

# Development Consent

## Section 89E of the *Environmental Planning & Assessment Act 1979*

As delegate of the Minister for Planning, I approve the development application referred to in schedule 1, subject to the conditions in schedules 2 to 5.

These conditions are required to:

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

Carolyn McNally  
**Secretary**

Sydney

2015

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### SCHEDULE 1

**Application Number:**

SSD-5170

**Applicant:**

Bengalla Mining Company Pty Limited

**Consent Authority:**

Minister for Planning

**Land:**

See Appendix 1

**Development:**

Bengalla Continuation Project

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[Modification 1 \(December 2015 shown in blue text\)](#)

[Modification 2 \(July 2016 shown in red text\)](#)

[Modification 3 \(December 2016 shown in green text\)](#)

[Modification 4 \(December 2018 shown in pink text\)](#)

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## DEFINITIONS

Annual review	The review required by condition 4 of schedule 5
ARI	Average recurrence interval
Applicant	Bengalla Mining Company Pty Limited, or anyone else who relies on this consent to carry out the development that is subject to this consent
BCA	Building Code of Australia
Biodiversity offset strategy	The biodiversity offset strategy described in the EIS, and depicted conceptually in the figures in Appendix 7
Blast misfire	The failure of one or more holes in a blast pattern to initiate
CCC	Community Consultative Committee
Conditions of this consent	Conditions contained in schedules 1 to 5 inclusive
Council	Muswellbrook Shire Council
Day	The period from 7am to 6pm on Monday to Saturday, and 8am to 6pm on Sundays and Public Holidays
Development	The development described in the documents in condition 2(a) of Schedule 2
Department	Department of Planning and Environment
Dol	Department of Industry – Crown Lands and Water Division
DRG	Division of Resources and Geoscience within the Department
EEC	Endangered ecological community, as defined under the <i>Threatened Species Conservation Act 1995</i>
EIS	Environmental impact statement titled <i>Continuation of Bengalla Mine, Environmental Impact Statement</i> (6 volumes), dated September 2013, as modified by the <i>Response to Submissions</i> dated March 2014
EPA	Environment Protection Authority
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EP&A Regulation	<i>Environmental Planning and Assessment Regulation 2000</i>
EPL	Environment Protection Licence issued under the POEO Act
Evening	The period from 6pm to 10pm
Feasible	Means what is possible and practicable in the circumstances
Incident	An occurrence or set of circumstances that causes or threatens to cause material harm and which may or may not be or cause a non-compliance
Land	Has the same meaning as the definition of the term in section 1.4 of the <i>Environmental Planning &amp; Assessment Act 1979</i> , except for where the term is used in the noise and air quality conditions of this consent where it is defined to mean the whole of a lot, or contiguous lots owned by the same landowner, in a current plan registered at the Land Titles Office at the date of this consent
Material harm	Is harm that involves actual or potential harm to the health or safety of human beings or to the environment that is not trivial, or results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding \$10,000, (such loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment). This definition excludes “harm” that is authorised under either this consent or any other statutory approval
Mine water	Water that accumulates within, or drains from, active mining and infrastructure areas and any other areas where run-off may have come into contact with coal or carbonaceous material (synonymous with ‘dirty water’)
Mining operations	Includes the removal and emplacement of overburden; and the extraction, processing, handling, storage and transport of coal on site
Minister	Minister for Planning, or delegate
Mitigation	Activities associated with reducing the impacts of the development
Night	The period from 10pm to 7am on Monday to Saturday, and 10pm to 8am on Sundays and Public Holidays
Non-compliance	An occurrence, set of circumstances or development that is a breach of this consent
NP&W Act	<i>National Parks and Wildlife Act 1974</i>
OEH	Office of Environment and Heritage
POEO Act	<i>Protection of the Environment Operations Act 1997</i>
Privately-owned land	Land that is not owned by a public agency or a mining company (or its subsidiary)
Public infrastructure	Infrastructure that provides services to the general public, such as roads, railways, water supply, drainage, sewerage, gas supply, electricity, telephone, telecommunications, etc
Reasonable	Reasonable relates to the application of judgement in arriving at a decision, taking into account: mitigation benefits, cost of mitigation versus

	benefits provided, community views and the nature and extent of potential improvements
Rehabilitation	The restoration of land disturbed by the development to a good condition to ensure it is safe, stable and non-polluting
Registered Aboriginal Parties	As described in the National Parks and Wildlife Regulation 2009
RMS	Roads and Maritime Services
ROM	Run-of-mine
SA NSW	Subsidence Advisory NSW (formerly the Mine Subsidence Board)
Secretary	Planning Secretary under the EP&A Act or nominee
SEE (Mod 1)	Statement of Environmental Effects titled ' <i>Bengalla Mine Development Consent Modification Statement of Environmental Effects</i> ' dated August 2015 and prepared by Hansen Bailey, including the Response to Submissions document dated October 2015
SEE (Mod 2)	Statement of Environmental Effects titled ' <i>Bengalla Mine Development Consent Modification Statement of Environmental Effects</i> ' dated April 2016 and prepared by Hansen Bailey, including the Response to Submissions document dated June 2016
SEE (Mod 3)	Statement of Environmental Effects titled ' <i>Bengalla Mine Development Consent Modification 3 Statement of Environmental Effects</i> ' dated September 2016 and prepared by Hansen Bailey, including the Response to Submissions document dated November 2016
SEE (Mod 4)	Statement of Environmental Effects titled ' <i>Bengalla Mine Development Consent Modification 4 Statement of Environmental Effects</i> ' dated December 2017 and prepared by Hansen Bailey, including the Response to Submissions document dated May 2018 and additional information dated July 2018 and November 2018
Visual Receptor	Residence on privately-owned land and/or a tourist facility on privately-owned land
Site	The land listed in Appendix 1
VPA	Voluntary Planning Agreement that is made under Division 6 of Part 4 of the EP&A Act

## SCHEDULE 2 ADMINISTRATIVE CONDITIONS

### OBLIGATION TO MINIMISE HARM TO THE ENVIRONMENT

1. In addition to meeting the specific performance measures and criteria established under this consent, the Applicant must implement all reasonable and feasible measures to prevent, and if prevention is not reasonable and feasible, minimise, any material harm to the environment that may result from the construction and operation of the development and any rehabilitation required under this consent.

### TERMS OF CONSENT

2. **The Applicant must:**
  - (a) carry out the development generally in accordance with the EIS, SEE (Mod 1), SEE (Mod 2), SEE (Mod 3) and SEE (Mod 4); and
  - (b) comply with the conditions of this consent and the Development Layout.

*Note: The Development Layout is shown in Appendix 2.*
3. Consistent with the requirements in this consent, the Secretary may make written directions to the Applicant in relation to:
  - (a) the content of any strategy, study, system, plan, program, review, audit, notification, report or correspondence submitted under or otherwise made in relation to this consent, including those that are required to be, and have been, approved by the Secretary; and
  - (b) the implementation of any actions or measures contained in any such document referred to in paragraph 3(a) above.
4. The conditions of this consent and directions of the Secretary prevail to the extent of any inconsistency, ambiguity or conflict between them and a document/s listed in condition 2(a) above. In the event of an inconsistency, ambiguity or conflict between any of the document/s listed in condition 2(a) the most recent document prevails to the extent of the inconsistency, ambiguity or conflict.

### LIMITS ON CONSENT

#### Mining Operations

5. The Applicant may carry out mining operations on the site until 28 February 2039.

*Note: Under this consent, the Applicant is required to rehabilitate the site and perform additional undertakings to the satisfaction of either the Secretary or the DRG. Consequently this consent will continue to apply in all other respects other than the right to conduct mining operations until the rehabilitation of the site and these additional undertakings have been carried out satisfactorily.*

#### Coal Extraction

6. **The Applicant must** not extract and/or process more than 15 million tonnes of ROM coal on site in any calendar year.

#### Coal Transport

7. **The Applicant must:**
  - (a) only transport coal from the site by rail; and
  - (b) restrict train movements from the Bengalla load point to a maximum of 16 laden trains a day.

#### Bengalla Link Road Construction Hours

8. **The Applicant must** only construct the Bengalla Link Road between the hours of 7 am to 6 pm, Monday to Friday and 8 am to 1 pm on Saturdays.

### NOTICE OF COMMENCEMENT

9. Prior to carrying out any development under this consent, **the Applicant must:**
  - (a) certify that it has obtained all the necessary approvals required to commence development; and
  - (b) notify the Secretary in writing of the date of commencement of development under this consent.

### SURRENDER OF EXISTING DEVELOPMENT CONSENT

10. By the end of June 2016, unless the Secretary agrees otherwise, **the Applicant must** surrender the existing development consent for mining operations on site in accordance with Section 104A of the EP&A Act.

Prior to the surrender of this consent, the conditions of this consent (once operational) shall prevail to the extent of any inconsistency with the conditions of this consent.

## STRUCTURAL ADEQUACY

11. All new buildings and structures, and any alterations or additions to existing buildings and structure, are constructed in accordance with:
- the relevant requirements of the BCA; and
  - any additional requirements of SA NSW where the building or structure is located on land within a declared Mine Subsidence District.

### Notes:

- Under Part 6 of the EP&A Act, the Applicant is required to obtain construction and occupation certificates for the proposed building works.
- Part 8 of the EP&A Regulation sets out the requirements for the certification of the development.
- The development is located in the Muswellbrook Mine Subsidence District. Under section 21 of the Coal Mine Subsidence Compensation Act 2017, the Applicant is required to obtain the Chief Executive of SA NSW's approval before carrying out certain development in a Mine Subsidence District.

## DEMOLITION

12. **The Applicant must** ensure that all demolition work is carried out in accordance with *Australian Standard AS 2601-2001: The Demolition of Structures*, or its latest version.

## PROTECTION OF PUBLIC INFRASTRUCTURE

13. Unless the Applicant and the applicable authority agree otherwise, **the Applicant must:**
- repair, or pay the full costs associated with repairing, any public infrastructure that is damaged by the development; and
  - relocate, or pay the full costs associated with relocating, any public infrastructure that needs to be relocated as a result of the development.

*Note: This condition does not apply to any damage to roads caused as a result of general road usage.*

## OPERATION OF PLANT AND EQUIPMENT

14. **The Applicant must** ensure that all plant and equipment used on site, and any equipment used offsite to monitor the performance of the development, is:
- maintained in a proper and efficient condition; and
  - operated in a proper and efficient manner.

## UPDATING & STAGING SUBMISSION OF STRATEGIES, PLANS OR PROGRAMS

15. The Applicant must regularly review the strategies, plans and programs required under this consent and ensure that these documents are updated to incorporate measures to improve the environmental performance of the development and reflect current best practice in the mining industry. To facilitate these updates, the Applicant may at any time submit revised strategies, plans or programs for the approval of the Secretary. With the agreement of the Secretary, the Applicant may also submit any strategy, plan or program required by this consent on a staged basis.

With the agreement of the Secretary, the Applicant may prepare a revision or stage of any strategy, plan or program required under this consent without undertaking consultation with all parties nominated under the applicable condition in this consent.

### Notes:

- While any strategy, plan or program may be submitted on a staged basis, the Applicant must ensure that the existing operations on site are covered by suitable strategies, plans or programs at all times.
- If the submission of any strategy, plan or program is to be staged, then the relevant strategy, plan or program must clearly describe the specific stage to which the strategy, plan or program applies, the relationship of this stage to any future stages, and the trigger for updating the strategy, plan or program.

## VOLUNTARY PLANNING AGREEMENT

16. By the end of December 2015, or as otherwise agreed by the Secretary, the Applicant must enter into a VPA for the development with Council in accordance with:
- Division 6 of Part 4 of the EP&A Act; and
  - the terms of the Applicant's offer in Appendix 3.

**EVIDENCE OF CONSULTATION**

- 17. Where conditions of this consent require consultation with an identified party, the Applicant must:
  - (a) consult with the relevant party prior to submitting the subject document; and
  - (b) provide details of the consultation undertaken including:
    - (i) the outcome of that consultation, matters resolved and unresolved; and
    - (ii) details of any disagreement remaining between the party consulted and the Applicant and how the Applicant has addressed the matters not resolved.

**COMPLIANCE**

- 18. The Applicant must ensure that all of its employees, contractors (and their sub-contractors) are made aware of, and are instructed to comply with, the conditions of this consent relevant to activities they carry out in respect of the development.

