

Submission - Latrobe Valley Draft Preliminary Land Use Vision

Overview

I am an agricultural advocate and farmer working for good governance and mining reform to inform good planning for our future well-being and prosperity. This includes updating policy settings to protect our potable water and sustainable agricultural areas.

Given the States duty to protect and improve the environment, the State must do more to reverse the future hydrology complications and subsequent economic risks/impacts caused by poor regulatory frameworks, compliance and enforcement of existing and past mining legacy. Too many times poor planning decisions are contributing to significant negative consequences for our health, environmental degradation and economic, legal and social impacts. The rationale to promote ongoing uses for brown coal puts the State in conflict with the need to also rehabilitate Latrobe Valley's mine voids.

My immediate concern is the apparent decision to flood Hazelwood as the only 'viable option.'

As such I do not support full or partial pit lake option.

I do not support ongoing use of the brown coal resource due to the obvious complications with dewatering requirements, ongoing instability and planning overlay restrictions.

I do support biolink corridors, ecotourism, agribusiness providing reliable access to clean water.

Tracey Anton
162 Hendersons Road
Toongabbie VIC 3856

The Mine Fire Rehabilitation Inquiry of 2015/16 came about as a result of the 2014 mine fire in the Hazelwood open cut coal mine.

Rehabilitation is now to reduce the fire risk by covering the exposed coal batters. But the Inquiry has thrown up all sorts of other safety risks which mean the cheapest [assumed] option to create full or partial pit lakes in the 3 mines may, in fact, create other safety risks.

No doubt that each mine would be look at differently as mine closure progresses over the decades but the main focus is Hazelwood for the short term, which is the most difficult for the experts to agree on due to other complex considerations.

- Access to enough water to complete pit lake in an acceptable timeframe.
- Freeway built beside the northern batter of the Hazelwood mine.
- Residential area in close proximity to mine.
- There is significant mine wall instability and the risk of submarine mine wall collapse.
- The Morwell fault line sits on the east of the Hazelwood batter beside one of the most seismically active areas in Australia.

The Latrobe Valley Rehabilitation Strategy and this Preliminary Land Use Vision is a project to accommodate the Latrobe Valley Miners wish list of pit lakes. Researching many available documents online including the Hazelwood Mine Fire Inquiry Report 2015/16 Volume 1V, Mine Rehabilitation¹, its terms of reference and the Inquiry transcripts for water² and geotechnical,³ I am dismayed that other engineered landform options have not, and not likely, to ever be considered.

Are any alternative mine rehabilitation options (other than the pit lake) being considered for the Latrobe Valley's three brown coal mines?

All mine rehabilitation proposals, either from the mine operators or third parties, proposing a pit-lake or an alternative option, will be given due consideration.

While the LVRRS is testing the feasibility of the pit lake option only, in the event that a third party proposal is deemed to have merit or warrant further investigation, the Victorian Government may assist the proponent, in furthering the proposal.

In the event that a mine operator puts forward an alternative rehabilitation proposal, this would be considered through the appropriate regulatory processes.

Source - <https://earthresources.vic.gov.au/projects/lvrrs/project-information-and-factsheets/key-questions>

At the forefront is the urgency to plan for what to do with the Hazelwood coal pit void. In the absence of any other engineered options being put forward by Engie, given the cheaper cost option of pit lake, I can only conclude that the Land Use study is an exercise in diversional tactics to take away from the significant risk potential pit lake would have on the Latrobe Valley subsurface. With mining holding exemption rights under the State Planning Provisions as a land use and bulk water entitlements from the Latrobe Catchment other water users can only hope the predicted drying climate is just a nightmare.

Why aren't other options being considered as part of the LVRRS?

The Hazelwood Mine Fire Inquiry concluded that in regard to the rehabilitation of the Latrobe Valley's three brown coal mines "the pit lakes and the partial backfill below the water table options are currently the most viable"¹.

The Board of Inquiry did conclude that "there are many unresolved issues about how the lake option will be achieved"².

The LVRRS (being prepared as part of the Victorian Government's response to the Inquiry's findings) will test the feasibility of the pit lake rehabilitation scenario.

