



Planning
Assessment
Commission

Bengalla Mine Continuation Project

Review Report

Garry West (Chair)
Abigail Goldberg
David Johnson

January 2015

The Bengalla Mine Continuation Project PAC Report©
State of New South Wales through the NSW Planning Assessment Commission, January 2015.

NSW Planning Assessment Commission
Level 13, 301 George St Sydney NSW Australia
Telephone: (02) 9383 2100
Email: pac@pac.nsw.gov.au
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Executive Summary

The Bengalla Mine Continuation Project is a proposed extension of the existing Bengalla open-cut coal mine located 4km west of Muswellbrook in the Muswellbrook Shire Council Local Government Area. An expansion of its mining area to the west is proposed, with approval sought to extract 15 million tonnes per annum (Mtpa) of run-of-mine (ROM) coal over 24 years. The coal would be processed on-site using existing (upgraded) facilities and transported by rail to the Port of Newcastle for shipment overseas.

The Minister for Planning in correspondence dated 6 November 2014 requested the Planning Assessment Commission to review the Bengalla Mine Continuation Project and to conduct public hearings as part of this process. The Minister requested the Commission review the merits of the project paying particular attention to the project specific and cumulative air quality, noise and blasting impacts. The Commission was constituted by Mr Garry West (chair) with Ms Abigail Goldberg and Mr David Johnson.

The Commission examined the documents referred to in the Terms of Reference, including the Department of Planning and Environment's Preliminary Environmental Assessment Report in the Department's letter dated 12 November 2014. The Commission also received written submissions, held a public hearing, visited the site and surrounds and met with the Proponent, Bengalla Mining Company Pty Limited, Muswellbrook Shire Council and the Office of Environment and Heritage. The public hearing was held on 10 December 2014 at Muswellbrook RSL and 26 verbal representations were made. Following the public hearing the Commission put a series of formal requests for further information to the Proponent to which the Proponent responded.

Reviewing the merits of the project proposal at this phase of the assessment process involves comprehensive assessment, within the statutory framework, of the predicted benefits and predicted environmental impacts of the project. The review should also identify issues that the consent authority will need to consider carefully before making a determination, and whether they should be resolved prior to determination.

The benefits claimed for this project by the Proponent are extensive. They include: a capital expenditure of \$689 million, State Tax Royalties of \$778 million and Commonwealth Royalties of \$509 million and an increase in the workforce up to 900 during operation of the project.

The residual impacts of the project cover a wide spectrum, but relatively few of them are of major concern. The Commission considers that the various cumulative impacts and the acquisition of properties are the most significant together with impacts on air, final void and landform.

The Commission's finding is that the draft consent conditions relating to acquisition, noise, the final void and the biodiversity offset strategy should be further reviewed to ensure they are robust in mitigating the impacts of the project. The Commission has provided comments on the conditions in its recommendations.

The issues of acquisition, noise, air and blasting have been considered in detail (see Term of Reference 1 (b)). Acquisition, noise, air and blasting impacts were also raised in submissions and mentioned in the public hearing.

The Commission finds that the impacts could be significant if not adequately addressed and has recommended improvements to the mitigation strategies. The other residual impacts

considered important by the Commission include the biodiversity offset strategy, the risks posed by the final void and rehabilitation. These are discussed in the report and recommendations made for mitigation or management.

The Commission has consolidated the recommendations from the various sections of the report into a summary at Section 8 of the report. In summary, these recommendations include:

- the proponent contributing to the ongoing maintenance and operational costs associated with mitigation measures installed on private properties;
- including land acquisition as an option should noise and/or air quality criteria which are predicted to be exceeded on more than 25 percent of privately owned land where there is an existing dwelling (or one could be built);
- inclusion of a mechanism for complaint investigation and reporting with the provision of remedial options should the modelling predictions not reflect operational data;
- retaining the blasting regime as recommended by the Department;
- implementation of a biobanking agreement for the preservation of biodiversity;
- implementation of additional design requirements for the design of the final void and landform;
- retaining the realignment design for Bengalla Link Road as recommended by the Department; and
- prior to the determination of the project application by the consent authority, the owners of Property's 106 and 110 be informed of the removal of their right to acquisition including the justification for their property being removed.

The Commission considers that the residual impacts of the project can be reduced to an acceptable level if the recommendations in this review report are adopted. If this occurs, and the relevant actions and/or commitments are in place prior to submission of the project for determination, it can be approved subject to conditions.

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Glossary

AQIA:	Air Quality Impact Assessment
AQMP:	Air Quality Management Plan
ARI:	Average Recurrence Interval
BMC:	Bengalla Mining Company Pty Limited
BMCP:	Bengalla Mine Continuation Project
BOS:	Biodiversity Offset Strategy
BSAL:	Biophysical Strategic Agricultural Landis land with high quality soil and water resources capable of sustaining high levels of productivity.
Commission:	Planning Assessment Commission constituted for this Review and public hearing, Mr Garry West (Chair), Ms Abigail Goldberg and Mr David Johnson
OEH:	Office of Environment and Heritage, formerly DECCW and now incorporating NSW Heritage Office, the latter also cited independent of OEH.

Secretary's

Requirements: Requirements provided by the Secretary of the Department of Planning and Environment for an environmental assessment or environmental impact statement.

DP&E:	Department of Planning and Environment
EIS:	Environmental Impact Statement
EPA:	Environment Protection Authority
EP&A Act:	<i>Environmental Planning and Assessment Act 1997</i>
EPBC Act:	<i>Environmental Protection and Biodiversity Conservation Act 1999</i>
LGA:	Local Government Area
NOW:	NSW Office of Water
PSNL:	Project Specific Noise Level
PM₁₀:	Particulate matter with an equivalent aerodynamic diameter of 10 micrometres or less.
PM_{2.5}:	Particulate matter with an equivalent aerodynamic diameter of 2.5 micrometers or less.

PEA:	Preliminary Environmental Assessment Report prepared by the Department of Planning and Environment
ROM:	Run-of-Mine
RTS:	Response to Submissions
SEPP:	State Environmental Planning Policy
SSD:	State Significant Development
TEOM:	Tapered Element Oscillating Microbalance
The proponent:	The applicant under Part 3A of the EP&A Act 1979, in this report being Bengalla Mining Company Pty Limited. 'Proponent' includes the proponent's EA consultants.
The proposal:	The subject of the application under Part 3A of the EP&A Act 1979, in this report being the Bengalla Mine Continuation Project.
TOR:	Terms of Reference of the Minister's request for the review of the project made under Section 23D of the <i>Environmental Planning and Assessment Act 1979</i> and Clauses 268R and 268V of the <i>Environmental Planning and Assessment Regulation 2000</i> .
TSC Act:	<i>Threatened Species Conservation Act 1995</i>
TSP:	Total suspended particulate matter
VLAMP:	Voluntary Land Acquisition and Mitigation Policy
ZOA:	Zone of Affectation

1. Introduction

On 6 November 2014 the Minister for Planning, the Honourable Pru Goward MP, issued terms of reference for the Bengalla Mine Continuation Project (BMCP) and requested the Planning Assessment Commission (PAC) to hold a public hearing.

Ms Lynelle Briggs AO, chair of the Commission, nominated Mr Garry West, Ms Abigail Goldberg and Mr David Johnson to constitute the Commission for the review and Mr West was appointed to chair it.

2. The Minister's Terms of Reference for the Review

The Minister's request was made under Section 23D of the *Environmental Planning and Assessment Act 1979* and Clauses 268R and 268V of the *Environmental Planning and Assessment Regulation 2000*.

The Terms of Reference are as follows:

1. *Carry out a review of the Bengalla Mine Continuation Project, and:*
 - a) *Consider the Environmental Impact Statement for the Project, the issues raised in submissions, the formal response to submissions, the Department of Planning and Environment's preliminary assessment report of the project and any other relevant information provided on the project during the course of the review;*
 - b) *Assess the merits of the project as a whole, paying particular attention to the project-specific and cumulative air quality, noise and blasting impacts of the project;*
 - c) *Apply all relevant NSW Government policies in those considerations and to that assessment; and*
 - d) *Provide recommendations on any reasonable and feasible measures that could be implemented to avoid and/or reduce the potential impacts of the project.*
2. *Conduct public hearings on the project no later than 28 November 2014.*
3. *Complete the review by 23 January 2015, unless the Secretary of the Department of Planning and Environment agrees otherwise.*

The preliminary assessment was received by the Planning Assessment Commission on 12 November 2014. The Department subsequently provided the Commission with an Addendum Report on 23 January 2015. As a consequence the Chair requested the Secretary extend the completion of the Review until 30 January 2015.

A public hearing was held in Muswellbrook on 10 December 2014 and is discussed below.

A copy of the terms of reference in the Minister's request is provided in **Appendix 1**.

3. Project Description

3.1 Background

The Bengalla coal mine is an existing open cut coal mine located in the Muswellbrook Local Government Area. The coal mine was approved in 1995 following a commission of enquiry. The approval allows for:

- Extraction of 146.3 million tonnes (Mt) of run of mine (ROM) coal, over a period of 21 years at a maximum extraction rate of 10.7 Mt of ROM coal per year;
- open pit mining, based on a series of 60 metre wide dragline strips running north–south;
- an overburden area to the east with a maximum allowable height of RL 270 m; and
- a coal handling and preparation plant located in the southwest corner of the project with adjacent related ROM and clean coal stockpiles.

Mining commenced in 1998 and was well underway at the time of the site inspection (December 2014).

The Bengalla mine is part of a broader Upper Hunter Valley mining complex, with its immediate neighbours comprising Mount Arthur coal to the south, Mangoola Coal to the west and Mount Pleasant to the north (yet to commence).

The mine is located approximately 4 kms west of Muswellbrook and is adjacent to the Hunter River floodplain with the eastern and southern project boundaries located on the Hunter River alluvial flats (see Figure 1).

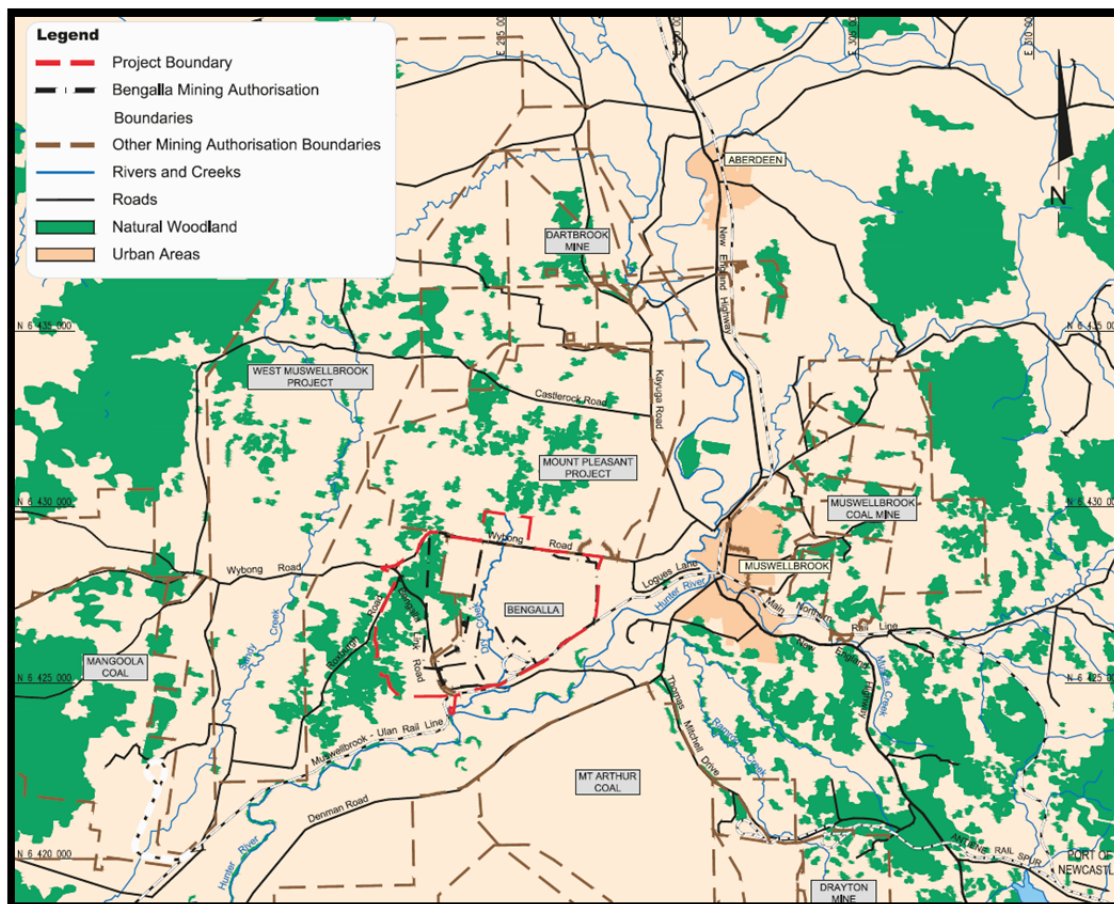


Figure 1: Locality of the Bengalla mine.

Source: Environmental Impact Statement September 2013, (Figure 2, page 4)

3.2 The Proposed Extension

The proponent proposes to extend the existing mine in order to extract an additional 316Mt of ROM coal over a period of 24 years, at a rate of up to 15 million tonnes per annum (Mtpa). Expansion and continuation of the existing open cut mining operations would involve:

- Westward extension of mining comprising an additional 964 hectares (ha), with the total disturbance area equivalent to 1,938ha;
- Extraction of up to 15 Mtpa of ROM coal over a project life of 24 years;
- Clearing of 881ha of native vegetation to be offset by 6,215 ha of land, comprises approximately 4,600ha of existing native woodland vegetation plus 1,500ha of native grassland;
- Upgrade of existing infrastructure including the coal handling and preparation plant (CHPP), stockpiles and rail loading facility;
- Construction of new 900 ML clean water diversion dam and Mt Pleasant Discharge Dam and relocation of existing water management infrastructure;
- Realignment of a 6km section of Bengalla Link Road to accommodate the extension of the mine;
- Temporary diversion of Dry Creek;
- Progressive rehabilitation of the site and reinstatement of Dry Creek through the rehabilitated mine landform;
- Final void that would be approximately 342 ha in area, predicted to fill with water in the long term (1,000 years) to RL 70m, approximately 100m below the rehabilitated surface level; and
- Employment for additional 500 operational staff (to the 400 existing workers) and 315 construction employees during the first 3 years of the project.

