Applicant – Bowdens Silver Pty Limited

Application Number - SSD-5765

Application – Bowdens Silver Mine

I object to the BOWDENS SILVER MINE proposal.

Thank you for the opportunity to make a submission expressing my concerns regarding the Bowdens Silver Mine Project at Lue NSW.

Background

I have a property at Lue on the southern side of the village. My family have been at Lue since 1923 and in the district since 1881. Our property is used for agriculture, and in particular the breeding and fattening of sheep and cattle for sale.

Our property is less than 2 kilometres from the mine site.

Our property is used mostly for agricultural enterprises and for many years my mother also ran a very popular and successful bed and breakfast in her home accommodating up to 19 guests at a time. These guests varied from large family groups, special interest groups, conferences, individuals enjoying a weekend away and bike riders both push bikes and motor bikes. Thousands of people from all over the world have stayed at Lue and have enjoyed the many activities Mudgee, Lue and Rylstone have to offer.

My husband and I, my children and my grandchildren and our friends regularly stay at Lue for extended periods of time. We have had many family weddings in the garden and have welcomed hundreds of guests and friends to Lue. If this mine is approved and mining commences my children and grandchildren may think twice about visiting our property due to its close proximity to the mine site and due to the extremely toxic nature of lead, arsenic, cyanide and other poisonous substances mined and used at the mine.

Bowdens Silver Project

Bowdens Silver Project was purchased by Silver Mines Limited in 2016 with the first SEARs issued in 2017 and then reissued in 2019. There was no consultation with local landowners, farmers and businesses or Lue stakeholders prior to the first or second SEARs being published and this is certainly an oversight in the planning process because it has resulted in a of the lack of consideration of the close proximity of this mine to the Village of Lue or the social, environmental and financial impacts on Lue and the surrounding district.

While for many years one company or another has explored in this area the people of Lue have always believed a mine at Lue is not sustainable. The EIS has not properly addressed the impacts of a mine producing large quantities of lead will have on existing adjacent homes, farms and tourist and other businesses. Mining should not occur at Lue for the following reasons -

1. **Lead is poisonous and should not be mined so close to a town**. The Lue Action Group (LAG) obtained this information many years ago and this information is now reconfirmed and is available from experts engaged by LAG. LAG experts have also noted that the lead at Lue will be much more poisonous than the lead mined at Broken Hill or Mt Isa. (Please see the LAG submission for the experts reports)

2. **The noise levels of this mine will be extremely disturbing**. A mine operating 24 hours a day and 7 days a week creating noise levels well above the silence that is experienced now will drive residents away. There is some noise at Lue, cars and trucks travelling along the road, road works, animal noises, farm machinery, the occasional chain saw and bulldozer but the noise levels that the Village will experience should mining and construction commence will be constant and loud. Lue residents have already experienced and been disturbed by drilling at the site. It is very loud and sounds like rapping on a door. The noise levels at Lue will be constant and offensive for

residents and animals.

3. **The night glow will disturb humans and animals.** The mine will be lit 24/7, and being just 2kms from the site Lue will be extremely bright. The night sky can be observed at present and it is possible to see the Milky Way and other stars and planets very clearly. Farm animals, native animals and humans will be disturbed. Visitors come to this region and to Lue to enjoy the night sky.

4. **The Lue Road is not suitable for large numbers of trucks and wide loads.** The Lue Road is a narrow road that winds its way along the floor of the Lawson Creek valley. It crosses the creek 4 times and also passes through a narrow cutting and over a gap. It is a pretty drive, wooded in parts and with district views in others. There are many tourists on our road as it forms part of a tourist drive through Rylstone and around the region. The Lue Road is the shortest route between Kandos and Rylstone and Mudgee. There are also many commuters on the road including a lot of young drivers and provisional drivers. There are probably only 3 or 4 safe overtaking sections between Lue and Mudgee and many corners on the drive where drivers cross the centre line to negotiate the corner. The bridges are narrow and two are on sharp corners while another has a steep incline and the fourth is safe but occasionally floods. It is only 26 kms from Lue to Mudgee but it generally takes 25 to 30 minutes to drive to Mudgee which indicates the level of difficulty of the drive. Although the Mid Western Regional Council (MWRC) is constantly upgrading, widening and repairing the Lue Road it is simply not capable of safely carrying the kind of traffic and the unsafe loads the mine will generate.

5. **The Lawson Creek Valley does not have abundant water.** Water users in the valley carefully manage the water in order to have enough groundwater to supply the bores in the village, the stock bores and other domestic bores in the area. Lue does not have town water. Lue relies on ground water and rainwater to supply enough water for households. Most homes have a bore, some are licenced and some are not. Most homes have a rainwater tank. During the recent drought most bores were able to be pumped although at a reduced capacity and although rainwater tanks ran out, residents, farms and businesses were able to top up their tanks with bore water and survive. Some properties are on the creek and have access to creek water using their riparian rights. Other properties have irrigation licences in the creek and irrigate crops. The creek is fed by springs in the hills surrounding the mine site and it is also fed by groundwater. There is also a dam in the village fed by a spring that filled during the drought. Please see the LAG submission and the attached report from Water Technology for further information on groundwater, bores in the village and how they are connected to the mine site.

6. **This mine is not financially viable.** Up until 22 July 2020 when the silver price increased by 6% this mine was not viable. Silver prices are volatile and are tied to the gold price. The reason the current silver price is high is most likely due to the Covid 19 pandemic and the increase in the gold price. Some say that the silver price is high because of the demand by the solar panel manufacturing industry. I'm sure any financial analyst would agree that when the silver price rises solar panel manufacturers would and have in the past replaced silver with other cheaper components.

There are many other reasons why this project should not proceed including the destruction of lifestyle, the destruction of the magnificent grassy woodland at Lue, the koala population and other native animals and birds, the platypus in the creek, the sandstone outcrops, the rugged bushland, the Aboriginal paintings and carvings, the historical village of Lue and its lovely old buildings and homes, the pristine Lawsons Creek, and the wonderful community at Lue and our productive farmland, vineyards and olive groves.

Any existing land uses at Lue including businesses, homes, farms and tourist destinations will be forced to close or drastically change their ways of operating.

The EIS has attempted to avoid the unsustainability of this project by

1. Attempting to overcome the lack of water at the mine site by proposing the construction of 58km pipeline from Ulan to Lue carrying saline waste water from the Ulan Coal mine to use in processing and dust suppression at Lue. This pipeline is planned to be constructed on or adjacent to prime farmland, residential blocks and in some sections on a narrow gravel road which is also passing through grassy box woodland and koala habitat. At the time of this submission no discussions have been held with MWRC or many of the landowners along the pipeline route regarding the pipeline construction. This pipeline is a very expensive pipe dream and unlikely to be completed without significant adverse affects to landholders and land along the proposed route.

2. Ignoring the residents of Lue by not including their homes on maps in the EIS, excluding them from the noise assessment, the ground water assessment, and not assessing the impact of light pollution. Unregistered bores in the village are not considered in the rehabilitation process. The assessment of any changes to the quality of water is ignored.

3. Addressing the dangerous traffic issue by planning to construct a road that bypasses Lue. This planned road is only a plan. There has been no consultation with MWRC about this new public road or the closure of the Bara Road from Pyangle Road around the mine site. While this new road might address the problem of the additional traffic through Lue it does nothing to address or overcome the unsafe conditions on the Lue Road itself.

4. Ignoring the real problems caused by the mining of lead. On many occasions the CEO of Bowdens Silver has stated that the mine is a silver mine. The miner will be mining silver. That is of course the case but Lead makes up 42% of the metals produced while silver is less than 1%. While the CEO may be able to argue that he runs a silver company he cannot state that he runs a silver mine when silver is such a small proportion of the ore mined. (See the Bowdens Silver Project Virtual Open Day on the Bowdens Silver Website and the CEOs presentation https://kastio.com/watch/bowdenssilver#/)

5. Not collecting dust samples from businesses or homes in the district and instead relying on samples and data taken by a previous owner of the mine site. They are also using outdated lead levels for their assessments in the EIS. They reported in the EIS that the lead levels in the Lue School exceed safe levels. The EIS does not indicate whether or not these findings were reported to anyone other than in the EIS nor whether Bowdens arranged for the safe removal of the lead from the school.

6. Avoiding the facts and the reality instead supporting some local groups. In this regard Bowdens have summarised the EIS in a booklet delivered to residents in the district and advertised the project in the local newspaper in a way that does not include many of the facts and avoids any of the negative impacts that will be experienced by the community, the economy and the environment. Attempts have been made to discredit the Lue Action Group and any other person who opposes this project. Bowdens employs an MWRC councillor from Rylstone who as a result is now conflicted in representing all of his constituents. Bowdens have also sponsored and donated money to some sporting clubs and local events.

The SEARs

The Environmental Impact Statement presented by Bowdens Silver Project does not respond to the requirements in the SEARs.

The EIS does not adequately address the specific issues regarding

- Land and Land Use, and particularly its compatibility with proposed mining use
- Air Quality, in particular fine dust, lead dust and dust caused by truck movements and blasting
- Human Health, in particular lead poisoning, cyanide exposure, dust exposure, traffic incidents, exposure to excessive noise, sleep disturbance, poor mental health,
- Water, and in particular there is not detailed site water balance table or assessment, an assessment of the reliability of imported water to the site, the management of excess water, an assessment of water quality and the management of imported water or a spill/leak management assessment of the pipeline or the tailings storage facility
- Biodiversity, endangered and threatened species including Koalas, platypus, Regent Honey Eater, the White box-Yellow box- Blakelys Gum Grassy Woodland, springs and watercourses or aquatic ecosystems
- Heritage, in particular the Aboriginal sites, historic town of Lue and adjacent homesteads and farms
- Transport, in particular the increased wide loads, semi-trailers and B doubles causing danger to other drivers and damage the road itself
- Visual impacts, of the mine on surrounding farms and homes and businesses and in Lue and the night glow causing sleep disturbance of humans and animals and disruption of the growth of native vegetation
- Hazards, and in particular the possibility of an Earthquake, given Lue is located in an Earthquake Hazard Zone, causing the Tailings Storage Facility to fail, and the problem of failure of the pipeline and the resulting spill of contaminated waste water from Ulan or Moolarben
- Social impacts, in particular the community division, heath, property values, dissolving of friendships, mental health issues, lack of social amenity, feelings of harassment, despair, depression and aggravation are common. Impact of 4 years of confrontation, preparation of EIS submission, providing evidence and proof of the unsuitability and unsustainability of this project, impact on friendships, businesses and future alternative developments caused by the time needed to oppose and object to this ill-conceived project.
- Economic impacts, in particular the economic impact on the shareholders and CEO of Bowdens compared to the economic impact on a resident, farm or tourist business in Lue.
- Consultation, and in particular the lack of proper meaningful consultation with landowners in and surrounding Lue and with the landowners in and around the pipeline route or the transmission line route.

The proponent has submitted a document that while comprehensive and even robust in some areas does not properly address the development in others and in particular the planning and construction and subsequent management of the water supply pipeline, the transportation of the processed ore from the mine via road, the rehabilitation of the site or the location, design, construction and management of the Tailings Storage Facility.