**APPLICABILITY OF GUIDELINES**

- 19. References in the conditions of this consent to any guideline, protocol, Australian Standard or policy are to such guidelines, protocols, Standards or policies in the form they are in as at the date of this consent.  
  
However, consistent with the conditions of this consent and without altering any limits or criteria in this consent, the Secretary may, when issuing directions under this consent in respect of ongoing monitoring and management obligations, require compliance with an updated or revised version of such a guideline, protocol, Standard or policy, or a replacement of them.
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## SCHEDULE 3 ENVIRONMENTAL PERFORMANCE CONDITIONS

### ACQUISITION UPON REQUEST

- Upon receiving a written request for acquisition from the owner of the land listed in Table 1, **the Applicant must** acquire the land in accordance with the procedures in conditions 5 and 6 of schedule 4.

*Table 1: Land subject to acquisition upon request*

<b>Acquisition Basis</b>	<b>Receiver No</b>
Noise	152, 153, 156E, 156S
Noise and Air Quality	154

*Note: To interpret the land referred to in Table 1, see the applicable figure in Appendix 4.*

- If the Applicant receives a written request for acquisition from the owner of the land listed in Table 2 and if that land is no longer subject to acquisition upon request under the relevant development consent or project approval shown in Table 2, then **the Applicant must** acquire the land in accordance with the procedures in conditions 5 and 6 of schedule 4.

*Table 2: Land subject to acquisition upon request*

<b>Acquisition Basis</b>	<b>Receiver No</b>	<b>Mine</b>
Noise	120	Mt Arthur
Noise and Air Quality	112, 113, 114, 117, 118, 119, 155	
Noise	166	Mt Pleasant
Noise and Air Quality	168, 171	

*Notes: To interpret the land referred to in Table 2, see the applicable figure in Appendix 4.*

### ADDITIONAL MITIGATION UPON REQUEST

- Upon receiving a written request from the owner of any residence on the land listed in Table 1 (unless the landowner of that land has requested acquisition), Table 2 (if acquisition or additional mitigation by the mine listed in Table 2 is no longer available for the landowner of that land) and on the land listed in Table 3, **the Applicant must** implement additional:
  - noise mitigation measures (such as double-glazing, insulation and/or air conditioning); and/or
  - air quality mitigation measures (such as air filters, a first flush roof water drainage system and/or air conditioning),
 at any residence in consultation with the owner.

These measures must be reasonable and feasible, and directed towards reducing the noise and/or air quality impacts of the development on any residence. **The Applicant must** also be responsible for the reasonable costs of ongoing maintenance of these additional mitigation measures until the cessation of mining operations.

If within 3 months of receiving this request from the owner, the Applicant and the owner cannot agree on the measures to be implemented, or there is a dispute about the implementation of these measures, then either party may refer the matter to the Secretary for resolution.

*Table 3: Land subject to additional noise and/or air quality mitigation upon request*

<b>Mitigation Basis</b>	<b>Receiver</b>
Noise and Air Quality	109 <sup>3</sup>
Noise	105, 106 <sup>3</sup> , 108, 110 <sup>3</sup> , 126N, 167, 169 <sup>2</sup> , 180, 184
Air Quality	66 <sup>3</sup> , 120 <sup>3</sup> , 152, 156E, 156S

*Notes:*

- To interpret the land referred to in Table 3, see the applicable figure in Appendix 4.
- The Applicant is only required to provide additional mitigation for this property if these rights are no longer available under the development consent for the Mt Pleasant mine.
- The Applicant is only required to provide additional mitigation for this property if these rights are no longer available under the project approval for the Mt Arthur mine.



## Noise

### Noise Criteria

4. Except for the noise-affected land in Tables 1 and 2, the Applicant must ensure that the noise generated by the development does not exceed the criteria in Table 4 at any residence on privately-owned land.

Table 4: Noise Criteria dB(A)

Location	Day	Evening	Night	
	L <sub>Aeq</sub> (15 min)	L <sub>Aeq</sub> (15 min)	L <sub>Aeq</sub> (15 min)	L <sub>A1</sub> (1 min)
108,109, 110	40	40	40	45
106	39	39	39	45
169	39	39	36	45
105, 126N	38	38	38	45
167, 180, 184,	38	38	35	45
102,126C, 146	37	37	37	45
186N	37	37	35	45
43, 44, 130, 145, 126S	36	36	36	45
186S,189	36	36	35	45
All other privately-owned residences	35	35	35	45

Note: To interpret the land referred to in Table 4, see the applicable figure in Appendix 4.

However, these criteria do not apply if the Applicant has a written agreement with the relevant landowner to exceed the noise criteria, and the Applicant has advised the Department in writing of the terms of this agreement.

Noise generated by the development is to be measured in accordance with the relevant requirements of the *NSW Industrial Noise Policy*. Appendix 5 sets out the meteorological conditions under which these criteria apply and the requirements for evaluating compliance with these criteria.

### Construction Noise

5. The Applicant must manage the noise associated with the construction of the Bengalla Road realignment and the Homestead Access Road in accordance with the noise management levels in Table 2 of the *Interim Construction Noise Guideline*.

### Operating Conditions

6. The Applicant must:
- implement best noise management practice, which includes implementing all reasonable and feasible noise mitigation measures to minimise the construction, operational, road and rail noise of the development;
  - operate a comprehensive noise management system on site that uses a combination of predictive meteorological forecasting and real-time noise monitoring data to guide the day-to-day planning of mining operations and the implementation of both proactive and reactive noise mitigation measures to ensure compliance with the relevant conditions of this consent;
  - minimise the noise impacts of the development during meteorological conditions when the noise criteria in this consent do not apply (see Appendix 5);
  - co-ordinate noise management at the Bengalla mine with the noise management at the Mt Arthur and Mount Pleasant mines to minimise cumulative noise impacts; and
  - carry out regular attended monitoring in accordance with Appendix 5 (unless otherwise agreed with the Secretary), to determine whether the development is complying with the relevant conditions of this consent,
- to the satisfaction of the Secretary.

### Noise Management Plan

7. The Applicant must prepare a Noise Management Plan for the development to the satisfaction of the Secretary. This plan must:
- be prepared in consultation with the EPA, and submitted to the Secretary for approval within 6 months of the date of this consent;
  - describe the measures that would be implemented to ensure compliance with the relevant conditions of this consent;
  - describe the proposed noise management system in detail; and
  - include a noise monitoring program that:
    - evaluates and reports on:
      - the effectiveness of the noise management system;

- compliance against the noise criteria in this consent; and
- compliance against the noise operating conditions;
- includes a program to calibrate and validate the real-time noise monitoring results with the attended monitoring results over time (so the real-time noise monitoring program can be used as a trigger for further attended monitoring where there is a risk of non-compliance with the noise criteria in this consent); and
- defines what constitutes a noise incident, and includes a protocol for identifying and notifying the Department and relevant stakeholders of any noise incidents.

The Applicant must implement the management plan as approved by the Secretary.

## BLASTING

### Blasting Criteria

8. The Applicant must ensure that blasting on the site does not cause exceedances of the criteria in Table 5.

Table 5: Blasting criteria

Location	Airblast overpressure (dB(Lin Peak))	Ground vibration (mm/s)	Allowable exceedance
Residence on privately owned land <sup>a</sup>	120	10	0%
	115	5	5% of the total number of blasts over a period of 12 months

However, these criteria do not apply if the Applicant has a written agreement with the relevant owner for higher levels, and has advised the Department in writing of the terms of this agreement.

### Blasting Hours

9. The Applicant must only carry out blasting on site between 7 am and 5 pm Monday to Saturday inclusive. No blasting is allowed on Sundays, public holidays, or at any other time without the written approval of the Secretary.

### Blasting Frequency

10. The Applicant must only carry out a maximum of:
- (a) 2 blasts a day; and
  - (b) 6 blasts a week, averaged over a calendar year, on the site.

This condition does not apply to blasts that generate ground vibration of 0.5 mm/s or less at any residence on privately-owned land, blast misfires or blasts required to ensure the safety of the mine, its workers or the general public.

#### Notes:

- For the purposes of this condition, a blast refers to a single blast event, which may involve a number of individual blasts fired in quick succession in a discrete area of the mine.
- For the avoidance of doubt, should an additional blast be required after a blast misfire, this additional blast and the blast misfire are counted as a single blast.
- In circumstances of recurring unfavourable weather conditions (following planned but not completed blast events), to avoid excess explosive sleep times and minimise any potential environmental impacts, the Applicant may seek agreement from the Secretary for additional blasts to be fired on a given day.

### Property Inspections

11. If the Applicant receives a written request from the owner of any privately-owned land within 3 kilometres of the approved open cut mining pit on site for a property inspection to establish the baseline condition of any buildings and/or structures on his/her land, or to have a previous property inspection updated, then within 2 months of receiving this request the Applicant must:
- (a) commission a suitably qualified, experienced and independent person, whose appointment is acceptable to both parties to:
    - establish the baseline condition of any buildings and other structures on the land, or update the previous property inspection report; and
    - identify measures that should be implemented to minimise the potential blasting impacts of the development on these buildings and/or structures; and
  - (b) give the landowner a copy of the new or updated property inspection report.

If there is a dispute over the selection of the suitably qualified, experienced and independent person, or the Applicant or the landowner disagrees with the findings of the property inspection report, either party may refer the matter to the Secretary for resolution.

### Property Investigations

12. If the owner of any privately-owned land claims that buildings and/or structures on his/her land have been damaged as a result of blasting on the site, then within 2 months of receiving this claim **the Applicant must:**
- (a) commission a suitably qualified, experienced and independent person, whose appointment is acceptable to both parties to investigate the claim; and
  - (b) give the landowner a copy of the property investigation report.

If this independent property investigation confirms the landowner's claim, and both parties agree with these findings, then **the Applicant must** repair the damage to the satisfaction of the Secretary.

If there is a dispute over the selection of the suitably qualified, experienced and independent person, or the Applicant or the landowner disagrees with the findings of the independent property investigation, then either party may refer the matter to the Secretary for resolution.

### Operating Conditions

13. During mining operations on site, **the Applicant must:**
- (a) implement best management practice to:
    - protect the safety of people and livestock in the surrounding area;
    - protect public or private infrastructure/property in the surrounding area from any damage; and
    - minimise the dust and fume emissions of any blasting;
  - (b) ensure that blasting on site does not damage historic heritage sites (see the figure in Appendix 6);
  - (c) minimise the frequency and duration of any road closures, and avoid road closures for blasting during peak traffic periods;
  - (d) operate a suitable system to enable the public and Council to get up-to-date information on the proposed blasting schedule on site and associated road closures;
  - (e) co-ordinate the timing of blasting on site with the timing of blasting at the Mt Arthur and Mount Pleasant mines to minimise any cumulative blasting impacts; and
  - (f) monitor and report on compliance with the relevant blasting conditions in this consent, to the satisfaction of the Secretary.
14. **The Applicant must** not undertake blasting on site within 500 metres of:
- (a) any public road;
  - (b) the Ulan – Muswellbrook railway line; or
  - (c) any land outside the site that is not owned by the Applicant,

unless:

- the Applicant has a written agreement with the applicable infrastructure authority or landowner to allow blasting to be carried out closer to the infrastructure or land, and the Applicant has advised the Department in writing of the terms of this agreement; or
- the Applicant has:
  - demonstrated to the satisfaction of the Secretary that the blasting can be carried out closer to the infrastructure or land without compromising the safety of people or livestock, or damaging buildings and/or structures; and
  - updated the Blast Management Plan to include the specific measures that would be implemented while blasting is being carried out within 500 metres of the road or land.

### Blast Management Plan

15. **The Applicant must** prepare a Blast Management Plan for the development to the satisfaction of the Secretary. This plan must:
- (a) be prepared in consultation with the EPA and Council, and submitted to the Secretary for approval within 6 months of the date of this consent;
  - (b) describe the measures that would be implemented to ensure compliance with the blasting criteria and operating conditions of this consent;
  - (c) propose and justify any alternative ground vibration limits for any public infrastructure in the vicinity of the site (if relevant); and
  - (d) include a monitoring program for evaluating and reporting on compliance with the blasting criteria and operating conditions.