The scope of the project does not extend to options outside of the pit lake rehabilitation option. However, as per the above answer, alternative mine rehabilitation options and proposals will be given due consideration, through already established processes and procedures.

Source - <https://earthresources.vic.gov.au/projects/lvrrs/project-information-and-factsheets/key-questions>

¹ https://www.parliament.vic.gov.au/file_uploads/11172_HAZ_MFIReport-2015_16-Volume4_FA_LR_15B0_pQfGZRfC.pdf

² <http://hazelwoodinquiry.vic.gov.au/wp-content/uploads/2016/02/Hazelwood-Mine-Fire-Inquiry-Mine-Rehab-Day-2-Transcript-accessible-version1.pdf>

³ <http://hazelwoodinquiry.vic.gov.au/wp-content/uploads/2015/12/Hazelwood-Mine-Fire-Inquiry-Day-3-Transcript.pdf>

The scoping of the Latrobe Valley Regional Rehabilitation Strategy⁴ (LVRRS) that came out of the Mine Fire Inquiry did not recommend pit lake option only nor were all engineers in the geotechnical transcripts supportive of pit lake option as noted in excerpt below.⁵

5.4 BOARD'S DISCUSSION AND CONCLUSIONS

The Board accepts the evidence of Jacobs that there are six possible rehabilitation options for open cut mines.

The Board is persuaded by the expert evidence that the pit lake and the partial backfill below the water table options are currently the most viable. The Board notes that these options are most closely aligned with the mine operators' current rehabilitation plans.

The Board accepts the opinions of Professor Galvin, Adjunct Professor Sullivan, Professor Mackay, Dr McCullough and Dr Haberfield that the two viable options identified by Jacobs can be considered as one landform with variable elements. Therefore the Board refers to the option as the 'pit lake option' for the remainder of this report, while recognising that each lake will have varying levels of overburden and water, and different lake depths.

The Board accepts the evidence of Mr Hoxley and Adjunct Professor Sullivan that it is possible that the two options may be considered less attractive or viable in the future once additional research is undertaken. The Board accepts that there are many unresolved issues about how the lake option will be achieved. These issues are discussed in Part 6.

While the potential for beneficial final land use is a key criterion in assessing rehabilitation options, the Board considers the safety, stability and sustainability of the landform to be of paramount importance.

The pit lake option is assessed in detail against Term of Reference 9 in the following Part.

Mixed messages

The following is a very interesting comment from Latrobe City Council. If industry, experts, community and government are talking about existing unstable subsurface from the winning of coal with no real consensus on how to rehabilitate the mines, then how can Council want the coal pits to expand only to create more uncertainty for the future.

Council has consistently advocated for not only a safe, stable and sustainable land use outcome ...but that is also 'visually attractive' and 'useable'. Waiting several decades to achieve this is not an acceptable outcome for our community, nor is one that would compromise significant natural resource advantages of the region. The final solution must consider how the regions natural resources including water availability are to be used into the future and how rehabilitation will still enable low emission coal technologies and alternative uses of carbon. It is important that the community understand all the options for rehabilitation. "We have not seen any alternatives assessed by the state governments Mine Rehabilitation Strategy to date. No economic or risk assessment of the mine's preferred option has been made available – so it is difficult to know if the full pit lake option is the best solution for our community and economy. Or what the potential impacts might be for future job creation opportunities locally and the broader region..." - Latrobe City Deputy Mayor, Cr Darren Howe.⁶

⁴ <https://earthresources.vic.gov.au/projects/lvrss>

⁵ https://www.parliament.vic.gov.au/file_uploads/11172_HAZ_MFIReport-2015_16-Volume4_FA_LR_15B0_pQfGZRfC.pdf p82

⁶ http://www.latrobe.vic.gov.au/About_Us/Media_and_Publications/Latest_News/Are_you_interested_in_mine_rehabilitation_in_the_Latrobe_Valley

Water

As of 2011, the current water policy document, *Gippsland Region Sustainable Water Strategy Policy*, notes the water table has declined 90metre along the valley.⁷ This is a huge challenge when we consider the significant decrease in annual rainfall impacting surface water flows and groundwater recharge.

