



NSW GOVERNMENT  
Department of Planning

## ***PROPOSED MODIFICATION: Bengalla Coal Mine***



Environmental Assessment Report  
Section 75W of the  
*Environmental Planning and Assessment Act 1979*

July 2008

Cover photograph: Aerial view of Bengalla coal mine in 2006.

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Published July 2008  
NSW Department of Planning  
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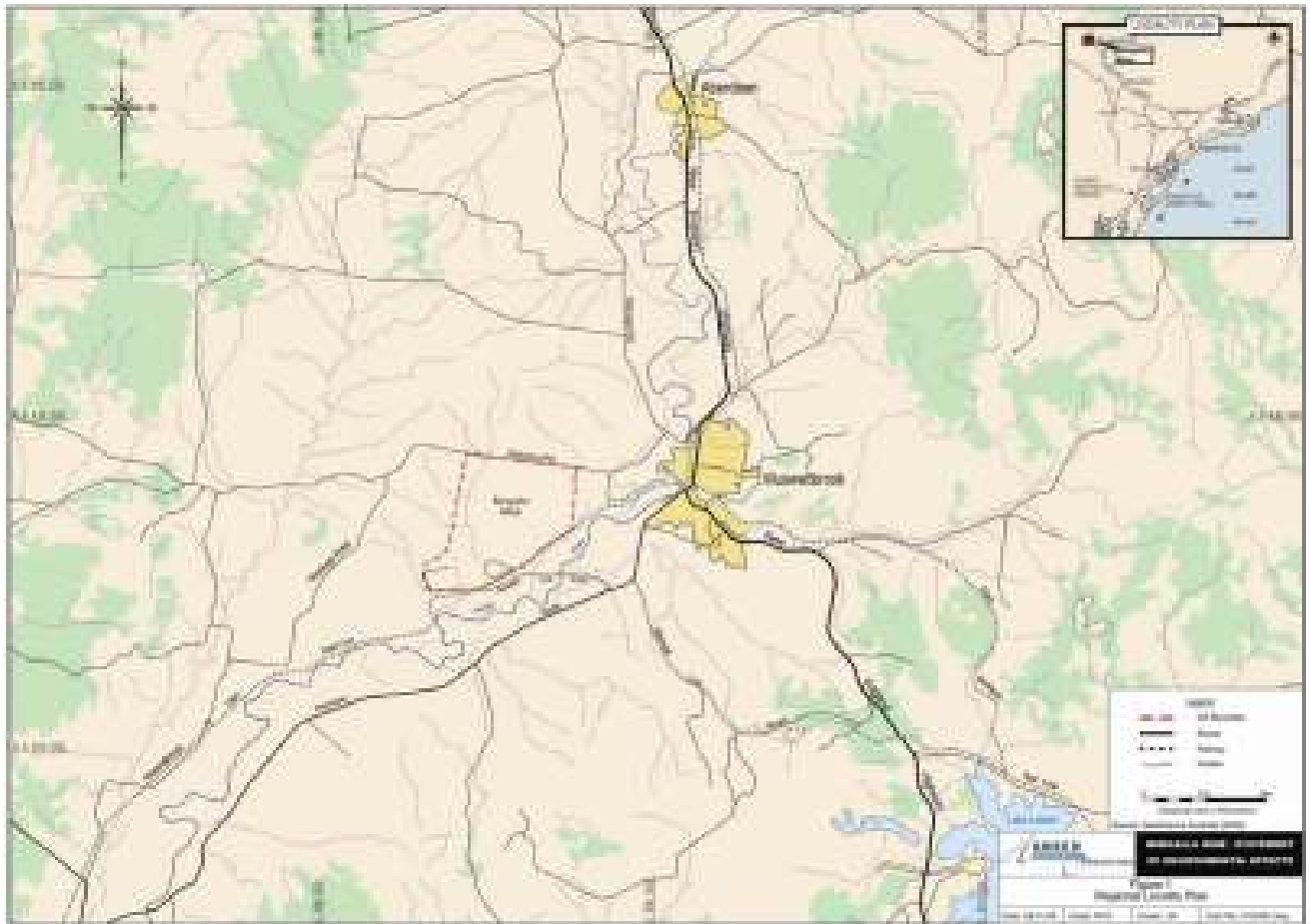
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# 1. BACKGROUND

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Bengalla Mining Company Limited (BMC) operates the Bengalla coal mine, located approximately 4 kilometres west of Muswellbrook in the Upper Hunter Valley (see Figure 1).



*Figure 1: Regional Context*

The mine was approved by the Minister on 7 August 1995 (DA 211/93), and 2 subsequent modifications have been approved. Under its consent BMC has approval to:

- extract a maximum of 10.7 million tonnes of run of mine (ROM) coal a year until 2017;
- process this coal on site;
- transport the product coal by rail to domestic power stations or the Port of Newcastle for export; and
- progressively rehabilitate the site as mining operations gradually move westwards.

