

**Before the Expert Panel appointed
under the Fast-track Approvals Act 2024**

Under the Fast-track Approvals Act 2024
(Act)

And

In the Matter of an application for approvals by
Matakanui Gold Limited to establish,
operate, rehabilitate and ultimately
close an open pit and underground
gold mining operation known as the
Bendigo-Ophir Gold Project

**Statement of Evidence of
Jon Farren on behalf of
Matakanui Gold Limited in response to
Section 53 Feedback**

Acoustic

Dated: 17 April 2026

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INTRODUCTION

1. My name is Jon Farren.
2. I am the Manager and Principal of the Christchurch office of Marshall Day Acoustics (**MDA**). I hold a Bachelor of Engineering with Honours in Electroacoustics from the University of Salford in the United Kingdom. I hold full Membership of the Institute of Acoustics (UK).
3. I have been employed as an Acoustic Consultant for over 30 years, approximately 25 of which have been with MDA. I have considerable previous experience in the assessment of noise and vibration effects at over 35 mining and quarrying sites across New Zealand, where mineral extraction, processing and its transportation are the dominant noise sources.
4. This statement is given as part of Matakau Gold Limited's (**MGL**) response to comments on the Bendigo-Ophir Gold Project (**BOGP**) made under Section 53 of the Fast-track Approvals Act 2024 (**FTA**). This statement responds to specific comments raised by:
 - (a) Central Otago District Council
 - (b) Heritage New Zealand Pouhere Taonga
 - (c) Otago Regional Council
 - (d) Department of Conservation
 - (e) Sustainable Tarras
 - (f) Gibbston Valley Wines Limited
 - (g) The Chinamans Terrace Services Company Ltd
 - (h) Dr. Claire Fletcher-Flinn and Professor Geoff Kearsley
 - (i) Simon Gibbard and Nicola Mulvena
 - (j) Bruce Lambie
 - (k) Sharon Brodie
5. My original findings are provided in full in Technical Report B.29 Assessment of Noise and Vibration Effects (**Noise Report**).

6. My assessment relies on the following information that accompanied the applications:
 - (a) Substantive Application Report A.10 Section 3 - Project Description.
 - (b) Technical Report B.30 Integrated Transport Assessment prepared by Stantec.
7. I have prepared this statement in the limited time available for MGL to respond to comments under the Act. If the Panel requires elaboration on any of the matters raised in this statement, I am available to provide further information on request.
8. Although this is not an Environment Court proceeding, my confirmation of compliance with the Code of Conduct for Expert Witnesses in the Environment Court Practice Note 2023 is included in Substantive Application Document A0.2B.

RESPONSE TO COMMENTS FROM CENTRAL OTAGO DISTRICT COUNCIL (CODC)

9. I have reviewed the following documents prepared by CODC:
 - (a) Central Otago District Council Comments (**CODC Summary**); and
 - (b) Appendix F – Noise and Vibration assessment (**Styles Review**) prepared by Jon Styles of Styles Group dated 2 April 2026.
10. The author of the CODC Summary relies on the advice provided by the noise peer reviewer. The Styles Review is broken into three main sections:
 - (a) Matters agreed;
 - (b) Matters resolved by further information; and
 - (c) Matters not yet resolved.
11. I have limited my comments to the “Matters not yet resolved”, where I provide a brief explanation of each issue raised by Mr Styles and my response.

Styles Review Item 4.1 - “Noise effects over surrounding land and compliance with the noise standards for permitted activities at dwellings anticipated by the District Plan”

12. Mr Styles is concerned that the Proposed Condition 11 sets noise limits that only apply at the notional boundaries of dwellings existing at the time that consent is granted.