The PAC advised the proponent, the Muswellbrook Shire Council and attendees at the public hearing that the Secretary of the Department of Planning and Environment would undertake the determination of the project application following the Review, under delegation. The Minister's delegations for determination by the PAC have not been triggered as no political donations were registered, Council did not object and the project received less than 25 public objections.

3.3 The Secretary's Preliminary Environmental Assessment Report

The Department has carried out a preliminary environmental assessment (Assessment Report) of the project application and its report has been submitted to the Commission for consideration as part of the review process.

The Assessment Report considered the merits of the project application, the proposal's strategic and statutory context, public and agency submissions and the Proponent's response to submissions. The report identified the following key issues:

- Amenity (related to noise, vibration, dust emissions and visual impacts);
- Natural resources including biodiversity, biodiversity offset strategy, water resources, agricultural land, final landform;
- Heritage (Aboriginal and non-indigenous);
- Traffic and transport; and
- Social and economic impacts.

The Assessment Report concluded that the project proposal is consistent with the aims, objectives and provisions of all relevant local, regional and State planning instruments.

In regard to the protection of agricultural land, the Department considered that the area of 1ha of Biophysical Strategic Agricultural Land (BSAL) that would be disturbed by the project is unlikely to have an adverse impact on the region's BSAL.

The Assessment Report concluded that *'the project represents a logical continuation of the existing mining operations to extract a significant coal resource, with limited scope for avoiding impacts on the biodiversity and heritage values of the land'*¹.

3.4 Department of Planning and Environment's Position

The Department accepted the proponent's claims that the project would provide significant social and economic benefits for both the local areas as well as the State, manifested as:

- direct employment for up to 900 mine workers and up to 315 additional construction workers;
- increase direct and indirect spending in the region with a capital expenditure of around \$689 million and annual operating expenses of around \$559 million;
- extracting a significant coal resource of around 316 million tonnes from an area that has long been earmarked as the most prospective area for mine expansions in the Hunter Valley;
- generating around \$778 million (in present value terms) of royalties for the State government which would be spent on providing infrastructure and services to the broader community; and
- providing around \$509 million to the Commonwealth government.

The Department argues that it has carefully weighed the impacts of the project against the significance of the resource and the socio-economic benefits. On balance, the Department believes that *'the project's benefits outweigh its residual costs, and that it is in the public interest and should be approved, subject to stringent conditions'*.

3.5 SEPP Amendment (Gas Exploration and Mining) 2014

The Mining SEPP was amended 19 December 2014 (after the EIS for this project was prepared and exhibited) and its provisions now apply to this project application.

Clause 12A requires the consent authority to consider any applicable provisions of the voluntary land acquisition and mitigation policy and, in particular:

- (a) any applicable provisions of the policy for the mitigation or avoidance of noise or particulate matter impacts outside the land on which the development is to be carried out, and
- (b) any applicable provisions of the policy relating to the developer making an offer to acquire land affected by those impacts.

The amendment clarifies the obligation of a consent authority under this clause extends to applications made, but not determined, before the commencement of the clause.

3.6 Socio-economic Significance

In correspondence to the Department of October 2014, the Department of Trade and Investment confirmed that the project's coal resource is significant, compared with other mineral resources across the State. This advice noted the resource is ideally located next to existing infrastructure and is worth around \$23 billion.

¹Secretary's Environmental Assessment Report, Department of Planning and Environment, November 2014, pg. 62

BMC has offered to enter into a new Voluntary Planning Agreement (VPA) with Muswellbrook Shire Council including an annual monetary contribution to the Council and to the Bengalla Coal Community Fund.

The proponent has also provided a cost-benefit analysis of the project which claims that the project would have a net social benefit for NSW of around \$1,766 million in present value terms.

4. Commission's Activities

4.1 Public Hearing and Submissions

In accordance with the terms of reference, a public hearing was held on the 10 December 2014 at Muswellbrook RSL Club. A total of 25 verbal submissions were made to the Commission at the hearing, comprising the proponent, various local businesses, a special interest group and a number of individuals. 29 written submissions were also made to the Commission. A summary of the issues raised at the Public Hearing is provided in **Appendix 3** of this Report.

A number of submissions were provided to the Commission by the Department. The Department summarised these in its Assessment Report.

Concerns from locals who presented at the public meeting, and who live in close proximity to the mines, related particularly to uncertainty regarding the applicable acquisition zones for all three mines in the area, which overlap in part. Impacts on the local population, particularly acquisition and relocation impacts as well cumulative impacts from noise, blasting and reduced air quality were also issues of concern to the local community.

Concerns about groundwater and surface water impacts were also raised with particular reference to the Clean Water dam 1.

Aside from the cumulative impacts and acquisition issues, there was general support for mining, in particular this project, expressed at the public hearing in Muswellbrook.

4.2 Documents, Meetings & Site Inspections

Through the course of the review the Commission accessed a wide range of documents including:

- The Proponent's Environmental Impact Statement;
- The proponent's Response to Submissions;
- The Department's Environmental Assessment Report and suggested draft conditions;
- The NSW Government's Voluntary Land Acquisition and Mitigation Policy;
- Submissions from government agencies and the public; and
- The Department's Addendum Report dated 23 January 2015.

During the review, the Commission met with the Department of Planning and Environment (2 December 2014 and 17 December 2014), the Proponent (9 December 2014), Muswellbrook Shire Council (9 December 2014) and the Office of Environment and Heritage (17 December 2014). On Thursday 29 January 2015 the Commission met to consider the Review report and to meet with the proponent to provide an overview of its findings and recommendations.

A summary of the topics discussed during these various meetings is provided in **Appendix 4** of this Report.

The Commission also visited the site on Tuesday 9 December 2014 with the proponent and travelled the area and road network surrounding the mine during the course of its time in the region.

5. Comments, Findings and Recommendations relating to the Terms of Reference

5.1 Air Quality

5.1.1 Existing Situation

Rural and residential sensitive receivers adjoin the existing Bengalla coal mine in addition to adjoining operational and/or approved mines to the south east and north of the project site. Some rural and residential receivers are subject to cumulative and project alone air quality impacts arising from the progression of the mine further to the west.

The proponent currently conducts air quality monitoring in locations identified in **Figure 2** below.

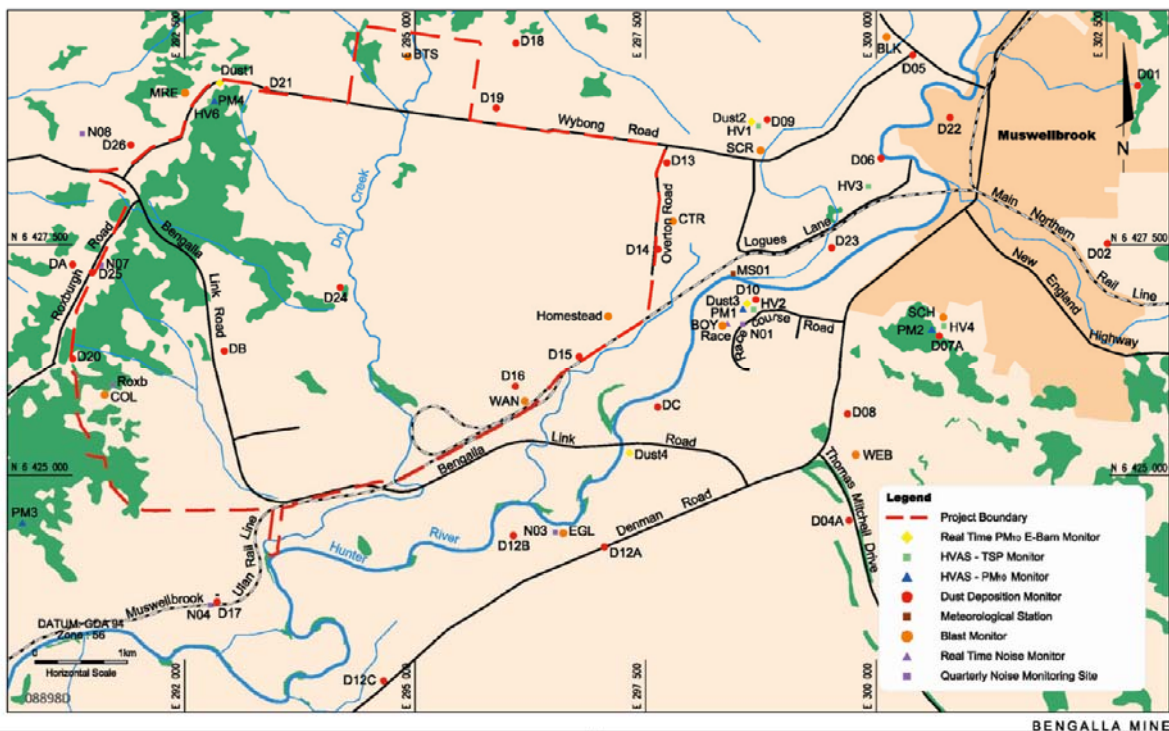


Figure 2: Existing Air Quality, Noise and Blast Monitoring Network

Source: Appendix H: Acoustic Impact Assessment, July 2013 (page 11)

Further to the monitoring network in **Figure 2**, the following table (**Table 1**) provides a summary of the PM₁₀ levels from the NSW OEH TEOM monitoring stations located within the Muswellbrook Township. The monitoring data indicates that the annual average PM₁₀ concentrations were below the criterion of 30 µg/m³.

Table 6-5: Summary of PM₁₀ levels from NSW OEH TEOM monitoring (µg/m³)

Year	Annual average		
	Muswellbrook	Muswellbrook NW	Criteria
2010	20.1 ⁽¹⁾	ND	30
2011	19.3	17.0 ⁽²⁾	30
2012 ⁽³⁾	19.8	16.1	30
Year	Maximum 24-hour average		
	Muswellbrook	Muswellbrook NW	Criteria
2010	36.4 ⁽¹⁾	ND	50
2011	46.5	22.6 ⁽²⁾	50
2012 ⁽³⁾	38.7	35.2	50

ND - no data; ⁽¹⁾ Data available from December 2010; ⁽²⁾ Data available from December 2011 ⁽³⁾ Data available till August 2012

Table 1: Summary of PM₁₀ levels from NSW OEH TEOM monitoring (µg/m³)

Source: Air Quality and Greenhouse Gas Impact Assessment, July 2013

The maximum 24 hour average PM₁₀ concentrations also indicate the relevant criterion of 50 µg/m³ were not exceeded during the monitoring period.

While the relevant criterion has not been exceeded, the levels are still relatively high.

5.1.1.1 PM_{2.5}

The proponent advised the Commission that a CSIRO study titled *Upper Hunter Valley Particle Characterization Study* (CSIRO, 2013) which reviewed the characterisation of PM_{2.5} in the Upper Hunter Valley, found wood smoke from sources such as wood heaters was a significant contributor to PM_{2.5} levels measured in the Muswellbrook area, contributing approximately 30% of the total measured PM_{2.5} levels.

The CSIRO Study found that mining activities were not a significant contributor of PM_{2.5} emissions, noting that fine particles are predominantly the result of combustion processes, rather than physical activity on crustal matter (CSIRO, 2013).

The Commission acknowledges PM_{2.5} levels have not yet been adopted by the NSW government as an impact assessment criteria and therefore notes the advice provided by the proponent.

5.1.2 Predicted Impacts

As part of its assessment of this project, the DP&E commissioned Todoroski Air Sciences (TAS) to undertake a cumulative air quality impact assessment of the mining operations in the region.

The assessment included the proposed Bengalla project, the approved Mt Pleasant project, as well as the recently approved expansions of the Mt Arthur and Mangoola mines. (Department of Planning & Environment, 2014).

The assessment indicated that during the life of the mine, up to 14 residences in the area would be subject to dust impact above the annual average PM₁₀ criteria of 30 µg/m³. The Department's assessment also indicates that up to 18 properties could experience elevated 24 hour average PM₁₀ impacts towards the end of the life of the mine (Year 24).

5.1.3 Commissions Consideration

As a result of the then Draft Voluntary Land Acquisition and Mitigation Policy (VLAMP), the proponent undertook further modelling for the project. **Figure 3** below, outlines the revised modelling contour compared with the original EIS Figure 31, PM₁₀ (24 hr) 50 µg/m³ contours which would have been the criteria for the original TAS assessment.

As a result of the revised modelling for mitigation and acquisition criteria in accordance with the VLAMP (refer Section 6.4), the proponent has provided the **Tables 2, 3 and 4** below which have been reviewed and re-modelled by TAS.

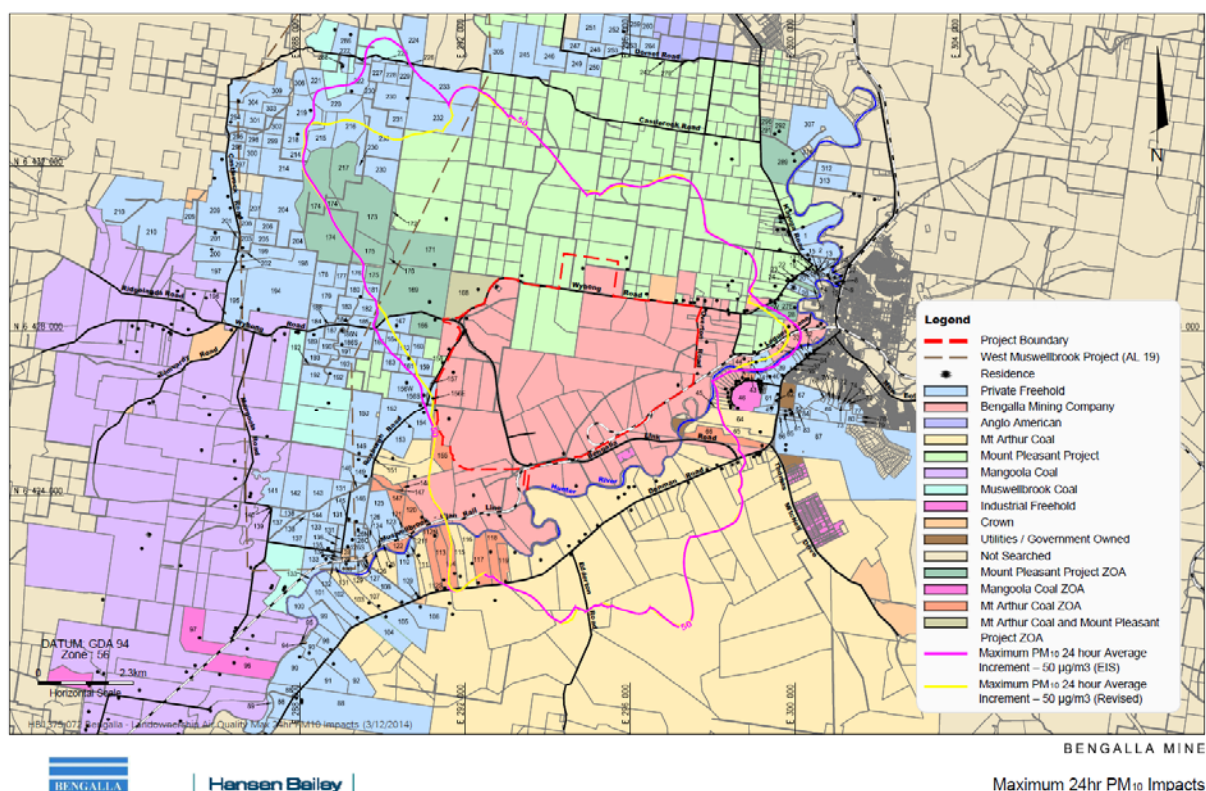


Figure 3: Maximum 24 hr PM₁₀ Impacts

Source: Hansen Bailey, 9 December 2014

Receptor ID	Year 4		Year 8		Year 24	
	Without mitigation	With mitigation	Without mitigation	With mitigation	Without mitigation	With mitigation
29	53	34	57	38	-	-
156S	-	-	-	-	60	48
156E	-	-	-	-	52	40
161	-	-	-	-	63	47
167	-	-	-	-	56	54
222	-	-	-	-	55	35
230	-	-	-	-	80	39
286	-	-	-	-	55	27

Table 2: Summary of Predicted 24-hour PM₁₀ Levels at Selected Sensitive Receptors

Source: Todoroski Air Sciences, 5 December 2014

The revised Todoroski Air Sciences modelling indicates that exceedances of incremental 24-hour PM₁₀ 50 µg/m³ would occur for a limited period and in most cases are not predicted to predominantly occur until Year 24 as provided in **Table 3** below.

