

Before the Waikato Regional  
and Hauraki District Councils

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Under the Resource Management Act 1991 (**RMA**)

In the matter of An application for resource consents to extend the Waihi Gold Mine via underground and open pit mining methods known as Project Martha

By **Oceana Gold (New Zealand) Limited**  
Applicant

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**Statement of evidence of Richard Turner for Oceana Gold (New Zealand) Limited**

29 October 2018

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## Qualifications and Experience

- 1 My name is Richard Jonathon Turner.
- 2 I hold a Bachelor of Planning (Hons) from the University of Auckland, which I obtained in 2000. I am a Director with Mitchell Daysh Limited, which practices as a planning and environmental consultancy throughout New Zealand.
- 3 I have been engaged in the discipline of resource management planning for 18 years. My experience includes a mix of in-house and consultancy resource management work, with an emphasis on providing advice on regional and district planning processes, and the preparation of resource consent applications for coastal and infrastructure projects. I have provided resource management planning advice to Oceana Gold (New Zealand) Limited (**OGNZL**) with respect to its mining activities in Waihi since 2016.
- 4 I am a full member of the New Zealand Planning Institute.
- 5 In preparing this evidence I have reviewed:
  - (a) The reports and statements of evidence of all of the other witnesses on behalf of OGNZL;
  - (b) The existing land use consents<sup>1</sup> and resource consents held by OGNZL for its mining activities in Waihi;
  - (c) The Section 42A reports by Mr Burton and Ms Roa; and
  - (d) Those submissions relevant to my area of expertise and the scope of this statement of evidence.
- 6 I have read the Code of Conduct for Expert Witnesses in the Environment Court Practice Note 2014. This evidence has been prepared in accordance with it and I agree to comply with it. I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed.

## Scope of Evidence

- 7 I have been asked by OGNZL to provide evidence on the proposed consent conditions for Project Martha, which are attached as **Appendix A** to this evidence. To this extent, this evidence includes:

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<sup>1</sup> Any references to 'existing land use consents' in this context includes reference to the expired mining license ML 32 2388, the conditions of which now form part of Rule 5.17.4.1(P1) of the Hauraki District Plan.

- (a) A brief overview of the key environmental effects of Project Martha;
  - (b) An overview of the measures proposed by OGNZL to avoid, remedy or mitigate the potential effects of Project Martha by way of proposed consent conditions; and
  - (c) Discussion on key matters raised in the Section 42A reports of Mr Burton and Ms Roa, as well as in the submissions.
- 8 I confirm that my evidence relates to the proposal known as Project Martha as described in Chapter 3 of the Assessment of Environmental Effects dated 25 May 2018 (**AEE**).
- 9 My firm were the authors of the AEE for Project Martha. My firm also contributed to the compilation of the additional information supplied to the Hauraki District Council (**HDC**) and the Waikato Regional Council (**WRC**) in response to questions asked by both local authorities in accordance with Section 92 of the Resource Management Act 1991 (**RMA**).
- 10 The proposed consent conditions in **Appendix A** utilise the consent conditions circulated with the Section 42A reports by Mr Burton (Appendix 8a and 8b) and Ms Roa (Schedule 2) as base documents. The further amendments to the consent conditions that I am recommending, but which are not currently agreed with Mr Burton and Ms Roa, are shown in tracking and strikethrough text in **Appendix A**. I discuss these matters further in this evidence below.

### **Executive Summary**

- 11 A number of technical assessments on the potential effects of Project Martha were commissioned to support the resource consent applications sought by OGNZL. These technical assessments provide a comprehensive and complete assessment of the potential effects of Project Martha, and provide recommendations regarding the management of the potential effects of the proposal. As such, a range of consent conditions are proposed by OGNZL in order to avoid, remedy or mitigate the potential effects of Project Martha.
- 12 While there will be some adverse effects, the proposed consent conditions have been drafted to ensure that any potential effects of Project Martha are mitigated or managed in accordance with recommendations of the various technical assessments, and in a manner that aligns with the outcomes sought by the relevant statutory planning documents where applicable.
- 13 It is also noted that many of the mitigation measures proposed for Project Martha have been, or are being, implemented for other mining projects around Waihi. As such, I have confidence in their effectiveness for this proposal. Many of the

mitigation measures are also well understood by the community. In particular, the noise and vibration conditions that are now proposed are broadly consistent with existing underground mining activities and activities within the Martha Pit.

- 14 Furthermore, I consider that the approach utilised in Schedule One provides an effective framework to ensure there is integrated management of the activities / effects that overlap in terms of the functions and responsibilities of the HDC and WRC.
- 15 Overall, it is my opinion that the consent conditions attached as **Appendix A** to my evidence are robust and provide suitable safeguards for the environment / community, while also providing sufficient flexibility for the management of activities as mining and rehabilitation activities progress. The matters of disagreement between Mr Burton, Ms Roa and myself with respect to the conditions that should apply to this proposal are, in my opinion, confined.

### **Summary of Actual and Potential Environmental Effects**

- 16 A number of technical assessments on the potential effects of Project Martha were commissioned to support the resource consent applications sought by OGNZL. These assessments are summarised in detail in Section 5 of the AEE, while Section 6 provides a general overview of the management / mitigation measures that are proposed for this project. A key feature in the preparation of the technical assessments was that the various experts were provided with an overview of the environmental outcomes sought by the relevant statutory planning documents at the outset, such that their recommendations regarding mitigation and management responses could be tailored to align (as far as practicable) with the environmental outcomes sought.
- 17 In my opinion, the AEE provides a comprehensive and complete assessment of the potential effects of Project Martha. Likewise, the various experts on behalf of OGNZL provide a summary of their conclusions regarding the potential effects of the project and how these effects should be managed. They also respond to the questions raised via peer review in the Section 42A reports. As such, and for the sake of brevity, I do not intend to repeat the conclusions from the technical assessments – but note that I rely on the technical assessments and the evidence of the other witnesses in the discussion that follows in this evidence.
- 18 I do, however, provide a brief overview of what I consider the key potential effects of Project Martha to be in the paragraphs below - based on the technical assessments, matters raised in submissions and from the discussion in the Section 42A reports of Mr Burton and Ms Roa. With this in mind, I consider that most of the key potential effects associated with Project Martha relate to surface and underground mining activities that are the same as, or very similar to, those that have been occurring in Waihi for a number of years. These activities are, in my

opinion, well-understood based on the extensive monitoring and reporting that is undertaken by OGNZL and already subject to effective management / mitigation controls by way of existing resource consent conditions.

### **Key Potential Effects**

19 I consider the key potential environmental effects associated with Project Martha to be:

- (a) **Noise** – Project Martha will generate noise effects from the construction of the noise bund, the realignment of Bulltown / Cambridge Roads and other ancillary activities, as well as activities associated with the rehabilitation of the Martha Pit (e.g. construction of the outlet structure). Noise effects will also be generated by mining activities in, and around, the Martha Pit.

In my opinion, the key matter for consideration is whether the noise effects from Project Martha can be managed such that appropriate construction and operational noise standards are met and the amenity of the surrounding community is appropriately protected.

To this extent, maximum noise limits at properties not controlled by OGNZL are proposed as part of the consent conditions. These limits reflect the relevant permitted noise limits set out in the Hauraki District Plan, and are more restrictive than the noise limits that apply to some of the existing authorised mining activities in Waihi;

- (b) **Vibration** – there will be vibration effects from blasting associated with Project Martha. This effect is not unique to Project Martha, and as noted by Mr Burton has been an issue of significant concern to some residents for many years.<sup>2</sup> The existing underground mines in Waihi involve blasting, including blasting under existing residential properties (i.e. the Correnso and Slevin Underground Mines). Likewise, blasting in the Martha Pit was a regular activity before the north wall failure and is provided for in the existing land use consents that apply to the Martha Pit.

The key matter for consideration is, in my opinion, the appropriateness of the proposed controls on the number, timing and duration of blast events – as well as the peak vibration amplitude that may be experienced by receivers over the life of Project Martha. What is appropriate is to be considered relative to the protection of the amenity of the surrounding community, as well as the existing limits that apply to blast vibration under the existing land use consent conditions and the Hauraki District Plan. To this extent, the

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<sup>2</sup> Project Martha Application for Land Use and Subdivision – Section 42A Report, Page 18.

proposed vibration conditions in **Appendix A** now generally reflect those applied to the Correnso Underground Mine and as recommended by Dr McKenzie and Mr Burton in the Section 42A report.

