

# Project Approval

## Section 75J of the *Environmental Planning & Assessment Act 1979*

As delegate of the Minister for Planning, the Planning Assessment Commission of NSW approves the project application referred to in Schedule 1, subject to the conditions in Schedules 2 to 6.

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 project.

Red type represents the July 2015 modification (MOD 1)

Blue type represents the February 2016 modification (MOD 2)

Grey type represents the June 2019 Modification (MOD 3)

Green type represents the December 2023 Modification (MOD 4)

Member of the Commission                  Member of the Commission                  Member of the Commission

Sydney

2015

### SCHEDULE 1

**Application Number:**

08\_0135

**Proponent:**

Moolarben Coal Mines Pty Ltd

**Approval Authority:**

Minister for Planning

**Land:**

See Appendix 1

**Project:**

Moolarben Coal Project Stage 2

***The Department has prepared a consolidated version of the consent which is intended to include all modifications to the original determination instrument.***

***The consolidated version of the consent has been prepared by the Department with all due care. This consolidated version is intended to aid the consent holder by combining all consents relating to the original determination instrument but it does not relieve a consent holder of its obligation to be aware of and fully comply with all consent obligations as they are set out in the legal instruments, including the original determination instrument and all subsequent modification instruments.***

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## DEFINITIONS

Annual review	The review required by condition 4 of Schedule 6
ARI	Average Recurrence Interval
ARTC	Australian Rail Track Corporation Ltd
BCA	Building Code of Australia
BC Act	<i>Biodiversity Conservation Act 2016</i>
BCS	Biodiversity Conservation and Science Directorate
BCT	Biodiversity Conservation Trust
BC Act	<i>Biodiversity Conservation Act 2016</i>
Biodiversity offset strategy	The conservation and enhancement strategy described in EA, and depicted conceptually in the figure in Appendix 7
Built features	Includes any building or work erected or constructed on land, and includes dwellings and infrastructure such as any formed road, street, path, walk, or driveway; any pipeline, water, sewer, telephone, gas or other service main
Blast misfire	The failure of one or more holes in a blast pattern to initiate
CCC	Community Consultative Committee
Cliff	A continuous rock face, including overhangs, having a minimum length of 20 metres, a minimum height of 10 metres and a minimum slope of 2 in 1 (>63.4°)
Conditions of this approval	Conditions contained in Schedules 2 to 6 inclusive
Council	Mid-Western Regional Council
CLD	Crown Lands Division within the Department of Trade and Investment, Regional Infrastructure and Services
CPI	Australian Bureau of Statistics Consumer Price Index
CCI	Construction Cost Index
Day	The period from 7am to 6pm on Monday to Saturday, and 8am to 6pm on Sundays and Public Holidays
DEC	NSW Department of Education and Communities
Department	Department of Planning & Environment
DPE Water	<i>Water Group within the Department</i>
DSC	Dams Safety Committee
EA	<b>The Moolarben Coal Project Stage 2 Environmental Assessment Report (6 volumes), dated March 2009 as modified by the:</b> <ul style="list-style-type: none"><li>• preferred project report, dated January 2012;</li><li>• response to submissions, dated June 2012;</li><li>• residual matters report, dated August 2012;</li><li>• Groundwater Accounting and Water Sharing Plan prepared by RPS Aquaterra Pty Ltd, dated 13 June 2012;</li><li>• Surface water information prepared by Worley Parsons Services Pty Ltd, dated 28 September 2012, 15 October 2012 and 9 November 2012;</li><li>• Biodiversity Offset Strategy prepared by Cumberland Ecology Pty Ltd, dated December 2012;</li><li>• Water Licensing Report – Wollar Creek Water Source prepared by Dundon Consulting Pty Ltd, dated 11 June 2013;</li><li>• OC4 South-West Modification Environmental Assessment, dated April 2015 and associated response to submissions, dated June 2015 (MOD 1);</li><li>• UG1 Optimisation Modification Environmental Assessment, dated June 2015 and associated response to submissions, dated September 2015 (MOD 2); and</li><li>• Environmental Assessment – Open Cut Optimisation Modification, Volumes 1 and 2, dated November 2017 and associated response to submissions dated May 2018; and supplementary information dated 24 August 2018 (MOD 3).</li><li>• Moolarben Coal Complex UG2 Modification Report dated December 2021, associated Submissions Report dated November 2022 and additional information dated 24 October 2023, 27 November 2023, 8 December 2023 and 21 December 2023.</li></ul>
EEC	Endangered ecological community, as defined under the BC Act
Environmental consequences	The environmental consequences of subsidence impacts, including: damage to built features; loss of surface flows to the subsurface; loss of standing pools; adverse water quality impacts; cliff falls; rock falls; damage to Aboriginal heritage sites; impacts on aquatic ecology; and ponding.
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>
EPBC Act	<i>Commonwealth Environment Protection and Biodiversity Conservation Act 1999</i>
EPL	Environment Protection Licence issued under the POEO Act
Evening	The period from 6pm to 10pm
Feasible	Feasible relates to engineering considerations and what is practical to build or implement
Heritage item	An item as defined under the <i>Heritage Act 1977</i> and/or an Aboriginal Object or Aboriginal Place as defined under the <i>National Parks and Wildlife Act 1974</i>
Heritage NSW Incident	<b>Heritage NSW within the Department of Premier and Cabinet</b> A set of circumstances that: <ul style="list-style-type: none"> <li>• causes or threatens to cause material harm to the environment; and/or</li> <li>• breaches or exceeds the limits or performance measures/criteria in this approval</li> </ul>
Land	As defined in the EP&A Act, except for where the term is used in the noise and air quality conditions in Schedules 3 and 5 of this approval 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 approval
Material harm to the environment	Actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial
Mine water	Water that accumulates within, or drains from, active mining and infrastructure areas (synonymous with 'dirty water')
Mining operations	Includes the removal and emplacement of overburden and extraction, processing, handling, storage and transport of coal carried out on the site
Minister	Minister for Planning and Public Spaces, or delegate
Minor	Not very large, important or serious
Minor cliff	A continuous rock face, including overhangs, which has a: <ul style="list-style-type: none"> <li>• minimum length of 20 metres and a height between 5 metres and 10 metres, or maximum length of 20 metres and a minimum height of 10 metres; and</li> <li>• minimum slope of 2 to 1 (&gt;63.4°).</li> </ul>
Mitigation	Activities associated with reducing the impacts of the project
Moolarben mine complex	The combined operations of the Moolarben Stage 1 and Stage 2 mines
<b>Moolarben Stage 1 mine</b>	<b>The approved mining operations and associated development within the area marked in blue dashed line on the figures in Appendix 2</b>
Moolarben Stage 1 mine surface infrastructure area	The approved surface infrastructure area, including the coal handling and preparation plant and the rail loop, as shown on the figures in Appendix 2
<b>Moolarben Stage 2 mine</b>	<b>The approved mining operations and associated development enclosed within the yellow dashed line on the figure in Appendix 2</b>
NP&W Act	<i>National Parks &amp; Wildlife Act 1974</i>
Negligible	Small and unimportant, such as to be not worth considering
Night	The period from 10pm to 7am on Monday to Saturday, and 10pm to 8am on Sundays and Public Holidays
<b>Non-compliance</b>	<b>An occurrence, set of circumstances or development that is a breach of this approval</b>
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)
Project	The development as described in the EA
Proponent	Moolarben Coal Mines Pty Limited, or any other person or persons who rely on this approval to carry out the development that is subject to this approval.
Public infrastructure	Linear and related 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
Reasonable costs	The costs agreed between the Department and the Proponent for obtaining independent experts to review the adequacy of any

Resources Regulator Rehabilitation	aspects of the extraction plan, or where such costs cannot be agreed, the costs determined by a dispute resolution process Resources Regulator within the Department of Regional NSW The restoration of land disturbed by the project to a good condition, to ensure it is safe, stable and non-polluting
RFS Rock face feature	Rural Fire Service A continuous rock face, including overhangs, which has a: <ul style="list-style-type: none"> <li>• minimum length of 20 metres and a height between 3 metres and 5 metres, or maximum length of 20 metres and a minimum height of 5 metres; and</li> <li>• minimum slope of 2 to 1 (&gt;63.4°).</li> </ul>
ROM Safe, serviceable & repairable	Run-of-mine Safe means no danger to users who are present, serviceable means available for its intended use, and repairable means damaged components can be repaired economically
Second workings	Extraction of coal from longwall panels, mini-wall panels or pillar extraction
Secretary	Secretary of the Department, or nominee
Site	The land referred to in Appendix 1
Statement of commitments	The Proponent's commitments in Appendix 3
Steep slope	An area of land having a gradient between 1 in 3 (33% or 18.3°) and 2 in 1 (200% or 63.4°)
Subsidence	The totality of subsidence effects, subsidence impacts and environmental consequences of subsidence impacts
Subsidence effects	Deformation of the ground mass due to mining, including all mining induced ground movements, such as vertical and horizontal displacement, tilt, strain and curvature
Subsidence impacts	Physical changes to the ground and its surface caused by subsidence effects, including tensile and shear cracking of the rock mass, localised buckling of strata caused by valley closure and upsidence and surface depressions or troughs
UCML Ulan Road Strategy	Ulan Coal Mines Limited The strategy prepared by the Arrb Group Limited, dated December 2011 as amended by the Secretary's letter dated 25 May 2013
UG2 Mining Area	The entire UG2 mining domain, including the UG2 Extension Area, as described in the EA (MOD 4) and depicted under 'Proposed UG Modification' in Figure 4.3
UG2 Extension Area	The UG2 longwall extension area within the UG2 Mining Area approved under Modification 4, as described in the EA (MOD 4) and depicted as the 'UG2 Longwall Extension Area' in Figure 4.3 of Appendix 4.

## SCHEDULE 2 ADMINISTRATIVE CONDITIONS

### OBLIGATION TO MINIMISE HARM TO THE ENVIRONMENT

1. In addition to meeting the specific performance criteria established under this approval, the Proponent **must** implement all reasonable and feasible measures to prevent and/or minimise any material harm to the environment that may result from the construction, operation, or rehabilitation of the project.

### TERMS OF APPROVAL

2. The Proponent **must** carry out the project:
  - (a) generally in accordance with the EA; and
  - (b) in accordance with the statement of commitments and the conditions of this approval.

*Notes:*

- *The general layout of the project is shown in Appendix 2; and*
- *The statement of commitments is shown in Appendix 3.*

3. If there is any inconsistency between the above documents, the most recent document shall prevail to the extent of the inconsistency. However, the conditions of this approval shall prevail to the extent of any inconsistency.
4. The Proponent **must** comply with any reasonable requirement/s of the Secretary arising from the Department's assessment of:
  - (c) any strategies, plans, programs, reviews, audits, reports or correspondence that are submitted in accordance with this approval;
  - (d) any reports, reviews or audits commissioned by the Department regarding compliance with this approval; and
  - (e) the implementation of any actions or measures contained in these documents.

### LAPSING OF APPROVAL

5. If the project has not been physically commenced within 5 years of the date of this approval, then this project approval shall lapse.

### LIMITS ON APPROVAL

#### Mining Operations

6. The Proponent may carry out mining operations on site until 31 December 2038.

*Note: Under this approval, the Applicant is required to rehabilitate the site and perform additional undertakings to the satisfaction of both the Secretary and Resources Regulator. Consequently, this approval 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

7. The Proponent **must** not extract more than:
  - (a) 16 million tonnes of ROM coal from the open cut mining operations of the project in any calendar year; and
  - (b) 8 million tonnes of ROM coal from the underground mining operations of the project in any calendar year.

*Notes:*

- *The above limits should be read in conjunction with the extraction, processing and coal transport limits in the Moolarben Coal Stage 1 approval (MP 05\_0117).*
- *The total ROM coal extracted from the Moolarben mine complex (open-cut and underground mining) is no more than 24 million tonnes in any calendar year.*
- *No more than 16 million tonnes of coal from the Moolarben mine complex can be processed (washed) in any calendar year.*
- *No more than 22 million tonnes can be transported from the Moolarben mine complex in any calendar year.*

#### Coal Processing and Transport

8. The Proponent **must** ensure that all coal extracted from the project is sent to the Moolarben Stage 1 mine surface infrastructure area for processing and/or transport to market.

## STRUCTURAL ADEQUACY

9. The Proponent **must** ensure that all new buildings and structures, and any alterations or additions to existing buildings and structures, are constructed in accordance with the relevant requirements of the BCA.

*Notes:*

- Under Part 4A of the EP&A Act, the Proponent is required to obtain construction and occupation certificates (where applicable) for the proposed building works; and
- Part 8 of the EP&A Regulation sets out the requirements for the certification of the project.

