



Assessment of the habitat value of Leard State Forest

Prepared by

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Summary

The Leard State Forest is located on the Liverpool Plains in Narrabri Shire, north-central New South Wales. Covering an area of 8,136 hectares, it is a large, relatively intact area of remnant native vegetation. The forest is within the Brigalow Belt South bioregion, one of Australia's 15 "biodiversity hotspots" (DSEWPC 2009). Ecological communities found in the forest include critically endangered box-gum grassy woodlands and native grasslands. 24 threatened species of animal and bird that are known to inhabit the forest, including the Regent Honeyeater, the Greater Long-eared Bat and the Koala (NPANSW n.d.).

In the Brigalow Belt South bioregion 61% of native vegetation has been cleared (NVAC 1999), and only 2.5% of the vegetated area is in reserves. Several coal mining projects are looking to expand operations into the forest, mainly using open-cut mining.

To understand how these projects would affect their local area, the Maules Creek Community Council (MCCC) has asked Economists at Large to consider the economic values of Leard State Forest. Environmental and ecological economics provide several methods for assessing the economic values of environmental resources. Some of these are described below, however due to the limited resources available for this report, we have not been able to conduct physical surveys of the forest itself. Instead, we have made a range of estimates based on Victoria's, BushBroker programme.

BushBroker is a market for native vegetation offsets. It is one of a growing number of market-based instruments being used to provide incentives for improvements in natural resource management. Under the programme, developers who would like to clear an area of native vegetation on their land negotiate with landowners whose land meets the complex 'like for like' rules under *Victoria's Native Vegetation Management – a Framework for Action* (DSE 2002). In each individual agreement landholders and developers negotiate prices privately. Price information collected across bioregions and published by the programme.

We have used price data from the Victorian BushBroker vegetation offset market to estimate a range of values relating to the native vegetation of the Leard State Forest:

Leard State Forest Area (ha)	8,134
Habitat hectare value using Victorian minimum value	\$162,680,000
Habitat hectare value using average minimum price across Victorian bioregions	\$630,385,000
Habitat hectare value using average of all BushBroker transactions	\$989,038,061
Habitat hectare value using average of Victorian bioregion averages	\$1,178,074,333
Habitat hectare value using average maximum price across Victorian bioregions	\$1,506,145,667

Leard State Forest

The Leard State Forest is located on the Liverpool Plains in Narrabri Shire, north-central New South Wales. Covering an area of 8,134 hectares, it is one of the most intact areas of habitat in the Brigalow Belt South bioregion (NPANSW n.d.). The Brigalow Belt is considered one of Australia's 15 "biodiversity hotspots" by the federal environment department. The biodiversity hotspots are areas which have high diversity of locally endemic flora and fauna, that are under risk from land management activities and provide high-value potential for conservation (DSEWPC 2009).

The Leard State Forest contains many rare and threatened ecological vegetation classes. Most important are several types of box-gum grassy woodlands and grasslands that are listed as critically endangered under the Environment Protection and Biodiversity Conservation Act. Some vegetation classes in the forest include:

- Yellow box-Blakely's red gum grassy woodland
- White box – white cypress pine grassy woodland
- White box – white cypress pine grassy open forest
- Pilliga box – white cypress pine grassy open woodland
- Weeping Myall grassy open woodland
- Narrow-leaved ironbark shrubby open forest
- Derived native grassland

Source: (Parsons Brinckerhoff 2010)

The forest also includes some areas of exotic grassland and areas used for forestry that are in a degraded condition.

The National Parks Association of NSW lists at least 24 threatened species of birds and animals known to inhabit the forest:

- Brown Treecreeper
- Hooded Robin
- Black-chinned Honeyeater
- Painted Honeyeater
- Pied Honeyeater
- Grey-crowned Babbler
- Speckled Warbler
- Diamond Firetail
- Varied Sittella
- White-browed Woodswallow
- Spotted Harrier
- Little Lorikeet
- Little Eagle
- Turquoise Parrot
- Barking Owl
- Masked Owl
- Black-necked Stork
- Eastern False Pipistrelle
- Greater Long-eared Bat
- Yellow-bellied Sheath-tail Bat
- Eastern Cave Bat
- Eastern Bent-wing Bat
- Little Pied Bat
- Koala

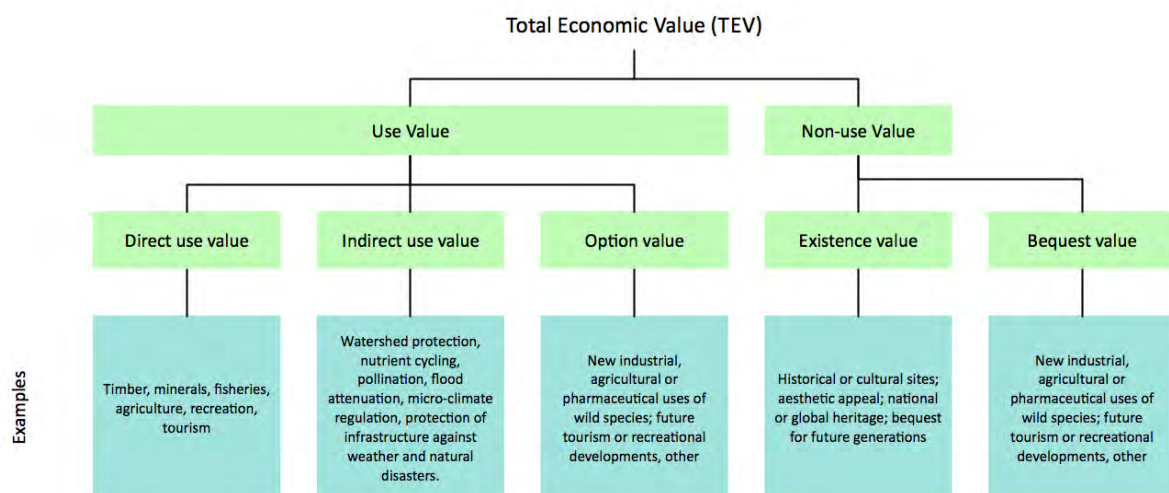
Source: (NPANSW n.d.)

Valuing habitat and environmental assets

Total Economic Value

Valuation of the environment is difficult. While benefits like clean air, water and a biodiverse environment benefit everyone, these benefits are generally not bought and sold in markets, making their valuation difficult. Some environmental goods and services are easy to identify – water, timber, going camping in a beautiful place – these are known as direct uses. Other indirect uses are less obvious – a stable climate, reduced erosion, protection from flooding, insects that pollinate crops. Still less obvious are non-use values – the fact that people value animals, plants and environments even though they may never see them. Economists generally try to assess all these values in relation to environmental goods, an approach known as Total Economic Value (TEV).

TEV and its various components – non-use values, use values and their various sub categories are shown in the diagram below with some examples.



Assessing all aspects of Total Economic Value involves many different studies and valuation techniques. Some examples include:

- Valuation of direct uses through goods prices, entry fees or travel cost methodology. See O'Connor et al. (2009) for an Economists at Large study on whale watching worldwide, showing that whale conservation contributes to an industry with revenue of over \$2.8 billion in 2008.
- Valuation of indirect uses through evaluation of avoided costs. The city of New York saved \$6-8 billion over 10 years by improving the integrity of ecosystems in their water catchments, rather than building and running a filtration plant. See (Chichilnisky and Heal 1998)
- Valuation of people's "willingness to pay" to protect a particular environmental good. See (Bennett, Dumsday, and Kragt 2007) for an example of the non-use value of Victorian forests.

Conducting such studies is expensive and time consuming. It is beyond the scope of this report to attempt such a large and detailed study of the Leard State Forest with physical assessments and social surveys. Because of the size of such studies, environmental values are often ignored in cost benefit analysis.

Benefits Transfer

Because of the expense and difficulty of these studies, economists often use “benefits transfer” estimate environmental values. This involves taking the results of a study of a particular environmental good or service in one area and using that as the basis for estimating values in another area. See Economists at Large (2008) for an example of benefits transfer, where values from a study on red gum forests in Victoria are transferred to red gum forests in NSW. Unfortunately we are unaware of any study or range of studies that are suitable to allow benefits transfer to assess the economic value of the Leard State Forest.

There are far too few comprehensive studies of ecosystems service valuation, biodiversity or landscape values in Australia. The result of this is that these environmental assets are given a value of zero in planning decisions, particularly in areas of productive land use. American study Scott et al. (2001) conclude that in productive agricultural areas where remnant vegetation is largely on private land, creative engagement of the private sector is crucial for conservation. One such approach that is gaining in popularity in Australia is market-based instruments.

Market-based instruments

Market-based instruments (MBIs) are being developed to create incentives for environmental goods. While there are many different programmes, they all try to create incentive and competition for environmental goods and services where none existed before. By creating supply and demand for a good or service, the scarcity of it and the costs involved in producing it, give it a market value. Well-known examples include water markets, or markets for emitting pollution.

MBIs to improve land management and conservation of biodiversity are also becoming widespread. Examples include conservation tenders and environmental markets. Conservation tenders involve landholders preparing a tender to receive funds in return for environmental improvements on their land. Environmental markets involve the buying and selling of a particular good or right, such as the right to clear native vegetation. In all cases, landholders retain the ownership of their land while these schemes provide an incentive to manage it partly for public, environmental good.

Environmental tenders

A successful environmental tender programme operates on the Liverpool Plains, close to Leard State Forest. The Liverpool Plains Land Management Committee, a community-based non-profit organisation, has been running tenders since 2001. Landholders prepare proposals of environmental improvements they could carry out on their land which will benefit the community

and the environment, and set the prices they would charge for carrying out these works. These proposals are assessed by the LPLM using a mathematical model incorporating the proposed benefits and the landholder's asking price.

While environmental tender programmes have been very successful in achieving conservation outcomes, it is difficult to use their results to estimate values of environmental goods outside their programme. It is difficult to compare the site-specific, often multi-criteria benefits provided by the tendered projects, and price information is often unavailable. Environmental markets, however, generally trade in more defined, quantifiable environmental goods and knowledge of market prices is important for participants, regulators and observers.

Environmental markets

Australia has two programmes that are working to put a market price on native habitat offsets, BioBanking in New South Wales and BushBroker in Victoria. BioBanking has had few transactions to date and has little publically available price information. BushBroker, on the other hand, has been operating for eight years, has had many transactions, and has publically-available price data.

BushBroker

The BushBroker programme trades in a specific good – native vegetation offsets. Different types of offset are bought and sold, relating to their ecological vegetation class. While individual transactions are private, general price information is readily available enabling market participants and observers to value their own needs and plan their participation in the market – if any.

The offsets are measured in “habitat hectares” an approach which incorporates habitat quality – environmental service value – and also enables market participants to assess their position.

What is a Habitat Hectare:

A habitat hectare is a site-based measure of quality and quantity of native vegetation that is assessed in the context of the relevant native vegetation type. This measure can be consistently applied across the State.

If it is assumed that an unaltered area of natural habitat (given that it is large enough and is within a natural landscape context) is at 100% of its natural quality, then one hectare of such habitat will be equivalent to one habitat hectare. That is the quality multiplied by the quantity. Ten hectares of this high quality habitat would be equivalent to ten habitat hectares, and so on. If an area of habitat had lost 50% of its quality (say, through weed invasion and loss of understorey), then one hectare would be equivalent to 0.5 habitat hectares, ten hectares would equivalent to five habitat hectares, and so on.

Source: (DSE 2002) p18

BushBroker has regulations on how these offsets can be generated. The general guidelines are:

- The areas of habitat being offset and restored must meet complex “Like for like” rules under *Victoria’s Native Vegetation Management – a Framework for Action* (DSE 2002).
- The two sites must be within the same bioregion for high and very high conservation value vegetation classes, while medium and low value classes can trade within their own or adjacent bioregions.
- The offset is permanent; the offset site is permanently protected through a legally-binding Landowner agreement and ongoing monitoring.

In generating habitat hectares, some activities that landholders undertake include:

• weed control	• revegetation
• rabbit control	• ecological burning
• stock exclusion	• bushfire prevention
• fencing	• ecological thinning

The legislated requirement for clearers of vegetation to obtain habitat hectare offsets from landholders who can supply only limited amounts of these offsets introduces the economic concept of scarcity to habitat conservation. The demand and supply of these offsets will give them a price, which economists believe will bring about a more efficient allocation of these resources.

Landowners and developers negotiate prices one-on-one, so each sale is dependent on the circumstances of that particular transaction. Supply and demand of particular types of offset are important in the relevant regions. Timing is also important – when developers are in urgent need of offsets prices can be driven up. Landowner attitudes are also influential, with some motivated largely by interest in habitat, while others are motivated primarily by payment (BushBroker managers pers. com).

Using BushBroker prices to estimate the value of Leard State Forest

BushBroker price histories are not available for individual agreements or specific ecological vegetation classes. Even if this information were available these prices reflect supply and demand within a bioregion and may not be reflective of conditions around the Leard State Forest, under a similar market. Instead, we have used minimum and average habitat hectare prices to estimate a range of values.

Given that specific vegetation class prices cannot be transferred, it is worth noting in relation to the average values that:

- Woodland and grassland vegetation classes similar to those found in Leards State Forest are traded on BushBroker and are included in the average values.
- Vegetation classes traded under BushBroker including examples of very high, high, medium and low conservation significance, reflecting Leard State Forest's areas of threatened ecosystems as well as areas of lesser value.
- The percentage of native vegetation clearance in Brigalow Belt South Bioregion - 61% is similar to Victoria as a whole – 66% (DSE 2002 p7) – suggesting that demand and supply of offsets would potentially be similar.

We have assumed that 1 hectare of state forest would equal one habitat hectare. This is supported by Parsons Brinckerhoff (2010), who found the areas it had assessed comprised “native forest and woodland communities with relatively few exotic species and high natural species diversity. (p ix)” Future estimates of the forest's value incorporating physical assessment of the forest may relax this assumption as better data becomes available.

The table below shows the publicly available price history from the BushBroker programme from May 2006 to May 2011. These prices have been used to estimate a range of values for the habitat of Leard State Forest.

Bioregion	Number of Agreements	Total number of Habitat Hectares	Average price per Habitat Hectare *	Habitat Hectare price range * *
Gippsland Plain	21	29	\$149,000	\$85,000 - \$250,000
Goldfields	39	38	\$45,000	\$25,000 - \$66,000
Victorian Riverina	10	11	\$101,000	\$80,000 - \$110,000
Victorian Volcanic Plain	29	54	\$170,000	\$49,000 - \$267,000
Highlands-Southern Fall	14	74	\$34,000	\$20,000 - \$38,000
Other bioregions	11	25	\$370,000	\$206,000 - \$380,000
Total	95	231		

*Average across all agreements in each bioregion * *80+% of agreements in each bioregion fall in this range

From this price history we can derive a number of values:

	\$/ha
Minimum habitat hectare price	\$20,000
Average minimum of all bioregions	\$77,500
Average price across program (total habitat hectares/total ammount spent)	\$121,593
Average of bioregion average prices	\$144,833
Average maximum of all bioregions	\$185,167

From these average values we can estimate a range of values for the Leard State Forest:

Leard State Forest Area (ha)	8,134
Habitat hectare value using Victorian minimum value	\$162,680,000
Habitat hectare value using average minimum price across Victorian bioregions	\$630,385,000
Habitat hectare value using average of all BushBroker transactions	\$989,038,061
Habitat hectare value using average of Victorian bioregion averages	\$1,178,074,333
Habitat hectare value using average maximum price across Victorian bioregions	\$1,506,145,667

The wide range of values here reflects the difficulty in precisely monetising the value of the environment and its services. Nonetheless, we believe it is important to make such estimates to ensure that stakeholders clearly understand that environmental assets are scarce and have value. Conserving them should not be seen as a cost, but rather as protecting real and valuable assets that play a critical role underpinning market based economic activity. While there is no doubt that such environmental assets have value, there are all-too-few attempts to quantify them.

Points to note about these estimates:

- These are estimates of the value of habitat and ecosystems of the Leard State Forest. It is not an estimate of the total economic value (TEV) of the forest. Further research is needed to determine the TEV of the forest. As mentioned above, TEV includes:
 - Direct use values such as recreation, tourism and forestry;
 - Indirect use values or environmental service values such as impacts on ground and surface water volume and quality, carbon sequestration, impact on air quality, etc
 - Non-use values relating to how the people of NSW value the existence of the forest and its flora and fauna.
- While the habitat hectare approach does incorporate quality of habitat, and so some indication of environmental service value, these values should not be considered a present value of environmental services. Instead, these values reflect the scarcity of different vegetation class offsets – the demand for them and the supply of them in Victoria. While the percentages of native vegetation clearance is similar in both areas, forecasting the levels of supply and demand that would prevail in the Leards Forest area is impossible until a similar market is developed in NSW or detailed surveys are carried out.
- These values represent the replacement cost of the entire Leard State Forest, incorporating every ecological vegetation class found in the forest, at a scale of a fraction of a hectare, reflecting the small scale of transactions usually traded under BushBroker. Re-establishing and maintaining fragile ecosystems involve considerable capital costs, maintenance and commitment over many years, as reflected in the BushBroker prices.
- Estimates are based on transactions relating to smaller, often fragmented areas of habitat. The Leard State Forest is a relatively large area of in-tact habitat. Ecologists suggest large areas of habitat are of greater value than smaller, separated ones, ie the whole is greater than the sum of the parts. See Hawes (2011) who discusses this in relation to the Leard State Forest. Our estimates do not consider the impact of the small size of areas transacted.
- The size of the area in the Leard State Forest is significantly larger than the combined areas for all BushBroker transactions. Transaction costs associated with BushBroker sales are significant – the initial site inspection costs at least \$5,000 and many other costs are associated. Payments are held in non-interest bearing accounts for considerable periods, further inflating prices. If larger areas were being considered it is possible that considerable savings could be realised. See *BushBroker information sheet 22 – fees and services* for full details.

Conclusion

Leard State Forest contains remnant native habitat of considerable value. Valuing environmental assets such as native ecosystems is difficult, generally involving extensive physical and social surveys not possible in this report.

Victoria's BushBroker programme, a market based instrument aimed at providing incentives for conservation through the buying and selling of vegetation offsets, provides proxy prices for native vegetation values. By using the minimum and several average prices, we have estimated a range of values for the Leard State Forest.

Leard State Forest Area (ha)	8,134
Minimum value	\$162,680,000
Habitat value using average minimum price across bioregions	\$630,385,000
Habitat value using average of all transactions	\$989,038,061
Habitat value using average of bioregion averages	\$1,178,074,333
Habitat value using average maximum price across bioregions	\$1,506,145,667

Several factors should be considered with these estimates:

- They do not provide a full estimate of Total Economic Value.
- They are not a present value of a stream of environmental services, but represent the scarcity and replacement cost of vegetation offsets.
- These reflect market conditions in Victoria
- BushBroker prices are based on smaller areas of native vegetation, the sum of which may not be as valuable as an in-tact large area.
- Transaction costs in BushBroker are considerable

As such these estimates should not be taken as definitive, but should be used as the basis for further investigation, through physical and social methods. Given the paucity of total economic value studies in Australia, we encourage efforts to value the environmental assets of Leard State Forest in more detail. These estimates do, however, demonstrate that native vegetation has considerable economic value, which should be taken into account when making decisions in relation to the Leard State Forest.

References:

BushBroker website

<http://www.dse.vic.gov.au/conservation-and-environment/biodiversity/rural-landscapes/bushbroker>

Meeting between Rod Campbell of Economists at Large and BushBroker managers Penny de Vine and Anne Buchan, held at DSE 11am, 15th July, 2011.

BioBanking website

<http://www.environment.nsw.gov.au/biobanking/>

All documents relating to the Boggabri Coal Extension Project – the full environmental assessment, including appendix J Biodiversity assessment, and the MCCC's submission on the assessment can be found at:

http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=3562

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Appendix 6: Official Documents

Letter from MCCC to the Planning Minister requesting release of Detailed Underground Mining Option, Boggabri NSW, 1 February 2011

Letter from MCCC to the Planning Minister requesting No Go Zones in the Maules Creek Area, Boggabri NSW, 18 August 2011

Letter from MCCC to the Minerals and Energy Minister request a briefing at the Maules Creek Hall regarding the Coal and Gas Reserves in the Maules Creek area, Boggabri NSW, 8 August 2011

Maules Creek Community Council

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Steve Bradshaw	02 6794 4503
Phil Laird	0428 712 622
Alistair Todd	0427 936 745
Peter Watson	0427 434 643

16th Sept 2011

Attn: Mr Brad Hazzard
Minister for Planning
Level 33 Governor Macquarie Tower
1 Farrer Place
SYDNEY NSW 2000

Re: Aston Resources EA – Lack of Underground Mining Option

Dear Minister;

We are writing to you on behalf of the Maules Creek Community regarding the Aston Resources Maules Creek Coal Proposal currently in exhibition.

Our community group is reviewing the EA and is disappointed that the Aston Resources Project does not include an underground mining analysis. The Director Generals requirements say that the EA must include a “detailed description of the project including ...alternatives considered.”

The EA makes no such alternative option detail available. There is a simple overview of the reasons why the Underground Option was excluded as the preferred option but this does not enable the community to make an assessment as to the likely benefits of an underground option.

Given that the prior consent was for underground mining it was the expectation of our community that this option would at least be fully considered. Investments and other plans made by community members have had the likelihood of underground mining as part of the decision making process and a number of large opencut mines on our doorstep is impacting on our asset values and those plans.

Our group has commissioned an Underground Mining Cost Benefit Analysis (CBA) for the adjacent coal mining project, Boggabri Coal, which is attached in Appendix 1. The figures are taken from Boggabri Coal's own EA and clearly show that the Underground Mining Option is more profitable in Australia. It follows that for the other key stakeholders - the nation of Australia, the State of NSW and the local community the underground option has more benefits. For example it provides more company tax, less diesel fuel rebate, less greenhouse gases, retains CEEC EPBC listed forest, has reduced health impacts and requires fewer property purchases for Zone of Affection and Environmental Offsets.

The CBA data is based on an extensive Underground Mining Preliminary Study produced in the Boggabri Coal EA. The data is taken from the same coal seams that Aston Resources is targeting and for this

reason, without evidence to the contrary we believe that the Aston Mine Underground Option is likely to be more profitable and less destructive as well. The information can then enable the Department of Planning to form a complete view as to the best project for our states resource given the external costs of extensive native vegetation clearing, greenhouse gas emissions, loss of a carbon sink, community and health impacts etc.

For this reason we ask that you make the underground alternative options available to the community for comment and peer review. We recommend that;

1. Aston Resources be directed to amend the EA to include a Preliminary Underground Mining Plan of the quality produced in the Boggabri Coal EA.
2. The exhibition period be immediately suspended until that information is prepared and deemed adequate.
3. That the exhibition period of 42 days recommence when that information is made available.

Due to the time constraints we would appreciate it if these recommendations could be resolved as soon as possible and that the relevant bodies be notified in a timely manner.

It is our view that for any mining project to get approval there should be a “net benefit” for all the stakeholders including the environment. It is only when all the information is available that we can make this assessment.

Should you wish to discuss our request further, please contact any of the individuals listed above.

Kind Regards

MCCC Inc



Boggabri Coal Mine Extension Project Proposal:

August 2011 review of Environmental Assessment - Appendix C (underground mining option), Appendix Q (economic assessment) and subsequent submissions by Gillespie Economics

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Introduction

Background

The proposed project extension of the Boggabri Coal Project involves the extension of an existing open-cut mine into farmland and the Leard State Forest, Narrabri Shire, NSW. In February 2011 the Maules Creek Community Council (MCCC) made a submission to the Department of Planning and Infrastructure NSW on the environmental assessment of the project. The MCCC are concerned that the proposal will have a negative effect on agriculture, the community and the forest, which contains nationally threatened ecosystems, habitat and fauna species.

As part of the MCCC's submission, Economists at Large conducted a review of *Appendix Q - Economic Assessment* of the environmental impact statement. This initial review highlighted problems in the economic assessment, particularly relating to:

- No economic analysis of alternative projects;
- Inappropriate treatment of mining profits and distribution of benefits and;
- Miscalculation and/or omission of external costs and benefits.

These issues have been explored in subsequent submissions by Gillespie Economics and Economists at Large and are further discussed in this report.

What's new in this report?

This report includes analysis of material not covered in our earlier submissions.

- **Analysis of *Appendix C – Underground Concept Study*, confirming the consultant's conclusion that an underground mining option is viable.** From the consultant's figures we estimate the NPV of the underground option is \$1.8 billion, higher than the estimate of production benefits under the project proposal in *Appendix Q – Economic Assessment*, which was \$1.3 billion. We urge the proponents to publish their internal analysis of underground mining to enable the public to understand why this option is not being pursued and suggest that as the option is viable other parties may be interested in developing it.
- **Scrutiny of calculations in *Appendix Q – Economic assessment*.** The values presented in the cost-benefit analysis of the economic assessment do not correspond with values presented in the rest of the appendix. We show our calculations which result in a \$500 million dollar difference with the Economic Assessment. We urge the authors to explain this variation and publish their calculations for the NSW government and public to have confidence in their analysis.

- Response to Gillespie Economics' *Response to residual economic matters raised by Maules Creek Community Council*, in particular:
 - **Producer surplus:** Gillespie Economics have misinterpreted our suggestions. Our ideas are supported by Eggert (2001), which Gillespie Economics claim guided their analysis. We urge them to adjust their treatment of producer surplus in line with Eggert's and our suggestions.
 - **Project definition and scale:** We agree that a national level is appropriate for cost-benefit analysis. Again Eggert (2001) provides useful guidance on how the economic assessment should be revised for a national perspective.
 - **Opportunity cost:** We agree that if using a national-level approach our suggestion of incorporating investors' opportunity costs of capital is not appropriate and we make some suggestions for how to incorporate opportunity cost at a national scale.
 - **Distribution of costs and benefits:** We are in general agreement about how these will be distributed, and suggest some revision to the economic assessment in line with expert opinion.
 - **Benefits transfer:** We agree this can be a useful technique, but maintain the value being used needs to be appropriate.

We believe that all these issues need to be clarified and adjustments made to the economic assessment of the project to ensure a decision is made in line with the public interest. Doing so would not only allow for the best outcome in relation to this project, but could serve as a guide for other projects in the area and nationally. This is occurring at a time when the mining industry is perceived as lacking a "social licence to operate" in farming areas. Robust and transparent assessment of this project can help to address this issue.

Analysis of Appendix C – Underground Concept Study

Appendix C of the original environmental assessment examined the option of extending the Boggabri Mine as an underground mine. The authors WDS Consulting found:

“The study has identified that the utilisation of underground mining methods can be economically viable in the Boggabri resource.” WDS Consulting (2009) p-7

However, the proponents of the project and Gillespie Economics have consistently claimed that underground mining is not feasible:

This underground concept study concluded that alternative mining methods did not maximise the utilisation of the in-situ coal resource and was not a practical or feasible option due to the geological structure of the coal seams. Response to submissions p52.

While underground mining may not maximise the volume of coal extracted from the Boggabri deposit, this is not the criteria by which the project should be assessed. Proper financial and economic analysis of all options should be conducted to enable the socially optimal option to be selected. Despite WDS’s considerable analysis and conclusion that underground mining could be viable, financial analysis that would enable comparison with the current proposal was not carried out:

At the request of Idemitsu, a full financial analysis was not within our deliverable scope. Our primary financial deliverables, ... are to be integrated into Idemitsu cost models for internal economic analysis. (p7-1)

As Idemitsu’s internal analysis is not available, we have made estimates from the findings of WDS’s study. From the data presented in Appendix C we have calculated the following values.

Table 1 Net Revenue of underground option

		Source
Discount rate	7%	Economic assessment p9
Total estimated product (Mt)	82.1	Appendix C p-4
Operating years (2011 to 2032)	22	Appendix C p4-21
Average annual production (Mt)	3.73	Based on visual estimates of Figure 4.2 Production Summary, Appendix C p 4-21. Note this is slightly lower than reported on p4-20, 4.0Mt, but in line with the production total on p-4. See Appendix for full modelling
Assumed price of coal per tonne	\$94	Economic assessment p9
Present value revenue (\$M)	\$3,730	Present value of yearly revenue based on production estimates on p4-21 and a \$94/tonne coal price.

Estimated operating cost per production tonne	\$32.47	Appendix C p7-7
Present value operating costs (\$M)	\$1,288	Operating cost per tonne multiplied by production estimates on p4-21
Present value capital costs (\$M)	\$652	Appendix C p7-15 outlines capital expenditures over the life of the mine, this distribution is discounted at 7%
Net Present Value	\$1,790	

The net present value of this option according to this analysis is higher than the “net production benefits” reported in table 2.2 of Appendix Q – Economic Assessment.

Table 2 Comparison of underground and open cut proposal net revenue

	Appendix C - Underground option (\$m)	Appendix Q - Economic assessment (\$m)
Revenue	\$3,730	\$5,343
Other production benefits	NA	\$54
Capital costs	\$652	\$778
Operating costs	\$1,288	\$3,328
Other production costs	NA	\$25
NPV	\$1,790	\$1,266

Idemitsu’s investors should be asking why this is the case. We call on Idemitsu to release their internal modelling to explain this discrepancy. If this project is to have social licence to operate, it is important for communities and the wider public to understand the project’s benefits and why a particular option is being pursued.

It is important to note that this analysis does not include external costs and benefits. The MCCC have indicated that they would support an underground mine, suggesting that the external costs of this option to the community are lower. The proponent’s cursory, dot-point explanations in section 4.12.6 (p43) of the Environmental Assessment of why they have rejected the underground option need considerable expansion if they are to contribute to the public’s understanding of the project.

In their latest response, Gillespie Economics are careful not contradict WDS’s conclusion that underground mining is viable, but correctly point out that alternatives must be feasible to the proponents. We agree. As the proponents are unable to present another proposal that is feasible to

them, we suggest the NSW government allow other parties to develop such proposals. These proposals might bring greater benefits to the state, the nation and the local community. We understand the lease on the area is due to expire shortly, providing a timely opportunity to investigate other options.

Scrutiny of calculations in Appendix Q – Economic assessment

Having found net present value of the underground mining option to be higher than the project proposal, we re-examined the calculation of values presented in Table 2.2 of the Economic Assessment. The values presented in Table 2.2 do not correspond with values presented in the rest of the economic appendix. Both revenue and operating cost estimates are significantly higher. There is not enough information presented to calculate capital costs.

Table 3 Present values presented in Economic Assessment, table 2.2, p12

	Table 2.2
Revenue (\$M)	5,343
Operating costs (\$M)	3,328
Capital costs (\$M)	778
Net Revenue (\$M)	1,237

The following calculations show that these values are different compared to when these calculations are replicated using data in the text of the assessment.

Revenue

From values in the text, we calculate the present value of revenue from the project to be \$6,801 million, higher than \$5,343 million as reported in the Economic Assessment Table 2.2. We arrived at our figure by using production levels based on page 8, where the assessment says:

Open cut mining is assumed to ramp up to 7Mtpa of product coal by Year 5 and remain at this level until Year 21.

By applying this increasing level of production to coal price as estimated on page 9 and the discount rate on p12 the following values are obtained.

Table 4 Present value of revenue calculation

Discount Rate ¹	7%																					
Coal Price ² (\$/tonne)	94																					
Year ³	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Coal Production (MTPA) ⁴	5	5.4	5.8	6.2	6.6	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
Revenue (\$M)		508	545	583	620	658	658	658	658	658	658	658	658	658	658	658	658	658	658	658	658	658
PV annual revenue (\$M)		474	476	476	473	469	438	410	383	358	334	313	292	273	255	238	223	208	195	182	170	159
PV Revenue (\$M)	6,801																					

¹ p12
² p9
³ p6
⁴ p6&9

Operating costs

From values in the text of the economic assessment, we calculate the present value of operating costs to be \$4,290 million, higher than the \$3,328 million as reported in Table 2.2. We arrived at our figure by finding the present value of average annual operating costs, as reported on page 8, where the assessment says:

The operating costs of the Project include those associated with overburden stripping, mining, processing, rail and port charges, selling costs, rehabilitation, marketing and general administration. Average annual operating costs of the mine are estimated at \$370M

Using the same discount rate, we find:

Table 5 Present value of operating cost calculation

Item																					
Discount rate ⁵	7%																				
Year	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Average annual operating cost ⁶ (\$M)	370	370	370	370	370	370	370	370	370	370	370	370	370	370	370	370	370	370	370	370	370
PV of annual cost	370	346	323	302	282	264	247	230	215	201	188	176	164	154	143	134	125	117	109	102	96
PV of operating cost	4290																				

⁵ p12

⁶ p8

In summary, the net revenue for the project proposal as calculated from the values in the text is almost \$500 million higher than the values presented in the Economic Assessment Table 2.2. Below we have used the same capital cost value as there is no information in the economic appendix on the timing of these costs.

Table 6 Comparison of net revenue

	Table 2.2	Calculated from text
Revenue (\$M)	5,343	6,801
Operating costs (\$M)	3,328	4,290
Capital costs (\$M)	778	778
Net Revenue (\$M)	1,237	1,733

The point of this comparison is not to suggest that project is more valuable than was presented, but to show that the public can have no confidence in figures presented. We urge the proponents to explain how they arrived at their evaluation and to publish their full working and modelling. Without this transparency neither the public nor the NSW government can understand the benefits of this proposal and make a decision on whether to support it or not. This lack of transparency is a key reason the mining industry is losing its “social licence to operate”, particularly in farming areas.

Response to Gillespie Economics' Response to residual economic matters raised by Maules Creek Community Council.

Producer surplus benefits

We maintain that the financial benefits that accrue only to the project proponents are of limited relevance in trying to understand this project's impact on a local or state scale. Gillespie Economics have misinterpreted this point, suggesting that we believe "producer surplus benefits (mine profits) should not feature in BCA (cost-benefit analysis)" (p1). We fully agree that in analysing the full costs and benefits of a project, profit is an important calculation to consider. Our point is that profits that accrue to overseas shareholders do not accrue to the local community, or the state of NSW.

This point is made clear by Eggert (2001) who state that when considering the perspective of local communities "*an analyst must be careful to ... eliminate any net benefits that accrue to nonresidents of the community*" (p28).

Gillespie Economics claim to have taken an approach "exactly" in line to that outlined in Eggert (2001) – taking commercial evaluation of the project and making adjustments for externalities, taxes and social time preference. But beyond these points the analysis of Gillespie Economics departs from Eggert. Eggert devotes considerable attention to how benefits are accounted for in analysis of mining projects. It is worth quoting him at length:

Let us now turn to ... issues that challenge and bedevil practitioners of social benefit-cost analysis. The first challenge is deciding "whose benefits and costs count" It sometimes is called the issue of standing--that is, who has standing in the analysis of benefits and costs? This is an issue of scope. Should the analysis include only those costs and benefits affecting residents of the local community? The state or province? The nation? The world? Whether the net benefits of a project are positive or negative often depends on how narrow or broad the scope of the study is. (p27)

Project definition and scale

Eggert's mention of scale or scope returns to one of our original points – the changing scope of the Economic Assessment. On page 2 of their *Response to residual economic matters*, Gillespie Economics say that cost-benefit analysis is generally undertaken at a national scale "*with the inclusion of all costs and benefits that are generated within a nation's borders from a development, regardless of who [sic] they accrue to.*" We are pleased that they have settled on a scale for the assessment and look forward to the following adjustments in their analysis:

- Reduction of net production benefits to reflect profits to overseas shareholders, in line with Eggert (2001) who points out "*a national government would consider profits sent abroad as a cost.*" (p27)
- Consideration of the opportunity cost of the mine from a national perspective – the value of the next best alternative project.

Opportunity Costs

Opportunity cost is a concept in economics that incorporates the value of the foregone alternative in decision making. In other words, considering what are the cost and benefits of the next-best option available. In their original Economic Assessment, Gillespie Economics considered the opportunity cost of not proceeding with the mine from the perspective of the proponent – the sale of their equipment, some \$8m.

We suggested a global perspective, incorporating the opportunity cost of investors' capital at a global level, which would significantly reduce the net present value of the project, possibly to zero. This reinforces Eggert's idea that the net benefits of the project depend on the scope of the analysis, as opportunity costs are different at each level.

To consider the opportunity cost from a national perspective, the analysts need to consider what the net benefits of this mine are compared to another mine that may not be going ahead because of the time and resources devoted to the Boggabri project. We suggest that from a national perspective the next best coal mine will be similar to those of the Boggabri mine, again negating most of the production benefits of the mine.

The importance of opportunity cost in relation planning coal mines was demonstrated in Victoria recently by Mantle Mining. Mantle withdrew their application to explore for coal southwest of Melbourne in the face of community opposition. Mantle withdrew not only because of community opposition, but *"in order to focus its resources on other higher priority projects."* (Mantle Mining 2011)(p1) Mantle's opportunity cost was not the loss of time and equipment put into the application, but the profits of the mines that they would be unable to develop in order to slug it out with the community near Melbourne.

In the Economic Assessment of the Boggabri mine, however, consider opportunity cost at neither a national perspective, nor even the company-wide perspective of the proponents. Instead they use a site-specific scope, claiming that there are only two alternatives: the proposed mine or cessation of mining.

Distribution of costs and benefits

We agree with Gillespie Economics the distribution of costs and benefits of the project and have revised our table:

	Benefits	Costs
Global	After tax profits	Greenhouse gasses
National	Company tax	
State	Royalties	Ecology
	Social benefits of employment	Heritage
Local	Unquantified and unspecified community support programs	Air quality
		Noise and vibration
		Groundwater
		Traffic
		Visual impacts
		Surface water
		Health impacts

We agree that if all externalities have been internalised then there is no need to estimate their values. The physical studies that the original economic assessment was based on estimated that externalities would be adequately offset, however many of these conclusions have since been questioned by experts in the relevant fields. See for example the submission by ecologist Wendy Hawes relating to the Environmental Assessment's appendix J – Biodiversity assessment, which raised serious questions about the project's ability to offset its impacts.

Given the disagreement between physical scientists, the economic assessment should be revised to include this uncertainty and risk, particularly if it is to incorporate the community and the state's point of view, as can be seen in Table 1. The uncertainty relating to these costs makes it difficult to see if the community should support changing their landscape in exchange for \$9.7 million dollar contribution in the form of a statue of Ben Lexcen, public seating, a better caravan park, road improvements and a contribution to a community programme.

In considering this trade off, the community should recall the proponent's response to submissions where they admit they did not include lost recreation value of the Leard State Forest. In their response the proponents calculated a "back-of-the-envelope" lost recreation value amounted of \$4 million in present terms. If the compensation package is worth \$9.7 million, this leaves \$5.7m to compensate the community for changes to their landscape and uncalculated environmental risk. As the proponents often point out, this pales in significance next to the estimated value of the project.

Health Impacts

Gillespie Economics point out that there has been no research done on the health impacts of this project. It is not their responsibility to carry this out, and likely beyond their expertise. As the health impacts of coal mining can be considerable, this impact should be assessed in the overall assessment of the project. The economics assessment could then quantify the likely economic impacts of health effects. Note that a study is currently underway in the Hunter Valley on coal mining's health impacts commissioned by local politician Tim Duddy. This follows studies such as Hendryx and Ahern (2009)

which found strong, negative health impacts of coal mining and increased mortality in the Appalachian Mountains of the United States. They found that the health impacts far outweighed the economic benefits of mines there.

Benefits transfer and social value of employment

We agree that benefits-transfer is a useful technique, but one that needs to be used with great caution, or as a matter of last resort. We should clarify that our criticism of the use of benefits-transfer from another study to estimate the social value of employment was not a criticism of benefits-transfer per se, but a criticism of how it was done by Gillespie Economics. The study used was about an underground mine in a traditional mining area, whereas this mine is an open-cut mine in a more agricultural area.

Conclusion

We call for greater transparency in the analysis of this and all major projects. At a time when mining projects in agricultural areas are causing great public and political debate, greater transparency is essential. The project proponents should release all modelling and analysis that enables the public to understand their decision to apply for this project using these means. Governments should require thorough, transparent analysis of all project options before making a decision. Where a proponent is not willing to pursue an option that is of greater benefit to the public, then other submissions should be sought.

In addition to publishing calculations and modelling to date, the proponents should adjust their economic analysis to reflect the following points:

- Appropriate treatment of profits/producer surplus/production benefits
- National scale of analysis
- Opportunity cost
- Disagreement among physical scientists over external costs
- Discussion of distribution of benefits

We look forward to these adjustments and continuing analysis of this and other projects.

References

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Appendix: Modelling of Underground option

Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Production see p4-21	0.3	1.9	4.5	4.8	4.5	4.6	3.7	3.8	3.8	3.9	4.2	3.3	2.9	4.1	5.1	4.8	3.3	2.9	4	3.8	4	3.9
revenue (\$M)	28.2	178. 6	423 .0	451. 2	423. 0	432. 4	347. 8	357. 2	357. 2	366. 6	394. 8	310. 2	272. 6	385. 4	479. 4	451. 2	310. 2	272. 6	376. 0	357. 2	376. 0	366. 6
discount rate	7%																					
disc rev (\$M)	26.4	156. 0	345 .3	344. 2	301. 6	288. 1	216. 6	207. 9	194. 3	186. 4	187. 6	137. 7	113. 1	149. 5	173. 8	152. 8	98.2	80.7	104. 0	92.3	90.8	82.7
PV revenue	372 9.9																					
Year OpX (\$M)	9.7	61.7	146 .1	155. 9	146. 1	149. 4	120. 1	123. 4	123. 4	126. 6	136. 4	107. 2	94.2	133. 1	165. 6	155. 9	107. 2	94.2	129. 9	123. 4	129. 9	126. 6
disc OpX	9.1	53.9	119 .3	118. 9	104. 2	99.5	74.8	71.8	67.1	64.4	64.8	47.6	39.1	51.6	60.0	52.8	33.9	27.9	35.9	31.9	31.4	28.6
PV opX cost	128 8.4																					
CapX	53.6	249. 4	357 .7	70.8	27.5	27.5																
Disc CapX	50.1	217. 8	292 .0	54.0	19.6	18.3																
PV CapX	652																					
NPV	179 0																					

Maules Creek Community Council Inc

Re: Coal and Gas Reserves in the Maules Creek Area

Maules Creek Community Council Inc

upthecreek2382@gmail.com

Steve Bradshaw 02 6794 4503

Phil Laird 0428 712 622

Fiona Morse 0408 656 808

Alistair Todd 0427 936 745

Peter Watson 0427 434 643

8 August 2011

Attn: Mr Chris Hartcher,
Minister for Resources and Energy,
Level 37 Governor Macquarie Tower,
1 Farrer Place,
SYDNEY NSW 2000

Dear Minister;

Re: Coal and Gas Reserves in the Maules Creek Area

We are writing to you on behalf of the Maules Creek Community to formally request a briefing at the Maules Creek Hall from the Department of Minerals and Energy regarding the Coal and Gas Reserves in our area.

The Maules Creek area is currently the target of a number of resource companies. While these companies have access to a large amount of mining data the residents do not and this imbalance is leading to a great deal of concern. These concerns include;

1. The mining companies are able cheaply pick off farmers who have no idea as to their situation.
2. Farms nowhere near the coal reserves are not selling to neighbours or new people moving into the district. Land prices no longer have any relationship to their productive capability.
3. No new farmers are moving into Maules Creek.
4. Landholders are unable to plan for the future. Investment in farm infrastructure and repairs is on hold and a wait and see game is starting to develop.
5. Mining companies share the information within their project areas that they deem is "appropriate", however areas outside their leases are typically not within their range of expertise. There are knowledge gaps as to where the resources are. We do not know what we do not know.
6. A division is starting to appear between those who think they will sell out and those who think that they will remain. Stress and conflict are not in anyone's interest.

In order to address these concerns we request that the Department should provide residents with a clear understanding of the coal and gas reserves, the depths as to where these reserves can be found and the likelihood of open cut or under ground mining in the areas. Like the mining companies this information would enable landowners to plan for the future. Reliable information will empower our residents to make good decisions for the future.

Maules Creek Community Council Inc

Re: Coal and Gas Reserves in the Maules Creek Area

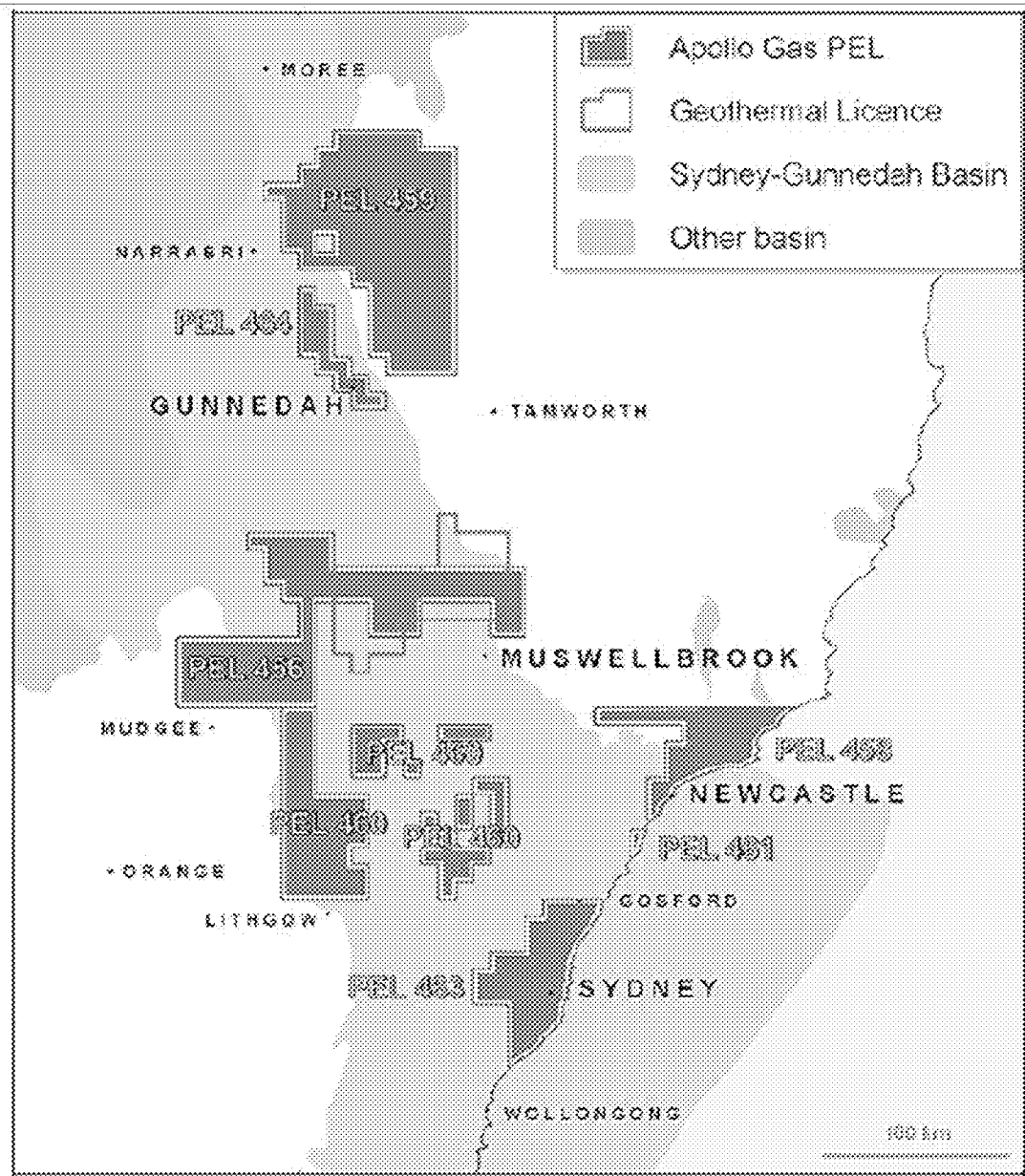
While this information may be available online, many of our older landowners who are near retirement are not able to access this information and would have some difficulty understanding it.

We have approached our local state members Kevin Anderson and Kevin Humphries with this request and have given both a full briefing as to the issues that we face. We would welcome an opportunity to provide this information to you and look forward to your reply.

Thank you for your consideration of this matter. Should you wish to discuss our request further, please contact any of the individuals listed above.

Yours sincerely,
MCCC Inc

Maules Creek Community Council Inc
Re: Coal and Gas Reserves in the Maules Creek Area



Maules Creek Community Council Inc

Re: Proposed No Go Zones in the Maules Creek Catchment

1

Maules Creek Community Council Inc

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Steve Bradshaw 02 6794 4503

Phil Laird 0428 712 622

Fiona Morse 0408 656 808

Alistair Todd 0427 936 745

Peter Watson 0427 434 643

18 May 2011

Attn: Mr Brad Hazzard
Minister for Planning
Level 33 Governor Macquarie Tower
1 Farrer Place
SYDNEY NSW 2000

Dear Minister;

Re: Proposed No Go Zones in the Maules Creek Catchment

We are writing to you on behalf of the Maules Creek Community regarding coal and coal seam gas mining in our area. We understand that the NSW State Government is currently formulating its strategic lands policy and we would like to strongly urge the government to “ring fence” the Leards Forest Coal Complex and quarantine the Maules Creek catchment, aquifers and farmland as a “No Go Zone”.

The Maules Creek area is currently the target of a number of resource companies who are proposing large open cut mines in the Leards State Forest. Despite much of the forest being listed under the EPBC act as containing the critically endangered ecological community Box Gum Grassy Woodland more than 20 million tonnes per annum of coal production is being proposed by Boggabri Coal and Aston Resources.

The MCCC is proposing that should these projects obtain planning approval, mining activity should be limited to the Leards Forest area. (See attached map). The areas adjacent to the Kaputar National Park, Namoi River and Maules Creek catchments and aquifers and farmland be placed in a “No Go Zone”. This No Go Zone would exclude any further mining activity such as coal mining or coal seam gas extraction.

We are focused on community and environmental impacts and our chief concerns are;

1. Damage or increased burden to the already stretched water aquifers in the Maules Creek Catchment. Impacts on the stock and domestic water supplies of the local Maules Creek residents will threaten livelihoods and will deplete the groundwater available for the irrigators in the Harparary irrigation precinct.

Maules Creek Community Council Inc

Re: Proposed No Go Zones in the Maules Creek Catchment

2

2. Purchase of properties by mines for further developments, zone of affectation or environmental offsets is depopulating our community and this could see the numbers of residents drop below the critical mass required to maintain a viable community.
3. Long term, sustainable farmland will be lost. Families and skilled farmers who, over many generations have made a living providing food and fibre will also be lost.

Our concerns are borne out, as over the past four years the area to the south of the Leards Forest has seen impacts to the ground water supply and a serious reduction in its number of residents so that now only six households remain from Leards Forest to the Manilla Rd.

We would very much like to meet with you so that we can discuss with you our proposed No Go Zone and options for the future. We would greatly appreciate an opportunity to provide input to the strategic lands policy in relation to our area. Should you wish to discuss our request further, please contact any of the individuals listed above.

Regards

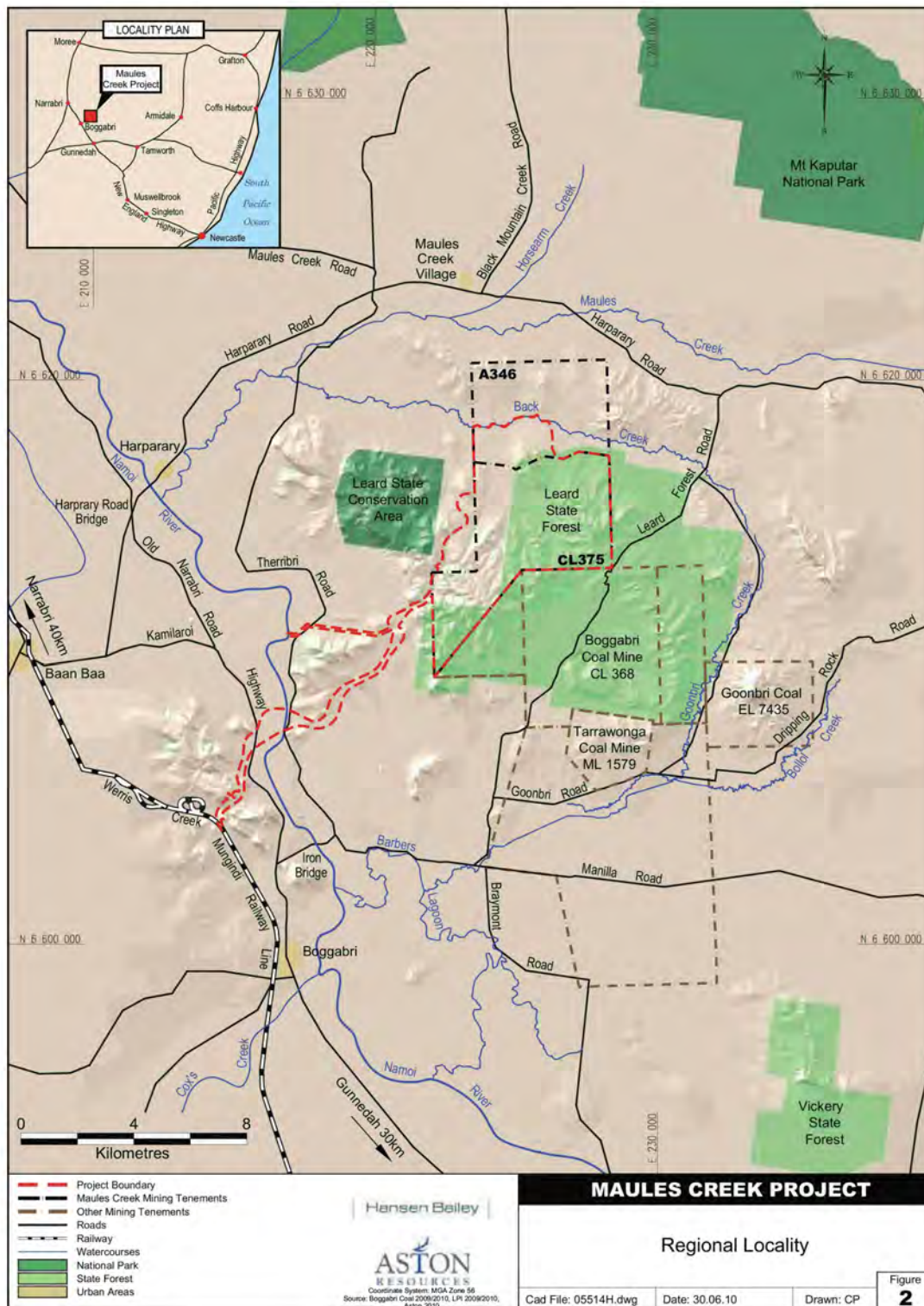
MCCC Inc

CC: Katrina Hodgkinson
CC: Kevin Humphreys
CC: Kevin Anderson
CC: Mark Coulton

Maules Creek Community Council Inc

Re: Proposed No Go Zones in the Maules Creek Catchment

3





Maules Creek Community Council Inc

Appendix 7 - 16

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October 2011



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Appendix 11	-	Health Impacts ○ Urgent Reform to Coal Industry Standards by Dr Steve Robinson and Murray Pakes ○ Affidavit to the Land and Environment Court by Dr Matthew Peters ○ Coal Opencasting and Health by Dr Dick van Steenis ○ Amonium Nitrate Blast Fumes by Kim Hann
Appendix 12	-	Resilience Thinking a Holistic Approach courtesy Namoi CMA
Appendix 13	-	Draft Leard Forest Environmental Trust Report
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Appendix 15	-	Noise Impact Assessment Peer Review by Vipac Engineers and Scientists
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Appendix 7 – Economic Impact

Economists at Large. Review of Maules Creek Coal Project Environmental Assessment – Appendix Q (economic assessment)



Review of Maules Creek Coal Project
Environmental Assessment - Appendix Q (economic assessment)

Prepared by
Economists at Large Pty Ltd

September 2011

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Disclaimer:

The views expressed in this report are those of the authors and may not in any circumstances be regarded as stating an official position of the organisations involved.

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Executive Summary

Economists at Large have reviewed the Economic Assessment of the Maules Creek Coal Project written by Gillespie Economics. The Economic Assessment contains flaws and omissions that make it unsuitable for decision making purposes. The Assessment should be revised to account for the following issues:

- **Inconsistent scope of analysis.** The Economic Assessment is required by NSW Department of Planning Environmental Assessment Requirements to consider the project from the perspective of the NSW community. It fails to do this on a number of fronts, notably:
 - **Consideration of alternative projects-no underground option considered** – only the option most beneficial to the proponent is considered, with no consideration of underground mining options, despite local studies finding underground mining is economically viable.
 - **Net production benefits** – Most of these will be lost to the NSW community due to the ownership structure of the project. No adjustment is made in the Economic Assessment.
 - **Opportunity costs** – considered strictly from the perspective of the proponent, with no consideration of forgone projects in NSW, or alternative uses of capital for NSW investors.
 - **Greenhouse gas costs** – confusion between what costs will accrue to NSW or the world.
 - **Discussion of distribution of costs and benefits** – Little discussion of distribution, particularly of external costs which will accrue mainly at local or state levels.
- **External costs.**
 - No consideration has been made for the debate between physical scientists as to the effectiveness of environmental offset programmes.
 - No consideration given to the health impacts of open cut coal mining and transport.
 - Social value of employment has been overstated.
 - No consideration of recreational losses.
- **Inconsistent figures.** Present value figures presented in the cost benefit analysis do not match the values presented in the text of the assessment. We present our working from the values in the text, which show differences of over \$1.5 billion on the major items of the assessment. The public can have no confidence in an assessment where large errors have been made in basic calculations such as present value. These figures need to be explained or revised.

We believe that all these issues need to be clarified and adjustments made to the economic assessment of the project to ensure a decision is made in line with the NSW public interest. Doing so would not only allow for the best outcome in relation to this project, but could serve as a guide for other projects in the area and nationally. This is occurring at a time when the mining industry is perceived as lacking a “social licence to operate” in farming areas. Robust and transparent assessment of this project can help to address this issue.

Introduction

Background

The proposed Maules Creek Coal Project is for an open-cut mine into agricultural land and the Leard State Forest, Narrabri Shire, NSW. The proposal is for a 21-year open cut mine which will produce up to 13 megatonnes of coal per year. The proponent is currently seeking planning approval and has prepared an Environmental Assessment.

The Maules Creek Project is one of several mining proposals or mine extension projects in this traditionally agricultural area. Local community group, the Maules Creek Community Council (MCCC) is concerned that the proposed projects will affect agriculture, the community and the Leard State Forest, which contains nationally threatened ecosystems and species. Many communities in Australia are facing similar issues and are concerned that the often-touted benefits of the mining boom may be overstated and/or not accruing to local people.

This submission

The MCCC is making a submission on the Maules Creek Coal Project Environmental Assessment. As part of their submission they have asked Economists at Large to review *Appendix Q - Economic Assessment*. We consider there are a number of very significant issues in the economic assessment, which, without being addressed, would render the assessment unsuitable to contribute to decision-making. These issues are:

- **Inconsistency of scope.** Cost benefit analysis requires a consistent level of analysis. This scope taken in the economic assessment varies between local and global level in accordance with the interests of the proponents, contrary to the requirements of the Department of Planning.
- **Miscalculation and/or omission of external costs and benefits.** Misrepresentation of externalities arising with the project:
 - **Impact on environmental services**
 - **Health impacts**
 - **Social value of employment**
 - **Recreation**
- **Inconsistency of calculations.** The values presented in the cost-benefit analysis summary table do not correspond with values presented in the text of the appendix.

We believe that all these issues need to be clarified and adjustments made to the economic assessment of the project to ensure a decision is made in line with the NSW public interest. Doing so would not only allow for the best outcome in relation to this project, but could serve as a guide for other projects in the area and nationally.

This is occurring at a time when the mining industry is perceived as lacking a “social licence to operate” in farming areas. Conflicts between farming communities and coal and coal seam gas developments are making headlines regularly, with farmers and the broader community losing confidence that such developments are in the community’s best interests. Robust and transparent assessment of this project could help to address this issue.

Inconsistent scope of analysis

The importance of setting the scope of a cost benefit analysis and remaining consistent with this scope cannot be overstated. As Eggert (2001) makes clear:

Let us now turn to ... issues that challenge and bedevil practitioners of social benefit-cost analysis. The first challenge is deciding "whose benefits and costs count" It sometimes is called the issue of standing--that is, who has standing in the analysis of benefits and costs? This is an issue of scope. Should the analysis include only those costs and benefits affecting residents of the local community? The state or province? The nation? The world? Whether the net benefits of a project are positive or negative often depends on how narrow or broad the scope of the study is. (p27)

The scope for this Economic Assessment is set on p4

The NSW Department of Planning (DoP) Director-Generals [sic] Environmental Assessment Requirements (EARs) for the Project indicate that an economic assessment is needed as part of the EA. The EARs specifically require:

*A detailed assessment of the costs and benefits of the Project as a whole, and whether it would result in a net benefit for **the NSW community** (bold added)*

However, contrary to this requirement, the Economic Assessment assesses costs and benefits not from the perspective of the NSW community but from a range of perspectives, from the narrow perspective of the proponents to a broad global perspective, depending on the item. Note how the scope of analysis is different in the following sub sections.

Consideration of alternative projects-no underground option considered

The Economic Assessment includes only two alternatives – a 21 year extension using open cut methods or no activity at all. Identification of alternative projects is made strictly from the perspective of the proponent and not from the view of the NSW community:

***Aston Resources' alternatives** for the mining of coal are essentially limited to different scales, designs, technologies, processes, modes of transport, timing, impact mitigation measures, etc. However these alternatives could be considered to be variants of the preferred proposal rather than distinct alternatives. (p6) (Bold added)*

Identification and evaluation of alternatives is one of the most important parts of project economic evaluation. This is made clear in all guides to cost benefit analysis, including one co-written by the author of the Economic Assessment, Gillespie & James (2002):

The main aims of an economic efficiency analysis are to...provide a framework for the evaluation of feasible alternatives. (p5)

See also:

Cost-benefit analysis is a procedure for comparing alternative courses of action by reference to the net social benefits that they produce for the community as a whole. (Commonwealth of Australia 2006, p2)

“One of the most important steps in project evaluation is the consideration of alternatives throughout the project cycle, from identification through appraisal.” (Belli et al. 1997, World Bank Handbook on Economic Analysis)

Most obviously, the Economic Assessment includes no consideration of an underground mining option, an option the local community has indicated it would support. A neighbouring coal project, the Boggabri Mine Extension Project, did engage consultants to analyse an underground mining option, WDS Consulting, (2009). WDS concluded that underground mining was both technically feasible and economically viable. In depth calculations of the underground option were not included in the cost-benefit analysis of the Boggabri Mine as:

At the request of [proponents] Idemitsu, a full financial analysis was not within [the consultant’s] deliverable scope. Our primary financial deliverables, ... are to be integrated into Idemitsu cost models for internal economic analysis. (WDS 2009, p7-1)

Economists at Large reviewed WDS’s work and conducted basic financial analysis of the data presented. We concluded that the profitability of the underground as presented in the WDS study was \$500 million greater than that of the preferred option presented in the Boggabri Coal Project Economic Assessment (also by Gillespie Economics).

Table 1 Underground and open cut mining options for Boggabri Coal Project

	Boggabri Coal Project Environmental Assessment Appendix C - Underground option (\$m)	Boggabri Coal Project Environmental Assessment Appendix Q - Economic assessment (open cut mining option) (\$m)
Revenue	\$3,730	\$5,343
Other production benefits	NA	\$54
Capital costs	\$652	\$778
Operating costs	\$1,288	\$3,328
Other production costs	NA	\$25
NPV	\$1,790	\$1,266

Source: Campbell (2011)

Gillespie Economics’ rationale for not including a viable underground option in their cost benefit analysis of the Boggabri Mine was that “*alternatives need to be **feasible** to the proponent*” (bold in original) (Gillespie, 2011). But cost benefit analysis of the Maules Creek project is required to consider the benefits for the NSW community. As underground mining in the area has been found

to be economically viable, the cost benefit analysis must consider how this option would affect the welfare of the NSW community.

Net Production benefits

Net production benefits – the profits from selling the coal – are the main benefits from the project. How much of these will accrue to the people of NSW is unclear, but is of great importance to the assessment of the project, as made clear by Eggert (2001) who states that when considering the perspective of local communities *“an analyst must be careful to ... eliminate any net benefits that accrue to nonresidents of the community”* (p28). Eggert makes clear that in the case of a national-level assessment: *“a national government would consider profits sent abroad as a cost.”* (p27) As this assessment is to focus on NSW, profits sent outside of NSW should not be considered a benefit of the project.

An estimate of how much of the production benefit/profit of the project will be retained in NSW and how much will be lost to the NSW community should have been included in the Economic Assessment. A detailed estimate is beyond the scope of our submission; however some indications can be gained from media reports, Aston Resources annual report and Bloomberg Data.

As reported in the Australian newspaper¹ Itochu Corporation of Japan owns 15% in the Maules Creek Project. A further 10% of the project looks set to be sold to Tokyo-based Electric Power Development Co². The remaining 75% of the project is owned by Aston Resources. Aston Resources top shareholders and their places of residence or registration are summarised in Table 2.

Table 2 Aston Resources major shareholders

	Shareholder	Stake	Registration/ residence	Source
1	Nathan Tinkler	31%	NSW	http://en.wikipedia.org/wiki/Nathan_Tinkler
2	Farallon CR Sidecar	7%	USA	http://investing.businessweek.com/research/stocks/private/snapshot.asp?privcapId=99047910
3	Burlingham Intl Ltd	7%	UK	http://investing.businessweek.com/research/stocks/private/snapshot.asp?privcapId=115281942
4	Wellington Management	6%	USA	http://wellington.com/

¹ <http://www.theaustralian.com.au/business-old/mining-energy/aston-resources-unlikely-to-sell-down-tier-one-stake-to-itochu/story-e6frg9e6-1226074987934>

² <http://www.theaustralian.com.au/business/mining-energy/aston-resources-sells-10pc-of-maules-creek-to-j-power-australia/story-e6frg9df-1226156879936>

5	Osendo Pty Ltd	5%	NSW, but is a subsidiary of Noble Group, based in Hong Kong	http://investing.businessweek.com/research/stocks/private/snapshot.asp?privcapId=59129114 and http://www.thisisnoble.com/index.php?option=com_content&view=article&id=180&Itemid=430&lang=en
6	HPRY Holdings	4%	Singapore	http://perennial.listedcompany.com/news.html/id/268702
7	Itochu Minerals and Energy	3%	Japan	http://www.itochu.com.au/
8	Kuok Inv Singapore	3%	Singapore	http://www.kuokgroup.com.sg/
9	Hannigan Todd	2%	NSW or Qld	http://astonresources.com/about-us/board-of-directors
10	Todd Tom	2%	Qld	http://au.linkedin.com/pub/tom-todd/7/535/904

Source: retrieved from Bloomberg 30/9/2011

We see that of the ten major shareholders, only one is definitely based in NSW. We suggest that at least half the profits of the project will not be retained by the NSW community and should therefore not be included as a benefit in the Economic Assessment if it is to comply with the DoP requirements.

That the majority of profits from this mining project will likely be lost to NSW and Australia is not unusual. Most mining projects in Australia are majority foreign owned and most mining profits are realised by foreign investors. See Edwards (2011) and Richardson & Denniss (2011) for discussion of this topic.

Royalties

The assessment correctly does not list royalties as a cost to the producer, though they are discussed in the cost section. As these royalties accrue to the government of NSW, they are a benefit to the state. It would be helpful if these royalties were listed in Table 2.2 along with other benefits of the project, separated from the rest of the net production benefits item, which as we have seen accrues largely to investors outside of NSW.

Correctly listed in Table 2.2, royalties would need to be presented in present value form, like the other values, not the undiscounted form as on page 8. By presenting royalties without discounting, they seem higher than their present value. Present value of royalties from the project are \$1,298M, not to be confused with their undiscounted total value of \$2,800M (p8).

Opportunity Costs

Opportunity cost is a concept in economics that incorporates the value of the foregone alternative in decision making. In other words, considering what are the cost and benefits of the next-best option available. One potential opportunity cost of the proposed project is that of not proceeding with an alternative to the project, such as an underground mine, as discussed above. However, this does not consider the complete opportunity costs from the perspective of the NSW community. This project going ahead may mean that another project does not. Without consideration of the next-best forgone alternative, the benefits of the project are difficult to evaluate.

Some opportunity costs are considered in the economic assessment, those of use of project land, water and capital. In the case of opportunity cost of capital, again we see that this is not considered from the perspective of the NSW community, but from that of the project itself. Opportunity cost of capital is listed as a zero value as no investment in capital equipment has yet occurred. The opportunity cost of capital to the community of NSW, however, is the value that NSW investors in the project could have realised investing in other projects instead of this one.

If returns on capital to NSW investors in other projects are similar to that of the proposal, then the opportunity cost of capital will be close to the share of production benefits retained by NSW investors, as discussed above. This cost would substantially offset the benefits to NSW investors, and further reduce the net benefits to the project from the perspective of the NSW community as required by the DoP.

Greenhouse gasses

The Economic Assessment uses a shadow price of \$30 per tonne of carbon dioxide to estimate the external cost to society of carbon emissions generated by the project. However, these costs accrue to the society of the world, rather than specifically to the community of NSW. The costs to NSW of these carbon emissions are likely to be lower than this.

The costs of the burning of this coal by its purchasers, however, will also be borne by the NSW community along with the rest of the world. The “dope dealer’s defence³” taken by coal mining companies – that if we didn’t sell it to users, somebody else would – leaving complete responsibility for the emissions of coal burning with the purchasers, fails to consider that the NSW community will also bear the costs of these emissions through climate change.

Discussion of distribution of costs and benefits

As we have seen the Economic Assessment fails to consider the costs and benefits of the project consistently from the perspective of the community of NSW as it is required to do. There is little discussion in the assessment of how costs and benefits are distributed, the only reference being on p13-14:

³ <http://www.abc.net.au/lateline/content/2008/s2575384.htm>

“(benefits will be) distributed amongst a range of stakeholders including:

- *The local community in the form of donations and community support programs;*
- *Aston Resources and its shareholders;*
- *The NSW Government via royalties; and*
- *The Commonwealth Government in the form of Company tax.”*

As we have discussed, the benefits to most of the project’s shareholders and taxes to the Commonwealth Government are not relevant in understanding the project’s value to the NSW community. It is disappointing that the benefits of state royalties and local community donations are not quantified or discussed in any detail in the economic assessment, as it is these benefits that are of great interest to the local community and the community of NSW.

The distribution of cost and benefits of coal mining projects are well understood by Gillespie Economics, who provided input into the following Table 3, originally published in (Campbell, 2011).

Table 3 Distribution of Costs and Benefits of coal mining projects

	Benefits	Costs
Global	After tax profits	Greenhouse gasses
National	Company tax	
	After tax profits	
State	Royalties	Ecology
	After tax profits	Heritage
	Social benefits of employment	
Local	Unquantified and unspecified community support programs	Air quality
		Noise and vibration
		Groundwater
		Traffic
		Visual impacts
		Surface water
		Health impacts

Source: modified from Campbell (2011) to reflect ownership of Aston Resources as discussed above

We see that while only some of the benefits of mining projects accrue at a state or local level, almost all external costs and benefits do accrue to these communities. This inequitable distribution of costs and benefits is at the heart of the present conflict between mining and communities. This makes it all the more important that external costs and benefits are calculated and explained in documents such as the Economic Assessment. It is therefore disappointing that the Economic Assessment makes errors and omissions in their calculation.

Miscalculation and/or omission of external costs and benefits

If all external costs can be internalised by an offset programme then there is no need to estimate their values. This is reason that the Economic Assessment assigns zero values to most of the external costs arising from the project, as listed in table 7 above. However, the allocation of a zero value, with no sensitivity testing, ignores the debate between physical scientists as to what extent these offsets are achievable. See for example:

- ViPAC (2011) who question the findings of the environmental assessment's air quality study
- Water Resources Australia (2011) who dispute the findings of the environmental assessment's groundwater study

We suggest it is beyond the expertise of Gillespie Economics to adjudicate in these debates between physical scientists. The allocation of zero values to these external costs is just such a judgement. When the necessary revisions are made to the Economic Assessment, we also recommend the proponents take note of Curtis (2011), who estimates the value of the ecosystem goods and services lost due to the clearing of the Leard State Forest at some \$490,000 per annum. Curtis also urges analysis of land values to consider losses of amenity and social value to the community. Curtis's background as a physical scientist, land economist and ecological economist gives his findings considerable weight.

