Supplementary Submission No 115a

INQUIRY INTO PLANNING SYSTEM AND THE IMPACTS OF CLIMATE CHANGE ON THE ENVIRONMENT AND COMMUNITIES

Name: Bronwyn Wannan

Date Received: 4 November 2023

Portfolio Committee No 7 – Planning and Environment

NSW Parliament, Legislative Council

Planning system and the impacts of climate change on the environment and communities

Executive Summary

That Portfolio Committee 7 inquire into and report on how the planning system can best ensure that people and the natural and built environment are protected from climate change impacts and changing landscapes.

The flaws in the planning system are many and I refer below to some of those flaws which confirm a complete failure of the planning system in reference to the Bowdens Project at Lue and its impacts on climate change, communities and the environment including:

1. **Incorrect assessment of the impacts of the leakage of contaminated water on the environment and the community and how climate change will impact that assessment.**
2. Employment by Bowdens of an elected local Government councilor and the lack of proper and unbiased discussion and assessment of the project by Mid Western Regional Council.
3. Improper assessment of the impacts to Mudgee town water supply and denial by NSW DPE of Tailings Dam Leakage of 1.6 ML and its impacts on surface and groundwater.
4. Release of the NSW Department of Planning (NSW DPE) Assessment on 22 December 2022 without properly assessing crucial water reports provided by experts shortly before the Assessment.
5. Flawed determination of the Project by the Independent Planning Commission which did not consider the merits of the Project, including the disproportionate water use on the mine site compared to other water users and incorrect acceptance that water was already damaged and degraded and therefore it was acceptable for the downstream water to be contaminated and unable to be consumed by humans.
6. No proper assessment of the merits of the project by the Independent Planning Commission.
7. The NSW DPE did not properly consider the impacts of Greenhouse Gas emissions and lead dust emissions of the Project on the Community, Wildlife, and the Environment.
8. No transparency of the Planning System and no easy access to Submissions made to NSW DPE in the EIS process with NSW DPE blaming the IT department. Expert reports were not available to the Community until after Assessment.
9. No proper assessment by DPE Water or NSW DPE of water licensing or water use or water supply to the mine site. All surface water caught on the mine site (av 924 megalitres per year) required for processing in unlicensed and unassessed by DPE Water. This rainfall and runoff water was not considered by the NSW DPE or the IPC or properly considered by Bowdens in the EIS. Only 177 megalitres of 924 megalitres were considered.
10. See page 20 below at ATTACHMENT 2 Letter IRF23/1568 dated 22 June 2023 - Clay Preshaw to Ms Wannan. Director Preshaw spoke at the recent health inquiry regarding the flawed planning system and that all Management Plans are formulated within the NSW DPE without

proper consultation with the community or proper consideration of water resources, climate change impacts or the environment.

11. The CEO of Bowdens is not concerned with the community, environment and the water and air pollution or any climate change impacts caused by his project.
    a. CEO gaslighted Cate Faerhmann by correcting her question re 1.6 megalitre per day leakage from mine site and incorrectly stating the site had 1.6 megalitres leakage per year.
    b. CEO denigrated the community of Kandos by making statements that are not in line with the latest census or Kandos community opinions.
    c. The NSW DPE has stated Bowdens will provide blood testing for lead levels but the CEO said they had not commenced the program when they should have.

Submitted by

B Wannan

I am a landowner to the south and west of the Bowdens proposed mine site. Lue Station is an immediate neighbour to land owned by Bowdens. Lawsons Creek flows through our property.

I am a member of the Mudgee Region Action Group (formerly the Lue Action Group) which was formed to obtain factual expert information regarding the Bowdens Silver Project to provide information to Lue residents, businesses and others of the impacts of this mine 2 kilometres from Lue. With some experience as a water user; an irrigator and user of regulated river water from the Cudgegong River, my area of responsibility with the Group is water. MRAG has engaged groundwater and surface water experts Craig Flavel, Shireen Baguley and Engeny to provide independent advice on the EIS reports by RW Corkery, Jacobs and WRM Environmental.

The independent experts engaged by MRAG and also experts engaged by NSW DPE found the Bowdens Silver Project (a lead, silver and zinc mine) is likely to have significant and irreversible impacts on the existing availability and quality of Groundwater and Surface Water near the mine site and in the wider region.

MRAG has accepted that information Bowdens provide is often inaccurate, exaggerated, understated or false but it is not acceptable for the NSW Government Department of Planning and Environment employees to knowingly provide information in a report that is not factual. This information is relied upon by others to make difficult and complex decisions about strategy, policy and developments.

Submission

This submission informs the Parliamentary Inquiry that NSW Department of Planning in its Assessment of the Bowdens Silver Project SSD-5765 dated 22 December 2023 misinformed the Independent Planning Commission regarding existing water conditions in Lawsons Creek resulting in

a flawed determination by the Commissioners that will cause irreparable damage and degradation to Lawsons Creek and negatively impact water users and the riparian environment of Lawsons Creek.

Summary

Lawsons Creek is a 4th order stream within 100 metres of the Bowdens Mine Site. The creek will be irreversibly damaged by seepage from the Tailings Dam (TSF) at a rate of 1.6 megalitres per day and will also be damaged by spillage from the TSF in a flood event or an earthquake.

The NSW Department of Planning and Environment in their assessment of the project stated that the creek was already damaged and degraded and so the seepage would not have an impact.

There is no evidence to support the claim by NSW DPE in their Assessment of the Bowdens Silver Project SSD-5765 issued in December 2022 that the water in Lawsons Creek, adjacent to and downstream of the mine site is damaged, degraded or ephemeral**.**

No independent expert report or any other expert report provided to the NSW DPE or any submissions by neighbouring landowners, downstream irrigators and water users, the Mid Western Regional Council, DPE Water, EPA or any other interested parties has noted that Lawsons Creek is damaged or degraded.

The Independent Planning Commission (IPC) accepted that TSF seepage would marginally exceed guidelines for the protection of freshwater aquatic system. The IPC stated in the Reasons for Decision that DPE Water and the EPA did not raise any significant concerns in relation to these conclusions. Independent experts engaged by the DPE including Hydrogeologic and Earth Sciences did raise significant concerns about the TSF and its seepage and were not properly responded to nor are their concerns managed adequately in the Conditions of Consent.

No attempt has been made by the IPC or the NSW DPE to meet Australian water quality objectives as set out in ANZG (2018) or to protect the Macquarie Bogan River catchment.

No attempt has been made by the IPC or NSW DPE to meet the water resource objectives set out in the Orana and Central West Strategic Plan 2041. Instead they note Objective 3 which concerns critical minerals mining in the region. The Bowdens mine will extract silver, lead and zinc which are not critical minerals according to the Australian Government Critical Minerals List and are not included in maps in the NSW Government Critical and High-Tech Minerals Strategy and Ag (silver) is only briefly mentioned in the Strategy.

Critical Minerals and High-Tech Metals Strategy | NSW Government

Part 2 of the Orana and Central West Strategic Plan 2041 Strategy includes objectives concerned with protecting health, water resources and the environment. The Bowdens Project does not meet any of these objectives. Although the then Minister Anthony Roberts' photograph appears in the Strategy and he made the following statement in the Strategy "*The updated plan recognises the importance of water and that future population and economic growth is dependent on this precious resource. It promotes the river systems as places for recreation, conservation and to enhance urban areas"* he has removed the Merit Appeal Rights from both the Bowdens Silver Project and the McPhillamys Gold Mine.

The Orana and Central West Strategic Plan 2041 Part 2 lists the following objectives

Objective 5: Identify, protect and connect important environmental assets

Objective 6: Support connected and healthy communities

Objective 7: Plan for resilient places and communities

Objective 8: Secure resilient regional water resources

Objective 9: Ensure site selection and design embraces and respects the region's landscapes, character and cultural heritage

Objective 10: Protect Australia's first Dark Sky Park

Central West and Orana Regional Plan 2041 | Planning (nsw.gov.au)

Recommendations

1. The NSW Department of Planning withdraw their recommendation of Bowdens Silver Project and this project be reassessed by an independent body.
2. Restore Merit Appeal rights that were removed by the previous Minister for Planning, Hon Anthony Roberts, and restore these rights for all minerals mining projects approved during the caretaker period of the previous Government.
3. That all water resource impacts be separately assessed and signed off by the Water Minister.