## DEMOLITION

10. The Proponent **must** ensure that all demolition work on site is carried out in accordance with AS 2601-2001: *The Demolition of Structures*, or its latest version.

## PROTECTION OF PUBLIC INFRASTRUCTURE

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

*Note: This condition does not apply to any damage to public infrastructure subject to compensation payable under the Mine Subsidence Compensation Act 1961, or to damage to roads caused as a result of general road usage.*

## OPERATION OF PLANT AND EQUIPMENT

12. The Proponent **must** ensure that all plant and equipment used on site, or in connection with the project, is:
- maintained in a proper and efficient condition; and
  - operated in a proper and efficient manner.

## STAGED SUBMISSION OF STRATEGIES, PLANS OR PROGRAMS

13. With the approval of the Secretary, the Proponent may:
- submit any strategy, plan or program required by this approval on a progressive basis; and
  - combine any strategy, plan, program, review, audit or report required by this approval with any similar strategy, plan, program, review, audit or report required under Project Approval 05\_0117 for the Moolarben Coal Project Stage 1.

*Notes:*

- While any strategy, plan or program may be submitted on a progressive basis, the Proponent will need to ensure that the existing operations on site are covered by suitable strategies, plans or programs at all times; and
- 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.

- 13A. With the agreement of the Secretary, the Proponent may prepare a revision of or a stage of a strategy, plan or program without undertaking consultation with all parties nominated under the applicable condition in this consent.

## COMMUNITY ENHANCEMENT

14. From the commencement of construction until mining operations under this approval cease, the Proponent **must** pay to Council a total of \$515 a year for each full-time equivalent employee/contractor at the Moolarben mine complex in excess of 320. This payment is for the provision of infrastructure and services generated by the project. It is also to be indexed in accordance with the CPI for the previous quarter.

## SCHEDULE 3 ENVIRONMENTAL CONDITIONS - GENERAL

### NOISE

#### Acquisition Upon Request

- (deleted)

*Note: The Proponent has acquired all properties provided acquisition rights under this approval.*

#### Mitigation Upon Request

- (deleted)

*Note: The Proponent has acquired all properties provided mitigation upon request rights under this approval.*

#### Noise Criteria

- The Proponent **must** ensure that the noise generated by the Moolarben mine complex does not exceed the criteria in Table 3 at any residence on privately-owned land or the other specified locations.

*Table 3: Noise criteria dB(A)*

Receiver ID	Day	Evening	Night	
	$L_{Aeq}(15min)$	$L_{Aeq}(15min)$	$L_{Aeq}(15min)$	$L_{A1}(1min)$
63	39	39	39	45
70	37	37	37	45
75	36	36	36	45
All other privately-owned residences	35	35	35	45
Ulan Primary School		35 (internal) when in use		-
Ulan Anglican Church		35 (internal) when in use		-
Goulburn River National Park Munghorn Gap Nature Reserve		50 when in use		-

*Note: To interpret the land referred to in Table 3, see the applicable figures in Appendix 5.*

Noise generated by the Moolarben mine complex is to be measured in accordance with the relevant requirements of the *NSW Noise Policy for Industry*. Appendix 6 sets out the meteorological conditions under which these criteria apply, and the requirements for evaluating compliance with these criteria.

However, these criteria do not apply if the Proponent has an agreement with the owner/s of the relevant residence or land to generate higher noise levels, and the Proponent has advised the Department in writing of the terms of this agreement.

#### Land Acquisition Criteria

- If the noise generated by the Moolarben mine complex exceeds the criteria in Table 4 then upon receiving a written request for acquisition from an owner of the land listed in Table 4, the Proponent **must** acquire the land in accordance with the procedures in conditions 5 and 6 of Schedule 5.

*Table 4: Acquisition criteria dB(A)  $L_{Aeq}(15min)$*

Receiver ID	Day ( $L_{Aeq}(15min)$ )	Evening ( $L_{Aeq}(15min)$ )	Night ( $L_{Aeq}(15min)$ )
63	43	43	42
All other privately-owned residences	40	40	40

*Note: To interpret the land referred to Table 4, see the applicable figures in Appendix 5.*

- If the noise generated by the Moolarben mine complex contributes to exceedances of the relevant criteria in Table 5 on more than 25% of any privately-owned land (and a dwelling could be built on that land under existing planning controls), the Proponent **must**, upon receiving a written request for acquisition from the landowner, acquire the land in accordance with the procedures in conditions 5 and 6 of Schedule 5.



Table 5: Land acquisition criteria

Day/Evening/Night $L_{Aeq}(\text{period})$	Receiver
55/50/45	All privately-owned land

Note: Noise generated by the project is to be measured in accordance with the relevant requirements of the NSW Noise Policy for Industry. Appendix 6 sets out the meteorological conditions under which these criteria apply, and the requirements for evaluating compliance with these criteria.

However, these noise criteria do not apply if the Proponent has an agreement with the owner/s of the relevant residence or land to generate higher noise levels, and the Proponent has advised the Department in writing of the terms of this agreement.

### Noise Mitigation Criteria

4. If the noise generated by the Moolarben mine complex exceeds the criteria in Table 6 at any privately owned residence, then upon receiving a written request the Proponent **must** implement additional noise mitigation measures (such as double-glazing, insulation and/or air conditioning) at the residence in consultation with the landowner. These measures must be reasonable and feasible, and directed towards reducing the noise impacts of the project on the residence.

If within 3 months of receiving this request from the owner, the Proponent 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 6: Mitigation criteria dB(A)  $L_{Aeq} (15min)$

Receiver ID	Day ( $L_{Aeq} (15min)$ )	Evening ( $L_{Aeq} (15min)$ )	Night ( $L_{Aeq} (15min)$ )
63	40	40	39
All privately owned residences other than those in Table 2	37	37	37

Note: To interpret the land referred to Table 6, see the applicable figures in Appendix 5.

### Operating Conditions

5. The Proponent **must**:
  - (a) implement best management practice to minimise the operational and road noise of the project;
  - (b) operate a comprehensive noise management system 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 approval;
  - (c) minimise the noise impacts of the project during meteorological conditions when the noise limits in this approval do not apply (see Appendix 6);
  - (d) only use locomotives and rolling stock that are approved to operate on the NSW rail network in accordance with the noise limits in ARTC's EPL;
  - (e) co-ordinate noise management at the Moolarben mine complex with the noise management at Ulan and Wilpinjong mines to minimise cumulative noise impacts; and
  - (f) carry out regular monitoring to determine whether the Moolarben mine complex is complying with the relevant conditions of this approval, to the satisfaction of the Secretary.

### Noise Management Plan

6. The Proponent **must** prepare a Noise Management Plan for the project to the satisfaction of the Secretary. This plan must:
  - (a) be prepared in consultation with the EPA, and submitted to and approved by the Secretary prior to the commencement of any development on site under this approval;
  - (b) describe the measures that would be implemented to ensure compliance with the noise criteria and operating conditions in this approval;
  - (c) describe the proposed noise management system in detail; and
  - (d) include a monitoring program that:
    - evaluates and reports on:
      - the effectiveness of the noise management system;
      - compliance against the noise criteria in this approval; 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 better indicator of compliance with the noise criteria in this approval and trigger for further attended monitoring); and
    - defines what constitutes a noise incident, and includes a protocol for identifying and notifying

the Department and relevant stakeholders of any noise incidents.

6A. The Proponent must implement the approved Noise Management Plan.

## BLASTING

### Blasting Criteria

7. The Proponent must ensure that blasting on the Moolarben mine complex does not cause exceedances of the criteria in Table 7.

Table 7: Blasting criteria

Location	Airblast overpressure (dB(Lin Peak))	Ground vibration (mm/s)	Allowable exceedance
Residence on privately owned land	120	10	0%
	115	5	5% of the total number of blasts over a period of 12 months
All public infrastructure	-	50 (or a limit determined by the structural design methodology in AS 2187.2-2006, or its latest version, or other alternative limit for public infrastructure, to the satisfaction of the Secretary)	0%

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

### Blasting Hours

8. The Proponent must only carry out blasting on site between 9 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

9. The Proponent may carry out a maximum of:
- 2 blasts a day; and
  - 9 blasts a week, averaged over a calendar year, at the Moolarben mine complex.

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 or its workers.

*Note: 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.*

### Property Inspections

12. If the Proponent receives a written request from the owner of any privately-owned land within 2 kilometres of any 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 Proponent must:
- 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 project on these buildings and/or structures; and
  - 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 Proponent 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

13. 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 Proponent **must**:
- commission a suitably qualified, experienced and independent person, whose appointment is acceptable to both parties to investigate the claim; and
  - 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 Proponent **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 Proponent 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

14. The Proponent **must**:
- 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;
  - ensure that blasting on the site does not damage Aboriginal rock shelter sites S2MC232 (AHIMS No. 36-3-1379) or S2MC233 (AHIMS No. 36-3-1380);
  - operate a suitable system to enable the public to get up-to-date information on the proposed blasting Schedule on site; and
  - co-ordinate the timing of blasting on site with the timing of blasting at the Ulan and Wilpinjong mines to minimise cumulative blasting impacts, to the satisfaction of the Secretary.
15. The Proponent **must** not undertake blasting on site within 500 metres of:
- any public road;
  - the Gulgong to Sandy Hollow Railway Line;
  - the Wollar-Wellington 330kV Transmission Line; or
  - any land outside the site not owned by the Proponent,
- unless the Proponent 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 the infrastructure and/or other buildings and 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 infrastructure or land; or
  - a written agreement with the relevant infrastructure owner or landowner to allow blasting to be carried out closer to the infrastructure or land, and the Proponent has advised the Department in writing of the terms of this agreement.

## Blast Management Plan

16. The Proponent **must** prepare a Blast Management Plan for the project to the satisfaction of the Secretary. This plan must:
- be prepared in consultation with the EPA, and submitted to and approved by the Secretary prior to conducting any blasting on site;
  - describe the measures that would be implemented to ensure compliance with the blast criteria and operating conditions of this approval;
  - propose and justify any alternative ground vibration limits for public infrastructure in the vicinity of the site (if relevant); and
  - include a monitoring program for evaluating and reporting on compliance with the blasting criteria and operating conditions of this approval.

16A. The Proponent **must** implement the approved Blast Management Plan.

## AIR QUALITY

### Odour

17. The Proponent **must** ensure that no offensive odours, as defined under the POEO Act, are emitted from the site.

## Air Quality Criteria

18. The Proponent **must** ensure that all reasonable and feasible avoidance and mitigation measures are employed so that particulate matter emissions generated by the Moolarben mine complex do not cause exceedances of the criteria listed in Tables 8, 9 and 10 at any residence on privately-owned land.

Table 8: Long term impact assessment criteria for particulate matter

Pollutant	Averaging period	<sup>d</sup> Criterion
Total suspended particulate (TSP) matter	Annual	<sup>a</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 9: Short term impact assessment criterion for particulate matter

Pollutant	Averaging period	<sup>d</sup> Criterion
Particulate matter < 10 µm (PM <sub>10</sub> )	24 hour	<sup>a</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 10: Long term impact assessment criteria for deposited dust

Pollutant	Averaging period	Maximum increase in deposited dust level	Maximum total deposited dust level
<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 to Tables 8-10:

<sup>a</sup> Total impact (i.e. incremental increase in concentrations due to the complex plus background concentrations due to all other sources);

<sup>b</sup> Incremental impact (i.e. incremental increase in concentrations due to the complex 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, fire incidents, illegal activities or any other activity agreed by the Secretary.

## Mine-owned Land

19. The Proponent **must** ensure that all reasonable and feasible avoidance and mitigation measures are employed so that particulate matter emissions generated by the Moolarben mine complex do not cause exceedances of the criteria listed in Tables 11, 12 and 13 at any occupied residence on mine-owned land (including land owned by another mining company) unless:
- the tenant and landowner (if the residence is owned by another mining company) have been notified of any health risks associated with such exceedances in accordance with the notification requirements under Schedule 5 of this approval;
  - the tenant of any land owned by the Proponent can terminate their tenancy agreement without penalty at any time, subject to giving reasonable notice;
  - air mitigation measures such as air filters, a first flush roof water drainage system and/or air conditioning) are installed at the residence, if requested by the tenant or landowner (if the residence is owned by another mining company);
  - 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 and landowner in an appropriate format for a medical practitioner to assist the tenant and landowner in making informed decisions on the health risks associated with occupying the property,
- to the satisfaction of the Secretary.

