

PO Box 216, DUBBO NSW 2830

ph

email web inlandriversnetwork.org ABN 34 373 750 383

Independent Planning Commission 135 King St Sydney NSW 2000 ipcn@ipcn.nsw.gov.au

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Submission of Objection Bowdens Silver Project SSD-5765

Introduction

Inland Rivers Network (IRN) is a coalition of environment groups and individuals that has been advocating for healthy rivers, wetlands and groundwater in the Murray-Darling Basin since 1991.

IRN has taken an interest in the proposed lead, zinc and silver mine in the catchment of Lawson Creek because it is at the top of the Macquarie River catchment, an important NSW river system in the Murray-Darling Basin.

IRN strongly recommends that the project be rejected on the grounds of incomplete and poor assessment of water impacts according to Independent Expert Reviews commissioned by the Department of Planning and Environment (DPE).

Recommendation: that Bowdens Silver Project be rejected on the basis of lack of evidence for a merits based decision.

Key Issues on Assessment

1. Murray-Darling Basin Plan

The Murray-Darling Basin Plan is a statutory plan under the Federal *Water Act 2007*. The NSW Government has a requirement under the Basin Plan to produce a Water Resource Plan (WRP) for the Macquarie Region that considers water take, including mine interception,

water quality and risk management. This requirement is not listed under the statutory context of the DPE assessment report.

The final assessment of water supply for the proposed Bowdens Silver Mine (the proposal) is based on access to harvestable rights. A requirement of the Macquarie-Castlereagh Surface Water WRP is to estimate the catchment wide interception through the harvestable rights access exemption in NSW. Any increase or unaccounted for take under the harvestable rights exemption will have an impact on the Sustainable Diversion Limit for the WRP and therefore an impact on other water users including the environment.

The Macquarie-Castlereagh Surface Water WRP includes the *Water Sharing Plan for the Macquarie-Bogan Unregulated Rivers Water Sources 2012* that includes Lawson Creek as an unregulated water source. All water intercepted or extracted from Lawson Creek flows must be managed under the rules of the Water Sharing Plan and the Sustainable Diversion Limits.

The DPE assessment report fails to acknowledge these requirements of the NSW Government under water management law.

2. Lawson Creek

Lawson Creek is a significant tributary of the regulated Cudgegong River in that it supplies the first natural inflows below Windamere Dam. These flows are critical for improving flow variability above the unnatural releases of water from the dam.

Lawson Creek is also highly connected to the Cudgegong alluvial aquifer system. This is the major source of water for Gulgong town water supply.

The health of Lawson Creek is a critical matter for the region and beyond. The potential for toxic heavy metal pollution to occur through unmanaged discharges from the proposal has not been adequately assessed or mitigated through recommended conditions of approval.

The lack of water quality assessment, acid forming rock assessment, finalization of final void design and lack of design or verification of the tailings dam liner are key issues that cause a high level of uncertainty around the protection of the health of Lawson Creek.

3. Threatened fish populations and aquatic ecology

The potential for a number of threatened native fish species to occur in Lawson Creek, including Murray Cod, Southern Purple Spotted Gudgeon and Murray-Darling Basin Eeltailed Catfish has not been adequately assessed or considered.

The Murray Cod is listed as vulnerable under the EPBC Act and must be assessed for significant impact. The failure to identify this protected species in the referral document submitted to the Federal Government is a failure in process.

The DPE Assessment Report states at clause 446 that: Aquatic ecology in the project area is primarily provided by Hawkins and Lawsons Creeks. These streams flow intermittently, traverse predominantly pasture/farmland, and support disturbed habitat with relatively low ecological values.

The proposal is likely to further degrade ecological values by decreasing natural flows, especially in dry times and discharging toxic water quality through seepage and unmanaged storage overflow.

DPE has chosen to ignore advise from DPI Fisheries to move the toe of the Waste Rock Emplacement (WRE) and avoid crossing Price Creek twice stating at clause 453 that '*the aquatic ecology is very limited*'. There is no excuse for continuing to degrade water habitats.

4. Water Quality

The DPE Assessment Report highlights the background poor water quality in both groundwater and surface water sources associated with the proposal:

Clause 92. Groundwater monitoring since 2014 has consistently detected elevated levels of metals including dissolved copper, lithium, nickel and zinc, and frequently detected elevated levels of dissolved cadmium, lead and manganese. Groundwater also contains elevated levels of total nitrogen, total phosphorus, nitrates of nitrogen. Ammonia, nitrate, total nitrogen, and total phosphorous exceed the guideline values for the protection of aquatic ecosystems.

Clause 99. Water quality in the creeks has been altered by agricultural activities and levels of ammonia, nitrate, total nitrogen, phosphorous and electrical conductivity exceed the guidelines values set out in the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZG 2018). Zinc and copper concentrations also exceed the ANZG values (although copper concentrations do not exceed the hardness modified guideline value).

Under the June 2019 Secretary's Environment Assessment Requirements (SEARs) the NSW Environment Agency assessment requirements includes a Water Quality Objective:

The EIS must assess the impacts of the development on water quality, including:

The nature and degree of impact on receiving waters for both surface and groundwater, demonstrating how the development protects the Water Quality Objectives where they are currently being achieved, and contributes towards achievement of the Water Quality Objectives over time where they are currently not being achieved. This should include an assessment of the mitigating effects of proposed stormwater and wastewater management during and after construction.

The contribution towards achieving Water Quality Objectives over time where they are currently not being achieved has not been considered by DPE. The description of current poor water quality is being used as a rationale to continue polluting receiving waters.

