BEFORE THE EXPERT PANEL **FTAA-2507-1089**

I MUA I TE ROOPU TOHUNGA

IN THE MATTER of the Fast-track Approvals Act 2024 (the Act)

AND

IN THE MATTER of an application made under the Fast-Track Approvals Act 2024 by Matakanui Gold Limited (Santana Minerals)

STATEMENT OF EVIDENCE OF MATTHEW JOHN DALE (ECOLOGY) ON BEHALF OF KĀTI HUIRAPA RŪNAKA KI PUKETERAKI, TE RŪNANGA O MOERAKI, TE RŪNAKA O ŌTĀKOU, AND HOKONUI RŪNANGA (KĀ RŪNAKA)

10 APRIL 2026

[redacted] HOLM | MAJUREY

Mike Holm/Nicole Buxeda
PO Box 1585
Shortland Street
AUCKLAND 1140

Solicitor on the record Mike Holm
Contact solicitor Nicole Buxeda [redacted]

EXECUTIVE SUMMARY

1. This evidence evaluates the ecological effects of the proposed Bendigo-Ophir Gold Project (BOGP) by Matakanui Gold Limited, with a focus on freshwater, terrestrial, and biodiversity values.

2. It concludes that significant deficiencies in baseline data, assessment processes, and proposed mitigation measures result in a high level of uncertainty and risk, and that the Application in its current form does not adequately address ecological impacts.

3. The aquatic environment within the project area comprises small, semi-arid catchments with intermittent and spring-fed streams that play an important ecological role despite their modified state. The proposal would result in the loss of approximately 10 km of perennial stream habitat. While diversion channels and proposed conditions may mitigate some functional impacts, they cannot replace the loss of natural stream systems. Additional long-term monitoring, nutrient controls, and ecological performance triggers are required, along with more substantial offsetting. The establishment of non-migratory galaxias sanctuaries is identified as a key opportunity to offset these impacts.

4. Terrestrial ecosystems are highly modified but still support significant indigenous biodiversity, including numerous threatened and at-risk plant species. However, substantial gaps and errors in vegetation and flora surveys undermine confidence in the assessment of effects and the design of mitigation measures.

5. Lizard populations represent a critical ecological issue. Three native species are present, including the At Risk–Declining Kawarau gecko and Southern grass skink. Significant deficiencies in baseline surveys - such as species misidentification, incomplete spatial coverage, and lack of targeted surveys - create major uncertainty. The proposal would result in a nationally significant loss of Kawarau gecko habitat (approximately 7% of total habitat), and current mitigation measures are inadequate. The Lizard Management Plan is currently not fit for purpose, and proposed salvage and translocation efforts are likely to be logistically challenging, time-constrained, and insufficient to address impacts. Expert evidence

indicates that up to 80% of adverse effects on lizards may remain unmanaged.

6. Pest management, particularly mouse control, is identified as a critical risk to the success of lizard mitigation. Without effective eradication prior to translocation, predation pressure will likely compromise outcomes.

7. Across all ecological domains, the assessment process has been constrained by the exclusion of Kā Rūnaka technical advisors from key technical discussions and workshops. This has limited access to up-to-date information and reduced confidence in the completeness and robustness of the application.

8. While recommended conditions from the Otago Regional Council, Central Otago District Council, and expert reviewers would improve the proposal, they do not fully address the scale of residual effects. Significant additional offsets, improved baseline information, and strengthened management frameworks are required.

9. The proposal lacks mechanisms to ensure long-term, intergenerational management and funding necessary to sustain ecological outcomes beyond the life of the mine.

10. In conclusion, the application does not currently meet the standard required to adequately avoid, remedy, mitigate, or offset ecological effects, and should not be approved without substantial revision and strengthening of its ecological management and mitigation framework.

INTRODUCTION

Qualifications and experience

1. My full name is Matthew John Dale.

2. I am the owner and director of Waterscape Connections Limited, an independent environmental consultancy based in Ōtepōti/Dunedin.

3. In addition to project-based roles supporting mana whenua and community groups throughout Te Waipounamu, I am also contracted to the position of Kaiwhakahaere Whakakaupapa Taiao (Environmental Project Manager) for Kāti Huirapa Rūnaka ki Puketeraki.

4. I hold the following qualifications: a Bachelor of Biological Science (Ecology) from La Trobe University and a Post Graduate Diploma (Ecology) from the University of Otago. I am also a member of the New Zealand Freshwater Sciences Society.

5. I have previously been employed by the National Institute for Water and Atmospheric Research (2004-2006), the Otago Regional Council (2006-2016), and Te Runanga o Ngāi Tahu (2016-2023).

6. I have over 20 years' experience as an ecologist, with a focus on freshwater fish monitoring and management, hydroecology, mahika kai, terrestrial ecology and pest management.

7. I am familiar with the project area, having undertaken extensive fish monitoring and hydrological studies in the catchment, including within the Shepherds Creek and Bendigo Creek catchments.

