



LVMRC Webinar 1: An overview of mine rehabilitation in the Latrobe Valley – A Commissioner’s perspective

Q&A SESSION

Questions via Microsoft Teams

| No. | Question | Answer |
|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | If the Commissioner has been superseded by the Mine Land Rehabilitation Authority, has the government made any announcement about its structure, composition, scope and terms of reference? | An announcement on the makeup of the Authority will be made on 26 June 2020 by the Minister for Resources. The <i>Mineral Resources (Sustainable Development) Amendment Bill 2019</i> provides information on the role and functions of the Mine Land Rehabilitation Authority. A copy of the Bill is available at: http://www5.austlii.edu.au/cgi-bin/download.cgi/au/legis/vic/bill/mrdab2019522 |
| 2 | Will full pit lakes be useable by the community? | Current mine rehabilitation plans propose a pit lake with the expectation that they will provide some beneficial use to the community. There are a range of studies currently being undertaken by mine operators to better clarify how the pit lakes will evolve during filling and how management of issues such as water quality and access to the lakes might be completed for the final pit lake. The final outcome, however, will be dependent on the availability of water of sufficient volume and quality during the filling period to meet proposed pit lake objectives. |
| 3 | Is it true that the SECV proposed pit lakes before privatisation? | The State Electricity Commission Victoria (SECV) based establishment of the Latrobe Valley brown coal mines on German brown coal mine operations. Much of the early mining technology and mine operational designs were based on German experience and included the expectation of flooding the final mine voids as was (and still is) done in the German mines. This has been achieved in closure of the small Yallourn North Extension Open Cut mine as a pit lake in the late 1980s. |
| 4 | Will any of the mines achieve closure and relinquishment without any residual liability and risk? | Every aspect of mining, including rehabilitation, must manage a range of risks. Some of those risks can never be entirely eliminated. The objective of rehabilitation risk management is to reduce those risks |

| | | |
|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | Will there be a point when the ownership of the mines has to be transferred to the community/state and will this affect the rehabilitation goals? | to the lowest extent practicably possible. Mine rehabilitation plans contain a vision for beneficial land use outcomes. Understanding the residual risk and consequent liability of land and the need for the Mine Land Rehabilitation Authority to take ownership of some land that contains risks that constrain beneficial use will be made as mine rehabilitation progresses. Most of the mine land is privately owned and may be sold as private land. However, this does not affect the rehabilitation goals. |
| 5 | Will the coal faces be covered by a protective substance to prevent leaching of coal components into water in any proposed pit lake? Would any leaching of substances damage water quality so that it would not be safe for recreational purposes? | <p>Mine rehabilitation includes the need to cover exposed coal to manage fire risks in the final landform. Below the final lake level coal coverage will be achieved by the lake water. Current understanding of coal properties and the potential for interaction between the lake water and coal material indicates there is limited potential for coal chemistry to affect lake water quality in the long term. This is already demonstrated by the good quality of water discharged from horizontal bores in the mine walls.</p> <p>Studies indicate that lake water quality will be primarily determined by the quality of water used to fill the pit. Over time, leaching of compounds from the overburden soils placed in the base of the pit (not the coal) may increase the lake’s acidity. If the acidity were to exceed lake water quality targets, treatment could be undertaken.</p> |
| 6 | Do you think a carbon tax be added to the price of water for ENGIE, AGL and EnergyAustralia, since the greenhouse gases they’ve emitted and made money from has contributed to the climate changes now reducing water availability? | <p>Taxation is an issue for state and federal governments to consider.</p> <p>I and my team are of the opinion that retrospective taxation would be unlikely to be beneficial either for mine rehabilitation or for reducing carbon emissions. We can’t undo the emissions of the past that we all benefitted from, but we can aim to reduce future emissions and all the power operators are working towards this goal.</p> |
| 7 | How would you describe the Victorian government’s track record / experience in managing rehabilitated land? | Mine rehabilitation, particularly at the scale of the Latrobe Valley brown coal mines, is a complex process to manage. The Hazelwood Mine Fire Inquiry noted a range of uncertainties and issues that government needed to better address and these have been the focus of a number of initiatives including preparation of the Latrobe Valley Regional Rehabilitation Strategy, enhanced mine regulation including the Declared Mine regulations that will be implemented no later than early next year, and appointment of the Latrobe Valley Mine Rehabilitation |