## Air Quality Acquisition Criteria

20. If particulate matter emissions generated by the Moolarben mine complex exceed the incremental criteria, or contribute an exceedance of the relevant cumulative criteria, in Tables 11, 12 and 13 at any residence on privately-owned land or on more than 25% of any privately-owned land (and a dwelling could be built on that land under existing planning controls), then upon receiving a written request for acquisition from the landowner, the Proponent **must** acquire the land in accordance with the procedures in conditions 5 and 6 of Schedule 5.

Table 11: Long term land acquisition criteria for particulate matter

Pollutant	Averaging period	<sup>d</sup> Criterion
Total suspended particulate (TSP) matter	Annual	<sup>a</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 12: Short term land acquisition criteria for particulate matter

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

Table 13: Long term land acquisition criteria for deposited dust

Pollutant	Averaging period	Maximum increase in deposited dust level	Maximum total deposited dust level
<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 to Tables 11-13:

<sup>a</sup> Cumulative impact (i.e. incremental increase in concentrations due to the complex plus background concentrations due to all other sources);

<sup>b</sup> Incremental impact (i.e. incremental increase in concentrations due to the complex on its own) with up to 5 allowable exceedances over the life of the development;

<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;

<sup>d</sup> Excludes extraordinary events such as bushfires, prescribed burning, dust storms, fire incidents, illegal activities or any other activity agreed by the Secretary.

## Operating Conditions

21. The Proponent **must**:
- implement best management practice to minimise the off-site odour, fume and particulate matter (including PM<sub>10</sub> and PM<sub>2.5</sub>) emissions of the project;
  - implement all reasonable and feasible measures to minimise the release of greenhouse gas emissions from the site;
  - minimise any visible off-site air pollution generated by the project;
  - minimise the surface disturbance of the site;
  - operate a comprehensive air quality management system that uses a combination of predictive meteorological forecasting and real-time air quality monitoring data to guide the day to day planning of mining operations and the implementation of both proactive and reactive air quality mitigation measures to ensure compliance with the relevant conditions of this approval;
  - minimise the air quality impacts of the project during adverse meteorological conditions and extraordinary events (see Note d above under Table 13); and
  - co-ordinate the air quality management at the Moolarben mine complex with the air quality management at the Ulan and Wilpinjong mines to minimise cumulative air quality impacts, to the satisfaction of the Secretary.

## Air Quality Management Plan

22. The Proponent **must** prepare an Air Quality Management Plan for the project to the satisfaction of the Secretary. This plan must:
- be prepared in consultation with the EPA, and submitted to and approved by the Secretary prior to the commencement of any development on site;
  - describe the measures that would be implemented to ensure compliance with the relevant air quality criteria and operating conditions of this approval;
  - describe the air quality management system;
  - include an air quality monitoring program that:
    - uses a combination of real-time and supplementary monitors to evaluate the performance of the project against the air quality criteria in this approval;
    - adequately supports the air quality management system;
    - evaluates and reports on the:
      - the effectiveness of the air quality management system;
      - compliance with the air quality criteria;

- 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.

**22A. The Proponent must implement the approved Air Quality Management Plan.**

*Note: With the introduction of the EPA's Climate Change Policy and Climate Change Action Plan, the Proponent will be required to prepare and implement a Greenhouse Gas Mitigation Plan and a Climate Change Adaptation Plan in accordance with requirements provided by the EPA.*

**ULAN PUBLIC SCHOOL**

23. The Proponent **must** consult with DEC and, if requested:
- a) implement agreed reasonable and feasible measures to ameliorate potential noise and/or dust impacts to Ulan Public School; or
  - b) on a reasonable basis relating to the adverse effect of noise and/or dust from the project, contribute to or meet reasonable costs toward relocating the school.

**METEOROLOGICAL MONITORING**

24. For the life of the project, the Proponent **must** ensure that there is a meteorological station 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 Noise Policy for Industry*, unless a suitable alternative is approved by the Secretary following consultation with the EPA.

**WATER**

**Water Supply**

25. The Proponent **must** ensure that:
- (a) it has sufficient water for all stages of the project, and if necessary, adjust the scale of operations on site to match its available water supply; and
  - (b) any water supply constraints do not compromise any aspect of the environmental performance of the mine.

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

**Compensatory Water Supply**

26. The Proponent **must** provide a compensatory water supply to any landowner of privately owned land whose water supply is adversely and directly impacted (other than an impact that is negligible) as a result of the project, in consultation with **DPE Water**, and to the satisfaction of the Secretary.

The compensatory water supply measures must provide an alternative long-term supply of water that is equivalent to the loss attributable to the project. Equivalent water supply should be provided (at least on an interim basis) within 24 hours of the loss being identified, unless otherwise agreed with the landowner.

If the Proponent and the landowner 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.

If the Proponent is unable to provide an alternative long-term supply of water, then the Proponent **must** provide alternative compensation to the satisfaction of the Secretary.

**Water Pollution**

27. Unless an EPL authorises otherwise, the Proponent **must** comply with section 120 of the POEO Act.

**Water Management Performance Measures**

28. The Proponent **must** comply with the performance measures in Table 14 to the satisfaction of the Secretary.

*Table 14: Water Management Performance Measures*

<b>Feature</b>	<b>Performance Measure</b>
Water Management – General	<ul style="list-style-type: none"> <li>• Minimise cumulative water impacts with the other mines in the region</li> </ul>

Feature	Performance Measure
	<ul style="list-style-type: none"> <li>• Maximise water sharing with the other mines in the region</li> <li>• Minimise the use of clean water on site</li> </ul>
The Drip	<ul style="list-style-type: none"> <li>• Nil impact on the water supply to the Drip</li> </ul>
Construction and operation of linear infrastructure	<ul style="list-style-type: none"> <li>• 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></li> <li>• 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</li> <li>• Design, install and maintain creek crossings generally in accordance with the <i>Policy and Guidelines for Fish Friendly Waterway Crossings</i> (NSW Fisheries, 2003) and <i>Why Do Fish Need To Cross The Road? Fish Passage Requirements for Waterway Crossings</i> (NSW Fisheries 2003), or their latest versions</li> </ul>
Mine Sediment Dams	<ul style="list-style-type: none"> <li>• 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></li> </ul>
Clean water diversion & storage infrastructure	<ul style="list-style-type: none"> <li>• Design, install and maintain the clean water system to capture and convey the 100 year ARI flood</li> <li>• Maximise as far as reasonable and feasible the diversion of clean water around disturbed areas on site</li> </ul>
Mine water storages	<ul style="list-style-type: none"> <li>• Mine water storage infrastructure is designed to store a 100 year ARI 72 hour storm event</li> <li>• On-site storages (including tailings dams, mine infrastructure dams, groundwater storage and treatment dams) are suitably lined to comply with a permeability standard of <math>&lt; 1 \times 10^{-9}</math> m/s</li> </ul>
Tailings, acid forming and potentially acid forming materials	<ul style="list-style-type: none"> <li>• In-pit emplacement, encapsulation or capping to prevent the migration of pollutants beyond the pit shell</li> <li>• Adequate freeboard within the pit void to minimise the risk of discharge to surface waters</li> </ul>
Chemical and hydrocarbon storage	<ul style="list-style-type: none"> <li>• Chemical and hydrocarbon products to be stored in bunded areas in accordance with the relevant Australian Standards</li> </ul>
Murragamba and Eastern Creek realignments	<ul style="list-style-type: none"> <li>• Increase the overall length of the creek diversions and reduce the overall average bed slope compared to the existing creek alignments</li> <li>• Mimic the existing meandering plan form of the low flow channel</li> <li>• Include creek corridors which are designed to contain flood flows up to the 1 in 100 year ARI</li> <li>• Include low flow channels which are designed to contain a rainfall event of a 1 in 1 year ARI</li> <li>• Include riffle/drop structures that are designed for a 1 in 20 year ARI peak flow</li> <li>• Incorporate erosion control measures based on vegetation and engineering revetments</li> <li>• Incorporate persistent/permanent pools for aquatic habitat</li> <li>• Incorporate seepage control/flow loss measures through sections of the creek lines to be constructed over mine waste backfill</li> <li>• Revegetate with suitable native riparian vegetation species to restore aquatic biodiversity throughout the realignments</li> </ul>

<b>Feature</b>	<b>Performance Measure</b>
Aquatic and riparian ecosystem, including the relevant sections of Murragamba Creek, Eastern Creek and Wilpinjong Creek	<ul style="list-style-type: none"> <li>• Maintain or improve baseline channel stability</li> <li>• 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</li> </ul>

### Water Management Plan

29. The Proponent **must** prepare a Water Management Plan for the project to the satisfaction of the Secretary. This plan must:
- be prepared in consultation with **DPE Water** and the EPA, by suitably qualified and experienced persons whose appointment has been approved by the Secretary;
  - be submitted to the Secretary for approval prior to the commencement of any development on site;
  - include reference to the National Water Quality Management Strategy;
  - include detailed performance criteria and describe measure to ensure that the Proponent complies with the Water Management Performance Measures (see Table 14);
  - in addition to the standard requirements for management plans (see condition 3 of Schedule 6), this plan must include a:
    - 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, including details of water sharing between neighbouring mining operations;
        - reporting procedures, including the preparation of a site water balance for each calendar year;
      - describes the measures that would be implemented to:
        - minimise clean water use on site;
        - maximise water sharing with the other mines in the region;
    - Surface Water Management Plan, that includes:
      - detailed baseline data on water flows and quality in the waterbodies that could be affected by the project;
      - a detailed description of the water management system on site;
      - detailed plans, including design objectives and performance criteria, for the:
        - Murragamba and Eastern Creek realignments;
        - in-pit emplacement areas for tailings, acid forming and potentially acid forming materials;
        - final voids (see the Rehabilitation Objectives in Table 14);
      - detailed performance criteria for the following, including trigger levels for investigating any potentially adverse impacts associated with the project:
        - the water management system;
        - downstream surface water quality;
        - downstream flooding impacts and
        - stream and riparian vegetation health for Moolarben Creek, Bora Creek, Murragamba Creek, Eastern Creek, Wilpinjong Creek and the Goulburn River;
      - a program to monitor and report on:
        - the effectiveness of the water management system; and
        - surface water flows and quality, stream and riparian vegetation health in the watercourses that could be affected by the project; and
        - downstream flooding impacts;
      - reporting procedures for the results of the monitoring program; and
      - a plan to respond to any exceedances of the performance criteria, and mitigate any adverse surface water impacts of the project;
    - Groundwater Management Plan, that includes:
      - detailed baseline data on groundwater levels, yield and quality in the region and privately-owned groundwater bores that could be affected by the project;
      - groundwater assessment criteria, including trigger levels for investigating any potentially adverse groundwater impacts;
      - a program to monitor and report on:
        - groundwater inflows to the underground and open cut mining operations;
        - the seepage/leachate from water storages, emplacements, backfilled voids and final voids;
        - background changes in groundwater yield/quality against mine-induced changes;
        - the permeability, hydraulic gradient, flow direction and connectivity of the palaeochannel and flows within Wilpinjong Creek (requires 3 additional



- monitoring piezometers within the main trunk of the paleochannel between the open cut 4 boundary and Wilpinjong Creek);
  - impacts of the project on:
    - regional and local (including alluvial) aquifers;
    - groundwater supply of potentially affected landowners; and
    - groundwater dependent ecosystems (including the Drip) and riparian vegetation;
  - a program to validate the groundwater model for the project, and compare against monitoring results with modelled predictions; and
    - a plan to respond to any exceedances of the groundwater assessment criteria.
- (iv) a protocol that has been prepared in consultation with the owners of the Ulan and Wilpinjong mines to:
- minimise cumulative water quality impacts;
  - review opportunities of increased water sharing between these projects;
  - co-ordinate water quality monitoring programs as far as practicable;
  - undertake joint investigations/studies in relation to complaints/exceedances of trigger levels where cumulative impacts are considered likely; and
  - co-ordinate modelling programs for validation, re-calibration and re-running of groundwater models.

**29A. The Proponent must implement the approved Water Management Plan.**

**BIODIVERSITY**

**Biodiversity Offset Strategy**

30. The Proponent **must** implement the biodiversity offset strategy for the project summarised in Table 15 and shown conceptually in Appendix 7 to the satisfaction of the Secretary.

