

A personal submission to the PAC

Asking that the Hume Coal Mine DA and EIS be rejected as the mine does not meet the objectives of sustainable ecological development

Summary

My submission objects to the proposed Hume Coal mine on the grounds that the EIS with regard to groundwater is deficient in detail, damaging in the extent of the mine's actual draw down of water, and so heroic in its assumptions that the DA should be refused. I also wish the Department of Planning and the PAC to reject the mine on the grounds that it proposes to use an unacceptable mining practice, fails to adequately protect the environment of the existing aquifer and exposes the community at large to unacceptable cumulative risk.

The EIS is deficient in detail and provides inadequate data

The EIS says that 93 bores owned by 71 different landholders lie within the proposed mining lease. The EIS says all of these bores will be adversely affected and that the present water table will be lowered by an average of 40 metres over 40 years. The EIS makes no mention of the effects of the draw down of the water table on bores in the larger agricultural area surrounding the mine that will also suffer draw down of the water table. There are literally hundreds if not thousands of additional bores that are not within the lease but are affected by the lease.

The water table surrounding the lease will be adversely impacted by Hume Coal's activities as water flows down the pressure gradient to the area of least pressure - the mine itself. I consider it unacceptable and deficient in the extreme that not only are the 93 bores within the lease not bench marked but nor are the hundreds of adjacent bores. Until all of the affected bores are bench marked with regard to pressure, the present levels of flow and the quality of water, it will be impossible for any landholder to seek remedy (even if there ever were any remedy) to the damage that will be done by Hume Coal. It is not good enough for Hume Coal to simply assert that they will make good as, without bench marks agreed by all parties, the offer of making good is illusory. Hume is both assuming and asserting that adaptive management and if all else fails some financial compensation will be acceptable. I say that this is not acceptable.

The failure to bench mark all bores is a major deficiency in the EIS. The accompanying failure to properly address so called remedial measures serves to illustrate the fact that an aquifer, once damaged (and polluted in this case) can never be remedied. To talk of compensating farmers who have lost water by trucking in water is simply ludicrous and beggars belief..

The damaging extent of the actual amount of the draw down.

I own a bore within 1 km of the Norther boundary of the lease. My bore is critical to the operation of my farm and, even more importantly, I am reliant on the existing water table. When my water flows down into the depressured area of the mine my bore and my water table will both be lowered.

My crops of lucerne, hay and cattle rely on rain water from dams, surface water (The Medway Rivulet) and ground water. Taking my water away by lowering the water table of the whole region will be very destructive to my farm and it is simply just not good enough for the EIS to be so offhand about water.

The Hawkesbury sandstone is a saturated aquifer with considerable lateral flows. So high in fact that the only pump test available shows the production of half a Giga Litre (GL) in one week. This very high flow proves the Southern Highlands is blessed with a saturated aquifer with considerable flows. In my lay man terms my understanding, from careful study of the available documents, is that the water is kept in the aquifer by the coal seam underneath the aquifer and there are no special layers of strata impermeable to water above the coal to stop the aquifer draining into the mine once the coal beneath the aquifer has been removed as asserted by Hume Coal. Yet Hume Coal's analysis of its total use of water and the diagrams made available seem to assert that such impermeable layers of strata exist when they actually do not.

Hence when the coal is mined, water will flow into the void and find different downwards and lateral pathway. Hume cannot mine underwater and so they will have to keep the mine dry by pumping. This process of pumping the mine dry will lower the water table which Hume concedes but Hume also talks of making this good. This is simply not possible. The Hawkesbury sandstone is not a fault free geological structure. The structure has numerous faults and intrusions and down at 100 to 150 m depth the hydraulic pressure is high (that is why my bore pumps out 11 litres a second and others run at hundreds of litres a second). In my view the mine will be a very wet mine even if it is heavily pumped out. I would like Hume Coal to be directed to recalculate their water usage more accurately so as to include keeping the mine pumped dry and without the heroic assumptions made as to so called impermeable water strata just above the mine workings for which I have seen no evidence at all. This mine will in fact leak like sieve and runs in real danger of flooding very rapidly if the mine workings expose a major fault in the underground formations.

I also simply cannot accept the very low figure of 2 GL that Hume uses with regard to the total amount of water it proposes to take annually across its entire operation. Other estimates mention a water take well in excess of 10 to 12 Giga Litres a year. What is needed is an independent third party assessment as all present estimates are too widely divergent, the experts do not agree and even a layman like myself has to question the Coffey water model in the EIS.

Hume/Coffey in the EIS say there are impermeable strata across the mining area which will keep the water in the aquifer once the coal has been mined from underneath the aquifer. Hence they are able to minimise a very important issue. There is, however, no evidence of any such strata in the EIS and I have seen none elsewhere. Yes there is some impermeable strata in the Southern Highlands region as a whole but this is known to be mainly well north of the mining area and well outside the lease. In the EIS Coffey seem to assert that this impermeable geological feature extends across the mining lease but I am very concerned that this is an assertion based on a highly misleading assumption. The assumption is that there is an impermeable layer above the mine that will keep water in the aquifer and out of the mine. To my mind this assumption is self-serving nonsense. Indeed a simple review of the drill core reports that I have seen show that there is no impermeable interburden across the mining area. I have my own bore report and I have seen reports for Berrima and Belanglo and these show no such strata.

Coffey should not make assumptions and base key issues in the EIS on incomplete and perhaps misleading information on a so called impermeable interburden without proving, beyond any doubt, the existence of this reputed interburden across the mining lease. It is a simple enough matter to

prove or disprove as all that needs to happen is for Department of Planning experts to inspect the core samples that are available from both earlier drilling in the area and from Hume's own drilling.