Parliamentary Inquiry Terms of Reference

- The attached report identifies that the NSW Department of Planning misinformed the Independent Planning Commission regarding the quality of water in Lawsons Creek which led to the Commission erroneously determining the Bowdens Silver Mine would not diminish the current beneficial uses of Lawsons Creek.
- The attached report at Tab A refers to Parliamentary Inquiry Terms of Reference in particular

  1(b)the impact on catchments and waterways, affecting both surface and groundwater destined for, local and town water supplies, including rainwater tanks, and on aquatic biodiversity

  (e) the effectiveness of the current regulatory framework in terms of monitoring, compliance, risk management and harm reduction from mining activities

  (f) the effectiveness of current decommissioning and rehabilitation practices in safeguarding human health and the environment,

  (h) whether the regulatory framework for heavy metals and critical minerals mining is fit for purpose and able to ensure that the positive and negative impacts of heavy metals and critical minerals mining on local communities, economies (including job creation) and the environment are appropriately balanced

Background of EIS Process

- August 2017 - The Bowdens Silver Project SSD- 5765 SEARs were issued with no external water supply
- June 2019 – SEARS were reissued including a 60 km pipeline from the Ulan Coal Mine
- The project is a controlled action under the EPBC Act with ID number 2018/8372
- May 2020 - EIS issued during COVID lockdown period
- June/July 2021 - Submissions based on an external water supply were responded to by Bowdens
- July 2021 – EIS Amendment to include the rebuilding of the 500kVa Transmission Line traversing the mine site
- March 2022 – Submissions were responded to by Bowdens
- March 2022 – EIS Amendment to remove the external water supply pipeline from Ulan Coal Mine. At this time a new SEARs should have been issued given the major water supply for the mine was removed and the Water Supply Amendment outlines plans for all water to be sourced entirely from the mine site.
- July 2022 – Minister Roberts referred the Bowdens Silver Project to a Hearing of the Independent Planning Commission and in doing so removed Merit Rights of Appeal in the Land and Environment Court. The Community Consultative Committee was not advised of this referral until 22 December 2023.
- October 2022 – Submissions were responded to by Bowdens
- Up to December 2022 - Independent Expert Reports responded to by Bowdens with inadequate time for the DPE to assess the responses before they released their recommendation.
- 22 December 2022 – NSW DPE released its Recommendation for the project (with no regard for the community on the second last business day before Christmas)
- 22 December 2022 IPC Hearing Submissions opened unannounced
- 16 January 2023 - Independent Planning Commission announced a Hearing to be held in Mudgee on 15, 16 & 17 February 2023
- 15, 16 & 17 February 2023 – Hearing held in Mudgee with 60 speakers opposed to the Bowdens Silver Project and 10 speakers in support of the project including a Mid-Western Regional Councillor employed by Bowdens, and other employees and contractors.
- 24 February 2023 – IPC Submissions close
- 3 March 2023 – NSW Caretaker Period Commences
- 25 March 2023 – NSW State Election
- 3 April 2023 – Independent Planning Commission released its Determination.
- 27 October 2023 – Independent Planning Commission stated they had only considered the Legislation and Policy regarding the Bowdens Project (not the merits of the Project).

Key statistics:

- 1.6 megalitres of contaminated water to be released by seepage from the Bowdens Silver Tailings Storage Facility (Tailings Dam) every day
- Lawsons Creek is 100 – 1000 metres downstream from the mine site
- Seepage will contain contaminants including acid, cyanide, zinc, arsenic, copper, phosphorus
- Lawsons Creek is not degraded or damaged and provides drinking water.
- Lawsons Creek has 47 water access licences, including 12 domestic and stock licences.
- A total 1496 megalitres of water is approved to be extracted in Lawsons Creek including licences for Domestic and Stock water and Irrigation water. Bowdens have a license for 139 ML per year.
- Mudgee Town Water supply is adjacent to Lawsons Creek and approximately 30 kilometres downstream of the mine site. No proper assessment has been made of contamination of water source.
- The Department of Planning stated in its Assessment of the Bowdens Silver Project (paragraph 161*) "Given the above, and also given that the habitat within Lawsons Creek is already degraded with relatively low ecological values and water use from the creek is principally for agricultural purposes, Jacobs concluded that seepage from the TSF would not lower the beneficial use of the creek."*
- No independent expert or any other expert has agreed with Jacobs conclusion.
- Lawsons Creek is not damaged or degraded and there is no evidence from any expert that Lawsons Creek is damaged or degraded or that it has relatively low ecological values.
- Lawsons Creek is used for Domestic and Stock purposes and after it receives seepage from the tailings dam will not be able to be used for that purpose.
- The impact of tailings seepage on Lawsons Creek will affect surface and groundwater destined for, local creek water users and Mudgee town water supplies, and on aquatic biodiversity.

Risks and Financial Implications

- Long term contamination of Lawsons Creek reducing the beneficial uses of the creek for hundreds of years
- Contamination of Lawsons Creek by spills in either a flood event or a failure of the dam wall.
- High risk of contamination of the Mudgee Town Water Supply
- Financial cost of supplying make up water to Lawson Creek water users
- Financial cost of supplying clean water to Mudgee from an alternative water source.
- Financial cost of rehabilitating Lawsons Creek.

Attachments

- Tab A – Lawsons Creek Water Quality Considerations

Tab A

Lawsons Creek Water Quality Considerations

Executive Summary

Lawsons Creek is a 4th order stream within 100 meters of the Bowdens Mine Site. The creek will be irreversibly damaged by seepage from the Tailings Dam or Tailings Storage facility (TSF) at a rate of 1.6 megalitres per day and will also be damaged by spillage from the TSF in a flood event or earthquake.

The NSW Department of Planning and Environment in their assessment of the project stated that the creek was already damaged and degraded and so the seepage from the TSF would not have an impact.

There is no evidence to support the claim by NSW DPE in their Assessment of the Bowdens Silver Project SSD-5765 issued in December 2022 that the water in Lawsons Creek, adjacent to and downstream of the mine site is damaged, degraded or ephemeral**.**

No independent expert report or any other expert report provided to the NSW DPE or any submissions by adjacent landowners, downstream irrigators and water users, the Mid Western Regional Council, DPE Water, EPA and other interested parties has noted that Lawsons Creek is damaged or degraded.

Private water tests of Lawsons Creek by landowners along the creek in August 2023 did not show any adverse results or major exceedances of guidelines that would indicate the creek was damaged or degraded.

The Independent Planning Commission (IPC) accepted that TSF seepage would marginally exceed guidelines for the protection of freshwater aquatic system. The IPC stated in the Reasons for Decision that DPE Water and the EPA did not raise any significant concerns in relation to these conclusions. Independent experts engaged by the DPE including Hydrogeologic and Earth Sciences raised significant concerns about the TSF and its seepage and were not properly responded to nor are their concerns managed adequately in the Conditions of Consent.

No attempt has been made by the IPC or the NSW DPE to meet Australian water quality objectives as set out in ANZG (2018) or to protect the Macquarie Bogan River catchment.

No attempt has been made by the IPC or NSW DPE to meet the water resource objectives set out in the Orana and Central West Strategic Plan 2041. Instead they note Objective 3 which concerns critical minerals mining in the region. The Bowdens mine will extract silver, lead and zinc which are not critical minerals. Silver, lead and zinc are not rare. Silver, lead and zinc are not included in the Australian Government Critical Minerals List. Ag (the abbreviation for silver) is briefly mentioned in the NSW Government Critical and High-Tech Minerals Strategy but is not included on maps in the strategy.

Lawsons Creek Water Quality Considerations

Lawsons Creek is not damaged or degraded.

Lawsons Creek is not ephemeral.

Lawsons Creek is used for domestic and stock water.

Director Clay Preshaw and the NSW Department of Planning and Environment (NSW DPE) misinformed the public when they stated on Page 33 of their Assessment Report that the habitat within Lawsons Creek is already degraded. There is no evidence to support that statement.

