

Submission
No 48

**INQUIRY INTO CURRENT AND POTENTIAL IMPACTS OF
GOLD, SILVER, LEAD AND ZINC MINING ON HUMAN
HEALTH, LAND, AIR AND WATER QUALITY IN NEW
SOUTH WALES**

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Partially
Confidential

I am a resident of Rylstone in the Mid-Western region and a management consultant with over 30 years of experience in top tier consulting firms and large corporates. I have advised large corporates on risk management, led risk assurance and review projects, and made recommendations to corporate Boards and C-Level executives. When I learned of the Bowden's lead, zinc and silver mining project near Rylstone, I wanted to understand the impact such a project could have on me personally and on the Mudgee region as a whole.

I came to live in this area for its natural beauty, complimented by wineries, accommodation, recreation, and local produce. Living here, I have experienced the warmth and generosity of the people. Thus, I followed the DPE/IPC approval process with great interest and increasing concern. I learned of the potential risks to human health, environmental health and local tourism and agriculture.

Having participated in the DPE/IPC approval process and having read the Statement of Reasons for Decision, I appreciate the opportunity to present my concerns to this Parliamentary Inquiry. My conclusions are:

- The DPE/IPC approval of the Bowdens project assumed that environmental consequences will be appropriately avoided and remediated based on modelling underpinned by many critical assumptions.
- Some Bowdens/DPE/IPC assumptions may prove to be correct, but many are disputed by independent experts, exposing a high degree of risk to regional human and environmental health well beyond the mine site.
- If the risks should become issues, the consequences are catastrophic and permanently alter the entire region, not just the mine site which seemed to be the focus of the DPE/IPC.
- Approvals were hastily made by the caretaker government pre-election, with DPE instructing the development of controls for these risks POST APPROVAL, effectively kicking the can down the road.
- I am asking the NSW Government to redress this hasty approval and related issues by:
 1. Reviewing the earlier Bowdens project approval and pausing the decision until the risks associated with minerals mining in Mid-Western NSW are properly understood, including the impact on tourism and agriculture in the region
 2. Ensuring appropriate controls are in place to protect human and environmental health before approvals are granted and projects go forward
 3. Legislating effective regulatory monitoring and penalties to quickly address risk control weaknesses and/or failures
 4. Restoring confidence in Government by restoring merit appeal rights when State Significant projects are approved.

The DPE/IPC decision was based on the following rationale:

- The absence of any outstanding concerns regarding health impacts from NSW Health or the NSW Environment Protection Authority that are unable to be managed.
- The conditions imposed by the Independent Planning Commission
- The project can meet all relevant requirements for protecting human health and safety
- The application is in the public interest

The assumptions of the IPC were that:

- Environmental consequences being appropriately avoided, mitigated, remediated or offset

- The project would appropriately balance the environmental, social and economic impacts of the present generation with those of future generations.

However, many of these statements are challenged by independent experts who have raised concerns about the modelling assumptions used to support the decision. An alternative set of assumptions and models shows potentially catastrophic consequences and the lack of controls available to any metals mining operation to mitigate these risks, making minerals mining currently unviable in proximity to communities, as assessed by other developed countries.

In fact, we've seen examples of such risks becoming issues in the Cadia area, where a gold mine in operation for the past 5 years has already created issues impacting human health. We have also seen the slow and ineffective response by the EPA as well as a regulatory policy where maximum penalties on mining companies are not large enough to appear significant in their financial reporting, let alone large enough to change their behaviour. For mining companies, penalties are currently a small cost of doing business.

The below table summarises my key concerns and the consequences if models used by NSW DPE/IPC are valid versus the consequences if modelling by independent experts is valid. While the expected consequences noted in the *Bowdens Silver Project SSD 5765 Statement of Reasons for Decision* report already represent a high degree of risk, the risk consequences associated with independent expert advice are orders of magnitude higher. In both cases, the consequences for the site and the wider region make these risks extremely high by any standard.

Risks raised by Independent Expert(s)	Bowdens, DPE and IPC assumptions	Consequence if IPC report assumptions are valid	Independent Expert advice	Consequence if Independent Expert advice is valid
<p>Lead contamination in air and water</p> <p><i>Lead Dust and Human Health –</i></p> <p><i>Human Health –</i></p>	<p>Lead in people will increase, but levels will be too low to cause ill effects; blood testing will monitor blood lead impact and inform people so they can “minimise adverse outcomes”</p>	<p>If lead levels in blood are found to be high through testing, adverse outcomes cannot be minimised or reversed.</p>	<ul style="list-style-type: none"> • There is no safe level of exposure to lead for humans or biota. • Pollution will leave the site and be remobilised into environmental and food systems. • There is significant risk in relying on modelling alone to estimate environmental impacts and health effects in relation to air quality. • No mine can demonstrate it has no off-site impacts. 	<p>Lead particles disbursed via air contaminate humans, agricultural products, animals and drinking water beyond the site, threatening human health, agricultural produce, and agritourism businesses in the Mudgee region.</p>
<p>Water availability and insecurity</p> <p><i>Surface water impacts –</i> <i>1 2</i></p>	<p>1,824 megalitres (over 500 Olympic sized pools) per year is required and will come from the site; impacts to water flows would be very minor</p>	<p>Regional groundwater levels will be lower; impacted residents will have to request water from mine operator’s “compensatory water supplies”</p>	<ul style="list-style-type: none"> • Bowdens modelled water availability contradicts actual data collected directly upstream of the mine site, which is less than 2% of what Bowdens modelled. • It is unclear what the true area of the Mine Site catchment is, which casts uncertainty over the modelled impacts. 	<p>Those living in the region will suffer from water insecurity for the duration of mining operations and for at least 50 years beyond closure.</p> <p>There is simply not enough water available to sustainably operate the proposed mining project.</p>

¹ is a Professor of Environmental Science and Human Health at Macquarie University, Sydney, specialising in environmental contamination and the risks it can pose. He is the Chief Environmental Scientist at EPA Victoria.

