



8 November 2018

Steve Rice
Rice Resources Ltd
PO Box 431,
Waikato Mail Centre,
Hamilton 3240.

Via email.

Dear Steve,

RE: Commissioner's Questions

We refer to your email of 31st October 2018 and the list of questions from one of the Commissioners for some of our witnesses. We have passed the questions on to those witnesses and provide their responses below.

Kerry Watson

- 19 *What can you tell us about those discussion that might provide us with an evidential basis for determining that adverse effects on the relationship of Ngati Hako with Pukewa will be avoided, remedied or mitigated?*
- 25 *What can you tell us about the contents of the draft Cultural Balance Monitoring Plan that might provide us with an evidential basis for determining that adverse effects on the relationship of Ngati Hako with Pukewa will be avoided, remedied or mitigated?*
- 27 *Update on discussion?*

Kerry Watson's Response

Active discussions with Ngati Hako are currently underway. An update will be provided at the hearing.

Sioban Hartwell

- 18 *What about smaller floods or the bank full flow event?*

Sioban Hartwell's Response

Our analysis showed the 2.5hr duration event to be the critical event for the Mangatoetoe Stream catchment, and the flood maps included in my evidence reflect this for a 100 year return period event. A number of other duration rainfall events were also analysed, and in all cases the peak discharge from the pit lake lags behind the peak flow in the Mangatoetoe Stream. This is due to the attenuation provided within the pit lake for rainfall.

While we did not model any smaller return period events than the 100 year, I see no reason why a different pattern would apply, i.e. the peak discharge from the pit lake always lags behind the peak in the stream and as a result does not cause an increase in flood levels in the stream.

45 *Does that new peak rate impact on the consents applied for?*

Sioban Hartwell's Response

OGNZL has not sought a new consent to discharge treated water to the Ohinemuri River and there is no change needed to current resource consent conditions that relate to the discharge of treated water (971318). The higher average rate of pit dewatering (compared to current) that is needed to allow development of the Martha Underground can be managed by discharging at the maximum rates allowable in the periods that river flows allow. This will effectively compensate for low flow periods when treated water discharge rates are constrained.

55 *Can you explain why to the 95th% and 5th% lines converge in Figure 7?*

Sioban Hartwell's Response

The lines that are converging in Figure 7 represent the allowable treated water discharge rates that the model has calculated based on river flows. Please refer to Table 3 of my evidence for the treated water discharge rate controls that link to operating regimes.

In simple terms the range of river flows experienced through spring/summer is more variable than through autumn/winter, when river flows are sustained consistently at higher rates. Through autumn/winter the dominant control on allowable treated water discharge rates is thus the consented maximum rather than the proportion constraint (treated water to river flow).

For Year 2 the model is showing for all simulations that operating regime D applies and as a result all simulations converge on the allowable maximum treated water discharge value of 26,000 m³/d through the middle of the year.

62 *What return period was the 2005 flood?*

Sioban Hartwell's Response

Environment Waikato concluded that the July 2005 event was equivalent to a 20 year return period event (Technical Report 2005/32) and that blockage of the stream channel from debris contributed to flood levels.

Ian Boothroyd

25 *Is it also the case immediately downstream of the abstraction – see paragraph 78 of Sioban Hartwell evidence?*

Ian Boothroyd's Response

In her evidence, Ms Hartwell states that immediately downstream when river flow is exactly at 2xMALF at the abstraction point; river flows will fall below 2xMALF in the reach immediately downstream until contribution from other tributaries join the Ohinemuri River. The proposal is to take 20% of flow using a variable speed pump so the change in flow would be 20% of 2xMALF. Under this scenario, the flow would be less than the 90% optimum flow for indigenous fish and trout, but above 80% optimum physical habitat.

I emphasise here that it is not the intention of the proposed abstraction to drive flows down to 2xMALF at all times the abstraction is operating. Rather, the intention is to take up to 20% of the flow at or above 2xMALF up to a maximum of 0.27 m³/s, leaving at least the remaining 80% to pass by.

For further context of the proposed abstraction, the amount of time (as a percentage of flows) that the Ohinemuri River naturally falls below 2xMALF is 31.69%. For the current water take consent held by OGNZL, the amount of time that the Ohinemuri River would fall below 2xMALF is 34.5% and for this application the figure would be 37.90% (a difference between the latter two of 3.4%).

It is also worth referring to paragraph 71 of Ms Hartwell's evidence-in-chief, where she states that the actual volume of water that can be taken will always be limited by abstraction pump capacity. Thus, an allowance to take 20% of the flow of the river does not mean that 20% of river flow can be taken at all times. Ms Hartwell goes on to emphasise that, on an annual average approximately 10% of the annual river flow volume would be abstracted.

It is worth emphasising that the flow requirements proposed by Jowett (2014) are not the same as minimum flows, were not proposed as minimum flows, and nor is it the purpose of the application to establish minimum flows in the Ohinemuri River. The purpose of the application is to provide for a take whilst safeguarding the life-supporting capacity of the river ecosystem and avoiding significant adverse effects. I have used the reference to the flow requirements of fish to inform an understanding of effects of the take on the Ohinemuri River, and not for the purpose of establishing a minimum flow.

In his evidence, Dr Daniel raises the matter of flow requirements for torrentfish. The nature of the preferred habitat for torrentfish means that they have the highest flow requirements. I refer to torrentfish in paragraph 76 of my evidence-in-chief, and refer to comments from Jowett (2014), and I also refer to the annual monitoring carried out by OGNZL. A search of the New Zealand Freshwater Fish database reveals no records of torrentfish for the upper Ohinemuri River, but records do occur from the tributaries in the downstream sections of the river, (e.g., Waitekauri River). Torrentfish are known from other tributaries within the larger Waihou River catchment.