**The Applicant must** implement the management plan as approved by the Secretary.

## AIR QUALITY

### Air Quality Criteria

16. Except for the air-affected land in Tables 1 and 2, **the Applicant must** ensure that all reasonable and feasible avoidance and mitigation measures are employed so that the particulate emissions generated by the development do not exceed the criteria listed in Tables 6, 7 and 8 at any residence on privately-owned land.

*Table 6: Long term criteria for particulate matter*

<i>Pollutant</i>	<i>Averaging period</i>	<i>Criterion</i>
Total suspended particulate (TSP) matter	Annual	<sup>a,d</sup> 90 µg/m <sup>3</sup>
Particulate matter < 10 µm (PM <sub>10</sub> )	Annual	<sup>a,d</sup> 25 µg/m <sup>3</sup>
Particulate matter < 2.5 µm (PM <sub>2.5</sub> )	Annual	<sup>a,d</sup> 8 µg/m <sup>3</sup>

*Table 7: Short term criterion for particulate matter*

<i>Pollutant</i>	<i>Averaging period</i>	<i>Criterion</i>
Particulate matter < 10 µm (PM <sub>10</sub> )	24 hour	<sup>b</sup> 50 µg/m <sup>3</sup>
Particulate matter < 2.5 µm (PM <sub>2.5</sub> )	24 hour	<sup>b</sup> 25 µg/m <sup>3</sup>

*Table 8: Long term criteria for deposited dust*

<i>Pollutant</i>	<i>Averaging period</i>	<i>Maximum increase in deposited dust level</i>	<i>Maximum total deposited dust level</i>
<sup>c</sup> Deposited dust	Annual	<sup>b</sup> 2 g/m <sup>2</sup> /month	<sup>a</sup> 4 g/m <sup>2</sup> /month

Notes for Tables 6 to 8:

- <sup>a</sup> Total impact (i.e. incremental increase in concentrations due to the development plus background concentrations due to other sources);
- <sup>b</sup> Incremental impact (i.e. incremental increase in concentrations due to the development on its own);
- <sup>c</sup> Deposited dust is to be assessed as insoluble solids as defined by Standards Australia, AS/NZS 3580.10.1:2003: Methods for Sampling and Analysis of Ambient Air - Determination of Particulate Matter - Deposited Matter - Gravimetric Method; and
- <sup>d</sup> Excludes extraordinary events such as bushfires, prescribed burning, dust storms, sea fog, fire incidents, illegal activities or any other activity agreed to by the Secretary.

17. (Deleted)

### Mine-owned Land

18. **The Applicant must** ensure that all reasonable and feasible avoidance and mitigation measures are employed so that particulate matter emissions generated by the development do not cause exceedances of the criteria in Tables 6, 7 and 8 at any occupied residence on mine-owned land (including land owned by another mining company) unless:
- the tenant or landowner (if the residence is owned by another mining company) has been notified of any health risks associated with such exceedances in accordance with the notification requirements in schedule 4 of this consent;
  - the tenant of any land owned by the Applicant can terminate their tenancy agreement without penalty at any time, subject to giving reasonable notice;
  - air quality monitoring is regularly undertaken to inform the tenant or landowner (if the residence is owned by another mining company) of the actual particulate emissions at the residence; and
  - data from this monitoring is presented to the tenant or landowner (if the residence is owned by another mining company) in an appropriate format for a medical practitioner to assist the tenant or landowner in making informed decisions on the health risks associated with occupying the residence, to the satisfaction of the Secretary.

### Operating Conditions

19. **The Applicant must:**
- implement all reasonable and feasible measures to minimise the:
    - odour, fume and dust emissions of the development; and
    - release of greenhouse gas emissions from the site;
  - minimise any visible air pollution generated by the development;

- (c) minimise the surface disturbance of the site;
- (d) operate a comprehensive air quality management system that uses a combination of predictive meteorological forecasting, predictive air dispersion modelling and real-time air quality monitoring data to guide the day-to-day planning of mining operations and implementation of both proactive and reactive air quality mitigation measures to ensure compliance with the relevant conditions of this consent;
- (e) minimise the air quality impacts of the development during adverse meteorological conditions and extraordinary events (see note d to Tables 6-8 above);
- (f) implement all reasonable and feasible measures to co-ordinate the air quality management at the Bengalla mine with the air quality management at the Mt Arthur and Mount Pleasant mines to minimise any cumulative air quality impacts; and
- (g) monitor and report on compliance with the relevant air quality conditions in this consent, to the satisfaction of the Secretary.

### Air Quality Management Plan

20. **The Applicant must** prepare a detailed Air Quality Management Plan for the development to the satisfaction of the Secretary. This plan must:
- (a) be prepared in consultation with the EPA and Council, and submitted to the Secretary for approval within 6 months of the date of this consent;
  - (b) describe the measures that would be implemented to ensure compliance with air quality criteria and operating conditions of this consent;
  - (c) describe the proposed air quality management system; and
  - (d) include an air quality monitoring program that:
    - uses a combination of real-time monitors and supplementary monitors to evaluate the performance of the development against the air quality criteria in this consent;
    - adequately supports the proactive and reactive air quality management system;
    - evaluates and reports on:
      - the effectiveness of the air quality management system; and
      - compliance with the air quality operating conditions; and
    - defines what constitutes an air quality incident, and includes a protocol for identifying and notifying the Department and relevant stakeholders of any air quality incidents.

**The Applicant must implement the management plan as approved by the Secretary.**

### METEOROLOGICAL MONITORING

21. During the life of the development, **the Applicant must** ensure that there is a suitable meteorological station operating in the vicinity of the site that:
- (a) complies with the requirements in the *Approved Methods for Sampling of Air Pollutants in New South Wales* guideline; and
  - (b) is capable of continuous real-time measurement of temperature lapse rate in accordance with the *NSW Industrial Noise Policy*, unless a suitable alternative is approved by the Secretary following consultation with the EPA.

### WATER

#### Water Supply

22. **The Applicant must** ensure that it has sufficient water during each stage of the development, and if necessary, adjust the scale of mining operations to match its available water supply.

*Note: Under the Water Act 1912 and/or the Water Management Act 2000, the Applicant is required to obtain necessary water licences for the development.*

#### Water Pollution

23. Unless an EPL or the EPA authorises otherwise, **the Applicant must** comply with section 120 of the POEO Act and the *Protection of the Environment Operations (Hunter River Salinity Trading Scheme) Regulation 2002*.

#### Water Management Performance Measures

24. **The Applicant must** ensure mining operations comply with the performance measures in Table 12 to the satisfaction of the Secretary.

*Table 12: Water management performance measures*

<b>Feature</b>	<b>Performance Measure</b>
Water management – General	<p>Minimise the use of clean water on site</p> <p>Minimise the need for make-up water from external supplies</p> <p>Minimise cumulative water impacts with the other mines in the region</p>
Construction and operation of infrastructure	<p>Design, install and maintain erosion and sediment controls generally in accordance with the series <i>Managing Urban Stormwater: Soils and Construction</i> including <i>Volume 1</i>, <i>Volume 2A – Installation of Services</i> and <i>Volume 2C – Unsealed Roads</i></p> <p>Design, install and maintain the infrastructure within 40 m of watercourses generally in accordance with the <i>Guidelines for Controlled Activities on Waterfront Land (DPI 2007)</i>, or its latest version</p> <p>Design, install and maintain any creek crossings generally in accordance with the <i>Policy and Guidelines for Fish Habitat Conservation and Management (DPI, 2013)</i> and <i>Why Do Fish Need To Cross The Road? Fish Passage Requirements for Waterway Crossings (NSW Fisheries 2003)</i>, or their latest versions</p>
Clean water diversion & storage infrastructure	<p>Design, install and maintain the clean water system to capture and convey the 100 year ARI flood</p> <p>Maximise as far as reasonable and feasible the diversion of clean water around disturbed areas on site</p> <p>Design, install and maintain any temporary clean water diversion infrastructure to minimise erosion potential at discharge locations</p>
Sediment dams	Design, install and maintain the dams generally in accordance with the series <i>Managing Urban Stormwater: Soils and Construction – Volume 1 and Volume 2E Mines and Quarries</i>
Mine water storages	<p>Design, install and maintain mine water storage infrastructure to ensure no unlicensed or uncontrolled discharge of mine water off-site</p> <p>On-site storages (including mine infrastructure dams and treatment dams) are suitably designed, installed and maintained to minimise permeability</p> <p>Adequate freeboard within the pit void at all times to minimise the risk of discharge to surface waters</p>
Overburden emplacements	<p>Design, install and maintain emplacements to encapsulate and prevent migration of tailings, acid forming and potentially acid forming materials, and saline and sodic material</p> <p>Design, install and maintain emplacements to prevent and/or manage long term saline groundwater seepage</p>
Chemical and hydrocarbon storage	Chemical and hydrocarbon products to be stored in bunded areas in accordance with the relevant Australian Standards
Aquatic and riparian ecosystem	<p>Maintain or improve baseline channel stability</p> <p>Develop site-specific in-stream water quality objectives in accordance with ANZECC 2000 and <i>Using the ANZECC Guidelines and Water Quality Objectives in NSW</i> procedures (DECC 2006), or its latest version</p>

### Water Management Plan

25. **The Applicant must** prepare a Water Management Plan for the development to the satisfaction of the Secretary. This plan must:
- (a) be prepared in consultation with the EPA and **Dol**, and submitted to the Secretary for approval within 6 months of the date of this consent; and
  - (b) in addition to the standard requirements for management plans (see condition 3 of schedule 5), include a:
    - (i) Site Water Balance that:
      - includes details of:
        - sources and security of water supply, including contingency planning for future reporting periods;
        - water use and management on site;
        - any off-site water transfers and discharges;

- reporting procedures, including the preparation of a site water balance for each calendar year; and
  - investigates and implements all reasonable and feasible measures to minimise water use on site;
- (ii) Surface Water Management Plan, that includes:
- detailed baseline data on surface water flows and quality in the watercourses that could potentially be affected by the development;
  - a detailed description of the water management system on site, including the:
    - clean water diversion systems;
    - erosion and sediment controls (mine water system); and
    - mine water management systems;
  - detailed plans, including design objectives and performance criteria, for:
    - design and management of final voids;
    - design and management for the emplacement of coal reject materials;
    - design and management of the temporary Dry Creek diversion infrastructure and discharge points;
    - reinstatement of drainage lines on the rehabilitated areas of the site; and
    - control of any potential water pollution from the rehabilitated areas of the site;
  - performance criteria for the following, including trigger levels for investigating any potentially adverse impacts associated with the development:
    - mine water management system;
    - surface water quality of the Hunter River;
  - a program to monitor and report on:
    - the effectiveness of the mine water management system; and
    - surface water flows and quality, stream and riparian vegetation health in the Hunter River potentially affected by the development;
  - a plan to respond to any exceedances of the performance criteria, and mitigate and/or offset any adverse surface water impacts of the development; and
- (iii) Groundwater Management Plan, which includes:
- detailed baseline data on groundwater levels, yield and quality in the region, and privately-owned groundwater bores, that could be affected by the development;
  - groundwater impact assessment criteria, including trigger levels for investigating any potentially adverse groundwater impacts;
  - a program to monitor and report on:
    - the seepage/leachate from water storages, emplacements, backfilled voids, and final voids;
    - the impacts of the development on:
      - groundwater inflows to the open cut pits;
      - regional aquifers;
      - groundwater supply of potentially affected landowners;
      - the Hunter River alluvial aquifer; and
      - any groundwater dependent ecosystems and riparian vegetation; and
      - base flows to the Hunter River;
  - a program to validate the groundwater model for the development, including an independent review of the model with every independent environmental audit, and compare the monitoring results with modelled predictions; and
  - a plan to respond to any exceedances of the groundwater assessment criteria.

The Applicant must implement the management plan as approved by the Secretary.

## BIODIVERSITY

### Biodiversity Offset Strategy

26. The Applicant must implement the biodiversity offset strategy as outlined in Table 13 and as generally described in the EIS (and shown in Appendix 7), to the satisfaction of the Secretary.

Table 13: Biodiversity Offset Strategy

Area	Offset Type	Minimum Size (hectares)
Kenalea Properties Offset Area	Existing vegetation to be managed and enhanced	4,096
Black Mountain Offset Area	Existing vegetation to be managed and enhanced	1,222
Merriwa River Offset Area	Existing vegetation to be managed and enhanced	897
<b>Total</b>		<b>6,215</b>

Note: To identify the areas referred to in Table 13 refer to the applicable figures in Appendix 7.