| | | |
|---|----------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | <p>Commissioner and the creation of my replacement, the Mine Land Rehabilitation Authority. The government has specifically established the Mine Land Rehabilitation Authority to oversee and manage rehabilitated land of declared mines, which includes the three Latrobe Valley brown coal mines and other mines in Victoria that pose significant risk to the community, environment and infrastructure. Our webinar on 29 June will outline the new Authority’s role and functions. These changes are all expected to improve Victoria’s oversight of mine rehabilitation and rehabilitated land. To register for the webinar, visit www.lvmrc.vic.gov.au/events.</p> |
| 8 | <p>Discussions about alternatives have been around for decades and not much has changed - pit lakes work best. Why not accept this fact?</p> | <p>Our current understanding is that pit lakes do provide the best long-term outcome in managing the large and diverse range of mine rehabilitation risks. Other options have been the subject of discussion and study in the past, including by the mine operators and the Hazelwood Mine Fire Inquiry, and were not seen as viable alternatives to pit lakes. Unfortunately, we have experienced a sharp reduction in the availability of water in the Latrobe River system and this is having a strong influence on the perceptions around pit lakes as an acceptable rehabilitation option. There is now a case to be made that alternative options, even if not as good as pit lake options, should be retested economically and socially to address the wider uses for water that are being encouraged in the region. It will be valuable for all stakeholders to understand the range of risks and opportunities that are posed by rehabilitation.</p> |

Questions via Slido.com (code: lvmrc1)

| No. | Question | Answer |
|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Will Rae the Commissioner still be involved with the new Government Authority? When are we likely to know who has been appointed to the Board of the new Authority and as CEO, given your role sadly finishes 30 June? | An announcement on the makeup of the Mine Land Rehabilitation Authority will be made by the Minister for Resources. I and my team have really enjoyed the role that we were asked to undertake over the last three years. We hope that we have made a difference. That role doesn't disappear even though the Commissioner's statute ends on 30 June 2020 as the role is fully covered by the role of the new Authority. We're hosting a webinar on Monday 29 June from 1.30pm AEST, which will explain the roles and functions of the Authority – you can register to attend at www.lvmrc.vic.gov.au/events . |
| 2 | Is there anything during this process that you would do differently? | See answer about alternative rehabilitation methods above – it would have been useful to have more detail on alternative considerations to better inform rehabilitation discussions now taking place. |
| 3 | Justification of water use to fill mines? | <p>Creating a safe and stable final rehabilitated landform should maximise the beneficial use opportunities of the landform, including the surrounding land, into the future.</p> <p>Creating a safe and stable landform that requires very little long-term management and maintenance reduces the risks of future safety and stability issues occurring.</p> <p>Full pit lakes would deliver on both desirable outcomes. If water is available in the quantity needed, its use is justified by these outcomes.</p> <p>Water scarcity and the future economic value of water influences this justification. For this reason, further work on water scarcity and water economics is warranted to resolve these influences.</p> |
| 4 | Has thought been given to the economic activities and benefits that "flow on" from the pit lakes solution? | <p>Each of the rehabilitation plans will present future land use opportunities for all areas of the site. Assuming a pit lake solution, post relinquishment will be up to the landholders to realise the potential benefits of the land and the pit lakes.</p> <p>Pit lakes have a wide range of potential uses locally (e.g. recreation, aquaculture, biodiversity, fire management) but could also have benefits more regionally (e.g. fire management, water detention/flood alleviation, drought mitigation).</p> |