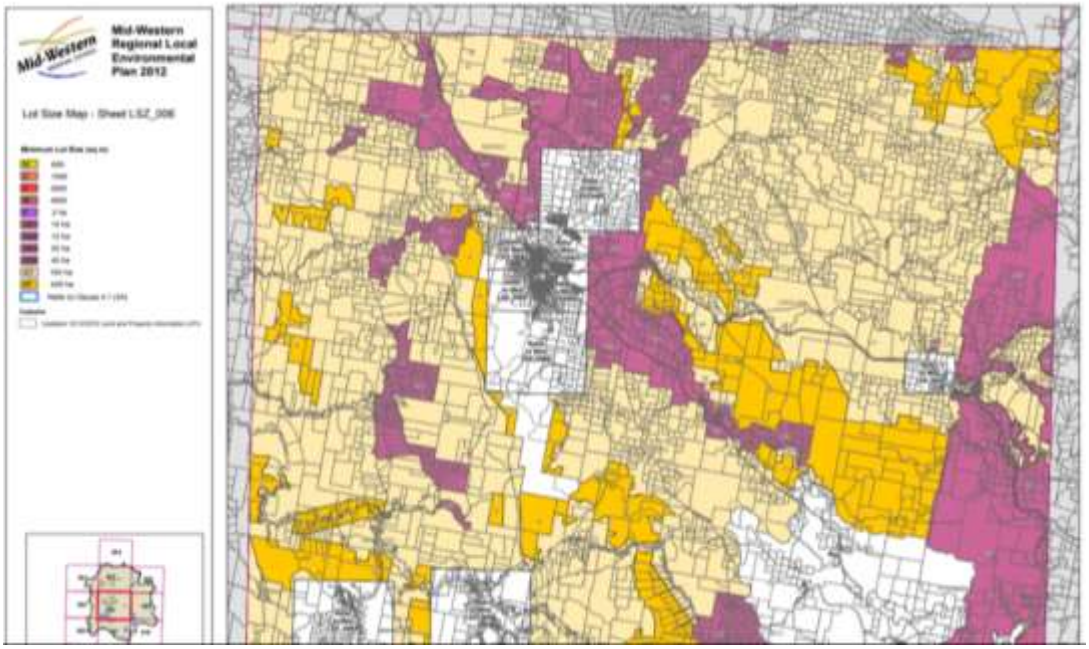
Existing and preferred land use

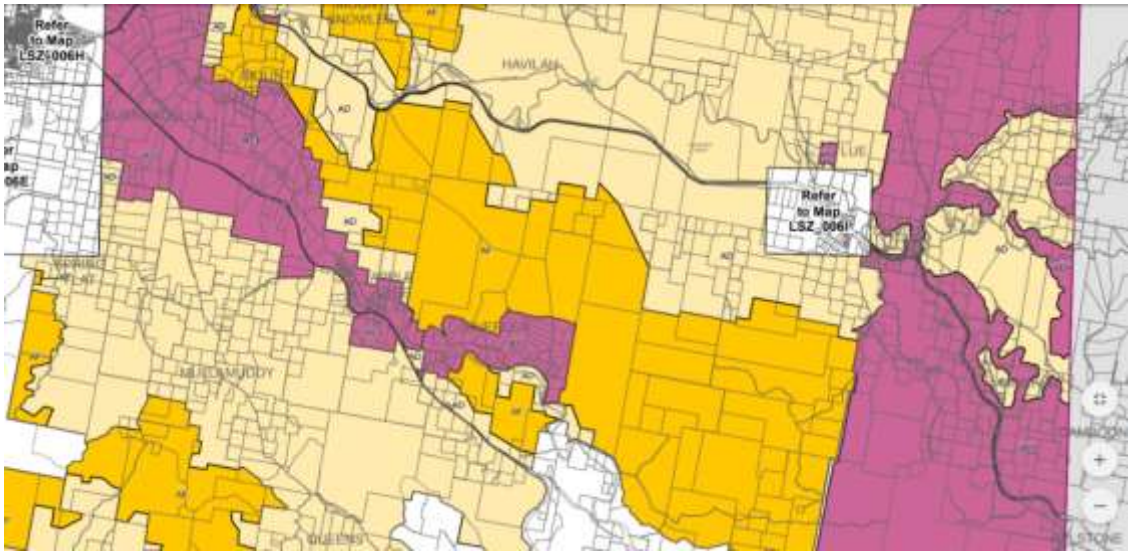
As shown in the MWRC Local Environmental Plan 2012 below, the land around Lue is zoned U being 1000 sq meter lots, AB2 being 12 hectare lots, AB4 being 40 hectare lots, U being 100 hectare lots and further out from the Lue the land is zoned AF being 400 hectare lots.

The existing use of the land around Lue is residential homes, tourist venues and accommodation and some small businesses and agricultural enterprises, large and small farms, orchards, viticulture and olive groves. There are no mines or mining in the area and the land is not zoned for mining or industrial use.

The preferred land use is for residential homes, large lot residences and small farms, tourist businesses and operations and agriculture. These current land uses are not compatible with mining.

MWRC LEP 2012 – Lot Size map for Lue

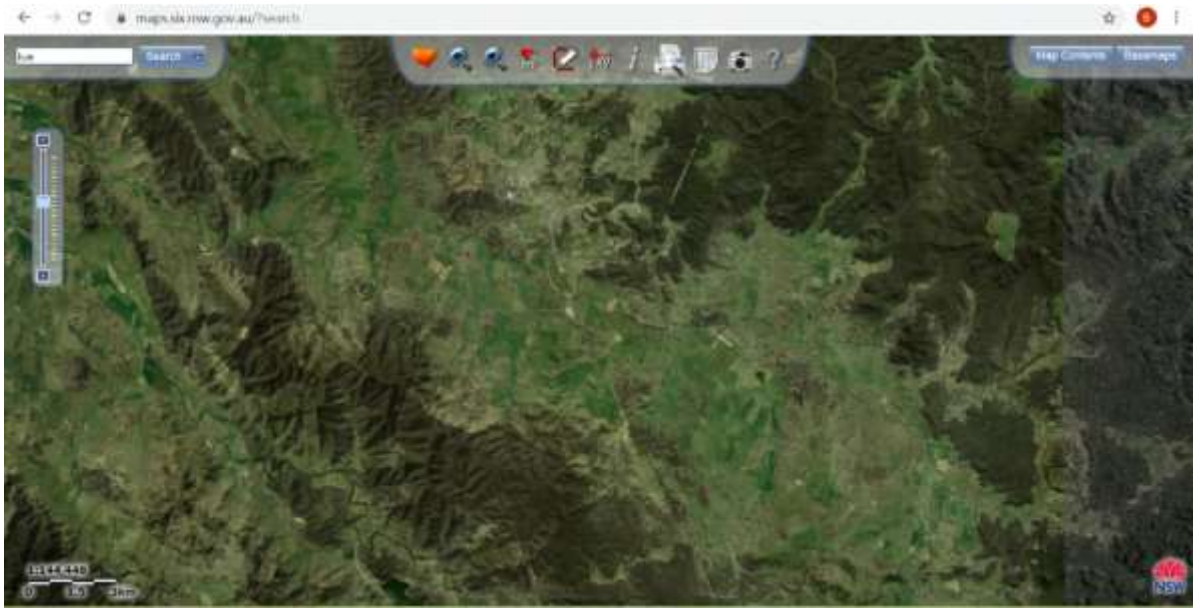


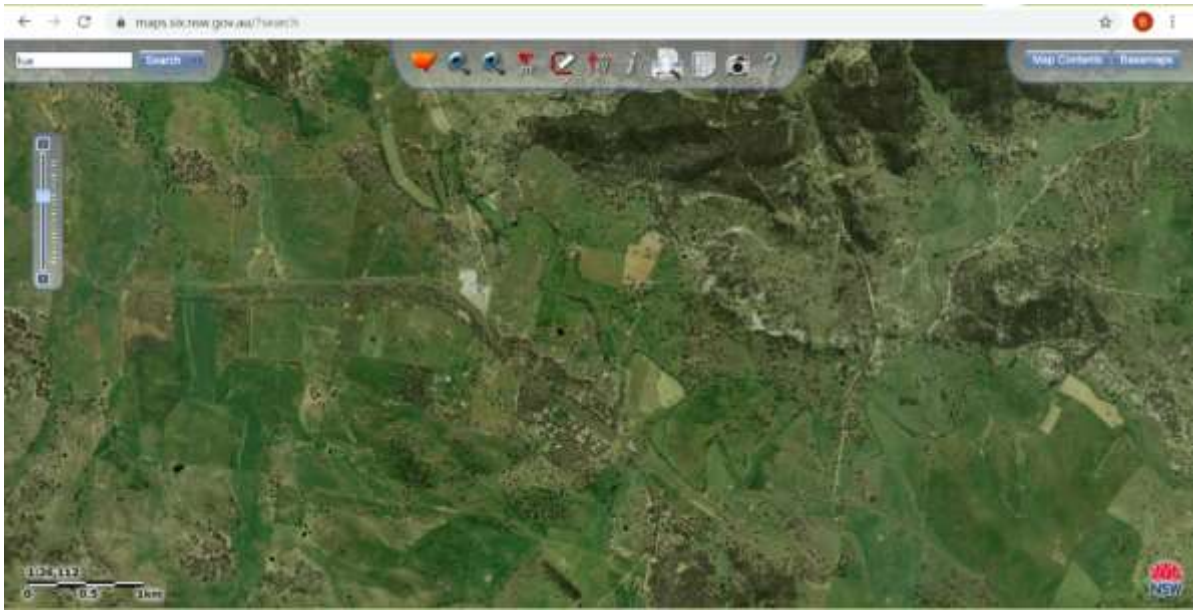


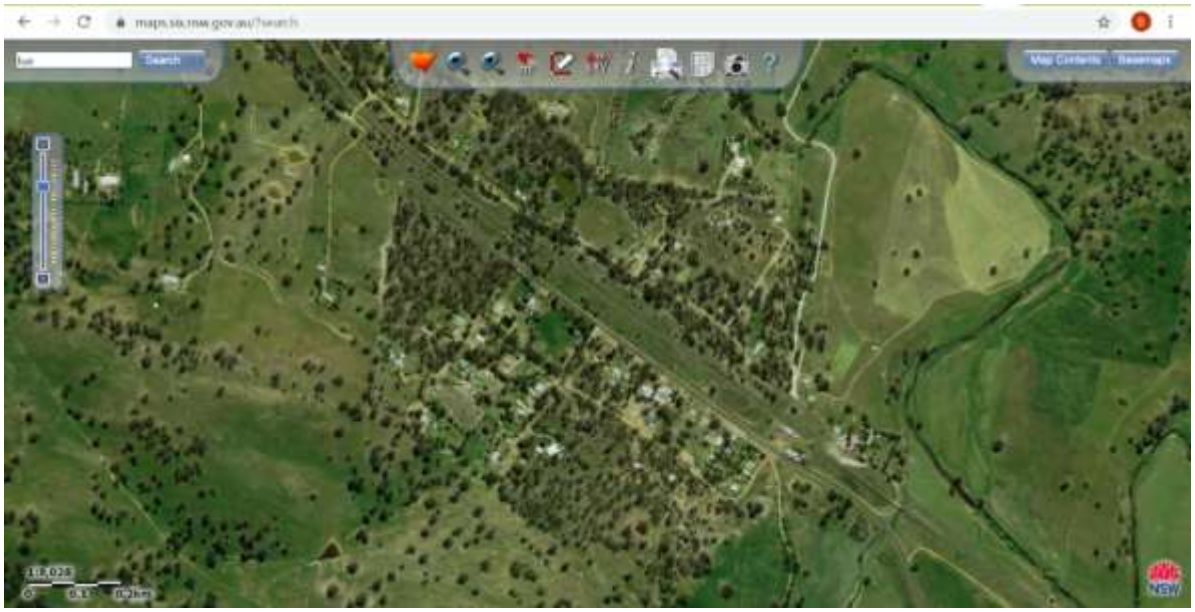
MWRC LEP 2012 – Lot size maps for the area including Lue and Havilah and Monivae. The maroon areas are AD and are either 10, 12, 20 or 40 hectares.