*Table 15: Summary of the Biodiversity Offset Strategy*

<b>Area</b>	<b>Offset Type</b>	<b>Minimum Size hectares (ha)</b>
Dun Dun East	Enhance existing vegetation: <ul style="list-style-type: none"> <li>• 1368 ha of native vegetation</li> <li>• 408 ha of EEC</li> </ul> Regenerate: <ul style="list-style-type: none"> <li>• 380 ha of existing grassland to forest/woodland</li> </ul>	<b>1776</b>
Dun Dun West	Enhance existing vegetation: <ul style="list-style-type: none"> <li>• 837 ha of native vegetation</li> <li>• 122 ha of EEC</li> </ul> Regenerate: <ul style="list-style-type: none"> <li>• 307 ha of existing grassland to forest/woodland</li> </ul>	<b>959</b>
Avisford 1	Enhance existing vegetation: <ul style="list-style-type: none"> <li>• 300 ha of native vegetation</li> <li>• 102 ha of EEC</li> </ul> Regenerate: <ul style="list-style-type: none"> <li>• 7 ha of existing grassland to forest/woodland</li> </ul>	<b>402</b>
Avisford 2	Enhance existing vegetation: <ul style="list-style-type: none"> <li>• 203 ha of native vegetation</li> <li>• 5 ha of EEC</li> </ul>	<b>208</b>
Ulan 18	Enhance existing vegetation: <ul style="list-style-type: none"> <li>• 291 ha of native vegetation</li> <li>• 48 ha of EEC</li> </ul> Regenerate: <ul style="list-style-type: none"> <li>• 178 ha of existing grassland to forest/woodland</li> </ul>	<b>339</b>
Onsite Offset	Enhance existing vegetation: <ul style="list-style-type: none"> <li>• 420 ha of native vegetation</li> <li>• 51 ha of EEC</li> </ul> Regenerate: <ul style="list-style-type: none"> <li>• 199 ha of existing grassland to forest/woodland</li> </ul>	<b>471</b>
Old Bobadeen	Enhance existing vegetation: <ul style="list-style-type: none"> <li>• 90 ha of native vegetation</li> <li>• 400 ha of EEC</li> </ul> Regenerate: <ul style="list-style-type: none"> <li>• 409 ha of existing grassland to forest/woodland</li> </ul>	<b>490</b>
Libertus	Enhance existing vegetation: <ul style="list-style-type: none"> <li>• 160 ha of native vegetation</li> <li>• 18 ha of EEC</li> </ul> Regenerate: <ul style="list-style-type: none"> <li>• 22 ha of existing grassland to forest/woodland</li> </ul>	<b>178</b>

Notes:

- To identify the areas referred to in Table 15, see the applicable figures in Appendix 7;
- The amount of native vegetation includes forest/woodland and grassland but excludes woodland and grassland EECs. The combined total of native vegetation and EEC on each property equates to the minimum size available as an offset;
- The amount of grassland available for regeneration includes sparsely vegetated woodland; and
- The strategy includes the regeneration of existing grassland areas within each offset to woodland communities.

## UG2 Extension Area

**30A.** Prior to the commencement of secondary workings within the UG2 Extension Area, the Proponent must retire the biodiversity credits specified in Table 15A below in accordance with the Biodiversity Offsets Scheme of the BC Act.

Table 15A: Credit Liability UG2 Extension Area

Credit Type	Credits Required
<b>Species Credits</b>	
Broad-headed Snake ( <i>Hoplocephalus bungaroides</i> )	20
Pink-tailed Worm Lizard ( <i>Aprasia parapulchella</i> )	22
Large-Eared Pied Bat ( <i>Chalinolobus dwyeri</i> )	12
Eastern Cave Bat ( <i>Vespadelus troughtoni</i> )	12

Notes:

- The credit liability referred to in Table 15A accounts for offsetting the predicted impacts on threatened species habitat in the onsite offset area (ie double the offset credit requirements for predicted impacts in the offset area).

## Regeneration Areas

31. The Proponent **must** ensure that the regeneration of vegetation within the specified areas of the biodiversity offset strategy is focused on the re-establishment of flora species typical of the White Box Yellow Box Blakely's Red Gum Woodland as defined under the BC Act and White Box Yellow Box Blakely's Red Gum Grassy Woodland as defined under the EPBC Act.
32. The Proponent **must** use its best endeavours to work with the CLD to identify and implement any reasonable and feasible regeneration of vegetation on Crown lands in the vicinity of Pyramul Creek immediately to the south of the 'Dun Dun East' biodiversity offset area.

## Munghorn Gap Nature Reserve

33. The Proponent **must** ensure that:
  - (a) the boundary of the project with the Munghorn Gap Nature Reserve is identified and surveyed prior to the commencement of open cut mining; and
  - (b) a 50 meter buffer zone is maintained between the open cut mining and the Munghorn Gap Nature Reserve during the life of the project.

## Habitat for Threatened Fauna Species

34. The Proponent **must** ensure that the biodiversity offset strategy provides suitable habitat for all the threatened fauna species confirmed and identified as being potentially present in the disturbance areas.

*Note: The threatened fauna species confirmed and identified as being potentially present in the disturbance areas are listed in Appendix 7.*

## Regent Honeyeater Study

35. Within 6 months of the date of this approval, the Proponent **must** calculate:
  - (a) the impacts generated by the project on the Regent Honeyeater in species credits; and
  - (b) the species credits that would be generated for the Regent Honeyeater from implementation of the offset strategy described in condition 30 above,in accordance with the *NSW Biodiversity Offset Policy for Major Projects*, and to the satisfaction of **BCS**.
36. If the calculations carried out in condition 35 above identify a shortfall of species credits to offset the impacts of the project, then within 24 months of the date of this approval, the Proponent **must** satisfy the outstanding offset requirements to the satisfaction of **BCS**. This can be achieved by one or more of the following:
  - (a) acquiring or retiring credits under the Biobanking Scheme in the TSC Act;
  - (b) making payments into an offset fund that has been developed by the NSW Government; and/or
  - (c) providing supplementary measures.

## Vegetation Information System Mapping Data

37. At the request of BCS, the Proponent **must** provide BCS with detailed vegetation mapping and survey data associated with its lands to be conserved in perpetuity in accordance with this approval. This information is to be provided free of charge.

## Long Term Security of Biodiversity Offsets

38. By 31 December 2015, unless the Secretary agrees otherwise, the Proponent **must** make suitable arrangements to protect the offset areas in Table 15 in perpetuity, in consultation with BCS and to the satisfaction of the Secretary.

*Note: The preferred mechanisms for the provision of long-term conservation security are via Biobanking Arrangements and additions to the BCS Estate.*

## Biodiversity Management Plan

39. The Proponent **must** prepare a Biodiversity Management Plan for the project to the satisfaction of the Secretary. This plan must:
- be prepared in consultation with BCS, and submitted to and approved by the Secretary prior to the commencement of any development on site;
  - describe the short, medium, and long term measures that would be implemented to:
    - manage the remnant vegetation and fauna habitat on the site; and
    - implement the biodiversity offset strategy;
    - integrate the implementation of the biodiversity offset strategy to the greatest extent practicable with the rehabilitation of the site;
  - include detailed performance and completion criteria for evaluating the performance of the biodiversity offset strategy, and triggering remedial action (if necessary);
  - include a detailed description of the measures that would be implemented over the next 3 years for:
    - enhancing the quality of existing vegetation and fauna habitat in the biodiversity offset areas;
    - creating native vegetation and fauna habitat in the biodiversity offset areas and rehabilitation area through focusing on assisted natural regeneration, targeted vegetation establishment and the introduction of naturally scarce fauna habitat features (where necessary);
    - maximising the salvage of resources within the approved disturbance area - including vegetative and soil resources – for beneficial reuse in the enhancement of the biodiversity offset areas or rehabilitation area;
    - collecting and propagating seed;
    - protecting vegetation and fauna habitat outside the approved disturbance area on-site;
    - minimising the impacts on fauna on site, including undertaking pre-clearance surveys;
    - managing any potential conflicts between the proposed enhancement works in the biodiversity offset strategy areas and any Aboriginal heritage values (both cultural and archaeological) in these areas;
    - managing salinity;
    - controlling weeds and feral pests;
    - controlling erosion;
    - managing grazing and agriculture on site;
    - controlling access; and
    - bushfire management;
  - include a seasonally-based program to monitor and report on the effectiveness of these measures, and progress against the detailed performance and completion criteria;
  - 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 against these risks; and
  - include details of who would be responsible for monitoring, reviewing, and implementing the plan.

39A. The Proponent **must** implement the approved Biodiversity Management Plan.

## Conservation Bond

40. By 31 December 2015, the Proponent **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 **must** be determined by:
- calculating the full cost of implementing the biodiversity offset strategy (other than land acquisition costs); and
  - employing a suitably qualified quantity surveyor to verify the calculated costs, to the satisfaction of the Secretary.

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 BCS as part of a Biobanking Agreement or transfer to conservation reserve estate can be used to reduce the liability of the conservation and biodiversity bond, and*
- *The sum of the bond may be reviewed in conjunction with any revision to the biodiversity offset strategy.*

## HERITAGE

### Protection of Aboriginal Heritage Items

41. Unless otherwise authorised under the NP&W Act, the Proponent **must** ensure that the project does not cause any direct or indirect impact on the identified Aboriginal heritage items located outside the approved disturbance area of the project.

### Additional Survey

42. Prior to carrying out any development on site, unless the Secretary agrees otherwise, the Proponent must:
- carry out additional archaeological survey work in the vicinity of the proposed Stage 2 ROM Coal Facilities in consultation with OEH and Aboriginal stakeholders;
  - undertake a detailed analysis of the significance of the heritage items that are identified during the survey; and
  - recommend measures to avoid and/or mitigate the impacts of the project on these heritage items,
43. Within 12 months of the date of this approval, unless the Secretary agrees otherwise, the Proponent must carry out a detailed investigation into the Aboriginal cultural heritage values of the southern portion of the Dun Dun East biodiversity offset area (Lot 79, DP 704159), in the vicinity of Pyramul Creek, in consultation with OEH and Aboriginal stakeholders, and to the satisfaction of the Secretary.

### Heritage Conservation Areas

44. The Proponent **must** implement the heritage conservation strategy described in the EA, summarised in Table 16, to the satisfaction of the Secretary.

Table 16: Summary of the Heritage Conservation Strategy

Area	Sites	Minimum Size hectares (ha)
Murragamba Creek Management Area	40 sites - 5 of high significance, 6 of medium and 29 of low	154
Powers Conservation Area	10 sites – 1 of high significance, 2 of medium and 7 of low significance	63
Red Hills Conservation Area	42 sites – 2 of high significance, 9 of medium and 31 of low significance	107

### Long Term Security of Heritage Conservation Areas

45. Within 18 months of approval of the Heritage Management Plan, unless the Secretary agrees otherwise, the Proponent **must** make suitable arrangements to protect the heritage conservation areas in Table 16 in perpetuity to the satisfaction of the Secretary.

Notes:

- *The protection of the Aboriginal heritage conservation area/s may be combined with the protection of the biodiversity offset areas required under condition 30 of this approval.*

### Heritage Management Plan

46. The Proponent **must** prepare a Heritage Management Plan for the project to the satisfaction of the Secretary. This plan must:
- be prepared by suitably qualified and experienced persons whose appointment has been endorsed by the Secretary;
  - be prepared in consultation with Heritage NSW and the Aboriginal stakeholders (in relation to the management of Aboriginal heritage values);
  - be submitted to and approved by the Secretary prior to construction, unless the Secretary agrees otherwise;
  - include a description of the measures that would be implemented for:

- managing the discovery of human remains or previously unidentified heritage items on site; and
  - ensuring any workers on site receive suitable heritage inductions prior to carrying out any development on site, and that suitable records are kept of these inductions;
- (h) include the following for the management of Aboriginal Heritage:
- a detailed plan of management for the Murrumbidgee Creek, Red Hills and Powers conservation areas;
  - a description of the measures that would be implemented for:
    - protecting, monitoring and/or managing (including any proposed archaeological investigations and/or salvage measures) the heritage items identified in the EA;
    - managing the discovery of previously unidentified Aboriginal items on site;
    - conserving the sites outside the surface disturbance area, including measures that would be implemented to secure, analyse and record the sites at risk of subsidence;
    - maintaining and managing reasonable access for Aboriginal stakeholders to heritage items on site and within any Aboriginal heritage conservation areas;
    - ongoing consultation with the Aboriginal stakeholders in the conservation and management of Aboriginal cultural heritage both on site and within any Aboriginal heritage conservation areas; and
  - a strategy for the storage of any heritage items salvaged on site, both during the project and in the long term;
- (i) include a detailed plan for the implementation of the mitigation and management measures outlined for the specified heritage items in Appendix 8, including archival recording, historical research and archaeological assessment prior to any disturbance.

46A. The Proponent must implement the approved Heritage Management Plan.

## TRANSPORT

### Ulan Road Strategy

47. The Proponent **must**:
- (a) work with Council and the owners of the Ulan and Wilpinjong mines to develop a detailed plan for the implementation of the Ulan Road Strategy; and
  - (b) make financial contributions towards the implementation of this detailed plan, in accordance with the requirements in the plan, with its share of the mining companies' contribution for implementation of the strategy to be proportionate to its share of mining-related traffic to be generated on the road during the life of the strategy.