Furthermore, although torrentfish can penetrate far inland along river systems, they are not known as good climbing fish, and the masonry dam (downstream of the abstraction point) will be a substantial barrier for the juvenile fish. In addition, the natural flow character of the Ohinemuri River in the vicinity of the abstraction and immediately downstream means that the flows will be regularly well below the optimal flows for torrentfish (as indeed for many of the fish species). As a result, I have not focused on the flow requirements for torrentfish in my evidence-in-chief.

31 *Is that provided for in the proposed consent conditions?*

Ian Boothroyd's Response

In paragraph 31 I stated:

"In my opinion, provision should be made for passage for eels to and from the lake at its outlet, as habitat for other fish is likely to be limited within the pit lake."

Condition 10 of resource consent AUTH139551.10.01 states:

"The pit lake outlet structure shall be designed in such a manner that provides for the passage of short-finned and long-finned eels to and from the pit lake."

78 *At your 86 you note that the Ohinemuri River is an important rainbow trout fishery. It is classified as Trout Habitat Class and Indigenous Fishery Class by the Regional Plan. 2xMALF is 0.85 m³/s. From your Table 1 the optimum habitat for rainbow trout spawning is 1.4 m³/s and for rainbow trout rearing is 1.0 m³/s, both of which are greater than 2xMALF. A simple 'no take' threshold to safeguard rainbow trout habitat (also an RMA s7(h) matter) might be to not allow the taking of water when the flow is below 1.670 m³/s (because 1.400+0.279=1.670). Comments?*

Are you able to advise similar Table 1 optimum flows for invertebrates?

Ian Boothroyd's Response

The suggestion that a no take threshold be based on an optimum flow rate (1.4 m³/s) plus the peak proposed pumping rate of 0.27 m³/s (to make 1.67 m³/s), is not a typical or logical means of developing a

total no take threshold. Once the threshold (whatever number is agreed) is reached it should be acceptable to start pumping. The addition of a further rate on top of the threshold equivalent to the pump maximum rate is not aligned with any particular environmental protection factors, it would simply apply a further buffer.

In my opinion, although the proposed 'no take' threshold results in a limited period of reduced flow, it is not so substantially reduced to cause significant harm to the river beyond what happens on a regular basis naturally, and I do not consider that the proposed 'no take' flow will result in significant adverse effects to trout habitat. The flow of the Ohinemuri River does fall below these levels under the current conditions (for approximately 60-65% of the time), and these natural flow requirements would not meet the optimal flow requirements for fish under such circumstances.

As a note, the 1.4 m³/s is a recommended flow for trout spawning (May-Sept) and would not be applicable at other times of the year. The optimal flow requirement for trout rearing is 1 m³/s (Table 1 of my evidence-in-chief).

I also understand that Policy 7 of Section 3,2,3 of the Waikato Regional Plan states the purpose of the fishery class includes the maintenance or enhancement of existing water quality and aquatic habitat in waterbodies that currently support a diverse range of fish species and fish habitats with significant conservation values, or which support significant recreational fisheries so that trout or indigenous fish can complete their life cycles and/or maintain self-sustaining populations. This provision does not seek that optimum trout habitat be safeguarded, so there is no policy directive for a no take threshold in order to safeguard optimum habitat.

120 *Given the Trout Habitat classification of the river, should Condition 6 of AUTH139551.05.01 refer to 20°C instead of 25°C?*

Ian Boothroyd's Response

The Ohinemuri River is classified under the Waikato Regional Plan as both 'Significant Indigenous Fisheries and Fish Habitat' and 'Significant Trout Fisheries and Trout Habitat'. Both classes have recommended temperature thresholds (20°C and 25°C respectively) that apply as a result of added heat. These thresholds apply to permitted activities and will be given regard to when considering resource consent applications.

We have used 19°C as the reference point in our analysis as a result of submissions from Fish and Game. Most of the time the instream temperature was below 25°C. Temperature records from the Ohinemuri River in the vicinity of the proposed abstraction point are already regularly elevated above 19°C, although for the most part, temperatures remain below 19°C (Appendix E of my evidence-in-chief). During these times, trout will seek refuge in either cooler waters or other habitats (as also indicated by Dr Daniel in his evidence, para 26). As this occurs already, providing a temperature threshold of 20°C will not alter the behaviour of trout or reduce any adverse effects that may occur from increased temperatures at 20°C or above.

137 *Is it also correct that riparian planting does not create more instream habitat as habitat availability depends on river flow?*

Ian Boothroyd's Response

Instream habitat availability depends on a number of factors, primarily the flow or area of the substrate that is wet (the 'wetted area'). Typically, riparian planting does not add substrate or wetted area, but riparian planting does improve the habitat. I have outlined some of the benefits provided by riparian planting in para 53 of my evidence-in-chief. Riparian planting can contribute to creating habitat more suitable for aquatic biota that improves food source for fish.

I note that Dr Daniel (para 20) makes reference to the riparian planting that has been carried out by the applicant. In my evidence-in-chief, I refer to the 28.8 ha of voluntary riparian planting undertaken by OGNZL (and its antecedent organisations). The riparian planting occurs around the vicinity of the proposed abstraction, and extends upstream and downstream of the proposed abstraction site for nearly 4 km and

over 1 km respectively. The benefits to shading vary, depending on the width of the river, where it is wider, the shade does not extend across the full width of the river, and vice versa. The planting occurs up to the stream edge.