The mine commenced operations in October 1998, and currently employs 320 people.

The current layout of the mine is depicted in Figure 2, showing:

- the overburden emplacement area (OEA) to the east of the mine,
- open cut mining operations, immediately adjacent to the OEA, which are gradually progressing westwards;
- the coal handling and processing plant (CHPP) and administration facilities, located in the south-west corner of the mine; and
- Bengalla Link Road to the south, providing access to the mine near the CHPP.

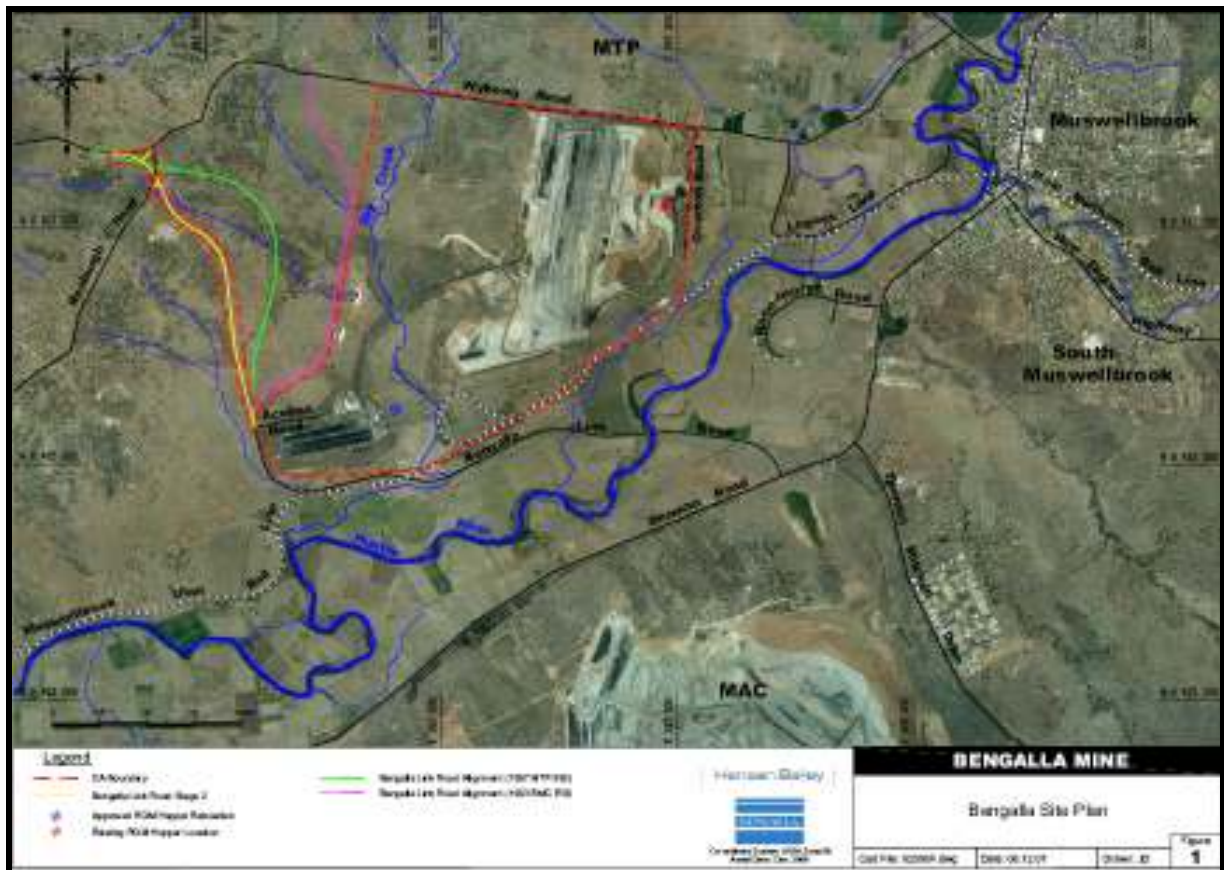


Figure 2: Current Layout of Bengalla Mine showing the proposed modification

The area is dominated by coal mining and agricultural activity as follows:

- the Mount Arthur mining complex is located to the south-east of the mine on the other side of the Hunter River, the approved Mount Pleasant mining project is located directly to the north, and the recently approved Anvil Hill mining project is located 15km to the west;
- intensive agricultural enterprises are located on either side of the Hunter River in the alluvial floodplain; and
- grazing land is located to the west of the mine (see Figures 1 & 2).

## 2. PROPOSED MODIFICATION

On 30 January 2008, BMC lodged a modification application with the Department under section 75W of the *Environmental Planning & Assessment Act 1979* (EP&A Act) to realign the approved Bengalla Link Road Stage 2 and to defer the approved relocation of its ROM coal hopper until the end of March 2009. These modifications are outlined below.

