Submission No 64

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

Organisation: Rylstone District Environment Society

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The Director
Portfolio Committee No.2 - Health
Parliament House
Maquarie Street
Sydney NSW 2000

Submission - Parliamentary Inquiry

Current and potential impacts of gold, silver, lead and zinc mining on human health, land, air and water quality in New South Wales

5 September 2023

Dear Commissioners,

This submission is about Bowdens' Mine and its potential for impacts on human health, land, and water from **Acid Mine Drainage.**

Until now, the NSW Government and the Environmental Protection Authority (EPA) have been unable to protect the people of Central NSW from land, water, air and human health impacts caused by metal mining as evidenced at Cadia Mine, Orange. The mine approval processes in place and the regulation of currently operating mines are sadly lacking. A strengthening of NSW environmental protection regulations and resourcing of their enforcement is long overdue. Self-reporting is not enough and only large fines will be any deterrent to wealthy global companies.

Bowdens' mine should never have been approved.
It was approved in spite of the fact that Bowdens had no management plans in place for its projected major contaminants, air-borne dust and Acid Drainage.

Bowdens' Mine must never be permitted to operate because of the potential for heavy metal contamination in the Lawson Creek Valley and the impacts this will have on the natural ecosystems of the Lawson Creek Valley the wider Mudgee region.

In waterways, Acid Mine Drainage (AMD) destroys life to the extent that only bacteria called "extremophiles" can survive. Animals, including humans are not able to drink creek water, farmers are not able to irrigate and natural ecosystems die.

The following are well-known international examples of Acid Mine Drainage disasters.

- Rio Tinto (Spain), Rosaria Montana Mine (Romania)[1], Bouganville Copper (Rio Tinto mine)[2]
- Mines in Arizona, Patagonia, China(Guandong) and Ontario[1]

"The Conversation" (13th September 2017) reported that in the US, there are 22,000km of waterways and 180,000 acres of reservoirs contaminated by AMD from mine sites.[1]

In Australia, there are hundreds of historic and currently operating mine sites around the outer part of our continent where Acid Mine Drainage contaminates groundwater, creeks and rivers[3]. Examples in NSW include Sunny Corner, Captains Flat, Yerranderie and Taralgo. In other states there are Rum Jungle NT and also Mt Lyell and Mt Morgan in Qld. Even the water in Dove Lake at Tasmania's famous Cradle Mountain is extremely toxic due to metal mining in the Queenstown area.

Every mining operation in the world mining metal sulphide ores produces Acid Mine Drainage. Bowdens' Mine will be no exception.

Bowdens' Environmental Impact Statement acknowledges that 54% of the rock excavated at the mine will be "potentially acid forming (PAF)".

Controlling AMD

Some currently operating mines around Australia are now trying to control AMD by various methods, The works constructed for these control methods require up to 100 years maintenance depending on the method used[4]. Significantly, there is little information on where their success has been monitored for more than ten years.

Bowdens made very brief mention of controlling AMD by "encapsulation". This means they intend to enclose the Potentially Acid Forming rock in non-acid rock.

The success of encapsulation depends on extremely careful management of the pile, for the lifetime of the mine and beyond. It also depends on the amount of time it takes for acid conditions return to neutral pH and importantly how long neutral pH lasts.

Lastly, it depends on whether there is seepage from the pile and other mine works into groundwater. If there is acid seepage from Bowdens' Mine, who will monitor this seepage and remediate if necessary for 100 years?

It is highly probable that Bowdens Mine will hide the problem of AMD for a while, possibly for the life-time of the mine but that it will become evident again after mine closure and persist forever.

Remediation

Billions of dollars are currently being spent world-wide trying to remediate the impacts of AMD due to mining. In Australia, remediation has started at some sites, but again, monitoring has only been happening for about ten years.

At Captains Flat, millions of dollars have been spent on remediation possibly because the site drains into the Molongolo River, which flows into Lake Burley Griffin, the nation's capital. Remediation has started at Sunny Corner but is in its infancy. In the Tonnali River (Yerranderie)[5,6], the situation is merely being monitored. This is in spite of the fact that the Tonnali River spills heavy metals into Warragamba Dam, which supplies 80% Sydney's drinking water.

When approval was granted, Bowdens' had no plan for remediation of AMD even though it is likely that the site will need to be remediated for more than 100 years. In addition, their tailings dam will contain acid water with dissolved heavy metals. Tailings dam disasters are not uncommon.

Stronger mine regulations and adequate enforcement are desperately needed in NSW.
However, it is important to consider the serious permanent and uncontrollable impacts of Acid Mine Drainage. Mudgee is a thriving tourist region with a population of more than 26,000 people. Why is there approval for an open cut silver, lead and zinc mine which has the potential to impact seriously on its water and natural ecosystems? Bowdens' Mine can never be allowed to operate.

References

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2 ABC Network News Wed 4th September 2013, UNEP to help Bouganville manage clean up of Rio Tinto mine https://www.abc.net.au/news/2013-09-04/an-bougainville-unep/4935456

3 1997 Department of the Environment Supervising Scientist Report, Acid mine drainage in Australia: It's extent and potential future liability, John Haries
https://www.dcceew.gov.au/sites/default/files/documents/ssr125-section01.pdf

4 Australian Centre for Geomechanics 2006: mine closure as a driver for waste rock dump construction (abstract) https://papers.acg.uwa.edu.au/p/605_61_Williams/

5 Harrison J, Heiknis H, Paparelli G: **Historical pollution variability from abandoned mine site Greater Blue Mountains World Heritage Area NSW Australia**

6 Submission by Rob Thompson on behalf of YACCA **file:///C:/Users/61459/Documents/RDES/Metal-Mining-Submission-YACCA.pdf**

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