27. **The Applicant must** ensure that the offset strategy and/or rehabilitation strategy is focused on the establishment of:
- (a) significant and/or threatened plant communities, including:
    - Box Gum Woodland;
    - Central Hunter Ironbark – Spotted Gum – Grey Box Woodland;
    - Hunter Floodplain Red Gum Woodland;
  - (b) significant and/or threatened plant species, including the:
    - Tiger Orchid (*Cymbidium canaliculatum*);
    - Pine Donkey Orchid (*Diuris tricolor*);
    - Weeping Myall (*Acacia pendula*);
    - River Red Gum (*Eucalyptus camaldulensis*);
    - Austral Toadflax (*Thesium australe*); and
  - (c) habitat for significant and/or threatened fauna species, including the:
    - Brown Treecreeper;
    - Speckled Warbler;
    - Black-chinned Honeyeater;
    - Grey-crowned Babbler;
    - Squirrel Glider; and
    - Yellow-bellied Sheath-tail-bat.

### Long Term Security of Offsets

28. Within 2 years of the commencement of development under this consent, unless otherwise agreed with the Secretary, **the Applicant must** 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* (or an alternative mechanism agreed with OEH), to the satisfaction of the Secretary.

### Biodiversity Management Plan

29. **The Applicant must** prepare a Biodiversity Management Plan for the development to the satisfaction of the Secretary. This plan must:
- (a) be prepared in consultation with OEH, and submitted to the Secretary for approval within 6 months of the date of this consent;
  - (b) describe how the implementation of the offset strategy would be integrated with the overall rehabilitation of the site;
  - (c) establish baseline data for the existing habitat in the biodiversity offset areas and on the site;
  - (d) include:
    - (i) a description of the short, medium, and long term measures that would be implemented to:
      - implement the biodiversity offset strategy; and
      - manage the remnant vegetation and habitat on the site;
    - (ii) include detailed performance and completion criteria for evaluating the performance of the biodiversity offset strategy and triggering remedial action (if necessary);
    - (iii) a detailed description of the measures that would be implemented over the next 3 years, including the procedures to be implemented for:
      - enhancing the quality of existing vegetation and fauna habitat in the biodiversity offset areas;
      - restoring native vegetation and fauna habitat on the biodiversity offset areas and rehabilitation areas through focusing on assisted natural regeneration, targeted vegetation establishment and the introduction of naturally scarce fauna habitat features (where necessary);
      - collecting and propagating seed;
      - protecting vegetation outside the disturbance area;
      - managing salinity;
      - undertaking pre-clearance surveys;
      - managing impacts on fauna;
      - salvaging and reusing material from the site for habitat enhancement;
      - translocation of threatened flora from the site in accordance with the *Guidelines for the Translocation of Threatened Plants in Australia* (Vallee et al., 2004);
      - controlling weeds and feral pests;
      - managing grazing and agriculture;
      - controlling access; and
      - bushfire management;
    - (iv) include a seasonally-based program to monitor and report on the effectiveness of these measures, and progress against the detailed performance and completion criteria;



- (v) identify the potential risks to the successful implementation of the biodiversity offset strategy, and include a description of the contingency measures that would be implemented to mitigate these risks; and
- (vi) include details of who would be responsible for monitoring, reviewing, and implementing the plan.

The Applicant must implement the management plan as approved by the Secretary.

- 29A. During construction and maintenance of the Northern Diversion Levee, the Applicant must ensure that impacts to native vegetation (particularly EECs) are minimised as far as is reasonable and feasible, to the satisfaction of the Secretary.

### Conservation Bond

30. Within 6 months of the approval of the Biodiversity Management Plan, the Applicant must lodge a conservation bond with the Department to ensure that the biodiversity offset strategy is implemented in accordance with the performance and completion criteria of the Biodiversity Management Plan. The sum of the bond shall be determined by:
- (a) calculating the full cost of implementing the biodiversity offset strategy (other than land acquisition costs); and
  - (b) employing a suitably qualified quantity surveyor to verify the calculated costs, to the satisfaction of the Secretary.

The calculation of the conservation bond must be submitted to the Department for approval at least 1 month prior to lodgement of the final bond.

If the offset strategy is completed generally in accordance with the completion criteria in the Biodiversity Management Plan to the satisfaction of the Secretary, the Secretary will release the bond.

If the offset strategy is not completed generally in accordance with the completion criteria in the Biodiversity Management Plan, the Secretary will call in all, or part of, the conservation bond, and arrange for the satisfactory completion of the relevant works.

#### Notes:

- Alternative funding arrangements for long term management of the biodiversity offset strategy, such as provision of capital and management funding as agreed by OEH as part of a Biobanking Agreement or transfer to conservation reserve estate (or any other mechanism agreed with OEH) can be used to reduce the liability of the conservation bond.
- The sum of the bond may be reviewed in conjunction with any revision to the biodiversity offset strategy or the completion of major milestones within the approved plan.

## HERITAGE

### Aboriginal Heritage Management Plan

31. The Applicant must prepare an Aboriginal Heritage Management Plan for the development to the satisfaction of the Secretary. This plan must:
- (a) be prepared in consultation with OEH and the relevant Registered Aboriginal Parties, and submitted to the Secretary for approval within 6 months of the date of this consent;
  - (b) include a program/procedures for:
    - salvage, excavation and/or management of Aboriginal sites and potential archaeological deposits within the project disturbance area;
    - assessment and removal of scarred trees;
    - protection and monitoring of Aboriginal sites outside the project disturbance area;
    - managing the discovery of any new Aboriginal objects or skeletal remains during the development;
    - maintaining and managing access to archaeological sites by the Registered Aboriginal Parties; and
    - ongoing consultation and involvement of the Registered Aboriginal Parties in the conservation and management of Aboriginal cultural heritage on the site.

The Applicant must implement the management plan as approved by the Secretary.

### Historic Heritage Management Plan

32. The Applicant must prepare a Historic Heritage Management Plan for the development to the satisfaction of the Secretary. This plan must:
- (a) be prepared in consultation with the Heritage Branch and Council, and submitted to the Secretary for approval within 6 months of the date of this consent;
  - (b) include the following for the management of other historic heritage on site:

- conservation management plans for the Bengalla and Overdene homesteads;
- measures to minimise the visual impacts of the development on the Edinglassie and Rous Lench Homesteads; and
- a program/procedures for:
  - photographic and archival recording of potentially affected historic heritage items;
  - protection and monitoring of historic heritage items outside the project disturbance area;
  - monitoring, notifying and managing the effects of blasting on potentially affected historic heritage items; and
  - additional archival recording of any significant historic heritage items requiring demolition (including the Stockyard).

The Applicant must implement the management plan as approved by the Secretary.

## TRANSPORT

### Monitoring of Coal Transport

33. The Applicant must keep records of the:
- (a) amount of coal transported from the site in each calendar year;
  - (b) number of coal haulage train movements generated by the development (on a daily basis); and
  - (c) make these records available on its website at the end of each calendar year.

### Road Works

34. Prior to mining within 200 metres of the Bengalla Link Road, the Applicant must design and construct the realigned road and associated intersections as shown conceptually in Appendix 8 (unless otherwise agreed by Council) to the satisfaction of Council.

### Road Upgrades and Maintenance

35. The Applicant must contribute to the upgrade and maintenance of Thomas Mitchell Drive and its intersections with Denman Road and the New England Highway, proportionate to its impact (based on usage) on that infrastructure, in accordance with the Contributions Study prepared by GHD titled, “*Thomas Mitchell Drive Contributions Study, December 2013*” (or its latest version), unless otherwise agreed by the Secretary.

The road or intersection upgrades referred to in this condition may be satisfied through funding the required upgrades, subject to the agreement of the applicable roads authority, and subject to providing the funding such that the upgrades can be completed within the stated timeframe.

For Thomas Mitchell Drive, the contributions must be paid to Council in accordance with the upgrade and maintenance schedule established in accordance with the Contributions Study during the life of the development, unless otherwise agreed with Council.

If there is any dispute between the Applicant and Council or the RMS in relation to the funding or completion of the upgrades, then any of the parties may refer the matter to the Secretary for resolution.

*Note: In making a determination about the applicable maintenance contributions for Thomas Mitchell Drive, the Secretary shall take into account the contributions already paid and currently required to be paid towards the maintenance of the local road network surrounding Muswellbrook under this consent and the voluntary planning agreement summarised in Appendix 3.*

## VISUAL

### Visual Amenity and Lighting

36. The Applicant must:
- (a) implement all reasonable and feasible measures to mitigate the visual and off-site lighting impacts of the development;
  - (b) ensure no outdoor lights shine above the horizontal; and
  - (c) ensure that all external lighting associated with the development complies with relevant Australian Standards, including *Australian Standard AS4282 (INT) 1997 – Control of Obtrusive Effects of Outdoor Lighting*,
- to the satisfaction of the Secretary.

### Additional Visual Impact Mitigation

37. Within 6 months of the commencement of development under this consent, the Applicant must prepare a Visual Impact Mitigation Plan for the development to the satisfaction of the Secretary. This plan must:

- (a) identify the visual receptors within the western and southern view sectors that are likely to have significant direct views of the development;
- (b) include a site specific visual impact assessment of each of the visual receptors identified in Table 14, and any other receptors identified during the site verification process, to determine the severity of the visual impact;
- (c) describe the additional mitigation measures that could be implemented to reduce the visual impacts of the development on these visual receptors.

Table 14: Visual receptors

<b>Receiver</b>
106, 105, 109, 112S, 113, 114, 117, 118, 119, 120, 108, 152, 153, 154, 155, 156E, 156S, 168

Note: To interpret the land referred to in Table 14, see the applicable figure in Appendix 4.

- 38. Within 1 month of the approval of the Visual Impact Mitigation Plan, **the Applicant must** advise the owners of the visual receptors identified in the plan that they are entitled to additional mitigation measures to reduce the visibility of the development from these visual receptors.
- 39. Upon receiving a written request from the owner of a visual receptor identified in this plan, **the Applicant must** implement additional visual impact mitigation measures (such as landscaping treatments or vegetation screens) at the visual receptor in consultation with the landowner, and to the satisfaction of the Secretary.

These mitigation measures must be reasonable and feasible.

If within 3 months of receiving this request from the owner, the Applicant and the owner cannot agree on the measures to be implemented, or there is a dispute about the implementation of these measures, then either party may refer the matter to the Secretary for resolution.

Note: *The additional visual impact mitigation measures must be aimed at reducing the visibility of the development from the identified affected receptors and do not necessarily require measures to reduce visibility of the development from other locations on the affected properties. The additional visual impact mitigation measures do not necessarily have to include measures on the affected property itself (i.e. the additional measures may consist of measures outside the affected property boundary that provide an effective reduction in visual impacts).*

### **Tree Plantings Along Public Roads**

- 40. Within 2 years of the commencement of development under this consent, unless the Secretary agrees otherwise, **the Applicant must** plant tree screening along those sections of Denman Road, Roxburgh Road and Wybong Road that will have direct views of mining operations on site. This screening must be planted, in consultation with Council (and where relevant the RMS), and maintained to the satisfaction of the Secretary.
- 41. At least five years prior to construction of the Bengalla Link Road realignment, or as otherwise agreed by the Secretary, **the Applicant must** plant tree screening along the proposed Bengalla Link Road realignment. This screening must be planted in consultation with Council and maintained to the satisfaction of the Secretary.

Note: *The planting of tree screening in areas of constructed fill embankments associated with the road realignment shall be undertaken as soon as practicable after completion of the constructed landform*

### **BUSHFIRE MANAGEMENT**

- 42. **The Applicant must:**
  - (a) ensure that the development is suitably equipped to respond to any fires on site; and
  - (b) assist the Rural Fire Service and emergency services as much as possible if there is a fire in the surrounding area.

### **WASTE**

- 43. **The Applicant must:**
  - (a) implement all reasonable and feasible measures to minimise the waste (including coal reject) generated by the development;
  - (b) ensure that the waste generated by the development is appropriately stored, handled and disposed of;
  - (c) manage on-site sewage treatment and disposal in accordance with the requirements of Council; and
  - (d) monitor and report on effectiveness of the waste minimisation and management measures each calendar year,

to the satisfaction of the Secretary.