A brochure titled Mudgee Region produced by Mudgee Tourism was posted to the Department of Planning separately to attach to this submission. Lue is listed on page 31 as a picturesque village in the region. Lue is on the popular tourist drive from Mudgee to Rylstone and Kandos and some of the tourist destinations at Lue are Lue Pottery, the Lue Hotel (recently removed from the list of places of interest in Lue), Rylstone Olive Press, Elephant Mountain Wines and Lodge, Lingnan Penjing Academy of Australia (Bonsai cultivation) and Louee Motocross and Enduro Track. Other homestays and accommodation at Lue can be found on Airbnb and are seen on the land use map below.

The 3 aerial photographs below show the homes in the village, the small farms and homes in and around Lue and the surrounding farmland. They indicate the large number of homes in the area. These maps were downloaded from Sixmaps www.maps.six.nsw.gov.au

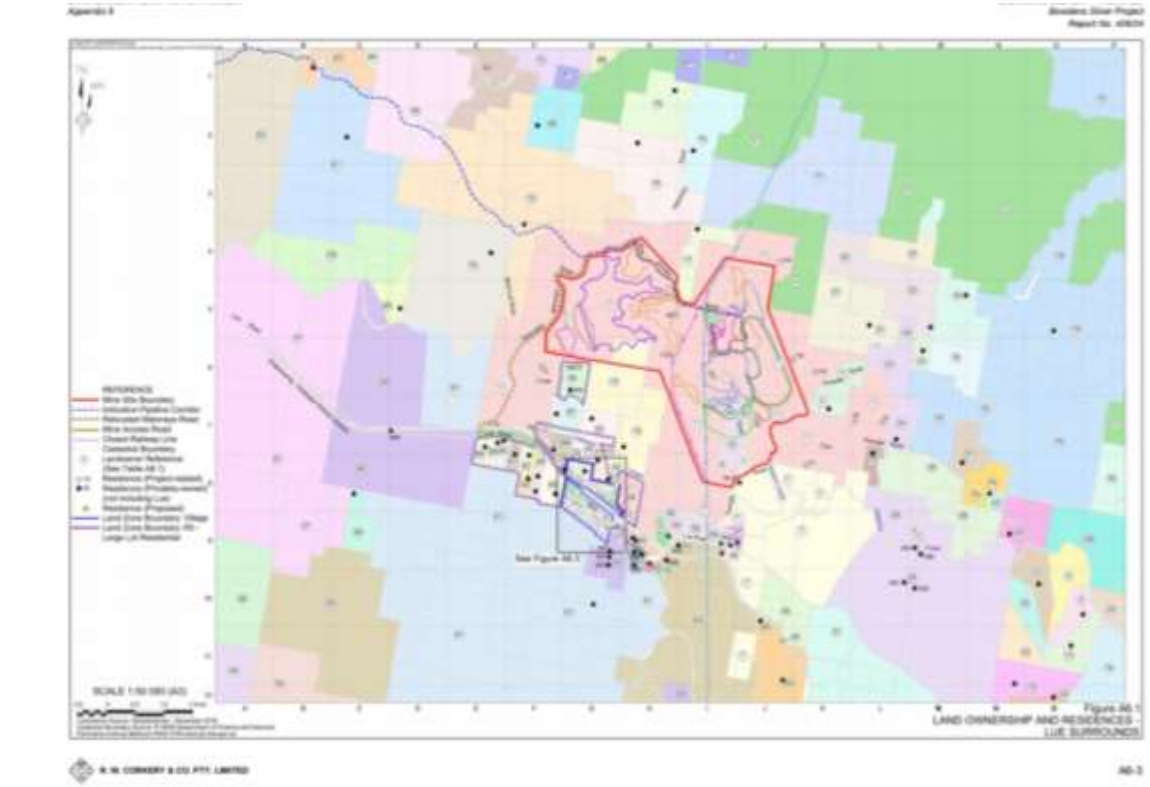






It can be observed from the aerial photographs above of Lue and the surrounding countryside that the land use is predominantly agricultural. Windamere Dam, the water source for Mudgee and for regulated water used in the Cudgegong River can be seen at the bottom of the first photograph. Any potential impacts on Windamere Dam, located within 10 kilometres, are not properly addressed in the EIS.

Mapping



A map of the mine site indicating its close proximity to the village.

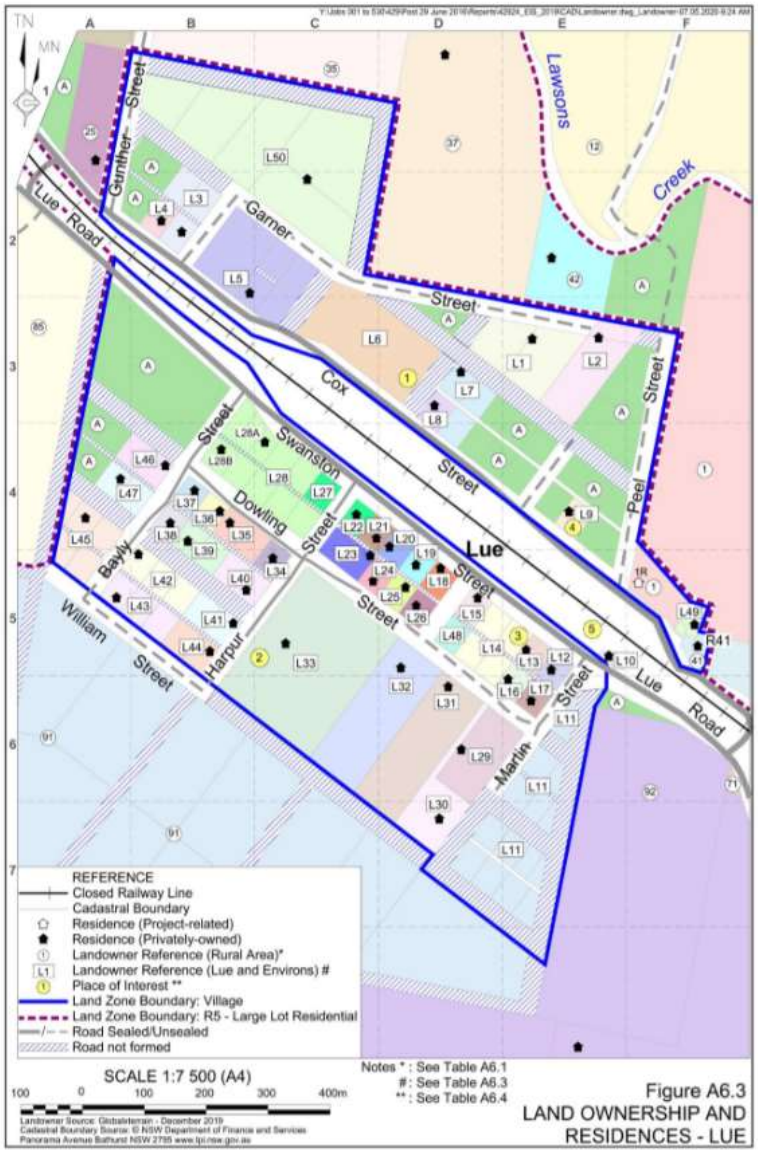


Figure A6.3
LAND OWNERSHIP AND RESIDENCES - LUE

A map of the village of Lue indicating homes and businesses.

EIS Page 4-15 states "*Figure 4.1.11 displays the ownership of land and the locations of privately-owned residences within Lue, i.e. the area zoned as "Village" within Mid-Western Regional Local Environmental Plan 2012 (MWR LEP 2012). Table 4.4 lists the ownership of the land within Lue shown on Figure 4.1.11. Lue comprises 122 full lots and one part lot, 97 of which are privately owned with the remainder being Crown land or owned by Mid-Western Regional Council and the Department of Education. A total of 44 privately-owned residences are located in Lue, 25 of which are built on single lots and 19 built on two or more adjoining lots. Six privately owned lots are vacant. The lots within Lue range in area from 0.2 ha to 5.6 ha.*"

This map of the residences is shown once in the 764 page EIS. See page 261 or EIS 4-15. All these homes are generally ignored and not individually considered in the EIS.

Rehabilitation and Final Landform

Rehabilitation of all areas disturbed by mining-related activities would be an integral part of the Project. Emphasis would be placed upon progressively creating final landforms, wherever practicable, and re-establishing soil profiles and vegetation essential to achieving the preferred final land use(s) during and following the cessation of operations. The nature of the Project dictates, however, that the disturbed areas associated with the main open cut pit, processing area and tailings storage facility would remain active throughout the mine life and, as a consequence, the opportunity to undertake progressive rehabilitation of these components would be minimal. **Figure ES-4** displays the final landform across the Mine Site at the end of the Project life.

CONSULTATION

Consultation has been undertaken to inform the community and government agencies about the Project and to gain an understanding of the issues that need to be considered by Bowdens Silver and addressed in the Environmental Impact Statement.

Initial community consultation for the Project was undertaken by Kingsgate prior to the 2012 exploratory drilling programs. Since acquiring the Project in 2016, Bowdens Silver has undertaken extensive community consultation throughout the design stages of the Project and during the environmental and social assessments for the *Environmental Impact Statement*. Consultation has been undertaken using a range of forums and formats including, but not limited to, a program of individual landowner consultation, distribution of newsletters / Project information sheets, the establishment of a website, a series of Community Information Days and a Community Consultative Committee (CCC).

As part of the wider Social Impact Assessment undertaken by Umwelt (Australia) Pty Limited to inform the Project design, a program of research and engagement was also undertaken.

ENVIRONMENTAL FEATURES SAFEGUARDS AND IMPACTS

The components and features of the existing environment within and in the vicinity of the Mine Site have been studied in detail and used to inform the design of the Project to avoid or minimise potential impacts. The Mine Site is situated on the outer western flanks of the Great Dividing Range which is dominated by elevated rocky ridges separated by either broad and flat or partially confined alluvial valley settings.

The Mine Site is located within a rural area principally used for cattle and sheep grazing. A total of 28 privately-owned rural residences are located within 3km of the edge of the closest open cut pit with four of these residences located within 2km. All residences within Lue lie between approximately 2km and 3km southwest of the closest open cut pit. **Figure ES-5** displays the surrounding land ownership and residence locations used to inform the design of the Project and the assessment of potential environmental impacts.

The following provides a brief overview of the main components of the existing environment, the proposed safeguards to be implemented to minimise adverse effects and the assessed level of impact(s) arising from the Project.

In spite of the previous paragraph stating that "following is a brief overview of the main components of the existing environment…..arising from the project". Nothing follows. The absence of anything following is a metaphor for Bowdens assessment of the "environmental feature safeguards and impacts".

See below an excerpt from the EIS on Page 4.21, regarding Land Use around the mine site. Information presented in the EIS is disjointed and difficult to read.