If there is any dispute between the various parties involved in either the development of the detailed plan or the implementation of the strategy, then any of the parties may refer the matter to the Secretary for resolution.

### Ulan-Wollar Road Site Access

48. The Proponent **must** design, construct, and maintain the site access intersection off Ulan-Wollar Road to the satisfaction of Council.

### Cope Road Maintenance

49. The Proponent **must** pay Council \$480,000 (in 2013 dollar value) for the maintenance of Cope Road. This payment must be:
- (a) made in 4 instalments of \$120,000 over the first four years of mining operations, with the first payment to be made on the commencement of mining operations on site;
  - (b) indexed in accordance with the CPI for the previous quarter.

## VISUAL

50. The Proponent **must**:
- (a) implement all reasonable and feasible measures to minimise the visual and off-site lighting impacts of the project;
  - (b) ensure no fixed outdoor lights shine above the horizontal or above the building line or any illuminated structure;
  - (c) ensure no in-pit mobile lighting rigs shine above the pit wall and other mobile lighting rigs do not shine above the horizontal;
  - (d) ensure that all external lighting associated with the project complies with *Australian Standard AS4282 (INT) 1997 – Control of Obtrusive Effects of Outdoor Lighting*, or its latest version;
  - (e) provide for the establishment of trees and shrubs and/or the construction of mounding or bunding to minimise visual and lighting impacts on the Proponent's land adjoining public roads with views of the site;
  - (f) ensure that the visual appearance of all buildings, structures, facilities or works (including paint colours and specifications) is aimed at blending as far as possible with the surrounding landscape, to the satisfaction of the Secretary.

## BUSHFIRE MANAGEMENT

51. The Proponent **must**:
- ensure that the project is suitably equipped to respond to any fires on site; and
  - assist the RFS and emergency services as much as practicable if there is a fire in the vicinity of the site.

## WASTE

52. The Proponent **must**:
- implement all reasonable and feasible measures to minimise the waste (including coal reject) generated by the project;
  - ensure that the waste generated by the project is appropriately stored, handled and disposed of; and
  - monitor and report on effectiveness of the waste minimisation and management measures in the Annual Review.

## REHABILITATION

### Rehabilitation Objectives

53. The Proponent **must rehabilitate the site in accordance with the conditions imposed on the mining lease(s) associated with the development under the Mining Act 1992**. This rehabilitation must be generally consistent with the proposed rehabilitation strategy described in the EA (and depicted conceptually in the figures in Appendix 9), and comply with the objectives in Table 17.

Table 17: Rehabilitation Objectives

Feature	Objective
Mine site (as a whole)	<ul style="list-style-type: none"> <li>Safe, stable and non-polluting;</li> <li>Constructed landforms drain to the natural environment (excluding final voids); and</li> <li>Minimise visual impact of final landforms as far as is reasonable and feasible.</li> <li>Restore ecosystem function, including maintaining or establishing self-sustaining ecosystems that is compatible with the conservation values of the adjacent Munghorn Gap Nature Reserve and Goulburn River National Park, that is comprised of:               <ul style="list-style-type: none"> <li>1502 ha of open woodland including Grey Box – Narrow-leaved Ironbark shrubby woodland on hills of the Hunter Valley, North Coast and Sydney Basin; Scribbly Gum – Brown Bloodwood woodland of the southern Brigalow Belt South; Rough-barked Apple – Coast Banksia shrubby woodland on Warkworth Sands of the central Hunter Valley, Sydney Basin; and White Box Yellow Box Blakely's Red Gum Woodland (EEC);</li> <li>aquatic habitat areas (within the diverted creek lines and retained water features);</li> <li>habitat for threatened fauna species; and</li> <li>wildlife corridors.</li> </ul> </li> </ul>
Final Voids	<ul style="list-style-type: none"> <li>Minimise the size and depth of final voids so far as is reasonable and feasible, subject to meeting the objectives below</li> <li>Minimise the drainage catchment of the final void so far as is reasonable and feasible;</li> <li>Negligible high wall instability risk;</li> <li>The size and depth of the final voids must be designed having regard to their function as long-term groundwater sinks, to ensure that groundwater flows across the back-filled pit towards the final void; and</li> <li>Minimise risk of flood interaction for all flood events up to and including the Probable Maximum Flood level.</li> </ul>
Water quality	<ul style="list-style-type: none"> <li>Water retained on site is fit for the intended land use (s) for the post-mining domain(s)</li> <li>The potential ecological, hydrological and geomorphic impacts from post-mining water discharges on receiving creeks are assessed and appropriate mitigation measures are effectively implemented as part of the closure plan.</li> </ul>
Surface infrastructure	<ul style="list-style-type: none"> <li>To be decommissioned and removed, unless Resources Regulator agrees otherwise.</li> </ul>

<b>Feature</b>	<b>Objective</b>
Degraded riparian areas along Wilpinjong Creek and along Murragamba and Eastern Creeks downstream of the mined areas to the boundary of the Wilpinjong mine.	<ul style="list-style-type: none"> <li>• Restore channel stability;</li> <li>• Restore riparian and aquatic ecosystem function; and</li> <li>• Include compensatory aquatic habitat areas.</li> </ul>
Community	<ul style="list-style-type: none"> <li>• Ensure public safety; and</li> <li>• Minimise adverse socio-economic effects associated with mine closure.</li> </ul>

*Note: The Proponent must prepare and implement a Rehabilitation Management Plan in accordance with the conditions imposed on the mining lease(s) associated with the development under the Mining Act 1992.*

### **Progressive Rehabilitation**

54. The Proponent **must** rehabilitate the site progressively as soon as reasonably practicable following disturbance. All reasonable and feasible measures must be taken to minimise the total area exposed for dust generation at any time. Interim rehabilitation strategies **must** be employed when areas prone to dust generation cannot be permanently rehabilitated.

*Note: It is accepted that some parts of the site that are progressively rehabilitated may be subject to further disturbance at some later stage of the project.*

### **Long Term Security of Rehabilitated Areas**

55. Prior to relinquishing the mining lease that covers the site, unless the Secretary agrees otherwise, the Proponent **must** make suitable arrangements to protect the rehabilitation areas with conservation value in perpetuity, in consultation with BCS and to the satisfaction of the Secretary.

### **Rehabilitation Management Plan**

56. *Deleted*
-

## SCHEDULE 4 ENVIRONMENTAL CONDITIONS – UNDERGROUND MINING

### SUBSIDENCE

#### Performance Measures – Natural and Heritage Features

- The Proponent **must** ensure that the project does not cause any exceedances of the performance measures in Table 18, to the satisfaction of the Secretary.

Table 18: Subsidence Impact Performance Measures

<b>Water Resources</b>	
Drainage Lines (DL1 – DL7)	No greater subsidence impacts or environmental consequences than predicted in the EA
<b>Land</b>	
Cliffs C7, C9 and C10	Negligible environmental consequences (that is occasional rockfalls, displacement or dislodgement of boulders or slabs or fracturing, that in total do not impact more than 0.5% of the total face of such cliffs within any longwall mining domain)
Other cliffs	No greater subsidence impacts or environmental consequences than predicted in the EA
Minor cliffs Rock face features Steep slopes	Minor environmental consequences (that is, occasional rockfalls, displacement of or dislodgment of boulders or slabs, or fracturing, that in total do not impact more than 5% of the total face area of each such type of feature within any longwall mining domain)
<b>Biodiversity</b>	
Threatened species, threatened populations, or endangered ecological communities	Negligible environmental consequences
<b>Heritage Sites</b>	
Aboriginal heritage site S2MC 236 (AHIMS No.s 36-3-0016 and 36-3-0134)	Negligible subsidence impacts or environmental consequences
Historic heritage sites	No greater subsidence impact or environmental consequences than predicted in the EA
<b>Mine workings</b>	
First workings under an approved Extraction Plan beneath any feature where performance measures in this table require negligible subsidence impacts or negligible environmental consequences	To remain long-term stable and non-subsiding
Second workings	To be carried out only in accordance with an approved Extraction Plan

*Notes:*

- The locations of the features referred to in Table 18 are shown in Appendix 4, and excludes features subject to impacts from the UG2 Extension Area which are subject to separate performance measures listed in Table 18A.
- The Proponent will be required to define more detailed performance indicators (including impact assessment criteria) for each of these performance measures in the various management plans that are required under this approval.
- Measurement and/or monitoring of compliance with performance measures and performance indicators is to be undertaken using generally accepted methods that are appropriate to the environment and circumstances in which the feature or characteristic is located. These methods are to be fully described in the relevant management plans. In the event of a dispute over the appropriateness of proposed methods, the Secretary will be the final arbiter.
- The requirements of this condition only apply to the impacts and consequences of mining operations, construction or demolition undertaken following the date of this approval.

#### Offsets

- If the Proponent exceeds the performance measures in Table 18 and the Secretary determines that:
  - it is not reasonable or feasible to remediate the impact or environmental consequence; or
  - remediation measures implemented by the Proponent have failed to satisfactorily remediate the impact or environmental consequence;
 then the Proponent **must** provide a suitable offset to compensate for the impact or environmental consequence, to the satisfaction of the Secretary.

*Note: Any offset required under this condition must be proportionate with the significance of the impact or environmental consequence.*



## Performance Measures – Natural Features and Heritage Features UG2 Extension Area

- 2A. For the UG2 Extension Area, the Proponent must ensure that the project does not cause any exceedances of the performance measures in Table 18A, to the satisfaction of the Secretary.

Table 18A: Subsidence Impact Performance Measures for UG2 Extension Area

<b>Water Resources</b>	
Drainage Line 8	No greater subsidence impacts or environmental consequences than predicted in the EA
<b>Land</b>	
Other cliffs	No greater subsidence impacts or environmental consequences than predicted in the EA
Minor cliffs Rock face features Steep slopes	Minor environmental consequences (that is, occasional rockfalls, displacement of or dislodgment of boulders or slabs, or fracturing, that in total do not impact more than 5% of the total face area of each such type of feature within any longwall mining domain)
<b>Biodiversity</b>	
Threatened species, threatened populations, or endangered ecological communities	Negligible environmental consequences
Habitat for Broad-headed Snake, Pink-tailed Worm Lizard, Large-eared Pied Bat and Eastern Cave Bat	No greater subsidence impacts than predicted in the EA
Known maternity / breeding cave for Large-eared Pied Bat and Eastern Cave Bat	Negligible subsidence impacts <sup>1</sup> and environmental consequences
Onsite Offset Area	No greater environmental consequences than predicted in the EA
<b>Heritage Sites</b>	
Aboriginal heritage sites	No greater subsidence impact or environmental consequences than predicted in the EA
<b>Mine workings</b>	
First workings under an approved Extraction Plan beneath any feature where performance measures in this table require negligible subsidence impacts or negligible environmental consequences	To remain long-term stable and non-subsiding
Second workings	To be carried out only in accordance with an approved Extraction Plan

<sup>1</sup> Negligible subsidence impacts are defined as an impact which does not result in loss of, or change to the characteristics of, a maternity roost (breeding habitat).

### Notes:

- The locations of the features referred to in Table 18A are shown in Figure 4.3 in Appendix 4, but only relate to those features within the UG2 Extension Area.
- The Proponent will be required to define more detailed performance indicators (including impact assessment criteria) for each of these performance measures in the various management plans that are required under this approval.
- Measurement and/or monitoring of compliance with performance measures and performance indicators is to be undertaken using generally accepted methods that are appropriate to the environment and circumstances in which the feature or characteristic is located. These methods are to be fully described in the relevant management plans. In the event of a dispute over the appropriateness of proposed methods, the Secretary will be the final arbiter.
- The requirements of this condition only apply to the impacts and consequences of mining operations, construction or demolition undertaken following the date of approval of MOD 4.

## Performance Measures – Built Features

3. The Proponent must ensure that the project does not cause any exceedances of the performance measures in Table 19, to the satisfaction of the Secretary.

Table 19: Subsidence Impact Performance Measures – Built Features

<b>Key public infrastructure:</b>	
Gulgong-Sandy Hollow Railway Line Ulan-Wollar Road	Always safe and serviceable.  Damage that does not affect safety or serviceability must be fully repairable, and must be fully repaired.
<b>Other infrastructure:</b>	
Murragamba Road Low voltage electricity power line	Always safe.

