

Questions Asked by the Panel - comments J Horrox, 23 Sept 2026

1. Evaluate the mining methodology, particularly Section 5.4 (Substantive Application, Appendix 6) and its proposal to sequentially divert streams across the three sectors of Stage 2.

The bed of several waterways in a number of locations will be mined. This will obviously have a significant ecological impact on those short sections for a given length of time. This impact is accepted and there is no way around this. The justification and offset for mining these waterways is the following remedial work, which will have a net benefit for these waterways over a longer timeframe. Existing riparian vegetation along these streams is for the most part modest at best and remedial planting, combined with adequate channel habitat reinstatement, will be an improvement.

2. Provide a table (perhaps in consultation with the applicant) based on the indicative sequencing model and using the three mining sectors, which streams and for what length in each affected reach are under diversion in years 1-14 so that the panel has a sense of the level of freshwater modification likely to occur in annual and (if possible) monthly intervals.

I have viewed the proposed sequence of mining based on an additional diagram provided by the applicant. This appears to optimise avoidance of channel/diversion interference at any one time, given the nature of mining and waterway directions.

3. Using the information in b), assess whether the timing interrupts any lifecycles of indigenous species to a degree that should affect the indicative mining sequence.

It is assumed that trout spawning is not a consideration for any of these streams. There is not much suitable spawning habitat for migratory galaxids in the affected channel reaches. These sections may provide some suitable habitat for other native species like Bullies eg Redfin Bully. As discussed, short channel sections will be impacted in turn, and the applicant has planned to space this out as effectively as possible.

Affected waterways should regain equal or better spawning potential with the restoration of instream habitat and addition of improved riparian cover. Suitable bankside vegetation overhanging the water will be particularly beneficial, but these waterways are subject to high flows and significant hydrological power that may shape and reshape channel and bank morphology over time, independent of initial intervention.

Most of the native species present can handle short term elevated sediment loads. It is assumed that consent conditions will manage suspended sediment discharges that might affect downstream aquatic ecology.

Maintaining fish passage is important. Care needs to be taken if culverts or temporary structures are installed in the waterways, that these don't impede fish passage. Undersized culverts are a classic cause of fish passage disruption, and open fords can be better for low frequency crossings.

4. Consider what information should be certified and be in place before any waterbody is interfered with to ensure the progressive rehabilitation achieves a final waterbody morphology that is structurally and functionally appropriate and meets the aims of Figure 11 (Substantive Application, Appendix 6).

The remedial plans need to be sufficiently detailed and measurable so they can be accurately assessed once in place. The proposed sequence of maintenance and post remedial surveys of aquatic ecological health (bugs and fish), stipulated in the application, are suitable safeguards.

5. Assess the project's potential to materially interfere with natural waterbody hydrology and how any risks can be managed.

Stream depletion potential is difficult to assess. This is maybe the largest long term risk associated with reinstating a stream channel in a location that has been mined to a depth that has potential to increase vertical permeability. If depletion occurs, I can't think of any remedial strategy to reverse this. Many of these streams flow over old alluvial fans that may already have a tendency to dry up over long rain free periods. The periodic construction of deep pools (as part of remediation) may help to provide refugia for fish in these instances, combined with riparian shade. These refugia might also assist with fish migration during dry periods, which realistically won't be that often. These pools may just fill up with bed load, it's hard to say. If riparian margins are sufficient, there will be some ability for the channel to move and naturally form different hydrological habitats – natural processes are hard to mimic and hard to control.

6. Evaluate the methodology and consider aspects of the feasibility and implementation of the rehabilitation through the creation of a new wetland (approx..54ha), incorporating a reach of Granite Creek in the manner shown in the rehabilitation plan in Figure 17.

The ratio of proposed habitats being formed via remediation looked sufficiently diverse and a probable improvement on existing habitat.

7. Assess whether the characteristics of the replacement wetland should or can model habitat lost according to the existing wetland typologies in the Ecological Impact Assessment.

I'm not sure I follow this correctly, but is there debate over whether the new wetland should be the same as the old, or allow for a more diverse array of habitat types? I would be in favour of the latter, but this might be a moot point.

8. Assess whether the goals expressed in the draft rehabilitation management plan adequately capture the overall outcomes sought, both in terms of river morphology and function, and a new wetland and the sufficiency of measures to secure its aims.

The application demonstrates understanding of the issues and adequate ways to address them. The key is ensuring that proposed mitigation and restoration is undertaken according to proposals. For this, the milestones and benchmarks need to be as measurable as possible.

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Jonny Horrox

Principal Scientist | West Coast Regional Council