

Before a joint hearing of the

Otago Regional Council and

Waitaki District Council

RM 20.024

IN THE MATTER OF of the Resource Management Act 1991

AND

IN THE MATTER OF Applications by Oceana Gold (New Zealand) Limited
for resource consents for the Deepdell North Stage III
Project

**STATEMENT OF EVIDENCE BY CLAIRE HUNTER FOR OCEANA GOLD (NEW
ZEALAND) LIMITED**

4 August 2020

QUALIFICATIONS AND EXPERIENCE

- 1 My name is Claire Elizabeth Hunter.
- 2 I hold an honours degree in Environmental Management from the University of Otago. I am an Associate with the firm Mitchell Daysh Limited which practices as a planning and environmental consultancy throughout New Zealand. I have held this position for the past 15 years.
- 3 I am a member of the Resource Management Law Association, and an Associate Member of the New Zealand Planning Institute.
- 4 I have lived in the Otago region all my life and have made numerous visits to the area in which the Macraes Gold Project is generally located. I have also specifically visited the proposed Deepdell North Stage III Project site and other existing mining operations at the Macraes Operation. I am familiar with mining activities, having worked with OceanaGold (New Zealand) Limited (**OGNZL** or **the Applicant**) on a number of applications within the Macraes area, and also Bathurst Resources Limited in Canterbury and on the West Coast. A list of recent projects I have been involved with is provided in **Appendix A**.
- 5 In preparing this evidence I have reviewed:
 - a. The reports and statements of evidence of all the other witnesses on behalf of OceanaGold (New Zealand) Limited;
 - b. The Section 42A reports prepared by Mr Purves and Ms Neville, and the technical evidence prepared by others to support these; and
 - c. The submissions received on the applications.
- 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 the Deepdell North Stage III Project (**the Deepdell Project**), which are attached to this evidence. To this extent, this evidence includes:
- a. A brief overview of the key environmental effects of the Deepdell Project;
 - b. An overview of the measures proposed by OGNZL to avoid, remedy, mitigate and offset the effects of the Project by way of proposed consent conditions; and
 - c. A discussion on key matters raised in the Section 42A reports and in submissions as they relate to the proposed conditions.
- 8 I can confirm that my evidence relates to the effects of the proposal known as the Deepdell Project, as described in Chapter 5 of the Assessment of Environmental Effects dated 29 January 2020 (**AEE**).
- 9 My firm prepared the AEE for the Project.
- 10 The proposed consent conditions attached to my evidence utilise the consent conditions circulated with the Section 42A reports by Mr Purves and Ms Neville as base documents. The further amendments to the consent conditions that I am recommending are shown in tracking and strikethrough text in **Appendix B** for the Waitaki District Council (**WDC**) land use consent, and **Appendix C** for the Otago Regional Council (**ORC**) consents.
- 11 I should also note that engagement between OGNZL and various submitters is ongoing, and this may result in further amendments being required to the proposed conditions. If this is the outcome, I anticipate that an updated version of conditions will be circulated as part of legal submissions or supplementary evidence at the hearing.

SUMMARY OF ACTUAL AND POTENTIAL EFFECTS

- 12 A number of technical assessments on the potential effects of the Project were commissioned to support the resource consent applications sought by OGNZL. These assessments were summarised in detail in Chapter 5 of the

AEE, while Chapter 6 provided a more general overview of the management/ mitigation measures that are proposed for this Project.

- 13 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 (as far as practicable) with the environmental outcomes sought by these.
- 14 In my opinion, the AEE (inclusive of the further information that was also supplied) provides a comprehensive and complete assessment of the potential effects of the Project. Likewise, the various experts on behalf of OGNZL provide a detailed overview of their conclusions regarding potential effects of the proposal and how these effects should be managed. This evidence has also considered and responded to the matters raised in the peer reviews that were part of 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 of the other witnesses in the discussion that follows in my evidence.
- 15 I do, however, provide a brief overview of what I consider the key potential effects of the Deepdell Project to be in the paragraphs below – based on the technical assessments, matters raised in the submissions and from the discussion in the Section 42A reports of Mr Purves and Ms Neville. With this in mind, I consider that most of the key potential effects associated with the project relate to mining activities that are the same as, or very similar to, those that have been occurring at the Macraes Operation for a number of years. These activities are, in my view, 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

- 16 I consider the key potential effects associated with the Project to be:

a. **Effects on terrestrial biodiversity values**

The Project will generate effects on terrestrial ecology and biodiversity values of the site. This is primarily due to the need to remove vegetation and wetlands within the project footprint. This vegetation and the affected wetlands possess some biodiversity value. The effects on these values and the approach to the management of these are primarily described in the evidence of Dr Thorsen.

In my opinion, the key matter for consideration is whether the management measures that are proposed, inclusive of offsetting (and compensation measures, so far as the actions for lizards are concerned as addressed in Dr Tocher's evidence), can be delivered with sufficient certainty and are of such a quality to ensure that overall indigenous biodiversity values are suitably protected.

There was criticism in the submissions from the Department of Conservation (**DOC**) and the ORC that the proposed offsetting in particular was not certain enough. Dr Thorsen explains in his evidence that planning of the proposed offsets has advanced considerably since the lodging of the application. This includes confirmation of the second site referred to as the Ephemeral Wetland Ecological Enhancement Area (**EEA**). OGNZL is working to secure this site and an agreement is, I understand, imminent. The conditions have been refined to require confirmation that the appropriate legal mechanisms are in place to secure this site as a long term ecological offset area before any mining at the site is able to commence.¹

As I discuss later in this evidence, amendments to the offsetting conditions have also been made to provide greater assurance that OGNZL is committed to implementing the offsetting and the ecological outcomes it is intended to provide.

¹ Appendix B – WDC Condition 20.11

b. **Effects on landscape and visual amenity values**

There will be some landscape changes as a result of the Deepdell Project. Mr McKenzie explains that the Project will be visible from various points along Macraes Road and other local roads in the vicinity. However, his assessment concludes that the Project will not result in adverse, inappropriate or unacceptable landscape effects. This is due to the mitigation and rehabilitation that is proposed to be incorporated into the final shaping and re-vegetation of the site post mining.

Cumulative effects on landscape and visual effects have been considered by Mr McKenzie and Mr Espie. Both conclude that these will not be particularly adverse, as they will be viewed in context of the existing mining operation that exists within the broader site.

Mr McKenzie recommends certain measures to be incorporated into the mining design and rehabilitation activities to further minimise adverse effects on landscape and visual values. These measures are reflected in the proposed conditions.² Mr Espie recommends that ongoing monitoring by the WDC is required to ensure that the worked areas are rehabilitated, and that the mitigation techniques (such as grassing) are effective. Mr McKenzie supports this, and further notes that the Applicant has a proven ability to successfully rehabilitate and reduce the visual appearance of previous mining operations at the site.

c. **Noise and Vibration Activities**

The Project will generate noise effects from the extension of the noise bund, the mining activities in and around the pit, including the Waste Rock Stack (**WRS**), and the hauling of material. Noise and vibration effects will be generated from blasting activities associated with the Project.

In my opinion, the key matter for consideration is whether the noise and vibration effects from the Deepdell Project can be managed such that

² Appendix B - WDC conditions, Condition 4.5

appropriate construction and operational noise standards are met, and the amenity of the surrounding neighbours is appropriately protected.

To this extent, the proposed conditions require the continuation of an existing noise bund and for the mining operation to comply with maximum noise limits at all adjoining properties not owned by OGNZL, with the exception of one³. These limits reflect the relevant permitted noise limits set out in the Waitaki District Plan. The closest residence is modelled to be subject to higher noise levels as discussed in the application, however since the application was prepared, OGNZL has obtained the affected party approval of this property owner.

Blasting activities will be restricted to daytime hours⁴, and further control will be achieved via the implementation of a Noise, Air Blast and Vibration Management Plan. The plan requirements are reflected in the proposed conditions.⁵ This is consistent with how OGNZL currently manages blast activities at the site, and has been proven to be effective in this regard.

d. **Dust**

As with the existing mining activities at Macraes, the Project will generate dust during the construction and subsequent mining activities. If uncontrolled, dust could cause nuisance/amenity effects, as well as potential health effects.

It is considered that the potential dust effects can be suitably managed via the implementation of mitigation measures set out in the existing Dust Management Plan for the Macraes Operation. These matters are reflected in the proposed conditions.⁶ Ms Harwood explains that OGNZL already adheres to an ambient air monitoring programme which will adequately provide for this activity and does not consider any additional monitoring sites are necessary. It is her view that with the

³ Appendix B - WDC conditions 8.1 – 8.5.

⁴ Appendix B – WDC condition 7.2.

⁵ Appendix B – WDC conditions 9.1 – 9.5.

⁶ Appendix B – WDC condition 10.1.

mitigation and monitoring measures in place, the risk of additional dust generated by the proposal creating adverse effects on the properties located within proximity of the Project is low.

It is also noted that the closest residence to the proposal (the Howards) have provided their affected party approval for the Project.

Ms Harwood does therefore not agree with the recommendations of Mr Iseli regarding the additional TSP monitoring (though I note that OGNZL is willing to undertake this), the speed limit reduction in the vicinity of the Howard property, or the restriction of stripping of overburden or the construction of bunds in certain conditions.

e. **Water Quality and Quantity**

OGNZL has a well established water quality monitoring regime for the Macraes Operation on surrounding and downstream water bodies. For this Project, OGNZL engaged GHD as discussed in the evidence of Ms Hartwell and Ms Mains, to model the likely effects of the activity on water quantity and quality for surrounding surface and groundwater resources.

With regard to surface water quality, the modelling confirms that the discharges associated with this Project are likely to remain within existing consent condition limitations held by OGNZL for water quality downstream. While these limits are likely to remain appropriate for water quality and instream habitat protection, both Ms Hartwell and Dr Ryder have reviewed the ORC section 42A report reviews on this matter, and for certain water quality parameters, recommend new limits. This is discussed later in my evidence.

Ongoing monitoring is also proposed, and this is reflected in the proposed conditions.⁷ If any non-compliance (or potential non-compliance) is detected as a result of this monitoring, adaptive

⁷ Appendix C – RM.20.024.09, Condition 9 and Monitoring Schedule water quality monitoring.

management responses, as discussed in the evidence of Ms Hartwell, can be applied to the site to manage these.

Ms Mains' evidence discusses the potential impact of the Project on changes in groundwater levels which potentially arise from the proposed dewatering of the pit and from the formation of a pit lake. With regard to surface flows in surrounding water bodies such as Deepdell Creek, Ms Mains does not expect there to be any significant effect from the pit dewatering, as groundwater is only a very small proportion of flows.

Overall, Ms Mains concludes that the effects on groundwater levels and quality will be less than minor. I note that Mr Cochrane, on behalf of the ORC, comes to a similar conclusion. Ongoing groundwater monitoring is proposed and this is reflected in the conditions.⁸

f. **Aquatic Ecology**

The proposal has the potential to have an effect on stream habitat and water quality during works in and around streams in the area. This will arise from the direct loss of approximately 150m of intermittent stream from the Highlay Creek Catchment as a result of the silt pond construction and the creation of a new road crossing. Seepage areas will also be lost from within the footprint of the pit and WRS, and part of the Camp Creek tributary will be diverted.

Dr Ryder observes that these areas are highly modified and degraded, and the effects are therefore considered to be minor on aquatic ecology values. The seepage habitats do not contain any suitable habitat for aquatic fauna. The Camp Creek tributary may provide habitat for freshwater crayfish, and Dr Ryder recommends re-creating this habitat within a new clean water diversion channel.

Dr Ryder further confirms that the existing water quality compliance limits are generally appropriate to ensure the ongoing discharges from the site do not adversely affect the health and wellbeing of the species

⁸ Appendix C – Compliance Schedule groundwater monitoring requirements.

living downstream. Dr Ryder does, however, recommend including new compliance limits for dissolved inorganic nitrogen and dissolved reactive phosphorous, as well as a new monitoring regime for potential nuisance algae growths.⁹

g. **Cultural and Heritage**

The submission prepared by Aukaha (on behalf of Kāti Huirapa Rūnaki ki Puketeraki and Te Rūnanga o Ōtākou (together referred to as **Kā Rūnaka**)) identifies key issues arising from the Project on cultural values and seeks a number of outcomes to be addressed as part of the proposal.

Among these matters, Kā Rūnaka seeks that the precautionary approach is applied when assessing the consents, and that Kā Rūnaka be involved in the drafting of the Ecological Management Plan (**EMP**) and offsetting plans to further support any further opportunities to address adverse effects on mauri, mahika kai and taoka species. I agree that this is appropriate, and the proposed conditions have been drafted to ensure engagement with Kā Rūnaka is undertaken prior to the finalisation of these plans. I understand that Aukaha has been given a copy of the draft offsetting management plans and OGNZL has invited any feedback at this stage.

The proposed conditions also reflect other matters raised in Kā Rūnaka's submission, including an obligation to adhere to the offsetting requirements and other ecological mitigation and rehabilitation activities onsite, and that an accidental discovery protocol is to be adhered to.¹⁰ The conditions also ensure the ongoing management of water quality.¹¹ Mr Kyle has addressed the rationale regarding the consent term in his evidence.

⁹ Appendix C – Monitoring schedule, aquatic biological monitoring requirements

¹⁰ Appendix B – WDC condition 24.1

¹¹ Refer to footnotes 7, 8 and 9.

The heritage assessment and evidence of Mr Teele confirms that the Project will have no adverse effects on any existing and known heritage features.

h. **Traffic and Roding Effects**

The existing mining area at the Macraes site is adjacent to the Golden Point Historic Area which attracts occasional public visits. In addition, there are a number of paper roads in the area, which members of the public are legally able to access. An assessment of the Deepdell Project on these existing roads and networks was undertaken by Mr Kelly, which is reflected in his evidence.

Mr Kelly concludes that for the most part, the proposal will not affect the existing traffic around the site and wider area. It is however recognised that the Project will increase the mine vehicle movements across the existing pedestrian access route from Horse Flat Road to the Golden Point Historic Reserve, and that operational mining is very close to this alignment. A new pedestrian access route is being proposed which is reflected in the proposed conditions.¹² As reflected in the conditions, this access will need to be carefully managed to avoid any potential conflicts.