### ***Bengalla Link Road Stage 2 (BLR2) Realignment***

The original alignment of the BLR2 was approved under DA211/93 (shown in pink on Figure 2). Mine planning for the adjacent Mount Pleasant Mine (MTP) proposed an alternative alignment (shown in green on Figure 2). Detailed evaluation of alternative alignments for the BLR2 in consultation with Council and RTA since this time has resulted in a preferred alignment that differs from that approved (shown in yellow on Figures 2 and 3). BMC now seeks approval to construct BLR2 on this preferred alignment.

### ***ROM Coal Hopper Relocation Deferral***

The ROM coal hopper was approved to be relocated from the OEA to the CHPP area (see Figure 2) as part of DA211/93 Mod 1. The relocation is linked to an increase in production and processing of ROM coal from 8.7 Mtpa to 10.7Mtpa. The increase in coal production was a key consideration in justifying the relocation of the ROM coal hopper and subsequent increase in capacity.

The relocation was planned to occur prior to the end of March 2008 and the consent exempted BMC from meeting noise impact criteria until that date. Due to restrictions in its capacity to move coal through the coal chain in 2007, the planned increase in coal production did not occur. In addition, BMC encountered delays in being granted a Section 90 Consent to Destroy permit for disturbance of Aboriginal material from the new ROM coal hopper location. These factors have meant that the ROM coal hopper has not been able to be relocated as planned. The current application seeks to defer the approved relocation until the end of March 2009.

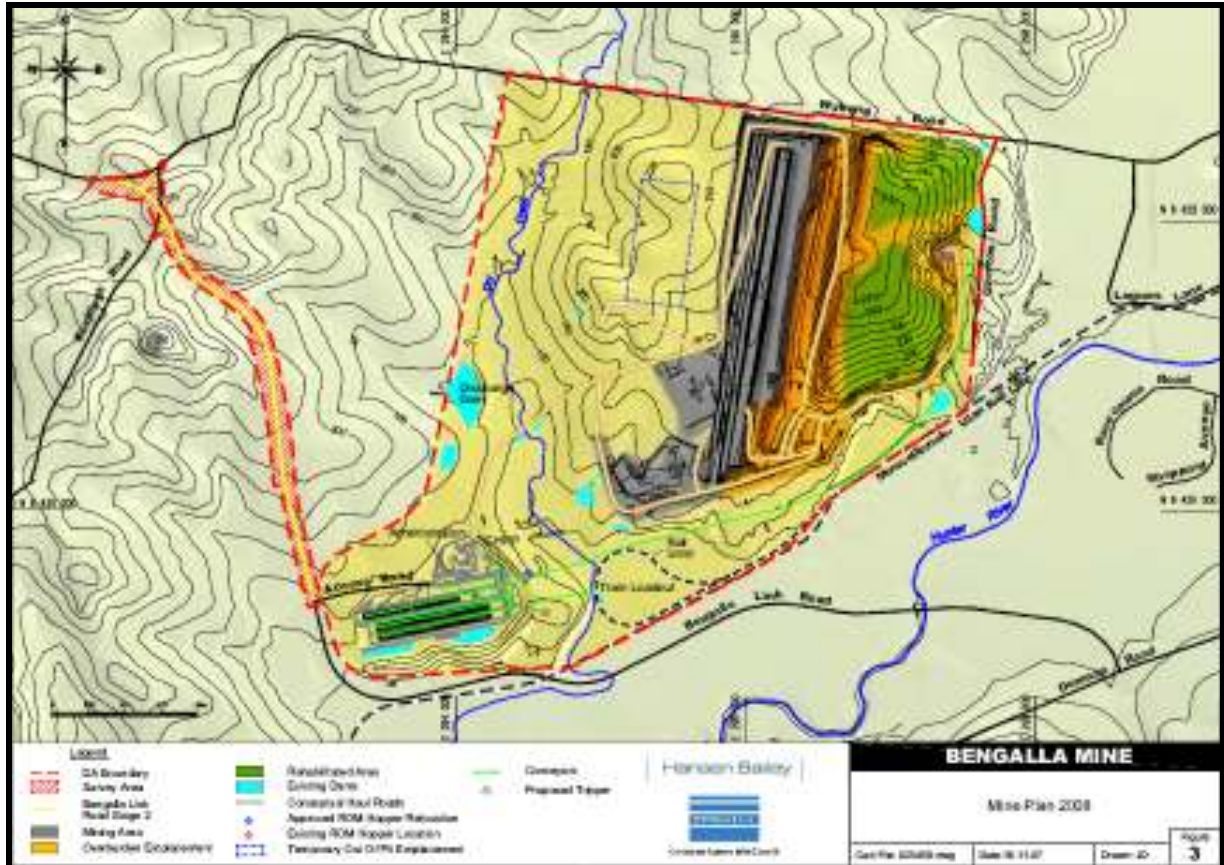


Figure 3: Bengalla Mine Plan 2008

### 3. STATUTORY CONTEXT

#### 3.1 Assessment Process

BMC has development consent under Part 4 of the EP&A Act. BMC has sought to modify this consent under section 75W of Part 3A of the Act. Under clause 8J(8)(b) of the *Environmental Planning and Assessment Regulation 2000* a development consent in force immediately before the commencement of Part 3A may be modified under section 75W as if the consent were an approval under Part 3A, but only if:

