

Thank you for the opportunity to comment on the Dept of Planning's Final Assessment Report for the Dendrobium Extension Project (SSD 8194).

I strongly **object** to this project because I believe it:

- poses unacceptable risks to the Sydney/Illawarra drinking water catchment
- will significantly and unnecessarily add to Australia's GHG emissions
- retards the Illawarra's transition to sustainable industry and employment
<https://grattan.edu.au/report/start-with-steel/>
- poses unacceptably risks Aboriginal Cultural Heritage
- will cause irreversible damage to EECs and unique biodiversity
- will increase bushfire risk for Wollongong and the Illawarra
- is based on a model of offsetting and compensation for damage which has no historical credibility of achieving its purpose; it is well established that this will bring no certainty in perpetuity.
- is contrary to the intention of the EP&A Act's Precautionary Principle and intra and intergenerational equity and therefore unlawful

Precautionary Principle: the NSW Environmental Planning and Assessment (EP&A) Act adopted the same definition of the Precautionary Principle as outlined in the Protection of the Environment Operations (POEO) Act " *that if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.*"

The evidence of damage to the Special Areas of the Sydney drinking water catchment gathered since the start of coal mining is substantial and concisely summarised by the scientists in their open letter to the NSW Premier, May 2020 <https://sites.google.com/site/specialareasconcerns/>.

Considered with the evidence outlined by many expert reports over more recent decades, also referred to in the same letter, then huge doubts must be raised about the true extent of damage and subsequent water loss and particularly of ongoing losses as water diversion into mines is inevitably permanent, and the water becomes polluted. What is clear is that there is no current known or emerging technology that can fix this damage.

Dr Ian Wright an environmental scientist who has signed the letter to the Premier, has done extensive work on water quality in rivers surrounding Sydney, particularly the Nepean system and the Blue Mountains, testing outflows from coal mines in these areas. I have heard a senior EPA officer say his work is invaluable to the EPA. He has stated that water diversion through mines and its subsequent pollution has become so extensive it is essential to learn how to stop the loss to protect our water supplies and to be able to keep our catchment environments healthy to ensure clean water. The problem becomes exacerbated with maintenance reduction when mines close and under today's system of rehabilitation obligations, the cost of the research to find a fix and then applying the fix will inevitably fall on the public purse.

The NSW Government's Independent Advisory Panel for Underground Mining has said of this extension project, "It is not possible, at this stage, to be comfortable that the worst-case losses from the surface water regime have been identified. Stream depletion can arise from combinations of reductions in overland and groundwater flow to the streams and increases in stream losses to the groundwater." (DPIE Assessment Report, op cit, p. 68)

Water NSW has also questioned the reliability of the modelling stating that "previous iterations of the model had predicted surface water take at the existing Dendrobium Mine and that these predictions had increased 5-fold in the 5 years since 2014 (now 1372 ML/year)". (DPIE Assessment Report, op cit, p 89)

Intra and intergenerational equity are also in the group of Ecological Sustainable Development principles included in the EP&A Act. Intra refers to equity within the current generation and of intergenerational equity it says “..the present generation should ensure that the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generations.”

Water impacts

Both the precautionary and intra/intergenerational principles are applicable to the approval assessment of this mine expansion in regards to the potential impacts on quality and quantity of drinking water, available for people now and those in the future. The Dendrobium mine causes the highest rate of water loss from any mine in the catchment. This proposed extension will more than double the mine’s existing rate of water loss.

The predicted average daily water loss of the Dendrobium Extension project is 22 million litres daily; equivalent to 130,000 peoples’ usage. (On average, each person in Sydney uses about 200 litres of drinking quality water every day.

From: <https://www.sydneywater.com.au/sw/education/drinking-water/water-use-conservation/index.htm>

Water loss will peak around 2032 to 2036 at 26ML per day. (DPIE Assessment Report, op cit, P. Xii)

This mining has high potential to adversely impact the Avon, Cordeaux and Nepean Reservoirs which supply drinking water for Wollongong, MacArthur and Sydney. Normally these dams supply 20 - 30% of Sydney’s water, however at any time that the Warragamba dam catchment is compromised the quantity can be much more.

