

27 March 2026
Job No: 1101934.0000

Reefton Gold Limited
1 Hattie Street
Reefton 7830

Attention: Simon Delander

Dear Simon

**Preliminary acoustics and air quality assessment: Fast-track Approvals Act 2024
Referral Application
Rua Gold - Auld Creek Project (Western Option)**

1 Introduction

Rua Gold (operating in New Zealand as Reefton Gold Limited) is seeking approvals under the Fast-track Approvals Act 2024 (FTAA) for its Auld Creek Project (the Project). The Auld Creek resource, comprising gold and antimony, is located approximately 3 km south-southeast of Reefton Township beneath Victoria Forest Park and 2 km north northwest of the former Globe Progress Mine site.

The Project involves a two-phase underground mining operation with associated surface infrastructure. Phase One includes development of a portal and adit on Crown land (administered by DOC) to access and mine the top of the orebody where the majority of high-grade mineral is located. Phase Two includes access to and mining of the remaining deposit via a 1.2 km twin decline tunnel system accessed from Ngāi Tahu Forestry land. Surface infrastructure will be located on private farmland and Ngāi Tahu Forestry land along Soldiers-Big River Road, occupying approximately 135,000 m². As part of the Project, Soldiers-Big River Road will be realigned to the west for approximately 1 km following Devils Creek to avoid the Surface Infrastructure Site.

Open pit mining methods are not proposed. The Project will include underground mine portals with associated access drives. Surface infrastructure will include ventilation fans and shafts, backup generators, workshops, a Run of Mine (ROM) pad, waste rock stack (WRS), dry tailings storage facility (TSF), mine water treatment facilities, explosive magazine, compressor plant, electrical switchyard, warehouse, and offices.

On-site processing will include three-stage crushing, single-stage ball milling, flotation cells producing antimony/gold concentrate, a separate gravity circuit producing gravity gold Doré, and concentrate dewatering using thickener and filter systems. Processing will include detoxification of cyanates in tailings handling (if required), and the possible operation of carbon regeneration kilns and barring furnaces. The final product will be a transportable mineral concentrate containing antimony and gold for offshore refining.

The mine and surface infrastructure will operate continuously, 24 hours per day, seven days per week. Details regarding waste rock stacks, tailings storage facilities, and the full extent of ore processing facilities remain to be confirmed during the preparation of the FTAA Substantive

Application. Production is anticipated start in late 2028 with an estimated operational phase of 6-8 years depending on resource availability. An indicative layout of the Project components is shown in Figure 1-1.

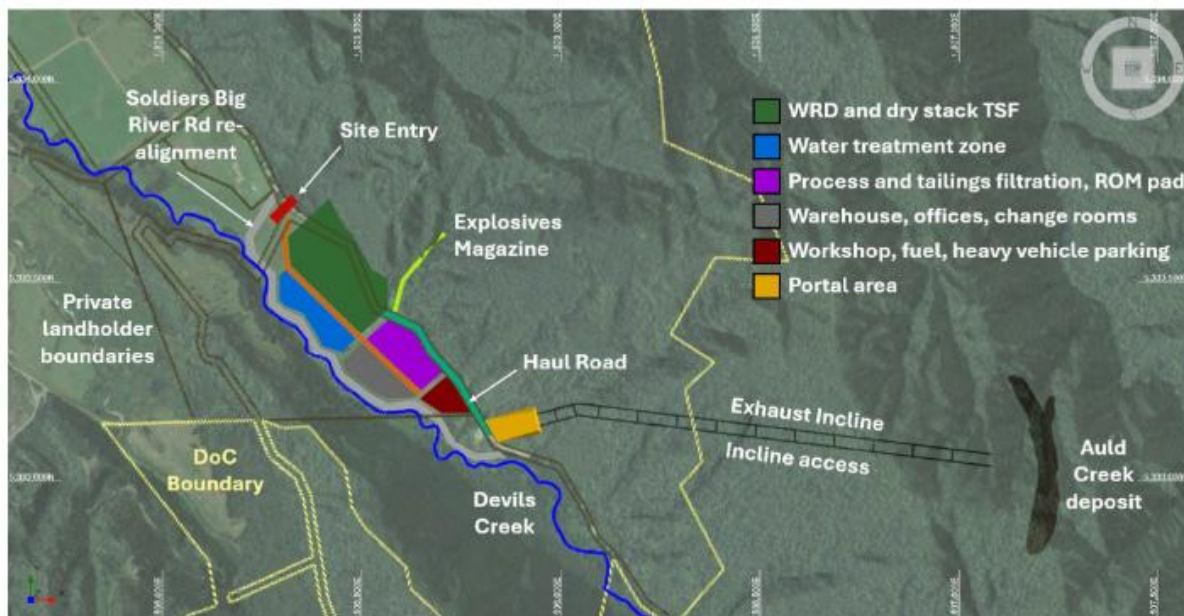


Figure 1-1 Indicative Auld Creek Project layout.

