



Memorandum

To: Bendigo-Ophir Gold Project Expert Panel

From: Santana Minerals Limited

Date: 17 August 2026

Re: Response to Memorandum of Counsel for DOC regarding spring annuals survey

This memo addresses the Statement of Advice from Max Crowe on behalf of the Department of Conservation (DOC) on spring annuals. Since the points discussed in Mr Crowe's memorandum overlap with other questions from RFI 11 this memo is provided to provide context for the RFI 11 response.

Mr Crowe's statement of advice covers a range of subjects in relation to the spring annuals survey, spring annual populations and the MGL Assessment of Effects.

MGL does not intend to address the statements regarding the assessment of effects. This has been discussed at length in the expert witness conferencing and there is disagreement between the experts on some methodological aspects.

The discussion below addresses Mr Crowe's analysis, broadly in line with the subject headings in his analysis

CIT densities and buffers

MGL concurs that densities of spring annuals in the CIT pit are higher than elsewhere for *Ceratocephala pungens*. MGL has offered a draft condition to protect the population of *C. pungens* and *Myosotis brevis* within the CIT pit area until the population within the pit is less than 1% of the known population. The table below shows the actual populations required before CIT can be mined based on 2025 CIT pit and national populations.

	CIT pit population	National population	CIT Outcome
<i>Ceratocephala pungens</i>	2,495 (19%)	13,150 (100%)	Not mined
	2,495 (1%)	249,500 (100%)	Mined
<i>Myosotis brevis</i>	6,895 (9%)	79,115 (100%)	Not mined
	6,895 (1%)	7,911,500 (100%)	Mined

The likely importance of the spring annuals was anticipated from the 2024 survey and taken into account from early in the project when defining the direct disturbance



footprint and undertaking design. Locations and shapes of infrastructure, stockpiles (topsoil, ore) and haul roads were adjusted to reduce effects. Approximately 23ha were trimmed out of the footprint in spring annual habitat to protect spring annuals. This created a number of flow-on design challenges for the siting of infrastructure (workshops, portal, stockpiles) in the steep, mountainous valley environment.

Mr Crowe raises concerns regarding the adequacy of buffers around spring annual populations and the potential for indirect effects extending beyond the direct disturbance footprint. The 610ha direct disturbance footprint (DDF) includes contingency zones (amounting to approximately 21% of the DDF) around all project components and was deliberately designed to provide separation between operational activities and surrounding habitats. These contingency areas are intended to minimise the potential for indirect effects, including dust deposition, edge effects and operational disturbance. In addition, the Air Quality Management Plan establishes monitoring and management thresholds specifically directed at protecting sensitive receptors, including spring annual habitat, should dust levels exceed expected conditions.

Bendigo Conservation Covenant and distribution of spring annuals

While the Bendigo Conservation Covenant offers legal protection for flora and fauna, it has not afforded that protection in practice. MGL understands that the objectives of the covenant have never been monitored on the ground and substantial areas of the original covenant have been revoked without consideration for potential ecological or heritage effects. The covenant area, including substantial areas of DOC reserves are operated as a commercial sheep station where, excluding DOC reserves, pasture improvement activities are an accepted practice. While pasture improvement (over sowing and topdressing) is a necessary and accepted practice for sheep farming in difficult station country, it affects the distribution and abundance of native species.

MGL is proposing to uplift part of the Bendigo covenant, to be replaced with a new covenant, encompassing a much larger area (2,219 ha) including the Ardgour Restoration Area (ARA). The new covenant, along with proposed BOGP consent conditions would afford much stronger and effective legal protection for spring annuals over a much larger area than the proposed revocation. The protection would be afforded via more precise and directive legal language and increased management oversight by regulating agencies, including DOC. In addition, MGL's commitment to ongoing spring annuals surveys, habitat, propagation and lifecycle research will provide much greater levels of knowledge and protection of spring annuals than the status quo.