Dendrobium’s past history of subsidence caused by its aggressive longwall mining methods which are wider and higher than any of the other mines, has lead to unacceptable and shocking damage to the water catchment. These are just 2 examples -, the cracking of the bed and subsequent draining of some 9k’s of the Waratah Rivulet and the heavy metal pollution of remaining water in the Rivulet, and draining and desiccation of Swamp 1.

This extension proposes mining to come within 300m of the Avon and Cordeaux Reservoirs. 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_(WaterNSW Fact Sheet – Illawarra Water Security Project, November 2019, accessed 9.11.20

at: https://www.watnsw.com.au/_data/assets/pdf_file/0007/150757/Avon-Deep-Water-Access-Fact-Sheet-Nov-2019.pdf,)

WaterNSW states that the setback from the dam walls should be at least 1500m, adding that, “Should any impacts occur to these dams, there is the potential that the risks and consequences could be extreme.”_(Letter from Water NSW to DPIE, Re: Dendrobium Mine Extension Project (SSD 8194) – Response to Submissions, 6 March 2020, Accessed

at: <https://majorprojects.planningportal.nsw.gov.au/prweb/PRRestService/mp/01/getContent?AttachRef=PAE-2101%2120200306T045644.719%20GMT>)

WaterNSW’s Deep Water Access Project aims to provide water security for the Illawarra by constructing a deep water pumping system to access the reservoir’s deeper waters. WaterNSW says that the Dendrobium Extension Project could affect its ability to construct and operate this important infrastructure project. Letter from Water NSW to DPIE, Re: Dendrobium Mine Extension Project (SSD 8194) – Response to Submissions, 6 March 2020, Accessed

at: <https://majorprojects.planningportal.nsw.gov.au/prweb/PRRestService/mp/01/getContent?AttachRef=PAE-2101%2120200306T045644.719%20GMT>

The extension threatens the Cordeaux Reservoir also, which along with the Cataract Reservoir is the main water supply for Camden, Campbelltown and Wollondilly council areas and even as far afield as Nepean Reservoir, which is the water supply for the nearby towns of Bargo, Thirlmere, Picton and The Oaks.

Heavy metal pollution of the water of the catchment from coal mining is already at unacceptable levels. WaterNSW stated - “WaterNSW is concerned that any increase in arsenic (or other heavy metals) may have a negative effect on water quality and aquatic ecology.”_(WaterNSW response to Amendment and Supplementary Information – Dendrobium Mine Extension Project (SSD 8194) . 17 September, 2020, Accessed at:

<https://majorprojects.planningportal.nsw.gov.au/prweb/PRRestService/mp/01/getContent?AttachRef=PAE-8943318%2120200917T022400.336%20GMT>

The increase of heavy metal pollution from mining will worsen in the 100 – 200 year period of groundwater recovery. (DPIE Assessment Report, op cit, p 40)

This mining extension will cause the existing water discharge into Allens Creek, Unanderra, to double. This discharge point is very close to where I reside, consequently, in addition to the threats to my drinking water, I have a personal concern for my welfare and that of my neighbours. I cannot condone the local release of pollutants, and was shocked that the Allan's Creek discharge point for the Dendrobium was recently identified as exceeding safe levels of heavy metals. <https://www.abc.net.au/news/2020-09-17/south32-mine-discharge-in-allens-creek-concerns-scientist/12670060>

There is no known “fix” for damage that causes substrata or surface cracking and consequential water loss. This is a dreadful legacy that present day mining is leaving future generations in perpetuity.

Climate Change

Similarly the intra and intergenerational principles must apply when considering the impacts on climate from this project. In its Summary of Concerns p5, dot point 5, the open letter from the scientists to the Premier states: *“Water loss becomes increasingly significant during low rainfall periods and such periods are expected to increase as climate change progresses.”*

The Dendrobium extension proposal is estimated to create up to 23.7 million tonnes of CO₂e in the production stage (“Scope 1 and 2 emissions”) and 237 million tonnes in the transport and consumption of the metallurgical coal produced (“Scope 3 emissions”). This brings the total emissions to between 256 million and 260.7 million tonnes of CO₂e for the life of the project. Environmental Assessment Part 2, Section 6, pp 150 – 151 accessed at: <https://www.planningportal.nsw.gov.au/major-projects/project/9696>

Regardless of whom DPIE considers is responsible for the Scope 3 emissions which will be generated from the consumption of the coal from this project, these emissions would not be generated if the project was not approved. Approval of this mine extension would add an average of 9.3 million tonnes per annum (260.7 million tonnes over 28 years) of CO₂e to the atmosphere. (Environmental Assessment Part 2, Section 6, pp 150 – 151, op cit)

Recent droughts and last season's fires are clear indication climate change is impacting “...the health, diversity and productivity of the environment” (EP&A Act) and will continue to do so for future generations. Under the NSW EP&A Act there is a legal requirement therefore to apply the intra and intergenerational principles to the assessment of the Dendrobium Extension.

