

I object to the Dendrobium Extension Project (SSD 8194)

On December 2, 2020, the [Illawarra Mercury](#) published comments from South32's boss Jason Econimides, in which he claims South32 "know[s] what we need to do to meet and exceed our environmental obligations and meet community expectations."

Fourteen paragraphs above, the DPI representative confirms damage to the catchment and states that alterations to the longwall panels "would not stop surface cracking and creek damage" and "could" "prevent" water leaking into the mine.

How exactly does that level of expected damage—with a proposed solution that will not stop damage to local creeks, will not stop surface cracking and only has a chance of preventing water leakage—demonstrate a recognition of South32's environmental obligations?

South 32 predicts that its 305 metre wide long wall panels may result in subsidence of 2m to 2.45m[4]. Previous mines of similar width have caused 2.5m to 3 m of subsidence, so South 32's predictions are likely to be conservative, especially when considering their overall approach to environmental concerns [5].

Even while supposedly tackling objections in arguing for the extension of the operation, South32 has not shown any real concern for the environmental impact of the mine. How can we expect this morally bankrupt company to comply with what is in the best interests of the environment?

Big picture

Zoom out from this local issue.

We have had a year of drought and catastrophic bushfires. The green light has been given to Santos to mine for coal seam gas as part of the Narrabri Gas Project. The government is attempting to roll out a gas-led COVID-19 recovery. Adani's Carmichael Mine is approved. Food and water scarcity was experienced in times of a pandemic; imagine the levels that would be experienced during an extreme climate change event.

Do we really need to give more handouts to the fossil fuel industry?

The mining industry cannot support itself. It is not sustainable, environmentally or in terms of employment. Many mines laid off workers during the early days of the COVID-19 pandemic. There are going to be fewer jobs in mining in Wollongong.

Whether we tackle that now or after South32 has decimated Sydney's water catchment, that fact does not change.

What does change in whether we tackle that reality now or after we continue to give handouts to mining companies is the impact on climate change.

Millions of litres of water will be lost

As an important component of the Greater Sydney Water Catchment, the reservoirs affected by this extension supply between 20 and 30% of Greater Sydney's water in normal times. In times when Warragamba is compromised by water quality (for example the 1998 cryptosporidium and giardia water crisis, or the 2019/20 black summer bushfires which burned the Warragamba catchment) they may supply even more. In dry years, the watercourses in the mined area that flow into Avon Reservoir are expected to totally dry up.

The cracking and dewatering of watercourses, swamps and aquifers is expected to add the loss of many more millions of litres of water each day to the 10 million litres daily water loss from Dendrobium's current and past mining.

Dendrobium's average daily water loss for the duration of the expansion project will be 22 million litres (ML). Water loss will peak around 2032 to 2036 at 26ML per day.[7] This is equivalent to the daily water usage of 130,000 people [8].

The existing water discharge into Allans Creek, Unanderra will double.

This is the same discharge point that was recently identified as exceeding safe levels of heavy metals.[9]

South32 wants to purchase water licenses and pay cash compensation to WaterNSW for the water they take from the catchment. This cannot possibly compensate for irreversible damage to the Special Areas and for the legacy of water loss. The water loss has been modelled for the 171 years from 2048 to 2319.[10]

Allowing this level of water loss in times of accelerating climate change is unconscionable.

Government agencies outside Planning are concerned

The NSW Government's Independent Advisory Panel for Underground Mining has said, "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."[11]

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)".[12]

WaterNSW has been clear that mining in the Special Areas causes loss of yield to the reservoirs and the swamps and water courses that charge them.[13]

Water quality

As water courses fracture due to mining induced subsidence, metals will be dissolved and leach into the water. This will lead to an increase in metals in the water courses and reservoirs. Furthermore, this increase will worsen in the 100 – 200 year period of groundwater recovery.[18]

WaterNSW in particular expressed concern about the levels of metal contamination, stating, “WaterNSW is concerned that any increase in arsenic (or other heavy metals) may have a negative effect on water quality and aquatic ecology.”[19]

Bushfire risk

Dewatering of the forest, bushland and swamps above the mining will make the area more prone to bushfire. The water catchment was one of the few unburnt areas of bushland in the 2020 fires and it needs to be protected from mining induced degradation. It is also close to the highly populated residential areas of Wollongong that are located along the Illawarra Escarpment; making the catchment more fire prone makes the escarpment more fire prone.