**Combined Predicted Exceedances of PM₁₀ (24 hr) (50µg/m³)
Project Alone at Receivers**

ID	Name	Prediction (days) Year 1	Prediction (days) Year 4	Prediction (days) Year 8	Prediction (days) Year 15	Prediction (days) Year 24	Project cumulative AQ ZOA	Project Noise ZOA
114*	JM Wild					58 (1 d)		Y
118*	E & WJ Rankin				62 (4)	67 (8)	Y	Y
119*	E & WJ Rankin					51 (3)	Y	Y
155*	PG & CM Lane					59 (6)		Y
156S	NJ & RH Ellis					60 (9)		Y
156E	NJ & RY Ellis					52 (2)		Y
166*	BA & TE Strachan			52 (1)	52 (1)	92 (44)	Y	
168*	JB Moore		56 (13)	90 (46)	83 (55)	211 (166)	Y	Y
169*	JB Moore				52 (1)	88 (57)	Y	
171*	BL & ML Bates			60 (10)	54 (3)	109 (83)	Y	
167	RJ & SA Lane					54 (x)		

* In another mine's existing ZOA.

X – not calculated.

Table 3: Summary of Combined Predicted 24-hour PM₁₀ Exceedances at Sensitive Receptors
Source: Todoroski Air Sciences, 5 December 2014

**Combined Predicted Exceedances of PM₁₀ (24 hr) (50 µg/m³) Project Alone
over 25% of a Contiguous land ownership**

ID	Name	Impacted Year	Comment **
29	Jabetin Pty Limited	Year 4 & Year 8	Not impacted above criterion at residence.
117	E Rankin	Not Modelled	Not modelled under 'mitigation'. Already in BMC AQ ZOA for TSP. In Mt Arthur Coal ZOA also.
225-233	GC Sparre	Year 24	Residence on block 230 not impacted.
159-165, 186-187, 190-191	RB & SA Parkinson	Year 24	Residence on block 161 not impacted.
215 & 216	JH & CM Almond	Year 24	No residence on land.

* Located in West Muswellbrook AL19.

** Excludes residences in **Table 1**.

Table 4: Combined Predicted Exceedances of PM₁₀ (24hr) (50µg/m³) Project Alone over 25% of a Contiguous Land Ownership

Source: Todoroski Air Sciences, 5 December 2014

Table 4 provides a summary of where the revised modelling indicates the PM₁₀ (24 hr) 50 µg/m³ project alone contour indicates an exceedance of the criterion on greater than 1 day over 25% of contiguous land in a single land ownership (this excludes private properties in an adjoining mine's Zone Of Affection (ZOA)). The table indicates there would be no impact for the modelled properties until Year 24 of the project and further, the residences on these properties would not be impacted.

While the modelling indicates the main air quality impacts are unlikely to occur until towards the end of the project as the mine progresses further west, the proponent has advised the Commission that it would modify its operations, as required, through the implementation of the predictive real time monitoring and an alarm system. In addition, the Draft Consent conditions provide for the revision of the Bengalla Mine Air Quality Management Plan (AQMP). The revised AQMP would include the detail of the development and implementation of the predictive system and upgraded air quality monitoring program which adequately supports proactive and reactive approach to air quality management.

The proponent advises that the modelling results demonstrate that with the use of a predictive/reactive mitigation strategy, the dust levels would not exceed the 24-hour average PM₁₀ criteria of 50µg/m³ at any of the key receptor locations.

The Todoroski advice also indicates that Receptor 167 is an exception to the comments above. Results for all years are shown for the Receptor 167 in **Table 2**. The results show that there may be effects in Year 24 as per the criteria contained in the VLAMP. As such, Receptor 167 would be subject to the provisions of the VLAMP.

The Commission agrees that as impacts at all other receptors would be lower, it is therefore reasonable to conclude that the Project can minimise and prevent the potential for adverse dust levels occurring at all of the sensitive receptor locations.

5.1.3.1 Mitigation Measures

Anecdotally, the PAC has found one ongoing area of concern for residents who receive mitigation (e.g. first flush systems) due to air quality impacts is the ongoing cost of maintaining the systems. The Commission is of the view that if mitigation measures are provided as a result of addressing the impacts from a mine, then the relevant proponent should be required to offset any running/maintenance costs associated with the measures provided, such as regular replacement of water filters, cleaning of rainwater tanks and regular cleaning of any residence and its related amenities, such as barbeque areas and swimming pools.

5.1.4 Recommendation:

A condition to the effect of the following be imposed:

The Proponent shall contribute to reasonable maintenance and recurrent operating costs associated with the mitigation measures installed at privately-owned residences (e.g. a first flush system). If the mitigation measures are in addition to previously implemented measures, then the contribution to ongoing maintenance and recurrent operating costs must be consistent with any existing agreement between the Proponent and the relevant landowner.

Note: If there is any dispute about the implementation of this condition, then either party may refer the matter to the Secretary for resolution.

5.2 Noise

5.2.1 Existing Situation

The proponent currently conducts quarterly noise monitoring in locations identified in consultation with the EPA to ensure the mine operations are undertaken in accordance with the existing project approval. The Assessment Report found that the current noise management practices and monitoring employed at the Bengalla mine are compliant with the existing consent.

The established noise criteria for the mine is between 36 – 40dB(A) at 32 privately-owned properties around the mine, and up to 35 dB(A) at residences on all other privately owned land.

5.2.2 Predicted Impacts

The proponent undertook specific, attended noise monitoring to determine the background levels to assist with the consideration of potential noise impacts for the project which is provided in **Table 5** below.

Receiver Area	Measured Background Level, LA90,15min	
	Day	Night
East (Racecourse Road)	32, 35 , 36, 39 , 39 , 43 , 38, 38	32 , 32 , 32, 29, 35, 38, 36 , 38
South (Edinglassie)	42, 37, 44, 39 , 44 , 44 , 38, 38	37, 37, 42, 38, 40, 38, 40, 43
South West (Denman Road)	33 , 36 , 37, 35 , 33 , 42 , 41 , 38	34 , 30 , 34, 47 , 36 , 30, 32 , 39
West (Hamilton)	34 , 29, 27, 31, 27, 32, 32 , 31	33, 38, 23, 38, 31, 26 , 33, 36
North West (Moore)	28 , 30 , 28 , 29, 28 , 42 , 39 , 31	32, 33, 22, 39 , 45, 25 , 30, 39

Table 5: Measured Background Noise Levels, LA90, 15 min, 2010-2011

Source: Appendix H: Acoustic Impact Assessment, July 2013 (page 13)

The data recorded in bold (**Table 5**) indicates elevated noise levels with the absence of audible noise from Bengalla coal mine. The proponent also provided background noise data in its EIS for the period 2000 to 2009. The background levels for this period were more conservative and therefore adopted by the proponent for this review. **Table 6** below provided the background levels for 2000-2009.

Receiver Area	Background Level, LA90,15min		
	Day	Evening	Night
East (Racecourse Road)	33	32	31
South (Edinglassie) ¹	33	34	34
Others (Chudyk ² , Denman Road, Hamilton)	30	30	30

- 1 All residences to the south are now owned by a mining company (HVEC)
- 2 The Chudyk residence is now owned by BMC.

Table 6: Adopted Background Noise Levels, LA90, 15 min, 2000-2009

Source: Appendix H: Acoustic Impact Assessment, July 2013 (page 12)

The noise assessment for the mine expansion predicts the project would increase the noise impacts of mining on the surrounding area due to the increase in production rates as the mining operation shifts to the west.

The noise impacts would be generated through a number of areas as the mine progresses westward, closer to rural and residential properties, including noise generated as a result of increased size of the equipment fleet and the extension of the Coal Handling and Preparation Plant to facilitate the increased rate of extraction.

The Department's assessment indicates that the project would result in exceedances of the specific noise levels at up to 45 privately-owned residences surrounding the mine during worst-case operating conditions (during the periods of evening and night).

5.2.3 Additional Property Impacted

On 23 January 2015 the Department provided the Commission with an addendum report which identified further modelling that had been undertaken by the proponent following implementation of the Voluntary Land Acquisition and Mitigation Policy (refer Section 6.4).

The proponent's modelling indicated that noise levels at Property 167 would be exceeded by between more than 3 dBA. The Department therefore recommended Property 167 be afforded the right to request mitigation for noise in addition to air quality.

5.2.4 Commission's Consideration

Where a private residence is affected by excessive noise, it has been standard practice for conditions of mine consents to provide for mitigation measures at the property to reduce that

impact, or for acquisition of the property if the predicted noise is significantly above the Project Specific Noise Level (PSNL).

The Commission considers that such a condition provides a reasonable degree of protection for property owners where land sterilisation might limit future development options and should be attached to any approval for this project.

The Department's draft conditions do not allow specifically for mitigation or acquisition options to be triggered if during operation the predicted noise levels are not achieved in practice. There are two obvious situations. The first is where the property was predicted to be impacted below the level at which mitigation or acquisition remedies would become available (i.e. for this project 3-5dBA and >5dBA above the PSNL respectively). The second is where the property was predicted in the assessment to be impacted at levels that would have attracted mitigation remedies only (i.e. 3-5dBA above the PSNL).

If the actual performance of the mine results in exceedances of the predicted noise impacts at properties in these categories the Commission considers that there ought to be equitable access to the same remedies as would have applied if the predictions in the assessment had been accurate.

As it stands the only proposed remedy appears to be that contained in Condition 4 of Schedule 4. This condition simply requires preparation of an independent report in response to a written complaint to the Secretary, identification of actions that could be implemented to bring the mine into compliance and provision to the landowner of a copy of the report.

Whilst it would be most desirable to bring the mine into compliance, the Commission notes that there are numerous other provisions in the draft conditions that are designed to investigate, report, and take remedial action for non-compliance. What is required is a condition that provides the property-owner with direct access to the same remedies as would have been available if the operational performance had been predicted accurately in the EIS.

One of the difficulties in the past has been deciding whether an 'exceedance' for the purposes of providing the property owner with access to remedies should be a single event or require multiple events (sustained exceedances). The expression 'sustained exceedances' had been utilised routinely in mining approvals for some time but without definition of what constituted 'sustained'.

The Department has previously attempted to define 'sustained exceedances' (as per the Warkworth case), however this has not been supported by the Land and Environment Court which found that the monitoring requirements for such exceedances, as laid down in the consent conditions, would be difficult to demonstrate².

The Commission considers that it is not acceptable to place property owners in an inequitable position when the fault lies entirely with the Proponent's assessment and/or operation of the mine.

With respect to Property 167, the Commission accepts the proponent's revised modeling with the Department's subsequent recommendation to afford the property the right to mitigation.

5.2.5 Recommendations

1. Land acquisition should be included as an option if the noise criteria are predicted to be exceeded on more than 25 percent of privately owned land where there is an existing dwelling or where a dwelling could be built. Note that this may require reassessment of

the properties potentially impacted and increase the number of properties in Table's 1 and 2, Schedule 3.

2. A scheme be included in the conditions that provides for:
 - a mechanism for complaint, investigation and report (the framework for this exists in Condition 4 of Schedule 4);
 - the investigation to include sufficient monitoring to enable recalibration of the model predictions for the property in question; and
 - if the revised predictions indicate that the property should now receive remedial options, a requirement that the Proponent provide those remedies at the request of the property owner or enter into a negotiated agreement with the property owner to accept the higher levels.

Provided the investigation is independent and robust, Recommendation 2 should avoid the 'sustained exceedances' definitional problem and provide a fair and equitable outcome for the circumstances outlined above.

This approach would not affect any negotiated agreements, however the Commission considers that this may need to be considered in the context of the content of negotiated agreements for mining proposals generally rather than attempt to resolve it as part of this Review.

The Commission notes that over the life of the project, the noise assessment predicts exceedances of project specific noise levels at up to 45 privately-owned residences surrounding the mine during worst-case operating conditions.

Of the 45 affected residences, 16 are predicted to experience significant noise impacts; 11 are predicted to experience moderate noise impacts; and, 18 predicted to experience marginal noise impacts, resulting in 5 additional residences being significantly affected and 4 by moderate mining noise impacts.

The recommended conditions in the Assessment Report include these residences in the voluntary acquisition and/or mitigation zone.

The Assessment Report further recommends in accordance with the Government's policy the Proponent should endeavor to either acquire these properties and/or enter into negotiated agreements with the owners prior to any decision on this development application.

The Commission considers this to be a reasonable request so as to provide a clear outcome for owners if the project is approved and urges the Secretary as the Consent Authority to review progress prior to any decision.

5.3 Blasting

5.3.1 Existing Situation

The existing project approval enables the proponent to undertake a maximum of 2 blasts per day and 4 blasts a week averaged over any calendar year. No blasting is permitted on Sundays or public holidays.