| | | |
|---|------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | <p>Recommendations have been made for these potential benefits to be explored in the wider management of the region’s land and water resources as well as in addressing the on-site value of pit lakes. Furthermore, the potential future land use(s) of the area surrounding the mine void is contingent upon the stability of the void. As previously described, a pit lake maximises mine stability and minimises the long-term risk of failure, enabling a wider variety of future uses than a lowered-lake level or empty void, where a buffer zone would likely be required (as is currently in place around the mines).</p> |
| 5 | <p>What water quality monitoring and other rehabilitation monitoring will be conducted in the post-closure period?</p> | <p>The purpose of monitoring post closure is to confirm that the final landform and surrounding land continues to meet rehabilitation objectives and that any management and maintenance work required to manage ongoing residual risks is being undertaken by the landholder and is effective in managing risks. The specifics of the post-closure monitoring program will not be established until rehabilitation is completed; however, it would likely include as a minimum water quality, land movement, vegetation and ground cover monitoring programs.</p> <p>The new Mine Land Rehabilitation Authority is charged with ensuring appropriate monitoring and evaluation is undertaken so that potential water quality and other physical impacts, if they arise, are recognised and mitigated.</p> |
| 6 | <p>Is it true that Hazelwood wants to fill the mine with water in less than 10 years and that this is the most safe and stable outcome long term? Why?</p> | <p>Filling the mine void as quickly as possible to provide a full pit lake reduces the time over which ground stability and environmental risks associated with the rehabilitation period need to be managed. Lake fill time will be dependent on the annual availability of water. In Hazelwood’s case, fill time for a full pit lake is unlikely to be less than 15 years.</p> |
| 7 | <p>How is residual risk being managed?</p> | <p>Residual risk applies to the post relinquishment period once rehabilitation has been completed. Understanding of residual risk and risk management requirements will be part of the post-rehabilitation land management plan for the mine licenses. The management plan will describe the nature of risks associated with the land and the way in which risks should be managed by the landholder. For those land areas where residual risks are considered high, and hence land management costs beyond the capacity of most landholders to meet, a post relinquishment land management fund will be in place to meet land management needs.</p> |

| | | |
|----|-----------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8 | Will any of the mines achieve closure and relinquishment without any residual liability and risk? | Answered above. |
| 9 | Any key learnings from international experience with the rehabilitation of lignite mines that have informed planning for the Latrobe Valley mines? | While there is good international experience in lignite mine rehabilitation, particularly in Germany, the physical settings are rather different to those of the Latrobe Valley. For this reason, the technical understanding is not directly transferable. Some important experiences, such as the time required to establish the land for productive future use, are relevant to the Latrobe Valley. Valuable learnings can also be found in the largely whole of government approaches used to enable mine rehabilitation in Germany and in the social engagement of the community in embracing the opportunities provided by the rehabilitation and in informing the plans for rehabilitation. |
| 10 | If the mine operators do get access to water from the Latrobe River for rehab, will the state continue to subsidise the cost of water for Big Coal? | Provision of water to the power stations is on the basis of agreements that have been in place since privatisation. Mine rehabilitation occurs after the power stations have been closed. Water access arrangements for mine rehabilitation are a matter for discussion between industry and government as mine rehabilitation and closure plans are developed. |
| 11 | What changes to rehabilitation planning will be needed to minimise another Hazelwood fire impact extent occurring again? | Lessons from the Hazelwood mine fire have already been implemented into mine fire response and management. Fire suppression systems and risk mitigation measures will remain in place throughout the rehabilitation period. One of the key findings of the Hazelwood Mine Fire Inquiry, that rehabilitation works must cover all exposed coal to minimise the risk of coal fires in the final landform, is being adopted into each mine’s rehabilitation plan. |
| 12 | Will there be a site management plan attached to the land title for that longer-term management? | Where post relinquishment land management requires actions beyond what would normally be expected for a landholder to undertake a land management plan will attach to a land title and will require the landholder to complete works to manage residual rehabilitation risks associated with that land. The management plan’s implementation will be monitored by the Mine Land Rehabilitation Authority. |
| 13 | At the completion of the fill of Hazelwood, who will be responsible for the allocation for recreation usage? | Access and use of land post rehabilitation will be the responsibility of the landowner, who may be a private or public body. They will determine what recreational activities may be compatible with the land and the basis for access to the land, based on the rehabilitation outcomes achieved. |