In addition to the uncertainty around values above, others have been omitted or miscalculated:

- Health impacts
- Social value of employment
- Recreation

Health Impacts

The economic assessment makes no mention of the impacts on human health of open-cut coal mining and transportation, despite this issue garnering considerable attention in the region, the media and academic writing. External impacts such as health can be measured and quantified in economic terms, as pointed out in Gillespie and James (2002):

[C]ertain kinds of social impacts, such as social dislocation or adverse health effects, may be partially appraised in monetary terms. (p21)

An example of a quantitative interpretation of health outcomes is a recent publication from Epstein et al (2011), which estimates that the cost of lives lost in the Appalachian mining region in the US is US\$74.6 billion per year (p.83). This builds on other studies such as Hendryx and Ahern (2009) who found "[a]ge-adjusted mortality rates were higher every year from 1979 through 2005 in

Appalachian coal mining areas compared with other areas of Appalachia or the nation” (p.547), Hendryx and Ahern also refer to past research on coal mining regions that found elevated levels of chronic heart, respiratory, and kidney disease, and lung cancer, after control for socioeconomic factors. They found that the health impacts far outweighed the economic benefits of mines.

Similarly, a report from the Nobel Peace Prize-winning organisation Physicians for Social Responsibility found that “coal pollutants affect all major body organ systems and contribute to four of the five leading causes of mortality in the U.S.: heart disease, cancer, stroke, and chronic lower respiratory diseases.” (Lockwood et al. 2009)

Closer to home, a study investigating the direct and indirect health impacts of coal mining is currently underway in the Hunter Valley, by the University of Sydney’s Health and Sustainability Unit. This follows long-term reports of negative health impacts, including a ‘cancer cluster’ and increased respiratory conditions, many of which were outlined by a report on ABC’s *Four Corners* program last year (ABC 2010).

With long-term, empirical evidence linking significant health impacts to coal mining, it is important that the costs associated with impacts are included in consideration of this project. Clearly these are costs that accrue to the local and NSW community and should be included in the assessment.

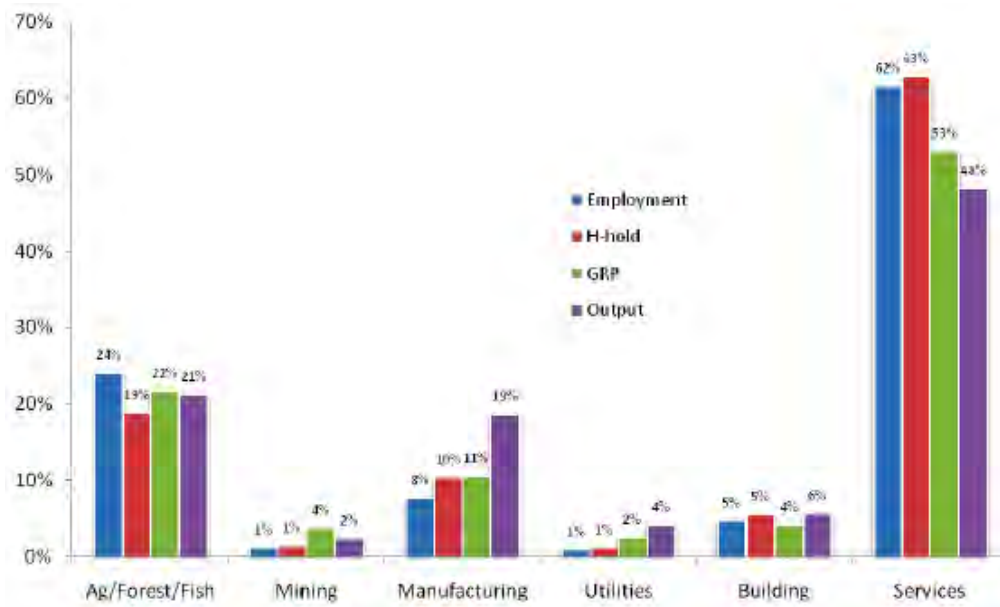
Social value of employment

The Economic Assessment discusses and places a value on the existence values that the NSW public places on rural jobs and communities. It is important to realise that the values mentioned in the Economic Assessment regarding employment are derived not from a study relating to the Maules Creek mine, but to a mine in the Illawarra, Bulli Seam Operations (see Gillespie Economics 2009). This is important, as the two mines differ in two significant ways:

Firstly, the Illawarra Bulli Seam operation is an underground, longwall mine, while Maules Creek is open cut. The survey presented to respondents was based on environmental issues such as land subsistence and impacts on local streams – hardly comparable to open cut mining of a state park with listed threatened ecosystems. If an underground option for the Maules Creek project was being considered, perhaps this would be a relevant study, but it seems unlikely respondents would give similar answers to the open cut option.

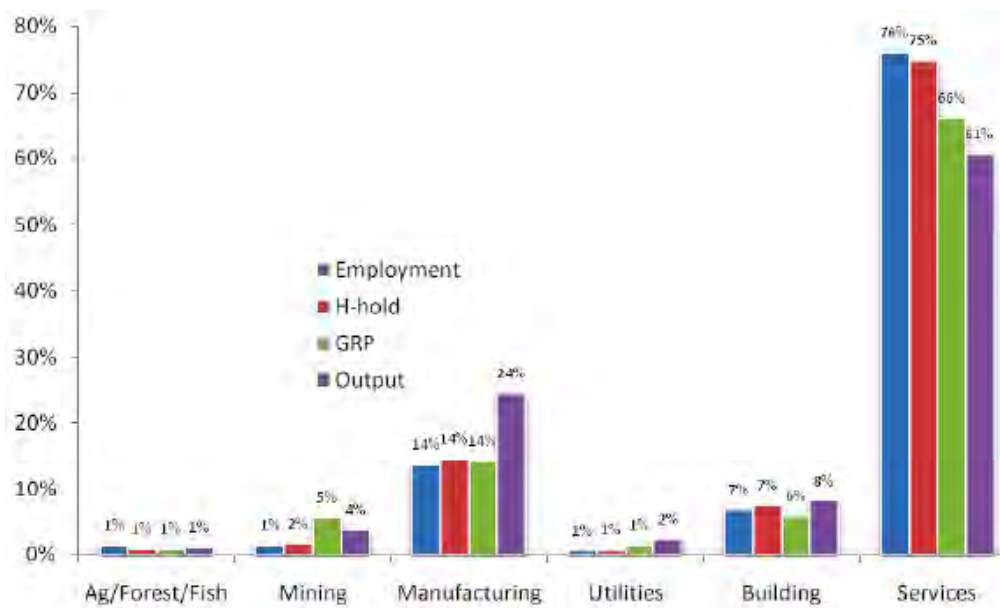
Secondly, the Bulli Seam operation is in an area where coal mining plays quite a different role in the local economy. Note in the graphs below, taken from the Bulli Seam report and the Economic Assessment, that coal mining is a larger part of the Illawarra economy than agriculture, while in the Maules Creek area agriculture is dominant.

Chart 1: Economic structure in the region around Maules Creek



Source: Figure 3.1, p.17 from Economic Assessment.

Chart 2: Economic structure in region around Bulli Seam



Source: Figure 3.1, p.31 from Bulli Mining Operations Socio-Economic Assessment

Note the difference in the importance of the Ag/Forest/Fish section of the two regions. It seems unlikely that respondents would place the same value on 400 mining jobs in an agricultural area, in an open cut mine that may threaten agriculture, as they would on 1,170 mining jobs in an underground mine in a traditional mining area.

Furthermore, the Bulli Seam study is based on a survey with serious flaws that cast doubt on its values attached to employment. The survey informs respondents of some local impacts of mining:

Mining can also result in the clearing of native vegetation and the loss of Aboriginal heritage sites from the construction of mine surface infrastructure i.e. buildings and coal stockpile areas. (Gillespie Economics, 2009, Attachment 1 p1)

However, no mention is made of the long-running mining boom, the labour shortages faced by the mining industry and the macroeconomic effects of the mining boom. The latter point is explored by Richardson & Denniss (2011) who outline how the mining boom has driven up exchange rates leading to job losses in exchange rate-sensitive industries such as manufacturing and tourism, both far bigger employers than mining.

Neither Gillespie Economics (2009) nor this economic assessment discuss the tendency for mining jobs to accrue less to local people and more to mining specialists who “fly-in and fly-out” (FIFO). The mining industry in Australia is largely serviced by a FIFO workforce, which has become the standard for resource development in remote areas (Storey 2010). Given this, it is reasonable to assume that at least part of the Maules Creek Mine workforce will comprise of FIFO workers, in which case, the positive economic benefit to the region is questionable and the willingness of the NSW community to pay for such jobs unlikely.

At the regional level, FIFO presents challenges for development, and ‘the practice of fly-in, fly-out is an ongoing factor limiting the expansion of the region... Fly-in, fly-out is impacting negatively on smaller communities’ (RDC, 1996). The complex economic and social consequences for mining communities and regional development as a result of FIFO operations is also explored in studies by Storey (2001), Hajkowicz (2011) and others.

A study on FIFO operations by Rolfe et al. suggests that the increased reliance on a non-resident workforce has meant that an increasing proportion of the economic stimulus from mining is flowing out of mining towns and into regional and metropolitan centres (Rolfe et al., 2007). The growth in the mining support sector has tended to be based in larger communities and strategic centres fulfilling the role of service hubs. As a result, a large proportion of the direct and indirect economic impacts of mining and employment have bypassed smaller local economies and focused immediately on the larger regional centres. McHugh states that by accessing their workforces and buying supplies and services from larger metropolitan centres, while benefiting from the resources of rural regions, mining companies cannot claim to be giving back to the regions in which they operate (McHugh, 2009). The loss of local benefits of resource developments in remote areas is described by Storey as the ‘fly-over’ effect of FIFO (2001). Storey queries the positive social value of FIFO employment and suggests that this ‘fly-over effect’ results in a ‘no town’ mining model (rather than a ‘new town’ model) (2010).

Government policy can address concerns raised by FIFO by ensuring that development approval of the Project is closely tied to industrial benefits, planning strategies and impact benefits agreements that seek to maximise local area benefits (see Storey and Shrimpton, 2008). No such discussion is included in the Economic Assessment. Unless the fly-over effects of FIFO are mitigated by agreements between Aston Resources, the Maules Creek community and the government, in which hiring and purchasing preferences are given to local workers and businesses, the negative implications of a FIFO workforce must be considered in an economic assessment of the overall economic and social impact of employment on the Maules Creek community.

Finally, we note the inconsistency between the employment estimates in the first and third paragraphs on p12 of the assessment:

[T]he project would generate up to 470 direct jobs (398 on average) during the operational period of 21 years. (Paragraph 1)

The project will provide an average of 416 direct jobs for a period of 21 years. (Paragraph 3)

It is very difficult to understand from the Economic Assessment what benefits of employment there would be from this project, whether these benefits would accrue to the local community and whether the NSW community places any value on these jobs.

Recreation

The Economic Assessment makes no mention of recreation values of Leard State Forest that will be lost due to mining. The same omission was made in the economic assessment of the Boggabri Mine, (Gillespie 2011). When this omission was pointed out in Economists at Large and MCCC submissions, the proponents calculated a “back-of-the-envelope” lost recreation value amounted of \$4 million in present terms. A calculation of the lost recreational value should be included in the Economic Assessment of the Maules Creek mine.

Inconsistency of calculations

Major values presented in the Economic Assessment Table 2.2 (p13) do not correspond with values presented in the rest of the assessment. We have calculated the present values of operating costs and revenue from values presented on pages 8, 9 and 13 of the assessment. These values vary by over \$1.5 billion with those presented in table 2.2 and are summarised below.

Table 4 Comparison of revenue and operating cost calculations

	Table 2.2	Calculated from text	Difference
Revenue (\$M)	14,336	16,011	1,675
Operating costs (\$M)	5,134	6,655	1,521

The point of this comparison is not to suggest that project is more valuable than was presented, but to show that the public can have no confidence in the figures presented. We urge the proponents to explain how they arrived at their present value figures and to publish their full working and modelling. Our calculations are explained in the following sub-sections.

Revenue

Our calculations, based on values on pages 8, 9 and 13 of the assessment, result in a present value of \$16,011M, which is \$1,675M greater than the value presented in Economic Assessment Table 2.2.

The value of average annual revenue presented on p9 is \$1,600M. To achieve this level of average annual revenue, with production to “ramp up” from zero to 13Mtpa by year 8 requires a weighted coal price of \$USD117.63 across the three different types of coal the mine will produce, thermal coal, semi-soft coking coal and PCI coal. This means that the mine must produce portions of coal summarised below:

Table 5 Obtaining weighted price for average annual revenue value

	Unit		Percentage
Thermal coal	USD/tonne	96	43%
Semi-soft coking coal	USD/tonne	135	47%
PCI coal	USD/tonne	129	10%
Weighted price	USD/tonne	117.6	

While not explained in the Economic Assessment, this weighting is in line with estimates published on the Aston Mining website⁴. Using this price, however, results in a total present value revenue of \$A 16,011M, which does not match the \$A 14,336M printed in table 2.2 (p.13). Our full calculations are provided in Table 6 below.

⁴ <http://astonresources.com/maules-creek/project/maules-creek-project/>

Table 6 Present value of revenue

	Unit	Value	Yr	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Annual Coal Production	Mtpa		1.6		3.3	4.9	6.5	8.1	9.8	11.4	13	13	13	13	13	13	13	13	13	13	13	13	13	13
Weighted Price	\$USD/t	117.6																						
Annual Revenue USD	\$USD M		191		382	573	764	956	1,147	1,338	1,529	1,529	1,529	1,529	1,529	1,529	1,529	1,529	1,529	1,529	1,529	1,529	1,529	1,529
USD/AUD		0.76																						
Annual Revenue AUD	\$AUD M		251		503	754	1,006	1,257	1,509	1,760	2,012	2,012	2,012	2,012	2,012	2,012	2,012	2,012	2,012	2,012	2,012	2,012	2,012	2,012
Average Annual Revenue	\$AUD M	1,600																						
Discount Rate		7.0%																						
Present Value Revenue	\$AUD M		235		439	616	767	896	1,005	1,096	1,171	1,094	1,023	956	893	835	780	729	681	637	595	556	520	486
Total PV Revenue	\$AUD M	16,011																						

Operating Costs

In the Economic Assessment average annual operating costs are estimated at \$A574M (p.8). The present value of these operating costs in Economic Assessment Table 2.2 (p13) is \$A5,134M, at 7% for 21 years. As with average revenue above, the present value of the annual figure does not match the present value presented in table 2.2. The present value of the annual value is \$A6,655M. Our full calculations are in Table 7 below.

Table 7 Present value of operating costs

	Unit	Value	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Annual Operating Costs	\$AUD M	574	574	574	574	574	574	574	574	574	574	574	574	574	574	574	574	574	574	574	574	574	574	0
Discount Rate		7.0%																						
Present Value OpCosts	\$AUD M																							
Total PV OpCosts	\$AUD M	6,655	574	536	501	469	438	409	382	357	334	312	292	273	255	238	223	208	194	182	170	159	148	-

The difference between these figures and the present values presented in Table 2.2 of the Economic Assessment need to be explained in a revised Economic Assessment.

Conclusion

The Economic Assessment for the Maules Creek mine should not be used for decision making purposes without substantial revision. The Assessment's inconsistent calculations of the major financial costs and benefits of the project are contrary to normal economic and financial practice and should be explained. The lack of consideration of alternative projects is contrary to cost benefit analysis best practice, even as outlined in a handbook by the author. In particular, consideration needs to be made of underground mining, an option supported by the local community.

The scope for the Assessment, set by the Department of Planning, requires the assessment to take the perspective of the NSW community. The Assessment fails to do this in relation to:

- Alternatives
- Net production benefits
- Royalties
- Opportunity costs
- Greenhouse gasses
- Distribution of costs and benefits

Given these breaches of the Economic Assessment's requirements, we urge the Department of Planning to require its revision and to consider whether the Economic Assessment fulfils its legal requirements.

The Economic Assessment also needs to be revised to better consider external costs and benefits. The opinions of experts in the physical scientists should be considered rather than blindly accepting the assurances of the proponents that proposed offset programmes will negate any effects. Furthermore, the omissions of health impacts and loss to recreation should be amended, while values relating to the employment created by the project more carefully considered.

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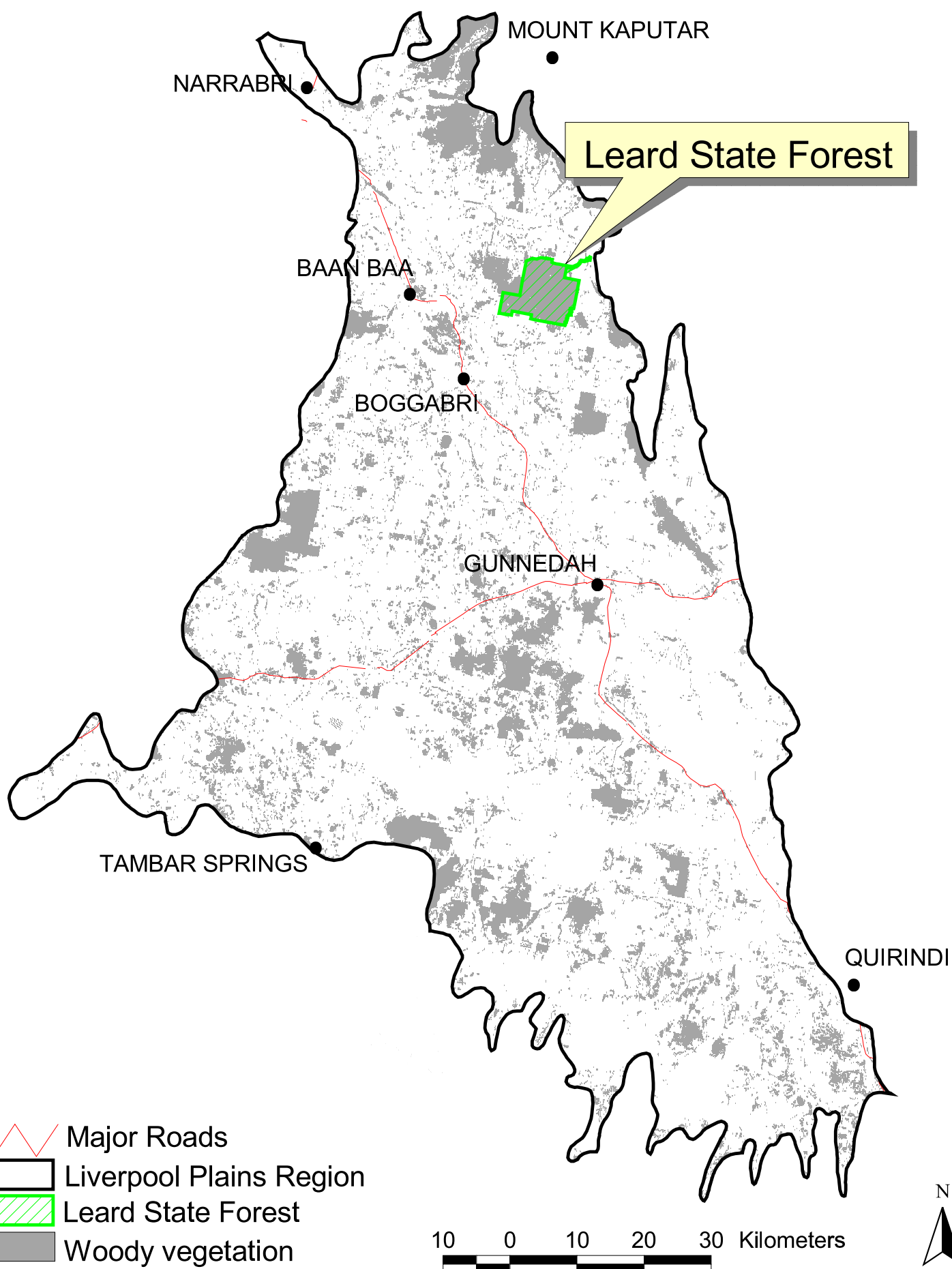
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Appendix 8 – Remnant Forest Map

Map of remnant forest in the Liverpool Plains region provided by Carmel Flint,
National Parks Association

Leard State Forest is the largest remnant in the heavily cleared Liverpool Plains region of NSW



Appendix 9 – Agricultural Impacts

Allocation of Land and Water Resources Between Agriculture and Mining

The following submission follows the format produced by Gillespie Economics in the Allocation of Land and Water Resources Between Agriculture and Mining report within the Aston Resources EA. There has been some reproduction of Gillespie content material.

1.0 INTRODUCTION

There appears to be a range of interrelated issues associated with coal mining and the use of agricultural land and water, including:

- The reduction of agricultural property valuations due to nearby mining precincts
- The loss of business equity due to agricultural property devaluation
- The depressurisation of groundwater aquifers due to aquifer interception
- The loss of productive capacity due to airborne particulate contaminants
- The loss of rural amenity due to acoustic, light and particulate pollution and increased traffic volumes
- The removal of business confidence due to the uncertainty of future mining projects
- The failure to recognise that farms are businesses and family homes
- The reduced appetite for risk of farmers due to the above impacts and uncertainty surrounding future business planning decisions

Many of these issues cannot be addressed through discussion of economic principles and simple empirical analysis in relation to NSW and the case study region of Gunnedah and Narrabri Statistical Local Areas (SLAs).

2.0 UNDERLYING ISSUES WITH COAL MINING AND USE OF AGRICULTURAL LAND AND WATER CONCERNS

2.1 Agricultural Lands are Important to New South Wales

Agricultural lands are not only important to NSW but also to those farming families that are custodians of this land. "The world is running out of good farmland. A quarter of all land is now so degraded that it is scarcely capable of yielding food. At the same time, cities are sprawling, smothering the world's most fertile soil in concrete and asphalt. A third category of land is poisoned by toxic industrial pollution. Agricultural lands are the root of our existence, essential to life on earth, but we treat it as a cheap industrial commodity". (*Julian Cribb. The Coming Famine, CSIRO Publishing*)

Coal is what most of us think of as a strategic material. Yet agricultural lands are every bit as important but in a longer time frame.

Given that the state of agricultural lands determines what can be grown for how long, preserving the basis for the wealth of future generations requires intergenerational land stewardship.

While recognising that the area used for mining is a small fraction of the area of NSW (i.e. likely to be less than 0.1% of the total NSW land area), it must be recognised that land suitable for agriculture is finite and the environmental and socio-economic footprint of a mine often extends past the project boundary. Superficially, NSW appears to have plenty of spare agricultural land, but - like water, it isn't always located in the most favourable climatic regions or where the major centres of population and increase in food demand are most likely to occur.

2.2 Agricultural Lands Support Economic Growth in Regional Areas

Agricultural lands support economies of regional areas. Due to productivity growth and advancement in technologies there has been a structural shift in population demographics within regional

economies. Up scaling of machinery and changing enterprise mix has resulted in a shift in labour requirements from manual (such as shearing), to technical such as agronomic consultants and specialist service technicians for modern machinery.

Productivity growth has helped to ease the effects on farmers' incomes of a persistent decline in their terms of trade (prices received for outputs relative to prices paid for inputs). Further, productivity growth has also helped maintain the competitiveness of agricultural exporters and enabled export volumes to recover and expand following periods of decline (*Roberts et al. 2009 Australian farm survey results , ABARES April 2011*).

2.3 There is a Conflict between Prime Agricultural Land and Other Land Users that Threatens Food Production

The author of this document requests that Gillespie Economics provide a definition of Prime Agricultural Land. As of August 2011 the NSW Government has yet to release its Strategic Land Use Policy including the above definition.

The concept of peak agricultural land is demonstrated in the report by Rabobank that shows that the area of food production has declined from 0.45 ha per person in the 1960s to 0.23 ha currently and will keep falling as global population rises, to around 0.18 ha in 2050. (*Ingrid Richardson, "Fertilisers, a Precious Commodity," Rabobank Global Focus Report, summer 2007*).

2.4 Water Supplies Should Also be Protected

Farmers presently use about 70% of the world's readily available freshwater to grow food. It is anticipated that by 2050 competing consumption from urban, industrial and other uses could consume half or more of the world's freshwater supplies. Unless major new sources or savings are found, farmers will have about half of the world's currently available freshwater with which to grow twice the amount of food. (*International Water Management Institute, summary of Water for Food; Water for Life: A Comprehensive Assessment of Water Management in Agriculture, ed. David Molden*)

3.0 ECONOMIC EFFICIENCY OF THE PROPOSALS THAT IMPACT PRIME AGRICULTURAL LAND

3.1 Economic Efficiency

From an economic perspective, the aim is to use scarce resources, such as capital, labour, land and water, to maximise economic welfare or community fulfilment. (Gillespie Economics)

From an agricultural perspective, the aim is to use scarce resources , such as capital, labour, land and water in a sustainable manner to provide renewable produce (food and fibre) for community fulfilment in a self sustaining production system.

The description of agricultural land and water resources as market goods fails to consider the non renewable nature of agricultural land. Re-allocation of agricultural land away from its intended use (ie. agriculture) permanently removes its most productive use to society (the production of food and fibre).

Next best use (ie.coal mining) may well be the best net economic benefit to society when considering mining projects within their geographic boundaries, but when externalities are considered that impact beyond those geographic boundaries the benefit cost analysis (BCA) must include all associated impacts beyond the project boundaries.

3.2 Economic Efficiency of Proposals that impact Prime Agricultural Land

In a simple BCA framework as described by Gillespie Economics, the potential costs and benefits of a mining project that impacts agricultural land describes Net Production Benefits and Net Externalities. The externalities (Residual environmental impacts after impact mitigation) describe a physical cost to the environment, and as such, do not describe an economic cost to agricultural lands beyond the project boundaries.

Where the proposal impacts agricultural lands there is an opportunity cost to society of using the land for mining instead of agriculture. While the magnitude of this cost is reflected in the market value of

land, the opportunity cost is not reflected in the magnitude of the external effects (net externalities) of the project.

The market value of the mined land does not reflect, among other things, the discounted future net income that can be earned from all properties affected by the project and as such fails to reflect the community valuation of agricultural production from the wider region.

The ultimate outcome of any BCA for the proposal is an empirical issue and as such the use of a BCA within the EA decision process must not be considered in isolation of all net externalities as described in section 1.0 above.

4.0 CASE STUDY - MAULES CREEK PROJECT

4.1 Introduction

The Maules Creek Project is located within the district of Maules Creek - Bullarah Creek as described under the Narrabri Shire Growth Management Strategy, an agricultural district located within the Narrabri Shire Council Boundaries. The district is zoned as Rural 1 (c) within the Narrabri Shire Growth Management Strategy.

4.2 Population

The general characteristics of the Maules Creek - Bullarah Creek district comprise of 269 total rural holdings, of which 170 are defined as agricultural holdings, and, 9 rural residential lots. Extensive agriculture comprises 158 holdings and intensive irrigation 12 additional holdings. Most agricultural holdings would have 1 or more populated rural residential dwellings.

4.3 Existing Agricultural and Mining Production

No production data is available for existing agricultural and mining production within the Maules Creek - Bullarah Creek district.

For the purposes of this submission the Gillespie Economics case study of the Gunnedah and Narrabri statistical local areas (SLAs) provides a good example of the empirical issues associated with coal mine expansion within the Gunnedah basin in general and the Leard Forest complex in particular.

Page 8 Table 2 by Gillespie Economics - Existing Agricultural Land Use and Value of production in Gunnedah and Narrabri SLAs provides a classic example of selective economic analysis. Typically, the returns on investment from agricultural resources are derived from both the capital appreciation of the resource (e.g. agricultural lands), and the potential yield or production from operating an agricultural enterprise. Table 2 only includes the total gross value of agricultural production. Long term capital appreciation or rate of return including capital appreciation is a standard measure of business performance and as such should be included.

4.4 Values and Regional Economic Impacts of Maules Creek Project and the Water and Land Inputs

Page 9 Table 3 by Gillespie Economics - Agricultural Land Suitability and Potential Production Values of Land Impacted by the Project, identifies the land directly associated with the project. Net externalities as identified using the BCA framework as described in section 3.2 such as residual environmental impacts after impact mitigation are not described by table 3. Other externalities such as reduced agricultural lands valuation and airborne particulate pollution do have an economic value and as such should be included within this analysis.

Page 9 Table 4 - Agricultural Production Values Associated with 3000ML of Water Allocated to Irrigated Cotton, Provides a gross margin budget for irrigated cotton. The use of 3000ML of water by the project would provide a substantially greater return per ML of water than irrigated cotton. The table fails to consider water users beyond the project boundaries that may be adversely effected by the depressurisation of the alluvial aquifer by net externalities (i.e. Residual environmental impacts after impact mitigation).

Page 10 Table 5 - Regional Economic Impacts of the Project and Displaced Agriculture, Provides a basic example of the economic earning potential of the project compared to using the land within the project boundary as an agricultural enterprise mix. Again, Gillespie Economics have failed to consider the net externalities that may affect agricultural lands beyond the project boundaries. A rigorous economic assessment would consider all agricultural production beyond the project boundary within the zone of affectation and possibly to an even greater geographic extent as a margin of safety.

An inclusion of this data may identify the true economic cost of "residual environmental impacts after impact mitigation".

4.4 Economic Efficiency of Using Land and Water Resources for Coal Mining Instead of Agriculture

Page 10 Table 6 - Net Production Benefits of Different Land Uses (\$M), again provides a simplistic BCA calculation of net production benefits of mining vs. agriculture within the project boundary. The table fails to include net externalities of different land uses beyond the project boundaries, and, the potential environmental and therefore economic costs such as permanent groundwater loss due to the project's impacts in perpetuity. The statement following Table 6, - There are a number of potential negative externalities associated with the project valued at in the order of \$303M, is disturbing in the sense that this is a study of the allocation of land and water resources between agriculture and mining. What are the "net externalities" calculated at \$303M, and, have they been calculated in perpetuity?

5.0 CONCLUSION

The Gillespie Economics study of the allocation of land and water resources between agriculture and mining using a BCA analysis, by design, fails to adequately address the conflict between family farms and mining at a micro level. A one paragraph inclusion mentioning a \$303M negative externality without a considered analysis of this cost upon the local community fails to provide a valid benefit cost analysis for the people of Maules Creek.

The study fails to identify who will bear the \$303M cost. Will it be the proponent, or, will it be the local environment and community including family farm businesses that are subjected to this economic cost of economic efficiency that seeks to allocate resources in a manner that maximises the net benefit to society as a whole.

Recently the mining industry in Australia has boomed, surging from around four per cent of GDP in 2004 to around nine per cent today. But the rise of the mining industry is neither inexorable nor universally beneficial. While the high exchange rate associated with the mining boom has brought down the price of imports, at the same time it has ensured that trade - exposed industries such as agriculture, tourism, manufacturing and education will find it harder to compete internationally.

Much has been said about the changing face of the mining industry, where the effects of the boom have been both substantial and positive. But until very recently there has been far less discussion of the impact of the mining boom on the rest of the economy, including those which have suffered as a result. While one might assume that any expansion in the mining industry simply adds to the overall size of the Australian economy, in reality the operation of the macro economy is far more complex. Indeed, much of the growth in mining comes at the direct expense of expansion in other parts of the economy. (Richardson, D. , Dennis, R., The Australia Institute - Mining The Truth 2011).

Key Recommendations

- That a rigorous economics assessment of the impacts of mining on agriculture be conducted at a local level such as Maules Creek - Bullarah Creek as defined in the Narrabri Shire Growth Management Strategy.
- That such an assessment include Agricultural land valuations that may demonstrate loss of value or saleability of those lands due to the impacts by coal mining within the Leard Forest coal complex.

5.0 REFERENCES

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Maules Creek Community Council Inc

Re: Maules Creek Coal Project/ Project Application Number: 10_0138

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Richardson, D. , Dennis, R., The Australia Institute - Mining The Truth 2011

Narrabri Shire Growth Management Strategy

http://narrabri.cfm.predelegation.com/index.cfm?page_id=1220

Appendix 10 – Aboriginal Heritage

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24th September 2011

Atten: Mr Phil Laird
Maules Creek Community council Inc
“Middle Creek”
Boggabri. NSW. 2382.

Dear Phil,

RE: DESKTOP REVIEW OF MINE AT MAULES CREEK

I have conducted a review of the work undertaken by the archaeologist and Aboriginal site officers at the proposed Maules Creek mine. I have discussed the project with the traditional owners in the area and have listened to their views. In general the work undertaken is of good standard and I agree with the findings.

There remains the fact that the area known as Leard Forest has not been fully investigated by either an archaeologist or by the Aboriginal Stakeholders. Investigation of this area needs to be fully undertaken as there are various effects that have not been taken into consideration.

The main point being the effects that the mine will have on watercourses that emanate from the catchment located from the proposed development will be affected by run off being removed. Back Creek that runs to the north of the development contains a species of Melaleuca (*M. bracteata*), a tall bushy shrub or small tree with narrow ovate leaves and white flowers in leafy cylindrical spikes and a tendency to grow in wetland areas will be affected by the change in water flows from the proposed development. This species was used by Aboriginal people for its paper-like bark for wrapping, carrying foodstuffs and medicinal uses. The wood was used for making wooden implements and the leaves (tea tree oil) was used as an antifungal and medicinal dressing for wounds and other skin lesions.

It is recommended that further archaeological studies be undertaken before the proposed development can proceed.



Yours faithfully,
SUZANNE R HUDSON B.A.(HONS), Dip. FLM, Dip. AF&CC, J.P.
Consulting Archaeologist

Appendix 11 – Health Impacts

Report by Dr Steve Robinson and Murray Pakes outlining Health

Affidavit of Professor Matthew Peters evidence to the Land and Environment Court.

Report by Dr D van Steenis describing Coal “opencasting” and health impacts.

Report by Kim Hann regarding Ammonium Nitrate Blast Fumes

Urgent Reform of Coal Industry operating standards required

“I am appalled at the very dated health standards causing much unnecessary death and disease in the Hunter” stated UK Industrial air pollution expert, Dr Dick van Steenis, when he toured the Hunter region last week. He noted some parts had death rates as much as 37% above the national average and was positive the poorly regulated coal mining and power generation industries are to blame. Compounding the problems from coal is the temptation to use power stations and bulldozers as defacto hazardous waste disposal units reducing the cost to coal companies but causing enormous escalation of health damage.

Dr van Steenis visited coal communities and lectured in Gloucester, Liverpool Plains, Singleton, Muswellbrook, Newcastle and ending at the Environmental Defenders Office in Sydney. The following is a synthesis of his observations and recommendations.

Dust problems, PM10 and PM2.5 – SIZE IS IMPORTANT

Open cut mining produces dust particles at several stages in production. Both the size of the particle and the content are critical to causing health damage.

For dust to enter lung tissue it must be less than 3microns in diameter. Larger coarse particles breathed in will get caught in the hairs and mucous of the nose and bronchi. The convention is to describe coarse dust particles between the size of 10microns and 4 microns as PM10. Fine dust particles are conventionally measured as PM2.5. (A human hair is about 100microns in diameter). Whilst even much smaller ultra fine particles are produced in large numbers they are probably too small to cause major health effects. It is PM2.5 and PM1 particles that are the critical ones for human health. PM10 particles cause nuisance effects of dirtying all surfaces and if they get into the water supply such as rainwater tanks their toxins will be dissolved and can then produce health effects. The processes that produce PM2.5 tend to be different to the processes that produce PM10 and their levels bear no relation to one another. This fact is critical to understanding the deadly uselessness of the Australian dust monitoring system which is all built around measuring PM10 levels – there is no standard for PM2.5, and it is not measured or reported.

World-wide PM2.5 legislation

USA commenced legislation for PM2.5 levels in 1997 and they have noted a 6% reduction in mortality rates and a reduction in the associated health bill. Canada, Japan and France have followed suit. In contrast, in other polluting countries such as Australia the mortality rates and health expenses are rising.

OPEN CUT MINING DUST PRODUCTION

The mechanical processes of mining produces some PM2.5 but the majority of the dust is at least PM10. PM2.5 is produced in greatest numbers by processes that involve burning. At an open cut mine it is primarily the bulldozers and blasting which are the culprits plus any burning that may occur of a coal seam. Each large bulldozer

can emit the same number of fine particles as 900,000 Volvo P70 petrol cars. Even a small open cut mine is likely to have at least five of these heavy mining vehicles operating and large mines many more. Typically a bulldozer does not have a particle trap on the exhaust and the hot exhaust fumes are thrown into the air, rise and travel several kilometers. The cooling of the night air causes the particles to fall leading to coughing and asthma in children and young animals at night. (Most of a cars exhaust fumes have fallen to the ground within 100metres). If the diesel fuel is a low grade or mixed with oil refinery waste it causes the particles to reduce to PM1 size and will contain many more toxins.

Blasting usually only occurs about once per week but the gases produced are very toxic. Blast gases are not normally monitored despite their toxicity.

The processing, stockpiling, loading and transport of coal from over 30 mines to Newcastle and the loading onto ships are processes that cause coal to rub against hard surfaces and produce more dust. Water suppresses only coarse particles and dries out on long journeys so that the quantity of emissions from the uncovered coal rail wagons does not reduce even after several hundred kilometers. Every community beside the rail line is at risk as are the Newcastle suburbs within 3 kilometers of the coal loaders. (Wheat carried by rail and coal carried by road is covered. Why not oblige coal rail wagons to be covered?)

Water contamination from Open Cut Mining

Coal is washed in the processing plant and this requires about 200litres for every ton of coal. The dirty slurry is usually diverted to a dam which would need to be lined by 17feet of clay to absorb all the toxins and not leak them into the ground water. We know of nowhere that this has been done. Dirty water from Gunnedah area mines drains into the Murray-Darling system contaminating an enormous food bowl area. We are told areas of land at Ravensworth are still unsafe for stock 30 years after 'rehabilitation'.

POWER STATION DUST PRODUCTION

When pure coal is burned most of the particles are PM5 and do not enter the lungs, however about 20% of the particles are smaller and can enter the lungs. If impurities are added the particles are reduced to PM2.5 and PM1. Several people informed us hazardous waste including medical hazardous waste is being added to the coal at Liddell Power Station making it function as an incinerator even though the operating temperature is far too low for the waste to be properly broken down to safe basic particles. Mercury is just one toxin released by such plants. Dr van Steenis stated this is the most dangerous operation he encountered in his tour and in his opinion should be closed down. (If a power station is to operate as an incinerator as well it needs to be by the plasma gasification process which Dr van Steenis suggested should be built at Liddell since this process needs electric power and hazardous waste will continue to be widely produced and needs to be eliminated.)

Much of the coal in the Hunter Region is high in sulphur content and this will make particles acid and increase their toxicity. More than 200 different substances can be emitted so Power Stations need extensive emission control devices. Older power stations such as those in our valley are usually missing much of the controls which

could make them safe. Flue Gas Desulphurisation (FDG) is usually absent in older power stations as is means of elimination of very toxic nitrogen oxide gases. The bag filters which these older power stations have do not capture the smaller most deadly PM1 particles which are typically present when toxic waste is being added.

The haze, which greeted us as we travelled south from the Liverpool Plains into the Hunter, is comprised of PM2.5 and the density of haze has been demonstrated to be directly proportional to asthma increased mortality rates in the USA.

The high smoke stacks cause the dust particles to fall more further than with bulldozers. Every 100feet of the smoke stack distances the point that the fallout occurs a further 10km, with maximum levels again at night as the air cools. Thus both Singleton and Muswellbrook townships are in the drop zone of Liddell, Bayswater and Redbank Power stations. Prevailing winds tend to be up and down the valley and just a few hours of PM2.5 fallout can trigger heart attacks and asthma. Hunter Valley horse studs around Scone fear the dust is affecting their foals.

Damage from Power plants is detailed in a report “Death, Disease and Dirty Power” available on the web.

HEALTH DAMAGE FROM PM2.5 COAL PARTICLES

When a fine dust particle lodges in the lung the body's immune system mounts a defence. Macrophages transport bits of coal to the lymph nodes but most of the particle is walled off with fibrous tissue whilst the T lymphocytes neutralize some of the toxins. The body has a limited supply of these immune cells so that numbers drop throughout the rest of the body leading to increased susceptibility to infections and vaccines.

Respiratory system effects

Just a few hours exposure to acidic particles will trigger a further attack of asthma in the predisposed. Children living 1.5km from a mine have a 33% risk of asthma, at 3km the risk is 22% and at 5km it is 12%. Particularly nasty toxins called Polycyclic Aromatic Hydrocarbons (PAH) and dioxins can damage the genes causing mutations which will produce new proteins that in turn lead to new cases of asthma. The fibrosis leads to Chronic Obstructive Pulmonary Disease (**COPD** – Australia's fourth biggest killer) with evidence of permanent damage in children as young as 12 years old in areas with high PM2.5 rates. Lung cancer increases in these same areas due to gene damage.

In Singleton Dr Tuan Au has commenced testing the lung function of children and has already tested nearly 700 children with the aim of following them for five years.

Cardiovascular system effects

The platelets and other blood components become more viscous leading to clots in arteries whose walls have been roughened. Lipids are changed resulting in more fatty deposits in the vessel wall. Heavy metals in the coal such as nickel affect the electrical conductivity of the heart and cadmium attacks the elastic lining of vessels leading to aneurysm formation. The net effect is an increase in deaths from heart

attacks and strokes. Blood vessels in the placenta are damaged leading to low birth weight babies.

Neurological system effects

Mercury breaks down the blood-brain and blood-bowel barriers letting in other toxins such as PAH which lead to a reduction in intelligence and an increase in autism and other damage which releases challenging (antisocial) behaviours.

Lead from coal and released from the roofs by acid rain running into rural rainwater tanks leads to brain damage. Arsenic is also found in coal.

The chemical toxins cause lethargy and depression with clusters of increased suicide noted downwind of one incinerator. Rare neurological syndromes occur in clusters such as a group of people with Motor Neurone disease presenting in one street in Muswellbrook. Immune disease such as Multiple Sclerosis increase.

Metabolic and other effects

Thyroid function is often suppressed and combined with the lethargy arising from chemical toxins this can result in over-eating and excessive weight gain. Diabetes 2 rates increase. Eye diseases and skin rashes and infections all increase.

All the above damage to physical health is compounded by the psychological stress and depression arising from enforced changes to life plans, loss of quality of life, grief at the changed landscape, perceived powerlessness etc. Noise impairs concentration and sleep. Low frequency machinery noise (28Hz) may resonate in body cavities and people's rooms and interfere with nerve conduction.

More detailed descriptions of all the above are found in Dr Dick van Steenis's papers such as "Coal opencasting and health" and in the recent report from Physicians for Social Responsibility titled "Coal's assault on human health". This latter document notes that in 51 metropolitan areas in USA where legislation forced the reduction of PM2.5 levels there were significant increases in life expectancy. A detailed reference list of 370 scientific papers supporting the above is available on request.

FINANCIAL IMPLICATIONS

Professor Mike Hendryx has shown the costs from health damage from coal in USA is five times the value of the coal. In Australia a recent CSIRO report by Tom Biegler et al titled "The Hidden Cost of Electricity" similarly highlights the enormous burden coal imposes on this country's economy. The NSW Government is currently having difficulty paying its health bills, one of the contributory factors is likely to be a consequence of ignoring for years the hard evidence that exists about PM2.5 levels and health damage. Dr van Steenis frequently made the point that long term unpolluted water availability, sustainable food production and good health should be our Government's priority. What analysis is done to assess the future cost of health care that will be required to address the consequences of allowing PM2.5 dust to fall on residential subdivisions during the planning assessment process? Where does the health of the people of NSW rank vs economic considerations during the planning assessment process for open cut coal mines?

LEGAL ASPECTS

Tim Robertson, a barrister specializing in environmental law, noted at the EDO that with the escalation in open cut coal mining in the Upper Hunter, dust levels are now apparently frequently exceeding existing mandated levels (PM10 levels which are decades out of date); that this is a serious problem, and that something needs to be done. He indicated that Air Pollution is more difficult to assign responsibility for than water or land pollution because it is more difficult to prove the source of the pollution. (Note that biopsies of lung tissue for dust samples for analysis may assist in overcoming this difficulty as coal has area specific levels of constituents ie sulphur.) He stated that the laws relating to Air Pollution in NSW can be difficult to understand; one aspect is that it is only a crime if the process producing it has been demonstrated to be inefficient.

A law professor who also spoke at the EDO indicated that any potential class action would be greatly assisted by data of lung function in a group of children (or horses for that matter) prior to damage from coal dust (the establishment of baseline data). Any person believing they have been damaged by coal dust should investigate the possibility of registering their case with The Dust Diseases Tribunal in order to be suitably compensated. There may be potentially 50,000+ such people. One successful case may lead to a flood; note that in the UK claims for damage from breathing coal dust (COPD) were expected to be 600 million pounds. The total ended up at 4.1 billion pounds.

WHAT CAN BE DONE TO REDUCE THE DAMAGE

- 1) Call a moratorium on any new development until a plan involving the following points is enacted
- 2) Conduct a Health Study in already affected areas investigating mortality rates, low birth weight incidence, genetic malformations, post mortem lung damage. Document asthma, heart attack, stroke and cancer rates in coal communities.
- 3) Require a Health Study as part of any application to mine. By not assessing the health risks associated with mining activities, there is potential legal exposure that could prove costly to the taxpayer – aside from being hazardous to their health.
- 4) Extend baseline lung function measurement in children beyond the study commenced in Singleton.
- 5) Legislate buffer zones, particularly downwind of any new development. Note asthma incidence in studies in the UK reveal that at 4.8km from open cut coal mines the rate is 13%.
- 6) Legislate for PM2.5 levels to be the monitoring standard in future. There seems little point in monitoring dust particles that are less dangerous, while ignoring the dust particles that are more dangerous. The technology to do so is freely available. Where the mandatory levels are breached, appropriate

action needs to be taken immediately. In the USA, plants can be shut within an hour for this reason; in Australia it is self assessment, with no local compliance officers in the Upper Hunter.

- 7) Purchase PM2.5 Beta Attenuated Monitors that are accurate to 1% and that are factory calibrated and sealed. If this is not done by the State, it should be done at a community level. Place monitors in all affected school yards as well as upwind and downwind of sources. Continuous monitoring needs to be done with results posted on the web. This needs to be done to get an accurate picture of the levels of PM2.5 dust that are currently being generated, and this dust can be sent for analysis. In this way the facts become apparent as to the level of dust being generated as well as its source. This monitoring needs to be done independently from the source of contamination.
- 8) Ensure heavy mining vehicles use high grade diesel fuel with no additions and their exhaust have particle traps fitted
- 9) Monitor Blast gases. CSIRO research reveals toxic gases with known adverse health effects from this source only become equivalent to background levels at 5km from the blast site.
- 10) Cover Coal Rail Wagons
- 11) For existing at risk families, purchase HEPA air filters for all houses at risk. These cost \$500 each retail for the best filters which should be placed in schools and close to the bedroom of any affected child.
- 12) Check all affected rain water tanks for contamination. Advise accordingly.
- 13) Recommend that affected adult individuals (subject to approval from their healthcare practitioner) take Selenium 200 microgram for one month and then 100microgram daily (dosage to be confirmed by healthcare practitioner). This boosts T lymphocyte production and lowers heavy metal contaminants. Subject to individual medical advice take 1gram daily of Vitamin C which reduces mutations. Consider also taking Vitamin E.

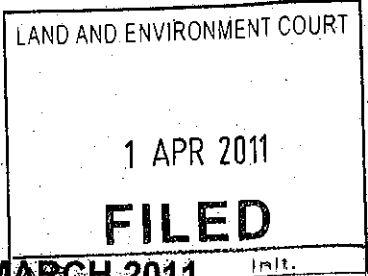
In addition, where power stations are present:

- 14) Tighten hazardous waste surveillance.
- 15) Close power stations such as Liddell which are burning hazardous waste and replace them with a plasma gasification plant.
- 16) Ensure all power stations have the maximum emission protection devices

Dr Steve Robinson email <treesteve@gmail.com>
Murray Pakes

On behalf of the consortium of community groups organizing Dr van Steenis visit to the Hunter.

Form 40 (version 1)
UCPR 35.1



AFFIDAVIT OF MATTHEW PETERS AFFIRMED 28 MARCH 2011

COURT DETAILS

Court	Land and Environment Court
Division	Class 1
Registry	Sydney
Case number	10090 of 2011

TITLE OF PROCEEDINGS

Applicant	Ironstone Community Action Group Inc
First respondent	NSW Minister for Planning
Second respondent	Duralie Coal Pty Ltd

FILING DETAILS

Filed for	Ironstone Community Action Group Inc, Applicant
Legal representative	Kirsty Ruddock, Environmental Defender's Office (NSW)
Legal representative reference	1115836
Contact name and telephone	Elaine Johnson (02) 9262 6989

Matthew Peters

Elaine Johnson

AFFIDAVIT

Name Professor Matthew Peters
 Address C22 – Concord Hospital, The University of Sydney NSW 2006
 Occupation Clinical Associate Professor Concord Clinical School The University of Sydney
 Date 28th March 2011

I affirm:

- 1 I am a Clinical Associate Professor at Concord Clinical School at Concord Hospital, at The University of Sydney.
- 2 I have been asked by the Applicant to describe, with reference to Particulate Matter (PM)₁₀ and PM_{2.5}, the following: the emissions the Project Application 08_0203 (**the Project**) will generate, the relationship between an increase in the concentration of atmospheric PM_{2.5} and the impacts on human health; the relationship between an increase in the concentration of atmospheric PM₁₀ and the impacts on human health, and finally what is the likely impact of the Project on the health and well being of the communities surrounding the Project, the Hunter Valley, and the Greater Sydney Metropolitan Region, and the demand for amenities or services in this area.
- 3 In response to that request I have prepared the report which is annexed to this affidavit and marked "MP1".
- 4 The views expressed in that report are my own and correctly state my opinion in relation to the matters set out in the report. I believe no further qualifications are required as to the opinions set out in the report other than those expressed in the report.
- 5 A copy of my curriculum vitae is attached to my report. My curriculum vitae accurately summarises my scientific qualifications and experience, including my expertise in the area of respiratory health.
- 6 I have been provided with a copy of Division 2 of Part 31 of the Uniform Civil Procedure Rules 2005 and the Expert Witness Code of Conduct in Schedule 7 of the Uniform Civil Procedure Rules 2005. I have read the expert witness code of conduct and agree to be bound by it. I believe that my report complies with the code.
7. I have been engaged as an expert in these proceedings by the Applicant on the basis that the Applicant is currently fundraising for these proceedings and should




the funds be raised, I may be paid my normal fee in full or part, depending on the amount raised.

8. I believe that the information set out in this affidavit is true and correct to my own knowledge.

AFFIRMED at

Signature of deponent

Signature of witness

Name of witness

Address of witness

Capacity of witness

Canberra

[Signature]

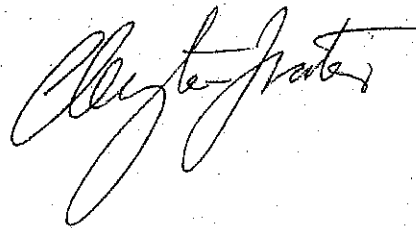
Clayton Proctor
Clayton Proctor

28/8 Norman St East Sydney 2010

Justice of the peace / Solicitor #150264

Note: The deponent and witness must sign each page of the affidavit. See UCPR 35.7B.

This and the following 27 pages is the Annexure marked "MP1" referred to in the Affidavit of Matthew Peters, affirmed this 28th day of March 2011, before me:

A handwritten signature in cursive script, appearing to read "Clayton Forster".

Clayton Forster

March 15, 2011

TO THE NSW LAND AND ENVIRONMENT COURT

Re: Potential for Adverse Health Issues associated with Proposed Hunter Valley Coal Mine Expansion

I am a Respiratory Physician by training and have a particular expertise and interest in Public Health. I have been asked to prepare this report at short notice because an expert previously briefed was unable through circumstances out of his control to prepare a report in time. As a result, there is some lack of detail in areas of the report but it does represent an accurate overview of the issues raised.

I approach this review as an expert in Respiratory and General Medicine Medicine rather than in Epidemiology or environmental toxicology. This report is furnished in accordance with the Code of Practice for expert witnesses that I have read.

What is PM2.5 and what are the general concerns?

The disposition of any inhaled particle depends on its size. Particles that are very large are trapped in the upper airway and never reach the lung. Very small particles behave essentially as a gas – they remain suspended in air and are inhaled and then exhaled without ever being in contact with lung or airway surface. The convention is that they cause no harm. Between these sizes are particles that are small enough to make passage through the upper airway into the lungs but large enough to impact on smaller airways or to settle in the alveoli of the lungs. The critical size below which an effect will be seen is likely to be between 4 and 10µm.

Historically, the greatest interest and concern has been with PM10 particles with a median aerodynamic diameter less than 10 µm. This has been relatively easy to measure and health harms have been documented. However particles near to or larger than 10µm are not likely to be respirable and studies that have determined effects of PM10 may have been measuring an effect of smaller particles. Most current concern is with PM2.5 - particles with a median aerodynamic diameter less than 2.5µm. These penetrate further into the lung and given that the alveolar surface is similar to the size of a tennis court allow both for local effects and for absorption of substances into the circulation and from there systemic effects.

An inert particle of that size might do little harm but particles derived from carbonaceous sources are likely to contain a variety of toxic hydrocarbons and in the course of their passage from source to the person inhaling them, they may have absorbed aldehydes, aromatic hydrocarbons or other chemical compounds that might have been generated within the particle when exposed to oxygen and sunlight. There is clear evidence across a number of health concerns that elemental carbon is a particularly toxic component of PM2.5.

Separate from the effects of the components of the particle, respirable particles in the PM2.5-PM10 range can act as vehicles for allergens. That is, an allergen may itself be too small to be inhaled but by becoming adsorbed to the surface of a larger particle it is effectively delivered on a plate to the lung.

What is likely to be generated by the expansion of the coal-mine activity?

At least the following activities will generate PM2.5 and PM10 dust.

1. Removal of the overburden preparatory to open cut mining
2. Mining activity including harvesting and transfer of mined coal
3. Diesel engines on trucks, rail engines, generators used to mine or move coal
4. Temporary storage of waste or low-quality mined material
5. The construction of permanent or temporary roads or access
6. The traffic of vehicles on permanent or temporary roads or access tracks that are substantially or in large part
7. Off-site. Local or nearby coal-fired power generation used to service the power needs of the mine

Coal is a complex organic product. The mined material will not only include carbon but there will be complex organic compounds the nature and extent of which I am not expert to comment on. These will have an effect on total risk.

Geography of the Greater Sydney Basin as it relates to coal-mine development in the Hunter Valley

It is possible that this is covered in other reports you may have received but a brief point is worth making. Convectional flows of pollutants that are generated in the Sydney basin, or that enter its airflow, are such that pollution tends to settle or persist in Southwestern Sydney. A factor in this is the usual sea-breeze and then overnight air cooling especially in summer. Demographically, this is an area where there are more young people now and this is likely to remain so or increase.

Describe the relationship between an increase in the concentration of atmospheric PM2.5 and impacts to human health.

There are no known health benefits from this exposure

Because of the constraints of time, I will concentrate on PM2.5. My own opinion is that the evidence is becoming ever stronger that this is where the greatest risk lies. This is both because the number of known ill consequences of PM2.5 exposure is increasing and in many cases, a better understanding of the exposure-harm relationship has led to upgrade of risk estimates. This has been recently reviewed.¹

The following can be reasonably concluded as proven health risks of exposure to high PM2.5 levels.

Increase in total mortality

Authoritative reviews from the US and Europe^{2,3,4} indicate that population mortality is increased substantially even with modest increases in PM of $10\mu\text{g}/\text{m}^3$

Follow-up of the large American Cancer Society study in 2002 showed that there was a relationship between PM2.5 and elevated risks for cardiopulmonary and lung cancer deaths. When long-term average PM2.5 increased by $10\mu\text{g}/\text{m}^3$, there was a 4% increased risk of death from natural causes, 6% increased risk of death from cardiopulmonary disease, and an 8% increased risk of death from lung cancer⁵. As these are common causes of death in the community, the numerical impact of these increases is important.

COPD

Globally, indoor and outdoor air pollution match smoking as risk factors for Chronic Obstructive Pulmonary Disease (COPD). This is biased by solid fuel burning in India, China and other parts of Asia. The dominant cause of COPD in Australia is tobacco smoking not airborne pollution but atmospheric pollution does correlate with exacerbations of COPD and respiratory mortality is a component of the increased death rate seen in the large mortality studies.

Lung Cancer

As with COPD, the dominant cause of lung cancer in Australia is smoking rather than pollution. However, within the incremental mortality estimates referred to above, there is a substantial component of lung cancer deaths and the ACS study supports that risk.

Asthma

For each increase in PM2.5 of $20\mu\text{g}/\text{m}^3$, that represented the interquartile range, there was an approximate 6% increase in the risk of hospital admission with asthma in Hong Kong.⁶ This peaked with a lag of about 4 days, adding to plausibility. Elemental carbon levels have been shown to correlate with risk of several respiratory symptoms in asthmatic children.⁷ More generally, PM2.5 elemental carbon levels are associated with cough during the cold and flu season among children 2 years or younger.⁸

Cardiovascular events

As previously described, cardiac deaths are increased with higher PM2.5. There is expert consensus that particulate pollution increases cardiovascular events⁹ and there is evidence also that this effect is more marked in patients with diabetes. Diabetes, an important cardiovascular risk factor is also increased with PM2.5 levels¹⁰ and is increasing generally in the community such that there will be progressively more in the community at risk of pollution-related cardiac events.

Harms associated with prenatal exposure

Exposures of pregnant women, particularly in the third trimester of pregnancy, to higher levels of certain PM2.5 chemical constituents are associated with lower birth weight. Amongst the constituents of particles that are specifically associated with harm is elemental carbon – as would naturally be increased from coal-mine particles¹¹.

In your opinion, what is the likely impact of the Project on the health and well-being of the communities surrounding the Project, the Hunter Valley, and the Greater Sydney Metropolitan Region, and the demand for public amenities or services in the area?

Based on reading of the majority of reasonable studies and in the reviews that have consolidated data from smaller studies, there are inevitable health harms from increasing atmospheric pollution with PM2.5. There remain genuine uncertainties about the linearity of risk. Even if the additional mining and associated activity only increased PM2.5 by a certain percentage, there is no certainty at all, that the increment in health harm would be limited to the same percentage increase. There is a quite reasonable concern that increases in background PM2.5 or PM10 related to mine expansion would set the community at even greater risks from episodic high exposures such as during bushfires¹² or during adverse climatic or environmental conditions.

Summary

There is strong evidence for a range of adverse health effects from exposure to particulate air pollution within the range experienced by many communities. These effects may be exacerbated for social and demographic reasons in communities that will experience greater exposures. This together represents a real but clearly avoidable risk to Public Health.

Yours sincerely,



Matthew Peters MD FRACP

References

- ¹ Susan C. Anenberg, Larry W. Horowitz, Daniel Q. Tong, and J. Jason West. An Estimate of the Global Burden of Anthropogenic Ozone and Fine Particulate Matter on Premature Human Mortality Using Atmospheric Modeling *Environ Health Perspect*. 2010 September; 118(9): 1189-1195.
- ² Pelucchi C, Negri E, Gallus S, Boffetta P, Irene Tramacerte T, La Vecchia C. Long-term particulate matter exposure and mortality: a review of European epidemiological studies *BMC Public Health* 2009, 9:453
- ³ Laden F, Schwartz J, Speizer FE, Dockery DW: Reduction in fine particulate air pollution and mortality: Extended follow-up of the Harvard Six Cities study. *Am J Respir Crit Care Med* 2006, 173(6):667-672.
- ⁴ Miller KA, Siscovick DS, Sheppard L, Shepherd K, Sullivan JH, Anderson GL, Kaufman JD: Long-term exposure to air pollution and incidence of cardiovascular events in women. *N Engl J Med* 2007, 356(5):447-458.
- ⁵ Pope, C., R. Burnett, M. Thun, E. Calle, D. Krewski, K. Ito, and G. Thurston, 2002. Lung Cancer, Cardiopulmonary Mortality, and long-term Exposure to Fine Particulate Air Pollution. *Journal of the American Medical Association*, 28(9):1132-1141.
- ⁶ Lee SL, Wong WHS, Lau YL. Association between air pollution and asthma admission among children in Hong Kong. *Clin Exp Allergy* 2009; 38: 1138-1146.
- ⁷ Gent JF, Koutrakis P, Belanger K, et al. Symptoms and medication use in children with asthma and traffic-related sources of fine particle pollution. *Environ Health Perspect* 2009;117:1168-1174.
- ⁸ Patel MM, Hoepner L, Garfinkel R, et al. Ambient metals, elemental carbon, and wheeze and cough in New York City children through age 24 months. *Am J Respir Crit Care Med* 2009;180:1107-1113.
- ⁹ Brook RD, Franklin B, Cascio W et al Expert Panel on Population and Prevention Science of the American Heart Association. Air pollution and cardiovascular disease: a statement for healthcare professionals from the Expert Panel on Population and Prevention Science of the American Heart Association. *Circulation* 2004;109: 2655-2671
- ¹⁰ Pearson JF, Goldfine AB, Bachireddy C, Brownstein J, Shyamprasad S. Association between fine particulate matter and diabetes prevalence in the US. *Diabetes Care* 33:2196-2201, 2010
- ¹¹ Bell ML, Belanger K, Ebiisu K et al. Prenatal Exposure to Fine Particulate Matter and Birth Weight: Variations by Particulate Constituents and Sources. *Epidemiology* 2010; 21: 884-891.
- ¹² Dennkamp M, Abrahamson M. The effects of bushfire smoke on respiratory health. *Respirology* 2011; 16:198-209.

Our Ref: KR:EJ:1115836
Your Ref:

25 March 2011

Clinical Associate Professor Matthew Peters
Medicine, Concord Clinical School
C22 - Concord Hospital
The University of Sydney NSW 2006

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Dear Matthew

Ironstone Community Action Group Inc v Minister for Planning and Duralie Coal Pty Ltd
Land and Environment Court Proceedings No. 10090 of 2011

We act for Ironstone Community Action Group (ICAG) in relation to the above Land and Environment Court proceedings. ICAG is a community-based association seeking to protect the local community and environment in the Barrington Tops area.

On 7 February 2011, ICAG commenced Class 1 proceedings challenging the approval by the NSW Minister for Planning of the Duralie Coal Extension Project (**Project**) under Part 3A of the *Environmental Planning and Assessment Act 1979* (NSW) (**EPA Act**).

Our client wishes to retain your services to act as an expert witness to assist the Court impartially on matters relevant to your area of expertise. In this respect, we draw your attention to Division 2, Part 31 of the *Uniform Civil Procedure Rules 2005* (**UCP Rules**) and the Expert Witness Code of Conduct (**Code of Conduct**) (**enclosed**), which govern the use of expert evidence in the Land and Environment Court.

Clause 2 of the Code of Conduct states that:

1. An expert witness has an overriding duty to assist the court impartially on matters relevant to the expert witness's area of expertise.
2. An expert witness's paramount duty is to the court and not to any party to the proceedings (including the person retaining the expert witness).
3. An expert witness is not an advocate for a party.



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Handwritten signature
25/3/11

Background

The Project is an extension of the existing Duralie Coal Mine, in the Gloucester Valley near Stroud. The proponent is Duralie Coal Pty Ltd (**DCPL**), which is a wholly owned subsidiary of Gloucester Coal Pty Ltd. DCPL lodged Major Project Application No. 08_0203 with the Department of Planning, dated 13 October 2008 (**Project Application**). The Project was approved by the NSW Minister for Planning on 26 November 2010.

On 5 November 2009, the Director-General of the Department of Planning (**Director-General**) issued modified environmental assessment requirements for the Project under s 75F of the EPA Act.

In accordance with s 75H of the EPA Act, an Environmental Assessment (**EA**) dated 27 January 2010 was prepared on behalf of DCPL by Resource Strategies Pty Ltd. The EA details the Project, describes the environment within and surrounding the Project site, presents the mitigation measures DCPL intends to incorporate in the operation of the Project, and assesses potential impacts that the operation of the Project will have on the local environment.

In November 2010, the Director-General issued an Environmental Assessment Report under s 75I of the EPA Act.

On 26 November 2010, the Minister for Planning (**Minister**) determined to approve the Project under s75J of the EPA Act, subject to conditions of consent (**Project Approval**).

Objects of the EPA Act

The objects of the EPA Act are set out in s5 of that Act, and include the protection of the environment, encouragement of ecologically sustainable development (**ESD**), and the proper management, development and conservation of resources for the purpose of promoting the social and economic welfare of the community and a better environment.

Ecologically Sustainable Development

We would argue that the Court must consider public interest as a mandatory relevant consideration when making its determination under Part 3A of the EPA Act. ESD is an element of the public interest and includes the following principles:

- the precautionary principle;
- intergenerational equity; and
- the conservation of biological diversity and ecological integrity.

Great Lakes LEP

We would also argue that the Court must consider the aims and objectives of the Great Lakes Local Environmental Plan (**LEP**), and the objective of Zone 1(a) (Rural Zone) in the Great Lakes LEP. The aims and objectives of the Great Lakes LEP relevantly provide as follows:



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2 What are the aims and objectives of this plan?

(1) The aims of this plan are:

- (a) ...
- (b) to protect and enhance the environmental qualities of the area, and
- (c) ...
- (d) to promote the well-being of the area's population.

The objective of Zone 1(a) (Rural Zone) relevantly provides as follows:

Zone No 1(a) (Rural Zone)

The objective of the zone is to restrict development to those uses which are unlikely to:

- (a) ...
- (b) ...
- (c) ...
- (d) create unreasonable or uneconomic demands for the provision or extension of public amenities or services

The proceedings

The Class 1 Application filed on 7 February 2011 in relation to the Project Approval seeks orders from the Court to the effect that the Project Application should be refused.

A copy of ICAG's Statement of Facts and Contentions is attached. In summary, ICAG submits that the Project Application should be refused based on the impacts the Project will likely have on:

- 1. Biodiversity;
- 2. Threatened species;
- 3. Water quality; and
- 4. Air quality.

The work we require

We request that you undertake the following work:

- 1. Review Division 2, Part 31 of the UCP Rules and the Code of Conduct.
- 2. Review the following documents:

General Project Documents

Section 4 - Environmental Assessment (pages 4-39 to 4-44)

Appendix D - Air Quality Assessment

Other Relevant Documents

Australian Government (2008) National Pollutant Inventory "Emission estimation technique manual for Railway yard operations" Version 2.0 (enclosed)

Australian Government (2008) National Pollutant Inventory "Emission estimation technique manual for Explosives detonation and firing ranges" Version 2.0 (enclosed)



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Australian government (2008). National Pollutant Inventory "Emission estimation technique manual for Combustion engines" Version 3.0 (enclosed)

3. Drawing on your experience and the documents briefed to you, prepare an expert report (refer below to 'The requirements for your work').
4. Attend a conference with your instructing solicitors and barristers. We will advise you of the date and time of this conference shortly.
5. Review the expert report(s) prepared by the expert(s) engaged by the Minister and DCPL.
6. Confer with the other parties' experts at a joint conference and produce a joint expert report which sets out the matters agreed on, the matters where agreement cannot be reached, and the reasons for agreement and disagreement as a result of the joint conference(s).
7. Appear at one or more days of the hearing as required. The hearing is listed for 5 days commencing on Monday, 9 May 2011. We will notify you of the day(s) that you will be required to attend.

The requirements for your work

As stated above, an expert witness has an overriding duty to the Court and not to any party to the proceedings. In undertaking your work, you must comply with Division 2 of Part 31 of the UCP Rules and the Code of Conduct.

Your report must contain an acknowledgment that you have read the Code of Conduct and that you agree to be bound by it, as required by Rule 31.23(3) of the Rules and clause 2 of the Code. Otherwise your report will be inadmissible as evidence.

We ask that you draft your report addressing the following issues:

Air quality and human health

1. Using the documents above, and with reference to Particulate Matter (PM)₁₀ and PM_{2.5}, describe the emissions the Project will generate.
2. Describe the relationship between an increase in the concentration of atmospheric PM_{2.5} and impacts to human health.
3. Describe the relationship between an increase in the concentration of atmospheric PM₁₀ and impacts to human health.
4. In your opinion, and taking into account your response to the questions above, what is the likely impact of the Project on the health and well-being of the communities surrounding the Project, the Hunter Valley, and the Greater Sydney Metropolitan Region, and the demand for public amenities or services in the area?



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Format of your report

Division 2, Part 31 of the UCPR Rules sets out information that your report must contain, such as:

- your qualifications,
- the facts, and assumptions of fact, on which the opinions in the report are based and your reasons for each opinion expressed,
- if a particular issue falls outside your area of expertise, clear acknowledgement that it falls outside your field of expertise,
- any literature or other materials utilised in support of the opinions,
- details of any examinations, tests or other investigations on which you have relied, including details of the qualifications of the person who carried them out,
- a brief summary of the report,
- if you believe that the report may be incomplete or inaccurate without some qualification, the qualification must be stated in the report,
- if you consider that your opinion is not a concluded opinion because of insufficient research or insufficient data or for any other reason, this must be stated when the opinion is expressed, and
- if you change your opinion on a material matter after providing an expert's report to us, you must provide us with a supplementary report to that effect.

Please format your report as follows:

- address your report to the Court,
- Sign and date your report,
- Include a summary of your qualifications and experience as an appendix to your report,
- Use 12 point type and at least 2cm page margins,
- Supply a PDF version of your report for printing and binding,
- Number each paragraph of your report,
- Number all pages, including attachments and annexes, continuously from the first page to the last page (excluding any cover page to your report), and
- Annex this letter of instruction to your report.

Timing

The timing for expert evidence in this matter is as follows:

- Please provide us with a draft report by Friday, **25 March 2011**
- Finalised report to be filed with the Court by Friday, **25 March 2011**
- Experts to confer and file a joint report with the Court by Friday, **22 April 2011**
- The matter will be heard by the Court on **9-13 May 2011**

Fees

As discussed, the client is currently fundraising for these proceedings and we are not currently in a position to advise as to what funds are available for payment of fees. We will keep you updated on the client's position in relation to its ability to pay you fees in this matter.



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We are grateful for your assistance in this matter.

Yours sincerely
Environmental Defender's Office (NSW) Ltd



Elaine Johnson
Solicitor

Chris Ball
Scientific Officer

Encl.



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CURRICULUM VITAE

Matthew John PETERS

PERSONAL DETAILS

Date of Birth: 15th January, 1959.

Nationality: Australian

Marital Status Married

Children	Emma	25
	Courtenay	24
	Dominic	22
	Madeleine	15
	Sophie	14

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EDUCATIONAL QUALIFICATIONS

High Schooling: St Joseph's College, Hunters Hill
Marist Brothers High School, Eastwood
Dux of School 1976.

M.B. B.S. Sydney University 1982.

M.D. Sydney University 1991.

Thesis **The Role of Formylpeptides in the Pathophysiology of
Acute Exacerbations of Chronic Airflow Limitation**

Research Performed -1987-1990.

Supervisors: Professor N Berend & Dr A B X Breslin.

Medical Registration:

NSW Medical Board - Effective 3 March 1982

Post-Graduate Qualifications:

Fellow of Royal Australasian College of Physicians -1988.

Awards and Fellowships Received

Thoracic Society of Australia and New Zealand 'Young Investigator Award' -
1990.

Asthma Foundation of New South Wales Travelling Fellowship -1990.

Thoracic Society of Australia and New Zealand/Allen and Hanburys Respiratory
Research Fellowship - 1991-1993.

POST-GRADUATE MEDICAL TRAINING

1982	Intern	CONCORD HOSPITAL
1983	Junior RMO	CONCORD HOSPITAL
1984	Registrar Geriatric Medicine	CONCORD HOSPITAL
1985	Basic Physician Trainee Passed RACP(Pt 1) written and clinical examinations	CONCORD HOSPITAL
1986	Registrar Thoracic Medicine Dr G E Marlin Dr C R Jenkins Dr J Rutland	CONCORD HOSPITAL
1987	Registrar Thoracic Medicine Dr A B X Breslin Dr M Dally	CONCORD HOSPITAL
1988	Registrar Intensive Care Medicine(6/12) Dr P J Lawrence Dr G Thanakrishnan Registrar Thoracic Medicine Dr A B X Breslin Dr M Dally	CONCORD HOSPITAL

1989/90 Clinical Superintendent (Medicine) CONCORD HOSPITAL

Responsibilities Administration
 Physician Training Program
 Relief Consultant Physican in General Medicine

1991-3 Royal Brompton National Heart and Lung Hospital and
 National Heart and Lung Institute London, UK

My Principal activities in this time were Clinical and Laboratory Research. In addition to this I ran, independently, an Asthma-biased General Thoracic Medicine Clinic. I was an independent bronchoscopist – Generally for Research procedures but the occasional non-research bronchoscopy as well.