The Commission notes the exception to this condition is that this does not apply to blasts that generate ground vibration of 0.5 mm/s or less at any residence on privately-owned land, or to blasts required to ensure the safety of the mine or its workers.

5.3.2 Predicted Impacts

The proponent has sought to increase the annual averaged number of blasts from 4 to 12, with up to 4 blasts a day. In addition, the proponent has also sought to conduct blasts on Sundays between 11 am and 3 pm.

5.3.3 Commission's Consideration

The Department has considered the proponents request in line with similar and larger scale mining operations in and around the area.

No mine is permitted to blast on Sundays and when compared to nearby mines, the proposed numbers of blasts are not warranted for the extraction rate sought for this project. The Assessment draws attention to the Mount Arthur approval which provides for up to 12 blasts a week for an extraction rate of 32 million tonnes whereas the current proposal is less than half this extraction rate but is seeking the same number of blasts (12 a week averaged over a calendar year).

The Commission also notes the Department's recommended condition provides the flexibility to blast in the event of ensuring the safety of its workers or if the blast would generate a ground vibration of 0.5 mm/s or less.

The Commission agrees with the Department's view that the proponent has not provided adequate justification to warrant a blast regime above that of mines with extraction rates far exceeding the current proposal where those mines are operating in accordance with their approved limits.

Further the Commission considers that a blast regime of up to 12 blasts a week could have the potential to result in significant amenity impacts on adjoining rural and residential land owners.

5.3.4 Recommendations

The blast regime recommended by the Department which provides for a maximum of 2 blasts a day, and 6 blasts a week averaged over any calendar year be adopted with no blasts on Sundays.

6. Other Issues

During the public hearing and in written submissions and as part of its review of the project, additional issues were identified by the Commission which are considered in Section 6.

6.1 Biodiversity Offset Strategy

6.1.1 Existing Situation

The Proponent's Response to Submissions indicates that while the area has been significantly disturbed, it still supports threatened flora and fauna. This includes White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland (referred to hereafter as "Box Gum Woodland and Derived Native Grassland") which are listed as a Critically Endangered Ecological Community (C/EEC) under both the NSW *Threatened Species Conservation Act 1995* and the *Environment Protection and Biodiversity Conservation Act 1999* Acts (refer **Table 7**).

73.2 ha of Box Gum Woodland and 462.1 ha Box Gum Woodland Derived Native Grassland will be removed during the life of the project. The Project will also remove 9.7 ha of other State-listed Endangered Ecological Communities (EECs) and 168 ha of non-endangered Narrow-leaved Ironbark Woodland (refer **Figure 4**).

The proponent's RTS also indicates that forest and woodland habitat to be impacted is known habitat for a suite of State-listed threatened flora and fauna species including the following vulnerable species that are known to occur within the Disturbance Area:

- Tiger Orchid (*Cymbidium canaliculatum*);
- Woodland birds: Brown Treecreeper; Speckled Warbler; Grey-crowned Babbler; Black-chinned Honeyeater;
- Squirrel Glider; and
- Woodland bats: Yellow-bellied Sheath tail-bat; Eastern Bent-wing Bat; Large-footed Myotis; Eastern Cave Bat.

The RTS also indicates that there is suitable habitat present which is considered 'likely' to support other State and Commonwealth listed threatened species within the Disturbance Boundary.

The vegetation is significant in its own right, including critically endangered communities listed at both a state and national level. It also includes individual plant species listed as nationally threatened or significant and/or threatened within NSW. The vegetation also provides habitat for nationally listed threatened species of native fauna as well as fauna species listed under the NSW legislation.

Vegetation Community	Area (ha)
Grey Box/White Box Intergrade Grassy Woodland	27.9
Upper Hunter White Box –Ironbark Grassy Woodland	45.3
Subtotal (CEEC Woodland)	73.2
Derived Native Grassland	462.1
Subtotal (CEEC Derived Grassland)	462.1
Total CEEC	535.3
Central Hunter Ironbark - Spotted Gum Forest	6.7
Narrabeen Footslopes Slaty Box Woodland	2.9
Subtotal (EEC)	9.7
Upper Hunter Hills Exposed Ironbark Woodland	167.9
Subtotal (Narrow-leaved Ironbark)	167.9
Hunter Floodplain Red Gum Woodland Complex	9.4
Upper Hunter Hills Exposed Ironbark Derived Native Grassland	159.2
Derived Native Grassland (Slaty Box)	0.0
Subtotal (Other Vegetation)	168.7
Total Native Vegetation	881.6
Tree and Shrub Plantation	11.4
Low Diversity Derived Native Grassland/Exotic Pasture	57.5
TOTAL	950.5

TSC Act / EPBC Act Status: EEC = Endangered Ecological Community, CEEC = Critically Endangered Ecological Community.

Table 7: Vegetation Communities within the Disturbance Area

Source: Cumberland Ecology, 2014

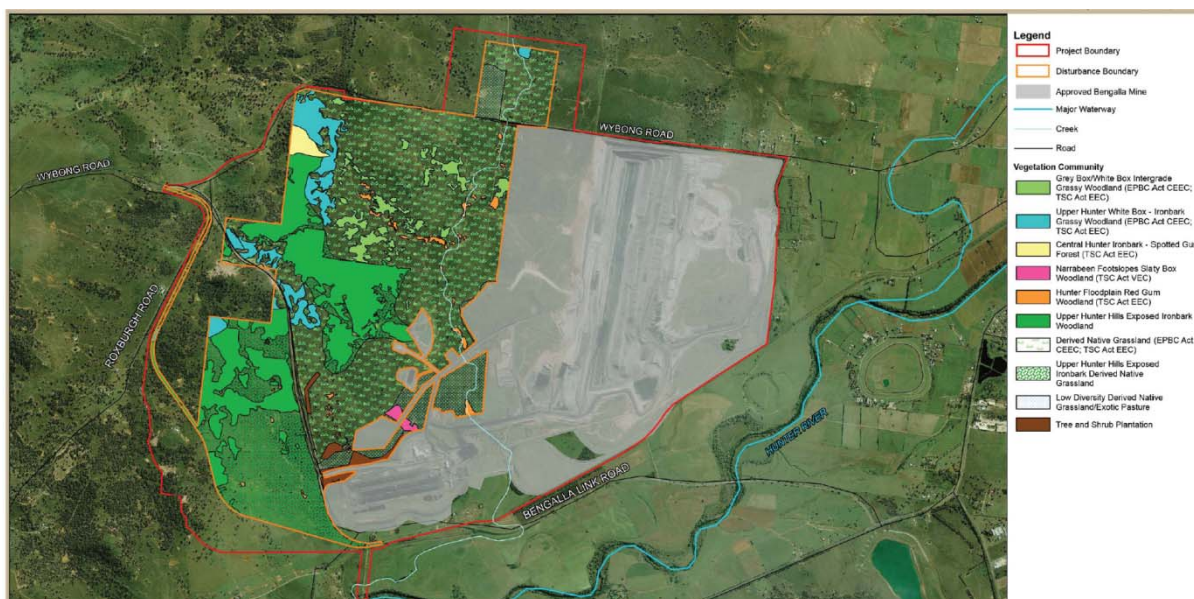


Figure 4: Distribution of Vegetation Communities within the Disturbance Boundary
Source: Biodiversity Offset Strategy, Cumberland Ecology, 2014 (page 1.5)

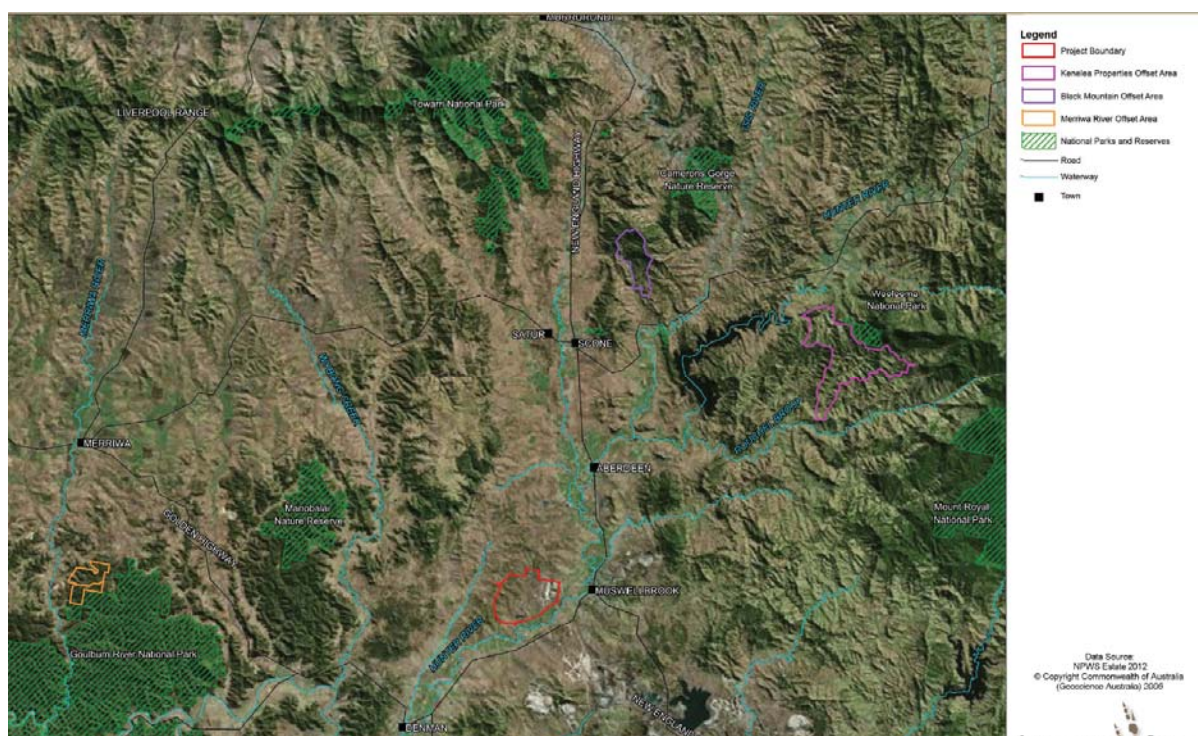


Figure 5: Location of the Offset Areas
Source: Biodiversity Offset Strategy, Cumberland Ecology, 2014 (page 1.12)

6.1.2 Predicted Impacts

A total (approximate) area of 881 ha of native forest, woodland and grassland (on previous farmland) will be impacted by the proposal (Cumberland Ecology, 2014). Most of the Disturbance Area is within highly modified grassland areas: 640 ha (73%) is grassland, while 241 ha (27%) ha is forest and woodland (refer **Figure 4**).

6.1.3 Commission's Consideration

In the Assessment Report the Department recommends that the offsets proposed by the Proponent are permanently protected through a Biodiversity Offset Strategy (BOS).

The BOS proposed by the proponent comprises 6,215 ha of land to be permanently conserved and includes broad areas of native forest and woodland, and semi-natural grassland that are suitable for use as offsets. This provides a substantial ecological outcome compared to the 241 ha of forest and woodland to be cleared and 640 ha of grassland.

Simplistically, there are two different policy perspectives regarding the provision of offsets. Offsets are either provided by:

- Securing existing high quality vegetation that is equivalent to the areas to be removed; or
- Providing for the replacement of the areas to be removed by regeneration of suitable areas nearby.

There are advantages and disadvantages to both approaches. By securing existing vegetation it is possible to ensure like for like communities, including habitat and occurrence of specific threatened species in the area to be secured. Notwithstanding this, the areas secured are existing woodlands and while additional protection may be provided through an offset, the areas are often not at risk of clearance and this approach could still result in an overall loss of vegetation at a regional landscape level.

The constituent Offset Areas that form the BOS are indicated in **Figure 5** and are described as follows:

- Kenalea Properties (4,097 ha): contains extensive areas of Box Gum Woodland and other forest, woodland and grassland. Links to Mount Woolooma National Park. Contains broad areas of grassland and grassy woodland that can be regenerated in the long term to provide for a substantial net gain.
- Black Mountain (1,222 ha): contains three variants of Box Gum Woodland and broad areas of Narrow-leaved Ironbark Forest, all in moderate to good condition.
- Merriwa River (897 ha): contains broad areas of Ironbark forest and woodland, largely in moderate to good condition.

Both the Black Mountain and the nearby Kenalea Properties can contribute to biodiversity links connecting the Liverpool Ranges to Barrington Tops. In addition, Merriwa River further extends the area of Goulburn River National Park and increases biodiversity connectivity within the Upper Hunter Valley.

All threatened flora and fauna species that are predicted to be impacted by the Project are known or considered likely to occur in the lands of the BOS. The proponent's fauna investigations have illustrated that the Offset Areas contain excellent habitat for threatened species including the orchid *Cymbidium canaliculatum*, woodland, birds, woodland bats and Squirrel Glider.

The orchid and 11 of the threatened fauna species, known or likely to occur, within the Disturbance Boundary have been recorded within the Offset Areas along with six additional threatened species not known within the Disturbance Boundary including Spotted-tailed Quoll, Greater Long-eared Bat and Large-eared Pied-bat.

In considering the biodiversity impacts of the proposal and the proposed BOS, the Commission met with a representative from the Office of Environment and Heritage to seek clarification on the suitability of a biobanking agreement for preserving the offset areas in perpetuity.

The Commission was advised that OEHL is generally satisfied that most of the biodiversity impacts of the mine can be adequately offset with the proposed biodiversity offset package. In

addressing the Commission's concern regarding the long term preservation of the offset areas, OEH indicated that a biobanking agreement ensures agreements are maintained as they can only be modified with the concurrence of the Minister for the Environment.

OEH also advised the Commission that experience has shown that requiring the proponent to make suitable arrangements for the offset within 12 months was unrealistic. OEH suggested two years as a more viable period, which the Commission accepts.

The task of acquiring and securing regionally significant areas of remnant vegetation to be managed primarily for biodiversity conservation is complicated by the scarcity of suitable areas where maintenance or improvement of biodiversity values is not threatened by nutrient enrichment and/or weed infestation as a legacy of past land use. Efforts are also constrained by the imperative of minimising impacts on productive pastoral and agricultural enterprises.

In this case however the Commission has carefully considered the regional scale biodiversity conservation measures proposed by the proponent and considers they have the potential to ensure that the biodiversity values and functions are maintained or improved in the medium to long term. A key component of these measures will be the potential future integration of the offset areas into the adjoining National Parks (Goulburn River National Park and Woolooma National Park) which helps to replace the key biodiversity values and functions impacted during mining and secures these areas to be managed explicitly for biodiversity conservation in perpetuity.