Distribution of spring annuals and future surveys

Since MGL commenced ecological surveys in 2023 there has been an increasing understanding about the location of populations of spring annuals and their habitat in the Bendigo area. Two well-resourced targeted surveys undertaken by MGL in 2024 and 2025 have dramatically changed the collective knowledge about spring annuals including populations, areal extent and habitat. Future surveys, including the 2026 survey will further expand that knowledge.

Prior to MGL's 2025 survey spring annuals were generally expected to be found predominately in either severely degraded areas now occupied by cushionfields and described as depleted herbfields or salt impacted areas, with some open kanuka woodlands suitable. Since MGL's 2025 survey, spring annuals can be expected to be found in other habitats including exotic grassland, tussock grassland and mixed scrub. Prior "understandings" about seed banks, seed dormancy, germination timing and frequency, soil types and competition effects need to be reconsidered as more information comes to hand.

The 2026 survey expands into the ARA and areas to the west and southwest of the DDF. Discussions with private landholders and lessees, some of whom have made substantial changes to their annual lambing program, has enabled the expanded 2026 survey of approximately 2,000 hectares. Discussions are ongoing regarding access to additional areas with other landowners.

Experienced botanists and ecologists have been engaged for the survey which includes additional potential habitat types, the collection of broad habitat description data and the testing of novel survey techniques (time lapse cameras and drones) to support future surveys.

Mr Crowe makes a valid observation that little is known about spring annuals in the broader Bendigo covenant area. MGL's focus to date has been on potential direct effects on the spring annuals and the ARA where the proposed new covenant will apply and where MGL will have management responsibility and authority. The 2024 survey, although constrained by late access onto ARA due to lambing restrictions, indicates that spring annuals populations are likely to occur there in reasonable numbers. The 2025 survey of the northwestern faces of the Ardgour Station Hill country where substantial new populations of spring annuals were discovered, support this premise (Figure 1).

Mr Crowe considers that less than half of the area within the DDF considered likely to support spring annuals has been surveyed to date. RMA Ecology prepared a "heat map"

in their 2024 Vegetation Values Assessment¹ for BOGP indicating the likelihood of threatened spring annual presence (page 77). More than two thirds of the areas identified in the RMA Ecology report have been surveyed over the 2024 and 2025 surveys and the remainder will be surveyed in 2026.

The 2026 survey will include some of the Bendigo Covenant areas where suitable habitat is probably present, as lambing restrictions allow, and some of the former covenant areas as landowners permit. Figure 2 shows the 2024, 2025 and current extent of the 2026 survey.

Ardgour Sanctuary

The concerns expressed by expert witness regarding the values of the Ardgour Sanctuary were carefully considered and MGL now proposes a 52-hectare sanctuary over Battery Hill as an alternative location. The Battery Hill site offers higher values for lizards, in particular southern grass skink (Refer to RFI 11 Question 10 response).

MGL notes that a sanctuary fence is only necessary for the protection of lizards and other conservation activities, including the conservation of cushionfield and spring annuals can be undertaken without a fence.

Effects of erosion mitigation on recruitment

Mr Crowe stated that while these species may benefit from some level of disturbance, their habitat requirements **may potentially** be incompatible with the erosion and sediment control objectives of the mining operation.

Mr Crowe was paraphrasing the statement in the 2025 survey report - “Some plants within the DDF were difficult to find amongst exotic grass swards that had become established since the first survey, and it is possible that the sowing of grass seed as rehabilitation for roading disturbance **may have contributed** to that outcome” (page 23).

In the areas surveyed twice along Thomsons Gorge Road two populations of *C. pungens* were found within approximately 20m of the upgraded section of road. The populations were 200m apart and found on separate trips. One population of approximately 30 plants was found on the first trip, and the other of approximately 10 plants was found on the second trip, one month later.

The 2025 Spring Annual report also notes that:

¹ RMA Ecology Ltd BOGP Vegetation Values Assessment. Report prepared for Matakanui Gold Limited. October 2025.