In para 136 of my evidence-in-chief, I make reference to the proposal for a riparian planting plan. I have not supported such a plan, but if a plan was recommended the current voluntary riparian planting should be included.

143 *In light of the NPSFM Appendix 2 Attribute tables and the ANZECC 2018 Guidelines, are the USEPA 1985 criteria still relevant and/or appropriate?*

At his paragraph 86 Ian Jenkins states that discharges from the lake epilimnion will exceed water quality standards for copper under worst case conditions. What effect will that have on aquatic ecology in the Mangatoetoe Stream receiving waters?

Ian Boothroyd's Response (to paragraph 1)

I have given some thought to the relevance of all of these standards and criteria. The NPSFM Appendix 2 Attribute tables primarily focus on providing standards to meet ecosystem health and human health for recreation objectives. The focus (of the attributes) is largely on nitrogen, nitrate toxicity, periphyton and E. coli, rather than the suite of potential contaminants of relevance to this application.

The ANZECC 2018 Guidelines, as did the antecedent Guidelines of 2000, provide for the derivation of site-specific criteria for the protection of instream water quality. The original use of 'trigger' values was designed to do just that, to trigger a response when a certain threshold concentration of a contaminant was reached. The trigger values were always a conservative approach to managing contaminants in waterways, but these values are often heavily relied upon as the actual limits. The recently released ANZECC 2018 makes use of 'default guideline values' as a means for providing a generic starting point for assessing water quality. ANZECC recommend using DGVs for generic applications in the absence of more relevant guideline values (jurisdictional, site specific). The derivation of site-specific guidelines is far more preferable, as the standards are aimed at the actual values and organisms living in the waterway.

For the Ohinemuri River and this operation, the USEPA guidelines were applied and found acceptable as site-specific instream water quality criteria for the protection of aquatic life within the Ohinemuri River.

The most compelling evidence for the continuing relevance of the USEPA 1985 criteria as instream water quality criteria lies in the 30 years of instream ecology and water quality monitoring record of the Ohinemuri River, based on these criteria. The monitoring, designed to assess the impacts of the treated wastewater discharge into the river, and for the long-term protection of the aquatic biota of the river, is a heavily science and statistically-based programme that has shown that the treated wastewater discharge from the Martha mine operations has not had an adverse effect on the aquatic ecology of the Ohinemuri River.

In addition, the annual reports are submitted to Waikato Regional Council, are reviewed independently and signed off by Council. I suggest that this is further evidence of their relevance and applicability to the management of the aquatic biota in the Ohinemuri River.

I refer to this matter in para 117 of my evidence-in-chief:

"...30 years of water quality and biological monitoring within the Ohinemuri River has demonstrated that these standards are very effective at protecting the aquatic ecology of the river. These standards are protective of aquatic life and therefore remain appropriate as water quality standards to be met in the Mangatoetoe Stream..."

Ian Jenkin's Response (to paragraph 2)

Paragraph 86 refers to the period of lake filling and there will be no discharge to the Mangatoetoe Stream. Paragraph 89 also noted elevated copper post filling but with the expected copper adsorption onto ferric hydroxides this will meet receiving water criteria in the discharge. Copper adsorption during filling is also expected but has not been modelled as this is an interim condition. Monitoring during filling will verify that these processes are occurring.

Ian Boothroyd's Response (to paragraph 2)

This question has been answered by Ian Jenkins.

Ian Jenkins

77 *What are some examples of "appropriate ore and tailings management"?*

Ian Jenkin's Response

This would depend on the geochemical composition of the ore, however our current knowledge is that the geochemical composition will not differ substantially from the existing ore, therefore current practises are deemed appropriate. Generally the wet decommissioning of tailings is effective in terms of managing a wide range of trace element concentrations and sulphide levels in ore. Once the material is contained within the tailing impoundment area, potential changes would therefore be around the final closure of the impoundment area and any cover requirements in the unlikely event that there were significant changes in the tailings composition.

79 *How deep/thick is the epilimnion layer?*

Ian Jenkin's Response

The Pit Lake Limnology modelling is outlined in Appendix V. The upper layer (epilimnion) in the initial 5 years post filling varies in depth between a minimum of 15m below surface and at times can extend to depths in excess of 150 metres for periods of 1 to 2 months. After this period a density gradient from high TDS groundwater inflow into the bottom of the pit extends higher into the water column and restricts the depth of the epilimnion. After the initial 5 years and in years with warmer autumn and winter months, the epilimnion is a minimum of 15 metres deep and can extend to 100 metres depth, although it is typically less than 75 m deep.

81 *Does OGNZL intend to limestone treat all river water discharged to the lake?*

Ian Jenkin's Response

The modelling presented assumes that an average of 60 mg/l of alkalinity is achieved in river water. The maximum alkalinity concentration that could be achieved with optimal limestone dissolution in river water is in the order of 120 mg/l. So there is some flexibility in how the alkalinity mass is introduced in river water either as a continual moderate level dose or as periodic additions where higher concentrations are achieved. It is also noted that the actual requirement will depend on the success of measures to reduce pit wall acidity prior to and during lake formation.

83 *Can you explain what "pit wall amendment" entails?*

Ian Jenkin's Response

Pit wall amendment could entail the passivation / neutralisation of exposed acid producing pit walls via a suitable amendment product (such as tackifier, lime and/or hydroseeding) or it could entail treatment of the eroded material that accumulates on the pit benches which have been shown to be a significant source of

the acidity load. Any such measures would target identified potentially acid forming rock in order to reduce the acidity load into the lake.