The proposal also involves realignment of a portion of Horse Flat Road. The proposed conditions ensure that this will be constructed to an appropriate standard for its anticipated usage, and this will likely result in a similar or better standard than the existing road.¹³

i. **Geotechnical and Stability**

Geotechnical investigations have been conducted into the stability of the proposed pit and WRS. With adherence to best practice engineering and mine management techniques, the pit and WRS will achieve the necessary safety requirements and will also retain appropriate stability in the long term.

¹² Appendix B – WDC condition 15.6.

¹³ Appendix B – WDC condition 15.4.

j. **Hazardous Substances and Contaminated Land**

The storage and use of hazardous substances will be undertaken in accordance with the existing management practices successfully employed at the Macraes site. This is reflected in the proposed conditions.¹⁴ These existing practices comply with the relevant New Zealand Standards, Codes of Practices and the Health and Safety at Work (Hazardous Substances) Regulations 2017.

PROPOSED CONSENT CONDITIONS – SUMMARY OF APPROACH

- 17 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 at the Macraes site. In this regard, it is considered that the potential effects associated with the Project are well understood. The measures that have been implemented to manage these effects have also proven to be effective, particularly in recent years, as explained in the evidence of Mr Lee. The technical assessments also generally recommend a continuation of the existing management / mitigation measures implemented by the company.
- 18 Some amendments to the consent conditions that apply to existing mining activities were proposed to reflect particular circumstances relevant to the Deepdell Project. A key feature in this regard is the proposed conditions which relate to terrestrial ecology.¹⁵ These matters were carefully navigated by OGNZL and its team of ecology experts, and the management strategy that has been developed includes elements of policy, non-statutory guidance and best practice. This approach has been endorsed by Dr Ussher in his peer review role on this Project. To the extent that the proffered conditions include obligations to undertake offsetting and compensatory actions that might go beyond the power of a consent authority to impose, these actions, and the corresponding conditions, are being proposed by the Applicant and can therefore be appropriately taken into account and included as consent conditions.

¹⁴ Appendix B – WDC conditions 23.1 – 23.2.

¹⁵ Appendix B – WDC conditions 20 – 21.

- 19 As indicated earlier, the consent conditions attached to the Section 42A reports of Mr Purves and Ms Neville have been reviewed. For the most part, it is evident that there is a good deal of agreement between Mr Purves, Ms Neville and myself on the proposed consent conditions that should be applied to the Project, with the potential exception of terrestrial biodiversity, which Mr Purves has not made any specific recommendations on in his section 42A report. The conditions attached as **Appendix B** also reflect the latest discussions between OGNZL and DOC.

PROPOSED LAND USE CONSENT – WAITAKI DISTRICT COUNCIL

- 20 As is explained in the evidence of Mr Kyle, the Project triggers a number of resource consent requirements under the Waitaki District Plan. As part of the application, a suite of consent conditions were proposed. Mr Purves has incorporated these conditions into his report and provided comment throughout. As noted earlier in this evidence, I have tracked further amendments to these conditions which are provided in **Appendix B**, and the key subject matters are discussed below.

Project Overview and Annual Work and Rehabilitation Plan

- 21 The conditions require the preparation of a Project Overview and Annual Work and Rehabilitation Plan to be submitted to the WDC on an annual basis to cover the forthcoming year.¹⁶ This plan is intended to provide the Council with the details of the intended mining activities, any rehabilitation that is proposed to be undertaken, as well as the monitoring and reporting requirements. This is consistent with the approach that is adopted for other mining projects at the Macraes site.
- 22 A copy of this annual plan is also to be submitted to the Chair of Macraes Community Incorporated, Kā Rūnaka, and the Department of Conservation for their information.
- 23 A Site Decommissioning Plan is also proposed via the conditions.¹⁷ This plan will manage the closure of the active mining and guide the site rehabilitation

¹⁶ Appendix B – WDC condition 3.

¹⁷ Appendix B – WDC condition 5.

requirements. To be consistent with the ORC conditions, a draft of this plan will be submitted to the above stakeholders and their feedback will be incorporated as appropriate into the final version.

Cultural Impact Assessment

- 24 At the time of preparing the application, the Cultural Impact Assessment (CIA) had not yet been received. The proposed conditions (attaching to both the ORC and WDC proposed conditions) reflected this and enabled a consent review mechanism, should the CIA raise anything of particular concern. The CIA has subsequently been received and this is attached to the evidence of Mr Lee. The matters raised within the CIA appear to be similar to the issues within Aukaha's submission on the Project. As I have discussed above, the conditions have been re-drafted to enable greater engagement and review of the various ecological management plans and site operational plans. I believe that this review process might assist in addressing some of the matters identified in Aukaha's submission, and no longer consider the CIA specific review conditions¹⁸ to be required.

Rehabilitation and Landscaping Plans

- 25 Condition 4.1 sets out the rehabilitation objectives to be achieved post mining.
- 26 DOC has requested that these objectives are broadened to include ecological restoration in Condition 4.1(d), which seeks to stabilise and rehabilitate the banks and surrounds of any water bodies. Although the ultimate goal for the rehabilitation of this site will be to ensure it is suitable for ongoing farming activities, it is appropriate in my view to afford some ongoing protection to these water bodies through fencing and planting. This condition has been modified as a result.
- 27 Mr Purves recommends amendments to the conditions to require greater specificity with respect to rehabilitation and certain landscape matters. These have been considered by OGNZL and Mr McKenzie, and there is

¹⁸ On either the WDC or ORC Consents.

general agreement with these additional requirements insofar as they relate to those conditions sitting under 4 and 5.

- 28 DOC recommends establishing a timeframe on the rehabilitation activities. There are difficulties in establishing an exact timeframe for the requirement of rehabilitation, and this may frustrate the operation of the mine and the rehabilitation requirements at the site. I do not consider this to be a necessary addition on the basis that the Annual Work and Rehabilitation Plan will set out the anticipated activities and outcomes on an annual basis and the WDC (and community) will be kept fully informed of the company's planned mining and rehabilitation schedule via this mechanism. Condition 5.1 also requires the consent holder to submit a Site Decommissioning Plan, and in doing so, this will give the WDC certainty as to when mining will cease and rehabilitation will be required.

Noise

- 29 The proposed conditions relating to noise¹⁹ require compliance both during the construction and operation of the mining activity, with the following standards as measured at the notional boundary of any dwelling not owned by OGNZL:
- a. On any day between 7am to 9pm: 55 dBA LAeq; and
 - b. On any day between 9pm to 7am the following day: 40dBA LAeq; and/or 70 dBA LAm_{ax}.
- 30 When the application was prepared, the affected party approval of the Howards, who reside at 406 Horse Flat Road, had not yet been received. As a result of the potential noise effects on this property during the hauling of material between the mine site and the processing plant, a condition was proposed which prevented any hauling between the hours of 9pm and 7am. I understand that the Howards have since provided their affected party approval for the proposal, inclusive of this night time hauling activity, and therefore this condition has been removed, and the above condition has been altered to exempt the limits applying at this particular dwelling.

¹⁹ Appendix B – WDC conditions 8 and 9.

- 31 Consistent with the evidence of Dr Trevathan, a condition requiring that the construction of the noise bund complies with the relevant New Zealand Construction Noise Standard has been added.

Roading

- 32 Conditions 15.1 – 15.5 relate to the roading requirements for the Project. Mr Purves recommends amendments to these conditions, the basis of which are largely directed at ensuring greater compliance with the WDC roading specifications. I agree that these changes are appropriate. I have also added a condition requiring the preparation of a Traffic Management Plan consistent with the recommendation of Mr Kelly in his evidence.²⁰
- 33 Mr Purves also recommends removing reference within the conditions (throughout) to other mining projects that have already been consented within the Macraes site (e.g Coronation North). While I understand his concern regarding this, I note that there needs to be some flexibility and integration in the way that these operations are managed on-site. For example, the Deepdell Project operations may cease ahead of the Coronation North projects, and the roads which are affected by both projects will not be able to be fully rehabilitated until both operations cease. This integration needs to be suitably recognised in the conditions²¹ of this consent in my view.

Bonds

- 34 The proposed conditions require OGNZL to maintain bonds in favour of WDC. The bond conditions provide the WDC with access to funds sufficient to close and rehabilitate the mine site in the event that OGNZL fails to meet its closure obligations. These are consistent with existing bond conditions on other consents for the site, and it is appropriate that they be continued.
- 35 DOC has requested that some assurance is provided in the conditions that funding for the biodiversity offsetting is available in the long term. A suggested edit to the bond conditions was proposed in this regard. It is not

²⁰ Appendix B – WDC condition 15.6.

²¹ Appendix B – WDC condition 15.1.

considered necessary to include the offsetting funding as part of the bond requirements, as I discuss later, the conditions relating to offsetting require that OGNZL is fully committed to its implementation prior to commencing any on-site mining activity, and the offsetting conditions also require an appropriate funding mechanism to be established in the long term.

Ecological Management Plan

- 36 OGNZL proposes to require a suite of environmental management obligations within an Ecological Management Plan (**EMP**). This is intended to act as an overarching plan to ensure compliance with the conditions of the consent and otherwise to minimise the actual and potential adverse effects on any threatened, at risk or locally uncommon species and general ecological values of the site. It is specifically intended to cover the impacts of the proposal on plant species, lizards and aquatic biota as these have been identified in the evidence as being the most critical.
- 37 The EMP requires, as a subset, the following:
- a. The preparation of an annual ecological monitoring report. The purpose of this report is to describe the actions and activities that were undertaken in the preceding twelve months in order to meet the purpose and objectives of the overarching EMP; and
 - b. The details of the Ecological Enhancement Area Programme which is specifically designed to offset any residual effects of the proposal on terrestrial ecology and indigenous biodiversity within the Macraes Ecological District (**MED**).
- 38 As is evident from **Appendix B**, a number of amendments have been made to these conditions. These are a result of the discussions between OGNZL and DOC as well as recommendations from its technical experts, following consideration of the peer review undertaken by WDC. The key changes are discussed below.
- 39 The conditions now require the EMP (which is inclusive of the Ecological Enhancement Area Programme (**EEAP**)) to be certified by the WDC prior to

the commencement of any onsite activities.²² The EMP will also be prepared in consultation with the Department of Conservation and iwi.

- 40 Greater specificity has been included in the drafting of the conditions requiring the preparation of the EEAP for the Project. There is a clear purpose and objectives which specifically require:
- a. That offsetting effort shall achieve a no net loss and preferably a net gain in overall indigenous biological diversity in the MED;
 - b. That offsetting will ensure there no loss of individuals of Threatened taxa, and no measurable loss within the MED to any At Risk-Declining taxon under the New Zealand Threat Classification (other than Myrtaceae species);
 - c. That an offset will be provided in two locations – referred to as the Redbank EEA and the Ephemeral Wetland EEA;
 - d. That the offsetting is undertaken substantially in accordance with the draft Ecological Enhancement Area Management Plans (**EEAMP**) that will be provided as part of Dr Thorsen’s evidence at the hearing;
 - e. That the offset aligns with best practice offsetting principles such as those set out in the Partially Operative RPS as discussed in the evidence of Mr Kyle. This includes a condition (Condition 20.12) which requires that OGNZL executes an appropriate legal mechanism or binding agreement (e.g a covenant under the Conservation Act) over the proposed offsetting sites to enable their protection and enhancement of biodiversity values in perpetuity.
- 41 The conditions also require the preparation and ultimately implementation of a specific offsetting plan or EEAMP for each of the selected sites. The draft plans are attached to the evidence of Dr Thorsen and he provides a detailed description of these. The conditions²³ have been amended to reflect the obligations inherent within these plans.

²² Appendix B – WDC condition 20.1.

²³ Appendix B – WDC condition 20.8.

- 42 The certainty and enforceability of these offsetting sites has been queried by some of the submitters and the additional conditions set out in Condition 20.10 – 20.13 have been specifically developed to address these concerns. These conditions require that OGNZL secure both the Redbank and the Ephemeral EEA sites via appropriate legal mechanisms prior to the commencement of any mining activity on the site.
- 43 I understand that the ORC Policy Team has raised a potential issue with the enforceability of the Ephemeral Wetland EEA site because it is situated within the Dunedin City Council territorial authority boundary. There is concern that the WDC has no ability to enforce compliance with conditions within another jurisdictional boundary. I do not share these same concerns.
- 44 As discussed, the proposed conditions require that the offsetting sites are secured and legally protected. They also require adherence to an offsetting plan, all before the mining operation can commence. The offsetting plans will generally be consistent with the drafts attached to the evidence of Dr Thorsen. The objectives of those plans are clear, and it is evident that the Ephemeral Wetland EEA offsetting that is proposed will best achieve these outcomes.
- 45 I do not think it matters where the offset is provided for the purpose of enforcing the obligation, as the Consent Authority can still enforce the requirements of the plan on the Consent Holder and there is no impediment to undertaking the offset at this site from a Resource Management Act (**RMA**) perspective.²⁴ If OGNZL fails to meet the requirements of the plan, the Consent Authority can withhold its certification, meaning the mining operation cannot proceed which is clearly within the Councils jurisdiction.
- 46 Notwithstanding my view that there is no enforcement issue, this matter could be resolved simply by imposing the offsetting obligations on the regional council consents as well as the WDC land use consent. The ORC has indigenous biodiversity functions under section 30 of the RMA and the site is certainly within its jurisdictional boundaries.

²⁴ I have assessed that no additional resource consents would be required from the DCC in order to authorise the offsetting that is proposed.

