

**BEFORE AN INDEPENDENT HEARINGS PANEL  
OF THE WAIKATO DISTRICT COUNCIL**

**IN THE MATTER** of the Resource  
Management Act 1991

**AND**

**IN THE MATTER** of the proposed Waikato  
District Plan (Stage 1)  
Hearing 19

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**SUMMARY OF EVIDENCE OF DEAN ANDREW FERGUSSON  
ON BEHALF OF THE RALPH ESTATES**

**MINERAL RESOURCE & MINING**

**9 September 2020**

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## 1. INTRODUCTION

- 1.1 My full name is Dean Andrew Fergusson. I prepared a statement of evidence dated 13 August 2020 in relation to the Ralph Estates' mineral interests at Ohinewai and the effects that Ambury Property Limited (**APL**)'s request to rezone land at Ohinewai may have on those interests. I refer to my qualifications and experience in my original statement and do not repeat those matters here.

## 2. SUMMARY OF EVIDENCE

- 2.1 The Ralph Estates have a 150 year history in the Waikato of exploring and mining coal and other minerals such as aggregate and fireclay within its extensive mineral titles around Rotowaro, Huntly and Ohinewai.
- 2.2 These mineral titles provide unfettered rights of access to the surface land to mine their minerals, subject to providing reasonable compensation for land damage.
- 2.3 The Ralph Estates' mineral interests under and adjacent to the land that is the subject of the rezoning proposal include a very substantial quantity of coal resources in the Ohinewai Opencast and Ohinewai Sectors of Waikare Coalfield.
- 2.4 Coal resources, geotechnical and mining challenges, environmental effects and economics at Ohinewai have been extensively explored, investigated and assessed in the past 40 years, first as part of the New Zealand Coal Resources Survey (**NZCRS**) and the Ministry of Energy, and then by Solid Energy, since the early 2000s.
- 2.5 A series of opencast mining proposals have been developed. The most recent proposal, developed by Solid Energy between 2013 and 2016, has been developed with a mine design that addresses geotechnical risks, materials handling characteristics and the associated productivity impacts. It would avoid Lakes Rotokawau and Ohinewai, minimise impact on the wetlands around the south of Lake Waikare and reduce the land and development requirements for the mine.
- 2.6 A smaller opencast pit containing a coal resource ranging between 17 and 22 million tonnes (**Mtonnes**) looks most likely. The Ralph Estates own the

majority (~75%) of this opencast coal resource (12-16 Mtonnes). The remaining coal resource is owned by the Crown and other private coal owners.

- 2.7** In my opinion an opencast mine at Ohinewai is technically feasible and appears it would be economic at the proposed mine scale proposed by Solid Energy and anticipated production level, even when capital requirements are considered. In my opinion there is a sufficient long-term market for this coal. It is recognised that resource consents would be required to realise the economic value.
- 2.8** The proposal to rezone the land would effectively prevent access to the Ralph Estates' coal north of Tahuna Road.
- 2.9** Based on both high-level estimation and deduction from recent mine planning by Solid Energy and a design based approach by Mine Design Systems Limited (**MDS**), the proposed rezoning would sterilise approximately 9 Mtonnes and 7.5 Mtonnes, respectively.
- 2.10** The potential rezoning of land clearly prevents the Public Trust from realising full commercial value from the Ralph Estates' mineral interests at Ohinewai. Using appropriate valuation methodologies defined in the VALMIN code, MDS have estimated the value of the sterilised coal quantity to be between \$4.1 and \$7.0 million. The evidence of Mr Gray on behalf of the Ralph Estates explains the methodology used for this valuation.
- 2.11** I have reviewed Mr Cameron Lines' evidence on behalf of APL. Some of this evidence relies on information from the 1970-80s NZCRS which is now out of date. More recent work has been undertaken by Solid Energy to investigate and plan a mining operation. Opencast mining at Ohinewai would pose a number of technical challenges. The key mining risks include material excavation rates, cut slope stability, and overburden storage. In view of the technical work carried out to date, it is my opinion that these challenges are not insurmountable and that operational solutions and methods exist today and can be adapted to Ohinewai.
- 2.12** In regard to the environmental effects, specifically those caused by dewatering for slope stability and material handling, as raised in Mr Lines' rebuttal, I understand that these effects would require further investigation, assessment and development of management solutions to inform a robust assessment of environmental effects to support an application for consent.

### **3. COMMENTS ON APL'S REBUTTAL EVIDENCE**

- 3.1** In paragraph 2.6 of his rebuttal evidence, in response to the comments in my evidence about the potential demand for Ohinewai coal from the Glenbrook Steel Mill, Mr Lines indicates the life of the ironsand mine at Waikato North Head (**WNH**) is limited to a maximum of 20 years. Mr Lines does not provide any real basis for his comments regarding the WNH mine life. My experience is that life of mine plans are subject to ever-changing inputs, assumptions and business strategies. Once investment is made to establish a large operation such as the Glenbrook Steel Mill, ensuring its profitability and keeping it going become imperatives.
- 3.2** There is a large ironsand resource at WNH, and significant resources contiguous to the northern limits of that deposit and within 50kms along the western coast north and south of the WNH mine. Given the abundance of nearby ironsand, it is my opinion that this iron ore, together with Ohinewai coal, would ensure the Glenbrook Steel Mill could be supplied with the mineral ingredients needed to make steel for several decades beyond the 10 to 20 year WNH mine life suggested by Mr Lines.
- 3.3** In paragraph 3.4 of his evidence, Mr Lines refers to several environmental issues associated with forming stable pit slopes when excavating the overburden to access the Ralph Estates' coal. I acknowledge that drawdown effects would be expected. Assessing such effects was the reason for the dewatering hydrological investigations (pump tests) and modelling carried out by GHD in previous investigations relating to this coal resource. The last significant piece of work was undertaken in 2012. Such work would inform technical solutions to manage the effects of drawdown on the shallow groundwater system, surface water bodies and ground settlement.
- 3.4** I have managed several feasibility studies for opencast coal mine projects in the Waikato, including environmental effects assessments to support consenting opencast coal mines as part of the overall feasibility. In my statement in my evidence confirming my opinion that a mining operation at Ohinewai was technically feasible I deliberately drew the distinction between technical feasibility and project feasibility, knowing full well the former is only part of the latter. There are several high risks that need to be resolved for the *project* to be considered feasible.

- 3.5** In paragraphs 3.5-3.9, Mr Lines makes comment about the assumed set back between the northern pit crest and the Tahuna Road. I caution against speculating on the extent of the set-back and the implied slope performance risk. The final set back may be greater or less than 100m, subject to further site-specific geotechnical risk assessment.
- 3.6** Quantitative risk assessment techniques for such design challenges were developed by myself and others at Solid Energy, in conjunction leading geotechnical consultants such as URS New Zealand Limited and T+T, for Waikato opencast mines in the late 1990s to early 2000s, and successfully applied to challenging pit developments at Rotowaro (Township and Awaroa 4 Opencast highwalls) and Maramarua (Kopako eastern highwall and lake dewatering). In these cases, the risk must take account not only of the inherent health and safety and financial risks that slope instability poses to the mining operation, but also the risk slope failure would have on public roads and their users. In my experience, the 100m set back adopted between the northern highwall crest and Tahuna Road is appropriate.

Dean Andrew Fergusson

9 September 2020