

Major Development Assessment,
Department of Planning
GPO BOX 39, SYDNEY NSW 2001

29 April 2009

**Re: Moolarben CM Stage 2 - No: 08_0135
& Modification Stage 1 - No: 05_0117 MOD 3**

I would like to lodge an objection to Moolarben CM Stage 2 - No: 08_0135 & Modification Stage 1 - No: 05_0117 MOD 3 and request the opportunity to address any future enquiry or assessment panel.

The further expansion of the existing coal mine operations in the area will result in significant cumulative environmental, cultural and social impacts on this catchment and community. It will place additional unacceptable pressure on a landscape and water system already stressed from past mining practises.

The Moolarben Coal Mine (MCM) should be required to provide significant offsets and long term protective measures around important natural and cultural features that are valued by society.

Recommendation 1

The culturally and scenically significant Goulburn River Drip and Corner Gorges (which includes the Brett Whiteley mural) are fully protected from the impacts of coal mining by the addition of this section of the river corridor and adjacent escarpments into the Goulburn River National Park. This is the best way that this iconic landscape of national significance is safeguarded for future generations. (This includes the crown land DP 759759 Lot 45 in total and northern section of DP 755439 Lot 30 Parish Lennox County Bligh)

UNSUSTAINABLE MINING OF GROUNDWATER

The Goulburn River Gorges and surrounding landscape is rich in groundwater. The river's relationship and connectivity with the surrounding aquifer system is complex and poorly understood. Groundwater levels within the Permian and Triassic have a strong downward gradient and flow towards the northeast echoing the surface riverine corridor. The groundwater discharges where aquifers intersect with the ground surface and provides important base flow to the river and creeks; this is visible in the many spring fed drips, seeps and flows found along the river. The sandy bed of the river acts as a slow sand filter and alluvial aquifer. The deeper Permian groundwater most probably discharges further downriver where Permian sediments are exposed, for example in the deeply incised valleys of the Goulburn River National Park and further down the valley around Wollar and Bylong. Temporal and spatial factors influence the behaviour of groundwater flows and understanding this system

and its relationship to the river would require an extensive investigation over many years.

The MCM groundwater study does not adequately assess the long term effects of mining on this water system. Subsidence and dewatering of Underground Mine 4 will crack and depressurise the water rich zone around the Goulburn River and permanently alter the structure and connectivity of this water system. MCM groundwater modelling sets the post mining recovery at 100 years and assumes the climate will not change in this period. This is a high risk and unacceptable strategy that ignores the long term effects of an extensively depleted groundwater system on riparian ecosystems combined with lower or infrequent rainfall. Moist riparian vegetation differs greatly to the drier communities set back from watercourses and grow there for a reason. Less than a metre drop in groundwater over a prolonged or dry period would inflict severe water stress on these ecosystems.

MCM plan to install an extensive production and dewatering bore field (13 supply bores) across EL 6288 and straddling the Goulburn River Gorges (M5,M6 & M7 - PLAN 31). The neighbouring Ulan Coal Mine (UCML) predicts an escalating water make from its long wall mining reaching over 18ML/day by 2011. The scale of this water extraction represents unsustainable mining of these aquifers and places unacceptable pressure on the water resources of this scenically, culturally and nationally significant landscape.

The National Water Commission policy on sustainable management of groundwater states: (<http://www.nwc.gov.au/www/html/180-sustainable-management.asp>);

'Groundwater is not an infinite resource, its connectivity with surface water resources means that care must be taken to ensure that both groundwater and surface water supplies are not unsustainably 'mined...

To guarantee groundwater resources for the future, we need to ensure that we do not extract groundwater faster than it can be replenished...

The NWI defines environmentally sustainable level of extraction as: the level of water extraction from a particular system which, if exceeded would compromise key environmental assets, or ecosystem functions and the productive base of the resource'.

The 100 year recovery period considered in the MCM groundwater modelling is ecologically unacceptable and equates to the unsustainable mining of irreplaceable water resources in a climatically uncertain future.

Recommendation 2 & 3

- **No production bore field is permitted within at least 2 kms of the Goulburn River Drip and Corner Gorges.**
- **Water collection and extraction for mine use should not exceed the permitted harvestable rights for surface water runoff (i.e. 10% of runoff yield) If inadequate water is available, MCM should adjust their coal production accordingly.**

INADEQUATE DATA

The MCM Environmental Assessment Report is a flawed document that bases many of its predictions and conclusions on inadequate data and assumptions.