The Commission notes the EIS originally intended that the impacts to flora and fauna as a result of the project would be compensated for by contributing funds to the Upper Hunter Strategic Assessment (UPSA). At the time of completing the review the Commission notes the UHSA remains under development and has yet to be implemented, hence the reason for recommending securing the offset areas in perpetuity via a Biobanking Agreement under the Threatened Species Conservation Act 1995.

The Commission also acknowledges that while a biobanking offset strategy may not always provide a direct 'like for like' offset, it can provide for an overall positive environmental outcome and is therefore supported.

The Commission is satisfied that, subject to the entering into of a biobanking agreement as part of the Biodiversity Offset Strategy under the National Parks and Wildlife Act 1974, the biodiversity issues have now been addressed adequately and the Department's recommended conditions (incorporating the recommended amendment by the Commission) are appropriate.

6.1.4 Recommendation

- Schedule 3, Condition 28 be revised as follows:

Within 24 months of the commencement of development under this consent, unless otherwise agreed with the Secretary, the Applicant shall make suitable arrangements to provide appropriate long term security for the land within the Biodiversity Offset Strategy identified in Table 13 through a Biobanking Agreement under the *Threatened Species Conservation Act 1995*, to the satisfaction of the Secretary.

6.2 Final Landform/Void

6.2.1 Final Void

The final landform will include a void at the western extent of the site (refer **Figure 6**). This void would have a catchment area of approximately 342 ha (3.5 kms by 1 km) and rain falling in this catchment would slowly fill the void, forming a lake and permanent water sink.

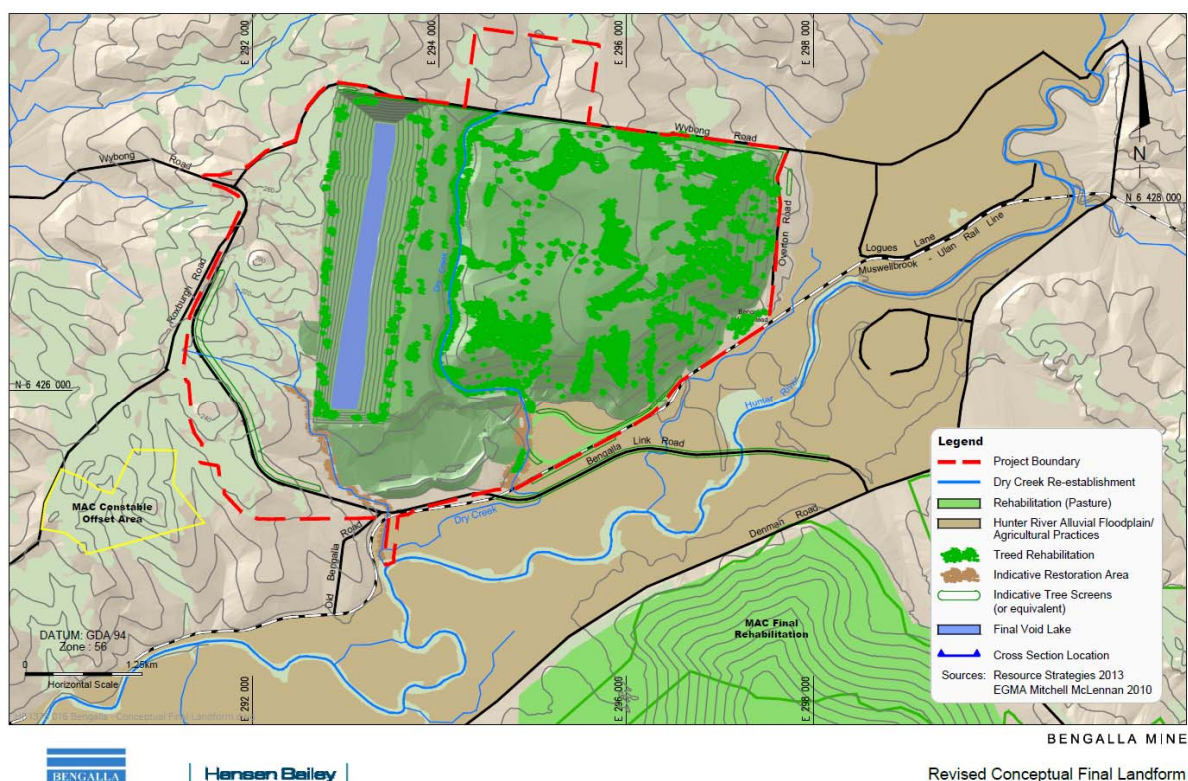


Figure 6: Conceptual Final Landform and Void

Source: Response to Submissions, Hansen Bailey March 2014 (page 120)

Submissions on the EIS together with concerns which were raised by Council with the Commission are critical of the inclusion of the final void design and profile. The reasons for objecting to inclusion of a final void are wide-ranging and include, *inter alia*: impact on groundwater, high salinity levels in the pit lake, lack of provision for long-term security and maintenance, and risk of overflow.

The proponent advised the Commission that an additional coal resource is known to occur generally to the west of the Disturbance Boundary. Subject to market factors and confirmation of the resource, the proponent indicated they would seek approval for further extraction, resulting in uncertainty regarding the final form of the void as by the final stage of the project an expansion of activities may have been approved.

From previous PAC Reviews, there is anecdotal evidence to suggest there is a groundswell of opinion to the effect that final voids of the magnitude proposed are no longer considered to be 'best practice'. However, there is no policy position in NSW that discourages or prohibits final voids as part of an open-cut mine design. The Commission's view is that this issue should be considered on a whole of sector basis by Government.

As stated by the PAC in previous reports, until the Commission is presented with a policy position that discourages or prohibits use of final voids, the Commission's view is that it must

consider each case on its merits. The technical advice concerning the impact of the void proposed for this project is summarised in the Assessment Report at p49/50. It notes that modelling indicates the water level in the void would rapidly recover over the first 50 years followed by a slowing recovery as the hydraulic gradients to the pit reduce.

The Commission's assessment of the available information supports the Department's conclusions concerning environmental risks from the final void along with the design outcome. The Proponent has also advised the Commission that the characteristics of the operation would make it uneconomic to fill the void and that the negative environmental consequences of alternative management of overburden may be greater than the void itself.

One of the remaining issues for the Commission is whether there is adequate provision for long-term security and maintenance of the void. In the Commission's view it is the Proponent's responsibility to ensure that this is catered for. The Commission also notes that the proposed void would contain highly saline water that would be a feature of the landscape in perpetuity.

The proponent indicated that issues associated with the alternative options include the backfilling of the void either entirely or partially which would impede any future approvals (should it be sought); this would result in significant rehandling of emplaced overburden and disturbance and would result in the reduction in the scheduled Project ROM coal extraction levels by approximately 25 Mt.

In consideration of economic cost and environmental constraints associated with the various options, the proponent has stated the proposed option of a single stable final void provides the best overall outcome for the environment and community.

The Commission considers that if the void is to be permitted then the consent must contain clear and unambiguous conditions that require no spillage from the void to the rest of the catchment, no migration of saline water to surrounding aquifers or streams, that the void is maintained in a state that ensures public safety and there is a mechanism to ensure that responsibility for any long-term maintenance runs with the land.

The requirement concerning no spillage will need to include design parameters for the void² and the monitoring required to ensure it meets the design parameters in operation.

6.2.1.2 Recommendation

That approval for the inclusion of a final void in the final landform should require conditions that require the void:

- to be designed with adequate freeboard to ensure no spillage under any foreseeable conditions;
- to not be a source of saline groundwater for aquifers and streams;
- to be constructed to meet the design specifications; and
- to be constructed and maintained in a manner that ensures public safety.

The approval should also require a mechanism to be developed to ensure that responsibility for meeting the performance criteria extends beyond the life of the mine.

²Capacity buffers are a common feature in conditions for leachate dams, etc. and are based on the estimated leachate volumes to be generated and inflow risks from severe storm events (e.g. 1:100 yr to 1:400 yr). The Commission considers that it should be feasible to specify what is required to be achieved by the final voids.

6.2.2 Final Landform

Council raised concern that the proposed final landform fronting the township of Muswellbrook would not reflect the existing, densely vegetated landforms viewed from town.

The Commission discussed Council's concern with the proponent who advised it was their view that the rehabilitation of the overburden emplacement area (OEA) with high density tree plantings over the entire eastern face of the OEA (the view from Muswellbrook) would lack the patterning that is the character of the adjoining hills. Further, the proponent stated that implementing high density tree plantings on the eastern face would likely reinforce the visual simplicity of the 'planar' landform.

The proponent therefore requested the deletion of Schedule 3, Condition 44 Rehabilitation Objective (overburden emplacement area – exposed to Muswellbrook and Denman) within the Department's draft Development Consent.

Figure 7 outlines both the Council's view (image noted as '100% trees') and the proponent's (image noted as 'RTS').

Following a visit to the area and surrounds of Muswellbrook, the Commission accepts Council's and the Department's opinion that the rehabilitation of the OEA should be more reflective of the nearby Bells Mountain and therefore should be more densely vegetated (refer Figure 7(100% trees)).

This also acknowledges the proponents' advice to the Commission that notwithstanding their opinion, the proponent is able to comply with any future requirement regarding the final tree coverage facing Muswellbrook.



Figure 7: Final Landform (Eastern face)

Source: Response to PAC Site Visit & Public Hearing, December 2014

6.2.2.1 Recommendation

The requirement to rehabilitate the eastern face of the OEA with high density woody vegetation as per Table 14 within Schedule 3, Condition 44 (Overburden Emplacement Area) to be retained.

6.3 Realignment of Bengalla Link road

Concern was raised by Council and local residents regarding the proposed realignment of Bengalla Link Road which would result in additional travel times and that the cumulative

impact of the existing and proposed mines in regard to increased traffic could exceed an acceptable level.

The Commission acknowledges that an extension of the mine as proposed will generate additional traffic and would lead to a marginal increase in travel time on the surrounding road network.

The realignment of Bengalla Link Road in approximately Year 13 of the Project would increase the length of the road by 900 metres (refer **Figure 8**). The proponent advised the Commission that with an average travel speed of 90 km/hr, travel times will increase by 36 seconds per vehicle.

The proponent advised the Commission that the realignment would be engineered to ensure high levels of safety and would readily account for future traffic levels.

The Council provided the Commission with an alternative realignment option (refer Figure 9) and an agreement with the Proponent that the realignment and associated intersections as shown conceptually (or otherwise as agreed with Council) is to be designed and constructed to Council's satisfaction. The Commission discussed Council's alternative realignment option with the proponent and the Department. The proponent raised concern with the proposal indicating that elements of the road would be located on private land which would require partial lot acquisition in addition to the topography not supporting the location of a road.