8. I am experienced with biodiversity management in the context of gold mining operations, having undertaken various technical reviews of various phases of expansion of the Oceana Gold Macraes goldmine, as well as supporting several lizard salvage operations as part of these processes.

Involvement in project

9. I have been involved with the current iteration of the Matakanui Gold Ltd (MGL) project for approximately 12 months since the initial engagement with Aukaha in early 2025.

10. In addition to my own technical expertise, I have also been tasked with managing and supporting a wider team of ecological experts, including Marcia Dale (terrestrial ecology), Jade Watkin (terrestrial ecology, pekapeka/bats, and matauraka), and James Crofts-Bennet (terrestrial invertebrates).

11. The Rūnaka technical experts have had one opportunity to engage with MGL post submission of the substantive application limiting the value of the potential engagement. Rūnaka technical experts were also not informed or given the opportunity to participate in workshops undertaken with Te Papa Atawhai (Department of Conservation) or the Otago Regional Council (**ORC**). Therefore, the evidence provided relies primarily on MGL's submitted technical reports, and further evidence/reviews undertaken by Te Papa Atawhai and ORC.

12. Due to the lack of opportunity to be involved in these processes, this evidence may be missing some context, details, or updated information that Kā Rūnaka experts were not privy to.

Purpose and scope of evidence

13. The purpose of this evidence is to provide a summary of the existing environment at the proposed MGL mine site, summarise the likely impacts of the prosed activity on ecological values, identify any technical or structural deficiencies in the Application, and recommend any further consent conditions/activities to mitigation or offset the impact of the proposed activities.

14. In addition to evidence provided based on my own expertise, which focuses on freshwater ecology and broad-scale ecosystem management, I will also be drawing on and summarising evidence provided by the ecology advisory group that has supported Kā Rūnaka through their engagement with MGL, as well as evidence provided by other submitters. All evidence not based on my own expertise will be referenced accordingly.

15. All application documentation examined in the preparation of this evidence is listed below.

    (a) B.02 Kōmanawa Solutions Limited Bendigo Groundwater Bore Take Effects Assessment (Kōmanawa 2025a)

(b) B.03 Kōmanawa Solutions Limited - Groundwater Existing Environment and Effects Assessment (Kōmanawa 2025b) (PDF, 5 MB)

(c) B.04 Kōmanawa Solutions Limited, Bendigo - Ophir Gold Mine Project – Surface Water & Catchment Existing Environment & Effects Assessment (Kōmanawa 2025c)

(d) B.08A Alliance Ecology Consulting Assessment of Ecological Effects

(e) B.09 Habitat NZ Mammalian Pest Survey (Habitat NZ 2025a)

(f) B.10 Habitat NZ Native Bat Survey (Habitat NZ 2025b)

(g) B.11A Habitat NZ Terrestrial Invertebrate Survey

(h) B.13A RMA Ecology Vegetation Values Assessment

(i) B.14A RMA Ecology Avifauna Values Assessment

(j) B.15A RMA Ecology Lizard Values Assessment

(k) B.17 Water Ways Consulting Assessment of Effects on Aquatic Habitat (Waterways 2025)

(l) B.18 Boffa Miskell Assessment of Freshwater Ecological Effects (Boffa Miskell 2025a)

(m) G.01 Water Management Plan

(n) G.02 Ecological Management Plan Framework

(o) G.03 Habitat Impact Management Plan

(p) G.04 Avifauna Management Plan

(q) G.05A Lizard Management Plan

(r) G.06 Terrestrial Invertebrate Management Plan

(s) G.07A Landscape and Ecological Rehabilitation Management

(t) G.09 Matakanui Sanctuary Management Plan

(u) G.10 Mammalian Pest Management Plan

(v) G.12 Biodiversity Outcome Monitoring Plan

(w) G.13 Freshwater Ecological Management Plan

Expert Witness Code of Conduct

16. Although these proceedings are not before the Environment Court, I confirm that I have read the Expert Witness Code of Conduct set out in the Environment Court's Practice Note 2023. I have complied with the Code of Conduct in preparing this evidence and agree to comply with it while giving oral evidence before the Hearings Panel. This evidence is within my area of expertise, except where I state that I am relying upon the specified evidence of another person. I have not omitted to consider material facts known to me that might alter or detract from the opinions that I express.

EXISTING ENVIRONMENT – AQUATIC ECOLOGY AND HYDROLOGY

17. The Direct Disturbance Footprint (**DDF**) proposed by the Applicant is located within three primary creeks and tributaries, including Shepherds Creek, Bendigo Creek and Rise & Shine Creek (an upper tributary of Bendigo Creek). The location of these creeks in relation to the proposed mining area is shown in **Appendix 1**.

18. These catchments are characterised by a network of small 1st to 3rd order streams originating in the Dunstan Mountains and draining northwest across alluvial terraces. Shepherds Creek is a tributary of the Lindis River, while Bendigo Creek flows into the Mata Au/Clutha River.

19. Both catchments are strongly influenced by a semi-arid to arid climate, with low annual rainfall (approximately 400–550 mm) and high evapotranspiration (Dale, 2008). As a result, flows are highly variable, with many reaches being intermittent, losing flow to groundwater in their lower reaches, and only connecting to downstream systems during high-flow events.