DPE – Assessment Report

Microsoft Word - Bowdens Silver Assessment Report Final.docx (nsw.gov.au)

IPC – Statement of Reasons for decision

230403-bowdens-silver-project-ssd-5765-statement-of-reasons-for-decision.pdf (nsw.gov.au)

What Jacobs did say is that as a result of tailings dam seepage (TSF) *"Concentrations of all analytes would be below the ANZG threshold for the protection of sheep, cattle and irrigation."* Jacobs words carefully exclude mentioning drinking water which means that the water in Lawsons Creek will not be within the ANZG guidelines for drinking water as a result of tailings dam seepage. It is nonsense that any assessment by an experienced and competent assessor such as Jacobs would be *conservative* or qualified in any way. It will be as accurate and robust as it can be and as it should be.

The EPA, DPE Water, independent experts and adjacent landowners all raised concerns in relation to seepage from the Tailings Storage Facility. These concerns were not addressed adequately by Bowdens or their expert consultant, Jacobs, and were disregarded by NSW DPE Director Mr Preshaw and the NSW DPE in favour of incorrect and misleading statements made by Jacobs and Bowdens. The NSW DPE and Mr Preshaw were and have put NSW citizens at risk by recommending an unsafe project 2 kms from a village with the likelihood of causing significant damage to stock and domestic water supplies.

No water quality concerns regarding the current water quality of Lawsons Creek have been raised by any experts including Jacobs, WRM Environment, or RW Corkery who conducted a thorough assessment of Lawsons Creek with no adverse findings other than noting that there was some debris on nearby fences. The presence of debris indicates a flood event in the past and while unsightly would not cause contamination. Debris on fences on the other hand may indicate how far tailings seepage or spillage will move in a spill event.

Private water testing of samples collected from Lawsons Creek in August 2023 showed no water quality issues or exceedance of drinking water guidelines that would prevent human consumption of creek water after normal drinking water treatments such as chlorination or boiling.

There has been no attempt by NSW DPE, IPC or Bowdens to fulfil the Water Quality Objectives of the Macquarie Bogan Catchment as described on page 6-45 of Part 6, Surface Water Assessment.

Reports from surface and ground water experts can be found on the DPE Major Projects Website.
Bowdens Silver | Planning Portal - Department of Planning and Environment (nsw.gov.au)

Please refer to Attachment 1 below for an excerpt from the DPE Assessment including the paragraphs 158 – 163 Tailings Dam seepage and its impact on Lawsons Creek.

The Department of Planning, have reached the conclusions stated in Paragraph 161 of the DPE Assessment Report, prepared by Mr Preshaw and Mr O'Donohue, about the quality of the water in Lawsons Creek with no evidence to support those conclusions.

161. Given the above, and also given that the habitat within Lawsons Creek is already degraded with relatively low ecological values and water use from the creek is principally for agricultural purposes, Jacobs concluded that seepage from the TSF would not lower the beneficial use of the creek. DPE Water and the EPA did not raise any significant concerns in relation to these conclusions, subject to implementation of best practice seepage management controls.

The EIS Part 6: Surface Water Assessment presented by WRM Water & Environment Pty Ltd and the water course assessments conducted by RW Corkery & Co 2020 and found at Annexure A of that report do not indicate that Lawsons Creek is degraded, damaged or in any way contaminated or polluted beyond repair.

See below at Appendix 1 an excerpt from that report that says all metal concentrations are generally below current default guideline values. It is extraordinary that Jacobs would report to the DPE that Lawsons Creek is so degraded that the Tailings Dam Seepage would not make any difference and in fact they didn't. Mr Preshaw and the DPE misinterpreted Jacobs in their assessment report. Please see Attachment 1.

NSW DPE, Mr Preshaw and Mr O'Donohue also state in Paragraph 162 that the TSF, the tailings dam, is designed to spill into Lawsons Creek in a flood event. The assessors have evidence that the tailings dam will contain large volumes of hazardous, poisonous and dangerous materials.

There has been no attempt by NSW DPE, IPC or Bowdens to fulfil the Water Quality Objectives of the Macquarie Bogan Catchment as described on page 6-45 of Part 6, Surface Water Assessment.

Please see attached the Development Consent including conditions B36 to B52 which relate to Water

https://majorprojects.planningportal.nsw.gov.au/prweb/PRRestService/mp/01/getContent?AttachRef=SSD-5765%2120230405T033951.618%20GMT

Water testing was carried out along Lawsons Creek by RW Corkery and found no serious water quality issues or concerns with the quality of the water. No water testing was undertaken by RW Corkery downstream of the mine site or the tailings dam.

WRM Environmental in their Surface Water report in the EIS state (See Appendix 1 below)

The assessment also concludes that median (50th percentile) metal concentrations are generally below current default guideline values.

See results of water testing of Lawsons Creek by RW Corkery in Table 3.2. These results and photographic evidence of the testing carried out in Lawsons Creek can be found in Attachment 1.

Table 3.2
Summary of Background Dissolved Metal Concentrations and Guideline Levels (µg/L)

Analyte	ANZG Default Guideline Value[1]	50th Percentile from Water Quality Monitoring Data							
		Lawsons Creek				Hawkins Creek			
		BSW28	BSW22	BSW21	BSW20	BSW7	BSW11	BSW12	BSW13
Mn	1900	88.0	87.0	262.0	512.8	225.5	218.5	138.5	293.0
Zn	8	7.0	6.5	7.0	16.0	10.0	9.0	10.0	8.0
Cd	0.2	0.1	0.1	1.0	0.1	0.2	0.1	0.2	Below LOR
Pb	3.4	2.0	Below LOR	Below LOR	Below LOR	Below LOR	Below LOR	Below LOR	Below LOR
Co	N/A	2.0	1.0	1.0	2.0	1.0	2.0	2.0	2.0
As	13	2.0	1.5	2.0	4.0	1.0	2.0	1.0	1.0
Cu	1.4	2.0	2.0	1.0	3.0	2.0	2.0	1.0	2.0
Ni	11	2.0	1.0	1.0	3.0	2.0	3.5	2.0	4.0

LOR – limit of reporting
[1] – for protection of aquatic ecosystems

Earth Sciences Surface Water Review

Earth Sciences conducted a review of the mines surface water requirements, impacts on water quality and the impacts of acid mine drainage and stated in their recommendations to the NSW DPE

Microsoft Word - NSWDPE239612_ResponseSurfaceWater_Rev1

TSF seepage modelling indicates potential surface water quality impacts (eg. copper, zinc, cyanide and phosphorus) in Lawsons Creek, as well as groundwater quality impacts. Such impacts could be further exacerbated by AMD generation from PAF tailings, addition of other contaminants from the mine site / process plant water, or concentration of contaminants due to water re-circulation, none of which were considered in seepage modelling. A comprehensive TSF seepage quality management strategy is required.

Tailings Dam Failure

In addition to a disregard for the damage and degradation that will be caused to Lawsons Creek by tailings including cyanide, arsenic, and other hazardous materials of 1.6 megalitres (1,600,000 litres) per day seeping into the creek, there is a very high risk that the single wall tailings dam or Tailings Storage Facility (TSF) will fail due to a mine induced earthquake as occurred at Cadia in 2018. Fortunately for the water courses downstream of Cadia that tailings dam has a second wall that retained the tailings and prevented them from being spilled downstream. Bowdens tailings dam or TSF has no second wall to protect Lawsons Creek.

Water Management Plan

In his presentation at the IPC hearing Mr Clay Preshaw the Executive Director of Energy, Resources and Industry Assessments advised the Commissioners that there were 14 management plans to be issued by the NSW DPE for this mine. Given that his department, the NSW DPE, has misinformed the Commissioners and the public in its Assessment regarding the contamination of Lawsons Creek by tailings seepage the public can have no confidence that the NSW DPE will oversee a Water Management Plan that will ensure the creek will be protected.

The SEARs issued for this Bowdens Silver Project regarding water has requirements that have not been met including:

https://majorprojects.planningportal.nsw.gov.au/prweb/PRRestService/mp/01/getContent?AttachRef=SSD-5765%2120190626T063908.406%20GMT

Water *– including: - an assessment of the likely impacts of the development on the quantity and quality of the region's surface and groundwater resources (including, but not limited to, Lawsons Creek and Price Creek), having regard to the EPA's, DPI's and OEH's requirements (see Attachment 2A and 2B); - an assessment of the likely impacts of the development on aquifers, watercourses, riparian land, water-related infrastructure, and other water users, including:*

- *a detailed site water balance, including an assessment of the reliability of water supply imported to the site, and management of excess water, supported by sensitivity analysis; and*
- *an assessment of the water quality and management of the imported water, including spill/leak management.*

Mr Preshaw, rather than insisting that the requirements of the SEARs be met has instead recommended this mine be approved without evidence that water supplies to other water users and the environment will be protected.