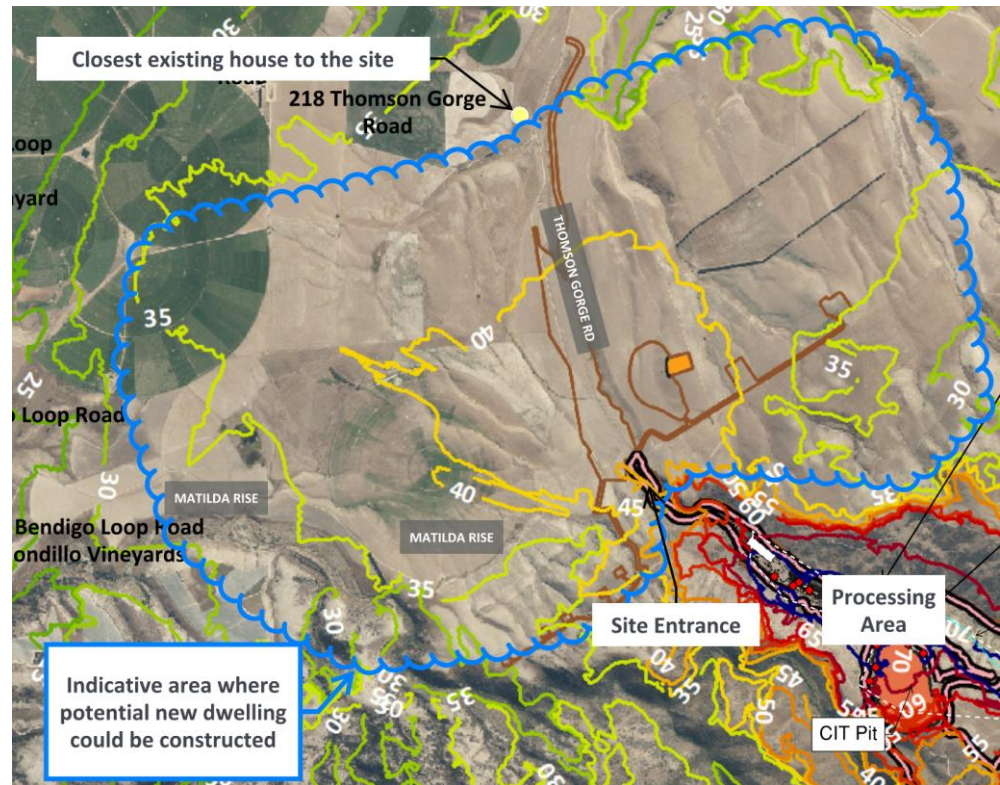
He considers this approach may disadvantage occupants of potential future dwellings that could be established as-of-right within the Rural Zone, and “...*that certainty [for the Applicant] may come at the expense of the neighbour’s amenity and right to reasonable noise levels*”.

13. On this basis, he recommends Proposed Condition 11’s reference to existing rural dwellings is rejected, or alternatively, the effect on neighbouring properties is understood.
14. As I discuss below, the principle of applying noise limits at dwellings that exist at the time a consent is granted is common practice in New Zealand and clearly referenced in the latest version of the applicable noise standard – NZS 6802:2008¹ – which represents current best practice. In any event, noise effects would be minimal at any future dwellings.
15. To assist with understanding the potential noise effects at locations where future dwellings could potentially be established, **Appendix A** to this evidence reproduces the noise contour plot that was included with the Noise Report.² As explained in my report, the noise contours represent a conservative worst-case scenario. The calculations assume all relevant items of equipment are operating simultaneously, located at the closest practicable positions to dwellings and at elevated terrain positions that minimise screening. Because of this conservatism, I expect that in practice, actual noise levels will be lower than those predictions.
16. Appendix A also identifies the location of the current closest dwelling to the site at 218 Thomson Gorge Road. Figure 1 below provides an enlarged and annotated extract of the noise contour plot, indicating a clouded area closer to the mine where future dwellings could potentially be located. I note I have not confirmed whether such dwellings would be permitted under the Central Otago District Plan (**District Plan**). The Figure 1 noise contours show that noise levels at the most likely potential building sites along Thomson Gorge Road, Matilda Rise and Bendigo Loop Road that are closer than the dwelling at 218 Thomson Gorge Road would experience noise levels in the range 30 to 40 dB L_{A10} during normal operation, which comfortably complies with the applicable permitted activity daytime noise limit of 55 dB L_{A10} and the night-time noise limit of 40 dB L_{A10} in the District Plan. In this context, noise effects would be minimal, and the concerns raised by Mr Styles are unlikely to arise at any future dwelling.