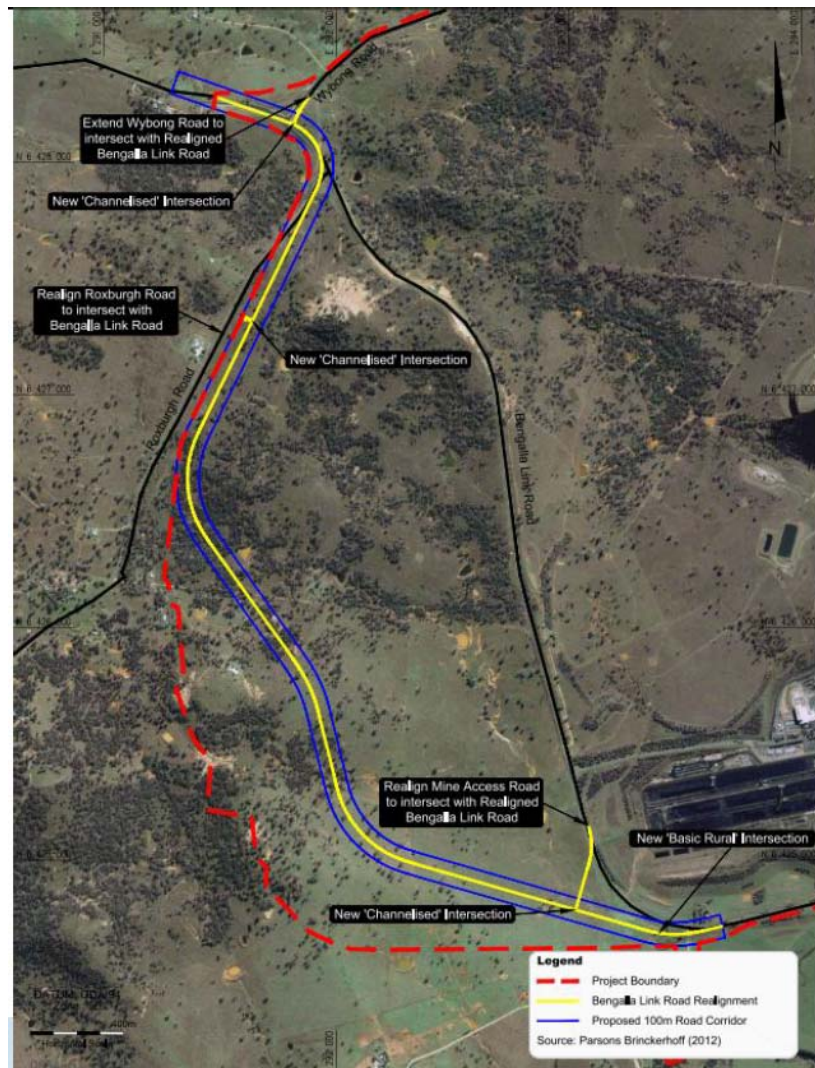


Figure 8: Proposed Bengalla Link Road realignment

Source: Coal & Allied "Presentation and Site Tour", 9 December 2014

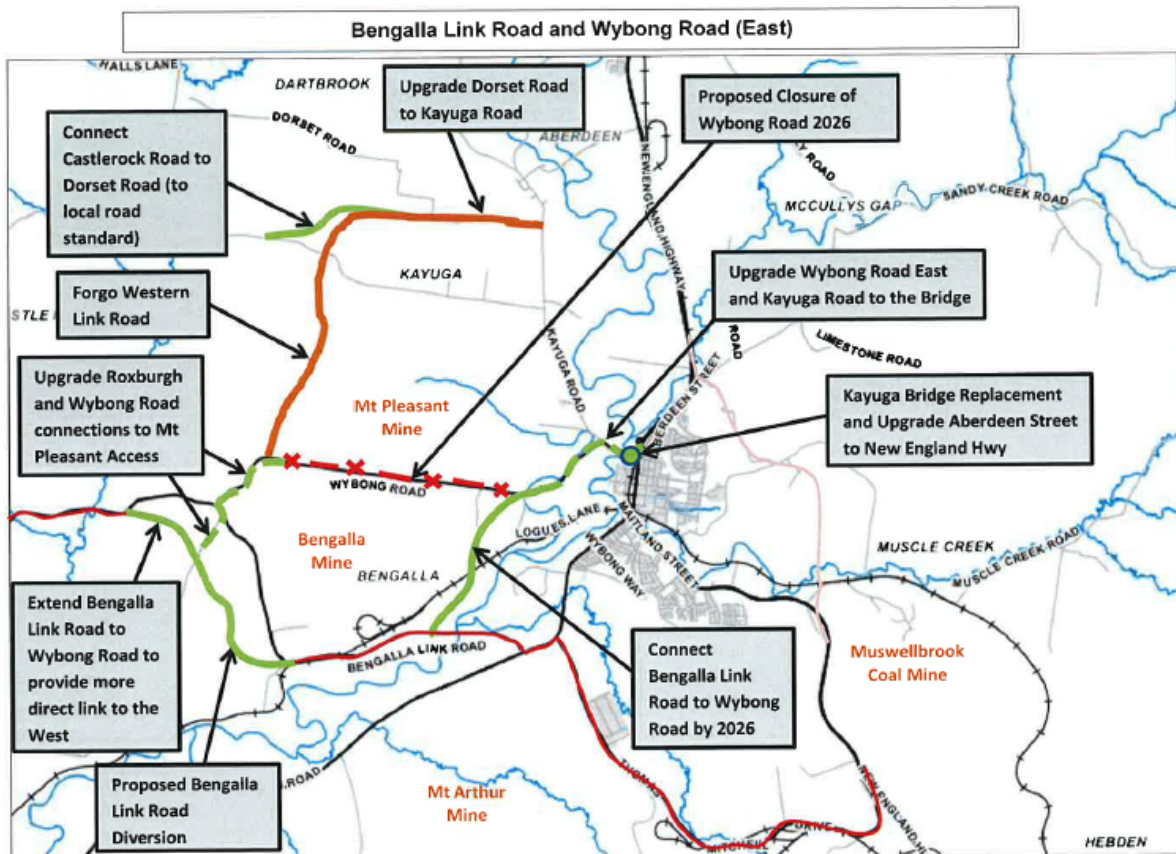


Figure 9: Council proposed Bengalla Link Road realignment

Source: Muswellbrook Shire Council, December 2014

The Commission has considered the options put forward by the proponent and the Council (refer **Figure 9**). Given the impediment of the local terrain in addition to potentially having to acquire private land to facilitate the realignment of the road and the fact the mine may potentially extend further west in the future, the Commission is of the view the alignment initially proposed by the proponent would be an appropriate option in this instance and one which would still minimize environmental impacts along with travel times while ensuring, and maintaining, safe vehicular flows.

6.3.1 Recommendation

The Commission accepts the Bengalla Link Road realignment as proposed by the proponent (Figure 8).

6.4 Voluntary Land Acquisition and Mitigation Policy

Careful consideration of the noise and air quality impacts of a mining project application under the SSD provisions of Part 4 of the Act are important in their own right.

On 19 December 2014 an amendment to the *State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007 (State Environmental Planning Policy Amendment (Gas Exploration and Mining 2014))* adopting a Voluntary Land Acquisition and Mitigation Policy (VLAMP) was gazetted. The VLAMP adopted specific criteria already used in practice to assess the need for voluntary mitigation or land acquisition due to noise and dust impact on adjoining landowners. The VLAMP gives legal effect to existing measures and processes for dealing with the impacts of mining activities on adjoining populations.

The VLAMP adopted the noise and dust criteria and guidelines that are used by the NSW Environmental Protection Authority (EPA) however they may be revised following the finalisation of reviews of Commonwealth and NSW noise and dust standards which are likely to occur in 2015.

The following two tables outline the assessment criteria required to be considered for mitigation and acquisition purposes.

POLLUTANT	AVERAGING PERIOD	MITIGATION CRITERION		IMPACT TYPE
PM ₁₀	Annual	30 µg/m ³ *		Human health
PM ₁₀	24 hour	50 µg/m ³ **		Human health
Total suspended particulates (TSP)	Annual	90 µg/m ³ *		Amenity
Deposited dust	Annual	2 g/m ² /month**	4 g/m ² /month*	Amenity

* Cumulative impact (i.e. increase in concentrations due to the development plus background concentrations due to all other sources).

** Incremental impact (i.e. increase in concentrations due to the development alone), with zero allowable exceedances of the criteria over the life of the development.

Table 8: Particulate Matter Mitigation Criteria

Source: Voluntary Land Acquisition and Mitigation Policy (page 16)

POLLUTANT	AVERAGING PERIOD	ACQUISITION CRITERION		IMPACT TYPE
PM ₁₀	Annual	30 µg/m ³ *		Human health
PM ₁₀	24 hour	50 µg/m ³ **		Human health
Total suspended particulates (TSP)	Annual	90 µg/m ³ *		Amenity
Deposited dust	Annual	2 g/m ² /month**	4 g/m ² /month*	Amenity

* Cumulative impact (i.e. increase in concentrations due to the development plus background concentrations due to all other sources).

** Incremental impact (i.e. increase in concentrations due to the development alone), with up to 5 allowable exceedances of the criteria over the life of the development.

Table 9: Particulate Matter Acquisition Criteria

Source: Voluntary Land Acquisition and Mitigation Policy (page 17)

6.4.1. Commission's Consideration

While the VLAMP is to be applied by consent authorities to new projects, it is also to be applied to existing applications not yet determined. While the Commission will not be the consent authority determining this current project, as the project is subject to the policy (which was gazetted during its Review), the Commission has reviewed the air quality and noise elements of the VLAMP as part of its consideration under Sections 5.1 and 5.2.

During the public hearing and in written submissions, concern was raised with the Commission that the Department's recommended acquisition conditions appeared to conflict with a recent approval for Mount Arthur Coal Mine (MOD 1) and, further, land owners may potentially be affected through the operation of the mine however as they are located outside of the modelled zone of affectation they would not be able to request acquisition or mitigation.

Concern was also raised by the community that the draft conditions did not make it clear which mine, affected land owners should approach, should acquisition be sought.

Note 4 to Condition 1, Schedule 3 of the Mount Arthur Coal Mine approval (09_0062, MOD 1) states “the proponent is only required to acquire this property if acquisition is not reasonably achievable under a separate approval for the Bengalla mine”.

However draft Condition 2, Schedule 3 for the Bengalla Continuation Project states *If acquisition is no longer available for the owner of the land listed in Table 2 under the relevant mining approval shown in the table, and the Applicant receives a written request for acquisition from the owner of the land, then the Applicant shall acquire the land in accordance with the procedures in conditions 5 and 6 of schedule 4.*

Table 2: Land subject to acquisition upon request

Acquisition Basis	Receiver No	Mine
Noise	120, 155	Mt Arthur
Noise & Air	112, 113, 114, 117, 118, 119	
Noise & Air	166, 168, 171, TBC	Mt Pleasant
Air	169, TBC	

Table 10: Land Subject to Acquisition Upon Request

Source: Department of Planning and Environment, Draft Bengalla Continuation Project Instrument, 2014 (page 7)

A land owner was concerned that properties subject to acquisition rights by two or more mines are not being provided with surety that they may be able to approach the relevant proponent due to the apparent conflicting conditions.

The proponent provided a written response to matters raised at the public hearing and by PAC (Hansen Bailey, December 2014) which included this issue. The proponent advised the Commission that acquisition (and associated timing) is available under the applicable mine approval as reflected in the relevant project approvals outlined in the following table:

Receptor 168 Acquisition Structure

Subject to Acquisition Upon Request		
Mt Pleasant Project (DA 92/97)	Bengalla Continuation Project (Draft Development Consent)	Mt Arthur (PA 09_0062)
Now – 22 Dec 2020	23 Dec 2020 – 31 Dec 2038	22 December - 30 June 2026*

*Only required if not reasonable achievable under the Bengalla Continuation Project

Table 11: Receptor 168 Acquisition Structure

Source: Response to PAC Site Visit & Public Hearing, Hansen Bailey, December 2014 (page 14)

The Department, in a meeting with the Commission (17 December 2014), confirmed that while Mount Pleasant has yet to commence construction, land acquisition rights are still able to be activated therefore land owners subject to acquisition rights are able to approach the relevant proponent for acquisition.

While the Commission accepts the advice provided by the proponent and the Department it also acknowledges the confusion caused for land owners due to the wording of the conditions.

6.4.2 Recommendation

The consent authority is to ensure conditions relating to mitigation and/or acquisition requests provide clear and unambiguous wording for the timing and the method (or process) for enacting such requests with the relevant mine proponent.

6.5 Water Management and Dry Creek Clean Water Dam (CW1)

Concern was raised during the Public Hearing and in submissions with regard to the location, construction and operation of the proposed Dry Creek Clean Water Dam (CW1), north of Wybong Road as part of the realignment of Dry Creek.

Water is an important resource that contributes to the ecological functions of creek systems, provides for base flow recharge to nearby alluvial aquifers and if impacted, can influence the availability to downstream users.

The volume and quality of surface water entering the catchment is expected to change as a result of the proposed mining operations. For example rain that falls within the project site would be classed as clean, dirty or contaminated water, depending on whether it has been exposed to areas of disturbance and the potential for it to have become contaminated.

Water in each of these classes would be treated differently, for example, clean water would be captured in Clean Water Dam 1 (CW1) prior to crossing Wybong Road and then discharged (by pump and pipelines) into the Hunter River.

Water that falls in the pit and on the coal stockpiles is classed as contaminated water and would be captured on site. Groundwater that leaks into the pit would also be classed as contaminated water. The existing, and proposed, water management system aims to use contaminated water on site, for dust suppression and in the coal preparation plant. Contaminated water would be stored in dams and, in the event of high or flood flows, would be discharged to the Hunter River within the terms approved under the Hunter River Salinity Trading Scheme.

Dirty water includes runoff from mine infrastructure areas, spoil dumps and haul roads and would contain high levels of suspended solids. This water would be captured in sediment dams to allow suspended solids to settle with the water reused on site, depending on the quality of the water and the needs of the mine.

The Department has assessed the water impacts of the mine, of which there are a number of components including Clean Water Dam 1, along with surface water losses and discharges, and the proposed diversion of Dry Creek. Subject to conditions including the requirement to provide further information and compliance with contemporary water management performance measures, the Department is satisfied the proposal is unlikely to have any significant impact on surface water or groundwater resources.

The Commission notes that the recommended water management plan condition includes requirements to respond to any exceedances of the performance of surface water criteria and groundwater assessment criteria. The Commission considers this requirement should go further, to ensure that a plan is also in place to respond to any monitoring results which may be inconsistent with the water modelled predictions.

In relation to the Dry Creek diversion, the Commission notes the recommended Rehabilitation Management Plan includes performance measures to ensure that the riparian vegetation is appropriately re-established along the realigned Dry Creek.

6.5.1 Clean Water Dam (CW1)

The proponent advised the Commission that construction of a clean water dam (CW1) which has a surcharge capacity of 900 ML, would occur within the first year of the project and had been designed to capture the runoff generated from a 1 in 200 year ARI, 72 hour storm event prior to crossing Wybong Road.

In response to the concerns raised by the community, the proponent advised that to maintain safe operating levels, clean water from CW1 has a design flow of 1,085 L/s into a pipe to divert clean water around mining operations until Dry Creek is reinstated after Year 15.

The pipeline would be approximately 5.4 km long and would direct water to a discharge point west of the current Mine Access Road. The Commission was advised that an energy dissipating structure would be constructed at the end of the pipeline to minimise erosion potential from the water re-entering the existing drainage line.

The Commission has also been provided with advice from the Dams Safety Committee (dated 15 December 2014) which states that CW1 would be a prescribed dam with a dam hazard category of High C; however notwithstanding this, the overall design conforms to the Committee's requirements. Due to the hazard category, the Dams Safety Committee is requiring the preparation and submission of surveillance reports following the dam's first substantial filling (or one year after construction of the dam) and then submission of surveillance reports every five years until decommissioning.

The Commission is satisfied that the water impacts of the project have been thoroughly considered, and that with the additional surveillance monitoring and reporting required by the Dams Safety Committee, along with some additions to the performance measures and monitoring requirements, impacts on water, and particularly the Dry Creek diversion (including CW1), can be suitably mitigated and managed.

The Commission is also satisfied that the wider governance arrangements and review mechanisms covering water sharing plans and the operation of the Hunter River Salinity Trading Scheme are adequate to deal with issues that may arise over time.

The Commission acknowledges the importance of the surface water issues and considers that these can be addressed by the Department at the time of preparing its final assessment report.

6.6 Employment Numbers

The current mining operation employs up to 400 staff for an extraction rate of up to 10.7 million tonnes per annum (Mtpa). The proposal seeks to increase employee numbers to provide for up to 900 operational staff for an extraction rate of 15 Mtpa.

The increase in operational staff (an increase of 225%) did not correlate to the increase in the extraction rate (of 40%) and therefore the Commission sought clarification from the proponent regarding the proposed number of employees.

The proponent advised the Commission that the current operation of up to 10.7 Mtpa requires 25 haul trucks and six excavators/loaders along with additional dozers, drills and graders. To achieve a production rate of up to 15 Mtpa the proponent estimates that up to 53 haul trucks and 11 excavators/loaders along with additional dozers, water carts, drills and graders would be required. In addition to this, there would be an associated increase of 257 production technicians, a further 58 coal handling and preparation plant and maintenance technicians along with 46 support staff to sustain the 15 Mtpa production profile. This represents an additional 361 full time workers.

The proponent advised the Commission that due to the nature of the operation there are no further efficiencies that would be gained in operating an additional dragline and as such increases in production are required to be supported by increases in the number of the truck and excavator/loader fleet.

The proponent also advised the Commission that while the proposal seeks to allow for up to 900 employees, there would not necessarily be this number of operational staff on site at one time; however this figure would provide flexibility to ensure production rates are maintained.

The Commission acknowledges and accepts this advice.

6.7 Department's Addendum Report

On Friday 23 January 2015, the Commission received an Addendum to the Assessment Report from the Department in response to further information provided to it by the proponent.

The Addendum identified three topics for further discussion:

- **Air Quality**

The Department applied the VLAMP to the revised modelling provided by the proponent and found that no additional properties were identified for acquisition apart from those already identified for acquisition rights under the Mt Arthur or Mt Pleasant project approvals.

