



Memorandum

To: BOGP Expert Panel

From: Santana Minerals Limited

Date: 17 August 2026

Re: Response to Question 7 of RFI 11, Part B

Question 7 of RFI 11 relates to wetlands and has two parts:

Part A: *Please provide a quantification of the hydrology under a range of climatic conditions sufficient to sustain the proposed restoration wetlands in perpetuity.*

Part B: *In the event that the wetlands are unable to be created and sustained, what other form of compensation is offered and how will this be addressed through conditions.*

Ryan Burgess, Principal Consultant at Hydro Geochem Group is BOGP's technical expert for hydrogeochemistry and has addressed Part A of question 7.

This memo addresses Part B relating to compensation in the event that the wetlands are unable to be created and sustained and how the compensation will be addressed through conditions.

Response to Part B:

Approximately one hectare of restoration wetlands will be established in Shepherds Creek within the area between the process plant and the Shepherds Valley gorge within the first three years after commencement of consents (half a hectare in Year 1 and another half a hectare by Year 3).

Six hectares of restoration wetlands will be established on the Tailings Storage Facility (TSF) during the active closure period at approximately Years 10 - 12 (two hectares of swamp and four hectares of ephemeral marsh). A further half a hectare will be established during active closure¹ following removal of the process plant at approximately Year 15 as part of the water treatment facilities (or earlier if required).

Shepherds Creek Wetlands Year 1 and Year 3

Wetlands will be established within the required Year 1 and Year 3 periods. Annual monitoring following establishment, undertaken as part of the Biodiversity Outcomes Monitoring Plan (BOMP), will confirm the condition of the wetlands and if they are self-sustaining.

If monitoring demonstrates that the restoration wetlands are not self-sustaining within 10 years of their establishment then compensation will be provided in accordance with the framework below.

¹ Active closure means the period of time when all mining activities are completed and rehabilitation activities are in progress (including profiling to final landforms, decommissioning of infrastructure, construction of water treatment facilities and capping of the ELFs and TSF).



The type and level of compensation will be commensurate with the gap between the ecological success criteria for the wetland (% wetland plant cover over each 0.5 hectare of wetland) and the committed area for each wetland (i.e. the difference between actual and 0.5 hectare for each wetland).

Should compensation be required, a range of measures can be implemented including:

- **Commitment to ongoing monitoring and / or work on the wetlands** - If annual monitoring following the 5 year trigger for contingency measures shows wetland vegetation cover is not trending toward a stable or expanding wetland with >66% wetland vegetation cover as measured in permanent vegetation plots over a portion of the wetland, then a program of works would be developed to achieve stable or expanding status by Year 10 (refer to Table 6a of the Landscape and Ecological Rehabilitation Management Plan (LERMP)).
- **Commitment to new programs of work** – If monitoring shows a portion of the wetlands are trending towards self-sustaining (defined as >66% wetland vegetation cover as measured in permanent vegetation plots, with *Carex kaloides* present and actively growing, with the area of the individual wetlands stable or expanding at Year 10) but due to design of the original wetland layout some areas are not self-sustaining and are unlikely to become self-sustaining, MGL will undertake to establish additional areas of wetlands in Shepherds Creek such that 1 hectare of self-sustaining wetlands (defined as >66% wetland vegetation cover as measured in permanent vegetation plots, individual rehabilitated wetland is greater than specified, stable or expanding and *Carex kaloides* is present and actively growing) can be established by or as part of active closure.
- **Financial Compensation** – In the event that monitoring demonstrates that portions of the wetlands are not self-sustaining and unable to be realistically established as a self-sustaining wetland at passive closure² (Year 12), and this conclusion is supported by the Peer Review Group, Otago Regional Council (ORC) and Central Otago District Council (CODC), then financial compensation will be offered for the corresponding shortfall in wetland area that has not been successfully established. The compensation will be \$30,000 per non-self-sustaining hectare, which is approximately 1000 labour hours that could be applied to remediation of existing wetlands elsewhere. The funds will be provided to the BOGP Biodiversity and Heritage Enhancement Fund (BOGP BHEC) for use on regional wetland enhancement.