In a letter written by Mr Preshaw (IRF23/1568) on 22 June 2023, Mr Preshaw writes *"Firstly, I can assure you that the Department undertook a rigorous and evidence-based assessment of the potential impacts of the project on the community and the environment. It included careful consideration of the information provided by the proponent and by independent experts engaged by the community and the Department."* See Attachment 2

While Mr Preshaw's Department may have undertaken a rigorous assessment it was not evidence based in the case of its assessment of Lawsons Creek. If, as Mr Preshaw claims the assessment was part of a *triple bottom line assessment undertaken by the Department and considered by the IPC* then clearly a triple bottom line assessment is not an adequate type of assessment to rely on when considering a dangerous project such as the Bowdens Silver Projects and other minerals mines favoured by the previous government in NSW.

Water Management Plans for the Bowdens Silver Project should have been provided to the public and independent experts for proper scrutiny prior to any recommendation by the NSW DPE. The NSW DPE engaged experts Hydrogeologic and Earth Sciences and then largely ignored their findings and recommendations in favour of dubious statements made by Nicholas Warren from RW Corkery in responses to queries by Earth Sciences and others.

In response to a query by Earth Sciences on the lack of water quality assessment Mr Warren stated *"As noted above, the design intent of all water management infrastructure is the capture of all water/runoff in contact with catchments disturbed by mining operations to prevent discharge from the Mine Site.* ***As no discharge is proposed, no treatment of contaminated water is required.*** *Should discharge of water be proposed, the EPA have identified the assessment needed to justify this which would include development of water quality management strategies."*

Mr Warren has overlooked 1.6 megalitres every day of TSF seepage, as well as floods and earthquakes.

See the response at

https://majorprojects.planningportal.nsw.gov.au/prweb/PRRestService/mp/01/getContent?AttachRef=SSD-5765%2120221221T052917.765%20GMT

Conclusion

No issues or adverse findings were identified by any expert regarding the quality of the water in Lawsons Creek. Bowdens, Jacobs and the NSW DPE have misled the IPC by indicating that the water in the creek and the creek itself was damaged and degraded. NSW DPE assessors Steve O'Donohue and Rose-Anne Hawkeswood visited Lawsons Creek at various locations and saw that it was not damaged or degraded.

No flow data has been recorded in Lawsons Creek so the statement that Lawsons Creek is ephemeral is unfounded. During the last drought while in some places there were excellent water holes in other places the creek ran dry. The last drought was recorded as one of the most significant ever recorded with many perennial water courses running dry. The fact that sections of Lawsons Creek ceased to flow during that time is not evidence that Lawsons Creek is ephemeral.

Dangerous and hazardous materials will continue to seep from the tailings dam at a rate of 1.6 megalitres each day even during a drought.

Lawsons Creek is not degraded, damaged or ephemeral and is an important water source in the Macquarie Bogan catchment and part of the Murray Darling Basin system and must be protected.

ATTACHMENT 1

Appendix 1 contains material referred to that can be found on the **NSW Department Major Projects Website.** Bowdens Silver | Planning Portal - Department of Planning and Environment (nsw.gov.au)

Independent Expert Reports compiled for the DPE can be found on the website under the tab "Additional Information".

Other Expert reports can be found in the Tab – "Submissions" – Organisations – Oppose – Lue Action Group on Page 1 and Page 2. (The NSW DPE has consistently refused to make these reports easily accessible to the public)

Microsoft Word - Planning NSW 200727 LAG Bowden Silver Objection (Cvr Ltr - FINAL).1

Microsoft Word - Planning NSW 210818 LAG Bowden Silver Amendment Objection (FINAL)

Microsoft Word - Planning NSW 210818 LAG Bowden Silver Water Supply Amendment Objection (FINAL)

LAG Bowdens Silver Comments on Bowdens Response to Submissions Report (RTS)
https://majorprojects.planningportal.nsw.gov.au/prweb/PRRestService/mp/01/getContent?AttachRef=EXH-39437454%2120220524T055251.529%20GMT

Independent Expert Reports can be accessed via the Mudgee Region Action Group website

Mudgee Region Action Group (lueactiongroup.org)

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Below is an excerpt from the DPE Assessment including the paragraphs 158 – 163 Tailings Dam seepage and its impact on Lawsons Creek.

The DPE Assessment states in paragraphs 158 to 163

158. Jacobs undertook refined modelling of the transport and fate of seepage from the TSF based on both designs to determine the potential impacts on the receiving environment from elevated metals concentrations or low pH.

159. After accounting for mixing and dilution, the modelling identified that during low or median creek flows the concentrations of some analytes would marginally exceed the value set out in the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZG) for 95% protection of freshwater aquatic ecosystem. Concentrations of all analytes would be below the ANZG threshold values for the protection of sheep, cattle and irrigation.

160. Jacobs noted that the concentrations of some of these metals already exceed the ANZG levels in downstream receiving waters and the additional contribution from the TSF would be very minor. Furthermore, the modelling was deliberately conservative in that it did not account for natural chemical reactions and attenuation within the TSF or along the flow path that is likely to reduce concentrations of pollutants from the TSF. For example, it is likely that some residual cyanide (possibly up to 90%) may be lost from the decant pond through volatilisation with further removal in the groundwater system via processes such as the formation of insoluble iron-cyanide precipitates or

formic acid. Metals such as copper and zinc may adsorp (sic) to calcium and iron oxide and precipitate within the aquifer.

161. Given the above, and also given that the habitat within Lawsons Creek is already degraded with relatively low ecological values and water use from the creek is principally for agricultural purposes, Jacobs concluded that seepage from the TSF would not lower the beneficial use of the creek. DPE Water and the EPA did not raise any significant concerns in relation to these conclusions, subject to implementation of best practice seepage management controls.

162. In relation to community concerns about the risk of failure of the TSF, the Department notes the preliminary design of the TSF was prepared in accordance with the relevant guidelines and policies of Dams Safety NSW and the Australian National Committee on Large Dams (ANCOLD).

163. The design includes an emergency spillway on the TSF embankment that would provide for overflows in extreme events. It also includes allowance for storm storage, wave run-up and additional freeboard based on the ANCOLD guidelines.

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The EIS, Part 6 The Surface Water Assessment prepared by WRM Environmental states

3.7 WATER QUALITY

Monitoring of surface water in Lawsons Creek, Hawkins Creek and its tributaries has been undertaken since 2012. Full details of the baseline water quality assessment are presented in Annexure A (R.W. Corkery & Co, 2020).

The principal guideline for water quality in Australia is ANZG (2018). Most of this guideline relies upon guidance developed by the Australian and New Zealand Environment and Conservation Council (ANZECC) in collaboration with the Agriculture and Resources Management Ministerial Council of Australia and New Zealand (ARMCANZ) and which was published in the (then) Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC, 2000). ANZG (2018) sets quantitative and qualitative guideline values for a range of water quality parameters for the protection of aquatic ecosystems, aquaculture, recreation, drinking and agricultural values.

The baseline water quality assessment concludes water quality in the receiving waters of the Mine Site has been altered as a result of the agricultural activities in the contributing catchment, particularly with regard to nutrients and electrical conductivity (EC). The median values for:

• ammonia exceed the default guideline value at all sampling locations.

• nitrate exceed the default guideline value at all sampling locations.

• total nitrogen is above the default guideline value at all sampling locations.

• total phosphorous exceed the default guideline value at all sampling locations.

• pH is within the desired range for upland rivers although the results for monitoring locations on Lawsons Creek are generally at the upper end of this range.

• sulphate concentrations are below the default guideline value at all locations.

