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EGL Ref: 9702

Matakanui Gold Limited
Via email

10 March 2026

Attention: Cheryl Low

MATAKANUI GOLD LIMITED
BENDIGO-OPHIR GOLD PROJECT - FAST TRACK APPROVALS ACT
RESPONSE TO OTAGO REGIONAL COUNCIL
RIVER ENGINEERING REQUESTS FOR INFORMATION

1.0 INTRODUCTION

Otago Regional Council (ORC) have sought responses from Matakanui Gold Limited (MGL) to assist them in their understanding of the Bendigo-Ophir Gold Project (BOGP) Fast Track Approvals Act (FTAA) application and potential effects and the proposed management of those effects relating to:

- River engineering

Engineering Geology Limited (EGL) is engaged by MGL to provide geotechnical, earthquake, dam and surface water engineering services for the BOGP. ORC has previously raised questions on 12 December 2025[1], to which EGL has provided responses on 2 February 2026[2] and 17 February 2026[3].

GeoSolve Limited (GeoSolve) subsequently undertook a further technical review of EGL's responses on behalf of ORC for surface water and river engineering[4], and has issued comments dated 20 February 2026.

This letter sets out EGL's response to specific ORC's queries dated 26 February 2026[5]. It does not address the full scope of questions raised by GeoSolve as ORC has stated that other

[1] Otago Regional Council. 12 December 2025. Request for further information – Matakanui Gold Limited fast-track application for the Bendigo-Ophir Gold Project. ORC Ref: RMFT25.007
[2] Engineering Geology Limited. 2 February 2026. Matakanui Gold Limited, Bendigo-Ophir Gold Project - Fast Track Approvals Act, Response to Otago Regional Council, Geotechnical Engineering, Surface Water, Erosion and Sediment control requests for information – Revision 1. EGL Ref: 9702
[3] Engineering Geology Limited. 17 February 2026. Matakanui Gold Limited, Bendigo-Ophir Gold Project- Fast Track Approvals Act, Response to Otago Regional Council, Shepherds Valley Creek Realignment. EGL Ref: 9702
[4] GeoSolve, 20 February 2026. Revised Surface Water and River Engineering Assessment Memo, Bendigo-Ophir Gold Project Fast-Track Application Assessment. Ref: 240480.03
[5] Otago Regional Council. 26 February 2026. Email from Shay McDonald (ORC) to Cheryl Low (MGL)

points are "manageable by consent conditions, either those already proposed or modified versions which [ORC] would discuss in council's s53 comments."

2.0 ORC COMMENTS

ORC's questions relating to river engineering are repeated below:

"*River engineering*
The only matters that remain somewhat unresolved are:

- *an assessment of the likelihood and consequences of overtopping the Shepherds diversion channel;*
- *an assessment of the frequency and consequences of spilling events from the sediment retention devises.*

The concern with both is the risk of back-scour and channel re-routing."

3.0 RESPONSE TO ORC COMMENTS

In this response, EGL recommend a detailed assessment and design of the channel be undertaken prior to construction. This shall include assessment of overtopping and potential for back-scour and channel re-routing and the mitigations. Below EGL outlines:

1. Summary of the potential for back-scour and channel re-routing for the proposed site.
2. The key considerations required in a detailed assessment of channel design, overtopping, back-scour and channel re-routing.
3. A proposed resource consent condition to enable ORC to review and approve the detailed engineering design for the Shepherds Creek Realignment prior to construction.

Summary of back-scour and channel re-routing

The Northern Diversion Channel runs along the northern side of Shepherds TSF and Shepherds ELF. The Northern Diversion Channel ends just downstream of Shepherds Silt Pond. Shepherds Creek Realignment extends downstream of Shepherds Creek Silt Pond on fill. The Northern Diversion Channel will be designed in operation to pass 1 in 10-year peak flow (during a 24-hour duration event) and 1 in 100-year flow in closure (all durations). The increased design event criteria is achievable due to detention of flows on the TSF in closure. Shepherds Creek Diversion Channel will be designed for a 1 in 100-year flow in operation and closure.

The Northern Diversion Channel will be formed by cut in rock. In closure the Northern Diversion Channel is disestablished above the closed TSF surface and water flows in the natural gullies onto the capped TSF surface to the Northern Diversion Channel on the north side of Shepherds ELF. Surface flows across the capped tailings surface will be at a very low gradient and low depth channels will be protected from erosion with rockfill.