Land Uses

4.1.4.1 Introduction

This subsection provides an overview of the land uses surrounding and within the Mine Site and within and adjacent to the water supply pipeline corridor. Land uses were identified through a combination of site inspections and a review of land zoning and Australian Land Use Mapping (ALUM) data in order to appropriately reflect specific local land uses.

The impacts of the Project upon the range of land uses described are presented in Section 4.18.

4.1.4.2 Local Area around Mine Site

Figure 4.1.13 shows the existing land uses within the region surrounding the Mine Site.

Apart from Lue, all land immediately surrounding the Mine Site comprises a combination of grazing, lifestyle lots and heavily vegetated areas with minimal land use. Grazing is the predominant land use immediately surrounding the Mine Site.

Minor areas surrounding the Mine Site are utilised for horticultural activities, in particular, the Rylstone Olive Press and East Ridge Olives which are both notable olive growers. These two enterprises are located approximately 5.3km and 2.6km from the Mine Site, respectively. Viticulture enterprises are also established within the region, with Elephant Mountain Wines being the closest vineyard to the Mine Site (3.8km). Elephant Mountain Wines also operates a bed and breakfast (B&B), known as Elephant Mountain House and a wedding venue. Several vineyards are located on the Castlereagh Highway immediately south of Mudgee with the closest being approximately 13.3km from the Mine Site.

A notable component of the wider tourism sector throughout the Region is agri-tourism, principally comprising guesthouses and B&Bs catering to the Region's wine industry. Guesthouses and B&Bs are interspersed within and immediately surrounding the Lue district and include the 'WYUNA' Lue Farmstay (1.1km south), Odd Frog Lodges (1.1km south), the Old Bara Guesthouse (5.5km northwest), Rokbara Cottage (4.7km north) and Camphill Cottage (11.4km southeast). The numerous wineries and scenic nature of the area are the principal attractions for tourists. Tourist Drive 2 connects Capertee on the Castlereagh Highway with the towns of Kandos, Rylstone, Lue and Mudgee and is a popular drive which showcases the Capertee and Lue Valleys (Rylstone Kandos Chamber of Commerce, 2015).

The Louee Enduro and Motocross Complex is located approximately 3.0km south of the Mine Site. This complex is located within Lue Station, a working sheep and cattle property, and provides over 150km of off-road motorbike trails, a workshop, canteen and accommodation (Shearer's Quarters, Dungeree House, Lue Cottage, Louee Station and a campground). This complex is also a destination of visitors to the local area when staying at local guesthouses and B&Bs.

Other land uses that occur within the area immediately surrounding the Lue district include the extractive industry with three quarries located near the Mine Site. These quarries include the Mt Knowles Quarry, the Bara Quarry and a privately-owned quarry on the southern side of Lue Road opposite the Rylstone Olive Press. The Mt Knowles and Bara Quarries are located approximately 12.1km and 2.4km to the northwest of the Mine Site, respectively. The privately owned quarry is located approximately 6.9km to the southeast of the Mine Site.

Large tracts of land also remain heavily vegetated within the Lue district, primarily on steep, hilly terrain. The closest forestry reserve is the Dungeree State Forest which is located in the area immediately surrounding the Lue district approximately 7.1km to the south of the Mine Site.

The Windamere Dam, which collects the natural flow of the Cudgegong River, is located approximately 10km southwest of the Mine Site. The dam supplies water for both agricultural production and town water within the Mid-Western Regional LGA. It also provides for flood mitigation and recreational activities.

Figure 4.1.13 below shows Land Use in the mine site surrounds. It clearly shows the number of lifestyle lots in and around Lue and their close proximity to the mine site. Clearly the preferred land use in the Lue district is not mining.

Water

Bowdens propose to use 1857 megalitres of water per year.

Water sources include (according to the Bowdens EIS Summary Booklet)

1. 806 ML per year recycled from the Tailings Storage Facility
2. 637 ML per year from groundwater inflows and open cut pit dewatering
3. 331 ML per year from Ulan or Moolarben Coal Mine via a 58.5 km pipeline, 10m wide with an intermediate relift pump station, delivering up to 5.5ML per day

The Site Water Balance Table 5.5 below from the EIS indicates water sources will include

1. 806 ML per year from rainfall and runoff
2. 637 ML per year from groundwater inflows to open cut pit
3. 331 ML per year from imported pipeline water
4. 83 ML per year from ore moisture

Table 5.5
Average Annual Site Water Balance – Years 1 to 14

Item	Inflow ML/a	Outflow ML/a
Rainfall and runoff	806	
Net groundwater inflows to open cut pit	637	
Imported pipeline water	331	
Ore moisture	83	
Retained tailings moisture		1 151
Evaporation		440
Dust suppression demands supplied		204
Concentrate moisture		22
Dam overflows		0
Annual increase in stored volume		41
Total	**1 857**	**1 857**

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It seems when comparing the water source information provided by Bowdens the Tailings Storage Facility will not only store tailings but all the rainfall and run off on the site. The table assumes 440 ML per year of evaporation. The retained tailings moisture is 1151 ML per year.

I am concerned that the Tailings Storage Facility will be used as a water storage and given Climate Change and the increased likelihood of longer more severe droughts interspersed with heavier rain periods and more flooding than has occurred in the past the Tailings Storage Facility will not be designed to store the required amounts of water.

I am also concerned that 806 ML per year will be retained on site and will not flow into Lawsons Creek without the necessary approvals. Bowdens are planning to hold 1151 ML per year in the Tailings Storage Facility. All

this doesn't make sense and the 806 MLs of rainfall and runoff retained on the property seems to grossly exceed any harvestable rights and the rainfall and runoff actually available to the property.

Please see the reports by Craig Flavel and Michael White for more detail on the Tailings Storage Facility and its unsuitability for the purpose it is intended. In a recent article in the Sydney Morning Herald a spokesman from Bowdens said the company's groundwater and surface water assessments comprehensively address how leachate would be managed and contained within the mine site. Please see attached reports that indicate the leachate or acid mine drainage will not be retained on site but rather the Tailings Storage Facility is designed to leach and in any case it is constructed over a fault line and watercourse.

https://www.smh.com.au/environment/conservation/fears-a-central-west-silver-mine-may-have-a-lead-lining-20200724-p55f66.html

Groundwater

Water use at the Bowdens Silver Project as presented in the EIS has been reviewed by Craig Flavel. Craig is a senior hydrogeologist at Water Technology, water, coastal and environmental consultants. Craig has reviewed the water availability and use at Lue previously. Please find attached his Preliminary Groundwater review and his Aquifer Connectivity Study. I also attach various maps showing bore locations in and around Lue.

Due to the cost of conducting a full review of Jacobs report, and the Lue Action Group's limited funds, and the fact that Jacobs and their reviewer are well respected in the industry it was decided to concentrate on 18 queries that identified areas of concern for the Lue community and the water users on Lawsons Creek and near the mine site and in the affected area.

Please see below a table containing 40 queries and concerns considered by the Lue Action Group but which were not all reviewed due to limited funds.

1 Compare geology and locations of paired bores, considering p5-68 noting lack of significant correlation

2 Review lack of monitoring wells between Lue and site

3 Query cause for groundwater drawdown at the site in 2013-2017

4 Raise lack of geological cross sections leading to a lack of conceptual hydrogeological understanding – relationship between alluvium and fractured rock, considering BGW10 pumping test; leaky confined aquifer

5 Check locations and rights of groundwater users

6 Raise lack of understanding of aquatic GDEs and *work with ecologist* to demonstrate the lack of consideration of likely impacts to listed aquatic species such as Murray Cod and Murray Crayfish considering groundwater

7 Question dependence of identified listed flora on groundwater *requires ecologist*

8 **Modelling:** question assumption of limitless recharge from Lawson's Creek; review drawdown boundary in Lawson's Creek (Corkery 4-121) considering diversion of flows from upstream Hawkins Creek towards the pit.

9 Consider whether impact to (Lyn Coombe?) licenced irrigation bore 200 m east of Lue is acceptable

10 Review proposed monitoring of evaporation rates to justify 'groundwater sink' / water balance model for the mine. If, during winter, groundwater flows away from the pit, then contamination will occur that has not been considered. The discharge is not allowed under environmental protection licence limits (95% protection of freshwater species).

11 Review Jacobs finding that springs are 'rainfall fed sub-flow and therefore are not groundwater dependent ' (Corkery 4-125). Note lack of aquatic species discussion. Consider whether AIP Water Table 10% rule is violated for high priority GDEs in Water Sharing Plan.

12 Consider whether questions have been responded to and summarised appropriately

13 The 'deep' groundwater levels may not be representative due to lack of local hydraulic communication. Check core logs and screen depths.

14 Query basis for assumption of 10% of leachate from preceding cell to next in WRE (Advisian p18)

15 Raise lack of clear link between WRE/TSF and groundwater assessment

16 Request reference to the assertion on Corkery 4-195 that no adverse impacts upon water quality are anticipated' and other assertions therein that oversimplify sub-consultant findings

17 Raise the potential impact of lowered groundwater level on Box Gum Woodland that is not directly cleared *may benefit from ecologist input* (EnviroKey 9a-307)

18 Discuss that proposed pit lake will increase salinity by evapoconcentration and consider whether this will alter groundwater beneficial use

19 Note lack of discussion of neutralisation of acidic material, even after 100 years. SEARs p3, S.17, does the consent authority require a rehabilitation plan from the Act (1997)

20 Query aquatic species or fauna species trigger values specified (reliance on generic water quality standards, arguing that these are already exceeded) $2200

21 Query lack of measures listed to contain cyanide in TSF to less than 10 ppm (EnviroKey 9a-148). Notes that vegetation should be removed, however, this conflicts with Advisian.

22 EnviroKey 9a-153 note that vegetation is not likely to be a GDE, however, no risk assessment is presented to discuss acceptable risk

23 Query dependence of species listed on 9a-160 (9a-309) on groundwater *in collaboration with an ecologist* to consider drawdown and groundwater quality matters

24 Consider creek drainage during low-flow/no flow (refer to page 4-256) and drainage of alluvium. *Surface water component*

25 Analyse likelihood of physically obtaining the entitlement using existing bores

26 **modelling** consider uncertainty around 'maximum drawdown' values in Lawson and Hawkins creek, including provenance of hydraulic properties applied

27 raise discrepancy on Jacobs Page 5-96: generally south-easterly flow from TSF? Looks like westerly from the map

28 Raise questions about presented cross sections

29 Check evaporation calculation range and mine water balance

30 Highlight missing details in abandonment plan (including economic plan), including continued creation and migration of sulfuric acid from the site via groundwater. Rehabilitation Plan. Discuss values used for permeability of rock foundations, potential for fracture enlargement from dissolution by acid and any grout curtain.

31 Review hydraulic parameters used in model, especially alluvium

32 Review site water balance, specifically discharges on Jacobs 5-157 Table 37 where most groundwater is modelled to discharge to water courses… review the Corkery quotation of a 40 m limit that is not found in Jacobs

33 Investigate winter evaporation rates and confirm that leakage will not travel to Lawson's Creek

34 Query lack of geology and groundwater contours around TSF

35 Review the assessment against SEARs constraints

36 highlight lack of identified groundwater monitoring network nor trigger responses (Corkery 4-131) – lacking a Water Management Plan.