- fewer *C. pungens* plants were found on the second survey across all areas with average densities dropping from 25 plants/ha to 2 plants/ha.
- *C. pungens* germination and emergence do not occur all at once but are extended across the spring growing season.
- While the main flush of germination and emergence was in early spring with few plants appearing later results from areas twice surveyed suggest there is a turnover of *C. pungens* plants across the habitat throughout spring.
- *C. pungens* was found in open, sparsely vegetated habitats including cushionfield, shrubland, and disturbed silty soils, typically where perennial grass cover was low.

The relationship between grass, annuals and spring annuals on sparsely vegetated areas is not clear cut. The 2025 report states the plants were difficult to find, but some were found. Spring annuals may germinate ahead of grasses and other annuals and complete their lifecycle before the other plants establish. The triggers for germination of spring annuals are not known.

These are important nuances that require further observation in future surveys and research.

CIT pit early works

Mr Crowe notes that only half of the CIT early works was surveyed. This is because the other half is facing south and when considered by the experienced botanists on site the vegetation at the location was not suitable habitat for survey on the 2024 or either of the two 2025 surveys of this area.

Nature of effects and uncertainty

Mr Crowe contends that the effects of the proposal are irreversible and it is not possible to offset or compensate the effects.

MGL's comprehensive package of proposed conditions, research, rehabilitation, new expanded covenant, surveys, and conservation work on Mine Regeneration Zones and Ardgour Restoration Area will all work together to deliver a step change in understanding and increased protection thereby resulting in decreased uncertainty. Ultimately the package will deliver an expansion of spring annuals populations in the Bendigo area through survey outcomes, conservation efforts and rehabilitation leveraging off the research results. It will require:

- Focus – directed by success criteria and adaptive management but ultimately ensured by consent conditions,
- Time – 35 year duration of consent provides time, and

- Resources – MGL has committed substantial resources to the BOGP ecological programme

The BOGP is not unusual, there are several examples in New Zealand where resource development has resulted in improved knowledge, increased certainty and better ecological outcomes; the more high profile ones include frogs at Waihi and snails on the east coast.

Conclusion

MGL acknowledges that the BOGP will result in an effect on spring annuals. However, the BOGP will also deliver at least 12-14 years of targeted surveys and 10 years of targeted spring annual research. BOGP presents a unique opportunity to substantially grow and develop the understanding of spring annuals over a relatively short period. Without BOGP the residual effect will likely remain highly negative through ongoing active farm management and vineyard development but without any of the broadscale surveys or research being proposed through the BOGP.

MGL has worked hard to mitigate the effects within the constraints of a potential operating mine, to the point of forfeiting a significant ore body to conserve spring annuals. If BOGP were not to occur the outcomes for spring annuals are more uncertain. Broadscale population surveys will not be undertaken and research will not be funded. Topdressing and over sowing will continue, weeds will not be managed. Amongst other things the BOGP offers a great opportunity to contribute to the conservation of a group of poorly understood Threatened species through a well-resourced program overseen by regulating agencies and the community.