1993-present Senior Staff Specialist and Head of Department
 Department of Thoracic Medicine
 Concord Repatriation General Hospital

Clinical Associate Professor
Concord Clinical School
University of Sydney

2010-present Professor of Respiratory Medicine
 Australian School of Advanced Medicine
 Macquarie University

COMMITTEE POSITIONS AND APPOINTMENTS**At Concord Hospital**

Drug Committee	1994-1997
Medical QA Committee	1994-2000
Secretary, Division of Medicine	1995-1998
Director Physician Training	1996-2000
Chairman Medical Staff Council	2000-2002

Sydney University

Tutor, Lecturer, Examiner	1986-2008
Assessment Co-Ordinator - Respiratory Block	1997-2000
Chair Respiratory Block	1998-2000

Royal Australasian College of Physicians

Therapeutics Advisory Committee	1995-1996

Service to Professional Bodies*Thoracic Society of Australia and New Zealand*

Member	Clinical Care and Resources Subcommittee	1995-1999
Secretary	NSW Branch	1994-1998
President	NSW Branch	1998-2000
Hon Secretary	Federal Body	2000-2004

Australian Lung Foundation

Board Member	2004-2010

Other Advocacy Roles

Member	- Smoke-Free Olympics Task Force
Member	- Tobacco Control Coalition

Current External Positions

Chairman	- Action on Smoking and Health
Chairman	- Global Lung Cancer Coalition
Board Member	- Australian Lung Foundation
Chairman	- Cancer Institute NSW Oncology Group (Lung)

Post-Graduate Research Students

Students who have Successfully Completed Post-Graduate Studies

Dr He Wang Ph D Degree awarded 1998

'Cellular Mechanisms in Silica-Induced Lung Inflammation and Neoplasia'

Ms K L Reid M Sc(Med) Degree awarded 1999

'The Role of Swallowing Dysfunction in Acute Exacerbations of Chronic Airflow Limitation'

Ms J Maclean M Sc (Med) Degree Awarded 1999

'Chronic Airflow Limitation and Dysphagia: A Clinical Picture of Dysphagia During an Acute Exacerbation'

Dr L Morgan Ph D Degree awarded 2005

Measurement of Mucociliary Clearance in vivo in Man

Dr Tommy Chung Ph D Degree awarded 2008

Reversible myocardial dysfunction

Ms N Clayton M Sc Degree awarded 2008

The effect of COPD on laryngopharyngeal sensitivity and swallow function

Dr Paul T Kelly PhD- University of Otago – awarded 2010

Co-supervised students whose Studies are in Progress

1. Claude Farah (PhD)
2. Regina Leung (M Sc)
3. Leigh Seccombe (PhD)

Clinical Trials Experience

1995-present

Including Phase 2 through phase 4 studies

Therapy areas

Respiratory infections

Asthma

COPD

Lung Cancer

DVT prophylaxis

Smoking Cessation

GCP training

Last conducted in July 2009. GCP training has been a part of all clinical trials conducted.

Data safety Monitoring Committees

2008.

Baxter BioScience

ARALAST Fr. IV-1 BAL Study

Protocol 460502 - A safety/BAL study examining alpha-1 anti-trypsin replacement in patients with alpha-1 antitrypsin deficiency

2009.

CSL (Limited)

Protocol covered by confidentiality agreements.

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15. Peters MJ, Adcock IM, Brown CR, Barnes PJ. Beta-adrenoceptor agonists interfere with glucocorticoid receptor DNA binding in rat lung. *Eur-J-Pharmacol.* 1995 Apr 28; 289(2): 275-81
16. Yates DH, Peters MJ, Keatings V, Thomas PS, Barnes PJ. Reduced dose salbutamol in comparison with standard dosage for symptom relief in asthma. *Eur Respir J* 1995 Nov; 8(11): 1847-51.
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65. GUIDELINES

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2. Zwar N, Richmond R, Borland R, Peters M, Stillman S, Litt J, Bell J, Caldwell B. Smoking cessation pharmacotherapy: an update for health professionals. Melbourne: Royal Australian College of General Practitioners 2007.
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Coal opencasting and health

Dr Dick van Steenis

My work has been peer reviewed by professors in the UK and USA and describes just a small portion of the health damage and cumulative effects caused by opencast mining. For 16 years I have researched industrial air pollution (including opencasting) with its consequential health damage namely illness and premature deaths. Published research confirms that both PM1 & PM2.5 particulates produced by opencasting of coal, especially if toxic waste is present due to known or unknown tipping, CAUSE new cases of asthma to develop in children and adults as well as exacerbating those who already have it. There will also result increased incidence of chronic pulmonary obstructive disease, heart attacks, generalised premature deaths, strokes, type 2 diabetes, clinical depression and in addition other conditions resulting from any toxic waste and machinery emission ingredients contaminating the area which would include cancers, hormone disorders, birth defects, low birth-weight babies, skin rashes, behaviour disorders, infections (including eye) and immune system disruption etc. due to pollutants such as organic compounds (including PAHs), heavy metals, dioxins (rife in North East Derbyshire), and even radio-active matter. Fuel quality used by equipment & vehicles is also critical as fuel used is normally of inferior quality compared to city diesel.

Studies in NE Derbyshire (1994-2000) comprising school medical records, school asthma inhaler use, microscopy of dust outside and within buildings, and PM 2.5 monitor readings with filter analysis at 5 schools covering a 3 year period, all confirm a rise in asthma to affect 33% of primary school children living within one mile, a cumulative rise to 21 % at two miles and even 12% at three miles. Welsh Office studies at Gwaun Cae Gurwen also discovered 33% of children in three schools to have developed asthma at one mile, based on peak flow readings. West Glamorgan studies found coal particles plus diesel particles in the filters partly upwind of the opencast, over the top of a large mountain. Peakflow measurements and asthma inhaler use worsened as particulate levels rose in direct proportion, and this happened irrespective of home conditions and social factors. A Lanarkshire study (1998) proved that hospital admissions for asthma rose with opencasting of coal, again within three miles or so, with cumulative rises year after year, falling when the opencasting ceased. A Liverpool University study even showed a rise in asthma in schools within 2km of moving coal at the docks, irrespective of smoking habits and unemployment. Coal dust from moving coal can be reduced by some 80% by foaming with GE DusTreat DC9112E used in USA.

Hospital admissions for asthma in the Tinsley area, since opencasting began at Orgreave, rose to 11 per 1000 population as against 3 per 1000 at Sheffield City Centre and 1 per 1000 in Worcestershire. All three areas have motorways. GP doctors in the area of SE Sheffield, namely Handsworth area etc., have noted a large rise in asthma incidence in their area since Orgreave opencasting began. They are clear of the M1. The rise at Tinsley is not confined only to asthma, also diabetes, due to possible dioxin or arsenic contamination contained in PM2.5 particulates (which produce oxidative radicals). In London 0.5 miles away from the millennium dome site, the asthma incidence rose from 11.9% of school children in early 1996 to some 50% in November 1998, with the only change being the "opencasting" of that waste site development at Greenwich, containing no doubt nickel, phenols etc.

Findings of microscopy and particle analysis, presented at the Royal

Microscopical Society in London in July 1998, revealed that asthma caused by open-casting involves:

(A). Cut quartz particles of which 36% were found to be smaller than PM 0.3, which are second to asbestos in terms of serious effects on the lungs. The body walls off these particles, causing fibrosis (called silicosis). These PM1 sized silica particles also enhance peripheral thrombosis.

(B). Coal particles around PM 1 in size cause an inflammation in the lungs. Repeated doses then lead to fibrosis, called pneumoconiosis in miners. Macrophages can only cope with a small amount of PM1 & PM2.5 particles at a time. The immune system T-lymphocytes have to assist the macrophages leaving the immune system unprotected from vaccines and infections. Excess particles become walled off causing COPD, even at age 10 years. A recent study in Austria using lung spirometry proved PM1 inhalation was even worse than PM2.5, probably due to greater surface area. PM1 particulate has been shown to promote early atherosclerosis and oxidative stress.

It only needs an increase of 14.3ug/m³ of PM2.5s for 3 hours to cause a heart attack in a vulnerable patient. Peak levels of PM2.5 in Derbyshire exceeded 150ug/m³ in 2000. Peak levels of PM1 measured at Hollingdean (Brighton) brown field site development by 4 bulldozers June 2007 reached 1100ug/m³ of PM1 (safe level around 6ug/m³) and 375 ug/m³ of PM2.5 (safe level around 7ug/m³). Remember only particles smaller than PM3 (3 microns) get into the depths of your lungs. The UK measures PM10 with monitors checking PM4 to PM10, NONE of which get into the lungs. TEOM instruments can be adjusted downwards. It must be stated that readings of PM2.5s rise and fall entirely separately from PM10s. PM10 monitors are thus totally useless in the UK for commenting on health damage, confirmed in the Austrian study. At Hollingdean (Brighton) the week average readings amounted to PM10s=116ug/m³, PM2.5s=163ug/m³ & PM1s =253ug/m³. DEFRA's few PM2.5 monitors are inappropriately sited and readings are being "adjusted" and do not cover all the time.

Fuel emission particles of acidic carbon may include heavy metal and/or PAH contaminants. These particles cause inflammation within the lungs and beyond lasting several days (maximum effects on the heart arising second day) plus heart attacks, strokes, cancers years later from the any metals or PAHs. Analysis of PM2.5s in Derbyshire discovered high cadmium levels plus substantial levels of arsenic and mercury from a brown field site, mixed in with coal dust. PAHs (polycyclic aromatic hydrocarbons) emitted in the vehicle exhaust fumes are carcinogenic, **and cause mutation of a gene leading to asthma.(Perera). Just 8.5 ug/m³ of PM2.5s lead to a drop of 60ml in peak flow.** Even healthy human volunteers revealed significant increases in white cells, histamine etc, in the lungs just 6 hours after inhaling road diesel exhaust, with increased white cells and platelets in the peripheral blood. A rise of just 14.3ug/m³ of PM2.5s for 3 hours has been proved to increase heart attacks (p=0006). The fuel used by heavy equipment in the UK is normally industrial diesel, which is toxic. A single earth-moving machine could release as many as 145 million billion ultra fine particles per minute, equivalent to some 900,000 Volvo V70 petrol cars.

An American study involving x-rays annually for twenty years, showed 55% of opencast workers had developed lung damage, proven by x-ray by year twenty. In USA, train drivers have been paid compensation for asthma or COPD caused by inhalation of emissions from diesel fuels. The USEPA brought in laws to improve this off-road diesel quality including reducing sulphur content by 99%.

In the Dolk Report in the Lancet 1998, the graph confirmed a concentric critical distance of 3 miles radius around waste sites for a rise in birth defects. In Wales in February 2008 the Minerals Planning Policy Draft Minerals Technical Advice No. 2: Coal was published for consultation with responses closing 23 May 2008. They insist on a health impact assessment (done by Cardiff University for Kenfig Hill proposal which led to refusal) and a 350m buffer zone (now 500m). But a true buffer zone to protect public health should really be 4.8km (3 miles). In NSW (Australia) 2010 a study revealed illness rates at 2 miles from an opencast coalmine were double rates at 3 miles.

All my medical evidence concerns PM2.5 particles and below. These are man-made, and are the ones that enter the lung. PM10 printouts in the UK cannot be relied upon. The DETR has admitted that the figures are massaged down and are hence not accurate or reliable. The same applies to the few PM2.5 TEOM machines. This is confirmed by the Environment Agency who also has admitted that their data is not always "accurate, complete, up-to-date or valid." The highest PM 2.5 figures in the UK have been not from the highways, but from sites such as the opencasting of brownfield land in Brighton and of shifting a burning coal tip in Standish and around the Castle Cement plant at Clitheroe (recordings of up to 250ug/M3 were found in a hospital and 600ug/m3 of PM2.5s downwind outside in the open).

Experience gained at Arkwright proves that the alleged ability to control dust by opencasters is a complete fallacy. I was present when the television filmed the emissions at Arkwright with separate clouds of coal-dust and vehicle emissions. PM2.5s and PM1s rise, and can stay suspended in the air for up to one week, totally dependent on the weather as to where and when they ground. Maximum grounding takes place at 11 pm and 4am, confirmed by monitoring.

PM2.5 measurements in the latter half of September 1998 have revealed higher levels at Grassmoor and Hasland, Derbyshire some 2.1 miles from Arkwright opencast than at Tupton and Wingerworth at about 3.1 miles from Arkwright. Levels at Grassmoor were as high as 42.5ug/m3. Peaks of PM2.5s in Oct. 1998 reached 80ug/M3 in the Hasland area and 150ug/m3 in 2000. This confirms the cause of the higher asthma incidence at Grassmoor and one could now expect those exposed to that sort of level, to have their lives shortened by several years. Interestingly those in Arundel live some six years longer. Analysis of the filter heads confirmed that coal dust was the main ingredient.

The NHS is paying the bill. With cost limited frozen budgets now affecting both hospitals and PCTs, which patients will be denied treatment to pay for those made ill or who die, through opencasting? Costs of illness & death in Virginia USA by Hendryx 2008 revealed the scale of health damage, confirmed in a report by Epstein et al. in 2011 (Ann.N.Y.Acad. Sci.1219. pp73-98).

The Douglasdale (Scotland) 2009 Coal Health Study proved COPD incidence had risen 60% between 2004-2008 while other areas had no rise. A 2003 profile revealed 52% rise in disability living allowance claimants compared with

a clear area, 27% rise in those too ill to work cf. Scottish average, 19% rise in low birthweight babies and a 23% rise in cancer. In the Hunter Valley, NSW (Australia) death rates by 2009 were 37% higher than the Australian average. I lectured there in Dec 2009 and found opencast mines, 2 coal-fired power stations and 1 power station/incinerator. Lung tests on 700 children revealed lung damage in 20%. Heart attack rates at A&E and inpatient hospital levels were very high. Horses at one stud were infected with retroviruses as the T-lymphocytes of the immune system handle the inhaled PM2.5/PM1s leaving the immune system unable to cope with infections.

What knowledge of medicine and toxicology has a Mineral Planning Authority got? What training has an environmental services department in medicine and toxicology? What postgraduate tuition in toxicology have public health directors received and from whom? COMEAP have conflicts of interest while their references are dated. Dr. Pless-Mulloli admitted 1997 at Cwmbran that her Newcastle report was "all fraud" and "political" and proves nothing due to a fraudulent protocol and methodology. There was no before-during-after data. There were no peak flow measurements. Ages 1 to 11 were supposed to fill in forms. Figures were "adjusted" and "cleaned" and discarded to suit. The controls were chosen with equally bad pollution. GPs were not involved. In one area GP data revealed 28 children were asthmatic but the report stated none. A PM10 reading of MINUS 4.9ug/m3 was rewritten as PLUS 0.5ug/m3 etc. There was allegedly no coal or diesel in PM10 particulates collected though Dr. Tim Jones did find these in Welsh opencast emissions. Article 8 of the Human Rights Convention should be used in the courts to force disclosure of relevant health authority data, in consideration of public health risks of imposition by government agencies. Article 16 states that use of one's rights (to opencast etc) must never ruin somebody else's rights. Article 2 provides for right to life. The WHO 1997 report insists on mapping out health data to form public health policy, which only I have done in the UK in this opencasting of coal issue.

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References and data were obtained from Dr D Williams, Mr P Ordidge, Royal Microscopical Society Conference July 1998, Epidemiology July 1995, West Glamorgan HA, Lanarkshire HA, Ken Coates MEP, English Partnerships (and CPL data), USEPA Research & Harvard School of Public Health, Respiratory Morbidity in Merseyside School Children exposed to coal dust and air pollution, in Archives of Disease in Childhood 1994;70:305-312 & Doctor Salvi et al AM J RESPIR CRIT CARE MED 1999; 159: 702-709. Also Proc R Coll Physicians Edinb 1999; 29;1115- "Health Effects of Respirable Dust from Opencast Coal Mining" by Doctors Munro and Crompton. This article backs up my research. What Car magazine of June 1999 contains an article analysing vehicle particle emissions from PM0.01 to PM 1. The PM 0.01 to PM0.1 particles tend to rise up into the atmosphere causing dimming. I append 360 references.

Ammonium Nitrate Blast Fumes

Forward

With the rapid expansion of open-cut coal mining operations, which includes both the doubling in production volume of existing mines and the opening of an even greater number of new open-cut coal mines, the concern over the frequency, volume and cumulative impacts of blast fumes on the health of those affected by mining operations is of increasing concern. Open-cut blasts with “as much as nine hundred thousand kg (two million lb) of explosive may generate reddish-orange product clouds. The color is due to the NO₂ in the cloud (Turcotte, Yang, Lee, Short, and Shomaker, 2002)” (as quoted in *Behavior of Nitrogen Oxides in the Product Gases from Explosive Detonations*, Richard J. Mainiero, James H. Rowland III, Marcia L. Harris, and Michael J. Sapko.)

It must be noted that, according to the publication *Mining Australia*, (September 2011) in an article entitled “*Blast Fume Events: Addressing a Noxious Issue*”, it was stated that: “Current World Health Organisation guidelines for NO_x are a one hour level of 200µg m³ (approximately 200 parts per billion), and an annual average of 40µg m³. However, typical concentrations of NO_x in post blast clouds can measure anywhere between 5.6 to 580 parts per million, exceeding the safe limits by around 30 to 3000 times. This is clearly far too high.”

Blast Fume Cloud Composition

Most of the ammonium nitrate blast fume cloud is composed of the following:

- Dust, soil and rock particulate matter that is released by the forces exerted on the surrounding rock during the blasting operations
- Water Vapour
- Carbon Dioxide
- Carbon Monoxide
- Oxides of Nitrogen (NO_x)

Properties of the Gases

Oxides of Nitrogen

- The colour can range from a yellowish-orange to reddish-brown.
- The odour could be typically described as a “burnt powder smell”.
- These gases are an irritant to the eyes, nose and throat.
- They are soluble in water.
- They form an acid solution when mixed with water.
- It is important to note that a concentration of 0.07% can be fatal within 30 minutes.

Carbon Monoxide

- This is a colourless gas.
- It is an odourless gas.
- It is a tasteless gas.
- It is hazardous, because it replaces oxygen in the blood, so it is classified as an “asphyxiate”.
- It can only be detected with specialised equipment
- A concentration of 0.4% can result in instant collapse, followed by death.

Constituents of the Gases

Nitrogen Oxides

Oxides of Nitrogen are a combination of nitrogen-based gases, which include the following -

- Nitric Oxide (NO)
- Nitrous Oxide (N₂O)
- Nitrogen Dioxide (NO₂)
- Dinitrogen Trioxide (N₂O₃)
- Dinitrogen Tetroxide (N₂O₄)
- Dinitrogen Pentoxide (N₂O₅)

Nitrogen oxides (NO_x) are a mixture of gases that are composed of nitrogen and oxygen. Two of the most toxic of these gases are nitrogen dioxide and nitric oxide. It should be noted that nitrogen oxides are released into the air from a range of activities, which also includes the blasting of explosives.



Blast Fume Cloud

Properties and Hazards of the Gases

Properties of Nitrogen Dioxide (NO₂)

Nitrogen Dioxide is a reddish-brown gas, which liquefies below 21.1 degrees Celsius. It has an irritating and harsh odour. This is extremely toxic. It does not burn but supports the combustion of carbon, phosphorous and sulphur. It decomposes in water to form nitric oxide and nitric acid, and reacts with alkalies such as sodium hydroxide to form nitrates and nitrites.

Health hazards from Exposure to Nitrogen Oxides: Summary

Low Level exposure can-

- Irritate the eyes, nose, throat and lungs;
- Cause coughing and shortness of breath;
- Cause nosebleeds and headaches;
- Cause tiredness and nausea;
- Cause a build up of fluid in the lungs (which may take 1 -2 days)

Exposure to high concentrations can-

- Swelling of tissues in the throat, and upper respiratory tract;
- Cause rapid burning to exposed body parts (eyes, nose, throat, lungs);
- Reduced oxygenation of body tissues
- Muscle spasms;
- A build up of fluid in the lungs (pulmonary oedema)
- Result in acquired or type II methaemoglobinemia.
- Death

Detailed Notes:

The effects of Nitrogen-Based Gases on the Human Body

Nitrogen Oxide (NO)

- Nitrogen gases including Nitrogen Oxide, are classified as “simple asphyxiates”.
- This means Nitrogen will displace Oxygen and create Oxygen deficiencies (<19.5%), without significant physiological effects, including to the bloodstream and body tissues.
- Breathing is stimulated and controlled by Carbon Dioxide (CO₂), when present in the lungs.
- As the Carbon Dioxide (CO₂) level increases, the brain sends a message to increase respiration.
- When the Carbon Dioxide (CO₂) level drops, the rate of respiration will also decrease in order to maintain the proper balance.
- Everyone should understand that one deep breath of 100% Nitrogen Oxides (NO_x) can be fatal.
- 100% Nitrogen Oxide exposure can reduce Carbon Dioxide and Oxygen to dangerously low levels and, in the absence of a Carbon Dioxide signal to the brain, the stimulus to breath no longer exists.
- This means that affected individuals are likely to stop breathing altogether.

Nitrogen Dioxide (NO₂)

Nitrogen dioxide is the most hazardous component of NO_x emissions, as it is associated with PM 1 particulates. Potential symptoms of overexposure to Nitrogen Dioxide (and Nitric Oxide) include coughing, mucoid frothy sputum, decreased pulmonary function, chronic bronchitis, chest pain, pulmonary oedema, methemoglobinemia, cyanosis and eye, nose and throat irritation. Inflammation of the lungs may cause only slight pain or pass unnoticed, but the resulting oedema several days later may cause death. 100 PPM is dangerous for even a short exposure, and 200 PPM (or more) may be fatal. NO₂ appears to diminish function of t- lymphocytes leaving the recipient more likely to go down with infections. The PM 1 & PM 2.5 particulates also result in these t- lymphocytes being tied up in the lungs with the macrophages leaving the immune system at risk. Hence repeated exposure over a long term pre-disposes individuals to developing chronic and / or terminal auto-immune diseases.

Nitric Oxide (NO)

Properties and health effects of Nitric Oxide (NO) are the same as Nitrogen Oxide exposure. This is because Nitric Oxide, when exposed to air, immediately converts into nitrogen dioxide. Nitric Oxide is colourless in appearance, but turns into reddish-brown Nitrogen Oxide gas, as per the reaction referred to previously.

Nitrous Oxide (N₂O)

Nitrous Oxide is a colourless gas, which has a slightly sweetish odour. This gas supports combustion. It is a very stable and inert gas at room temperature. This gas is also known as “laughing gas”. The health effects are not as severe as Nitrogen Dioxide or Nitric Oxide. Potential symptoms of overexposure to Nitrous Oxide are drowsiness, headache, reproductive effects, and asphyxia.

What is Pulmonary Oedema?

Pulmonary Oedema is a fluid accumulation within the lungs. It leads to impaired gas exchange and may lead to respiratory failure. It is most likely to develop over time and symptoms may include:-

- difficulty in breathing
- coughing up blood
- excessive sweating
- anxiety
- pale skin
- pink frothy sputum

If left untreated it may lead to complications such as Hypoxia (a lack of oxygen in the blood stream, so that body tissues become deprived of oxygen). This is why it is vital that anyone who experiences exposure to a blast fume cloud seeks medical attention, as medical diagnosis is the best way to determine whether or not an individual is at risk of pulmonary oedema.

What is Methaemoglobinemia?

According to PubMed Health, *“Methaemoglobinemia is a blood disorder in which an abnormal amount of haemoglobin builds up in the blood.*

Haemoglobin is the oxygen-carrying molecule found in red blood cells. In some cases of methaemoglobinemia, the haemoglobin is unable to carry oxygen effectively to body tissues.”

Symptoms such as headache, dizziness, weakness and dyspnoea occur when methaemoglobin concentrations are at 30 – 40%. At levels of approximately 60%, stupor, convulsions, coma and respiratory paralysis occur and the blood turns a chocolate brown colour. Death is likely to result at higher levels of exposure.

Methaemoglobinemia can result from an intense, high level, short-term exposure to oxides of nitrogen – such as those that are released in an incomplete combustion of an open-cut mining overburden blast set-up, whereby post-blast gases create a red fume.

Kim Hann, September 2011

(With special thanks to the world-renowned Industrial Pollution expert Dr Dick van Steenis for the provision of toxicological information on the various components of the Blast Fume.)

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Appendix 12

Resilience Thinking - A holistic approach to decision making

Under the broader context of a whole of catchment approach, the key assets of Biodiversity, Landscape, Water and People will be subjected to significant shocks and drivers from the expansion of the resources industry within Leards Forest that will ultimately lead to a breakdown of Social-Ecological systems and therefore environmental resilience within the Maules Creek Catchment.

The Namoi Catchment Management Authority (CMA) has developed a Catchment Action Plan (CAP) that sets strategic targets and activities for natural resource management within the Namoi Catchment.

Namoi CMA has chosen to adopt a “Resilience Thinking” approach to the CAP to ensure that the CAP is both contemporary and vigorous. The resilience assessment is a justified perspective on where the catchment should not go. All stakeholders in natural resource management within the Namoi Catchment are encouraged to adopt the Catchment Action Plan and develop immediate priorities for natural resource management intervention.

Year 2020 Catchment Targets identified by the Namoi CMA include:

- Increase In Native Vegetation Extent
- Maintain Sustainable Populations Of A Range Of Native Fauna Species
- Actions Supporting Recovery Of Viable Threatened Species, Populations And Communities
- Reduction In New Invasive Species And The Spread Of Key Emerging Invasive Plants And Animals Is Limited
- Improvement In Soil Health
- Improvement In The Condition Of Those Riverine Ecosystems That Have Not Crossed Defined Ecological And Geomorphic Thresholds
- Improvement In The Ability Of Groundwater Systems To Support Groundwater Dependant Ecosystems And Designated Beneficial Users
- Improvement In The Condition Of Regionally Important Wetlands And The Extent Of Those Wetlands In Maintained
- Natural Resource Management Decisions Contribute To Social Wellbeing
- There Is An Increase In The Adaptive Capacity Of Natural Resource Managers

Critical thresholds have been defined for the above themes and aligned with NSW Government State Plan Targets.

The Maules Creek Community Council (MCCC) believes that the approach the Namoi CMA has undertaken for the resilience assessment within the catchment is justified under both economic and environmental grounds.

The Namoi Catchment Authority has utilised the resilience assessment methodology to conduct a preliminary assessment of the cumulative impacts of mining within the Maules Creek Sub catchment. While this assessment is still to be validated by modelling, the recognition by the CMA of potential conflict between multiple mines and critical thresholds within the catchment warrants further investigation. The Proposed Framework for assessing the cumulative risk of mining of natural resources in the Namoi Catchment, and the Critical Thresholds of the Namoi Catchment have been reproduced from publications produced by the Namoi Catchment Authority.

They have been used to demonstrate the complexity of resilience assessments within the catchment and to demonstrate to the reader work that has both been completed and is ongoing by the Namoi Catchment Management Authority.

Namoi CMA Proposed Framework for Assessing the Cumulative Risk of Mining of Natural Resource Assets in the Namoi Catchment

The coal mining and coal seam gas industries are experiencing a period of rapid expansion in NSW.

Forward estimates of global demand for coal have resulted in a surge in mining activity in the Hunter Valley, and in the Gunnedah Basin which lies immediately north of the Hunter Valley within the central parts of the Namoi Catchment in northern NSW. Some existing mines in the Gunnedah Basin are expanding, and several new mines are planned for the region.

The potential cumulative impacts of multiple mines on natural resources assets in the Namoi Catchment have evoked concern from both environment and farming interest groups. The Namoi Catchment Management Authority has responded by commissioning this study to scope out a framework for quantifying the unmitigated risk of cumulative impacts across nine natural resource assets in the Catchment – soils, land use, surface water, groundwater, vegetation extent, vegetation type, vegetation condition (intactness), landscape connectivity and threatened species.

A framework is proposed to develop a spatially-interactive cumulative risk assessment tool that could be used to explore the potential cumulative impacts of mining scenarios on key natural resource management assets in the Namoi Catchment. The framework is consistent with the Australian Standard for Risk Assessment and accounts for critical thresholds stipulated in the Namoi Catchment Action Plan.

The framework also draws on past experience in cumulative impact and risk assessment in NSW, and proposed parameters draw on advice given by independent experts who were interviewed during the project. The framework considers three mine sizes (large, medium, small) and three mine types (open cut, longwall and coal seam gas). It also includes small quarries.

The proposed framework is spatial in nature (i.e. is operated within a Geographic Information System) and involves the following:

- identification of the major types of impact associated with mining;
- derivation of a catchment-wide map of each type of impact using one or more baseline asset
- maps, using explicit rule sets underpinned by published science and expert advice;
- derivation of a risk matrix for each type of impact that relates the mine types and size classes to the projected magnitude of impact;
- linking the impact mapping and risk matrix to establish risk maps; and
- preparation and input of a base case mining layer and a scenario mining layer.

A key output of the proposed framework is a risk statement for any mining scenario that shows the single impact of each mine and the cumulative impact of all mines, and the associated levels of risk, on each natural resource asset. Individual layers that show the change in impact zones prior to and following the scenario will be produced to support and justify the risk statement.

It is recommended as a next step that a working prototype be developed and tested. It is anticipated that the prototype will be programmed as an 'interactive' system in ArcGIS, in that users will be able to test, modify and report scenarios using specific commands. Whilst Namoi CMA has a comprehensive set of NRM spatial data, some elements will need to be developed further to provide all the baseline data that are required for the proposed model. In particular a vegetation condition (intactness) layer, a landscape connectivity layer and a threatened species composite layer will need to be constructed as they are not currently available for the Namoi Catchment.

It is also recommended that mining industry companies operating in the Namoi Catchment be briefed about the framework and its assumptions, and given opportunity to contribute to parameter setting and design.

Namoi CMA Case Study : Boggabri Coal Mine, Gunnedah Basin (Hansen Bailey 2010)

Following consultation with DoP for an application to extend current operations, Boggabri Coal Pty Ltd recently undertook a cumulative impact assessment of four other projects in the immediate vicinity of the Boggabri project. The other projects are set out in Table 16. The Department requested that impacts of these proposed mining activities be assessed in a Simultaneous Worst Case Scenario (SWCCIS).

This assessment was informed by the findings of the various environmental assessments where available, however, several assumptions had to be made regarding the two unformulated prospective mines, and therefore the assessment should be considered qualitative suitable for the purposes of high level review.

Maules Creek Community Council Inc

Re: Maules Creek Coal Project/ Project Application Number: 10_0138

The study was informed by separate specialist reports on cumulative air quality impacts, noise impacts, ecological impacts, surface water impacts, groundwater impacts and traffic impacts. The separate reports are available from the Project EA (online at Major Projects Assessment website).

Table 16. Potential mines factored into the Cumulative Impact Assessment for Boggabri Coal

Project Name	Mine Type	Attributes
Maules Creek Coal	New open cut mine.	21 years predicted life of mine. 240Mt coal reserves.
Tarrawonga Modification	Modification to existing open cut mine	8-10 years predicted life of mine. 16.4Mt coal reserve.
Tarrawonga Extension	Expansion of current operations into exploration lease 5967.	No project applications made at time of assessment. Technical details unknown.
Goonbri Project	Open cut or underground within EL 7435	No project applications made at time of assessment. Technical details unknown.
Boggabri Continuation	Open cut.	21 years predicted extension to current 21 year life of mine. 200 Mt coal reserve.

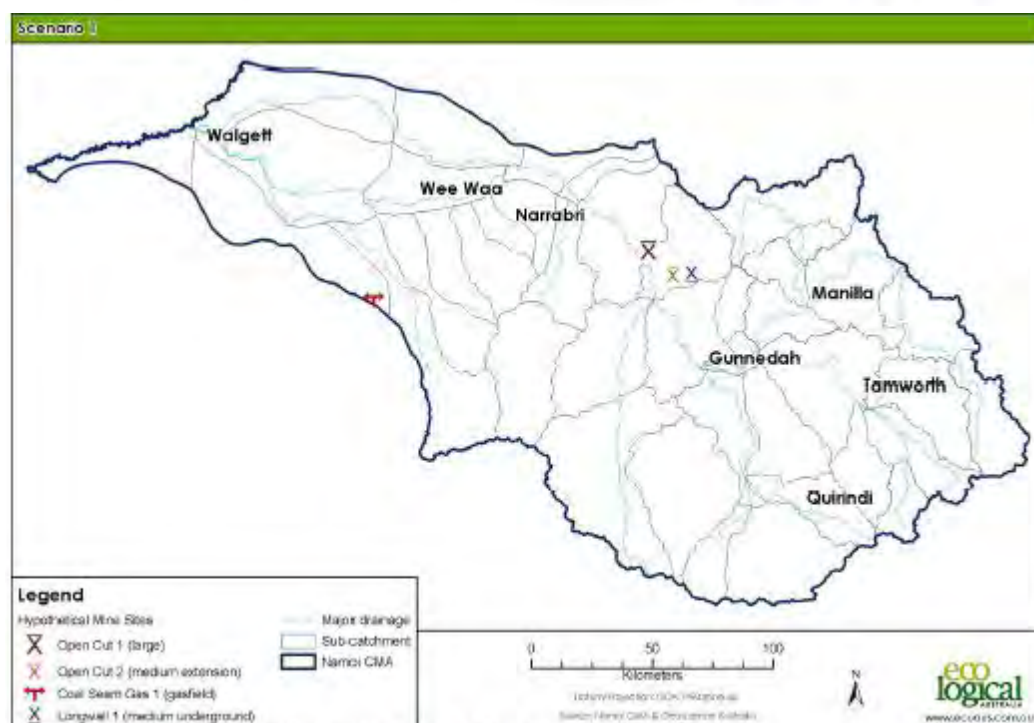


Figure 16. Hypothetical mining scenario in the Namoi catchment

Namoi CMA Cumulative risk statement

It is proposed that the Model Builder tool be developed with the capacity to output a statement on the individual and cumulative impacts associated with any real or hypothetical mining scenario. An example is provided in Table 20 for a hypothetical mining scenario involving two new open cut mines and a new long wall mine, all in the Maules Creek sub-catchment, and a coal seam gas mine in the Box Creek sub-catchment (Figure 16).

Table 20 provides summary information about each mine in the scenario, the individual values within each asset that would be or may be impacted, the level of that impact, and the subsequent level of risk (drawn from the relevant risk matrix). It also provides a summary table of the collective impact on each NRM asset of *all* mines in the scenario, and the associated cumulative risk of that scenario. This example has been developed to showcase the type of reporting that might be achieved through use of the Model Builder tool.

The final format and content of this report will need to be workshopped and agreed as part of future testing of the tool developed for reporting cumulative risk. It is likely that once a final template has been designed, it will be embedded in the tool with all associated risk matrices, and populated as the tool works through the various analyses.

Table 20. Cumulative risk statement – possible format of output for hypothetical scenario

SCENARIO 1

Characteristics	Mine 1	Mine 2	Mine 3	Mine 4
Type	1 x open cut	1 x open cut	1 x long wall	1 x CSG
Size	Large	Medium	Medium	Medium
Location	Easting/Northing	Easting/Northing	Easting/Northing	Easting/Northing
Sub catchment	Maules Creek	Maules Creek	Maules Creek	Box Creek

Risk from Mine 1 – large open cut

Asset	Description	Potential Impact	Risk
Land Use	Irrigated Cropping	Major	H
Soils	Brown and Grey Clays	Minor	M
Threatened Species	5 species present, 15 likely, 15 possible, 10 unlikely, 70 absent	Moderate	H
Connectivity	Loss of 10 km functional connectivity, loss of 300 ha of viable habitat	Minor	M
Vegetation Type	Contains RVC 80 Poplar Box grassy woodland	Severe	E
Vegetation Extent	Maules Creek sub-catchment 39% cleared	Major	H
Vegetation Condition	Mean intactness 0.3	Minor	L
Groundwater	Intact aquifer (class 2)	Minor	L
Surface Water	Not in proximity to threshold	Minor	L

Risk from Mine 2 – medium open cut

Asset	Description	Potential Impact	Risk
Land Use	Improved Pasture	Minor	M
Soils	Alluvial Loams	Minor	M
Threatened Species	3 species present, 12 likely, 25 possible, 12 unlikely, 73 absent	Minor	M
Connectivity	Loss of 3 km functional connectivity, loss of 50 ha of viable habitat	Insignificant	L
Vegetation Type	Major type RVC 28, minor type RVC 32 Pilliga Box Poplar Box White Cypress Pine grassy open woodland on alluvial loams	Insignificant	L
Vegetation Extent	Maules Creek sub-catchment 39% cleared	Major	H
Vegetation Condition	Mean intactness 0.3	Minor	M
Groundwater	Aquifer supports GDEs	Moderate	M
Surface Water	Not in proximity to threshold	Minor	L

Maules Creek Community Council Inc

Re: Maules Creek Coal Project/ Project Application Number: 10_0138

Risk from Mine 3 – medium longwall

Asset	Description	Potential Impact	Risk
Land Use	Cropping (dryland)	Moderate	M
Soils	Red Sandy Loam	Minor	M
Threatened Species	7 species present, 19 likely, 13 possible, 4 unlikely, 71 absent	Minor	M
Connectivity	No loss of functional connectivity; loss of 10 ha of viable habitat	Insignificant	L
Vegetation Type	Major vegetation type RVC 44 White Box Pine Silver-leaved Ironbark shrubby open forests	Minor	M
Vegetation Extent	Maules Creek sub-catchment 39% cleared	Major	M
Vegetation Condition	Mean intactness 0.25	Minor	L
Groundwater	Aquifer above long wall	Moderate	L
Surface Water	Not in proximity to threshold	Minor	L

Risk from Mine 4 – medium CSG

Asset	Description	Potential Impact	Risk
Land Use	State Forest	Minor	M
Soils	Red Sandy Loam	Minor	M
Threatened Species	15 species present, 10 likely, 20 possible, 10 unlikely, 60 absent	Moderate	H
Connectivity	No loss of functional connectivity; loss of 500 ha of viable habitat	Minor	M
Vegetation Type	Dominant vegetation type RVC 33 Ironbark shrubby woodlands of the Pilliga area, BBS	Minor	L
Vegetation Extent	Box Creek sub-catchment 58% cleared	Moderate	M
Vegetation Condition	Mean intactness 0.7	Major	H
Groundwater	Shallow aquifer, GDEs	Major	H
Surface Water	Not in proximity to threshold	Minor	L

CUMULATIVE RISK FROM ALL MINES: SCENARIO 1

Asset	Description	Cumulative Impact	Cumulative Risk
Land Use	Areas of dryland and irrigated cropping in Maules Creek Sub-Catchment; State Forest in Box Creek Catchment	Moderate	H
Soils	Variety of soils	Minor	M
Threatened Species	22 species present; 12 likely; 22 possible; 15 unlikely; 52 absent	Moderate	H
Connectivity	Loss of 13 km functional connectivity, 860 ha viable habitat	Moderate	H
Vegetation Type	Loss of 300 ha of poplar box woodland, which is already 92% cleared in the Namoi	Severe	E
Vegetation Extent	Maules Creek catchment vegetation extent into the 25%-35% threshold as a result three mines in the catchment	Severe	E
Vegetation Condition	Condition score class 60-80 impacted	Major	H
Groundwater	Aquifer and GDEs impacted by three mines	Major	H
Surface Water	Three mines connected to Maules Creel	Major	H

MCCC Conclusion of the Namoi CMA Model

The proposed model does not include a cumulative risk assessment of the key assets of "people".

People are defined as "the social and economic elements of the Catchment in relation to how they are underpinned by natural resources, an asset for increasing resilience and a driver of system changes".

The NSW State Plan Target (E4:12), states that, Natural resource decisions contribute to improving or maintaining economic sustainability and social wellbeing.

The Five Capitals Model – a framework for sustainability, interlinks natural, human, social, manufactured and financial capital to provide a basis for understanding sustainability in terms of the economic concept of wealth creation or 'capital'. Any organisation will use the five types of capital to deliver its products or services. A sustainable organisation will maintain and where possible enhance these stocks of capital assets, rather than deplete or degrade them. The model allows business to broaden its understanding of financial sustainability by allowing business to consider how wider environmental and social issues can affect long-term profitability.

By linking together the principles of Environmental Resilience and The Five Capitals Model, an equitable holistic approach to minimise the negative economic and environmental consequences of coal mining within the Maules Creek Catchment can be found.

Equity means that there should be a minimum level of income and environmental quality below which nobody falls. Within a community it usually also means that everyone should have equal access to community resources and opportunities, and that no individuals or groups of people should be asked to carry a greater environmental burden than the rest of the community as a result of government actions. It is generally agreed that equity implies a need for fairness (not necessarily equality) in the distribution of gains and losses, and the entitlement of everyone to an acceptable quality and standard of living.

Critical Thresholds of the Namoi Catchment as Identified by the Namoi CMA

The Resilience Assessment has been completed as a requirement of the Catchment Action Plan Review Pilot process instigated by the Natural Resources Commission of New South Wales (NRC). The NRC has set an objective for Catchment Action Plans to focus on building resilience to future change.

The NRC has taken this position on the grounds that recent experiences with prolonged droughts, declining water availability and extreme weather events in association with the uncertainty around future climate have shown that we are in a time of rapid change and high uncertainty. The Resilience Thinking conceptual framework is considered an appropriate tool for managing systems in the face of high uncertainty as it assumes that the context for the system will be constantly changing.

Namoi Catchment Management Authority is presenting this Resilience Assessment as the first step in the process of understanding the complexity and resilience of our systems. The time available to this process is very short and thus we are unable to delve too deeply into the function and controlling variables for much of our Catchment. This assessment has been developed to inform the strategic directions of the Catchment Action Plan as best as we are able given the available time. Some of the thresholds we have identified in this document and the resulting Catchment Action Plan may prove to be incorrect, however, as long as we acknowledge the “unknowns” and have an adaptive management process in place to review system trends, changes, drivers, thresholds and intervention activity, the Resilience Thinking approach should position where we understand what is critical to the Catchment’s function and exactly where we are in relation to relevant thresholds.

This resilience assessment underpins the development of the Namoi Catchment Action Plan (2010 – 2020).

Critical Thresholds identified in the resilience assessment of the Namoi Catchment

Biodiversity

- Woody vegetation cover (% remaining of original extent) – 30%.
- Woody vegetation cover (% remaining of original extent) – 70%.
- 69% of Regional Vegetation Communities maintain 30% extent (i.e. No further vegetation communities drop below the 30% threshold).
- Population size of individual species (generic – not specified for each species currently).
- Habitat area for individual species or populations (generic – not specified for each species currently).
- Area of endangered or vulnerable community (generic – not specified for each species currently).
- Presence of individual invasive species (i.e. Presence/absence is the threshold).
- Population extent of individual invasive species.

Biodiversity Asset:

Local Scale Connectivity:

Definition - Local Scale Connectivity has been defined as the connectivity provided by small remnants and paddock trees.

Trend in Condition – Declining.

Notes on Trend: Paddock trees are dying. Many small remnants are not viable in the long term without intervention due to impacts such as edge effects, patch size and climate change trends.

Impacts of continuing trend: Small remnants and paddock trees provide important habitat connectivity for a range of native species. Some of the key tree species affected in the Namoi Valley include Poplar Box (*Eucalyptus populnea*), River Red Gum (*E.camaldulensis*), Yellow Box (*E. melliodora*) and Rough-barked Apple (*Angophora floribunda*). More recently, there has also been concern about dieback of River Oak (*Casuarina cunninghamiana*) in parts of the Namoi Catchment.

These small remnants and paddock trees are also often the last bastion in terms of seed banks and regenerative capacity for ecosystem types with high levels of modification and removal due to clearing and development associated with agriculture, urban expansion and extractive industries. Regenerative capacity can however be limited due to stresses

associated with fragmentation (loss of connectivity). The influence of trees and small remnants on soil service properties at a site scale is also significant.

Drivers and Threats: Current estimates for the rate of tree decline range from 1-5% per annum. Overall impacts of clearing and removal of vegetation, and thus loss of connectivity, are greatest in those landscapes with highly productive soil types.

Thresholds known or suspected:

Known:

Nil

Strongly suspected:

- 1) Mortality amongst established trees kept below 0.5% per year, recruitment of new trees at a rate higher than the number of existing trees, and recruit new trees at a frequency in years equivalent to around 15% of the maximum life expectancy of the tree species in question.
- 2) A minimum of 400-500 mature trees required to maintain genetic diversity of a patch in Eucalypt woodlands.
- 3) Fertiliser application.

Precise thresholds regarding particular stresses such as defoliation levels, damage by livestock, impacts from cropping practices, lack of regeneration and water stress specifically relating to rates of tree decline were not able to be identified for the Catchment. The general threshold for these effects is however the point at which the individual tree is unable to recover.

Controlling variables: Rates of recruitment and rates of tree mortality are the most critical controlling variable for this asset. Previous research suggests that the loss of scattered mature trees is most sensitive to tree mortality, stand age, number of recruits and frequency of recruitment.

Landscape

- Groundcover is at least 70%

Biodiversity Asset:

Regional Landscape Connectivity:

Definition – Regional landscape connectivity refers to how connectivity occurs across the Namoi Catchment itself and across into neighbouring Catchments.

Trend in Condition – Declining.

Notes on Trend: In some parts of the Catchment, regional landscape connectivity is very poor and continuing to decline, and in others areas it is stable.

Impacts of continuing trend: There is a high possibility of species loss and local or global extinctions due to the ongoing loss of regional landscape connectivity. Also, loss of connectivity reduces the viability of those remnant patches that do remain. Total vegetation cover can be impacted by reduced connectivity.

Drivers and Threats: Current estimates for the rate of tree decline range from 1 to 5% per annum. The impacts are biased towards those landscapes with highly productive soil types.

Thresholds known or suspected:

Known:

Nil

Strongly suspected:

- 1) Mortality amongst established trees kept below 0.5% per year, recruitment of new trees at a rate higher than the number of existing trees, and recruit new trees at a frequency in years equivalent to around 15% of the maximum life expectancy of the tree species in question.
- 2) A minimum of 400-500 trees required to maintain genetic diversity of a patch in Eucalypt woodlands.
- 3) Gaps more than 106m – many species will not cross.
- 4) Patches more than 1100m apart – reduces species dispersal.
- 5) Corridors more than 350m wide.
- 6) Gap distance less than 75m where gliding marsupials occur.

Controlling variables: Rates of recruitment, rates of patch decline and net loss of native vegetation overall are the controlling variables for this asset.

Biodiversity Asset:

Total Native Woody Vegetation Cover

Definition – Total woody vegetation cover is expressed as a percentage of the Catchment or sub-catchments that have woody vegetation cover.

Trend in Condition – Declining.

Notes on Trend: In some parts of the Catchment total native woody vegetation is very poor and continuing to decline, and in other areas it is stable.

Impacts of continuing trend: There is a very high possibility of species loss and local or global extinctions. Land degradation will continue and possibly accelerate, particularly in relation to salinity and erosion. Water quality will continue to degrade. Productivity of existing agricultural systems will continue to decline. Scenic amenity will be reduced and the ecosystem services of seed production, honey production, timber production, climate regulation, supporting hydrological equilibrium and supporting air quality will be negatively impacted.

Drivers and Threats: Utility clearing, mining and development, agricultural practices, disturbance events (e.g. flood, fire, drought), approved clearing, natural attrition, illegal clearing, climate change. Estimates for rate of net loss of cover in the Catchment range from 1 to 5% per annum. Impacts are biased towards those landscapes with highly productive soil types. Vegetation is one of the critical aspects to the management and maintenance of soils.

Greater vegetation cover results in reduced run-off erosion For terrestrial biodiversity conservation to be most effective in landscapes with over 70% native vegetation cover (i.e. relatively intact), the following thresholds are suggested:

- Remoteness from water (grazing impacts) – more or less than 5% of area is more than 3km from a water point
- Fragility of land system – vulnerable or not to invasive species (now or in the future)
- Rareness and irreplaceability – found in only one place within the region or not Size of land system (total area) – more or less than 20km² in area
- Isolation of land system – nearest similar land system or habitat more or less than 30km away

For terrestrial biodiversity conservation to be most effective in landscapes with 30-70% native vegetation cover, the following thresholds are suggested:

- Watertables – threatened by rising watertables or not Amount of clearing – less than 30%, 30-70% or more than 70%
- Rareness and irreplaceability – found in only one place within the region or not
- Total extent of vegetation community or species range (area) – more or less than 20km² in area
- Fragility of land system to degradation – vulnerable to invasive species or not (now or in the future)

For terrestrial biodiversity conservation to be most effective in landscapes with 10-30% native vegetation cover, the following thresholds are suggested:

- Watertables – threatened by rising watertables or not
- Amount of clearing – less than 30%, 30-70% or more than 70%

- Rareness and irreplaceability – found in only one place within the region or not
- Total extent of vegetation community or species range (area) – more or less than 20km² in area
- Fragility of land system to degradation – vulnerable to invasive species or not (now or in the future)
- Degree of isolation – more or less than 10km to the nearest identical land system

Thresholds known or suspected:

Known:

Nil

Strongly suspected:

- 1) 30% woody vegetation cover loss and 70% woody vegetation cover loss.
- 2) 30-35% percent minimum of native vegetation cover.
- 3) Less than 10% habitat cover at the landscape scale leads to a sharp decline in species richness.
- 4) A maximum threshold of 30% intensive land use on properties, a minimum of 30% woodland cover, 10% of a property to be managed for wildlife, 30-40% maximum bare ground, 60-70% minimum tussock grass dominance, and 5-10ha minimum size of woodland patches.

Biodiversity Asset:

Species Populations

Definition – Declining or at high risk from system changes (e.g. climate change).

Trend in Condition – Declining or stable, but high risk.

Notes on Trend: Trend in threatened species – declining (i.e. there is an ever growing list of threatened species, versus a very small number of species populations or ecological communities being recovered and coming off the threatened species list). Some species are on the increase, as they take advantage of modifications to the landscape that they are well suited to, however these are in the minority. Key threatening processes to biodiversity are continuing to increase and most are yet to be successfully abated. Overall, biodiversity is in decline and predicted climate change impacts are expected to exacerbate this trend

Impacts of continuing trend: High possibility of local or global species extinctions. Secondary wave of extinction possible due to complexity of poorly understood inter-species interactions. Flow on effects will include potential loss of face of the community in regard to

biodiversity conservation, reduced funding and investment in Catchment-wide natural resource management, public sadness and reduced connection with place and landscape. Species loss is particularly significant to Aboriginal communities that value each species intrinsically.

Drivers and Threats: Habitat disturbance, habitat loss, feral animals, invasive weeds, climate change.

Thresholds known or suspected:

Known:

Nil

Strongly suspected:

- 1) Population size.
- 2) Habitat area available.

Further background information on the species and ecological communities is provided in this document at Biodiversity Appendix A. Information on threatened species and key threatening processes in the Namoi Catchment is also provided in Biodiversity Appendix B.

For further details on biodiversity, threatened species, and appropriate fire regime thresholds for different vegetation communities, please refer to the Namoi Catchment Conservation Strategy.

Controlling variables: Critical controlling variables include the habitat area available, population size and recruitment rates. These will vary, however, according to the species or community in question.

Biodiversity Asset:

Large Areas of Conserved Habitat

Definition – Large areas of conserved habitat includes wilderness, National Park, reserves, and other areas managed for conservation.

Trend in Condition – Stable and possibly increasing in area.

Notes on Trend: The overall area of land reserved in public protected areas has increased.

Biodiversity Asset:

Intact Native Vegetation Communities

Definition – Defined as the condition and arrangement of vegetation and habitat, and is based on the 77 Regional Vegetation Communities occurring in the Catchment.

Trend in Condition – Declining or very poor and stable.

Impacts of continuing trend: High possibility of local or global species and ecosystem extinctions. Secondary wave of extinction possible due to complexity of poorly understood inter-species interactions. Flow on effects will include potential loss of face of the community in regard to biodiversity conservation, reduced funding and investment into Catchment-wide NRM, public sadness and reduced connection with place and landscape. Species loss is particularly significant to Aboriginal communities that value each species intrinsically.

Drivers and Threats: Habitat disturbance, invasive species (weeds and vertebrates), fragmentation.

Thresholds known or suspected:

Known:

Nil

Strongly suspected:

- 1) Whilst specific thresholds have not been identified, the critical threshold for intact vegetation communities (both in terms of condition and arrangement) is regenerative potential.
- 2) Presence/absence of introduced grazing species.
- 3) Presence/absence of introduced weed species.

Controlling variables: degree of fragmentation, patch size, condition score, frequency and intensity of grazing/cropping, nutrient cycle status.

Biodiversity Asset:

Water

- Surface water flow quantity is at 66% of natural (pre-development) condition with a sensitivity to natural frequency and duration.

- River geomorphic condition is good (against benchmark condition).
- Recruitment of riparian vegetation is higher than attrition of individual trees.
- Agricultural and urban supply aquifers do not cross into lower levels of beneficial use.
- Alluvial aquifers are not drawn down below historical maximum drawdown levels.
- Groundwater is within 30m of surface where there are identified groundwater dependant ecosystems.
- Wetlands are not drained, dammed or otherwise physically modified.

Waterways - connected

Definition – expressed as a % intact rivers and streams and connected wetlands, lakes.

Trend in Condition – Declining or stable but poor.

Notes on Trend: Refer to water assets section for more information on trends associated with connected waterways.

Impacts of continuing trend: Water quality trend is downwards and continues to worsen, species loss including iconic fish species such as Eel-tailed Cat-fish, loss of aquatic habitat, impacts on terrestrial species due to declining drought refugia, reduced recreation possibility, declining access to clean drinking water, rising costs in water filtration, breakdown of biodiversity function at a landscape scale, economic downturn as a result of reduced fresh water, failure of infrastructure, changed wetting and drying regimes as a result of river incision.

Drivers and Threats: Climate change, water regulation, grazing, vegetation removal, weeds, introduced fish species, intensification of agriculture and urban development.

Thresholds known or suspected:

Known:

Nil

Strongly suspected:

- 1) Research to date suggests that to maintain a river in a healthy state, the flow regime must be at least two-thirds of the natural level.

Controlling variables: Geomorphology and surface water quantity

Biodiversity Asset:

Waterways - unconnected

Definition – expressed as a % intact of swamps, bogs, non-floodplain wetlands and other less connected systems.

Trend in Condition – Declining.

Notes on Trend: The condition of these unconnected or less connected waterways, such as perched wetlands for example, is poor.

Impacts of continuing trend: Water quality trend is downwards and continues to worsen, species loss, loss of aquatic habitat, impacts on terrestrial species due to declining drought refugia.

Drivers and Threats: Climate change, draining, grazing, vegetation removal, weeds, intensification of agriculture and urban development.

Thresholds known or suspected:

Known:

Nil

Strongly Suspected:

- 1) Physical integrity of wetlands remains (intact geomorphology).
- 2) Draining.
- 3) Cropping (species loss and changes in species composition as well as changed morphology and water regime).

Controlling variables: Landuse regime (draining, cropping and grazing), geomorphology, local flows and surface water quantity.

Biodiversity Asset:

Groundwater Dependant Ecosystems

Definition – expressed as a % intact of ecosystems that are dependent on groundwater.

Trend in Condition – Unknown or declining.

Notes on Trend: The condition of groundwater dependant ecosystems is thought to be poor in many parts of the Catchment.

Impacts of continuing trend: Possibility of species and ecosystem extinctions. Secondary wave of extinctions possible due to complexity of inter-species interactions being poorly understood.

Drivers and Threats: Climate change, groundwater extraction rates, decline in groundwater quality, grazing, vegetation removal, weeds, intensification of agriculture and urban development.

Thresholds known or suspected:

Known:

Nil

Strongly Suspected:

- 1) Groundwater within 30 metres of soil surface where groundwater dependant ecosystems occur.

Controlling variables: Groundwater extraction, groundwater recharge rates, changes to the hydrology, groundwater quality.

Climate Change as a driver:

The Department of Environment, Climate Change and Water has recently compiled more detailed projections of the impacts and hazards of climate change on a regional basis. Projections for impacts on Biodiversity Assets are sobering.

Generally, it can be expected that higher altitude forests such as those found at Mt Kaputar and on the Liverpool Ranges are likely to contract significantly. Climate change will increase the pressure on species and ecosystems that are already stressed due to fragmentation. Heat and dryness will impact on species and lead to structure and species changes in ecosystems. Increased fire frequencies will also lead to changes in the structure and species found in ecosystems.

The highly fragmented grasslands and grassy woodlands on the western slopes are considered to be particularly vulnerable to increased degradation due to changed rainfall patterns and increases in temperature. Many species will disappear from these ecosystems leaving them much simplified.

As previously mentioned, higher altitude forests are likely to be particularly sensitive to increases in temperature and the associated changes to available moisture. A radical change in the species composition of these areas is likely causing a marked reduction in the range limits of the original ecosystem.

Wetlands are also likely to be heavily impacted by increased temperature, increased fire frequency and changes in water regimes. Fauna species such as koalas, flying foxes and cave dwelling bats are likely to be impacted by high temperature extremes resulting in heat stress and deaths of individual animals and in some cases whole colonies.

In the western parts of the Catchment, the combination of increased temperatures, greater extremes, improved conditions for pests and weeds and large wildfires are expected to impact on ecosystems to the point where some species are likely to be lost from the region altogether.

Species likely to face increased extinction risks include bats and koalas due to their vulnerability to heat stress and death over long hot spells. A dramatic decline is likely in some places.

What does all this mean?

Biodiversity plays a critical function within the Catchment, providing the productivity that agriculture depends on, clean air, clean water, tourism opportunity and an important sense of place and wellbeing to people. Some asset types are able to be assessed to determine status, thresholds and trends, whereas others are more difficult to assess as information is not readily available.

On the basis of the resilience assessment undertaken, it would appear that total woody vegetation cover, and intact native vegetation communities, are the most critical assets for biodiversity, followed by large areas of conserved habitat, connected waterways and regional landscape connectivity as shown by the conceptual model presented in Figure 3.

Evidence strongly suggests preventing a trajectory in woody vegetation loss crossing the 70% cleared threshold as critical to maintaining biodiversity assets in the Catchment. Species loss occurs as the vegetation cover is reduced from 100% to 30% but the rate of loss increases exponentially after woody vegetation cover reduces below the 70% and 30% thresholds. Thus a threshold that maintains 30% of woody vegetation cover is important for more cleared areas so as to avoid further loss of biodiversity. A threshold that maintains those areas that retain 70% or more of their woody vegetation cover is also considered important as these areas are likely to maintain most of their biodiversity.

A third critical threshold has been defined as a percentage of ecosystem types at or above 30% of their original extent. This threshold is an attempt to capture the diversity of ecosystem type rather than just the amount of woody vegetation. No information was available in the scientific literature that helped to establish the number or percentage of ecosystems that need to remain intact for overall maintenance of biodiversity. Therefore, a preliminary figure of 61% of ecosystem types at 30% original extent has been carried forward into this CAP. This is because, based on the 2010 mapping, 61% of Regional Vegetation Communities found in the Namoi (i.e. 47 of 77 Regional Vegetation Communities) have not yet crossed below the 30% extent remaining threshold. Regional Vegetation Communities include both woody and nonwoody vegetation types (e.g. grasslands and wetlands).

Native vegetation extent, condition and configuration are all important in relation to maintaining biodiversity. Based on the resilience assessment undertaken, and the available research, extent has by far the greatest influence, with condition and configuration reliant on having native vegetation present in the landscape in the first place. Thus the critical threshold of extent is carried forward as a target in the CAP.

Condition is also seen as important in relation to biodiversity and is thus identified as part of the actions involving maintenance of all Regional Vegetation Communities under several targets.

Thresholds for threatened species, populations and communities will need to be identified for each individual entity and will most probably relate to the population size or extent of a species, population or community and the habitat area for a species or population.

Invasive species are an important driver of change to biodiversity assets, and thresholds have been identified that relate to the presence of individual invasive species and population extent of invasive species. Thus the priorities in the CAP are based on preventing incursions of new species into the Namoi Catchment, eradicating newly established or emerging invasive species before they become established.

These are the key priorities in relation to invasive species. Targeting established or 61 widespread invasive species is only considered a priority where they are the critical threat to an important biodiversity asset (such as a threatened species or endangered ecological community) and control is feasible.

People

Assets in the people theme were highly variable and interrelated with each other to such a high degree that no 'underpinning' assets stood out. As such we could not identify thresholds that had an overarching affect on all people assets.

Literature does support a general focus on the key areas of wellbeing and adaptive capacity

People Asset:

Human Capital:

Definition – Human Capital has been defined by the Forum for the Future organisation as “consisting of people’s health, knowledge, skills and motivation” (<http://www.forumforthefuture.org/projects/the-five-capitals>).

Assets defined by the Expert Workshop participants that fit into this category are:

- Intellectual capital – a combination of ‘smartness’ and education level – not necessarily well represented by levels of tertiary education. The Namoi Catchment enjoys higher than state average levels of certificate level education and lower than state average levels of tertiary education.
- Experience – including experience of different events, circumstances and eras within the Catchment, but also of other places, cultures and societies. *It is important to note that experiences of the same event will be different depending on the cultural and personal attributes of each person.* Life-long residents of the Namoi Catchment potentially hold a detailed specific knowledge of life in the Catchment, whilst there are many residents who have come to the Catchment and bring with them experiences of other places and people, both nationally and internationally.
- Leadership – the capacity of a person to take responsibility for outcomes within a community and operate at multiple levels to carry the needs and wants of a community forward in times of stress or into ongoing policy and planning debates. Leadership varies across the Catchment with some communities and industries having the benefit of very strong leadership captured in a few key people.
- Skills – the ability of people to carry out tasks. Skill sets existing in the Catchment are relevant to the way the Catchment is today, however some skills shortages have occurred in recent history and demand for skills continues to grow. It is unknown what currently unused skill sets people have that will help in times of shock or crisis within the Catchment or how relevant current skill sets might be to the Catchment of the future.
- Capacity to imagine a different future – an important contributor to adaptive capacity in that if an individual cannot imagine a different way of being in the world, it makes it very hard to build multiple skills, knowledges and to prepare for change, let alone be accepting of the need for it. It is unknown to what level the residents of the Namoi Catchment can imagine different futures for themselves or the Catchment.
- Knowledge and data – including the amount of information and data that is available to people and the access to knowledge and data. Knowledge and data about the Namoi Catchment is good and improving steadily, particularly in relation to the natural resource base of the Catchment. Research and development activity in the Catchment has been high based on the requirements of the major agricultural activities that occur here. Furthermore, access to knowledge and data by an individual is increasingly easy due to the internet and increased efforts from custodians to ensure that information is readily moving through communities. It is unknown whether there is an increased readiness to accept knowledge and data and make changes based on increased understanding.

- Cultural diversity – the diversity of language, nationality and beliefs (either secular or religious) within the community. Cultural diversity is an attribute found within a person but requires the appreciation of a community before it can become an asset. Cultural diversity will improve access to different responses in times of stress and shock. The Namoi Catchment has some cultural diversity as evidenced by a strongly identified Aboriginal Nation in the Gamilaraay Nation, religious and secular diversity, and highly variable positioning on moral and ethical debates.
- Sense of belonging – meaning a strong sense of place within landscape and community. It is unknown how many people would express a sense of belonging within the Catchment and to what degree. It is also unknown whether people feel more connected to the people within the Catchment or to places within the Catchment.
- Self knowledge – describing the ability of a person to know their own strengths and weakness, to know what they know and are capable of and be able to reflect on how they might cope given sudden change or a different future. There is no measure of self knowledge applicable to the Namoi Catchment at this time.
- Health – both physical and mental and important to the capacity of people to move, change, learn new skills, take on new challenges and be independent. Health across the Catchment is perceived to be on par with state averages. Aboriginal people experience poorer health outcomes with resultant shorter than average life expectancies.

Thresholds known or suspected:

There is very little information available regarding thresholds in Human Capital. Most work has focused on demographics and numbers, with population growth or decline most often used as an indicator of social and economic sustainability. Obviously, the numbers of people are important and there can be no Human Capital without them. It may prove to be important to look deeper in regard to Human Capital however. Central to any discussion about Human Capital and its workings, is that the critical information about it is vested in the idiosyncrasies of individuals and the communities and societies with which they interact.

The thresholds listed here include those that have been posited by other authors in the literature, but not always in terms of them being a threshold. They are mostly the result of these authors reviewing the literature and thinking about the nature of the Catchment and drawing conclusions regarding those parameters discussed by other bodies of work that could act like thresholds. They are proposed as a starting point for discussions about thresholds relating to the Namoi Catchment's Human Capital and not a positive position of certainty.

Known Thresholds:

Nil

Strongly suspected:

1) Balance among values held (Walker *et al* 2009). This threshold was initially identified in the paper *Resilience, Adaptability and Transformability in the Goulburn-Broken Catchment, Australia* as relating to the value of the environment as compared to economic and social activities. We suspect the same threshold occurs in the Namoi Catchment, but with the additional complexity of balance in values in a climate change context. We believe that as climate change occurs, thresholds regarding concern and the need for action will be crossed.

2) Population pressure above resource capability (Smit and Wandel 2006). Population pressure above resource capability is a threshold that applies to any species. Human populations are often an exception due to the capacity to transport resources from other places.

3) Degree of dependence on a vulnerable resource (Marshall 2005). Dependence on a vulnerable resource depends on variables like capacity to imagine alternate futures, age and education level. If highly dependent on a resource that collapses either through biophysical or policy means, crisis is a likely outcome. The Namoi Catchment is highly dependent on vulnerable water resources, and also highly dependent on agriculture, which is vulnerable to commodity shocks and a drying environment.

4) Heat Stress Threshold (Mella and Madill 2007). Heat stress thresholds have been developed around the world in relation to human population's tolerance for extreme heat. This information is not available for NSW currently, but there may be a threshold crossed that results in deaths and causes communities to become unviable.

Possible:

5) Leadership capacity falls below a critical mass. Leadership in the Namoi is currently provided by a few key nodes, either individual people or organisations that have a key role in the planning and development of the Catchment. There is a possible threshold in the numbers of these nodes that can drop out before the system ceases to function as it has and a new regime develops.

6) In-migration of high human capital falls below a critical mass or out-migration exceeds a critical mass. In-migration is considered an important contributor to human capital. As areas decline, they reach a point where they can no longer attract human capital and the area may become locked into a spiral of decline. A similar effect can be caused by levels of outmigration of human capital exceeding in-migration.

People Asset:

Social Capital:

Definition – Social Capital can be defined as the relationships, links and institutional arrangements that support and maintain people. Examples include families, communities, businesses, trade unions, schools and voluntary organisations (<http://www.forumforthefuture.org/projects/the-five-capitals>).

Assets defined by the Expert Workshop participants that fit into this category are:

- Proximity to other places – reflecting that relationships that are relevant to the people in the Catchment have a much wider scope than just the Catchment. An important part of why people live and work in the Catchment can be because of its proximity to places or people who are important but not within the Catchment boundary. There is no measure of how proximity to other places affects the Social Capital of the Catchment at this time.
- Shared purpose – an important contributor to social cohesion and indicates a collective view of how the Catchment should be managed. It should be noted that it is unlikely that shared purpose will be experienced across communities and between communities to an all inclusive

extent. An individual will most likely share a purpose with others on some things, but not on all things, can agree with a direction today, and change their mind tomorrow.

- Shared history – collective experience of events in the Catchment. Important to social cohesion and often associated with response and recovery of a community after disaster. Can also be associated with a reluctance to change and adapt. There is no measure of shared history available for the Catchment, however as there are many people who have lived most or all of their lives in the area, it can be assumed to be high. It must also be noted that whether shared history is positive or negative to an individual will depend on the outcomes of events for that person (e.g. farmers see the history of the Catchment as settlement; Aboriginal communities see it as invasion).
- Complexity of communities – defined as the richness and difference exhibited by those within a community as well as the differences between communities. No two communities are the same and no two people within a community are the same. This definition also refers to the fact that dealing with communities from within is complex and there are moving powerbases, practices of exclusion and politics playing a role in who is thought of as 'community'. Engagement with 'community' needs to take this into account.
- Mixture of ages, sexes – a rudimentary measure of diversity based on simple demographics. The median age of the Catchment population is approximately 40 years. The Namoi region has more people than state averages in the 0-19 year age bracket, but significantly less 20-34 year olds. Higher than average numbers of people live in the Catchment who are between 45 and 49 years old.
- Social cohesion – there is a common vision and a sense of belonging for all; the diversity of people's backgrounds and circumstances are appreciated and positively valued; those from different backgrounds have similar life opportunities; and strong and positive relationships are being developed between people from different backgrounds in the workplace, in schools and within neighbourhoods. Little is known about social cohesion in the Namoi Catchment at this time. (<http://www.publications.parliament.uk/pa/cm200304/cmselect/cmmodpm/45/45.pdf>).
- Equity – the state, quality, or ideal of being just, impartial, and fair. A lack of equity, or even a perception of a lack of equity, impedes engagement with activities or adaptive changes ("Why should I...?"). There has been no formal analysis of equity in the Namoi Catchment.
- Social networks – are social structures made up of individuals (or organisations) called "nodes", which are tied (connected) by one or more specific types of interdependency, such as friendship, kinship, common interest, financial exchange, dislike, sexual relationships, or relationships of beliefs, knowledge or prestige. A social network analysis of the Namoi Catchment has not been completed.
- Industries – collections of production and/or manufacturing businesses that have some collective interest, markets and accepted standards of practice. Several industries operate within the Catchment; major examples are the cotton industry, beef industry, poultry related industries, food manufacturing industry, extractive industries and a wool and sheep meat industry.

Thresholds known or suspected:

As is the case for Human Capital, there is very little information available regarding thresholds in Social Capital and similar sensitivity to the particularities of communities and societies is required. Again, the thresholds listed here include those that have been posited by other authors in the literature, but not always in terms of them being a threshold. They are also mostly the ideas of the

authors and are proposed as a starting point for discussions about thresholds relating to the Namoi Catchment's Social Capital and rather than a position of certainty.

Known Thresholds:

Nil

Strongly suspected:

1) Population pressure above resource capability is a threshold that applies to any species. Human populations are often an exception due to the capacity to transport resources from other places. This threshold in regard to Social Capital is about the things that happen to social cohesion and networks when resources become scarce. There is a suspected threshold that, when crossed, impacts on trust, partnerships, communication and relationships with the potential for conflict and complete collapse of a society.

2) Industry expansion beyond infrastructure capability. There is a level of industry that current infrastructure can support (including water infrastructure). A suspected threshold occurs in the critical mass of industry exceeding infrastructure capacity with the potential to collapse themselves, infrastructure or other industries.

Possible:

3) In-migration reaches a critical mass or out-migration exceeds a critical mass. This is a similar threshold to the one proposed for Human Capital, but actually means something quite different in the context of Social Capital. This threshold suggests that there is an identifiable amount of in-migration that a society can absorb before the social cohesion and networks struggle to maintain themselves under the pressure of large numbers of new people and cultures. The other part of this threshold relating to out-migration is similar to that proposed in the Human Capital thresholds in that it refers to a certain number of people being able to leave an area before the social cohesion and networks break down due to the lack of people.

People Asset:

Manufactured Capital:

Definition – Manufactured Capital is made up of the infrastructure and assets that contribute to the production processes, employment, lifestyle amenity and servicing that support and maintain human and social capital. Examples include roads, buildings and machines (<http://www.forumforthefuture.org/projects/the-five-capitals>).

Assets defined by the Expert Workshop participants that fit into this category are:

- Major centres – defined as cities and major influences on financial, human and social capitals in the Catchment. Population is over 10,000 people. Tamworth is the major centre in the Catchment.
- Towns were not identified by expert workshops as being separated out of major centres and villages. However, identifiable trend information can be found for 'towns' as separate from major centres or villages, therefore they have been added as an asset. Towns are those centres that have shops, banks and act as a centre for commerce to some degree however influence is

more local in context than that of a major centre. Population is over 1,000 people but less than 10,000. Towns in the Catchment have been identified as Barraba, Quirindi, Gunnedah, Werris Creek, Narrabri, Wee Waa, Manilla and Walgett.

