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Submission of Objection
Ulan Mine Modification 4 (08_0184)

Hunter Environment Lobby Inc. is a regional community-based environmental organization that has been active for over 20 years on the issues of environmental degradation, species and habitat loss, and climate change.

We cannot support the ongoing incremental creep of coal minig expansion in the Western Coalfields area of the Hunter Region. The regional cumulative environmental impacts of these very large extractive operations are unsustainable and are not adequately assessed as or recognised as an expensive legacy for future generations.

We lodge a strong objection to the proposed extension of longwall mining at Ulan Mine (Mod 4) on the headwaters of the Goulburn River because the cumulative impacts of mining on the river are too great and have not been adequately assessed, monitored or reported on.

1. **Poor cumulative assessment of regional water impacts**

The groundwater assessment for this proposed next increase in coal extraction in the Goulburn River catchment has not included the cumulative drawdown of groundwater caused by the Moolarben Mine or the Wilpinjong Mine.

The groundwater assessment for the Ulan Continuation Project (PA 08_0184), approved in 2010, predicted a drawdown over a 20 km radius for more than 200 years.

The continued, incremental loss of baseflows to the river system is of critical concern for the long-term health and viability of the river system, particularly the Upper Goulburn Water Source.

This water source has been assessed as being at risk.

Baseflows provided by groundwater are critical to the Goulburn River during dry and extremely dry climatic conditions. The loss of connected alluvial aquifers from past opencut operations and the continuing interception from current approvals across three mining operations is a critical issue.

The significance of Triassic aquifers and springs for providing base flows to the Upper Goulburn cannot be ignored.

The monitoring and reporting on the impacts on base flows is very poor.

2. **Impacts of mining on the Goulburn River**

The substantial loss of intercepted surface water and groundwater from the catchment of the Goulburn River across the three mines operating in the headwaters has caused the river to become highly dependent on water discharges from the Ulan Mine.

Discharges from Wilpinjong Mine and Moolarben Mine are also a factor.

During periods of low rainfall and low flow, the river is virtually a regulated river system because of the volume of water held on the mine sites.

The cease of mine discharge from Ulan Mine in December 2017 had a critical impact on low flows to the river. While storm events and groundwater inflows caused flows in surrounding small creeks and tributaries, the main river was dry. This impacted downstream water users and the river ecology.

Curra Creek continued to flow during this time. Mod 4 is predicted to impact on flows in this creek system. The subsidence impact assessmen predicts that Curra Creek may experience a reduction in retention times after periods of rainfall.

The implications of this flow loss during dry periods has not been assessed.

3. **Environmental flow rules**

Currently mine water is discharged into the river system at the convenience of the mining operations. There is no requirement in the management of mine water discharge to consider the ecological needs of the river, other than water quality.

River flow variability is also an essential factor for the health of a river system.

The interception of surface and groundwater flows to the river has impacted on the natural flow regime of the river system, particularly in dry periods of low flow.

Hunter Environment Lobby recommends that mine water discharge from Ulan Mine is managed under a legal set of environmental flow rules included in the conditions of approval, in the event that Mod 4 is approved.

These rules should be established to reinstate a natural flow regime in the Goulburn River.

4. Impacts on The Drip

The assessment report for Mod 4 states that no adverse impacts at The Drip have been observed. This is based on monitoring that commenced in 2016.

The referenced reporting in the 2016 Annual Environmental Management Report (AEMR) is misleading and is repeated almost verbatim in the 2017 AEMR.

5.10.8 The Drip Monitoring Program[1]

Samples were collected from the drip by funnelling dripping water into a sample container. Samples were analysed at the laboratory for Anions, Cations, PH, EC and TSS. The analysis indicates the water source within the drip is distinct from Triassic ground water in the region.