The consideration of vibration effects also requires some cognisance of the Amenity Effects Programme (**AEP**) and property management measures already undertaken by OGNZL for the Correnso Underground Mine, the continuation of which is being proffered as part of the proposed consent conditions for Project Martha – as discussed in the evidence of Mr Wilson. These programmes are considered to be measures that ensure positive effects for the purposes of Section 104(1)(ab) of the RMA;

- (c) **Dust** – as with the existing mining activities in Waihi, Project Martha will generate dust from construction and mining activities in, and around, the Martha Pit. Dust emissions can cause nuisance / amenity effects, as well as potential health effects.

However, it is considered that potential dust effects can be suitably managed via the implementation of mitigation measures set out in the existing Air Quality Management Plan. These are documented in the evidence of Ms Harwood and I note that this approach is agreed by Dr Cauldwell on behalf of the WRC;

- (d) **Geotechnical and Ground Settlement** – while the previous underground mining and mining within the Martha Pit has provided a large body of information on the geotechnical and groundwater conditions that are likely to be encountered for Project Martha, there is still a need to ensure that Project Martha is undertaken in a manner that ensures the stability of the Martha Pit and surface stability around the Martha Underground Mine (particularly where there are potential interactions with old mine workings).

To this extent, OGNZL propose to largely rely on the existing measures and controls for the Martha Pit and the Correnso Underground Mine to manage geotechnical stability and ground settlement for Project Martha. This includes the continued use of the independent Peer Review Panel, as well as the ongoing management of potential effects and mining activities via the Dewatering and Settlement Monitoring Plan, Pit Slope Management Plan and Void Management Plan. It is noted that aspects of the conditions relating to these management measures are not currently agreed between the respective experts;

- (e) **Water Abstraction from the Ohinemuri River** – OGNZL is proposing to alter the currently consented water abstraction from the Ohinemuri River in order to accelerate the filling of the pit lake, by abstracting up to 20% of the flow when the river is at or above 2 x Mean Annual Low Flow (**MALF**).

The submissions by Auckland / Waikato Fish and Game Council (**Fish and Game**) and the Royal Forest and Bird Protection Society raise concerns regarding the impact of the proposed change in the abstraction regime on habitat and water temperatures in the Ohinemuri River. Fish and Game notes that increased water temperatures could reduce existing trout habitat and negatively affect trout spawning.

Dr Boothroyd responds to these submission points in his evidence. Likewise, Ms Roa is of the opinion that any potential adverse effects relating to the abstraction can be avoided, remedied or mitigated.<sup>3</sup> As such, it is my opinion that the key issue is what controls need to be placed on the abstraction of water from the Ohinemuri River in order to ensure the ecological values of the river are safeguarded while also facilitating the filling of the pit lake in a reasonable timeframe. To this extent, the proposed consent conditions in **Appendix A** propose to limit the abstraction at times of low flow and when the water temperature of the river (upstream of the abstraction point) is above 25 degrees;

- (f) **Property Matters** - Mr Burton comments in his Section 42A report that effects on property values are not generally regarded as an environmental effect under the RMA, but rather are considered to be a consequence of other environmental impacts. That said, if Project Martha had a significant negative effect on the property market he considers that this would constitute a social effect under the RMA.<sup>4</sup>

A number of submitters also raise concerns relating to the impact of Project Martha on property values.

Mr Wilson details the various property-related measures that have been implemented by OGNZL in Waihi, some of which are required as consent conditions for other mining projects and others which are voluntarily implemented by the company. Mr Saunders also notes that he expects Project Martha to result in a dip in property values in the short term in the area overlying and bordering the Rex Orebody of the Martha Underground Mine (similar to that predicted and observed with the Correnso Underground Mine).

In light of this, OGNZL is proposing the continuation of the AEP. It is also proposing the reintroduction of the 'Top Up' policy in the vicinity of the Rex

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<sup>3</sup> Project Martha Applications for Waikato Regional Council Consents – Section 42A Report, Section 6.2.

<sup>4</sup> Project Martha Application for Land Use and Subdivision – Section 42A Report, Page 24.



Orebody and its extension to the residential area adjacent to the north wall of the Phase 4 Cutback; and

- (g) **Cultural** – the submission by Te Kupenga o Ngati Hako (**Ngati Hako**) identifies that the area encompassing Project Martha is of high cultural value, and includes the ancestral maunga of Pukewa. The submission also identifies that the mauri of Pukewa will be adversely affected and that it should be allowed to ‘rest’.

Based on the evidence of Mr Watson, I understand that discussions between OGNZL and Ngati Hako are ongoing regarding appropriate consent conditions to potentially address the submission – noting that the completion of the Phase 4 Cutback is necessary in order to remedy the failure of the north wall and enable the required rehabilitation of the existing pit.

I understand that a further update on these discussions will be provided at the hearing, but amendments to the proposed consent conditions have been made so that they now apply to the activities authorised by the HDC and WRC. In addition, it is proposed to make provision for a representative of the iwi advisory group to join the Peer Review Panel as an ‘active observer’ in order to (i) provide a cultural perspective to the consideration of activities in the Martha Pit and, (ii) provide iwi with a more information / understanding of the management of mining in the Martha Pit.

### **Proposed Consent Conditions – Summary of Approach**

- 20 As briefly noted above, the consent conditions proffered by OGNZL were largely based on the existing consent conditions that apply to the existing open pit and underground mining activities undertaken in Waihi. In this regard, it is considered that the potential effects associated with Project Martha are well-understood based on the existing mining activities that have occurred over the past 30 years. The measures that have been implemented to manage these effects have proven to be effective. The technical assessments also generally recommended a continuation of the existing management / mitigation measures implemented by the company.
- 21 Some amendments to the consent conditions that apply to existing mining activities were proposed to reflect particular circumstances relevant to Project Martha, as well as to reflect changes in the expected drafting of consent conditions over time (e.g. the certification of management plans by the HDC / WRC, rather than their approval).
- 22 It was also recognised that the management of Project Martha involves overlapping matters relevant to the functions and responsibilities of the HDC and WRC. Some of these matters are general information and administrative requirements that will need to be provided by OGNZL to both the HDC and WRC, while other matters

relate to the management and monitoring of potential effects that involve the functions of both local authorities as specified in Sections 30 and 31 of the RMA. In light of this, it is proposed that the land use consent and regional resource consents for Project Martha be subject to a schedule of common conditions (Schedule One).

- 23 Subsequent to this, the recommended consent conditions attached to the Section 42A reports of Mr Burton and Ms Roa have been reviewed. Further refinements to the proposed consent conditions have been made based on the advice of the experts engaged by OGNZL, as well as the mine staff.
- 24 As is illustrated in **Appendix A**, I consider that there is a high level of agreement between Mr Burton, Ms Roa and myself on the proposed consent conditions that should be applied to Project Martha. I expect a further update on matters that remain outstanding will be provided to the Panel at the hearing.

#### **Proposed Land Use Consent Conditions – Hauraki District Council**

- 25 As is explained in the evidence of Mr Kyle, Project Martha triggers a number of resource consent requirements under the Hauraki District Plan. These relate to activities associated with the establishment and operation of the Martha Pit, as well as the Phase 4 Cutback in the Martha Pit.
- 26 A subdivision consent is also required, which I discuss later in this evidence.
- 27 Mr Burton has recommended a suite of consent conditions for Project Martha in his Section 42A report. I have subsequently tracked further amendments to these recommended consent conditions, which are provided in **Appendix A** and discussed below. I have also recommended various 'minor' amendments to the consent conditions proposed by Mr Burton to ensure consistency between the consents / conditions in terms of terminology and phraseology. I don't discuss these proposed amendments in this evidence, but will be able to answer any questions on them at the hearing.