This referral memorandum outlines at a high level the following:

- **Noise and vibration (Acoustics):** The anticipated sources of environmental noise and vibration, potential sensitive receptors, and the proposed assessment approach consistent with New Zealand Standards and best practice. It also provides preliminary conclusions regarding noise and vibration effects.
- **Air quality:** The anticipated air discharges (namely dust), potential sensitive receptors, the proposed assessment approach consistent with Ministry for the Environment Guidance and best practice. It also provides preliminary conclusions regarding potential air quality effects.

This referral memorandum has been prepared for Rua Gold in accordance our letter of engagement dated 21 January 2026.

2 Existing environment

2.1 Overview

The Project Area is comprised of rural land uses (pastoral farming) surrounded by native forest and exotic forestry. Reefton Township is located approximately 1.7 km from the proposed infrastructure area and is separated from the Project Area by significant terrain. Reefton Township is historically a mining town with a legacy of gold mining dating back to the 1860s. The region's historical mining activities, including the former Globe Progress Mine site located 2 km to the south-southeast, have shaped the local community's familiarity with mining-related activities and associated environmental effects. There are currently no large-scale industrial sources of dust or other discharges to air within 2 km of the proposed Auld Creek Project Area.

2.2 Acoustics

The main sources of existing noise are vehicle movements on State Highway 7 and freight rail-traffic (mainly coal freight) on the Stillwater–Ngākawau Line, which are both to the north of the project area.

The acoustic environment along Quigleys Road, which will serve as the primary access route, has negligible traffic volumes resulting in low traffic noise levels. The acoustic environment along Soldiers-Big River Road, which will be relocated to the west of the proposed surface infrastructure is typical of a low-volume rural road, which includes infrequent heavy vehicles associated with forestry or farming activities. This baseline acoustic environment provides context for the assessment of incremental noise changes attributable to the Project during both construction and operational phases.

2.3 Air quality

Given the nature of the surrounding land uses and the absence of existing industrial air discharge sources, existing levels of dust and other potential air pollutants in the receiving environment are expected to be very low.

3 Sensitive receptors

The closest dwelling (sensitive receptor to both noise/vibration and air quality effects) to the proposed surface works is located approximately 700 m to the north of the site. A second dwelling at 2484 Ikamatua Highway is situated approximately 55 m from the proposed local access road (Quigleys Road). It is understood that the access road past this dwelling would be sealed to minimise dust from vehicle movements.

Reefton Township is located approximately 1.7 km to the north-northeast of the proposed infrastructure area, with significant terrain between the two sheltering the township from impacts.

In addition to residential receptors, there are also transient recreational users (e.g., walkers and mountain bikers using the newly formed ridgeline track through to the former Globe Progress Mine site), and ecological receptors have been identified within the vicinity of the Project, including confirmed lizard habitats.

4 Potential noise and vibration sources

4.1 Construction phase

Noise and vibration will result from:

- Site establishment and earthworks, including road construction
- Portal excavation and tunnelling activities
- Construction of surface infrastructure including workshops, offices, and laydown pads
- Use of heavy machinery, piling, drilling, and (if applicable) controlled blasting for construction purposes
- Construction traffic along local road corridors

Construction noise will be assessed in accordance with NZS 6803:1999 Acoustics – Construction Noise. Equipment scenarios will be modelled using manufacturer sound power level data and realistic duty cycles, with noise predictions calculated using ISO 9613-2:2024 methodology incorporating distance corrections, ground effects, and topographic screening within a 3D computer

model. Predicted levels will be compared against District Plan construction noise limits and NZS 6803:1999 guideline values where District Plan limits are not specified.