A legacy of water loss and contamination for future generations

It will take 100 years for groundwater levels to stabilise in Area 5 and 200 years for Area 6.[22] Thus the drawdown/dewatering impacts of the mining will remain long after we are gone.

This is a problem that we will hand down to future generations, descendants that will be more challenged by climate change, subject to more extreme weather events, longer and more severe droughts and more serious bushfire risk.

The NSW Independent Advisory Panel for Underground Mining says that, “At this stage, because there is a lack of clarity as to if and how Dendrobium Mine can be sealed, it should be assumed that surface losses from the catchment will occur over the long term and potentially in perpetuity.” [23]

The discharge water from the mining will also need to be managed and treated, perhaps in perpetuity, and this is another burden that we leave for future generations. Previous mining at Dendrobium has already burdened future generations with a legacy of water loss and contamination and this expansion will make it much worse.

I and many other individuals have had to make difficult decisions in our lives. What hope do I have for a fulfilling career in a country with increasing underemployment? Do I bring children into this world, knowing what is going to happen to it because of mining projects like this? I’ve had to rule that it would be unconscionable to have children. Once again, companies like South32 are exempt from having to consider ethical issues, while laypeople have to shoulder the burden.

Damage to valuable Aboriginal Cultural Heritage

A legacy of mining induced damage to Aboriginal Heritage sites at Dendrobium was recently revealed in the media.[24]

The Aboriginal Cultural Heritage Assessment[25] records and physical survey of only 6.91 % of the affected area, 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." [26]

Once again, South32 shows utter disregard for environmental and cultural heritage.

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.

Locking in 28 years of Greenhouse Gas Emissions, instead of decarbonising

The IPCC 2018 Special Report warned that to limit global warming to 1.5°C then, globally, by 2030, primary energy from coal needs to have reduced by a minimum of 59 %.[27] In this context, this coal mining extension proposal spanning 28 years (to 2048) should not even be considered.

The 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.[28]

The DPIE will not consider the Scope 3 emissions from the consumption of the coal, arguing that these are the responsibility of the consumer. To put the volume of emissions in context, the federal government estimates Australia's greenhouse gas emissions for the year to December 2018 as 538.2 million tonnes.[29] Thus, approval of this mine would lock in emissions over the 28-year life of the project equivalent to 48% of the 2018 annual emissions for all of Australia. Annually it would add an average of 9.3 million tonnes per annum (260.7 million tonnes over 28 years) of CO₂e to the atmosphere.[30]

This is comparable to 1.73% of Australia's current annual emissions.

Australia is a major greenhouse gas polluter: in 2016 Australia had higher emissions than 90 % of all countries; had the seventh highest emissions per capita; and even worse as an exporter of GHG emissions, ranked third after Russia & Saudi Arabia for exports of fossil fuel CO₂e potential. Coal makes up more than 80 % of this export.

The emissions from combustion of coal that Australia sells (i.e. scope-3 emissions) are very significant. Australia needs to take responsibility for them as well and rapidly transition to zero carbon steelmaking.

NSW Government locking in 28 years of destructive coal mining is irresponsible economic planning

We need to rapidly reduce greenhouse gas emissions to address global warming. One of the obvious - and appropriately ambitious, given the climate emergency - ways to decarbonise industry is to start with steel.[31]

Port Kembla has been identified as having good prospects for moving from existing fossil fuel-based steel-making to making low-emissions steel. This transition would not only retain jobs in the Illawarra, it would position Australia well in the emerging low-carbon future.

No alternative is provided to this shockingly destructive expansion which will cause permanent damage to our water catchment

There should be no mining in the Special Areas of Greater Sydney Water Catchment; this is the stated position of WaterNSW and the legislated purpose of Special Area protection.

It is outrageous that DPIE not only support this destructive mining expansion, but the Department also required no alternative mine design options to reduce the damage should an expansion proceed. Having failed to explore any alternatives, the DPIE is claiming without evidence that narrower longwalls would still cause significant damage and “would come at an unsustainable economic cost” for the mining company.[32]

The NSW government requires South32 to consider alternatives, including mining in domains for which they have existing approvals and modifying the design to “avoid key sensitive surface features, including swamps and water storage infrastructure”.[33] South32 have failed to address these imperatives and yet the Department has supported the proposal rather than uphold standards of responsible planning.

In conclusion, this expansion project is not in the public interest and it should be rejected.