#### ***General Conditions***

- 28 Mr Burton recommends that Condition 1 references an appendix that lists the activities authorised by the consent, as well as the area encapsulating Project Martha. He also recommends that the condition define the general parameters of the Martha Pit as authorised for Project Martha.
- 29 In my opinion, listing the activities that are authorised by the consent in an appendix does not achieve anything already clarified in the drafting of the condition. In this regard, the list in the appendix in the Section 42A report just repeats what activities trigger the need for a resource consent from Table 4.1 of the AEE, whereas

Condition 1 already clarifies the consent is to be undertaken generally in accordance with the AEE – which includes a fulsome description of what constitutes Project Martha in Section 3.

- 30 Furthermore, attempting to define aspects of the Project Martha by way of a plan is considered problematic. While Figures 1.1 and Figure 1.2 of the AEE provide an indicative area of the Martha Underground Mine and Phase 4 Cutback, they do not identify all of the works associated with Project Martha – for example, the realignment of Bulltown / Cambridge Road, the use of underground infrastructure, the location of the cement aggregate fill plant and stockpile areas. A plan attempting to show the various aspects of Project Martha would need to distinguish all the different features of the project.
- 31 In my opinion, the extent of the area encompassing Project Martha is suitably explained in the AEE (Figures 1.1 and 1.2) and Appendix A – which details the legal description of all properties that the different activities comprising Project Martha may occur on or under. For those consent conditions where there is a need to confirm the extent of underground mining, I consider that it would be appropriate to directly cross-reference to Figure 1.1 of the AEE in the relevant condition.
- 32 Mr Burton has also recommended that Condition 1A provide for the use, maintenance and rehabilitation of existing and consented underground mining infrastructure in existence at the commencement of this consent. OGNZL has deliberately applied to use all existing and consented underground mining infrastructure in recognition that some of this infrastructure is still to be established as part of the existing underground mining activities. Any additional infrastructure will be constructed on or under the properties identified in Appendix A of the AEE, such that I do not consider there are any issues with respect to the scope of where activities can occur under this consent.

### ***Schedule One***

- 33 As discussed at paragraph 22 above, it is proposed that the land use consent and resource consents for Project Martha be subject to a schedule of common conditions – which is acknowledged in Condition 7.
- 34 The specific conditions in Schedule One are discussed further later in this evidence.

### ***Hours of Work***

- 35 The condition relating to the hours of work align with the existing land use consents for the Martha Pit and underground mining activities in Waihi. Of note is that Condition 9 provides for underground mining activities to occur 24 hours per day in light of these activities not generating any discernible noise effects at the surface,

together with the fact that it is the vibrations caused by underground blasting that constitute the primary effect from underground mining - and blasting is subject to its own set of conditions as I discuss later.

- 36 Together with the proposed noise conditions, I consider that the conditions controlling the hours of work assist in protecting the reasonable amenity of residents in Waihi.

### **Construction Activities**

- 37 Condition 14 defines the activities captured by the construction noise conditions that follow. Mr Burton has recommended that the reference to the re-alignment of Bulltown / Cambridge Roads and the relocation and demolition of dwellings be deleted from the condition – and these matters be managed via the subdivision consent. He adopts a similar approach with the conditions regarding construction management and heritage.

- 38 It is my experience and understanding that subdivision consents generally establish conditions for the division of lots or the adjustment of property boundaries. The conditions attached to these consents typically set out the matters that need to be addressed (e.g. provision of infrastructure services, vehicle access) in order for the survey plan to be approved and deposited in accordance with Sections 223 and 224 of the RMA. In this instance, many of the conditions attached to the subdivision consent are activities requiring land use consent themselves and are construction related (so would best sit under the land use consent for Project Martha).

- 39 As such, it is my opinion that the likes of Condition 14 should seek to manage the re-alignment of Bulltown / Cambridge Roads, as well as the relocation and demolition of dwellings.

### **Construction Noise**

- 40 In my opinion, the proposed construction noise conditions are typical for a construction-related project. In this regard, they define the construction noise limits that apply at any dwelling not owned by the consent holder, and how construction noise will be measured and assessed (i.e. in accordance with *NZS6808:1999 Acoustics – Construction Noise*).

- 41 The construction noise limits reflect the maximum noise standards for construction noise received in the Residential and Low-Density Residential Zones in Section 8.3.1.3 of the Hauraki District Plan, with two exceptions. That is:

- (a) Any construction noise received at the boundary of Waihi Central School on Moresby Avenue is subject to 55 dB  $L_{Aeq}$  and 75  $L_{AFmax}$  limits between 0830 and 1500 (i.e. school hours); and
  - (b) Any construction noise between 2000 and 0630, as well as Sundays and public holidays, is limited to 40 dB  $L_{Aeq}$  (whereas the Hauraki District Plan provides for 45 dB  $L_{Aeq}$ ).
- 42 These exceptions reflect the existing construction noise limits that apply for the Extended Martha Mine Project. In this regard, construction noise will be no greater than the levels authorised by the existing land use consents held by OGNZL.
- 43 There is also provision in the conditions for the preparation of a Construction Noise Management Plan, which shall be submitted to the HDC for certification at least 20 working days prior to the first exercise of the consent. The purpose of this management plan is to specify the measures that are proposed in order to ensure that all of the construction related activities noted in Condition 14 are able to comply with the construction noise limits – recognising that the Construction Noise Management Plan will require several iterations given the staging of the various construction-related activities over the life of Project Martha.

#### ***Operational Noise***

- 44 Condition 22 originally adopted the use of control boundaries for operational noise from Project Martha in order to ensure that the amenity of the surrounding community is appropriately protected.
- 45 However, in light of OGNZL purchasing the three properties close to the north wall of the Martha Pit that would have been subject to noise greater than 50 dB  $L_{Aeq}$  for a short duration, and the discussion by Mr Lloyd and Mr Burton in the Section 42A report, it is agreed that a simplified noise condition is appropriate.
- 46 To this extent, it is now proposed that noise from around the Martha Pit from mining and mining related activities be limited to a maximum of 50 dB  $L_{Aeq}$  between 0700 and 2100 on Monday and Friday, and between 0700 and 1200 on Saturday, at all properties / dwellings not owned by OGNZL (or subject to an agreement with the company). This means that the noise limits that apply to mining and mining related activities in the Martha Pit will be the same as apply to any permitted activity in or bordering the Residential and Low-Density Residential Zones in accordance with Rule 8.3.1.3 of the Hauraki District Plan, and will be more restrictive than the 55 dB limit that applies to some of the existing mining activities.
- 47 Condition 23 clarifies the noise limits that apply to those operational activities associated with Project Martha that are outside of the urban area of Waihi. The proposed operational noise limits reflect those which apply to these activities under

the existing land use consents held by OGNZL (e.g. as part of the Extended Martha Mine Project and the Correnso Underground Mine).

- 48 Conditions 24 and 25 further clarify where operational noise associated with Project Martha will be measured and assessed, and that it does not apply to properties owned or controlled by OGNZL. The reliance on *NZS6801:2008* and *NZS6802:2008* for the measurement and assessment of operational noise aligns with the direction provided in Rule 8.3.1.3(1) of the Hauraki District Plan.
- 49 As with construction noise, Condition 27 requires the preparation of a Noise Management Plan that is to be submitted to the HDC for certification at least 20 working days prior to the first exercise of the consent. The Noise Management Plan will need to specify how the noise control limits in Conditions 22 and 23 will be achieved for the duration of the Project (i.e. via the construction of the noise bund or the use of particular machinery in certain locations). The Noise Management Plan will also need to specify the monitoring programme for operational noise and the reporting of data to the HDC – such that the HDC (and the wider community) have certainty that the mining activities are being undertaken in accordance with the noise controls established in Conditions 22 and 23.

### ***Blasting and Vibration***

- 50 The proposed consent conditions in Appendix O to the AEE sought to revise the blasting limits imposed for the Correnso Underground Mine based on operational experience and practicalities with that underground mine. While Dr Heilig still considers the blasting and vibration conditions in Appendix O to be appropriate for this project, OGNZL have advised that they are prepared to accept the consent conditions for blasting and vibration set out in the Section 42A report by Mr Burton (subject to some minor amendments). It is considered that these limits, which are currently implemented for the Correnso Underground Mine, will also ensure the protection of the reasonable amenity of the residents of Waihi from the vibration effects caused by underground blasts.
- 51 The key features of the revised blasting and vibration limits are:
- (a) A blast limit of 5 mm/s for 95% of monitored events;
  - (b) An average blast limit of 2 mm/s for development blasts;
  - (c) An average blast limit of 3 mm/s for production blasts; and
  - (d) A blast limit of 1 mm/s for maintenance / safety blasts, which may occur at any time.
- 52 It is proposed that the definitions of 'development blast' and 'production blast' be amended. An explanation for the proposed amendments to the definitions is

provided in the evidence of Mr O'Leary, who discusses the mis-classification of blasts based simply on the weight of explosives used. I understand that this is particularly important in the Rex Orebody, where Dr Heilig has indicated that production blast weights in some instances will need to be considerably less than 7 kg.