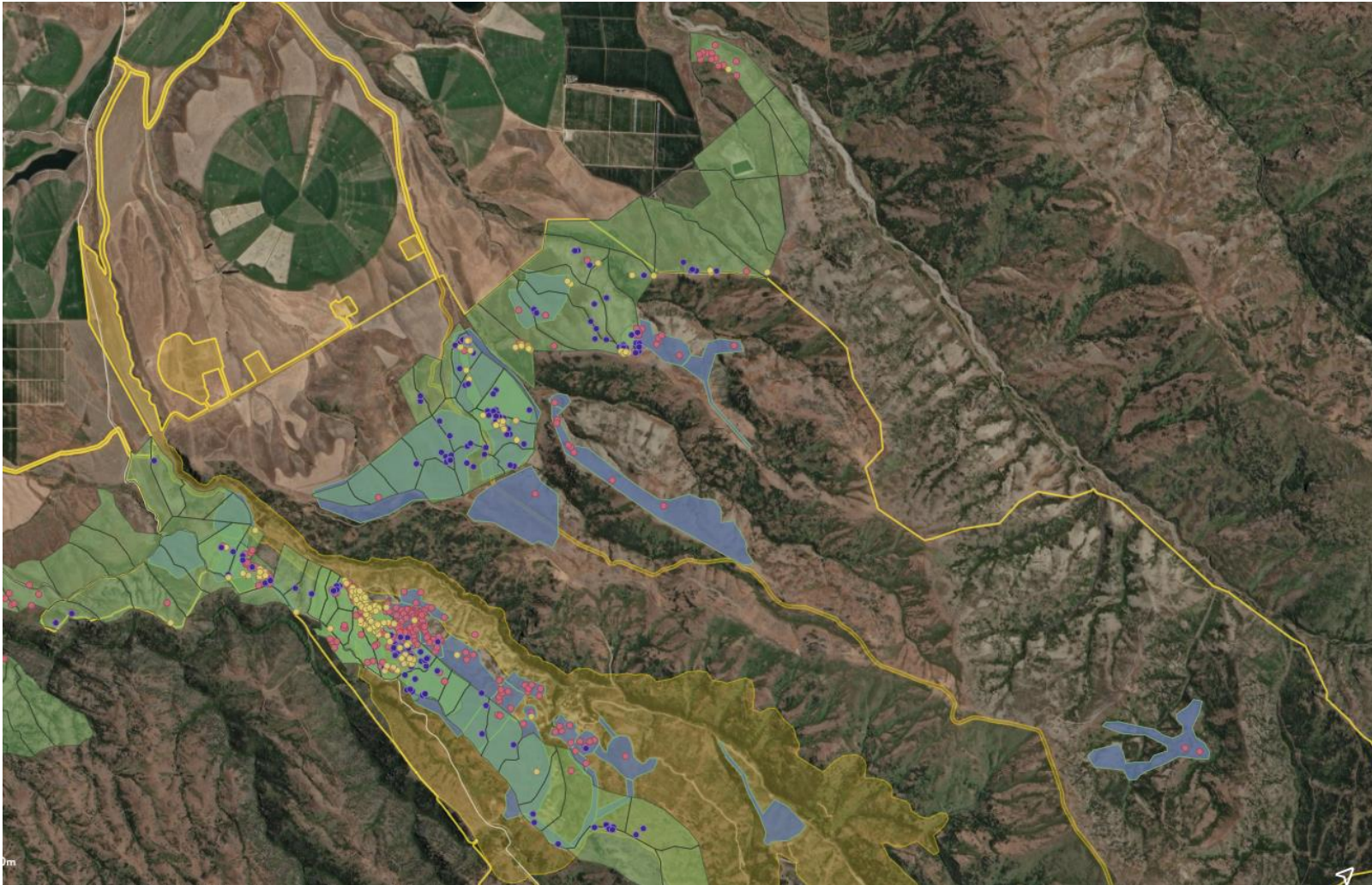


Figure 1: Survey areas including northwestern faces of Ardour Station hill country 2024 (blue), 2025 (green), *C. Pungens* (blue), *M. brevis* (pink), *M. minimus* (yellow).

