



THE COLONG FOUNDATION FOR WILDERNESS LTD.

Thursday December 14th, 2017

Committee Secretary
Senate Standing Committees on Environment and Communications
PO Box 6100
Parliament House
Canberra ACT 2600

email ec.sen@aph.gov.au

Dear Sir/Madam,

Senate Inquiry - water use by the Extractive Industry

The current regulatory framework governing water use by the extractive industry is inadequate because it has failed to prevent water losses to and pollution of Sydney's drinking water catchments. Delegation of this regulatory power to the New South Wales Government has proven ineffective.

The existing safeguards have failed to prevent the loss and severe degradation of nationally endangered upland swamps on sandstone in the Sydney Region, including those within the drinking water catchments for Sydney and Wollongong. In the enclosed book (*Upland Swamps in the Sydney Region*) Dr Ann Young describes these swamps as 'the canaries above the coal mines' as loss of water in these swamps reflects a broader loss of hydrological competence in the affected catchments. In relation to this Inquiry Chapter 9 pages 83 to 97 and Chapter 11 pages 114 to 121 of this book deal with the impacts of coal mining on swamps and associated impacts on water resources.

It is a matter of national security that the water trigger has failed to adequately protect the drinking water supply catchments for Sydney. The protection of drinking water supplies for five million people is imperative and yet longwall coal mining is compromising the ability of these catchments to capture, collect and transmit drinking water to water supply infrastructure.

Longwall mining cracks surface sandstone rocks and also the rocks deep within the earth above the area where the coal seam is mined. As a result of these two cracking networks, surface water tends to flow vertically rather than horizontally as it did before mining. There is a loss of water catchment capacity to collect, store and transmit, and also water pollution associated with the cracking of surface rocks. Much of this cracking is hidden under soil and is only exposed on rock bars and rock outcrops scattered across these catchments. The reality is that all surface rocks in the undermined areas are cracked by the intensive method of coal mining known as longwall mining.

Expert evidence of catchment damage

The NSW Department of Planning and Environment in 2017 commissioned a height of cracking report for one mine, the Dendrobium mine, in the Metropolitan Special Area Catchment. This expert report and peer reviews of it is publically available [here](http://planspolicies.planning.nsw.gov.au/index.pl?action=view_job&job_id=7441). (http://planspolicies.planning.nsw.gov.au/index.pl?action=view_job&job_id=7441)

There are four important documents this inquiry should examine in regard to the height of cracking report:

[The Pells Sullivan and Meynink height of cracking report](#)

[Peer review by Emeritus Profession Jim Galvin](#)

[Peer review by Dr Col Mackie](#)

[Summary and explanation of height of cracking issues by Jim Galvin](#)

If ever there was a case for the rigorous application of the precautionary approach in regulating coal mines, it is where coal mines are having an adverse impact on Sydney's drinking water catchments.

The 'water trigger' under the *Environment Protection and Biodiversity Conservation Act 1999*, must be strengthened so that coal mining that damages or has the potential to damage drinking water supply catchments is curtailed.

This generation has inherited Sydney's water supply catchments in a pristine condition due to the foresight of our forebears. We have a duty to future generations to pass on these pristine catchments in an undamaged condition. The 'water trigger' must operate so that the damage being caused by coal mining to drinking water catchments is stopped.

The coal industry has had clear indications of catchment damage for decades and has not moderated mining practice to stop this damage. This is evidenced in detail in Ann Young's book.

Drinking water resources must take priority over short term economic and social considerations. The safeguards to prevent damage and contamination of drinking water catchments must be strengthened through the 'water trigger' to not only prevent future damage but also require existing approved mines to cease damaging drinking water supplies. The water trigger should ensure mining cease unless it is proven to not cause damage to the integrity of a drinking water catchment.

Springvale Mine - a case study in vigorous application of existing catchment protection laws

Springvale is an underground mine 15km north-west of Lithgow. It mines under Newnes State Forest, on the western edge of the Greater Blue Mountains World Heritage Area and currently extracts 5.5 million tonnes of coal per year, using longwall techniques to supply the Mount Piper power station as well as for export via the Port Kembla coal terminal.

In recent years, several other mines in the area have closed, as has the Wallerawang power station, and Springvale is now the only local source of coal for Mount Piper, and with the power station, is the largest local employer.

In 2006, the mine was instructed by the EPA to begin transferring its mine water to Wallerawang Power Station for treatment and reuse, to avoid dumping it either in the upper catchment of Sydney's drinking water (the Coxs River) or the Greater Blue Mountains World Heritage Area via streams on the Newnes Plateau.