20. More stable flows can be found in the perennial 1st and 2nd order streams of both catchments, where small springs provide a steady base flow throughout the year. Further down the catchment, surface flows are lost through alluvial gravels in the Ardgour Alluvial Aquifer (Shepherds Creek) and the Bendigo Alluvial Aquifer (Bendigo Creek).

21. Water from these aquifers does not reach the surface again until they reach the Lindis (Ardgour Alluvial Aquifer) and Mata Au/Clutha Rivers (Bendigo Alluvial Aquifer).

22. Ecologically, the streams within the proposed mine footprint support modest but variable freshwater communities. Macroinvertebrate assemblages indicate a range of ecological condition, from "Good" to "Poor," corresponding to NPS-FM attribute bands B to D.

23. Baseline surveys undertaken by the Applicant did not detect any fish within the project area, although eDNA sampling indicated the presence of kōaro (*Galaxias brevipinnis*) and brown trout (*Salmo trutta*) in lower Bendigo Creek, which is outside of the mine footprint.

24. Overall, while the aquatic environment exhibits signs of ecological modification due to historic land use practices, these streams remain important ecological features within a dry landscape. They provide habitat for aquatic and terrestrial species and contribute to broader catchment processes. Despite the absence of threatened freshwater species, the systems should be considered integral to maintaining local biodiversity and ecological function, particularly given their role in supporting biodiversity in an otherwise water-limited environment.

EXISTING ENVIRONMENT – TERRESTRIAL ECOLOGY

Vegetation and flora

25. The terrestrial environment within the Bendigo–Ophir Gold Project (**BOGP**) Ecological Study Area (**ESA**) reflects a highly modified Central Otago dryland landscape that has undergone extensive historical and ongoing disturbance.

26. Land use activities including vegetation clearance, historic gold mining, repeated burning, grazing, oversowing with exotic pasture species, fertiliser application, and the spread of invasive plants and animals have resulted in the near-complete removal of original native woody vegetation. As a consequence, the present-day environment is dominated by exotic grassland systems, with indigenous vegetation persisting in fragmented and often modified forms across the landscape.

27. Vegetation communities within the ESA are typical of the remaining montane vegetation within the wider Dunstan Ecological District, supporting at least 48 Nationally or Regionally Threatened, At Risk or Data Deficient plant species (M Crow, 2026).

28. Approximately 264 ha of the 610 ha Direct Disturbance Footprint (DDF) lies within the Bendigo Conservation Covenant. Revocation of ~864 ha of the Covenant has been proposed, representing approximately 14% of the total Bendigo Conservation Covenant area. Importantly, the proposed revocation area supports high concentrations of Nationally At Risk and Threatened species.

29. Several gaps within the baseline surveys undertaken by MGL make it difficult to assess the existing environment with regards to vegetation and flora. In particular, evidence provided by Te Papa Atawhai notes the following (M Crow, 2026).

    (a) Incorrect vegetation type classification (s34).

    (b) Large gaps in the spring annual survey data (s29).

    (c) Aggregation of biodiversity data (s40).

30. It should be noted that a lack of site visit opportunities and exclusion from technical workshops prevent the Kā Rūnaka ecological advisors from adding significantly to the body of evidence provided by MGL, Te Papa Atawhai and the ORC with regards to vegetation and flora. However, it is our opinion that the concerns raised by M Crow (2026) and Teele (2026) with regards to baseline surveys are valid and cast significant doubt on the ability to adequately assess environmental effects and appropriately apply mitigation frameworks.

Avifauna

31. The avifauna values of the Bendigo-Ophir Gold Project area are characterised by a moderately diverse bird community, with a mix of native and exotic species and a small number of species of conservation concern. Desktop assessment identified a total of 48 bird species within the wider Ecological Study Area, including 30 native species (Lurling, 2025).

32. Six Threatened, At Risk or locally uncommon indigenous species are present within the DDF (falcon, pipit, silvereye, black shag, tomtit and South Island Pied Oystercatcher) and an additional four (little shag, blackbilled gull, and black-fronted tern) are potentially present on occasion within the DDF (Lurling, 2025).

33. The presence of falcon nesting sites and observed nesting behaviour within the DDF places a high importance on appropriate management frameworks to minimise impacts on this toaka species.

Lizards

34. The existing lizard environment within the Bendigo-Ophir Gold Project area is characteristic of a dryland Central Otago landscape. Across the Ecological Study Area (ESA; ~5,386 ha) and the Direct Disturbance Footprint (DDF; ~610 ha), three native lizard species are confirmed as present: McCann's skink, Kawarau gecko, and Southern grass skink (Ussher, 2025).

35. McCann's skink are widely distributed throughout the ESA and DDF, while Kawarau gecko are largely restricted to schist rock formations and southern grass skink to valley floors with higher soil moisture and vegetation cover.

36. Evidence provided by Tocker (2026) Teele (2026) identifies fundamental and compounding deficiencies in the baseline lizard survey and data. These deficiencies include.