37 No reference to impacts on significant species in watercourses or springs in Cardno 10-96

38 Check TSF water quality, noting long term potential for leakage

39 Highlight lack of effective monitoring plan, including Corkery 4-196

40 **modelling** review the projected 100 years for the pit lake to fill (and discuss groundwater migration during that time). Consider whether Jacobs (2020) is confident that the existing groundwater setting is well understood (Corkery 4-133) and that TSF leachate post mining will migrate towards the pit

After much consideration it was decided to commission Craig to only query 18 of the Lue Action Groups concerns.

The Lue Action Group are concerned about the queries that were unable to be reviewed by Craig Flavel and would be very pleased to have these concerns and issues assessed by the Government appointed EIS reviewer.

Please see below Craig Flavel's advice and the list of 18 groundwater concerns the Lue Action Group asked to be reviewed of the 40 queries initially raised.

Craig Flavel's advice follows (P17234 v1.1 Proposal for EIS Feedback 200618)

"Water Technology will review the groundwater related aspects of the EIS against the Secretary's Environmental Assessment Requirements (SEARS) and other relevant legislation. The EIS comprises reports by Corkery, Advisian, Jacobs and EnviroKey.

This review will enable LAG to either raise these matters with DPIE and other stakeholders, or to direct Water Technology to prepare a detailed report suitable for inclusion in a submission to DPIE.

The 18 Queries to be raised in this project are as follows:

1. Compare geology and locations of paired bores, (p5-68) noting lack of significant correlation

2. Review coverage of monitoring wells between Lue and site

3. Review coverage of geological cross sections and adequacy of conceptual hydrogeological understanding with particular focus on the relationship between the alluvium and fractured rock aquifers, considering BGW10 pumping test; leaky confined aquifer

4. Check locations and rights of groundwater users 5. Question dependence of identified listed flora on groundwater (requires ecological input)

6. Consider whether impact to licenced irrigation bore 200 m east of Lue is acceptable

7. Consider whether questions have been responded to and summarised appropriately

8. Query basis for assumption of 10% of leachate from preceding cell to next in WRE (Advisian p18)

9. Raise lack of clear link between WRE/TSF and groundwater assessment

10. Raise the potential impact of lowered groundwater level on Box Gum Woodland that is not directly cleared (may benefit from ecologist input (EnviroKey 9a-307)

11. Query measures listed to contain cyanide in TSF to less than 10 ppm (EnviroKey 9a-148). Note that vegetation should be removed, however, this conflicts with Advisian

12. Raise discrepancy on Jacobs Page 5-96: generally south-easterly flow from TSF? Looks like westerly from the map

13. Query lack of geology and groundwater contours around TSF

14. Review the assessment against SEARs constraints

15. Review adequacy of groundwater monitoring network (including coverage and timing) , trigger responses and compliance levels (Corkery 4-131) – These should be reported in a Water Management Plan.

16. Raise lack of reference to impacts on significant species in watercourses or springs in Cardno 10-96

17. Check TSF water quality, noting long term potential for leakage

18. Review the projected 100 years for the pit lake to fill (and discuss groundwater migration during that time). Consider whether Jacobs (2020) is confident that the existing groundwater setting is well understood (Corkery 4-133) and that TSF leachate post mining will migrate towards the pit

Estimates of pumping rates and the locations of wells used for irrigation and drinking water near Lue will contribute greatly to the focus of these queries."

Craig Flavel's queries are addressed in the attachments and raise serious concerns in many areas.

Unregistered bores

I am concerned that there are a number of groundwater bores in the village and surrounds that are very old and not registered. WaterNSW advised that old bores are not legally required to be registered but any bores that are not registered will not be recognised.

Under new rules all domestic bores must be drilled at least 250 metres from a septic tank. As the lot size is Lue 1000 sq metres as is indicated on the property map of Lue most residents would not be able to to obtain a licence to redrill their existing registered or unregistered bores should the levels drop.

Jacobs Groundwater Report states

4.5.11 Groundwater Levels

Comprehensive groundwater monitoring has been undertaken on site and throughout the surrounding area since March 2012. The monitoring network includes a network of private bores in addition to the site monitoring bores as described in Section 4.5.6. The layout of the groundwater monitoring network is provided on Figure 23.

See below a copy of Figure 23 which is extremely difficult to read. Following Figure 23 is Figure 4.6.1 which also shows the Groundwater monitoring network but excludes the Tailings Storage Facility.

Figure 23 shows 15 bores in the village of Lue which are being monitored.

Please see Figure 4.6.4 which is a map of the mine site and shows the predicted drawdown at the end of mine life (Year 15.5).

My concern is why are the bores shown on Figure 23 and Figure 4.6.1 not shown on Figure 4.6.4.

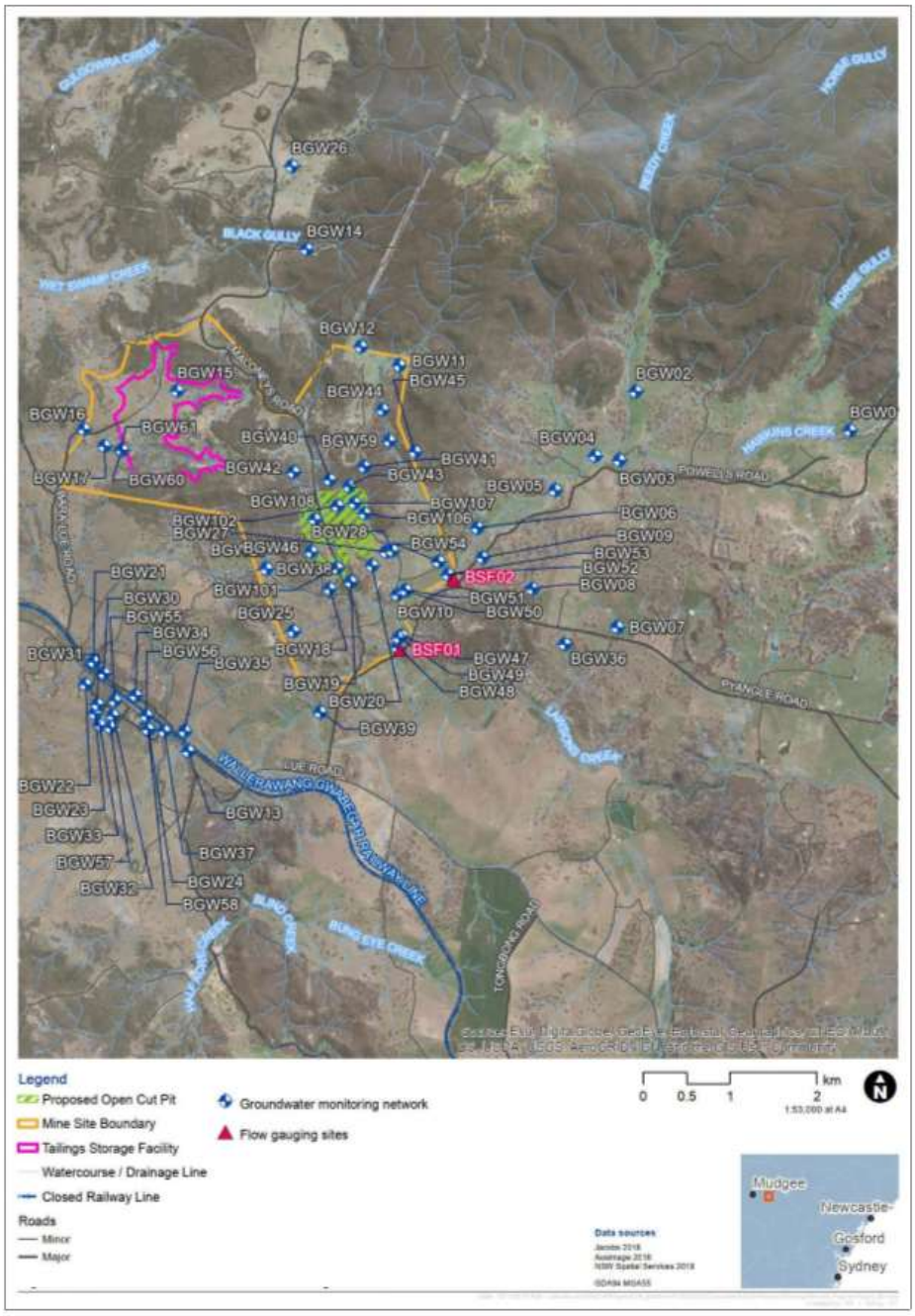
I am also concerned that 2 domestic bores on Lue Station are registered but are not shown on any of the maps. Please see Figure G1 below which indicates the location the domestic bores on our property.

There may be other bores in the village that are not monitored by Bowdens or registered and I would recommend that due to the social impact of these bores being contaminated or their flow reduced they should be investigated. I would remind the reviewer that Lue does not have town water and all residents rely on groundwater, rainwater or creek water.

Another notable feature of Figure 4.6.4 is that no bores on the mine site are included.

Figure 7 below is a map of Groundwater Bores included in Craig Flavel's Aquifer Connectivity Study.