## REHABILITATION

### Rehabilitation Objectives

44. **The Applicant must** rehabilitate the site to the satisfaction of the **DRG**. The rehabilitation must comply with the objectives in Table 15 and be consistent with the conceptual final landform plan shown in Appendix 9.

Table 15: Rehabilitation Objectives

Feature	Objective
Mine site (as a whole)	<ul style="list-style-type: none"> <li>• Safe, stable and non-polluting</li> <li>• Final landforms designed to incorporate natural micro-relief and natural drainage lines, which, where reasonable and feasible, further avoid straight run drainage drop structures, to integrate with surrounding landforms</li> </ul>
Overburden Emplacement Area – exposed to Muswellbrook and Denman	<ul style="list-style-type: none"> <li>• Rehabilitate the entire face with high density woody vegetation as soon as practicable following the completion of mining operations</li> </ul>
Final void	<ul style="list-style-type: none"> <li>• Designed as a long term groundwater sink and to maximise groundwater flows across back-filled pits to the final void</li> <li>• Minimise to the greatest extent practicable:               <ul style="list-style-type: none"> <li>○ the size and depth of the final void</li> <li>○ the drainage catchment of the final void</li> <li>○ any high wall instability risk</li> <li>○ risk of flood interaction (flows in and out of the void)</li> </ul> </li> <li>• Maximise to the greatest extent practicable the final void landform to be in keeping with the natural terrain features of the surrounding landscape</li> </ul>
Agricultural land	<ul style="list-style-type: none"> <li>• Restore or maintain land capability generally as described in the EIS and shown conceptually in Appendix 9</li> </ul>
Revegetation areas	<ul style="list-style-type: none"> <li>• Restore a minimum 10% treed coverage at the mine site</li> <li>• Higher density planting along the riparian zone of the Dry Creek reinstatement, and around the final void</li> </ul>
Dry Creek reinstatement	<ul style="list-style-type: none"> <li>• No net loss of creek length</li> <li>• Restore, maintain and/or improve hydrological and ecological function, quality and geomorphic stability</li> <li>• Incorporate erosion control measures based on vegetation and engineering revetments</li> <li>• Revegetate with suitable native species</li> </ul>
Surface infrastructure	<ul style="list-style-type: none"> <li>• To be decommissioned and removed, unless <b>DRG</b> agrees otherwise</li> </ul>
Community	<ul style="list-style-type: none"> <li>• Ensure public safety</li> <li>• Minimise the adverse socio-economic effects associated with mine closure</li> </ul>

### Progressive Rehabilitation

45. **The Applicant must** carry out rehabilitation progressively, that is, as soon as reasonably practicable following disturbance (particularly on the face of emplacements that are visible off-site). Interim stabilisation measures must be implemented where reasonable and feasible to control dust emissions in disturbed areas that are not active and which are not ready for final rehabilitation.

*Note: It is accepted that parts of the site that are progressively rehabilitated may be subject to further disturbance in future.*

### Rehabilitation Management Plan

46. **The Applicant must** prepare a Rehabilitation Management Plan for the development to the satisfaction of the **DRG**. This plan must:
- be submitted to the **DRG** for approval within 6 months of the date of this consent;
  - be prepared in consultation with the Department, **DoI**, **OEH**, Council and the **CCC**;
  - be prepared in accordance with relevant **DRG** guidelines;
  - describe how the rehabilitation of the site would be integrated with the implementation of the biodiversity offset strategy;
  - include detailed performance and completion criteria for evaluating the performance of the rehabilitation of the site, including over the long term following completion of mining operations, and triggering remedial action (if necessary);
  - describe the design specifications and measures that would be implemented to ensure compliance with the relevant conditions of this consent, and address all aspects of rehabilitation including mine closure, final landform including final voids, and final land use;

- (g) include interim rehabilitation where necessary to minimise the area exposed for dust generation;
- (h) include a research program that seeks to improve the understanding and application of rehabilitation techniques and methods in the Hunter Valley;
- (i) include a schedule for establishment of native vegetation corridors and habitat linkages across the site;
- (j) include a landscape management plan for the proposed Bengalla Link Road realignment;
- (k) include a plan for the reinstatement of Dry Creek including:
  - o detailed design specifications for the reinstatement of the creek;
  - o a schedule of works describing how the reinstatement work would be staged and integrated with mining operations and the final landform;
  - o a revegetation program;
  - o hydrological, ecological and geomorphic performance and completion criteria for the reinstated creek based on the assessment of baseline conditions; and
  - o a program to monitor, maintain and/or improve the hydrological and ecological function, quality and geomorphic stability of the reinstated creek;
- (l) include a program to monitor, independently audit and report on the effectiveness of the measures, and progress against the detailed performance and completion criteria; and
- (m) build to the maximum extent practicable on other management plans required under this consent.

The Applicant must implement the management plan as approved by the Secretary.

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## SCHEDULE 4 ADDITIONAL PROCEDURES

### NOTIFICATION OF LANDOWNERS/TENANTS

1. Within 1 month of the date of this consent, **the Applicant must:**
  - (a) notify in writing the owners of:
    - the land listed in Table 1 of schedule 3 that they have the right to require the Applicant to acquire their land at any stage during the development and/or request the Applicant to ask for additional noise and/or air quality mitigation measures (whichever is relevant) to be installed at their residence at any stage during the development (if they have not requested acquisition);
    - the land listed in Table 2 of schedule 3 that, if they no longer have an acquisition right for that land under the mining approval of the mine listed in Table 2, they have the right to require the Applicant to acquire their land at any stage during the development and/or request the Applicant to ask for additional noise and/or air quality mitigation measures (whichever is relevant) to be installed at their residence at any stage during the development (if they have not requested acquisition from any mine, or the installation of mitigation measures by another mine);
    - any residence on the land listed in Table 3 of schedule 3 that they have the right to request the Applicant to ask for additional noise and/or air quality mitigation measures (whichever is relevant) to be installed at their residence at any stage during the development (if they have not requested the installation of mitigation measures by another mine); and
    - any privately-owned land within 3 kilometres of the approved open cut mining pit/s that they are entitled to ask for an inspection to establish the baseline condition of any buildings or structures on their land, or to have a previous property inspection report updated;
  - (b) notify the tenants of any mine-owned land of their rights under this consent (see condition 18 of schedule 3); and
  - (c) send a copy of the NSW Health fact sheet entitled "Mine Dust and You" (as may be updated from time to time) to the owners and/or existing tenants of any land (including mine-owned land) where the predictions in the EIS identify that dust emissions generated by the development are likely to be greater than the relevant air quality criteria in schedule 3 at any time during the life of the development.
  
2. Prior to entering into any tenancy agreement for any land owned by the Applicant that is predicted to experience exceedances of the recommended dust and/or noise criteria, or for any of the land listed in condition 1 that is subsequently purchased by the Applicant, **the Applicant must:**
  - (a) advise the prospective tenants of the potential health and amenity impacts associated with living on the land, and give them a copy of the NSW Health fact sheet entitled "Mine Dust and You" (as may be updated from time to time); and
  - (b) advise the prospective tenants of the rights they would have under this consent.
  
3. As soon as practicable after obtaining monitoring results showing:
  - (a) an exceedance of any relevant criteria in schedule 3, **the Applicant must** notify the affected landowners in writing of the exceedance, and provide regular monitoring results to these landowners until the development is again complying with the relevant criteria; and
  - (b) an exceedance of any relevant air quality criteria in schedule 3, **the Applicant must** send a copy of the NSW Health fact sheet entitled "Mine Dust and You" (as may be updated from time to time) to the affected landowners and/or existing tenants of the land (including the tenants of any mine-owned land).

### INDEPENDENT REVIEW

4. If an owner of privately-owned land considers the development to be exceeding the relevant criteria in schedule 3, then he/she may ask the Secretary in writing for an independent review of the impacts of the development on his/her land.

If the Secretary is satisfied that an independent review is warranted, then within 2 months of the Secretary's decision **the Applicant must:**

- (a) commission a suitably qualified, experienced and independent person, whose appointment has been approved by the Secretary, to:
  - consult with the landowner to determine his/her concerns;
  - conduct monitoring to determine whether the development is complying with the relevant criteria in schedule 3;
  - if the development is not complying with these criteria then identify the measures that could be implemented to ensure compliance with the relevant criteria; and
  - in cases where there is an exceedance of any air quality criteria, and more than one mine is responsible for the exceedance, determine the relative share of each mine regarding the impact of the development;

- (b) give the Secretary and landowner a copy of the independent review with a plan which details the proposed measures to be implemented in response to the independent review; and
- (c) implement the necessary measures as directed by the Secretary.

## LAND ACQUISITION

5. Within 3 months of receiving a written request from a landowner with acquisition rights, **the Applicant must** make a binding written offer to the landowner based on:
- (a) the current market value of the landowner's interest in the land at the date of this written request, as if the land was unaffected by the development, having regard to the:
    - existing and permissible use of the land, in accordance with the applicable planning instruments at the date of the written request; and
    - presence of improvements on the land and/or any approved building or structure which has been physically commenced at the date of the landowner's written request, and is due to be completed subsequent to that date, but excluding any improvements that have resulted from the implementation of the additional noise and/or air quality mitigation measures in condition 2 of schedule 3;
  - (b) the reasonable costs associated with:
    - relocating within the Muswellbrook, Cessnock or Singleton local government area, or to any other local government area determined by the Secretary; and
    - obtaining legal advice and expert advice for determining the acquisition price of the land, and the terms upon which it is to be acquired; and
  - (c) reasonable compensation for any disturbance caused by the land acquisition process.

However, if at the end of this period, the Applicant and landowner cannot agree on the acquisition price of the land and/or the terms upon which the land is to be acquired, then either party may refer the matter to the Secretary for resolution.

Upon receiving such a request, the Secretary will request the President of the NSW Division of the Australian Property Institute to appoint a qualified independent valuer to:

- consider submissions from both parties;
- determine a fair and reasonable acquisition price for the land and/or the terms upon which the land is to be acquired, having regard to the matters referred to in paragraphs (a)-(c) above;
- prepare a detailed report setting out the reasons for any determination; and
- provide a copy of the report to both parties.

Within 14 days of receiving the independent valuer's report, **the Applicant must** make a binding written offer to the landowner to purchase the land at a price not less than the independent valuer's determination.

However, if either party disputes the independent valuer's determination, then within 14 days of receiving the independent valuer's report, they may refer the matter to the Secretary for review. Any request for a review must be accompanied by a detailed report setting out the reasons why the party disputes the independent valuer's determination. Following consultation with the independent valuer and both parties, the Secretary will determine a fair and reasonable acquisition price for the land, having regard to the matters referred to in paragraphs (a)-(c) above, the independent valuer's report, the detailed report of the party that disputes the independent valuer's determination and any other relevant submissions.

Within 14 days of this determination, **the Applicant must** make a binding written offer to the landowner to purchase the land at a price not less than the Secretary's determination.

If the landowner refuses to accept the Applicant's binding written offer under this condition within 6 months of the offer being made, then the Applicant's obligations to acquire the land shall cease, unless the Secretary determines otherwise.

6. **The Applicant must** pay all reasonable costs associated with the land acquisition process described in condition 5 above, including the costs associated with obtaining Council approval for any plan of subdivision (where permissible), and registration of this plan at the Office of the Registrar-General.
-

## SCHEDULE 5 ENVIRONMENTAL MANAGEMENT, REPORTING AND AUDITING

### ENVIRONMENTAL MANAGEMENT

#### Environmental Management Strategy

1. **The Applicant must** prepare an Environmental Management Strategy for the development to the satisfaction of the Secretary. This strategy must:
  - (a) be submitted to the Secretary for approval within 6 months of the date of this consent;
  - (b) provide the strategic framework for environmental management of the development;
  - (c) identify the statutory approvals that apply to the development;
  - (d) describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the development;
  - (e) describe the procedures that would be implemented to:
    - keep the local community and relevant agencies informed about the operation and environmental performance of the development;
    - receive, handle, respond to, and record complaints;
    - resolve any disputes that may arise during the course of the development;
    - respond to any non-compliance;
    - respond to emergencies; and
  - (f) include:
    - **references to** any strategies, plans and programs approved under the conditions of this consent; and
    - a clear plan depicting all the monitoring required to be carried out in relation to the development.