    (a) Systematic misidentification between southern grass skink and McCann's skink in the initial survey, with the remedy offered by the Applicant not being made available in time to inform submissions. This misidentification has multiple downstream implications, including

        i. Unreliable population estimates for grass skinks.

        ii. Compromised mitigation and salvage design due to misestimation of population size and location.

    (b) Incomplete spatial coverage of lizard and lizard habitat surveys leading to several gaps including wetlands, predator-controlled release areas, concession areas, etc.

(c) No map of lizard detections to understand lizard distribution, survey coverage, and habitat associations.

(d) Survey effort is not comprehensive across the project footprint or associated activity areas, resulting in information gaps.

(e) No targeted surveys for rarer species such as jewelled gecko or Lake's skink.

This represents a critical issue, as all subsequent effects assessment, mitigation design, and offsetting rely on a robust and defensible understanding of baseline conditions. In my opinion, there is sufficient uncertainty caused by these deficiencies to create a high level of risk for any proposed management framework proposed by the Applicant.

ASSESSMENT OF EFFECTS ON THE ENVIRONMENT

37. Assessment of ecological effects has been difficult due to the dispersed nature of the information provided by the Applicant across multiple reports with often inconsistent information. This has been exacerbated by the fact that further technical discussions have been held between the Applicant and statutory authorities where Kā Runaka technical advisors were not informed of nor given the opportunity to participate.

38. From submissions and further information provided by Te Papa Atawhai and Otago Regional Council, it is clear that some discussions have progressed significantly past what is available in the technical reports, but Kā Rūnaka experts have had no access to this information.

39. With that in mind, the following assessment of effects is based on what is available in the MGL technical reports, Te Papa Atawhai submissions and ORC documentation, but aspects of more recent technical work may be missing, further impacting mana whenua's ability to engage in this process.

Effects on aquatic habitat and stream health

40. The most significant impact on aquatic habitat is the destruction of approximately 10km of perennial stream within the DDF. Although

much of the stream flow will be diverted into artificial diversion channels, much of the aquatic biota in the "reclaimed" streams will be lost.

41. The design of the diversion channels was discussed in a workshop that took place on 25-26 of February 2026 (Greer, 2026), however Rūnaka technical advisors were not included in the invitation so are unable to comment on the effects of the more recent design proposals arising from those workshops.

42. As suggested by Greer (2026, s3.3), there is merit in using the Stream Ecological Valuation (SEV) to ensure that the diversion channels provide a higher level of functional health than the streams they are replacing.

43. The use of this approach and the suggested additional conditions for condition 22 (Schedule Two – General Conditions for Otago Regional Council Resource Consents) is likely to mitigate some of the effect of the proposed diversion on stream habitat over the active life of the mine, and the net improvement in habitat will contribute towards offsetting the mortality of instream biota caused by the diversion.

44. A similar approach should also be taken to the reinstatement of the original stream once the mine has been closed.

45. Greer (2026) also notes the risks associated with the use of single nutrient limits for controlling periphyton growth (s3.1.1) and recommends that the Applicant includes nitrate and ammonia limits alongside the existing phosphorus limits to reduce the risk of nuisance periphyton growth. It has also been recommended that long-term periphyton monitoring is undertaken to assess the effectiveness of the proposed nutrient limits.

46. It is my opinion that the Applicant should be required to design and implement a freshwater ecological monitoring network to monitor the impacts of their activities and with clear trigger values to allow them to respond if there are any significant changes.

47. Should the Applicant agree to conditions proposed by Greer (2026) with regards to nitrate and ammonia limits, stream habitat assessment, and the inclusion of long-term ecological monitoring, it

is my opinion that this will reduce the risk of nuisance periphyton growth affecting the ecological health of the receiving waters and allow the Applicant to accurately assess the impacts of management actions .

48. It has also been noted by Greer (2026) that the combination of higher more stable flows and decreases in water quality through the current limits proposed by the Applicant will lead to a shift in community composition compared to what currently exists in the Shepherds Creek catchment. While there is significant uncertainty as to the magnitude of this effect, it speaks to a significant risk that cannot be addressed through management actions during the active phase of the mine.

49. It is my opinion that further mitigation/offsets will be required beyond the life of the mine to address this issue, and that appropriate funding and management frameworks will be required to address this long-term impact.

Lizards

50. There is currently insufficient information provided by the Applicant to comprehensively assess the significance of effects on lizards due to both the gaps in the baseline surveys (as discussed in s36 and s37, above), and gaps in the Applicant's own assessment of effects. These gaps are discussed in detail in Te Papa Atawhai's submission (Tocher, 2026, s37-51).

51. Kawarau geckos (At Risk-Declining) represent the highest risk with regards to significance of effect. With over 600ha of habitat permanently removed from within the DDF, this represents a loss of approximately 7% of the species' total habitat (Tocher, 2026 s40-42). This represents a nationally significant loss of habitat for this species.