Figure 23 Bowdens Silver Groundwater Monitoring Network



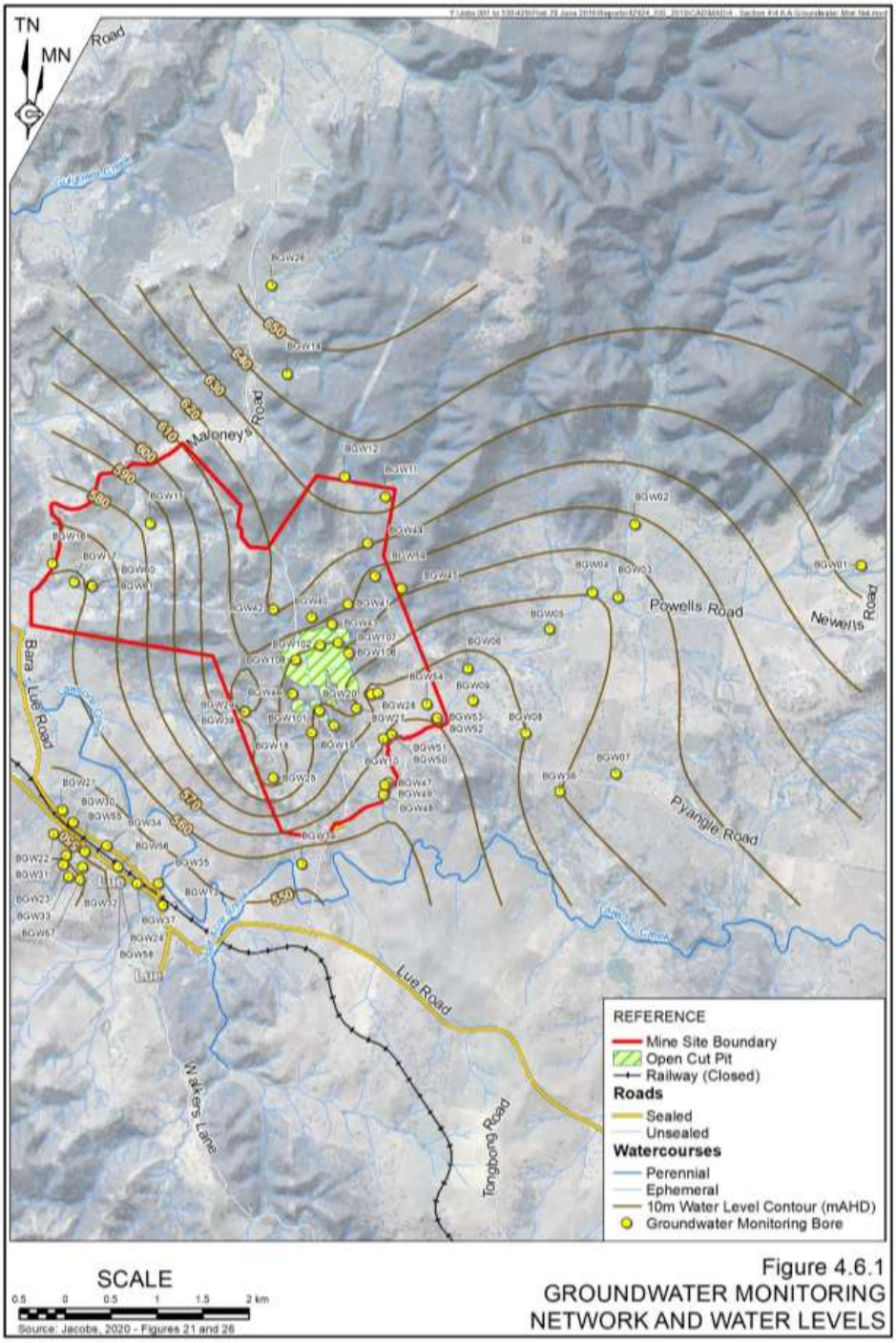


Figure 4.6.1
GROUNDWATER MONITORING NETWORK AND WATER LEVELS

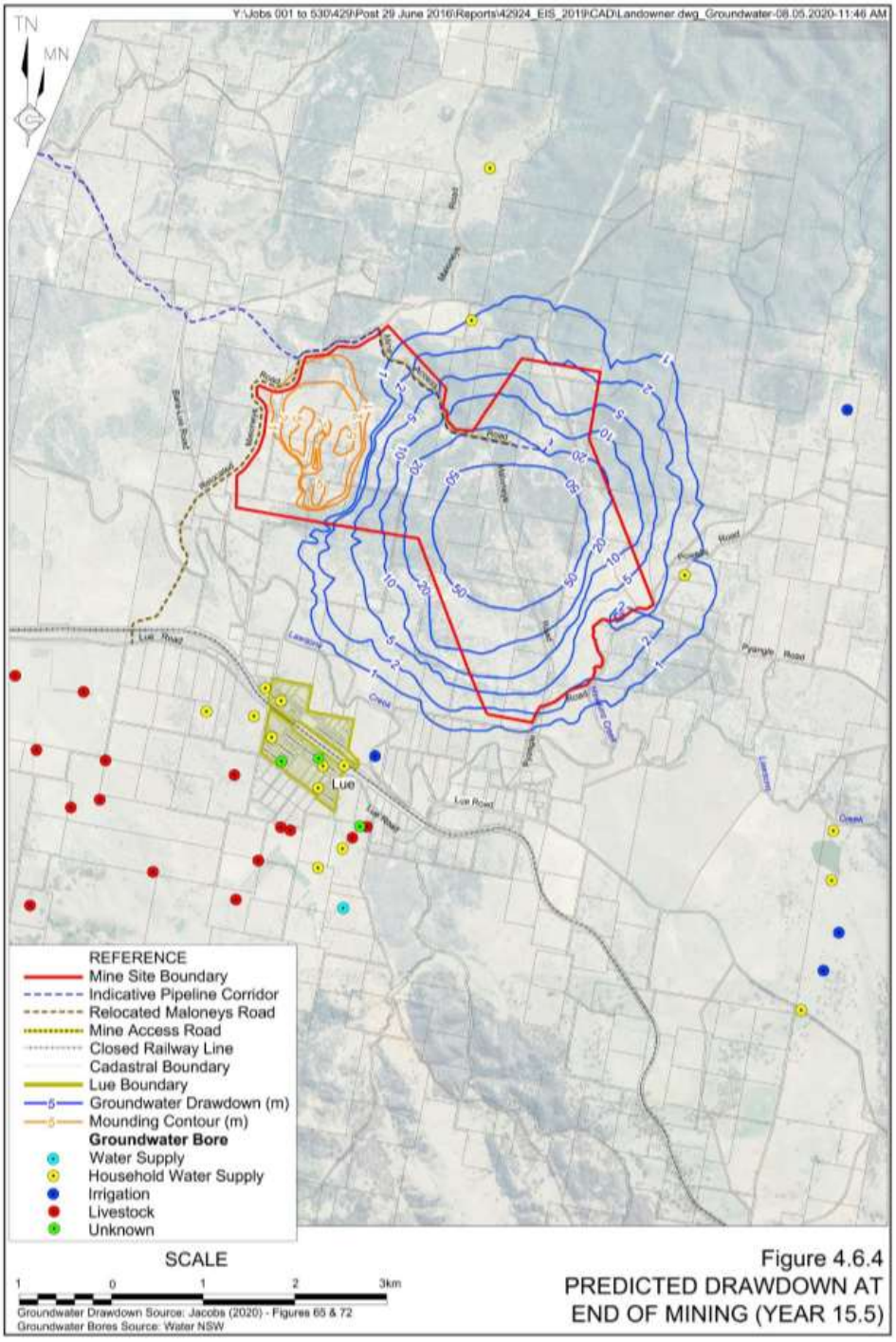


Figure 4.6.4
PREDICTED DRAWDOWN AT END OF MINING (YEAR 15.5)

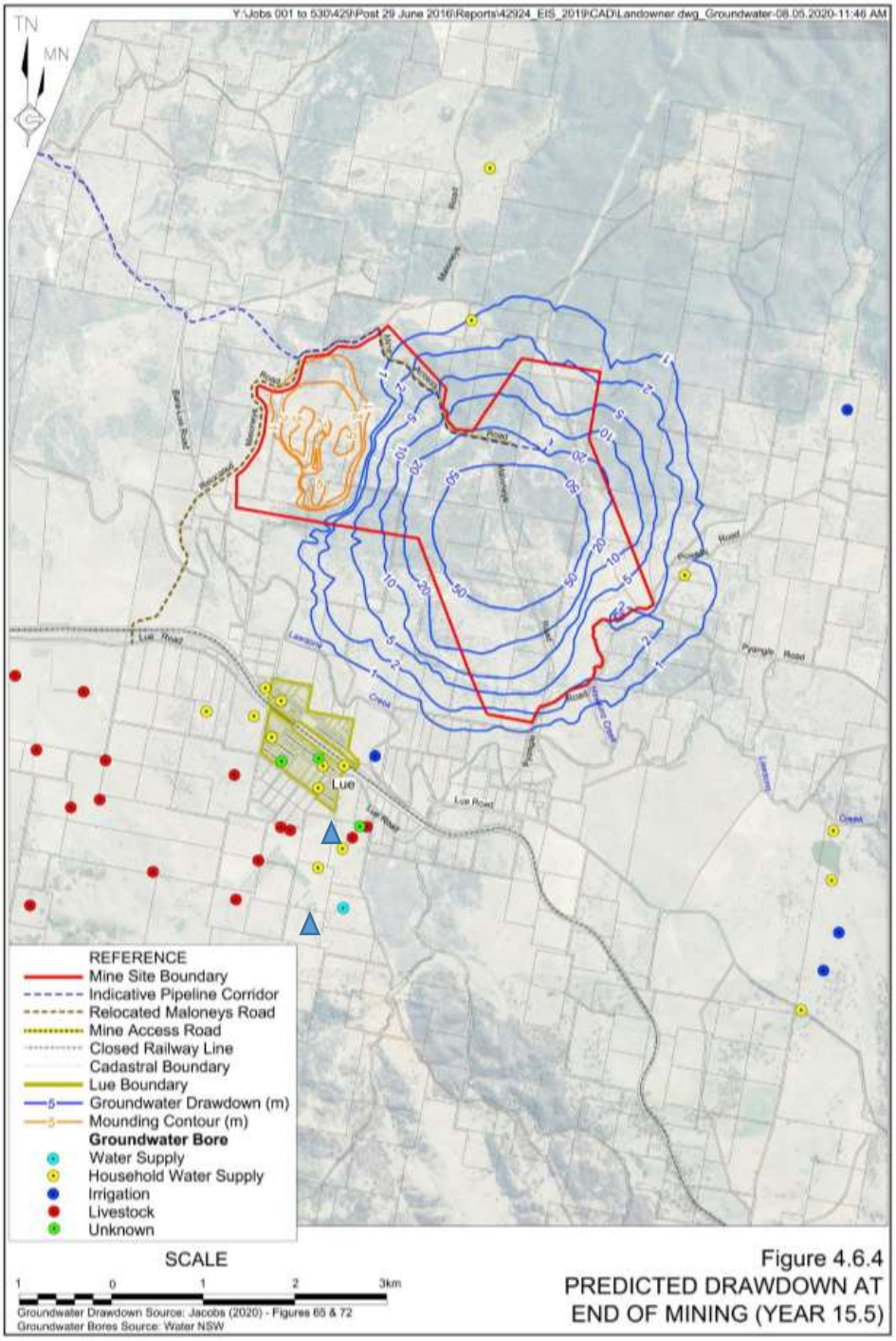


Figure 4.6.4
PREDICTED DRAWDOWN AT END OF MINING (YEAR 15.5)