**The Applicant must** implement the approved strategy as approved from time to time by the Secretary.

#### Adaptive Management

2. **The Applicant must** assess and manage development-related risks to ensure that there are no exceedances of the criteria and/or performance measures in schedule 3. Any exceedance of these criteria and/or performance measures constitutes a breach of this consent and may be subject to penalty or offence provisions under the EP&A Act or EP&A Regulation.

Where any exceedance of these criteria and/or performance measures has occurred, the Applicant must, at the earliest opportunity:

- (a) take all reasonable and feasible steps to ensure that the exceedance ceases and does not recur;
- (b) consider all reasonable and feasible options for remediation (where relevant) and submit a report to the Department describing those options and any preferred remediation measures or other course of action; and
- (c) implement remediation measures as directed by the Secretary, to the satisfaction of the Secretary.

#### Management Plan Requirements

3. **The Applicant must** ensure that the management plans required under this consent are prepared in accordance with any relevant guidelines, and include:
  - (a) **a summary of** baseline data;
  - (b) a description of:
    - the relevant statutory requirements (including any relevant approval, licence or lease conditions);
    - any relevant limits or performance measures/criteria;
    - the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the development or any management measures;
  - (c) a description of the measures that would be implemented to comply with the relevant statutory requirements, limits, or performance measures/criteria;
  - (d) a program to monitor and report on the:
    - impacts and environmental performance of the development;
    - effectiveness of any management measures (see c above);
  - (e) a contingency plan to manage any unpredicted impacts and their consequences;
  - (f) a program to investigate and implement ways to improve the environmental performance of the development over time;
  - (g) a protocol for managing and reporting any:
    - incidents;
    - complaints;
    - non-compliances with statutory requirements; and
    - exceedances of the impact assessment criteria and/or performance criteria; and
  - (h) a protocol for periodic review of the plan.



*Note: The Secretary may waive some of these requirements if they are unnecessary or unwarranted for particular management plans.*

### **Annual Review**

4. By the end of March each year (or as otherwise agreed by the Secretary), **the Applicant must** review the environmental performance of the development for the previous calendar year to the satisfaction of the Secretary. This review must:
- describe the development (including any rehabilitation) that was carried out in the past calendar year, and the development that is proposed to be carried out over the current calendar year;
  - include a comprehensive review of the monitoring results and complaints records of the development over the past year, which includes a comparison of these results against the:
    - relevant statutory requirements, limits or performance measures/criteria;
    - monitoring results of previous years; and
    - relevant predictions in the EIS;
  - identify any non-compliance over the last year, and describe what actions were (or are being) taken to ensure compliance;
  - identify any trends in the monitoring data over the life of the development;
  - identify any discrepancies between the predicted and actual impacts of the development, and analyse the potential cause of any significant discrepancies; and
  - describe what measures will be implemented over the next year to improve the environmental performance of the development.

### **Revision of Strategies, Plans and Programs**

5. Within 3 months of the submission of:
- an annual review under Condition 4 above;
  - an incident report under Condition 7 below;
  - an audit report under Condition 9 below; or
  - any modification to the conditions of this consent (unless the conditions require otherwise), **the Applicant must** review, and if necessary revise, the strategies, plans, and programs required under this consent to the satisfaction of the Secretary.

Where this review leads to revisions in any such document, then within 4 weeks of the review, unless the Secretary agrees otherwise, the revised document must be submitted to the Secretary for approval.

*Note: This is to ensure the strategies, plans and programs are updated on a regular basis, and incorporate any recommended measures to improve the environmental performance of the development.*

### **Community Consultative Committee**

6. **The Applicant must** operate a Community Consultative Committee (CCC) for the development to the satisfaction of the Secretary. This CCC must be operated in general accordance with the *Community Consultative Committee Guidelines: State Significant Projects (2016)*.

Notes:

- The CCC is an advisory committee. The Department and other relevant agencies are responsible for ensuring that the Applicant complies with this consent.*
- In accordance with the guideline, the Committee should be comprised of an independent chair and appropriate representation from the Applicant, affected councils and the local community.*

### **Incident Notification**

7. **The Applicant must** immediately notify the Department and any other relevant agencies immediately after it becomes aware of an incident. The notification must be in writing to [compliance@planning.nsw.gov.au](mailto:compliance@planning.nsw.gov.au) and identify the development (including the development application number and name) and set out the location and nature of the incident.
- 7A. Within seven days of becoming aware of a non-compliance, the Applicant must notify the Department of the non-compliance. The notification must be in writing to [compliance@planning.nsw.gov.au](mailto:compliance@planning.nsw.gov.au) and identify the development (including the development application number and name), set out the condition of this consent that the development is non-compliant with, the way in which it does not comply and the reasons for the non-compliance (if known) and what actions have been, or will be, undertaken to address the non-compliance.

*Note: A non-compliance which has been notified as an incident does not need to also be notified as a non-compliance.*

## Monitoring and Environmental Audits

- 7B. Any condition of this consent that requires the carrying out of monitoring or an environmental audit, whether directly or by way of a plan, strategy or program, is taken to be a condition requiring monitoring or an environmental audit under Division 9.4 of Part 9 of the EP&A Act. This includes conditions in respect of incident notification, reporting and response, non-compliance notification, compliance report and independent audit.

*Note: For the purposes of this condition, as set out in the EP&A Act, "monitoring" is monitoring of the development to provide data on compliance with the consent or on the environmental impact of the development, and an "environmental audit" is a periodic or particular documented evaluation of the development to provide information on compliance with the consent or the environmental management or impact of the development.*

## Regular Reporting

8. **The Applicant must** provide regular reporting on the environmental performance of the development on its website, in accordance with the reporting arrangements in any plans or programs approved under the conditions of this consent.

## INDEPENDENT ENVIRONMENTAL AUDIT

9. Within 1 year of the commencement of development under this consent, and every 3 years thereafter, unless the Secretary directs otherwise, **the Applicant must** commission and pay the full cost of an Independent Environmental Audit of the development. This audit must:
- be conducted by a suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Secretary;
  - include consultation with the relevant agencies and CCC;
  - assess the environmental performance of the development and assess whether it is complying with the requirements in this consent and any relevant EPL or Mining Lease (including any assessment, plan or program required under these approvals);
  - review the adequacy of strategies, plans or programs required under the abovementioned approvals; and
  - recommend appropriate measures or actions to improve the environmental performance of the development, and/or any assessment, plan or program required under the abovementioned approvals.

*Note: This audit team must be led by a suitably qualified auditor and include experts in any field specified by the Secretary.*

10. Within 6 weeks of the completion of this audit, unless the Secretary agrees otherwise, **the Applicant must** submit a copy of the audit report to the Secretary, together with its response to any recommendations contained in the audit report.

## ACCESS TO INFORMATION

11. From the commencement of development under this consent, **the Applicant must:**
- make copies of the following publicly available on its website:
    - the documents listed in condition 2(a) of Schedule 2;**
    - current statutory approvals for the development;
    - approved strategies, plans and programs required under the conditions of this consent;
    - a comprehensive summary of the monitoring results of the development, reported in accordance with the specifications in any conditions of this consent, or any approved plans and programs;
    - a complaints register, which is to be updated monthly;
    - minutes of CCC meetings;
    - the annual reviews of the development (for the last 5 years, if applicable);
    - any independent environmental audit of the development, and the Applicant's response to the recommendations in any audit;
    - any other matter required by the Secretary; and
  - keep this information up-to-date, to the satisfaction of the Secretary.
-

**APPENDIX 1  
SCHEDULE OF LAND**

<b>Lot</b>	<b>DP</b>	<b>Owner</b>
9	39345	Bengalla Mining Company Limited
1	189134	Bengalla Mining Company Limited
1	236668	Bengalla Mining Company Limited
3	236668	Bengalla Mining Company Limited
6	236668	Bengalla Mining Company Limited
7	236668	Bengalla Mining Company Limited
10	236668	Bengalla Mining Company Limited
112	551930	Bengalla Mining Company Limited
110	556761	Bengalla Mining Company Limited
111	556761	Bengalla Mining Company Limited
2	561117	Bengalla Mining Company Limited
19	563495	Bengalla Mining Company Limited
1	570070	Bengalla Mining Company Limited
2	570070	Bengalla Mining Company Limited
91	620639	Bengalla Mining Company Limited
71	626353	Bengalla Mining Company Limited
72	626353	Bengalla Mining Company Limited
20	706045	Bengalla Mining Company Limited
505	711996	Bengalla Mining Company Limited
1	718834	Bengalla Mining Company Limited
1	735667	Bengalla Mining Company Limited
2	735667	Bengalla Mining Company Limited
21	776758	Bengalla Mining Company Limited
22	776758	Bengalla Mining Company Limited
41	792447	Bengalla Mining Company Limited
43	792447	Bengalla Mining Company Limited
5	801249	Bengalla Mining Company Limited
8	821183	Bengalla Mining Company Limited
20	1072668	Bengalla Mining Company Limited
22	1072668	Bengalla Mining Company Limited
24	1072668	Bengalla Mining Company Limited
25	1072668	Bengalla Mining Company Limited
26	1072668	Bengalla Mining Company Limited
27	1072668	Bengalla Mining Company Limited
100	1148907	Bengalla Mining Company Limited
101	1148907	Bengalla Mining Company Limited
102	1148907	Bengalla Mining Company Limited
103	1148907	Bengalla Mining Company Limited
104	1148907	Bengalla Mining Company Limited
105	1148907	Bengalla Mining Company Limited
106	1148907	Bengalla Mining Company Limited
274	750926	Coal & Allied Operations Pty Limited
4	801249	Coal & Allied Operations Pty Limited
6	821183	Coal & Allied Operations Pty Limited
2*	801249	Coal & Allied Operations Pty Limited
10	1184928	Coal & Allied Operations Pty Limited
11	1184928	Bengalla Mining Company Limited
3	998477	Coal & Allied Operations Pty Limited
Sections of various Council roads		
Sections of Crown roads		
Sections of Muswellbrook-Ulan Rail Line		

\*Associated with Mod 1 and SEE (Mod 1), August 2015

**APPENDIX 2  
DEVELOPMENT LAYOUT**



BENGALLA MINE

Conceptual Development Layout



HansenBailey  
ENVIRONMENTAL CONSULTANTS

**APPENDIX 3  
TERMS OF THE VOLUNTARY PLANNING AGREEMENT**

<b>Funding Component</b>	<b>Applicant Contribution</b>
Bengalla Coal Community Fund	\$400,000 per annum
Road maintenance requirements within the Muswellbrook LGA	\$125,000 per annum
Council Environmental Officer position	\$20,000 per annum
A commitment from the Applicant to seek to engage four apprentices per annum for the life of the mine sourced from residents within the local area.	N/A
General	\$0.065 cents per tonne of product coal produced in excess of 8.5 Mt of product coal from the mine in any one calendar year.



**APPENDIX 5  
NOISE COMPLIANCE ASSESSMENT**

**Applicable Meteorological Conditions**

1. The noise criteria in Table 4 of schedule 3 are to apply under all meteorological conditions except the following:
  - (a) wind speeds greater than 3 m/s measured at 10 m above ground level; or
  - (b) temperature inversion conditions between 1.5°C and 3°C/100 m and wind speeds greater than 2 m/s at 10 m above ground level; or
  - (c) temperature inversion conditions greater than 3°C/100 m.