- a) *the consent was granted with respect to development that would be a project to which Part 3A of the Act applies but for the operation of clause 6 (2) (a) of State Environmental Planning Policy (Major Projects) 2005, and*
- b) *the Minister approves of the development consent being treated as an approval for the purposes of section 75W of the Act.*

*The development consent, if so modified, does not become an approval under Part 3A of the Act.*

The Minister gave approval to the consent being treated as an approval for the purposes of section 75W on 30 November 2007. While the modification process has taken place under Part 3A, the modified consent remains a consent under Part 4 of the Act.

On 7 June 2007, the Minister delegated his powers and functions as an approval authority to modify certain project approvals under section 75W of Part 3A of the EP&A Act, to the Executive Director, Major Project Assessment. This modification application meets the terms of this delegation, and consequently the Executive Director may determine the application under delegated authority.

### **3.2 Permissibility**

The land the subject of the proposed modification is zoned 1(A) Rural and 7(L1) Environment Protection General (L1) (Alluvial areas) under the *Muswellbrook Local Environmental Plan 1985* (LEP).

The proposed alignment of BLR2 is located within the 1(A) zone. Development for the purpose of mining is permissible in the 1(A) zone.

The ROM Hopper is to be relocated on land within the 7(L1) zone. Development for the purpose of open cut mining is prohibited in the 7(L1) under the LEP, however mining is permissible pursuant to clause 7 of the *State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007*.

Consequently, the Department is satisfied that the Executive Director may approve the proposed modification.

### **3.3 Environmental Planning Instruments**

The following environmental planning instruments are of some relevance to the proposal:

- *SEPP No 44 – Koala Habitat Protection*;
- *SEPP No.55 – Remediation of Land*;
- *SEPP (Mining, Petroleum Production and Extractive Industries) 2007*;
- *Muswellbrook Local Environment Plan 1985*.

The Department has assessed the proposal against the relevant provisions in these instruments and is satisfied that the proposal complies with and is otherwise consistent with the aims, objectives and provisions of the instruments.

## **4. CONSULTATION**

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After accepting the modification application the Department:

- placed the EA on public exhibition from 14 to 28 March 2008:
  - on the Department's website; and
  - at the Department's Information Centre, and at Muswellbrook Shire Council;
- notified relevant State government authorities and Muswellbrook Shire Council by letter; and
- advertised the exhibition in the Muswellbrook Chronicle on 14 March 2008.

This satisfies the requirements for public participation in the EP&A Act and the EP&A Regulation.

During the exhibition period, the Department received 7 submissions on the proposal (see Appendix D), including:

- 4 from public authorities:
  - Department of Environment and Climate Change (DECC);
  - Department of Primary Industries (DPI);
  - Roads & Traffic Authority (RTA); and
  - Muswellbrook Shire Council (Council).
- 1 from a special interest group:
  - United Mineworkers Federation of Australia (Union); and
- 2 from private landholders.

DPI and RTA offered no objection to the proposed modification. DECC raised concerns that construction of the BLR2 on the preferred alignment would impact a number of Aboriginal heritage sites and that alternative alignments should have been assessed. DECC was also concerned that BMC had not fully assessed noise impacts that would occur in deferring the relocation of the ROM coal hopper. Council raised no objection to the modification but requested that a detailed construction

management plan for the BLR2 be prepared to its satisfaction prior to works commencing. The Union was generally supportive.

One submission from a private landholder objected to the proposed modification and raised concerns based on its potential to further contribute to noise, dust and visual impacts. The other private submission offered no objection to the proposed modification but objected to the inference that the acquisition clause in the consent had been triggered for that property.

Bengalla has prepared a detailed response to the issues raised in these submissions (see Appendix C), and the Department has taken these issues into consideration during its assessment of the proposed modification (see Section 5 below).

## 5. ASSESSMENT OF ENVIRONMENTAL IMPACTS

### 5.1 Noise

#### ***BLR2 Realignment***

BMC's noise impact assessment (NIA) considered noise levels from both construction and operation of the BLR2. Construction of the road would utilise standard construction methods and would take up to 8 months to complete. The relevant impact assessment criterion is the DECC *Environmental Noise Control Manual* (ENCM) of the background level plus 10dB(A), giving an impact assessment level of 40dB(A).