52. Unlike McCanns skink, Kawarau gecko habitat cannot be reinstated through simple revegetation and unconsolidated rock piles, as their habitat requirements are significantly narrower than these species and require rock crevice refugia within schist outcrops.

53. The narrow crevices within schist outcrops provide essential shelter, thermal buffering, and protection from mammalian predators, particularly from mice, which are able to effectively predate geckos

in the more open interstitial spaces associated with unconsolidated rock piles.

54. Southern grass skink also have more narrow habitat requirements compared to McCann's skinks, requiring higher soil moisture and vegetation cover which can not necessarily be achieved by planting alone.

55. Assessments by Teele (2026, s3.1.3) and Tocher (2026, s37-51) both show that the Applicant has underestimated the significance of effects on both Southern grass skink and Kawarau gecko. A view that is shared with Kā Rūnaka technical advisors and myself. This, in turn, increases the required thresholds for mitigation/offsets that the Applicant has yet to adequately address.

56. The 2019 "*Key principles for lizard salvage and transfer in New Zealand*" published by Te Papa Atawhai lists nine key principles for lizard salvage. Based on the information currently available from the Applicant and additional submissions, it is not clear if the current proposal will be sufficient to meet five of these principles with a high degree of certainty, including.

    (a) Principle 1: Lizard species' values and site significance must be assessed at both the development and receiving sites.

    (b) Principle 2: Actual and potential development-related effects and their significance must be assessed.

    (c) Principle 5: Lizard salvage, transfer and release must use the best available methodology.

    (d) Principle 6: Receiving sites and their carrying capacity must be suitable in the long term.

    (e) Principle 9: Contingency actions are required when lizard salvage and transfer activities fail.

57. Tocher (2026, s74-79) has identified several fundamental gaps within the Lizard Management Plan (**LMP**) that significantly reduce confidence in its ability to sufficiently manage adverse effects. I concur with this assessment and with the conclusion that approval should not be granted until the LMP is fit for purpose.

Pest control

58. One of the most significant risks arising from successful control of larger predators within the reserves is "meso-predator release", where a reduction in predation can lead to rapid population increases of smaller predators such as mice. Mice are a key predator for lizards in Aotearoa, particularly for eggs and juveniles, and in colder temperatures where lizards are less able to avoid predation.

59. The pest control plan indicates that mice are to be managed within fenced reserves using an initial aerial toxin application a follow up bait station network with a 25m X 25m grid (Barber *et al,* 2025).

60. It is crucial to the success of the planned fenced sanctuaries that mouse eradication is achieved before translocation of salvaged lizards can occur, both to reduce direct lizard mortality, increase the lizard carrying capacity of the release site, and reduce completion for the limited habitat within the reserve.

EFFECTS MANAGEMENT AND PROPOSED CONDITIONS

Aquatic habitat and stream health

61. Although the Applicant has provided some mitigation through the reinstatement of stream habitat following mine closure, it is my opinion that the current mitigation framework does not adequately address the ecological impacts of the proposed activity. When combined with the cultural impacts of this magnitude of stream destruction[1], and the limited options for mitigations, a significant increase in offsets/compensation is required.

62. The conditions proposed by Greer (2026) are able to mitigate effects within the diverted sections of stream and downstream receiving environment, but do not directly address the destruction of a natural watercourse.

63. In earlier discussions between Kā Rūnaka technical advisors and the Applicant, it was suggested that an appropriate offsetting activity

[1] See Evidence of Edward Ellison (10 April 2026) at [23], [24], [25], [26], [28], [37], [38], [41], [61], [62], [113].

for effects on aquatic ecosystems would be the creation of one or more non-migratory galaxias reserves in tributaries adjacent to the DDF, as well as in Shepherds Creek and Rise and Shine Creek.

64. Clutha flathead galaxias (*Galaxias species* D) are classified as Threatened – Nationally Vulnerable (Dunn *et al,* 2023) with their total remaining habitat estimated to be less than 60ha. Over the last decade, approximately 35% of known Clutha flathead galaxias populations have been lost, mainly to predation from introduced sports fish such as brown trout and brook char.

65. The absence of fish within Shepherds Creek, Rise and Shine Creek, and likely other nearby tributaries, provides a unique opportunity to help establish and secure additional populations of this species and reverse its current decline. Furthermore, the higher stable flows predicted by the Applicant following the filling of the pit lake will improve climate change resilience (another threat to this species), while the physical disconnection of both tributaries from the Lindis and Mata Au Rivers will significantly reduce the chances of introduced salmonids gaining access to these populations.

66. It is my opinion that when combined with the additional consent conditions suggested by Greer (2026) that the successful establishment of at least two Clutha flathead galaxias reserves would adequately offset the ecological impact of the proposed activity on aquatic ecology and instream values.

67. However, without the above mitigation and offsets the Application as it stands will not meet this standard.

Lizards

68. As discussed in Sections 50 to 55, there is significant uncertainty as to the size and extent of existing lizard populations within the DDF. This severely compromises the ability of the Applicant and relevant experts to assess the impact of the proposed mining activities and associated mitigation frameworks.