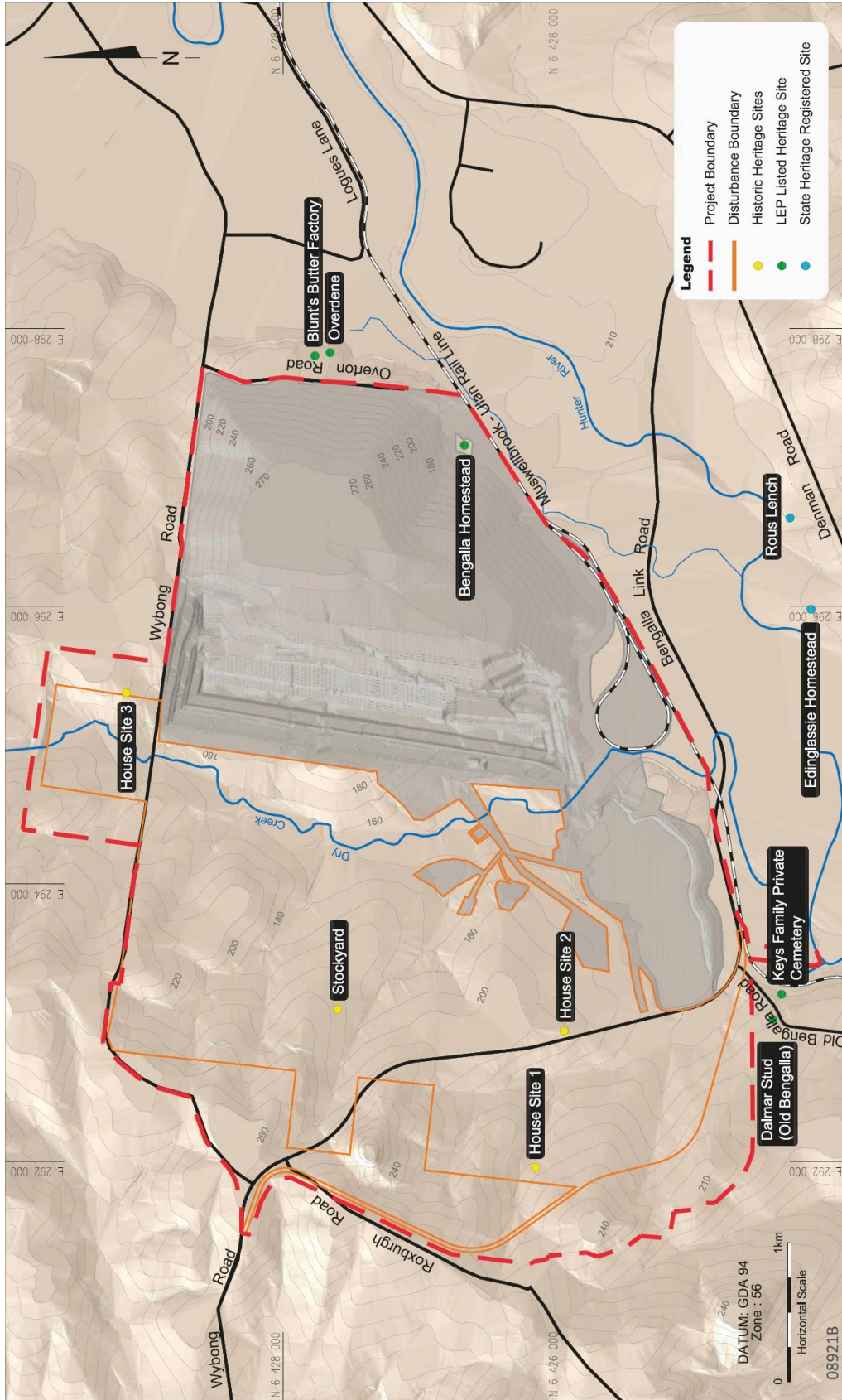
**Determination of Meteorological Conditions**

2. Except for wind speed at microphone height, the data to be used for determining meteorological conditions shall be that recorded by the meteorological station located on the site.

**Compliance Monitoring**

3. Attended monitoring is to be used to evaluate compliance with the relevant conditions of this consent.
4. This monitoring must be carried out at least once a month (but at least two weeks apart) unless the Secretary directs otherwise.
5. Unless otherwise agreed with the Secretary, this monitoring is to be carried out in accordance with the relevant requirements for reviewing performance set out in the *NSW Industrial Noise Policy* (as amended from time to time), in particular the requirements relating to:
  - (a) monitoring locations for the collection of representative noise data;
  - (b) meteorological conditions during which collection of noise data is not appropriate;
  - (c) equipment used to collect noise data, and conformity with Australian Standards relevant to such equipment; and
  - (d) modifications to noise data collected, including for the exclusion of extraneous noise and/or penalties for modifying factors apart from adjustments for duration.