REFERENCES

[1] Dendrobium Mine – Plan for the Future: Coal for Steelmaking, Groundwater Assessment for South32 – Illawarra Coal, NPM Technical Pty Ltd trading as HydroSimulations, 2019, p 101 accessed at:

<https://www.planningportal.nsw.gov.au/major-projects/project/9696>

[2] Department of Planning, Industry and Environment, Assessment Report, Dendrobium Mine Extension Project, State Significant Development SSD-8194, October 2020, (“DPIE Assessment Report” p. x, Accessed at: <https://www.ipcn.nsw.gov.au/projects/2020/10/dendrobium-extension-project-ssd-8194>

[3] https://www.south32.net/docs/default-source/all-financial-results/fy21-quarterly-reports/quarterly-report-september-2020.pdf?sfvrsn=49faff9_6

[4] Subsidence Report for Dendrobium Mine, MSEC, 2019, pp 35 – 37, accessed at:

<https://www.planningportal.nsw.gov.au/major-projects/project/9696>

[5] Ibid

[6] WaterNSW Fact Sheet – Illawarra Water Security Project, November 2019, accessed 9.11.20 at:

https://www.waternsw.com.au/__data/assets/pdf_file/0007/150757/Avon-Deep-Water-Access-Fact-Sheet-Nov-2019.pdf

- [7] DPIE Assessment Report, op cit, P. xii
- [8] 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>
- [9] <https://www.abc.net.au/news/2020-09-17/south32-mine-discharge-in-allens-creek-concerns-scientist/12670060>
- [10] DPIE Assessment Report, op cit, p88
- [11] DPIE Assessment Report, op cit, p. 68
- [12] DPIE Assessment Report, op cit, p 89
- [13] <https://www.waternsw.com.au/water-quality/catchment/mining>
- [14] <https://www.waternsw.com.au/projects/greater-sydney/illawarra-water-security-project#stay>
- [15] WaterNSW Fact Sheet – Illawarra Water Security Project, November 2019, accessed 9.11.20 at: https://www.waternsw.com.au/_data/assets/pdf_file/0007/150757/Avon-Deep-Water-Access-Fact-Sheet-Nov-2019.pdf
- [16] 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>
- [17] *ibid*
- [18] DPIE Assessment Report, op cit, p 40
- [19] 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>
- [20] Final Report of the NSW Bushfire Enquiry, p. 241, accessed at: <https://www.dpc.nsw.gov.au/publications/categories/nsw-bushfire-inquiry/>
- [21] Cowley, K.L. & K.A.Fryirs (2020) Forgotten peatlands of eastern Australia: An unaccounted carbon capture and storage system. *Science of the Total Environment*. 730 (2020) 139067. <https://doi.org/10.1016/j.scitotenv.2020.139067>
- [22] DPIE Assessment Report, op cit, p 105 - 106
- [23] Independent Advisory Panel For Underground Mining Advice Re: Dendrobium Extension Project SSD-8194 October 2020, Accessed at: <https://majorprojects.planningportal.nsw.gov.au/prweb/PRRestService/mp/01/getContent?AttachRef=SSD-8194%2120201102T055834.983%20GMT>
- [24] <https://grattan.edu.au/report/start-with-steel/>
- [25] 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>
- [26] Quote: DPIE Assessment Report (Oct 2020) page xv.
- [27] Figure SPM.3b, p14 IPCC (2018) Summary for Policymakers. In: *Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty* [Masson-Delmotte, V., P. Zhai, H.-O. Pörtner, D. Roberts, J. Skea, P.R. Shukla, A. Pirani, W. Moufouma-Okia, C. Péan, R. Pidcock, S. Connors, J.B.R. Matthews, Y. Chen, X. Zhou, M.I. Gomis, E. Lonnoy, T. Maycock, M. Tignor, and T. Waterfield (eds.)]. In Press. Accessed 03/09/2019 from: <https://www.ipcc.ch/sr15/chapter/spm/>
- [28] Environmental Assessment Part 2, Section 6, pp 150 – 151 accessed at:

<https://www.planningportal.nsw.gov.au/major-projects/project/9696>

[29] <http://www.environment.gov.au/climate-change/climate-science-data/greenhouse-gas-measurement/publications/quarterly-update-australias-nggi-dec-2018>

[30] Environmental Assessment Part 2, Section 6, pp 150 – 151, op cit

[31] DPIE Assessment Report, op cit, p x

[32] Secretary's Environmental Assessment Requirements, accessed at:

<https://majorprojects.planningportal.nsw.gov.au/prweb/PRRestService/mp/01/getContent?AttachRef=SSD-8194%2120190301T021109.930%20GMT>