- 53 As with the existing mining activities in Waihi, the proposed consent conditions require the preparation of a Vibration Management Plan that is to be certified by the HDC at least 20 working days prior to the first blast event (Condition 46). The first blast event has been used as the trigger for submitting this management plan as blasting may not occur until some time after the completion of other preliminary works required as part of Project Martha.
- 54 The requirements of the Vibration Management Plan are set out in Condition 47 (as well as Condition 34). The requirements of the management plan are, in my opinion, fulsome and detail particular matters that need to be detailed in order to demonstrate how blasting will be minimised, monitored and reported. These requirements align with those set out in the Vibration Management Plan for the Correnso Underground Mine and are considered to be sufficiently detailed.
- 55 Dr Heilig discusses in his evidence his recommended approach to the conditions relating to the management of flyrock in Condition 47(a)(vi).
- 56 Condition 47 has also been updated to clarify that the Vibration Management Plan should also include procedures for converting a roving monitor location to a fixed monitoring location (and that roving monitors are not to be used for compliance monitoring). In this regard, if a roving monitor location that is not a compliance point indicates a potential compliance issue with the blast vibration limits, then it is appropriate that a permanent compliance monitor be established at that site to confirm whether compliance is being achieved or not. This amendment, along with the inclusion of Condition 47(a)(viii), are considered to provide suitable direction on the management of anomalous blast results.
- 57 Finally, with respect to blasting and vibration, the proposed consent conditions require the continuation of AEP and provision for the monitoring and remediation of potential property damage – Conditions 35 to 42 and 55 and 56 respectively.
- 58 The AEP has been established by OGNZL as a measure to respond to the perceived loss of amenity by residents who experience vibration from blasting activities, whilst noting that the vibration blast limits in Condition 33 are considered to be appropriately protective of amenity in accordance with the Hauraki District Plan. Conditions 35 to 42 are proffered on an *Augier* basis and provide a regime for payments to residents who experience vibration from blast events throughout the life of Project Martha – with the amount of payment scaled to the level of

vibration experienced by residents. The data utilised to calculate the payments is from the vibration compliance monitoring network.

- 59 I understand that the AEP has been utilised by OGNZL for a number of years and forms part of the consent conditions for the Correnso Underground Mine. The evidence of Mr Wilson provides further detail on the formulation of AEP and how it works in practice.
- 60 Conditions 55 and 56 provide a framework for the monitoring and remediation of any property damage caused by blasting associated with Project Martha – which largely reflects the ‘we break, we pay’ approach that exists with the consent conditions for the Correnso Underground Mine. The framework includes structural surveys of representative properties and provision for the investigation and remediation of any property damage by OGNZL. Condition 56 also includes an escalation mechanism in the event that there is not agreement about the cause of property damage – with provision for an independent expert to investigate the property damage and the utilisation of arbitration in accordance with the provisions of the Arbitration Act 1996.
- 61 The use of an arbitrator appointed by the Institute of Professional Engineers in New Zealand is considered a more robust process than a panel appointed by the Waihi Community Forum, and will ensure that someone with the appropriate skills and experience is available to consider the dispute.

### ***Fencing, Lighting and Screen Planting***

- 62 Conditions 57 – 61 relate to the screening and lighting of the Martha Pit and the Surface Facilities Area. They largely represent a continuation of the existing obligations that apply under the expired mining license for the pit under Rule 5.17.4.1(P1) of the Hauraki District Plan.
- 63 Conditions 60 and 61 are based on the recommendations of Mr Girvan and, in my opinion, provide an appropriate approach to the mitigation of the localised visual effects associated with the Phase 4 Cutback. Mr Girvan does not support the proposed amendments to Condition 61(c) and (d) recommended by Mr Burton and Mr Mansergh – particularly in light of the recent purchase of three properties near the north wall of the Martha Pit by OGNZL.

### ***Construction Management***

- 64 Conditions 62 – 65B set out relatively standard measures that require further detail on the design and construction methodology for the noise bund, pit rim walkway, re-alignment of Bulltown / Cambridge Roads and the intake / outlet structures for the pit lake prior to the commencement of construction.



- 65 The purpose of these conditions is to provide flexibility over the detailed design of the respective construction activities, while also ensuring that any potential effects are minimised and rehabilitation measures are implemented post-construction.
- 66 In response to the submission of Powerco I have added an advice note that clarifies the need to protect network utilities and relocate them in accordance with appropriate procedures. It is considered that this advice note fully addresses the submission of Powerco.
- 67 Condition 65A and 65B further clarify the need to ensure the re-location of Bulltown / Cambridge Roads (and associated services) occurs in accordance with the appropriate standards and that engineering drawings for these works are submitted for approval prior to the works commencing. I adopted these conditions from the proposed subdivision consent conditions in light of my earlier comments regarding the purpose of a subdivision consent.

### ***Pit Slope Management and Surface Stability***

- 68 The requirement for a Pit Slope Management Plan / Manual is a key feature of the existing land use consent for the Extended Martha Mineral Project. In light of the recommendations in the geotechnical assessments, the proposed consent conditions provide for the continuation of this mechanism for the management of the stability of the pit walls – this is documented in Condition 70. However, the proposed conditions provide further detail than previous conditions on the need for the Pit Slope Management Plan to identify areas around the Martha Pit that may be subject to ground deformation, as well as contingency measures in the event of instability.
- 69 The Pit Slope Management Plan will also be peer reviewed by the Peer Review Panel, whose role is discussed further in relation to Schedule One.
- 70 It is recommended that Condition 70(a) also clarify that the Pit Slope Management Plan will identify procedures for the backfilling of open stopes encountered by OGNZL within 30 m below the toe of the Phase 4 Cutback (where practicable) given that the lower slope of the pit is potentially affected by underground stopes and disturbed rock mass. I do not, however, agree with imposing this remediation measure as a specific requirement via Condition 71(f) given the recommendation by PSM that this measure should be considered and that the detail of any remediation would need to be determined based on the performance and exposures during mining.
- 71 In my opinion, the Pit Slope Management Plan is the appropriate mechanism for the management of open stopes below the toe of the Phase 4 Cutback given that the circumstances as to when it may be required may vary – and there was no recommendation from PSM that only cement aggregate fill be used for backfilling.

- 72 Similar to the management of the stability of the Martha Pit, Conditions 71 – 75 generally provide for the continuation of management measures that are required as part of the resource consent conditions for the Slevin Underground Mine and the Martha Drill Drive Project. The purpose of the Void Management Plan is to detail how geotechnical hazards associated with the Martha Underground Mine will be managed and what mitigation measures will be implemented.
- 73 For the reasons outlined in the evidence of Mr O'Leary, I do not agree with a number of the amendments proposed to Conditions 71 – 75 by Mr Burton. In this regard, some of these proposed amendments seem to inadvertently limit mining methods available to OGNZL, or require staged development (e.g. Condition 71(g)), without further providing for surface stability as part of the Martha Underground Mine.
- 74 My recommended amendments to Conditions 71 – 75 are detailed in **Appendix A** and, in my opinion, ensure further specific detail on the management of surface stability is provided in advance of, and as, mining occurs - but without limiting the need for flexibility in how the development of the Martha Underground Mine is advanced.