The NIA considered the sound power levels of construction machinery and calculated the proportion of the construction site that each receiver would be exposed to, the closest distance of construction activities to the receiver and extent of topographic shielding. The results of the assessment showed exceedences of ENCM criterion of up to 13dB would occur at 7 non mine-owned residences (see Table 1 and Figure 4).

*Table 1: Construction noise levels at the closest non- mine owned receivers*

| Receiver            | Site Length |          | Closest distance |          | Predicted Noise Level, LA10 |           |           | Criteria |
|---------------------|-------------|----------|------------------|----------|-----------------------------|-----------|-----------|----------|
|                     | Exposed     | Shielded | Exposed          | Shielded | Exposed                     | Shielded  | Total     |          |
| <b>42 B Moore</b>   | 0           | 3100     | -                | 1800     | -                           | 40        | 40        | 40       |
| <b>44 Lane</b>      | 1800        | 1300     | 1550             | 1800     | <b>48</b>                   | 36        | <b>48</b> | 40       |
| <b>40 Ellis</b>     | 1700        | 1400     | 1550             | 1650     | <b>48</b>                   | 38        | <b>48</b> | 40       |
| <b>38 Hamilton</b>  | 1700        | 1400     | 1200             | 950      | <b>48</b>                   | <b>42</b> | <b>49</b> | 40       |
| <b>183 Strachan</b> | 100         | 3000     | 800              | 230      | <b>50</b>                   | <b>49</b> | <b>53</b> | 40       |
| <b>35 M Moore</b>   | 50          | 3050     | 550              | 600      | <b>52</b>                   | <b>45</b> | <b>53</b> | 40       |
| <b>34 J Moore</b>   | 300         | 2800     | 880              | 1000     | <b>46</b>                   | <b>44</b> | <b>48</b> | 40       |
| <b>33 Bates</b>     | 3100        | 0        | 3100             | -        | <b>44</b>                   | -         | <b>44</b> | 40       |

Whilst the predicted construction noise levels exceed the ENCM criterion at these residences, there are ameliorating factors, which include:

- residences 44, 40 and 38 would experience noise exceedences for half the construction schedule and are located between 1.2 - 1.5km from the BLR2 at their closest points;
- residences 38 and 183 face towards the proposed Denman Road/BLR2 intersection and exceedances would be experienced for a relatively short period whilst the intersection is constructed;
- residence 33 is over 3km from proposed road construction activities and has acquisition rights under the mine's consent; and
- the NIA's assumptions are based upon all equipment operating simultaneously. As some equipment would not be required at all times during construction and not all machines require full engine power when working normally, the construction noise levels in Table 1 would be lower than shown for much of the time.

In order to minimise the likelihood of these exceedances occurring, BMC has committed to a number of mitigation measures, which include:

- consulting residential neighbours prior to the commencement of construction work;
- ensuring no significant noise producing activity occurs outside of normal construction hours (7am-6pm Monday to Friday and 8am-1pm on Saturday) and no construction related vehicles arrive on site before these start times;

- ensuring appropriate machinery is used for each task and adopting efficient work practices to minimise the construction schedule;
- avoiding unnecessary noise due to machinery idling;
- ensuring all machinery on site is maintained in good condition and modifying reversing alarms; and
- ensuring regular maintenance of access tracks along the construction route to minimise the noise of empty trucks on the tracks.

As the modelled noise levels simulate worst-case conditions and with all equipment running simultaneously, the Department is satisfied that the predicted noise levels are conservative and considers that the predicted exceedences would not occur continuously for the duration of the construction period at all residences listed in Table 1.

The Department considers the proposed construction noise management measures would result in the lowest practically achievable noise levels and that compliance with the ECNM criterion would occur for at least part of the construction schedule at most of the listed residences. However, the Department recommends that BMC be required to prepare a construction noise management plan to manage impacts as well as undertaking all reasonable and feasible measures to minimise noise impacts during construction of the road. The Department has recommended a condition in this regard.

Traffic noise levels during construction and operation of the BLR2 were assessed using DECC's *Environmental Criteria for Road Traffic Noise* (ECRTN). The noise assessment concluded that predicted traffic noise levels during construction and operation of the road would comfortably comply with the applicable traffic noise criteria.

#### ***ROM Coal Hopper Relocation Deferral***

The NIA aggregated the noise contributions expected from mining activities during 2008 and considered the impact of deferring the relocation of the ROM Coal Hopper. The modelled predictions are represented in Figure 4 below, and refer to the night-time period, when noise enhancement is greatest.