• *electrical conductivity is above the desired range.*

The assessment also concludes that median (50th percentile) metal concentrations are generally below current default guideline values*. Table 3.2 compares the median percentile of metal concentrations to the default guidelines for protection of aquatic ecosystems. The table shows exceedance for zinc and copper (although copper concentrations do not exceed the hardness modified guideline value) in both Hawkins Creek and Lawsons Creek, but all other metals are at or below the guideline value. Full details of the baseline water quality assessment are presented in* ***Annexure A*** *(R.W. Corkery & Co, 2020).*

Annexure A [getContent (nsw.gov.au)]

Table 3.2
Summary of Background Dissolved Metal Concentrations and Guideline Levels (µg/L)

Analyte	ANZG Default Guideline Value[1]	50th Percentile from Water Quality Monitoring Data							
		Lawsons Creek				Hawkins Creek			
		BSW28	BSW22	BSW21	BSW20	BSW7	BSW11	BSW12	BSW13
Mn	1900	88.0	87.0	262.0	512.8	225.5	218.5	138.5	293.0
Zn	8	7.0	6.5	7.0	16.0	10.0	9.0	10.0	8.0
Cd	0.2	0.1	0.1	1.0	0.1	0.2	0.1	0.2	Below LOR
Pb	3.4	2.0	Below LOR	Below LOR	Below LOR	Below LOR	Below LOR	Below LOR	Below LOR
Co	N/A	2.0	1.0	1.0	2.0	1.0	2.0	2.0	2.0
As	13	2.0	1.5	2.0	4.0	1.0	2.0	1.0	1.0
Cu	1.4	2.0	2.0	1.0	3.0	2.0	2.0	1.0	2.0
Ni	11	2.0	1.0	1.0	3.0	2.0	3.5	2.0	4.0

LOR – limit of reporting
[1] – for protection of aquatic ecosystems

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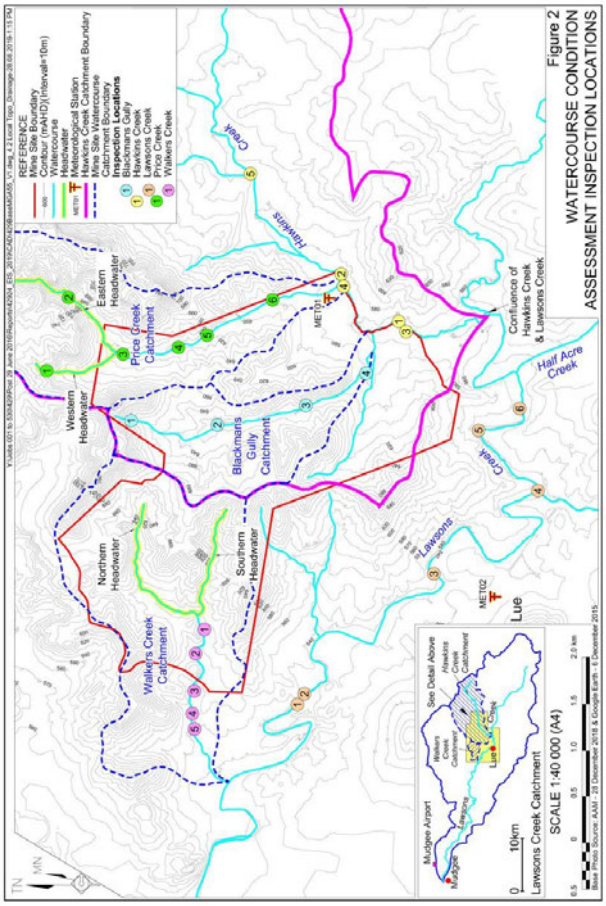
Figure 2 Watercourse Condition Assessment Inspection Locations



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Lawsons Creek

Part 6: Surface Water Assessment Bowdens Silver Project Report No. 429/25

6-11 Lawsons Creek is an unregulated watercourse that drains the regional catchment in which the Mine Site is situated. The headwaters of the Lawsons Creek system are situated on Mount Graham (elevation approximately 910m AHD) which is approximately 20km east of the Mine Site. The northern and eastern extents of the Lawsons Creek catchment are heavily vegetated and underlain by Permian sediments of the Sydney Basin.

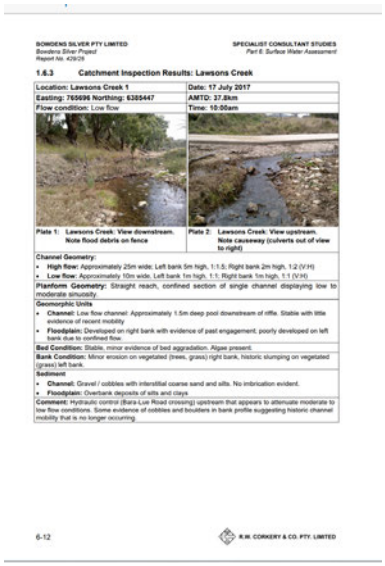
The southwestern extent of this catchment is also heavily vegetated but underlain by metasediments and volcanics associated with the Lachlan Orogen. A review of aerial photography indicates that the bulk of the Lawsons Creek catchment has been altered (cleared) to support agricultural activities.

The aerial photography also suggests that, historically, Lawsons Creek was likely to have been an intermittent to perennially discharging watercourse however, subsequent land use changes and the construction of water capture and storage structures to support agriculture have altered the hydrologic regime such that Lawsons Creek may now be described as an intermittent to ephemeral watercourse.

Lawsons Creek in the vicinity of the Mine Site and a subordinate watercourse Half Acre Creek, were inspected on 17 July 2017 at locations from the Bara-Lue Road crossing, approximately 3km west (downstream) of the Mine Site (Adopted Middle Thread Distance (AMTD) 37.8km) and the Pyangle Road crossing, approximately 2.5km south (downstream) of the Mine Site (AMTD 45.2km) which is 1.1km west of the Hawkins and Lawsons Creeks confluence.

Property access limited the watercourse inspection at a number of locations along this reach of the watercourse.

Water testing locations on Lawsons Creek



BOWDENS SILVER PTY LIMITED — SPECIALIST CONSULTANT STUDIES

1.6.3 Catchment Inspection Results: Lawsons Creek

Location: Lawsons Creek 1	**Date:** 17 July 2017
Easting: 765696 **Northing:** 6385447	**AMTD:** 37.8km
Flow condition: Low flow	**Time:** 10:00am

Plate 1: Lawsons Creek: View downstream. Note flood debris on fence

Plate 2: Lawsons Creek: View upstream. Note causeway (culverts out of view to right)

Channel Geometry:
- **High flow:** Approximately 25m wide; Left bank 5m high, 1:1.5; Right bank 2m high, 1:2 (V:H)
- **Low flow:** Approximately 10m wide, Left bank 1m high, 1:1; Right bank 1m high, 1:1 (V:H)

Planform Geometry: Straight reach, confined section of single channel displaying low to moderate sinuosity.

Geomorphic Units
- **Channel:** Low flow channel: Approximately 1.5m deep pool downstream of riffle. Stable with little evidence of recent mobility
- **Floodplain:** Developed on right bank with evidence of past engagement, poorly developed on left bank due to confined flow.

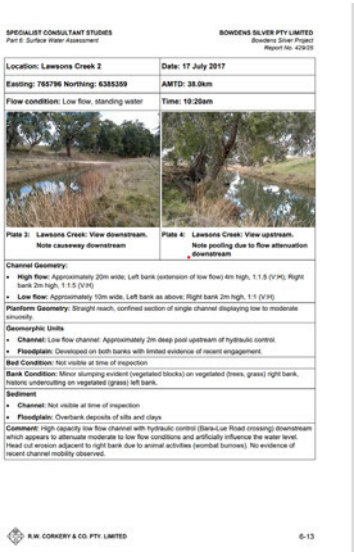
Bed Condition: Stable, minor evidence of bed aggradation. Algae present.

Bank Condition: Minor erosion on vegetated (trees, grass) right bank, historic slumping on vegetated (grass) left bank.

Sediment
- **Channel:** Gravel / cobbles with interstitial coarse sand and silts. No imbrication evident.
- **Floodplain:** Overbank deposits of silts and clays

Comment: Hydraulic control (Bara-Lue Road crossing) upstream that appears to attenuate moderate to low flow conditions. Some evidence of cobbles and boulders in bank profile suggesting historic channel mobility that is no longer occurring.