Falling groundwater levels in the Latrobe Valley

Groundwater is extracted by power stations in the Latrobe Valley to dewater mine pits to ensure safe operating conditions for coal mining, and for process water in mine operation and power generation. As a result, water levels have declined by up to 90 m along the valley. The groundwater declines are lower away from the mines.

The estimated extent of water volumes needed if filled to the top of the pits are -

*'that each mine could require between 750 and 1,000 billion litres of water. In comparison, the combined capacity of the Latrobe's Blue Rock, Moondarra and Narracan water storages is 245 billion litres. Sydney Harbour's total capacity is 560 billion litres.'*⁸

Yet, in answering the question 'what happens if there's not enough water available to fill the mines, and will other water users be impacted?', LVRRS noted,

'Victoria's statutory water entitlement and planning framework manages these competing demands for water, and includes provisions to protect other water user's entitlements and rights to water'

If pit lake option for Hazelwood is accepted this would be a statutory nightmare with implications for decision makers needing to commit as much surface and groundwater as can be feasibly allocated in the short term to prevent significant geotechnical risks particularly to the northern batter. How will this inform a risk-based decision making process framework?

The flooding of the pit voids could trigger rising of groundwater levels & flood issues for surrounding agricultural lands. Threats to other groundwater users could also occur via aquifer pressure changes, further depletion or by contamination by saline or pollutants. All will have health impacts on residents reliant on groundwater, and on nearby agricultural land and stock.

⁷ https://www.water.vic.gov.au/_data/assets/pdf_file/0026/52883/DSE_GRWS_accessible_linked.pdf p29

⁸ <https://earthresources.vic.gov.au/projects/lvrrs/project-information-and-factsheets/key-questions>

That is a significant amount of surface water in a valley creating its own micro climate & precipitation.

*'...The implications of water in particular are significant. These mines will become fairly significant sinks for water in the sense that they will become open lakes and those lakes will have significant evaporation. That means that there will be a change in the hydrology of the area for a period of time. It may be that that change in the hydrology will become a permanent feature.'*⁹

Worst is the amount expected to be needed to maintain pit lakes.¹⁰ In an ever changing environment where water is the new gold, where will the water come from?

- *An external supply of water would be needed to make up for evaporative loss from potential pit lakes in order to maintain the required lake level.*
- *Under current climate conditions, about 4-6 GL per year per mine void would be needed to maintain water levels, totalling about 15 GL/y for all three mines. This is likely to increase under a drying climate.*
- *For comparison, over 2017/18, Gippsland Water supplied about 13 GL of water to its residential and non-residential customers (excluding major industry)*

Salinity

*In the Latrobe Valley, the ash yield is usually 1 to 4% on a dry basis. Minerals such as quartz, kaolinite, and iron account for up to half the ash-forming constituents (Gloe, 1984). Inorganics such as organically-bound cations and dissolved salts of sodium and magnesium (as chlorides) tend to be higher in the main coal depocentres.*¹¹

The salinity of pit lakes will be an ongoing concern as salts will leach from the coal and only become more saline with time, evaporation and, potentially, with poor freshwater inflows.

*It would be necessary to maintain an inflow of river water equivalent to an average of 30ML/d to maintain salinities at levels appropriate for discharge to stream systems*¹²

Cost

There has never been any monetary worth placed on the environment or health effects in consideration of coal production and generation so the full cost analysis of the impacts to air, health, ground & surface water is not accounted for.

⁹ <http://hazelwoodinquiry.vic.gov.au/wp-content/uploads/2015/12/Hazelwood-Mine-Fire-Inquiry-Day-3-Transcript.pdf> p411 line 25

¹⁰ <https://earthresources.vic.gov.au/projects/lvrrs/project-information-and-factsheets/synopsis-reports>

¹¹ <https://www.bioregionalassessments.gov.au/assessments/12-resource-assessment-gippsland-basin-bioregion/12112-brown-coal>

¹² <http://hazelwoodinquiry.vic.gov.au/wp-content/uploads/2015/12/Paragraph-206-EAY.0001.003.0001.pdf>

Similarly, the confidential agreements LV miners are charged for their water entitlement was declared in the recent past to be as little as half a cent per kilolitre. Whilst the miners do have to manage their own water infrastructure it does appear that water for them, collectively, is very cheap.

