



ABN: 53 974 240 329

Date: 11th February 2026

C/- Project Officer, Brittany Golding
Planning Assessment Section,
Dept of Planning, Housing and Infrastructure,
NSW Government
Sydney NSW

Via. NSW Project Planning Portal and email: Brittany.Golding@planning.nsw.gov.au

Re Submission of Objection to Larvotto Resources Hillgrove Mine Extension to Mine Life;
SSD Modifications Application No. DA98/35-Mod-5, EPBC ID No. 2025/10262,

Dear Sir/Madam,

Thank you for the opportunity to submit re the above important Modification 5. to Hillgrove Mine. Save Our Macleay River Inc. (SOMR) is a community group working with all levels of Government and industry, with the objective: '*To work towards ensuring clean water and healthy environment throughout the Macleay River catchment.*' Its Committee and members comprise and represent the community in all parts of the large (11,450km²) Macleay catchment, with varied expertise and experience.

Historical Context and Baseline Contamination

The risks associated with Mod 5 are intrinsically linked to the 150-year mining history at Hillgrove, dating back to 1877. Legacy sediment contamination is estimated to be 7 million tonnes of waste rock and tailings, historically deposited into and adjacent to Bakers Creek. This material constitutes a persistent "plume" of heavy metals that moves downstream with each flood event.

This legacy creates a challenging baseline for any expansion, as new operations must avoid exacerbating existing contamination while addressing historical liabilities. - The primary challenge is ensuring that doubling production to 500,000 tpa does not increase the pollutant load of an already contaminated system. The "care and maintenance" history of the site means legacy issues often remain unresolved while expansion is prioritised.

Summary Position

This submission raises serious concerns that the proposed Hillgrove Mine Modification 5 has not demonstrated that arsenic, antimony, or associated mine wastes will be prevented from entering Bakers Creek, Swamp Creek, or the Macleay River system.

While the accompanying groundwater and surface water assessments are technically detailed, they are structurally inadequate for decision-making in a catchment already under cumulative and escalating stress. Approval should not proceed until critical flaws are addressed and key data, modelling, and design gaps are closed.

1. The Macleay River context: cumulative and compounding pressure - The Hillgrove proposal cannot be assessed in isolation

The Macleay River catchment is already experiencing:

- § Historic legacy mining contamination.
- § Separate approved DA Hillgrove Mine operations, including e.g. Clarkes Gully and Metz mines - also on Bakers Creek inflows.
- § Extensive agricultural land use and drainage modification.
- § Reduced flows downstream from upper catchment water storage plans.
- § Gravel extraction and channel disturbance.
- § Ongoing catchment vegetation clearance.
- § Blackwater events and hypoxic conditions with system-wide ecological impacts; and
- § Acid sulphate soil (ASS) mobilisation during flood events.

These pressures are interactive and cumulative, reducing the river's assimilative capacity and resilience. In this context, additional contaminant loading - especially episodic discharges associated with rainfall events - carries a significantly heightened risk of threshold exceedance and system-wide impact. Also, these cumulative impacts on the river need to be considered in any other DAs affecting the river, such as Armidale's Regional Water Strategy and Oven Mountain Pumped Hydro proposals.

Bakers Creek, a tributary of the Macleay River, has a well-documented history of elevated arsenic and antimony arising from both naturally mineralised host rocks and historic mining activities, including waste rock placement, tailings disposal and creek disturbance. Resulting in a 'plume' of antimony and arsenic contamination progressing down the Macleay.

Extensive scientific studies by UNE for over 20 years and intensive studies by SCU over 5 years and government reporting indicate persistent dissolved and sediment-bound contamination, bioaccumulation in sediments and macroinvertebrates, and remobilisation during high-flow events. This establishes an already highly-degraded baseline prior to any further proposed mine life extension, as proposed in Hillgrove Mine's Modification 5.

2. Fundamental flaw: the river is not treated as the primary subject

Across both the groundwater and surface water assessments, the Macleay River and its tributaries appear primarily as downstream compliance reference points or dilution environments. They are not assessed as living systems with thresholds, cumulative limits, or existing vulnerabilities.

A proposal, such as this, that introduces arsenic and antimony into tributaries of a river already experiencing contamination and episodic collapse must demonstrate no net harm to the river-system, not merely compliance with 'prescribed exceedances' at discharge points.

2.1 Groundwater and surface water must be assessed together

Unlike the Mod 5 'Proposal'; This submission by SOMR deliberately considers groundwater and surface water together because, in the Hillgrove–Bakers Creek–Macleay system, they are hydrologically and ecologically inseparable. Adit discharges, seepage from storages, fractured rock flow paths, baseflow contributions, and surface-water overflows form part of a single connected system.

Contaminants mobilised into groundwater do not remain underground; over time and during events they emerge into surface waters and are conveyed downstream. Treating groundwater and surface water as separable compartments understates cumulative risk and fails to protect the river-as-a-whole.