6-12 — R.W. CORKERY & CO. PTY. LIMITED



SPECIALIST CONSULTANT STUDIES — BOWDENS SILVER PTY LIMITED

Location: Lawsons Creek 2	**Date:** 17 July 2017
Easting: 765796 **Northing:** 6385359	**AMTD:** 38.0km
Flow condition: Low flow, standing water	**Time:** 10:20am

Plate 3: Lawsons Creek: View downstream. Note causeway downstream

Plate 4: Lawsons Creek: View upstream. Note pooling due to flow attenuation downstream

Channel Geometry:
- **High flow:** Approximately 20m wide; Left bank (extension of low flow) 4m high, 1:1.5 (V:H); Right bank 2m high, 1:1.5 (V:H)
- **Low flow:** Approximately 10m wide, Left bank as above; Right bank 2m high, 1:1 (V:H)

Planform Geometry: Straight reach, confined section of single channel displaying low to moderate sinuosity.

Geomorphic Units
- **Channel:** Low flow channel: Approximately 2m deep pool upstream of hydraulic control.
- **Floodplain:** Developed on both banks with limited evidence of recent engagement.

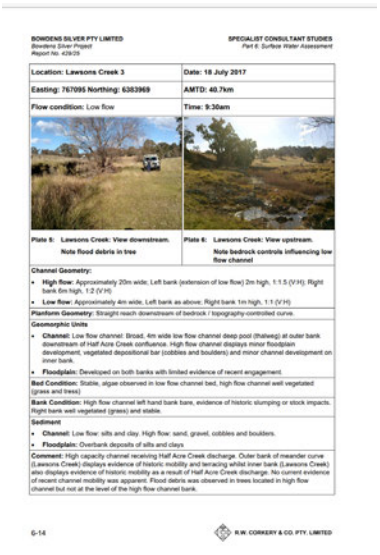
Bed Condition: Not visible at time of inspection

Bank Condition: Minor slumping evident (vegetated blocks) on vegetated (trees, grass) right bank, historic undercutting on vegetated (grass) left bank.

Sediment
- **Channel:** Not visible at time of inspection
- **Floodplain:** Overbank deposits of silts and clays

Comment: High capacity low flow channel with hydraulic control (Bara-Lue Road crossing) downstream which appears to attenuate moderate to low flow conditions and artificially influence the water level. Head cut erosion adjacent to right bank due to animal activities (wombat burrows). No evidence of recent channel mobility observed.

R.W. CORKERY & CO. PTY. LIMITED — 6-13



BOWDENS SILVER PTY LIMITED — SPECIALIST CONSULTANT STUDIES

Location: Lawsons Creek 3	**Date:** 18 July 2017
Easting: 767095 **Northing:** 6383969	**AMTD:** 40.7km
Flow condition: Low flow	**Time:** 9:30am

Plate 5: Lawsons Creek: View downstream. Note flood debris in tree

Plate 6: Lawsons Creek: View upstream. Note bedrock controls influencing low flow channel

Channel Geometry:
- **High flow:** Approximately 20m wide; Left bank (extension of low flow) 2m high, 1:1.5 (V:H). Right bank 6m high, 1:2 (V:H)
- **Low flow:** Approximately 4m wide, Left bank as above; Right bank 1m high, 1:1 (V:H)

Planform Geometry: Straight reach downstream of bedrock / topography-controlled curve.

Geomorphic Units
- **Channel:** Low flow channel: Broad, 4m wide low flow channel deep pool (thalweg) at outer bank downstream of Half Acre Creek confluence. High flow channel displays minor floodplain development, vegetated depositional bar (cobbles and boulders) and minor channel development on inner bank.
- **Floodplain:** Developed on both banks with limited evidence of recent engagement.

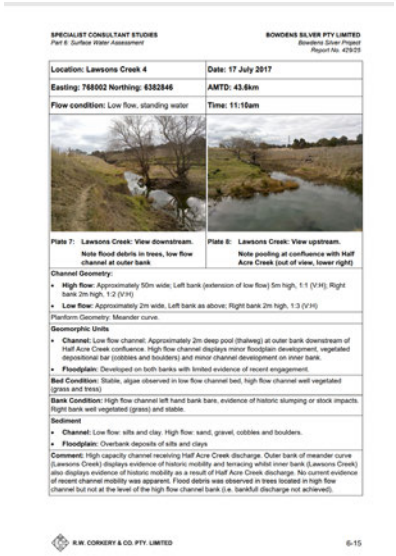
Bed Condition: Stable, algae observed in low flow channel bed, high flow channel well vegetated (grass and trees)

Bank Condition: High flow channel left hand bank bare, evidence of historic slumping or stock impacts. Right bank well vegetated (grass) and stable.

Sediment
- **Channel:** Low flow: silts and clay. High flow: sand, gravel, cobbles and boulders.
- **Floodplain:** Overbank deposits of silts and clays

Comment: High capacity channel receiving Half Acre Creek discharge. Outer bank of meander curve (Lawsons Creek) displays evidence of historic mobility and terracing whilst inner bank (Lawsons Creek) also displays evidence of historic mobility as a result of Half Acre Creek discharge. No current evidence of recent channel mobility was apparent. Flood debris was observed in trees located in high flow channel but not at the level of the high flow channel bank.

6-14 — R.W. CORKERY & CO. PTY. LIMITED



SPECIALIST CONSULTANT STUDIES — BOWDENS SILVER PTY LIMITED

Location: Lawsons Creek 4	**Date:** 17 July 2017
Easting: 768002 **Northing:** 6382846	**AMTD:** 43.6km
Flow condition: Low flow, standing water	**Time:** 11:10am

Plate 7: Lawsons Creek: View downstream. Note flood debris in trees, low flow channel at outer bank

Plate 8: Lawsons Creek: View upstream. Note pooling at confluence with Half Acre Creek (out of view, lower right)

Channel Geometry:
- **High flow:** Approximately 50m wide; Left bank (extension of low flow) 5m high, 1:1 (V:H). Right bank 2m high, 1:2 (V:H)
- **Low flow:** Approximately 2m wide, Left bank as above; Right bank 2m high, 1:3 (V:H)

Planform Geometry: Meander curve.

Geomorphic Units
- **Channel:** Low flow channel: Approximately 2m deep pool (thalweg) at outer bank downstream of Half Acre Creek confluence. High flow channel displays minor floodplain development, vegetated depositional bar (cobbles and boulders) and minor channel development on inner bank.
- **Floodplain:** Developed on both banks with limited evidence of recent engagement.

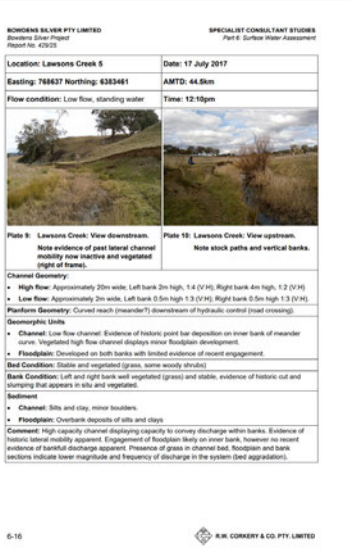
Bed Condition: Stable, algae observed in low flow channel bed, high flow channel well vegetated (grass and tress)

Bank Condition: High flow channel left hand bank bare, evidence of historic slumping or stock impacts. Right bank well vegetated (grass) and stable.

Sediment
- **Channel:** Low flow: silts and clay. High flow: sand, gravel, cobbles and boulders.
- **Floodplain:** Overbank deposits of silts and clays

Comment: High capacity channel receiving Half Acre Creek discharge. Outer bank of meander curve (Lawsons Creek) displays evidence of historic mobility and terracing whilst inner bank (Lawsons Creek) also displays evidence of historic mobility as a result of Half Acre Creek discharge. No current evidence of recent channel mobility was apparent. Flood debris was observed in trees located in high flow channel but not at the level of the high flow channel bank (i.e. bankfull discharge not achieved).

R.W. CORKERY & CO. PTY. LIMITED — 6-15



BOWDENS SILVER PTY LIMITED — SPECIALIST CONSULTANT STUDIES

Location: Lawsons Creek 5	**Date:** 17 July 2017
Easting: 768637 **Northing:** 6383461	**AMTD:** 44.5km
Flow condition: Low flow, standing water	**Time:** 12:10pm

Plate 9: Lawsons Creek: View downstream. Note evidence of past lateral channel mobility now inactive and vegetated (right of frame).