Two properties, Property 167 and 114 were identified for additional air quality mitigation measures as the properties are expected to exceed the short term PM₁₀ criteria for up to 4 and 1 day respectively over the life of the project. The Commission notes the recommended air quality mitigation condition incorporates both properties identified.

Two properties (Property's 106 and 110) were identified however as not being expected to experience exceedances of the cumulative annual average criteria for PM₁₀. The Department has subsequently removed reference to these properties in the acquisition zone in its recommended conditions (refer to the revised conditions contained in **Appendix 5**).

- **Noise**

The proponent identified a newly constructed residence which had not been considered for noise impacts. An assessment of noise impacts indicated the property, Property 167, would be subject to project specific levels of more than 3 dBA during the day and evening periods however it would comply with noise at criteria for the night period.

The Department subsequently recommended Property 167 be afforded the right to noise mitigation in addition to air quality. The Commission accepts this recommendation.

- **Final Void.**

The Addendum identifies a fourth option for the final landform and final void. The fourth option was provided in the Hansen Bailey submission of 9 December 2014 which the Commission has already considered – refer 6.2 of this report.

6.7.1 Commission's Consideration

The Commission has already considered the majority of issues outlined in the Addendum report and other than the inclusion of additional properties afforded mitigation rights, the issues have been discussed within this Review.

The Commission is concerned that the Assessment Report and recommended conditions clearly affording these two properties acquisition rights which are now being removed through the Addendum without the land owners being informed.

While the Commission acknowledges the reasoning behind the removal of acquisition rights for Property's 106 and 110, it is concerned that should the actual performance of the mine result in the cumulative criteria for PM₁₀ being exceeded at these properties, they no longer have the remedy of acquisition. Should the modelling be shown to not be accurate then the properties ought to have equitable access to the same remedies as those indicated to be impacted by the modelling.

6.7.2 Recommendations

1. Prior to determination of the project application by the consent authority, the owners of Property's 106 and 110 should be informed of the removal of their right to acquisition including the justification for their property being removed.
2. Land acquisition should be included as an option if the air quality criteria are predicted to be exceeded on more than 25 percent of privately owned land where there is an existing dwelling or where a dwelling could be built. Note that this may require reassessment of the properties potentially impacted and increase the number of properties in Table's 1 and 2, Schedule 3.
3. A scheme be included in the conditions that provides for:
 - a mechanism for complaint, investigation and report (the framework for this exists in Condition 4 of Schedule 4);
 - the investigation to include sufficient monitoring to enable recalibration of the model predictions for the property in question; and
 - if the revised predictions indicate that the property should now receive remedial options, a requirement that the Proponent provide those remedies at the request of the property owner or enter into a negotiated agreement with the property owner to accept the higher levels.

7. Findings

The Commission has carefully considered the proposal and the submissions made, including the issues raised at the public hearing and the submissions made on both the Environmental Impact Statement and the Response to Submissions Report, from individuals, groups, organisations and government authorities. The Commission also sought specific expert advice on:

- the mine plan;
- acquisition rights;
- the final void and landform; and
- the biodiversity offset strategy options for the site.

In addition to the specific issues to be considered in the Ministers Terms of Reference, the Commission also considered voluntary acquisition, final landform and water impacts of the project.

The Commission notes key mines in the vicinity of the Bengalla mine are the Mt Arthur, Mangoola and Mt Pleasant mines (the latter which has not yet been constructed) which contribute towards a cumulative area of concern for the community. As noted in the Secretary's Environmental Assessment Report, *'the intensification of mining in the area to the south and west of Muswellbrook is generating cumulative dust, noise, blasting and visual impacts'*. These potential cumulative amenity impacts were raised as a concern by the local community.

The Commission found that the project would have a number of project specific and cumulative impacts, but that these can be managed to an acceptable level through stringent and robust conditions along with careful management of operations on site. The Commission has made a number of recommendations in this regard, particularly relating to the need for best practice management of dust, noise, blasting operations and water.

The long term management of the site and surrounds (as a result of cumulative impacts) was of particular concern to the Commission, and to the local community. As a result, recommendations have been made with regard to voluntary acquisition rights in addition to the air and noise components of the project.

The Commission also acknowledged Council's concern with the proponent's proposed level of rehabilitation for the overburden emplacement area (OEA). The rehabilitation of the OEA, if not managed effectively, could result in a significant visual impact when viewed from Muswellbrook. The Commission is satisfied that high density tree plantings over the entire eastern face of the OEA (the view from Muswellbrook) as preferred by Council, would result in an acceptable visual outlook when viewed from Muswellbrook and which would be consistent with the surrounding vegetated outlook.

With these measures, and requirements for best practice management in place, the Commission is satisfied that the project can be approved, subject to conditions.

8. Recommendations – Consolidated Summary

In considering the project and its potential impacts, the Commission has identified a number of areas where the mine plan could be improved. The Commission has consolidated these and other recommendations from the various sections of the report into this final consolidated list of recommendations on the project:

1. Air Quality

The Proponent shall contribute to reasonable maintenance and recurrent operating costs associated with the mitigation measures installed at privately-owned residences (i.e a first flush system). If the mitigation measures are in addition to previously implemented

measures, then the contribution to ongoing maintenance and recurrent operating costs must be consistent with any existing agreement between the Proponent and the relevant landowner.

Note: If there is any dispute about the implementation of this condition, then either party may refer the matter to the Secretary for resolution.

2. Land acquisition should be included as an option if the air quality criteria are predicted to be exceeded on more than 25 percent of privately owned land where there is an existing dwelling or where a dwelling could be built. Note that this may require reassessment of the properties potentially impacted and increase the number of properties in Table's 1 and 2, Schedule 3.
3. Noise
A scheme be included in the conditions that provides for:
 - a mechanism for complaint, investigation and report (the framework for this exists in Condition 4 of Schedule 4);
 - the investigation to include sufficient monitoring to enable recalibration of the model predictions for the property in question; and
 - if the revised predictions indicate that the property should now receive remedial options, a requirement that the Proponent provide those remedies at the request of the property owner or enter into a negotiated agreement with the property owner to accept the higher levels.
4. Blasting
The blast regime recommended by the Department which provides for a maximum of 2 blasts a day, and 6 blasts a week averaged over any calendar year be adopted with no blasts on Sundays.
5. Biodiversity Offset Strategy
Schedule 3, Condition 28 be revised as follows:

Within 24 months of the commencement of development under this consent, unless otherwise agreed with the Secretary, the Applicant shall make suitable arrangements to provide appropriate long term security for the land within the Biodiversity Offset Strategy identified in Table 13 through a Biobanking Agreement under the *Threatened Species Conservation Act 1995*, to the satisfaction of the Secretary.
6. Final Void
That approval not be given to inclusion of a final void in the final landform unless there are clear and unambiguous conditions that require the void:
 - to be designed with adequate freeboard to ensure no spillage under any foreseeable conditions;
 - to not be a source of saline groundwater for aquifers and streams;
 - to be constructed to meet the design specifications; and
 - to be constructed and maintained in a manner that ensures public safety.
7. Final Landform
The requirement to rehabilitate the eastern face with high density woody vegetation as per Table 14 within Schedule 3, Condition 44 (Overburden Emplacement Area) be retained.

8. Bengalla Link Road Realignment

The Department accepts the Bengalla Link Road realignment as proposed by the proponent.

9. Land Acquisition

- i. Land acquisition should be included as an option if the noise criteria are predicted to be exceeded on more than 25 percent of a parcel of privately owned land where there is an existing dwelling or where a dwelling could be built. Note that this may require reassessment of the properties potentially impacted and increase the number of properties in Table's 1 and 2, Schedule 3.
- ii. Land acquisition should be included as an option if the air quality criteria are predicted to be exceeded on more than 25 percent of privately owned land where there is an existing dwelling or where a dwelling could be built.. Note that this may require reassessment of the properties potentially impacted and increase the number of properties in Table's 1 and 2, Schedule 3.
- iii. Prior to determination of the project application by the consent authority, the owners of Property's 106 and 110 should be informed of the removal of their right to acquisition including the justification for their property being removed.

References

Bengalla Mining Company Pty Limited. *Bengalla Continuation of Mining Project – draft Development Consent Condition Amendments* 8 December 2014

Coal & Allied. *Continuation of Bengalla Mine, Planning Assessment Commission Presentation & Site Tour* 9 December 2014

CSIRO Marine and Atmospheric Research. *Upper Hunter Valley Particle Characterization Study, Final Report*. 17 September 2013
<http://www.environment.nsw.gov.au/resources/aqms/UHFPCSFinal.pdf>

Hansen Bailey. *Bengalla Continuation Project (SSD 5170) Additional Information Request* 9 December 2014

Hansen Bailey *Continuation of Bengalla Mine – Response to Submissions* March 2014

Hansen Bailey *Environmental Impact Statement – Continuation of Bengalla Mine* September 2013

Hansen Bailey. *Response to PAC Site Visit & Public Hearing*. 16 December 2014

Land and Environment Court, New South Wales. *BulgaMilbrodale Progress Association Inc v Minister for Planning and Infrastructure and Warkworth Mining Limited [2013] NSWLEC 48*
<http://www.caselaw.nsw.gov.au/decision/54a639943004de94513da836>

Muswellbrook Shire Council. *Bengalla Link Road and Wybong Road (East)*. Handed to the PAC on 9 December 2014

NSW Department of Planning and Environment *Addendum To The Assessment Report Bengalla Continuation Project* 23 January 2015

NSW Department of Planning and Environment *State Significant Development Assessment Bengalla Continuation Project (SSD 5170)* November 2014

NSW Government *Voluntary Land & Acquisition and Mitigation Policy* Gazetted 15 December 2014

State of New South Wales through the Department of Planning and Infrastructure *Upper Hunter Strategic Regional Land Use Plan*. September 2012.
<http://www.planning.nsw.gov.au/strategic-regional-land-use-plans> - accessed 5 December 2014.

Muswellbrook Shire Council *Bengalla Continuation Project Application Number: SSD-5170 Minute of Agreed Amendments* Copy handed to the PAC 9 December 2014 by Muswellbrook Shire Council.

List of Appendices

1. Minister's Terms of Reference
2. List of Speakers at the Public Hearing
3. Summary of Presentations made at the Public Hearing
4. Summary of Meetings with Others
5. Addendum to the Assessment Report – Bengalla Continuation Project

APPENDIX 1
Minister's Terms of Reference

**Request to the Planning Assessment Commission
Bengalla Continuation Project**

Section 23D of the *Environmental Planning and Assessment Act 1979*
Clauses 268R and 268V of the *Environmental Planning & Assessment Regulation 2000*

I, the Minister for Planning, request the Planning Assessment Commission to:

1. Carry out a review of the Bengalla Continuation Project, and:
 - a) consider the EIS for the project, the issues raised in submissions, the formal response to submissions, the Department of Planning and Environment's preliminary assessment report of the project, and any other relevant information provided on the project during the course of the review;
 - b) assess the merits of the project as a whole, paying particular attention to the project-specific and cumulative air quality, noise and blasting impacts of the project;
 - c) apply all relevant NSW Government policies in those considerations and to that assessment; and
 - d) provide recommendations on any reasonable and feasible measures that could be implemented to avoid and/or reduce the potential impacts of the project.
2. Conduct public hearings on the project no later than 28 November 2014.
3. Complete the review by 23 January 2015, unless the Secretary of the Department of Planning and Environment agrees otherwise.



The Hon. Pru Goward MP
Minister for Planning

Sydney

6 November 2014

APPENDIX 2
List of Speakers at the Public Hearing

Date & Time: 9 am, Wednesday 10 December 2014

Place: Muswellbrook RSL Club, 113 Bridge Street Muswellbrook

1. Bengalla Mines Jo-Anne Scarini
2. Stephen Fuller
3. Joe Clayton
4. Sarah Southcombe
5. Jonathan Moore (also spoke on behalf of speaker 6)
6. Elizabeth Moore
7. Singleton Business Chamber Ryan Fitzpatrick
8. Peter Churchill
9. Harry Hobden
10. Stewart Butel
11. Bruce Bates
12. Aaron Goadsby
13. Gus Mather
14. Kent Flaherty
15. Anthony Prpic
16. Wybong Action Group John Shewan
17. Sandy Warburton
18. Russell Hartin
19. De-anne Douglas
20. Keith Googe
21. Shane Davy
22. Apex Club Tim Troon
23. Ernest Markham
24. Muswellbrook Chamber of Commerce & Industry Michael Kelly
25. Shane Curry

APPENDIX 3

Summary of Presentations made at the Public Hearing

Comments providing during the public hearing and in written submissions:

- The project would provide for \$613 million in wages and \$405 million in royalties;
- The mine has one of the lowest strip ratio's;
- 94% of the workforce live/reside in the Upper Hunter;
- The mine adds to, and supports, the diversity of land uses in the region which include viticulture, agriculture, tourism and mining;
- The mine ensures families can remain within the region;
- The operation of the mine supports and benefits ancillary businesses through income generated by employees being returned to the local economy;
- Local businesses are heavily dependent on the operation of the mine for their income;
- On balance, the mine is in the best interest of the State and should be approved;
- The proponent is seeking to achieve the best environmental outcome for the project and the region;
- The project will be using existing infrastructure;
- The community has great local services as a result of the mine funding/sponsoring community organisations;
- The recent downturn in mining has impacted on the local community with businesses closing and moving away from the area;
- The Coal & Allied community development fund has provided \$13 million since its commencement;
- The mine actively engages with the community and hosts an open day annually;
- The mine is proactive in its rehabilitation program;
- Out of town objectors hijack media attention;
- The Upper Hunter Show has been incorporated for 125 years and showcases the agricultural and mining industries together;
- Only 9 objections were received by the Department during the exhibition period for the project;
- Future land use options should be kept open rather than setting aside the land for agricultural purposes;
- Property values in the area have been adversely impacted by the downturn in mining;
- The community are impacted by noise, blasting, lighting and dust;
- The price of coal has dropped from \$170 to \$63 resulting in a project which does not appear financially viable;
- Confusion with the acquisition and mitigation zones and when they can be initiated due to properties being impacted by three mines, Mt Arthur, Mt Pleasant and Bengalla;
- Concern Clean Water Dam (CW1) and its discharge to the Hunter River. The dam is located on an adjoining mine's land and will sit above the open pit. Should the dam fail given it would be subject to vibration impacts from mine blasting, it could impact on employees who are working below;
- The PAC's engagement is at the end of the assessment process with the community only being provided with input during the exhibition period and during PAC hearings/meetings;
- Over burden emplacement areas are not natural looking;
- The mine extension will impact on the adjoining dairy;
- The Bengalla Link Road is now going even though it was dedicated as a public road;
- The 12 km trip into Muswellbrook will now be a 15 km trip into town;
- Globally, communities are moving away from fossil fuels whereas the Muswellbrook community are fossil fools;

- There has been a loss of biodiversity with mining in the region;
- The assessment process is stacked in favour of mining;
- The gateway process should occur prior to an exploration licence being issued;
- Older locals are disregarded;
- Properties are surrounded by 3 open cut mines;
- Local sought a rural lifestyle and are now impacted by mining;
- Impacts from numerous coal train rail movements;
- Horse breeding business impacted by mining with foals being born with deformities;
- There is a toxic fallout from blasts;
- The community are concerned the premier has publicly stated that approvals for mining projects are to be made easier;
- Locals should stop thinking only of the money they are earning now, and start thinking about the cost of mining to human health;
- There is a need to start now to diversify activities so that the area is not so reliant on mining;
- Elderly landowners on Roxburgh Road, many of whom have been in the area long term, find it hard to advocate on their own behalf;
- Mining has been the driver for many local people to improve their skills.