Figure G1 – Domestic Groundwater Bores ▲

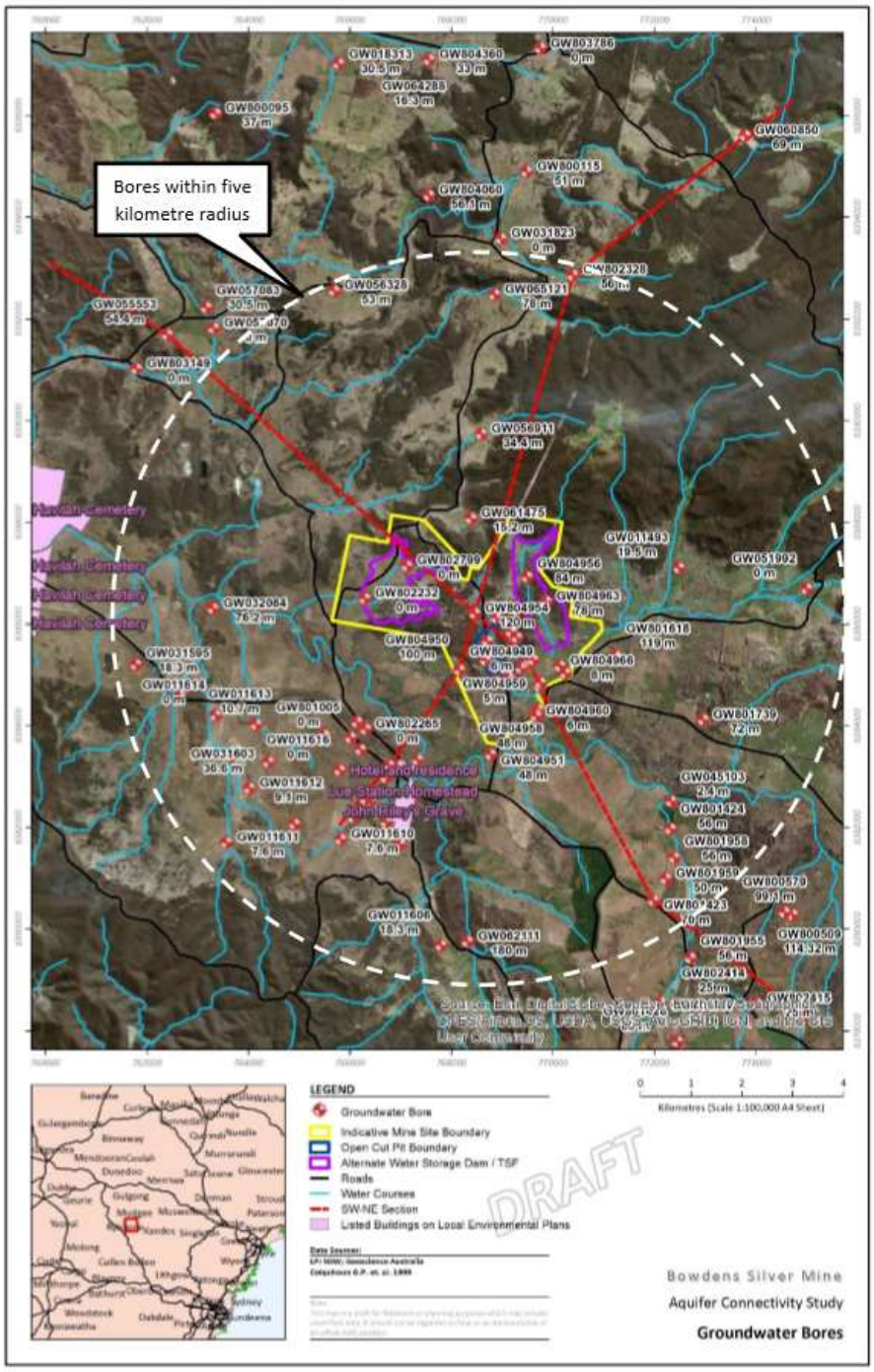


FIGURE 7: LISTED SITES AND REGISTERED BORES IN THE AREA SHOWING THEIR REPORTED DEPTHS

Pipeline

The proposed pipeline which is part of the development is 58.5 kilometres long and will be constructed from Ulan to the mine site at Lue. The EIS describes the pipeline on page 2-63 below

In order to ensure sufficient water is always available on a continuous basis for processing and dust suppression, Bowdens Silver proposes to construct a buried pipeline from the Ulan Coal Mine and the Moolarben Coal Mine to the Mine Site that could convey up to 5.5ML of water per day, thereby removing any uncertainties related to the availability of other water sources on site. Surplus water from the Ulan Coal Mine and/or Moolarben Coal Mine would be pumped to the Mine Site via the proposed water supply pipeline. All water sourced via the water supply pipeline would be pumped to a turkeys nest dam with any excess diverted to the TSF. An outline of the proposed water supply pipeline is presented in the remainder of this subsection with the indicative alignment of the corridor displayed on Figure 2.22.

Water sourced via the water supply pipeline would preferentially be treated near the initial section of the pipeline. This would permit better quality water to be pumped within the pipeline and to be received at the Mine Site. Water treatment would involve a reverse osmosis plant with the following options considered.

Once water has been transported to the Mine Site, it may require a low level of treatment to ensure it is suitable for use in processing operations. Dedicated brine management facilities or evaporation ponds would not be required as brine would be pumped directly to the TSF. No additional land would need to be disturbed for this option as the treatment plant would be located adjacent to existing proposed facilities

It is acknowledged that the use of water treatment facilities installed and managed by others would be subject to commercial arrangements being reached between the relevant parties. Bowdens Silver would resolve the location and management of water treatment for the water supply pipeline coincident with finalisation of commercial arrangements for water supply.

The recent prolonged drought being experienced across NSW has prompted Bowdens Silver to consider contingency strategies available to permit ongoing operations during drought conditions. Discussions with the owners of the Ulan Coal Mine and the Moolarben Coal Mine regarding make-up supply has also included the need for operational contingencies should makeup water not be available from either operation. Bowdens Silver has investigated the reliable supply of groundwater from production bores within the Mine Site or on surrounding properties owned by Bowdens Silver. It is noted that Bowdens Silver has access to approximately 1 066ML of groundwater entitlements to provide for peak groundwater inflow. Therefore, these entitlements could also be called upon outside of peak groundwater inflow periods.

Whilst it may be theoretically the case that Bowdens "has access to approximately 1066LM of groundwater entitlements" there is no evidence of this and even if there was such evidence it is nonsense to suggest that anything like that quantity of groundwater could in reality be accessed.

As to the proposed water supply pipeline from Ulan and Moolarben Coal Mines to Lue is still a pipe dream because the following aspects have not been addressed or assessed

- The feasibility of such a pipeline including the cost of installation and the cost of pumping
- Compatibility of development with existing land use
- The problems in the construction of a pipeline and in acquiring a 10m wide easement on a narrow, rocky, winding and steep road including under boring of creeks and roads.
- The hazards regarding the spillage or leakage of contaminated water from the pipeline and its containment and the prevention of contamination of surrounding farmland
- A plan for the maintenance of the pipeline
- Social impacts of the pipeline location
- Lack of consultation with those on and adjacent to the pipeline route including the MWRC.

I am the manager of a 30 kilometre pipeline which transfers water from the Cudgegong River to homes and agricultural land. The pipeline I manage is constructed along a relatively flat, wide, straight gravel road and through 2 properties. All landowners on the pipeline route are compensated by being allocated regulated river water from the pipeline. Various lands are benefited by the pipeline including stock and domestic users as well as irrigators including vineyards, orchards and other intensive agriculture. In my experience a pipeline is easily damaged by traffic, roadworks and wear and tear. The proposed pipeline from Ulan to Lue will most

certainly from time to time fail particularly at valves, joins and relift pump. The Ulan to Lue pipeline is a poorly conceived idea and even more so when water from a regulated water source such as the Cudgegong is readily available.

Consultation

It is a requirement of the SEARs that Bowdens engage with the community.

The SEARs states

"During the preparation of the EIS and subsequent assessment process, you must establish and operate a Community Consultative Committee (CCC) for the development in accordance with the Community Consultative Committee Guidelines: State Significant Projects dated November 2016. You should also consult with relevant local, State or Commonwealth Government authorities, infrastructure and service providers, community groups and affected landowners. The EIS must describe the consultation that was carried out, identify the issues raised during this consultation (including by the CCC), and explain how these issues have been addressed in the EIS."

Although I am a director of the company that owns property 91 on Figure 4.1.10 and a part owner of property 92 I have not been consulted or engaged in any way.

Property 91 on Figure 4.1.10 is adjacent to the land owned or under purchase option to Bowdens Silver Pty Limited (Property 1) and our property is a few hundred metres downstream from the Tailings Storage Facility. Please see the attached Reports from Craig Flavel and from Michael White and Dr Hayden Washington to confirm the unsuitability of a Tailings Storage Facility constructed within a few hundred metres of a Lawsons Creek, over a named water course and a faultline.

Property 92 is opposite Property 1, land owned or under purchase option to Bowdens Silver Pty Limited on the south eastern side of the village.

Bowdens has for many years in the CCC meetings been asked various questions regarding water use, data collection and other questions to enable experts engaged by the Lue Action Group to provide comprehensive and informed reports. On many occasions the CCC representatives were told all would be revealed in the EIS. In a newspaper advertisement in the Mudgee Guardian recently Bowdens advised that they had never been contacted by any experts. They were asked for data in the CCC meetings by the Lue Action Group representatives on behalf of our experts.

In June 2019 I attended a Community Meeting at Kandos and heard in response to a question regarding what would happen after 18 years (which was the published length of the project at that time) the CEO infer that the mine would still be going. It seemed the question was referring to the rehabilitation or jobs at the mine as those topics were being discussed at the time. At a community meeting held in Mudgee later the same week the Bowdens CEO stated that Bowdens would be in the region exploring for a long time. At the same meeting a landowner on the proposed pipeline route after asking a question about the location of the pipeline route and if compensation would be paid to landowners was asked to state their name. This sort of behaviour is intimidating to many people in country towns. Many country people and people from small communities are wary of being identified as it may affect their business or may insult their friends.

Bowdens Silver employ part time a local councillor who resides in Rylstone and would be considered to be one of Lue Council representatives. This man was elected to MWRC is 2004, well before he was employed by Bowdens in 2016. He states his role is Community Project Officer, see letter attached, but he actively promotes the project and arranges sponsorship of local events.

In my opinion the sponsorship of an Agricultural Show by a lead mining company leads to circumstances whereby members of the committee of the local agricultural show are unable or feel uncomfortable in opposing the project as it might jeopardize the event.

In the same way a company proposing to mine lead which is toxic and in particular toxic to young children should not be allowed to sponsor young peoples' sporting events, clubs and schools. The parents of those

children are put in a very difficult position and would find it hard to express an opinion contrary to that of their sponsor. Perhaps in the city this would be possible but in a small country town many people are reluctant to express their opinions for fear of losing sponsorships, their friends or their jobs.

I have for some time been very concerned that almost all published maps of the mine site do not show the homes and businesses of the community of Lue. A map of the village can be found on page 4-15 of the EIS and the same map can also be found in the appendices accompanied by lists of residents and their corresponding properties. This list of names and corresponding property numbers is a breach of those peoples' privacy, is not required in the EIS and serves no purpose. Most of these names have now been removed from the list but Bowdens have not removed all the company names. These names are not required in the EIS and although their listing is not a breach of privacy it is inappropriate and unnecessary. Some names of landowners and their property locations are still listed in the body of the EIS on page 4-15. The listing of these names in the body of the EIS is not necessary and serves no purpose.

In my experience Bowdens has not engaged with affected landowners. Some Bowdens employees and contractors behaviour has not been conducive to establishing a good working relationship with the local community.

The Department of Planning website describes

The purpose of a CCC is to:

- *establish good working relationships and promote information sharing between the proponent, local community, stakeholder groups and councils on State significant projects*
- *allow the proponent to keep the community informed about projects, seek community views on projects and respond to matters raised by the community*
- *allow the community to seek information from the proponent and give the proponent feedback on projects to assist with the delivery of balanced economic, environmental and social outcomes for the community.*

A booklet titled the Bowdens Silver Project Environmental Impact Statement Summary Booklet June 2020 was delivered to householders in Rylstone and Lue at some time during June 2020. The section Stakeholder Engagement on Page 9 of the booklet states that stakeholder engagement has been an integral component of the Project. This section does not include consultation with landholders and invites interested community members to contact the Community Liaison Officer. Unsuccessful attempts have been made to contact that person since the EIS exhibition. The Social Impact section of this booklet does not contain a map of the village of Lue or show its proximity to the mine site or advise the number of homes, residents and others who will be impacted by the project. This is a major oversight and does not enable the reader to properly assess the social impacts of this project.

Lue Action Group is a community group made up of landowners, residents and business owners established a few years ago to keep the Lue community informed about development in the area. Since the EIS was exhibited on 2 June 2020 the Lue Action Group has held weekly community meetings to inform the community of the EIS process, the mining operations and what the impacts may be for the community. Due to Covid 19 rules it has been a challenging task to plan and hold these meetings. According to the rules all meeting attendees must sign their name and provide their phone number. No one has been excluded from these meetings and although the venue, the Lue Hall, is only able to hold small numbers we have been able to accommodate all interested community members within the rules. We were advised, the day after one meeting in mid-June, a man attending the meeting had refused sign his name or give his phone number. As the meeting planner I was extremely concerned that the rules had been broken but was confident that if we had an outbreak of Covid 19 at Lue we could contact this person through the RFS. The following Friday a large double page advertisement was placed in the local paper, the Mudgee Guardian, by Bowdens attempting to discredit an expert speaking at the meeting on the effects of lead poisoning on children. These studies were carried out in Mt Isa and Broken Hill and confirm the effects of lead exposure to children at various distances.