- Villages – defined as small centres of less than 1,000 people that have variable levels of servicing and commerce. Some villages have just a post office or a hotel or one shop.
- Infrastructure – roads, rail, gas, electricity, public transport, urban services such as water and sewerage reticulation. Infrastructure is only considered to be of a fair level across the Catchment with issues associated with road and rail, public transport and water supplies being experienced.
- Soft Infrastructure – health, education, policing and social services including recreational facilities and institutions such as local governments. Services are assumed to be adequate for the main towns and the major centre of Tamworth however smaller centres are poorly serviced with distance to services being a major issue.
- Lifestyle amenity – defined as the scenic amenity, opportunities for recreational activity, social opportunities, sense of safety and choice regarding lifestyle. Lifestyle amenity associated with familiarity is probably quite high given the longevity of many people's relationship with the Catchment. Many people are used to, and find appealing, the highly agriculturalised nature of the Catchment. Reduced recreational opportunity is evident due to the decline in the health and naturalness of many areas particularly rivers and streams. People can still choose to live rural, semi-rural or urbanised lifestyles and areas of natural beauty and opportunities to 'tree-change' exist.

Known Thresholds:

Nil

Strongly suspected:

- 1) Industry or population expansion beyond infrastructure capability. There is a level of population and industry that current infrastructure can support (including water infrastructure). A suspected threshold occurs in the critical mass of population or industry exceeding infrastructure capacity with the potential to collapse themselves, infrastructure or other industries.
- 2) Major centre expansion beyond water availability. This is a strongly suspected threshold in the Namoi as Tamworth already needs to consider its development and growth in regard to water availability. There will be a critical level of expansion available to Tamworth that risks crossing a threshold in relation to water availability and security. It is unlikely that crossing this threshold will result in system collapse but it will certainly impact on the way that water is used and the lifestyle amenity of the population of the city in the way that will not easily be reversed.
- 3) Population declines below a critical mass. This threshold supposes that there are a critical number of people that are needed to keep a village, town or major centre operating as it currently does.

Possible:

- 4) Development exceeds levels associated with lifestyle amenity. This threshold proposes that there is a threshold in development that means a certain amount can occur before the lifestyle amenity of those living and working in the Catchment is compromised to a degree that they are likely to either leave the Catchment or lose touch with their sense of belonging.

People Asset:

Financial Capital:

Definition – Financial Capital is money in its simplest terms, including cash, equity and investment. Examples include shares, bonds or banknotes. Financial Capital is extremely important in enabling other types of Capital to be owned and traded, but has no real value in itself (<http://www.forumforthefuture.org/projects/the-five-capitals>).

Assets defined by the Expert Workshop participants that fit into this category are:

- Imported capital – meaning the money that can be imported into the Catchment by attracting investor dollars. There is no measure of imported capital available at this time.
- Economic diversity – the diversity of sources that contribute to the Catchment economy as whole, generally measured by industry. Economic diversity is low with a high dependency on dryland and irrigated agriculture. Close to 50% of the economy is directly or indirectly supported by agriculture.
- Distribution of wealth – referring to how equitable the distribution of wealth is across the Catchment or whether there is a 'rich getting richer and poor getting poorer' divide operating'. No data is available regarding the distribution of wealth across the Catchment however, as 71% of all income in the Catchment derives from wages, with only 14% of all income attributed to owner business and investment. Therefore it may be argued that wealth has a fairly even distribution. It must be noted that the Aboriginal community experiences a high degree of injustice and is poorer, less healthy and less able to take up economic opportunities than the rest of the population. Also important is that many farming and grazing families live well below the poverty line in times of drought or low commodity prices.
- Available money – not identified by expert workshops, but an important asset to provide possibilities for human and social assets to adapt. The gap between the estimated payments to households and their expenditure is much larger than prior to 2005.
- Transferability of wealth – not identified by expert workshops, but an important asset to the ability of people to move or change. For example, whilst a farm may be a form of wealth, it is not readily transferable. For a farm to be realised as available money, it either has to be sold or recognised as of worth by a lending institution. Currently, property values are high, therefore farm asset transferability is also high. No measure is available for transferability of wealth for average householders or industries.

Thresholds known or suspected:

There is very little information available regarding the thresholds that apply to Financial Capital. It is likely, however, that thresholds regarding Financial Capital will be easier to quantify than those that may exist in relation to Human and Social Capital. Again, the thresholds listed here include those that have been posited by other authors in the literature, but not always in terms

of them being a threshold. They are also mostly the ideas of the authors and are proposed as a starting point for discussions about thresholds relating to the Namoi Catchment's Financial Capital and are not a positive position of certainty.

Known Thresholds:

Nil

Strongly suspected:

1) Farm income to debt ratios (Walker *et al* 2009). This threshold was initially proposed in relation to the Goulburn-Broken Catchment in Victoria as relating to the proportion of a farm that becomes salinised, the costs of capital and inputs and product prices. For the Namoi Catchment, farm income and debt ratio thresholds are likely to be dependent on water availability and pricing, costs of capital and product prices.

2) State of infrastructure (Walker *et al* 2009). This threshold was initially proposed in relation to the Goulburn-Broken Catchment in Victoria as relating to the state of irrigation infrastructure and the need to reinvest. In the Namoi Catchment, the threshold doesn't apply to irrigation infrastructure as most irrigators pump from the river, meaning irrigation infrastructure is a private investment. The threshold in this instance relates to infrastructure more generally (road, rail, water supply, sewerage, etc.). There is a threshold in condition and population dynamics that suggests infrastructure can reach a point where it is extremely expensive to bring back up to standard, effectively crossing a threshold and forcing infrastructure into a new regime which may have significant impacts on imported capital and economic diversity.

3) Level of dependence on a vulnerable resource (Marshall 2005). This threshold refers to the degree to which communities in the Namoi Catchment are dependent on agriculture, which is vulnerable to climate change as a slow driver and shocks from commodity prices and policy decisions.

Possible:

4) Skewed distribution of wealth such that a 'second class' of citizen is established.

5) Household income to debt level. This threshold refers to the recent experience in the United States where household equity and ability to service debt led to people walking away from their houses. Whilst it is a doom and gloom threshold, it should be noted that this has happened in Australia's history.

6) Property value (either farm or house) declines below equity levels. This is similar to the household income to debt level thresholds, but referring to farm equity. 'Walking off' land because land values and commodity prices have slumped completely has occurred in Australia's history.

7) Length and frequency of shock/crisis. This threshold supposes that there is a threshold nature in the drivers and shocks themselves. If sustained or frequent shocks or crises occur, it can be assumed that available resources including energy and Human Capital will be used up, leaving the system more vulnerable to the next hit.

Relationship to natural resources:

Expert workshop participants were also asked to consider how the natural resource base underpinned people, industries and communities. The group also considered how the trends in

Maules Creek Community Council Inc

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natural resources would impact on people. The key points are drawn out here, but the full report of workshop outcomes is available in People Appendix A - Results from Expert Workshops.

It was agreed that declines in ecosystem connectivity, woody vegetation cover, wetlands, species populations and intact native vegetation communities would have the result of:

- reducing farm profitability;
- impacting on aesthetics;
- creating greater regulatory pressure;
- greater peer pressure;
- threatening the identity of both Aboriginal communities and everybody else;
- reducing options or choices of future generations;
- reducing tourism opportunities;
- impacting on spirituality; and
- a general decline in social and emotional wellbeing.

It was also noted that the degree to which any one of these outcomes was realised would depend on the particularities of farming and grazing systems and an individuals' sensitivity to loss.

The general downward trend in surface and groundwater assets was a cause of concern and it was agreed that it would ultimately result in:

- no drinking water;
- no irrigation;
- loss of tourism;
- loss of recreation opportunity;
- reduced habitation possibilities;
- towns and cities collapsing due to no water;
- reduced economic activity;
- no water for industry;
- social cohesion collapse as water becomes a scarce resource;
- loss of identity;
- impact on spirituality; and
- a general decline in social and emotional wellbeing.

It was noted that people may become paralysed when confronted by significant numbers of downward pointing trend arrows relating to critically underpinning resources such as water. The group expressed its belief that maintaining capacity and engagement in this situation is extremely important.

Soils were considered by the group to be generally underpinning of all activity in the Catchment. Because soils information was presented based on soil type that relates to productivity, the

workshop agreed that the community and sectoral implications could be quite tightly and quantitatively tied to trend information. It should also be noted that most soils trends presented to the group were stable or up.

What does all this mean?

It can be concluded that information regarding the status and trend of key people assets across the Catchment is not readily available. Some very clear issues have emerged as a result of the Expert Workshop processes and literature review, however. These are:

- People of the Catchment are significantly underpinned by their natural resources for economic activity, wellbeing and social cohesion.
- Most of the natural resources are trending down in condition and availability indicating key sources of vulnerability across the Catchment.
- People asset trends are variable and particularities are important to how the people system functions. A detailed systems model of the people system is likely to be so complex that it is meaningless or almost immediately out of date the moment is completed.
- No single people asset stands out as being critically underpinning and sustaining of the majority of assets. However, an obvious observation is that there needs to be people to sustain the people system and the presence or absence of people is tightly linked in dually sustaining relationships with economies and natural resources.
- Dependence on agriculture within the Catchment is very high. Agriculture is vulnerable to declines in soil health and water quality and availability as well as commodity price and policy shocks. There are likely to be changes in soil health and water quality and availability related to the slow driver of climate change. Consequently, a focus on adaptive capacity in agriculture and related industries will serve the Catchment well.
- An overwhelming take home message from the literature reviewed was the importance of a 'sense of place' to people and societies.
- There is no clearly defined and meaningful threshold relating to the people assets. Rather, a focus on the generalities of building adaptive capacity and sustaining wellbeing will be carried forward into the Namoi Catchment Action Plan.

MCCC Conclusion

The Maules Creek Coal Project EA Fails to consider the principles of Resilience Thinking in considering the project in isolation, and, in consideration of the cumulative effects of the combination of multiple mines within the extent of the Leard Forest coal complex.

Environmental and socio-economic net externalities beyond the project boundaries are real costs that will be imposed on the local community and need to be adequately addressed by the proponent.

Key Recommendations

Maules Creek Community Council Inc

Re: Maules Creek Coal Project/ Project Application Number: 10_0138

- That Aston Resources in conjunction with the Depart of Planning and Namoi CMA develop a rigorous peer reviewed resilience assessment of the project in conjunction with other projects within the Leard Forest.
- That due consideration be given to the local community of imposed socio-economic costs due to the project.
- That Namoi Catchment Management Authority continue to use Resilience Methodology to determine the appropriateness of various projects within the Namoi Catchment.

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Appendix 13 – Environmental Trust

Draft Leard Forest Environmental Trust Report

Leard Forest Environmental Trust

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Overview

The Maules Creek Community Council (MCCC) has had ongoing dialogue with the NSW Department of Planning (DoP), Boggabri Coal and Aston Resources regarding the community's concerns regarding coal mining in the Leard State Forest ("The Forest").

In order to get community support for projects the MCCC has been vocal in calling for a "net benefit" to all the stakeholders in the projects including the environment and the local community.

Negotiations between the mining companies and the Narrabri Shire Council regarding to the Voluntary Planning Agreement (VPA) while beneficial to residents are seen by the community as driven by the Narrabri Shire Council and its strategic plan. The VPA arrangements are explicitly excluded from this proposal.

The Proposed Coal Projects using Open Cut mining methods place significant socio-economic and environmental risks upon the Maules Creek Community.

Environmental public rights and amenity will be removed from the neighbouring community due to the negative and unavoidable consequences from the cumulative impacts of a large scale industrial coal complex.

The proposed Leards Forest Environmental Trust ("the Trust") is designed to offset the cost of environmental impact to The Forest. The Trust will operate in tandem with the Maules Creek Community Fund to help environmental values to be balanced against direct and indirect costs from the projects so as to achieve an overall net benefit. The Maules Creek Community Fund is documented separately.

This document is based on the World Bank "Mining Foundations, Trusts and Funds Sourcebook" 2010 (reference required) which describes leading practice in developing and delivering net benefits to impacted community's from mining developments. The following table identifies the key components of the Fund based on the World Bank model.

Fund Design Category	Type
Programming Approach	Grant Making
Financing Structure	Annual Budget
Geographic Focus	Namoi Valley
Community Participation	Board Membership
Influence of Mining Company	Board Membership
Influence of Government	DoP consent condition

Establishment, Structure and Purpose of the Fund

The fund will be established by Boggabri Coal and Maules Creek Coal as a Discretionary Trust in mutual agreement and as part of the consent conditions for mining activities in The Forest. Other mines seeking new approvals to operate inside The Forest will have DoP consent conditions to contribute to The Trust. Mines outside the The Forest but in the near vicinity (say within 15 kms) will be invited to contribute to The Trust.

The Trust will be governed by a board of trustees that will be made up of;

- Two members from the local area, one of these must be from Maules Creek.
- Two members from the mining companies.
- One representative from local government.
- Two members from well respected Environmental Groups. ACF, Landcare.

The purpose of the fund is to offset the cost of environmental impact to The Forest by developing Renewable Energy (RE) Projects and on ground works.

As identified in the Boggabri Coal EA and in communications with Aston Resources environmental offsets are being developed by the mining companies in the form of purchasing existing habitat, often some distance from the Leard State Forest. These offset lands are already in existence and no new habitat area is being created. Due to mining there is a reduction in habitat. The offset lands already operate as habitat for the current “occupiers” of native fauna and flora. While purchase of offsets some distance away may protect that habitat in perpetuity and enable planning consent, the significant impact to the current fauna and flora occupiers of the Forest is not taken into account.

The impacts to the Forest will be established by a consulting Environmental Economist to determine funding sufficient to provide a Net Benefit for the “environment” as a stakeholder.

The Trust is proposed to provide for impacts to The Forest and its habitat only and is not a means to redress impacts to ground water, health issues, community impacts, loss of recreational use, non use values or any other impact that does not relate to the native vegetation and habitat of The Forest.

The Trust will commence from the time of mining consent. Funding will be apportioned equally over the 21 year lease of the project. Should a mining project extend beyond the 21 year period it is anticipated that the Trust will carry on into the new lease periods.

The Trust will manage its resources so as to be able to carry on its role beyond the life of the mines.

Programs

The Leards Forest Environmental Trust will work in three ways to achieve a net benefit to the environment for native vegetation and habitat impacts.

Firstly, by developing RE Projects to reduce our dependence on fossil fuels.

Secondly, by funding on ground works and training to assist land owners in the Namoi Valley improve existing native habitat on their lands, sequester carbon in the landscape and reduce their environmental footprint.

Thirdly, to co-ordinate with local landowners the management of remnant vegetation outside the offset area based on an incentive program. The goal is to extend the value provided by the mining company offsets.

Programs are delivered via a grants program. The annual grant funding to be split 50% to RE Projects and 50% to “on ground” works in the Namoi Valley.

Renewable Energy Projects

It is proposed that The Trust provide ongoing funding for RE Projects within the Namoi Valley.

The Trust will leverage its resources and the people of the area to achieve this goal and it will be done in 2 ways;

1. Employ a full time project manager and engage consultants to develop a Feasibility Study and Project Plans to enable a large scale RE project to be developed in the Namoi Valley. To use mining industry contacts and additional resources to bring such a project to fruition.

2. Encourage local people to adopt renewable energy via a Namoi Valley wide scheme such as a local feed in tariff, buying group, interest rate subsidy or direct equipment purchase subsidy.

The expectation is that the RE Project outlined in point 1 above will be a source of ongoing funding for on ground works once mining in the district has been completed. Thereby a strong legacy will remain for future generations

The RE Projects would enable individual mining companies to achieve “Name Plate” recognition for additional resourcing should such an opportunity be desired.

On Ground Works and Training

The on ground works and training to meet the objectives of the Namoi Catchment Plan with an emphasis on habitat conservation and carbon sequestration.

The on ground works to be supervised by the Namoi CMA and are allocated using a competitive tendering process. Administration costs to be limited to 10% of the available funds.

The Namoi CMA has a strong track record in managing on ground works and providing education programs. The Trust would be able to leverage existing programs, staff and technical expertise to achieve its on ground works goals.

This relationship would be reviewed every five years.

Identification and Geography of the Beneficiaries

The beneficiaries of the on ground works funds are located within the Namoi Valley Catchment.

Governance and Ownership

There is flexibility as to whether the RE Project is to be owned and operated outright by The Trust or operated by a third party or simply owned via an equity placement.

The Trust must provide quarterly reporting as to the progress of the RE Project.

The On Ground works are to be administered by the Namoi CMA.
Annual Reporting via CMA

Quarterly Board Meetings to review the operational status of the Trust and Annual Meetings to fulfill corporate responsibilities would be the minimum requirements of The Trust.

The Trust must provide annual reports as to the nature of the grants made, the financial position of the trust and the appropriate corporate governance reports.

Financing and Sustainability

In order to show a Net Benefit to the environment a value of the Leards Forest will be determined by consulting environmental economists. This value will be peer reviewed and individual companies will contribute to the Trust Funds annually based on estimates of the particular mining companies impact to the Forest apportioned over 21 year lease.

Recommendation: An environmental economist be formally engaged to provide official values for inclusion in the Trust documents.

Management Operations/Human Resources

Ideally much of the day to day management operations can be taken by organizations with expertise in the appropriate area.

Trust Accounts and Administration – Local Accountancy Firm

Processing of Onground Works Grants applications – Namoi CMA

Development of RE Project would require engagement of project management and third party consultants.

Quarterly Board Meetings to review the operational status of the Trust and Annual General Meetings to fulfill corporate responsibilities would be the minimum requirements of The Trust.

Seek feedback from Grantees and third party audits to ensure funds are being targeted in accordance with the objectives of the fund.

Environmental Resilience – A holistic approach

Under the broader context of a whole of catchment approach, the key assets of Biodiversity, Landscape, Water and People will be subjected to significant shocks and drivers from the expansion of the resources industry within Leards Forest that will ultimately lead to a breakdown of Social-Ecological systems and therefore environmental resilience within the Maules Creek Catchment.

The Namoi Catchment Management Authority (CMA) has developed a Catchment Action Plan (CAP) that sets strategic targets and activities for natural resource management within the Namoi Catchment.

Namoi CMA has chosen to adopt a “Resilience Thinking” approach to the CAP to ensure that the CAP is both contemporary and vigorous. The resilience assessment is a justified perspective on where the catchment should not go. All stakeholders in natural resource management within the Namoi Catchment are encouraged to adopt the Catchment Action Plan and develop immediate priorities for natural resource management intervention.

The Maules Creek Community Council envisages that the Leard Forest Environmental Trust should be used for both renewable energy projects and Catchment level interventions that help maintain desirable natural resource outcomes as specified within the Namoi CAP. Catchment Targets are described in Appendix 3.

The combined outcomes of targeted environmental projects within the Namoi Catchment and a focus on renewable energy projects within North West NSW provide a framework for environmental sustainability at a small economic cost to corporate enterprise.

A targeted financial mechanism (The Leard Forest Environmental Trust), provides an opportunity for the implementation of a holistic approach by the minerals industry to demonstrate commitment to utilise the concept of Enduring Value within a local catchment, therefore gaining a social license to operate.

The Five Capitals Model – a framework for sustainability, interlinks natural, human, social, manufactured and financial capital to provide a basis for understanding sustainability in terms of the economic concept of wealth creation or 'capital'. Any organisation will use the five types of capital to deliver its products or services. A sustainable organisation will maintain and where possible enhance these stocks of capital assets, rather than deplete or degrade them. The model allows business to broaden its understanding of financial sustainability by allowing business to consider how wider environmental and social issues can affect long-term profitability.

By linking together the concepts of Environmental Resilience, The Five Capitals Model, Enduring Value and The Leard Forest Environmental Trust, a holistic approach to minimise the negative consequences of coal mining within the Namoi Catchment can be found. The internalisation of environmental costs and assigning an economic value to them adds to the principle of the Triple Bottom Line.

The Trust provides a genuine commitment to the sustainability of the local environment by using an economic solution to provide achievable environmental outcomes.

DRAFT

Conclusion

The World Bank Sourcebook 2010 analysis of Leading Practice for community funds has been followed extensively in developing the proposed Funds for mining companies in the Maules Creek area. (See Appendix 2 – World Bank Areas of Leading Practice) The Maules Creek Community Fund and the Leards Forest Environmental Trust approach as described above and in accompanying documents would be in the best interest of the mining companies, the community, the environment and society at large.

Firstly, the mining companies could develop their projects with the support of the community. In addition, the mining companies would be seen to be working for the environment and the community along with their customers, shareholders and employees and thereby developing their social license.

Secondly, the community could take some ownership of the mining projects over the life of mining in the Leards Forest Coal Complex. The economic lifecycle of community members would not be disrupted and the population of the area would be maintained or even increased with a greater number of people from whom to draw as mine workers.

Thirdly, due to reduced agricultural demands a more comprehensive and voluntary environmental offset strategy in the local area could be developed, including areas in as yet unidentified farmland. The Leards Forest Environmental Trust would provide a provision for environmental impacts to the Leards Forest in direct proportion to its economic costs.

Finally a the principles of “inbuilt resilience” ensure that the mining industry will compliment and not “crowd out” the local community as the primary and secondary effects can be taken into account. Society at large will benefit as a leading practice model is developed for industries to exist together.

The MCCC submissions made to the Department of Planning in response to the Boggabri Coal Continuation Project recommended among other things that for projects to go ahead they need to add to the triple bottom line. We stand by all our recommendations made in those submissions and in addition urge that should mining approvals be granted, the Community Fund and Environmental Trust be considered as part of the consent conditions so that there is a net benefit to all stakeholders.

Key Recommendations

1. That “if” Boggabri Coal or Maules Creek Coal gain approval that due to community and environmental impacts the consent conditions should be for underground mines.
2. Among the Dept of Planning consent conditions the companies should make provision for the impacts to the environment and the local community by forming the Leard Forest Environmental Trust and the Maules Creek Community Fund.
3. That clearly defined No Go Zones be identified by the NSW Dept of Planning and that these areas are adjacent to and include the Kaputar National Park, Leards Forest Conservation Area, Maules Creek, Middle Creek, Horesarm Creek and the Namoi River.
4. Consulting Environmental Economists be engaged to determine the value of The Forest. Our suggestion is that Dr Ian Curtis be resourced to value the forest. That the value be peer reviewed and that the value form the basis for the provision identified in the Trust documentation.
5. A working group be formed to develop the strategic plans, guidelines, and rules for the Fund and the Trust. This would include a detailed analysis of the households and farm properties within the provision area.
6. Trustees for both the Fund and the Trust be appointed.
7. An Arbitrator be identified to resolve issues that arise for the operation of the Fund.

Appendix 1 – World Bank Categorization Model

Programming Approach	Grant Making ----- Operational
Financing Structure	Annual Budget ----- Endowed
Geographic Focus	Targeted Community---Mine Area of Influence –Broader Community
Community Participation	No Participation -----Board Membership
Influence of Mining Co	No Influence -----Board Membership
Influence of Gov't	No Influence -----Legal Requirement

Appendix 2 – World Bank Areas of Leading Practice for Foundations, Trusts and Funds

- A clearly defined strategic vision, outlining its role as a development actor in the local environment;
- A single purpose, ie, either community investment, compensation or government payments, but not a combination;
- A representative multi-stakeholder governing body;
- An endowed fund to enable sustainability;
- High levels of co-financing and collaboration;
- Transparent practices and associated accountability;
- Efficient administration structures to maximise development delivery;
- Flexibility to adapt to changing development practices and operating conditions;
- Incentive schemes to retain high calibre staff; and
- Impact based monitoring and evaluation.

Foundations, trusts and funds can be used as mechanisms for the distribution of social and economic contributions and payments from companies and governments to communities. They are highly flexible instruments and can be adapted to suit a variety of situations. Establishment of an FTF can facilitate co-financing and act as a strong development commitment to beneficiary communities. Use of an FTF can provide opportunities for representative governance structures which may not be possible under different conditions.

They also provide opportunities to develop sustainable community development programs from the mining sector. When they are applied with a clear vision and clarity of purpose, with transparency and accountability, and are managed by highly skilled staff, they can become the success story of a mining operation.

Appendix 3 – Year 2020 Namoi Catchment Targets

- Increase In Native Vegetation Extent
- Maintain Sustainable Populations Of A Range Of Native Fauna Species
- Actions Supporting Recovery Of Viable Threatened Species, Populations And Communities
- Reduction In New Invasive Species And The Spread Of Key Emerging Invasive Plants And Animals Is Limited
- Improvement In Soil Health
- Improvement In The Condition Of Those Riverine Ecosystems That Have Not Crossed Defined Ecological And Geomorphic Thresholds
- Improvement In The Ability Of Groundwater Systems To Support Groundwater Dependant Ecosystems And Designated Beneficial Users
- Improvement In The Condition Of Regionally Important Wetlands And The Extent Of Those Wetlands In Maintained
- Natural Resource Management Decisions Contribute To Social Wellbeing
- There Is An Increase In The Adaptive Capacity Of Natural Resource Managers

Critical thresholds have been defined for the above themes and aligned with NSW State Plan Targets.

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Appendix 14 – Community Fund

Draft Maules Creek Community Fund Report

Maules Creek Community Fund

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Overview

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In order to get community support for projects the MCCC has been vocal in calling for a "net benefit" to all the stakeholders in the projects including the environment and the local community.

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The Maules Creek Community Fund ("the Fund") is designed to offset the cost of community impact due to coal mining in the immediate area. The Fund will operate in tandem with the Leards Forest Environmental Trust to help local community members balance direct and indirect costs from the projects so as to achieve an overall net benefit. The Leards Forest Environmental Trust is documented separately.

This document is based on the World Bank "Mining Foundations, Trusts and Funds Sourcebook" 2010 which describes leading practice in developing and delivering net benefits to impacted community's from mining developments. The following table identifies the key components of the Fund based on the World Bank model.

Fund Design Category	Type
Programming Approach	Net Benefit
Financing Structure	Annual Budget
Geographic Focus	Area of Influence
Community Participation	Board Membership
Influence of Mining Company	Board Membership
Influence of Government	DoP consent condition

Establishment, Structure and Purpose of the Fund

The fund will be established by Boggabri Coal and Maules Creek Coal as a Discretionary Trust as part of the consent conditions for mining activities in The Forest. Other mines seeking new approvals to operate inside The Forest will have DoP consent conditions to contribute to The Fund. Mines outside the The Forest but in the near vicinity (say within 5 kms) will be invited to contribute to The Fund.

The Fund will be governed by a board of trustees that will be made up of;

1. Two members from the local area, one of these must be from Maules Creek.
2. Two members from the mining companies.
3. One representative from local government.

The purpose of the Fund is to capture benefit to the impacted community and its members with an emphasis on quality of life to offset impacts on the community, living standards, amenity and property values. These impacts are summarized in Appendix 5.

The fund does not include compensation for serious environmental issues such as major disruptions to groundwater, impacts to human health or impacts to the native vegetation and habitat in The Forest.

Determining The Level of Provision:

Impacts to amenity will increase in line with cumulative production and some method is required to allow for this.

Options for determining a adequate level of compensation.

The question as to how much compensation is required is left open with a number of options available;

1. **Impacts to Property Price:** As described by Dr Ian Curtis in his report to the MCCC, property prices can be used as an indicator to determine impacts to amenity.
2. **Direct Negotiation:** Engage in direct negotiations to agree between the parties on suitable compensation.
3. **Choice Modelling:** Use Choice Modelling as described by Gillespie Economics in the Maules Creek Economic Impact Assessment to establish a level of compensation.

The Fund will commence from the time of mining consent. Funding will be apportioned equally over the 21 year lease of the project. Should a mining project extend beyond the 21 year period it is anticipated that the Fund will carry on into the new lease periods.

The Fund will expire at the end of mining in the local area.

Programs

Community members could participate in a grants or direct payment system to the value of the impact described by the contour maps (see below) and in accordance with the rules set out by the Trustees. The Fund will make a lump sum payment on July 30th of each year from July 2013 onwards.

Community members who are morally unable to accept monies from coal mining are able to “opt out” of the disbursements or allocate the funds to a charity or the Leards Forest Environmental Trust.

Identification and Geography of the Beneficiaries

The beneficiaries of the Fund will be local residents who experience impacts to amenity due to visual, acoustic, light and particulate pollution.

Cumulative noise modelling that provides noise contours (or a composite map of all impacts) could be a de facto indicator for each property of the compensation required to offset amenity impacts, property devaluation etc. While the absolute values of the contours are not significant for this analysis, the contours show how amenity impacts reduce as distance from the project increases. A sample Noise Contour Map is shown in Appendix 4.

Note that the map shown in Appendix 4 is a sample only as composite impacts to amenity would go beyond the boundaries of this map.

Governance and Ownership

The Fund must provide an annual report prior to disbursements.

Quarterly Board Meetings to review the operational status of the Fund and Annual Meetings to fulfill corporate responsibilities would be the minimum requirements of The Fund.

The Board should seek feedback from beneficiaries and require third party audits to ensure funds are being disbursed appropriately.

Financing and Sustainability

Company contributions to be paid into the Fund’s trust account at the end of each quarter.

Disbursements to beneficiaries to be limited to the contributions paid with the interest on the bank account to cover costs of administration, taxes and charges.

Management Operations/Human Resources

Ideally much of the day to day management operations can be taken by organizations with expertise in the appropriate area.

1. Trust Accounts and Administration – Local Accountancy Firm
2. Dispute Resolution – Fund Trustees

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Community Resilience – A holistic approach

Under the broader context of a whole of catchment approach, the key assets of Biodiversity, Landscape, Water and People will be subjected to significant shocks and drivers from the expansion of the resources industry within Leards Forest that will ultimately lead to a breakdown of Social-Ecological systems and therefore community resilience within the Maules Creek catchment.

The concept of In-Built Resilience needs to be addressed in a targeted manner that preserves the Social-Ecological balance within the Maules Creek catchment. The environmental requirements stipulated by the DoP for project approval fail to consider the community beyond the boundaries of the Zones of Affectation .

The project's environmental requirements fail because they rely on modelling of average conditions and ignore the thresholds of major disturbances. Resilience is defined as the capacity of a system to absorb disturbance and still retain its basic function and structure (Walker and Salt 2006). Sustainability and approaches that try to optimise systems fail to recognise secondary effects and feedbacks that impact upon the bigger system.

The interrelated multiple variables of Social, Economic and Biophysical assets are defined as drivers of, and critical functions of, a healthy community and any breakdown of any of the above three functions will impact directly upon the resilience of the Maules Creek catchment.

A targeted financial mechanism (The Maules Creek Community Fund), provides an opportunity for the implementation of a holistic approach by the minerals industry to demonstrate commitment to utilise the concept of Enduring Value within a local community, therefore gaining a social license to operate.

By linking together the concepts of Community Resilience and The Maules Creek Community Fund, a holistic approach to minimise the negative consequences of coal mining within the Maules Creek Catchment can be found. The internalisation of environmental and social costs and assigning an economic value to them adds to the principle of The Triple Bottom Line.

The Fund provides a genuine commitment to the sustainability of the local community by using an economic solution to provide local people realistic options for now and the next generation. The unquantifiable consequences of large scale coal mining such as loss of amenity, public nuisance, personal health including both physical and mental, reduced property valuations and equity, unsaleable agricultural land due to proximity of mining, disrupted retirement and farm succession plans, loss of self managed superannuation (farm valuations), and finally the social consequences of all of the above will have negative consequences for the Maules Creek catchment if large scale coal mining proceeds.

Conclusion

The World Bank Sourcebook 2010 analysis of Leading Practice for community funds has been followed extensively in developing the proposed Funds for mining companies in the Maules Creek area. (See Appendix 2 – World Bank Areas of Leading Practice) The Maules Creek Community Fund and the Leards Forest Environmental Trust approach as described above and in accompanying documents would be in the best interest of the mining companies, the community, the environment and society at large.

Firstly, the mining companies could develop their projects with the support of the community. In addition, the mining companies would be seen to be working for the environment and the community along with their customers, shareholders and employees and thereby developing their social license.

Secondly, the community could take some ownership of the mining projects over the life of mining in the Leards Forest Coal Complex. The economic lifecycle of community members would not be disrupted and the population of the area would be maintained or even increased with a greater number of people from whom to draw as mine workers.

Thirdly, due to reduced agricultural demands a more comprehensive and voluntary environmental offset strategy in the local area could be developed, including areas in as yet unidentified farmland. The Leards Forest Environmental Trust would provide a provision for environmental impacts to the Leards Forest in direct proportion to its economic costs.

Finally a framework using “inbuilt resilience” as a guide will ensure that the mining industry will compliment and not “crowd out” the local community as the primary and secondary effects can be taken into account. Society at large will benefit as a leading practice model is developed for industries to exist together.

The MCCC submissions made to the Department of Planning in response to the Boggabri Coal Continuation Project recommended among other things that for projects to go ahead they need to add to the triple bottom line. We stand by all our recommendations made in those submissions and in addition urge that should mining approvals be granted, the Community Fund and Environmental Trust be considered as part of the consent conditions so that there is a net benefit to all stakeholders.

Key Recommendations

1. That “if” Boggabri Coal or Maules Creek Coal gain approval that due to community and environmental impacts the consent conditions should be for underground mines.
2. Among the Dept of Planning consent conditions the companies should make provision for the impacts to the environment and the local community by forming the Leard Forest Environmental Trust and the Maules Creek Community Fund.
3. That clearly defined No Go Zones be identified by the NSW Dept of Planning and that these areas are adjacent to and include the Kaputar National Park, Leards Forest Conservation Area, Maules Creek, Middle Creek, Horesarm Creek and the Namoi River.
4. Consulting Environmental Economists be engaged to determine the value of The Forest. Our suggestion is that Dr Ian Curtis be resourced to value the forest. That the value be peer reviewed and that the value form the basis for the provision identified in the Trust documentation.
5. A working group be formed to develop the strategic plans, guidelines, and rules for the Fund and the Trust. This would include a detailed analysis of the households and farm properties within the provision area.
6. Trustees for both the Fund and the Trust be appointed.
7. An Arbitrator be identified to resolve issues that arise for the operation of the Fund.

Appendix 1 – World Bank Categorization Model

Programming Approach	Grant Making ----- Operational
Financing Structure	Annual Budget ----- Endowed
Geographic Focus	Targeted Community---Mine Area of Influence –Broader Community
Community Participation	No Participation -----Board Membership
Influence of Mining Co	No Influence -----Board Membership
Influence of Gov't	No Influence -----Legal Requirement

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Appendix 2 – World Bank Areas of Leading Practice for Foundations, Trusts and Funds

- A clearly defined strategic vision, outlining its role as a development actor in the local environment;
- A single purpose, ie, either community investment, compensation or government payments, but not a combination;
- A representative multi-stakeholder governing body;
- An endowed fund to enable sustainability;
- High levels of co-financing and collaboration;
- Transparent practices and associated accountability;
- Efficient administration structures to maximise development delivery;
- Flexibility to adapt to changing development practices and operating conditions;
- Incentive schemes to retain high calibre staff; and
- Impact based monitoring and evaluation.

Foundations, trusts and funds can be used as mechanisms for the distribution of social and economic contributions and payments from companies and governments to communities. They are highly flexible instruments and can be adapted to suit a variety of situations. Establishment of an FTF can facilitate co-financing and act as a strong development commitment to beneficiary communities. Use of an FTF can provide opportunities for representative governance structures which may not be possible under different conditions.

They also provide opportunities to develop sustainable community development programs from the mining sector. When they are applied with a clear vision and clarity of purpose, with transparency and accountability, and are managed by highly skilled staff, they can become the success story of a mining operation.

Appendix 3 - Key Definitions

Householder – owner/occupier of an *existing* house inside the local area as at the time the Aston Resources DGR's were issued. Note there may be more than 1 house on a farm property.

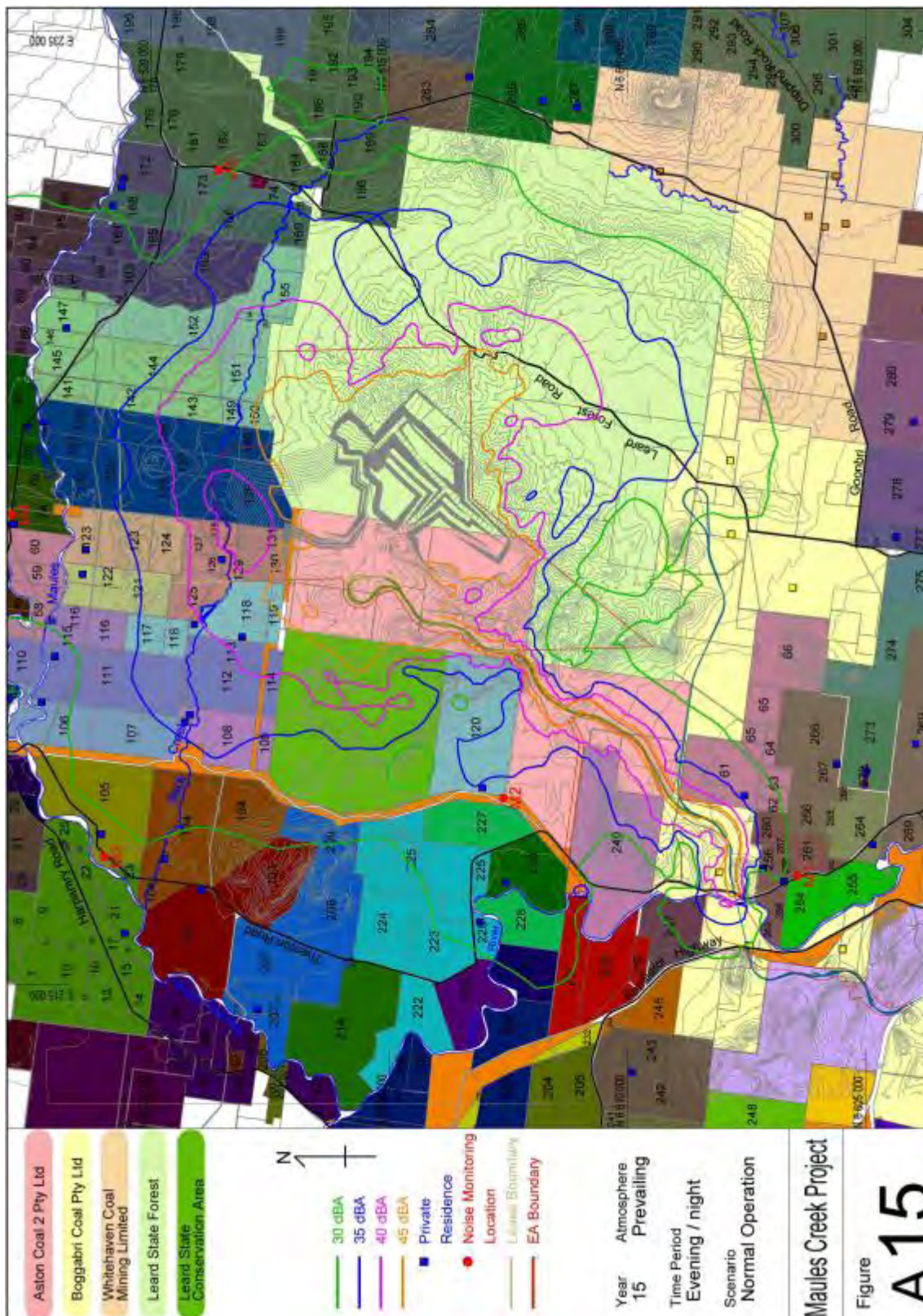
Farm Business – Farm Business with a ABN. Only one farm business per property.

Local Area - see attached sample map Appendix 4.

Provision Rights - pass with the sale of a property or at the time of property intergenerational change.

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Appendix 4 – Cumulative Noise Contour Map of Maules Creek



Appendix 5 – Reasons for Compensation

Damage to capital value for homeowners and business owners due to secondary negative impacts to amenity, perceived or otherwise:

Due to the well documented issues the health impacts of coal dust there is a reluctance for “new” people to move into the Maules Creek District and for existing residents to expand to the property next door. This is having a severe impact on the normal life in the community. Retirement plans are on hold, new investments in infrastructure and equipment is being deferred and even general maintenance of farms and houses in the district is suffering.

The damage to the capital value itself can be described in several ways including realised property prices, increases in property disposal periods, reduction in the pool of available purchasers, increase in the relative power of the mines in the negotiation and the future disposal options.

Damage to lifestyle for residents due to negative impacts to amenity, perceived or otherwise:

Further direct impacts to quality of life due to noise, light, traffic etc also take their toll.

Damage to the community social capital due to depopulation:

Key community members are moving away and there are fewer people with whom to transact with. For example the Captain of the Bushfire Brigade, a primary school teacher and Hall Committee Treasurer and the local plumber have all been recently bought out. The loss of these key people is a cost to the remaining residents who need to pick up additional duties.

Damage to the local agricultural economy due to reduced farm businesses:

There is a certain amount of economic activity that occurs within the Maules Creek community that is being lost due to a reduction in farms. For example, farm businesses can provide contract harvest and other work for neighbouring farmers, supply weaner cattle to neighbours to fatten, purchase seed and other inputs from neighbours, purchase/loan surplus equipment from/to neighbours, provide advice and expertise and were part of the underlying demand in the agricultural economy that is the foundation for the local community.

This depopulation threatens community viability and the threat is set to increase as additional farm land will likely be purchased for ZOA, offsets etc.

Net Benefit:

The effect is to make the community less attractive to prospective new community members and is placing stress on the physical and mental health of existing members.

These day to day issues would not occur without the mines and for the mines to be excluded as a factor for people moving to or leaving the district, a level of provision sufficient to put the district on par or slightly above similar districts is sought. When this is done then a genuine “Net Benefit” to the community may have achieved.

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The Five Capitals Model. www.forumforthefuture.org

Gillespie Economics 2011. *Economic Impacts Assessment*. Appendix Q - Maules Creek Coal Environmental Assessment.

Bridges Acoustics July 2011. *Acoustic Impact Assessment*. Appendix G – Maules Creek Coal Environmental Assessment.

Curtis I. (2011) *Assessment of the Environmental and Social Values and Community Concerns of the Maule Creek Community Council*.

Appendix 15 – Noise Impact

Peer Review by Vipac Scientists and Engineers of the Aston Resources Acoustics Impact Assessment written by Bridges Acoustics contained in Appendix G.

Maules Creek Community Council

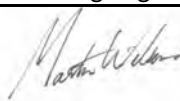
Maules Creek Coal Mine Peer Review of EIS Noise Impact Assessment



Report No. 70Q-11-0312-TRP-511557-0

5 Oct 2011

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Maules Creek Coal Mine		
Peer Review of EIS Noise Impact Assessment		
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1. INTRODUCTION

The Maules Creek Community Council requested Vipac Engineers & Scientists Ltd (Vipac) conduct a Peer Review of the Noise Impact Assessment report "*Aston Resources Pty Limited, Acoustics Impact Assessment, Maules Creek Coal Project Environmental Assessment Report J0130-41-R3, 4th July 2011*" by Bridges Acoustics. This report was included as part of the Maules Creek Mine Environmental Impact Statement (EIS) in 2011.

Vipac has reviewed the report with particular attention to the modelling inputs (where available) and requires further clarification of the items raised within this document before the extent of the noise impact can be further evaluated.

2. SUMMARY OF COMMENTS ON THE REPORT

In general the report is well written. We have identified the following issues with the report which should be addressed to determine if the assessment is valid.

1. Noise source definitions lacked detail of important parameters
2. Noise source sound powers generally seem lower than might be expected of standard equipment. This is especially the case of the crushing plant.
3. Exceedance of the noise criteria is predicted yet no solution is presented.

Without knowing any other information, the mines proximity to noise sensitive receivers and the type of equipment being used in the mining process suggests that exceedances of the noise criteria is possible. As such a noise impact assessment should show the information that is known to be important to noise propagation so that compliance can be seen to be plausible in the report.

3. COMPLIANCE OF RESULTS PRESENTED IN THE REPORT

The NIA reports the following outcomes and conclusions:

The NIA indicates that small to large noise criteria exceedances will occur (particularly during the night period) at a number of residences and properties, based on the current noise modelling data.

A significant noise impact of more than 5 dB(A) above the noise criteria is predicted at four residences (ID 126, 118, 61 and 256) and eight additional properties (Lots 123-124, 132-140, 141-148, 149-155, 120, 110-114, 240 and 254-255).

The project is also predicted to be responsible for noise criteria exceedances of less than 5 dB(A) at a further five residences and thirteen additional properties.

The NIA offers no solution to the noise exceedances, and states that no further noise control measures would be considered by Aston Resources, the proponent.

These comments suggest the mine is non-compliant with a criteria which defines an acceptable noise environment.

4. ANALYSIS OF MODELLING INFORMATION

4.1 NOISE SOURCE LOCATIONS

The locations of the noise sources in the noise model has not been provided. The locations are required to determine whether reasonable assumptions have been made in regards to the worst-case' positioning of equipment and machinery.

Further information about the location of the equipment and machinery used in the noise model is required.

4.2 NOISE SOURCE DEFINITION

1. The NIA states that the noise sources in the model have been modified for tonality and impulsiveness, and low frequency content. Evidence of which noise sources have been modified was not provided, nor was the one-third octave band data so that such an assessment could be made.

A list of the noise sources which have been modified for tonality or impulsiveness or both and/or low frequency noise content is required.

2. Table 7 of the NIA provides the modelled Noise Sources and Sound Power Levels, including reductions due to Noise Control Measures (presented in Section 4.3 of the NIA). The NIA states that the Sound Power Levels in Table 7 have been derived from Manufacturer's data and noise measurements from existing coal mines.

Of particular concern is the Primary and the Secondary Sizers (Crushers). Vipac believes that the sound power levels for these noise sources are grossly understated by up to 15 dB(A). An increase in source Sound Power Level of 15 dB(A) could significantly increase the noise exceedance at some residences already affected by the project, and create further noise exceedances at residences currently predicted to be unaffected by the project.

It should also be noted that these noise sources have not been mentioned in Section 4.3 of the NIA, and therefore do not include noise control measures. Even if noise control measures were adopted, Vipac expects that such a low Sound Power Level is unachievable.

Manufacturer's data or noise measurement data (including Mine location) of Primary and Secondary crushers with Sound Power Levels presented in Table 7 of the NIA is to be provided by Bridges Acoustics for review.

3. The height of each noise source is a significant factor in noise propagation, and is therefore important in determining the validity of a noise model. This data is not provided in the NIA.

Noise source heights used in the noise model are required for review.

4.3 NOISE MODELLING OUTPUT

The NIA does not provide Noise Source Contributions at affected residences. Therefore, the potential impact of an increase in Sound Power Level of the Primary and Secondary Sizers and other plant (see Section 3 of this document) cannot be determined.

The noise source contribution at each affected residence is required for review.

5. CONCLUSION

At this stage Vipac cannot comment on the plausibility of the results of the noise impact assessment as there is insufficient information presented in the report to do so. While some sound power values seem understated, without the noise contribution these and other sources make to receivers, it is not possible to determine the impact this would have on the overall received noise level at receivers.

As a worst case scenario, if the crushers were a major noise source and they were understated by 10dB(A) or more, then noise sensitive receivers could see overall noise levels much higher than those indicated.

The uncertainties highlighted in this peer review need to be addressed before a conclusive review can be produced.

The issue of the noise criteria exceedances (which the NIA states will not be further reduced by the proponent) still needs to be addressed. The NIA offers no solution that would result in acceptable noise levels at some nine residences and 21 additional properties.

In summary, the currently predicted noise impact of the mine, and uncertainty in the NIA are of some concern.

Appendix 16 – Air Quality

Peer Review by Vipac Scientists and Engineers of the Aston Resources Air Quality Impact Assessment written by PAE Holmes contained in Appendix F.

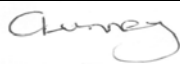
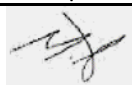
Maules Creek Community Council

Maules Creek Coal Mine Peer Review EIS Air Quality



Report No. 70Q-11-0312-TRP-511520-0-draft
4 Oct 2011

DOCUMENT CONTROL

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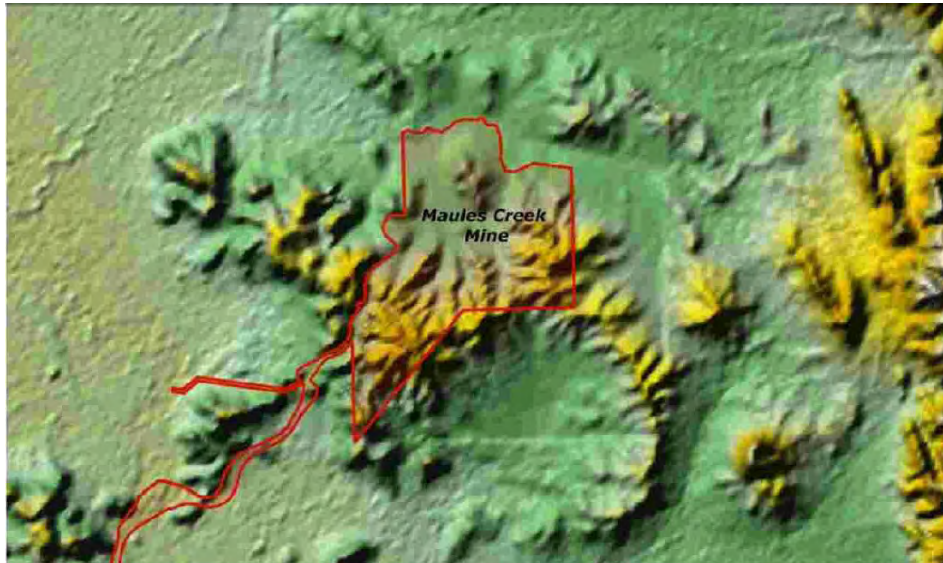
1. INTRODUCTION

The Maules Creek Community Council requested VIPAC Engineers & Scientists conduct a Peer Review of the Maules Creek Mine EIS Air Quality Assessment performed by PAE Holmes in 2011.

While the assessment implies that air quality impacts will be minimal, the confidence on the assessment is questionable for a number of reasons. These shortcomings are outlined in the following sections.

2. MODEL SELECTION

The use of a steady state Gaussian model in adverse terrain such as this is inappropriate. A Gaussian model does not properly account for flow steering. An assessment of the surrounding terrain has differential heights in immediate area of up to 100-150 m and further afield greater than 1000 m. Shown below is the terrain representation from the PAE Holmes report.

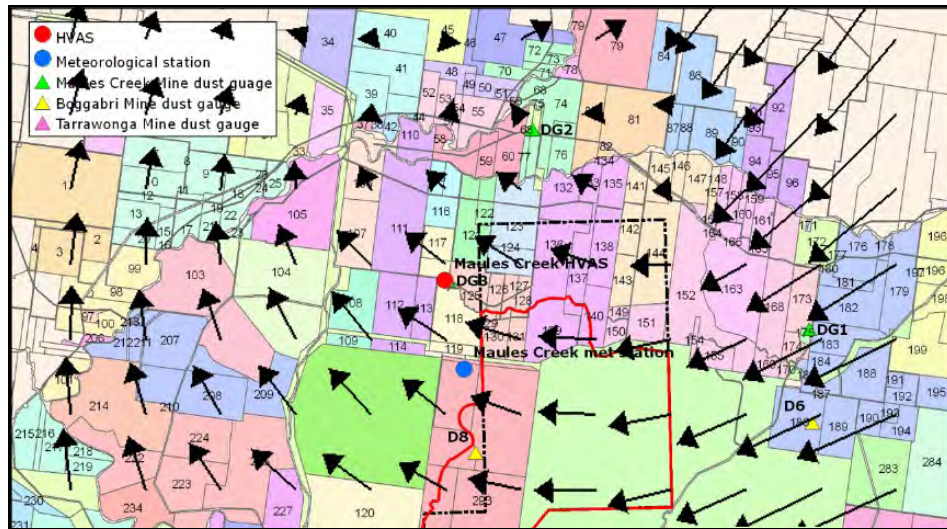


Adding to the complexity for the assessment that this brings is to the east of the site is a distinct feature that can be best described as “catchers mitt”. See attached image that shows this feature. While it is acknowledged that ISC-MOD is regularly used for the modelling of coal mines due to the in-pit modules are useful. However with the complexity of the surrounding terrain it is not suitable in this context alone.

It is noted that in the report wind roses are shown for the winds generated by TAPM for Maules Creek site looks appropriate with a predominance of southerly winds not apparent from other AWS data shown in the report.

However visualisation of the wind fields show considerable spatial variability that would not be accounted for with a Gaussian model. An example hour of the windfields generated by VIPAC for the area are shown for a given hour area in the Figure below.

This data clearly shows how variable the winds are spatially. As shown in this example hour higher wind speeds would tend to carry dust off the mine site, however in other areas the wind speeds are low. In this situation dust would be carried off site and later encounter low winds speeds resulting in significant dustfall, which a Gaussian model cannot simulate.



The major limitation of the assessment is the use of a gaussian model in this context is totally unsuitable. Validation against a three-dimensional non steady state model such as CALPUFF is required.

3. MODEL PARAMETERS

3.1 PIT SIZE PARAMETERS

No data is provided regarding the parameters for the various pit geometries used in the modelling. These are important considerations as the model used has a pit retention module, which significantly reduces emissions based on this geometry.

Further information is required to confirm appropriate parameters are required.

4. MET DATA

4.1 DATA AVAILABILITY

There is a large amount of meteorological data contained within the Air Quality Impact Assessment; in Table 5.1 of the assessment the meteorological data availability was summarised for the surrounding four weather stations:

- Maules Creek;
- Boggabri Coal Mine;
- Tarrawonga Coal Mine; and

- Narrabri Airport.

Table 5.1 stated that there was 12 months of data available in 2010 however wind speed and wind direction data was discontinuous with 29.9% of the data missing. This is inconsistent with Table 2 of the Existing Environment Chapter of the EIS, where it states that only September 2009-December 2009 were available with the exclusion of the month of October 2009.

Clarification and justification of the use of meteorological data is a significant issue in an assessment of this nature.

Full justification of the quality of this data is required.

4.2 HANDLING ADVERSE TERRAIN

A review of the input parameters as detailed in Appendix B identified that there are seven cell heights, which are defined in order to calculate the flow of wind and the dispersion of pollutants in the model. The heights of these cells were not provided in Appendix B. It is noted that while the TAPM data was calculated at 1 km intervals and CALMET was calculated at 300 m intervals.

The local terrain features are such that greater resolution is required to best reflect the local meteorological effects from significant terrain features.

4.3 DATA USED FOR MODELLING – CLOUD COVER

After reviewing the wind speed and direction of the four weather stations, the meteorological data was generated using CALMET, which uses input data from weather stations, upper air and cloud data in combination with land use and terrain to predict meteorology for the local area.

In Appendix B of the Air Quality Impact Assessment, it is stated that cloud amount and cloud heights were sourced from observations at Tamworth Airport (BoM site located 90 km from Maules Creek), however the BoM weather station at Barraba is located only 45 km from Maules Creek and has a much more complete cloud dataset than Tamworth Airport for the modelling period. Further justification is required for the use of Tamworth Airport AWS in the model.

Additionally, BoM only record the cloud cover in fractions of eighths at 9 am and 3 pm, there is no nighttime cloud cover data. It can therefore be concluded that using observational data from BoM as the sole source of cloud cover data is inappropriate.

Justification of the cloud cover data used is required.

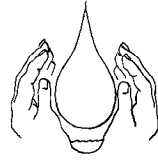
5. ASSESSMENT YEARS

The impact assessment considered four separate years during the life-time of the mine, the years selected were Year 5, Year 10, Year 15 and Year 21. Whilst these years were chosen to represent the impact in five-yearly intervals, only Year 21 assesses the maximum output of 13 Mtpa, as shown in Table 3.1 of the Air Quality Report. As a result all of the modelling scenarios do not reflect peak activity.

Discussion on the implications of differing activity is required.

6. CONCLUSION

While overall the assessment was thorough, significant uncertainties in elements of the assessment have been raised in this review that need addressing before any confidence can be had in the conclusion that there will be no health or amenity issues with the mine.



Supporting Sustainable Water Use in the Namoi Catchment

Namoi Water

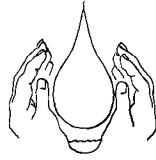
The preservation of sustainable resources for agriculture – including water – must be absolute in addressing mining exploration or operational licence applications.



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.



Supporting Sustainable Water Use in the Namoi Catchment

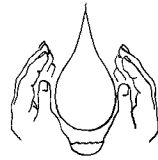
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The Namoi Catchment Water study is currently collating data from government, mining and CSG companies to produce a regional model to assess the risks of coal mining and coal seam gas activities in our catchment on water resources. The models will be 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.



Supporting Sustainable Water Use in the Namoi Catchment

Namoi Water

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.

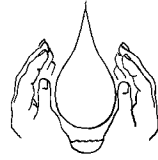
Loss of catchment (14% will drain to pit) of Back Creek will affect water users who rely directly on Back Creek as a water supply for irrigation, from the supplied evidence in the EA the company does not appear to mitigate these impacts.

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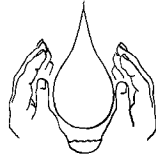
Irrigators are required to measure all groundwater pumped on their property and must be licenced to do so and pay for the right to hold a licence. They are then required to pay charges for all usage of water. Groundwater irrigators in Zones 4,5 & 11 located around the Leard State Forest and the proposed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



Supporting Sustainable Water Use in the Namoi Catchment

Namoi Water

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.

Review of Maules Creek Coal Project Groundwater Impact Assessment

Prepared for: Maules Creek Community Council and Namoi
Water

October 2011



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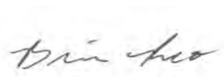
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Author: Brian Rask

Signed: 

Date: 06/10/2011

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Executive Summary

A groundwater model in the Maules Creek area of the Namoi Catchment in New South Wales has been developed by Australasian Groundwater and Environmental Consultants Pty Ltd. (AGE) in support of the Environmental Assessment for the Maules Creek Coal Mine (Project). The objective of the groundwater study was to assess the impact of the Project on the hydrogeological regime and to meet the applicable Director-General's Requirements.

This report provides a review of the model development and reporting according to Australian modelling guidelines (MDBC, 2000) and the Project Director-General's Requirements.

Setup and development of the steady state model is in line with current industry practices – as indicated by the MDBC checklist (Table E-1, MDBC, 2000). A thorough background literature research has been conducted and used as the foundation for the conceptual and numeric models.

The modelling report is overall of a high quality and provides sufficient figures and diagrams to provide illustrations of key features and results.

Using the MDBC guidelines checklist, the modelling is found to be deficient and/or lacking in the areas of calibration, verification, sensitivity analyses and uncertainty analyses – each to varying degrees. The deficiency that stands out the most is the incomplete calibration. The steady state calibration is reported to have a good statistical calibration (SRMS); however the report does not provide any other measures by which to judge the validity of the model, chiefly the qualitative assessments required by the MDBC guidelines, if available. These qualitative assessments are often more telling of the reasonableness of a model's ability to replicate the groundwater and surface water systems than the statistics. This project is rich in comparison to most projects for studies and data as indicated by the fact the report dedicates nearly 37 pages to describing it all but only two dedicated to describing how the model matches heads.

The calibration procedure is also found deficient in the respect a transient calibration was not conducted despite the fact this project has a relatively large amount of recent and historic data/studies available to it. The reasoning provided by AGE, that they could not perform a transient calibration because pumping records are not publically available, does not seem to stand up when looked at closely or at least is in need of more explanation. Firstly, Aston Resources is a member of the Namoi Water Study and as such has or could have access to the usage data provided by NOW for that study. Secondly, calibration could have been done based upon assumed usage and qualitative assessment of fit made and thirdly, calibration could have been considered for just the bedrock only. The latter is arguably the most important.

The primary risks of impact being assessed are associated with the alluvial systems yet the connection between the alluvial and bedrock systems in the calibrated model are not assessed to the previous studies and conceptual model to provide the reader with any confidence the model is replicating reality.

Additional recommendations provided by the reviewer regarding the Maules Creek groundwater modelling report are as follows:

- The cumulative impact assessment should consider the declining water levels within the alluvial systems along with the impacts of the surrounding mines as currently presented.
- A clear method for identifying mining related loss of well yields from background yield losses should be defined up front to eliminate any confusion or difficulties after the fact.
- Recommendations by AGE for groundwater monitoring and seepage inflow measurements should be included in the consent requirements if approved.

The overall impression left after the review is that the work done is competent and well presented, however it is the work not done that leaves cause for concern and uncertainty.

1. Introduction

The Maules Creek Coal Mine was approved in 1995 and is seeking a contemporary Project Approval for the construction and operation of an open cut mine. The open cut coal mining is estimated to extract up to 13 Million tonnes per annum (Mtpa) over a mine life of 21 years.

The objective of the groundwater assessment is to assess the impact of the Project on the hydrogeological regime and to meet the applicable Director-General's Requirements (DGRs).

This report provides a peer review for Maules Creek Community Council (MCCC) and Namoi Water of the Maules Creek Coal project Groundwater Impact Assessment (Project). The review is to be within the context of industry best practice and meeting the DGRs.

A glossary of technical terms is provided in Appendix A.

2. Background Information

2.1 Scope of Work

The key tasks requested by MCCC/Namoi Water for the review of the groundwater assessment conducted in support of the Project submission were:

- A review of the groundwater assessment report by AGE (AGE, June 2011);
- A summary of AGE findings and how they relate to the DGRs as well as industry best practices, i.e. Murray Darling Basin Commission (MDBC) guidelines for modelling exercises (MDBC, 2000).
- An identification of limitations, if any, of the work conducted/presented and how they relate to fully satisfying the DGR requirements as well what work, analyses, reporting could be done to provide further assessment and confidence in findings, if any.
- Recommendations, if any, for further action/discussion.

2.2 Supplied Information

The application documentation on which this review is based are:

1. Australasian Groundwater and Environmental Consultants, Pty, Ltd. (June 2011), *Maules Creek Coal Project Groundwater Impact Assessment*. Prepared for Aston Resources Limited.
2. Hansen Bailey, (July 2011), *Maules Creek Coal Project Environmental Assessment Statement*. Prepared for Aston Coal 2 Pty Limited

The above references were downloaded from the NSW Government Planning website for major projects (<http://majorprojects.planning.nsw.gov.au>).

2.3 Review Criteria/Guidelines

The review has been designed to provide an assessment of the groundwater assessment based upon unbiased or subjective criteria. As such the MDBC guidelines process for review has been selected for the review along with the DGRs for the project available on the project planning website (<http://majorprojects.planning.nsw.gov.au>).

2.3.1 MDBC Guidelines

The 2-page review checklist (Table E-1, Appendix E, MDBC, 2000) provided in the guidelines has been selected for the model review. Not all questions in the checklist are relevant to the review - where possible these have been duly marked.

2.3.2 Director General Requirements

A copy of the DGRs was downloaded from the NSW planning website. The relevant section(s) that pertain to groundwater are summarised below.

- a risk assessment of the potential environmental impacts of the project, identifying key issues for further assessment;
- a detailed assessment of the key issues specified below, and any other significant issues identified in the risk assessment (see above), which includes:
 - A description of the existing environment, using sufficient baseline data;
 - An assessment of potential impacts of the project, including any cumulative impacts, taking into consideration any relevant guidelines, policies, plans and statutory provisions (see below); and
 - A description of the measures that would be implemented to avoid, minimise and if necessary, offset the potential impacts of the project, including detailed contingency plans for managing any significant risk to the environment.
- a statement of commitments, outlining all the proposed environmental management and monitoring measures
- Soil and Water
 - detailed modelling of the potential surface water and groundwater impacts of the project;
 - a detailed site water balance, including a description of the measures to be implemented to minimise water use on site;
 - a detailed assessment of the potential impacts of the project on:
 - the quality and quantity of both surface water and ground water resources;
 - water users, both in the vicinity of and downstream of the project;
 - the riparian and ecological values of the watercourses both on site and downstream of the project; and
 - environmental flows; and
 - a detailed description of the proposed water management system for the project and water monitoring program.

2.4 Review Limitations

The level of effort and detail provided as part of a project submission is heavily dependent upon timing and budgetary constraints - details that are unknown by the reviewer. Hence any item(s) that may be commented as lacking or deficient are not necessarily an indication of unwillingness or inability to perform said task but instead a result of the prioritisation of tasks.

Given the above limitation by the reviewer, the following review has not made any assumptions regarding the cause for deficiencies, if any, but instead focuses upon what is and isn't presented and what are the potential consequences.

3. Peer Review

3.1 MDBC Guidelines

A copy of the completed review checklist is provided in Appendix B. A discussion of findings is provided in the following sections corresponding with the sections of the review table.

3.1.1 The Report

The modelling and assessment report is a standalone document of high quality. Numerous cross-sections and “cartoon” diagrams are used to clearly present conceptualisations and subsurface structural understandings.

“The objective of the groundwater study was to assess the impact of the Project on the hydrogeological regime and to meet the applicable Director Generals Requirements.” (AGE, 2011). These two objectives are essentially the same and as such will be commented further in Section 3.2.

3.1.2 Data Analysis

The assessment is founded upon a seemingly thorough literature review and the modelling is where possible based upon previous modelling and site investigations throughout the study area. Documentation of where information has been collected seems quite thorough.

Although the report is quite thorough in its description of different sources of information and previous studies, the report would benefit from a summary section which provides a series of specific summary tables dedicated to what relevant information is available from all the sources. For example, from all the historic and current studies within the study area, provide a summary of the water level information (time, location, aquifer source, and level(s)) available. This would provide the reader a clear understanding of what water level information is available for steady state and transient calibration.

Recharge and discharge rates have not been explicitly estimated as part of this study. Response to rainfall events were presented and commented upon. A cumulative rainfall deficit was provided. Initial recharge rates were assumed based upon previous modelling in the area and then allowed to change in the bedrock areas for calibration.

3.1.3 Conceptualisation

The conceptual model is the most important part of any modelling exercise as it provides the framework and limitations for all analyses and assumptions. The report provides a good summary of the conceptual framework used to construct and constrain the model along with graphs and diagrams where applicable to further demonstrate the ideas.

Overall the conceptual model in combination with the data presentation provides an adequate description of the major hydrogeologic processes.

3.1.4 Model Design

The documentation and design of the model seem reasonable and fit for purpose. One of the key factors in model development is the “[t]he model must not be configured or constrained such that it artificially produces a restricted range of prediction outcomes” (MDBC, 2000). The explicit boundary conditions at the edge of the model seem to be unrestrictive.

It appears that AGE have adopted hydraulic parameters from the more transmissive lower lying areas of the catchment as hydraulic parameters for the smaller tributaries such as Horsearm Creek, Maules Creek, etc. The database and conceptualisation provided within the AGE report and previous studies (Coffeys and UNSW) demonstrate that these catchments have a much lower hydraulic properties, typically orders of magnitude lower. Given that these catchments are of much greater risk for impact than the lower more transmissive aquifers, it would be most prudent and considered best practice to have these aquifers characterised as close to the fields study results as possible. The potential consequence of characterising the aquifer(s) with much higher transmissivities than what is known to exist there is to under estimate the drawdown propagation and thus impacts of the project. Therefore, it is highly unlikely the parameterisation of these tributary aquifers is in any way conservative or a worst case scenario.

AGE note that Evapotranspiration (ET) was applied at a maximum potential ET rate of 0.4mm/day, that this assumed rate is “at the lower end of the range of possible values,” and that any higher rates caused numerical stability problems. While this does raise some red flags for the model it is not uncommon and does not necessarily render a model invalid when ET is a minor component of the overall mass balance. In the case of this model ET comprises over 15% the total budget, and greater than 1/3 rainfall recharge, despite being set at such a small maximum potential rate. This would indicate a large area of the model must have water levels within the recharge extinction depth (2m). This seems unlikely for an alluvial system that has experienced declining water levels up to 3 metres in the last 15years (AGE, 2010). A map of depth to groundwater level should be provided for clarification. It would also be inferred that if ET were such an important component of the groundwater system that potential impacts to GDEs would of concern given they would be the primary source of ET.

The above issue of ET may also be a demonstration that the omission of groundwater abstraction in the calibration of the model is not as insignificant an issue as the authors have claimed. AGE state *“the extraction rate from bores is accounted for in the balance of inputs and outputs adopted during the steady state model calibration. Groundwater discharging from the model via drains, river flow, evapotranspiration and constant head cells account for water that would be removed by irrigation from the aquifer.”* The above statement and assumptions raises many causes for concern or comment:

- A steady state simulation provides an “average” condition or state of a system based upon average rates of inflow and outflow – how is a steady state simulation able to account for abstraction in a long-term average manner when the abstraction is causing declining water levels over the last 15years and as such indicates it exceeds the natural net inflow? Wouldn't the long-term average simulated condition be less than the current if not dry? How could this match current water levels as is the objective of the steady state?
- The mechanisms described that would account for the omission of abstraction are typically shallow features such as river channels and ET (up to 2m below ground surface). In order for these to then extract water from the model the estimated water level must be within this depth from surface. By definition, the model must have heads greater than existing conditions, or the boundary conditions have much lower draining depths, in order the create the increased flow and existing depth to water level contour./profile.
- In this instance the estimated baseflow rates to the surface water systems must be an over estimate of existing conditions and any comparison in the results of a percent decrease in flow would not be valid or at least would be considered an under estimate of relative change and thus not meet the DGRs.

- This assumption also then assumes a greater connection between the surface water and groundwater systems which can then under estimate impacts in the alluvial groundwater system from drawdown in the bedrock. Greater water levels in the alluvium results numerically in a greater transmissivity, resulting in less drawdown. Greater connection of the River cells with the alluvium results in less drawdown. Greater water levels in the alluvium (from a steady state simulation used as an initial head in the transient simulation) would start the transient simulation with too much water in storage in the alluvium, which are often orders of magnitude greater than that in the bedrock aquifers.

- Given the above notes it is difficult to ascertain how this assumption could lead to a conservative or worst case simulation of potential impacts. In addition, by not including groundwater abstraction, and the current decline of water levels, the modelling is not considering all cumulative impacts as required by the DGRs.

3.1.5 Calibration

Calibration has been limited to steady state only. “Steady state simulations...are used to model equilibrium conditions (e.g. representing the long term “average” hydrological balance), and/or conditions where aquifer storage changes are not significant” and [t]ransient simulations are used to model time-dependent problems, and/or where significant volumes of water are released from or taken into aquifer storage” (MDBC, 2000). As such, the model is calibrated for long term average conditions, however it is being used to assess transient time and storage dependent problems - this is not an ideal situation.

The calibration procedure is found to be deficient in the respect a transient calibration was not conducted despite the fact this project has a relatively large amount of recent and historic data/studies available to it. The reasoning provided by AGE, that they could not perform a transient calibration because pumping records are not publically available, does not seem to stand up when looked at closely or at least is in need of more explanation. Firstly, Aston Resources is a member of the Namoi Water Study and as such has or could have access to the usage data provided by NOW for that study. Secondly, calibration could have been done based upon assumed usage and qualitative assessment of fit made and thirdly, calibration could have been considered for just the bedrock only. The latter is arguably the most important.

The level of confidence in transient calibration would be limited because of the unknown/uncalibrated flow rates (pit inflows and potentially inconsistent usage data), however this is still present for the steady state simulation as the natural flow rate to the river and creek systems is not known either. In the end even a qualitative assessment provides a level of reasonableness above not doing anything.

The MDBC guidelines provide a table of model calibration performance measures (Table 3.2.1, MDBC, 2000). The steady state calibration conducted is compared and summarised using this table as its basis.