Where would pit wall runoff be diverted to?

Ian Jenkin's Response

Pit wall runoff could be diverted to either an active treatment plant or passive treatment (wetland) technology in order to reduce the acidity load into the lake. The most likely location for this would be the eastern end of the pit lake.

91(a) *Is your recommendation reflected in proposed consent conditions?*

Ian Jenkin's Response

The conditions for the lake discharge permit (AUTH139551.08.01) require the development of a pit lake filling and discharge management plan and that this plan considers mitigation measures to ensure compliance of the discharge and that these measures are not limited to the addition of alkalinity to the pit lake.

Chris Simpson

59 *What would "mitigation of any such discharges" entail?*

Chris Simpson's Response

This relates to mine rewatering and post closure, as opposed to mine dewatering (groundwater take consent).

The nature of the discharge (i.e. flow rate and quality) would ultimately determine if remedial action was required and, if so, the options for mitigation. This would most likely take the form of a partial or full bulkhead to prevent the discharge occurring if that was deemed necessary. Such an option was used with success at the former Tui Mine. Options for passive or active in-situ treatment of a discharge could also be considered depending on its nature.

Trevor Matuschka

60 *You say that "settlements are associated with settlement in the deeper andesite rock mass". However, are the additional Project Martha settlements set out in the last paragraph of your 56 ground surface settlements?*

Trevor Matuschka's Response

Yes, but to clarify the surface settlements arise due to settlements occurring in the deeper andesite rock mass.

64 *Are your recommendations reflected in the proposed conditions?*

Trevor Matuschka's Response

Yes. I summarise below the recommendations and relevant proposed conditions:

| Evidence – para number | Recommendation (paraphrased) | Proposed consent condition |
|------------------------|---|---|
| 62 | Monitoring of settlement as required by the expired Mining Licence and resource consent 124860 should continue. | HDC and WRC Schedule One, conditions 15-20. |
| 63 | The settlement trigger levels should be reset. | HDC and WRC Schedule One, condition 17. |
| 64a | No stoping above defined levels in the andesite. | HDC Land Use condition 71b. |
| 64b | Grouting of all future surface-drilled holes to a depth below the top of andesite. | HDC Land Use condition 71f. |
| 64c | Avoiding intercepting existing drillholes with mine workings. | HDC Land Use condition 73a.. |
| 64d | Grouting drillholes from underground where development intercepts holes that are making water or geological defects with significant and sustained water flows. | HDC Land Use condition 73b. |

71 *Can you explain the purpose of the settlement trigger levels?*

Trevor Matuschka's Response

The purpose of the settlement trigger levels is to provide warning that settlements are greater than expected. If the trigger levels are exceeded this would initiate implementation of investigations to determine why this is and to assist with the selection of the appropriate mitigation contingency and/or monitoring measures. Monitoring of groundwater levels is also proposed to be undertaken at a number of locations. Groundwater levels will be monitored in the Younger Volcanic and andesite. The reason why this is important is because settlements occur directly as a result of decreases in groundwater levels.

Changes in groundwater levels are likely to precede observations of increased settlements and is why monitoring of groundwater levels is important in relation to settlements. The importance of this is recognised in Schedule One with Clause 20 requiring reporting of any anomalous results together with explanations and actions proposed to address any issue within 10 working days of the anomalous results being identified. Recommendations for installation of additional groundwater monitoring are provided in the evidence by Chris Simpson. Details for monitoring of groundwater levels and ground surface settlements will be included in the Dewatering and Settlement Monitoring Plan.

Mike Sandy

46 *Is the ground 'support' you mention the same as that discussed on page 23 of Appendix M?*

Mike Sandy's Response

Yes, I am referring to the methods and materials used in modern mining practice to ensure excavations in rock are stable and safe during their operation which are discussed at page 23 of Appendix M. My assessment noted that there are a variety of methods that can be used to provide support, which will depend

on ground conditions and the development timeframe (i.e. declines v ore drives). The appropriate method will need to be confirmed as ground conditions are encountered.

85 *Has OGNZL asked you to review the Void Management Plan to ensure it includes your recommendations?*

Mike Sandy's Response

I was asked to consider the current OGNZL Void Management Plan (developed for the SUPA and MDDP projects) in terms of its applicability to the Martha Underground project. I provided recommendations to OGNZL as to how the Void Management Plan should be amended to account for the Martha Underground Mine, and I expect to provide input into the revised plan on behalf of OGNZL to reflect the specific mining plans for the Martha Underground Mine prior to it being submitted to the Council for certification.

A list of suggested changes to the SUPA and MDDP VMP to make it applicable to the proposed Martha Underground project area (MUPA) includes:

- Amend Table 1 in the VMP so that it specifies the stand-off distances that are required/proposed for proposed MUPA mining activities near various historical workings.
- In the void management overview (Section 1.2 of the existing VMP), state clearly that all development and stoping design plans must include, when issued, a specific discussion of probe drilling requirements.
- As far as possible provide details of the proposed monitoring that will provide ongoing confirmation of the lack of disturbance to the surface beyond the pit crest due to MUPA development and stoping, including prisms and survey stations, extensometers and seismic monitoring.