A number of documents were submitted at the public meeting and/or sent by email following the meeting.

APPENDIX 4 SUMMARY OF MEETINGS WITH OTHERS

Summary notes of first meeting with the Department of Planning & Environment

Meeting note taken by: Rob Sherry **Date:** Wednesday, 3 December 2014 **Time:** 2.00 pm

Meeting place: PAC

Attendees:

PAC: Abigail Goldberg, Garry West, David Johnson & Rob Sherry

Department: Mike Young (Manager); Kane Winwood (Team Leader); Phillipa Duncan (Planner)

The purpose of the meeting is to brief the PAC on the Continuation project proposal.

The chair confirmed with the Department that PAC had no delegation to determination the project application (following the Review) with no political donations having been registered, Council had not objected and there were less than 25 public objections.

The main points of discussion are outlined below:

Final Void

- There is no consistency in the mining industry;
- The size of a final void can be significant and have ramifications for the environment;
- There is an economic issue with filling a final void which can impact on the viability of a project

Rehabilitation/Biodiversity Offset Strategy

- The offset areas should be protected in perpetuity which could be achieved through incorporating them into the adjoining conservation areas (i.e. National Park);
- Various scenarios, including Voluntary Conservation Agreements and Biodiversity Offset Strategies, are being considered as part of the Review;
- A biobanking strategy is easier to enter into than incorporating a site into a National Park;
- A biobanking agreement for management of the offset area lasts for the period of the mine life following which the ongoing conservation is maintained by the land owner through a proponent funded management and preservation regime;
- The PAC will look to meet with the Office of Environment and Heritage to discuss options.

Employee Numbers

- The increase in employee numbers from 400 to 900 should be raised with the proponent for clarification noting the extraction rate does not validate a doubling in staff.

Bengalla Link Road Realignment

- The realignment is a matter to be discussed and resolved with Council and can be conditioned

Mitigation

- Rainwater tanks – consumables are not considered. A condition could be imposed requiring the cost of consumables (associated with rainwater tanks) to be covered should a tank be provided as a mitigation measure. The Department raised no issue with a draft condition being considered for properties within the mitigation and acquisition zones.

Visual

- Mitigation measures such as landscaping could be requested;

- The Department raised no concern with the provision of a woodland rather than a variable vegetation density for the rehabilitation of the overburden emplacement area fronting the highway.

Acquisition and Mitigation

- Reference was made to the conditions imposed for the Boggabri Coal Mine project which had a similar scenario of properties impacted by more than one mine;
- Mount Pleasant was considered (by the Department) to have substantial commencement as a dam associated with the project had been constructed therefore a request for acquisition would be valid.

Air Quality

- The Todoroski cumulative air quality report used for the Mangoola coal mine project is the current cumulative study for the region;
- The Todoroski report is zoned based, not property specific.

General items:

- No issues was raised with archaeological items.

Documents provided: - N/A

Briefing finished at approximately: 3.45 pm

Summary notes of meeting with the proponent

Meeting note taken by: Rob Sherry

Date: Tuesday, 9 December 2014

Time: 11:00 am

Meeting place: Bengalla Coal Mine

Attendees:

PAC: Abigail Goldberg, Garry West, David Johnson & Rob Sherry

Bengalla Coal Mine:

Jo-Anne Scarini (JS) – Bengalla Mining Company (BMC)

James Davison (JD) – BMC

Craig White (CW) – BMC

Debbie Day - BMC

Dianne Munro (DM) – Hansen Bailey

Jason Martin (JM) – Hansen Bailey

The purpose of the meeting is to brief the PAC on the Continuation project proposal and to provide for a site inspection of the mine.

A general briefing of the open cut operations was provided along with a history of mining in the Hunter region.

The main points of discussion and through the power point presentation are outlined below:

Strategic summary

- The mine is currently located 6 km's from Muswellbrook however by Year 24, the mine would be located 8 km's from the town;
- The mine is a single strip operation which enables them to run a tidy mine;
- The mine produces a high quality, export quality product with a low strip ratio;
- Innovative approaches to noise mitigation include being the first mine in the Hunter to use attenuated trucks, use real time monitoring etc;
- The drag line operation was closed for 412 hours during 2013 to address environmental concerns. The number of hours closed represents 5% of the mines operational period;
- The Bengalla mine is the number 1 mine for performance when compared to other Rio Tinto operations;
- The mine hosts a biannual open day with 870 members of the public being bussed to the mine for a site visit during the last open day event. Over 2000 people attended the showground where the mine also ran an open day/information event;
- There are further coal reserves located to the west outside of the lease area. The current Review proposal includes mining the additional coal subject to a mining lease being obtained;
- If approved, the mine would ramp up its operations to extract 15 Mtpa in 4 years then it would mine at this rate for 18 years before starting to ramp down the operations to cater for the closure plan.

Rehabilitation

- Three offset areas are proposed, namely Merriwa River (adjoining Goulburn River National Park), Black Mountain, and Kenalea properties (adjoining Woolooma National Park and Lake Glenbawn State Recreation Area);
- Offset areas of 6,200 ha provide a high quality native vegetation offset against the disturbance area of 881 ha which is largely degraded native vegetation;

- The mine owns the land proposed to be used for the offset areas and has approached the National Parks Service to discuss potentially transferring ownership to National Park.

Final Void

- The final void will be 3.5 km's long and will be 1 km wide;
- The conceptual void has been designed to provide stable high walls which would have sufficient freeboard so they will not require a spillway;
- A number of alternatives for either a final void or filling the final void were considered however the only environmentally viable and economic option was the one supported by the Department which is to blast and doze to provide a stable, finished landform.

Waste emplacement

- Council are seeking the eastern face to be heavily treed however an emplacement which has a mix of trees and grassland is considered (by the proponent) to be more appropriate for the location;
- the Department was provided with visual landscape analysis data on the 8 December 2014.

Other considerations

- The mine has 6,500 water entitlement units allocated from the Hunter River Trading Scheme and currently uses approximately 2,500 units;
- The chair advised the proponent that PAC had no delegation to determination the project application (following the Review) with no political donations having been registered, Council had not objected and there were less than 25 public objections. The Secretary would be the consent authority for the project.

General questions:

- Recommended Conditions – the proponent indicated they raised no concern with the Department's recommended conditions other than indicated during the briefing;
- The proponent accepts the amendments proposed by Council; and
- Timing

Documents provided: - Copy of power point presentation.

Briefing and site visit finished at approximately: 3.45 pm

Summary notes of meeting with Muswellbrook Shire Council

Meeting notes taken by: Rob Sherry **Date:** Tuesday, 9 December 2014 **Time:** 4.00 pm

Meeting place: Muswellbrook Shire Council chambers, 157 New England Highway, Muswellbrook

Attendees:

PAC - Abigail Goldberg, Garry West, David Johnson & Rob Sherry

Muswellbrook Shire Council –

Steve McDonald (General Manager)

Martin Rush (Mayor)

Josh Brown (Acting Executive Services Manager)

The purpose of the meeting is to discuss Council's concerns with the project proposal.

The main points of discussion are outlined below:

Strategic

- the Council has discussed proposed amendments to the recommended conditions which have been agreed to by the proponent;

Waste emplacement

- Council are seeking the eastern faced to be heavily treed to be more reflective of the Bells Mountain visual outlook;
- Council would not like to see drop drains in the final landform;
- A full woodland face would provide a preferred environmental outcome such as through the creation of tree corridors for fauna;
- The rehabilitated area will never be used for agriculture so woodland is a preferable outcome.

Final Void

- Concern over the final void design – refer to the proposed Drayton South final void which was shaped to appear more natural.

Bengalla Link Road Realignment

- Council has an issue with Schedule 3, Condition 34 and Appendix 8. Roxborough Road would have a mine road 50 metres from the public road which Council would have to maintain – there should be a single road;
- Wybong Road is a major collector road, not a mine access road;
- Council has an alternative realignment design (copy provided) for Bengalla Link Road.

Other matters

- Council would like the definition of Environmental Impact Statement (EIS) in the Instrument of Approval to be revised to reflect the amended Statement of Commitments and to insert "and as further amended by the letter to Council from Bengalla Mining Company Pty Ltd dated 8 December 2014".
- General discussion regarding conditions;
- The chair advised the Council that PAC had no delegation to determine the project application (following the Review) with no political donations having been registered, Council had not objected and there were less than 25 public objections. The Secretary would be the consent authority.

Documents provided: - Copy of letter from Bengalla Mining Company Pty Ltd to Mayor Martin Rush, Muswellbrook Shire Council, dated 8 December 2014; copy of Muswellbrook Shire Council 'Minute of Agreed Amendments' for Application Number SSD-5170; copy of Council proposed road realignment plan titled 'Bengalla Link Road and Wybong Road (East).'

Meeting finished at approximately: 5.00 pm

Summary notes of meeting with the Office of Environment & Heritage

Meeting note taken by: Rob Sherry **Date:** Wednesday, 17 December 2014 **Time:** 1.30 pm

Meeting place: PAC

Attendees:

PAC: Abigail Goldberg, Garry West, David Johnson & Rob Sherry

OEH: Andrew McIntyre, Regional Manager Hunter and Central Coast

The purpose of the meeting is to discuss biodiversity offset strategies.

The main points of discussion are outlined below:

Rehabilitation/Biodiversity Offset Strategy

- The offset areas should be protected in perpetuity which could be achieved through incorporating them into the adjoining conservation areas (i.e. National Park);
- Various scenarios, including Voluntary Conservation Agreements and Biodiversity Offset Strategies, are being considered as part of the Review;
- OEH advised the identified offset areas lend themselves to a biobanking strategy;
- A biobanking strategy is easier to enter into than incorporating a site into a National Park;
- A biobanking agreement for management of the offset area lasts for the period of the mine life following which the ongoing conservation is maintained by the land owner through a proponent funded management and preservation regime;
- Sites which are transferred to National Park become a management cost issue – biobanking is the preferred option for OEH in the first instance;
- Biobanking funds are front end loaded (capital cost, infrastructure etc) however proponents can often undertake the work and then cover the ongoing maintenance costs;
- An ‘environmental trust’ manages funds once they are paid into it;
- Brokers now actively purchase speculative land then sell the biobanking credits to proponents. Once sold, credits are retired and therefore cannot be re-sold to another party;
- Biobanking is in perpetuity – the Minister for the Environment would be required to authorise the removal of a site from a biobanking arrangement;
- Land tax would still have to be paid however this is usually factored into the maintenance cost for the offset area;
- Biobanking certificates are publicly traded with the prices available on the National Parks website;
- A biobanking assessment needs to be conducted on the proposed offset areas;
- OEH advised the proposed offset areas are considered appropriate – while they are not ‘like for like’ they will provide a conservation outcome with additional flora and fauna protected.

Documents provided: - N/A

Meeting finished at approximately: 2.45 pm

Summary notes of second meeting with the Department of Planning & Environment

Meeting note taken by: Rob Sherry **Date:** Wednesday, 17 December 2014 **Time:** 3.00 pm

Meeting place: PAC

Attendees:

PAC: Abigail Goldberg, Garry West, David Johnson & Rob Sherry

Department: David Kitto (Acting Executive Director); Mike Young (Manager); Kane Winwood (Team Leader)

The purpose of the meeting is to discuss elements of the Continuation project proposal.

The main points of discussion are outlined below:

Final Void

- The mine reiterated the cost factor associated with various options for the final landform/void however they also advised the PAC they are looking to the future extension of the mine;
- The mine is a drag line operation therefore it is more difficult to mould the shape of the final void and provide micro-relief;
- The proponent has indicated they can revise the shape of the final void however this would require a change from a drag line operation to a truck and shovel mine resulting in sterilisation of coal;
- Council's draft policy requires mine projects to have no final void.

Rehabilitation/Biodiversity Offset Strategy

- OEH have advised the PAC their preferred option is for a biobanking arrangement to be entered into rather than the offset areas being transferred to National Parks;
- A Rehabilitation Management Plan (RMP) is the Department's version of a Mine Operation Plan. RMP's are reviewed during the life of a project which will cater for any advances in technology;
- The Department supported the overburden emplacement area being heavily vegetated as per Council's suggestion.

Bengalla Link Road Realignment

- The PAC does not support Council's alternative realignment option. The Department concurred with the PAC's view.

Mining SEPP

- Changes to the mining SEPP have recently been gazetted which will impact on air quality scenarios including PM₁₀. The Department undertook to provide a response to PAC early January 2015 on the SEPP amendment.

Noise

- Property 126 – while the Industrial Noise Policy considers cumulative noise issues, the modelling indicates noise levels at this property would comply however it is acknowledged mining operations would be audible;
- A 'safeguard' condition could be considered should noise levels exceed that indicated by the modelling for the project. The Department advised they were not contemplating any non-compliance and therefore have not recommended a condition noting this could be construed as supporting a noncompliance to 38 dBA;

- The Department does not object to a 'safeguard' condition being recommended by the PAC.

Air Quality

- The Department advised it is still working with the EPA to consider whether 'safeguard' conditions for noise and air are still required.

Acquisition

- The Department advised the PAC that the proponent has approached all properties which are afforded acquisition rights with the view to purchasing them however the majority of owners have indicated they are not accepting the offer at this time.

General items:

- The area between the three mines (Mt Arthur, Mangoola and Bengalla) would likely be subject to mining in the future so Government could consider requiring mines to set up a trust to purchase properties should land owners want to sell now;
- The PAC advised it would meet with the proponent to outline its recommendations prior to issuing the Review report.

Documents provided: - N/A

Briefing and site visit finished at approximately: 4.00 pm