This is very relevant as a baseline figure appears to have been constructed to compare viability of alternate water alternatives as opposed to their existing and substantial water entitlement, which is to use all surface and groundwater allocations first before they dip into Blue Rock Dam storage at a higher cost ratio.

Currently there are no alternative water sources that are considered more feasible than existing water sources for mine rehabilitation, although this may change in the future

• No alternative water sources of suitable quality, volume or comparative cost are currently considered feasible at the present time to assist in mine rehabilitation compared to existing water sources, although this may change in the future.

At the recent Latrobe Valley Regional Rehabilitation Strategy Community Information Event in Morwell on 30 October 2019 I asked the questions regarding costs and comparable to what? Also, will the LV miners have their water entitlements reviewed? Seems I was too far ahead of myself. Understandable though given the State Government seems to have already committed our future water sources to a miner on the cheap.

Insurance

Under full or partial pit lake scenario and potential for mine wall instability, ongoing subsidence and/or rebound, seismic or other ground movement impacts, both in and outside of buffer zones, what reinsurance/insurance options would be available to the southern residential area of Morwell that resident's homes and properties will not be endangered and there would be compensation for structural damage?

Asbestos

Is there a resolution to where the asbestos will be buried to not impact a future use for rehabilitation of the existing limited overburden as they need the overburden for the mine base to stabilise it?

Ground movement

To achieve stability in the Hazelwood pit could be any number of years just on partial pit lake. With the northern batter of Hazelwood pit being so close to residential areas and township that have already suffered significant incremental subsidence over the many decades, the risks are many and varied, albeit potentially substantial.

The LVRRS have misrepresented the existing infrastructure impacts from subsidence and cost burdens that the community and state taxes have already incurred. This is dropped state utility pipes of gas, water and sewerage. Soil creep is real from north to south towards Hazelwood mine.

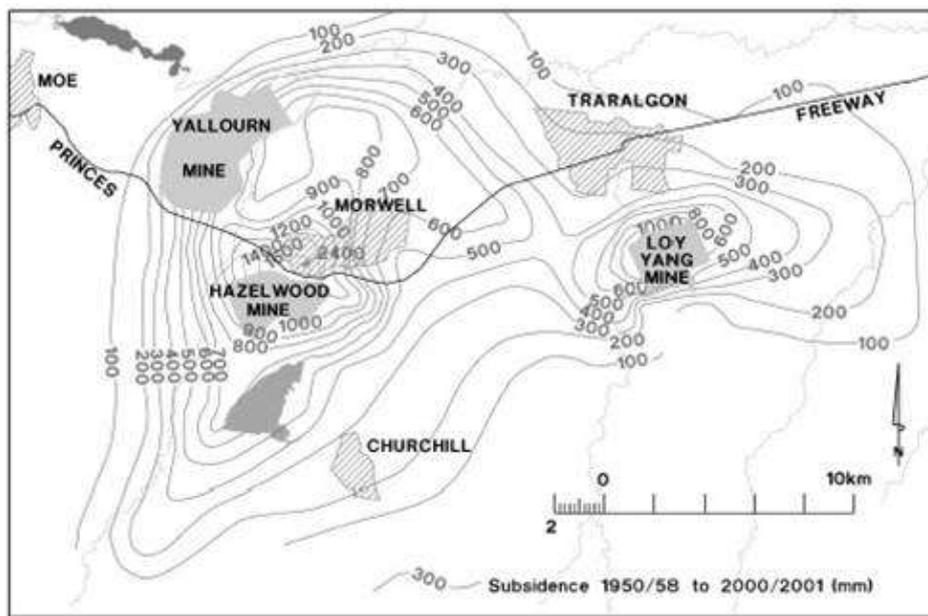


Figure 1: Regional Subsidence Contours

Source: The Potential for Artificial Recharge of the Tertiary Aquifers of Latrobe Valley Depression, Victoria, Australia 2001

PROFESSOR GALVIN: ...There is another paper published that talks about movement, an anomaly that runs through Morwell, the Lewis anomaly. It talks about gas pipes in the town itself being bent by movement towards the mine. This occurred in the 1960s as well. That anomaly is still there. We believe it is still a player in the movement that's occurring on the Hazelwood batters, and we still believe that it's yet to be addressed. So there's another point of reference.¹³

and

PROFESSOR GALVIN: ...We know the department has had a lot of sink holes repaired in another part of the area. There's cracks in netball courts. The town has

¹³ <http://hazelwoodinquiry.vic.gov.au/wp-content/uploads/2015/12/Hazelwood-Mine-Fire-Inquiry-Day-3-Transcript.pdf> p406

subsided several metres because of the water situation and will continue to subside and for a while and it has infrastructure that's too close to the mine and it was silly to ever put it there.