Tim Sullivan

79 *Have you drafted or reviewed a revised condition for this issue?*

Tim Sullivan's Response

Revised Condition 70a should perhaps be re-worded as:

"Procedures for the investigation, monitoring, excavation and backfilling of old mine stopes where necessary, using either rockfill, cemented rockfill or cemented aggregate fill (CAF) as appropriate (including backfilling of open stopes within 30 m below the toe of the Phase 4 Cutback where practicable);"

Prue Harwood

Appendix 2 *Which of the residential properties within the 200m set back boundary are not owned by OGNZL?*

Prue Harwood's Response

Refer Attachment 1.

John Heilig

74 *Update on meeting results?*

John Heilig's Response

Discussions with Gold FM have been undertaken to assess the proposed Martha Project blasting and its possible impact on the operation of their broadcast studio. The Gold FM studio building is classified as a

sensitive receiver as a result of the possible residential occupancy on the first floor. The maximum level of vibration is 5mm/s.

It has been confirmed that whilst the studio houses electronic equipment (computers and transmitters) that is necessary to relay the daily broadcasts, based upon a comparison with other projects where blasting has been completed nearer to similarly sensitive electronic equipment, it is not expected that any impact on the continued operation of the equipment would occur. As an example, a blast generating 5mm/s equates to round 20% of the suggested operating limits for a computer hard drive. The exact vibration tolerance specifications of the transmitter are unknown, but are expected to be no more significant than other electronic hardware which has similar limits to the hard disk drive. Vibration isolation devices for key hardware could be considered in the unlikely event that vibration was shown to impact upon the equipment operation.

The requirements of the Gold FM studio are noted but are not anticipated to be impacted upon the proposed Project Martha blasting.

Kathy Mason

31 *Who are the members of the peer review panel and how are they chosen?*

Kathy Mason's Response

The members of the Peer Review Panel and the areas that they cover are as follows:

- Professor Phil Dight (University of Western Australia) – currently peer reviews the geotechnical aspects of the open pit (required by the expired Mining Licence condition 7A and the EMMA consent condition 3.19),
- Chris Kidd (Chris Kidd and Associates Pty Ltd)– currently peer reviews the hydrogeological aspects of the open pit and tailings storage facilities (required by the expired Mining Licence condition 7A, the EMMA consent condition 3.19, WRC Storage 1A consents 971303 to 971306, condition 28 and Schedule 1 section 8.0 and WRC Storage 2 consents W1749, W1750, W1751 and W1761),
- James Pope (CRL Energy Ltd) - currently peer reviews the geochemistry aspects of the tailings storage facilities (required by WRC Storage 1A consents 971303 to 971306 condition 28 and Schedule 1 section 8.0 and WRC Storage 2 consents W1749, W1750, W1751 and W1761),
- Don Tate (Riley Consultants Ltd)– currently peer reviews the geotechnical aspects of the tailings storage facilities, (required by WRC Storage 1A consents 971303 to 971306 condition 28 and Schedule 1 section 8.0 and WRC Storage 2 consents W1749, W1750, W1751 and W1761), and,
- Craig Ross (retired Research Associate – Landcare Research) – currently peer reviews the rehabilitation of the open pit and the tailings storage facilities (required by the expired Mining Licence condition 7A, the EMMA consent condition 3.19, WRC Storage 1A consents 971303 to 971306 condition 28 and Schedule 1 section 8.0 and WRC Storage 2 consents W1749, W1750, W1751 and W1761).

The consent conditions require that the members of the Panel shall be fully independent of the planning, design, and construction of the open pit/tailings storage facilities.

For each peer reviewer, OGNZL and its predecessor companies have identified appropriately qualified, experienced and independent candidates for the roles, requested CVs and, as is normal practice for any recruiting exercise, checked with other parties that the prospective candidate has worked with to ensure that they are the right fit for the role.

The Company has then forwarded the candidate's name and CV to the respective council and they also make their own enquiries to ensure that the candidate is appropriately qualified, experienced and independent prior to approving their role to the Peer Review Panel.

I note that Professor Phil Dight and Chris Kidd are based in Australia.

Richard Turner

31 *In that case, should Figures 1.1 and 1.2 and Appendix A of the AEE be explicitly referred to in Condition 1?*

The version of Condition 1 attached to my evidence requires that authorised activities be undertaken in accordance with the information contained in the AEE, which Figures 1.1 and 1.2 form a part of. However, as explained in paragraph 30 of my evidence, these figures only detail the indicative area of underground mining and where the main surface works in the pit will occur in order to remediate the north wall failure. They do not identify all of the activities authorised by the consent, so referencing them in Condition 1 does not resolve the issues raised in paragraph 30 of my evidence.

It is my understanding that Condition 1 is typical of most resource consents that are granted, and is intended to ensure that any consent holder only undertakes activities described in the resource consent application. In my opinion, this is achieved in the version of Condition 1 attached to my evidence. Where there is a particular need to refer to a mapped area in the conditions in order to provide certainty I have noted this in the relevant condition (e.g. Condition 74(g)).

Richard Turner's response

53 *What is the rationale for deletion of Condition 33(l)?*

I understand that the 25mm/s limit applied to the Cornish Pumphouse in its previous location, which was within 30m of the pit crest and hence very close to some of the blasting that was occurring. I also understand that this limit was proposed to guard against potential cosmetic or structural damage to the pumphouse.

For Project Martha, the nearest blasting to the pumphouse will occur more than 100m away, which is a similar distance to that for the nearest residential properties. The limit of 5mm/s for residential properties is set for the appropriate protection of amenity, and I understand from Dr Heilig's assessment that this limit is well below the lowest level capable of causing the onset of cosmetic or structural damage to the pumphouse (or other buildings.)