69. The exclusion of the Kā Rūnaka technical team from subsequent workshops with Te Papa Atawhai and Otago Regional Council also adds further uncertainty and compromises the ability of Rūnaka experts to access all relevant information. Despite this, it is clear from

the information provided by the Applicant and subsequent evidence from Teele (2026) and Tocher (2026) that the likely impact on Kawarau gecko and Southern grass skink is significantly higher than what has been indicated by the Applicant.

70. Information provided in the Lizard Management Plan (Baber 2025) indicated that the Applicant is intending to salvage between 10-30% of the lizard population within the DDF. Recent salvage work undertaken by Kā Rūnaka ecologists and kaimahi in collaboration with teams of experienced herpetologists have shown that a catch rate of 3-6 lizards per person hour can be expected in similarly complex Central Otago habitats.

71. Using the lower end of the lizard population estimates provided by the Applicant (300,000) and the best catch rates experienced in recent salvage operations (6 per person/per hour), it would be expected to take a team of 10 ecologists 62 days of constant work to salvage 30,000 lizards 10% of the population, which rises to 190 days of continuous work for the same field team if a 30% salvage rate is targeted (90,000 lizards).

72. This also does not consider seasonal and weather restrictions, as lizard salvage can generally only occur between October and April, and at temperatures above 12 degrees.

73. Using the above catch rate assumptions, it would be expected that salvaging 102,000 lizards as proposed in the CODC conditions would require 193 days of continuous work for a team of 10 ecologists, which would need to be broken up over at least 2-3 years due to likely seasonal and temperature restrictions.

74. This estimate is not provided to cast doubt on the validity of the proposed CODC conditions, but rather set clear expectations around the effort and time required to implement mitigation at this scale and ensure that sufficient time (4-6 years) is allowed for pest control and salvage before translocation occurs into fenced sanctuaries.

75. In theory, the reintroduction of threatened lizard species (Otago skink, Grand skink, and jewelled gecko) into the proposed predator free reserves can contribute to offsetting the expected loss of lizards

currently within the DDF, particularly for Southern grass skink and McCann's skink. However, the nationally significant impact on Kawarau geckos is unlikely to be sufficiently offset with the existing size of the proposed reserves.

76. To gain some more certainty around the appropriateness of this approach, the following information requirements should be considered.

(a) The percentage increase in available habitat for the three proposed new introductions based on their current range.

(b) An increase in size of the reserve to match the equivalent loss of Kawarau gecko habitat (at least 7% of national population for each species).

(c) A translocation plan for each species with clear outcome thresholds and subsequent actions.

77. There is potential for further discussion around the appropriateness of the 7% habitat increase for the species mentioned above, however this should be considered a starting point to quantify the potential offset value of this approach.

78. In my view, the mitigation framework as currently proposed does not adequately address the impacts on the lizard species currently existing in the DDF. Specifically, the following issues would need to be addressed.

(a) It is unlikely that the creation of new rock habitat for Kawarau geckos will be an effective mitigation for the destruction of habitat within the DDF, and available habitat will be a significant limiting factor for translocation of Kawarau geckos.

(b) It is unclear that the receiving environment of the predator-controlled reserves has the carrying capacity to sustain a translocation of this magnitude, nor is there any evidence from the literature to suggest that this form of translocation will be successful.

79. Tocher (2026) states that "*the applicant's ecologists confirmed that their effects-management package addresses only ~20%*

(approximately) of adverse effects on lizard species and habitats, leaving approximately 80 % unmanaged as residual effects. This exposes a substantial deficit in the proposed mitigation compensation and demonstrates that most effects—four-fifths of them—remain unaddressed."

80. It is noted that since Kā Rūnaka technical advisors were not given the opportunity to engage in discussions with the Applicant or Te Papa Atawhai, that we are relying solely on the evidence of Dr Tocher in this case.

81. Further consent/permit conditions have been proposed by Central Otago District Council (**CODC**)(**Appendix 2**) and Te Papa Atawhai (Tocher, 2026, **Appendix 3**) in addition to those proposed by the Applicant.

82. In my view, these conditions resolve many of the technical deficiencies of the current MGL Application and should be supported.

83. Despite this, significant gaps exist between the proposed mitigation package and effects of the proposed activity.

84. Considering the issues raised above, and assuming that the 80% unmanaged residual effects is an accurate figure, it is my opinion that the proposed offset/compensation package falls short of the standard required to adequately address impacts on lizard species within the mine footprint and surrounding area.

Pests

85. The removal of predators within the fenced sanctuaries and suppression within the wider landscape poses significant technical challenges, particularly with regards to mice. Translocation of salvaged lizards is unlikely to be successful without predator eradication, and consent conditions must be implemented to ensure that this is recognised.

86. The conditions proposed by CODC for the Mammalian Management Plan (80-84), Matakanui Sanctuary Management Plan (85-91), Ardgour Restoration Area Management Plan (92-99) largely meet these requirements and should be supported.

CONCLUSIONS

87. The current Application submitted by MGL fails to accurately assess the existing environment within the DDL, making it difficult to accurately assess the effects of the proposed activity.