- 47 In response to matters raised by DOC and WDC in its ecology review OGNZL has sought further advice regarding the management of lizards and their habitat that could be affected as a result of the proposal. This is discussed in Dr Thorsen and Dr Tocher's evidence. Dr Tocher has prepared a draft Lizard Management Plan that is intended to avoid, remedy, mitigate and/or compensate for the effects on lizard species present within the Project footprint. The proposed conditions require this plan to be finalised, confirm that it is aligned with any Wildlife Act approval, and be implemented.²⁵
- 48 The WDC ecology review also recommends including additional plant species to be translocated to either the existing or proposed covenanted areas as part of the suite of mitigation measures proposed. Dr Thorsen agrees that it might be worthwhile attempting to translocate additional plant species but does not agree that ongoing monitoring of some of these plant species is warranted. I understand that this is because these species have a lower threat status. In some instances where the translocation success might be marginal (due to the nature of the species), it is instead proposed to undertake propagation and planting at an appropriate site which may be at the offsetting sites or within existing OGNZL covenanted areas. The proposed conditions have been amended to reflect this broader list of species to be translocated or propagated and sets out the monitoring expectations and outcomes.

REGIONAL COUNCIL CONSENTS

- 49 As I mention earlier in this evidence, I used the conditions attaching to Ms Neville's report as the base. The recommended changes I make to these are shown as tracking in **Appendix C** to this evidence. I focus the next section of my evidence on those amendments.

Ongoing Discharge Monitoring Schedule

- 50 With respect to the proposed discharges from the site (i.e. from the WRS discharges to land) the application proposes ongoing compliance with the same downstream water quality criteria which is set out in existing consents

²⁵ Appendix B – WDC Condition 21.

held by OGNZL. With regard to certain parameters within the Deepdell Creek and Shag River environs I understand there is agreement between the various experts that the existing compliance criteria are appropriate. However, Dr Greer in the section 42A reporting raises concern regarding the compliance criteria for copper and zinc in Deepdell Creek and the Shag River/Waihemo, and the arsenic criteria for Deepdell Creek.

- 51 Similarly, Dr Greer raises concern with the existing consented criteria as it applies to the arsenic, copper and zinc concentrations in Highlay Creek.
- 52 Dr Greer also raises concerns in his review regarding the potential for periphyton growth downstream as a result of increased nitrate within the discharges.
- 53 In response to the issues raised by Dr Greer, Ms Neville recommends revised compliance criteria, and includes a placeholder for new limits to control periphyton growth.
- 54 Ms Hartwell and Dr Ryder have reviewed these suggested changes, and while there is acceptance that the current water quality compliance limits are generally suitable, Dr Ryder recommends the inclusion of additional limits for DIN and DRP as discussed in his evidence.²⁶
- 55 With regard to periphyton Dr Ryder does not agree that new nutrient limits are necessary. He observes that such growths have always been a feature of the streams within the Deepdell catchment, and that these do not appear to be adversely impacting on the aquatic ecology values within the various streams. Dr Ryder does however recommend that monitoring of nuisance algae growth occurs, and if this reaches 30% cover at two of the monitoring sites downstream of the Camp Creek confluence, then a flushing flow from the Camp Creek dam could be investigated as a potential remediation response. The proposed conditions within the discharge consents²⁷ set out this monitoring requirement and the triggers that would require investigation of such actions. To properly enable this to occur a variation to the current Camp Creek dam consent (RM10.351.38) would also be required in order to

²⁶ Appendix C – Compliance Schedule Numerical Compliance Criteria.

²⁷ E.g RM20.024.09 – Discharge Waste Rock to Land and Compliance Schedule.

enable an instantaneous flow release greater than the minimum 58L/s. I do not see any significant impediment in being able to obtain this variation should this be considered a necessary ecological management requirement.

- 56 Some minor other changes have been made to the proposed downstream monitoring and compliance schedule. These amendments derive mainly from practical issues with being able to implement what was recommended including:
- a. That the proposed cyanide limit at HC02 of 0.013 is below the Hills laboratory detection limit so this needs further discussion as to an appropriate limit;
 - b. Upstream and downstream monitoring of the silt pond areas may be impractical due to their location and further discussion is required on this;
 - c. Groundwater monitoring at the site DDB02 will no longer be possible as this is within the physical pit area.

Highlay Creek Culvert

- 57 Ms Neville recommends including a condition on RM20.024.11 as it relates to the proposed Highlay Creek culvert to ensure it provides for fish passage.²⁸ Dr Ryder disagrees that the provision of fish passage is necessary as part of this culvert design. Upstream of the culvert area is an ephemeral gully which is rarely wet and therefore does not provide any suitable fish habitat. I note that this view is generally supported by Dr Allibone in his review. This condition has therefore not been included in my version of conditions (refer **Appendix C**).

Pit Lake Monitoring Schedule

- 58 OGNZL does not intend to back fill the pit, and following the cessation of mining the pit will be allowed to fill as a lake with a combination of surface water (run off), and groundwater. The water balance modelling predicts that the pit lake will reach an elevation of 430m RL around 2060 as discussed in

²⁸ Condition 4.

Ms Hartwell's evidence. It is also expected that at this level the pit lake will likely stabilise and not reach the overflow level of 465m RL.

- 59 As part of the application it was intended that upon completion of the rehabilitation activities and the development of the pit lake, that this activity would be subject to the preparation and implementation of a Pit Lake Compliance and Monitoring Schedule. It was intended that this schedule would be developed in consultation with the ORC and detail the rewatering strategy for the pit lake, as well as the ongoing monitoring for water quality compliance. Allowing for some flexibility was considered important so as to monitor the rate of water level recovery during the filling of the pit lake in order to validate the modelling and guide the subsequent management of filling of the pit lake. It was also intended that this schedule would detail the actions to be undertaken to monitor and address water quality in the pit lake and any overflow discharge (if this were to occur).
- 60 Ms Neville has recommended the development of a Pit Lake Closure Manual, and the general intent of this is supported and consistent with the above approach that was outlined in the application.
- 61 Ms Neville also recommends specific lake water monitoring and quality criteria that must be complied with as it fills. I understand Ms Hartwell considers these measures to be reasonable, but it is noted that an adaptive management regime may be required in order to check the modelling predictions and adjust future management practices to achieve the water quality compliance criteria if needed. I have attempted to build some flexibility into the proposed conditions to allow for this to occur via the development of a monitoring, report and review process.²⁹

Discharges to Air

- 62 As mentioned earlier and as discussed in the evidence of Ms Harwood, Ms Neville's recommended conditions relating to the management of dust on the nearest residential dwelling (Howards) is not considered necessary. This is on the basis of expert opinion regarding the severity of likely effects

²⁹ Refer to proposed condition 6a of RM20.024.08 as an example of this.

following mitigation of potential dust sources, as well as the fact that the affected party approval of these neighbours has been obtained. However as discussed in the evidence of Mr Lee, OGNZL agrees to undertake the additional TSP monitoring recommended by the ORC at the Howard residence.

Erosion and Sediment Control

- 63 A number of the regional council consents³⁰ require the preparation and implementation of an Erosion and Sediment Control Plan. In my opinion, these conditions are typical of most land disturbance type activities and will ensure that the appropriate measures are implemented on site to avoid or minimise any potential for uncontrolled sediment runoff.

CONCLUSION

- 64 A range of consent conditions are proposed by OGNZL in order to manage the actual and potential effects of the Project. This includes an extensive offsetting package which is intended to ensure that all residual adverse effects of the Deepdell Project are managed in accordance with the recommendations of the various technical assessments, and in a manner that aligns with the outcomes sought by the relevant statutory planning documents.
- 65 It is also noted that for the construction and operational effects, the management measures being proposed have been, or are being, implemented for other mining projects around Macraes. As such, I have confidence in their effectiveness for this proposal. For example the noise and vibration measures being proposed are consistent with the existing mining activities in the Macraes area.
- 66 Furthermore, I consider the ecological mitigation and offsetting that is proposed to be comprehensive and generally consistent with the practices promoted within Policies 5.4.6 and 5.4.8 of the RPS in particular. It is very

³⁰ E.g. RM20.024.09 as it relates to the discharge of waste rock to land.

likely that the ecological outcomes as a result of this proposal will be better than if the Deepdell Project did not proceed.

- 67 Overall, it is my opinion that the consent conditions attached as **Appendices B and C** to my evidence are robust and provide suitable safeguards for the environment, while also providing sufficient flexibility for the management of activities as mining and rehabilitation activities progress.

Claire Hunter

4 August 2020

Appendix A

List of Project Experience for Claire Hunter

- OceanaGold (New Zealand) Limited – peer review role in various project and activities at the Macraes Gold Project, in Otago. This includes reviewing of the Deepdell North Stage III Project resource consent applications, and the Golden Point Underground resource consent applications.
- Bathurst Resource Limited – providing planning assistance to Bathurst Resource Limited with regard to its mine situated in the Canterbury region. Bathurst is seeking to re-consent and extend its existing mine footprint and requires consent from both the Selwyn District Council and Environment Canterbury.
- Alliance Group Limited – Planning advice and preparation of applications with regard to the renewable of key discharge consents (water, land and air) for its Lorneville Plant.
- Alliance Group Limited – Review of Canterbury Proposed Regional Air Plan, preparation of submission and evidence.
- Alliance Group Limited – Review of various Southland Regional and District Plan changes and preparation of submissions. Participation in Environment Court mediation to resolve Alliance Group Limited’s appeal on the Southland Proposed District Plan.
- Alliance Group Limited – Preparation of resource consent application for the renewal of its Mataura Plant’s hydroelectric power scheme.
- Alliance Group Limited – Preparation of statutory assessment to accompany resource consent application to renew its Pukeuri Plant biosolids discharge consent
- Aurora Energy Limited – Successfully obtained a resource consent and subdivision for a new large scale substation in Camp Hill, Hawea. Claire’s involvement in this project followed an earlier application which was declined by Hearing Commissioners due to its controversial location in Hawea.
- Wellington International Airport Limited – management of technical inputs and reports for the proposed runway extension, preparation of regional and district council resource consent applications.
- Wellington International Airport Limited – preparation of advice and submissions on the Greater Wellington Proposed Natural Resources Plan. Active involvement in preparing evidence for the various hearing streams on behalf of WIAL.
- Liquigas Limited – Preparation of submissions and planning evidence on the Second-Generation Dunedin City Plan in order to protect the existing and proposed operational capacity of its LPG Terminal in Dunedin.

- Liquigas Limited – Reconsenting of its significant South Island LPG Terminal located at Port Otago, Dunedin. The application sought to increase the storage of LPG significantly at the site and was processed as a non-notified consent.
- Environmental Protection Authority – NZTA Expressway between MacKays Crossing to Peka, Kapiti Coast project; Transmission Gully project plan change and Notices of Requirements and resource consents – Assisting in the review and section 42A report writing for the Notice of Requirement and various consents required.
- Ravensdown Fertiliser Limited – Preparation of regional council resource consents (air and coastal discharges) to enable the ongoing operation of the Plant in Ravensbourne in Dunedin City.
- Queenstown Airport Corporation – Provision of resource management advice for the airport and its surrounds in particular the runway end safety area extension and preparation of the notice of requirement, gravel extraction applications to both regional and district councils and other alterations required to the aerodrome designation.
- LPG Association of New Zealand Limited – Preparation of evidence and hearing attendance representing the LPGA with respect to Dunedin City Council’s Plan Change 13 – Hazardous Substances and participation in mediation to resolve LPGA appeal.
- LPG Association of New Zealand Limited – Preparation of planning evidence on the Second-Generation Dunedin City Plan.
- Invercargill Airport Limited – Preparation of plan change provisions and section 32 analysis to provide for the future growth and expansion of Invercargill Airport in the Invercargill District Plan.
- Invercargill Airport Limited – Preparation of notices of requirement to amend a number of existing designations in the Invercargill District Plan including obstacle limitation surfaces and the aerodrome.
- Southdown Holdings Ltd – Preparation of proposed conditions of consent for large scale irrigation in the Upper Waitaki catchment, Canterbury.
- Trustpower Limited – Review of Otago Regional Council Plan Change 6A and preparation of submissions and evidence at the hearing on behalf of Trustpower Limited. Participation in Environment Court mediation to resolve issues.
- Trustpower Limited – Review of Clutha District Plan Energy Generation Plan Change and preparation of submissions and evidence at the hearing on behalf of Trustpower Limited.
- Trustpower Limited – preparation of proposed conditions of consent for the Wairau Hydroelectric Power Scheme.
- Trustpower Limited – management of the necessary technical inputs, consultation and preparation of resource consents necessary to enable the ongoing operation

of the Wahapo Hydroelectric Scheme on the West Coast, South Island.

- Meridian Energy Limited – preparation of the regional and district council consents for the Proposed Project Hayes Wind Farm in Central Otago.
- Meridian Energy Limited – preparation of the regional and district council consents for the Proposed Mokihinui Hydro Scheme on the West Coast, South Island.
- SouthPort Limited – Prepared and presented evidence on behalf of SouthPort in regards to proposed plan changes to the Invercargill District Plan.

Appendix B

Recommended amendments to consent conditions are shown as tracking (additional text is underlined and ~~strikethrough~~ for text to be deleted) for the Waitaki District Council land use consent.

Waitaki District Council Conditions

These suggested conditions are intended to assist with managing specific land use consent matters and offer approaches to managing specific effects associated with the proposal. The intent is to continue to work with submitters and Waitaki District Council to come to further agreement on consent conditions and present updated conditions at the hearing.