The assessment indicates that the mine will exceed the operational noise criteria in the development consent at up to about 40 private properties in the area surrounding the mine during worst case conditions. The majority of these exceedences are minor (between 1 and 2dBA exceedance, which is generally not perceptible to the human ear), however greater exceedences are predicted at 3 private properties, including:

- a significant 7dB exceedance at one property (Property 90 – Webber); and
- moderate exceedences (4 and 5dB) at a further two properties (Property 11 – Drake and Property 13 – Scriven).

The exceedences on these 3 properties occur on the vacant portion of the respective properties<sup>1</sup>. Residences on these properties are not expected to experience significant impacts, with exceedences of only 1dB predicted.

Given the temporary nature of the noise impacts (ie. whilst the ROM Hopper remains in its current location), and the noise impacts are not predicted to significantly impact on residences, the Department is satisfied that a further delay in the relocation of the hopper would not result in a significant noise impact on surrounding receivers.

The Department acknowledges that the ROM Hopper relocation has been principally delayed as a result of the requirement to obtain a Section 90 Consent to Destroy an Aboriginal heritage site at the new location. Further, the Department notes that BMC proposes to restrict its coal production to 8.7Mtpa until the relocation has been completed to limit noise impacts. The Department also recognises that preliminary earthworks to facilitate the relocation have already commenced and therefore the relocation timeframe should be limited.

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<sup>1</sup> Private properties are considered to be affected by noise impact if either a residence on the land is affected, or where more than 25% of the land area of the property is affected.

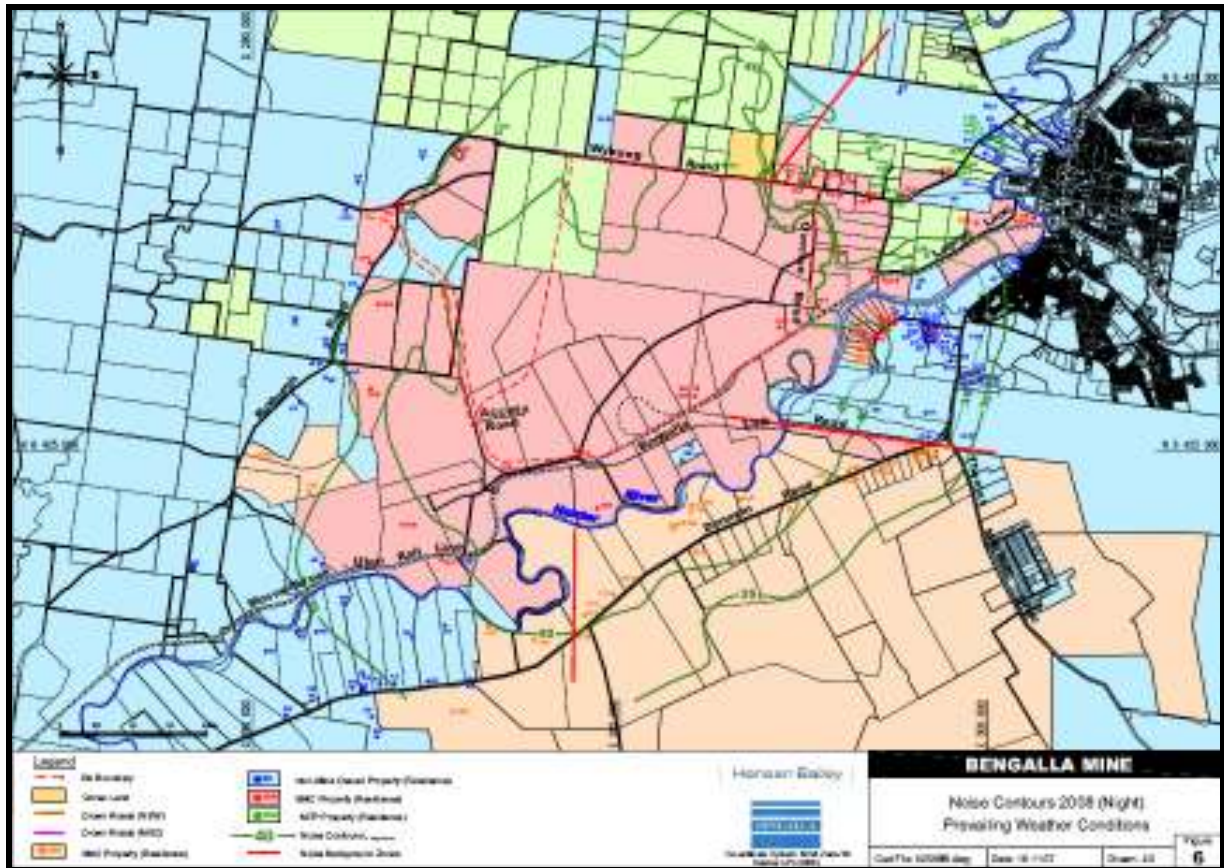


Figure 4: Noise levels for mining operations in 2008 (night-time)

Current consent conditions require noise impacts at all residences to be continually monitored using a combination of real-time and attended monitoring, and for Bengalla to adopt an active management approach which responds to exceedances of consent criteria by:

- offering additional noise mitigation measures to the landowner, such as double glazing, insulation and/or air conditioning, in the case of moderate (3 to 5dB) exceedances; or
- acquiring the properties, at the request of the landowner, in the case of significant (>5dB) exceedances.