¹ New Zealand Standard NZS 6802:2008 *Acoustics - Environmental Noise*

² Part B.29 Noise Report Appendix C – Noise Contour Plot

Figure 1 – Enlarged area of noise contour plots



17. I further note that the approach of applying rural noise limits to existing dwellings is explicitly addressed in New Zealand Standard NZS 6802:2008 *Acoustics - Environmental Noise*. Section 8 of NZS 6802 is titled “Guidelines for setting noise limits”, and in particular, subsection 8.4 “Measurement Location” provides example condition wording that applies noise limits “at any point within the notional boundary of an **existing** dwelling”. Paragraph 8.4.8 of the Standard States:

“8.4.8 An important distinction will often need to be made between existing dwellings and potential future dwellings. For reasons now called “reverse sensitivity”, the concept of people coming to a noise source or nuisance not being entitled to an amenity level as if the noise source did not exist has long been upheld”

18. For these reasons, I consider the proposal to apply noise limits at existing dwellings is entirely appropriate in this instance, and will not result in an unduly disadvantaged noise environment at potential future dwellings.

Styles Review Item 4.2 - “Difference between operational noise level predictions and proposed operational noise limits”

19. Mr Styles' concern is that noise effects have not been assessed at the proposed consented noise limits of 55 dB L_{Aeq} (daytime) and 40 dB L_{Aeq} (night-time), as opposed to the lower noise levels that are predicted to occur in practice. In my opinion, this is an incorrect assertion. The Noise Report explicitly addresses both the potential adverse effects associated with the proposed noise limits and the substantially lower noise levels that are predicted to be experienced at nearby dwellings as a result of the BOGP.
20. In Section 4.5 of the Noise Report³ I discuss the District Plan permitted activity standards with additional reference to the guidance from the World Health Organisation (**WHO**)⁴ and NZS 6802.⁵ I explain that the proposed operational noise criteria of 55 and 40 dB L_{Aeq} for the daytime and night-time, respectively, ensure that noise effects are acceptable in the context of what can reasonably be anticipated at a rural dwelling operating under the existing District Plan noise limits.
21. However, in Section 10 of the Noise Report,⁶ I specifically assess the actual noise effects expected to be experienced at the nearest dwellings to the proposed activity and conclude that these effects will be minimal. I note that Mr Styles appears to agree with this conclusion with his statement that "I agree that compliance by a significant margin is likely for the majority of time and for the majority of neighbours."⁷
22. As the matter is also raised in the CODC Summary,⁸ I wish to address Mr Styles' comment that the Noise Report inappropriately includes reference to the WHO noise guidelines. In my view, this concern is moot, as the Noise Report places primary emphasis on compliance with the CODC permitted activity standards, rather than relying on WHO guideline values when setting the proposed noise criteria. In other words, while I disagree with Mr Styles position on the WHO guidance, it ultimately has no direct influence on the proposed noise limits and can be ignored.
23. Notwithstanding my disagreement with Mr Styles regarding the relevance of the WHO guidance, I note that the WHO community noise guidelines have been widely adopted as a foundational reference for setting noise limits in many New Zealand District Plans, including in the Central Otago District and other districts with extensive rural environments.

³ Part B.29 Noise Report Section 4.5

⁴ The World Health Organisation (WHO) Guidelines for Community Noise (Berglund, Lindvall and Schwela, 1999)