I request that the EIS be rejected on the grounds that incomplete knowledge and incorrect assumptions as to the geology of the strata above the mine seem to have led to an incorrect analysis by the EIS as to the true amount of water that will be used by the mine and that these assumptions also place into question the rapidity and extent of the true dewatering that will occur because of the mine.

Unacceptable mining practice

Hume Coal propose to dispose of mining reject material, coal wash wastewater and other noxious detritus from the mine's operations by placing this waste material back underground. They say they will do this by forming a paste de-acidified by the introduction of 1% lime and then pumping this slurry into voids created as the mine workings progress underground.

My point is that it is totally unacceptable to place a noxious sludge right underneath a pristine and productive aquifer when it is clear that there is no physical separation between the clean water in the aquifer and the polluted water that is to be pumped back down the mine. At the present time I can drink my bore water it is so clean. Hume will need to use more and more water to transport their paste, slurry and sludge back down the mine. Hume say there will be in the order of one million tons of mine waste annually at full production. The associated water needed to create the very liquid paste needed to transport this waste back underground every year will be in the order of 3,000,000,000+ litres per annum. (This is an approximation which uses 3 litres of water for each kilogramme of waste. This is very conservative as a stiff mix of paste is unworkable and cannot be pumped. I have to approximate as Hume's EIS is deficient in its description of this proposed use of water.) I also have to observe that if 3GL of water is needed to pump just the waste back down into the mine that I then have serious problems reconciling this with Hume's stated total annual usage of 2GL. Maybe there is an explanation for this somewhere else in the EIS but I have not been able to make a satisfactory reconciliation as to why Hume's total water use is so low.

The paste being pumped back underground is also not benign as it is polluted and will contain magnetite, coal fines, surfactants and many other chemicals. This is not made clear by Hume Coal. Many mining chemicals are noxious and are banned from water catchments. This mine is in a water catchment which people drink. Hume should be compelled to fully treat any water it proposes to place underground and or discharge onto the surface when underground placement fails for whatever reason.

Unacceptable failure to protect the existing aquifer

It was asked at a mine information evening run by the department of planning how this proposed intermingling of good and polluted water could possibly be allowed. We were told in reply that placing wet mine waste underground was quite normal and quite safe and that it has been done worldwide. I can accept that with regard to deep mines that are not near an aquifer. But, in the Southern Highlands the aquifer and the coal seams are close to the surface and in close physical contact. Nowhere in the world, using Google, have I been able to find a mine where a paste or slurry is being reinjected into the voids in a coal seam which lies directly beneath and is in direct contact with an aquifer.

This proposed method of operation seems to me to be based on an out of sight out of mind approach to disposing of mine waste and it creates the extremely high risk not only of clean and waste water intermingling, but also the very high risk of a plume of noxious polluted water travelling over time throughout a pristine aquifer. This method of waste disposal should not be permitted as it is intrinsically unsafe and utterly incapable of being remedied even by the most skilled adaptive management. This method of operation is so risky it should never be allowed in the geology of the Southern Highlands

Unacceptable cumulative risk

Farmers and landholders think long term. My neighbours and I do not feel that we “own” our land. In many ways we believe we are custodians of the land for future generations and we value and care for the properties we are fortunate to have. Thus, and while we fully comprehend the need of modern society for coal (base load power is essential) providing coal for the manufacture of steel in South Korea does not weigh very heavily in a scale where the counter balance is that this steel is produced by damaging an ancient water table and a pristine aquifer. Coal is available elsewhere in Australia from existing mines that are already underutilised. We do not need yet another highly risky, low benefit and very expensive mine in a closely settled agricultural community and tourist region in the Sydney water catchment.

Unsustainable development

There are well established principles relating to ecologically sustainable development. These are the precautionary principle; intergenerational equity; conservation of biological diversity and ecological integrity; and improved valuation, pricing and incentive mechanisms (meaning the ‘polluter pays’).

I believe the proposed coal mine offends all four principles of sustainable ecological development in too many ways. The user, Hume Coal, is not paying for its actions as the burden of cost falls and has already fallen heavily on the local community and landholders. Intergenerational equity is also offended as this mine is not necessary whereas a pristine aquifer is an intergenerational asset.

Placing mine waste back underground, polluting millions of gallons of water annually, lowering the water table over hundreds of square kilometres, damaging bores for up to 75 years and all of this for a derisory amount of royalty (less than \$6m a year) is in my view not reasonable and the arguments put forward by the proponents are not sustainable.

This Development Application by Hume offends the principles of sustainable ecological development in so many ways that I ask for the DA to be rejected.

If the view that prevails is that this mine should proceed regardless then, before planning consent is given, I ask that the DA be sent back to the Proponent requiring the prior satisfaction of a specific list of prior conditions including the following:

- that the placement of mine waste back underground using polluted water as the transport medium to form a wet paste is not permitted;
- that bench marks must be established for all bores within the actual proposed mining lease and within 5km of the mine lease boundary;
- that the aquifer and surface streams and rivers must never be polluted in any way and that the mine must provide a water treatment plant

- that the proponent must accurately and fully describe their total take of water and how much of this take will then be polluted; and
- that the heroic assumptions of impermeable strata just above the coal measures must be proven to exist, across the mining lease, and not simply asserted and used as the basis for very questionable assumptions.

Thank you for your attention.

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26 May 2017