The Bowdens Project is described as the largest undeveloped silver deposit in Australia so it is prudent that the community be concerned about lead poisoning and seek expert advice given that 42% of the minerals produced are lead. The Health Risks section of the Bowdens booklet does not specifically list lead as a health risk and states that impacts derived from the Project make a negligible contribution to overall exposures and that these conclusions apply to all members of the community.

As an employer I am very concerned about risks to employees' health and providing a safe workplace. The front cover of the booklet displays a photograph of a person handling what appears to be a core sample. If this is a core sample then the person in the photograph should be wearing PPE given the highly toxic nature of the core sample they are touching and are exposed to. On page 16 of the booklet is a photograph of a man inspecting a sample of rock and holding it up to his face. In my opinion a responsible company would have advised this man, whether an employee, a contractor or an actor, of the health implications of ingesting lead and other minerals that might be found in that rock sample and how easy it is to inadvertently ingest lead and other poisonous substances and ensure he was wearing protective equipment. The Bowdens representative who attended the community meeting held in the Lue Hall when Professor Mark Taylor presented his findings on lead contamination and the health risks of even negligible exposure to lead should have passed these concerns on Bowdens. As a result of Bowdens continuing engagement and consultations with the community they would be aware of Professor Taylor's findings of the toxicity of lead and the risk to human health of even the smallest exposure to lead.

If Bowdens has behaved in this way in the past what real hope do we have of them in the future being mindful of the significant risks associated with this proposal and in properly consulting those affected by it.

The EIS states on page 2-89

Stakeholder Consultation

During the community consultation program undertaken by Bowdens Silver, a number of aspects relating to the rehabilitation and final use of the Mine Site were raised, particularly with respect to stability of the final slopes, water quality runoff and weed management.

The community open day held on 15 June 2019 provided an opportunity for interested persons to provide comments on the final landform, planned revegetation strategies and long term land uses. Feedback received on the open day related to the following. • The water quality within the final lake. • The extent of native vegetation on the final landform. • Will Bowdens Silver continue to own the land on which the main open cut pit, TSF and WRE are located? • When will Bowdens Silver sell the areas of land currently owned after the completion of the Project? • The proportion of revegetated areas within the Mine Site returned to grazing.

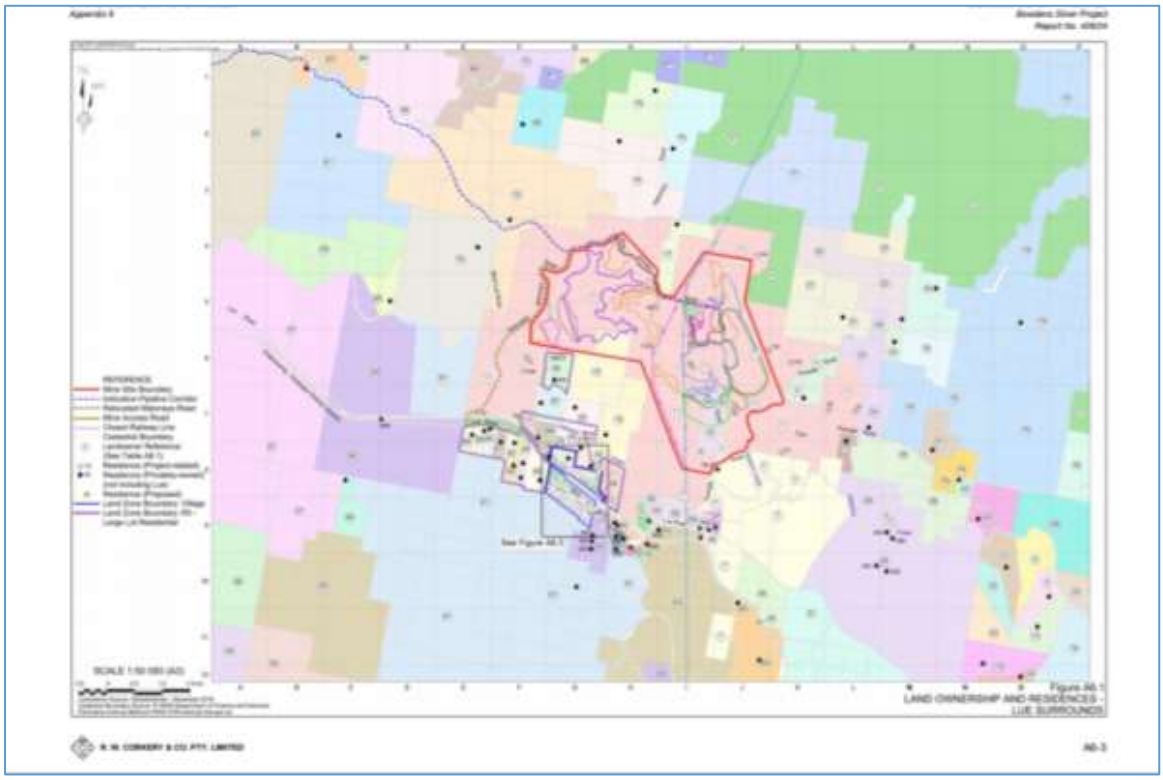
The 3D interactive model presented to the community at the open day on 15 June 2019 provided interested persons with the opportunity to comment on the final landform and extent of progressive revegetation.

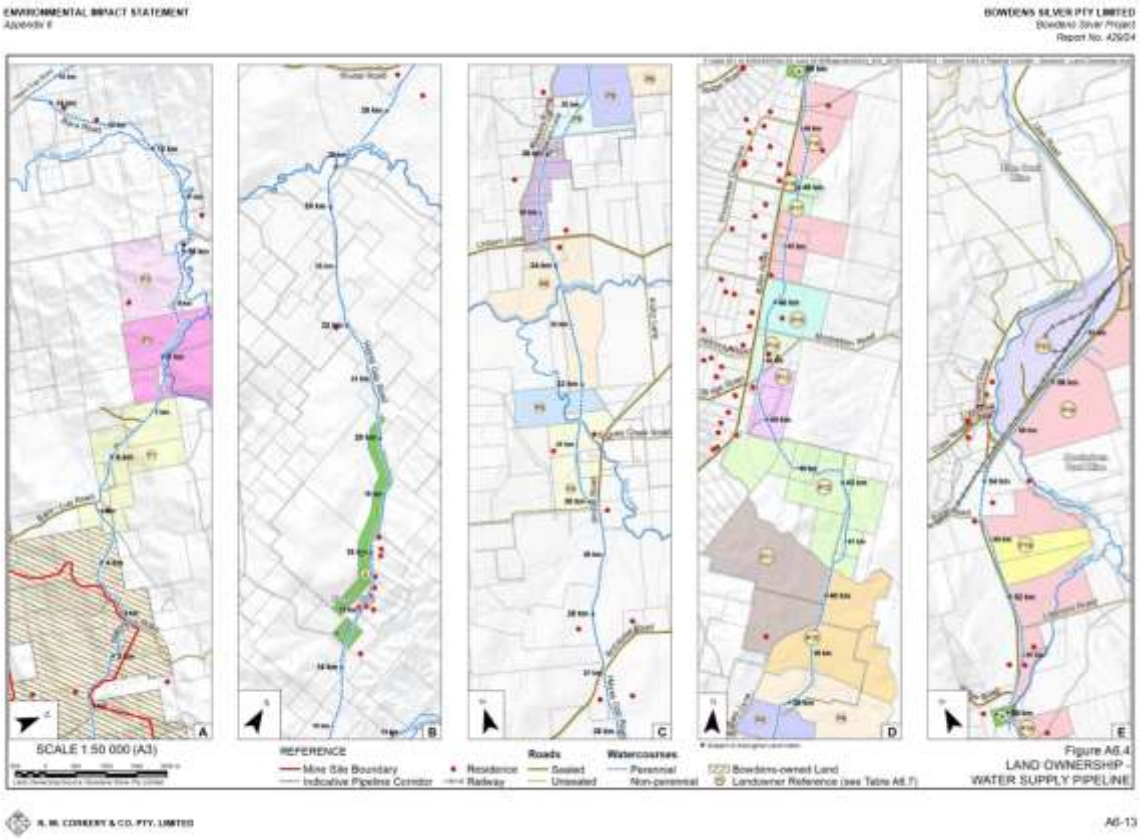
Once sufficient detail was available on each Project component and the possible approach to their rehabilitation established, discussions were sought with two local Landcare Groups, namely Bingman Landcare (based in Lue) and Watershed Landcare (based in Mudgee), and the Aboriginal stakeholders involved in the cultural heritage assessment for the Project.

Both Landcare groups chose not to provide input to the rehabilitation design component of the Project as they claimed they had no knowledge of the overall project and the type of disturbance requiring rehabilitation. Bingman Landcare, a group that formed the Lue Action Group, has formally recorded that the group opposes the Project as the environmental impacts, that they assume would occur as a result of the Project, are "directly at odds" with their key values and primary focus to look after their local environment. Watershed Landcare, a group which is related to the Bingman Landcare with a number of common members, expressed similar sentiments to those of Bingman Landcare that their "input was only being sought on a very narrow subject" given their group had a range of core interests such as water quality, soil health, biodiversity, impacts on agriculture and other socio-economic issues.

I attended the Bingman Landcare meeting with RW Corkery and confirm that at this meeting Mr Corkery was unable to provide details of planned water use or full rehabilitation of the site.

See below the land ownership maps used by Bowdens in the EIS, indicating the minesite and the pipeline and adjacent properties in the area. Other than property no 1 and property no 7, some properties in the village and those to the east of the village with severe visual impacts the majority of landholders, large and small have near Lue and on or adjacent to the pipe line route have not been properly consulted or been offered compensation.





Conclusion

Bowdens have not convinced me of the merits of this project.

While the Department of Planning may not be concerned with the behaviour of development proponents they should be concerned when a proponent engages in unsafe workplace practices, omits important information from advertising material, openly opposes and disputes information given to the community to enable them to make informed decisions, unnecessarily publishes names and private details in public documents, employs a sitting Councillor as a Community Project Officer, sponsors groups and events effectively preventing opposition to the project and intimidates community members. This is not the sort of company a responsible community, Local Council or Government should allow to develop such a controversial and potentially dangerous project with so many risks in one of the most popular tourist destinations in the state, impacting on homes, agricultural land, tourist venues, watercourses, towns, town water supplies, Aboriginal Heritage sites, Koala habitat and other threatened and endangered species.

The Bowdens Silver Mine Project should be refused.

Letter from Councillor Peter Shelley dated 20 June 2020

From: Councillor Shelley <Councillor.Shelley@midwestern.nsw.gov.au>
Date: 20 June 2020 at 9:40:12 am AEST
To: "
Subject: RE: Bowdens Proposal for Lead Mine at Lue

Dear Bron,

Thank you for your letter.

A couple of points of clarification as you addressed this in my role as Councillor.

I am employed as a part time Community projects coordinator by Bowdens Silver, not as a community liaison officer.

I have always declared an pecuniary interest and have taken no part in any of Councils discussions or decisions regarding Bowdens Silver.

Any communications regarding my role as Councillor containing accusations or any other content relating to declared interests or perceived conflict of interests, are, and will continue to be, forwarded to Councils governance officer for full disclosure.

Regards

Peter Shelley.