	Serviceability should be maintained wherever practicable. Loss of serviceability must be fully compensated.  Damage must be fully repairable, and must be fully repaired or else replaced or fully compensated.
Telecommunication cable Fibre-optic cable Murrumbidgee Trig Station	Serviceability should be maintained wherever practicable. Loss of serviceability must be fully compensated.  Damage must be fully repairable, and must be fully repaired or else replaced or fully compensated.
Other built features and improvements, including fences	Serviceability should be maintained wherever practicable. Loss of serviceability must be fully compensated.  Damage must be fully repairable, and must be fully repaired or else replaced or fully compensated.
<b>Public Safety</b>	
Public safety	Negligible additional risk

Notes:

- The locations of the features referred to in Table 19 are shown in [Figures 4.2 and 4.4](#) in [Appendix 4](#).
  - The Proponent will be required to define more detailed performance indicators for each of these performance measures in Built Features Management Plans or Public Safety Management Plan (see condition 5 below).
  - Measurement and/or monitoring of compliance with performance measures and performance indicators is to be undertaken using generally accepted methods that are appropriate to the environment and circumstances in which the feature or characteristic is located. These methods are to be fully described in the relevant management plans. In the event of a dispute over the appropriateness of proposed methods, the Secretary will be the final arbiter.
  - The requirements of this condition only apply to the impacts and consequences of mining operations undertaken following the date of this approval.
  - Requirements under this condition may be met by measures undertaken in accordance with the Mine Subsidence Compensation Act 1961.
  - Requirements regarding safety or serviceability do not prevent preventative or mitigatory actions being taken prior to or during mining in order to achieve or maintain these outcomes.
4. Any dispute between the Proponent and the owner of any built feature over the interpretation, application or implementation of the performance measures in Table 19 is to be settled by the Secretary, following consultation with [Resources Regulator](#). Any decision by the Secretary shall be final and not subject to further dispute resolution under this approval.

### Extraction Plan

5. The Proponent **must** prepare and implement an Extraction Plan for all second workings on site to the satisfaction of the Secretary. Each extraction plan must:
- (a) be prepared by suitably qualified and experienced persons whose appointment has been endorsed by the Secretary;
  - (b) be approved by the Secretary before the Proponent carries out any of the second workings covered by the plan;
  - (c) include detailed plans of existing and proposed first and second workings, [overlying surface features](#) and any associated surface development;
  - (d) include detailed performance indicators for each of the performance measures in Tables 18, [18A](#) and 19;
  - (e) provide revised predictions of the potential subsidence effects, subsidence impacts and environmental consequences of the proposed second workings, incorporating any relevant information obtained since this approval;
  - (f) describe the measures that would be implemented to ensure compliance with the performance measures in Tables 18, [18A](#) and 19, and manage or remediate any impacts and/or environmental consequences;
  - (g) include a Built Features Management Plan, which has been prepared in consultation with [Resources Regulator](#) and the owners of affected public infrastructure, to manage the potential subsidence impacts and/or environmental consequences of the proposed second workings, and which:
    - addresses in appropriate detail all items of key public infrastructure and other public infrastructure and all classes of other built features;
    - has been prepared following appropriate consultation with the owner/s of potentially affected feature/s;
    - recommends appropriate remedial measures and includes commitments to mitigate, repair, replace or compensate all predicted impacts on potentially affected built features in a timely manner; and
    - in the case of all key public infrastructure, and other public infrastructure except roads, trails and associated structures, reports external auditing for compliance with ISO 31000 (or

- alternative standard agreed with the infrastructure owner) and provides for annual auditing of compliance and effectiveness during extraction of longwalls which may impact the infrastructure;
- (h) include a Water Management Plan, which has been prepared in consultation with EPA and **DPE Water**, which provides for the management of the potential impacts and/or environmental consequences of the proposed second workings on watercourses and aquifers, including:
- detailed baseline data on:
    - watercourses and/or waterbodies that could be affected by subsidence;
    - groundwater levels, yield and quality in overlying strata and the region;
  - surface and groundwater impact assessment criteria, including trigger levels for investigating any potentially adverse impacts on water resources or water quality;
  - a program to monitor and report stream flows, assess any changes resulting from subsidence impacts and remediate and improve stream stability;
  - a program to monitor and report groundwater inflows to underground workings;
  - a program to predict, manage and monitor impacts on groundwater bores on privately-owned land;
  - a program to:
    - confirm the location and saturated extent of the palaeochannel adjacent to the extents of underground 1 second workings, including drilling of additional investigation bores;
    - validate, and if necessary revise, the groundwater model for the palaeochannel; and
    - monitor and report on the groundwater impacts of underground 1 second workings on the palaeochannel; and a program to monitor and report on the predicted groundwater impacts on the paleochannel adjacent to underground 1 boundary; and
  - a program to monitor and report on groundwater impacts of the UG2 mining area second workings, including the installation of at least two additional nested standpipes to investigate and, if identified, monitor perched water in the overlying strata;
- (i) include a Biodiversity Management Plan, which has been prepared in consultation with BCS, and:
- establishes baseline data for existing habitat, including vegetation condition and threatened species habitat;
  - provides for the management of potential impacts and/or environmental consequences of second workings on terrestrial flora and fauna, with a specific focus on threatened species, populations and endangered ecological communities; and
  - includes impact assessment criteria to ensure compliance with the relevant performance measures in Tables 18 and 18A;
  - includes a monitoring program designed to detect and monitor maternity / breeding caves for the Eastern Cave Bat and Large-eared Pied Bat within the UG2 Mining Area;
- (j) include a Land Management Plan, which has been prepared in consultation with any affected public authorities, to manage the potential impacts and/or environmental consequences of the proposed second workings on land in general;
- (k) include a Heritage Management Plan, which has been prepared in consultation with **Heritage NSW** and relevant stakeholders for both Aboriginal and historic heritage, to manage the potential environmental consequences of the proposed second workings on both Aboriginal and non-Aboriginal heritage items, and reflects all requirements under conditions 41-46 of Schedule 3;
- (l) include a Public Safety Management Plan, which has been prepared in consultation with **Resources Regulator**, to ensure public safety in the mining area;
- (m) include a Subsidence Monitoring Program, which has been prepared in consultation with **Resources Regulator**, to:
- describe the on-going subsidence monitoring program;
  - provide data to assist with the management of the risks associated with subsidence;
  - validate the subsidence predictions;
  - analyse the relationship between the predicted and resulting subsidence effects and predicted and resulting impacts under the plan and any ensuing environmental consequences; and
  - inform the contingency plan and adaptive management process;
  - monitor the subsidence impacts of the project to ensure compliance with the performance measures in Tables 18, 18A and 19, including an appropriate trigger action response plan to ensure early detection of and response to potential exceedances of the performance measures;
  - monitor non-conventional subsidence impacts on cliffs, the Munghorn Gap Nature Reserve and any other sensitive features, including a trigger action response plan that enables early detection of any adverse or excessive non-conventional behaviour;
- (n) include a contingency plan that expressly provides for adaptive management where monitoring indicates that there has been an exceedance of any performance measure in Tables 18 and 19, or where any such exceedance appears likely;
- (o) proposes appropriate revisions to the Rehabilitation Management Plan required under condition 56 of Schedule 3; and
- (p) include a program to collect sufficient baseline data for future Extraction Plans.

*Note: To identify the longwall mining domains referred to in this condition, see Appendix 2.*

6. The Proponent **must** ensure that the management plans required under conditions 5(g)-(l) above include:

- (a) an assessment of the potential environmental consequences of the Extraction Plan, incorporating any relevant information that has been obtained since this approval; and
- (b) a detailed description of the measures that would be implemented to remediate predicted impacts.

### **Bat Monitoring Program**

- 6A. Within twelve months of the determination of Modification 4, the Proponent must commence targeted bat surveys for any maternity / breeding caves for the Eastern Cave Bat and Large-eared Pied Bat in the UG2 Mining Area. Surveys must be undertaken during breeding season for the two bat species and continue until the completion of secondary extraction within the UG2 Mining Area.

The monitoring program must be generally consistent with the methodology outlined in the EA for Modification 4.

### **First Workings**

7. The Proponent may carry out first workings on site other than in accordance with an approved Extraction Plan, provided that Resource Regulator is satisfied that the first workings are designed to remain long-term stable and non-subsiding, except insofar as they may be impacted by approved second workings.

### **Second Workings under Palaeochannel**

- 7A. The Proponent must ensure that the longwall panels of the project do not underlie any saturated section of the palaeochannel in the vicinity of Wilpinjong Creek, unless it has demonstrated that it has obtained the necessary water licences, to the satisfaction of the Secretary.

### **Payment of Reasonable Costs**

8. The Proponent must pay all reasonable costs incurred by the department to engage suitably qualified, experienced and independent experts to review the adequacy of any aspect of an Extraction Plan.

### **Gas Drainage**

9. The Proponent must implement all reasonable and feasible measures to minimise the greenhouse gas emissions from the underground mining operations to the satisfaction of the Secretary.
10. Prior to carrying out underground mining operations, the Proponent must submit an updated Greenhouse Gas Minimisation Plan to the Secretary. This plan must:
- (a) identify options for minimising greenhouse gas emissions from underground mining operations, with a particular focus on capturing and/or using these emissions;
  - (b) investigate the feasibility of implementing each option;
  - (c) propose the measures that would be implemented in the short to medium term on site; and
  - (d) include a research program to inform the continuous improvement of the greenhouse gas minimisation measures on site.

## SCHEDULE 5 ADDITIONAL PROCEDURES

### NOTIFICATION OF LANDOWNERS/TENANTS

1. Within 1 month of the date of this approval, the Proponent **must**:
  - (a) notify in writing the owners of:
    - any residence or land exceeding the criteria in Tables 4 or 5 (respectively) of Schedule 3 that they have the right to require the Proponent to acquire their land at any stage during the project;
    - any residence exceeding the criteria in Table 6 of Schedule 3 that they have the right to request the Proponent for additional noise mitigation measures to be installed at their residence at any stage during the project; and
    - any privately-owned land within 2 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 approval; 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 EA identify that dust emissions generated by the project are likely to be greater than the relevant air quality criteria in Schedule 3 at any time during the life of the project.
2. Prior to entering into any tenancy agreement for any land owned by the Proponent that is predicted to experience exceedances of the recommended dust and/or noise criteria, or for any of the land listed in Table 3 that is subsequently purchased by the Proponent, the Proponent **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 approval, to the satisfaction of the Secretary.
3. As soon as practicable after obtaining monitoring results showing:
  - (a) an exceedance of any relevant criteria in Schedule 3, the Proponent **must** notify affected landowners in writing of the exceedance, and provide regular monitoring results to each affected landowner until the project is again complying with the relevant criteria; and
  - (b) an exceedance of the relevant air quality criteria in Schedule 3, the Proponent **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 project to be exceeding the criteria in Schedule 3, then he/she may ask the Secretary in writing for an independent review of the impacts of the project 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 Proponent **must**:

- (a) commission a suitably qualified, experienced and independent expert, whose appointment has been approved by the Secretary, to:
  - consult with the landowner to determine his/her concerns;
  - conduct monitoring to determine whether the project is complying with the relevant impact assessment criteria in Schedule 3; and
  - if the project is not complying with these criteria then:
    - determine if more than one mine is responsible for the exceedance, and if so the relative share of each mine regarding the impact on the land;
    - identify the measures that could be implemented to ensure compliance with the relevant criteria; and
- (b) give the Secretary and landowner a copy of the independent review.

### LAND ACQUISITION

5. Within 3 months of receiving a written request from a landowner with acquisition rights, the Proponent **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 project, 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 mitigation measures in conditions 2 and 6 of Schedule 3;
- (b) the reasonable costs associated with:
- relocating within the Mid-Western Regional Council 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 Proponent 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 Proponent **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 Proponent **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 Proponent's binding written offer under this condition within 6 months of the offer being made, then the Proponent's obligations to acquire the land shall cease, unless the Secretary determines otherwise.

6. The Proponent **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.
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## SCHEDULE 6 ENVIRONMENTAL MANAGEMENT, REPORTING AND AUDITING

### ENVIRONMENTAL MANAGEMENT

#### Environmental Management Strategy

1. The Proponent **must** prepare an Environmental Management Strategy for the project to the satisfaction of the Secretary. This strategy must:
  - (a) be submitted to the Secretary for approval prior to the commencement of any development on the site;
  - (b) provide the strategic framework for environmental management of the project;
  - (c) identify the statutory approvals that apply to the project;
  - (d) describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the project;
  - (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 project;
    - receive, handle, respond to, and record complaints;
    - resolve any disputes that may arise;
    - respond to any non-compliance;
    - respond to emergencies; and
  - (f) include:
    - copies of any strategies, plans and programs approved under the conditions of this approval; and
    - a clear plan depicting all the monitoring to be carried out in relation to the project.