**APPENDIX 6  
HISTORIC HERITAGE SITES**



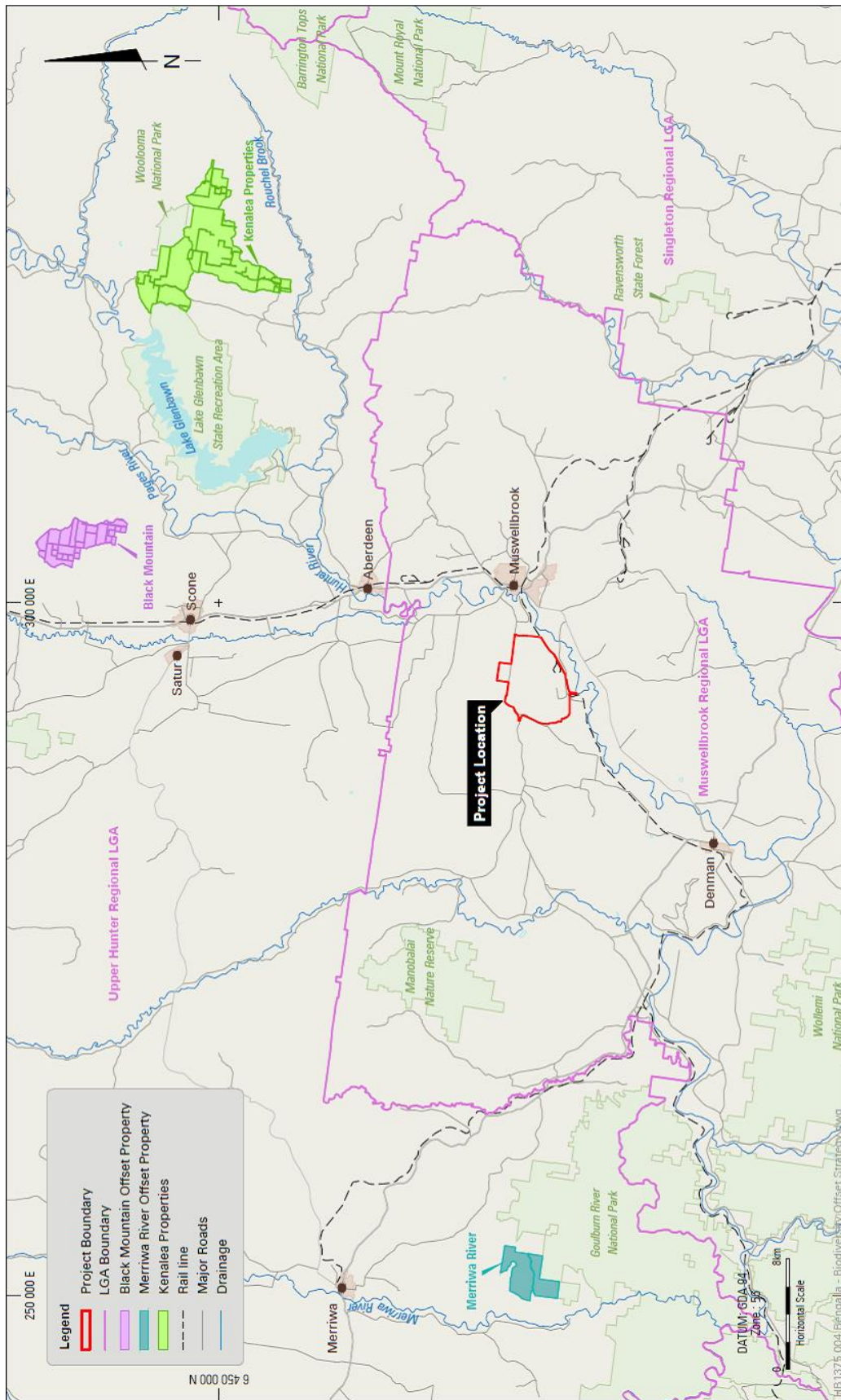
BENGALLA MINE

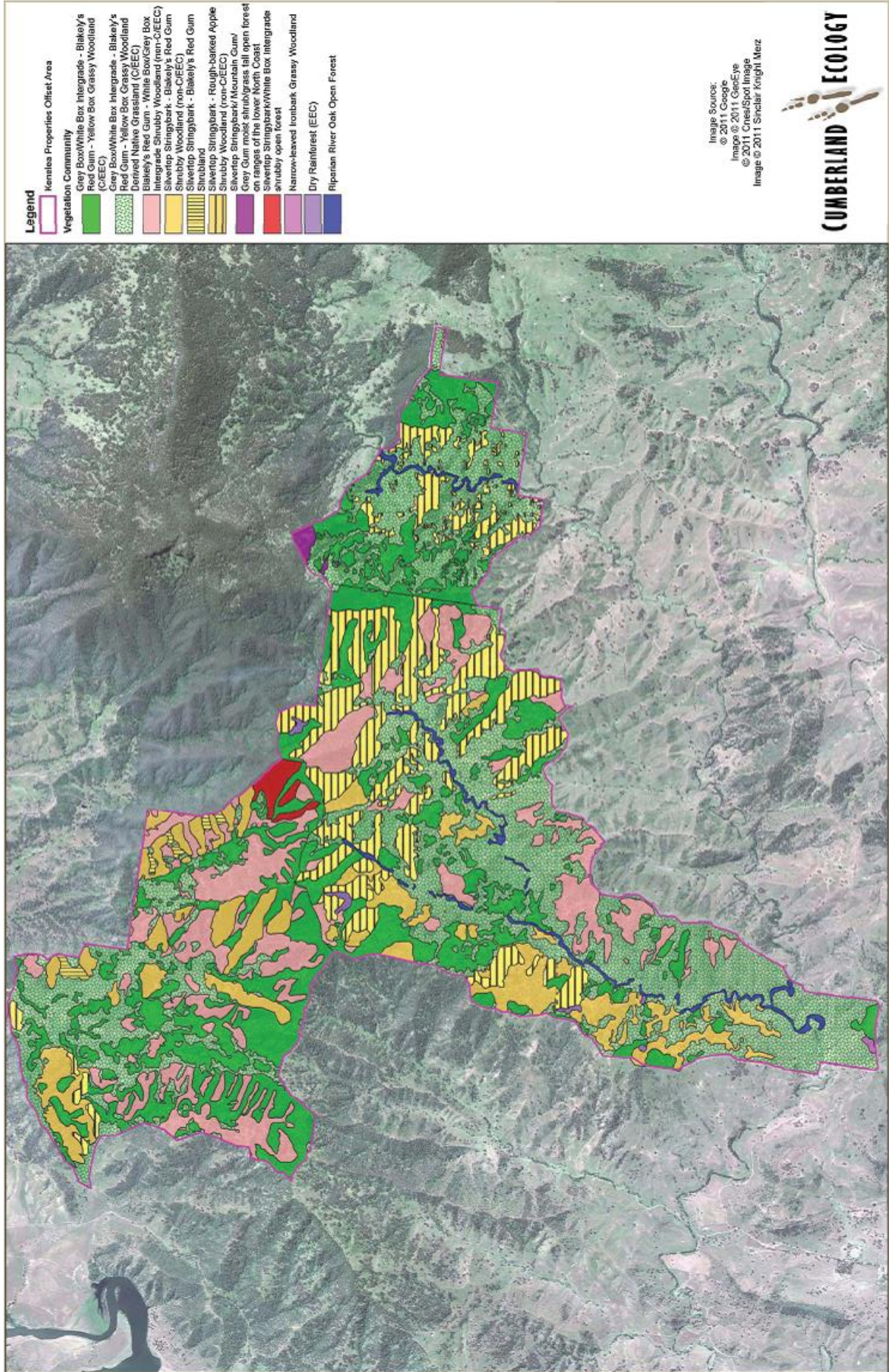
Historic Heritage Sites

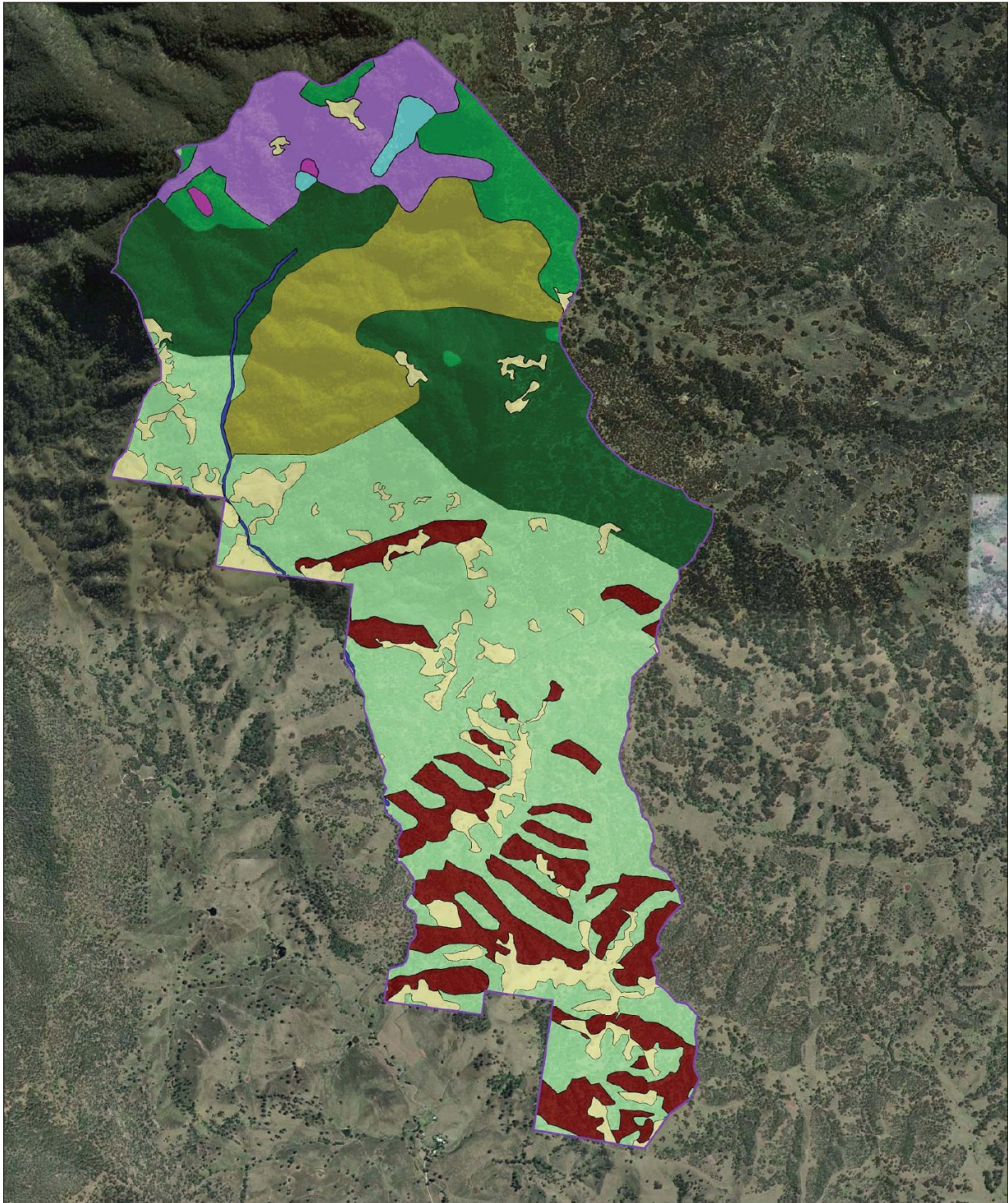




## APPENDIX 7 BIODIVERSITY OFFSET AREAS







**Legend**

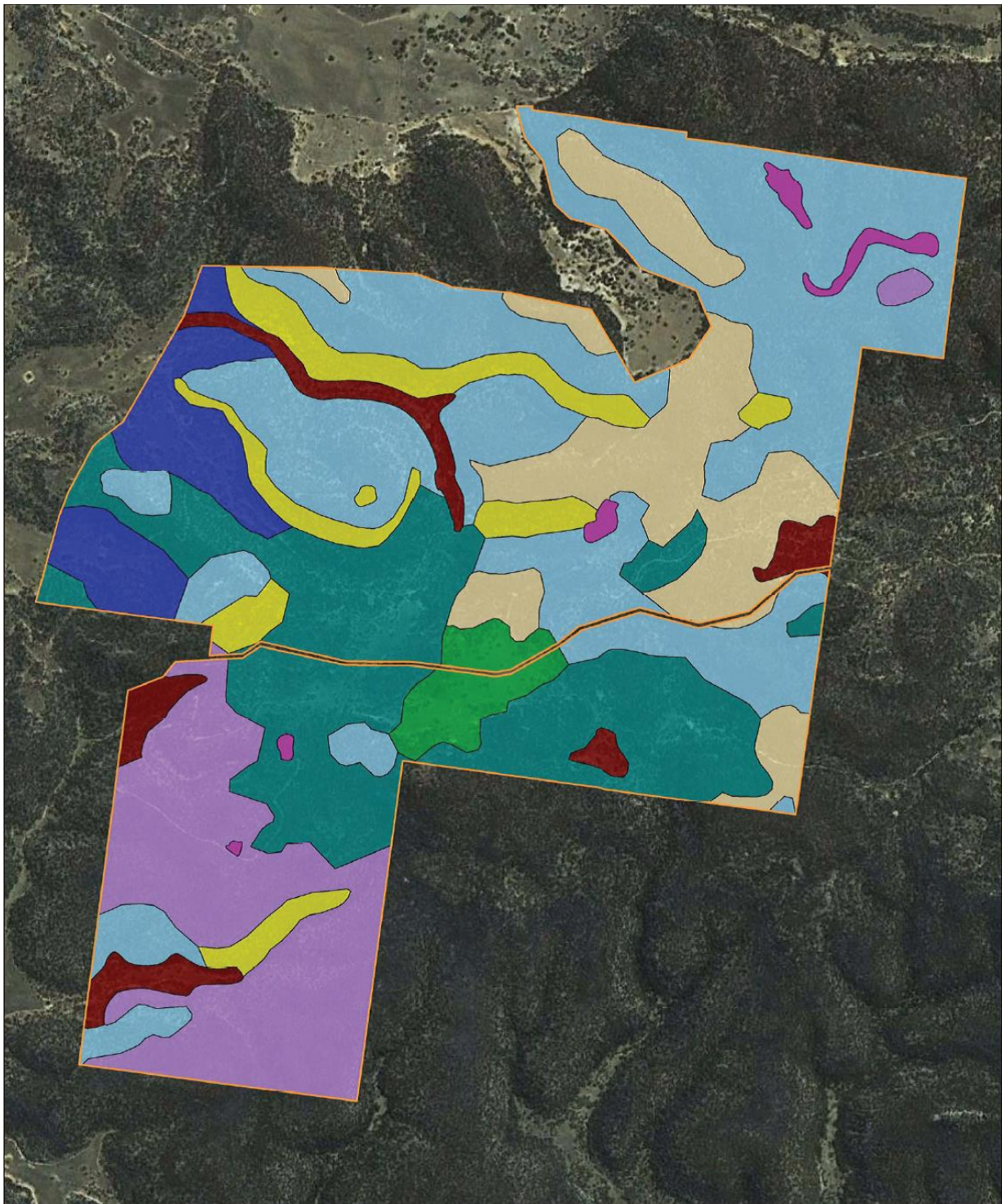
Black Mountain Offset Area

**Vegetation Community**

 Upland Grassy Box Woodland	 Ribbon Gum - Pittosporum Forest
 Midland Grassy Box Woodland	 Ironbark Grassy Woodland
 Lowland Grassy Box Woodland	 Socketwood Vine Thicket
 Midland Shrubby Box Woodland	 River Oak Forest
 Sydney Blue Gum Forest	 Derived grass and herblands

Image Source:  
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 Image © 2013 Sinclair Knight Merz  
 Image © 2013 DigitalGlobe





**Legend**

Merriwa River Offset Area

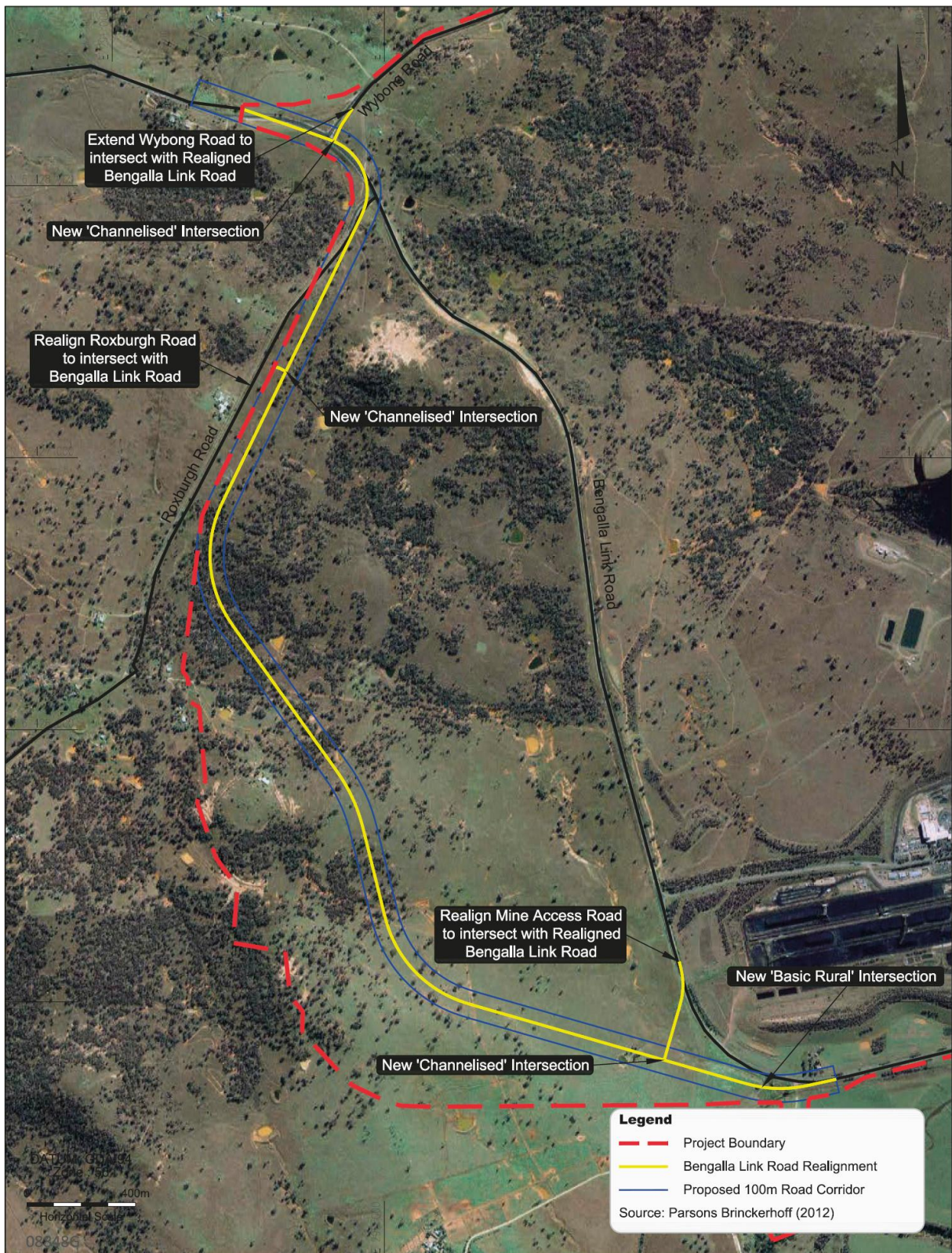
**Vegetation Community**

- |  |   |
|--|---|
| Box Woodland on Basalt (C/EEC)                             | Low Open Forest - Scrub Complex on Sandstone Plateaus |
| Ironbark Open Forest on Sandstone (Narrow-leaved Ironbark) | Sheltered Open Forest Complex in Sandstone Gullies    |
| Ironbark Open Forest on Sandstone (Red Ironbark)           | Narrow-leaved Ironbark Alluvial Open Forest           |
| Callitris Open Forest                                      | Redgum Alluvial Open Forest                           |
| Mallee Open Forest on Narrabeen Conglomerate               |   |

Image Source:  
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**APPENDIX 8  
CONCEPTUAL REALIGNMENT OF BENGALLA LINK ROAD**



## APPENDIX 9 CONCEPTUAL FINAL LANDFORM