1	General
1.1	<p>This consent shall be exercised in accordance with the Deepdell North Stage III application for resource consent and <u>Assessment of Environmental Effects</u> lodged with, and received by, the Waitaki District Council on XX29 December <u>January 2019</u>20 (and all supporting application documents) and any further documents including the further information provided to Waitaki District Council on <u>4 March 2020 and at the hearing on 19 and 20 August 2020.</u> XX December 2019, including the Assessment of Environmental Effects and all Supporting Documents (which are deemed to be incorporated in, and form part of this consent),</p> <p>Except to the extent that any condition or <u>appendix to</u>in this consent is inconsistent with such material. If there is an inconsistency <u>between the application documents and conditions</u>, the conditions and terms of this consent shall prevail. <u>If there is an inconsistency between application documents, the most recent document shall prevail.</u></p>
1.2	<p>Pursuant to Section 125(1) of the Resource Management Act 1991 this consent shall lapse on the expiry of five years after the date of issue of the consent unless the consent is given effect to before the end of that period or upon application in terms of Section 125 (1) (b) of the Act, the Waitaki District Council may grant a longer period of time.</p>
1.3	<p>The consent holder shall notify the Waitaki District Council in writing of the first exercise of this consent.</p>
1.4	<p>In the event of any non-compliance with the conditions of this consent, the consent holder shall notify the Waitaki District Council within one working day of the non-compliance being detected. Within five working days the consent holder shall provide written notification to the Waitaki District Council providing details of the non-compliance. This notification will at a minimum include an explanation of the cause of the non-compliance, the steps taken to remedy the situation and steps taken to avoid any future occurrence of the non-compliance.</p>
1.5	<p>The Waitaki District Council may, in accordance with sections 128 and 129 of the Act, serve notice on the consent holder of its intention to review the conditions in the last week of March in any year for the purposes of:</p> <ul style="list-style-type: none"> <li data-bbox="354 1682 1404 1793">(a) Dealing with any adverse effect on the environment (including cultural values) which may arise from the exercise of this consent and which is appropriate to deal with at a later stage, or which become evident after the date of commencement of the consent, <li data-bbox="354 1818 987 1850">(b) Ensuring the conditions of this consent are appropriate,

	<p>(c) Ensuring rehabilitation is completed in accordance with the rehabilitation conditions of this consent;</p> <p>(d) Requiring the consent holder to adopt the best practicable option to remove or reduce any adverse effect on the environment arising as a result of the exercise of this consent.</p>
1.6	<p>The Council may, within 6 months of receipt of the Deepdell North Stage III Project Cultural Impact Assessment prepared by Kai Tahu Ki Otago on behalf of Te Rūnanga o Moeraki, Te Runanga o Ōtakou and Kāti Huirapa Rūnaka ki Puketeraki, commissioned in 2019, serve notice of its intention under Sections 128 and 129 of the Act to review the conditions of this consent for the purpose of amending or adding conditions to address mitigation of the effect(s) from activities authorised under this consent on cultural values and associations.</p>
1.7	<p>The consent holder shall remedy or adequately mitigate any adverse effect on the environment from the exercise of this consent which becomes apparent after the expiry of this consent.</p>
1.8	<p>Prior to the expiry of this consent, the consent holder shall ensure that all rehabilitation and everything necessary to comply with the conditions of this consent has been completed.</p>
2.	Location of various mining activities
2.1	<p>The pit, waste rock stack, and haul road shall not materially exceed those footprints shown on “Map 1 - Deepdell North Stage III proposal areas” annexed as <u>Appendix I to this consent</u>.</p>
3	Project Overview and Annual Work and Rehabilitation Plan
3.1	<p>The consent holder shall submit a Project Overview and Annual Work and Rehabilitation Plan to the Waitaki District Council by 31 March each year that will cover the forthcoming year (1 July to 30 June). The consent holder may, at any time, submit to the Waitaki District Council an amended Project Overview and Annual Work and Rehabilitation Plan. The Project Overview and Annual Work and Rehabilitation Plan shall include, but not be limited to:</p> <p>(a) A description and timeline of intended mining activities for the duration of mining operations including a plan showing the location and contours of all existing and proposed structures at completion of mining;</p> <p>(b) A description (including sequence, method and form) of mining operations, monitoring and reporting carried out in the last 12 months;</p> <p>(c) A detailed description (including sequence, method and form) of all mining operations, monitoring and reporting, not covered by a separate management plan intended to be carried out in the next 12 months;</p> <p>(d) An explanation of any departure in the last 12 months from the previous Project Overview and Annual Work and Rehabilitation Plan;</p> <p>(e) Plans showing the contours (at 5 metre intervals) and footprints of all works and structures and any proposed changes at the end of the next 12 months;</p>

	<ul style="list-style-type: none"> (f) A description and analysis of any unexpected adverse effects on the environment that have arisen as a result of the exercise of the consent in the last 12 months and the steps taken to deal with it and the results of those steps; (g) A description and analysis of any non-compliance with any conditions of consent that have occurred in the last 12 months and the steps that were taken to deal with it and the results of those steps; (h) A full report describing and evaluating the mitigation measures used in the last 12 months and any that are proposed to be implemented in the next 12 months. This should detail where further mitigation is proposed or has been undertaken as a result of a non-compliance event and/or any adverse effects on the environment; (i) A summary description of all Management Plans and Manuals required under this land use consent and any resource consents issued by ORC and details of any review or amendment of any of the Management Plans or Manuals; (j) An overview of the monitoring and reporting programme for the previous 12 months and any changes proposed for the next 12 months; (k) A detailed section on rehabilitation including, but not limited to the following: <ul style="list-style-type: none"> (i) The total area of disturbed land during the mining of Deepdell North Stage III, including the haul road, yet to receive rehabilitation and indicative rehabilitation dates for various areas of the mine site; (ii) The area of additional disturbed land in the coming year that will require future rehabilitation; (iii) The area of disturbed land rehabilitated in the previous year; (iv) The area of disturbed land proposed to be rehabilitated in coming year; (v) A description of rehabilitation planned for the life of mine at Deepdell North Stage III; (vi) A description of proposed rehabilitation methods for any area, including proposed topsoil to be stripped and stockpiled, surface pre-treatment and re-use of topsoil on finished areas in the next 12 months.; (vii) The details of the location, design (including shape form and contour) and construction of all permanent structures; (viii) Drainage details for any disturbed land and recently rehabilitated areas; (ix) Details of any vegetation to be used as part of rehabilitation for the next 12-month period; (x) Detailed results of any revegetation trials.
3.2	<p>Each year, and anytime the <u>Project Overview and Annual Work and Rehabilitation Plan in condition 3.1</u> is updated the consent holder shall provide the Chair of Macraes Community Incorporated, Kāti</p>

	Huirapa ki Puketeraki, Te Rūnanga o Otakou, and Te Rūnanga o Moeraki and the Department of Conservation with a copy of the latest Project Overview and Annual Work and Rehabilitation Plan.
3.3	The Project Overview and Annual Work and Rehabilitation Plan for this consent may be combined with any Project Overview and Annual Work and Rehabilitation Plan required by any other consent held by the consent holder for mining operations at Macraes Flat.
3.4	The consent holder shall provide the Waitaki District Council with any further information, or report, which the Waitaki District Council may request after considering any Project Overview and Annual Work and Rehabilitation Plan. This information or report shall be provided in the time and manner required by the Waitaki District Council.
3.5	The consent holder shall exercise this consent in accordance with all defined conditions and the current Project Overview and Annual Work and Rehabilitation Plan.
3.6	The consent holder shall design and construct all permanent earthworks to the form shown in the Project Overview and Annual Work and Rehabilitation Plan.
4.	Rehabilitation
4.1	<p>The rehabilitation objectives to be achieved by the consent holder are:</p> <ul style="list-style-type: none"> (a) To ensure short-term and long-term stability of all structures and works and their surrounds; (b) To avoid the need for maintenance after completion of rehabilitation requirements; (c) To protect soil from erosion and to protect water from contaminants affected by mining operations; (d) To stabilise and rehabilitate the banks and surrounds of any waterbodies, and where it is practicable to do so the integration of riparian management (e.g. fencing and planting); (e) To return land to grazing pasture; (f) To visually integrate finished structures, landforms and vegetation into the surrounding landscape so they appear to be naturally occurring features; and, (g) To control invasive environmental weeds, including wilding conifers, in the Disturbed Land for the Life of the Macraes Gold Project.
4.2	The consent holder shall locate, form and shape all earthworks so that their profiles, contours, skylines and transitions closely resemble and blend with the surrounding natural landforms. If earthworks cannot be fully naturalised, the consent holder shall minimise the extent of their visibility and maximise their integration into the surroundings.
4.3	The consent holder shall use a Landscape Architect in the planning and design of all permanent earthworks and structures.
4.4	<p>The consent holder shall design and construct the waste rock stack in accordance with the following principles:</p> <ul style="list-style-type: none"> (a) Slopes shall be suitably shaped in cross-profile to match nearby natural slopes;

	<p>(b) Slope gradients shall be no steeper than nearby natural surfaces;</p> <p>(c) Transitions between natural and formed surfaces shall be rounded and naturalised;</p> <p>(d) Contours should be curvilinear in plan form, in keeping with original natural contours in that area;</p> <p>(e) The skyline shall be variable and curved, simulating natural skylines;</p> <p>(f) New landforms shall be aligned and located so they seem to continue, not cut across, existing landscape patterns; and</p> <p>(g) Silt ponds shall be removed, and the site rehabilitated or be converted to stock water drinking ponds following completion of mining operations and rehabilitation.</p>
4.5	<p><u>(a)</u> The consent holder shall stage the construction of Deepdell East Waste Rock Stack (WRS) so that waste rock deposition will commence in the area occupied by Deepdell South Pit prior to other areas.</p> <p><u>(b)</u> At least one month prior to the construction of the waste rock stack commencing, the consent holder shall provide to the Council detailed plans of the southern-end of the waste rock stack as viewed from the Golden Point Historic Reserve. The plans are to be certified in writing by the landscape Architect appointed under condition 4.3 as meeting the principles set out in condition 4.4 shall show how the principles set out in condition 4.4 are to be achieved in this location. :</p> <p><u>(c)</u> The Waitaki District Council, upon receiving the plans and written certification required by condition 4.5 (b) may notify the consent holder that it will commission an independent review of the plans by a suitably qualified and experienced landscape architect. All actual and reasonable costs of the review incurred by Waitaki District Council shall be paid in full by the consent holder. The certification and reviews outlined in this clause will be carried out in a manner that avoids any unreasonable delay.</p>
4.6	The consent holder shall, as far as practicable, stockpile soil from any disturbed land, unless the soil is required to be left in place to protect water and soil values.
4.7	All salvaged soil shall be used on disturbed land for rehabilitation purposes.
4.8	<p>The consent holder shall take practical measures to ensure that the areas of vegetation requiring disturbance to give effect to this consent are minimised where possible. This shall include the following protocols:</p> <p>(a) Clearly marking out areas to be cleared</p> <p>(b) Only clearing authorised areas as they are required</p> <p>Avoiding driving vehicles and machinery outside of established tracks or areas that are authorised by this consent to be cleared.</p>

4.9	The consent holder shall in accordance with the rehabilitation objectives, undertake progressive rehabilitation of disturbed land as completion of operational activities allow. It shall be revegetated with exotic pastoral species.
4.10	After <u>initial</u> rehabilitation actions within the disturbed areas in accordance with condition 4.9 are <u>complete</u> , the consent holder shall maintain vegetation cover within rehabilitated areas until the expiry of this consent <u>for a period of ten years</u> and ensure that the vegetation, including any vegetation established on disturbed land, as far as practicable <u>for the vegetation type being established</u> , shall be designed and implemented to be self-sustaining after this timeframe. expiry of the consent.
4.11	At three yearly intervals, the consent holder shall complete a review of all soil and pasture on land that has been rehabilitated. The first review shall be not later than the third anniversary of the <u>completion of the mining activity commencement of this consent</u> . The review shall include, but not be limited to, the following: <ul style="list-style-type: none"> (a) Monitoring for ground cover, species components, plant nutrition status, soil organic matter and concentrations of exchangeable nutrients in the soil; (b) Analysis and interpretation of the monitoring results by a suitably qualified soil or agricultural scientist; (c) Evaluation of the vegetation and its potential to be self-sustaining for pastoral farming after mining ceases; and (d) Any necessary recommendations for future rehabilitation, including plant species or varieties to be used, cultivation and seeding methods to be introduced, or fertilisers to be used; and, (e) A copy of the review will be forwarded to the Waitaki District Council within three months of the review being completed.
5	Site decommissioning and closure
5.1	The consent holder shall submit a Site Decommissioning Plan to the Waitaki District Council, not less than 12 months before completion of the operations. The Site Decommissioning Plan may be part of any other Decommissioning Plan required for the Macraes Gold Project. A copy of the draft Site Decommissioning Plan shall be provided to the Chair of Macraes Community Incorporated and the Macraes Community Development Trust (and any successive groups); Kāti Huirapa ki Puketeraki, Te Rūnanga o Otakou; Te Rūnanga o Moeraki; and the Department of Conservation and an invitation to provide feedback on the Plan shall be extended. Where appropriate this feedback shall be incorporated into the final version of the Site Decommissioning Plan. If any feedback has not been incorporated into the final version, an explanation as to why shall be provided by the Consent Holder as part of the final plan submitted to the Waitaki District Council.
5.2	The Site Decommissioning Plan shall include but not be limited to: <ul style="list-style-type: none"> (a) A plan(s) showing the final design and intended contours (at 5 metre intervals) of all permanent structures and works, including but not limited to, waste rock stacks, permanent earthworks, pit

	<p>lakes, roads, water storage reservoirs or other works which under this consent or any related consent are authorised or required to remain after the relevant consents expire;</p> <p>(b) A summary of rehabilitation completed to date, and details of rehabilitation required to fulfil the conditions of this consent and any related consents;</p> <p>(c) Details on infrastructure to be decommissioned, such infrastructure may include buildings, plant, and equipment;</p> <p>(d) Details of specific infrastructure to remain on-site post-closure. Such infrastructure may include buildings, plant, equipment and any monitoring structures required by this consent and any related consent to remain after the expiry of the consents;</p> <p>(e) Details of management, any ongoing maintenance, monitoring and reporting proposed by the consent holder to ensure post-closure activities are carried out in accordance with the conditions of this consent;</p> <p>(f) Details of measures to protect public safety, including any fencing yet to be completed;</p> <p>(g) The costs of complying with (a)-(f) above.</p>
5.3	<p>The consent holder shall remove all buildings, plant and equipment (whether attached to the land or not) associated with site decommissioning. This condition does not apply to:</p> <p>(a) Any waste rock stacks, permanent earthworks, silt pond, waterbody, road or other works and any associated plant and equipment which under this or any other resource consent is permitted or required to remain after decommissioning or after this consent expires;</p> <p>(b) Any monitoring structure required by this or any other resource consent to remain after the expiry of this consent.</p>
5.4	<p>The waste rock stack shall be progressively rehabilitated as areas are completed.</p>
6.	Complaints
6.1	<p>The consent holder shall maintain a record of any complaints received regarding their operation. The register shall include, but not be limited to:</p> <p>(a) Name and location of site where the problem is experienced;</p> <p>(b) Nature of the problem;</p> <p>(c) Date and time problem occurred, and when reported;</p> <p>(d) Action taken by consent holder to remedy the situation and any policies or methods put in place to avoid or mitigate the problem occurring again.</p>
6.2	<p>The register of complaints shall be incorporated into the Project Overview and Annual Work and Rehabilitation Plan required by Condition 3 of this consent and provided to the Waitaki District Council on request.</p>
7.	Blasting and vibration