#### 1A. The Proponent must implement the approved Environmental Management Strategy.

#### Adaptive Management

2. The Proponent must assess and manage project-related risks to ensure that there are no exceedances of the criteria and/or performance measures in Schedules 3 & 4. Any exceedance of these criteria and/or performance measures constitutes a breach of this approval 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 Proponent 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 Proponent **must** ensure that the management plans required under this approval are prepared in accordance with any relevant guidelines, and include:
  - (a) detailed 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 project 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 project;
    - 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 project 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.

### Annual Review

4. By the end of March each year, or as otherwise agreed by the Secretary, the Proponent **must** review the environmental performance of the project to the satisfaction of the Secretary. This review must:
- (a) describe the development that was carried out in the previous calendar year, and the development that is proposed to be carried out over the current calendar year;
  - (b) include a comprehensive review of the monitoring results and complaints records of the project over the previous calendar 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 EA;
  - (c) identify any non-compliance over the last year, and describe what actions were (or are being) taken to ensure compliance;
  - (d) identify any trends in the monitoring data over the life of the project;
  - (e) identify any discrepancies between the predicted and actual impacts of the project, and analyse the potential cause of any significant discrepancies; and
  - (f) describe what measures will be implemented over the next year to improve the environmental performance of the project.

### Revision of Strategies, Plans and Programs

5. Within 3 months of the submission of:
- (a) the submission of annual review under condition 4 above;
  - (b) the submission of an incident report under condition 7 below;
  - (c) the submission of an audit under condition 9 below; or
  - (d) any modification to the conditions of this approval or MP 05\_0117 (unless the conditions require otherwise),

the Proponent **must** review and, if necessary, revise the strategies, plans, and programs required under this approval to the satisfaction of the Secretary. Where this review leads to revisions in any such document, then within 4 weeks of the review 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 project.*

### Community Consultative Committee

6. The Proponent **must** operate a Community Consultative Committee (CCC) for the Moolarben mine complex to the satisfaction of the Secretary. This CCC must be operated in general accordance with the *Guidelines for Establishing and Operating Community Consultative Committees for Mining Projects* (Department of Planning, 2007, or its latest version), and be operating by the end of March 2015.

#### Notes:

- *The CCC is an advisory committee. The Department and other relevant agencies are responsible for ensuring that the Proponent complies with this approval; and*
- *The CCC should be comprised of an independent chair and appropriate representation from the Proponent, Council, recognised environmental groups and the local community.*

## REPORTING

### Incident Reporting

7. The Proponent **must** immediately notify the Secretary and any other relevant agencies of any incident that has caused, or threatens to cause, material harm to the environment. For any other incident associated with the project, the Proponent **must** notify the Secretary and any other relevant agencies as soon as practicable after the Proponent becomes aware of the incident. Within 7 days of the date of the incident, the Proponent **must** provide the Secretary and any relevant agencies with a detailed report on the incident, and such further reports as may be requested.

### Regular Reporting

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



## AUDITING

9. By 31 December 2015, and every 3 years thereafter, unless the Secretary directs otherwise, the Proponent **must** commission and pay the full cost of an Independent Environmental Audit of the project. This audit **must**:
- (a) be conducted by a suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Secretary;
  - (b) include consultation with the relevant agencies;
  - (c) assess the environmental performance of the project and assess whether it is complying with the requirements in this approval, and any other relevant approvals, relevant EPL/s and/or Mining Lease (including any assessment, plan or program required under these approvals);
  - (d) review the adequacy of any approved strategy, plan or program required under the abovementioned approvals; and
  - (e) recommend measures or actions to improve the environmental performance of the project, and/or any strategy, plan or program required under these approvals.
- Note: This audit team must be led by a suitably qualified auditor, and include experts in noise, air quality, ecology, Aboriginal heritage and any other fields specified by the Secretary.*
10. Within 3 months of commissioning this audit, or as otherwise agreed by the Secretary, the Proponent **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. The Proponent **must**:
- (a) make the following information publicly available on its website:
    - the EA;
    - current statutory approvals for the project;
    - approved strategies, plans or programs required under the conditions of this approval;
    - a comprehensive summary of the monitoring results of the project, which have been reported in accordance with the various plans and programs approved under the conditions of this approval;
    - a complaints register, which is to be updated on a monthly basis;
    - minutes of CCC meetings;
    - the last five annual reviews;
    - any independent environmental audit, and the Proponent's response to the recommendations in any audit;
    - any other matter required by the Secretary; and
  - (b) keep this information up to date,
  - (c) investigate and report on reasonable and feasible measures to make predictive meteorological data and real time monitoring data publicly available on its website to the satisfaction of the Secretary.

**APPENDIX 1  
SCHEDULE OF LAND**

Lot and Deposited Plan Number	Tenure Type
Lot 1 DP1023568	Freehold
Lot 1 DP755454	Freehold
Pt Lot 1 DP803204	Freehold
Lot 1 DP817487	Freehold
Lot 105 DP755454	Freehold
Pt Lot 107 DP755454	Freehold
Lot 11 DP1152406	Freehold
Pt Lot 110 DP755442	Freehold
Lot 112 DP755454	Freehold
Lot 113 DP755454	Freehold
Lot 119 DP755442	Freehold
Pt Lot 192 DP755442	Freehold
Pt Lot 193 DP755442	Freehold
Lot 2 DP1023568	Freehold
Pt Lot 2 DP1143354	Freehold
Lot 2 DP755454	Freehold
Lot 2 DP878678	Freehold
Lot 21 DP755454	Freehold
Pt Lot 218 DP755442	Freehold
Lot 223 DP755442	Freehold
Pt Lot 228 DP755442	Freehold
Pt Lot 229 DP755442	Freehold
Lot 234 DP755442	Freehold
Pt Lot 238 DP755442	Freehold
Lot 262 DP755442	Freehold
Lot 3 DP878678	Freehold
Lot 32 DP755454	Freehold
Lot 33 DP755454	Freehold
Lot 34 DP755454	Freehold
Pt Lot 36 DP755442	Freehold
Lot 36 DP755454	Freehold
Pt Lot 37 DP755442	Freehold
Lot 4 DP755454	Freehold
Lot 4 DP878678	Freehold
Lot 41 DP755454	Freehold
Lot 42 DP755454	Freehold
Lot 44 DP755442	Freehold
Lot 5 DP878678	Freehold
Lot 53 DP755454	Freehold
Lot 57 DP755454	Freehold
Lot 58 DP755454	Freehold

Lot and Deposited Plan Number	Tenure Type
Lot 6 DP878678	Freehold
Lot 60 DP755442	Freehold
Lot 61 DP755442	Freehold
Lot 61 DP755454	Freehold
Lot 62 DP755454	Freehold
Lot 7 DP755454	Freehold
Lot 7 DP878678	Freehold
Lot 76 DP755454	Freehold
Lot 8 DP755454	Freehold
Lot 82 DP755454	Freehold
Lot 85 DP755454	Freehold
Lot 86 DP755454	Freehold
Lot 90 DP755454	Freehold
Lot 91 DP755454	Freehold
Lot 92 DP755454	Freehold
Lot 93 DP755442	Freehold
Lot 93 DP755454	Freehold
Lot 95 DP755442	Freehold
Lot 96 DP755454	Freehold
Lot 97 DP755454	Freehold
Lot 99 DP755454	Freehold
Pt Lot 3 DP115031	Freehold
Lot 91 DP755442	Freehold
Lot 242 DP755442	Freehold
Pt Lot 7 DP755442	Freehold
Lot 95 DP755454	Freehold
Lot 79 DP755454	Freehold
Pt Lot 6 DP206588	Freehold
Pt Lot 68 DP755454	Freehold
Pt Lot 4 DP206588	Freehold
Pt Lot 7010 DP1025345	Crown
Lot 54 DP755454	Freehold
Pt Lot 92 DP755442	Freehold
Pt Lot 67 DP755454	Freehold
Lot 28 DP755454	Freehold
Lot 80 DP755454	Freehold
Lot 65 DP755454	Freehold
Lot 277 DP755442	Freehold
Pt Lot 2 DP206588	Freehold
Lot 77 DP755454	Freehold
Pt Lot 5 DP206588	Freehold
Lot 120 DP724656	Freehold
Lot 117 DP705226	Freehold

Lot and Deposited Plan Number	Tenure Type
Pt Lot 12 DP755454	Freehold
Lot 78 DP755454	Freehold
Pt Lot 3 DP206588	Freehold
Pt Lot 52 DP755454	Freehold
Lot 40 DP755454	Freehold
Lot 38 DP755454	Freehold
Lot 253 DP755442	Freehold
Lot 71 DP755454	Freehold
Lot 63 DP755454	Freehold
Lot 272 DP755442	Freehold
Lot 74 DP755454	Freehold
Lot 75 DP755454	Freehold
Pt Lot 69 DP755454	Freehold
Pt Lot 122 DP724655	Freehold
Lot 118 DP724657	Freehold
Lot 106 DP755454	Freehold
Lot 29 DP755454	Freehold
Pt Lot 59 DP755454	Freehold
Pt Lot 1 DP1089166	Freehold
Lot 50 DP755454	Freehold
Lot 30 DP755454	Freehold
Pt Lot 1 DP1099037	Freehold
Pt Lot 7 DP206588	Freehold
Lot 116 DP705226	Crown
Lot 179 DP755442	Freehold
Lot 121 DP724656	Crown
Lot 119 DP724657	Crown
Pt Lot 123 DP724655	Crown
Lot 43 DP755454	Crown
Lot 44 DP755454	Crown
Lot 1 DP722881	Freehold
Lot 178 DP755442	Freehold
Lot 2 DP722882	Freehold
Lot 3 DP722882	Freehold
Lot 13 DP1152406	Freehold
Lot 17 DP1140073	Freehold
Lot 16 DP1140073	Freehold
Pt Lot 18 DP1140073	Freehold
Lot 20 DP1140073	Freehold
Pt Lot 1 DP1214133	Freehold
Pt Lot 3 DP1214133	Freehold
Lot 1 DP1016396	Freehold
Lot and Deposited Plan Number	Tenure Type
<b>Other Land</b>	

Lot and Deposited Plan Number	Tenure Type
Roads located between or adjacent to the above parcels of land	Council and Crown
Creeks or streams located between or adjacent to the above parcels of land	Crown
Sandy Hollow – Gulgong Railway	State Rail Authority