It is obvious, as stated in the Act, that the Dendrobium Expansion is a “... *threat(s) of serious or irreversible environmental damage...*” and “...*lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.*” While ever there is not a way of repairing the damage from mining in the drinking water catchment that diverts and pollutes water and irreversibly damages and desiccates Upland Swamps, mining approvals in the catchment should be considered unlawful under the EP&A Act precautionary principle, and approval denied.

NB: There are a substantial number of court challenges in NSW to fossil fuel mining projects where the ESD principles have been carefully considered. Corrs Chambers and Westgarth describe a number of these in “The principles of ecologically sustainable development in Australia and internationally” June 2020, pages 3-5 (<https://corrs.com.au/insights/the-principles-of-ecologically-sustainable-development-in-australia-and-internationally>)

Increased bushfire frequency and intensity – mining damage that drains Upland Swamps causing them to dry out, vastly increases the risk of fire not only from the desiccation of vegetation but

because dried peat is highly flammable. There are 46 swamps in the proposed mining area and 25 of these are expected to be cracked by this mining extension proposal. There is no condition of approval that can abate this risk, as where there is mining under or near Upland Swamps they are threatened with damage. This increased fire risk impacts anyone who lives in Wollongong or the surrounds of the Metropolitan Special Areas where this extension is proposed.

Aboriginal Cultural Heritage – inadequate or nonexistent mapping and protection

A legacy of mining induced damage to Aboriginal Heritage sites at Dendrobium was recently revealed in the media. <https://www.abc.net.au/news/2020-10-02/illawarra-indigenous-sites-being-destroyed-behind-barricades/12717976>

The Aboriginal Cultural Heritage Assessment (Dendrobium Mine – Plan for the Future: Coal for Steelmaking, Appendix F: Aboriginal Cultural Heritage Assessment.

Niche Environment & Heritage (2019) Aboriginal Cultural Heritage Assessment, pp 26,33-34, 68, 71-72. Accessed 01/09/2019 from: <https://www.planningportal.nsw.gov.au/major-projects/project/9696>), records the physical survey of only 6.91 % of the affected area. It identified 58 Aboriginal heritage sites, including six new sites, in the area likely to be affected by longwall mining in Area 5 and Area 6. These were mostly rock shelters with/without art and deposits, and axe grinding groove sites located in creeks.

Although the DPIE's Biodiversity Conservation Division proposed changes to South32's mine design to avoid impacts to six Aboriginal heritage sites, changes were made by South 32 that would protect only one site. In a statement that was justifiably and understandably described as offensive by the Illawarra Local Aboriginal Land Council, the Department said:

"The five remaining sites are all located centrally above longwall panels. Given the limited risks of impacts, the Department does not consider that the scientific or cultural benefit of avoiding the risk of impacts is warranted." (Quote: DPIE Assessment Report (Oct 2020) page xv6)

Monitoring of Indigenous cultural sites is required but there is no requirement to preserve or avoid these sites, and no penalties to South32 when it destroys them. It is reprehensible for mining interests to desecrate Aboriginal Cultural Heritage whilst the area remains out-of-bounds for the Aboriginal community.

Conclusion

Plentiful good quality water in the Sydney drinking water catchment is priceless. As is the unique natural environment of the area & the services it can offer our wellbeing if it is left intact. Any benefits of the Dendrobium Extension (SSD 8194) cannot possibly outweigh any damage to the catchment or water lost by diversion or pollution; damage to Aboriginal Cultural Heritage or our climate. It is imperative that the Illawarra is able to, and allowed to, quickly transition from the economics and employment generated from industry reliant on fossil fuels. Approval of this project will seriously retard that process and its detriments to our wellbeing are far too high for it to be approved.

Yours sincerely, Annie Marlow, Berkeley NSW