



Supporting Sustainable Water Use in the Namoi Catchment

Namoi Water

The preservation of sustainable resources for agriculture – including water – must be absolute in addressing mining exploration or operational licence applications.



Introduction

Namoi Water is the peak industry group for irrigated agriculture in the Peel, Upper and Lower Namoi valleys in the North West of NSW. We are non-profit non-political organization supporting our members to achieve a sustainable irrigation industry that meets the environmental, economic and social needs of our local communities. Namoi Water as the peak water entitlement holder group represents approximately 1000 members. Entitlement holders within the catchment vary in size from single employee operations to businesses employing around seventy employees.

The agricultural activities range from grains and pulses such as sorghum, wheat, soybeans, peanuts, corn, lucerne, vegetables and cotton, to water used for intensive animal production and a variety of niche market food products. The direct contribution to our economy is \$800 million per annum. We are one of the most experienced valleys in terms of water reform, having entered reform in NSW several years prior to other valleys. The Namoi has pioneered the NSW industry response to water reform and we apply this experience to the current challenges of mining expansion in our area.



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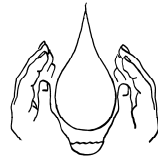
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The Namoi Catchment Water study is currently collating data from government, mining and CSG companies to produce a regional model to assess the risks of coal mining and coal seam gas activities in our catchment on water resources. The models will be run using a number of scenarios (5 – in this project) to assess impact. The phase II report has highlighted there are data gaps and these are highlighted in our submission. Data Gaps are a critical flaw in the development of this industry in any region to assess impact.

Namoi Water is committed to continue working towards better information exchange between our industries, and lobby government for appropriate safeguards to consider long term and accumulative impacts prior to approval being provided. Our aim is to seek regulation to protect the water resources our industry is dependent upon and upon which the food and fibre this State needs now and for the future. If the water resources cannot be safeguarded then this industry must not be allowed develop in NSW. There should be an immediate moratorium on any further licences or approvals, until the system is reformed. The Namoi Water study and scenario model runs must be completed prior to granting licences.

It is vitally important that Aston Resources identify and investigate any potential detrimental environmental impacts resulting from their planned operations in and around Leards Forest. Before the project is approved any potential risks to the water resource from their practices must be identified and reduced or removed prior to commencement of mining operation.

Namoi Water contracted a suitably qualified Hydro geologist to peer review the Groundwater Impact Assessment produced by Australian Groundwater & Environmental Consultants Pty Ltd for Aston Resources proposed development of the Maules Creek Coal Mine.



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Discussion

Water quantity will be affected by reduction in Back Creek flows and its effect on recharging Maules Creek alluvial aquifer, reduced surface flows and drainage leading to lower recharge rates across the whole of the Back Creek catchment. Zone 11 irrigators rely on recharge to the zone to maintain access to the resource, if recharge levels decline then it is likely that reliability of access will be reduced accordingly.

Loss of catchment (14% will drain to pit) of Back Creek will affect water users who rely directly on Back Creek as a water supply for irrigation, from the supplied evidence in the EA the company does not appear to mitigate these impacts.

The level of drawdown of standing water levels around the pit and the degree of connectivity between the shallow surface aquifers and the Permian coal measures will determine how much water is drawn from the Maules Creek aquifer into the pit. The groundwater modelling shows a maximum of 28 ML per year flowing out of Maules Creek Alluvial Aquifer into the coal mine.

Peer Reviewer Brian Rask has determined that the Model developed for groundwater movement has been poorly calibrated, not validated and that it is not suitable for predictive modelling due to questions around the assumptions used. AGE should have had access to five years worth of data from the Boggabri Coal Mine to calibrate the groundwater model, as no evidence is shown to whether this was carried out, assumptions about the accuracy of the model and its predictive ability or lack of will be made.

'Figures are provided that depict the zone of impact or cone of depression estimated with the proposed mine plan. The zone of impacts is directly influenced/constrained by the alluvial system in all predictive simulations, including the cumulative impact simulations. Therefore this interaction is of direct importance to the impact assessment. As previously stated, it has not been demonstrated that the model replicates reality in depicting this relationship or that it is even conservative.' (Rask 2011)

The transmissivity calculations are confusing. Figure 8 shows high readings along Maules Creek while significantly lower values are shown for Middle and Horsearm Creeks. If the transmissivity numbers are correct for Maules Creek it is possible that significantly more water may be flowing from the alluvial aquifer into the draining Permian coal strata than what is calculated. No pumping and drawdown testing has been carried out at this interface and the modelling of flows should be discounted due to the lack of transient calibration of the groundwater model.



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Irrigators are required to measure all groundwater pumped on their property and must be licenced to do so and pay for the right to hold a licence. They are then required to pay charges for all usage of water. Groundwater irrigators in Zones 4,5 & 11 located around the Leard State Forest and the proposed mine site are currently operating under a Water Sharing Plan.

The present arrangement of Achieving Sustainable Groundwater Entitlements involves irrigators incurring graduated reductions in licence capacity to allow groundwater reserves to reach equilibrium between extraction and recharge. Any impacts which remove groundwater from these alluvial aquifers or affect the recharge will reduce the ability of these systems to achieve sustainability. This would lead to irrigator licences being reduced further to provide the environmental requirements, rather than the extractive industry being held accountable for their impact.

Boggabri Coal who's EA has still not been deemed acceptable have not attempted to measure inflows into the mining pit to ultimately determine their water usage from the groundwater. It is essential that Aston Resources be required as part of its development consent to measure pit inflows and determine groundwater removal volumes as suggested by AGE in the Groundwater Impact Assessment.

There is no requirement for the company to measure inflows to the pit, when taking into account the historical of the calculation of sustainable yields, our members find this lack of accounting unacceptable. As per other examples in mining areas, the physical effects of blasting affects the structures of the aquifers and may reduce the transmissivity of Zones 11, 4 and 5. The shockwaves combined with effects of increased drawdown due to mining may mean alluvial aquifers are more vulnerable to collapse reducing their connectivity and transmissivity as well as ultimately their storage volume.

The groundwater review mentions that unused water from the high security licence retained by Aston Resources will provide benefits to the environment and to general security surface water users. We believe that Aston Resource should be required as part of the development consent to return their high security licences to the environment. We are concerned that there is no requirement for the company to measure the inflows to the pit. It is our belief that this must be an essential part of any consent.



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Concluding Statement

Over the last two decades agriculture has felt enormous pain and undergone extraordinary regulatory reform with regard to water resources and effective water use. To consider that the NSW Government would allow such large scale developments like this application, with such minimal construction of water regulation specifically applicable to these projects. When there is a depth of scientific evidence and understanding which leads directly to establishing environmental detriment as a result of the mining on this scale. It is prudent that the Government reform is a priority prior to any applications like this are approved. Meaningful and extensive community consultation is essential to ensure that all stakeholder interests are properly protected.