Plate 10: Lawsons Creek: View upstream. Note stock paths and vertical banks.

Channel Geometry:
- **High flow:** Approximately 20m wide; Left bank 2m high, 1:4 (V:H); Right bank 4m high, 1:2 (V:H)
- **Low flow:** Approximately 2m wide, Left bank 0.5m high 1:3 (V:H); Right bank 0.5m high 1:3 (V:H)

Planform Geometry: Curved reach (meander?) downstream of hydraulic control (road crossing).

Geomorphic Units
- **Channel:** Low flow channel: Evidence of historic point bar deposition on inner bank of meander curve. Vegetated high flow channel displays minor floodplain development.
- **Floodplain:** Developed on both banks with limited evidence of recent engagement.

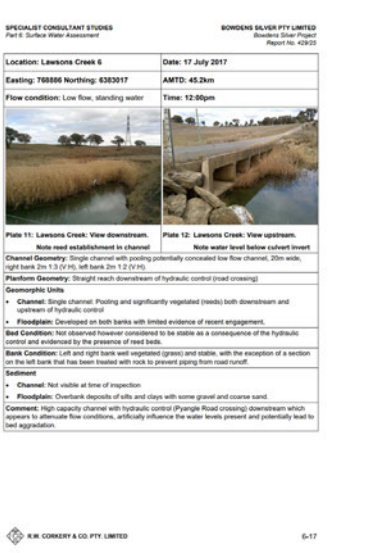
Bed Condition: Stable and vegetated (grass, some woody shrubs)

Bank Condition: Left and right bank well vegetated (grass) and stable, evidence of historic cut and slumping that appears in situ and vegetated.

Sediment
- **Channel:** Silts and clay, minor boulders.
- **Floodplain:** Overbank deposits of silts and clays

Comment: High capacity channel displaying capacity to convey discharge within banks. Evidence of historic lateral mobility apparent. Engagement of floodplain likely on inner bank, however no recent evidence of bankfull discharge apparent. Presence of grass in channel bed, floodplain and bank sections indicate lower magnitude and frequency of discharge in the system (bed aggradation).

6-16 — R.W. CORKERY & CO. PTY. LIMITED



SPECIALIST CONSULTANT STUDIES — BOWDENS SILVER PTY LIMITED

Location: Lawsons Creek 6	**Date:** 17 July 2017
Easting: 768886 **Northing:** 6383017	**AMTD:** 45.2km
Flow condition: Low flow, standing water	**Time:** 12:00pm

Plate 11: Lawsons Creek: View downstream. Note reed establishment in channel

Plate 12: Lawsons Creek: View upstream. Note water level below culvert invert

Channel Geometry: Single channel with pooling potentially concealed low flow channel, 20m wide, right bank 2m 1:3 (V:H), left bank 2m 1:2 (V:H).

Planform Geometry: Straight reach downstream of hydraulic control (road crossing)

Geomorphic Units
- **Channel:** Single channel: Pooling and significantly vegetated (reeds) both downstream and upstream of hydraulic control
- **Floodplain:** Developed on both banks with limited evidence of recent engagement.

Bed Condition: Not observed however considered to be stable as a consequence of the hydraulic control and evidenced by the presence of reed beds.

Bank Condition: Left and right bank well vegetated (grass) and stable, with the exception of a section on the left bank that has been treated with rock to prevent piping from road runoff.

Sediment
- **Channel:** Not visible at time of inspection
- **Floodplain:** Overbank deposits of silts and clays with some gravel and coarse sand.

Comment: High capacity channel with hydraulic control (Pyangle Road crossing) downstream which appears to attenuate flow conditions, artificially influence the water levels present and potentially lead to bed aggradation.

R.W. CORKERY & CO. PTY. LIMITED — 6-17

Water testing was carried out along Lawsons Creek by RW Corkery and found no serious water quality issues or concerns with the quality of the water.

Results of water testing of Lawsons Creek.

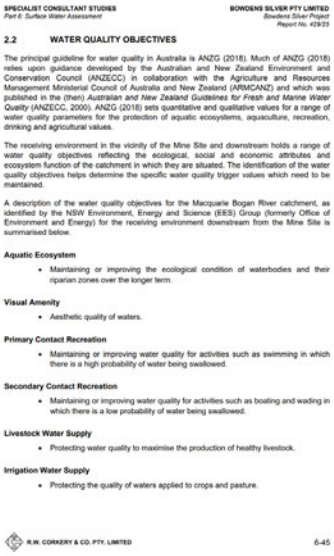
Table 3.2
Summary of Background Dissolved Metal Concentrations and Guideline Levels (µg/L)

Analyte	ANZG Default Guideline Value[1]	50th Percentile from Water Quality Monitoring Data							
		Lawsons Creek				Hawkins Creek			
		BSW28	BSW22	BSW21	BSW20	BSW7	BSW11	BSW12	BSW13
Mn	1900	88.0	87.0	262.0	512.8	225.5	218.5	138.5	293.0
Zn	8	7.0	6.5	7.0	16.0	10.0	9.0	10.0	8.0
Cd	0.2	0.1	0.1	1.0	0.1	0.2	0.1	0.2	Below LOR
Pb	3.4	2.0	Below LOR	Below LOR	Below LOR	Below LOR	Below LOR	Below LOR	Below LOR
Co	N/A	2.0	1.0	1.0	2.0	1.0	2.0	2.0	2.0
As	13	2.0	1.5	2.0	4.0	1.0	2.0	1.0	1.0
Cu	1.4	2.0	2.0	1.0	3.0	2.0	2.0	1.0	2.0
Ni	11	2.0	1.0	1.0	3.0	2.0	3.5	2.0	4.0

LOR – limit of reporting
[1] – for protection of aquatic ecosystems

***

The following pages from the report by RW Corkery on water testing describe Water Quality Objectives, Sample Locations and Results.



SPECIALIST CONSULTANT STUDIES
Part 6: Surface Water Assessment

BOWDENS SILVER PTY LIMITED
Bowdens Silver Project
Report No. 429/25

2.2 WATER QUALITY OBJECTIVES

The principal guideline for water quality in Australia is ANZG (2018). Much of ANZG (2018) relies upon guidance developed by the Australian and New Zealand Environment and Conservation Council (ANZECC) in collaboration with the Agriculture and Resources Management Ministerial Council of Australia and New Zealand (ARMCANZ) and which was published in the (then) *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* (ANZECC, 2000). ANZG (2018) sets quantitative and qualitative values for a range of water quality parameters for the protection of aquatic ecosystems, aquaculture, recreation, drinking and agricultural values.

The receiving environment in the vicinity of the Mine Site and downstream holds a range of water quality objectives reflecting the ecological, social and economic attributes and ecosystem function of the catchment in which they are situated. The identification of the water quality objectives helps determine the specific water quality trigger values which need to be maintained.

A description of the water quality objectives for the Macquarie Bogan River catchment, as identified by the NSW Environment, Energy and Science (EES) Group (formerly Office of Environment and Energy) for the receiving environment downstream from the Mine Site is summarised below.

Aquatic Ecosystem

- Maintaining or improving the ecological condition of waterbodies and their riparian zones over the longer term.

Visual Amenity

- Aesthetic quality of waters.

Primary Contact Recreation

- Maintaining or improving water quality for activities such as swimming in which there is a high probability of water being swallowed.

Secondary Contact Recreation

- Maintaining or improving water quality for activities such as boating and wading in which there is a low probability of water being swallowed.

Livestock Water Supply

- Protecting water quality to maximise the production of healthy livestock.

Irrigation Water Supply

- Protecting the quality of waters applied to crops and pasture.

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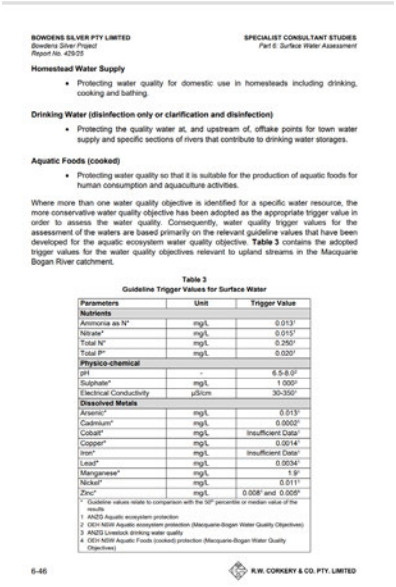
6-45



BOWDENS SILVER PTY LIMITED
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SPECIALIST CONSULTANT STUDIES
Part 6: Surface Water Assessment

Homestead Water Supply

- Protecting water quality for domestic use in homesteads including drinking, cooking and bathing.