Dr Heilig has assessed the maximum level of vibration from all blasting associated with Project Martha as less than 10mm/s (Figure 1). As such, a compliance limit of 25mm/s to protect the structure, and the associated compliance monitoring at the pumphouse would not serve any legitimate purpose – particularly given the need to comply with 5 mm/s at the nearest residential property.

Dr Heilig will be able to provide more discussion on this matter at the hearing if necessary.



Figure 1 – Pumphouse Vibration Modelling¹

60 What is the rationale for excluding the Martha Underground Mine from Condition 55?

Richard Turner's response

As noted by Mr Wilson in his evidence (paragraph 17), most of the underground mining with Project Martha will occur beneath the open pit and will have very limited potential to impact on people. The Rex Orebody is located beneath privately-owned property and is considered to be comparable to the situation that OGNZL has with the Correnso Underground Mine. As such, it is proposed that underground mining of the Rex Orebody be subject to similar conditions as apply to the Correnso Underground Mine in terms of BRANZ surveys and structural surveys at representative properties.

I had recommended amending Condition 55 to distinguish when the requirement for building surveys applied (i.e. it was specific to underground mining in a particular area). Upon further reflection, I consider that it is not necessary to delete the words “of the Martha Underground Mine” from Condition 55.

You suggest the words “from activities authorised by this consent”. How will one know that is the case until an investigation is actually completed?

¹ Yellow – 10 mm/s, Red – 5mm/s.

Richard Turner's response

I have recommended the inclusion of the words "from activities authorised by this consent" in Condition 56 so as to clarify that the scope of a complaint that is to be investigated should be related to damage allegedly caused by mining activities (not activities that are unrelated to Project Martha). This could be better clarified by amending Condition 56 to:

"Upon receipt of a complaint of property damage suspected by the resident to be caused from activities authorised by this consent..."

67 Your conditions 65A and 65B refer to the "approval" of the Group Manager Planning and Environmental Services. Is the requirement for "approval" offered by OGNZL on an Augier basis?

Richard Turner's response

The requirement for approval in Conditions 65A and 65B is not proffered on an Augier basis. The drafting of these conditions was intended to closely align with the terminology used in Condition 3 of the subdivision consent attached to the Section 42A report on behalf of the Hauraki District Council. In my opinion, and as noted in paragraph 21 of my evidence, I consider that Conditions 65A and 65B should be amended to:

"That engineering drawings and specifications shall be submitted to the Group Manager Planning and Environmental Services for ~~approval~~ certification prior to..."

71 Should Condition 70(a) nevertheless refer to the use of cement aggregate fill aggregate (CAF) where 'necessary and appropriate'?

Richard Turner's response

Condition 70 is intended to detail what matters should be addressed in the Pit Slope Management Plan, whereas Condition 71 is intended to detail specific measures that will be employed as part of underground mining.

Condition 70 itself is not intended to detail the general procedure methods that will be employed as part of Project Martha. The requirement for the plan to specify the procedures for the excavation and backfilling of stopes will address the methodologies that may be utilised, and these procedures will be subject to certification by the Hauraki District Council.

However, in order to provide additional clarity and based on the advice of Mr Sullivan, it is considered that Condition 70(a) could be amended as follows:

"Procedures for the investigation, monitoring, excavation and backfilling of old mine stopes where necessary required, using either rockfill, cemented rockfill or cemented aggregate fill as appropriate (including the backfilling of open stopes within 30 m below the toe of the Phase 4 Cutback where practicable);"

This amendment would clarify that the Pit Slope Management Plan is required to detail the materials that will be used to backfill old mine stopes, noting that the use of cement aggregate fill is not the only option for the backfilling of stopes.

88 Any update on NZTA's response to these conditions?

Richard Turner's response

I have recently received the evidence on behalf of the NZTA, but it is noted that they are seeking further amendments / additional conditions in relation to the management of traffic associated with the haulage of aggregate. I note that NZTA are requesting further amendments to the conditions relating to the use of local

roads (i.e. Baxter Road), notwithstanding these conditions being agreed between the Hauraki District Council and OGNZL.

It is also apparent that they are seeking that OGNZL take responsibility for the upgrade of all haulage routes that may be used by a quarry operator contracted by OGNZL, when it is presumed that these quarry operators will be authorised to haul aggregate from their quarries to a number of different locations.

Based on advice provided by Stantec (Attachment 2), I don't consider the amendments to the traffic-related conditions recommended by NZTA are necessary or warranted based on the activities encompassing Project Martha, and the traffic effects that will be generated.

112 *So what do you recommend?*

Richard Turner's response

Subject to clarification from Ms Roa as to the rationale for the inclusion of Condition 5 on AUTH139551.04.01, I would recommend that the condition be deleted from this consent and instead be imposed as a condition on AUTH139551.01.01 and AUTH139551.06.01.

181 *Condition 79(j) of the Land Use Consent refers to the consent holder's top up policy. In light of that should the consent include an advice note stating what that 'top up policy' is?*

Richard Turner's response

While I consider that there is good understanding by the Hauraki District Council and the community of OGNZL's 'Top Up Policy', I agree that confirming the scope of the policy in a manner akin to Condition 55(a) would potentially provide additional certainty. In this regard, Condition 79(j) could be amended as follows:

"Take up of the consent holder's property purchases and top up policy";

* *The consent holder's property purchases and top up policy is as per the consent holder's website at 19 October 2018."*

John Kyle

59 *The second sentence and footnote 18 appear contradictory. Is the distinction between 'area' and 'site'? If so can you explain the difference between those terms?*

John Kyle's Response

The District Plan does distinguish between 'sites of significance to Maori' and 'Areas of significance to Maori'.