3. Key flaws in the current assessments

3.1 Reliance on qualitative inference where quantitative assurance is required

The groundwater assessment is explicitly qualitative, relying on limited monitoring and conceptual models. Despite this, conclusions are drawn about localised impacts, minimal migration risk, and licensing adequacy. These conclusions exceed the strength of the evidence base and are inappropriate for approval where trace-metal mobilisation is already a known and documented risk.

3.2 Failure to measure critical discharge pathways

Licensed adit discharges are acknowledged, yet actual discharge volumes are not measured, with reliance placed on visual inspection. Without quantifying these flows, particularly during rainfall events, it is not possible to credibly conclude that contaminant loads are controlled.

3.3 Normalisation of guideline exceedances

Antimony and arsenic exceed drinking-water and irrigation guidelines at adit monitoring locations. These exceedances are reframed as background variability or not necessarily indicative of mining impact, this normalising contamination rather than addressing downstream consequences.

3.4 Design-embedded pathways for uncontrolled discharge

The surface water assessment identifies storage overflows to Bakers Creek or Swamp Creek, uncontrolled discharges within the water balance framework (i.e. the passive overflow pathways whereby, under high-rainfall or storage exceedance conditions, water is released from mine water storages to receiving creeks without active flow regulation or treatment), and contingencies that include increasing discharge limits during wet periods. These features are incompatible with river protection, particularly because they coincide with flood-driven ASS mobilisation and blackwater events.

3.5 Compliance is treated as protection

Reliance on EPL limits, guideline compliance, and treatment technology conflates regulatory compliance with ecological protection. In an already stressed catchment, compliance alone does not ensure river health.

4. Critical data and modelling gaps that must be closed before approval

4.1 Continuous measurement of adit flows and contaminant loads

Approval should require continuous flow monitoring at key adits, quantified rainfall-response relationships, and mass-load estimates for arsenic and antimony under both baseflow and event conditions.

4.2 Deep and sentinel groundwater monitoring

Nested shallow and deep monitoring bores should be installed along inferred fracture and fault pathways, particularly between mine infrastructure and surface waterways.

4.3 Baseline establishment around unlined storages

Upgraded unlined storages present seepage risks. Baseline groundwater and surface-water conditions must be established, with sentinel monitoring networks and early-warning triggers operational prior to approval.

4.4 Event-based and failure-mode modelling

Modelling must explicitly address extreme rainfall, prolonged wet periods, coincident failures, overflow sequences, and treatment bypass risks. River failure occurs in events, not averages.

4.5 Fate of treatment concentrates

Reliance on reverse osmosis shifts risk rather than removing it: large volumes of water are consumed, contaminants are concentrated into a hazardous acid/brine, and secure long-term containment becomes critical. In a catchment already under contaminant and ecological stress, this approach increases the severity of consequences if containment or treatment fails.

A full fate-and-failure analysis for Reverse Osmosis concentrate and brine storage is required, to demonstrate that contaminants cannot reach surface water or groundwater under credible operating, extreme-weather, and failure scenarios.

5. Mine materials management as a pathway to river contamination

5.1 Dry-stacked tailings and Bakers Creek stockpiling: long-term arsenic and antimony risk

While dry-stacked tailings may reduce the risk of sudden structural failure compared to slurry tailings, they do not eliminate long-term contamination risk. At Hillgrove, tailings are enriched in arsenic and antimony-bearing minerals, and the dominant risk is chronic mobilisation rather than catastrophic release.

Dry-stacked tailings remain exposed over decades to oxygen, rainfall infiltration, and changing redox conditions. In steep terrain with fractured bedrock and hydraulic connectivity to Bakers Creek, this creates credible pathways for dissolved arsenic and antimony to migrate into groundwater and surface waters, particularly during prolonged wet periods.

The environmental acceptability of dry-stacked tailings at Hillgrove therefore depends not on tailings form alone, but on rigorous site-specific geochemical characterisation, conservative siting outside flood-prone and creek-connected areas, robust seepage interception, and closure designs that ensure long-term chemical stability without reliance on perpetual water treatment.

5.2 Waste Rock stockpiling: long-term arsenic and antimony risk

Waste rock stockpiling near Bakers Creek, especially at Brackins Spur immediately adjacent Bakers Creek, and the proposed backfilling of historic workings present additional long-term pathways for arsenic and antimony mobilisation and must be designed, monitored, and regulated to the same site-specific standards.

It should be noted that Waste Rock still contains ore to weather and mineral discharge. It is defined as rock that contains 'insufficient economic mineral content for processing'. Thus, it requires highly responsible management in stockpiles (dumps) due to potential environmental issues like acid mine drainage.

6. Broader governance concerns

This proposal occurs within a catchment subject to multiple interacting stressors and episodic ecological collapse, yet no single authority is accountable for protecting the Macleay River as an integrated system. This represents an unacceptable governance failure.

Approval of additional contaminant pathways should not proceed in the absence of a clearly defined lead responsibility for whole-of-river protection, explicit cumulative-impact thresholds, and enforceable mechanisms linking monitoring results to mandatory management action. Without these safeguards, approval would further entrench a system in which harm is repeatedly identified but institutionally tolerated.