Tailings Storage Facility Swamp and Ephemeral Marsh

Two hectares of swamp and four hectares of ephemeral marsh will be established during active closure (years 10 – 12). Monitoring following establishment, as set out in the BOMP, will confirm the condition and area of the swamp and marshland and if they are self-sustaining.

² Passive closure (or post-closure) is defined as the period of time when final site closure arrangements are in place and the active WTP (or PTS) continues to operate, with ongoing site monitoring to ensure it is a long-term stable landform.

In the event that the swamp and marshland are not fully self-sustaining within 10 years post establishment then compensation will be offered as set out below.

The type and level of compensation will be commensurate with the gap between the area of swamp and marshland that is self-sustaining and the committed area for each type (i.e. the difference between actual area of self-sustaining wetland and the required two and four hectares for swamp and marsh, respectively).

The need for compensation would arise if ecological success targets had not been met at Year 10. A range of measures could be implemented, including:

- **Commitment to ongoing monitoring and / or work on the swamp and marshlands -**
If annual monitoring following the 5 year trigger for contingency measures shows wetland vegetation cover is not trending toward a stable or expanding wetland with >66% wetland vegetation cover as measured in permanent vegetation plots (including the presence of actively growing *Carex kaloides* as measured in permanent vegetation plots over a portion of the wetland), then a program of works would be developed to achieve stable or expanding status by Year 10 (LERMP Table 6a).
If after 5 years there is < 0.5 hectares of open water present at spring maxima, and <2 hectares of permanent swamp with native sedge cover over two successive surveys (Years 4 and 5), then changes will be made to drive the trajectory towards 2 hectares of swamp and 4 hectares of marshland with >66% wetland vegetation cover measured in permanent vegetation plots (e.g. changes to outlet height, changes to how run on water flows through the system).
- **Commitment to new programs of work –** If after 10 years post establishment monitoring shows that more than 40% of the swamp and / or marsh do not have >66% wetland vegetation cover in permanent vegetation plots including the presence of actively growing *Carex kaloides* (i.e. <60% of areas are self-sustaining), MGL will undertake works to facilitate the expansion of the areas of swamp and /or marshland and/or improve the quantity/quality of the vegetative cover. This may include actions such as adjustment to the height of the outlet structure, changes to how run-on water flows through the system or the addition of surface materials and / or planting. Ongoing monitoring will determine if additional work was successful and if further programs are required.
- **Financial Compensation –** In the event that monitoring demonstrates that portions of the swamp or marshland are not self-sustaining and unable to be realistically established as a self-sustaining swamp and / or marshland by 15 years post establishment, and this conclusion is supported by the Peer Review Group, ORC and CODC then financial compensation will be offered. The compensation will be \$50,000 per non-self-sustaining hectare which is approximately 1,600 labour hours that could be applied to remediation of existing wetlands elsewhere. The funds will be provided to the BOGP BHEC for use on regional wetland enhancement.

Water Treatment Plant Wetland

A wetland is expected to be established to support the Water Treatment Plant (WTP) and to undertake passive water treatment, if required, upon decommissioning of the WTP. The WTP will be constructed if water discharges from the mine impacted areas do not meet discharge criteria. The size and layout of the wetland will be determined by the type of water treatment undertaken during and post operation of the WTP. It is expected to be in the order of 0.5 hectares and be located upstream of the Shepherds Creek Wetlands established in Years 1 and 3 of the Project.

When the wetland is no longer required for passive water treatment it will be remediated, if necessary, and reestablished to function as natural wetland. If after 5 years it is not fully self-sustaining, compensation will be offered as per the compensation offered for the Shepherds Creek Wetlands discussed earlier in this memorandum.

Resource Consent Conditions

Resource consent conditions will be proposed (as part of the final proposed conditions to be provided to the Expert Panel by 28 August 2026) which require the implementation of the compensation measures proposed above in the event that the success of the wetlands is not as planned.