VWP PZ36 was installed 1.3 km north of The Drip in 2016 for the purpose of assessing groundwater gradients and trends around The Drip. The time-series data from the VWP is presented in Figure 5.24. During construction, the Jurassic sediments intersected by the shallowest sensor located 18 m below the surface, were unsaturated and results indicated that they have remained unsaturated during 2016. The Triassic sediments extend to approximately 130 m below the surface with results indicating a downward gradient within the Triassic sediments. The shallowest Triassic sensor at a depth of 50 mbgl, recorded a piezometric surface at around 410 mAHD whilst the deepest sensor at 122 mbgl recorded a piezometric surface at around 389 mAHD. Groundwater levels for all sensors within the Triassic sediments remained relatively stable throughout the 2016 monitoring period. At 243 mbgl only one sensor appears to be operational that is located within the Permian coal measures and intersects the Ulan Seam. Piezometric levels appear to have settles with the piezometer by April 2016. The Permian water level decreased by approximately 2m by December 2016. Water levels within the Triassic sediments were stable. Overall the results indicate a degree of hydraulic separation, known as aquitard, between the Permian coal measures and the Triassic sediments.

Key issues with this monitoring report is that:

- The water chemistry testing from water at The Drip is characteristic of water reporting from an intermediate to regional Triassic water source influenced by the nearby basalt geology.
- The hydrochemistry of groundwater sources in PZ36 were not analysed
- The groundwater levels in the Triassic sediments monitored in PZ36/PZ29 (VW) appear to have declined by around 1 m since installation in 2016 though the scale of the hydrograph makes it difficult to determine

The fact that Curra Creek is predicted to be subject to subsidence impacts indicates that aquifers reporting to The Drip may also be impacted.

Hunter Environment Lobby considers that more rigorous monitoring and reporting on mining impacts on ground water systems associated with The Drip is required.

We do not support the conclusion that Mod 4 will not impact on The Drip, based on the information provided.

[1]Ulan Coal Mines Limited, 2016a, Annual Review. Environmental Management Strategy.

5. Mining under Durridgere State Conservation Area (SCA)

Hunter Environment Lobby does no support the proposal to extend longwall panels 30, 31, 32 and 33 plus widen 33 under the Durridgere SCA.

The proposal is to impact an additional 2.7 ha of surface area to the 3.61 ha already approved. This will result in 6.31 ha of surface disturbance and an area of 87 ha of subsidence impact.

Other than vegetation assessment, there is no reporting on other habitat features in the area of impact such as rocky outcrops, drainage lines, gullies or tree hollows. These features provide important habitat for the range of threatened species recorded in the SCA.

Some deep rooted Eucalypt species could be impacted by groundwater drawdown over the area during drought. The assessment also refers to subsidence

Figure 3 in the ecological assessment is virtually impossible to read and interpret.[2]

The field survey assessment was conducted over 1 week in September 2017, with an additional day in October 2017. This is not a rigorous survey effort.

The subsidence assessment (App D) notes that subsidence cracks have been observed to destabilize the root systems of some trees at Ulan Mine contributing to them falling over in high winds. There is also the issue of tree root shearing or damage to tap roots of large trees.[3]

While these issues were not expected to be a significant issue in the SCA they were not considered in the ecological assessment.

We are concerned that Mod 4 was assessed using the 'envelope approach'.[4] This approach will allow future changes to longwall layouts and infrastructure locations to be undertaken without the need for further assessment or approval.

This is not acceptable in an area set aside for environmental protection.

6. Climate Change implications of increased coal mining

Hunter Environment Lobby considers that the proposal to extract a further 6.4 million tonnes of coal has not been assessed in regard to the critical circumstances now being experienced globally from increased carbon emissions.

The cost to society and the environment of increasingly extreme and dangerous weather events must be taken into account.

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[2] Eco Logical Australia, 2018. Appendix G. Ecological impact assessment, p 13
[3] SCT Operations, 2018. Appendix D. Subsidence assessment, p 21
[4] Eco Logical Australia, 2018. Environmental Assessment Mod 4, p 17

Hunter Environment Lobby fully supports the 'do nothing' approach.[5] The sterilization of 6.4 Mt ROM coal is the best outcome because it would result in no further subsidence impacts, drawdown of groundwater, loss of base flows to the Goulburn River, threats to The Drip, disturbance in the Durridgere SCA or increased release of carbon into the atmosphere than that already approved from Ulan Mine (which is substantial).

We consider that Glencore must take its global corporate responsibilities more seriously and start to invest in job creation and economic stimulus from sustainable industries that will not further impact on the global carbon footprint.

Yours sincerely

Jan Davis
President

[5] Ibid p 22