The image I have in my mind is basically a fractured dinner plate, if you like, just sitting there and one edge of the plate sits at the edge of the Hazelwood northern batters, but the whole thing is fractured. In my statement I try to do it in layman's terms for you, that when you get a fracture you get water in the fracture and if you can't get the water out quickly, everything moves. To me that northern batters area extending for a significant distance back into the town is a fractured dinner plate and I can't give you any assurance in time to come when and how and how much that will move.¹⁴

Seismicity

An active seismic fault line sits in the middle of Latrobe Valley east of the Hazelwood pit known as the Morwell Fault line or the Lewis Anomaly as referred to by geotechnical experts. The lake loading effect from pit lake could have the potential to trigger an unplanned seismic event of significant magnitude to cause major damage to existing power transmission lines.

A 2012 risk document has predicted a major earthquake threat in the valley over the next decade in consideration of the 2012 earthquake.¹⁵

The 2012 Moe earthquake occurred on 19th June two weeks after a massive volume of water flowed into the Yallourn open cut pit with the Morwell River diversion collapse. A colleague predicted the earthquake after the river collapse. You can't have a mass volume of weight bear down on an unstable, excavated subsurface without consequence.

Transparency and accountability

Given the full geotechnical report is not available to the public, can this land use plan guarantee accountability to the community that mine rehabilitation planning decisions for pit lakes and the potential implications are responsibly considered given the Morwell Land Movement Survey Report on management of future potential hazards has been denied public scrutiny.

¹⁴ <http://hazelwoodinquiry.vic.gov.au/wp-content/uploads/2015/12/Hazelwood-Mine-Fire-Inquiry-Day-3-Transcript.pdf> p438-439 line 27

¹⁵ <https://www.ses.vic.gov.au/documents/112015/136975/East+Region+Earthquake+Emergency+Plan-pdf/3397a289-b95f-4dab-86ed-f4c2304e842b>

I attended one of the community consultation meetings held by DWELP earlier in the year with different department representatives and engineers. They asked the people – what do you want?

Whipped the community into a frenzy with many options on offer totally unviable. I was extremely frustrated and told organisers that they were giving the community hope for their dreams to fill the mine void rather than the achievability of what they can do with it.

This link is to the news clip for that particular meeting.

<https://www.facebook.com/watch/?v=2088878794717373>

*'DR McCULLOUGH: Yes, I believe that there's been a general misunderstanding of the mine closure process with the Inquiry. Mine closure planning is a process. It is a life of mine activity. It begins usually at the approval stage and extends past the actual completion of the mining operation. It is certainly not a one-off event. It is designed to be flexible and to meet the needs of the environment, the operation and the social community as it develops. If it is fixed and definitive at any point in time it will not achieve those at closure. For example, if we put fixed criteria in place now, people who are not even born who will live with those rehabilitated mines would be being influenced by criteria that they had no say in.'*¹⁶

My concern is that the community are not properly informed of the risks, economic, legal and social impacts.

To understand what a risk is in consideration of the cost and the level of risk that the public will be exposed to is being undermined by this Land Use Vision.

Comes back to available \$\$\$ of what the miners are prepared to paid and what the community are prepared to accept based on taxpayer dollars. **This is the story that is not being told fairly.**

Planning for progress will occur gradually in a flexible environment when the business community have trust in the government. Surety of land tenure is essential as is access to clean water. Focus on what can be engineered in the mines rather than what the miners want to achieve to get out quickly. Our community deserve more than what is currently offered by the Latrobe Valley miners.

¹⁶ <http://hazelwoodinquiry.vic.gov.au/wp-content/uploads/2015/12/Hazelwood-Mine-Fire-Inquiry-Day-3-Transcript.pdf> Pg402 line 11