### ***Social Impact***

- 75 Conditions 77 – 83 adopt the approach utilised for the Correnso Underground Mine with respect to identifying, assessing and managing potential social effects associated with Project Martha.
- 76 While a Social Impact Management Plan is proposed as part of these conditions, OGNZL does not intend to commission a further social impact assessment (as is the requirement of the Correnso Underground Mine). As noted in Section 5 of the AEE, there is a considerable body of existing information on the social impacts of mining activities in Waihi – such that it is not considered that an additional social impact assessment is required for Project Martha. I note that Mr Wilson is of the same view and discusses this in his evidence.
- 77 The Social Impact Management Plan will continue to monitor the indicators of potential social effects attributable to mining activities associated with Project Martha (as well as in combination with the other mining activities in Waihi). Reporting on trends will occur on an annual basis in accordance with Condition 80. Importantly, in my opinion, Condition 81 also requires the implementation of further or different mitigation actions if a significant adverse trend is determined from the monitoring undertaken as part of Social Impact Monitoring Plan.

### ***Property Programme***

- 78 The evidence of Mr Wilson details the existing property programme that is implemented by OGNZL in relation to its mining activities in Waihi. Related to this, Conditions 84 – 98 detail specific measures that are proposed by OGNZL to reflect its commitment to the local community.
- 79 The key aspects of these conditions are:
- (a) An offer to purchase any residential property overlying stopes or a spiral decline for the mining of the Rex Orebody;
  - (b) An offer of an ex gratia payment equal to 5% of a residential property's market value to the registered proprietor of the property immediately beneath any proposed development drive prior to mining of the Rex Orebody;
  - (c) An arbitration process in the event that the purchase and payment offers are not accepted; and
  - (d) Provision of payments associated with legal and moving costs, and general inconvenience.
- 80 Based on the evidence of Mr Wilson, I understand that these measures have been generally appreciated by the community for previous projects and are considered appropriate measures to provide for residents to relocate in the event that they decide they would prefer to relocate from their existing property.

### ***Cultural Matters***

- 81 In light of comments by Ms Roa in her Section 42A report, I have recommended that all of the consent conditions addressing cultural matters be moved to Schedule One so that they apply to all of the resource consents required for Project Martha.
- 82 These conditions are discussed further later in this evidence.

### ***Transport***

- 83 Condition 100 – 102 are effectively the same measures imposed on the resource consent for the Correnso Underground Mine. They apply in the event that OGNZL elects to establish a cement aggregate plant off Baxter Road, and require that OGNZL record the baseline condition of the road and reimburse HDC for the cost of road pavement maintenance caused by the cartage of aggregate and backfill material. I understand that these conditions are acceptable to Mr de Haast of the HDC.

- 84 With respect to Conditions 103 – 109, I understand that Mr Carlisle has been consulting with the New Zealand Transport Agency (**NZTA**) regarding its submission and matters pertaining to the intersection of Crean and Baxter Roads with State Highway 2.
- 85 It is unclear to me why the existing conditions that apply to these intersections under the resource consent for the Correnso Underground Mine are no longer appropriate (i.e. those proffered in Appendix O of the AEE). That said, in response to the submission of NZTA more detailed conditions are now proposed that limit the use of heavy vehicles on Baxter and Crean Roads, and State Highway 2, prior to the intersection being upgraded.
- 86 The conditions also include a requirement (Condition 106) for OGNZL to upgrade this intersection prior to its use by heavy vehicles associated with the Martha Underground Mine. Condition 106 is caveated with 'where necessary' as it is recognised that the NZTA is about to embark on a programme of safety improvements along Stage Highway 2 between Waihi and Omokoroa. As such, it is not immediately apparent what upgrade works will be required if, and when, OGNZL decides to bring aggregate to the site for the manufacture of cement aggregate.
- 87 Further, the conditions now also require a Traffic Management Plan to be submitted to the HDC in relation to the haulage of aggregate for the manufacture of cement aggregate fill for the Martha Underground Mine.
- 88 While I have not been provided with any response from NZTA to these conditions prior to finalising this evidence, I note that Mr Carlisle concludes that these proposed consent conditions are reasonable and appropriately address the issues raised from a traffic engineering perspective.

### ***Heritage Management***

- 89 Conditions 110 to 112 set out the measures proposed to manage potential adverse effects on heritage sites potentially affected by Project Martha, noting that no listed heritage items will be impacted by the project.
- 90 The principal focus of the conditions is on ensuring that a representative record of any potential pre-1900 workings encountered as part of the mining activities is maintained – be that by photographic record, retrieval of items of interest or laser scanning of the extent of old workings. These mitigation measures are supported by Dr Clough.
- 91 Condition 112 includes a requirement to relocate the existing dwelling at 12 Cambridge Road in light of its heritage values. For reasons previously discussed in this evidence, it is my opinion that this mitigation measure should sit in the land

use consent for Project Martha rather than the subdivision consent. I am also now proposing that the reference to 'best endeavours' be deleted from Condition 112 in light of OGNZL confirming that it is feasible to relocate the dwelling within the urban area of Waihi.

- 92 While Mr Burton has recommended the inclusion of an accidental discovery condition (as does the submission of Heritage New Zealand), it is my opinion that a condition of this nature should be included in Schedule One given that the WRC have also sought to impose this requirement – albeit with slightly different procedures in the event of a discovery.

### **Proposed Consent Conditions – Waikato Regional Council**

- 93 As is explained in Section 4 of the AEE, and in the evidence of Mr Kyle, Project Martha requires a number of resource consents from the WRC as well as a variation to an existing air discharge permit that applies to mining activities undertaken by OGNZL around Waihi.
- 94 Ms Roa has recommended a suite of consent conditions for each of these activities in Schedule 2 of her Section 42A report (following the receipt of draft conditions from OGNZL on 12 October 2018). I have subsequently tracked further amendments to these recommended consent conditions, which I discuss below. I have also recommended various 'minor' amendments to the consent conditions proposed by Ms Roa to ensure consistency between the consents / conditions in terms of terminology and phraseology. I don't discuss these proposed amendments in this evidence, but will be able to answer any questions on them at the hearing.

#### ***Schedule One***

- 95 As with the land use consent required from the HDC, it is proposed that all of the resource consents from the WRC be subject to Schedule One – being the common conditions between the HDC and WRC. This is noted in the conditions for all of the resource consents required from the WRC.
- 96 Ms Roa has recommended a minor amendment of the drafting of the condition relating to compliance with Schedule One. I have accepted this amendment and made the same amendment to the proposed consent conditions for the HDC (for reasons of consistency).

#### ***Discharge to Air (Variation) – AUTH124850.01.03***

- 97 The only changes to the conditions of AUTH124859.01 relate to recognising that the existing Air Quality Management Plan for mining activities in Waihi should also be consistent with the recommendations of the technical assessment by Beca for

Project Martha; which are discussed in the evidence of Ms Harwood and documented in Table 5-7 of the AEE.

- 98 In effect, OGNZL will be required to revisit / update the existing Air Quality Management Plan to ensure that suitable air quality controls are in place for the existing mining activities and Project Martha. The revised plan will need to be certified by the WRC.
- 99 Likewise, there is a proposed amendment to Schedule One that applies to AUTH124859.01 to confirm that the activities undertaken as part of the consent should be generally in accordance with the AEE for Project Martha.

***Taking of Groundwater – AUTH139551.01.01***

- 100 As I discuss later in this evidence, Schedule One requires the preparation of a Dewatering and Settlement Monitoring Plan to ensure that the dewatering of the Martha Pit and underground workings do not give rise to surface instability and differential settlement. This is a principal mechanism to address potential effects associated with the dewatering activity.
- 101 The proposed conditions of the groundwater abstraction consent require monitoring and reporting on the volume of water abstracted, as well as water chemistry (Conditions 5 to 7), which is considered appropriate given the length of time over which dewatering will occur. There are also controls on the extent of groundwater lowering that can occur – which is considered sufficient to provide for the establishment and operation of the Martha Underground Mine below the Martha Pit (Condition 4).
- 102 While the AEE concludes that it is not expected that Project Martha will impact on the operation of any private bores around Waihi, it is proposed that OGNZL remedy any existing water supply that is determined as being adversely affected by the dewatering activities (Condition 8). In my opinion, this proposal will ensure that no other water users are unintentionally adversely affected by the proposed dewatering activities.
- 103 Ms Roa has also recommended that OGNZL report on the effect of the groundwater take and dewatering activities on deep and shallow aquifers in the Waihi Basin on a five-yearly basis. However, this condition is not considered to be warranted given it applies over an area much larger than the area considered to be affected by Project Martha, and the conclusion of Mr Pattle on behalf of the WRC that the effects of Project Martha will be less than minor.
- 104 In addition, Condition 22 of Schedule One already proposes that OGNZL provide an annual report on the volume of groundwater abstracted and discussion on

changes in the groundwater profile, predictions of the future impacts that may arise and what contingency actions, if any, should be taken.