The Department considers that this monitoring should continue, to verify modelled predictions at all receivers. The Department accepts that BMC is undertaking all reasonable and feasible measures to reduce noise emissions associated with the project.

## 5.2 Aboriginal Heritage

BMC's Aboriginal cultural heritage assessment surveyed the area that would be disturbed to construct the BLR2 and found 9 sites containing 42 scattered artefacts that would be directly impacted (see Figure 5). All 9 sites were assessed as having low archaeological significance.

DECC raised concerns that BMC had not considered alignment opportunities either side of the preferred alignment to avoid impacting these sites. BMC argued that whilst it had not conducted archaeological assessments either side of its preferred alignment, engineering, safety and social factors determined that the alignment was the most practical and feasible option. Further, the alignment had been determined in consultation with Aboriginal community and that the areas either side of the preferred alignment contain undisturbed vegetation having the potential not only for further archaeological sites but also habitat for threatened species. BMC added that based on the extent of Aboriginal artefacts previously identified in the region, it would be expected that the areas either side of the preferred alignment contain Aboriginal artefacts. In addition, the preferred alignment has been designed to limit disturbance to site BMRA2 (see Figure 5), which contains almost half the 42 identified artefacts.

To mitigate impacts to the 9 identified sites, BMC would undertake the following measures:

- the Bengalla Aboriginal Cultural Heritage Management Plan (ACHMP) would be revised in consultation with the local Aboriginal community and DECC to include an artefact salvage program;
- section 87/90 permits would be sought prior to the salvage of artefacts or disturbance of any of the sites; and
- a construction management plan for the BLR2 would include controls required to protect Aboriginal archaeology not proposed to be disturbed.

DECC accepted BMC's argument and recommended a range of conditions aimed at managing impacts to the sites, including the preparation of an ACHMP for the preferred alignment.



Figure 5: Aboriginal heritage sites along the proposed BLR2 realignment

The Department considers the impacts to Aboriginal heritage would not be significant and the management actions proposed by BMC to be adequate. The Department notes that DECC has recommended a ACHMP should be developed specifically for the site. However, the Department believes the Applicant should revise its existing ACHMP in consultation with DECC and the local Aboriginal community to adequately capture DECC's recommendations. The Department therefore recommends the consent condition be revised accordingly.

### 5.3 Other Issues

| ISSUE       | CONSIDERATION                                                                                                                                                                                                                                                                                                                                    |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Air Quality | An assessment has been prepared in accordance with the <i>Approved Methods for the Modelling and Assessment of Air Pollutants in NSW</i> . As recommended by the DECC, the method employed was to add dispersion model predictions to existing background levels, involving the cumulative impacts of Bengalla's existing operations, as well as |

| ISSUE                    | CONSIDERATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                          | Mount Arthur North and more distant operations including Drayton and Muswellbrook Coal. The results for TSP, PM10 and dust deposition suggest that exceedances of annual average and 24 hour consent criteria are not expected at any private residential receivers, and that air quality impacts will not change significantly as a result of the modification.                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <i>Flora &amp; Fauna</i> | The proposed modification would involve limited clearing of highly disturbed and modified grazing land. The conservation significance of this land is considered to be low. A detailed field survey did not identify any threatened species, and confirmed a lack of suitable habitat for any fauna species which otherwise have the potential to occur in the region. The Department is satisfied with the assessment, and believes significant impacts on flora or fauna as a result of the modification would be unlikely.                                                                                                                                                                                                                                                                                       |
| <i>Surface Water</i>     | The proposed BLR2 lies in the upper reaches of the Dry Creek catchment, an ephemeral watercourse feeding south towards the Hunter River. A number of drainage lines and farm dams are also in the vicinity of BLR2. Temporary sediment control structures would be constructed to ensure all run-off is managed during the construction period. Culverts would be installed at suitable locations along the alignment to manage run-off from a 50 year ARI rainfall event. Water for dust suppression purposes during construction would be sourced from dams owned by BMC or from raw water sources at the mine. The Department is satisfied that surface water impacts are unlikely to be significant.                                                                                                            |
| <i>Traffic</i>           | Traffic levels are not expected to change significantly as a result of the modification. Construction of the BLR2 would redirect traffic in the local network, however increased traffic volumes at critical intersections would not significantly impact upon operating conditions. The applicant would prepare a traffic management and traffic control plan during construction of the road. The local road network has sufficient capacity to adequately manage the expected increase in traffic due to the proposed modification as well as predicted increases in traffic from future traffic growth from adjacent mining operations. The Department is therefore satisfied that there would be no significant traffic impacts arising from both the construction and operation of the proposed modification. |
| <i>Visual</i>            | Due to the remote locality and its topography of the area proposed for the construction of the BLR2 no adverse visual impacts would occur to surrounding non-mine owned residential receivers. During operation of the road some minor impacts would be experienced at a small number of receivers from vehicle lights on the road, however the topography of the road would shield much of the impact. The Department therefore considers these impacts to be minor.                                                                                                                                                                                                                                                                                                                                               |