The final level of Shepherds ELF is proposed to be raised to match the level of the channel cut in rock. This is to mitigate the potential for uncontrolled channel re-routing and erosion of the ELF. The surface of the ELF immediately adjacent will need to be protected from potential channel re-routing due to landslip blocking the channel in rock. This will require a low permeability base layer over the potential overflow areas and surface erosion protection with rockfill to prevent the erosion of the ELF surface. This can be easily achieved where

gradients are flat along the majority of the ELF. Where the gradients are steeper at the front face of the ELF down to the Shepherd Silt Pond, the channel will need to be cut deeper into rock such that is incised on both sides to prevent channel re-routing. Practically this is a 2 to 4 m deep channel and access profile cut into the existing rock surface as indicated on the proposed plans. Alternatively, the channel could be aligned down the surface of the Shepherds ELF. However, this will require a low permeability layer base layer and heavy rock armouring. This is practical, however, will likely require some maintenance as armour rock can weather and break down overtime. These items would be allowed for in a closure bond.

The design flows for Shepherds Creek Realignment allows for spill events from all sediment retention devices upstream. Therefore, the expected frequency and potential effects of these spill events from the sediment retention devices, in terms of back-scour and channel re-routing, will be addressed through the assessment of overtopping.

The Shepherds Creek Realignment will be formed in rockfill, with a design capacity to accommodate peak flows from a 1 in 100-year AEP storm event. Practically its alignment will be in the lowest point of the valley infill and the channel will be lined with armour rock erosion protection and the average gradient will be 1V in 15H.

The bulk valley infill will comprise rock fill, which has low susceptibility to erosion at low gradients. Therefore, the risk of channel re-routing is low. In the event the channel overtops at a single or multiple locations, creek flows will self-correct to the point of lowest elevation along the design alignment once flood water subsides.

Local variations in topography required to achieve rehabilitation objectives may require introduced steps which may be more at risk of re-routing. Risk in these areas will be managed through the use of erosion protection and profiling of the valley infill. EGL recommends the proposed channel alignment avoid sharp bends for flood control purposes. Where base flows are required to meander, it is recommend this is achieved within the floor the channel.

The Shepherds Creek Realignment will be rehabilitated prior to operation. This includes armouring, establishing a creek bed substrate in the floor of the channel, and planting and vegetation along channel banks.

In closure, the Shepherds Valley Infill surface (rockfill) will be rehabilitated and capped with brown rock (approximately 0.3 to 0.5 m thick), topsoiled and vegetated. This will provide a stabilised surface which will protect against erosion in the situation of overflow from the channel. It is recommended that the maintenance of the channel in closure is included in the closure bond. This is common on other mine sites. Where the channel is well armoured vegetation is well established and the risks are demonstrated to be low at closure, this would be a relatively small amount.

<u>Detailed channel design including overtopping</u>

EGL recommend a detailed assessment and design of the channel be undertaken prior to construction, for the Northern Diversion Channel and Shepherds Creek Realignment. EGL recommend this includes:

- Channel design capacity;
- Armouring of the channel;
- Detailing of inflow locations from gullies upstream;
- Seepage controls to maintain base flows in the channel;

- Overtopping potential, risks and mitigations, including;
  - Review of frequency of spilling events above channel design;
  - Review of at-risk locations where flows can be impeded in channel (i.e. from slips);
  - Identification of at-risk locations of re-routing (such as introduced localise steps in the channel)
  - Potential alternative flow routes by-passing the channel
  - Protection measures for alternative flows routes (rockfill, armouring and vegetation)

Proposed Resource Consent Condition

EGL recommends a resource consent condition be included to require a the detailed assessment and design of the Northern Diversion Channel and Shepherds Creek Diversion Channel, including overtopping. A draft condition is recommended below:

Proposed Condition - Detailed Assessment and Design of Permanent Creek Realignments

Prior to the commencement of any construction works associated with permanent creek realignments, the Consent Holder must submit a Detailed Design for the realignments to the Otago Regional Council (ORC) for approval.

The Detailed Design must be prepared by a suitably qualified and experienced professional and must include the following:

- Hydraulic channel design, including design flows, channel capacity, and freeboard.
- Assessment of back-scour and channel re-routing risks from overtopping.
- Channel and bank protection design, including sizing, location, and extent of any rock armouring, vegetation, or structural protection.
- Channel geomorphological assessment, demonstrating long-term channel stability to avoid unintended channel re-routing or avulsion.
- Design of ecological enhancement elements.
- Detailed Design Documentation including Design Report, Design drawings, Specification, Construction Monitoring Schedule. Drawings to include plan view, long-sections, and cross-sections at sufficient intervals to illustrate channel form, gradients, and structural elements.

ORC must, within 20 working days of receiving the Detailed Design Documentation:

Provide written approval; or
Provide written requests for further information or amendments.

If ORC has not provided written approval or requested amendments within 20 working days of receipt of the Detailed Design Documentation, the package shall be deemed to be accepted and the Consent Holder may proceed with construction in accordance with the submitted design.

All permanent creek realignment works must be constructed in accordance with the approved (or deemed accepted) Detailed Design Documentation. On completion a Construction Completion Report documenting the as-built channel and protection measures and any variations shall be completed and reviewed by a suitably qualified and experienced professional and submitted to ORC.

Your Sincerely

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