

Before the Independent Hearing Panel

In the Matter of the Resource Management Act 1991
(RMA)

And

In the Matter of an application to the Central Otago District Council and Otago Regional Council for resource consent to establish and operate a gold mining activity at 1346 – 1536 Teviot Road, Millers Flat

Reference RC230325 (Central Otago District Council)
RM23.819 (Otago Regional Council)

Summary Statement of Thomas Brendan Heller on behalf of Hawkeswood Mining Limited

Groundwater Take and Discharge (Hydrology and Water Quality)

Dated 13 May 2024

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Introduction

1. My full name is Thomas Brendan Heller and I provide this summary statement of evidence in relation to the Hawkeswood Mining Limited (**HML**) mining proposal at Millers Flat.
2. Please refer to the qualifications and expertise statements previously provided within my brief of evidence in-chief dated 29 April 2024. I also reaffirm that I have read and agree to and abide by the Environment Court's Code of Conduct for Expert Witnesses as specified in the Environment Court's Practice Note 2023.

Summary Statement

3. The existing environment and scope and scale of the proposed mine dewatering and discharge to land activities, inclusive of the type and scale of effects, are agreed between the Otago Regional Council (**ORC**) and E3, and the **HML** (applicant) technical proposal documents.
4. The proposed groundwater take and discharge to land activities for mine dewatering and management purposes are able to be undertaken in conjunction with the proposed and agreed ORC conditions of consents subject to one specific consideration and in respect of correction of any obvious errors.
5. It is requested that condition 15 of the discharge to land permit wording may include: "..... (as specified in the relevant NZ Drinking Water Standards at the time of sampling), where this was not previously exceeded from the results of baseline monitoring, then the Consent Holder must:"
6. This is to avoid any unnecessary assessment and reporting for HML if the groundwater quality at any monitoring site already naturally exceeds the NZ Drinking Water Standards.

7. Whilst some temporary effect of the mine dewatering activity (with a steady state rate of about 40 L/s), may result in a reduction of local well water levels and possibly some depletion of water from the lower reach of the Tima Burn, suitable monitoring, mitigation and reporting is included in agreed conditions of consents to suitably and completely mitigate these effects.
8. No measureable effect of the discharge to land activity is anticipated by the proposal, which has also been demonstrated by a similar activity (Waikaia Gold Ltd) discharge quality compliance data. The HML site/activity is also much better suited to the discharge to land than the WGL site/activity. The existing mine pond groundwater is of good water quality.
9. Where possible and appropriate, any outstanding matters from the ORC s 42A report and responses from submissions have been addressed within my evidence in-chief and are included for within the agreed ORC proposed conditions of resource consents. However in addressing the majority of submissions, considering the agreed level of monitoring, mitigation and reporting, the HML mining proposal will appropriately sustain the quality of, and connections and interactions between all local water bodies.

Matters Arising

10. Below I provide clarification of matters arising from submitters evidence for the following items:
 - a. Groundwater quality at the CODC Millers Flat Landfill in relation to Aukaha evidence;
 - b. Effect and lag time of mine dewatering upon Gunn wells G44/0132 and G44/0111; and
 - c. Effects and mitigation for flow in the Tima Burn in relation to Aukaha's evidence.

11. The latest sampling results (September 2023), from a 2023 CODC Annual Compliance Report show that at the Millers Flat Landfill, groundwater quality is good and comparable with the groundwater quality result taken from the HML test pit pond. Groundwater quality for parameters sampled at the landfill was as follows: pH 6.39, EC 26.21 mS/m, Chloride 17.7 mg/L and Nitrate-N 4.6 mg/L. There are no issues apparent from those results. Additionally, HML is prepared to monitor groundwater quality down-gradient of the landfill over time in respect of the mining proposal.
12. The Gunn wells G44/0132 and G44/0111 have been assessed as being potentially affected by mine pond dewatering (of between 0.2 – 1.0 m maximum seasonal drawdown), although this is unlikely to compromise the water supplies. Consistent with the calculations for seasonal drawdown given in the HML application reporting, a 0.2 m baseline drawdown effect from the location of the test pit pond upon G44/0132 and G44/0111 would take approximately 110 days to potentially develop. This provides more than sufficient time in advance of providing an alternate water supply if needed.
13. Assessment of effects of the HML mining proposal upon the Tima Burn have been provided based on ORC RPW Schedule 5 requirements and otherwise, inclusion of sufficient augmented flow as an adaptive management provision (in proposed and agreed conditions of consent). The classification of the Tima Burn within ORC RPW Schedule 5, indicates that effects of stream depletion would not be apparent upon the waterbody. This is due to natural water losses occurring and separation of the waterbody from the local groundwater level. Zero flow sightings and instream ecology evidence from Dr Allibone indicates that the Tima Burn goes naturally dry or exhibits very limited flow during summer periods.
14. Ordinarily, a standard stream depletion approach would indicate there is potential for the HML mine dewatering activity to temporarily deplete some water (flow) from the Tima Burn, and this outcome has also been

anticipated and adopted into the proposed adaptive management (agreed) conditions of resource consent.

15. The adaptive management conditions will provide for an augmented Tima Burn flow of a minimum of 21 L/s, with cool, clean and oxygenated groundwater. Dr Allibone considers the 21 L/s augmented Tima Burn flow as being substantially better than the typical natural flow.
16. Part of the proposed adaptive management conditions includes for (optional) additional investigation of natural Tima Burn flow losses. This does not indicate an information gap in regards to the effects assessment and proposal for augmentation of Tima Burn flow. The conservative 21 L/s Tima Burn flow augmentation requirement still stands and is agreed to by HML and ORC.

Conclusions

17. Overall, I conclude that there will be no measurable effect of the proposed discharge to land and that while some effect of the mine dewatering activity may result in a reduction in local water wells and possibly some depletion of water from the lower Tima Burn, that these potential effects can be suitably mitigated through HML's proposed conditions of consent.
18. I therefore remain of the opinion set out in my evidence in-chief that the effects of the proposal on hydrogeology are appropriately mitigated through the proposed conditions of consent.



Thomas Brendan Heller

Dated 13 May 2024