88. Kā Rūnaka technical advisors have been excluded from crucial technical workshops across the full spectrum of ecological disciplines considered in the Application. This has made it exceptionally difficult to access up to date information on the technical aspects of the Application or accurately advise Kā Rūnaka on appropriate management actions.

89. The current Lizard Management Plan has significant and fundamental gaps, and the Application should not be granted without this being remedied.

90. Based on the accessible information, the current mitigation package fails to sufficiently avoid/remedy/mitigate/offset the ecological impact of the proposed activity.

91. The conditions recommended by CODC (D.01 CODC Land Use Consent and Conditions), Greer (2026),and Tocher (2026) narrow this gap further, but not sufficiently to address the identified residual impacts.

92. In addition to the above conditions, the Applicant should implement the following further offsets.

    (a) Establish and populate Clutha flathead galaxias (*Galaxias species D*) sanctuaries in nearby tributaries adjacent to the proposed mine and establish further populations within Shepherds and Rise and Shine Creek once they have been rehabilitated following mine closure.

    (b) Undertake further work to quantify the increase in habitat for Otago skink, grand skink and jewelled gecko if they are released into the proposed sanctuaries and ensure that this increase is commensurate to the potential loss of habitat for Kawarau gecko. This may include increasing the size of the proposed reserves if necessary.

93. Ongoing, long-term management will be required across many aspects of the proposed mitigation package well beyond the life of the mine or any future rehabilitation bond. The management of fenced sanctuaries, non-migratory galaxias sanctuaries (if implemented), water quality monitoring/intervention, etc will all require intergenerational funding and engagement.

94. The current Application does not acknowledge this need or provide a mechanism to achieve this.

Matthew John Dale

10 April 2026

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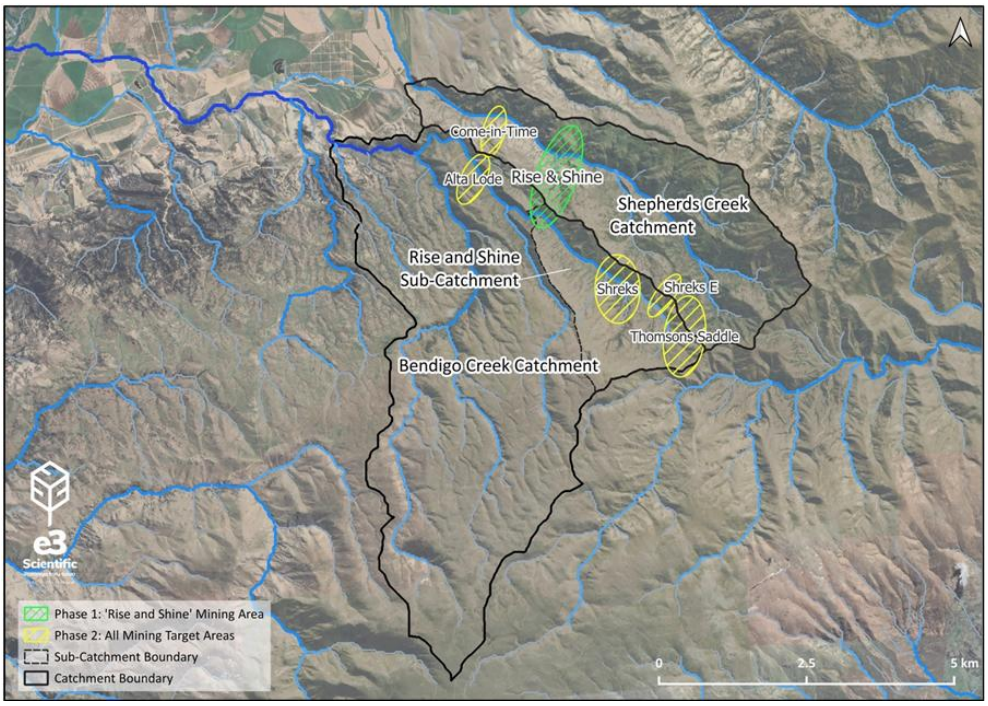
APPENDIX 1: POTENTIAL MINING SITES WITHIN THE BENDIGO, SHEPHERDS CREEK AND RISE AND SHINE SUB CATCHMENTS (DOHENY, 2023))



APPENDIX 2 – PROPOSED CODC CONDITIONS

Condition 62 – Lizard Management Plan (LMP)

• Requires implementation of the certified Lizard Management Plan to avoid/minimise adverse

effects on native lizards.

Condition 63(a–e) (sub-clauses) Salvage, Handling & Relocation

• Salvage footprint & timing:

o Salvage required in all high- and moderate-value habitat; only when T > 12°C, between 1

Sept–30 Apr.

• Minimum effort & targets:

o ≥2,330 person-hours,

o ≥102,000 lizards salvaged, including 70,000 McCann's skinks, 2,000 tussock skinks,

30,000 Kawarau geckos.

• Methods:

o Manual and construction-assisted salvage; ≤6 months between salvage and clearance.