7.1	The consent holder shall ensure that blasting practices minimise air and ground borne vibration. Fly-rock shall be minimised, and all blasting procedures shall be carried out so as to ensure the safety of employees and the public.
7.2	Blasting authorised by this consent shall be restricted to within the following hours: a. Monday-Friday 9am to 530pm, b. Saturday, Sunday and public holidays 10am to 430pm.
7.3	Details of blasting method, strength of the blast and time of blast shall be entered into a record kept for that purpose and shall be available to the Waitaki District Council on request. This information shall also be included in the monitoring report, required under Condition 9.
7.4	Vibration due to blasting or any other activity associated with the mining operation, when measured at any point within the notional boundary of any dwelling not owned by the consent holder, shall not exceed a peak particle velocity measured in the frequency range 3-12 Hz of 5 mm/sec provided this level may be exceeded on up to 5% of the total number of blasts over a period of 12 months. The level shall not exceed 10 mm/sec at any time.
7.5	Airblast overpressure from blasting associated with the mining operation, when measured at any point within the notional boundary of any dwelling not owned by the consent holder shall not exceed a peak non-frequency-weighted (Linear or flat) level of 115 decibels (dB), provided this level may be exceeded on up to 5% of the total number of blasts over a period of 12 months. The level shall not exceed 120 dB (Linear peak) at any time. For the purpose of this consent, C-frequency-weighting may be considered equivalent to the Linear or Flat-frequency-weighting. <i>Note: The notional boundary is defined as a line 20 metres from the exterior wall of any rural dwelling or the legal boundary where this is closer to the dwelling.</i>
7.6	The consent holder shall send an email notification to surrounding residents on days that blasting is to occur with times of blasting and will notify residents at least 3 days prior with any changes to the blasting program.
8.	Noise
8.1	The consent holder shall ensure that all construction and operation activities associated with the mining operations are designed and conducted so that the following noise limits are not exceeded unless condition 8.2 applies at the locations specified in Condition 8.32: (a) On any day between 7 am to 9 pm (daytime): 55 dBA LAeq; and (b) On any day between 9.00 pm to 7.00am the following day (night-time): 40dBA LAeq; and/or 70 dBA LMax.
8.2	No Heavy Vehicles other than a service truck shall use the haul road between the Deepdell North Stage III, Coronation, Coronation North or Coronation North Extension mine sites and the gold processing plant as shown on Figure Map 1 between the hours of 9.00 pm to 7.00am each day. Condition 8.2 ceases to have effect if the consent holder obtains an agreement with the residents of

	406 Horse Flat Road that the condition is no longer necessary. If this agreement is obtained and verified by the Waitaki District Council, the Consent Holder shall be authorised to utilise this haul road for heavy vehicle purposes during the hours of 9:00pm to 7:00am, provided the noise levels at the notional boundary of 406 Horse Flat Road do not exceed 51dBA LAeq.
8.2	<p>The construction and operational noise limits associated with the mining operations set out in condition 8.1 shall not apply to any property or site that is:</p> <p>a. Owned by the consent holder; and/or</p> <p>b. Owned or occupied by a third party which is subject to a registered covenant or written approval whereby noise effects on the property caused by activities authorised under this consent are not to be taken into account for monitoring and compliance purposes.</p>
8.32	<p>Noise measurements shall be taken at the notional boundary of any dwelling not owned by the consent holder, with the exception of the dwelling at 406 Horse Flat Road.</p> <p><i>Note: The notional boundary is defined as a line 20 metres from the exterior wall of any rural dwelling or the legal boundary where this is closer to the dwelling.</i></p>
8.4	All noise measurements referred to in Conditions 8.1 - 8.32 above shall be measured in accordance with the provisions of NZS 6801:2008 Acoustics: Measurement of Environmental Sound, and shall be assessed in accordance with the provisions of NZS 6802:2008 Acoustics: Environmental Noise.
8.5	The construction of the noise bund shall be managed so as to comply with the limits set out in the New Zealand Standard NZS6803:1999 Acoustics – Construction Noise.
9.	Monitoring of noise, airblast and vibration
9.1	<p>Prior to exercise of this consent, the consent holder shall prepare a Noise, Airblast and Vibration Monitoring Plan, which shall be provided to Waitaki District Councilll. The plan shall include but not be limited to:</p> <p>(a) Details of the monitoring locations, the frequency of monitoring and the method of measurement and assessment in accordance with Conditions 7.4, 7.5 8.1 – 8.5, 8.2, 8.3;</p> <p>(b) Procedures for recording blasting method, strength of the blast and time of blast; and</p> <p>(c) Procedures for addressing non-compliant results and notification of the Waitaki District Council.</p>
9.2	The Noise, Airblast and Vibration Monitoring Plan for this consent may be combined with any other Noise, Airblast and Vibration Monitoring Plan required by any other consent held by the consent holder for mining operations at Macraes Flat.
9.3	The consent holder shall exercise this consent in accordance with the Noise, Airblast and Vibration Monitoring Plan. The consent holder shall review the plan annually and if necessary, update it. Confirmation of the review shall be included in the Project Overview and Annual Work and Rehabilitation Plan. The Waitaki District Council shall be provided with any updates of the plan within one month of any update occurring.

9.4	The consent holder shall produce a report each year summarising the results of the Noise, Airblast and Vibration Monitoring. The report shall be included in the Project Overview and Annual Work and Rehabilitation Programme required by condition 3.1 of this consent.
9.5	All measurements from the monitoring program required by conditions 7.3 and 8.3 2 specified in the Noise, Airblast and Vibration Monitoring Plan shall be recorded and shall be made available to the Waitaki District Council on request.
10	Dust
10.1	The consent holder shall carry out dust suppression measures on site in accordance with a Dust Management Plan. This Plan may be combined with any other Dust Management Plan required by any other consent held by the consent holder for managing dust during construction and mining operations at the Macraes Gold Operation site.
11	Fire
11.1	The consent holder shall maintain an emergency response capability at the Macraes Gold Operation site and will take every reasonable precaution in the operation of the Deepdell North Stage III site to prevent fires from establishing.
12.	Lighting
12.1	All flood lighting luminaires utilised at site between sunset and sunrise that could potentially cause a glare nuisance, or a traffic hazard shall be, as far as is practicable, orientated so that the principal output is directed away from residences and traffic.
13.	Waste Rock Stacks
13.1	<u>Subject to condition 4.5,</u> The Deepdell East Waste Rock Stack shall be constructed in general accordance with the design outlined in the consent application, in particular, the Waste Rock Stack design document attached to the resource consent application as Appendix J.
13.2	The Deepdell East Waste Rock Stack shown on Appendix I to this consent “Appendix I – Map 1 - Deepdell North Stage III proposal areas” shall not exceed a height of 680mRL.
14.	Final Pit Lake
14.1	<p>(a) No less than twelve months prior to allowing the pit lake to fill through ending pit dewatering, the consent holder shall provide the Waitaki District Council with a closure manual for the Deepdell North Stage III Pit Lake. The manual shall include but not be limited to:</p> <ul style="list-style-type: none"> (i) Details of the pit lake design requirements (ii) Details of the lake filling requirements, including but not limited to; <ul style="list-style-type: none"> • The location and method of the discharge into the pit, and; • Details of the long-term pit wall stability <p>(b) The consent holder shall exercise the consent in accordance with the Closure Manual.</p>

14.2	The consent holder shall exercise this consent in accordance with the Closure Manual in condition 14.1. The consent holder shall review the manual required by 14.1 annually and if necessary, update it. Confirmation of the review shall be included in the Project Overview and Annual Work and Rehabilitation Plan required by condition 3.1 of this consent. The consent holder shall provide the Waitaki District Council with any updates of the plan within one month of any update occurring.
15.	Roading
15.1	Within 6 months of all of Coronation, Coronation North, Coronation North Extension and Deepdell North Stage III pit excavations and rehabilitation ceasing, the consent holder shall reinstate for public use that part of Golden Point Road south of Horse Flat Road shown on “Appendix I – Map 1 – Deepdell North Stage III proposal areas” annexed to <u>this consent</u> .
15.2	Prior to any construction of the Deepdell East Waste rock stack that prevents the safe and practical public use of the existing alignment of Horse Flat Road, the realignment of Horse Flat Road and associated earth embankment and culvert must be constructed on the route shown on “Appendix I – Map 1 - Deepdell North Stage III proposal areas” and approved as open to the public by Waitaki District Council.
15.3	On Horse Flat Road, the sequence of vesting of new roads, road construction and road closures shall ensure that public vehicle and pedestrian access along this road is maintained within a legal road reserve on a carriageway conforming to the relevant standards set out in the conditions of this consent at all times, except that the roads may be temporarily closed from time to time for the purpose of blasting. All works on public roads shall be signed and managed in accordance with the NZTA Code of Practice for Temporary Traffic Management. <u>The consent holder shall inform the Rounding Department at the Council of any impending temporary road closures.</u>
15.4	<p>The realignment of Horse Flat Road required by condition 15.2 and the reinstatement of Golden Point Road south of Horse Flat Road required by condition 15.1 shall be constructed to the following details:</p> <ul style="list-style-type: none"> (a) 15m minimum road reserve (b) 5m minimum carriageway width (c) Road shall be formed to a minimum 150 mm sub-base and a basecourse of 100mm AP40 with a wearing course of AP20 (d) <u>The layers of aggregate shall comply with the compaction requirements set out in TNZ B/2 prior to the application of the wearing course.</u> (e) The road shall also be delineated and marked to a public road standard (f) Geometric design will be in terms of Rural Road Design manual published by AUSTRROADS – Sydney 1989 edition and any subsequent revisions. (g) <u>The culvert pipe shall be installed following the drawings contained in Road Embankment and Culvert Report from EGL (dated 26 November 2019) and attached as Appendix K to the AEE.</u> (h) <u>A Defects Liability Period of 12 months for road construction workmanship and defects shall</u>

	<p><u>apply from the date of any alignments being opened for public use. This excludes any fair wear and tear defects.</u></p> <p>(i) <u>The consent holder shall as soon as practicable, depending on the alignment, provide Waitaki District Council updated RAMM (Road Assessment and Maintenance Management) Information of the new alignments and associated asset in order for the Council to update their road asset database. This includes the GPS position of the new carriageway centreline.</u></p>
15.5	No new tree planting by the consent holder shall be positioned such that when the trees grow, they would shade the new Horse Flat Road alignment between the hours of 1000 and 1400 on the shortest day of the year.
15.6	At least 20 working days prior to the commencement of the operation of the mining activity (i.e any hauling activity), the consent holder shall submit a Traffic management Plan to the Waitaki District Council for certification. The Traffic Management Plan shall provide details as to how the operational management of the mining activity will be managed so as to minimise conflicts with any pedestrian and public use of the surrounding road network.
16	Land for new public roads
16.1	All land to be vested as road reserve for new roads shall be transferred to Waitaki District Council by the consent holder at no cost to Waitaki District Council. If any actual and reasonable costs are incurred by Waitaki District Council in facilitating the vesting of the road, such as survey, legal and consulting costs, these costs shall be paid in full by the consent holder.
17	Road Closures
17.1	The consent holder shall request the Waitaki District Council to initiate road stopping procedures in relation to all public roads to be stopped. All actual and reasonable costs including survey, legal and other consulting fees, and all of Waitaki District Council's direct costs associated with the closure procedures shall be paid in full to the Waitaki District Council by the consent holder.
18	Disposal of Land under Closed Roads
18.1	All road reserve land comprised as closed road shall be transferred from the Waitaki District Council to the consent holder as the owner of adjacent land. All land created by road closure shall immediately be amalgamated with the adjoining land.
18.2	The consent holder shall ensure that all existing parcels of land have frontage to a legal road at the completion of the amalgamations.
18.3	All actual and reasonable costs, including survey, legal, consulting fees and costs and disbursements incurred by the Waitaki District Council in disposing of the land under the closed roads shall be paid in full to the Waitaki District Council by the consent holder.
19	Bonds
19.1	(a) The consent holder shall provide and maintain in favour of the Consent Authority one or more bonds to secure:

- (i) The performance and completion of rehabilitation in accordance with the conditions of this consent; and
 - (ii) The carrying out of the monitoring required by the conditions of this consent; and
 - (iii) The remediation of any adverse effect on the environment that may arise from the exercise of this consent.
 - (iv) Compliance with conditions 19.1(m) to 19.1(q) of this consent.
- (b) Before the first exercise of this consent, the consent holder shall provide to the Consent Authority one or more bonds required by condition 19.1(a).
- (c) Subject to the other provisions of this consent, any bond shall be in the form and on the terms and conditions approved by the Consent Authority.
- (d) Any bond shall be given or guaranteed by a surety acceptable to the Consent Authority.
- (e) The surety shall bind itself to pay for the carrying out and completion of the conditions of consent which are the subject of the bond on default by the consent holder or the occurrence of any adverse environment effect requiring remedy; during or after the expiry of this consent.
- (f) The amount of each bond shall be fixed annually by the Consent Authority which will take into account any calculations and other matters submitted by the consent holder relevant to the determination of the amount to be bonded in the Project Overview and Annual Work and Rehabilitation Plan.
- (g) The amount of the bond(s) shall include:
- (i) The estimated costs of complete rehabilitation in accordance with the conditions of consent on the completion of the mining operations proposed for the next year and described in the Project Overview and Annual Work and Rehabilitation Plan.
 - (ii) The estimated costs of:
 - Monitoring in accordance with the monitoring conditions of the consent;
 - Monitoring for and of any adverse effect of the activity authorised by this consent which may become apparent during or after expiry of this consent;
 - Monitoring any rehabilitation required by this consent.
 - (iii) Any further sum which the Consent Authority considers necessary for monitoring and dealing with any adverse effect on the environment that may arise from the exercise of the consent whether during or after the expiry of this consent.
- (h) The amount shall be calculated for the duration of this consent and for a period of 20 years after its expiry.
- (i) If, on review, the total amount of bond to be provided by the consent holder is greater or less than the sum secured by the current bond(s), the consent holder, surety and the Consent Authority may, in writing, vary the amount of the bond(s).