⁵ New Zealand Standard NZS 6802:2008 *Acoustics - Environmental Noise*

⁶ Part B.29 Noise Report Section 4.5

⁷ CODC Appendix F – Noise and Vibration assessment Section 4.2 1st paragraph

⁸ CODC Summary Section 3.6

24. Furthermore, I consider the following statements from the final paragraph of Mr Styles' Section 4.2 to be either incorrect or not relevant:
- (a) *"The [WHO] guidelines are designed to assist in the evaluation of effects of large populations exposed to high levels of transport noise where serious adverse health effects need to be managed."*
25. This statement implies that the WHO guidelines are limited to large populations and high-level transport noise.
26. This claim is inconsistent with the stated purpose of the WHO community noise guidelines, which is stated as follows:
- (a) *"The scope of WHO's effort to derive guidelines for community noise is to consolidate actual scientific knowledge on the health impacts of community noise and to provide guidance to environmental health authorities and professional trying to protect people from the harmful effects of noise in non-industrial environments."*⁹
27. Mr Styles statement *"Existing large quiet outdoor areas should be preserved and the signal-to-noise ratio kept low"* is taken directly from the WHO guidelines but with respect to the section on "Parklands and Conservation areas". In my opinion, this statement has been quoted out of context. The "Dwellings" section of the WHO guidance is the most relevant to this assessment as it discusses noise health effects in the human population and proposes criteria that form the basis of many District Plan noise limits, including the Central Otago District Plan.

Styles Review Item 4.3 - "Blasting over-pressure and vibration"

28. Mr Styles considers there is an issue with the proposed vibration limits for blasting on the basis that:
- (a) The Noise Report does not demonstrate that the higher limit of 10 mm/s PPV is required; and
- (b) There is no assessment of the effect of the higher levels and how this might be perceived by neighbours of the proposal.

⁹ World Health Organisation (WHO) Guidelines for Community Noise 1999, Page (iii) Forward

29. By way of background, Section 4 of the Noise Report sets out the three CODC noise and vibration rules that are applicable for the project including:
- (a) Operational noise (Rule 4.7.6.E);
 - (b) Construction noise (Rule 12.7.4.ii); and
 - (c) Blasting (Rule 12.7.4.iv).
30. Consistent with my approach to operational and construction noise, my proposed blasting criteria update the existing rules to align with current industry best practice and remove reliance on outdated standards and/or measurement metrics. In my opinion, the proposed criteria will not result in any material difference in overall noise or vibration effects when compared with the current CODC standards.
31. The proposed blasting condition references Australian Standard AS 2187-2:2006¹⁰ which aligns with the CODC vibration limit of 5 mm/s PPV¹¹ for the large majority (95%) of blasts, while allowing for limited exceedances up to a maximum of 10 mm/s PPV. These limits are based on human comfort and are well below levels associated with cosmetic or structural damage to residential buildings.¹²
32. Proposed Condition 17 of the *D.01 CODC Land use consent conditions* includes a specific requirement that blasting activities be measured and assessed in accordance with AS 2187-2:2006. This is an important distinction from the CODC Rule 12.7.4.iv. AS 2187-2 establishes a robust assessment process that is currently absent from this permitted activity rule, and its 95% compliance methodology reflects contemporary industry practice and supports a more reliable blast design process.
33. From a community perspective, the key difference between the CODC 100% compliance requirement and the proposed 95% compliance framework comes down to the safety margin built into the AS 2187-2 approach. Because this methodology is designed with sufficient conservatism, CODC can be confident that vibration levels will generally remain below accepted thresholds.
34. In any event, the assessment in Section 8 of the Noise Report shows that low levels of vibration can be expected, owing to the large separation distances between mining activity and nearest dwellings.

¹⁰ Appendix J of Australian Standard AS 2187-2:2006 Explosives – Storage and use, Part 2: Use of explosives

¹¹ PPV Peak Particle Velocity

¹² AS 2187-2:2006 TABLE J4.4.2.1 15 mm/s at 4 Hz, increasing to 20 mm/s at 15 Hz, increasing to 50 mm/s at 40 Hz and above

35. In practical terms, and subject to detailed blast design and management procedures, blasting-related vibration is expected to be imperceptible to most residents for most of the time. Where vibration is perceptible, it would be brief, and consistent with residents' expectations of a managed blasting programme that requires a regular blasting schedule and time of day to be established. In my experience, effective communication of blasting activity significantly reduces the potential for adverse amenity or community concern. A *G.18 Noise and Vibration Management Plan* that addresses blasting has been provided with the Substantive Application.