Drinking Water (disinfection only or clarification and disinfection)

- Protecting the quality water at, and upstream of, offtake points for town water supply and specific sections of rivers that contribute to drinking water storages.

Aquatic Foods (cooked)

- Protecting water quality so that it is suitable for the production of aquatic foods for human consumption and aquaculture activities.

Where more than one water quality objective is identified for a specific water resource, the more conservative water quality objective has been adopted as the appropriate trigger value in order to assess the water quality. Consequently, water quality trigger values for the assessment of the waters are based primarily on the relevant guideline values that have been developed for the aquatic ecosystem water quality objective. **Table 3** contains the adopted trigger values for the water quality objectives relevant to upland streams in the Macquarie Bogan River catchment.

Table 3
Guideline Trigger Values for Surface Water

Parameters	Unit	Trigger Value
Nutrients		
Ammonia as N*	mg/L	0.013[1]
Nitrate*	mg/L	0.015[1]
Total N*	mg/L	0.350[1]
Total P*	mg/L	0.020[1]
Physico-chemical		
pH		6.5-8.0[2]
Sulphate*	mg/L	1 000[3]
Electrical Conductivity	µS/cm	30-350[2]
Dissolved Metals		
Arsenic*	mg/L	0.013[1]
Cadmium*	mg/L	0.0002[1]
Cobalt*	mg/L	Insufficient Data[1]
Copper*	mg/L	0.0014[1]
Iron*	mg/L	Insufficient Data[1]
Lead*	mg/L	0.0034[1]
Manganese*	mg/L	1.9[2]
Nickel*	mg/L	0.011[1]
Zinc*	mg/L	0.008[2] and 0.005[4]

* Guideline values relate to comparison with the 50th percentile or median value of the results
1 ANZG Aquatic ecosystem protection
2 OEH NSW Aquatic ecosystem protection (Macquarie-Bogan Water Quality Objectives)
3 ANZG Livestock drinking water quality
4 OEH NSW Aquatic Foods (cooked) protection (Macquarie-Bogan Water Quality Objectives)

6-46

R.W. CORKERY & CO. PTY. LIMITED

2.3 SURFACE WATER SAMPLING LOCATIONS

A total of 10 locations along the subject watercourses were sampled by Kingsgate Bowdens Pty Ltd or Bowdens Silver between June 2012 and November 2018 with the data utilised for the purposes of this assessment. The sampling locations are listed in **Table 4** and presented on **Figure 5**.

Table 4
Surface Water Monitoring Locations

Location Ref	Watercourse / Catchment	Position
BSW 13	Hawkins Creek	Upstream of Mine Site Boundary
BSW 11*	Hawkins Creek	Adjacent to Mine Site Boundary
BSW 7	Hawkins Creek	Adjacent to Mine Site Boundary
BSW 12	Hawkins Creek	Downstream of Mine Site Boundary
BSW 19*	Hawkins Creek	Downstream of Mine Site Boundary
BSW 20*	Lawsons Creek	Upstream of Hawkins Creek confluence
BSW 21	Lawsons Creek	Downstream of Hawkins Creek confluence
BSW 22	Lawsons Creek	Downstream of Lue
BSW 28*	Lawsons Creek	Downstream of Lue
BSW 25	Tributary (Lawsons Creek)	West of Mine Site

BSW = Bowdens Surface Water
* Stream sediment sample also collected at this location

2.4 ANALYTES

The sampling locations listed in **Table 4** were generally sampled on a monthly basis and submitted to a NATA accredited laboratory for analysis of the physico-chemical parameters shown in **Table 3**. In total, the dataset comprises 11,904 individual analytical results from a suite of 29 analytes.

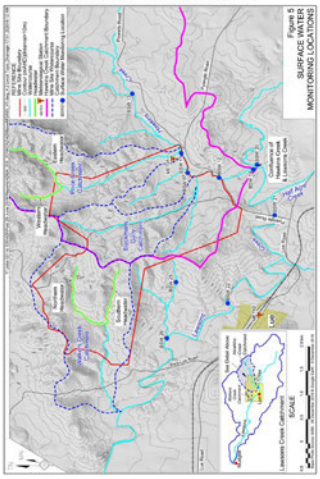
2.5 RESULTS AND INTERPRETATION

2.5.1 Data Presentation

2.5.1.1 Surface Water Quality

Box and whisker plots have been compiled and used to present the results of water quality monitoring for this assessment. This type of plot is extremely useful in providing a visual representation of the statistical distribution of a sample population. With the exception of electrical conductivity, which reports the 75th percentile value, all plots present data as maximum, minimum, median, 20th and 80th percentiles. With regard to electrical conductivity, the use of the 75th percentile, rather than the 80th percentile has been adopted as with this indicator the 80th percentile is usually significantly higher than the median and allows for too much change when compared to the median (EHP, 2009). The median has been chosen for comparison to trigger values. This is the approach recommended in ANZG. This approach is not intended as being an instrument to assess compliance but as an early warning mechanism for the management of potential impacts.

Figure 5 Surface Water Monitoring Locations



ATTACHMENT 2

Letter IRF23/1568 dated 22 June 2023 - Clay Preshaw to Ms Wannan

Our ref: IRF23/1568

Ms Wannan

22 June 2023 Dear Ms Wannan

I write in response to your email dated 15 May 2023 regarding your concerns about the assessment of the Bowdens Silver Project (the project) and the independence of the Independent Planning Commission of NSW (IPC). Minister Scully has also asked me to respond on his behalf to your email dated 16 May and letter dated 28 April to him.

Firstly, I can assure you that the Department undertook a rigorous and evidence-based assessment of the potential impacts of the project on the community and the environment. That assessment was undertaken in accordance with applicable legislation and policy. It included careful consideration of the information provided by the proponent and by independent experts engaged by the community and the Department.

A thorough review process was followed with the Department's experts requesting additional information or clarification on identified issues or concerns prior to finalising advice/ recommendations. The Department carefully considers those criticisms and concerns, the proponent's response to the review, the level of residual risk, and any mitigation and/or management options available to reduce that risk.

In relation to your specific concerns about the approval of unlicenced water take, I can clarify that notwithstanding any development consent, Bowdens Silver is required to comply with all legislation, including the *Water Management Act 2000* and any relevant water sharing plans. In accordance with this legislation, Bowdens Silver must ensure it has sufficient licensed entitlement for any water that it takes, except water taken under harvestable rights or where a specific exemption exists. In this regard, the DPE Water advice notes that there is an exemption for water licensing from dams that prevent contamination of a water source including from mine water and sediment dams.

In relation to the independence of the IPC, I can advise you that the IPC was established as an independent decision-making body for contentious State Significant Developments. It operates independently of the Department and other government departments and is not subject to the direction or control of the Minister for Planning and Public Spaces in relation to its decision making role. Although the Department's assessment informs the IPC as the consent authority, the IPC must make the ultimate decision about the merits of the project, and it is under no obligation to accept the recommendations of the Department.

In regard to your concern that the process excludes community participation, compared to proceedings in the Land and Environment Court there are fewer restrictions on public participation, as any interested person can register and speak directly to the decision-maker before the decision is made.

Finally, I note your request that the decision be reversed and the project reassessed on the basis that environmental, social and economic matters and risks were ignored and that the decision was underpinned by procedural unfairness.

If you believe you have grounds to challenge the legality of the decision, you may seek a judicial review in the Land and Environment Court under some circumstances. However, under the planning legislation it is not within the Minister's power or the Department's under delegation to overturn a legally made decision or undertake a review of a decision made by the IPC.

However, I assure you again that environmental, social and economic risks were not ignored and were carefully considered as part of triple bottom line assessment undertaken by the Department and considered by the IPC.

Yours sincerely

Clay Preshaw Executive Director

Energy, Resources and Industry Assessments