	<ul style="list-style-type: none"> (j) While the liability of the surety is limited to the amount of the bond(s), the liability of the consent holder is unlimited. (k) Any bond may be varied, cancelled, or renewed at any time by written agreement between the consent holder, surety and Consent Authority (l) The actual and reasonable costs (including the costs of the Consent Authority) of providing, maintaining, varying and reviewing any bond shall be paid by the consent holder. (m) For a period of 20 years from the expiry or surrender of this consent the consent holder shall provide in favour of the Consent Authority one or more bonds. (n) The amount of the bond to be provided under Condition 6(m) shall include the amount (if any) considered by the Consent Authority necessary for: <ul style="list-style-type: none"> (i) Completing rehabilitation in accordance with the conditions of this consent. (ii) Monitoring for and of any adverse effect on the environment that may arise from the exercise of the consent. (iii) Monitoring any measures taken to prevent, remedy or mitigate any adverse effect on the environment that may arise from the exercise of this consent. (iv) Dealing with any adverse effect on the environment which may become apparent after the surrender or expiry of this consent. (v) Contingencies. (o) Without limitation, the amount secured by the bond given under condition 19.1(m) may include provision to deal with structural instability or failure, land and water contamination, and the failure of rehabilitation in terms of the rehabilitation objectives and conditions of this consent. Costs shall include costs of investigating, preventing, remedying or mitigating any adverse effect. (p) The bond(s) required by condition 19.1(m) must be provided on the earlier of: <ul style="list-style-type: none"> (i) 12 months before the expiry of this consent. (ii) Three months before the surrender of this consent. (q) Conditions 19.1(c), (d), (e), (h), (i), (j) and (k) apply to the bond(s) required by Condition 19.1(m).
20.	Nature conservation and landscape values
20	Ecological Management Plan (EMP)
20.1	<p>Prior to exercising this<u>the exercise of this</u> consent, the consent holder shall engage a suitably qualified and experienced ecologist to prepare and submit to the <u>Waitaki District Council a Deepdell North Stage III Project Ecological Management Plan (“EMP”) for certification against the requirements of condition 20.2 by an appropriately qualified and experienced person.</u> a Deepdell North Stage III Project Ecological Management Plan (“EMP”). The EMP may be combined with any EMP required by any other consent held by the consent holder for mining operations at Macraes Flat. The purpose of</p>

	<p>the EMP is to manage<u>minimise</u> the actual and potential adverse effects on the Threatened, At Risk and Locally Uncommon species and general ecological values. The EMP shall be in accordance with the resource consent application and particularly the recommendations within the Terrestrial Effects Assessment and Impact Management Plan attached to the application as Appendix D and within the Aquatic Ecology Effects Assessment Report attached to the application as Appendix O, <u>and the evidence of Dr Thorsen and Dr Ryder dated 4 August 2020. A copy of the draft EMP shall be provided to The consent holder shall provide a copy to</u> the Department of Conservation <u>and; Kāti Huirapa ki Puketeraki, Te Rūnanga o Otakou; Te Rūnanga o Moeraki; Nga Runaka, Ōtago Regional Council and Waitaki District Council</u> and an invitation to provide feedback shall be extended. Where appropriate, <u>this feedback shall be incorporated into the final version of the EMP submitted to the Waitaki District Council for certification purposes. If any feedback has not been incorporated into the final version, an explanation as to why shall be provided by the Consent Holder as part of the final EMP.</u></p>
<p>20.2</p>	<p>The EMP shall:</p> <p>(a) Include sections covering <u>the following matters</u></p> <ul style="list-style-type: none"> (i) vegetation and threatened plant management, (ii) lizard management, and (iii) and aquatic management, (iv) <u>management of other indigenous biodiversity</u> <p>(b) Have the following objectives:</p> <ul style="list-style-type: none"> (i) To avoid where it is practicable to do so, significant adverse effects on<u>appropriately protect and provide for</u> threatened, at risk and locally uncommon plants and vegetation types (other than Myrtaceae species); indigenous birds, indigenous invertebrates, resident lizard populations, and aquatic fauna where practicable and; (ii) To minimise the <u>To a</u>Appropriately manage other adverse effects from the implementation of the Deepdell North Stage III Project on amenity/landscape; indigenous vegetation; <u>indigenous plants; indigenous birds, indigenous invertebrates,</u> resident lizard populations; and aquatic biota; (iii) To protect indigenous flora, threatened, at risk and locally uncommon plants and vegetation types; resident lizard populations, and aquatic fauna where practicable. <p>(c) Detail the methods by which the objectives set out in <u>this condition</u> Condition 20.2(b) shall be achieved, including:</p> <ul style="list-style-type: none"> (i) Legal protection, fencing and management of offset area(s) as described in conditions 20.4-20.147; (ii) Salvage, propagation and transplanting of the threatened <u>indigenous</u> plants identified in conditions 20.15 and 20.169. (iii) Minimisation of construction effects of Deepdell East Waste Rock Stack by keeping the area of disturbed land to a minimum; and

	<p>(iv) <u>Monitoring of any actions taken under requirements of the conditions of this consent to remedy, mitigate, offset or compensate for adverse ecological effects of the proposal.</u></p> <p>(d) — Planning for appropriate contingencies</p> <p>(de) The consent holder shall implement the programme of activities specified in the EMP and in any subsequent EMP action outlined pursuant to condition 20.2(c) and 20.2(d).</p>
	<p>Ecological Monitoring Report (EMR)</p>
20.3	<p>The consent holder shall engage a suitably experienced and qualified ecologist, to prepare an annual Deepdell North Stage III EMR:</p> <p>(a) Describing the works and other actions completed by the consent holder in the previous twelve months in order meet the purpose and objectives of the EMP; and</p> <p>(b) Evaluating the progress of:</p> <ul style="list-style-type: none"> • the planting on rehabilitated land; • transplanting of <u>indigenousthreatened</u> plant species <u>identified in condition 20.146 (ii - iiiv— xii) ,</u> • <u>Actions required by the Lizard Management Plan, and</u> • the propagation and subsequent planting of the two Locally Uncommon and Naturally Uncommon plant species listed in condition 20.108. <p>(c) Describing what methods are to be implemented in the following 12 months in order to meet the purpose and objectives of the EMP.</p> <p>The consent holder shall provide the Waitaki District Council, <u>Kāti Huirapa ki Puketeraki, Te Rūnanga o Otakou; Te Rūnanga o Moeraki; Aukaha</u> and the Department of Conservation with a copy of the report by no later than 31 July each year. The report may be combined with any EMP report required by any other consent held by the consent holder for mining operations at Macraes Flat.</p>
	<p>Ecological Enhancement Area Programme (EEAP)</p>
20.4	<p>Not less than 20 working days prior to the commencement of any works associated with the Deepdell North Stage III, the The consent holder shall <u>engage an appropriately qualified and experienced person to</u> prepare as a subset of the EMP in conditions 20.1 and 20.2 of this consent, an EEAP <u>and provide this to the Waitaki District Council for certification against the requirements of conditions 20.4 - 20.8 by an appropriately qualified and experienced person.</u> The purpose of this programme shall be to offset any residual adverse effects of the Deepdell North Stage III on terrestrial ecology and indigenous biodiversity values within the Macraes Ecological District. The overriding objective of the programme shall be to achieve a no-net-loss and preferably a net gain in indigenous biological diversity in the Macraes Ecological District. The EEAP shall achieve this by ensuring that any offset that is undertaken aligns with the following objectives:</p>

	<p>There is no loss of individuals of rare or vulnerable species as defined in reports published prior to 14 January 2019 under the New Zealand Threat Classification System (“NZTCS”);</p> <p>The offset is undertaken where it will result in the best ecological outcome, preferably:</p> <p>Close to the location of development; or</p> <p>Within the same Ecological District;</p> <p>The offset is applied so that the ecological values being achieved are the same or similar to those being lost;</p> <p>The positive ecological outcomes of the offset last at least as long as the impact of the activity, preferably in perpetuity;</p> <p>The offset will achieve biological diversity outcomes beyond results that would have occurred if the offset was not proposed; and</p> <p>The delay between the loss of biological diversity through the proposal and the gain or maturation of the offset’s biological diversity outcomes is minimised.</p>
<p>20.5</p>	<p>The purpose of the EEAP shall be to offset and mitigate any residual adverse effects of the Deepdell North Stage III on terrestrial ecology and indigenous biodiversity values within the Macraes Ecological District. The overriding objective of the programme shall be to achieve a no-net-loss and preferably a net gain in indigenous biological diversity in the Macraes Ecological District. The EEAP shall achieve this by ensuring that any the offset that is undertaken aligns with the following objectives:</p> <p>(a) There is no loss of individuals of threatened species as defined in reports published prior to 14 January 2019 under the New Zealand Threat Classification System (“NZTCS”);</p> <p>(a) <u>The offset ensures there is no loss of individuals of Threatened taxa, and no measurable loss within the ecological district to an At Risk-Declining taxon under the New Zealand Threat Classification System (“NZTCS”) other than Myrtaceae species.</u></p> <p>(b) <u>The offset is undertaken in the locations outlined in the two Ecological Enhancement Area Management Plans (EEAMP) namely;</u></p> <p> i. <u>The Redbank shrubland, seepage wetland and low producing grassland offset site, and;</u></p> <p> ii. <u>The proposed ephemeral wetland offset site</u></p> <p>(c) <u>The offsetting is undertaken substantially in accordance with the draft EEAMP for the Redbank and ephemeral wetland offsetting sites attached to the evidence of Dr Thorsen dated 4 August 2020; which were provided to the Waitaki District Council on XX xxx 2020</u></p> <p>(d) <u>The offset is applied so that the ecological values being achieved are the same or similar to those being lost;</u></p> <p>(e) <u>The positive ecological outcomes of the offset are designed and implemented to last at least as long as the duration of the consent and as far as is practical at least as long as the impact of the activity, preferably in perpetuity;</u></p>

	<p>(f) <u>The offset will achieve biological diversity outcomes beyond results that would have occurred if the offset was not proposed; and</u></p> <p>(g) <u>The delay between the loss of biological diversity through the proposal and the gain or maturation of the offset's biological diversity outcomes is minimised.</u></p>
20.65	The EEAP shall be implemented in at least two locations as illustrated in the maps annexed to this consent as Appendices V and VI. The location and extent of these areas shall be confirmed in the EEAP submitted to the Waitaki District Council in condition 20.54. The consent holder shall ensure that the selected sites contain biodiversity that is of similar or better character to that being affected by the mining activities.
	Ecological Enhancement Area Management Plan (EEAMP)
20.7	<p>As part of the Ecological Enhancement Area Programme , at least 20 working days prior to carrying out the activities authorised by this consent, the consent holder shall <u>engage an appropriately qualified and experienced person to</u> prepare a final Ecological Enhancement Area Management Pplan (EEAMP) for botheach sites specified in condition 20.6 (i) and (ii) and provide these to the Waitaki District Council for for certification certification by an appropriately qualified and experienced person against the requirements of condition 20.8 of this consent 5 which shall include:</p> <p>(a) a description of the offset, the calculation basis, locations and management activities by which enhancements will be generated. These activities shall include but not be limited to:</p> <p>(b) Planting of a total of 5 ha of new shrubland comprising at least 18 different indigenous shrub species in the offset and reaching 2 m in height and 75% canopy cover within 10 to 20 years, respectively and keeping these 5ha free of exotic shrub species for 10 years</p> <p>(c) Using weed control to achieve a 20% improvement in indigenous species dominance within a minimum of 0.82 ha seepage wetland at the offset sites within 10 years</p> <p>(d) In addition to (ii), planting at least 50 individuals of Juncus distegus within seepage wetlands within the offset sites.</p> <p>(e) Including existing area(s) of low producing grassland of at least 24.55 ha within the offset sites and establishing safeguards against invasion of woody weed species and land disturbance within this habitat.</p> <p>(f) Using weed control to produce a 25% improvement in indigenous vegetation cover at ephemeral wetlands at 5-7 locations within the offset sites and totalling at least 2 ha and an improvement in indigenous plant diversity at each of the 5-7 locations to at least 11 indigenous plant species characteristic of Macraes ephemeral wetlands within 10 years.</p> <p>(g) Confirmation of the ability to undertake enhancement works within management sites by way of landowner agreements (e.g. covenants) or acquisitions;</p> <p>(h) The technical detail of the offset works;</p>