Styles Review Item 4.4-“Truck noise on public roads”

36. Mr Styles considers that the noise effects of traffic on nearby public roads have the potential to be unreasonable and that the applicant should consider further mitigation measures to reduce the noise levels.
37. I understand that Mr Styles' concern relates primarily to truck noise during the construction phase, when the highest traffic volumes are predicted to occur over a relatively brief period of approximately two to three months. During this period, I have calculated that external noise levels at the façade of the dwelling at 213 Ardgour Road would be in the order of 60 dB $L_{Aeq(1hr)}$.
38. I do not agree that noise effects at this level would be unreasonable. Based on standard façade-to-indoor noise level relationships, I calculate that internal noise levels within the dwelling at 213 Ardgour Road would be approximately 45 dB $L_{Aeq(1hr)}$ with windows ajar for ventilation.¹³ While truck movements would be audible at this level, they would not interfere with normal speech communication or typical indoor activities. With windows closed,¹⁴ internal noise levels would be lower again, at approximately 40 dB $L_{Aeq(1hr)}$, and unlikely to interfere with daily residential activities.
39. Having regard to the relatively short duration of the peak construction traffic period, and that noise levels are unlikely to interfere with normal residential activities, I consider that residents would experience moderate noise effects at most.

¹³ A 15 dB sound reduction can be expected across partially open windows with reference to [AAAC Guideline for interpreting and applying NZS 6803:1999](#)

¹⁴ A 20 dB sound reduction can be expected across closed windows (older buildings) with reference to [AAAC Guideline for interpreting and applying NZS 6803:1999](#)

RESPONSE TO COMMENTS FROM HERITAGE NEW ZEALAND POUHERE TAONGA

40. I have reviewed the following document prepared by Heritage New Zealand Pouhere Taongas (HNZPT):
- (a) Comments on project under the Fast Track Approvals Act 2024 by Ben Hanson
41. HNZPT refers to a memorandum¹⁵ I prepared that specifically discusses the potential effects of blasting vibration on heritage structures. My assessment found that blasting can occur across most of the Project Area while still complying with recognised vibration criteria for avoiding damage.
42. However, when blasting occurs close to unreinforced masonry heritage structures, the blasting methodology will need to be adapted to minimise the risk of superficial damage. In my opinion, this is best managed through a series of processes set out in a management plan, which uses real, site-specific vibration measurements to guide safe blasting practices.
43. The plan would include:
- (a) Dilapidation surveys to document the condition of heritage structures and assign appropriate vibration limits.
 - (b) Test blasts to measure how vibration travels through the local ground conditions.
 - (c) Blast design optimisation (e.g., reduced charge weight) when required to ensure vibration limits are not exceeded.
44. I recommend that these measures either be incorporated into the current Noise and Vibration Management Plan,¹⁶ or through the development of a specific Blasting Management Plan. I propose that management plans are refined and updated as required during expert conferencing.

¹⁵ Part K.06 Marshall Day Acoustics – BOGP Blasting Vibration Effects on Heritage Structures (10 March 2026)

¹⁶ Part G.18 Noise and Vibration Management Plan

RESPONSE TO COMMENTS FROM OTAGO REGIONAL COUNCIL

45. I have reviewed the following documents prepared by Otago Regional Council (ORC):
- (a) Otago Regional Council s53 Comments (**ORC Summary**)
 - (b) Appendix 42 - Landscape Architecture review (**SLR Review**) by Nigel Parker of SLR Consulting dated 1 December 2025
46. I note the ORC Summary specifically excludes Noise and Vibration from the matters assessed by Council¹⁷. This statement aligns with my understanding that no noise-related approvals are being sought from ORC.
47. Section 3.2.2 of the SLR review mentions noise in the context of the overall landscape effects which will “...*only be experienced by the workers and operations staff...*”. I understand this comment does not relate to the off-site noise effects that are assessed in the Noise Report and more of a perceptual landscape factor. Mr Parker’s comments do not change my opinion that operational noise effects will be minimal.