Table 3-1 Calibration Performance Measures

Performance Measure¹⁾	Criterion¹⁾	Comment(s)²⁾
Water balance Difference between total inflow and total outflow, including changes in storage, divided by total inflow or outflow, expressed as a percentage.	Less than 1% for each stress period and cumulatively for the entire simulation.	A water balance is provided for review with an error of <1%.
Iteration residual error The calculated error term is the maximum change in heads (for any node) between successive iterations of the model.	Iteration convergence criterion should be one to two orders of magnitude smaller than the level of accuracy desired in the model head results. Commonly set in the order of millimetres or centimetres.	Iteration convergence criteria is not documented.
Qualitative measures Patterns of groundwater flow (based on modelled contour plans of aquifer heads). Patterns of aquifer response to variations in hydrological stresses (hydrographs). Distributions of model aquifer properties adopted to achieve calibration.	Subjective assessment of the goodness of fit between modelled and measured groundwater level contour plans and hydrographs of bore water levels and surface flows. Justification for adopted model aquifer properties in relation to measured ranges of values and associated non-uniqueness issues.	A general review and discussion on goodness of fit is presented. A graph of predicted vs. observed heads is also provided. No obvious bias is present. No justification for surface flows is provided. Justification for adopted model parameters is provided to measured ranges. Non-uniqueness is not explicitly addressed in calibration.
Quantitative measures Statistical measures of the differences between modelled and measured head data. Mathematical and graphical comparisons between measured and simulated aquifer heads, and system flow components.	Residual head statistics criteria are detailed in Section 3.3. Consistency between modelled head values (in contour plans and scatter plots) and spot measurements from monitoring bores. Comparison of simulated and measured components of the water budget, notably surface water flows, groundwater abstractions and evapotranspiration estimates.	RMS error and Scaled RMS are provided for a selected set of the original data set. No comparison of flows either conceptual or measured is presented. Justification for the rate of average baseflow to the ephemeral streams is not provided.

Notes: 1) MDBC, 2000

2) Reviewer's comments

The calibration conducted would at best have to be considered basic according to MDBC guidelines. The approach adopted by the modellers would seem to be more in line with the following description provided within the guidelines:

“where understanding or data are lacking, it is possible to design the associated model aspects to be conservative with respect to their intended use (eg. assuming an unknown aquifer parameter or stress is at the upper or lower limit of a realistic range).”

However the above philosophy is not an exemption from following standard calibration and sensitivity procedures to describe, assess and quantify non-uniqueness within the model. Non-uniqueness is the situation whereby many model input values and arrangements can produce the same or equally acceptable solutions. This situation arises because of the numerous

variables available within the model setup. The recommended procedure for addressing non-uniqueness is described within the MDBC guidelines as follows:

The main methods that should be employed in conjunction to reduce the non-uniqueness problem comprise:

- *calibrating the model using hydraulic conductivity (and other) parameters that are consistent with measured values; and,*
- *calibrating to multiple distinct hydrological conditions with that parameter set.*

The first method is designed to restrict the possible range of parameters to values that are consistent with the actual ("unique") values of the aquifer. The second method provides an indication of the predictive performance of a model by demonstrating that a given set of input model parameters (consistent with field measurements) are capable of reproducing system behaviour through a range of distinct hydrological conditions. The variation in hydrological conditions should not just relate to natural conditions, but also to induced stresses (e.g. pumping, river regulation, etc.).

Similarly to the first method, a suggested third method of reducing the non-uniqueness problem involves the use of measured groundwater flow rates (eg. stream baseflow) as calibration targets, as this restricts the water budget to values that are consistent with actual aquifer conditions. However, it is often not practical or possible to directly measure groundwater flow rates, and where it is possible to estimate them, there is usually a large degree of uncertainty associated with the estimates, so this method is often not applicable.

It is highly preferable that a model is calibrated to a range of distinct hydrological conditions (eg. prolonged or short term dry or wet periods, and ranges of induced stresses), and that calibration is achieved with hydraulic conductivity and other parameters that are consistent with measured values, as this helps address the non-uniqueness problem of model calibration.

The model calibration presented in the report only addresses the first of three methods to be used conjunctively to address non-uniqueness. Simply put the model as reported is a non-unique solution with no evaluation as to the limits of possible solutions and the likely impact on this would have on predictive results.

3.1.6 Verification

"Verification (also called validation) is a test of whether the model can be used as a predictive tool, by demonstrating that the calibrated model is an adequate representation of the physical system. The common test for verification is to run the calibrated model in predictive mode to check whether the prediction reasonably matches the observations of a reserved data set, deliberately excluded from consideration during calibration" (MDBC, 2000).

Verification was not performed and/or presented in the model report. The aim of the verification/calibration being to replicate the rate of drawdown associated with mining.

It is noted in the predictive simulation setup description that the predictive model is intended to be simulating impacts/water levels from the commencement of mining in 2006 – yet a comparison of the predictive results for the first 5 years of mining with the monitoring dataset has not been provided. This period would at face value seem to be a reasonable datasets from which either a transient calibration or verification exercise could have been performed as there would be some monitoring data as required by the consent requirements for Boggabri Coal.

3.1.7 Prediction

The setup of the predictive simulations is typical for an open pit mining and reclamation plan.

The assumed parameterisation of the backfill is reasonable.

The presentation of results within the bedrock aquifers is adequate to understand predicted impacts.

Predictive model results that describe flow rates and/or changes to flow rates should have a caveat with them stating the model is not calibrated to any flow rates. This is not to say the reported values are wrong or even unreasonable – it just that it has not been demonstrated that the model provides reasonable estimates of flow rates. In addition, it is not demonstrated that any estimates of flows to and from the alluvium or changes in them are considered worst case or conservative despite the claims otherwise regarding faulting, higher water levels, etc. No comparison has been made to existing conditions in the calibration section and as such it is not known how the model actually replicates reality. A couple of potentially conservative assumptions do not exclude the potentially non-conservative assumptions made elsewhere. Without transient calibration, sensitivity and/or verification assessments it is not possible to say which assumptions out-weight the others in the nature of how conservative the model is.

The assessment provides two options for reclamation of the mine void. The results for Option 2 indicate that additional recharge would occur to the bedrock aquifers and by inference the alluvium as a result of higher recharge to the spoil and a higher recovered water level. The Report also states that there are no risks to water quality as a result of this increased recharge. How is this conclusion consistent with the numerous salinity studies and reclamation projects throughout NSW, and Australia in general, that has found that clearing of forests in the higher topography area led to rising water levels and salinity problems in the lower lying areas as a direct result of increase recharge from rainfall?

Along these same lines – it is not clear how the modelling has accounted for increased recharge from any changes to land use outside the pit area.

3.1.8 Sensitivity Analyses

Sensitivity analyses have been provided for predictive models. These simulations provide a reasonable bound for the impact assessment. Noel Merrick's independent review provides some recommendations for improvement.

3.1.9 Uncertainty Analyses

No formal uncertainty analyses (i.e. Monte Carlo simulations, etc.) have been presented. This is not uncommon within the practice as computational, budgetary and time constraints often limit the ability to perform these analyses.

3.2 Director General Requirements

The DGRs list the following requirements that pertain to the groundwater assessments:

- a risk assessment of the potential environmental impacts of the project, identifying key issues for further assessment;
- a detailed assessment of the key issues specified below, and any other significant issues identified in the risk assessment (see above), which includes:
 - A description of the existing environment, using sufficient baseline data;
 - An assessment of potential impacts of the project, including any cumulative impacts, taking into consideration any relevant guidelines, policies, plans and statutory provisions (see below); and
 - A description of the measures that would be implemented to avoid, minimise and if necessary, offset the potential impacts of the project, including detailed contingency plans for managing any significant risk to the environment.
- a statement of commitments, outlining all the proposed environmental management and monitoring measures
- Soil and Water
 - detailed modelling of the potential surface water and groundwater impacts of the project;
 - a detailed site water balance, including a description of the measures to be implemented to minimise water use on site;
 - a detailed assessment of the potential impacts of the project on:
 - the quality and quantity of both surface water and ground water resources;
 - water users, both in the vicinity of and downstream of the project;
 - the riparian and ecological values of the watercourses both on site and downstream of the project; and
 - environmental flows; and
 - a detailed description of the proposed water management system for the project and water monitoring program.

The first main bullets are the context by which the final two main bullets will be discussed.

Figures are provided that depict the zone of impact or cone of depression estimated with the proposed mine plane. 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.

The impact assessment does not account for arguably the greatest cumulative impact which is the current declining water levels in the alluvial systems.

Pumps are rarely set any deeper than required due to extra electrical and capital costs. Given falling water level conditions within the alluvial aquifer, freeboard above many pumps are likely to already be minimal if non-existent. Mitigation measures for negotiating with land holders to lower pumps, replace bores, etc. to compensate for yield losses attributable to mining related impacts has been recommended but it is unclear how the cause of yield losses will be determined given the background conditions.

Water quality impacts from site activities are adequately covered with recommendations for mitigation and monitoring. One notable exclusion, though, is addressing any potential risk of salinity related impacts from increased recharge at topographically higher areas.

The majority of the impact assessment section is dedicated to changes in flow rates in the alluvium, to mine void, or the interaction between bedrock and alluvium. However, the modelling report has provided no evidence, qualitatively or quantitatively, that the model replicates reasonable estimates of current flow rates. As such, confidence in the impact assessment is limited.

Water management measures, including measures to reduce water use, are not provided. However the monitoring recommendations and data management and reporting recommendations are sound and should be included in the consent requirements, if approved. Particular weight should be given to the Mine Water Seepage Monitoring requirements for the following reasons:

- the model is not calibrated to flows and as such the estimate provided of losses to the alluvium is largely uncertain. Good monitoring and water balance on seepage inflows to the mine will indicate how close the current estimate is.
- any future revisits to the model should include a transient calibration, of which pit inflows will be required to constrain the model solution. It is not in MCCC and Namoi Waters interest for them to do the same thing as Boggabri Coal and say they cannot do better modelling simply because they are not collecting the necessary information. AGE has done well to provide recommendations such that future work can provide greater confidence in the hydrogeologic assessments.
- The project will require licensing of water take and/or water trading to offset inflows. Therefore as accurate an estimate as possible is in all parties' interests.

A description of the water level and quality monitoring systems has been provided and is relatively standard for this type of project. It is noted that a recommendation is provided for reviews of the monitoring data and model accuracy every 5 years. There is concern here with the idea of improving your understanding of impacts after the project is already started and underway. Adopting this approach undermines the EA process by allowing a project to go forward without having confidence in what impacts will occur - essentially rendering the process a function of creating compensation rather than assessing whether the project should be approved.

4. Conclusions and Recommendations

The modelling work conducted thus far is considered to be consistent with the fundamental guiding principle of best practice as defined by Hugh Middlemis (2004) in *Benchmarking Best Practice for Groundwater Flow Modelling*:

The fundamental guiding principle for best practice modelling is that model development is an ongoing process of refinement from an initially simple representation of the aquifer system to one with an appropriate degree of complexity. Thus, the model realisation at any stage is neither the best nor the last, but simply the latest representation of our developing understanding of the aquifer system.

Based upon the current understanding of the work conducted presented in the AGE 2011 report, the following conclusions and recommendations are presented:

- Overall the work presented is in line with industry best practice, with the caveat above that modelling is an ongoing process of increased complexity often balanced by the practical limitations of budget and time.
- The report and presentation of the work conducted is of a high quality and is easily understood with good use of diagrams.
- A thorough background literature search has been completed and is well documented and used as a base for the conceptual and numeric model.
- Using the MDBC guidelines checklist, the modelling is found to be deficient and/or lacking in the areas of calibration, verification, sensitivity analyses and uncertainty analyses – each to varying degrees. The end result is a deficient demonstration or basis by which to have any real confidence that what is being provided is the best estimate or even worst case, in particular with flow rates which form the majority of the impact discussion. Water level hydrograph comparing the predicted and measured water levels for the first 5 years of the predictive simulation could go a long way to providing confidence the model actually replicates reality.
- The primary risks of impact being assessed are associated with the alluvial systems yet the connection between the alluvial and bedrock systems are not well explored either through field testing, literature research, vertical water level gradients, and or model sensitivity assessments. Further work should be conducted, including field studies such as pumping tests and model sensitivity assessments to quantify this interaction.
- The cumulative impact assessment should consider the declining water levels within the alluvial systems along with the impacts of the surrounding mines as currently presented.
- A clear method for identifying mining related loss of well yield from background yield losses should be defined up front to eliminate any confusion or difficulties after the fact.

In summary, the overall impression left after the review is that the work done is competent and well presented, however it is the work not done that leaves cause for concern and uncertainty.

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5. References

- Australasian Groundwater and Environmental Consultants, Pty, Ltd. (October 2010) *Continuation of Boggabri Coal Mine Groundwater Assessment*. Prepared for Boggabri Coal Pty Limited, <http://majorprojects.planning.nsw.gov.au>.
- Australasian Groundwater and Environmental Consultants, Pty, Ltd. (June 2011), *Maules Creek Coal Project Groundwater Impact Assessment*. Prepared for Aston Resources Limited. <http://majorprojects.planning.nsw.gov.au>.
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- Hansen Bailey, (July 2011), *Maules Creek Coal Project Environmental Assessment Statement*. Prepared for Aston Coal 2 Pty Limited
- Middlemis, H (2004), *Benchmarking Best Practice for Groundwater Flow Modelling*, prepared for The Winston Churchill Memorial Trust of Australia.
- Murray Darling Basin Commission (MDBC) (2000), *Groundwater Flow Modelling Guideline*, prepared by Aquaterra.
- NSW Department of Planning (2010), *Boggabri Coal Project (MP 09_0182) Director General Requirements*, <http://majorprojects.planning.nsw.gov.au>.
- NSW Department of Planning (2011), *Maules Creek Coal Project (MP 10_0138) Director General Requirements*, <http://majorprojects.planning.nsw.gov.au>

Appendix A

Glossary

Aquiclude	Low- permeability unit that forms either the upper or lower boundary of a groundwater flow system.
Aquifer	Rock or sediment in a formation, group of formations or part of a formation that is saturated and sufficiently permeable to transmit economic quantities of water to bores, wells and springs.
Aquifer properties	Characteristics of an aquifer that determine its hydraulic behaviour and its response to abstraction.
Aquifer, confined	Aquifer that is overlain by a confining, low permeability strata. The hydraulic conductivity of the confining bed is significantly lower than that of the aquifer.
Aquifer, semi-confined	Aquifer confined by a low- permeability layer that permits water to slowly flow through it. During pumping, recharge to the aquifer can occur across the confining layer; also known as a leaky artesian or leaky confined aquifer.
Aquifer, unconfined	Also known as a water table or phreatic aquifer. An aquifer in which there are no confining beds between the zone of saturation and the surface. The water table is the upper boundary of unconfined aquifers.
Aquitard	Low-permeability unit that can store groundwater and also transmit it slowly from one aquifer to another. Aquitards retard but do not prevent the movement of water to or from an adjacent aquifer.
Artesian water	Groundwater that is under pressure when tapped by a bore and is able to rise above the level at which it is first found. It may or may not flow out at ground level. The pressure in such an aquifer commonly is called artesian pressure, and the formation containing artesian water is an artesian aquifer or confined aquifer.
Australian Height Datum (AHD)	Reference point (very close to mean sea level) for all elevation measurements, and used for correlating depths of aquifers and water levels in bores.
Baseflow	Part of stream discharge that originates from groundwater seeping into the stream.
Bore	Structure drilled below the surface to obtain water from an aquifer system.
Boundary	Lateral discontinuity or change in the aquifer resulting in a significant change in hydraulic conductivity , storativity or recharge.

Cone of depression	Depression of the potentiometric surface, which has the shape of an inverted cone, and develops around a production bore from which water is being drawn. It defines the area of influence of a bore.
Confining layer	Body of relatively impermeable material that is stratigraphically adjacent to one or more aquifers; it may lie above or below the aquifer.
Discharge	Volume of water flowing in a stream or through an aquifer past a specific point in a given period of time.
Discharge area	Area in which there are upward or sideways components of flow in an aquifer.
Drawdown	Lowering of the water table in an unconfined aquifer or the potentiometric surface of a confined aquifer.
Fissility	The property of rocks to split down planes of weakness.
Fracture	Breakage in a rock or mineral along a direction or directions that are not cleavage or fissility .
Fractured rock aquifer	Occurs in sedimentary, igneous and metamorphosed rocks that have been disturbed, deformed, or weathered, and which allow water to move through joints, bedding planes and faults. Although fractured rock aquifers are found over a wide area, they generally contain much less groundwater than alluvial and porous sedimentary aquifers.
Groundwater	Water contained in interconnected pores located below the water table in an unconfined aquifer or located in a confined aquifer.
Groundwater flow	Movement of water through openings in sediment and rock; occurs in the zone of saturation.
Groundwater flow system	Regional aquifer or aquifers within the same geological unit that are likely to have similar recharge, flow, yield and water quality attributes.
Hydraulic conductivity	The rate with which water can move through pore spaces or fractures. It depends on the intrinsic permeability of the material and on the degree of saturation.
Hydraulic gradient	Change in total head (see below) with a change in distance in a given direction, which yields a maximum rate of decrease in head.

Hydraulic head	Specific measurement of water pressure or total energy per unit weight above a datum. It is usually measured as a water surface elevation, expressed in units of length. The hydraulic head can be used to determine a hydraulic gradient between two or more points.
Hydrogeology	Study of the interrelationships of geologic materials and processes with water, especially groundwater.
Hydrology	Study of the occurrence, distribution, and chemistry of all waters on the Earth.
Hydrostatic pressure	The pressure exerted by a fluid at equilibrium due to the force of gravity.
Infiltration	Flow of water downward from the land surface into and through the upper soil layers.
Parameterisation	The process of defining the parameters necessary for the specification of a model.
Perched water	Unconfined groundwater separated from an underlying body of groundwater by an unsaturated zone and supported by an aquitard or aquiclude .
Permeability	Property or capacity of a porous rock, sediment, clay or soil to transmit a fluid. Measures the relative ease of fluid flow under unequal pressure. Hydraulic conductivity is a material's permeability to water at the prevailing temperature.
Permeable material	Material that permits water to move through it at perceptible rates under the hydraulic gradients normally present.
Piezometer (monitoring well)	Non-pumping monitoring well, generally of small diameter, which is used to measure the elevation of the water table and/or water quality. A piezometer generally has a short well screen through which water can enter.
Porosity	Proportion of interconnected open space within an aquifer, comprised of intergranular space, pores vesicles and fractures.
Porosity, primary	Porosity that represents the original pore openings when a rock or sediment formed.
Porosity, secondary	Porosity caused by fractures or weathering in a rock or sediment after it has been formed.

Potentiometric surface	Surface to which water in an aquifer would rise by <i>hydrostatic pressure</i> .
Pumping test	Test made by pumping a bore for a period of time and observing the change in hydraulic head in the aquifer. It may be used to determine the capacity of the bore and the hydraulic characteristics of the aquifer.
Recharge	Process that replenishes groundwater, usually by rainfall infiltrating from the ground surface to the water table and by river water entering the water table or exposed aquifers; addition of water to an aquifer.
Recharge area	Area in which there are downward components of hydraulic head in the aquifer. Infiltration moves downward into the deeper parts of an aquifer in a recharge area.
Recovery	Difference between the observed water level during the recovery period after pumping stops and the water level measured immediately before pumping stopped.
Residence time	Time that a water source spends in storage before moving to a different part of the hydrological cycle (ie it could be argued it is a rate of replenishment).
Saturated zone	Zone in which the voids in the rock or soil are filled with water at a greater pressure than atmospheric. The water table is the top of the saturated zone in an unconfined aquifer.
Sedimentary aquifers	Occur in consolidated sediments, such as porous sandstones and conglomerates, in which water is stored in the intergranular pores, and limestone, in which water is stored in solution cavities and joints. They are generally located in sedimentary basins that are continuous over large areas, they may be tens or hundreds of metres thick, and they contain the largest groundwater resources.
Specific yield	Ratio of the volume of water a rock or soil will yield by gravity drainage to the volume of the rock or soil. Gravity drainage may take many months to occur.
Spring	Location where groundwater emerges on to the ground surface. Water may be free flowing or slowly seeping.
Storativity	Volume of water an aquifer releases from or takes into storage per unit surface area of the aquifer per unit change in head. It is equal to the product of specific storage and aquifer thickness. In an unconfined aquifer, the storativity is equivalent to specific yield.

Stratigraphy	The study of stratified rocks (sediments and volcanics), including their sequence in time, the character of the rocks and the correlation of beds in different localities.
Surface water-groundwater interaction	Occurs in two ways: (1) Streams gain water from groundwater through the streambed when the elevation of the water table next to the streambed is greater than the water level in the stream. (2) Streams lose water to groundwater by outflow through streambeds when the elevation of the water table is lower than the water level in the stream.
Transmissivity	Rate at which water of a prevailing density and viscosity is transmitted through a unit width of an aquifer or confining bed under a unit hydraulic gradient. It is a function of properties of the liquid, the porous media, and the thickness of the porous media.
Unconfined aquifer	Where the groundwater surface (water table) is at atmospheric pressure and the aquifer is recharged by direct rainfall infiltration from the ground surface.
Unsaturated zone	That part of an aquifer between the land surface and water table. It includes the root zone, intermediate zone and capillary fringe.
Water table	Surface in an unconfined aquifer or confining bed at which the pore water pressure is atmospheric. It can be measured by installing shallow wells extending a few feet into the zone of saturation and then measuring the water level in those wells.
Well	Any structure bored, drilled driven or dug into the ground, (which is deeper than it is wide), to reach groundwater.

Appendix B

MDBC Review Checklist

MODEL REVIEW: Maules Creek Coal Project – Groundwater Impact Assessment

Q.	QUESTION	Not Applicable or Unknown	Score 0	Score 1	Score 3	Score 5	Score	Max. Score (0, 3, 5)	COMMENT
1.0	THE REPORT								
1.1	Is there a clear statement of project objectives?		Missing	Deficient	Adequate	Very Good			
1.2	Is the level of model complexity clear or acknowledged?		Missing	No	Yes				
1.32	Is a water or mass balance reported?		Missing	Deficient	Adequate	Very Good			
1.4	Has the modelling study satisfied project objectives?		Missing	Deficient	Adequate	Very Good			
1.5	Are the model results of any practical use?			No	Maybe	Yes			
2.0	DATA ANALYSIS								
2.1	Has hydrogeology data been collected and analysed?		Missing	Deficient	Adequate	Very Good			This area has had many previous studies and the project proponent has provided additional investigations to supplement a historic database.
2.2	Are groundwater contours or flow directions presented?		Missing	Deficient	Adequate	Very Good			
2.3	Have all potential recharge data been collected and analysed? (rainfall, streamflow, irrigation, floods, etc.)		Missing	Deficient	Adequate	Very Good			
2.4	Have all potential discharge data been collected and analysed? (abstraction, evapotranspiration, drainage, springflow, etc.)		Missing	Deficient	Adequate	Very Good			Private land owner abstraction not obtained or used. It is known that NOW provided water use records to the Namoi Water Study of which Aston Resources is a member and as such should have access to the data.
2.5	Have the recharge and discharge datasets been analysed for their groundwater response?		Missing	Deficient	Adequate	Very Good			
2.6	Are groundwater hydrographs used for calibration?			No	Maybe	Yes			
2.7	Have consistent data units and standard geometrical datums been used?			No	Yes				Some inconsistencies as noted in Noel Merrick's review.

Q.	QUESTION	Not Applicable or Unknown	Score 0	Score 1	Score 3	Score 5	Score	Max. Score (0, 3, 5)	COMMENT
3.0	CONCEPTUALISATION								
3.1	Is the conceptual model consistent with project objectives and the required model complexity?		Unknown	No	Maybe	Yes			
3.2	Is there a clear description of the conceptual model?		Missing	Deficient	Adequate	Very Good			
3.3	Is there a graphical representation of the modeller's conceptualisation?		Missing	Deficient	Adequate	Very Good			
3.4	Is the conceptual model unnecessarily simple or unnecessarily complex?			Yes	No				
4.0	MODEL DESIGN								
4.1	Is the spatial extent of the model appropriate?			No	Maybe	Yes			
4.2	Are the applied boundary conditions plausible and unrestrictive?		Missing	Deficient	Adequate	Very Good			The explicit boundary conditions input to the model seem to be unrestrictive. However the fixed parameterisation of the alluvium makes this in effect a prescribed boundary condition and the modelling results presented indicate that the alluvium is restricting any drawdown propagation. This relatively important role the alluvium is playing is not balanced by presentation of field testing, data analysis, or sensitivity and/or uncertainty analyses.
4.3	Is the software appropriate for the objectives of the study?			No	Maybe	Yes			
5.0	CALIBRATION								

Q.	QUESTION	Not Applicable or Unknown	Score 0	Score 1	Score 3	Score 5	Score	Max. Score (0, 3, 5)	COMMENT
5.1	Is there sufficient evidence provided for model calibration?		Missing	Deficient	Adequate	Very Good			The level of statistical calibration and presentation is adequate for the steady state model. It is also noted that the predictive simulation starts in 2006 when mining began – yet no comparisons are provided either as calibration or verification that the predicted water levels match those measured of the same time period (either in absolute head values or rate of decline). No transient calibration is conducted despite the fact this study has more information available to it than most others which still manage to provide a transient calibration exercise to demonstrate a model's ability to at least reasonably represent response to flux changes in the system.
5.2	Is the model sufficiently calibrated against spatial observations?		Missing	Deficient	Adequate	Very Good			A large residual error is still noted, especially in the bedrock units.
5.3	Is the model sufficiently calibrated against temporal observations?		Missing	Deficient	Adequate	Very Good			
5.4	Are calibrated parameter distributions and ranges plausible?			No	Maybe	Yes			
5.5	Does the calibration statistic satisfy agreed performance criteria?	Unknown	Missing	Deficient	Adequate	Very Good			None stated

Q.	QUESTION	Not Applicable or Unknown	Score 0	Score 1	Score 3	Score 5	Score	Max. Score (0, 3, 5)	COMMENT
5.6	Are there good reasons for not meeting agreed performance criteria?	Not Applicable	Missing	Deficient	Adequate	Very Good			No agreed performance criteria were documented. Reasons presented in the report for not performing a transient calibration (at least for the bedrock aquifers alone) are not plausible and/or fully justified.
6.0	VERIFICATION								
6.1	Is there sufficient evidence provided for model verification?		Missing	Deficient	Adequate	Very Good			None provided even though datasets are said to exist and the predictive simulation included the previous 5 years of mining.
6.2	Does the reserved dataset include stresses consistent with the prediction scenarios?	Not Applicable	Unknown	No	Maybe	Yes			
6.3	Are there good reasons for an unsatisfactory verification?	Not Applicable	Missing	Deficient	Adequate	Very Good			
7.0	PREDICTION								
7.1	Have multiple scenarios been run for climate variability?		Missing	Deficient	Adequate	Very Good			
7.2	Have multiple scenarios been run for operational/management alternatives?	Unknown	Missing	Deficient	Adequate	Very Good			Two mine closure options are presented.
7.3	Is the time horizon for prediction comparable with the length of the calibration / verification period?		Missing	No	Maybe	Yes			Calibration is steady state (i.e. no time period) and no verification is provided.
7.4	Are the model predictions plausible?			No	Maybe	Yes			
8.0	SENSITIVITY ANALYSIS								

[illegible]

Stephen O'Donoghue - Submission Details for

From: Stephen O'Donoghue
To: <stephen.o.donoghue@planning.nsw.gov.au>
Date: Monday, 26 September 2011 1:20 PM
Subject: Submission Details for
CC: <assessments@planning.nsw.gov.au>



Disclosable Political Donation: no

Address:

How would you like to receive this email?

Content:

I strongly oppose this mining operation. Alternative energy resources are the way to go. We should not be sending all our coal over to China. There are other ways to infuse the economy without destroying Australia. If this mine is approved it shows there is no common sense on those that are meant to ensure a quality life for generations to come.

Coal mines are dinosaurs and no new mining licenses approved. The NSW State Government pulls incentives for the solar sector with a mass lay off but defend those in the coal industry. If the decision makers have children and care for them, then this madness would surely stop.

These are some of the reasons to NOT approve the mine.

The Maules Creek Coal Mine will:

Clear a total of 1,665 hectares of native bush, taking the total clearing in the Leard Forest to over 3,500 hectares.
Clear 545 hectares of the White Box Grassy Woodland endangered community, taking the total clearing of endangered communities in Leard Forest to over 1,169 hectares.
Impact on habitat for up to 36 threatened species which are known or likely to occur in Leard State Forest, including Painted Honeyeater, Koala, Turquoise Parrot and Eastern Cave Bat.
Contribute to the destruction of the largest remnant of vegetation left on the heavily cleared Liverpool Plains.
Result in a final pit depth of 320m that will cause massive depressurisation of the water table and impact on springs and unique groundwater dependent ecosystems.
Result in a final void that will permanently deplete groundwater, interfere with aquifers and divert surface water.
Make an enormous contribution to global warming amounting to at least 25 million tonnes of greenhouse gas emissions per annum from burning the coal that is produced. This is equivalent to more than 15% of all emissions from NSW annually.
Forever change the quiet rural community of Maules Creek into a giant industrial zone with impacts on health, air quality, noise and amenity.

Regards,

IP Address: -

Submission: 0

<https://majorprojects.affinitylive.com/>

Submission for Job: #4142

https://majorprojects.affinitylive.com/?action=view_job&id=4142

Site: #2307 Maules Creek Coal Mine

https://majorprojects.affinitylive.com/?action=view_site&id=2307

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Stephen O'Donoghue - Submission Details for '

From:

To: <stephen.o'donoghue@planning.nsw.gov.au>

Date: Monday, 26 September 2011 2:34 PM

Subject: Submission Details for '

CC: <assessments@planning.nsw.gov.au>



Disclosable Political Donation: no

Name: |

Email: |

Address:

n/a

n/a

Melbourne, VIC

3000

Content:

This project will clear a total of 1,665 hectares of native bush, taking the total clearing in the Leard Forest to over 3,500 hectares.

In a sentence, I object to this massive destruction by clearing to our eco system for the SOLE benefit of a private company.

IP Address: 192.168.1.100

Submission: Online Submission from

https://majorprojects.affinitylive.com/?action=view_diary&id=20650

Submission for Job: #4142

https://majorprojects.affinitylive.com/?action=view_job&id=4142

Site: #2307 Maules Creek Coal Mine

https://majorprojects.affinitylive.com/?action=view_site&id=2307

F

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Stephen O'Donoghue - Submission Details for

From:
To: <stephen.o'donoghue@planning.nsw.gov.au>
Date: Tuesday, 27 September 2011 12:20 PM
Subject: Submission Details for
CC: <assessments@planning.nsw.gov.au>



Disclosable Political Donation: no

Name:
Email:

Address:

Content:

This DA is about as bad as a coal mine can be. The environmental irreversible damage to one of the last stands of an endangered ecosystem. That a state forest owned by the people of NSW be privatised for the benefit of a mining company.

The amount of native forest which this proposal involves would be putting 36 threatened species including the koala, turquoise parrot etc virtually to the edge of extinction.

It is difficult to make a rational submission to such an appalling DA.
It is my belief that this should never be approved

IP Address:
Submission: Or. https://majorprojects.affinitylive.com/?action=view_diary&id=20680

Submission for Job: #4142
https://majorprojects.affinitylive.com/?action=view_job&id=4142

Site: #2307 Maules Creek Coal Mine
https://majorprojects.affinitylive.com/?action=view_site&id=2307

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Stephen O'Donoghue - Submission Details for Wendy Hardman

From: Wendy Hardman <wmhardman@hotmail.com>
To: <stephen.o'donoghue@planning.nsw.gov.au>
Date: Tuesday, 27 September 2011 12:31 PM
Subject: Submission Details for Wendy Hardman
CC: <assessments@planning.nsw.gov.au>



Disclosable Political Donation: no

Name: Wendy Hardman
 Email: wmhardman@hotmail.com

Address:
 6 Burra Place

Congo, NSW
 2537

Content:

Hi,
 Please register my strong opposition to the Maules Creek Coal Mine development. Our State forests are a national environmental resource and in this day and age, it's madness to proceed with such developments when common sense clearly dictates the protection of native forests above economic considerations. In particular, I am concerned that; The Maules Creek Coal Mine will:

Clear a total of 1,665 hectares of native bush, taking the total clearing in the Leard Forest to over 3,500 hectares.
 Clear 545 hectares of the White Box Grassy Woodland endangered community, taking the total clearing of endangered communities in Leard Forest to over 1,169 hectares.
 Impact on habitat for up to 36 threatened species which are known or likely to occur in Leard State Forest, including Painted Honeyeater, Koala, Turquoise Parrot and Eastern Cave Bat.
 Contribute to the destruction of the largest remnant of vegetation left on the heavily cleared Liverpool Plains.
 Result in a final pit depth of 320m that will cause massive depressurisation of the water table and impact on springs and unique groundwater dependent ecosystems.
 Result in a final void that will permanently deplete groundwater, interfere with aquifers and divert surface water.
 Make an enormous contribution to global warming amounting to at least 25 million tonnes of greenhouse gas emissions per annum from burning the coal that is produced. This is equivalent to more than 15% of all emissions from NSW annually.
 Forever change the quiet rural community of Maules Creek into a giant industrial zone with impacts on health, air quality, noise and amenity.

Thank you
 Wendy Hardman

IP Address: - 203.217.150.69
 Submission: Online Submission from Wendy Hardman (object)
https://majorprojects.affinitylive.com/?action=view_diary&id=20684

Submission for Job: #4142
https://majorprojects.affinitylive.com/?action=view_job&id=4142

Site: #2307 Maules Creek Coal Mine
https://majorprojects.affinitylive.com/?action=view_site&id=2307

Wendy Hardman

E : wmhardman@hotmail.com

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Stephen O'Donoghue - Submission Details for Paul Mulhall

From: Paul Mulhall <paulm_triplea@hotmail.com>
To: <stephen.o'donoghue@planning.nsw.gov.au>
Date: Tuesday, 27 September 2011 1:13 PM
Subject: Submission Details for Paul Mulhall
CC: <assessments@planning.nsw.gov.au>



Disclosable Political Donation: no

Name: Paul Mulhall
Email: paulm_triplea@hotmail.com

Address:
19a Westmoreland St

Glebe, NSW
2037

Content:
The Maules Creek Coal Mine will make an enormous contribution to global warming amounting to at least 25 million tonnes of greenhouse gas emissions per annum from burning the coal that is produced. This is equivalent to more than 15% of all emissions from NSW annually.

This development is grossly irresponsible and will contribute towards a problem that our descendents will struggle with for generations to come.

IP Address: stella.sge.net - 152.91.9.115
Submission: Online Submission from Paul Mulhall (object)
https://majorprojects.affinitylive.com/?action=view_diary&id=20686

Submission for Job: #4142
https://majorprojects.affinitylive.com/?action=view_job&id=4142

Site: #2307 Maules Creek Coal Mine
https://majorprojects.affinitylive.com/?action=view_site&id=2307

Paul Mulhall

E : paulm_triplea@hotmail.com

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Stephen O'Donoghue - Submission Details for Tom Harding

From: Tom Harding <tom@tomthepom.com>
To: <stephen.o'donoghue@planning.nsw.gov.au>
Date: Tuesday, 27 September 2011 4:14 PM
Subject: Submission Details for Tom Harding
CC: <assessments@planning.nsw.gov.au>



Disclosable Political Donation: no

Name: Tom Harding
Email: tom@tomthepom.com

Address:
1/3 Hill Street
Marrickville
Sydney, NSW
2204

Content:

This looks to be a terrible idea. In this parched land our drinking water should be protected and digging a massive hole will negatively affect the flow of water. Our forests should be preserved. Finally, the huge amounts of CO2 released by this project will make a bad situation worse. Please do not allow the profit of a few people to over ride the land of many. Please do not allow this mine.

IP Address: 123-243-77-177.tpgi.com.au - 123.243.77.177
Submission: Online Submission from Tom Harding (object)
https://majorprojects.affinitylive.com/?action=view_diary&id=20692

Submission for Job: #41 42
https://majorprojects.affinitylive.com/?action=view_job&id=4142

Site: #2307 Maules Creek Coal Mine
https://majorprojects.affinitylive.com/?action=view_site&id=2307

Tom Harding

E : tom@tomthepom.com

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Stephen O'Donoghue - Submission Details for Barbara Lynn

From: Barbara Lynn <treadlightlybarb@yahoo.com.au>
To: <stephen.o'donoghue@planning.nsw.gov.au>
Date: Tuesday, 27 September 2011 4:34 PM
Subject: Submission Details for Barbara Lynn
CC: <assessments@planning.nsw.gov.au>



Disclosable Political Donation: no

Name: Barbara Lynn
Email: treadlightlybarb@yahoo.com.au

Address:
14A Millowine Lane

Bega, NSW
2550

Content:

IP Address: 178.130-26-211.dynamic.dsl.syd.iprimus.net.au - 211.26.130.178
Submission: Online Submission from Barbara Lynn (object)
https://majorprojects.affinitylive.com/?action=view_diary&id=20694

Submission for Job: #4142
https://majorprojects.affinitylive.com/?action=view_job&id=4142

Site: #2307 Maules Creek Coal Mine
https://majorprojects.affinitylive.com/?action=view_site&id=2307

< p>

Barbara Lynn

E : treadlightlybarb@yahoo.com.au

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Stephen O'Donoghue - Submission Details for

From:
To: <stephen.o'donoghue@planning.nsw.gov.au>
Date: Tuesday, 27 September 2011 5:16 PM
Subject: Submission Details for
CC: <assessments@planning.nsw.gov.au>



Disclosable Political Donation: no

Name:
Email:

Address:

zU65

Content:
The Maules Creek Coal Mine should not be approved. I object to it on a number of grounds.

My concerns relate to the potential damage to the environment. The proposed pit depth is so deep that it will cause massive depressurisation of the water table, permanently deplete groundwater, interfere with aquifers and divert surface water.

Further, the mine will destroy 1,665 hectares of native bush and have an impact on 36 threatened animal and bird species.

I am also extremely concerned about the impacts of the mine on global warming. At least 25 million tonnes of greenhouse gas emissions per annum will be produced from burning the coal that is produced

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Stephen O'Donoghue - Submission Details for

From:

To: <stephen.o'donoghue@planning.nsw.gov.au>

Date: Tuesday, 27 September 2011 5:58 PM

Subject: Submission Details for

CC: <assessments@planning.nsw.gov.au>



**Planning &
Infrastructure**

Disclosable Political Donation: no

Name: .

Email: j

Address:

.

3051

Content:

I object to this development on the basis that The Maules Creek Coal Mine will:

Clear a total of 1,665 hectares of native bush, taking the total clearing in the Leard Forest to over 3,500 hectares.

Clear 545 hectares of the White Box Grassy Woodland endangered community, taking the total clearing of endangered communities in Leard Forest to over 1,169 hectares.

Impact on habitat for up to 36 threatened species which are known or likely to occur in Leard State Forest, including Painted Honeyeater, Koala, Turquoise Parrot and Eastern Cave Bat.

Contribute to the destruction of the largest remnant of vegetation left on the heavily cleared Liverpool P lains.

Result in a final pit depth of 320m that will cause massive depressurisation of the water table and impact on springs and unique groundwater dependent ecosystems.

Result in a final void that will permanently deplete groundwater, interfere with aquifers and divert surface water.

Make an enormous contribution to global warming amounting to at least 25 million tonnes of greenhouse gas emissions per annum from burning the coal that is produced. This is equivalent to more than 15% of all emissions from NSW annually.

Forever change the quiet rural community of Maules Creek into a giant industrial zone with impacts on health, air quality, noise and amenity

IP Address: .

Submission: Online Submission from .

https://majorprojects.affinitylive.com/?action=view_diary&id=20699

Submission for Job: #4142

https://majorprojects.affinitylive.com/?action=view_job&id=4142

Site: #2307 Maules Creek Coal Mine

https://majorprojects.affinitylive.com/?action=view_site&id=2307

E

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Stephen O'Donoghue - Submission Details for carol sparks of no

From: carol sparks <carolsparks@bigpond.com>
To: <stephen.o'donoghue@planning.nsw.gov.au>
Date: Tuesday, 27 September 2011 6:58 PM
Subject: Submission Details for carol sparks of no
CC: <assessments@planning.nsw.gov.au>



Disclosable Political Donation: no

Name: carol sparks
Organisation: no (no)
Email: carolsparks@bigpond.com

Address:
197 meade st
po box 645
glen innes, NSW
2370

Content:
dear sir or madam
this mine is disgraceful , it will be a blight on the landscape and a very sad day for our environment and the native animals and species it destroys , shame shame shame.
carol sparks

IP Address: cpe-138-217-66-97.lnse4.ln.bigpond.net.au - 138.217.66.97
Submission: Online Submission from carol sparks of no (comments)
https://majorprojects.affinitylive.com/?action=view_diary&id=20707

Submission for Job: #4142
https://majorprojects.affinitylive.com/?action=view_job&id=4142

Site: #2307 Maules Creek Coal Mine
https://majorprojects.affinitylive.com/?action=view_site&id=2307

carol sparks

E : carolsparks@bigpond.com

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Stephen O'Donoghue - Submission Details for

From:
To: <stephen.o'donoghue@planning.nsw.gov.au>
Date: Tuesday, 27 September 2011 7:02 PM
Subject: Submission Details for
CC: <assessments@planning.nsw.gov.au>



Disclosable Political Donation: no

Name:
Email:

Address:

Content:

Mining of coal in a State forest which is land belonging to the nation is something that we should say NO to. Once this "dirty" fuel is removed from the ground, the forest can never be restored. It is outrageous to imagine that a huge open cut coal mine such as that proposed for the Leard Forest near Boggabri could be approved. The Maules Creek Coal Mine must not be allowed to proceed. I and many others do not approve of this development proposal currently on public exhibition under Part 3A because of the huge cost to the environment. The removal of native vegetation will impact significantly on biodiversity, habitat for our native animals, threatened animal species, the destruction of large tracts of native vegetation in an area already heavily cleared generally, impact on groundwater and the diversion of surface water and a negative impact on the amenity of the area for the community of Maules Creek.

IP Address:
Submission: Online Submission from I
https://majorprojects.affinitylive.com/?action=view_diary&id=20709

Submission for Job: #4142
https://majorprojects.affinitylive.com/?action=view_job&id=4142

Site: #2307 Maules Creek Coal Mine
https://majorprojects.affinitylive.com/?action=view_site&id=2307

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Stephen O'Donoghue - Submission Details for Gareth Thomas

From: Gareth Thomas <gthoma24@scu.edu.au>
To: <stephen.o'donoghue@planning.nsw.gov.au>
Date: Monday, 26 September 2011 1:31 PM
Subject: Submission Details for Gareth Thomas
CC: <assessments@planning.nsw.gov.au>



Disclosable Political Donation: no

Name: Gareth Thomas
Email: gthoma24@scu.edu.au

Address:
117 great western hwy

Mt victoria, NSW
2786

Content:
I am unhappy with the environmental impacts of this project. I believe that mining projects like this should never be approved. I am particularly concerned about clearing native forest and disturbing the water table.

IP Address: - 192.148.117.91
Submission: Online Submission from Gareth Thomas (object)
https://majorprojects.affinitylive.com/?action=view_diary&id=20641

Submission for Job: #4142
https://majorprojects.affinitylive.com/?action=view_job&id=4142

Site: #2307 Maules Creek Coal Mine< br />https://majorprojects.affinitylive.com/?action=view_site&id=2307

Gareth Thomas

E : gthoma24@scu.edu.au

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Stephen O'Donoghue - Submission Details for

From:

To: <stephen.o'donoghue@planning.nsw.gov.au>

Date: Tuesday, 27 September 2011 7:27 PM

Subject: Submission Details for c

CC: <assessments@planning.nsw.gov.au>



Disclosable Political Donation: no

Name:

Email:

Address:

Content:

I do not believe it is right to mine this area as it will contribute to the destruction of the largest remnant of vegetation left on the heavily cleared Liverpool Plains.

IP Address:

Submission: Online

https://majorprojects.affinitylive.com/assessment-view_detail?id=20711

Submission for Job: #4142

https://majorprojects.affinitylive.com/?action=view_job&id=4142

Site: #2307 Maules Creek Coal Mine

https://majorprojects.affinitylive.com/?action=view_site&id=2307

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Stephen O'Donoghue - Submission Details for M

From:

To: <stephen.o'donoghue@planning.nsw.gov.au>

Date: Tuesday, 27 September 2011 8:11 PM

Subject: Submission Details for

CC: <assessments@planning.nsw.gov.au>



Disclosable Political Donation: no

Name:

Organisation:

Email: r

Address:

K

Content:

I am strongly opposed to the development of a further coalmine in the remnant forest on the edge of the Liverpool Plains.

My opposition is founded in part due to the significant direct environmental negatives associated with this project, (destruction of woodlands, impact on aquifers, threats to endangered species 'Painted Honeyeater and Turquoise Parrot).

In addition to all of this I am appalled at the intention to further add to the greenhouse gas problems we have, through the mining operations themselves and the burning of the harvested coal.

Please reject this proposal and instead put some energy into supporting the renewable energy industries that are poised to grow rapidly and add to the employment opportunities in our state.

Regards

IP Address: -

Submission: Online Submission from

https://majorprojects.affinitylive.com/?action=view_site&id=2307

Submission for Job: #4142

https://majorprojects.affinitylive.com/?action=view_job&id=4142

Site: #2307 Maules Creek Coal Mine

https://majorprojects.affinitylive.com/?action=view_site&id=2307

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Stephen O'Donoghue - Submission Details for ruth sykes of private citizen

From: ruth sykes <ruthsykes@shoalhaven.net.au>
To: <stephen.o'donoghue@planning.nsw.gov.au>
Date: Tuesday, 27 September 2011 8:23 PM
Subject: Submission Details for ruth sykes of private citizen
CC: <assessments@planning.nsw.gov.au>



Disclosable Political Donation: no

Name: ruth sykes
Organisation: private citizen ()
Email: ruthsykes@shoalhaven.net.au

Address:
25 Birriley St

Bomaderry, NSW
2541

Content:
I am very concerned about the degradation of the land by this planned coal mine. I make a plea to the planning department to refuse this request. It may bring short term wealth but Australia and especially the local community of Maules Creek will be impoverished and the burning of this fossil fuel will increase pollution and the possible climate change aftermath with it.
I request that the planning body consider long term effects and not just short term monetary gain.

IP Address: apollo.shoalhaven.net.au - 202.139.20.24
Submission: Online Submission from ruth sykes of private citizen (comments)
https://majorprojects.affinitylive.com/?action=view_diary&id=20715

Submission for Job: #4142
https://majorprojects.affinitylive.com/?action=view_job&id=4142

Site: #2307 Maules Creek Coal Mine
https://majorprojects.affinitylive.com/?action=view_site&id=2307

ruth sykes

E : ruthsykes@shoalhaven.net.au

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Stephen O'Donoghue - Submission Details for /

From:  
To: <stephen.o'donoghue@planning.nsw.gov.au>
Date: Tuesday, 27 September 2011 8:47 PM
Subject: Submission Details for ..
CC: <assessments@planning.nsw.gov.au>



Disclosable Political Donation: no

Name: ..
Email: ..

Address:
.....

3102

Content:

In this day and age where climate change is a scientifically established fact - it is incredible that the development of a new coal mine would even be considered in Australia.

The fact that this mine is to be established in native bush makes it even more destructive to the environment.

I strongly object to this development.

IP Address:

Submission: Online Submission in

https://majorprojects.affinitylive.com/#action=view_site&id=20717

Submission for Job: #4142

https://majorprojects.affinitylive.com/?action=view_job&id=4142

Site: #2307 Maules Creek Coal Mine

https://majorprojects.affinitylive.com/?action=view_site&id=2307

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Stephen O'Donoghue - Submission Details fo

From: I
To: <stephen.odonoghue@planning.nsw.gov.au>
Date: Tuesday, 27 September 2011 9:06 PM
Subject: Submission Details fo
CC: <assessments@planning.nsw.gov.au>



Disclosable Political Donation: no

Name: I
Email:

Address:

Content:
Hello,

We already have too much CO2 in the atmosphere, why would we clear more forest for the purpose of digging up more coal which would get burn to produce more CO2?

Wouldn't it be more sensible to leave the coal in the ground and work on consumption reduction and alternatives instead.

Future generations will have to live or die by the choices we make today.

Letting this project go ahead will make a few people a lot of money while creating havoc in the name of greed and wasteful consumption.

Letting this go ahead is like taking a large loan at very high interest rates, i.e. you get something now, but it's almost impossible to cope with the long term repayments.

IP Address: I
Submission ID: Online Submission from I
<https://majorprojects.affinitylive.com/?id=4142>

Submission for Job: #4142
https://majorprojects.affinitylive.com/?action=view_job&id=4142

Site: #2307 Maules Creek Coal Mine
https://majorprojects.affinitylive.com/?action=view_site&id=2307

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Stephen O'Donoghue - Submission Details for Naomi Groothoff

From: Naomi Groothoff <naomig333@hotmail.com>
To: <stephen.o'donoghue@planning.nsw.gov.au>
Date: Tuesday, 27 September 2011 9:37 PM
Subject: Submission Details for Naomi Groothoff
CC: <assessments@planning.nsw.gov.au>



Disclosable Political Donation: no

Name: Naomi Groothoff
Email: naomig333@hotmail.com

Address:
Carthago Court 36/62 Beane St

Gosford, NSW
2250

Content:
I object to this development & strongly oppose it. I'm appalled to think of beautiful endangered trees being wasted & threatened animal species being at risk; I support alternative means of energy that don't involve destroying our glorious & pristine environment

IP Address: c-59-101-92-25.syd.connect.net.au - 59.101.92.25
Submission: Online Submission from Naomi Groothoff (comments)
https://majorprojects.affinitylive.com/?action=view_diary&id=20723

Submission for Job: #4142
https://majorprojects.affinitylive.com/?action=view_job&id=4142

Site: #2307 Maules Creek Coal Mine
https://majorprojects.affinitylive.com/?action=view_site&id=2307

Naomi Groothoff

E : naomig333@hotmail.com

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Stephen O'Donoghue - Submission Details for Peggy Fisher

From: Peggy Fisher <pegfisher@hotmail.com>
To: <stephen.o'donoghue@planning.nsw.gov.au>
Date: Tuesday, 27 September 2011 10:32 PM
Subject: Submission Details for Peggy Fisher
CC: <assessments@planning.nsw.gov.au>



Disclosable Political Donation: no

Name: Peggy Fisher
Email: pegfisher@hotmail.com

Address:
3 Adair Pl

Killara, NSW
2071

Content:

I strongly object to the continued degradation of our forest and surface land to dig up yet more coal. This is a state forest, home to animals trees and birds, many on the endangered list.

Billions is being spent on ways to sequester carbon. this carbon is safely in the ground. We do not want it dug up to pollute our atmosphere, do irreparable damage to the landscape, bulldoze even more trees and animal habitat.

No, No No

IP Address: c220-239-113-209.belrs4.nsw.optusnet.com.au - 220.239.113.209
Submission: Online Submission from Peggy Fisher (object)
https://majorprojects.affinitylive.com/?action=view_w_diary&id=20725

Submission for Job: #4142
https://majorprojects.affinitylive.com/?action=view_job&id=4142

Site: #2307 Maules Creek Coal Mine
https://majorprojects.affinitylive.com/?action=view_site&id=2307

Peggy Fisher

E : pegfisher@hotmail.com

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Stephen O'Donoghue - Submission Details for Chris Lee of Consultant

From: Chris Lee <bushbreaks@gmail.com>
To: <stephen.o'donoghue@planning.nsw.gov.au>
Date: Wednesday, 28 September 2011 12:52 AM
Subject: Submission Details for Chris Lee of Consultant
CC: <assessments@planning.nsw.gov.au>



Disclosable Political Donation: no

Name: Chris Lee
Organisation: Consultant ()
Email: bushbreaks@gmail.com

Address:
7/17 Lang Street

Mosman, NSW
2088

Content:

I strongly oppose this development. I agree that we must continue to produce coal for some years while we adjust our economy, but the environmental impact should be fully considered and the long term costs and benefits fully evaluated. I don't accept that the environmental and social cost of this development will be adequately reflected in the taxes paid, nor that the taxes which are paid will be appropriately invested in our renewable energy future. This is not a sensible proposition for present and future generations if the true costs are assessed. It should not be allowed.

IP Address: - 91.224.27.228

Submission: Online Submission from Chris Lee of Consultant (object)
https://majorprojects.affinitylive.com/?action=view_diary&id=20727

Submission for Job: #4142
https://majorprojects.affinitylive.com/?action=view_job&id=4142

Site: #2307 Maules Creek Coal Mine
https://majorprojects.affinitylive.com/?action=view_site&id=2307

Chris Lee

E : bushbreaks@gmail.com

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Stephen O'Donoghue - Submission Details for Valerie Faber

From: Valerie Faber <gallerybodalla@gmail.com>
To: <stephen.o'donoghue@planning.nsw.gov.au>
Date: Wednesday, 28 September 2011 8:17 AM
Subject: Submission Details for Valerie Faber
CC: <assessments@planning.nsw.gov.au>



Disclosable Political Donation: no

Name: Valerie Faber
 Email: gallerybodalla@gmail.com

Address:
 66a Princes Hwy

Bodalla, NSW
 2545

Content:

I am against the Maules Creek Coal Mine development and do not want it to go ahead. I believe it should be rejected because it will be clearing one of the best remaining stands of an endangered ecosystem to cart away 13 million tonnes of coal per year for export.

My objection is based on the following:

1. It will clear a total of 1,665 hectares of native bush, taking the total clearing in the Leard Forest to over 3,500 hectares.
2. It will clear 545 hectares of the White Box Grassy Woodland endangered community, taking the total clearing of endangered communities in Leard Forest to over 1,169 hectares.
3. Will impact on habitat for up to 36 threatened species which are known or likely to occur in Leard State Forest, including Painted Honeyeater, Koala, Turquoise Parrot and Eastern Cave Bat.
4. Will contribute to the destruction of the largest remnant of vegetation left on the heavily cleared Liverpool Plains.
5. Result in a final pit depth of 320m that will cause massive depressurisation of the water table and impact on springs and unique groundwater dependent ecosystems.
6. Result in a final void that will permanently deplete groundwater, interfere with aquifers and divert surface water.
7. Make an enormous contribution to global warming amounting to at least 25 million tonnes of greenhouse gas emissions per annum from burning the coal that is produced. This is equivalent to more than 15% of all emissions from NSW annually.
- 8 And forever change the quiet rural community of Maules Creek into a giant industrial zone with impacts on health, air quality, noise and amenity.

Please do not approve this mine.

IP Address: cpe-121-213-20-20.lns1.clt.bigpond.net.au - 121.213.20.20

Submission: Online Submission from Valerie Faber (object)

https://majorprojects.affinitylive.com/?action=view_diary&id=20731

Submission for Job: #4142

https://majorprojects.affinitylive.com/?action=view_job&id=4142

Site: #2307 Maules Creek Coal Mine

https://majorprojects.affinitylive.com/?action=view_site&id=2307

Valerie Faber

E : gallerybodalla@gmail.com

Stephen O'Donoghue - Submission Details for Ali Barrett

From: Ali Barrett <ali_barrett@hotmail.com>
To: <stephen.o'donoghue@planning.nsw.gov.au>
Date: Wednesday, 28 September 2011 8:26 AM
Subject: Submission Details for Ali Barrett
CC: <assessments@planning.nsw.gov.au>



Disclosable Political Donation: no

Name: Ali Barrett
Email: ali_barrett@hotmail.com

Address:
1000 Kaputar Road

Narrabri, NSW
2390

Content:
The Mails Creek coal mine project by Aston should not go ahead. As an Australian citizen I am appalled by our countries high green house gas emissions. Per person Australians are responsible for the highest GHG emissions in the world, not a title we should be aiming to add to. We have the technology to replace coal with renewables and we dont have to cut down entire forests and destroy ecosystems to do so!!

IP Address: nimmo-37.its.uow.edu.au - 130.130.37.13
Submission: Online Submission from Ali Barrett (object)
https://majorprojects.affinitylive.com/?action=view_diary&id=20733
< br />Submission for Job: #4142
https://majorprojects.affinitylive.com/?action=view_job&id=4142

Site: #2307 Maules Creek Coal Mine
https://majorprojects.affinitylive.com/?action=view_site&id=2307

Ali Barrett

E : ali_barrett@hotmail.com

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Stephen O'Donoghue - Submission Details for Kerri Browne

From: Kerri Browne <kerri@kjb.id.au>
To: <stephen.o'donoghue@planning.nsw.gov.au>
Date: Monday, 26 September 2011 1:51 PM
Subject: Submission Details for Kerri Browne
CC: <assessments@planning.nsw.gov.au>



Disclosable Political Donation: no

Name: Kerri Browne
Email: kerri@kjb.id.au

Address:
PO Box 5

Deepwater, NSW
2371

Content:

I am seriously concerned about the effects this proposed mine will have on groundwater, the local forest ecosystem and the local community. I am also concerned about the effects on our carbon output from mining, transporting and burning such a huge tonnage of coal. I object to this proposal and it should never be approved.

IP Address: - 58.171.233.41
Submission: Online Submission from Kerri Browne (object)
https://majorprojects.affinitylive.com/?action=view_diary&id=20645

Submission for Job: #4142
https://majorprojects.affinitylive.com/?action=view_job&id=4142

Site: #2307 Maules Creek Coal Mine
https://majorprojects.affinitylive.com/?action=view_site&id=2307

Kerri Browne

E : kerri@kjb.id.au

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Stephen O'Donoghue - 1

From: [redacted]
To: <stephen.odonoghue@planning.nsw.gov.au>
Date: Wednesday, 28 September 2011 9:28 AM
Subject: Submission Details for [redacted]
CC: <assessments@planning.nsw.gov.au>



Disclosable Political Donation: no

Name: [redacted]
Email: [redacted]

Address: [redacted]

Content:
I do not agree with the Maules Creek Coal Project!
Please to not go ahead with this scheme polluting our air, destroying our future...there are other ways of living how we live.

IP Address: 1
Submission: Online Submission from [redacted]
https://majorprojects.affinitylive.com/?action=view_diary&id=20755

Submission for Job: #4142
https://majorprojects.affinitylive.com/?action=view_job&id=4142

Site: #2307 Maules Creek Coal Mine
https://majorprojects.affinitylive.com/?action=view_site&id=2307

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Stephen O'Donoghue - Submission Details for William Vorobioff of Transition Newcastle

From: William Vorobioff <wvorobioff@optusnet.com.au>
To: <stephen.o'donoghue@planning.nsw.gov.au>
Date: Wednesday, 28 September 2011 10:57 AM
Subject: Submission Details for William Vorobioff of Transition Newcastle
CC: <assessments@planning.nsw.gov.au>



Disclosable Political Donation: no

Name: William Vorobioff
 Organisation: Transition Newcastle (Member)
 Email: wvorobioff@optusnet.com.au

Address:
 8 Bridge Street

waratah, NSW
 2298

Content:

If the following is true, this development should be rejected. When looking at cost-benefit, we have to ask - who is this benefitting? What is the cost to the environment, us, and other species. We live in an age that the quadruple bottom line must become part of the equation. No longer is it morally or ethically right to pretend ignorance of the impact that our developments on the Earth we rely on, and approve developments on the basis of dollar value only.

The Maules Creek Coal Mine will:

Clear a total of 1,665 hectares of native bush, taking the total clearing in the Leard Forest to over 3,500 hectares.
 Clear 545 hectares of the White Box Grass Woodland endangered community, taking the total clearing of endangered communities in Leard Forest to over 1,169 hectares.
 Impact on habitat for up to 36 threatened species which are known or likely to occur in Leard State Forest, including Painted Honeyeater, Koala, Turquoise Parrot and Eastern Cave Bat.
 Contribute to the destruction of the largest remnant of vegetation left on the heavily cleared Liverpool Plains.
 Result in a final pit depth of 320m that will cause massive depressurisation of the water table and impact on springs and unique groundwater dependent ecosystems.
 Result in a final void that will permanently deplete groundwater, interfere with aquifers and divert surface water.
 Make an enormous contribution to global warming amounting to at least 25 million tonnes of greenhouse gas emissions per annum from burning the coal that is produced. This is equivalent to more than 15% of all emissions from NSW annually.
 Forever change the quiet rural community of Maules Creek into a giant industrial zone with impacts on health, air quality, noise and amenity.

IP Address: d58-107-112-130.sbr26.nsw.optusnet.com.au - 58.107.112.130
 Submission: Online Submission from William Vorobioff of Transition Newcastle (object)
https://majorprojects.affinitylive.com/?action=view_diary&id=20740

Submission for Job: #4142
https://majorprojects.affinitylive.com/?action=view_job&id=4142

Site: #2307 Maules Creek Coal Mine
https://majorprojects.affinitylive.com/?action=view_site&id=2307

William Vorobioff

E : wvorobioff@optusnet.com.au

Stephen O'Donoghue - Submission Details for Jan Brennan

From: Jan Brennan <Quondong59@gmail.com>
To: <stephen.o'donoghue@planning.nsw.gov.au>
Date: Wednesday, 28 September 2011 11:08 AM
Subject: Submission Details for Jan Brennan
CC: <assessments@planning.nsw.gov.au>



Disclosable Political Donation: no

Name: Jan Brennan
Email: Quondong59@gmail.com

Address:
PO Box 9055

Larnook, NSW
2480

Content:
The short Sighted nature of this project is hard to believe. Water and food security is what a government that is focused on the interests of the people they represent should have as highest priority. This project puts both these at risk. There are alternative creditable plans. Follow up on these plans.

IP Address: cpe-124-177-118-20.lns5.wo. bigpond.net.au - 124.177.118.20
Submission: Online Submission from Jan Brennan (object)
https://majorprojects.affinitylive.com/?action=view_diary&id=20742

Submission for Job: #4142
https://majorprojects.affinitylive.com/?action=view_job&id=4142

Site: #2307 Maules Creek Coal Mine
https://majorprojects.affinitylive.com/?action=view_site&id=2307

Jan Brennan

E : Quondong59@gmail.com

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Stephen O'Donoghue - Submission Details for Alison Cleary

From: Alison Cleary <rainbowquilt@gmail.com>
To: <stephen.o'donoghue@planning.nsw.gov.au>
Date: Wednesday, 28 September 2011 5:56 PM
Subject: Submission Details for Alison Cleary
CC: <assessments@planning.nsw.gov.au>



Disclosable Political Donation: no

Name: Alison Cleary
Email: rainbowquilt@gmail.com

Address:
9 Dodds Street

Redhead, NSW
2290

Content:
Please don't approve this development. I am appalled that such a environmentally destructive development could be considered for a State Forest. Don't destroy our forests!

IP Address: 202.63.33.239.static.rev.aanet.com.au - 202.63.33.239
Submission: Online Submission from Alison Cleary (object)
https://majorprojects.affinitylive.com/?action=view_diary&id=20764

Submission for Job: #4142
https://majorprojects.affinitylive.com/?action=view_job&id=4142

Site: #2307 Maules Creek Coal Mine
https://majorprojects.affinitylive.com/?action=view_site&id=2307

Alison Cleary

E : rainbowquilt@gmail.com

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Stephen O'Donoghue - Submission Details for Richard Weller of private

From: Richard Weller <richard.weller@cardno.com.au>
To: <stephen.odonoghue@planning.nsw.gov.au>
Date: Wednesday, 28 September 2011 7:33 PM
Subject: Submission Details for Richard Weller of private
CC: <assessments@planning.nsw.gov.au>



Disclosable Political Donation: no

Name: Richard Weller
Organisation: private ()
Email: richard.weller@cardno.com.au

Address:
14 Silvesters Road

SOMERSBY, NSW
2250

Content:
This is appalling. This mine represents the equivalent of 15% of NSW annual carbon emissions for as long as the mine operates.

Given that we are tasked with the job of reducing our emissions urgently, how can such a mine be approved. Don't we already have enough mines?

If mines such as these are approved when we know what will happen to the worlds climate, it would be an act of sabotage for our descendants.

IP Address: - 61.88.20.56
Submission: Online Submission from Richard Weller of private (object)
https://majorprojects.affinitylive.com/?action=view_diary&id=20770

Submission for Job: #4142
https://majorprojects.affinitylive.com/?action=view_job&id=4142

Site: #2307 Maules Creek Coal Mine
https://majorprojects.affinitylive.com/?action=view_site&id=2307

Richard Weller

E : richard.weller@cardno.com.au

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Stephen O'Donoghue - Submission Details for Stephen Albury of Rivers SOS

From: Stephen Albury <saorb@skymesh.com.au>
To: <stephen.o'donoghue@planning.nsw.gov.au>
Date: Wednesday, 28 September 2011 7:38 PM
Subject: Submission Details for Stephen Albury of Rivers SOS
CC: <assessments@planning.nsw.gov.au>



Disclosable Political Donation: no

Name: Stephen Albury
Organisation: Rivers SOS (Member)
Email: saorb@skymesh.com.au

Address:
151 Forest Glenn Road

Limeburners Creek, NSW
2324

Content:

As a resident of Australia I strongly object to the proposed Maules Creek Mine. To clear 1665Ha of native vegetation is a crime especially when it lies within a State Forest. This area contains 36 threatened species whose habitat will be severely destroyed. By approving this project your Dept. will be helping to add to the production of greenhouse gases. We must stop stealing our next generations resources for our own gain. If we just keep on digging these holes the contents of which cannot be replaced we continue to be short to medium focused. This project must not be approved.

IP Address: - 180.181.30.112

Submission: Online Submission from Stephen Albury of Rivers SOS (object)
https://majorprojects.affinitylive.com/?action=view_diary&id=20772

Submission for Job: #4142
https://majorprojects.affinitylive.com/?action=view_job&id=4142

Site: #2307 Maules Creek Coal Mine
https://majorprojects.affinitylive.com/?action=view_site&id=2307

Stephen Albury

E : saorb@skymesh.com.au

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Stephen O'Donoghue - Submission Details for Tim Scrace

From: Tim Scrace <timsgrace@hotmail.com>
To: <stephen.o'donoghue@planning.nsw.gov.au>
Date: Wednesday, 28 September 2011 7:59 PM
Subject: Submission Details for Tim Scrace
CC: <assessments@planning.nsw.gov.au>



Disclosable Political Donation: no

Name: Tim Scrace
Email: timsgrace@hotmail.com

Address:
7 Massie St

Cooma, NSW
2630

Content:

I wish to register my objection to this development in its entirety. My primary objection is that this mine will involve the clearing of over 1500ha of native woodland in what is/was the largest remnant of native woodland left on the Liverpool Plain.

This clearing includes the clearing of over 500ha of 'Grassy White-Box woodland', an endangered ecological community. It also is habitat for several listed species under the TSC Act including the Turquoise Parrot, Painted Honey-eater and Eastern Cave Bat.

The impacts of this massive open-cut mine on the local water table and aquifer are also unclear. In an era of greater uncertainty of water supply, this issue should be clarified before any development is allowed. < br />
I also object to this development given it will contribute to appoxamately 25 million tonnes of CO2e annually. This seems ridiculous when there needs to be a substantial reduction in carbon emissions globally.

I thank you for this opportunity to comment.

IP Address: cpe-124-184-99-22.lns14.clt.bigpond.net.au - 124.184.99.22
Submission: Online Submission from Tim Scrace (object)
https://majorprojects.affinitylive.com/?action=view_diary&id=20776

Submission for Job: #4142
https://majorprojects.affinitylive.com/?action=view_job&id=4142

Site: #2307 Maules Creek Coal Mine
https://majorprojects.affinitylive.com/?action=view_site&id=2307

Tim Scrace

E : timsgrace@hotmail.com

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Stephen O'Donoghue - Submission Details for

From:

To: <stephen.o'donoghue@planning.nsw.gov.au>

Date: Wednesday, 28 September 2011 8:23 PM

Subject: Submission Details for ...

CC: <assessments@planning.nsw.gov.au>



Disclosable Political Donation: no

Name: ...

Email: ...

Address: ...

...

...

Content:

I am apposed to this mine to go ahead.

It is time to stop mining for minings sake.

I do not agree with the destruction of the environment for mining that we do not actually need.

IP Address: ...

Submission: Online Submission from ...

https://majorprojects.affinitylive.com/?action=view_diary&id=20780

Submission for Job: #4142

https://majorprojects.affinitylive.com/?action=view_job&id=4142

Site: #2307 Maules Creek Coal Mine

https://majorprojects.affinitylive.com/?action=view_site&id=2307

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Stephen O'Donoghue - Submission Details for Michael Rynn

From: Michael Rynn <michaelrynn@optusnet.com.au>
To: <stephen.o'donoghue@planning.nsw.gov.au>
Date: Wednesday, 28 September 2011 8:25 PM
Subject: Submission Details for Michael Rynn
CC: <assessments@planning.nsw.gov.au>



Disclosable Political Donation: no

Name: Michael Rynn
 Email: michaelrynn@optusnet.com.au

Address:
 500 Guildford Rd

Guildford, NSW
 2161

Content:

The Maules Creek Coal Mine commits the people of NSW to another 20 years of shameful environmental destruction, at a time of global climate emergency, and global species extinction.

The NSW government is hiding from its global and local environmental responsibilities. By serving the short term profit interests of the coal industry, it is in effect acting for agents of climate change denial.

Increase carbon emissions from land clearing. Increased carbon emissions from energy cost of infrastructure creation, mining and transport of coal. The Coal will be burned, mainly after export, mainly for the benefit of foreign owners and foreign nations, and will add 25 million tonnes per annum of global greenhouse gas emissions. Over twenty years, 500 million tonnes.

This open cut mine will cause permanent habitat and soil loss, through destruction of native bush, reducing the viability of many endangered species.

It will create a massive deep hole in the ground, affecting water table and aquifer flows.

It will destroy the health and integrity of the landscape and community around Maules Creek.

NSW has no need of new coal mines, nor new coal power stations.

This proposed mine is a plan to commit global environmental crime.

IP Address: c122-107-68-47.blktn5.nsw.optusnet.com.au - 122.107.68.47

Submission: Online Submission from Michael Rynn (object)

https://majorprojects.affinitylive.com/?action=view_diary&id=20782

Submission for Job: #4142

https://majorprojects.affinitylive.com/?action=view_job&id=4142

Site: #2307 Maules Creek Coal Mine

https://majorprojects.affinitylive.com/?action=view_site&id=2307

Michael Rynn

E : michaelrynn@optusnet.com.au

Stephen O'Donoghue - Submission Details for Michael Rynn

From: Michael Rynn <michaelrynn@optusnet.com.au>
To: <stephen.o'donoghue@planning.nsw.gov.au>
Date: Wednesday, 28 September 2011 8:53 PM
Subject: Submission Details for Michael Rynn
CC: <assessments@planning.nsw.gov.au>



Disclosable Political Donation: no

Name: Michael Rynn
 Email: michaelrynn@optusnet.com.au

Address:
 500 Guildford Rd

Guildford, NSW
 2161

Content:

The Maules Creek Coal Mine commits the people of NSW to another 20 years of shameful environmental destruction, at a time of global climate emergency, and global species extinction.

The NSW government is hiding from its global and local environmental responsibilities. By serving the short term profit interests of the coal industry, it is in effect acting for agents of climate change denial.

Increase carbon emissions from land clearing. Increased carbon emissions from energy cost of infrastructure creation, mining and transport of coal. The Coal will be burned, mainly after export, mainly for the benefit of foreign owners and foreign nations, and will add 25 million tonnes per annum of global greenhouse gas emissions. Over twenty years, 500 million tonnes.

This open cut mine will cause permanent habitat and soil loss, through destruction of native bush, reducing the viability of many endangered species.

It will create a massive deep hole in the ground, affecting water table and aquifer flows.

It will destroy the health and integrity of the landscape and community around Maules Creek.

NSW has no need of new coal mines, nor new coal power stations.

This proposed mine is a plan to commit global environmental crime. The NSW government environment approval processes is seriously corrupt if this project is approved.

IP Address: c122-107-68-47.blktn5.nsw.optusnet.com.au - 122.107.68.47

Submission: Online Submission from Michael Rynn (object)
https://majorprojects.affinitylive.com/?action=view_diary&id=20786

Submission for Job: #4142
https://majorprojects.affinitylive.com/?action=view_job&id=4142

Site: #2307 Maules Creek Coal Mine
https://majorprojects.affinitylive.com/?action=view_site&id=2307

Michael Rynn

E : michaelrynn@optusnet.com.au

Stephen O'Donoghue - Submission Details for Alison Potter

From: Alison Potter <a.potter@iinet.net.au>
To: <stephen.o'donoghue@planning.nsw.gov.au>
Date: Wednesday, 28 September 2011 8:39 PM
Subject: Submission Details for Alison Potter
CC: <assessments@planning.nsw.gov.au>



Disclosable Political Donation: no

Name: Alison Potter
Email: a.potter@iinet.net.au

Address:
31 Percy Street

Rozelle, NSW
2039

Content:
The Maules Creek coal mining project should be rejected on the grounds that coal is an outdated fuel source that is causing catastrophic and irreversible climate change and the mining and exporting of it is, in that regard, unjust and globally irresponsible.