IRN finds this position to be highly inappropriate and trusts that the Commission takes the issue of poor water quality and ongoing likelihood of increased toxic water pollution very seriously. The proposal will not be a nil discharge mine and there is limited evidence about the scale of toxic water pollution to be held in onsite storages.

The DPE Assessment Report and the proponent's Environmental Impact Statement have failed to meet the SEARs on water quality.

5. Incomplete and poor assessment

IRN notes that DPE commissioned a number of Independent Expert Reviews of the assessment of the significant water impacts of the proposal. There is clear evidence that this advice has been ignored and not addressed in the DPE Assessment Report.

The Independent Expert Reports received in late December 2022 identified:

- The failure to include water quality in the site water balance model, as required under the SEARs,
- No detailed geochemical analysis of final void pit or tailings dam water quality,
- No analysis of dilution or attenuation processes along seepage pathways,
- Acid Mine Drainage analysis is still missing,
- The potential of the final void being a groundwater flow through water body has not been resolved

IRN notes that many of these significant water management issues have been relegated to the Water Management Plan under the proposed conditions of consent.

It is highly unsatisfactory to have limited information on these significant water impacts for the purpose of a merits based decision.

6. Inadequate Water Access Licences (WALs)

There is a high level of doubt around interception volumes and sufficient WALs to offset water take. DPE maintains an average annual loss of 177 ML to surface water flows. The most recent Independent Surface Water Review notes that 856 ML/year would be removed from the catchment and that rainfall & runoff terminology appears to be inaccurate.

The volume of harvestable rights exemption appears to be vastly overstated in the water model with the likelihood of double dipping and using catchments that have already met their 10% harvestable right through existing farm dams. This is a critical issue that must be resolved before a merits based decision can be made.

The DPE analysis of WALs does not appear to include the volume in sediment dams. Clause 139 Table 6: Water licences held by Bowdens Silver only describes groundwater losses, base flow losses and tailings dam volume. The volume held in sediment dams is another key interception that will not be met through the harvestable rights exemption.

It is highly likely that insufficient WALs have been obtained to offset the mine water interception. This issue is significant for water sharing arrangements and rules, and needs more investigation before a merits based decision can be made.

Under the 2019 SEARS the NSW Environment Agency assessment requirements includes assessment of:

Changes to environmental water availability, both regulated/licensed and unregulated/rules based sources of such water.

The DPE assessment report has not identified that loss of base flows and increased interception above the harvestable rights exemption is a reduction in planned environmental water under rules in the *Water Sharing Plan for the Macquarie-Bogan Unregulated Rivers Water Sources 2012*.

This is a failure to meet the SEARs and demonstrates that the water impacts of the proposal are likely to be greater than the information provided in the DPE Assessment Report.

7. Acid Mine Drainage control

There is inconclusive evidence of Acid Mine Drainage control. It is proposed that a materials classification verification program to determine if there is sufficient non-acid forming waste rock to fully encapsulate all potential acid forming material be conducted after approval. This is a critical piece of work needed to inform a final decision that must be conducted by independent experts. Pushing this analysis until after approval is another example of DPE ignoring the major water quality impacts of this heavy metal mining operation.

8. Management of mine discharge

DPE incorrectly claims that project will be nil discharge when the tailings dam has been designed with a spillway and the sediment dams may discharge under an EPA licence. The water quality of these storages is unassessed and therefore unknown.

The Independent Review notes that the lack of water quality information has made it difficult to advise on necessary water treatment for discharge under an Environment Protection Licence. This information is critical for a merits based decision.

9. Poor climate change modelling

The NSW Government has invested in new climate datasets and improved modelling to provide a more robust and sophisticated understanding of future risks to water availability in the Macquarie region. Regional Water Strategies are looking at the next 20 - 40 years of climate risk.

The new models predict much longer periods of drought in the region. The failure of the assessment process to use these new climate data sets raises significant questions around all the predicted water interception and use. The uncertainty of water supply for the proposal must be a key consideration.

It is highly likely under the proposed conditions of consent that the proposal will not meet its stated economic benefits:

B36. The Applicant must ensure that it has sufficient water for all stages of the development, and if necessary, adjust the scale of the development to match its available water supply.

The amount of time the proposal will not be producing ore under increasing dry climate conditions has not been assessed. The water model for the proposal is not adequate and needs to be updated with new climate change scenarios to properly inform the assessment of water supply and water take for the proposal.

10. Poor economic analysis

The economic analysis appears to ignore the value of WALs taken out of production in perpetuity for a proposed groundwater sink.

Water is our most essential resource and must be given the highest economic value. The permanent loss of access to WALs should be at least considered in the cost benefits analysis for the proposal.

IRN recommends a condition that the final void be backfilled.

The economic analysis has not assessed the likely period of time of scaled back production if there is inadequate water supply during extended dry periods, as predicted. The reported economic benefits of the proposal are likely to be heavily impacted during drought meaning job losses, loss of production, loss of royalties and taxes. These impacts must be considered when weighing up the significant environment and social costs of the proposal against the poorly assessed economic benefits.

Conclusion

IRN considers the assessment for the proposal to be highly inadequate. There are major deficiencies in information on water supply and water quality impacts.

A number of SEARs have not been met by the proponent or in the DPE Assessment Report. This is a key failing that must be taken into account.

Water impacts are one of the outstanding unresolved issues for this proposal. The Commission does not have enough evidence on water impacts and mitigation to make a merits based decision on the proposal

IRN recommends that the Bowdens Silver Mine Project be rejected.

For more information on this submission contact: inlandriversnetwork@gmail.com