RESPONSE TO COMMENTS FROM THE DEPARTMENT OF CONSERVATION

48. The Department of Conservation’s (**DOC**) comments primarily relate to potential noise and vibration effects on walkers and hunters in public conservation areas. The Noise Report¹⁸ considers effects on recreation users more broadly, and highlights that the noise levels received will depend on separation distance from mining operations and the acoustic attenuation provided by the intervening terrain.
49. I consider that, for most of the time, noise effects will be negligible for recreational users, as mining noise levels are likely to be lower than the self-noise generated by recreational users as they walk through the area, or in the case of hunters, when they discharge their firearm.

¹⁷ ORC Summary Paragraph 24 (c)

¹⁸ Part B.29 Noise Report Section 9.0

RESPONSE TO COMMENTS FROM ENVIRONMENTAL GROUPS, OWNERS AND OCCUPIERS AND OTHERS

50. I have reviewed the following comments that mention noise from:
- (a) Sustainable Tarras dated 9 April 2026;
 - (b) Gibbston Valley Wines Limited dated 10 April 2026; and
 - (c) The Chinamans Terrace Services Company Ltd dated 9 April 2026;
 - (d) Bruce Lambie dated 9 April 2026;
 - (e) Sharon Brodie dated 7 April 2026;
 - (f) Claire Fletcher-Flinn and Geoff Kearsley – undated; and
 - (g) Simon Gibbard and Nicola Mulvena dated 8 April 2026.
51. In Paragraph 43, Sustainable Tarras states the local community is concerned about noise and vibration impacts on their businesses and lifestyles. The Noise Report provides a detailed analysis of the existing and proposed noise environment at those properties where the potential adverse effects will be greatest. Predicted operational noise levels are relatively low and noise effects will be minimal in my view.
52. Gibbston Valley Wines is concerned about noise at their School House vineyard which I understand is approximately 3.5 kilometres from the BOGP Processing Plant Area and worst-case predicted daytime noise levels are in the order of 30 dB L_{A10} . While the District Plan does not apply noise limits at rural properties that do not have dwellings, I consider that noise levels are so low that noise effects at this site will be negligible and will not interfere with the day-to-day operation of the vineyard.
53. In Paragraph 15 of their submission, The Chinamans Terrace Services Company Ltd is concerned that noise will impact their amenity, particularly in the vicinity of Bendigo Loop Road. As discussed above and in the Noise Report, noise levels in the vicinity of Bendigo Loop Road will be very low (less than 30 dB L_{A10}) during both the construction and operational phases of the project. In my view, there will be negligible effect on their noise amenity.
54. Mr Lambie is the co-owner of land at Oliver Road, Bendigo, and is concerned about significant noise from blasting. I understand his property is approximately 7.5 km from the closest point where blasting is likely.

I note that BOGP has adopted my proposed consent conditions relating to blasting that will ensure effects are acceptable at the closest dwellings to the site and therefore blasting noise effects will be further reduced at Mr Lambie's property and will not be significant as he states.

55. Ms Brodie is concerned about operational noise levels in relation to the quiet rural environment. Ms Brodie's dwelling is at Oliver Road, approximately 7.5 km from the BOGP Processing Plant Area, and I expect BOGP operational noise will largely be inaudible at this location. For context, I expect local noise sources, such as traffic noise from the State Highway 8, to be more prominent at this property. Ms Brodie is also concerned about blasting at night. However, no surface blasting in open pits shall occur before 10 am and no later than 9 pm.¹⁹
56. Dr. Fletcher-Flinn and Professor Kearsley's Section 4 provides a list of blasting and operational noise sources that have already been addressed in the Noise Report. I disagree with their statement that noise will dramatically affect the rural character of the neighbourhood. My assessment shows that noise and blasting levels will be similar to, or considerably less than, the noise effects that are anticipated by the District Plan permitted activity standards.
57. Mr Gibbard and Ms Mulvena's comments can broadly be categorised as concerns about noise effects on rural character which I have previously addressed in Paragraph 56.



Jon Farren

17 April 2026

¹⁹ Part A.10 Project Description Section 3.5.4