## 6. RECOMMENDED CONDITIONS

The Department has prepared recommended conditions of approval for the proposed modifications (see Appendix A). These conditions are required to:

- prevent, minimise, and/or offset adverse impacts of the development;
- set standards and performance measures for acceptable environmental performance;
- ensure regular monitoring and reporting; and
- provide for the ongoing environmental management of the development.

BMC has reviewed and accepts the recommended conditions.

## 7. CONCLUSION

BMC is seeking to modify its current consent to construct the BLR2 on an alternative alignment to that approved in DA211/93 in order to link the mine with Wybong Road to its west. It also seeks to defer the approved relocation of its ROM coal hopper until March 2009.

Constructing the BLR2 on a different alignment to that already approved would generate construction noise impacts at 7 non mine-owned properties. Whilst noise levels during construction would exceed relevant criteria, impacts would be able to be managed through a range of on-site practices and the preparation of a construction management plan. Construction of BLR2 would also directly impact 9 sites containing Aboriginal archaeological material, however measures would be employed to protect or salvage artefacts from these sites.

Importantly, the completion of the BLR2 will facilitate through access from Denman Road to Wybong Road. This access will facilitate access to the Bengalla mine from areas to the north, as well as facilitating access to the planned Mt Pleasant and Anvil Hill coal mines, in a manner that relieves traffic impacts on local roads in Muswellbrook.

The deferral of the approved relocation of the ROM coal hopper would prolong some of the impacts associated with the ROM hopper in its current location (in particular, noise), however the Department is satisfied that these impacts are not significantly impacting surrounding receivers, and that BMC is progressing the relocation as soon as is practicable.

The Department has assessed the predicted impacts of the proposed modification and has recommended conditions it believes will, in conjunction with the reasonable and feasible mitigation measures BMC has committed to, adequately mitigate or minimise these impacts. The Department is satisfied that the other impacts of the proposal will remain much the same as for Bengalla's existing operations, and are unlikely to be significant.

In assessing the proposed development, the Department has taken into account the objects of the EP&A Act, in particular the need to encourage ecologically sustainable development, and matters required to be considered under section 79C of the Act.

Based on this consideration, the Department is satisfied that the proposal is generally in the public interest, and should be approved subject to conditions.

## 8. RECOMMENDATION

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It is RECOMMENDED that the Executive Director Major Project Assessment, as delegate of the Minister:

- consider the findings and recommendations of this report;
- approve the application to modify development consent, subject to conditions, under section 75W of the *Environmental Planning and Assessment Act 1979*; and
- sign the attached instrument of modification to the development consent (Tagged A).

David Kitto  
**Director**  
**Major Development Assessment**

Chris Wilson  
**Executive Director**  
**Major Project Assessment**

## **APPENDIX A. NOTICE OF MODIFICATION**

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## **APPENDIX B. CONSIDERATION OF ENVIRONMENTAL PLANNING INSTRUMENTS**

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### **State Environmental Planning Policy (SEPP) Mining, Petroleum Production and Extractive Industries (Mining SEPP)**

In accordance with clause 7 of the Mining SEPP, the carrying out of development for the purpose of mining is a use permissible with development consent. As such, the Department is satisfied the proposed modification is generally consistent with the requirements of the Mining SEPP.

#### **SEPP No.44 – Koala Habitat Protection**

The EA identified that the modified development site does not contain 'core' or 'potential' Koala habitat and does not have a resident population of Koalas. As such, the Department is satisfied that the proposal is generally consistent with the aims, objectives, and requirements of SEPP 44.

#### **SEPP 55 – Remediation of Land**

The Department is satisfied that the land subject to the modification application does not have a significant risk of contamination given its historical land use, and that the proposal is generally consistent with the aims, objectives and requirements of SEPP 55.

## **APPENDIX C. APPLICANT'S RESPONSE TO SUBMISSIONS**

See attached CD-ROM containing a file entitled *Bengalla MOD 3 Response to Submissions*

## **APPENDIX D. SUBMISSIONS**

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See the attached CD-ROM containing a file entitled *Bengalla MOD3 Submissions*.

## **APPENDIX E. ENVIRONMENTAL ASSESSMENT**

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See the attached CD-ROM containing a directory entitled *Bengalla Development Consent Modification EA March 2008*