The devastating effects of massive coal mines like Maules Creek will be seen for hundreds of years to come. Any short term economic gain for the local community will be insignificant in the face of the climate change it contributes to, and the local environmental damage it will create.

Sincerely

Alison Potter

IP Address: 124-149-123-12.dyn.iinet.net.au - 124.149.123.12
Submission: Online Submission from Alison Potter (object)
https://majorprojects.affinitylive.com/?action=view_diary&id=20784

Submission for Job: #4142
https://majorprojects.affinitylive.com/?action=view_job&id=4142

Site: #2307 Maules Creek Coal Mine
https://majorprojects.affinitylive.com/?action=view_site&id=2307

Alison Potter

E : a.potter@iinet.net.au

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Stephen O'Donoghue - Submission Details for

From:
To: <stephen.o'donoghue@planning.nsw.gov.au>
Date: Monday, 26 September 2011 1:54 PM
Subject:
CC: <assessments@planning.nsw.gov.au>



Disclosable Political Donation: no

Name:
Email:

Content:

This development should not be allowed to go ahead at all.
Clear a total of 1,665 hectares of native bush, taking the total clearing in the Leard Forest to over 3,500 hectares.
* Clear 545 hectares of the White Box Grassy Woodland endangered community, taking the total clearing of endangered communities in Leard Forest to over 1,169 hectares.
* Impact on habitat for up to 36 threatened species which are known or likely to occur in Leard State Forest, including Painted Honeyeater, Koala, Turquoise Parrot and Eastern Cave Bat.
* Contribute to the destruction of the largest remnant of vegetation left on the heavily cleared Liverpool Plains.
* Result in a final pit depth of 320m that will cause massive depressurisation of the water table and impact on springs and unique groundwater dependent ecosystems.
* Result in a final void that will permanently deplete groundwater, interfere with aquifers and divert surface water.
* Make an enormous contribution to global warming amounting to at least 25 million tonnes of greenhouse gas emissions per annum from burning the coal that is produced. This is equivalent to more than 15% of all emissions from NSW annually.
* Forever change the quiet rural community of Maules Creek into a giant industrial zone with impacts on health, air quality, noise and amenity.

IP Address:
Submission: Online
https://majorprojects.affinitylive.com/?action=view_diary&id=20647

Submission for Job: #4142
https://majorprojects.affinitylive.com/?action=view_job&id=4142

Site: #2307 Maules Creek Coal Mine
https://majorprojects.affinitylive.com/?action=view_site&id=2307

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Stephen O'Donoghue - Submission Details for Susie Russell

From: Susie Russell <susierussell2k8@gmail.com>
To: <stephen.o'donoghue@planning.nsw.gov.au>
Date: Wednesday, 28 September 2011 10:29 PM
Subject: Submission Details for Susie Russell
CC: <assessments@planning.nsw.gov.au>



Disclosable Political Donation: yes

Name: Susie Russell
 Email: susierussell2k8@gmail.com

Address:
 330 Glenwarrin Rd

Elands, NSW
 2429

Content:

i object to the approval of this development on the following grounds:

1. There has been no assessment of the greenhouse gases emitted as a result of burning the fossil fuels from Maules Creek. With atmospheric carbon dioxide levels already higher than any time in the last 650,000 years it is madness to be engaging in activities that will release millions more tonnes. The relationship between increased carbon dioxide in the atmosphere and increasing global temperatures is also clearly established. The continued burning of coal from expansion of the coal industry will see that temperature rise to the point where it will endanger the very future of life on this planet. This is a significant impact. It cannot be mitigated.
2. This mine will result in the clearing of almost 1700 hectares of native forest/woodland from an area where almost all of that landscape has already been completely cleared. No farmer would be allowed to clear this forest, particularly not the hundreds of hectares of Endangered Ecological Community. Why a separate set of rules for the mining industry? What happened to the level playing field?
3. This mine will use huge volumes of water. It will deplete groundwater and probably impact on the aquifers. The impacts of the mine on water have not been adequately addressed and can in no way be claimed as not significant.

IP Address: 212.77.233.220.static.exetel.com.au - 220.233.77.212

Submission: Online Submission from Susie Russell (object)

https://majorprojects.affinitylive.com/?action=view_diary&id=20788

Sub mission for Job: #4142

https://majorprojects.affinitylive.com/?action=view_job&id=4142

Site: #2307 Maules Creek Coal Mine

https://majorprojects.affinitylive.com/?action=view_site&id=2307

Susie Russell

E : susierussell2k8@gmail.com

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Stephen O'Donoghue - Submission Details for Meg Leathart

From: Meg Leathart <tibuc@aussiebroadband.com.au>
To: <stephen.o'donoghue@planning.nsw.gov.au>
Date: Thursday, 29 September 2011 10:08 AM
Subject: Submission Details for Meg Leathart
CC: <assessments@planning.nsw.gov.au>



Disclosable Political Donation: no

Name: Meg Leathart
 Email: tibuc@aussiebroadband.com.au

Address:
 Tibuc
 Timor Rd
 Coonabarabran, NSW
 2357

Content:

I strongly object to the proposed Maules Creek coal mine in Leard State Forest. This project will create a massive void in the landscape so deep it will be below sea level. How can this not affect the water table?

It will utterly destroy the ecological community on the surface which is one of the few remaining intact areas of grassy whitebox woodland, an endangered ecological community. No offset can balance out this loss. No rehabilitation can make up for the impact on the presently threatened species such as koalas, the Eastern Cave Bat and several bird species.

Water, soils, air and biodiversity will suffer if this proposal goes ahead. These earthly wonders are the reason why we have life on this planet. This proposal not only jeopardises life on these local public lands but also on this planet. This one mine will contribute to the equivalent of more than 15% of all greenhouse emissions from NSW annually. Global warming and its impacts will not be able to be solved by the relatively meagre amounts of money made by the state government from this project. This is so easy to see that the only conclusion that anyone can make from a proposal like this is that some people will be made very rich at the expense of future generations who will be left to clean up the mess. This is not the legacy I wish to leave.

IP Address: - 180.181.58.22
 Submission: Online Submission from Meg Leathart (object)
https://majorprojects.affinitylive.com/?action=view_diary&id=20799

Submission for Job: #4142
https://majorprojects.affinitylive.com/?action=view_job&id=4142

Site: #2307 Maules Creek Coal Mine
https://majorprojects.affinitylive.com/?action=view_site&id=2307

Meg Leathart

E : tibuc@aussiebroadband.com.au

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Stephen O'Donoghue - Submission Details for Megan Hitchens of State of NSW

From: Megan Hitchens <mmhitchens@yahoo.com.au>
To: <stephen.o'donoghue@planning.nsw.gov.au>
Date: Thursday, 29 September 2011 10:42 AM
Subject: Submission Details for Megan Hitchens of State of NSW
CC: <assessments@planning.nsw.gov.au>



Disclosable Political Donation: no

Name: Megan Hitchens
 Organisation: State of NSW (voter)
 Email: mmhitchens@yahoo.com.au

Address:
 155 Britannia Drive

Watanobbi, NSW
 2259

Content:

I am absolutely appalled that you are even considering this monster of a mine. Growth for growth's sake, profit over people. Profit over everything. I expect my government to act for the people of this state, not for mining companies that can provide only economic benefit to themselves and bribes into govt coffers (for what otherwise are mining royalties - a sop to ensure that their greedy desires are met).

This mine will contribute enormously to carbon emissions, when we are all urged to "do our bit" to reduce carbon footprints.

This mine will clear another 1,665 hectares of what is OUR State Forest, even though govt has seen fit to immorally privatise it.

This mine will create a hole 320m deep, interfering with ground water and surrounding ecosystems

Offsetting "negative impacts" is obscene. It is a license to do whatever damage a company likes, so long as it does "something nice" somewhere else. Fines for damage are laughable when compared to company profits, and the reaction of appropriate departments in the past (and currently) to other companies sends a clear message to Aston that it need not worry about its operations - the needs of people, communities, the environment are not worthy of consideration.

I implore you, do not approve this mine. For once, say no. For once, act for the people and for the state, not for mining interests, not for the promise of money for the sake of money, projections of jobs that do not exist, promise of reparations that will be inadequate. If reparations are needed or mooted, then the risk is too high.

Once this mine is approved and begun, it will be too late to undo it. History will look on this time and shake its head at the madness and greed that allowed so much to be destroyed in the name of profit, and supported by lies, bullying and govt support.

Please, say no.

IP Address: 220-245-53-48.static.tpgi.com.au - 220.245.53.48
 Submission: Online Submission from Megan Hitchens of State of NSW (object)
https://majorprojects.affinitylive.com/?action=view_diary&id=20801

Submission for Job: #4142
https://majorprojects.affinitylive.com/?action=view_job&id=4142

Site: #2307 Maules Creek Coal Mine
https://majorprojects.affinitylive.com/?action=view_site&id=2307

Megan Hitchens

E : mmhitchens@yahoo.com.au

Powered by [AffinityLive](#): Work. Smarter.

Stephen O'Donoghue - Submission Details for

From:

To: <stephen.o'donoghue@planning.nsw.gov.au>

Date: Thursday, 29 September 2011 10:52 AM

Subject: Submission Details for

CC: <assessments@planning.nsw.gov.au>



Disclosable Political Donation: no

Name: Stephen O'Donoghue

Email: stephen.o'donoghue@planning.nsw.gov.au

Address:

Content:

I strongly object to the approval for the Maules Creek mine. Continuing down the path of environmental destruction is not good for our economic or physical well-being. The Maules Creek Coal Mine will:

- * Clear a total of 1,665 hectares of native bush, taking the total clearing in the Leard Forest to over 3,500 hectares.
 - * Clear 545 hectares of the White Box Grassy Woodland endangered community, taking the total clearing of endangered communities in Leard Forest to over 1,169 hectares.
 - * Impact on habitat for up to 36 threatened species which are known or likely to occur in Leard State Forest, including Painted Honeyeater, Koala, Turquoise Parrot and Eastern Cave Bat.
 - * Contribute to the destruction of the largest remnant of vegetation left on the heavily cleared Liverpool Plains.
 - * Result in a final pit depth of 320m that will cause massive depressurisation of the water table and impact on springs and unique groundwater dependent ecosystems.
 - * Result in a final void that will permanently deplete groundwater, interfere with aquifers and divert surface water.
 - * Make an enormous contribution to global warming amounting to at least 25 million tonnes of greenhouse gas emissions per annum from burning the coal that is produced. This is equivalent to more than 15% of all emissions from NSW annually.
 - * Forever change the quiet rural community of Maules Creek into a giant industrial zone with impacts on health, air quality, noise and amenity.
- Stop being so short-sighted. Ban this mine completely.

IP Address:

Submission: Online Submission from S

https://majorprojects.affinitylive.com/?action=view_diary&id=20807

Submission for Job: #4142

https://majorprojects.affinitylive.com/?action=view_job&id=4142

Site: #2307 Maules Creek Coal Mine

https://majorprojects.affinitylive.com/?action=view_site&id=2307

E:

Powered by [AffinityLive](#): Work. Smarter.

Stephen O'Donoghue - Submission Details for Marcel van Regteren Altena

From: Marcel van Regteren Altena <m.v.r.altena@gmail.com>
To: <stephen.o'donoghue@planning.nsw.gov.au>
Date: Thursday, 29 September 2011 10:54 AM
Subject: Submission Details for Marcel van Regteren Altena
CC: <assessments@planning.nsw.gov.au>



Disclosable Political Donation: no

Name: Marcel van Regteren Altena
Email: m.v.r.altena@gmail.com

Address:
16 Peverill Street

Manning Park, NSW
2259

Content:

I strongly disagree with this project. We cannot allow endangered ecosystems such as these to be threatened once again by humans. The idea of clearing such pristine native forests and encompassed fauna - which will never be seen again - for overseas export, appals me! For a country that has introduced a carbon tax to reduce carbon, approving such a project would be a disgrace, and for what reason? Surely there are other ways to boost the economy, than to destroy beautiful locations such as the Leard State Forest and send carbon overseas only to further enhance the problem of climate change anyway? For one, the upcoming environmental sector is a great way to boost economics and protect the environment at the same time, is it not?

I strongly object to this project and it should not be approved. Should it be approved, I will be one among many who will stand for the environment, because that is what we are!

IP Address: - 121.212.2.254

Submission: Online Submission from Marcel van Regteren Altena (object)
https://majorprojects.affinitylive.com/?action=view_diary&id=20813

Submission for Job: #4142
https://majorprojects.affinitylive.com/?action=view_job&id=4142

Site: #2307 Maules Creek Coal Mine
https://majorprojects.affinitylive.com/?action=view_site&id=2307

Marcel van Regteren Altena

E : m.v.r.altena@gmail.com

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Stephen O'Donoghue - Submission Details for Justin McKee of The Blue Mountains Conservation Society

From: Justin McKee <justin.mckee@ethicalintegration.com>
To: <stephen.o'donoghue@planning.nsw.gov.au>
Date: Thursday, 29 September 2011 11:13 AM
Subject: Submission Details for Justin McKee of The Blue Mountains Conservation Society
CC: <assessments@planning.nsw.gov.au>



Disclosable Political Donation: no

Name: Justin McKee
 Organisation: The Blue Mountains Conservation Society (Campaigner)
 Email: justin.mckee@ethicalintegration.com

Address:
 P O Box 29

Wentworth Falls, NSW
 2782

Content:
 I strongly object to this proposal.

The proposal compromises the states commitment to Forest protection.

The Maules Creek Coal Mine will:

- * Clear a total of 1,665 hectares of native bush, taking the total clearing in the Leard Forest to over 3,500 hectares.
- * Clear 545 hectares of the White Box Grassy Woodland endangered community, taking the total clearing of endangered communities in Leard Forest to over 1,169 hectares.
- * Impact on habitat for up to 36 threatened species which are known or likely to occur in Leard State Forest, including Painted Honeyeater, Koala, Turquoise Parrot and Eastern Cave Bat.
- * Contribute to the destruction of the largest remnant of vegetation left on the heavily cleared Liverpool Plains.
- * Result in a final pit depth of 320m that will cause massive depressurisation of the water table and impact on springs and unique groundwater dependent ecosystems.
- * Result in a final void that will permanently deplete groundwater, interfere with aquifers and divert surface water.
- * Make an enormous contribution to global warming amounting to at least 25 million tonnes of greenhouse gas emissions per annum from burning the coal that is produced. This is equivalent to more than 15% of all emissions from NSW annually.
- * Forever change the quiet rural community of Maules Creek into a giant industrial zone with impacts on health, air quality, noise and amenity.

IP Address: 60-242-183-40.static.tpgi.com.au - 60.242.183.40
 Submission: Online Submission from Justin McKee of The Blue Mountains Conservation Society (object)
https://majorprojects.affinitylive.com/?action=view_diary&id=20821

Submission for Job: #4142
https://majorprojects.affinitylive.com/?action=view_job&id=4142

Site: #2307 Maules Creek Coal Mine
https://majorprojects.affinitylive.com/?action=view_site&id=2307

Justin McKee

E : justin.mckee@ethicalintegration.com

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Stephen O'Donoghue - Submission Details for Margaret Hilder of NA

From: Margaret Hilder <peigihilder@hotmail.com>
To: <stephen.o'donoghue@planning.nsw.gov.au>
Date: Thursday, 29 September 2011 11:52 AM
Subject: Submission Details for Margaret Hilder of NA
CC: <assessments@planning.nsw.gov.au>



Disclosable Political Donation: no

Name: Margaret Hilder
 Organisation: NA (NA)
 Email: peigihilder@hotmail.com

Address:
 90 Bonnie Blink Drive

Little Hartley, NSW
 2790

Content:

I want to register my strong objection to the development of the Maules Creek Coal Mine. I believe that this development is inappropriate for many reasons, including the following:

The Maules Creek Coal Mine will result in:

- * the clearing of valuable native bushland and forest, destroying habitats and impacting negatively on a large number of threatened species
- * destroying the largest remnant of vegetation left on the heavily cleared Liverpool Plain
- * creating an enormous pit 320 m deep that will cause massive depressurisation of the water table, impact on springs and unique groundwater dependent ecosystems, permanently deplete groundwater, interfere with aquifers and divert surface water
- * make an enormous contribution to global warming - at least 25 million tonnes of greenhouse gas emissions per annum from burning the coal that is produced - equivalent to MORE THAN 15% OF ALL EMISSIONS FROM NSW ANNUALLY.
- * forever change the quiet rural community of Maules Creek into a giant industrial zone with impacts on health, air quality, noise and general quality of life for the local community. Extra jobs will NOT compensate these people for this catastrophic change in their lives.

IP Address: cpe-121-217-30-239.lnse1.cht.bigpond.net.au - 121.217.30.239
 Submission: Online Submission from Margaret Hilder of NA (object)
https://majorprojects.affinitylive.com/?action=view_diary&id=20823

Submission for Job: #4142

https://majorprojects.affinitylive.com/?action=view_job&id=4142

Site: #2307 Maules Creek Coal Mine

https://majorprojects.affinitylive.com/?action=view_site&id=2307

Margaret Hilder

E : peigihilder@hotmail.com

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Stephen O'Donoghue - Submission Details for

From:

To: <stephen.o'donoghue@planning.nsw.gov.au>

Date: Thursday, 29 September 2011 1:34 PM

Subject: Submission Details for

CC: <assessments@planning.nsw.gov.au>



Same person
Confidential
Submission 1

Disclosable Political Donation: no

Name:

Organisation: Private (N/A)

Email:

Address:

.....

Content:

To whom it may concern,
NSW Government/Narrabri Shire Council,

I am writing to you today as an Australian voter & as an extremely concerned citizen to make it clear that I am strongly opposed to this development, I object to it, it should never be approved.

The massive open-cut Maules Creek Coal Mine involves clearing one of the best remaining stands of an endangered ecosystem. Such reckless destruction is nothing more than short term greed & is not in the best interests of the people of Australia & future generations.

The Maules Creek Coal Mine will:

- * Clear a total of 1,665 hectares of native bush, taking the total clearing in the Leard Forest to over 3,500 hectares.
- * Clear 545 hectares of the White Box Grassy Woodland endangered community, taking the total clearing of endangered communities in Leard Forest to over 1,169 hectares.
- * Impact on habitat for up to 36 threatened species which are known or likely to occur in Leard State Forest, including Painted Honeyeater, Koala, Turquoise Parrot and Eastern Cave Bat.
- * Contribute to the destruction of the largest remnant of vegetation left on the heavily cleared Liverpool Plains.
- * Result in a final pit depth of 320m that will cause massive depressurisation of the water table and impact on springs and unique groundwater dependent ecosystems.
- * Result in a final void that will permanently deplete groundwater, interfere with aquifers and divert surface water.
- * Make an enormous contribution to global warming amounting to at least 25 million tonnes of greenhouse gas emissions per annum from burning the coal that is produced. This is equivalent to more than 15% of all emissions from NSW annually.
- * Forever change the quiet rural community of Maules Creek into a giant industrial zone with impacts on health, air quality, noise and amenity.

Please stop putting greed & evil before life & good, walk away from this ecological disaster. We are sacrificing all that is good about this country, it's spirit, its unique irreplaceable fauna & flora, not to mention our own humanity.

Sincerely,

IP Address:

Submission: Or

https://majorprojects.affinitylive.com/?action=view_diary&id=20831

Submission for Job: #4142

https://majorprojects.affinitylive.com/?action=view_job&id=4142

Site: #2307 Maules Creek Coal Mine

https://majorprojects.affinitylive.com/?action=view_site&id=2307

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Stephen O'Donoghue - Submission Details for /

From:
To: <stephen.o'donoghue@planning.nsw.gov.au>
Date: Tuesday, 4 October 2011 12:03 AM
Subject: Submission Details for
CC: <assessments@planning.nsw.gov.au>



Same person
Confidential
Submission 2

Disclosable Political Donation: no

Name
Email: ✓

Address:

Content:
I object to this proposal in its entirety due to the unacceptable environmental impacts, subsequent greenhouse gas emissions & associated negative impacts on local communities & society in general.

IP Address: 1.
Submission: Online Submission from
https://majorprojects.affinitylive.com/?action=view_diary&id=20959

Submission for Job: #4142
https://majorprojects.affinitylive.com/?action=view_job&id=4142

Site: #2307 Mau les Creek Coal Mine
https://majorprojects.affinitylive.com/?action=view_site&id=2307

E

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Stephen O'Donoghue - Submission Details for Tifenn Bouillard

From: Tifenn Bouillard <tifenn.bouillard@gmail.com>
To: <stephen.o'donoghue@planning.nsw.gov.au>
Date: Thursday, 29 September 2011 2:37 PM
Subject: Submission Details for Tifenn Bouillard
CC: <assessments@planning.nsw.gov.au>



Disclosable Political Donation: no

Name: Tifenn Bouillard
Email: tifenn.bouillard@gmail.com

Address:
Camden St

Newtown, NSW
2042

Content:
Please don't approve this insane project which endangers plant and animal life, and also human health. Don' let economy destroy our Earth.

IP Address: 110-174-4-86.static.tpgi.com.au - 110.174.4.86
Submission: Online Submission from Tifenn Bouillard (object)
https://majorprojects.affinitylive.com/?action=view_diary&id=20840

Submission for Job: #4142
https://majorprojects.affinitylive.com/?action=view_job&id=4142

Site: #2307 Maules Creek Coal Mine
https://majorprojects.affinitylive.com/?action=view_site&id=2307

Tifenn Bouillard

E : tifenn.bouillard@gmail.com

Powered by [AffinityLive](#): Work. Smarter.

Stephen O'Donoghue - Submission Details for "

From: 
To: <stephen.o'donoghue@planning.nsw.gov.au>
Date: Thursday, 29 September 2011 4:40 PM
Subject: Submission Details for
CC: <assessments@planning.nsw.gov.au>



Same person
confidential
submission!

Disclosable Political Donation: no

Name: 
Email: 

Address: 


Content:

I strongly oppose the Maules Creek Coal Mine for the following reasons:
the Liverpool Plains are far too valuable as a food growing centre to have any mining, above or below ground - this is prime agricultural land and no assurances from the mining proponents will satisfy me that there will be no loss of arable land. Australia has an appalling record of finding out too late that clearing of land and mining impacts are not as fool proof as those hoping to make money out of such ventures state.

The final pit depth of 320 m will assuredly have a massive impact on the water table - it is beyond comprehension that any Government department can favour dollars in the short term over water and food for the nation they are governing in the near, and very long, term.

I suppose with so little regard for human life it is too much to expect that there should be any concern about loss of habitat and threatened animal or plant species.

What truly sad and frightening times we live in.

IP Address: 
Submission: Online Submission from
https://majorprojects.affinitylive.com/?action=view_dla&id=20850

Submission for Job: #4142
https://majorprojects.affinitylive.com/?action=view_job&id=4142

Site: #2307 Maules Creek Coal Mine
https://majorprojects.affinitylive.com/?action=view_site&id=2307


E

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Stephen O'Donoghue - Submission Details for

From: Stephen O'Donoghue
To: <stephen.o'donoghue@planning.nsw.gov.au>
Date: Friday, 30 September 2011 12:27 PM
Subject: Submission Details for Planning
CC: <assessments@planning.nsw.gov.au>



Same person
Confidential
Submission 2

Disclosable Political Donation: no

Name: Stephen O'Donoghue
Email: paul@odonoghue.com.au

Address:

1

2

Content:

I vehemently oppose the proposed Maules Creek Coal Mine. The environmental destruction which will result from a project of this nature are absolutely unacceptable.
The Liverpool Plains is a major food producing area for NSW- a mine of this size and depth will have adverse impact on the water table; the clearing of native vegetation and loss of habitat for threatened species likewise is totally unacceptable. I find it most alarming, and very sad, that short term profits can so outweigh all considerations of food and water for the natural environment and all humans and other life forms dependant on it.

IP Address: 192.168.1.1
Submission: Online Submission from
https://majorprojects.affinitylive.com/?action=view_site&id=2307

Submission for Job: #4142
https://majorprojects.affinitylive.com/?action=view_job&id=4142

Site: #2307 Maules Creek Coal Mine
https://majorprojects.affinitylive.com/?action=view_site&id=2307

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Stephen O'Donoghue - Submission Details for Kim Lauren Hollingsworth

From: Kim Lauren Hollingsworth <kim347@bigppond.com>
To: <stephen.o'donoghue@planning.nsw.gov.au>
Date: Monday, 26 September 2011 3:58 PM
Subject: Submission Details for Kim Lauren Hollingsworth
CC: <assessments@planning.nsw.gov.au>



Disclosable Political Donation: no

Name: Kim Lauren Hollingsworth
 Email: kim347@bigppond.com

Address:
 347 Rowlands Creek Road

Uki, NSW
 2484

Content:

Dear Sir/Madam,

There is no reasonable excuse for continuing to permit development of new coal mines. The planet is already suffering the impacts of devastating climate change, keeping our fossil fuel industries adding to our CO2 emissions will result in increased loss of biodiversity, (In this case impact on habitat for up to 36 threatened species which are known or likely to occur in Leard State Forest, including Painted Honeyeater, Koala, Turquoise Parrot and Eastern Cave Bat. This coal mine will clear a total of 1,665 hectares of native bush, taking the total clearing in the Leard Forest to over 3,500 hectares.

Clear 545 hectares of the White Box Grassy Woodland endangered community, taking the total clearing of endangered communities in Leard Forest to over 1,169 hectares.

The result of continuing to support/subsidize fossil fuel industries will be more extreme weather events, loss of our way of life and loss of human life itself. The cost will far outway any financial benefits in the long run, as the cost of climate change should be factored into these destructive polluting industries. I like many others want 100% renewable energy, not continued reliance on polluting fossil fuels. I know about 'Beyond Zero Emissions', 'Zero Carbon Australia Plan', Published by the Melbourne University, 100% renewable energy by 2020, using already proven technology.

Yours sincerely,

Ms. K. Hollingsworth

IP Address: cpe-124-176-111-212.lns6.ken.bigpond.net.au - 124.176.111.212

Submission: Online Submission from Kim Lauren Hollingsworth (object)

https://majorprojects.affinitylive.com/?action=view_diary&id=20653

Submission for Job: #4142

https://majorprojects.affinitylive.com/?action=view_job&id=4142

Site: #2307 Maules Creek Coal Mine

https://majorprojects.affinitylive.com/?action=view_site&id=2307

Kim Lauren Hollingsworth

E : kim347@bigppond.com

Stephen O'Donoghue - Submission Details for Judith Cooney

From: Judith Cooney <greenspot@westnet.com.au>
To: <stephen.o'donoghue@planning.nsw.gov.au>
Date: Thursday, 29 September 2011 5:32 PM
Subject: Submission Details for Judith Cooney
CC: <assessments@planning.nsw.gov.au>



Disclosable Political Donation: no

Name: Judith Cooney
Email: greenspot@westnet.com.au

Address:
17 Wiri Place

Hungry Head, NSW
2455

Content:

The proposal for the massive clearing of thousands of hectares of one of the best remaining stands of an endangered ecosystem to create a huge open cut coal mine is criminal. Effectively public land (State Forest) is being privatised to benefit a coal company and on an enormous scale.

Open cut mining is an anachronism and should have been banned years ago. It is obvious from the destruction of the land in the Pilbara and closer to home in the Hunter Valley that this type of mining cannot continue with its deleterious effects on the environment, agricultural land and aquifers. I am totally opposed to the proposed Maules Creek coal mine.

IP Address: 124-169-14-17.dyn.iinet.net.au - 124.169.14.17
Submission: Online Submission from Judith Cooney (object)
https://majorprojects.affinitylive.com/?action=view_diary&id=20855

Submission for Job: #4142
https://majorprojects.affinitylive.com/?action=view_job&id=4142

Site: #2307 Maules Creek Coal Mine
https://majorprojects.affinitylive.com/?action=view_site&id=2307

Judith Cooney

E : greenspot@westnet.com.au

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Stephen O'Donoghue - Submission Details for

From:

To: <stephen.o'donoghue@planning.nsw.gov.au>

Date: Thursday, 29 September 2011 10:41 PM

Subject: Submission Details for R

CC: <assessments@planning.nsw.gov.au>



Disclosable Political Donation: no

Name: .

Email: .

Address: .

Content:

Clear a total of 1,665 hectares of native bush, taking the total clearing in the Leard Forest to over 3,500 hectares.

Clear 545 hectares of the White Box Grassy Woodland endangered community, taking the total clearing of endangered communities in Leard Forest to over 1,169 hectares.

Impact on habitat for up to 36 threatened species which are known or likely to occur in Leard State Forest, including Painted Honeyeater, Koala, Turquoise Parrot and Eastern Cave Bat.

Contribute to the destruction of the largest remnant of vegetation left on the heavily cleared Liverpool Plains.

Result in a final pit depth of 320m that will cause massive depressurisation of the water table and impact on springs and unique groundwater dependent ecosystems.

Result in a final void that will permanently deplete groundwater, interfere with aquifers and divert surface water.

Make an enormous contribution to global warming amounting to at least 25 million tonnes of greenhouse gas emissions per annum from burning the coal that is produced. This is equivalent to more than 15% of all emissions from NSW annually.

Forever change the quiet rural community of Maules Creek into a giant industrial zone with impacts on health, air quality, noise and amenity.

IP Address:

Submission: Online Submission from

https://majorprojects.affinitylive.com/?action=view_diary&id=20864

Submission for Job: #4142

https://majorprojects.affinitylive.com/?action=view_job&id=4142

Site: #2307 Maules Creek Coal Mine

https://majorprojects.affinitylive.com/?action=view_site&id=2307

•
Name: *

Mr Mrs Ms Miss Dr

Title

James

First Name

Tedder

Last Name

Your details:

jtedder@exetel.com.au

Email *

Organisation

Position in organisation

Address: *

Pavans Access

Address 1

via Stuarts Point

Address 2

Grassy Head

Suburb

NSW QLD NT VIC TAS ACT WA

State

2441

Postcode

Submission: *

I object to the proposed mine

This coal mine proposal is going to result in the clearing of some 1660 h of woodlands which are some of the most threatened habitats in NSW. Included in this total are some 545 h of white box grassy woodland which is an endangered ecological community.

According to David Keith "Ocean Shores to Desert dunes" grassy woodlands have become one of the continent's most damaged and threatened ecosystems yet for the sake of a company which wishes to make large profits digging and selling coal Government is prepared to consider this mine. Also the habitat of threatened species some 30 in number will be destroyed.

We should not put at risk Australia's heritage for a transitory mine which will contribute more carbon dioxide into a world suffering an overload .

Surely the impact on ground water alone is enough to reject this proposed mine.

There are coal mines in less sensitive places which surely supply all the coal the world requires.

Your comments

I object to it

Your view on the application

File attachment 1

File attachment 2

File attachment 3

File attachment 4

File attachment 5

Donations: *

I have made a disclosable political donation

Yes

No

Stephen O'Donoghue - Submission Details for ' '

From:

To: <stephen.o'donoghue@planning.nsw.gov.au>

Date: Friday, 30 September 2011 10:45 AM

Subject: Submission Details for

CC: <assessments@planning.nsw.gov.au>



Disclosable Political Donation: no

Name: !

Email: n

Address:

Content:

I must say I appreciate this public consultation and hope it will be meaningful.
I strongly oppose the construction of this plant. First, because it makes appear the former State Forest status as a joke made in order to ease the public outcry only for a while. Secondly, because the landclearing required for the plant will obviously impact on one of the best remaining stands of an endangered ecosystem.
Thank you.

IP Address: 1

Submission: Online Submission from lv

https://majorprojects.affinitylive.com/?action=view_diary&id=20891

Submission for Job: #4142

https://majorprojects.affinitylive.com/?action=view_job&id=4142

Site: #2307 Maules Creek Coal Mine

https://majorprojects.affinitylive.com/?action=view_site&id=2307

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Stephen O'Donoghue - Submission Details for Daryl Morris

From: Daryl Morris <dazsm91-wilderness@yahoo.com.au>
To: <stephen.o'donoghue@planning.nsw.gov.au>
Date: Friday, 30 September 2011 10:55 AM
Subject: Submission Details for Daryl Morris
CC: <assessments@planning.nsw.gov.au>



Disclosable Political Donation: no

Name: Daryl Morris
 Email: dazsm91-wilderness@yahoo.com.au

Address:
 807 31-35 station st

Newtown, NSW
 2042

Content:

This proposed mine would destroy the area but also anything close to it and contribute to Global warming while many Governments talk about the threat of climate change they do little but token gestures confusing children who are are taught of the problem then see our elders doing the opposite which contributes to our children's anger and potential drug abuse. There is also the issue of water use age that I could not find in your proposal. There are some many more reasons for this proposed mine not to go ahead. Please I beg of you to take all the scientific evidence into account. Because Australia is holding the record for mammal extinction it appears to me we as a society has not learn't from previous failings.

I object to this mine

IP Address: 110-174-4-86.static.tpgi.com.au - 110.174.4.86
Submission: Online Submission from Daryl Morris (object)
https://majorprojects.affinitylive.com/?action=view_diary&id=20895

Submission for Job: #4142
https://majorprojects.affinitylive.com/?action=view_job&id=4142

Site: #2307 Maules Creek Coal Mine
https://majorprojects.affinitylive.com/?action=view_site&id=2307

Daryl Morris

E : dazsm91-wilderness@yahoo.com.au

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Stephen O'Donoghue - Maules Creek Coal Project - submission by email due to malfunction of web-site.

From: "Iain Fyfe" <iainf@iimetro.com.au>
To: <information@planning.nsw.gov.au>
Date: Saturday, 1 October 2011 9:19 PM
Subject: Maules Creek Coal Project - submission by email due to malfunction of web-site.

I have repeatedly tried to make a submission to your website at
http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=4142 Maules Creek Coal Project.

The security code access refuses to work, so I am emailing my submission.

Please acknowledge the receipt of this submission to my email or postal address below.

Mr Iain Fyfe
Email: iainf@iimetro.com.au

Address

Goose Green Farm
229 Marked Tree Rd
Gundaroo N SW 2620

Submission

I very strongly believe this mine should not go ahead as it will impact severely if not fatally on the ecosystem that is the Leard Forest, and will put at risk the area's water table. There is no need to be embarking on this mass destruction - the unrecoverable environmental cost far outweighs the truly short term gains that may be made. The Australian community cannot sustain such decimation of its lands. The opening of this new coal mines is also a step in the wrong direction considering that we in reality need to drastically reduce greenhouse gas emissions.

Stephen O'Donoghue - Submission Details for paola cassoni

From: paola cassoni <bimblebox@gmail.com>
To: <stephen.o'donoghue@planning.nsw.gov.au>
Date: Monday, 3 October 2011 12:42 PM
Subject: Submission Details for paola cassoni
CC: <assessments@planning.nsw.gov.au>



Disclosable Political Donation: no

Name: paola cassoni
Email: bimblebox@gmail.com

Address:
kerand station

alpha, QLD
4724

Content:
I strongly object to this development, it should never be approved.

IP Address: cpe-139-168-177-114.lns9.woi.bigpond.net.au - 139.168.177.114
Submission: Online Submission from paola cassoni (object)
https://majorprojects.affinitylive.com/?action=view_diary&id=20947

Submission for Job: #4142
https://majorprojects.affinitylive.com/?action=view_job&id=4142

Site: #2307 Maules Creek Coal Mine
https://majorprojects.affinitylive.com/?action=view_site&id=2307

paola cassoni

E : bimblebox@gmail.com

Powered by [AffinityLive](#): Work. Smarter.

Stephen O'Donoghue - Submission Details for Anthony Milburn

From: Anthony Milburn <noeleenm@bigpond.net.au>
To: <stephen.o'donoghue@planning.nsw.gov.au>
Date: Monday, 3 October 2011 9:33 PM
Subject: Submission Details for Anthony Milburn
CC: <assessments@planning.nsw.gov.au>



Disclosable Political Donation: no

Name: Anthony Milburn
Email: noeleenm@bigpond.net.au

Address:
4 Mawson Avenue.

East Maitland, NSW
2323

Content:

I am the land owner of property, The Calpe, at 1159 Upper Maules Creek Road, Maules Creek. We are worried about the loss of our ground water, and also we have had 99 species of birds identified on our property, and we are worried about the loss of these with mining activity in the area. Our property is a native habitat with native grasses and Iron Bark, White Box and Red Gum timbers. Have any studies been done in our area as to the repercussions from coal mining activity. We have had no communication about mining in our area

IP Address: cpe-58-166-96-232.lnse5.cht.bigpond.net.au - 58.166.96.232

Submission: Online Submission from Anthony Milburn (comments)
https://majorprojects.affinitylive.com/?action=view_diary&id=20949

Submission for Job: #4142
https://majorprojects.affinitylive.com/?action=view_job&id=4142

Site: #2307 Maules Creek Coal Mine
https://majorprojects.affinitylive.com/?action=view_site&id=2307

Anthony Milburn

E : noeleenm@bigpond.net.au

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Stephen O'Donoghue - Submission Details for Jennifer Cuthbertson

From: Jennifer Cuthbertson <nathalie.em@bigpond.com>
To: <stephen.o'donoghue@planning.nsw.gov.au>
Date: Tuesday, 4 October 2011 10:32 AM
Subject: Submission Details for Jennifer Cuthbertson
CC: <assessments@planning.nsw.gov.au>



Disclosable Political Donation: no

Name: Jennifer Cuthbertson
 Email: nathalie.em@bigpond.com

Address:
 6 Nook Avenue

Neutral Bay, NSW
 2089

Content:

I am appalled that this proposed mine would impact so severely on:

1. National Park that belongs to the whole of the people of NSW
2. Security of food and water in a crucial production area of priceless value to the people of this state due to the the rarity of productive soil and readily available water
3. Destruction of threatened species and endangered native woodland

It is not acceptable that for the benefit of a few, the heritage, food and water security of the state of NSW is destroyed.

I object absolutely with this proposal

Yours sincerely

J N Cuhertson

IP Address: cpe-124-176-116-198.lns8.ken.bigpond.net.au - 124.176.116.198

Submission: Online Submission from Jennifer Cuthbertson (object)

https://majorprojects.affinitylive.com/?action=view_diary&id=20968

Submission for Job: #4142

https://majorprojects.affinitylive.com/?action=view_job&id=4142

Site: #2307 Maules Creek Coal Mine

https://majorprojects.affinitylive.com/?action=view_site&id=2307

Jennifer Cuthbertson

E : nathalie.em@bigpond.com

Powered by [AffinityLive](#): Work. Smarter.

Stephen O'Donoghue - Submission Details for Sandra Alon of sandrajalon@bigpond.com

From: Sandra Alon <sandrajalon@bigpond.com>
To: <stephen.o'donoghue@planning.nsw.gov.au>
Date: Tuesday, 4 October 2011 3:45 PM
Subject: Submission Details for Sandra Alon of sandrajalon@bigpond.com
CC: <assessments@planning.nsw.gov.au>



Disclosable Political Donation: no

Name: Sandra Alon
Organisation: sandrajalon@bigpond.com ()
Email: sandrajalon@bigpond.com

Address:
P.O. Box 135
'Maarumali' Baradine Road
P.O. Box 135, 'Maarumali' Baradine Road, NSW
NSW

Content:

This an appalling use of a State Forest tract. There is no going back to useful land or a viable ecosystem for our native flora and fauna. Just look at Singleton and the land around. A bit of 'cosmetic' bulldozing and plantings of trees to screen the mess.

I would personally damn to hell the person or persons who gave permission for this project and others like it to go ahead in this area of the country. Permanent damage to scarce and precious water resources is only one more large item on the list against the mine at Maules Creek porceeding.

IP Address: cpe-121-217-0-75.Inse1.cht.bigpond.net.au - 121.217 .0.75
Submission: Online Submission from Sandra Alon of sandrajalon@bigpond.com (object)
https://majorprojects.affinitylive.com/?action=view_diary&id=20985

Submission for Job: #4142
https://majorprojects.affinitylive.com/?action=view_job&id=4142

Site: #2307 Maules Creek Coal Mine
https://majorprojects.affinitylive.com/?action=view_site&id=2307

Sandra Alon

E : sandrajalon@bigpond.com

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Stephen O'Donoghue - Submission Details for

From:

To: <stephen.o'donoghue@planning.nsw.gov.au>

Date: Monday, 26 September 2011 6:01 PM

Subject: Submission Details for ' ' '

CC: <assessments@planning.nsw.gov.au>



Disclosable Political Donation: no

Name:
Email:

Address:

Content:

In this day and age, when we face a climate crisis of immense proportions, not one single dollar of money should be put into new coal developments.

No government should allow any new fossil fuel projects to go ahead if it cares about the people it governs. Developing a coal mine is insanity.

This new coal mine will add to climate change, and thereby add to deaths, injuries and impoverishment through floods, bushfire, storms, drought, water shortage, food shortage, displacement, etc.

It must not be allowed to go ahead.

IP Address: ' '

Submission: Online Subr
https://majorprojects.affinitylive.com/?action=view_query&id=20658

Submission for Job: #4142
https://majorprojects.affinitylive.com/?action=view_job&id=4142

Site: #2307 Maules Creek Coal Mine
https://majorprojects.affinitylive.com/?action=view_site&id=2307

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Stephen O'Donoghue - Submission Details for Charlie Hewitt

From: Charlie Hewitt <charlie@geolink.net.au>
To: <stephen.o'donoghue@planning.nsw.gov.au>
Date: Tuesday, 4 October 2011 4:55 PM
Subject: Submission Details for Charlie Hewitt
CC: <assessments@planning.nsw.gov.au>



Disclosable Political Donation: no

Name: Charlie Hewitt
Email: charlie@geolink.net.au

Address:
1/5 Aurora Place

Lennox Head, NSW
2478

Content:
I strongly oppose the proposed Maules Creek Coal Project on the basis of the environmental, social and ecological value of the existing landuse as state forest that includes EECs, as well as the impacts on groundwater.

IP Address: mail.geolink.net.au - 150.101.196.190
Submission: Online Submission from Charlie Hewitt (object)
https://majorprojects.affinitylive.com/?action=view_diary&id=20990

Submission for Job: #4142
https://majorprojects.affinitylive.com/?action=view_job&id=4142

Site: #2307 Maules Creek Coal Mine
https://majorprojects.affinitylive.com/?action=view_site&id=2307

Charlie Hewitt

E : charlie@geolink.net.au

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Stephen O'Donoghue - Submission Details for

From:

To: <stephen.o'donoghue@planning.nsw.gov.au>

Date: Wednesday, 5 October 2011 9:01 AM

Subject: Submission Details for

CC: <assessments@planning.nsw.gov.au>



Disclosable Political Donation: no

Name: Stephen O'Donoghue
Email: stephen.o'donoghue@planning.nsw.gov.au

Address:

Content:

It's time a NSW government stopped rolling over to big development when it is mostly in the interests of non-NSW constituents, for the sake of a few royalties.
In particular the outdated and extremely polluting coal mines in our few really key farming and native forest areas.

A final pit depth of 320m will cause depressurisation of the water table, impact on springs, permanently deplete groundwater, interfere with aquifers and divert surface water.

IP Address: -

Submission:

https://majorprojects.affinitylive.com/?action=view_diary&id=21015

Submission for Job: #4142

https://majorprojects.affinitylive.com/?action=view_job&id=4142

Site: #2307 Maules Creek Coal Mine

https://majorprojects.affinitylive.com/?action=view_site&id=2307

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Stephen O'Donoghue - Submission Details for

From:
To: <stephen.o'donoghue@planning.nsw.gov.au>
Date: Wednesday, 5 October 2011 10:32 AM
Subject: Submission Details for
CC: <assessments@planning.nsw.gov.au>



Disclosable Political Donation: no

Name
Email:

Address:
P:

Content:

Please do not approve this application.

1. Coal is dirty and polluting and we need to be moving away from it and towards renewables.
2. It will dig a pit so deep it will be below sea level.
3. It will pollute groundwater for hundreds of kilometres and hundreds of years.

Plus:

The Maules Creek Coal Mine will:

- * Clear a total of 1,665 hectares of native bush, taking the total clearing in the Leard Forest to over 3,500 hectares.
- * Clear 545 hectares of the White Box Grassy Woodland endangered community, taking the total clearing of endangered communities in Leard Forest to over 1,169 hectares.
- * Impact on habitat for up to 36 threatened species which are known or likely to occur in Leard State Forest, including Painted Honeyeater, Koala, Turquoise Parrot and Eastern Cave Bat.
- * Contribute to the destruction of the largest remnant of vegetation left on the heavily cleared Liverpool Plains.
- * Result in a final pit depth of 320m that will cause massive depressurisation of the water table and impact on springs and unique groundwater dependent ecosystems.
- * Result in a final void that will permanently deplete groundwater, interfere with aquifers and divert surface water.
- * Make an enormous contribution to global warming amounting to at least 25 million tonnes of greenhouse gas emissions per annum from burning the coal that is produced. This is equivalent to more than 15% of all emissions from NSW annually.
- * Forever change the quiet rural community of Maules Creek into a giant industrial zone with impacts on health, air quality, noise and amenity.

Please do the right thing and say refuse approval.

IP Address: -
Submission: https://majorprojects.affinitylive.com/?action=view_diary&id=21030

Submission for Job: #4142
https://majorprojects.affinitylive.com/?action=view_job&id=4142

Site: #2307 Maules Creek Coal Mine
https://majorprojects.affinitylive.com/?action=view_site&id=2307

Stephen O'Donoghue - Submission Details for barrie griffiths

From: barrie griffiths <bgriffiths@harboursat.com.au>
To: <stephen.o'donoghue@planning.nsw.gov.au>
Date: Wednesday, 5 October 2011 6:41 PM
Subject: Submission Details for barrie griffiths
CC: <assessments@planning.nsw.gov.au>



Disclosable Political Donation: no

Name: barrie griffiths
 Email: bgriffiths@harboursat.com.au

Address:
 p. o. box 9

singleton, NSW
 2330

Content:

I strongly object to further coal mine approvals and any expansion of the coal and coal seam gas industries because of impacts on the environment and on human communities and especially because of the enormous contribution to the pressing problem of global warming

I especially object to this Ashton Coal proposal because it involves clearing State Forest, which is absurd.

The Maules Creek Coal Mine will:

Clear a total of 1,665 hectares of native bush, taking the total clearing in the Leard Forest to over 3,500 hectares.

Clear 545 hectares of the White Box Grassy Woodland endangered community, taking the total clearing of endangered communities in Leard Forest to over 1,169 hectares.

Impact on habitat for up to 36 threatened species which are known or likely to occur in Leard State Forest, including Painted Honeyeater, Koala, Turquoise Parrot and Eastern Cave Bat.

Contribute to the destruction of the largest remnant of vegetation left on the heavily cleared Liverpool Plains.

Result in a final pit depth of 320m that will cause massive depressurisation of the water table and impact on springs and unique groundwater dependent ecosystems.

Result in a final void that will permanently deplete groundwater, interfere with aquifers and divert surface water.

Make an enormous contribution to global warming amounting to at least 25 million tonnes of greenhouse gas emissions per annum from burning the coal that is produced. This is equivalent to more than 15% of all emissions from NSW annually.

Forever change the quiet rural community of Maules Creek into a giant industrial zone with impacts on health, air quality, noise and amenity.

IP Address: - 59.154.42.141
 Submission: Online Submission from barrie griffiths (object)
https://majorprojects.affinitylive.com/?action=view_diary&id=21050

Submission for Job: #4142
https://majorprojects.affinitylive.com/?action=view_job&id=4142

Site: #2307 Maules Creek Coal Mine

https://majorprojects.affinitylive.com/?action=view_site&id=2307

barrie griffiths

E : bgriffiths@harboursat.com.au

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Stephen O'Donoghue - Submission Details for Pamela Reeves

From: Pamela Reeves <pamela.reeves@optusnet.com.au>
To: <stephen.o'donoghue@planning.nsw.gov.au>
Date: Thursday, 6 October 2011 12:54 PM
Subject: Submission Details for Pamela Reeves
CC: <assessments@planning.nsw.gov.au>



Disclosable Political Donation: no

Name: Pamela Reeves
Email: pamela.reeves@optusnet.com.au

Address:
29 Kennedy St

Gladesville, NSW
2111

Content:

I strongly oppose this proposed development of State Forest land. Not only does it destroy an intact habitat, the drastically increased carbon emissions will make it even harder for Australia to achieve its carbon emissions target. Projects such as this will have long term effects on the health of the local residents and the habitat that will outlive the short-term gains of coal mining.

It is time the impact on the environment was the major consideration, not the financial gain.

IP Address: c211-30-184-78.carlnfd1.nsw.optusnet.com.au - 211.30.184.78

Submission: Online Submission from Pamela Reeves (object)
https://majorprojects.affinitylive.com/?action=view_diary&id=21106

Submission for Job: #4142
https://majorprojects.affinitylive.com/?action=view_job&id=4142

Site: #2307 Maules Creek Coal Mine
https://majorprojects.affinitylive.com/?action=view_site&id=2307

Pamela Reeves

E : pamela.reeves@optusnet.com.au

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From: Pamela Reeves <pamela.reeves@optusnet.com.au>
To: <information@planning.nsw.gov.au>
Date: 10/10/2011 3:51 pm
Subject: application number 10-0138 Maules Creek Coal mine

I writing to protest strongly against the proposed open cut coal mine for the Leard State Forest.

This mine will not only destroy an intact native bushland but will also destroy the largest remnant of vegetation left on the Liverpool Plains, one of our most productive agricultural areas.

The contribution to world carbon emissions will be enormous and is not justified when renewable energy sources are more environmentally responsible.

I am also concerned about the effects on the local residents in terms of health, air quality and noise.

Yours sincerely
Pamela Reeves

29 Kennedy Street
Gladesville NSW 2111

Stephen O'Donoghue - Submission Details for J

From:

To: <stephen.o'donoghue@planning.nsw.gov.au>

Date: Thursday, 6 October 2011 2:27 PM

Subject: Submission Details for

CC: <assessments@planning.nsw.gov.au>



Disclosable Political Donation: no

Name:

Email: JA

Address:

~ ~

/

Content:

FURTHER DESTRUCTION OF OUR NATIVE FORESTS AND THE HABITATS OF ALL SPECIES THREATENED OR NOT IS APPALLING TO EVEN CONSIDER. WE HAVE SO LITTLE FOREST LEFT IN AUSTRALIA AND YET THIS PUSH TO COMPLETELY DESTROY WHAT IS LEFT SEEMS LIKE A MADNESS OVERTAKING A SUPPOSEDLY RATIONAL SOCIETY.

IP Address: - - -

Submission: Online Submission from J:

https://majorprojects.affinitylive.com/?action=view_diary&id=21124

Submission for Job: #4142

https://majorprojects.affinitylive.com/?action=view_job&id=4142

Site: #2307 Maules Creek Coal Mine

https://majorprojects.affinitylive.com/?action=view_site&id=2307

E:

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Stephen O'Donoghue - Submission Details for Alistair Todd of Farmer

From: Alistair Todd <alistairjtodd@gmail.com>
To: <stephen.o'donoghue@planning.nsw.gov.au>
Date: Sunday, 9 October 2011 9:01 AM
Subject: Submission Details for Alistair Todd of Farmer
CC: <assessments@planning.nsw.gov.au>
Attachments: Maules Creek Coal Project_ Alistair Todd's submission-2.pdf



Disclosable Political Donation: no

Name: Alistair Todd
Organisation: Farmer (FamilyPartnership)
Email: alistairjtodd@gmail.com

Address:
East Lynne
Maules Creek
Boggabri, NSW
2382

Content:
Alistair Todd's Submission for the Maules Creek Coal Project
Project Application Number 10-0138

IP Address: cpe-60-228-53-114.lns9.ken.bigpond.net.au - 60.228.53.114
Submission: Online Submission from Alistair Todd of Farmer (object)
https://majorprojects.affinitylive.com/?action=view_diary&id=21309

Submission for Job: #4142
https://majorprojects.affinitylive.com/?action=view_job&id=4142

Site: #2307 Maules Creek Coal Mine
https://majorprojects.affinitylive.com/?action=view_site&id=2307

Alistair Todd

E : alistairjtodd@gmail.com

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Maules Creek Coal Project

Project Application Number 10-0138

A Submission by Mr. Alistair Todd of "East Lynne" Maules Creek , Boggabri 2382

10/9/2011

A submission prepared by Mr. Alistair Todd of the merits or lack thereof of the Maules Creek Coal Project as presented within the Environmental Assessment by Aston Resources from the perspective of a resident and beef cattle producer from the Maules Creek Community and District.

Introduction:

Nothing focuses the mind quite like intrusion of white utes bearing red flags, of yellow hard hats and reflective vests, the constant hum of the drilling rigs on their endless quest across the vast Australian countryside for black gold, the continual bombardment of ads in the local paper of new exploration leases and the editorials of the enormous bounties that these projects offer. It is the insidious expansion of the coal industry. It's dirty and noisy and exciting and a fabulous export earner, or so we are led to believe.

And this is where the conflict between agriculture and mining begins.

The Issues:

Self-interest is never far from the surface, whichever side of a debate is being examined. From the big end corporate boardrooms to the bowels of governments, there is the never-ending appetite for fat profits and royalties, the economic prosperity that the minerals industry proclaims.

Then we have the coal communities. Those communities that reside within throwing distance of the mines, those communities that bear the social consequences of the mines. The dust, the noise, the traffic, the destroyed ecosystems and disrupted alluvial aquifers.

As a resident and farmer of Maules Creek it would be easy to decide upon which side of the debate I belong, but the answer is not as simple as that. As a shareholder of BHP one would assume that I support the minerals industry and the economic benefits provided by Australia's vast mineral resources, the explosion of jobs, the community infrastructure that sometimes follows the boom, the massive injection of capital into regional communities and the flow-on effects that this can provide.

Then there are the negatives. The net-externalities, the consequences of the boom that nobody wishes to talk about. It is a symptom of bad planning at both a corporate and government level that these inequalities do exist, and are guaranteed to occur within the community of Maules Creek and further afield within the Narrabri Shire as a direct consequence of the Maules Creek Coal Project as described within the Aston Resources environmental assessment.

As with all decisions that are considered using economic analysis, there are winners and losers. The winners tend to be those that are the owners of the project, and the associated workforce and industry that is necessary for the conduct of that project. There may be a residual economic benefit to the wider local economy such as increased residential land values and indirect jobs, but this is debateable as the net benefit may not outweigh the indirect costs the project introduces, such as increased rental prices, increased shire rates and increased cost of goods and services for those of us who are not in direct employment of the project or its associated service industries.

Then there are the coal communities, those families and businesses that are literally at the coal face. The Aston project in particular and the Leard Forest coal complex in general introduces a vast transfer of social, environmental and economic wealth from the local families and businesses of the Maules Creek community into the hands of shareholders, many of which are foreign owned. This transfer occurs because of the unavoidable consequences of mining, those impacts that cannot be prevented due to the destructive polluting nature of open cut coal mining.

This transfer of wealth occurs because of the loss environmental capital, or of environmental public rights. The conversion of a sleepy (but productive) rural community into an industrial wasteland has numerous effects . There are the obvious, such as increased airborne pollution and noise, the destruction of ecosystems and increase in traffic, and then there are the less so obvious. The reduction of alluvial water tables beneath our feet, the slow depopulation of our community as the next farm is purchased for environmental "offsets" causing the loss of a valuable community member. And then we have the insidious, the sudden realisation of a farmer nearing retirement that their property is no longer saleable due to the impacts of mining, the sudden unexplainable developments of health problems due to unknown toxic plumes, the mental health anguish of families at a loss to reconcile the change in their circumstances and finally we have the cumulative effects - that the critical thresholds that define and underpin our community no longer exist.

The DoP and the Planning Assessment Commission are tasked with an unenviable decision to make, a decision that must weigh the benefits of the Maules Creek Coal Project against its costs, the costs to the people of Maules Creek, this decision decides the future of our community of Maules Creek. As a farmer and resident of Maules Creek, I would urge those tasked with this decision to appreciate the merits and concerns of all submissions submitted for the Maules Creek Coal Project with the highest regard to the principles of equality. The ethical principle of equality, particularly intergenerational equality, is central to the concept of sustainable development. If the project is approved, then it must be approved with stringent conditions that ensure that there are no net external environmental, social or economic costs imposed upon the families, businesses and the community of Maules Creek.

Conclusion:

In summary, I reject outright the merits of Maules Creek Coal Project proposal as submitted by Aston Resources on the grounds of a lack of a social licence to operate, and therefore recommend that project approval be declined.

Stephen O'Donoghue - Submission Details for

From:
To: <stephen.o'donoghue@planning.nsw.gov.au>
Date: Monday, 10 October 2011 4:59 PM
Subject: Submission
CC: <assessments@planning.nsw.gov.au>



Disclosable Political Donation: no

Name:
Email:

Address:

Content:

I have been unable to attach the photos mentioned here since they are not pdf files. If you send an email to the above address I can forward these photos separately.

My overriding concern is that I don't believe the coal mining industry in general is being made to foot the real bill including all impacts of their activities on rural communities, environments, infrastructure and other agricultural industries.

Firstly I note in an article in the Newcastle Herald (1/10/2011) that the Upper Hunter Shire Council has been unsuccessful in securing Regional Development Australia Funding of \$15 million to provide a railway overpass to aid traffic flow through the town. As you know the New England Highway crosses the rail line at a boom-gate level crossing at Scone (in addition to another level crossing on a major street within the CBD of Scone). My observations of rail traffic on that line as I travel the Highway are that its use for public transport pale into insignificance next to the number of kilometre-long coal trains (including the empty returns) that use it daily (see attached photo;) and this is before a proposed major expansion of the coal industry in the Gunnedah Basin (Aston Resources

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Maules Creek submission

I have included here a copy of a letter written to Tony Windsor (Federal Member for New England) in July 2011 outlining my general objections to the way that the coal industry is riding rough-shod across significant tracts of NSW at present. I have also attached several photos that illustrate some of the points made in my following submission. These have all been taken in the last three months within the Hunter and Northwest Regions.

My overriding concern is that I don't believe the coal mining industry in general is being made to foot the real bill including all impacts of their activities on rural communities, environments, infrastructure and other agricultural industries.

Firstly I note in an article in the Newcastle Herald (1/10/2011) that the Upper Hunter Shire Council has been unsuccessful in securing Regional Development Australia Funding of \$15 million to provide a railway overpass to aid traffic flow through the town. As you know the New England Highway crosses the rail line at a boom-gate level crossing at Scone (in addition to another level crossing on a major street within the CBD of Scone). My observations of rail traffic on that line as I travel the Highway are that its use for public transport pale into insignificance next to the number of kilometre-long coal trains (including the empty returns) that use it daily (see attached photo;) and this is before a proposed major expansion of the coal industry in the Gunnedah Basin (Aston Resources' Maules Creek project, which alone has projected an output of some 36 thousand tonnes per day over the next 21 years). I am assuming that the products of such activity will further impact the residents of Scone (Gunnedah, Muswellbrook, Aberdeen, Murrurundi etc.) and not be restricted to the gentlemanly hours of 9 to 5.

Will Aston Resources (perhaps in conjunction with Whitehaven) be required to fund railway loops so that coal trains will bypass all significant communities along the route to Newcastle i.e. both the full trains and the empty returns?

These are some of the unseen impacts of this industry that are not currently being borne as costs of winning their spoils from the ground. If the mining industry is getting the benefits/support of billions of dollars of my – and others' – taxes why are the likes of Whitehaven/Aston Resources not required to provide rail bypasses around those communities so affected by the rumblings, noise and traffic disruption that I refer to? Why is such a cost not added to their ledger as a genuine attempt to minimise disruption to communities so affected? Pardon my cynicism but I'd suggest it is because it is far less costly to buy off the local community with a \$50,000 sporting club grant or a program of submissions for 'Community Support' grants – the Newcastle Coal Infrastructure Group's "living up to its responsibility", or Shenhua Coal's similar attempts at community pacification. (It's hard to avoid the obvious parallel that when a stranger lures a child into a car with the promise of candies it is not for the child's benefit – it is not destined to go well for that child!)

After discussing the benefits of nearby coal mining activity to the local Narrabri economy with several business people there, I have again concluded that all is not as it seems via the coal industry's 'spin.' I have attached a photo of the Mining Accommodation Centre on the outskirts of Narrabri. Apparently the mine employees who wish to enjoy the full benefits of their employment are 'required' by Whitehaven to live at this makeshift village of demountable, battery cubicles. I suppose the local builders didn't benefit much from their construction and I can't see the miners' children attending the local schools, nor wives serving at the school canteen or running businesses in town, nor the miners themselves

volunteering at the local bushfire brigade, nor contributing to the community in any way other than, as I was told, bringing their thirst to the local pub. While I have no doubt of some local jobs benefit many such employees will never call Narrabri home!

While the Maules Creek proposal includes the promise of some 470 permanent employees, will these jobs go to local people who already belong to the communities of Gunnedah, Boggabri and Narrabri: or will yet another demountable Miners Accommodation Centre be erected nearby without the involvement of local builders so that these 470 employees can camp overnight rather than calling the local community home, with all of the other benefits that could flow to the local economy as a result?

A further 'downside' of this mining boom is that it has artificially inflated house prices in Narrabri/Gunnedah, making it very hard for locals trying to enter the real estate market for the first time or for those whose rental price has skyrocketed as a result. Will this effect be further magnified with the expansion of Maules Creek?

Does it make good sense for any rural based community to transfer many of its agriculture-based eggs to the fly-by-night-coal basket and run the risk in 20-30 years of finding themselves dependent upon an industry that has just packed its bags and fled?

We have in the past (through our governments) sought to stall or regulate industries as diverse as logging, whaling and asbestos mining when it became obvious that health or environmental concerns needed to take precedence over employment; and yes people lost jobs as a result. We must make sure that the mining industry's smokescreen about employment growth (short-term) doesn't allow these other considerations to be sidelined nor blind us to some of the other more hidden impacts of their craft – e.g. on agriculture and tourism. (Who could have foreseen the growth of the whale-watching industry and what that has brought in the way of tourism dollars as a result!)

As also appears to be happening in sections of the Hunter, the needs of the mining industry seem to take precedence over the potential job losses in tourism (vineyards, B & B's, Farmstays) horse and cattle breeding studs, the wine industry, etc. What other nearby rural industry will be adversely affected by this expansion of Maules Creek.

I have also been horrified by the attempted 'rehabilitation' of the mine tailings heaps in the Hunter (attached photo of Muswellbrook example). Very little attempt has apparently been made to genuinely return the landscape to its pre-mining condition. Instead the heap of overburden is smoothed over and planted with grass and sometimes trees. Such hills look very artificial compared to surrounding countryside. Will Aston Resources have as one of their costs, the complete restoration of the landscape, including all waste being returned to the open-cut pit and a diverse vegetation community being re-established prior to their departure? I have also attached a photo of part of the new, picturesque 50m X 4m high wall beside the New England Highway near Singleton. Is this not a powerful demonstration - along with all of the roadside tree plantings - that the mining industry is itself just a little ashamed of the scar that they are creating behind these visual barriers? Can Boggabri expect similar?

I note reference to a water pipeline from the nearby Namoi River in the application. What impacts will the mines water usage have on that river's ecology and other water users downstream?

In the section headed 'Political Donations in the last two years' the applicant, Aston Resources 2 Pty Ltd has listed 'NIL'. Does this also apply to donations from Mr Nathan Tinkler or other 'arms' of the Aston group?

I am further dismayed at the appointment of Mr Mark Vaile as Non-Executive chairman of the Board of Directors at Aston Resources. According to their website Mark was “a former Deputy Prime Minister, Minister for Trade and acting Minister for Transport and Regional services” where he “was instrumental in the establishment of the ARTC as operator of the Hunter Valley Rail Network” and “established an extensive network of contacts throughout regional Australia, particularly in Northern NSW.” Forgive the perception of large slabs of the general populace that politicians are often feeding at the same trough as Mr Big Business. Again I make a rash assumption... “Are my taxes still paying him a parliamentary pension along with that of the Non-Executive Chairman of the Board of Eastern Star Gas?” Why is there not a ten-year moratorium on ex-politicians feathering their nests with the ‘down’ provided via their big business connections while in office?!

What part will Mr Vaile's previous affiliations be allowed to play in the negotiations surrounding this proposal?

I don't write under the illusion that I'm the only person to have these ideas but in order to ensure that such issues don't fall off the agenda during this important phase of potential growth in the coal/CSG sector.

To quote from Leroy Eims... **“A leader is one who sees more than others see, who sees farther than others see and who sees before others do.”** It is time we had such leaders!

Mr Tony Windsor,
Federal Member for New England,
Tamworth, 2340

Dear Tony,

If you read no other personal letter this year I hope you will take the time to read this one; not because it has been authored by anyone special but because it comes as the impassioned plea from a very ordinary Australian. One whose views I believe are representative of a growing groundswell of community outrage at the way big business interests – in this case coal mining and coal-seam-gas (CSG) industries – and the Wall Street view of the world are being allowed to manipulate the political processes to the benefit of a privileged few, to the ultimate destruction of other, very important long-term community values. Ones that don't appear on any balance sheet nor have a listing on the ASX!

To quote from the American philosopher Henry David Thoreau...

"I went into the woods because I wished to live deliberately. To confront only the essential facts of life and see if I could not learn what it had to teach; and not when it came my turn to die, discover that I had not lived."

I include this quote because as a husband and father, biologist, teacher, son of a Soil Conservationist, photographer, outdoor educator, member of a rural community and keen bush-walker, I am passionate about Australia and its natural landscapes. I am also passionate about our need to protect tracts of that landscape from the current rampant expansionism of the coal industry in NSW. (I am not however advocating a tree-hugging, barefoot, hair-shirt wearing mentality.)

The most cursory glance across the popular media over the last twelve to eighteen months will reveal a seething indignation, especially among agricultural communities who are under increasing siege from the coal mining industry (read also CSG), to further rape and plunder the landscape, with consequent loss of livelihood and productive capacity of valuable farming land. The rise in interest in the 'Lock the Gate' movement is testament to the resilience of a farming community who are prepared to fight for values that mean much more than short-term income.

The internet has provided a valuable vehicle of communication among the many community groups mobilising against being walked all over by big mining interests across large slabs of NSW. These are areas of the state's prime agricultural food bowls and pristine wilderness.

I have driven the New England Highway from Tamworth to Newcastle on a regular basis and observed the increasing number of very lengthy trains full of coal from the region to the port's coal loading facilities, bound for China via the queue of bulk carrying ships lined up off the coast of Newcastle. I have watched the expansion of gaping holes in the lower Hunter Valley gradually transform a rural landscape into a Swiss-cheese moonscape of craters and massive mullock heaps. I have heard the concerns of nearby residents about the health implications of atmospheric dust from the mines. I have wondered whether my taxes are helping to pay for the dual rail line being established to allow these massive trains to pass on their way to and from the Gunnedah basin to Newcastle. (or is this rail a 'community asset' and therefore a legitimate target for the use of taxpayers' dollars?).

I have driven the road from Muswellbrook via Denman, Bylong, Rylstone and Kandos and observed the diversity of other rural businesses – vineyards, olive groves, horse and cattle studs among them - blossoming in those valleys. With coal mines on their horizons I've wondered how their owners feel knowing that their livelihoods are potentially deemed of less worth than the black stuff beneath! Then my question is answered by the numerous signs on fences telling the mining industry to keep out in no uncertain terms. The scenario is repeated in both the Liverpool Plains and the area around Narrabri.

I have heard the arguments about 'rehabilitation' of the mine sites as the mullock heaps are bulldozed smooth and covered in grass to look like smooth mullock heaps covered in grass. Do they seriously believe that that is rehabilitating a landscape that has taken millions of years to mature?! Watercourses are changed; ecological communities are destroyed in the process! Why does the cost of winning the coal from the ground not also include the environmental cost of replacing all of the overburden back into the hole it came from as part of returning the landscape to a more natural state? Such a move might help to level the very uneven playing field that currently prevents the alternative energy players from competing successfully in the coal-dominated marketplace.

I have listened to the television propaganda by Santos, using a farmer to extol their virtues as the big safe and friendly organisation that "looks after the people and looks after the land" and will therefore "always be welcome here."

I have witnessed the mass roadside tree plantings, foretelling of the impending scar that will need to be hidden from the public gaze. Could it be that the coal mining industry is more than a little ashamed of what they're doing behind all those screens of trees and hastily created earth embankments beside the New England Highway?

I've heard the State Minister for Resources, Chris Hartcher on television news after a recent local community meeting, claim that only "real science" will be used to determine the way forward regarding coal-seam-gas exploration in the Gunnedah basin and its impact on underground water aquifers and hence on the farming community. I'd like to believe him but would this be the same "real science" that brought us asbestos mining, thalidomide, Hiroshima, Chernobyl and the most recent Japanese nuclear accident?

The truth is that real science – coming from the Latin 'to know' – is the result of systematic measurement and observation of physical phenomena, not from the sort of modelling and supposition used by pro-industry spokespeople to justify their course of action. Truly knowing the resultant impacts of CSG extraction on subsequent decades of farming practice can only happen in the rear view mirror – after the event. Pseudo-science on the other hand is easily bought by big business concerns wanting to do a 'snow' job on the community at large by wearing their 'caring hat' in public whilst conducting business as usual. The sort of real science that is needed is an extensive, frank and transparent analysis of the observable effects of hydraulic fracturing where it has been practised in the US over many years. This needs to be conducted and funded by a body completely independent of the CSG lobby.

I've heard about the industry doing its own Environmental Impact Assessments prior to approval being granted. Who thinks that it's a good idea to leave the fox in charge of the henhouse with an issue as far-reaching as this? "Sorry" won't be good enough in fifty years after they've moved on! Fresh water is everything – we tamper with it at our peril!

One has only to visit sites like the now abandoned Woodsreef asbestos mine near Barraba to be reminded of the (sadly majority) 'environmental concern' of the mining industry once the prize has been won from the soil. Have we witnessed any outpouring of concern by the executives of James Hardy Industries as they rushed forward with open arms to embrace the pain and suffering of those affected by asbestosis?

It seems that after having successfully 'cleaned up' Newcastle as a steel producing city, we are now content to ship our polluting industry to China in pieces to allow them to grow fat while ignoring the more stringent anti-pollution laws of Australia. (I understand too that there's talk of yet another coal-loader to be developed at the port of Newcastle to handle the promised increase in coal exports.) Do we seriously think that Chinese air pollution stays in China any more than Chilean volcanic ash stays in Chile? We need to pay much closer attention to the voices of those like David Suzuki when he says that as members of ecosystem-earth we need clean air, clean water and fertile soils as the fundamental basis of life on the planet. Without these we are as doomed as any Tasmanian tiger to a similar fate at the hands of human interference.

It seems that the loudest arguments being put forward in support of the unlimited expansion of the coal-mining industry revolve around our balance of payments in the international marketplace, jobs, jobs, jobs and the resources-led boom in the Australian economy. All very real but short term outcomes! All measures that return huge immediate benefits to allow a few mining magnates to drive around in Ferraris as they survey the damage at a secure distance from the lives of those most affected by this industry.

I was similarly amused recently to hear a coal mining representative refer to the state's coal reserves as belonging to the NSW government as if by implication they belonged to us all. Are we seriously supposed to believe him that we all share equally in the benefits won via the coal mining industry? Despite our mineral wealth genuinely being a resource for Australians, it seems that those nearer the top of the business food-chain do disproportionately well when it comes to feeding time! If we are to keep allowing the unfettered expansion of the coal/CSG industries are governments not responsible for ensuring that the revenues so obtained are distributed more equitably across the community by way of compensation for the livelihoods disrupted and environmental costs born in the process?

I'm not suggesting that the coal industry is likely to close down any time soon. It was suggested some thirty years ago that one way of getting industries responsible for polluting nearby waterways to clean up their act would be to ensure that their water intake was downstream from their water outlet. Industries would then be more inclined to invest in the sort of technology to ensure that their effluent was less polluting. Perhaps there's a message here for coal-fired power stations. Rather than building taller and taller chimneys to put polluting gases way out of sight above our heads technology should be employed that fed their exhaust gases back into the process until only clean air is emitted.