Given the Proposal is for 24/7 365 days a year mining and processing operations, oversight of any monitoring results thus need to be automated, as the responsible agency will not work 24/7/365. Should the proposal be approved, monitoring results also need to be independently collected, monitored and accessible to the public. Self-reporting of breaches/exceedances is proven to be NOT effective.

It is understood that a new Rehabilitation Cost Estimation Tool becomes mandatory on 2 March 2026; and given the extensive and high-risk elements of the Mod. 5 proposals and timing of assessment & approvals, it seems appropriate the mine's bond(s) subject to DA 98/35 be reassessed using this tool if/when approved. Additionally, a formal review of the \$4,920,000.00 rehabilitation security deposit/bond is requested and is this sufficient to remediate the 7 million tonne legacy plume and the dry-stack facility

7. Conclusion

The Hillgrove Mine Modification 5 assessments are technically detailed, but they are not scientifically or ecologically sufficient for approval in, or for, the Macleay catchment.

Cumulative impacts are under-accounted for, rely on unmeasured pathways, normalise contaminant presence, and assume that meeting licence conditions alone ensures river protection, an assumption that is not supported in a catchment already experiencing contaminant and episodic ecological stress.

Given the Macleay River's existing and well-documented vulnerability, from historic mining impacts, altered hydrology, ongoing catchment disturbance, acid sulphate soil discharge, blackwater events,

and climate-amplified extremes; Approval should not proceed until the identified flaws are resolved and the necessary data, modelling, design safeguards and effective monitoring are in place.

The proponent's community engagement and consultation have focused on the Armidale area with only minimal on those downstream stakeholders in the Macleay River catchment, at most risk. Most of the information has been gleaned from Larvotto's ASX and mail-outs to shareholders.

In these documents, Larvotto proposes mining and processing Tungsten, which is not mentioned in the proposed Mod 5 summary, only in historic context and existing approvals. – The specific impacts of mining and processing are not known, or addressed in Mod 5 proposal.

The urgency / haste of the proposed Mod 5, where several components, subject to separate DAs are underway, is obviously driven by record high mineral prices and the Government's Critical Minerals strategy and funding (\$2.1b overall); any assessments, approvals and/or conditions need to be thoroughly considered.

The river's and downstream users' health must be treated as a binding constraint, not a residual consideration. In the current form, the Hillgrove Mine's Modification 5 assessments are fundamentally flawed and pose an unacceptable risk to the Macleay River catchment and the community downstream.

Thank you for the opportunity to provide this submission of objection to Hillgrove Mine's Modification 5 to their DA 85/35 – as proposed. We hope that this submission is taken constructively.

Should you have any queries regarding the above, please contact the SOMR Secretary at any time.
Yours sincerely



Paul Smith, President
Save Our Macleay River Inc.
Secretary, Rupert Milne Home, Contact:
t: (+61) 02 65 671384 m: 0412 671384
e. C/-: rupmh3@gmail.com w: <http://saveourmacleayriver.com/>
Thungutti Country

Relevant References & Links to support SOMR's submission include:

Scientific papers:

Antimony and arsenic particle size distribution in a mining contaminated freshwater river: Implications for sediment quality assessment and quantifying dispersion.

Link: <https://www.sciencedirect.com/science/article/abs/pii/S0269749122004183?via%3Dihub>

Floodplain morphology influences arsenic and antimony spatial distribution in a seasonal acid sulphate soil wetland

Link: <https://www.sciencedirect.com/science/article/pii/S0304389424015929?via%3Dihub>

Antimony and arsenic speciation, redox-cycling and contrasting mobility in a mining-impacted river system Link: <https://www.sciencedirect.com/science/article/abs/pii/S0048969719363508?via%3Dihub>

Antimony Flux and Transport Dynamics in a Mining-Impacted River Is Linked to Catchment Hydrodynamics and Climate Oscillations Link <https://onlinelibrary.wiley.com/doi/10.1002/hyp.15323>

Summaries

Prof Scott Johnson's SCU research on quantities and mobility of As & Sb etc as baseline data . Power point slides summary of and presented to the community at a forum late 2024. Link:

https://saveourmacleayriver.com/wp-content/uploads/2024/08/1_Macleay-Forum_Antimony-and-Arsenic_Aug24.pdf

Larvotto's Hillgrove Mine ASX announcements.

Link: <https://www.larvottoresources.com/investors/asx-announcements/>

Their 'mailouts' can be requested.

A current ABC News article re Cadia mine contamination litigation, that demonstrates the mine, governance and regulatory flaws outlined in SOMR's submission. Link:

<https://www.abc.net.au/news/2026-02-03/rural-community-launches-class-action-against-major-goldmine/106295724>

Appendices

Snapshot image of Page 43 of 'Modification Report' showing proximity of Waste Rock proposed to be stored/stockpiled at Brackin Spur Mine head, less than 10m from Bakers Creek, flowing into the Macleay.



Given the 'historic' contamination of such practices, outlined above in 'Historical Context and Baseline Contamination' in SOMR's submission, - This 'waste rock' (refer definition in 5.2 above) is unacceptable without relocation and/or thorough and proven eliminative controls and monitoring.