	<ul style="list-style-type: none"> (i) The financial costs of site management into bond calculations or other similar instruments as required by Council that secure financial delivery of biodiversity enhancements; (j) A monitoring programme to assess the degree to which enhancement targets are being achieved and the ability to adjust biodiversity management to ensure that gains are achieved and maintained for the long term; (k) The roles and responsibilities of those carrying out the work, and the governance and management structures relating to the operation of the enhancement site(s); and (l) Reporting the results of monitoring results and a process for undertaking actions if enhancement targets are not being achieved as anticipated.
<p>20.8</p>	<p>The final EEAMP required by condition 20.7 of this consent shall include (as applicable to the relevant site):</p> <ul style="list-style-type: none"> (a) A description of the offset, the calculation basis, locations and management activities by which enhancements will be generated. These activities shall include but not be limited to: <ul style="list-style-type: none"> (i) <u>Planting of a total of 5 ha of new shrubland comprising at least 18 different indigenous shrub species in the offset and reaching 2 m in height and 75% canopy cover within 10 to 20 years, respectively and keeping these 5ha free of exotic shrub species for 10 years</u> (ii) <u>Using weed control to achieve a 20% improvement in indigenous species dominance within a minimum of 0.82 ha seepage wetland at the offset sites within 10 years</u> (iii) <u>In addition to (ii), planting at least 50 individuals of Juncus distegus within seepage wetlands within the offset sites.</u> (iv) <u>Including existing area(s) of low producing grassland of at least 24.55 ha within the offset sites and establishing safeguards against invasion of woody weed species and land disturbance within this habitat.</u> (v) <u>Using weed control to produce a 25% improvement in indigenous vegetation cover at the ephemeral wetland within the offset site and totalling at least 2 ha and an improvement in indigenous plant diversity to at least 11 indigenous plant species characteristic of Macraes ephemeral wetlands within 10 years.</u> (vi) <u>Confirmation of the ability for the consent holder to undertake enhancement works within the sites by way of any required legal agreements;</u> (vii) <u>Details of grazing management measures to achieve enhanced indigenous ecological values;</u> (viii) <u>The technical detail of the offset works;</u> (ix) <u>The financial costs of site management into bond calculations or other similar instruments as required by Council that secure financial delivery of biodiversity enhancements;</u>

	<p>(x) <u>A monitoring programme to assess the degree to which enhancement targets are being achieved and the ability to adjust biodiversity management to ensure that gains are achieved and maintained for the long term;</u></p> <p>(xi) <u>The roles and responsibilities of those carrying out the work, and the governance and management structures relating to the operation of the enhancement site(s); and</u></p> <p>(xii) <u>Reporting the results of monitoring results and a process for undertaking actions if enhancement targets are not being achieved as anticipated.</u></p>
20.97	<u>The consent holder shall be required to implement the components of the programs and plan(s) set out in conditions 20.1 – 20.86.</u>
	Offsetting sites and protection mechanisms
20.910	The consent holder shall set aside approximately 138ha of land known as the Redbank Station <u>Offset Site Covenant</u> as shown on the Map annexed as Appendix V-III to this consent for the purposes of providing ecological offsetting in accordance with conditions 20.41 - 20.89 and 20.123 – 20.134 of this consent
20.101	The consent holder shall set aside approximately 7.4 ha of land known as the Ephemeral Wetland <u>Offset Site Covenant in addition to the adjacent reference areas</u> as shown on the Map annexed as Appendix V-IV to this consent for the purpose of providing ecological offsetting in accordance with 20.41 - 20.89 and 20.123 – 20.134 of this consent.
20.112	<u>As part of the EEAMP required by conditions 20.7 and 20.8 Prior to exercising this consent to undertake mining activities</u> , the consent holder shall confirm <u>with the Waitaki District Council</u> that it has secured legal access to the Ephemeral Wetland <u>offsite site Covenant land referred to in condition 20.10 in order to implement the actions required by condition 20.11 of this consent.</u>
20.123	Within 24 months of exercising this consent to undertake mining activities, the consent holder shall provide to the Waitaki District Council evidence to confirm that an appropriate legal instrument has been registered on the titles of the land known as the Redbank Station <u>Offset Site Covenant area</u> and the Ephemeral Wetland <u>Offset Site Covenant area</u> to ensure that it is able to meet the obligations required by conditions 20.910 and 20.101 of this consent for as long as those obligations endure. For the avoidance of doubt, the purposes of this legal instrument shall be to assist the protection and enhancement of terrestrial ecology values within the respective areas in perpetuity. <u>Costs associated with creating and registering the legal instrument shall be borne by the consent holder.</u>
20.134	The consent holder shall manage the land known as the Redbank Station <u>Covenant area Offsite site</u> and the Ephemeral Wetland <u>Offsite site Covenant area</u> for the purposes identified in conditions 20.910 and 20.101 in order to achieve the purpose of the EEAMP and the objectives identified in condition 20.5 of this consent.
	Plant translocation Rescue
20.1458	The consent holder shall, using a suitably qualified person or persons, fund <u>and carry out</u> measures for the translocation <u>and/or cultivation</u> of seeds, cuttings or other cultivation material from the following

plant species located within the impacted footprint of the Deepdell North Stage III project (“salvage species”); taken from plants located within the impacted footprint of the Deepdell North Stage III project (“salvage species”) for planting out in the Highlay Creek shrubland covenant:

- (i) The Locally Uncommon shrub *Melicope simplex* from the eleven trees in the WRS to twenty individuals at one site in the nearby OceanaGold Highlay Creek Shrubland Covenant to create a new population there.
- (ii) The Naturally Uncommon shrub *Myrsine divaricata* from the two individuals in the WRS to 10 individuals at one site in the nearby OceanaGold Highlay Creek Shrubland Covenant to create a new population adjacent to an existing population.
- (iii) The Naturally Uncommon wetland rush *Juncus distegus* from approximately 370 m² to 50 plants in the Redbank EEA.
- (iv) The Declining wetland sedge *Carex tenuiculmis* from the 10 plants in the buffer area to 20 individuals planted in the Cranky Jims Wetland Covenant to enhance the population there.
- (v) The Declining coral broom *Cramichaelia crassicaulis* from the 2 plants in the WRS area to 10 individuals in the adjacent Highlay Creek Shrubland Covenant to create a new population there.
- (vi) The Declining desert broom *Carmichaelia petriei* from the 7 plants in the WRS area to 15 plants in the adjacent Highlay Creek Shrubland Covenant to bolster the population there.
- (vii) The Declining small wetland rush *Juncus pusillus* from the 1m² patch in the WRS to 10 plants in the Ephemeral Wetland EEA to create a new population there.
- (viii) The Declining button daisy *Leptinella perpusilla* from the 1m² in the WRS to 10 plants in the adjacent Highlay Creek Shrubland Covenant to create a new population there.
- (ix) The Declining small wetland herb *Lobelia ionantha* *Juncus pusillus* from the 0.5m² in the WRS to 10 plants in the Ephemeral Wetland EEA to create a new population there.
- (x) The Declining grass *Rytidosperma buchananii* from the 1 plant in the WRS to 5 plants in the adjacent Highlay Creek Shrubland Covenant to create a new population there, if the sole known individual can again be located.
- (xi) The Naturally Uncommon hookgrass *Carex subtilis* from the 1 plant in the WRS to 5 plants in the adjacent Highlay Creek Shrubland Covenant to supplement the population there, if the sole known individual can again be located.
- (xii) The Data Deficient liane *Parsonsia capsularis* var. *tenuis* from 1 plant in the buffer area to 10 plants in the adjacent Highlay Creek Shrubland Covenant to create a new population there.
- (xiii) The Locally Uncommon small sedge *Carex resectans* from the 1.6m² area in the WRS area to 10 plants in the Ephemeral Wetland EEA to create a new population there.

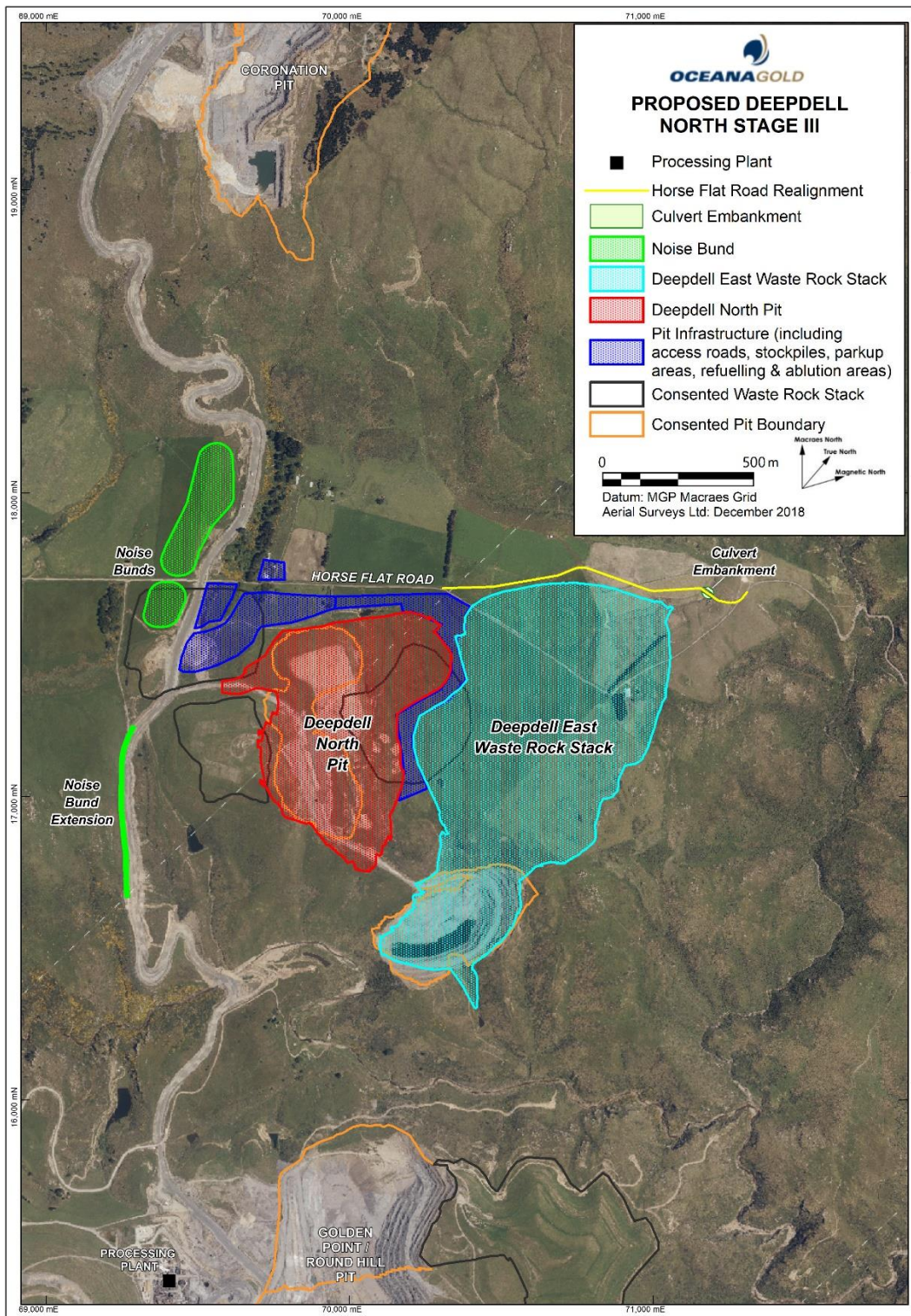
The propagation material taken from the plants listed in (i)– (xiii) of this condition will be established as self-sustaining and viable plants in suitable habitat within the existing covenanted areas at the Macraes Gold Project site (for example the Covenant area attached in Appendix II of this consent), or

	within one of the proposed covenanoffsett areas described in conditions 20.10 and 20.11 of this consent.
20.1569	The consent holder shall monitor the success of all plantings carried out under the requirements of (i) - (iii) of condition 20.145 annually for three years following planting and shall detail the plantings carried out and the “success” of the plantings in its annual Deepdell North Stage III Ecological Monitoring Report (EMR). In this context, success means the successful survival and growth of the plant species so that they may form potentially viable populations and shall be monitored by recording the survival and growth of individual plants and noting any flowering and recruitment of new individuals. Success shall be demonstrated by at least 75% of established plants surviving; and at least 50% of transplants increasing in size compared with their establishment.
21	Lizard Management Plan
21.1	Not less than 20 working days prior to the commencement of any construction or mining activities associated with Deepdell North Stage III, the consent holder shall engage an appropriately qualified and experienced person to prepare a final Lizard Management Plan (LMP) and provide this to the Waitaki District Council for certification against the requirements of conditions 21.23 - 21.34. by an appropriately qualified and experienced person. The purpose of the Lizard Management Plan is to as far as is practicable, plan and implement sliding scale actions to avoid, remedy and/or mitigate the actual and potential effects of the Deepdell North III project of the lizard values present within the project impact area. Compensation, the last component of the effects management package, will be employed to address residual adverse effects.
21.2	The purpose of the LMP is to as far as is practicable, plan and implement actions to avoid, remedy and/or mitigate the actual and potential effects of the Deepdell North III project of the lizard values present within the project footprint. Compensation will be employed to address residual adverse effects. The Lizard Management Plan shall demonstrate consistency with the requirements of any permit or approvals issued under any other legislation for the Deepdell North Stage III Project site (Wildlife Act Authorisation or permit).
21.32	The final LMP required by condition 21.1 of this consent shall include: (a) A description of the measures to be taken by the consent holder to adequately avoid, remedy, mitigate or compensate for effects on lizard species present within the Project Impact AreaDeepdell North Stage III Project site . (b) A description of the monitoring and reporting requirements The actions described in the LMP to satisfy the requirements of (a) and (b) will be in general accordance with those outlined in the draft Lizard Management Plan provided to Waitaki District Council on 4 August 2020, and any other permit or approval obtained under the Wildlife Act or other relevant legislation. ;
21.43	The consent holder shall be required to implement the components of the LMP asplan set out in conditions 21.1 – 20.32;
221	Fencing and marking