² is an environmental scientist who studies the pathways and processes of metals and metalloids in the environment. He applies environmental chemistry and toxicology with risk assessment tools to identify issues of human health and environmental effects in biota.

³ is a civil engineer with nearly 30 years’ experience in hydrology, water management and impact assessment. She holds a Bachelor’s degree in engineering (Civil) (Hons 1) and a Masters in Engineering Science (Water Resources). She is a Certified Lead Environmental Auditor and has been approved by the Department of Planning and Environment to conduct independent environmental audits on a range of state significant developments across NSW.

Risks raised by Independent Expert(s)	Bowdens, DPE and IPC assumptions	Consequence if IPC report assumptions are valid	Independent Expert advice	Consequence if Independent Expert advice is valid
<p>Water contamination through Acid Mine Drainage (AMD)</p> <p><u>Groundwater impacts – Acid Mine Drainage Issues –</u> 5</p>	<p>Use of 1.5 millilitre store-and-release liners with yet-to-be-developed detailed design and engineering of tailings dam will mitigate AMD</p>	<p>There is the potential for pit dewatering from Year 4 to drain surrounding catchments and for indefinite contaminant seepage on abandonment.</p>	<ul style="list-style-type: none"> • The proposed store-and-release cover systems are not considered an appropriate strategy for waste rock or tailings management. • There is no modelling of the contaminants leaching from the tailings dam or waste rock emplacement to the south and west of the Mine Site after 100 years. • The closure strategy for waste rock emplacement and tailings storage requires water treatment in perpetuity. • There is potential for leakage into groundwater and spillage into the downstream waterways such as Lawsons Creek that flow through the townships of Lue and Mudgee. 	<p>AMD and leakage will permanently contaminate Lawsons Creek and downstream water flows from which the town of Gulgong gets its drinking water.</p>

⁴ is a hydrogeologist and Chartered Environmental Engineer working on national and international groundwater projects. He is an active member of the International Association of Hydrogeologists, the Hydrological Society and Engineers Australia.

⁵ has more than 25 years' experience as a mining engineer in the resources sector, with 24 years' senior operational and technical experience with BHP across a range of commodities including manganese, diamonds, metallurgical and thermal coal. He holds a Bachelor of Engineering (Mining), Honors II from the University of Sydney, and an MBA from Deakin University.

Risks raised by Independent Expert(s)	Bowdens, DPE and IPC assumptions	Consequence if IPC report assumptions are valid	Independent Expert advice	Consequence if Independent Expert advice is valid
Tailings dam wall collapse <i>Groundwater and aquatic ecology issues –</i> 6	Single wall will prevent collapse and (what) contamination of surrounding ecosystems	Toxic chemicals will be stored in the tailings dam (under a 1mm thick tarp) for thousands of years with no remediation	<ul style="list-style-type: none"> The proposed tailings storage facility (TSF) lies on mapped faults with one fault trending southeast through Lawsons Creek 	Toxic chemicals will be released into the environment causing contamination for thousands of years with no remediation
Impact on regional tourism <i>Tourism, visitor economy and economic impacts</i> 7	Not assessed	No consideration of impact on regional tourism	<ul style="list-style-type: none"> Tourism spending in 2020-21 provided six times, and when combined with agriculture, 12 times, the expected number of jobs from the Bowdens' project. Visitors to the area also have significantly higher incomes and may be more concerned about environmental toxins with lead mining. Mudgee Region Destination Management Plan 2020-25 lists wellness tourism as a key experience theme. Conflict between attracting tourists interested in high-quality wine, food and wellness and risks posed by lead mining. 	<p>Transformation of the Mudgee region from a \$200m per year tourism destination featuring wine, nature and dining out, attracting 826,000 visitors and supplying 931 jobs in 2020-21, to a region overtaken by mining operations providing only \$38m (best case) and ~200 jobs over 16 years.</p> <p>Loss of high-income tourists and wellness tourism due to lead contamination and acid mine drainage impacting food, wine and pristine environment.</p>

⁶ is an aquatic and groundwater ecologist, and invertebrate taxonomist who has worked in a range of environments including surface aquatic, marine, terrestrial, and groundwater ecosystems. He specialises in the ecology and identification of stygofauna (groundwater fauna), and is recognised as the Australian authority on the Syncarida (both the Anaspidacea and Bathynellacea)

⁷ was Tourism and Aviation Economist at Tourism Australia for seven years, Director Tourism Investment in the Commonwealth Department of Tourism for six years and General Manager, Policy and Research at Australia's largest tourism industry association (TTF Australia) for six years, after starting his career with Federal Treasury.

I am not alone in raising these issues. There is a groundswell of concern which started in the Mudgee region and is now expanding across Australia. In April 2023, the geographic analysis included in the DPE/IPC report showed more than 50% of IPC submissions were objections, with the overwhelming majority from the Mudgee Region and Sydney.

A petition circulated by the Mudgee Region Action Group since the decision has garnered over 4,400 signatures with 33% of signatures from Sydney and over 90% from Australia's major cities and locations outside of the Mudgee region. NSW signers represented over 390 distinct post codes.

I add my voice to the concerned citizens of New South Wales to encourage you to make courageous recommendations to the NSW government to strike a better balance between mining, development and human and environmental health.

Janine Modaro