- 105 Given these comments, the recommended condition has been struck out from AUTH139551.01.01 in **Appendix A**.

***Placement of Overburden, Removal of Vegetation and Earthworks – AUTH139551.02.01 and AUTH139551.03.01***

- 106 The primary conditions proposed on the resource consents relating to the placement of overburden, the removal of vegetation and earthworks require the preparation and implementation of an Erosion and Sediment Control Plan in accordance with the technical guidelines prepared by the WRC. This is to ensure that any sediment discharges from stockpiled material site are minimised to the extent practicable.
- 107 In my opinion, these conditions are typical for most land disturbance activities in the Waikato Region and will ensure that appropriate measures are implemented on site to avoid or minimise sediment run-off during rainfall events.
- 108 The consent conditions also require that the activities be undertaken to ensure that dust emissions are kept to a practicable minimum and in accordance with AUTH124859 and the requirements of the Air Quality Management Plan. While I consider this condition to be potentially unnecessary on these resource consents (due to all activities being undertaken as part of Project Martha needing to comply with the requirements of the air discharge permit), I have not recommended its deletion as it may assist in providing a general reminder of the need to minimise the emission of dust associated with land disturbance activities around the project site.

***Backfilling of the Martha Underground Mine – AUTH139551.04.01***

- 109 As is noted in the project description in Section 3 of the AEE, historical stopes that are encountered will need to be backfilled as part of the activities in the Martha Underground Mine – which will involve the use of waste material from the mine and, potentially, cement aggregate fill.
- 110 While AECOM consider that the orebodies for Project Martha are of a similar mineralogy to the existing mines in Waihi and the need for remedial actions is unlikely, it is proposed to establish a monitoring programme to confirm that supposition (Condition 6). This monitoring programme will be submitted to the WRC for certification prior to any backfilling activities occurring in the Martha Underground Mine.

- 111 In addition, in the event that there is a significant variation in the chemical composition of the material being mined, the conditions also require that OGNZL identify contingency or remedial measures to address any potential effects on pit lake water quality (Condition 8). As per the resource consents that have been sought for Project Martha, this may involve the addition of limestone to the backfill material prior to placement.
- 112 I also accept that OGNZL will need to install piezometers around Waihi in order to monitor potential changes in groundwater levels arising from Project Martha over time (Condition 5). However, I question whether this requirement would be more appropriately imposed on the resource consents to abstract groundwater for dewatering purposes or the resource consents to flood the underground workings at Martha Pit.

***Abstraction of Water from the Ohinemuri River – AUTH139551.05.01***

- 113 The proposed consent conditions attached to the water permit for the abstraction of surface water from the Ohinemuri River are intended to ensure that the take only occurs in accordance with the parameters and flow conditions set out in the evidence of Ms Hartwell (Conditions 5, 6 and 7) – this is to safeguard the life-supporting capacity of the river as per the conclusions of Dr Boothroyd. The conditions also require the establishment of a river gauging facility and the monitoring / reporting of abstraction data in accordance with the standard conditions imposed by the WRC.
- 114 The proposed consent conditions also now include a requirement to cease the abstraction of water from the Ohinemuri River when the temperature of the Ohinemuri River, immediately upstream of the abstraction point, exceeds 25 degrees. This condition has been recommended by Dr Boothroyd in order to address matters raised in the submission by Fish and Game Council and others.
- 115 OGNZL also currently holds four resource consents from the WRC for the abstraction of water from the Ohinemuri River in order to provide for the filling of the pit lake. These resource consents relate to the same activity (i.e. the abstraction of water in order to fill the pit lake), but have been issued as part of previous mining projects. The result is that there are a number of existing ‘paper’ allocations from the Ohinemuri River which suggest a large amount of water could be taken from the river, when the reality is that these consents are not cumulative abstractions of water.
- 116 For the sake of clarity, Condition 3 has been proposed to confirm that the abstraction of water associated with Project Martha cannot occur until the four existing resource consents have been surrendered. This condition will, in my opinion, avoid the potential for any perception of over-allocation in the Ohinemuri River.



117 Finally, I note that Ms Roa has suggested in the Section 42A report that this consent should be subject to a condition that seeks a restoration or riparian plan for the Ohinemuri River in order to create / enhance habitat – although no condition is recommended in Appendix 2 of her report. Based on the advice and conclusions of Mr Boothroyd, it is not considered that any such condition is required in order to avoid, remedy or mitigate identified effects on the river environment (noting also that this section of the river has already been extensively replanted via previous initiatives by OGNZL).

***Discharge of Water to the Pit Lake and Mangatoetoe Stream – AUTH139551.06.01 and AUTH139551.08.01***

118 Water from the Ohinemuri River and the Water Treatment Plant will be discharged to the pit lake as part of the rehabilitation activities that will occur at the completion of mining activities for Project Martha. Overflow water from the pit lake will be discharged to the Mangatoetoe Stream via an outlet structure to be constructed.

119 These activities will be subject to the preparation and implementation of an Underground Mine Flooding, Pit Lake Filling and Discharge Management Plan – which is to be submitted to the WRC for certification prior to either activity occurring. The intention of this management plan is to further detail the rewatering strategy for the pit lake, as well as the monitoring of refilling on groundwater and water quality in the pit lake. In this regard, it is considered important that the rate of water level recovery during the filling of the pit lake be monitored in order to validate the rewatering model and guide the management of filling of the pit lake.

120 The Underground Mine Flooding, Pit Lake Filling and Discharge Management Plan also seeks to detail the actions to be undertaken to monitor and address water quality in the pit lake and any discharge to the Mangatoetoe Stream.

121 With respect to the Mangatoetoe Stream, the consent conditions do not propose to alter the existing receiving water quality standards which were previously established – which are attached to the conditions as Table 1. In this regard, Dr Boothroyd considers the existing standards to be suitably protective of aquatic life and not requiring amendment.

122 Ms Roa has recommended amendments to the frequency of water quality monitoring of the Mangatoetoe Stream and aquatic life in the pit lake – which would effectively require this monitoring to occur until such time as the WRC advises that it may cease. Given that the water quality of the pit lake will be monitored throughout the approximately 10 years of filling, Dr Boothroyd considers that it is appropriate to ‘pause and reflect’ on the monitoring parameters and frequency five years after the first discharge from the pit lake.

- 123 With respect to the aquatic life in the pit lake, I understand from Dr Boothroyd that the aquatic life in the pit lake is not expected to significantly change over time. As such, the need for this monitoring to continue to occur with no fixed end or review date is considered unreasonable.
- 124 In light of the above, I have recommended further amendments to Condition 5(b) of AUTH139551.06.01 and AUTH139551.08.01 to provide for a review of the water quality and aquatic life monitoring five years after the first pit lake discharge to the Mangatoetoe Stream.
- 125 Finally, it is recognised that any discharge from the pit lake to the Mangatoetoe Stream may not occur for another 20 years. While GHD have assessed the potential impact of any discharge from the pit lake on the flood capacity of the Mangatoetoe Stream, it is recognised that the characteristics of the stream may alter over time. As such, it is proposed that an updated assessment be provided prior to the commencement of any discharge – and that any necessary measures to mitigate the impact of the discharge on affected properties or public utilities be undertaken prior to the discharge occurring.
- 126 In my opinion, this approach proposes a pragmatic solution to address any changes (either climate or physical) that occur in the intervening period between the grant of consent and it being exercised.

***Discharge of Limestone to the Pit Lake – AUTH139551.07.01***

- 127 As noted in the AEE, resource consent is being sought (as a contingency) for the discharge of limestone to the pit lake in order to ensure that its water quality is suitable for recreational use and that it meets the existing receiving water standards for the Mangatoetoe Stream.
- 128 Further to the requirements of the Underground Mine Flooding, Pit Lake Filling and Discharge Management Plan, the proposed consent conditions require OGNZL to provide the WRC with a methodology for the addition of limestone to the pit lake. In this regard, and as per the management plan, the methodology will also need to detail the water quality triggers for the pit lake that warrant the addition of limestone.
- 129 This methodology will also require certification by the WRC prior to the first exercise of this consent.