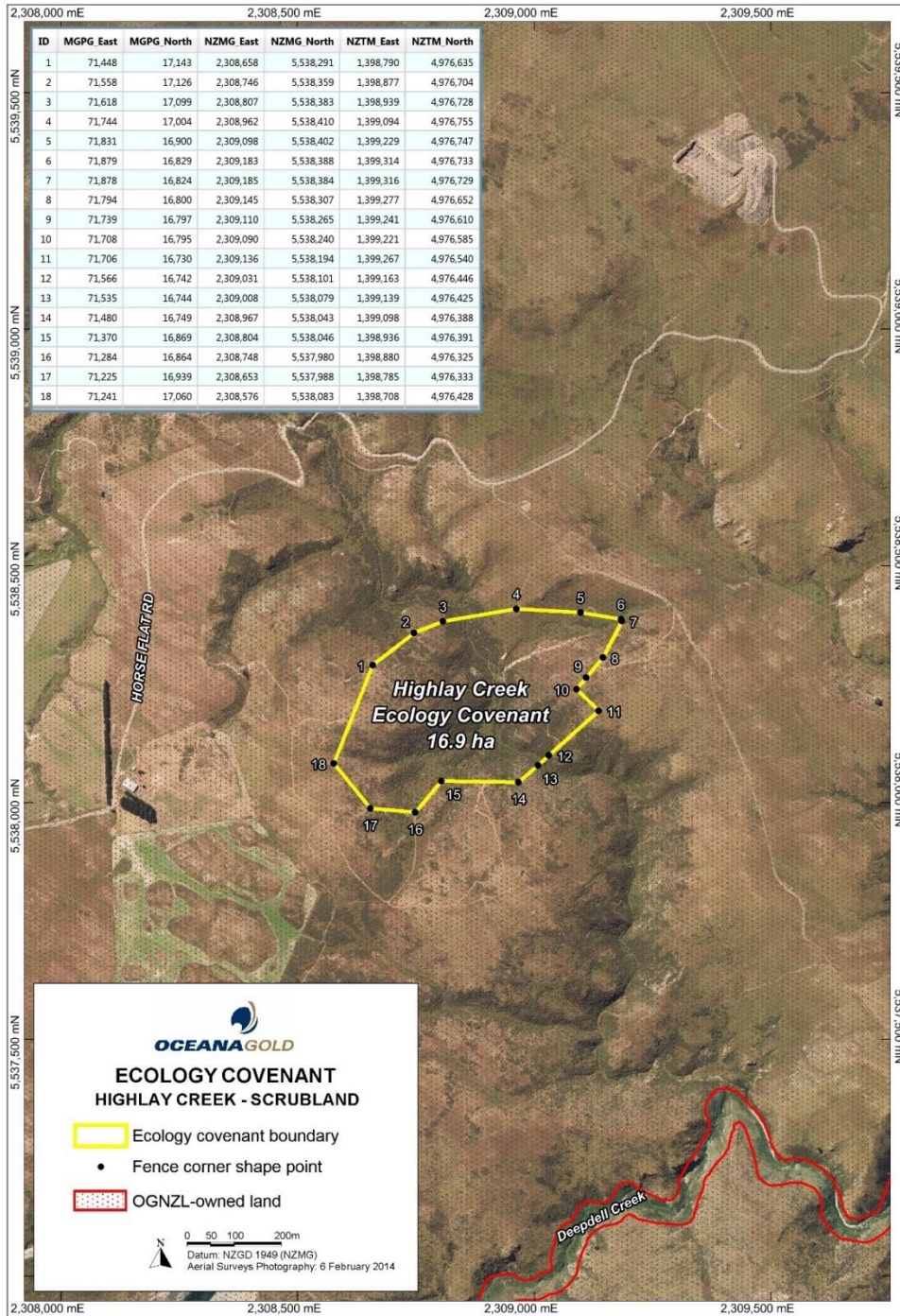
224.1	Stock-proof fencing shall be used to keep livestock away from all working areas.
224.2	The consent holder shall Identify sensitive values on mine plans and limit disturbance to within the planned footprint by placing survey markers in the field prior to disturbance commencing.
224.3	On the completion of mining operations, the consent holder shall ensure that all fences, required to restrict people and/or stock for safety purposes, are installed and maintained. This shall include fences to be installed and maintained around the pit lake.
232	Management of hazardous substances
232.1	The Consent Holder shall ensure that all fuels and oils used at the site are contained in appropriately bunded facilities and that all fuel/oil dispensers are fitted with non-return valves.
232.2	Refuelling, lubrication and any mechanical repairs shall be undertaken in a manner that provides sufficient mitigation measures to ensure that no spillages onto the land surface or into water occur.
243	Accidental discovery protocols
243.1	<p>If the consent holder discovers koiwi takata (human skeletal remains), or Maori artefact material, the consent holder shall without delay:</p> <ul style="list-style-type: none"> (a) Notify the Consent Authority, Takata whenua and New Zealand Historic Places Trust and in the case of skeletal remains, the New Zealand Police. (b) Stop work within the immediate vicinity of the discovery to allow a site inspection by the New Zealand Historic Places Trust and the appropriate runaka and their advisors, who shall determine whether the discovery is likely to be extensive; if a thorough site investigation is required and whether an Archaeological Authority is required. (c) Any koiwi takata discovered shall be handled and removed by tribal elders responsible for the tikanga (custom) appropriate to removal or preservation. <p>Advice note: An archaeological authority from the Heritage New Zealand Pouhere Taonga may be required before work can proceed.</p> <ul style="list-style-type: none"> (d) Site work shall recommence following consultation with the Consent Authority, Heritage New Zealand Pouhere Taonga, Takata whenua, and in the case of skeletal remains, the NZ Police, provided that any relevant statutory permissions have been obtained.
254.	Closure of Operations
25.180	<u>Upon mine closure the Consent Holder shall remove and rehabilitate the haul roads and the areas used for mining infrastructure and parking, unless they are required within a reasonable timeframe for other ongoing or future mining projects.</u>
254.12	The consent holder shall annually supply to the Waitaki District Council a contingency plan for the early closure of the mine, as part of the Project Overview Annual Work and Rehabilitation Program. This contingency plan shall be updated annually. The plan shall address the objectives listed in condition 4.1 and include:

- | | |
|--|--|
| | <ul style="list-style-type: none">(a) An evaluation of the residual risk of the operation with regard to the surrounding environment(b) A plan for the long term management of the site, in particular the pit, waste rock stack and the pit lake and include details of ongoing maintenance and monitoring requirements and restrictions on future use.(c) Describe in adequate detail what deeds to be carried out to:<ul style="list-style-type: none">(i) Decommission the mine in accordance with this consent(ii) Rehabilitate the mine site in accordance with this consent to achieve the rehabilitation objectives(iii) Comply with other conditions with regard to cessation of mining; and(iv) The costs of complying with (i) – (iii) |
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Appendix I – Map 1 - Deepdell North Stage III proposal areas

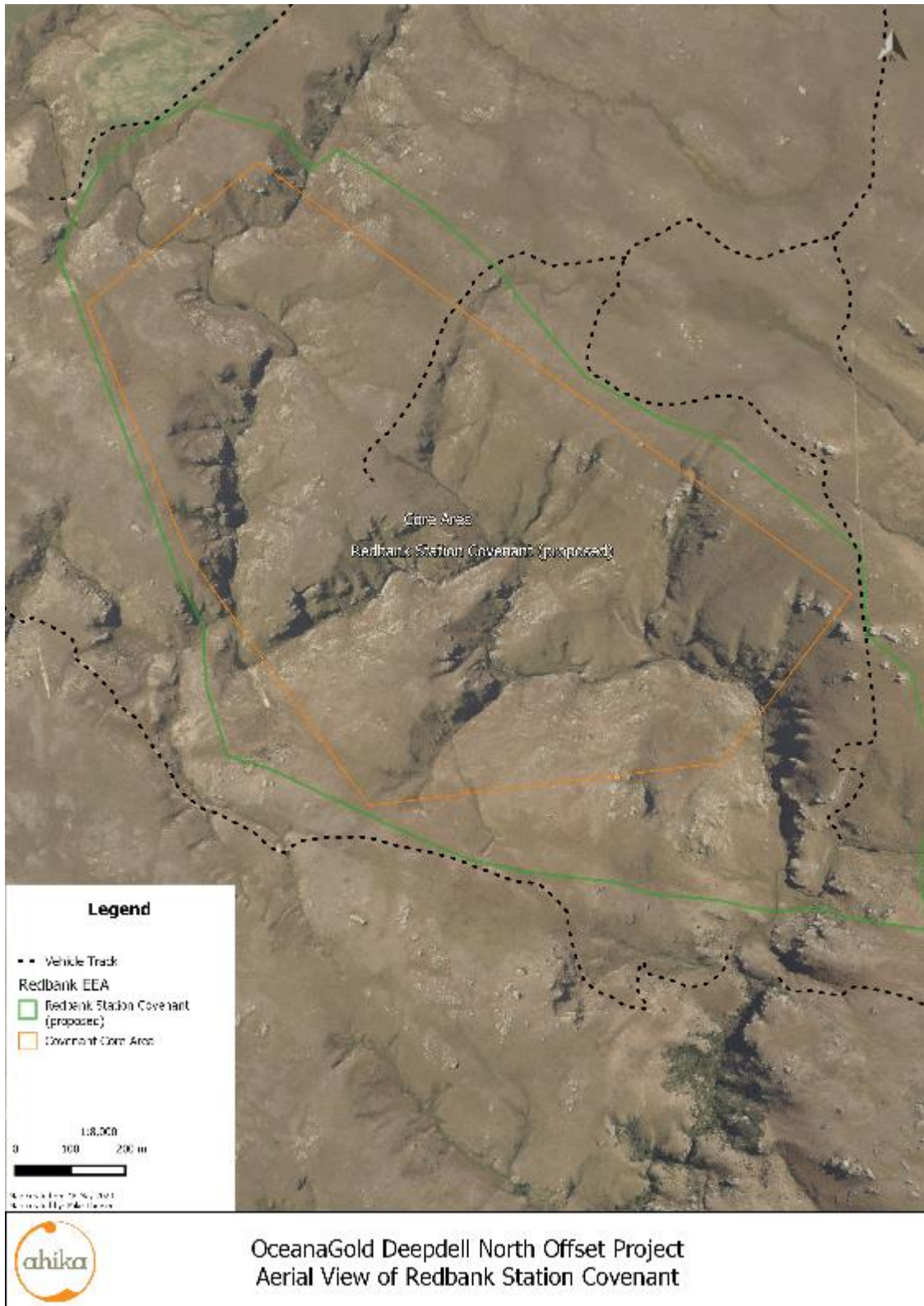


Appendix II – Ecology Covenant - Highlay Creek Scrubland

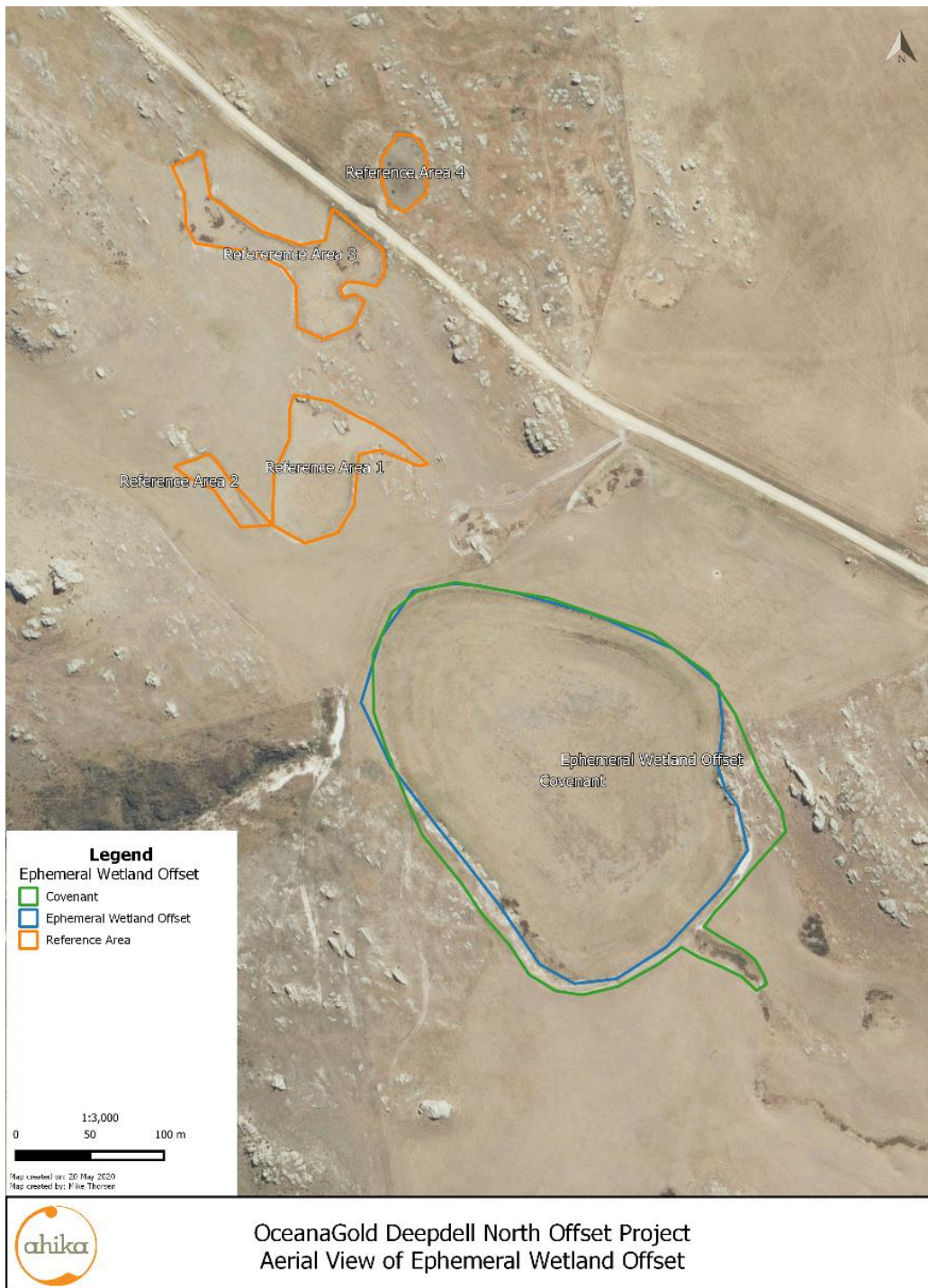


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Appendix III - Redbank Station Offsite Area



Appendix IV – Ephemeral Wetland Offsite Area



Appendix C

Recommended amendments to consent conditions are shown as tracking (additional text is underlined and ~~strikethrough~~ for text to be deleted) for the Otago Regional Council consent.