• Handling & transport:

o Must meet Animal Welfare Code; DOC approval required for toe-clipping; container and

holding-time requirements.

• Relocation:

o All lizards must be released into the Ardgour Restoration Area, placed into

species-appropriate microhabitats.

Condition 63(c–e) – Data, Release & Habitat Features

• Data collection required for every individual (ID, GPS, SVL, sex, age, photos, health).

• Release data also required (GPS, habitat type, photos).

• Habitat reconstruction:

o Deploy 480 rock stacks, rubble pits (1 per 5 ha), and revegetation across 480 ha (per

LERMP).

• Incident Management

Condition 63(e)

• Protocols required for inadvertent lizard injury/death and Threatened species discovery.

• FTAA Wildlife Approval required for capture/handling.

• Monitoring & Reporting

Condition 64 – Annual Lizard Compliance Monitoring Report

• Must include:

o Confirmation of compliance with LMP/HIMP protocols.

o Salvage totals vs targets.

o Maps of salvage/avoidance areas.

o Confirmation that relocation habitats were prepared.

o Recommendations for improved management.

o Representative photographs.

Condition 65 – LMP Updates

• Any updates to the LMP must be prepared by a qualified herpetologist.

• Biodiversity Outcome & Long-term Monitoring

Condition 102 – Lizard Abundance Targets

Within the DDF, lizard populations (Kawarau gecko, tussock skink, McCann's skink) must achieve

baseline conditions.

• Net-gain required for Threatened species:

• Otago skink, grand skink, jewelled gecko.

Condition 103 – Baseline Monitoring

• Baseline lizard monitoring must begin within 6 months of pest control establishment in the Ardgour

Restoration Area.

• ACOs must bed-in for 12 months before use.

Conditions 104–106 – Ongoing Monitoring, Year-35 Outcomes & Adaptive Management

• Annual biodiversity outcome reporting must include lizard metrics.

• If interim results show outcomes will not be met, adaptive management is mandatory.

• A final Year-35 report must confirm success or trigger contingency measures.

Condition 118 – Net Positive/Net Gain Outcomes Offsetting, Compensation & Sanctuaries

• Lizard outcomes must be achieved across 2,219 ha of offset/compensation land, including Mine

Regeneration Zones, Ardgour Restoration Area, and predator-free sanctuaries.

• **Conditions 120–121 – Predator-Proof Sanctuaries**

• Establishment of Ardgour Sanctuary (38 ha) and Bendigo Sanctuary (29 ha).

• Predator eradication, fence inspection, incursion response, and habitat enhancement for lizards.

• Species Re-introductions (under re-introduction section)

• Consent holder must use best endeavours to reintroduce:

o Otago skink, jewelled gecko, grand skink.

o Consultation with DOC and iwi required.

Condition 112 Ecological Salvaging

• Confirms salvaging of lizards (McCann's skink, tussock skink, Kawarau gecko) and relocation to

Ardgour Restoration Area.

• Habitat materials (rocks, wood, vegetation) must be salvaged to aid lizard habitat restoration.

APPENDIX 3: SUGGESTED ADDITIONAL WILDLIFE ACT CONDITIONS (TOCHER, 2026)

1. These conditions apply to all project areas where lizards may be affected, including the DDF, concession areas, covenant uplift areas, fence footprints, trenching and services, bore field and pipelines, quarry/silt ponds, dewatering draw-down zones, temporary stockpiles, and access/laydown sites.

2. Only named SEQEs (herpetologists) approved under this authorisation may handle lizards. The Authorisation Holder must provide the names and qualifications, together with the required declarations regarding Wildlife Act convictions, prior to any handling.

3. SEQEs may supervise trained field staff for non-invasive tasks; all handling must be undertaken by, or under the direct supervision of, the SEQE.

4. No works that may disturb lizards may commence until DOC confirms in writing that the LMP is certified as giving effect to these conditions.

5. The Authorisation Holder must avoid disturbance of high value microhabitats (e.g., rock outcrops/tors, boulder fields, cushion vegetation, riparian/wetland edges) wherever practicable through micro siting, exclusion fencing, and method selection.

6. Lizards must not be released into the Ardgour Restoration Area or any other area without:

   (a) demonstrated habitat suitability for the target species; and

   (b) a predator management regime that includes mice, unless DOC approves otherwise on the basis of evidence.

7. Preferred approach: establish a purpose-built pest exclusion fenced area before salvage, sized and located to be commensurate with the scale of residual effects, and approved by DOC. Salvage releases should be prioritised to this fenced area.

8. No release may proceed until DOC has certified the release site(s) against Conditions 6–7 and the LMP specifies prerelease habitat preparation, carrying capacity, and post release monitoring.

9. Discovery of any novel/unexpected species (not Kawarau Gecko, McCann's Skink, or Southern Grass Skink) requires stop work in the affected area, notification, targeted survey, and LMP review in full collaboration with DOC before recommencement.

10. The LMP must include contingencies and adaptive management triggers where objectives are not met (e.g., release sites underperforming), with pre agreed corrective actions and timelines for DOC approval.