



Protect Our Water Alliance

Submission OBJECTING to Dendrobium Mine Extension Project

11 June 2022

Protect Our Water Alliance (POWA) was formed in early 2019 in response to the ongoing mining beneath Sydney's water catchment. Located on unceded Dharawal Country in Wollongong, POWA is affiliated with grassroots groups and environmental organisations across the Illawarra, Southern Highlands, and Greater Sydney regions. POWA is calling for a total ban on mining in our water catchment.

Protect Our Water Alliance objects to the Dendrobium Mine Extension Project on the basis that the project would conflict with the existing use of the location as water catchment. It is very plain that the Minister must reject this proposal. It does not and cannot meet the following test:

“A consent authority must not grant consent to the carrying out of development on land in the Sydney drinking water catchment unless it is satisfied that the carrying out of the proposed development would have a neutral or beneficial effect on water quality.”

While the scoping report notes that this proposal, when compared with the previous proposal, involves a “Reduction in the potential for impacts to environmental values and water catchment”, a reduction in impact does not mean no impact. Any impact on the water catchment is incompatible with the use of this site as a water catchment.

Mining Area 5 is predicted to cause the loss of 171 Olympic size swimming pools of water every year (428ML/year). That's over 1 million additional litres of lost surface water every single day for the duration of the mine's activity. This brings the total extraction from surface watercourses by the Dendrobium mine to 580 Olympic pools every year (1450ML/year). This totals to 4 million litres of lost surface water every day for the duration of the mine's activity.

The groundwater intake of the mine is predicted to peak at 5,900 ML/year, which is equivalent to 2360 Olympic pools. Or approximately 16 million litres of ground water lost every day. The Mine Closure Study (Appendix Q) estimates that it will take approximately 60 years for groundwater levels to recover (p22). This is an optimistic estimate, though it is still alarming as we will experience more regular and persistent droughts over the next 60 years.

The mining company's own submission shows that this project cannot be undertaken without leaving the site worse off, in terms of both water quantity and water quality. While many development projects make provision to offset their environmental, social and other impacts, the southern water catchment is a unique, irreplaceable and essential resource that it is not possible to offset – there is no comparable resource that can be used to offset damage to the catchment, and the idea of trying to financially offset the combination of geology, ecosystems and engineered infrastructure that make up the southern catchment profoundly underestimates the value of the catchment to the people of NSW. Water NSW states clearly that it does not support the proposal to accept offsets for surface water loss resulting from the proposed longwall mining in Area 5.

The NSW Government has previously announced the building of a desalination plant as a means of adding to the current supply provided by the catchments and Kurnell desalination plant. The NSW Government has at its disposal the conventional options of increasing revenue, reducing expenditure or borrowing, in order to fund this infrastructure. Increasing desalination and water recycling in NSW does not rely on offset payments from a mining project that will impact both the quality and quantity of water supply from the catchment. The cost of building and powering desalination plants sufficient to replace the natural and engineered systems of the southern catchment is vastly greater than any figure that has yet been proposed. The unavoidable and very simple reality is that, the people of NSW cannot drink money, our lives depend on water.

While this revised proposal is a reduction in the total area to be mined, the length of the longwalls themselves remains unchanged at 305m. This means that the same impacts identified as unacceptable in the previous proposal remain for Area 5 in this revised proposal. The mining company itself has said that they expect subsidence of two metres or more as a result of longwall mining in Area 5, though this estimate may be conservative. Even at two

metres, this subsidence will result in irreversible damage to the southern catchment. The mining company itself expects to see the cracking of ground and rock platforms, damage to upland swamps, damage to waterways, the dewatering of the landscape, loss of water from Avon Reservoir, loss of groundwater, and contamination of water termed 'minewater' – that is, water that would otherwise run through creeks, streams, rivers and swamps, be taken up by plants and drunk by animals, to collect in dams that supply water to millions of people or be safely stored as groundwater. Instead, 'minewater' discharged from mines carries with it toxic contaminants that have been released into previously potable water as a result of the process of coal mining. According to DPIE's report on South 32's previous unsuccessful application to expand Dendrobium Mine, when water courses fracture due to mining induced subsidence, metals dissolve and leach into the water. Should this project go ahead, it will lead to an increase in metals in the water courses and reservoirs.

Previous expert testimony provided to the Independent Planning Commission has made it clear that the development will not and cannot have a neutral or beneficial impact on water quality. The proposal that so called 'mine water', that is, potential drinking water, be used for purposes other than drinking water is evidence in itself that the project will not have a neutral or beneficial effect on water quality. A neutral or beneficial effect would mean that the water did not have to be processed through sediment ponds or discharged or dumped into a creek.

Should this proposal be approved, the mine will still come within 1000m of the Avon Reservoir. It will result in water losses from Avon, which is the only source of water supply to over 310,000 residents and businesses in the Illawarra region. In dry years, the watercourses in the mined area that flow into Avon Reservoir are expected to totally dry up.

The southern catchment is vital to the sustainability and resilience of the supply of drinking water to Sydney and Wollongong. The dams of the southern catchment make an important contribution to the overall supply and are essential to the resilience of the system. For example, when Warragamba is affected by water quality issues, as happened during the 1998 cryptosporidium and giardia water crisis, the southern catchment made it possible to continue to supply Sydney with safe drinking water. Likewise, the southern catchment was key to the resilience of the system after the contamination caused by the 2019/20 black summer bushfires. For people living in the Illawarra, Avon Dam is the source of their drinking water. The Millennium Drought made it starkly clear that the drinking water collected by our

catchments, and produced by desalination, is a vitally precious resource, and should not be put at risk.