Surely enough scientists and environmentalists have been alerting us for years to the dangers of treating our atmosphere, waterways, oceans and land surfaces as bottomless sinks into which we think we can keep emptying the trash. Is the coal industry really paying their way when it comes to cleaning up after themselves? Again, if the true environmental costs were added to their ledger, other forms of energy generation might begin to look more competitive.

Apparently in the United States there remains sufficient unresolved controversy surrounding the current implementation of hydraulic fracturing technology (CSG) to suggest that we err on the side of much greater caution rather than bolting headlong down a similar path. There the hydraulic fracturing industry has been very reticent to disclose the specific chemical components contained in the fracturing liquid, many of which are highly toxic and pose significant potential environmental hazards. Accidents happen! Spills occur! Refer to the case of the well blowout in Clearfield County, Pennsylvania on June 3rd, 2010 where a massive amount of contaminated hydraulic fracturing fluid was accidentally released into the environment and the resources company concerned was ordered to cease all operations in that state from then on.

Yes there are many jobs created by such industries. Are we as a nation so poor in our thinking that we can't come up with some vision for where we want to be in fifty or one hundred years time, when the coal reserves have been exhausted and we have had to move to something other than a fossil-fuel-based economy? Does this government want to be remembered for having helped to galvanise that forward thinking, and show the world a different model, or as another one who sold our soul to the highest overseas bidder. Sooner or later when the coal runs out we will need to be looking for those alternative jobs. So while Australia has need for coal for our own energy needs in the short term, do we really need to be decimating the landscape with gay abandon in order to keep 'growing our economy' in directions that many of us don't want to go in? Our governments need to be seen to be 'driving' innovation away from our current dependence on fossil fuel economies.

As important as job creation is do we want that to be the only or even the main 'driver' of decision making? If we apply that logic then why didn't we make people keep riding horses in order to preserve the employment of many farriers, blacksmiths and saddle makers threatened by the introduction of automobiles? Despite the shutdown of the Australian whaling industry decades ago with consequent job losses, we now have a whale-watching industry worth million\$\$\$. Similarly, did we not shut down the asbestos industry despite the job losses because of the greater risks?

And yes nearby towns have benefited from mining dollars with some funding of civic projects to everyone's delight. Who doesn't love 'candy' until they find out what it really costs! We need decision makers who will not cave in to similar promises that help rapacious miners get in under the radar.

We need leaders who will create a vision for who we can be as a nation and then put some \$\$\$ behind that to help steer us to something more than the desire for bigger plasma screens in our home theatres, more powerful mobile phones and cars with more bells and whistles. Where are the core community values being talked about publicly, of the sort that will drive us out of our home entertainment cocoons and into the streets of communal life where together we can apply our minds to solving some of the real issues that confront us as humans? These will not be solved by more people owning Maseratis and living in penthouses overlooking Sydney Harbour.

I note with excitement and due applause the coming together of government and industry in the solar farm initiative recently announced for Moree with its attendant promise of job creation. Let this not be tokenism. Surely this is the sort of forward thinking that we should be looking to on a grand scale, sooner rather than later, before whatever planning legislation turns further tracts of NSW into moonscape.

Back to my earlier Thoreau quote. I have just returned from a photographic excursion into the wilderness area known as the Gardens of Stone National Park – part of the Greater Blue Mountains World Heritage area. You guessed it; the country from here through Rylstone, Kandos and Mudgee is another one of the battle fronts with the coal industry. Already at the Airly, Charbon, Ulan and Baal Bone collieries they are knocking on the door. Through photos I wanted to raise awareness of the value of keeping some areas of such pristine beauty strictly off-limits to the sort of destruction witnessed in the Hunter Valley – rehabilitation notwithstanding! I want to make these images available to as large an audience as possible in the hope that enough community outrage will be generated to make it impossible for any approvals to be given by any government body to any mining concerns with their sights set on expansion in this area. It must not happen!

I want generations of not only my children and their children to know that we thought there was value for the human spirit in wild untouched places; values that could not be measured on any profit sheet. (I hope to leave future generations of Australians some other legacy than a huge abandoned quarry.) That we could still get out from behind our earphones and screens and go to places and be reminded of what life in the raw looks like; even if only to remember that as humans we depend on some fundamental natural processes that no amount of technological innovation can separate us from. We cannot remove ourselves from the nest that we are currently soiling with rabid disregard.

When are the issues of caring for the aged, the sick, the poor and disenfranchised, better education etc. going to be seen by the broad community as being more important to the government via its spending policies than bowing down at the altar of Wall Street and the ASX. The day that a carer in an aged-care facility or a kindergarten teacher can earn the same as someone digging coal from the ground will be the day that we make a much needed shift in our priorities as to what matters most for our community. Will this government be seen as helping to lead that shift?

So what? The coal industry is certainly not going to stop tomorrow. But now is certainly the time to stop the cancer further spreading by making sure that they are truly paying the full cost of all aspects of their profit making, including the full environmental costs of air, water and land pollution as well as proper rehabilitation of the mine sites afterwards. (Talk to the women of Muswellbrook about the effects of living in the shadow of their mullock heaps when the westerlies blow). Time to stop handing out mineral exploration licences allowing for ever increasing expansion of an industry bent on a feeding frenzy in the current political climate. Now is the time to be weaning ourselves off dependence on fossil fuels by seriously funding the sort of research and development of alternatives into the future: to pay greater heed to groups like 'Beyond Zero Emissions': to fund more energy-efficient building design: to show the rest of the world what forward planning looks like as opposed to the here-and-now benefits of profit-taking. It goes without saying that all of this comes on the back of the overwhelming weight of evidence that we are accelerating the rate of global warming with the other effects of our fascination with fossil fuels!

I have also raised these matters with other politicians at the Federal level, our local state member Kevin Anderson, the local Catchment Management Authorities, and a range of concerned community action groups.

Yours sincerely







Stephen O'Donoghue - Submission Details for I

From:
To: <stephen.o'donoghue@planning.nsw.gov.au>
Date: Monday, 10 October 2011 7:47 PM
Subject: Submission Details for
CC: <assessments@planning.nsw.gov.au>



Disclosable Political Donation: no

Name:
Email:

Address:

Content:

Given the current global trend toward lowering carbon emissions, I feel it is counter-productive to allow both the clearing of a large area of forest and subsequent mining of coal. Not only will this produce greater carbon emissions through the burning of the coal, the clearing of so many trees will result in poorer re-absorption of carbon from our atmosphere.

Also, as a former resident of the Maules Creek area, it makes me shudder to think how this mine will destroy the peace and purity of the area. The noise alone would be enough to ruin it, but when you add the dust that the mine will inevitably inject into the atmosphere, and the irreversible damage the pit will cause to the water table, the area will no longer be as attractive as it once was.

IP Address:
Submission: Online Submission from
https://majorprojects.affinitylive.com/?action=view_diary&id=21410

Submission for Job: #4142
https://majorprojects.affinitylive.com/?action=view_job&id=4142

Site: #2307 Maules Creek Coal Mine
https://majorprojects.affinitylive.com/?action=view_site&id=2307

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Stephen O'Donoghue - Submission Details for Robert McGregor

From: Robert McGregor <callandar@skymesh.com.au>
To: <stephen.o'donoghue@planning.nsw.gov.au>
Date: Monday, 10 October 2011 9:48 PM
Subject: Submission Details for Robert McGregor
CC: <assessments@planning.nsw.gov.au>
Attachments: Submission re Aston Coal Mine.pdf



Disclosable Political Donation: no

Name: Robert McGregor
Email: callandar@skymesh.com.au

Address:
Callandar
1574 Braymont Rd
Boggabri, NSW
2382

Content:
Please refer to attachment. Any further questions I can be contacted on 0428445143.

IP Address: - 180.181.251.185
Submission: Online Submission from Robert McGregor (object)
https://majorprojects.affinitylive.com/?action=view_diary&id=21416

Submission for Job: #4142
https://majorprojects.affinitylive.com/?action=view_job&id=4142

Site: #2307 Maules Creek Coal Mine
https://majorprojects.affinitylive.com/?action=view_site&id=2307

Robert McGregor

E : callandar@skymesh.com.au

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Robert Peter McGregor and Rhonda Daphne McGregor
1574 Braymont Road
BOGGABRI NSW 2382
Ph:0428 445 143

Your ref: Maules Creek Coal Project (DA-85/1819)

10 October 2011

Director of Major Infrastructure Assessments
Department of Planning
GPO Box 39
SYDNEY NSW 2001

Attn: Stephen O'Donoghue

Dear Sir/Madam

Submission

Proposed Maules Creek Coal Project DA-85/1819

Proponent: Aston Coal 2 Pty Ltd

We refer to the application for the Proposed Maules Coal Mine, DA-85/1819 (the “**Project**”) and accompanying documents currently on public exhibition which seeks approval of the Maules Creek Coal Mine.

We understand the application affects our properties and wish to object to the project.

We own the following properties:

- 1 “Tarrawonga” which comprises:
 - (a) Lots 3, 4 and 5 in deposited plan 11312828; and
 - (b) Lot 121 in deposited plan 754926
- 2 “Callandar” which comprises lots 145, 149, 186 and 206 in deposited plan 754926
- 3 “East Callandar” which comprises lots 1 and 2 in DP 868635

The Tarrawonga Property is referenced to in the Maules Creek Environmental Assessment, along with the Braymont & Barbers Lagoon Roads.

We make the following submissions in relation to the Project application.

The residence located on the property Tarrawonga is located approximately 2km from the Tarrawonga Coal Project. The Tarrawonga farm falls in to the zone of affectation of the Tarrawonga and the Boggabri Coal mines and Callandar residence I believe falls into the management zone of the Boggabri Mine and probably the Tarrawonga Mine. Tarrawonga farm appears to also fall into the zone of affectation for the Aston Maules Creek project.

We are concerned that the cumulative impacts will be more than what we are presently subjected to in regard to noise, dust, lighting and extra traffic on local roads.

The proposed heavy vehicle access road to the Aston Mine site using the Braymont and Barbers Lagoon Road also concerns us. This road is a travelling stock route and is used by us and neighbouring landholders to frequently shift our cattle between properties. Our Callandar cottage is approximately 100m and Callandar Homestead approximately 300m to the north of Braymont Road we object to Aston using this road when there is already an access/haul road going through our Tarrawonga farm from Gunnedah to the existing mine sites.

The Braymont and Barbers Lagoon roads are subject to severe flooding from the Bollol and Driggle Draggie Creek systems and from the Namoi River via Barbers Lagoon. The road can sometimes be cut by flooding for several weeks. The road is a narrow, dusty gravel road with overhanging river gums. The culverts are old, one being timber. Slow moving oversize agricultural machinery is transported on these roads as a link between properties.

We do not need a second coal mine access road on our doorstep!

The social impacts of mining in our part of the valley are taking their toll with many farmers leaving the district. We realise that we cannot stop the mining in our valley, but we do need to be protected in the future from quick decisions now impacting on our farming business which has been sustainable and has been operating in this valley for 151 years.

Yours faithfully

Robert McGregor
(also on behalf of Rhonda McGregor)

Stephen O'Donoghue - Submission Details for Lisa Costello

From: Lisa Costello <lisa4worldpeace@gmail.com>
To: <stephen.o'donoghue@planning.nsw.gov.au>
Date: Monday, 26 September 2011 6:32 PM
Subject: Submission Details for Lisa Costello
CC: <assessments@planning.nsw.gov.au>



Disclosable Political Donation: no

Name: Lisa Costello
Email: lisa4worldpeace@gmail.com

Address:
433
Caniaba Road
Caniaba, NSW
2480

Content:
I can't believe that this project is happening on our precious state forest property.

Where will the wildlife go?

What will happen to the unique forest combinations.

Please reconsider this project.

Yours
Lisa Costello

IP Address: 121-200-213-101.dsl.syd.linearg.net - 121.200.213.101
Submission: Online Submission from Lisa Costello (object)
https://majorprojects.affinitylive.com/?action=view_diary&id=20660

Submission for Job: #4142
https://majorprojects.affinitylive.com/?action=view_job&id=4142

Site: #2307 Maules Creek Coal Mine
https://majorprojects.affinitylive.com/?action=view_site&id=2307

Lisa Costello

E : lisa4worldpeace@gmail.com

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Stephen O'Donoghue - Submission Details for Kate Boyd

From: Kate Boyd <kateboyd@bigpond.com>
To: <stephen.o'donoghue@planning.nsw.gov.au>
Date: Tuesday, 11 October 2011 9:07 AM
Subject: Submission Details for Kate Boyd
CC: <assessments@planning.nsw.gov.au>



Disclosable Political Donation: no

Name: Kate Boyd
 Email: kateboyd@bigpond.com

Address:
 po box 1594

Armidale, NSW
 2350

Content:
 I object to the proposed mine because it will have major unacceptable environmental impacts.

The forest proposed to be cleared has very high ecological values which will be completely lost in the short to medium term and will only be partially recoverable in the very long term if the forest is re-established from soil seed or other means. While mine revegetation has been improving over decades, we cannot be sure that a community with the same floristic composition will ever grow back, let alone the fauna. Changed subsoil conditions or weed invasion or localised loss of some key species may preclude complete recovery. The vertebrate wildlife that depend on this forest as habitat, particularly species dependent on hollows, are likely to be mostly lost - any that survive and reproduce due to the proposed offsets are unlikely to be sufficient to contribute to the long-term maintenance of local and regional populations in the way that this forest's biota currently can. The loss of this forest cannot be effectively offset. The threatened species and community will be significantly more threatened if the mine proceeds.

The Revised Environmental Risk Assessment (appendix E) revised downward the assessed risks of loss of biodiversity, disruption of threatened species and habitats and disturbance of federally listed species from "high" to "medium" risk. It claims that offsets and management of the development mean the risks are of likelihood D (unlikely/an event that does occur somewhere from time to time/expected once every thirty years) and of consequence III being "Serious but confined medium term environmental effects near the source". This is a serious misuse of the risk matrix. The disturbance will not just be equivalent to an occasional wildfire. Disturbance and disruption of the threatened species and habitats fits the "almost certain" likelihood so the overall risk should be rated as high - unacceptably high.

I am also concerned about many other likely adverse impacts of this mine, alone or with other adjacent mines if they continue/commence. These include short and possibly longterm impacts on hydrology and aquatic ecosystems, stygofauna, and on the productivity of areas that are currently used for agriculture, and social impacts on some sectors of local communities. Water extractions from the Namoi should be decreased not maintained or increased. Whatever social benefits occur, they will mostly be shortlived whereas loss of soil productivity will have longer social consequences. Excessive water extraction already has adverse social and ecological effects way downstream which should be reduced. While water extraction may have localised social benefits in the Namoi area, change that reduces extraction may or may not involve social cost in this area but is more likely to be costly if one group has to decrease its use more in order to enable the mine to take water.

This site may include good quality coal but that does not mean it ought to be mined. Economic benefits can be obtained from different use of capital and other resources. There are much better choices, notably choices that enable reduction of world carbon emissions rather than increasing emissions.

Please refuse this development application.

Thank you for considering this submission.

Kate Boyd

IP Address: cpe-143-238-115-220.lns10.clt.bigpond.net.au - 143.238.115.220

Submission: Online Submission from Kate Boyd (object)

https://majorprojects.affinitylive.com/?action=view_diary&id=21435

Submission for Job: #4142

https://majorprojects.affinitylive.com/?action=view_job&id=4142

Site: #2307 Maules Creek Coal Mine

https://majorprojects.affinitylive.com/?action=view_site&id=2307

Kate Boyd

E : kateboyd@bigpond.com

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Stephen O'Donoghue - Submission Details for Naomi Hogan

From: Naomi Hogan <naomihogan@gmail.com>
To: <stephen.o'donoghue@planning.nsw.gov.au>
Date: Tuesday, 11 October 2011 10:03 AM
Subject: Submission Details for Naomi Hogan
CC: <assessments@planning.nsw.gov.au>
Attachments: Ecolarge-Assessment-of-Leard-State-Forest-FINAL.pdf; Naomi Hogan Submission to the Maules Creek Coal Project.pdf



Disclosable Political Donation: no

Name: Naomi Hogan
 Email: naomihogan@gmail.com

Address:
 171 Parry St

Hamilton, NSW
 2303

Content:
 Please see below and attached my submission to the Maules Creek Coal Project.

Dear NSW Planning Department and the Planning Assessment Commission,

I, Naomi Hogan, call on the NSW Government to reject the Maules Creek Coal Mine. The proposed action for an open cut coal mine of this scale in Leard State Forest, a known biodiversity hotspot, directly contravenes NSW Government responsibility to:

1. Properly manage timber resources under the NSW Forestry Act 1916,
2. Protect threatened species and endangered ecological communities,
3. Avoid the worst impacts of climate change by limiting the NSW greenhouse gas contribution, and
4. Follow the principles of Ecologically Sustainable Development under the Environmental Planning and Assessment Act 1979.

Please see below evidence to demonstrate these four points.

Properly manage timber resources under the NSW Forestry Act 1916.

Section 11(1)(a) of the Forestry Act 1916 states that Forests NSW is to have control and management of state forests and shall control and manage them in such a manner as best serves the public interest and, in so doing, may maintain and improve indigenous species of trees and may on state forests establish, maintain and improve plantations of indigenous species and exotic species of trees. The Forestry Commission is to preserve and improve, in accordance with good forestry practice, the soil resources and water catchment capabilities of Crown-timber lands and land owned by the Commission or otherwise capabilities under its control or management.

Instead, the Maules Creek Coal Project will clear 1,665 hectares of Leard State Forest, destroying the state timber resource for the private profit of Ashton Resources. Water catchment capabilities will certainly be compromised, as the project includes the digging of 320m metre deep coal pits. This will significantly impact surface water flows, depressurise the water table across kilometers of surrounding forest and agricultural land and impact unique groundwater dependent ecosystems.

Protect threatened species and endangered ecological communities.

Leard State Forest is of extremely high conservation value and should not be destroyed for open cut coal mining. It

includes the most extensive and intact stands of the nationally-listed and critically endangered Box-Gum Woodland remaining on the Australian continent. Significantly, 545 hectares of forest to be cleared for the Maules Creek Coal project is Box-Gum Woodland. When combined with the other two open cut coal mines planned for the Leard Forest area, the total clearing of endangered communities in Leard Forest comes to over 1,169 hectares.

Leard State Forest is home to 396 native species of plants and animals, and known or likely habitat for 36 threatened species and several endangered ecological communities. The proposed clearing of Leard State Forest for this open cut coal mine will impact negatively on the life-cycles of these rare and threatened native species. It will lead to a substantial reduction in foraging and roosting habitat, fragmentation, edge effects, increased threats from invasive species, disruption of breeding cycles and will ultimately cause a long-term decrease in the size of the already limited populations.

Significantly, Leard State Forest is within the Liverpool Plains province of the Brigalow Belt South bioregion, a nationally recognised biodiversity hotspot. Only 2.9% of the Brigalow Belt South bioregion within NSW is included in secure protected areas, well short of the 15% protection target that is considered necessary by both national and international standards.

Avoid the worst impacts of climate change by limiting the NSW greenhouse gas contribution.

At a time when governments across the world are in agreement about the need to bring down our carbon emissions and take action to avoid dangerous climate change, this massive coal mining project is unacceptable. This project will make an enormous contribution to global warming, amounting to at least 25 million tonnes of greenhouse gas emissions every year from burning the product coal. This is equivalent to more than 15% of all emissions from NSW annually. This does not account for the lost carbon sequestration capacity of the forest.

Follow the principles of Ecologically Sustainable Development under the Environmental Planning and Assessment Act 1979.

ESD is a consideration under all NSW Planning decisions under the Planning Act. The principles of ESD include:

Naomi Hogan

E : naomihogan@gmail.com

Submission to the Maules Creek Coal Project

11/10/2011

Dear NSW Planning Department and the Planning Assessment Commission,

I, Naomi Hogan, call on the NSW Government to **reject the Maules Creek Coal Mine**. The proposed action for an open cut coal mine of this scale in Leard State Forest, a known biodiversity hotspot, directly **contravenes NSW Government responsibility** to:

1. Properly manage timber resources under the NSW *Forestry Act 1916*,
2. Protect threatened species and endangered ecological communities,
3. Avoid the worst impacts of climate change by limiting the NSW greenhouse gas contribution, and
4. Follow the principles of Ecologically Sustainable Development under the *Environmental Planning and Assessment Act 1979*.

Please see below evidence to demonstrate these four points.

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Section 11(1)(a) of the *Forestry Act 1916* states that Forests NSW is to have control and management of state forests and shall control and manage them in such a manner as **best serves the public interest** and, in so doing, may **maintain and improve indigenous species of trees** and may on state forests establish, maintain and improve plantations of indigenous species and exotic species of trees. The Forestry Commission is to **preserve and improve, in accordance with good forestry practice, the soil resources and water catchment capabilities** of Crown-timber lands and land owned by the Commission or otherwise capabilities under its control or management.

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nationally-listed and critically endangered Box-Gum Woodland remaining on the Australian continent. Significantly, 545 hectares of forest to be cleared for the Maules Creek Coal project is Box-Gum Woodland. When combined with the other two open cut coal mines planned for the Leard Forest area, the total clearing of endangered communities in Leard Forest comes to over 1,169 hectares.

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Significantly, Leard State Forest is within the Liverpool Plains province of the Brigalow Belt South bioregion, a nationally recognised biodiversity hotspot. Only 2.9% of the Brigalow Belt South bioregion within NSW is included in secure protected areas, well short of the 15% protection target that is considered necessary by both national and international standards.

Avoid the worst impacts of climate change by limiting the NSW greenhouse gas contribution.

At a time when governments across the world are in agreement about the need to bring down our carbon emissions and take action to avoid dangerous climate change, this massive coal mining project is unacceptable. This project will make an enormous contribution to global warming, amounting to at least **25 million tonnes of greenhouse gas emissions every year** from burning the product coal. This is equivalent to more than 15% of all emissions from NSW annually. This does not account for the lost carbon sequestration capacity of the forest.

Follow the principles of Ecologically Sustainable Development under the *Environmental Planning and Assessment Act 1979*.

ESD is a consideration under all NSW Planning decisions under the Planning Act. The principles of ESD include:

- The precautionary principle,
- Inter-generational equity,
- Conservation of biological diversity and ecological integrity, and
- Improved environmental valuation, pricing and incentive mechanisms.

The previously listed impacts of this project on climate change and the destruction of threatened species habitat and critically endangered ecological communities clearly go against the first three principles of ESD.

Regarding improved environmental valuation, in September 2011, Economists at Large Pty Ltd put together an Assessment of the habitat value of Leard State Forest (Attachment A). They demonstrate that environmental assets have value and that conserving Leard State Forest should not be seen as a cost, but rather as **protecting real and valuable assets that play a critical role underpinning market based economic activity**.

Their economic assessment of Leard State Forest used estimations from the Victorian BushBroker programme. They found that the habitat value of Leard State Forest could range from \$630,385,000 (the habitat value using average minimum price across bioregions) to \$1,506,145,667 (the habitat value using average maximum price across bioregions).

Their estimates only included the value of habitat and ecosystems of the Leard State Forest. They did not estimate of the total economic value (TEV) of the forest. A TEV would further include direct use values such as recreation, tourism and forestry, indirect use values or environmental service values such as impacts on ground and surface water volume and quality, carbon sequestration and impact on air quality, and non-use values relating to how the people of NSW value the existence of the forest and its flora and fauna.

In conclusion, **I strongly recommend the NSW Government reject the Maules Creek project** at this time. Ashton Resources needs to work much harder to come up with a project that is not so heavily destructive to Leard State Forest, to threatened species and ecosystems, to critical groundwater systems and to our fragile climate. The people of NSW deserve better outcomes from a government in charge of our public natural assets into the future.

Yours sincerely,

Naomi Hogan

Hunter resident of NSW



Assessment of the habitat value of Leard State Forest

Prepared by

Economists at Large Pty Ltd

July-August 2011

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Citation:

Campbell, R., 2011. *Assessment of the habitat value of Leard State Forest*, a report for the Maules Creek Community Council (MCCC), prepared by Economists at Large, Melbourne, Australia.

Disclaimer:

The views expressed in this report are those of the authors and may not in any circumstances be regarded as stating an official position of the organisations involved.

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Summary

The Leard State Forest is located on the Liverpool Plains in Narrabri Shire, north-central New South Wales. Covering an area of 8,136 hectares, it is a large, relatively intact area of remnant native vegetation. The forest is within the Brigalow Belt South bioregion, one of Australia's 15 "biodiversity hotspots" (DSEWPC 2009). Ecological communities found in the forest include critically endangered box-gum grassy woodlands and native grasslands. 24 threatened species of animal and bird that are known to inhabit the forest, including the Regent Honeyeater, the Greater Long-eared Bat and the Koala (NPANSW n.d.).

In the Brigalow Belt South bioregion 61% of native vegetation has been cleared (NVAC 1999), and only 2.5% of the vegetated area is in reserves. Several coal mining projects are looking to expand operations into the forest, mainly using open-cut mining.

To understand how these projects would affect their local area, the Maules Creek Community Council (MCCC) has asked Economists at Large to consider the economic values of Leard State Forest. Environmental and ecological economics provide several methods for assessing the economic values of environmental resources. Some of these are described below, however due to the limited resources available for this report, we have not been able to conduct physical surveys of the forest itself. Instead, we have made a range of estimates based on Victoria's, BushBroker programme.

BushBroker is a market for native vegetation offsets. It is one of a growing number of market-based instruments being used to provide incentives for improvements in natural resource management. Under the programme, developers who would like to clear an area of native vegetation on their land negotiate with landowners whose land meets the complex 'like for like' rules under *Victoria's Native Vegetation Management – a Framework for Action* (DSE 2002). In each individual agreement landholders and developers negotiate prices privately. Price information collected across bioregions and published by the programme.

We have used price data from the Victorian BushBroker vegetation offset market to estimate a range of values relating to the native vegetation of the Leard State Forest:

Leard State Forest Area (ha)	8,134
Habitat hectare value using Victorian minimum value	\$162,680,000
Habitat hectare value using average minimum price across Victorian bioregions	\$630,385,000
Habitat hectare value using average of all BushBroker transactions	\$989,038,061
Habitat hectare value using average of Victorian bioregion averages	\$1,178,074,333
Habitat hectare value using average maximum price across Victorian bioregions	\$1,506,145,667

Leard State Forest

The Leard State Forest is located on the Liverpool Plains in Narrabri Shire, north-central New South Wales. Covering an area of 8,134 hectares, it is one of the most intact areas of habitat in the Brigalow Belt South bioregion (NPANSW n.d.). The Brigalow Belt is considered one of Australia's 15 "biodiversity hotspots" by the federal environment department. The biodiversity hotspots are areas which have high diversity of locally endemic flora and fauna, that are under risk from land management activities and provide high-value potential for conservation (DSEWPC 2009).

The Leard State Forest contains many rare and threatened ecological vegetation classes. Most important are several types of box-gum grassy woodlands and grasslands that are listed as critically endangered under the Environment Protection and Biodiversity Conservation Act. Some vegetation classes in the forest include:

- Yellow box-Blakely's red gum grassy woodland
- White box – white cypress pine grassy woodland
- White box – white cypress pine grassy open forest
- Pilliga box – white cypress pine grassy open woodland
- Weeping Myall grassy open woodland
- Narrow-leaved ironbark shrubby open forest
- Derived native grassland

Source: (Parsons Brinckerhoff 2010)

The forest also includes some areas of exotic grassland and areas used for forestry that are in a degraded condition.

The National Parks Association of NSW lists at least 24 threatened species of birds and animals known to inhabit the forest:

- Brown Treecreeper
- Hooded Robin
- Black-chinned Honeyeater
- Painted Honeyeater
- Pied Honeyeater
- Grey-crowned Babbler
- Speckled Warbler
- Diamond Firetail
- Varied Sittella
- White-browed Woodswallow
- Spotted Harrier
- Little Lorikeet
- Little Eagle
- Turquoise Parrot
- Barking Owl
- Masked Owl
- Black-necked Stork
- Eastern False Pipistrelle
- Greater Long-eared Bat
- Yellow-bellied Sheath-tail Bat
- Eastern Cave Bat
- Eastern Bent-wing Bat
- Little Pied Bat
- Koala

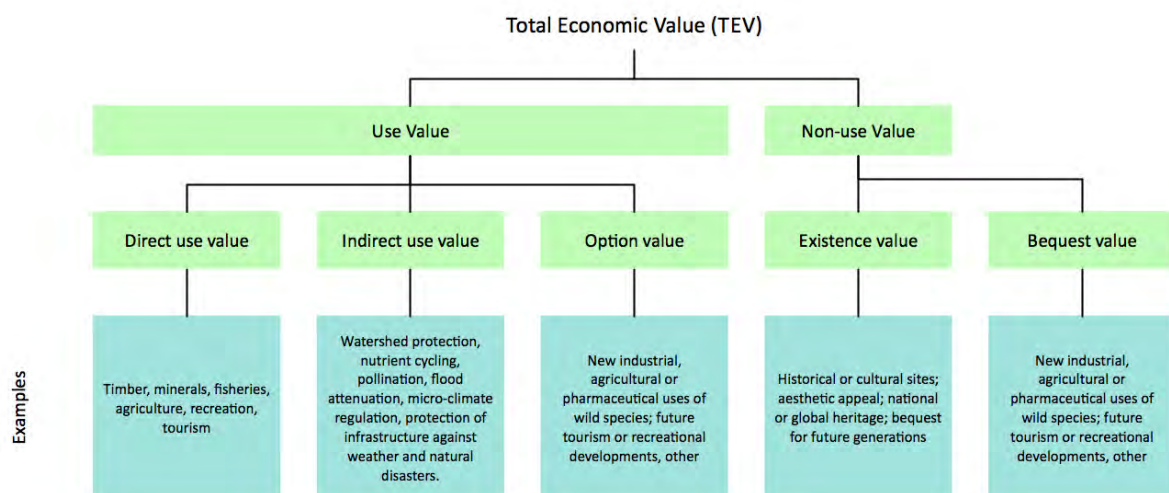
Source: (NPANSW n.d.)

Valuing habitat and environmental assets

Total Economic Value

Valuation of the environment is difficult. While benefits like clean air, water and a biodiverse environment benefit everyone, these benefits are generally not bought and sold in markets, making their valuation difficult. Some environmental goods and services are easy to identify – water, timber, going camping in a beautiful place – these are known as direct uses. Other indirect uses are less obvious – a stable climate, reduced erosion, protection from flooding, insects that pollinate crops. Still less obvious are non-use values – the fact that people value animals, plants and environments even though they may never see them. Economists generally try to assess all these values in relation to environmental goods, an approach known as Total Economic Value (TEV).

TEV and its various components – non-use values, use values and their various sub categories are shown in the diagram below with some examples.



Assessing all aspects of Total Economic Value involves many different studies and valuation techniques. Some examples include:

- Valuation of direct uses through goods prices, entry fees or travel cost methodology. See O'Connor et al. (2009) for an Economists at Large study on whale watching worldwide, showing that whale conservation contributes to an industry with revenue of over \$2.8 billion in 2008.
- Valuation of indirect uses through evaluation of avoided costs. The city of New York saved \$6-8 billion over 10 years by improving the integrity of ecosystems in their water catchments, rather than building and running a filtration plant. See (Chichilnisky and Heal 1998)
- Valuation of people's "willingness to pay" to protect a particular environmental good. See (Bennett, Dumsday, and Kragt 2007) for an example of the non-use value of Victorian forests.

Conducting such studies is expensive and time consuming. It is beyond the scope of this report to attempt such a large and detailed study of the Leard State Forest with physical assessments and social surveys. Because of the size of such studies, environmental values are often ignored in cost benefit analysis.

Benefits Transfer

Because of the expense and difficulty of these studies, economists often use “benefits transfer” estimate environmental values. This involves taking the results of a study of a particular environmental good or service in one area and using that as the basis for estimating values in another area. See Economists at Large (2008) for an example of benefits transfer, where values from a study on red gum forests in Victoria are transferred to red gum forests in NSW. Unfortunately we are unaware of any study or range of studies that are suitable to allow benefits transfer to assess the economic value of the Leard State Forest.

There are far too few comprehensive studies of ecosystems service valuation, biodiversity or landscape values in Australia. The result of this is that these environmental assets are given a value of zero in planning decisions, particularly in areas of productive land use. American study Scott et al. (2001) conclude that in productive agricultural areas where remnant vegetation is largely on private land, creative engagement of the private sector is crucial for conservation. One such approach that is gaining in popularity in Australia is market-based instruments.

Market-based instruments

Market-based instruments (MBIs) are being developed to create incentives for environmental goods. While there are many different programmes, they all try to create incentive and competition for environmental goods and services where none existed before. By creating supply and demand for a good or service, the scarcity of it and the costs involved in producing it, give it a market value. Well-known examples include water markets, or markets for emitting pollution.

MBIs to improve land management and conservation of biodiversity are also becoming widespread. Examples include conservation tenders and environmental markets. Conservation tenders involve landholders preparing a tender to receive funds in return for environmental improvements on their land. Environmental markets involve the buying and selling of a particular good or right, such as the right to clear native vegetation. In all cases, landholders retain the ownership of their land while these schemes provide an incentive to manage it partly for public, environmental good.

Environmental tenders

A successful environmental tender programme operates on the Liverpool Plains, close to Leard State Forest. The Liverpool Plains Land Management Committee, a community-based non-profit organisation, has been running tenders since 2001. Landholders prepare proposals of environmental improvements they could carry out on their land which will benefit the community

and the environment, and set the prices they would charge for carrying out these works. These proposals are assessed by the LPLM using a mathematical model incorporating the proposed benefits and the landholder's asking price.

While environmental tender programmes have been very successful in achieving conservation outcomes, it is difficult to use their results to estimate values of environmental goods outside their programme. It is difficult to compare the site-specific, often multi-criteria benefits provided by the tendered projects, and price information is often unavailable. Environmental markets, however, generally trade in more defined, quantifiable environmental goods and knowledge of market prices is important for participants, regulators and observers.

Environmental markets

Australia has two programmes that are working to put a market price on native habitat offsets, BioBanking in New South Wales and BushBroker in Victoria. BioBanking has had few transactions to date and has little publically available price information. BushBroker, on the other hand, has been operating for eight years, has had many transactions, and has publically-available price data.

BushBroker

The BushBroker programme trades in a specific good – native vegetation offsets. Different types of offset are bought and sold, relating to their ecological vegetation class. While individual transactions are private, general price information is readily available enabling market participants and observers to value their own needs and plan their participation in the market – if any.

The offsets are measured in “habitat hectares” an approach which incorporates habitat quality – environmental service value – and also enables market participants to assess their position.

What is a Habitat Hectare:

A habitat hectare is a site-based measure of quality and quantity of native vegetation that is assessed in the context of the relevant native vegetation type. This measure can be consistently applied across the State.

If it is assumed that an unaltered area of natural habitat (given that it is large enough and is within a natural landscape context) is at 100% of its natural quality, then one hectare of such habitat will be equivalent to one habitat hectare. That is the quality multiplied by the quantity. Ten hectares of this high quality habitat would be equivalent to ten habitat hectares, and so on. If an area of habitat had lost 50% of its quality (say, through weed invasion and loss of understorey), then one hectare would be equivalent to 0.5 habitat hectares, ten hectares would equivalent to five habitat hectares, and so on.

Source: (DSE 2002) p18

BushBroker has regulations on how these offsets can be generated. The general guidelines are:

- The areas of habitat being offset and restored must meet complex “Like for like” rules under *Victoria’s Native Vegetation Management – a Framework for Action* (DSE 2002).
- The two sites must be within the same bioregion for high and very high conservation value vegetation classes, while medium and low value classes can trade within their own or adjacent bioregions.
- The offset is permanent; the offset site is permanently protected through a legally-binding Landowner agreement and ongoing monitoring.

In generating habitat hectares, some activities that landholders undertake include:

• weed control	• revegetation
• rabbit control	• ecological burning
• stock exclusion	• bushfire prevention
• fencing	• ecological thinning

The legislated requirement for clearers of vegetation to obtain habitat hectare offsets from landholders who can supply only limited amounts of these offsets introduces the economic concept of scarcity to habitat conservation. The demand and supply of these offsets will give them a price, which economists believe will bring about a more efficient allocation of these resources.

Landowners and developers negotiate prices one-on-one, so each sale is dependent on the circumstances of that particular transaction. Supply and demand of particular types of offset are important in the relevant regions. Timing is also important – when developers are in urgent need of offsets prices can be driven up. Landowner attitudes are also influential, with some motivated largely by interest in habitat, while others are motivated primarily by payment (BushBroker managers pers. com).

Using BushBroker prices to estimate the value of Leard State Forest

BushBroker price histories are not available for individual agreements or specific ecological vegetation classes. Even if this information were available these prices reflect supply and demand within a bioregion and may not be reflective of conditions around the Leard State Forest, under a similar market. Instead, we have used minimum and average habitat hectare prices to estimate a range of values.

Given that specific vegetation class prices cannot be transferred, it is worth noting in relation to the average values that:

- Woodland and grassland vegetation classes similar to those found in Leards State Forest are traded on BushBroker and are included in the average values.
- Vegetation classes traded under BushBroker including examples of very high, high, medium and low conservation significance, reflecting Leard State Forest's areas of threatened ecosystems as well as areas of lesser value.
- The percentage of native vegetation clearance in Brigalow Belt South Bioregion - 61% is similar to Victoria as a whole – 66% (DSE 2002 p7) – suggesting that demand and supply of offsets would potentially be similar.

We have assumed that 1 hectare of state forest would equal one habitat hectare. This is supported by Parsons Brinckerhoff (2010), who found the areas it had assessed comprised “native forest and woodland communities with relatively few exotic species and high natural species diversity. (p ix)” Future estimates of the forest's value incorporating physical assessment of the forest may relax this assumption as better data becomes available.

The table below shows the publicly available price history from the BushBroker programme from May 2006 to May 2011. These prices have been used to estimate a range of values for the habitat of Leard State Forest.

Bioregion	Number of Agreements	Total number of Habitat Hectares	Average price per Habitat Hectare *	Habitat Hectare price range * *
Gippsland Plain	21	29	\$149,000	\$85,000 - \$250,000
Goldfields	39	38	\$45,000	\$25,000 - \$66,000
Victorian Riverina	10	11	\$101,000	\$80,000 - \$110,000
Victorian Volcanic Plain	29	54	\$170,000	\$49,000 - \$267,000
Highlands-Southern Fall	14	74	\$34,000	\$20,000 - \$38,000
Other bioregions	11	25	\$370,000	\$206,000 - \$380,000
Total	95	231		

*Average across all agreements in each bioregion * *80+% of agreements in each bioregion fall in this range

From this price history we can derive a number of values:

	\$/ha
Minimum habitat hectare price	\$20,000
Average minimum of all bioregions	\$77,500
Average price across program (total habitat hectares/total ammount spent)	\$121,593
Average of bioregion average prices	\$144,833
Average maximum of all bioregions	\$185,167

From these average values we can estimate a range of values for the Leard State Forest:

Leard State Forest Area (ha)	8,134
Habitat hectare value using Victorian minimum value	\$162,680,000
Habitat hectare value using average minimum price across Victorian bioregions	\$630,385,000
Habitat hectare value using average of all BushBroker transactions	\$989,038,061
Habitat hectare value using average of Victorian bioregion averages	\$1,178,074,333
Habitat hectare value using average maximum price across Victorian bioregions	\$1,506,145,667

The wide range of values here reflects the difficulty in precisely monetising the value of the environment and its services. Nonetheless, we believe it is important to make such estimates to ensure that stakeholders clearly understand that environmental assets are scarce and have value. Conserving them should not be seen as a cost, but rather as protecting real and valuable assets that play a critical role underpinning market based economic activity. While there is no doubt that such environmental assets have value, there are all-too-few attempts to quantify them.

Points to note about these estimates:

- These are estimates of the value of habitat and ecosystems of the Leard State Forest. It is not an estimate of the total economic value (TEV) of the forest. Further research is needed to determine the TEV of the forest. As mentioned above, TEV includes:
 - Direct use values such as recreation, tourism and forestry;
 - Indirect use values or environmental service values such as impacts on ground and surface water volume and quality, carbon sequestration, impact on air quality, etc
 - Non-use values relating to how the people of NSW value the existence of the forest and its flora and fauna.
- While the habitat hectare approach does incorporate quality of habitat, and so some indication of environmental service value, these values should not be considered a present value of environmental services. Instead, these values reflect the scarcity of different vegetation class offsets – the demand for them and the supply of them in Victoria. While the percentages of native vegetation clearance is similar in both areas, forecasting the levels of supply and demand that would prevail in the Leards Forest area is impossible until a similar market is developed in NSW or detailed surveys are carried out.
- These values represent the replacement cost of the entire Leard State Forest, incorporating every ecological vegetation class found in the forest, at a scale of a fraction of a hectare, reflecting the small scale of transactions usually traded under BushBroker. Re-establishing and maintaining fragile ecosystems involve considerable capital costs, maintenance and commitment over many years, as reflected in the BushBroker prices.
- Estimates are based on transactions relating to smaller, often fragmented areas of habitat. The Leard State Forest is a relatively large area of in-tact habitat. Ecologists suggest large areas of habitat are of greater value than smaller, separated ones, ie the whole is greater than the sum of the parts. See Hawes (2011) who discusses this in relation to the Leard State Forest. Our estimates do not consider the impact of the small size of areas transacted.
- The size of the area in the Leard State Forest is significantly larger than the combined areas for all BushBroker transactions. Transaction costs associated with BushBroker sales are significant – the initial site inspection costs at least \$5,000 and many other costs are associated. Payments are held in non-interest bearing accounts for considerable periods, further inflating prices. If larger areas were being considered it is possible that considerable savings could be realised. See *BushBroker information sheet 22 – fees and services* for full details.

Conclusion

Leard State Forest contains remnant native habitat of considerable value. Valuing environmental assets such as native ecosystems is difficult, generally involving extensive physical and social surveys not possible in this report.

Victoria's BushBroker programme, a market based instrument aimed at providing incentives for conservation through the buying and selling of vegetation offsets, provides proxy prices for native vegetation values. By using the minimum and several average prices, we have estimated a range of values for the Leard State Forest.

Leard State Forest Area (ha)	8,134
Minimum value	\$162,680,000
Habitat value using average minimum price across bioregions	\$630,385,000
Habitat value using average of all transactions	\$989,038,061
Habitat value using average of bioregion averages	\$1,178,074,333
Habitat value using average maximum price across bioregions	\$1,506,145,667

Several factors should be considered with these estimates:

- They do not provide a full estimate of Total Economic Value.
- They are not a present value of a stream of environmental services, but represent the scarcity and replacement cost of vegetation offsets.
- These reflect market conditions in Victoria
- BushBroker prices are based on smaller areas of native vegetation, the sum of which may not be as valuable as an in-tact large area.
- Transaction costs in BushBroker are considerable

As such these estimates should not be taken as definitive, but should be used as the basis for further investigation, through physical and social methods. Given the paucity of total economic value studies in Australia, we encourage efforts to value the environmental assets of Leard State Forest in more detail. These estimates do, however, demonstrate that native vegetation has considerable economic value, which should be taken into account when making decisions in relation to the Leard State Forest.

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BushBroker website

<http://www.dse.vic.gov.au/conservation-and-environment/biodiversity/rural-landscapes/bushbroker>

Meeting between Rod Campbell of Economists at Large and BushBroker managers Penny de Vine and Anne Buchan, held at DSE 11am, 15th July, 2011.

BioBanking website

<http://www.environment.nsw.gov.au/biobanking/>

All documents relating to the Boggabri Coal Extension Project – the full environmental assessment, including appendix J Biodiversity assessment, and the MCCC's submission on the assessment can be found at:

http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=3562

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Stephen O'Donoghue - Submission Details for Catherine Smit

From: Catherine Smit <casandpeter@gmail.com>
To: <stephen.o'donoghue@planning.nsw.gov.au>
Date: Tuesday, 11 October 2011 10:59 AM
Subject: Submission Details for Catherine Smit
CC: <assessments@planning.nsw.gov.au>



Disclosable Political Donation: no

Name: Catherine Smit
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Yuularaay Farm
P.O. Box 154
Coonabarabran, NSW
2357

Content:
11th of October, 2011

Submission to the Maules Creek Coal Project Assessment by the NSW Department of Planning and Infrastructure

Dear Sir/Madam,

I am writing to express my strong opposition to the Maules Creek Coal Project, proposed by Aston Resources.

I object to the project on a number of grounds. Firstly, because it will involve the clearing of a further 1,665 hectares of native bush, taking the total clearing in the Leard State Forest to over 3,500 hectares. This includes 545 hectares of the White Box Grassy Woodland endangered community which would mean that a total of 1,169 hectares of endangered communities will have been cleared in the Leard State Forest if the project goes ahead. As one of the largest stands of remnant vegetation left on the heavily cleared Liverpool Plains, home to threatened species such as Koalas, Painted Honeyeaters, Turquoise Parrots and Eastern Cave bats, this area should be protected, not turned into a massive open pit with associated infrastructure.

I am also aware that the final pit depth of 320m will have serious impacts on water resources by causing the depressurisation of the water table, permanently depleting groundwater, interfering with aquifers and diverting surface water.

I also object to the project going ahead because it will destroy the lifestyle and well being of the people of Maules Creek by turning it into an industrial zone with impacts on health, air quality, noise and amenity. The social impact of huge mining projects such as this on the mental health of rural communities by causing widespread emotional distress and social disruption is one that should be taken seriously by the NSW State Government.

Leard State Forest is a community asset that the following generations deserve to inherit undamaged and one that mining companies, shareholders and governments do not have the right to exploit, for short term profits and revenue raising. Furthermore, this coal mining project will represent an enormous contribution to global warming amounting to at least 25 million tonnes of greenhouse gas emissions per annum from burning the coal that is produced.

Catherine Smit

E : casandpeter@gmail.com

11th of October, 2011

Submission to the Assessment of the Maules Creek Coal Project by the NSW Department of Planning and Infrastructure, Application Number: 10_0138

Dear Stephen O'Donoghue,

I am writing to express my strong opposition to the Maules Creek Coal Project, proposed by Aston Resources.

I object to the project on a number of grounds. Firstly, because it will involve the clearing of a further 1,665 hectares of native bush in the Leard State Forest, taking the total clearing to over 3,500 hectares. This includes 545 hectares of the White Box Grassy Woodland endangered community which would mean that a total of 1,169 hectares of endangered communities will have been cleared in the Leard State Forest if the project goes ahead. As one of the largest stands of remnant vegetation left on the heavily cleared Liverpool Plains, home to threatened species such as Koalas, Painted Honeyeaters, Turquoise Parrots and Eastern Cave bats, this area should be protected, not turned into a massive open pit with associated infrastructure.

I am also aware that the the final pit depth of 320m will have serious impacts on water resources by causing the depressurisation of the water table, permanently depleting groundwater, interfering with aquifers and diverting surface water.

I also object to the project going ahead because it will destroy the lifestyle and well being of the people of Maules Creek by turning it into an industrial zone with impacts on health, air quality, noise and amenity. The social impact of huge mining projects such as this on the mental health of rural communities by causing widespread emotional distress and social disruption is one that should be taken seriously by the NSW State Government.

Leard State Forest is a community asset that the following generations deserve to inherit undamaged and one that mining companies, shareholders and governments do not have the right to exploit, for short term profits and revenue raising. Furthermore, this coal mining project will represent an enormous contribution to global warming amounting to at least 25 million tonnes of greenhouse gas emissions per annum from burning the coal that is produced. This is equivalent to more than 15% of all emissions from NSW annually. NSW needs to move ahead with encouraging innovation and investment in alternative energy projects, in conjunction with reducing energy use through education, instead of relying on "more of the same" fossil fuel solutions.

For all these reasons, I believe that the Maules Creek Coal Project should not be approved.

Yours sincerely,
Catherine Smit
Yuularaay Farm
P.O. Box 154
Coonabarabran NSW 2357

Stephen O'Donoghue - Submission Details for Martin Brennan of Cumbamurra Partnership

From: Martin Brennan <oakleigh8@activ8.net.au>
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Date: Tuesday, 11 October 2011 12:01 PM
Subject: Submission Details for Martin Brennan of Cumbamurra Partnership
CC: <assessments@planning.nsw.gov.au>



Disclosable Political Donation: no

Name: Martin Brennan
 Organisation: Cumbamurra Partnership (Partner and Landowner)
 Email: oakleigh8@activ8.net.au

Address:
 Oakleigh

BOGGABRI, NSW
 2382

Content:

Our property "Oakleigh" is situated east of the mining lease, bordering Leards Forest on the Southern and partial western boundary. Our operations consist of cropping, beef cattle and fat lamb production. We have 2 residences, one residence occupied by Ellen Brennan (aged 76) and the other occupied by us....Marty, Karen and our sons Jack and Jed Brennan (aged 39,36,12 and 10). Our children attend the local school, Fairfax Public School. "Oakleigh" has been in our family for 30 years, and have recently bought an adjoining block "Onavale" to our east.

We recognise the right to mine the resource, and can see the benefit that this will create. We have done some work for Aston Resources, and hope to continue this working partnership.

We find Maules Creek a fantastic place to live, and would like to outline some of our concerns, regarding the project.

1. Our property is in a unique position, having Boggabri Coal as our eastern and part southern neighbours (in land purchased), Leards Forest on our southern and part western boundary. Maules Creek Coal to our west, Boggabri Coal to our south and proposed Goonbri to the south east. Whitehaven Mine have purchased a large property to our North East, adjoining Mount Kaputar National Park, which in turn joins other offset country of Boggabri Coal and Maules Creek Coal.

Our concerns of being surrounded by mining leases and mine owned land are:

- a) The devaluation of our land.
- b) The ability to sell, if need be (due to health or financial constraints, or the fact that we may find it uncomfortable to live here, as mining progresses.)
- c) The increased pressure from noxious weed and feral animal populations.
- d) The possibility of offset country being handed to National Parks (known to be difficult neighbours)
- e) The inclusion of our property for animal corridors and linking purposes.
- f) The cumulative impacts of the existing Boggabri Coal operation, its expansion, Maules Creek Project and proposed Goonbri project. All being close neighbours to our property.
- g) Our intention of building on our "Onvale" block, at the southern end of our property, has now become "not an option".

2. Other issues are of the more obvious nature. These have been covered in the EA, based on modeling, but we feel that the impact on noise, water, air, light, visual will not be properly known until the mine is in production. The modelling shows that our property is within the management boundaries for Dust, Water, Visual and to a lesser extent noise (but this is yet to be known).

Whilst we are supporters of the "project", there are issues that need to be addressed. With the right consultation and positive attitude this can be achieved, a "win/win" result being the best outcome.

IP Address: - 116.250.94.26

Submission: Online Submission from Martin Brennan of Cumbamurra Partnership (support)

https://majorprojects.affinitylive.com/?action=view_diary&id=21461

Submission for Job: #4142

https://majorprojects.affinitylive.com/?action=view_job&id=4142

Site: #2307 Maules Creek Coal Mine

https://majorprojects.affinitylive.com/?action=view_site&id=2307

Martin Brennan

E : oakleigh8@activ8.net.au

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Stephen O'Donoghue - Submission Details for Tracey LAIRD of LAIRD FAMILY

From: Tracey LAIRD <tlaird@bigpond.com>
To: <stephen.o'donoghue@planning.nsw.gov.au>
Date: Tuesday, 11 October 2011 12:27 PM
Subject: Submission Details for Tracey LAIRD of LAIRD FAMILY
CC: <assessments@planning.nsw.gov.au>
Attachments: Laird Family response to Maules Creek Coal Project 10_0138.pdf



Disclosable Political Donation: no

Name: Tracey LAIRD
Organisation: LAIRD FAMILY ()
Email: tlaird@bigpond.com

Address:
"Middle Creek South"
Middle Creek Road
MAULES CREEK, NSW
2382

Content:
Please find attached the Laird Family Response to Aston Coal 2 Pty Ltd's Major Project Application. This document has been compiled by Tracey Laird on behalf of the entire Laird Family.

IP Address: huntergate.hnehealth.nsw.gov.au - 202.59.16.106
Submission: Online Submission from Tracey LAIRD of LAIRD FAMILY (object)
https://majorprojects.affinitylive.com/?action=view_diary&id=21467

Submission for Job: #4142
https://majorprojects.affinitylive.com/?action=view_job&id=4142

Site: #2307 Maules Creek Coal Mine
https://majorprojects.affinitylive.com/?action=view_site&id=2307

Tracey LAIRD

E : tlaird@bigpond.com

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Laird Family Response

To Application #10_0138 Maules Creek Coal Project

October 11, 2011

Summary

We the Laird Family of Maules Creek vehemently oppose the development of Maules Creek Coal Project in Leard State Forest. We believe the development of this mine will forever decimate the rural community of Maules Creek and reduce the Laird Family Property to an uninhabitable place. We believe the toxic pollution and destruction of the landscape will reduce Maules Creek to a wasteland.

History

The Laird Family have lived and worked on "Roslyn" Maules Creek since acquiring it in 1877 through Free Selection of Crown Land was made possible as a result of the *Robertson Act 1861 (NSW)* (NSW Government Land and Property Information n.d.)

William Bagnall Poole Laird (from now referred to as Bagnall) and his wife Susan Laird established the property, raising their family until Bagnall passed away in 1930 and his wife Susan in 1934. Bagnall and his wife are buried on "Roslyn" in the family cemetery.



William Leslie Fitzgerald Laird (from now referred to as Leslie), eldest son of Bagnall and Susan, was born on "Roslyn" in 1897. Leslie worked and lived on "Roslyn" all of his life.

Leslie and his wife Dora raised six children on "Roslyn", and lived on the property until their passing in 1981 and 1959 respectively. Both are buried in the family cemetery located on "Roslyn".



William Bruce Laird (from now referred to as Bruce), son of Leslie, was born on "Roslyn" in 1933 and was the eldest of six children. Bruce has lived and worked on "Roslyn" his entire life. He married his wife Wilma in 1961 and they have raised six children. "Roslyn" is currently being run by two of Bruce and Wilma's sons, Andrew and Richard.

Both Bruce and Wilma still live on "Roslyn" in retirement. Their wish is to remain on the property for the rest of their lives.



Laird Family Cemetery –“Roslyn”, Maules Creek

Andrew and Rick have lived and worked on “Roslyn” all of their lives and have raised their families on the property. Andrew has two children with his wife Wendy and Richard has five children with his wife Tracey.

It has always been the intention of Andrew and Rick to work and further develop the property until their children were old enough to continue the tradition of Laird’s on “Roslyn”.

This, however, will not be possible should the Proposed Maules Creek Coal Project be approved.

It is the firm belief of the entire Laird family that approval of the Proposed Maules Creek Coal Project will most certainly mean the end of the Laird Family in Maules Creek as the families will be forced to move away to a safer environment. This forced move will have a devastating emotional impact, causing the fragmentation of the family unit, as well as a huge financial cost in loss of earnings and the forfeiture of lifestyle.

This property has been in the family for 134 years and five generations.

This proposal and its resulting consequences has caused and continues to have a devastating impact on Mr William Bruce LAIRD (Bruce) who has lived nowhere else for his entire life (78 years).

There are three generations living on “Roslyn” at this time, should the Proposed Maules Creek Coal Project be approved the proximity of the property to the Project will mean that the families will be forced to leave. The Proposed Maules Creek Coal Project will be directly responsible for the fracturing of the family unit and the forced abandonment of the Family Home of 134 years.

In recent years Richard and his wife Tracey purchased “Middle Creek South” (part Middle Creek) which includes a house built in the mid to late -1800s. This historical house, originally built as a small timber home, over the years was expanded upon by two pioneering women who also helped to develop the Maules Creek Area. When Richard and Tracey purchased the property it was in a state of disrepair. They purchased the property with the intention of restoring the house and creating a home for their family.

Richard and his wife have spent a great deal of money renovating and restoring this historical house. The boundary of the Proposed Maules Creek Coal Project is 5 kilometres from this house.



“Middle Creek South” House - Today

Richard and Tracey have approval to erect a 10kw/hour Solar Installation. They have decided however not to begin this installation as the location of the Proposed Maules Creek Coal Project is too close to their home and they are not prepared to continue with the financial outlay to improve their property when it will essentially be unliveable should the mine be approved.

Richard and Tracey have five children; two are currently attending Fairfax Public School and one who will be attending in 2013. The two older children are currently attending high school. If the Proposed Maules Creek Coal Project were to be approved, the children attending Fairfax Public School would be exposed to unacceptable levels of Air and Noise pollution. Richard and Tracey feel that should the project be approved, they would have no choice but to not allow their children to attend the school as the risk to their health would be too great.

Andrew and Wendy’s children are older and are attending High School.

Every Laird child from William Leslie Laird (born 1897) to the children of Andrew and Wendy Laird and the children of Richard and Tracey Laird has attended Fairfax Public School (the last to begin school in 2013). The Proposed Maules Creek Coal Project, if approved, will signify the end of the tradition of Laird Children completing their Primary Education in the Idyllic setting of Fairfax Public School.



Bruce and Will - Drought Feeding 2008

The Property

“Roslyn” has been the owned by the Laird Family since 1877. This is however, more than just a property. This is a home, a business, a way of life. The property is able to support three families and is regarded as one of the best properties in the region. “Roslyn” is made up primarily of highly productive fertile soils including heavy black soil. This property has consistently produced excellent cropping results as well as being able to support a fine herd of Angus Cattle.

“Roslyn” farming history includes many award winning crops, most recently NSW Farmers Wheat Crop competition and also the State winner of Barley Crop competition. During the devastating drought of 1995 “Roslyn” was the only property in Maules Creek to have any crop survive to harvest. This is testimony to the quality of the land and the care and excellent farming practices of the current generation of Lairds.

Maules Creek, with the Nandewar Range to the North, provides an ideal environment for growing Dryland Cotton. The area is protected from hot northerly winds and has a reliable rainfall average of 600mm p.a. leading to higher than average yields. The 2011 crop out-yielded other crops to the north and west of the ranges.

“Roslyn” has over 1200 acres of Heavy Black Soil consistently producing high yielding and high quality crops.



Andrew, Richard and Will Laird



Feedlot on Roslyn



Phoebe, Caitie, Will and Richard - Canola



Wheat on Roslyn 2008



Richard and Will Laird – Wheat on Roslyn



Dryland Cotton 2011



Dryland Cotton 2011



Dryland Cotton 2011



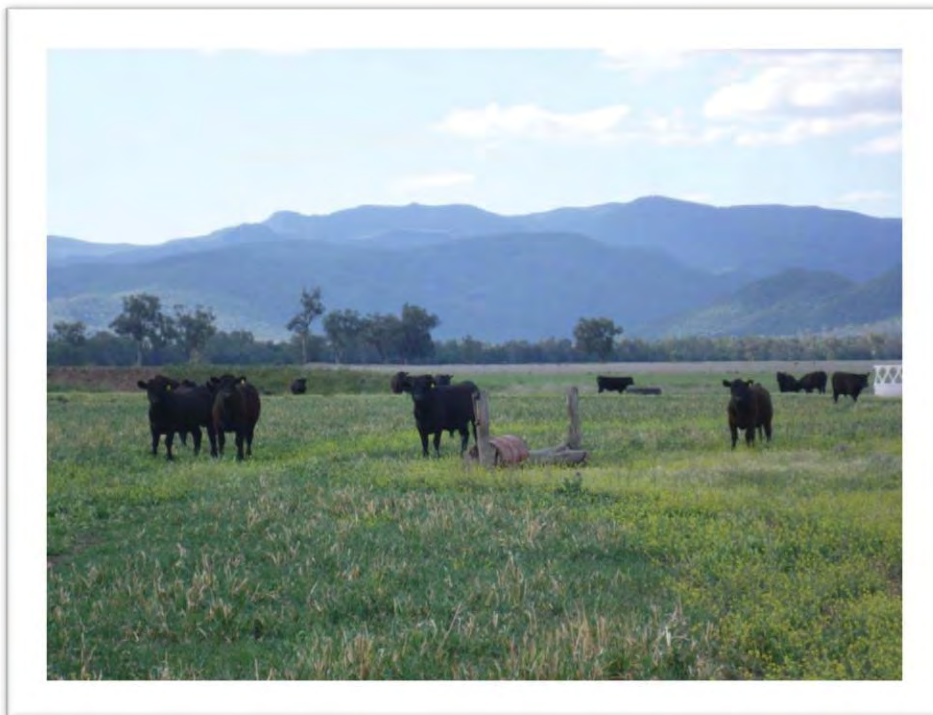
Bruce, Phoebe, Caitie, Will, Wilma and Max Laird 2011



Cattle on Roslyn 2011



Cattle on Roslyn 2011



Cattle on Roslyn 2011

If the Proposed Maules Creek Coal Project is approved the loss of “Roslyn” and the degradation of the Prime Agricultural land would be a tragedy.

The Proposed Maules Creek Coal Project has already caused tremendous stress within the Laird Family. The family members are feeling a sense of Loss; Loss of Family Home, Loss of inheritance for their children, Loss of Identity and most of all they are feeling Powerless to prevent the destruction of their Family.

This mine will cause this family to be fractured.

Environment

Maules Creek has a unique topography, which lends to the idyllic lifestyle and fertile farming land. The Nandewar Mountain range to the North of Maules Creek area acts as a wind break and causes an inversion layer within the valley.

Air Quality Assessments indicate to us that the cumulative dust level from Proposed Maules Creek Coal Project and the existing Open Cut Mines (Boggabri Coal and Tarrawonga Mines) will mean that we will suffer greatly from exposure to the harmful dust particles including PM_{2.5} dust. Studies show that PM_{2.5} Coal Dust has a catastrophic effect on the health and wellbeing of those who inhale it.

Evidence is beginning to emerge about the devastating effects on Coal Dust on human health. It has been shown that Coal Dust contributes to four of the five leading causes of mortality; heart disease, cancer, stroke, and chronic lower respiratory diseases. Pollutants produced from Coal Mining, including nitrous oxide and very small particles known as PM_{2.5} have been proven to adversely affect lung development in children leading to pulmonary diseases. (Alan H.Lockwood, Kristen Welker-Hood, Molly Rauch, & Barbara Gottlieb, November 2009)

There is an emerging pattern in the Hunter Valley particularly around the town of Singleton of clusters of these diseases. Local Physician, Dr Tuan Au of Singleton, NSW, has begun a study into the effects of Coal Air Pollution has on the health of local residents after noticing a disturbing number of children presenting to local practices with asthma and other respiratory diseases. This study is predicted to take five years to complete.

Richard's daughter has Asthma and one of his sons has shown signs of developing Asthma as well. With the increasing evidence proving the harmful effects of Coal Dust and the climate of Maules Creek, where the prevailing winds originate primarily from the South-West and are trapped in the Maules Creek Valley by the Northern Mountain Range of the Mt Kaputar and Nandewar Ranges producing an inversion layer, we believe the risks to our health and the health of our children are extreme. We would not be able in all consciousness allow our children to be exposed to this danger.

Current estimations are that Aston Coal 2 will be extracting 10.8 million tonnes of Coal a year and in achieving that will be moving

With the cumulative effect of Aston Coal, Boggabri Coal and Tarrawonga, there will be approximately 143.8 million tonnes of dirt being moved to extract the approximate 20.8 million tonnes of Coal per year.

We believe that should the Proposed Maules Creek Coal Project be approved, our idyllic home will become an intolerable and dangerous place to live.

We have genuine concerns about the underground water issues. On "Roslyn" there are four bores used for household and stock water. The main bore on "Roslyn" is only 175 feet deep into Water Bearing Sandstone. This bore is the main water source for the two houses on "Roslyn" as well as water for the Feedlot.

On "Middle Creek South", 100% of water for household and stock is derived from a bore situated near the "Middle Creek South" House. While we are not aware of any data showing our water supplies will be damaged we are very worried that the depth of the Proposed Maules Creek Coal Project will cause a detrimental effect on water levels in

the underground aquifers. If the groundwater is impacted by this Coal Mine we will have No Water Supply for three households.

Noise Pollution will also become insufferable should the Proposed Maules Creek Coal Project be approved. The application states that the Mine, should it be approved, would be operating 24 hours a day 7 days a week. Current conditions in Maules Creek are so peaceful and quiet that the only sounds that can be heard are the sounds of animals, birds etc. and the distant, but infrequent, sound of a car passing on the Maules Creek road. At night there are no sounds at all and sleep is undisturbed. With the development of Proposed Maules Creek Coal Project we will be forced to endure the noise from the operations. The blasting that has been done by the existing Boggabri Coal and Tarrawonga Mines has already caused distress and disturbance in the community. The notion that blasting and Mine Operation Noise will be a great deal closer to our homes is causing distress and anxiety. Sleep disturbance is just one issue that we have real concerns about.

Community

We have to this point referred to the devastation the Approval of Proposed Maules Creek Coal Project will have on the Laird family. This development will have a devastating effect on the Community of Maules Creek. There has been talk that “only a few scattered families” exist in the valley. We are insulted by these presumptions – no-one has the right to decide what is and isn’t a worthwhile number of people. There may be a few families (and this number is decreasing every month with the encroaching developments of the Coal Mining Industry) but these families live in harmony and form a fantastic Community. We are able to guarantee should there be any crisis or disaster in this valley we would be supported by every single family in the valley if needs be. We would like to ask whether the reader is able to confidently say that they could certainly guarantee 100% involvement from their community. You will notice that during Community events, members of the Community are able to work together intuitively. The Community Members know each other and their expectations and work together to achieve a common goal.

It is difficult for us to convey the wonderful lifestyle we are afforded living in the Maules Creek Community. Imagine your ideal way of life; you are able to rely on your neighbours for any assistance, advice, encouragement, friendship required. You can guarantee you would not be alone in any time of need, and there you have the Maules Creek Community.

With the destruction of the ‘Community’ through forced land acquisitions and folk leaving the region for their health, the Proposed Maules Creek Coal Project will result in the demise of the Maules Creek Community. There will be many fractured families and relationships. People of Bruce Laird’s generation are overwhelmed with a sense of loss for their life and their heritage.

Reports regarding the distance of Maules Creek Properties to the Proposed Maules Creek Coal Project are measured from the centre of the Coal Project area. Roslyn and Middle Creek South are just over 5 kilometres from the boundary of the Project. This needs to be acknowledged. In the not too distant future the impact of this Mine would be devastating on these two properties. The monetary value of the land will plummet primarily due to the proximity of the Coal Mine and the emotional and physical costs on the families will be unfathomable.

We challenge the reader to “put themselves in our shoes” and understand the devastating impact this would have on our lives. Begin to imagine what life would be like if you were powerless against the development of a ‘13 million tonne a year Coal Mine’, and all its infrastructure, 5 kilometres from your home. A Coal Mine that will be operating 24 hours a day. A Coal Mine that is permitted to be developed in a State Forest previously only permitted to be used for recreational purposes and preservation of protected flora and fauna identified there, five kilometres from the constant din of machinery and the constant intrusion of floodlighting. Five kilometres from the source of the most

harmful of pollution where your children and your family will be exposed to this pollution endangering their lives. We challenge the reader to acknowledge they would be happy for this to destruction of their lives to occur.

We challenge the reader to approve this mine knowing full well that the development will signify the end of a historical family property and the fracturing of a family unit, not to mention the devastation and fracturing of the community and risking the lives of the people of that community.

Please consider the consequences of this Application for Mining.

Conclusion

We firmly believe that if this Proposed Mining Application is approved we will be forced to leave Maules Creek.

Our family will be fractured and will be faced with a dreadful situation where we will be essentially losing our history, our generational home, our financial security and our lifestyle.

The Laird Family on “Roslyn” consists of three separate families. Should the Proposed Maules Creek Coal Mine be approved, we would hope to be adequately compensated.

To not compensate the family adequately, leaving them in a worse state than they are now would be inconceivable.

Should you require any further information please feel free to contact the Laird Family on the following telephone numbers;

Bruce and Wilma LAIRD	02 67944554				
Richard and Tracey LAIRD	02 67944595	or	0427 056 418 Richard	or	0428 156 147 Tracey
Andrew and Wendy LAIRD	02 67944587	or	0428 313 605 Andrew		

Works Cited

Alan H.Lockwood, MD FAAN, ScD MSN RN Kristen Welker-Hood, MPH Molly Rauch, and Barbara Gottlieb. "Coal's Assault on Human Health - A report from Physicians for Social Responsibility." November 2009.

NSW Government Land and Property Information. n.d.
http://www.lpma.nsw.gov.au/land_titles/land_ownership/crown_land.

Stephen O'Donoghue - Submission Details for Andrew Laird of RJ & AB Laird

From: Andrew Laird <ablaird@activ8.net.au>
To: <stephen.o'donoghue@planning.nsw.gov.au>
Date: Tuesday, 11 October 2011 12:59 PM
Subject: Submission Details for Andrew Laird of RJ & AB Laird
CC: <assessments@planning.nsw.gov.au>



Disclosable Political Donation: no

Name: Andrew Laird
Organisation: RJ & AB Laird (owner)
Email: ablaird@activ8.net.au

Address:
Roslyn

Boggabri, NSW
2382

Content:
please find submission in file attachment 1

IP Address: - 123.100.35.221
Submission: Online Submission from Andrew Laird of RJ & AB Laird (object)
https://majorprojects.affinitylive.com/?action=view_diary&id=21473

Submission for Job: #4142
https://majorprojects.affinitylive.com/?action=view_job&id=4142

Site: #2307 Maules Creek Coal Mine
https://majorprojects.affinitylive.com/?action=view_site&id=2307

Andrew Laird

E : ablaird@activ8.net.au

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Personal Submission from Andrew Laird in
regards to the Maules Creek Coal Project

I own the property Roslyn in partnership with my brother Richard. There are 2 houses on the property one of which my parents live in and the other being home for my wife and 2 children. My Ancestors have worked this property since 1877 and various branches of the Laird family have owned surrounding properties that border the Leard Forest "Warriadool","Cattle Plain"," Green Gully", "Wollondilly" (formally "Dalwood") and Willowdale. This is a history I am very proud of. My children are 5th generation Lairds living on "Roslyn". For the past 47 years I have lived and worked in Maules Creek on Roslyn running a grazing and mixed cropping operation.

"Roslyn "is prime agricultural land and is very safe summer and winter cropping country.



Canola



Wheat



Oats



Cotton



Production on Roslyn'

Angus Cattle

Maules Creek is a pristine environment and a great place to live and call home. The proposed Maules Creek Coal Project will have a huge impact on this environment, our farm and my families' way of life! "Roslyn" is adjoining the property "Wollondilly" to be acquired by the Maules Creek Project. This will mean that our property will be one of the closest to the mine operation, a distance of only 5km.

Of greatest concern to me is dust. With air quality and noise modeling in the Environmental Assessment (Maules Creek community Council) showing that there is a temperature inversion layer over Maules Creek for 41% of the time generally and 69% during winter. This will concentrate and trap dust generated by the mine in the Maules Creek valley with the Nandewar Ranges acting as a barrier to the north and east, causing

it to settle on the ground. Fine coal dust particles are dangerous and have been linked to cancer, respiratory problems and other diseases that will be a health hazard for my family. The cattle will also be affected by the dust-laden pasture they will be grazing, resulting in reduced productivity.

Constant Noise pollution is another impact the Maules Creek mine will have, especially at night and will lead to increased levels of stress and insomnia. The inversion layer effect will also amplify this noise. The blasting will disturb the peaceful environment of Roslyn and will spook our livestock.

The water supply we rely on for domestic use, and for cropping and livestock will come under serious threat if the mine is approved. Roslyn currently has 4 bores. These bores are not on the Maules Creek alluvium aquifer but a deeper water bearing sandstone seam approximately 35-40 meters deep. The mine depth of 320 meters is well below this, so it is a high probability that the aquifer will be permanently damaged at some stage of the mines life.

Large mounds of overburden and mine infrastructure will scar the natural landscape.

My families plan for the future is to continue working improving and developing the farm. I cannot see how a mine of this scale and magnitude in our vicinity can rectify and solve the problems of which I have outlined and therefore it will not be possible for us and the Maules Creek coal project to co- exist!

To those looking on from the sideline this predicament we are in would seem like just another stakeholder getting in the way of progress. To the Lairds and the tight knit community of Maules creek the approval of this mine will be a tragedy. We are real people with lives and dreams being put into a situation that we can't exist in, by a large conglomerate that's only real concern is its bottom line profit.

The proximity of "Roslyn" to the Aston project will make it unsalable. If the mine is approved we would expect the Company to purchase the farm outright enabling us to relocate to a clean environment.