The MCM Groundwater Assessment (GWA -Vol3 App5) predicts that the groundwater at point SP49 (Imrie House Bore) will experience a 5m drop in level by 2039, while the adjacent Goulburn River and nearby soaks and springs will experience 'no impact'? (Table 7.2) even though '*groundwater derived from the Triassic is believed to be the main baseflow contributor to the Goulburn River*' p.37

With very little evidence MCM assumes that The Drip is fed only by perched Triassic aquifers recharged from localised infiltration of rainfall concluding; '*Hence groundwater in the upper Triassic probably does not have a significant influence on a regional scale, and only contributes to more localised drainages*' p.37. This is an over simplification of a complex and dynamic system. This iconic permanently dripping sandstone feature sits at 380-390mAHD, a height that suggests a possible connection with the Triassic groundwater system and a less ephemeral water source than claimed by MCM. '*Groundwater contours for the Triassic, Figure 3.9, show groundwater levels within the upper and lower Triassic to typically range between 380mAHD and 400mAHD with the groundwater flow direction generally towards the Goulburn River*' p.29

The GWA report claim that;

*'This (Triassic groundwater) contribution **must originate predominantly from the northern side of the river**, as the Triassic is largely unsaturated to the south'* p.37
Is an extrapolation based on insufficient data.

The GWA states;

'significant impacts to Triassic groundwater levels have only occurred since Ulan Coal Mine increased the width of their long wall panels to 450m'... p.36

This with the following statement is misleading and ignores the fact that UCML had collected no solid data on the behaviour of the Triassic aquifers before and during the mining of previous long walls.

'Ulan Coal Mine monitoring data indicate that the dewatering of the Ulan Seam and the overlying Permian coal measures had negligible impacts on groundwater levels in the Triassic sediments up to the end of 2006'. p.38 Vol3 App5

The MCM EA refers incorrectly to the Goulburn River and Drip Gorge as a '*significantly altered system that is no longer representative of the stream condition that formerly existed*' (p.51 Vol4 A6A). While the upstream Goulburn River diversion channel (adjacent to UCML) has been significantly modified and degraded by mining, the spectacular downstream section is a highly valued landscape and should be classified accordingly.

CONTINGENCY RESPONSE PLANS

MCMs suggested contingency response plans to predicted and '*unforeseen adverse impacts*' are disappointing and not supported by adequate baseline data. It is essential that the community has confidence with the monitoring criteria underlying the conditions of consent and protection of the catchment and water resources.

The trigger for a response to groundwater states;

*'In the event that groundwater level drawdowns exceed predicted drawdowns by 20% or more for any consecutive three month period'*p.100

Three months is too long a period before a review is carried out and any assessment should be by an independent hydrologist. The background data collected so far on landowners bores and natural springs occurred during the depths of the 2005/2006 drought. The monitoring of groundwater census points '*on at least a six monthly basis*' has not occurred (p. 13 App D Groundwater MP) and the baseline data collected does not fully represent the hydrogeological environment. There are also mistakes for example in the collar height of the private bore SP49 (shown incorrectly on all MCM Tables). While the claim that the upper Wilpinjong Creek on Lot 15 (L. Green) is dry (p.79 Vol 3 App5) is puzzling as this area is named after its 'running springs' that has never been known to dry out (*pers comms A. Heslip*)

Another discrepancy is the baseline for salinity. The Surface Water Management Strategy (Vol 4 App 6A p. 17) states that the conductivity level of monitoring point SW1 is about 780 TS/cm ($\mu\text{s/cm}$ or mg/l?). This is 20% (or 70% if mg/L) higher than results from water sampling of the same area analysed by DWE laboratory between 2005-2008 (average 600-700 $\mu\text{S/cm}$ (Department of Water and Energy – regional Assessment of Aquatic health: Goulburn River @ Gleniston 21010017 see attached Graph). The MCM report should also have acknowledged that UCML discharged saline water prior to 2005 (pre- reverse osmosis plant) and on a few occasions during 2006 and that this would have anomalously raised the EC readings of the river water.

Using a 50% increase in salinity for mine water inflows or dewatering discharge as the trigger point is unacceptable. This would push the possible levels for the Triassic groundwater at SW1 to 1170 $\mu\text{s/cm}$, which is well over the ANZECC (1992) recommended upland and drinking water levels and allows the pollution of an drinking quality water resource. The Triassic groundwater salinity levels should not be allowed to exceed 800 $\mu\text{s/cm}$.