The risks to Sydney-Illawarra's water supply reservoirs have not been accurately accounted for in the proposal. Water does not simply appear in dams from rainfall, it is collected by tributaries which are connected to threatened swamps in the area. The assessment that longwalls have negligible impact on water supply reservoirs is based on their distance from the reservoirs. This is an erroneous claim that fails to understand how water is captured.

The use of Trigger Action Response Plans or TARPs, when it comes to matters such as subsidence, upsidence, shearing, seam to surface cracking and other impacts of longwall mining on the southern catchment is not adequate to prevent irreversible damage to the catchment. Sadly, once damage has occurred, it is irreversible. TARPS may be able to record damage that has already occurred, but they are not an adequate tool for ensuring that damage cannot occur. There is a certain irony in the inclusion in the EIS of previous TARPS undertaken for longwall mining in the southern catchment showing damage in a proposal for a mine that seeks to continue the very same practices and that will surely have the same results.

The remediation techniques listed in the EIS include the use of polyurethane, grout and cement to patch cracks. It is difficult to imagine relying on polyurethane, grout and cement to effectively remediate cracks in creek beds, very large cracks and fractures in rock platforms, seam to surface cracking, upsidence and valley closure. It also remains to be seen how long this kind of patching lasts, and its impact on aquatic life.

The work of Dr Tanya Mason has shown conclusively that undermined swamps sustain damage such that they do not retain their characteristic hydrological features, with resulting changes in ecologies, especially after fire. It may be the case that this research was overlooked when preparing the EIS, as the projected impacts on undermined swamps in the EIS are described as cyclical, whereas Dr Mason's research shows that undermined swamps do not recover after dry periods as swamps that have not been undermined can recover. The swamp remediation technique described in the EIS also appears to misunderstand the type and extent of damage that occurs when swamps are undermined. The use of coir and hessian to 'spread' water through a swamp is of little use if the rock platform that the swamp is sitting on has been cracked by longwall mining, as water stored in coir or hessian drains away

in exactly the same way that water stored in peat drains away – through cracks in the rock platform.

Under climate change effects, it is noted that there may be periods where the catchment region experiences wetter conditions. This past La Nina cycle has certainly demonstrated wet conditions. It is noted in the EIS that existing water management systems, including sediment ponds, will be used as part of the water managements systems for this mine extension. Sediment ponds discharge into the catchment of creeks. In 2022, the region of the southern catchment has included several extreme weather events of a very high volume of rain in a short period of time, to the extent that infrastructure such as roads and rail lines were damaged, and Mt Ousley Road was closed due to the risk of a domestic dam overflowing above the roadway. The Environmental Impact Statement does not discuss what provision will be made to ensure that water management systems, including sediment ponds designed to store toxins that settle in the base of the pond and that overflow into the catchment of creeks, are fit for purpose in expected periods of very heavy rainfall.

In April 2021, the Environmental Protection Agency issued a fine to this mining company after very heavy rain contributed to the catastrophic failure of a sediment dam. The result was water and tailings from the dam running into a creek. It is extremely concerning that this event was not just an excessive overflow of the relatively less toxic water in the upper part of the sediment dam, but the washing out of the bottom of the dam, the part of the dam intended to collect the most toxic materials.

The risk of pollution events in the catchment is real, and is not adequately addressed in the Environmental Impact Statement. South 32 use a number of sediment ponds and dams as part of their operations. In the recently approved Modification 9, South 32 noted that management plans for sediment dams meet requirements determined by HEC (2022) in accordance with the Landcom(2004) and the Department of Environment and Climate Change (2008) guidelines, and that “[v]isual inspections of the drainage channels and sediment basins would be undertaken on a monthly basis and following rainfall events in excess of 89.7 mm in 5 days.” In March of this year, the Illawarra experienced rain events considerably in excess of 89.7mm, with a number of occasions on which rainfall exceeded 100mm in a single day.

As in the case of bushfire risk, it is essential that mine infrastructure and monitoring is adequate to the real world conditions that we have already experienced, let alone the

predicted and modelled increase in heavy rainfall and flooding that could impact sediment ponds and dams as climate impacts intensify.

The mining company's assertion that it is not practicable to do anything other than contaminate drinking water overlooks a very straightforward means of preventing contamination – to not undertake this mine expansion. We would like to reassure the Minister that, despite the mining company making the assertion that this mine extension is essential to the continued operation of the steelworks at Port Kembla, Bluescope Steel held a public event in October 2021 in which it provided information on measures that would allow it to access metallurgical coal required to continue operations. This puts the Minister in the favourable position of being able to prioritise the drinking water of NSW while remaining secure in the knowledge that the steelworks at Port Kembla can continue to operate without this mine extension.

Protect Our Water Alliance recommends that the proposal to mine Area 5 be rejected, as the project offers no benefit to the people of NSW that cannot be achieved by existing concepts such as offshore wind farms, green hydrogen, low or zero carbon steel and recycling projects. The mining company itself has shown that its mine extension will impact the catchment in such a way that it will reduce both water quantity and water quality. This reality must be at the heart of the decision making process. This project will cause irreversible damage. And it offers no benefits that cannot be achieved by other means.