4.2 Operational phase

Operational noise sources are expected to include the following:

- Above ground mobile equipment (load–haul–dump units, drills)
- Fixed surface infrastructure such as ventilation fans, compressors, pumps, and generators
- Crushers, screens, and stockpile management systems associated with the processing plant
- Vehicle movements (light and heavy vehicles) within the site
- Product haulage to offsite locations
- Staff vehicle movements
- Maintenance and loading activities
- Blasting

Individual equipment items will be assessed using manufacturer/measured sound power level data, with worst-case scenarios considered where equipment operates at maximum capacity. Predicted operational noise levels, calculated using ISO 9613-2:2024 will be compared against District Plan operational noise limits (55 dB LAeq daytime and 45 dB LAeq night-time, with Lmax 75 dB) and assessed in accordance with NZS 6802:2008.

4.3 Road traffic noise (construction and operation)

Changes in local road traffic noise levels will be assessed for construction-related heavy-vehicle deliveries of plant, equipment, and materials to site, operational heavy-vehicle haulage of ore and waste materials, and employee light-vehicle trips during shift-change periods. The assessment will apply NZ road-traffic noise prediction methods consistent with NZS 6806:2010, with indicative comparisons made to baseline rural traffic conditions on Quigleys Road and other affected local roads, such as SH 7.

5 Potential air discharge sources

5.1 Construction phase

The main discharges to air associated with the construction phase will be dust associated with the following activities:

- Site establishment and earthworks, including road construction
- Portal excavation and tunnelling activities
- Use of heavy machinery, piling, drilling, and (if applicable) controlled blasting for construction purposes
- Construction traffic along local unpaved road corridors.

5.2 Operational phase

Operational surface air discharges associated with the Project are expected to include the following:

- Mobile equipment operating above ground (load–haul–dump units, drills) over unpaved surfaces
- Mine portal vents, where dust generated underground may be vented to air. In practice, and from experience assessing other mining activities, discharges of dust from mine portal vents

are expected to be very low due to the need to maintain suitable underground conditions for mine workers

- Crushers, screens, and stockpile management systems within the portal area
- Vehicle movements over unpaved surfaces and within the site
- Product haulage to offsite locations along unpaved haul routes
- Staff vehicle movements along unpaved haul routes
- Waste rock stockpiling (which is understood to occur to the immediate north of surface infrastructure).

6 Mitigation and management

6.1 Acoustics

Based on a high-level review of the proposed activities in relation to the locations of the nearest receivers, it is considered noise and vibration effects can be effectively mitigated and managed.

Mitigation measures proposed include:

- Scheduling high-noise construction activities during daytime hours where practicable
- Locating the primary surface infrastructure and fixed plant within topographically shielded ground on the western side of the deposit
- Constructing a rock stockpile bund to the north of the main site to act as a noise barrier
- Implementing machinery selection and maintenance programs that prioritise low noise plant design
- Integrating road traffic noise mitigation into the transport and noise & air quality management plans (e.g., speed controls, restricted access times, and verified vehicle sound levels)
- Considering limitations on traffic movements at sensitive times (e.g., 10 pm to 7 am)
- Blasting to be limited to controlled timing with vibration monitoring at boundary locations. Appropriate setback distances and blast design parameters will be established to ensure compliance.

6.2 Air quality

Based on a high-level review of the proposed activities in relation to the locations of the nearest receivers, it is considered air quality effects can be effectively mitigated and managed.

Mitigation measures proposed include:

- The use of a water cart or fixed spray system for frequently trafficked unpaved areas of the site to suppress dust emissions
- The use of water sprays on the primary crushers
- The use of water sprays on any dry stockpiles
- Minimising vehicle speeds on unpaved surfaces
- Maintaining unpaved surfaces so that they are free of corrugations and potholes.
- Minimising drop heights from loaders and excavators.

7 Potential effects

7.1 Acoustics

There is a significant spatial distance between sources of construction noise/vibration and sensitive receivers. As construction noise limits are more permissive than District Plan limits for operational noise sources, compliance is highly likely for all construction activities, including upgrading the access along Quigleys Road. Other than blasting, construction vibration effects will generally be limited to within 30 metres of an activity.

Similar to the construction assessment, there is a significant spatial separation for the operational phase of works from the surface infrastructure to noise sensitive receivers. Accordingly, compliance is likely with the daytime noise limit of 55 dB LAeq and the night-time 45 dB LAeq limit, provided that the mitigation measures identified are implemented.