When Wallerawang closed in November 2014, the water treatment plant was decommissioned and the environment protection licence for the mine was altered to allow the water to be discharged instead.

Springvale is now licensed to discharge 30 megalitres (million litres) of water a day from Discharge Point 9 into Sawyers Swamp Creek and thence the Cox's River, the second largest stream flowing into Warragamba Dam. This mine water comes from the coal seams being mined and the rock strata above the coal seam. The mine water is highly saline and contains heavy metals. The current discharge rate is 21.5 megalitres/day. Where the discharge meets the Coxs River, the discharge makes up the majority of flows in the river.

Springvale mine has repeatedly been found by the EPA to be in breach of its licence for exceeding limits on arsenic discharged via Discharge Point 9. Testing carried out by researchers from the Blue Mountains Conservation Society previously showed that the upper Coxs River had high levels of heavy metals including zinc, copper and manganese, 125 times more sulphate than surrounding streams and only 5% of the oxygen that fish need.

The mine sought and received approval to expand mining operations in September 2015 but because of its location within the Sydney drinking water catchment, the mine was subject to the provisions of State Environmental Planning Policy – Sydney Drinking Water Catchment 2011 (Catchment SEPP), which prohibits the granting of development consent unless the consent authority is satisfied that the proposed development will have a neutral or beneficial effect on water quality.

The environmental assessment for the expansion found that it would cause a significant increase in salinity in the swamp and creek immediately downstream and admitted that the discharge would increase the salinity of Warragamba Dam by 6%. The dam is the main water supply for Sydney.

In June 2014, the NSW EPA's comment on the environmental assessment for the Springvale extension and nearby Angus Place mines said that Centennial had failed to adequately assess the impact of the mine expansions on water quality: "This is a major concern to the EPA." The EPA described the contaminant load as a "major issue" stating that the "potential salt load alone (7,500 to 13,000 tonnes per annum)" is "extremely large for a freshwater system."

The Sydney Catchment Authority said at the time that the project should be refused consent unless a requirement was imposed that the discharged water be treated. Without this requirement, the mine would not achieve the test of having a neutral or beneficial effect on water quality in the catchment. It would be degrading the quality of water flowing into Warragamba, making it saltier, adding heavy metals to it, and contributing to toxicity of the aquatic environment.

The approval was granted in September 2015 with a condition that by July 2017, the mine significantly reduce the salinity of the water it is discharging into the Coxs River and reduce the acute toxicity of the downstream environment.

The mining company agreed to this timeline but less than two years later, asked that this interim goal be delayed by two years. The NSW Government deferred to July 2019 the interim pollution reduction goal in June this year.

The Planning Assessment Commission made it clear in granting the approval that the discharge into Sawyers Swamp Creek and the Coxs River was to be “an interim solution only” and that action must be taken to treat the water and to investigate sending it to Mount Piper power station instead.

Centennial Coal has since gained development consent for a treatment plant (in June 2017) but construction did not commence until November 2017, after the environment group 4nature had taken the matter to the NSW Court of Appeal. 4nature established that the crucial “neutral or beneficial effect test” was not properly applied.

As a result of the Court of Appeal decision the neutral or beneficial impact on water quality test for existing mining operations has been *weakened*. The NSW Government passed special legislation that overturned Court’s decision on the matter. Instead of legislation ensuring that the Springvale coal mine comply with the law that protects the quality of Sydney’s drinking water, the Government weakened that law for all existing mines in Sydney’s drinking water catchments. In effect existing levels of water pollution has been ‘grandfathered,’ allowing water pollution levels to continue indefinitely when an existing mine expands. This legislative action is perplexing as the Springvale mine will remove its pollution from the Coxs River by mid-2019. The legislation should be overridden by the ‘water trigger’ to protect drinking water quality.

Damage to swamps and surface water catchments by Springvale mine

Meanwhile it was further established in 2015 [by Pells Consulting](#) that the Springvale mine has caused significant swamp damage and that this damage will continue despite the claim in the 2014 environmental impact statement that the mining extension would be unlikely to cause such damage. In 2016 a NSW Government [independent expert monitoring panel](#) report confirmed Pells prediction of significant swamp damage by Springvale mine. Hydraulic connection has been established between swamps and streams on Newnes Plateau and Springvale mine. There are structural lineaments through which longwall mining operation passes that connect the mine area with surface hydrology. The damage to swamps is accepted by Centennial Coal to be high, but the independent expert panel believes it could be extreme.