Recommendations 4 & 5

- **Representative monitoring sites and baseline data are established along with appropriate trigger levels and contingency response plans that are based on extensive scientific assessments and have the confidence of affected landowners and community.**
- **Appropriately qualified independent consultants should be appointed to monitor and interpret the cumulative impacts of all mining operations affecting this area**

DIVERSION OF MURRAGAMBA AND EASTERN CREEKS

The Stage 2 proposal includes the permanent diversion of a semi-permanent 3rd order creek and the removal of 851 ha of remnant native vegetation including 157 ha of Critically Endangered Ecological Communities (CEEC).

Dr Peter Mitchell from Groundtruth Consulting (*Vol 5 App 09/App8 p.4.*) concludes; *Despite a century or more of European land use the Wilpinjong valley is in remarkably good condition and preserves geomorphic features such as; an alleviated valley floor, 'chain of pond' features, and valley floor springs and seepage zones that have been destroyed by erosion on most other parts of the Sydney Basin.'*

To successfully restore creek ecosystems and EECs of this quality and at this scale is a mammoth and complex task never yet achieved. The planned diversion of creeks and clearing of this valley should be rejected. Felix or White Industries has a very poor track record when it comes to the rehabilitation of creek diversions or 'realignment'. The Goulburn River diversion channel constructed by White industries in 1982-94 remains an unstable highly disturbed section of river.

The examples of vegetation species suggested for replanting (Table 24 p.91 Vol 4 App 6a) are also inappropriate and not native to this uplands catchment - another example of inadequate research and data collection. Examples of the correct species include e.g. *E. Blakleyi* (not River Red Gums), Yellow tea Tree *Leptospermum polygalifolium* subsp. *Polygalifolium* (not *Casuarina cunninghamiana*), and *Acacia linearifolia* (not *A. floribunda*)

Recommendations 6 & 7

- **No 3rd order or greater creeks should be diverted due to mining. MCM plans to divert or 'realign' 11kms of Murragamba and Eastern creeks should be rejected.**
- **If an approval is given the company must be obliged to fully reconstruct rehabilitate and revegetate the alternative creek line PRIOR to any disturbance from mining of the original channel. The ecological integrity of the fully reconstructed creek should be confirmed by independent experts BEFORE mining of the original creek bed can proceed.**

CULTURAL & NATURAL HERITAGE

MCM Stage 2 includes the removal of five Aboriginal heritage sites of high significance and 16 sites of medium significance. An additional two Aboriginal heritage sites of high significance and seven sites of medium significance will be disturbed. Underground 2 surrounds a significant site in a 100m cliff line (C7 - Site ID S2MC236) that contains numerous artworks - hand stencils, animal tracks and animal motifs. The mine has allowed a minimal 55 metre buffer area to protect this fragile overhang from subsidence.

Recommendations 8 & 9

- **If approved the MCM should provide extensive environmental and cultural heritage offsets for the disturbance and loss of cultural relics and landscape and a significant area of remnant native vegetation (including CEEC vegetation). This must be on a 'like for like' basis and meet the same standards as the DECC PVP developer tool used by the Hunter Central Rivers Catchment Management Authority to assess clearing proposals under the Native Vegetation Act 1995.**
- **MCM should provide funding to aboriginal groups for a purpose built cultural keeping place on the aboriginal land adjacent and complementary to the Goulburn River and Drip gorge.**

GREENHOUSE GASES


The MCM expansion if approved will produce more than 29 million tonnes CO₂-equivalent each year for more than 24 years. MCM EA concedes that increasing GHGs will change existing climates and place stresses on ecological systems and that increasing concentrations of GHGs are largely attributable to the burning of fossil fuels. Therefore the company Felix Resources is promoting this project in the full knowledge that it will result in fossil carbon pollution and that this will increase global climate change. However MCM claims that >710 Mt CO₂- is on a global scale negligible and thus the project complies with the principles of Ecologically Sustainable Development. This is a deceptive argument that must be totally rejected. On that basis no individual company or person needs to reduce their carbon footprint as relative to the global problem their emissions are insignificant.

Recommendation 10

- **The government should retain the right to revoke approval to mine this publicly owned coal resource (with no compensation), if within a reasonable time (say 5-10 yrs) the coal is not being utilised in an ecologically sustainable carbon capture and storage (CCS) system.**

I urge the Minister and Department of Planning to consider these recommendations in their response to the Moolarben Coal Mine development application and would appreciate specific feedback on this submission from the department.

Yours faithfully,



Julia Imrie

Regional assessment of Aquatic Health
Regional Assessment of Aquatic Health DWE - Goulburn River @ Gleniston 21010017