As a member of the Maules Creek Community Council I also fully support the submission it has made in relation to the Maules Creek Project

In conclusion I would like the Department of Planning and the Planning Assessment Commission to recognize who was here first.
What will our valley be like in 21 years time?

Should you need more information please contact me;
Andrew Laird
'Roslyn'
Boggabri N.S.W.2382

Phone Mobile -.0428313605
Email-ablaird@activ8.net.au

Stephen O'Donoghue - Submission Details for Jill Hartley

From: Jill Hartley <green.jill.hartley@gmail.com>
To: <stephen.o'donoghue@planning.nsw.gov.au>
Date: Tuesday, 11 October 2011 2:01 PM
Subject: Submission Details for Jill Hartley
CC: <assessments@planning.nsw.gov.au>



Disclosable Political Donation: no

Name: Jill Hartley
 Email: green.jill.hartley@gmail.com

Address:
 20 Wicks Rd

North Ryde, NSW
 2113

Content:

I object very very strongly to this mine going ahead.

This year 2011 is International Year of the Forests & this is disrespectful to so many, in numerous ways.

The Maules Creek Coal Mine will:

Clear a total of 1,665 hectares of native bush, taking the total clearing in the Leard Forest to over 3,500 hectares.

Clear 545 hectares of the White Box Grassy Woodland endangered community, taking the total clearing of endangered communities in Leard Forest to over 1,169 hectares.

Impact on habitat for up to 36 threatened species which are known or likely to occur in Leard State Forest, including Painted Honeyeater, Koala, Turquoise Parrot and Eastern Cave Bat.

Contribute to the destruction of the largest remnant of vegetation left on the heavily cleared Liverpool Plains.

Result in a final pit depth of 320m that will cause massive depressurisation of the water table and impact on springs and unique groundwater dependent ecosystems.

Result in a final void that will permanently deplete groundwater, interfere with aquifers and divert surface water.

Make an enormous contribution to global warming amounting to at least 25 million tonnes of greenhouse gas emissions per annum from burning the coal that is produced. This is equivalent to more than 15% of all emissions from NSW annually.

Forever change the quiet rural community of Maules Creek into a giant industrial zone with impacts on health, air quality, noise and amenity.

IP Address: mail.manly.nsw.gov.au - 115.186.229.2

Submission: Online Submission from Jill Hartley (object)

https://majorprojects.affinitylive.com/?action=view_diary&id=21489

Submission for Job: #4142

https://majorprojects.affinitylive.com/?action=view_job&id=4142

Site: #2307 Maules Creek Coal Mine

https://majorprojects.affinitylive.com/?action=view_site&id=2307

Jill Hartley

E : green.jill.hartley@gmail.com

Stephen O'Donoghue - Submission Details for Helen Stevens

From: Helen Stevens <hstevens@skymesh.com.au>
To: <stephen.o'donoghue@planning.nsw.gov.au>
Date: Tuesday, 11 October 2011 3:05 PM
Subject: Submission Details for Helen Stevens
CC: <assessments@planning.nsw.gov.au>



Disclosable Political Donation: no

Name: Helen Stevens
Email: hstevens@skymesh.com.au

Address:
56 Tibuc Road

Coonabarabran, NSW
2357

Content:

I wish to object strongly to Aston's proposed coal mine near Boggabri, in the Leard State Forest. This would be a massive hole in the ground, and on public land, home to endangered species such as the Painted Honeyeater, Speckled Warbler and Hooded Robin, and endangered communities (eg grassy White Box community). I am appalled at the thought of such a massive degradation of publicly-owned lands. The hole in the ground would be a visual nightmare, destroying important habitat and water resources - for private gain! We know that there are few remaining areas of natural bush or forest remaining in our landscape; to countenance the destruction of a large natural area, as Aston would like to do, is against the public good and flies in the face of our obligations to preserve endangered species and reduce our carbon pollution.

IP Address: 125-168-160-196.wbroadband.net.au - 125.168.160.196
Submission: Online Submission from Helen Stevens (object)
https://majorprojects.affinitylive.com/?action=view_diary&id=21501

Submission for Job: #4142
https://majorprojects.affinitylive.com/?action=view_job&id=4142

Site: #2307 Maules Creek Coal Mine
https://majorprojects.affinitylive.com/?action=view_site&id=2307

Helen Stevens

E : hstevens@skymesh.com.au

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Stephen O'Donoghue - Submission Details for Helen Stevens

From: Helen Stevens <hstevens@skymesh.com.au>
To: <stephen.o'donoghue@planning.nsw.gov.au>
Date: Tuesday, 11 October 2011 3:28 PM
Subject: Submission Details for Helen Stevens
CC: <assessments@planning.nsw.gov.au>



Disclosable Political Donation: no

Name: Helen Stevens
Email: hstevens@skymesh.com.au

Address:
56 Tibuc Road

Coonabarabran, NSW
2357

Content:

I strongly object to the proposed Maules Creek coalmine. It would use public land (a State Forest) and create an enormous hole in the ground - a visual eyesore as well as destroying habitat for endangered species such as the Speckled Warbler, Turquoise Parrot, Painted Honeyeater and Hooded Robin. It would also destroy an endangered ecological community - Grassy Box Woodland. In addition, there would be massive effects on local water tables and disruption to these, lowering our food production capacity. I strongly object to the use of public land for private gain.

IP Address: 125-168-160-196.wbroadband.net.au - 125.168.160.196

Submission: Online Submission from Helen Stevens (object)
https://majorprojects.affinitylive.com/?action=view_diary&id=21515

Submission for Job: #4142
https://majorprojects.affinitylive.com/?action=view_job&id=4142

Site: #2307 Maules Creek Coal Mine
https://majorprojects.affinitylive.com/?action=view_site&id=2307

Helen Stevens

E : hstevens@skymesh.com.au

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Stephen O'Donoghue - Submission Details for Karan Todd

From: Karan Todd <badog1@bigpond.com>
To: <stephen.o'donoghue@planning.nsw.gov.au>
Date: Tuesday, 11 October 2011 3:10 PM
Subject: Submission Details for Karan Todd
CC: <assessments@planning.nsw.gov.au>
Attachments: Maules Creek Coal Project submission.pdf



Disclosable Political Donation: no

Name: Karan Todd
Email: badog1@bigpond.com

Address:
"East Lynne"
Black Mountain Crk Rd, Maules Creek
Boggabri, NSW
2382

Content:
Refer attached PDF for Peter and Karan Todd's Submission into the Maules Creek Coal Project

IP Address: cpe-124-177-102-107.lns6.cha.bigpond.net.au - 124.177.102.107
Submission: Online Submission from Karan Todd (object)
https://majorprojects.affinitylive.com/?action=view_diary&id=21507

Submission for Job: #4142
https://majorprojects.affinitylive.com/?action=view_job&id=4142

Site: #2307 Maules Creek Coal Mine
https://majorprojects.affinitylive.com/?action=view_site&id=2307

Karan Todd

E : badog1@bigpond.com

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After the birth of our son, my husband and I decided to leave Brisbane to build a life for ourselves on his family's property in Maules Creek. We did not want to bring up our son in a polluted, noisy environment surrounded by strangers who did not have the best interest for our welfare and the community at heart. We believed Maules Creek would offer a better life. A life where people knew each other and a sense of community was important and the sky was clear and the air was clean. Here, at Maules Creek on the family property, we could raise our son in a healthy environment. Our property was established in 1924 by my husband's great grandfather. Since this time East Lynne has been passed down the generations from father to son and is now being run by the forth generation with our son, the fifth generation, already passionate about his patch of land and learning the ropes for when his time will come. Our son attends the local school, Fairfax Public School. He is the third generation of his family to do so. Fairfax Public School is a small one teacher country school that has been at the heart of Maules Creek for 101 years.

Our life sounds pretty good doesn't it? However I wonder how much this will change with the development of the Maules Creek Coal Project. I have concerns how this project will effect our health, our business, the environment and the community as a whole.

As a mother the health of my family and the community is of great concern. Air quality and noise modelling in the Maules Creek Community Council Environmental Assessment shows that there will be an inversion layer over Maules Creek for 41% of the time generally and 69% during winter. This will be a significant factor in increasing health impacts due to fine particulates and noise to the local people. This is of particular concern when you consider the close proximity of the school to the mining operations of Aston Resources. In addition to the reduction in air quality noise of the mine will be an issue. Noise from existing mining operations can be clearly heard on our property therefore the combined level of noise is a great concern. Studies have also shown levels of disease and violence increase in mining areas serviced by a high percentage of fly in fly out and drive in drive out workers. Danielle Cronin writing for the Sydney Morning Herald, 27 September 2011 reports that fly in fly out workers place an incredible stain on essential services, bringing in viruses from "far afield" and can accelerate the threat of highly contagious illnesses in mining communities. Whereas the national president of the CFMEU, Tony Maher, told the Sydney Morning Herald on the 6th December 2010 increased numbers of miners in small country towns previously occupied by families has resulted in an escalation in the level of violence and other social problems. Tony Maher goes on to say, "Mining companies are crushing the life out of these towns". I recommend the funding of a local health study to ascertain a baseline of community health and the ongoing monitoring of the community's health.

The community has already begun to suffer as farms are purchased for mining, zone of affectation and environmental offsets. These acquisitions have a negative effect on the community as existing families are removed from the area and new families can not enter. Thus resulting in less demand for the school and other forms of community infrastructure, less people to perform vital community functions ie Bush Fire Brigade and destroying the social fabric of the the community.

The operation of Maules Creek Coal Project will have a negative impact on our daily business as primary producers. The mining operations may have a detrimental impact to our water supply. The sheer quantity of material that will be removed and a pit depth in excess of 320m will cause a de-pressurisation effect which will impact on the water table. Springs, surface water run off and ground water in the area will be impacted. Likewise the mining operations could intercept aquifers in the Maules Creek/Back Creek area which could contribute to reductions in ground water supply. Our business depends on water, if we don't have water we have nothing.

The environment will suffer as a result of the Maules Creek Mining Project as the final void will act as a giant well filling with ground water, evaporating that water to the atmosphere setting up a cycle to permanently deplete the ground water in the area. In addition to this, the water in the final void will become a highly toxic lake that will contain heavy metals and salts. A major flood event like the one seen in Queensland last year could result in unplanned releases of this toxic water into the environment. I believe if this project was to go ahead the the final void must be filled in at the end of the project.

In conclusion I strongly urge Aston Resources not be allowed to proceed with the Maules Creek Coal Project. I believe the Maules Creek Coal Project will come at a “net cost” destroying the lifestyle and livelihood of my family and our community. Our family has formed a bond with the land that they have farmed for the the past 87 years through good times and bad times. It is a bond that they could never imagine breaking. Successive generations have made their mark here and it was always imagined future generations would have the same opportunity. If this is not possible due to the mining operations of Aston Resources compensation must be forthcoming. In my mind the arrival of Aston Resources in Maules Creek draws comparisons to the arrival of Europeans to the Americas. The new arrivals came with smiles on their faces, hand out stretched, offering gifts and riches, winning favour with the native people before driving them from their land, introducing disease and destroying their way of life and community. `

Karan, Peter & Matthew Todd

Stephen O'Donoghue - Submission Details for Luke Kenniff of Farmer

From: Luke Kenniff <lkenniff@gmail.com>
To: <stephen.o'donoghue@planning.nsw.gov.au>
Date: Tuesday, 11 October 2011 5:30 PM
Subject: Submission Details for Luke Kenniff of Farmer
CC: <assessments@planning.nsw.gov.au>



Disclosable Political Donation: no

Name: Luke Kenniff
 Organisation: Farmer (Director)
 Email: lkenniff@gmail.com

Address:
 PO Box 1088, Randwick, 2031

Randwick, NSW
 2045

Content:
 Dear Stephen,

Please understand, whilst my address in Sydney we own and operate a commercial farm at Maules Creek "North Avoca"

I would like to submit an application against the proposed mine on a number of areas. Detailed below is my personal concerns and general Concerns.

Personal Concerns

- * As a farmer within the area and in close proximity to the mine, I feel that the community and as individuals that we have in no way been consulted on the proposed mines and the effects for the surrounding areas. Our farm will be circa 6 km away from the largest coal mine in NSW and there has been no direct consultation on the effects.
- * The air quality analysis was completed and based off data which is not truly representative of the climatic situations within the area and the living conditions through dust and noise will effect our way of life.
- * My family has been farming within the area for 4 generations and I feel that living within the area will be duly compromised.
- * Our farming future is at risk. We have the ability to subdivide our farm into lifestyle blocks and having a mine so close will render the land to baseline rangeland at best which holds severe financial cost..
- * Our community is at risk. People are leaving already and the community is seeing the effects. Our community will die.
- * Our agricultural produce is at risk. \$25-30M pa in agricultural produce (from a small section of the area in Maules Creek) is at risk with potential fracturing of the water table connecting to Maules creek affecting stock, domestic and irrigation water. No in-depth analysis has been per formed to justify if the aquifer will not be in any way harmed through the development.
- * Our health is at risk. Apart form the dust etc noted below, I have clearly seen depression take it's toll on famers within the area. We do not need this mine to play a role is furthering rural suicide and depression statistics. This is the most concerning factor for me and is not being dealt with.

General Points of View.

1. There is little to no direct economic benefit to local residents and on balance the mine could be a "Net Cost" to local people.
 2. The impacts to amenity, air quality, noise, groundwater, property values etc mean that there is significant direct financial cost to the local community and local farms.
 3. Due to pressures on the Australian currency and domestic interest rates from the "mining boom", every new mine adds to these pressures and as such the proposed Maules Creek Coal project will indirectly impact on the viability of local farms.
 4. The project will privatise profits from public land. State Royalties of approx \$8 per tonne are insufficient to compensate the community for the loss of a non-renewable resource and to cover the cost and maintenance of infrastructure, GHG emissions, diesel fuel rebate etc.
- Recommend: There needs to be a Net Benefit to the local community for the project to be approved.

Community and Health

1. Air quality and noise modeling in the Environmental Assessment shows that there will be an inversion layer over Maules Creek for 41% of the time generally and 69% during winter. This will be a significant factor in increasing health impacts due to fine particulates and noise to local people.
 2. The local community has seen the ongoing removal of community members as farms are bought up for mining, zone of affectation and environmental offsets. De-population means that there will be less people to perform vital community functions (e.g. Bush fire Brigade) and these purchases impact on overall community viability.
 3. A fly in/fly out labour force will export most of the wages benefits out of the district. Relatively few local people will meet the age, health and other requirements to work at the mine.
- Recommend: Local health study to get a baseline of community health.

Best regards
Luke and Kate Kenniff
0409 992715

IP Address: - 140.168.79.1

Submission: Online Submission from Luke Kenniff of Farmer (object)
https://majorprojects.affinitylive.com/?action=view_diary&id=21536

Submission for Job: #4142
https://majorprojects.affinitylive.com/?action=view_job&id=4142

Site: #2307 Maules Creek Coal Mine
https://majorprojects.affinitylive.com/?action=view_site&id=2307

Luke Kenniff

E : lkenniff@gmail.com

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Stephen O'Donoghue - Submission Details for

From:

To: <stephen.o'donoghue@planning.nsw.gov.au>

Date: Monday, 26 September 2011 9:07 PM

Subject: Submission Details fo

CC: <assessments@planning.nsw.gov.au>



Disclosable Political Donation: no

Name:

Email:

Address:

Content:

*It's about as bad as any coal mine can be - clearing one of the best remaining stands of an endangered ecosystem to cart away 13 million tonnes of coal per year for export out of Newcastle. *

IP Address:

Submission: C

https://majorprojects.affinitylive.com/?action=view_diary&id=20663

Submission for Job: #4142

https://majorprojects.affinitylive.com/?action=view_job&id=4142

Site: #2307 Maules Creek Coal Mine

https://majorprojects.affinitylive.com/?action=view_site&id=2307

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PCU026792

1

Department of Planning
Received
10 OCT 2011
Scanning Room

"Marlow Down"

1356 Therribri Rd'

Boggabri. 2382

6/10/2011.

Attention: Stephen O'Donoghue,

I wish to object the Maules Creek Coal Project which Aston Resources are putting forward. I believe the severe impact will be placed on my family health, we have three children under 7 years of age, myself and my wife, also my mother & father, and call "Marlow Downs" home.

Our properties adjoin the proposed Maules Creek Coal mine being "Marlow Downs" comprising 95 Ellersie Road, Lot 1, DP614506 and Lot 2 DP614506 and 1356 Therrabri Road Lot 77, DP 754948 and Lot 1, DP 1143449. These two properties have been designed to run in conjunction with each other, e.g. water entitlements & access to water, etc. – up to this date, this has proven to be sustainable & successful under the title of 'LEITCH BROS'. [Appendix "A"].

I believe the Environmental Assessment Statement is very disturbing, by not placing our properties in the zone of affectation area, this does not give me the right to be able to the correct negotiations with the proposed coal mine in question, which I believe my family's well being and the farming resources we have, are being placed in a very dangerous position.

Currently, we run our farm comprising of sheep, cattle and horses, along with a large percentage of irrigated cropping, with balance left to rotation of farming with wheat, barley and chickpeas.

Our prominent wind direction, I believe will place the dust from the mine directly onto our properties and homes. As having the experience of use in aerial crop spraying by plane to spray our crops we need a southerly or south easterly, or even a easterly to be able to spray our crops safely to protect our neighbours from drift. My experience of this practice has worked well because we constantly are getting wind from that direction which gives me great concern of the amount of dust from the proposed coal mine. My mother's condition will be put in a life or death situation with proposed coal mine being such a short distance from our properties and homes. She suffers from emphysema and the doctors are concerned of the extra levels of dust particles and other sulphur smells etc.

We object to the noise level which has been outlined in the assessment, as well as the proposed lighting arrangements. Which brings me to the point, - we were never approached by the proposed coal mine to place "noise & dust monitors" to assess the "background" noise & dust levels. The assessment from proposed coal mine monitors were placed some distance from our homes & properties, placing these monitors on public gravel roads does not give correct assessment on the background noise & dust level on our homes & properties.

This is blatant disregard of measuring the TRUE background noise & dust levels prior to the proposed coal mine activities.

We object to the impact that the proposed coal mine will have on our water quality and availability. Back Creek is a vital part of our well being as it replenishes our underground aquifers which we drink, wash and bath in and also to irrigate our crops. Back Creek will be practically be non-existent from the proposed mine assessment as the catchment relies on that area greatly. Back Creek naturally beneficially floods part of our property which is a great tool to the well being of our property. I believe once the proposed mine is started the loss of Back Creek water flows will jeopardize our underground water to the wells which our family relies on for drinking and bathing, and this in turn will have an effect on our family health and well being, and also have a negative effect on our farming income. Back Creek flows quiet regularly with our annual rainfall. It has been a great source of flood water which flows into Maules Creek where they both join our property.

We object to the pressure of the proposed mine puts on the underground aquifer and surface flows on my properties. We rely on Back Creek and Maules Creek for the well being of the underground water we use. We currently have licenses for use for stock and domestic and irrigation water which we access by pumping out of licensed bores and wells as well as a license to pump out of Maules Creek I believe and with the correspondence from the Department of Environment, Climate Change of Water, as well as the previous Minister of the Department of Primary Industries the proposed

coal mine will have a major depletion on the water to be accessed on our properties.

The proposed coal mine has failed to present to the appropriate authorities the full details of the outcomes that have been investigated in this area. Late 2006 a Water Sharing Plan were implemented in the area of the proposed coal mine which now called Zone 11 where there was a 73% cut back in allocation of underground water entitlements.

Less than ten months later a Section 323 of the Act (Appendix "A1" and "B") followed by newly gazette Section 324 under the Water Management Act, 2000 which had a profound effect on me being able to access my underground water entitlements. You will note the Department of Water and Energy use a water level height of 0.18m and a flow rate of 1 Meg per day at Elfin Crossing on Maules Creek to trigger a "cease to pump" out of my bores which I use to access my underground water entitlement. The Minister as well as the previous ministers, as well as the departments involved, felt my pumping was affecting water levels up to 20-30 kilometers away and up to 120m upstream in ground height.

I repeat my 2 bores which pump my underground water entitlement, bore being the total depth of 8m pumping 2-3megs per day apparently affecting water levels 20-30kms up to 120m in height above the two bores in question on my property.

So I believe, as well as all the correspondence that our family have received, the proposed coal mine will have a major effect in water levels on my properties as well as the trigger point used by the departments to govern whether I can pump my underground water entitlement to irrigate

the crops I plant and harvest to produce an income for the well being my family. (Please see attached Appendix "C").

We object to the misconception of the proposed coal mine Environment Assessment Statement by showing a road that no longer exists on our property. The Assessment in question has written in Back Creek Road located on Lot 77, DP 754948 and Lot 1 DP1143449 which has been closed for a number of years (Please see attached Appendix "D").

We object to proposed coal mine being able to purchase properties which has been tabled in the Environmental Assessment Statement. The Northern Offsets Properties which has been purchased for this reason is a considerable distance from the proposed coal mine. I believe the private properties that are in neighboring area of the proposed coal mine should be given compensation to be used for appropriate offsets, see attached Appendix "E".

We object to constant and proposed clearing of vegetation in this area by the current proposed coal mines. We have seen a steep rise in numbers of feral animals and non-feral animals since the commencement of the three mines in our area. With the proposed Maules Creek Coal Mine adjoining our properties my fear that we will be unable to be a sustainable farming operation and business as our crops will be constantly damaged and with the threat of disease from feral animals, our livestock will suffer greatly. So far, with a percentage of crops being damaged over the past few years with the rise in numbers of animals we have suffered financially and it will be a great concern when the proposed new coal mine takes place.

We object to the constant blasting the proposed coal mine has illustrated in their assessment. Our concern of damage to our homes sheds and storage dams which we use for irrigation cropping and management. The damage to our well being and health if this would occur from constant blasting is unforgiveable.

With more activity with mining in this area we have seen a rise in new faces, being people. Sadly not all respect private property rights; therefore, we have seen a rise in the past few years of theft on "Marlow Downs". With the proposed coal mine there will be continual rise in activity in our area, and I fear for my family's safety when this takes place.

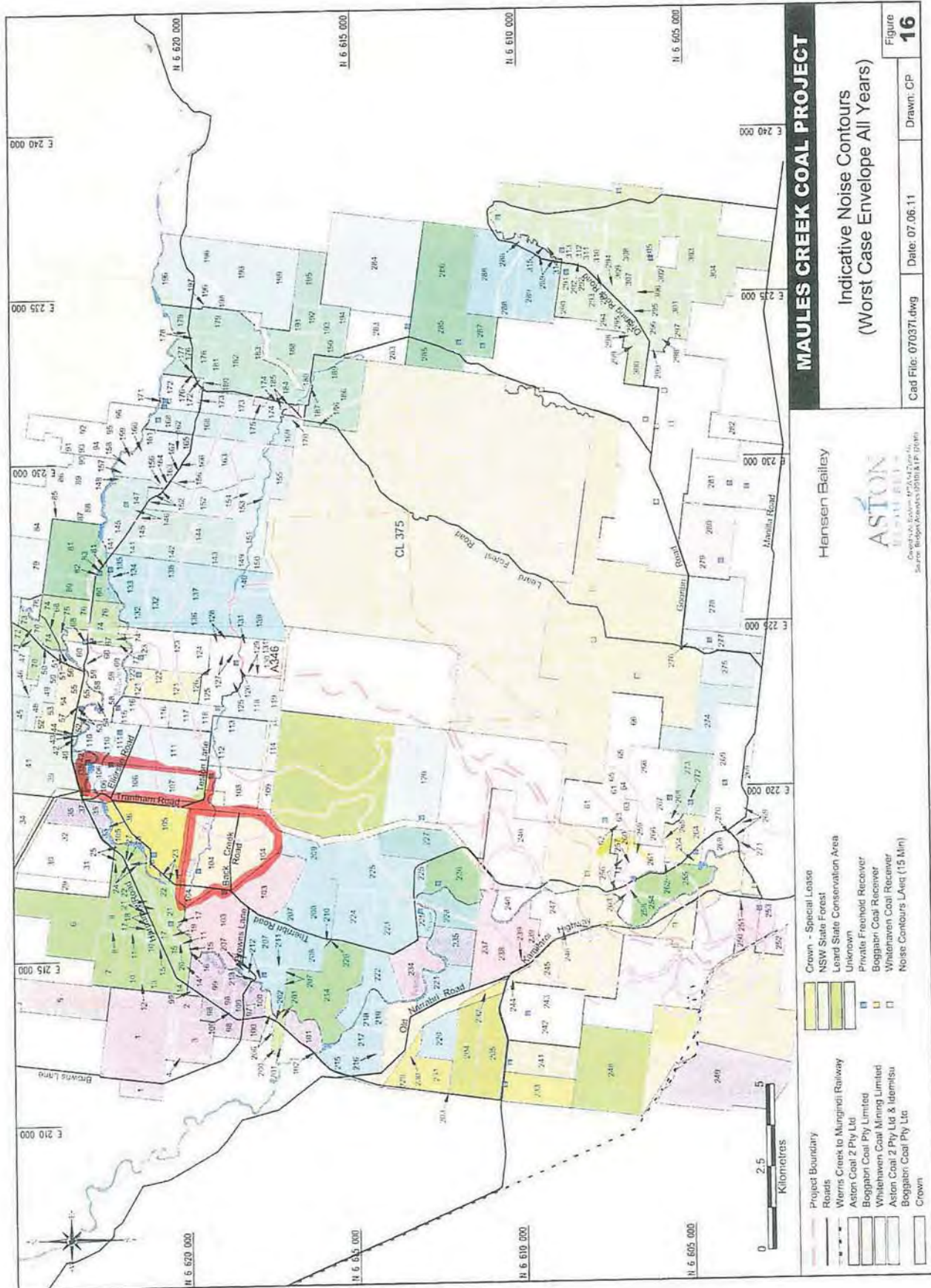
In conclusion – our family wish not to jeopardize the proposed coal mines ability to employ & generate wealth for Australian's, BUT - by placing our two properties in the "affectation area", this will enable the correct & valid negotiations by the proposed coal mine for my family to be sustainable & continue in good health.

Thank you.

A handwritten signature in cursive script, appearing to read 'L A Leitch'.

Signed: Lochie Leitch. [mobile 0428 789914]





Copy's A1



Office
of Water

Patricia Leitch
Marlow Downs
BOGGABRI NSW 2382

26 August 2010

Contact: Geoff Cameron[Name]
Phone: 02 6701 9608
Fax: 02 6701 9692
Email: geoff.cameron@water.nsw.gov.au

Our ref: 90CA807640

Dear Sir/Madam

Temporary Water Restriction Orders – Upper Namoi Groundwater Source (Zone 11)

As you will be aware since December 2007 it has been necessary to impose on a number of occasions temporary water restrictions on the taking of water from your irrigation bore/well(s). These orders have restricted pumping hours when flows in Maules Creek have been less than 1ML/day at Elfin Crossing.

Whilst there is no water restriction order currently in place, you are advised that the NSW Office of Water (NOW) is carefully monitoring the water source and will reinstate temporary restrictions if necessary.

In light of the number of temporary water restriction orders that have been required to date NOW will also be considering whether more permanent management arrangements are required. NOW will consult with users if it is determined that such arrangements are necessary.

Yours sincerely

Geoff Cameron
Licensing Manager
Gwydir Namoi/Border Rivers



NSW Government

Department of Water & Energy

1st Term 323

7th Nov 07 - 30th June 08

CP Leitch
Marlow Downs
BOGGABRI NSW 2382

Contact: Peter Cuell
Phone: (02) 6799 6625
Fax: (02) 6792 3004
Email: peter.cuell@dnr.nsw.gov.au

Our ref: 90CA807640

Dear Sir/Madam

Subject: Restrictions on groundwater pumping in the Upper Namoi Zone 11, Maules Creek Groundwater Source

An Order under Section 323 of the Water Management Act 2000 has been made restricting groundwater extraction in the Upper Namoi Zone 11, Maules Creek Groundwater Source, upstream of Elfin Crossing, from works used for pumping irrigation supplies. A copy of the Order is enclosed with this letter.

Your well/bore(s), which is authorised by the approval 90CA807640, is covered by this Order.

The restrictions, which are detailed in Schedule 1 of the Order, are tied to the flow in Maules Creek at Elfin Crossing. The first level of restriction commences when the flow at Elfin Crossing falls below 1ML/day. This equates to a gauge height at the stream gauging station immediately upstream of Elfin Crossing of 0.18m. The second level of restrictions refers to flow ceasing at the crossing. This is taken as being no flow over the downstream edge of the concrete road crossing.

If you have any queries regarding these restrictions please contact Mr Peter Cuell on (02) 6799 6625

Yours sincerely

per 
Dennis Milling
Manager Licensing North
18th December 2007



NSW Government

Department of Water & Energy

2nd Term 323

12th Aug 08 - 30 June 09

MRS PATRICIA CHRISTINE LEITCH
MARLOW DOWNS
BOGGABRI
NSW 2382

Contact: Peter Cuell
Phone: (02) 67996625
Fax: (02) 67923004
Email: Peter.Cuell@dnr.nsw.gov.au

File: [MAULES CREEK 2008-08-07 letter.doc]

12TH August 2008

Dear Madam

Subject: Restrictions Under Section 323 of the Water Management Act 2000 on Pumping in the Maules Creek Groundwater Source

As you are a water supply work holder affected by the abovementioned restrictions, I am writing to inform you about the groundwater management measures that were implemented by the Department of Water and Energy on 1 July 2008. The restrictions will apply until 30 June 2009 unless they are repealed or modified at an earlier date.

The Department has decided to introduce the following temporary restrictions in view of the current water shortages:

1. The use of the water supply works identified in Table 1 is restricted to pumping for no more than twelve hours per day when the surface flow in Maules Creek at Elfin Crossing, measured at Elfin Crossing Gauging Station, falls below 1 Megalitre per day.
2. The use of the water supply works identified in Table 1 is further restricted to pumping for no more than four hours per day when the surface flow in Maules Creek at Elfin Crossing, measured at Elfin Crossing Gauging Station, ceases.
3. The pumping hours described in paragraph 2 may be accrued whenever the surface flow in Maules Creek at Elfin Crossing, measured at Elfin Crossing Gauging Station, has ceased and may be taken in the following manner:
 - (a) Pumping no more than one day in six;
 - (b) Pumping no more than two days in twelve; or
 - (c) Pumping no more than four days in twenty four.
4. Pumping in accordance with paragraph 3 must not commence until the pumping hours described in paragraphs 3 (a) to (c) have first been accrued.
5. Pumping in accordance with paragraph 3 must only occur when the surface flow in Maules Creek at Elfin Crossing, as measured at Elfin Crossing Gauging Station, has ceased.
6. The owners of the water supply works described in Table 1 must cause a log book in which the start and end pumping times are accurately recorded, to be maintained and made available to the staff of the Department of Water and Energy on request.



3rd Term 324
1-9-09 — 3074 June 10

NSW Office of Water

Department of Environment Climate Change and Water

7

MRS PATRICIA CHRISTINE LEITCH
'MARLOW DOWNS'
BOGGABRI
NSW 2382

Dear Madam

The purpose of this letter is to notify you that a temporary water restriction order has been made under section 324 (2) of the *Water Management Act 2000* for the Upper Namoi Zone 11 - Maules Creek Groundwater Source.

The order imposes specified restrictions on the taking of water from that aquifer and was published in the NSW Government Gazette number 113 on 18 August 2009, pages 4,815 to 4,816.

The order takes effect on 18th August 2009 and will remain in force until 30 June 2010, unless it is repealed or modified by order before that date. A copy of the order is attached to this letter.

For any further information, please contact Peter Cuell of the Narrabri office of the Office of Water on (02) 67996626.


Dennis Milling
Manager Licensing North
NSW Office of Water
1.9.09.

Copy's B



New South Wales Consolidated Acts

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WATER MANAGEMENT ACT 2000 - SECT 324

Temporary water restrictions

324 Temporary water restrictions

(1) If satisfied that it is necessary to do so in the public interest (such as to cope with a water shortage or threat to public health or safety), the Minister may, by order in writing, direct that, for a specified period, the taking of water from a specified water source is prohibited, or is subject to specified restrictions, as the case requires.

(2) If satisfied that it is necessary to do so:

- (a) to maintain or protect water levels in an aquifer, or
- (b) to maintain, protect or improve the quality of water in an aquifer, or
- (c) to prevent land subsidence or compaction in an aquifer, or
- (d) to protect groundwater-dependent ecosystems, or
- (e) to maintain pressure, or to ensure pressure recovery, in an aquifer,

the Minister may, by order in writing, direct that, within a specified area and for a specified period, the taking of water from that aquifer, or from any other aquifer that is above, below or adjacent to that aquifer, is prohibited, or is subject to specified restrictions, as the case requires.

(3) The Minister must cause a copy of an order under this section to be published in the Gazette and notice of the order to be published in an appropriate newspaper.

(4) If satisfied that circumstances require publication of an order under subsection (1) or (2) sooner than can be achieved under subsection (3), the Minister may, prior to its publication under that subsection, cause notice of the order to be broadcast by a television or radio station transmitting to the part or parts of the State within which the water source is situated.

(5) An order under this section takes effect when it is first published or broadcast in accordance with subsection (3) or (4), as the case may be, or at such later date or time as may be specified in the order.

(6) Unless sooner repealed, an order under this section ceases to have effect on the expiry of the period specified in the order.

(7) In the event of any inconsistency between an order under this section and any other provision of this Act relating to the distribution, sharing or taking of water (including any order made, or any condition imposed on an access licence or approval, under this Act), the order under this section prevails to the extent of the inconsistency.

(8) Nothing in this section gives rise to a claim for compensation under Division 9 of Part 2 of Chapter 3.

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WATER MANAGEMENT ACT 2000 - SECT 323

Temporary water restrictions

323 Temporary water restrictions

(1) If satisfied that it is necessary to do so in the public interest (such as to cope with a water shortage or threat to public health or safety), the Minister may, by order in writing, direct that, for a specified period, the taking of water from a specified water source is totally prohibited or is restricted as specified in the order.

(2) As soon as practicable after making such an order in respect of a water source, the Minister:

(a) must cause notice of the order to be broadcast by a television or radio station transmitting to the part or parts of the State within which the water source is situated, and

(b) must cause a copy of the order to be published in the Gazette and in one or more local newspapers circulating within the part or parts of the State within which the water source is situated.

(3) An order under this section takes effect when it is first broadcast in accordance with subsection (2) (a), or at such later time as may be specified in the order.

(3A) An order under this section:

(a) ceases to have effect if it is repealed, or

(b) where the order provides that it ceases to have effect on a specified day or on the expiry of a specified period, ceases to have effect on that day or on the expiry of that period, unless the order is sooner repealed.

(3B) In the event of any inconsistency between an order under this section and any other provision of this Act relating to the distribution, sharing or taking of water (including any order made, or any condition imposed on an access licence or approval, under this Act), the order under this section prevails to the extent of the inconsistency.

(4) Nothing in this section gives rise to a claim for compensation under section 87.

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Copy C

"Marlow Downs"
Boggabri NSW 2382

21 July 2009

ATTENTION: GEORGE GATES
Department of Water & Energy

Dear George,

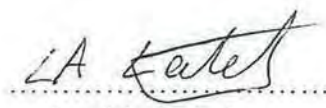
RE: MEETING ON 15 JULY 2009

Thank you very much for the abovementioned meeting which was held at the Department building at approximately 1.30pm. The people present at this meeting were yourself and Sue Hamilton representing the Department and John Clements, Namoi Water and myself, the farmer.

John Clements and myself I wish to take up your offer, in which you would explain the effects using your words "the pumping cone" and the effect it has on the area which can be 60 to 80 metres in height difference and up to 15 to 20 kilometres up stream. Personally, I do not honestly understand that theory and would like you to explain it, because I feel it is very important.

I look forward to your written reply.

Yours faithfully


.....
Lochie Leitch



Office of Water

Mr Lockie Leitch
"Marlow Downs"
BOGGABRI NSW 2382

File ref: S09/1033

Dear Mr Leitch

Thank you for your letter of 28 July 2009 to Mr George Gates, Groundwater Manager concerning the impact of groundwater pumping near Elfin Crossing on groundwater levels further up the valley.

Groundwater recharge occurs through a combination of rainfall, creek flow losses, side slope runoff and irrigation drainage. Groundwater discharge occurs via natural through-flow to the Namoi alluvium, creek base flows, evapotranspiration and groundwater pumping.

It is generally accepted that in addition to climatic variations (rainfall), land management practices affect groundwater levels. Specific examples are land clearing and groundwater pumping. Such practices can affect groundwater equilibrium levels through the replacement of deep rooted vegetation (trees) with shallow rooted vegetation (pastures/crops), which can cause groundwater levels to rise to a new level during periods of above average rainfall. This can cause the aquifer system to become full. The dryland salinity outbreaks seen across southern Australia in the 1970's and 80's were a consequence of this effect.

Similarly, groundwater pumping is known to exacerbate naturally falling groundwater levels during drought. All groundwater extraction from bores and wells comes from groundwater storage in the first instance. This recognises that groundwater pumping over any timeframe will result in some depletion of groundwater storage (reflected in a lowering of water levels or potentiometric head) that is over and above natural drainage. This is not generally a problem in average rainfall seasons, when regular recharge occurs and groundwater storage can be replenished. Community and environmental concerns often arise, however, when recharge is effectively turned off, for example during severe drought, and the groundwater storage is not being regularly replenished. In these conditions, more water is required to initiate groundwater recharge and the associated water level rises, as the soil must first be re-wetted.

Department of
Environment, Climate Change and Water NSW



The above information is of a general nature only but it helps explain the principle of 'conservation of mass'. That is, no water is created or destroyed but the elements of the water budget are in dynamic equilibrium.

The concept of a drawdown cone is used to communicate the effect that pumping a bore has on the aquifer around it. The size of the cone will vary depending on the hydraulic characteristics of the site, the pumping rate and duration of pumping. To obtain details of the drawdown for any one site a standard aquifer test could be used, or alternatively a hydrogeological consultant could advise you on this matter.

The broader issue of your groundwater pumping affecting groundwater levels in an upstream direction is only indirectly related to interference by a drawdown cone. It is, however, related to the principle of conservation of mass. For example, if a significant volume of groundwater (say 400 – 500ML/yr) is pumped from the Maules Creek alluvial aquifer in the vicinity of Elfin Crossing, during a long protracted drought, the drawdown effects are not just local to the pumping site, although these are the most notable impacts. The effects of local storage depletion are felt over the whole aquifer as a new equilibrium level is approached. In the up-gradient direction at distances of 15-20km, the pumping effects would be minor in nature.

I trust the above advice is helpful to you.

Finally, given that it is your stated intention to bring legal action against the Office of Water over the recent groundwater pumping restrictions, I request that all future correspondence on this matter be directed to me.

Yours sincerely



David Harriss
Commissioner, NSW Office of Water

"Marlow Downs"
95 Ellerslie Rd;
Boggabri.
6/10/2011.

ATTENTION; Stephen O'Donoghue,

I am writing in conjunction with my son – Lochie Leitch of 1356 Therrabri Rd; Boggabri, 95 Ellerslie Rd; Lot 1, DP614506 & Lot 2 DP614506, as these two properties are designed to run in conjunction with each other, under the title of LEITCH BROS. [Appendix "A"].

I wish to object strongly to some of the existing plans & strategies for mining in the Maules Creek area in relation to Fauna, Environment, Underground & Surface Water, Land Devaluation, Family Dislocation & Human Health [both physical & mental].

No, I am not against coal mining, I support it with the correct management strategies. For fauna, environment & human concerns being met as coal mining is not only beneficial to the Australian economy but also important for the world's standard of living.

With the present government department's strategies & plans, there are major flaws & setbacks for humans, fauna & the environment, which are not only unsustainable but highly negligent for fauna & humans as soon as the mining starts.

May I give examples -?

1. As mining commences there is an immediate effect & dislocation of wildlife & fauna in the closest area being mined due to human activity, food & shelter destruction & water availability or supply disruption. It shows a lack of commonsense & complete disregard for the immediately effected wildlife & fauna near the mining area when so called "offset" or replacement areas can be acquired in the Barraba, Mount Lindsey & Playgan districts & shows complete lack of understanding & compassion for the immediately effected wildlife & fauna. To have fauna & wildlife displaced due to no fault of their own selves, then to watch them slowly starve & fight to death is NOT an option, it only shows ignorance & negligence by mining & government departments & authorities.

** see enclosed graph.

Fauna Displacement & Replacement Lane areas should have to be acquired in the immediate effected area before mining commences, to give the wildlife & fauna the best chance of survival & sustainability. Even farming country should be re-established to trees & grasses to accommodate the fauna & wildlife displacement & replacement zones.

Some of the country already acquired by the mines for so called "offsets", is already locked up by the government under SEP46 etc & already has a sustainable fauna & wildlife habitat established. These arrears are not creating or re-establishing any NEW areas lost to mining, & are far from the immediate effected wildlife & fauna area.

2. Water -: Underground, subsurface & surface water will all be affected by mining. The problem is that the mining agencies & the relevant government departments do not have complete understanding, facts or completed scientific data to give a water tight guarantee on the total outcome of mining activities on water effects.

At the present pace of mining development the damage will be done & then the facts will be discovered, but, we & the fauna & environment will have to deal with the damage, as it is too late, the damage has been already done.

3. Dust & Pollution. -: I have already been diagnosed with early stages of Emphysema, & as with dust & pollution from existing mining operations in areas, I have seen with my own eyes [no need for scientific evidence], when the wind & sunlight are in the right position [I wish I had camera], puts me in the same position of mental torment as the underground & subsurface water dilemma, the health damage is already done & it is too late when the facts appear & I find out.

4. Noise Pollution -: If I wanted the constant torment of low irritable noise levels & the still debateable health damage & effects, I would install a wind turbine & receive some financial benefit from it, so I object to any noise pollution that is constant & a torment.

5. Family Dislocation -: As a grandparent, with my son & his wife & young family living in the immediate zone, ask this question = "Why would any parent in their right mind want to raise their family & live next to a major mine. Why take the health risks, both – mental & physical?? "

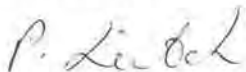
6. Property Devaluation -: For all of the above reasons our property has already lost value, the biggest majority of farmers & graziers do not want to live near a mine or take the risks with all the uncertainties involved & associated with it.

As I have already stated, I am not against coal mining with the correct planning & right strategies to protect humans, fauna environment & the next generation's future. That is why I think it is most important to implement & facilitate NEW displacement zones & replacement zones that are new & unoccupied & do not already established fauna & wildlife population. These zones should be established nearest the mined areas to help alleviate & avoid the 6 problems I have previously raised. These new displacement & replacement zones would help greatly to smooth transition to mining for all concerned, - fauna, wildlife, environment, humans & mines.

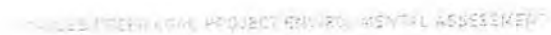
What really disturbs me for our future, is that under the present mines planning & government regulations, - the environment, fauna, wildlife, water, human health & family dislocation, are a sad & distant second to the miners profit & politicians & bureaucrats reserving their own power, which bitterly disappoints me for Australia's & the next generations future.

I am looking forward to hearing from you with some positive & active solutions to my objections & help alleviate the fears of others & myself.

Sign: Patricia Leitch.



Impacts, Management and Mitigation



**

FAUNA DISPLACEMENT ZONES

FAUNA REPLACEMENT ZONES

New Displacement Zones
& Replacement zones need to
be acquired which are new
& not already having full
capacity occupation of fauna
before mining starts.

FAUNA REPLACEMENT ZONE.

FAUNA REPLACEMENT ZONE

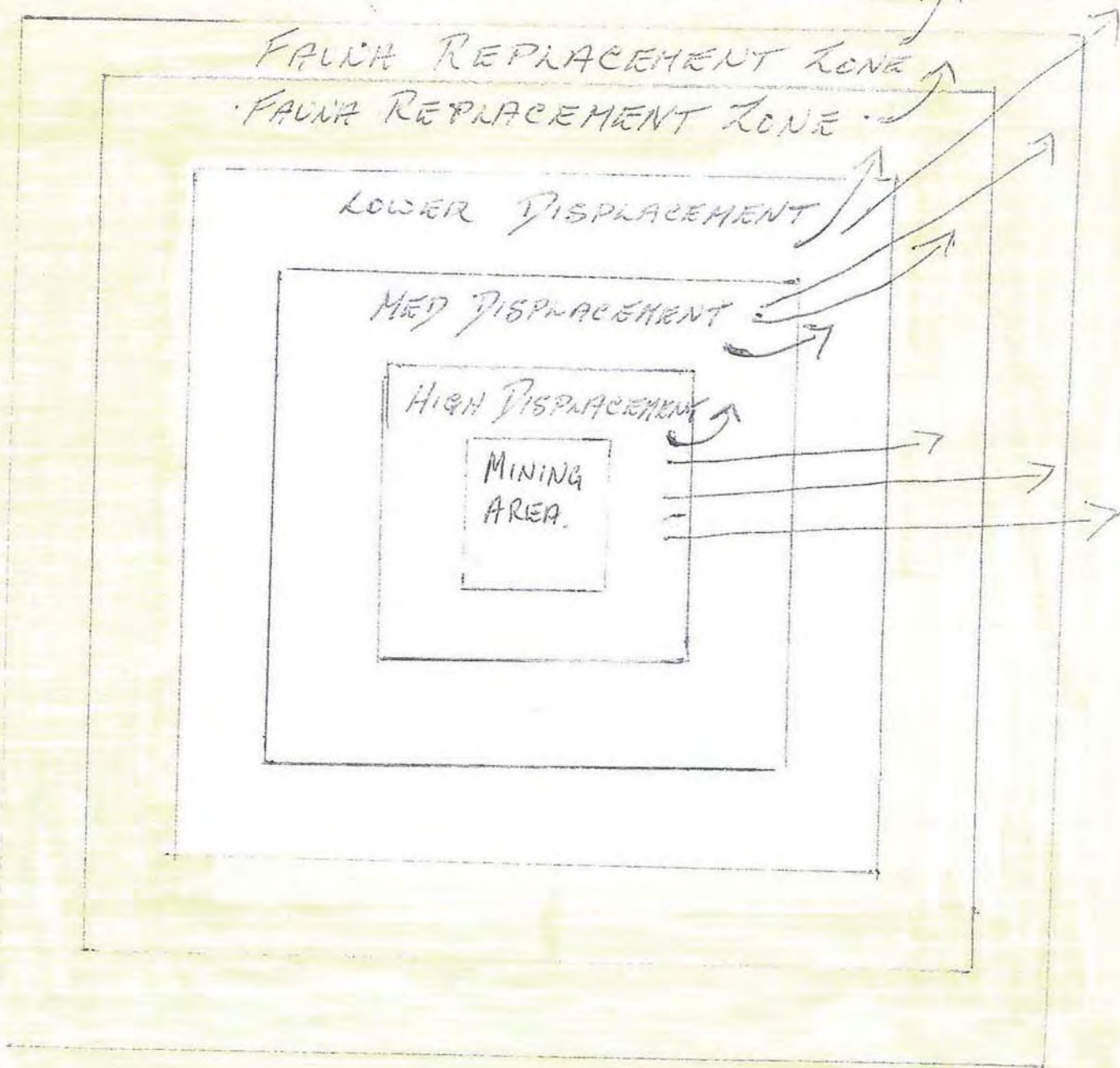
FAUNA REPLACEMENT ZONE

LOWER DISPLACEMENT

MED DISPLACEMENT

HIGH DISPLACEMENT

MINING
AREA.



Laird – Cameron Family Submission 11.10.2011

Proposed Maules Creek Coal Project 10_0138

The proposed Maules Creek Coal Mine is impacting on the Maules Creek community and we would like to outline the issues for our family and neighbours and make some suggestions as to how these issues could be mitigated.

The Laird family has a long history with the Maules Creek district, owning a number of local properties and running various agricultural businesses including a sawmill based at “Willowdale” which sourced its timber from Leards Forest. Despite logging in the forest over many years, Leards Forest is at this time a fully functioning ecosystem that is providing a wide range of ecological services to the native and human inhabitants of Maules Creek. It is home to 394 species of native plants and animals and 34 threatened and endangered species. The Forest is supposed to be protected under Federal EPBC Legislation for its critically endangered ecological community White Box Grassy Woodland.

Our property is known as “Middle Creek” a well known and productive farm approximately 6 kms from the project boundary of the proposed mine site. Over the past 7 or 8 years a relatively large investment has been made in the property in order to setup for Cell Grazing in which livestock (Cattle) are intensively grazed in small paddocks and moved frequently using low stress handling methods. This management style has a number of positive environmental and economic outcomes and was part of a Best Management Practice program coordinated by the Namoi CMA.

The topography of the region, the direction of the prevailing winds and the fact that there is a predicted atmospheric inversion layer 41% of the time generally and 69% of the time in winter will combine with the proposed Maules Creek Mine to seriously impact on the air quality of the area and our properties proximity to the mine is a major concern.

Health Implications

Our family values the healthy lifestyle afforded by Maules Creek. One member of our family has a pre-existing illness that will be greatly impacted by fine particles that are emitted from the mine.

The illness known as Scleroderma is an auto immune disease and it makes the sufferer especially sensitive to fine particles and has serious long term concerns for lung function. The increase in PM 2.5 emissions from the proposed mining operations will exasperate this condition in 2 main ways.

1. Lodge in the lung and reduce lung capacity or induce asthma.
2. Further impair the immune system due to the action of T-lymphocytes.^{1 2} Minor infections, flu, colds and even prior vaccines can become major dramas.

¹ Van Steenis (2011) *Coal Opencasting and Health*.

² Lockwood AH, Welker-Hood K, Rauch M, Gottlieb B. 2009. *Coals Assault on Human Health*.

<http://www.psr.org/assets/pdfs/psr-coal-fullreport.pdf>

Auto immune diseases cannot be taken lightly and we are currently making a judgment call as to the safety of our home and whether we remain in the district.

Farm Management

The adoption of intensive grazing management practices at “Middle Creek” has seen an improvement in soil health and pasture productivity in a relatively short period.

A great deal of time and effort has gone in to establishing perennial pastures, providing adequate stock water, fencing smaller paddocks, improving knowledge and re-arranging the business model to work with nature.

The farm is ideally located in a reliable rainfall area, between 2 major livestock selling centers with access to a large catchment of store cattle to the west and prime markets to the east. Overheads are very low and this business model is sustainable over the long term.

The bottom line is that the farm is becoming more productive, more profitable and has a declining variable cost base. This has taken a number of years to achieve, years where a reduced or even negative income was traded off against future benefits – benefits which are now in doubt.

These strategic plans and investment activities were undertaken with the knowledge that coal mining was envisaged in the district but that coal mining would be underground due to the protection afforded to native vegetation in the Leards Forest. It was also widely thought that the coal on the farmland adjacent to Leards Forest was too deep for open cut methods and underground longwall mining would be adopted.

Native Vegetation laws ([Minister for the Environment & Heritage v Greentree \(No 3\) \[2004\] FCA 1317 \(14 October 2004\)](#)) long thought to be a curse for farmers are no impediment for mining. It would seem that the Greentree case and the EPBC legislation on which it is based would ensure that the Native Veg in Leard Forest would be protected and that the only course for mining to take would be underground no matter what inefficiencies or production penalties that would be incurred.

No right minded farmer would undertake such long term investments in the productive capacity of their farm if it was known that a number of huge open cut coal mines were being planned on their doorstep. The careful planning of land owners and government bodies such as the Namoi CMA is completely at odds with the approvals based planning approach of the NSW state government under the guise of state significant projects.

Moreover, it is ironic that our farm management for environmental outcomes post Native Veg legislation is being dwarfed beside a open cut coal mine in a forest. Legislative inequities in this area seem par for the course and the irony continues as next we will be paying carbon taxes for CO2 emissions while coal mines will be exempt.

Community Considerations

Over the past 5 years we have increasingly found that the district is in decline. First it was to the South of Leards Forest and now it is to the North. De-population of the area due to purchases for mining, zone of affectation and environmental offsets is reducing the critical mass of the people required to sustain a viable community. Furthermore, not many people are putting up their hand to move to Maules Creek. And who can blame them – we certainly wouldn't move to the Hunter.

We cannot think of one property in the area in the last 1 - 2 years that has sold to a purchaser other than a coal mine.

A number of properties outside the Zone of Affectation are for sale and due to buyer resistance these properties are not selling. Maules Creek was once a well sought after district with farms and houses valued for their beautiful scenery, peaceful amenity as well as the productive capability of the land. The following excerpt from a tourist brochure tells the story.

"After you cross the Harparary Bridge, take the Maules Creek Road and head for 'the hills'. Maules Creek is situated at the foothills of the Mt Kaputar National Park and is truly amazing countryside. The rugged enchanting landscape hides a deep rich black soil, perfectly suited to farming. As a result the region harbours some of the country's leading cattle. Water flows from the mountains, trickling through Melaleuca lined creeks to arrive as clear as crystal. Many beautiful locations along the river provide captivating hideaways to have a picnic or just enjoy the presence of nature. The size and grandeur of the Nandewar Ranges viewed from the Maules Creek area is spectacular."

With the proposed mines in the Leards Forest, the amenity value is being wiped from overall property values and only the productive element remains. This will mean a serious downgrade of retirement expectations, expansion plans etc for ourselves and our neighbours.

For Long term residents this is particularly galling. Generations of community capital is being eroded over 5 - 10 years. Faced with the prospect of living with a coal mine, community members who have an option to sell are taking it – and no one blames them.

Important roles in the Bush Fire Brigade, Hall Trust, CWA etc are no longer able to be filled. Splits in a diminishing community due to stress and other pressures is an added complication which we would not have thought possible only a few years ago.

Large quantities of time are spent dealing with the mines. This time is unproductive time. Meetings, submissions, emails, phone calls, are a major intrusion on day to day activities and create no tangible benefits for ourselves. It is not limited to the miners – more meetings etc with the Narrabri Shire Council, the Department of Planning, various politicians, media, health workers and now social researchers hoping to find material for PhD's.

Global Considerations

Research has shown that Green House Gas (GHG) emissions are rising faster than ever and that Global Warming indications are tracking above the worst case trajectory described only a few years ago.

The following quote taken from our local Narrabri Weather Network (narrabriweather.net) is typical of the reports that are beginning to surface.

***“Record Low Arctic Ice:** The extent of sea ice in the Arctic reached a new record minimum last week. This is attributed to man-made global warming. The ice sheet is retracting even faster than climatologists have been expecting, at this rate the Arctic could be essentially ice-free over summer by 2030. Unfortunately it is one of those nasty non-linear things where the ice melts which then makes the planet get hotter even faster because the ice is no longer reflecting all that heat back into space. Presumably our grandchildren will be told that Santa lives in Mexico or somewhere, because he certainly won't be at the North Pole for much longer! Here is the [Arctic Sea Ice News and Analysis](#) and an [ABC News](#) article about last weeks record measurement.”*

How these facts and their implications can be reconciled with clearing a forest, mining, transporting and burning coal is beyond the average person who possesses common sense. The fact that this is being contemplated for the benefit of mostly foreign investors is even more baffling.

People and governments have become detached from the earth, the soil and reality. For some people economics is reality however in the real world with seasons, natural disasters and burgeoning populations, economics is getting in the way of reality - and proper planning. The un-measurable cost, the un-quantified cost and the external cost is what we will all end up paying for in the end. As they say “Nature bats last”.

What is more the economics of keeping that coal in the ground is on par with mining it if the carbon pollution from the GHG emissions for the lifecycle of the product were taxed in the country of origin. 10,000,000 tonnes of coal will produce in the order of 25,000,000 tonnes of CO₂. The long term estimated carbon price of \$30 means that the GHG costs would be in the order of \$750,000,000 per annum and this does not include mining and transportation emissions. We are all subsidizing this project and this is particularly disappointing as Australia, its farmers and likely the people of Maules Creek will face more drought as a result – Nature Bats Last.

The economics of asbestos are now such that the cost of the products lifecycle have been fully recognized and it is no longer produced. Given its implications for Global Warming³, coal will kill far more people than asbestos.

Just because someone will pay for something doesn't make it right. Drugs, vice etc are all unsuitable for official approval and clearing a forest to mine asbestos falls into this category and soon it will be joined

³ Lockwood et al 2009.

by the mining of coal. It has been shown in numerous studies that the costs of coal exceed the benefits.⁴ I hopefully will be alive in 2030 when the North Pole Ice sheet is gone and so will many of the players in the decision making of this and other inappropriate projects. The incredible part is that based on current decision making practices the impacts will be much worse than currently expected and we will all have to live with our actions in this lifetime and be called to account in the next.

Conclusion

This district is our home with a long term family attachment. Our business plans have been to build on existing holdings using an environmentally and economically sustainable business model. We have invested a significant amount of money in our property. We are committed to our community and our district and are very disappointed that due to impacts to our family health it may be prudent for our family to reside elsewhere.

Recommendations

From a personal, local community, environmental and global perspective there is a “net cost” from this project and accordingly the proposed project should be denied.

If the project is approved, it should be an underground mine.

The protection afforded to Native Vegetation under the Native Veg Act and the EPBC Act should be respected.

That if open cut mining is approved the final void is closed and that all the land in the project area be returned to its existing land capability. Sufficient funds be kept in perpetuity to ensure effective ongoing management of the final void.

That a detailed Health Study of the residents of Maules Creek be carried out to determine a baseline of current health levels.

Local residents need to be able to get away from the impacts of the mine. An “Options Package” needs to be developed for residents to live away from the impact area but maintain connection to the district and continue to work their businesses.

⁴Epstein, P.R. Buonocore, J.J., Eckerle, K., Hendryx, M., Stout, B.M. III, Heinberg, R., Clapp, R.W., May, B., Reinhart, N.L., Ahern, M.M., Doshi, S.K. and Glustrom, L. Full Cost Accounting for the Life Cycle of Coal, *Annals of the New York Academy of Sciences*, vol. 1219, pp.73-98.

Other Recommendations

In order to minimize community time reviewing Mining Company Environmental Assessments (EA) all EA's should be peer reviewed by a appropriately qualified independent consultant prior to being released for public exhibition. These independent consultants should be chosen from a panel of members retained by the Department of the Environment or the EPA Board.

Reasonable costs for submission preparations, meetings including travel for state significant projects should be reimbursed by the Department of Planning upon application.

Laws relating to water, GHG's and vegetation should be equal for all.

Phil Laird and Natalie Cameron

"Middle Creek"

Boggabri. NSW. 2382.

0428 712622

Stephen O'Donoghue - Submission: Maules Creek Coal Project, Project Application Number 10-0138

From: "Georgia Parkin" <georgia.parkin@bigpond.com>
To: <Plan_comment@planning.nsw.gov.au>
Date: Tuesday, 11 October 2011 9:51 PM
Subject: Submission: Maules Creek Coal Project, Project Application Number 10-0138
Attachments: Submission_Maules Creek Coal Project.docx

Please find attached our submission objecting to the Maules Creek Coal Project.

Regards

Peter and Georgia Watson

Peter and Georgia Watson
Topsoil Farming Pty Ltd
'Merriendi'
Therribri Road
BOGGABRI NSW 2382

12 October 2011

Major Development Assessment
Department of Planning and Infrastructure
GPO Box 39
SYDNEY NSW 2001
Fax No. 9228 6466
Plan_comment@planning.nsw.gov.au

Submission: Maules Creek Coal Project, Project Application Number 10-0138

As local landholders and farmers we wish to state our objection to the Maules Creek Coal Project.

As identified in the Environmental Assessment the properties for which we are responding include:

Those that we own and manage (referred to as 'Riverway' in this submission):

222, 223, 224, 225 (receiver) Riverway Boggabri Pty Ltd
237, 238, 239 PJ Watson and G Parkin
244, 245 PJ Watson

Those that we lease and manage (referred to as 'Merriendi' in this submission):

207 (receiver), 208, 209, 210, 211, 212, 213 Hamblin Pastoral Co Pty Ltd
214 Oakcolt Pty Ltd

In objecting to this project we support the in-depth submission that has been made by the Maules Creek Community Council and our reasoning is based on the information contained in that submission.

In general we are concerned about the potential health and amenity issues associated with the mine, including:

Air quality impact

As there has been no air quality monitoring conducted in the vicinity of our properties there are no baseline levels to refer to even though our property could experience impacts from the stated prevailing southeast and south-southeast winds, particularly as a result of the rail spur.

A dust deposition gauge was installed at 'Riverway' (property identifier 225) although there does not appear to be any data included in the Air Quality Impact Assessment.

We consider it important for baseline air quality and dust deposition levels to be established before the project is given approval to proceed and if approval was granted would expect ongoing monitoring of levels over the lifespan of the mine.

Despite the lack of baseline data both in the vicinity of our properties and in the entire area surrounding the proposed Maules Creek Coal Project, one could draw the conclusion that air quality would decrease and dust deposition would increase with the establishment of another coal mine in the area. Whilst the model predictions of levels of PM₁₀, PM_{2.5} and dust deposition do not exceed the recommended guidelines for the properties we own and manage, we consider any impact on air quality as a result of this project to be unacceptable.

Acoustics impact

We are particularly concerned about the private rail spur that has been proposed and the potential noise that will be generated by trains on this line as well as traffic using the mine access road. Based on the direction of the stated prevailing winds, noise from this rail spur and traffic on the mine access road will be carried in the direction of our property 'Riverway'. It is predicted that our property will experience operational noise levels of between 30 and 35.3 dBA at night. It is also predicted that our property will experience noise associated with the construction of the water pipeline and rail spur in excess of 35 LAeq,15min. While these noise levels do not exceed the amenity level it is still considered intrusive and a significant increase on the noise levels currently experienced.

The Maules Creek Coal Project Environmental Assessment does not fully consider the cumulative effects of noise caused by the rail spur with train movements by both Aston Resources and Boggabri Coal. It is requested that a much more thorough noise assessment be completed prior to project approval to identify any noise issues associated with the occurrence of wheel squeal and other sources as a train travels along the rail spur.

We categorically do not support construction activities, mining or coal processing, train loading or train movements during the evening or night hours when the impacts on noise levels will be greatest.

Should this project be approved we would request that noise monitoring equipment be permanently installed at our property 'Riverway' and also on the property 'Merriendi'.

Ecological impact

It is shocking to think that this project if approved could impact on more than 1665ha of forest and woodland and 513ha of native grassland and crop land and together with the other coal mines in the area be responsible for the destruction of more than 60% of Leards State Forest. In the process these projects will put at risk a variety of flora and fauna, including a number of threatened species.

As an agricultural landholder in the area that is subject to stringent Native Vegetation laws and a citizen concerned for the future of our environment it is unimaginable how the NSW Government could not apply the same laws to the approval of a coal mining project.

It is also important to note that this proposed project shares a boundary and is located adjacent to the Leards State Conservation Area. In an attempt to protect the ecologically, the Conservation Area is subject to a number and range of conditions of use. As such it is again difficult to understand how the NSW Government could potentially consider it appropriate to establish an enormous open cut coal mine next door.

To minimise the impacts on the ecology of Leards State Forest and the neighbouring Conservation Area it is suggested that the NSW Government decline the Maules Creek Coal Project application or recommend that the project be resubmitted as an underground mine.

Surface water and groundwater impact

As users of surface water and groundwater for personal and business purposes, and also as advocates for the environment, we are concerned that this project will potentially have significant effects on both the quality and quantity of these water sources.

As stated in the Maules Creek Community Council submission we would also like to see calibration of the groundwater model to provide confidence in the outputs of the model.

We rely on groundwater for the success of our irrigation farming business and do not wish to see the groundwater resource destroyed or negatively impacted simply because another business wishes to start a new project.

Traffic and transport impact

We have concerns about an increase in traffic along Therribri Road as this road is used by employees of our farming operation to travel to work from Boggabri and is also often used for heavy vehicle access to our property, carting of wheat, cotton etc. south to Boggabri and beyond. Heavy vehicle construction traffic could pose a significant risk to public vehicles on Therribri Road with high volumes of truck movements predicted particularly during the peak construction period. We would not support a complete closure of Therribri Road while any construction or maintenance work was occurring to this road.

The SIDRA modelling evidenced in the Environmental Assessment has shown that increases in traffic will have a low impact, this modelling software does not seem to have any weighting factor that takes into consideration that the area is a quiet rural area and therefore any increases in traffic are significant, despite the perceived capacity of the road network.

We acknowledge that Aston Resources has proposed that mine-related vehicles during both construction and operational stages of the project will be prohibited from using Therribri Road, between the Mine Access Road and Harparary Road and also the entire length of Browns Lane and support the installation of signs prohibiting access to these routes and the documentation of such in a traffic management plan. The eastern end of Browns Lane runs along the boundary of the property 'Merriendi' and a stretch of Therribri Road from the Browns Lane intersection south for approximately 6 kms runs through the middle of farming land on both 'Merriendi' and 'Riverway'.

These roads are regularly used by us to access various parts of the property and to move farm machinery. We also use these roads for leisure activities such as running and bike riding, often between the hours of 6am and 7am with our pet dog and we do not want to encounter large volumes of traffic travelling to the mine sight for the morning shift change. It concerns us that Harparary Road, Browns Lane and Maules Creek Road form part of a school bus route to Narrabri and any increase in traffic on these roads could impact on the safety of our children travelling on the school bus.

It should be noted that any construction or operations employees travelling from Narrabri to the mine site will be very tempted to use Maules Creek Road and Browns Lane as the most direct and shortest route to the mine site. We expect a considerable commitment from Aston Resources to ensure that their staff and contractors are not using this route as they have made this commitment verbally on a number of occasions.

Social impact

It is important that Aston Resources works with local communities to identify and build community infrastructure and social capital.

We would encourage Aston Resources to use as many local employees as possible, and those non-local hires to relocate permanently with their families as opposed to using temporary mine accommodation in the MAC villages. In line with this it is important for Aston to support the existing local community to ensure that there are no adverse affects on the availability of housing, health, community or other services.

We would also see it as important that Aston Resources makes a commitment to employing as many unskilled staff as possible on appropriate training programs to ensure an increase in the skills base of the local labour force. For a company estimated to employ more than 300 during the construction phase and more than 400 during operations it would seem that they could expand their Scholarship and Apprenticeship Program to more than four onsite apprenticeships per year. A comprehensive employment strategy should be developed to attract Aboriginal employees and young people thereby attempting to reduce the higher than average unemployment levels of these population groups in this area.

As a local business owner we are concerned that the availability of skilled labour will be reduced due to the high demand and uncompetitive wages that the mining industry pays its employees.

It is felt that Aston Resources could contribute significantly more to the community by way of a Community Grants Fund which could be used to develop local community services and facilities as well as economic development. The stated \$100,000 per year that they have proposed along with a number of other community related incentives seems rather insignificant in proportion to the profits the company will be generating.

It should be acknowledged by Aston Resources and the NSW Government that the proposed mine will provide very few benefits to the community living closest to the mine site and unfortunately it is this community that is most likely to be negatively affected. The proposal of the Maules Creek Coal Project has created a large amount of uncertainty for many people in the area and will in general make it a less appealing place to live. Most people would readily accept that no-one wants to be neighbours, or almost neighbours, with one of Australia's largest open-cut coal mines.

As a local landholder we are concerned about the future value and sustainability of our farming asset and our lifestyle. We do not want to see this coal project, or other mining or coal seam gas projects impact on these things in any way and believe the NSW Government has a responsibility to make decisions regarding these projects in a considered and balanced way. The lifespan of the coal industry in this country is short-term with potential long-term and devastating impacts on the agricultural industry. The future looks bleak for our rural communities once our agricultural assets have been destroyed and our land has been stripped of its mineral deposits.

Should the Maules Creek Coal Project be approved, any mitigation and management strategies that have been recommended in the Environmental Assessment should be included as conditions in the project approval. There should also be ongoing monitoring of all areas detailed in the Environmental Assessment including those specifically mentioned above and in particular air quality, noise, traffic and surface and groundwater. We would like air quality and noise monitors placed in the vicinity of our properties and groundwater and surface water testing to be conducted on a regular basis.

We would strongly encourage the Minister and the Department of Planning and Infrastructure to seriously consider the negative impacts that this mine will have on the local community and on the environment in this area and request that the project not be approved in its current form.

Regards

Peter and Georgia Watson

From: Marg McLean <margy.mclean@gmail.com>
To: <stephen.o'donoghue@planning.nsw.gov.au>
Date: 10/12/2011 10:12 am
Subject: Maules Creek Coal Project

Dear Department of Planning,
RE: Application Number 10_0138

I object to the proposed Maules Creek Coal Project. It would be absolutely appalling planning to approve further clearing and destruction in the Leard Forest. The Maules Creek Coal Mine should NOT be approved.

The real value of the precious remnant vegetation of the Liverpool Plains is much greater, overall and in the long term, than the simple return to the economy by this proposed mining. The return from the ecosystem services provided by biodiversity and functional hydrological systems together with the contribution to global greenhouse gas emissions that would NOT occur if the mine was not approved far outweighs simple short term dollars.

The cumulative impact must be considered.

The endangered White Box Grassy Woodland and habitat for threatened species in Leard State Forest need to be protected. The extinction debt is in train, we need to turn it around.

Please accept your responsibility for planning decisions for the greater good. Reject this application, it is environmentally totally unacceptable.

Yours sincerely,

Marg McLean
Falbrook Wildlife Refuge
PO Box 462
Singleton 2330
11 Oct 2011



PCU026524

Department of Planning
Received

29 SEP 2011

Scanning Room

1 of 2

Mr & Mrs Laurence & Sandra Compton
329 Ellerslie Rd
Maules Creek NSW 2382

Project Application Number 10-0138

25-9-2011.

We hereby submit our objection to the project application number (10-0138) - Maules Creek Coal Project.

Our objection is based on the following issues.

- Property values: We have reached retirement age. Our farm is our superannuation. Our house is close to the proposed mine. We feel that this close proximity will have a negative impact on the sale of our property.

- EA Discrepancies: Our residence is not where they have drawn it on the maps. Residence co-ordinates are $30^{\circ}30'25.28''S$, $150^{\circ}06'49.86''E$. Ellerslie Road is incomplete on the maps. There could be other discrepancies.

- Health Impacts: The prevailing wind is South - Eastely - that is, straight from the proposed mine through the gap in the hills to our house. We are sure this will result in our being adversely affected by both dust and noise. Drinking water could also be adversely affected.

- Blasting: We are concerned about the impact blasting will have on our residence.

• Environmental Impact: "2180 hectares of vegetation will be disturbed by the project" — "Disturbed" is a rather mild term for the total destruction of all existing vegetation, the pulverisation of the soil to a depth of up to 300 metres, and the occupation of the majority of the area by machinery.

The timber industry was obliterated in this district because of its impact on the environment. The timber industry had the footprint of a mouse compared to coal mining.

• Climate Change: 321 million tonnes of coal, which is almost pure carbon, is safely sequestered at the moment. Keeping in mind current beliefs and policies about the supposed connection between burning coal and climate change, is it wise to dig all that coal out of the ground and burn it in the atmosphere?

We appreciate your consideration of this submission.

Yours sincerely

Lawrence Compton



Sandra Compton
R. Compton

Stephen O'Donoghue - Submission Details for

From:

To: <stephen.o'donoghue@planning.nsw.gov.au>

Date: Monday, 26 September 2011 9:38 PM

Subject: Submission Details for

CC: <assessments@planning.nsw.gov.au>



Disclosable Political Donation: no

Name:
Email:

Address:

Content:

I am totally appalled by the proposal for the Maules Creek Coal Project, firstly because an open cut coal mine of any sort has no place within a State Forest ecosystem, and secondly because the mining of coal produces a product that will very significantly contribute to increased global greenhouse gas emissions at a time when Australia should be reducing same.

I strongly object to this project, which will not only destroy valuable native bushland and habitat for endangered species like the Turquoise Parrot --(have you ever seen a Turquoise Parrot? I have. And they are magnificently beautiful creatures!)--but allowing this project to proceed will also destroy the lifestyle and health of those people living in the area.

This Maules Creek Coal Project should NEVER be approved.

Sincerely,

IP Address: -

Submission: Online Submission from \

https://majorprojects.affinitylive.com/?action=view_job&id=20665

Submission for Job: #4142

https://majorprojects.affinitylive.com/?action=view_job&id=4142

Site: #2307 Maules Creek Coal Mine

https://majorprojects.affinitylive.com/?action=view_site&id=2307

Powered by [AffinityLive](#): Work. Smarter.