In addition to the loss of water in upland swamps, waterfalls along the edge of Newnes Plateau have lost their flows that were once supplied by Carnes West Swamp and two Gang Gang Swamps. While these swamps were identified as nationally endangered, the waterfalls below them were not mentioned, let alone considered in the 2014 environmental impact statement for mine expansion.

Far-field impacts outside the development consent area have also been identified as likely. As a result a number of longwall panels on the western side of the mine extension area have been cancelled but mining under nationally endangered swamps currently continues despite extreme risks of damage to national heritage.

In a retrospective analysis the company involved, Centennial Coal, has identified water losses in upland swamps is associated with structural lineaments that had produced a drawdown in water levels in swamps well before coal mining actually arrived under them. In some cases the drawdown of water in swamps has occurred over a kilometre from the mining operations.

It is now apparent that much of Springvale's 21.5 million litres a day mine water discharge is associated with surface water losses on Newnes Plateau. The question is not just a matter of offset compensation for the swamps lost (\$6 million offset payments will be required so far) but that massive pollution, near-surface groundwater damage and loss of stream flows are unacceptable and very expensive environmental impacts. The \$100 million dollar treatment plant for the mine water is a reflection of the scale of costs. Other mines in the area continue to discharge without any future plan for adequate treatment. Protection of nationally endangered swamps should be required under the 'water trigger'.

In addition, the mine impacted Newnes Plateau-Ben Bullen State Forest-Wolgan Valley slopes landscape should be protected to conserve a number of very restricted plant communities that are poorly represented in existing conservation reserves, or not protected at all.

This region has ten poorly conserved vegetation communities (five of them EECs) that have substantial representation and a further five communities (one an EEC) for which the region offers lesser but significant conservation potential. It supports 42 threatened plants species and 42 threatened animal species, including two critically endangered animals that are restricted to the swamps. In addition to the six EECs there are ten other rare plant communities. The reserve proposal has very high plant diversity with Newnes State Forest having 913 native plant species recorded.

Newnes State Forest contains two areas of NPWS identified wilderness and the best assemblage of internationally significant platey pagodas (sandstone rock pinnacle formations) in the world. In May 2014 the Office of Environment and Heritage found the region to be of very high value for biodiversity conservation (Map 31, page 111).

There are high biodiversity woodlands found on soils developed on the Permian Coal Measures that sit below the Triassic sandstones of Newnes Plateau. These woodlands were originally mapped as Tablelands Grassy Woodlands by Doug Benson and David Keith for the National Herbarium in 1990. The importance of these high biodiversity grassy woodlands is further enhanced by its association with an internationally significant pagoda landscape.

Culturally the region is extremely popular with walkers, botanists and ornithologists due to its easy access and variety. It is extremely threatened by coal mining making the area a priority for further consideration of protection under the 'water trigger'.

In relation to the shrub swamp EECs, the OEH Capertee Subregional Assessment states the following:

The Newnes Plateau is important for the conservation of upland swamps and their dependent flora and fauna in NSW...The entire extent of the Newnes Plateau Shrub Swamp EEC is 650 ha of which only 160 ha is protected in Blue Mountains and Wollemi National Parks...These swamps are characteristically groundwater dependent ecosystems and support species of groundwater dependent flora and fauna, including several threatened species.

Newnes Plateau Hanging Swamps and their dependent biota are similarly groundwater dependent. No research or data has been obtained in relation to longwall mining under hanging swamps. Hanging swamps should be assumed to suffer extreme impacts by longwall mining until it is proven otherwise. In the meantime, the 'water trigger' should protect these swamps.

Thank you for the opportunity to comment.

Yours sincerely,

Keith Muir
Director
The Colong Foundation for Wilderness Ltd

References:

Benson, D. and Smith, J. (2015) Protecting biodiversity values in response to long-term impacts: additional areas recommended for inclusion in the Greater Blue Mountains World Heritage Area, in The Greater Blue Mountains World Heritage Area Advisory Committee (2015), *Values for a New Generation*, the Committee, Katoomba.

Brown, I. (2016) *The Gardens of Stone Reserve proposal, towards national heritage*, the Colong Foundation for Wilderness Ltd, Sydney.

Office of Environment and Heritage, May 2014, *Capertee Subregional Assessment – identifying priority areas for biodiversity conservation and investment in the Capertee subregion and Newnes Plateau – Technical Report*, Sydney, OEH.

Washington, H. G. and Wray, R. A. L., (2011), The geoheritage and geomorphology of the sandstone pagodas of the North-western Blue Mountains Region (NSW). *Proceedings of the Linnean Society of New South Wales*, 132, 131-143.