Answered live

| No. | Question | Answer |
|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | <i>Where will the new Mine Land Rehabilitation Authority be located?</i> | It is expected that the Authority will be located in the GovHub building currently being constructed in Morwell and due for completion in 2021. |
| 2 | <i>So this whole management of pit lakes - could fall into other peoples’ hands - so what sort of safe guards will be asked of owners to do the up keep of water?</i> | <p>The mine rehabilitation plans will include a description of requirements, in the form of a management plan, to maintain the final landform/s post relinquishment. The activities to maintain lake water quality and level will be set out in the plan and it will be the responsibility of the land holder to undertake water management actions required.</p> <p>The government will maintain regulatory oversight both during rehabilitation and post closure.</p> |
| 3 | <i>How long will post-rehabilitation monitoring continue?</i> | The purpose of post-closure monitoring is to confirm that the pit lake and surrounding land continues to meet rehabilitation objectives and that any management and maintenance work required to manage ongoing residual risks is being undertaken by the landholder and is effective in managing risks. Where those risks must be managed in perpetuity the monitoring will also continue in perpetuity. |
| 4 | <i>What is the issue with stability - are we looking at sink holes? What are they?</i> | <p>Sinkholes are the consequence of surface water entering the ground along a sub-surface pathway to erode material creating a cavity which ultimately may collapse leaving a depression at the ground surface. Sinkholes have occurred in and around the mine voids in the past. Managing the potential for sinkhole formation includes effective control of surface water drainage.</p> <p>Sinkholes are only one aspect of stability. Batter movements and collapse and land subsidence/rebound are other ground movement risks that will need to be minimised as far as practicable. The history of mining in the Latrobe Valley provides ample evidence of the stability issues that need to be managed as part of rehabilitation.</p> |
| 5 | <i>The people who will be living with (and presumably paying for) land rehabilitation are now aged <20. How has your planning been designed to elicit their views?</i> | Stakeholder consultation completed to date by my office has canvassed the opinions of all age groups. |
| 6 | <i>How much it's reasonable to expect big for-profit companies to pay for rehab of land they've made \$\$\$</i> | It is expected that the mine operators will meet the full cost of mine rehabilitation. Having said this, mine rehabilitation should be based on a shared view amongst stakeholders of what a desirable end landform |

| | | |
|--|------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | <i>from. What is reasonable and why?</i> | looks like. The physical requirements needed to meet this outcome can then be identified. From that point a consideration of rehabilitation costs can be made. The question of cost then becomes one of what is required to meet the agreed rehabilitation outcome and, dependent on the particular circumstances, how cost may need to be shared amongst stakeholders. |
|--|------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

| Glossary | |
|------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| LVMRC | Latrobe Valley Mine Rehabilitation Commissioner – establishment of the Commissioner was a recommendation by the Hazelwood Mine Fire Inquiry. The Commissioner was appointed in June 2017. |
| LVRRS | Latrobe Valley Regional Rehabilitation Strategy – a Victorian government project recommended by the Hazelwood Mine Fire Inquiry, and led by the Department of Jobs, Precincts and Regions and the Department of Environment, Land, Water and Planning. The LVRRS undertook a series of geotechnical, water and land use studies based on a water-based rehabilitation option for the three Latrobe Valley brown coal mines. It provides information in a regional context for the Latrobe Valley brown coal mine operators to consider and incorporate in their mine rehabilitation plans. The LVRRS is due to be released by 30 June 2020. |
| Mine Land Rehabilitation Authority | A newly established Authority which will replace the role and functions of the Latrobe Valley Mine Rehabilitation Commissioner on 30 June 2020. |