***Construction of the Intake and Outlet Structures – AUTH139551.09.01 and AUTH139551.10.01***

- 130 The abstraction of water from the Ohinemuri River and the discharge of water from the pit lake will necessitate the construction of structures on the margins of each waterbody.

- 131 As with the land use consent from the HDC, it is proposed that the establishment of each structure be subject to a construction design report / management plan that details the construction design and methodology – which need to be submitted to the WRC for certification.
- 132 In addition, the conditions attached to AUTH139551.09.01 and AUTH139551.10.01 require the preparation of an Erosion and Sediment Control Plan in recognition of the fact that earthworks will be occurring in, and around, the margins of waterbodies and there is a need to avoid or minimise the potential for sediment entering waterbodies. I have recommended some redrafting of these conditions given that the versions recommended by Ms Roa differed from those conditions attached to the land disturbance consents.
- 133 Based on the recommendations of Dr Boothroyd, the consents for the intake and discharge structures are also subject to conditions requiring the avoidance and mitigation of potential effects on fish in the Ohinemuri River and Mangatoetoe Stream. In particular, there are controls on intake velocity, mesh aperture and the provision of tuna passage between the Mangatoetoe Stream and the pit lake. In my opinion, these are all reasonable and appropriate measures to ensure that the construction and operation of the structures does not adversely affect fish passage in the surrounding environment.

***Diversion and Discharge of Groundwater – AUTH139551.11.01 and 139551.12.01***

- 134 The construction of the pit lake outlet structure will require the temporary diversion and discharge of groundwater to the Mangatoetoe Stream, due to high groundwater levels around the construction area.
- 135 As per the conditions recommended by Ms Roa, it is proposed to manage any potential effects associated with these activities via the preparation and implementation of an Erosion and Sediment Control Plan, and the notification requirement in the event that any discharge has a significant adverse effect on water quality within the downstream catchment.
- 136 These measures are considered sufficient to manage any activity that is of short duration and effectively only involves pumping and discharging clean water away from the construction site.

**Proposed Consent Conditions – Schedule One**

- 137 As I have already discussed, it is recognised that the management of Project Martha involves overlapping matters relevant to the functions and responsibilities of both the HDC and WRC. As such, it is proposed that the land use consent and

resource consents for Project Martha be subject to a schedule of common conditions.

138 This approach will also avoid repetition across the various resource consent required for Project Martha.

139 A number of the consent conditions in Schedule One also reflect the existing requirements imposed on OGNZL under the existing authorisations that apply to mining at Waihi. These are discussed further as follows:

#### ***General Requirements***

140 Schedule One includes general requirements relating to the implementation of Project Martha, which are standard measures undertaken by OGNZL as part of its existing mining activities in Waihi. These include:

- (a) A requirement to provide an annual work programme that details the mining activities to be undertaken in the next 12 months, as well as the progressive rehabilitation and revegetation activities that will be undertaken (Condition 1);
- (b) The appointment of a liaison officer as point of contact between OGNZL, HDC, WRC and the community. The contact details of the liaison officer are to be publicly advertised for the duration of mining activities (Condition 2);
- (c) A requirement to maintain a complaints register that is made available to the HDC and WRC on request (Conditions 3 and 4); and
- (d) A requirement to make all management plans, monitoring reports and compliance reporting information available on OGNZL's website.

141 In my opinion, these general requirements are typical for multi-year 'construction-related' projects and are appropriately assigned as controls that should apply to the consent conditions imposed by both the HDC and WRC. As already noted, these requirements are already implemented by OGNZL as part of its current operations in Waihi.

#### ***Cultural Matters***

142 As I have already noted in this evidence, I am recommending that the conditions pertaining to the mitigation of cultural matters be included in Schedule One (Conditions 4A – 4F) in response to the comments by Ms Roa in her Section 42A report.

143 I also note that Mr Watson details that discussions between OGNZL and Ngati Hako are ongoing with respect to appropriate conditions to address the potential

cultural effects of Project Martha. I understand that a further update on these discussions may be provided at the hearing. Nevertheless, the proposed consent conditions have sought to include measures in order to assist in recognising and providing for the relationship of iwi within the area subject to these resource consent applications.

144 The proposed measures build upon the consent conditions regarding the recognition of iwi values developed through mediation on appeals for the Correnso Underground Mine, but are adapted to reflect the broader scope of Project Martha. To this extent, the measures include:

- (a) The continuation of cultural awareness training by tangata whenua for staff and contractors;
- (b) The preparation of a Cultural Balance Monitoring Plan, the purpose of which is to develop recommendations and solutions that achieve the restoration and or enhancement of the mauri of Pukewa and the surrounding land forms; and
- (c) The establishment of an iwi advisory group that meets on a six-monthly basis as a forum at which iwi can raise any matters of concern to them, and OGNZL can provide an update on its activities within the prior six months.

145 With respect to the Cultural Balance Monitoring Plan, Mr Watson has recommended (based on discussions with Ngati Hako) that its preparation be subject to a specific timeframe and that in the event that some iwi choose not to actively participate in the process, the consent holder and Ngati Hako may continue to proceed with the preparation of the Plan. This approach is now recorded in Condition 4C of Schedule One.

146 In addition, and in response to the discussions between Mr Burton and Ms Roa with Ngati Hako, provision has now been made for a representative of the iwi advisory group to be an 'active observer' on the Peer Review Panel. As an active observer it is intended that the iwi representative will receive all the same technical information as the other members of the Peer Review Panel, and attend all of the site visits and meetings convened. They will be able to ask questions and provide feedback to the other members of the Peer Review Panel, as well as inform the other peer reviewers of Maori cultural significance / perspectives that may be of relevance. In this regard, this approach should broaden understanding and knowledge for all parties.

147 While Ngati Hako still need to comment on the appropriateness of this suite of measures, these proposed conditions do provide a framework for the identification of measures to ultimately restore the mauri of Pukewa if possible, and enable iwi to be involved in the review process for the management of the Martha Pit.

### ***Accidental Discovery***

- 148 In light of Mr Burton and Ms Roa recommending different conditions relating to the accidental discovery of an archaeological site or koiwi tangata, I have included a new condition in Schedule One that would apply to all activities associated with Project Martha.
- 149 In my opinion, Condition 4G of Schedule One establishes an appropriate protocol in the event of an accidental discovery of an archaeological site that aligns with the methodology set out in the submission of Heritage New Zealand. It also clearly establishes who has authority for confirming whether works on site can recommence (i.e. Heritage New Zealand).
- 150 Further, and as per the submission of Heritage New Zealand, I have recommended an advice note that clarifies that Condition 4G only applies to those areas not subject to an archaeological authority (as any archaeological authority would override the procedures set out in the condition).

### ***Peer Review Panel***

- 151 Further to the discussion above, Schedule One provides for the continuation of the Peer Review Panel established as part of the existing land use consents for the Martha Pit. This is one of the recommended mitigation measures to ensure pit stability identified in Sections 5 and 6 of the AEE.
- 152 The Peer Review Panel will effectively provide independent technical support to the HDC and WRC on matters relating to geotechnical matters, hydrogeology; and rehabilitation / closure – so that they can be confident that the development of the Martha Pit and the Martha Underground Mine is developed in a manner that is appropriate to the conditions. In my opinion, the Peer Review Panel is appropriate safeguard in the consent conditions.

### ***Dewatering and Settlement Monitoring***

- 153 As noted in Condition 14 of Schedule One, the Dewatering and Settlement Monitoring Plan is intended to ensure that dewatering operations do not give rise to surface instability and differential settlement beyond that authorised by the consents. This management approach is also utilised for the existing mining activities undertaken by OGNZL in Waihi.
- 154 As noted in Section 5 of the AEE, the Dewatering and Settlement Monitoring Plan will detail the monitoring systems that will be in place while dewatering occurs, identify trigger levels to indicate when contingency measures will need to be actioned, and identify what contingency measures should potentially be implemented.