Matakanui Gold Limited
2 Cemetery Road
Cromwell, New Zealand
NZBN 9429041420614

T: 0800 726 333
E: community@santanaminerals.com
W: santanaminerals.com

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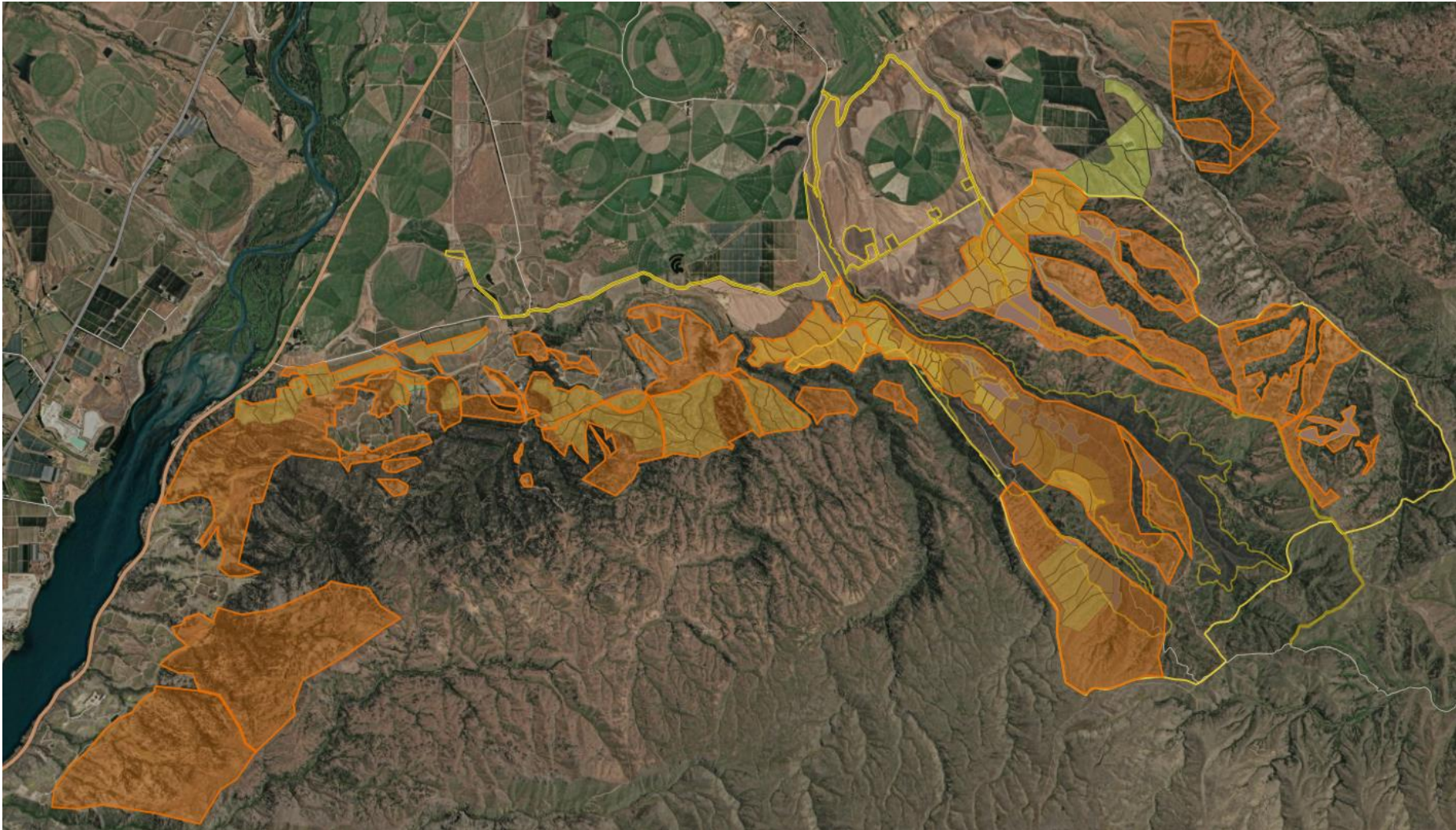


Figure 2: Survey areas- 2024 (blue), 2025 (green), 2026 (planned) (orange). The 2026 survey shown is approximately 3000 hectares. Access to some 600-800 hectares is still to be confirmed based on lambing. Some areas of the 2025 survey are unavailable due to lambing.