As outlined in paragraph 59 of my evidence the term 'sites of significance to Maori' is not defined in the District Plan, however, I suggest that Pukewa is the type of site the term is intended to capture. Areas of significance to Maori are defined areas which are listed in Schedule 6.1.6.7 of the Plan, and they are also identified on the relevant planning maps. These areas include various Waahi Tapu, Urupa and Pa, but do not include Pukewa.

63 *Could it be said that the cultural and spiritual values of Pukewa are already reduced though the effects of past mining, and Policy 3(a)(ii) is therefore moot as it does not refer to avoiding any "further reduction" in those values?*

John Kyle's Response

I accept that the cultural and spiritual values of Pukewa have been reduced by past mining. The submission of Ngāti Hako expresses the same view. Policy 3(a)(ii) seeks to avoid a reduction of historical, cultural and

spiritual values associated with sites of significance to Maori. On its plain meaning, the language of the policy seems to best apply to those circumstances where an activity is proposed to occur within or on a site having such significance on an otherwise “clean slate” basis. I accept that it becomes more complex to apply in the current circumstances where most of the land involved is within the Martha Mineral zone which enables some elements of mining activity as permitted activities, albeit that the land within the zone possesses significant cultural and spiritual values. This complexity of interpretation is likely reflective of the fact that Policy 3(a)(ii) is a “district wide” policy and such policies where they are pitched at that level very often are not tailored to the circumstances that apply within specific individual zones. A better approach during the promulgation of the Plan and the Martha Mineral zone in particular might have been to write policy specific to the circumstances and reflective of the values of Pukewa, and how these cultural and spiritual values should be managed, in the context that the site has been, and is extensively mined.

Is the policy moot? I do not think so. In approaching the matter, I accept that I took a conservative view, that despite the policy being precise in its language, it can be interpreted in a way such that it remains relevant. I interpreted “to avoid a reduction” to also encapsulate a “further” reduction. I think that this inherent conservatism in approach is the safest course, particularly given the significance of Pukewa to Ngāti Hako.

The commissioners will recall that in applying the policy in my evidence I reflected upon the methods that are being discussed between OGNZL and Ngāti Hako to address the cultural and spiritual significance of Pukewa. In summary, these methods are intended to achieve some restoration of Pukewa’s mauri now, as well as providing the opportunity to bring some closure to the issue so it is not passed on to the next generation. In my assessment the policy has provided some important guidance in this regard.