155 Based on the evidence of Mr Simpson, I consider that the continuation of the use of the Dewatering and Settlement Monitoring Plan is an appropriate tool for the management and potential mitigation of the dewatering and re-watering effects of Project Martha.

### ***Rehabilitation and Closure Plan***

156 A key feature of Project Martha (and the existing consents) is the rehabilitation of the Martha Pit and surrounding area into a pit lake and recreational area – as detailed in Figure 2.1 of the AEE and specified in Condition 24.

157 Project Martha will involve the progressive rehabilitation of parts of the site as works are completed. As such, the Rehabilitation and Closure Plan requires:

- (a) Detail on the programme of rehabilitation that is proposed for the site in the next 12 months should closure not occur (i.e. if mining continues), so that progressive rehabilitation can occur; and
- (b) Detail on the proposed methods of rehabilitation should mining cease within the next 12 months (i.e. how would rehabilitation of the site to a pit lake occur based on the current state / staging of mining activities).

158 These are existing obligations on OGNZL as part of the management of the Martha Pit and, in my opinion, should be continued so as to ensure that rehabilitation activities continue to be scheduled to occur as mining activities in a particular area come to completion.

### ***Bonds***

159 As discussed in Section 2 of the AEE, the consent conditions for the Extended Martha Mine Project require OGNZL to maintain bonds in favour of the HDC and WRC – these being a rehabilitation bond and a capitalisation bond. These requirements have been brought forward into Conditions 28 – 55 of Schedule One given that Project Martha will extend the life of the Martha Pit.

160 As per Condition 28 of Schedule One, the rehabilitation bond provides the HDC and WRC with access to funds sufficient to close and rehabilitate the mine site in the event that OGNZL fails to meet its closure obligations. The matters that should be included in calculating the bond are detailed in Condition 33 of Schedule One, and involve:

- (a) Establishing a list of tasks and activities required to rehabilitate the site so that closure obligations are met;
- (b) Estimating the quantity of work involved in completing each task; and

- (c) Assigning a unit rate to each measurement of quantity.
- 161 The quantum of the rehabilitation bond is to reviewed annually (Condition 32).
- 162 Condition 34 also makes provision for an arbitration on the amount of the bond between OGNZL and the HDC / WRC if necessary via the provisions of the Arbitration Act 1996.
- 163 With respect to the capitalisation bond (Conditions 46 – 55), I understand that when closure of the mine is achieved ownership of parts of the site will pass to the Martha Trust (being a charitable trust). The trust will be responsible for maintaining those areas in a safe and stable condition in perpetuity.
- 164 Once the mine site is fully rehabilitated, OGNZL will be required to settle funds on the Martha Trust to a level sufficient to fulfil its responsibilities. Until the capitalisation sum is settled on the trust, the consent conditions require that OGNZL maintain a capitalisation bond which is equal to the capitalisation sum.
- 165 As noted in Condition 49, the capitalisation bond is also fixed annually and needs to be sufficient to cover:
- (a) The cost of maintaining and managing the site;
  - (b) The cost of monitoring for adverse effects;
  - (c) Provision for contingencies; and
  - (d) The operating expenses of the Martha Trust.
- 166 Condition 50 makes provision for arbitration between OGNZL and the HDC / WRC on the amount of the bond in accordance with the process set out in Condition 34.
- 167 As noted by Mr Burton, it is considered that the existing bond conditions have worked well and it is appropriate that they be continued.

#### **Proposed Subdivision Consent Conditions – Hauraki District Council**

- 168 As already noted in this evidence, it is my understanding that the conditions attached to subdivision consents typically set out the matters that need to be addressed in order for the survey plan to be approved and deposited in accordance with Sections 223 and 224 of the RMA.
- 169 In this instance, many of the conditions attached to the subdivision consent are construction related and I consider they best sit under the land use consent for Project Martha. As such, I have incorporated a number of the relevant conditions into the land use consent and deleted the corresponding requirement from the subdivision consent.



170 Beyond this, I have no further comments on the subdivision consent conditions recommended by Mr Burton.

### **Matters Raised in the Submissions**

171 I have reviewed the submissions relevant to the scope of this evidence and comment as follows.

#### ***Juan Fisher***

172 The submission by Juan Fisher suggests that the HDC should undertake a review process to determine the effects of the proposed activities on residents. I note that the consent conditions provide a standard condition allowing HDC to commence a formal review of the consent conditions for Project Martha in the event it is determined that the existing conditions are not effective in avoiding, remedying or mitigating adverse effects on the environment – including in response to monitoring information.

173 Given this, I consider that the matter raised by the submitter is suitably addressed in the conditions.

#### ***Brian and Glenis Gentil***

174 Brian and Glenis Gentil also seek that the consent conditions be regularly reviewed as the working area changes, and that there be suitable mitigation for affected parties.

175 As noted above, I consider the review conditions to appropriately provide a mechanism for the HDC to amend the consent conditions in the event that the proposed consent conditions are not effective or suitable to avoid or mitigate effects.

176 Further, it is my opinion, that the mitigation proposed for Project Martha is appropriate and reasonable relative to the environmental outcomes sought in the statutory planning documents and the conclusions regarding potential effects in the technical assessments. Most of the proposed consent conditions build upon the existing obligations imposed on mining activities in Waihi over the past 30 years. As such, there is a high degree of confidence in their effectiveness.

#### ***Powerco***

177 As per the submission by Powerco, I have included an advice note after Condition 63 of the proposed land use consent to clarify that the consent holder needs to take appropriate measures prior to works commencing on site to ensure that Powerco's assets are protected and safely relocated / reinstated.

178 While the advice note has no formal compliance role, I do consider it potentially useful in providing a reminder to OGNZL as to its responsibilities when working close to network utilities.

### ***Heritage New Zealand***

179 In response to the submission of Heritage New Zealand, and as previously discussed, I have amended Condition 115 so that there is no longer a 'best endeavours' approach to the relocation of the dwelling from 12 Cambridge Road. This language had previously been used as OGNZL was uncertain as to the feasibility of moving the dwelling. However, further investigations have subsequently been undertaken and confirmed that relocation is feasible.

### ***Waihi Community Forum***

180 The Waihi Community Forum requests that the 'Streets Ahead' and 'Top Up' policies explained by Mr Wilson be imposed as consent conditions. As Mr Wilson notes, Streets Ahead is a voluntary measure undertaken by OGNZL to enhance the street amenity around the Correnso Underground Mine. In my opinion, it is not a necessary measure to avoid, remedy or mitigate the effects of Project Martha – based on the evidence regarding property effects and I understand that it is not being offered by the company on an *Augier* basis.

181 With respect to Top Up, I understand that this programme has operated successfully outside of the formal consent framework, and that it is the preference of OGNZL that this continues to be the case. I understand that while OGNZL is committed to the Top Up (including its extension to the residential properties adjacent to the Phase 4 Cutback, the company is not offering this as a consent condition on an *Augier* basis.

### **Conclusion**

182 A range of consent conditions are proposed by OGNZL in order to avoid, remedy or mitigate the potential effects of Project Martha. While there will be some adverse effects, the proposed consent conditions are intended to ensure that any potential effects of Project Martha are mitigated or managed in accordance with recommendations of the various technical assessments, and in a manner that aligns with the outcomes sought by the relevant statutory planning documents where applicable.

183 It is also noted that many of the mitigation measures proposed for Project Martha have been, or are being, implemented for other mining projects around Waihi. As such, I have confidence in their effectiveness for this proposal. Many of the mitigation measures are also well understood by the community. In particular, the

noise and vibration conditions that are now proposed are broadly consistent with existing underground mining activities and activities within the Martha Pit.

184 Furthermore, I consider that Schedule One provides an effective framework to ensure there is integrated management of the activities / effects that overlap in terms of the functions and responsibilities of the HDC and WRC.

185 Overall, it is my opinion that the consent conditions attached as **Appendix A** to my evidence are robust and provide suitable safeguards for the environment / community, while also provide sufficient flexibility for the management of activities as mining and rehabilitation activities progress.

A handwritten signature in black ink, appearing to be 'RT', with a long horizontal stroke extending to the right.

**Richard Turner**

29 October 2018

## **Appendix A – Recommended Consent Conditions**