Where underground blasting is proposed for the development of the tunnel and ore extraction, potential effects will include airblast overpressure associated with blast venting through surface portals and shafts, and ground-borne vibration transmitted through bedrock and soil to nearby sensitive receptors.

Airblast overpressure and ground-borne vibration are likely to meet relevant criteria, including the thresholds specified in AS 2187.2:2006 at residential dwellings due to the spatial separation. Vibration levels at ground level in the vicinity of blast (ecological receivers) will be determined, but likely levels of vibration are considered low based on experience from similar projects.

Potential effects of blasting-induced ground vibration on lizard species behaviour and habitat use will be assessed in consultation with ecological specialists as part of the broader ecological impact assessment.

Noise from daytime vehicle movements is likely to be compliant at all locations. However, movements at night are likely to adversely affect 2484 Ikamatua Highway - resulting in potential sleep disturbance effects if the existing property has poor sound insulation - this will be confirmed during the detailed assessment work.

7.2 Air quality

There is significant spatial separation between the above sources and sensitive receptors. Given the use of standard measures for dust control, it is expected that the potential air quality effects of dust emissions from construction and operation phases will be very low, and offensive or objectionable dust effects are unlikely to occur.

Combustion emissions will occur from construction machinery and vehicles. However, they are likely to be at low levels, and the potential effects of these emissions are expected to be negligible given the receiving environment.

8 Further assessment recommended

8.1 Acoustics

The detailed noise and vibration assessment for the FTAA Substantive Application for Rua Gold's Auld Creek Project (Western Option) will include quantitative construction and operational noise modelling using the prediction methods outlined in this referral. Results of the modelling exercise will be compared with relevant statutory criteria specified in the District Plan and best practice guidance provided in NZS 6803:1999 (construction) and NZS 6802:2008 (operation).

Assessment of potential vibration effects will be undertaken for both human receivers and ecological habitats, with specific consideration given to the sensitivity of confirmed lizard populations to ground-borne vibration from blasting and heavy vehicle movements. Development of noise and vibration mitigation and management plan will be required, outlining monitoring protocols, trigger levels for adaptive management responses, mitigation measures to be implemented during different project phases, and procedures for handling and responding to noise and vibration complaints from the community.

8.2 Air quality

The detailed air quality assessment will be prepared for the FTAA Substantive Application for Rua Gold's Auld Creek Project (Western Option). This will be prepared in accordance with Ministry for the Environment (MfE 2016)¹ guidance for the assessment of dust as well as guidance from the UK Institute of Air Quality Management (IAQM 2016)².

9 Conclusion

Noise and vibration associated with Rua Gold's Auld Creek Project (Western Option) are expected to be manageable and below applicable limits at residential receptors under typical operating conditions. With implementation of proposed mitigation measures and validation through detailed modelling, noise and vibration effects are likely to be less than minor.

The potential air quality effects associated with surface discharges from Rua Gold's Auld Creek Project (Western Option) are expected to give rise to very low dust effects at sensitive receptor locations surrounding the site. This conclusion is principally based on the significant separation distances that would be maintained between sources of dust and sensitive receptors and the implementation of industry-standard good practice mitigation and management measures to minimise dust emissions. Consequently, potential air quality effects are likely to be less than minor.

¹ MfE, 2016. Good Practice Guide for Assessing and Managing Dust. Ministry for the Environment. Publication Number: ME 1277.

² IAQM, 2016. Guidance on the assessment of mineral dust impacts for planning. Institute of Air Quality Management, United Kingdom.

10 Applicability

This report has been prepared for the exclusive use of our client Reefton Gold Limited, with respect to the particular brief given to us and it may not be relied upon in other contexts or for any other purpose, or by any person other than our client, without our prior written agreement.

We understand and agree that our client will submit this report as part of an application under the Fast-track Approvals Act 2024 and that an Expert Panel as the consenting authority will use this report for the purpose of assessing that application. We understand and agree that this report will be used by the Expert Panel in undertaking its regulatory functions in connection with the development of Rua Gold – Auld Creek Project.

Joint report prepared by:

Richard Chilton,

Technical Director - Air Quality

Authorised for Tonkin & Taylor Ltd by:



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Darran Humpheson,

Technical Director - Acoustics

Jenny Simpson

Project Director

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