Yours sincerely

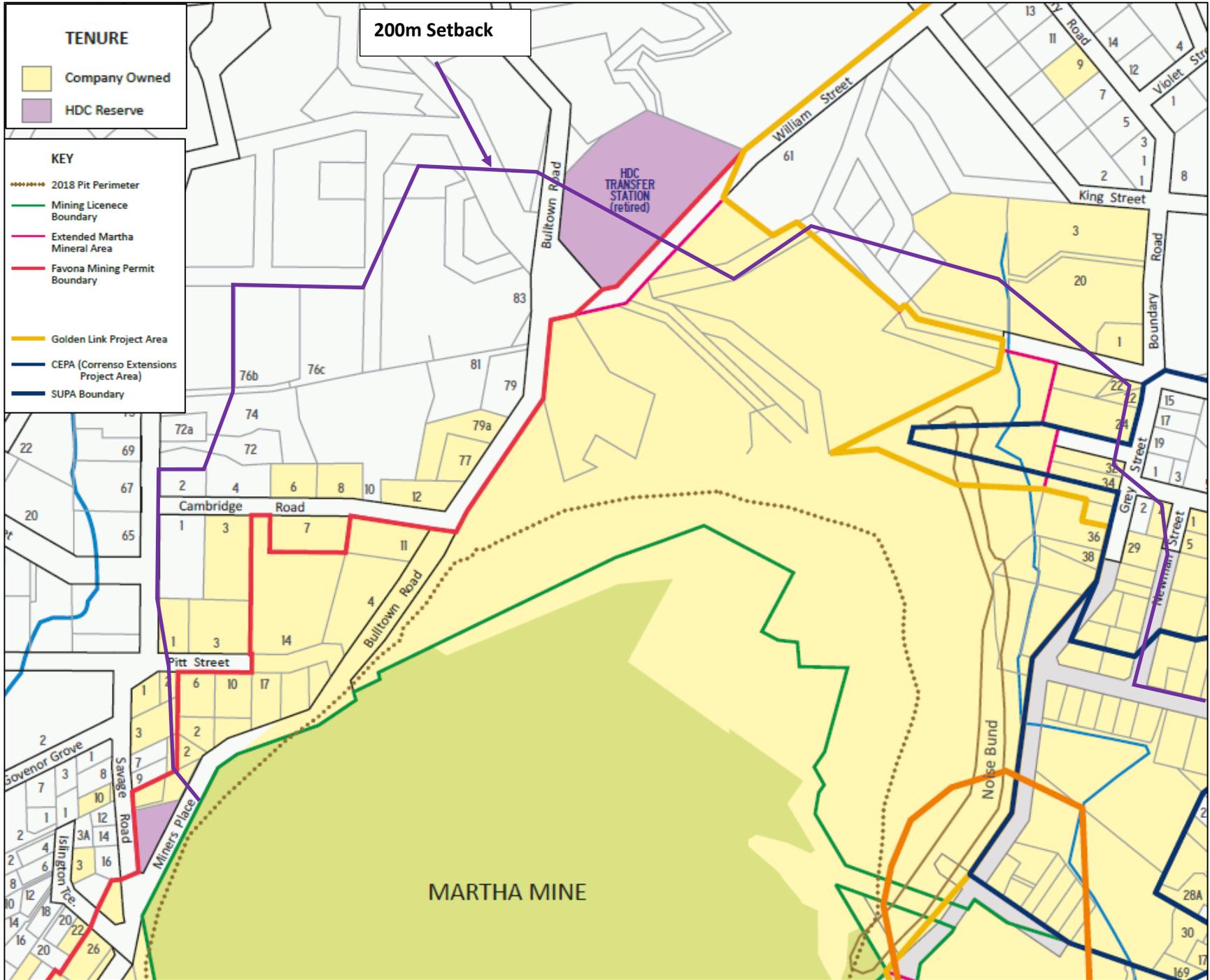
OCEANA GOLD (NEW ZEALAND) LTD



Bernie O'Leary
General Manager

Attachment 1

Private Properties Within Air Quality 220 m Setback



TENURE

- Company Owned
- HDC Reserve

KEY

- 2018 Pit Perimeter
- Mining Licence Boundary
- Extended Martha Mineral Area
- Favona Mining Permit Boundary
- Golden Link Project Area
- CEPA (Correnso Extensions Project Area)
- SUPA Boundary

200m Setback

HDC TRANSFER STATION (retired)

MARTHA MINE

Attachment 2

Stantec Response

To: Kathy Mason, OGNZL
Malcom Lane, Lane Associates

From: Will Hyde, Stantec

File: 14618.007

Date: November 7, 2018

Reference: Project Martha – Response to NZTA Consent Conditions

Further to our phone conference yesterday, please find below our comments on the land use consent conditions proposed by the NZ Transport Agency.

Identification of Specific Activities

In condition 100 the Agency proposes to add the line “..and haulage of other materials required for the consent holder’s activities..” to the proposed condition. We consider that this is too broad a definition which would effectively encompass all items and materials brought to the site. We note that the intention of condition 100 is to mitigate effects associated with the import of aggregate to the site from the Waitawheta quarry, which is a specific activity which would generate truck movements over and above the general day-to-day activity of the mine. As such, we do not consider that any amendment of the condition is warranted.

The Agency has added similar wording to condition 109, and again this would cover all general activities associated with this and other consents rather than the specifically anticipated increases in traffic associated with the import of aggregate from the Waitawheta quarry. As such, we do not consider that any amendment of the condition is warranted.

Alternative Haul Routes

In conditions 104, 104A and 108 the Agency proposes wording which requires an assessment of any alternative route used to import aggregate (in the event that the Waitawheta quarry is not the chosen source). We consider that the adequacy of the road network around a quarry is a matter that should be addressed through the consent for the quarry activity in question. This should include consideration of how the quarry will transport material from its site onto the wider road network, and whether the quarry consent holder is required to undertake any upgrades or mitigation. The proposed amendments to condition 104 are set out below. The proposed condition 104A and amendment to condition 108 should be deleted.

- 104 If the aggregate / backfill material required for the Martha Underground Mine is not sourced from the Waitawheta Quarry on McLean Road, the Council shall be advised at least one month prior to the commencement of the aggregate / backfill haulage activity of the location of the source of the material and the expected haulage routes and the vehicle configurations to be used for transporting the aggregate / backfill.

Monitoring

We consider the scale of the monitoring of traffic movements proposed in condition 109B appears to be inconsistent with the scale of the potential effects. For the purposes of establishing baseline heavy vehicle movements on Baxter Road prior to the hauling of aggregate, condition 100 includes a requirement to undertake traffic counts. These can be done in a manner that will allow for a baseline to be established, and the additional monitoring requirements of 109B are therefore not required.

Condition 109C would then become 109B and read as follows:

- 109B The consent holder shall make the traffic count data required by Condition 100 available to the Hauraki District Council within ten working days of a request being received.

Advice Note Regarding SH2/Crean/Baxter Intersection

In point 4.4 of the Agency's evidence it is recommended that the advice note be amended to include a reference to November 2018, to clarify that it refers to the current layout of the intersection. We agree that this is appropriate.

The advice note as proposed by the applicant includes the sentence "The conditions do not apply to travel utilizing only one or the other of the intersections but rather utilizing both (i.e. exiting Crean Road and turning directly into Baxter Road, and vice versa)." The purpose of this is to clarify that the issue addressed by the conditions is a result of long vehicles crossing from one side of SH2 to the other, using Crean and Baxter Roads. It is intended that if an activity under this consent causes trucks larger than an 11 m rigid truck to make this cross movement, a requirement to upgrade of the intersection will be triggered (unless the Safe Roads programme has already upgraded the intersection, in which case a requirement is triggered to confirm that the upgraded intersection is appropriate for the intended vehicles.)

The proposed Agency amendment requires the upgrade to be triggered by the use of any one intersection (not necessarily cross movements) by a vehicle larger than an 11 m rigid truck. The intersection of Baxter Road and SH2 is currently used by the occasional larger truck in the course of normal day-to-day operations, and this is expected to continue under this and any other existing consents. The condition as amended by the Agency would therefore require the upgrade of the intersection immediately on commencement of the activity, triggered by day-to-day activity which does not make the cross movement.

As the requirement to upgrade the intersection relates specifically to the movement of longer trucks across SH2 from Crean to Baxter Road or vice versa, we advise that the wording of the advice note should remain as originally proposed, apart from accepting the Agency's comment relating to the November 2018 date.

Stantec New Zealand

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