FOR INFORMATION

## APPENDIX 2 GENERAL LAYOUT OF PROJECT

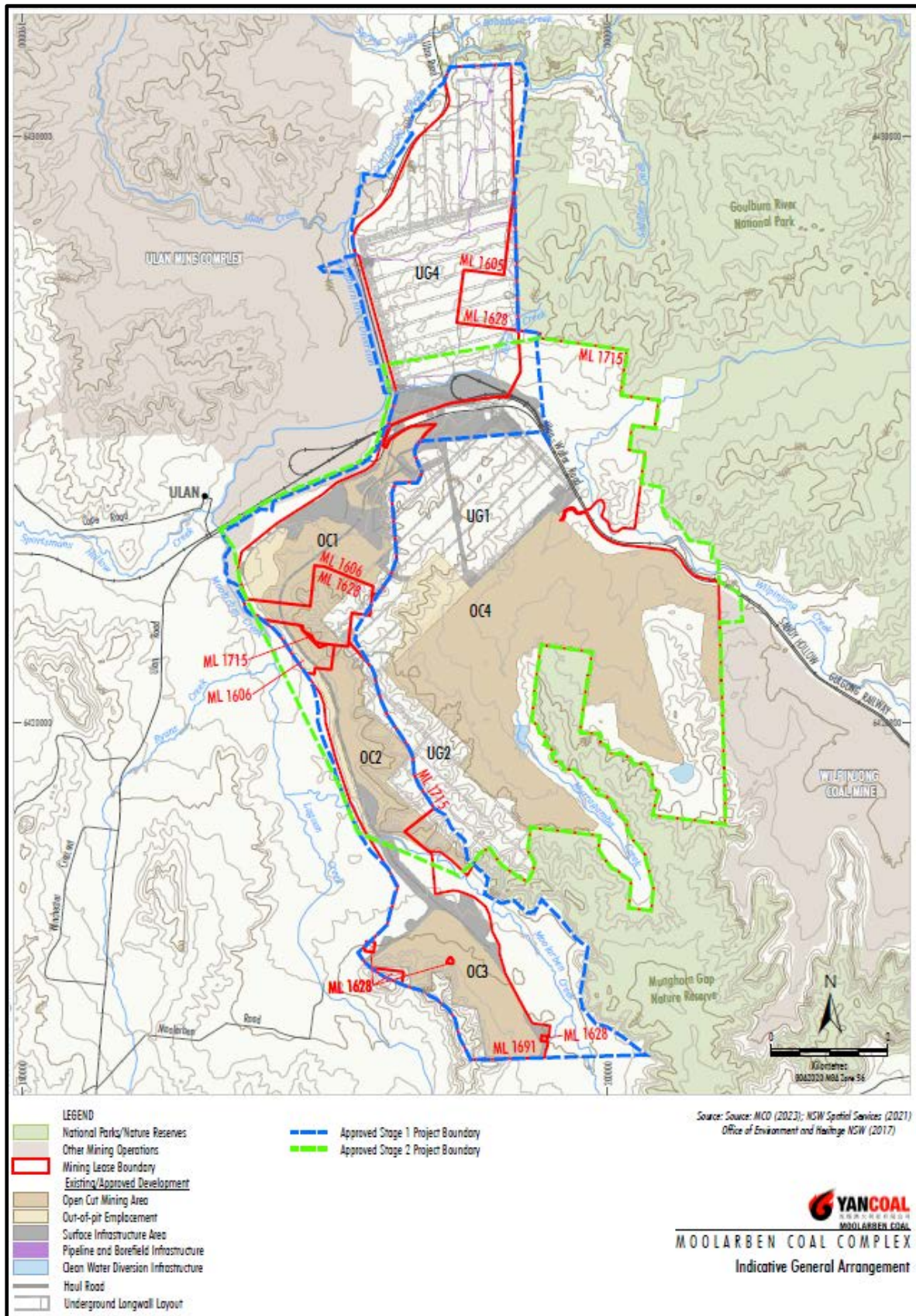


Figure 2.1: General Project Arrangement

**APPENDIX 3  
STATEMENT OF COMMITMENTS**

Ref	Commitment
<b>Mining Operations</b>	
1.	MCM will operate the Stage 1 and Stage 2 projects as a combined mining complex (the MCC) to extract up to 24 Mtpa of ROM coal comprising: <ul style="list-style-type: none"> <li>• 16 Mtpa from combined open cut operations (with up to 10 Mtpa derived from Stage 1 OCs and up to 16 Mtpa from Stage 2 OC); and</li> <li>• up to 8 Mtpa from underground operations,</li> </ul> until 31 December 2038, generally in accordance with the EA.
2.	MCM will ensure that open cut plant and equipment meet the sound power levels described in the noise impact assessment for the project, including specifying sound power levels and factory fitting of attenuation kits in relevant plant and equipment purchase contracts.
3.	MCM will obtain all necessary licences and approvals required to operate the Stage 2 project, generally in accordance with the Stage 2 EA and PPR.
<b>Environmental Management</b>	
4.	MCM will revise the Stage 1 Environmental Management System to incorporate the MCC Stage 2 project in consultation with relevant regulators and stakeholders (where appropriate). This may require revision or preparation of monitoring and management plans as prescribed by the Project Approval, such as (where relevant): <ul style="list-style-type: none"> <li>• Environmental Monitoring Program;</li> <li>• Air Quality and Greenhouse Gas Management Plan (including energy savings actions);</li> <li>• Spontaneous Combustion Management Plan;</li> <li>• Noise Management Plan;</li> <li>• Blast Management Plan;</li> <li>• Water Management Plan (including groundwater and surface water);</li> <li>• Creek and Aquatic Rehabilitation Plan;</li> <li>• Rehabilitation Management Plan;</li> <li>• Biodiversity Management Plan;</li> <li>• Subsidence Management Plan;</li> <li>• Aboriginal Cultural Heritage Management Plan;</li> <li>• Non Aboriginal Heritage Management Plan;</li> <li>• Erosion and Sediment Control Plan;</li> <li>• Social Engagement and Issue Response Strategy;</li> <li>• Bushfire Management Plan; and</li> <li>• Waste Management Plan.</li> </ul> (Note where applicable or appropriate some of these plans may be combined).
<b>Air Quality</b>	
5.	MCM will use its best endeavours to implement industry best practice air quality management initiatives to minimise the air quality impacts of the MCC.
6.	The revised MCC Air Quality Management Plan (and future variations) will include a validation exercise of the real time response triggers.

<b>Ref</b>	<b>Commitment</b>
7.	MCM will complete a review of particulate emission controls implemented at the MCC against industry best practice on a three yearly basis and report the findings in the relevant Annual Review.
8.	MCM will develop and implement meteorological criteria to help ensure that blasting is not undertaken under unfavourable wind and/or atmospheric conditions which would result in an exceedance of relevant criteria.
9.	Where air quality impacts are predicted to exceed criteria at private residences in the PPR due to MCC operations, MCM will install a first flush system to the rain water tanks upon written request of the landholder.
<b>Greenhouse Gas</b>	
10.	MCM will undertake regular revision of energy efficiency initiatives to ensure that Scope 1 greenhouse gas emissions per tonne of product coal are kept to the minimum practicable level.
<b>Noise and Blasting</b>	
11.	MCM will use its best endeavours to implement industry best practice noise control and management measures to minimise the noise impacts of the MCC.
12.	MCM will proactively manage its operations to ensure noise impacts are within the worst case predicted noise envelope.
13.	MCM will ensure noise monitoring is implemented to determine and manage the contribution to cumulative mine noise from the MCC at Property 258, including implementing at least quarterly attended noise monitoring and installing a directional noise monitor in the vicinity of the property in conjunction with the Ulan Mine, unless monitoring indicates there is no noise impact from the MCC at this property.
14.	MCM will work cooperatively with neighbouring mines to develop a blast monitoring system which is representative of the closest sensitive receivers to ensure compliance with the relevant blast criteria.
15.	The sound power of the conveyor used in the NIA will be provided to equipment manufacturers and suppliers to help ensure that the conveyor is maintained at these levels during operations
16.	MCM will continue to advise neighbours of blasting schedules upon request so that any concerns regarding blasting and impacts to pets and livestock can be managed by neighbours.
<b>Water Resources</b>	
17.	MCM will implement the water management and mitigation measures described in the PPR and subsequent supporting documents.
18.	MCM will continue to monitor groundwater impacts on surrounding privately owned bores. In the event that it is demonstrated that water levels in existing landholder bores decline as a consequence of the MCC, leading to an adverse impact on groundwater supply, MCM will: <ul style="list-style-type: none"> <li>• engage an appropriately qualified and experienced hydrogeologist to investigate the cause of the impact and recommend an appropriate action response plan; and</li> <li>• provide an alternate interim water supply or commensurate compensation as agreed to with the landholder.</li> </ul>
19.	MCM will develop a surface water monitoring program to quantify the streamflow and water quality characteristics within Murragamba and Eastern Creeks for existing conditions prior to mining of the creek lines.
20.	MCM will manage rainfall run-off from MCC mine disturbed areas to prevent contamination of downstream water sources from sediment laden water, unless otherwise approved under a relevant Environment Protection Licence.

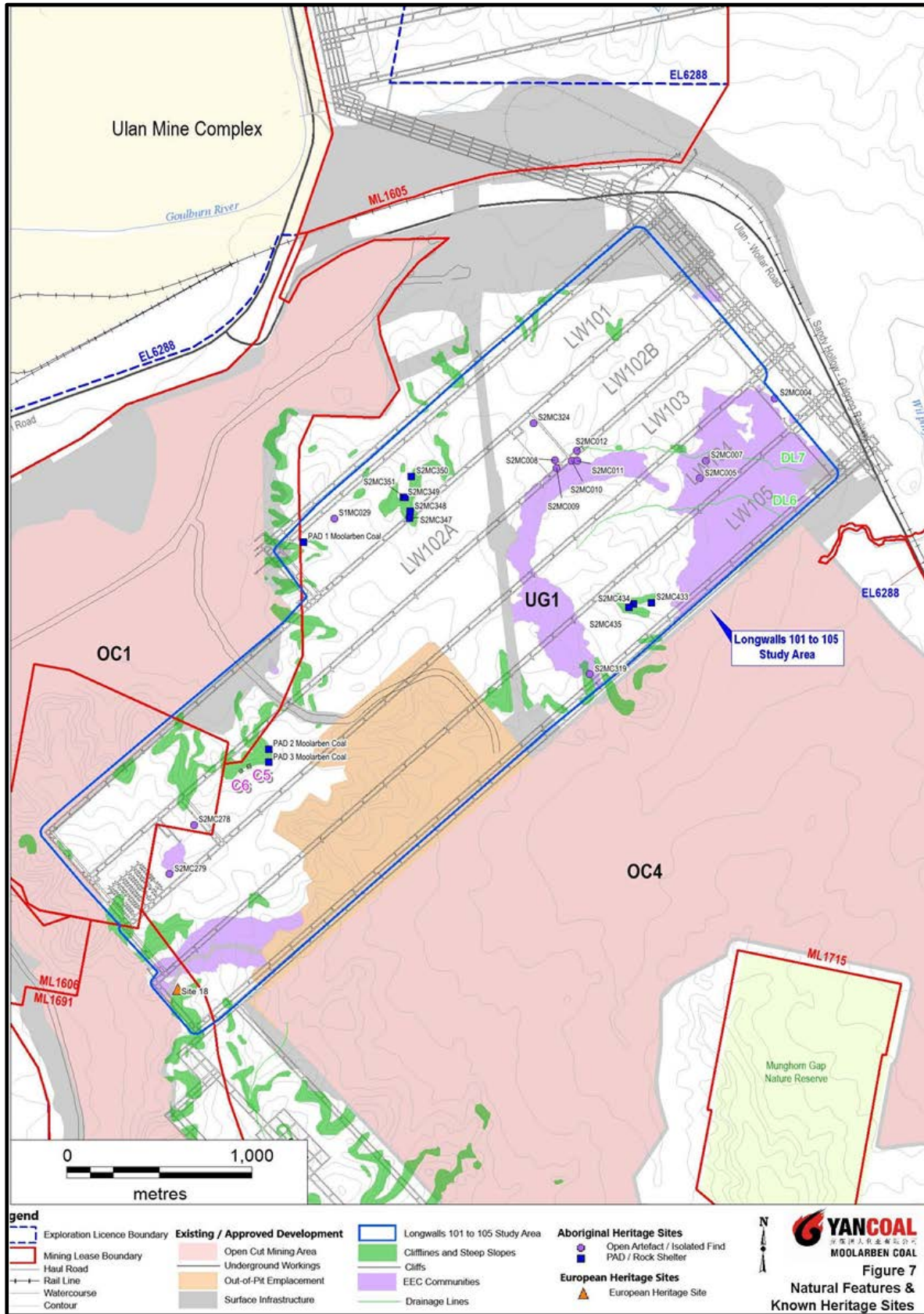


Ref	Commitment
21.	MCM will develop a six monthly water balance for MCC operations to assist in site water management and monitoring protocols. This will be reviewed on a regular basis to account for changing mine water inflows and water management infrastructure as mining progresses. The frequency of this review will be revised after Year 3 of Stage 2 operations to the approval of relevant regulators.
22.	Collated groundwater monitoring data will be reviewed annually to assess the impacts of the MCC on the groundwater environment and to compare observed impacts with those predicted from groundwater modelling.
23.	The groundwater monitoring program will be revised to include additional piezometers in alluvial areas, including palaeochannel areas, potentially affected by the MCC.
24.	A groundwater modelling post-audit and model re-calibration (where required) will be carried out 2 years (and 5 yearly thereafter) after commencing Stage 2 coal extraction. Should any groundwater review or post-audit indicate a significant variance from the model predictions, an appropriate response will be implemented in consultation with NOW and DP&I.
25.	MCM will acquire relevant licences under the <i>Water Act 1912</i> and <i>Water Management Act 2000</i> as required (or implement other such ameliorative measures as agreed with relevant regulators, such as return flows or other such reasonable and feasible mitigation measures to reduce the total direct and indirect water take of the MCC from alluvial and connected surface water sources).
26.	MCM will endeavour to implement an integrated monitoring program for the MCC, with UCML and Wilpinjong Coal Mine for data-sharing.
27.	MCM commits to realign and reconstruct the mined sections of Murragamba and Eastern creeks to meet geomorphological, hydraulic and ecological performance and completion criteria developed in consultation with relevant regulators.
28.	MCM will develop operational criteria for the realigned sections of Murragamba and Eastern creeks in consultation with relevant regulators and install diversions around the realigned sections of creek until such time as they become operational.
<b>Ecology</b>	
29.	MCM will implement the ecological management and mitigation measures described in the PPR and subsequent supporting documents.
30.	MCM will establish the Biodiversity Offset Strategy as described in the PPR and subsequent supporting documents to initially maintain and ultimately improve ecological values.  Where ownership or the controlling interest of any proposed offset property is not able to be held by MCM it will either provide an alternate property of equal biodiversity value as a replacement, or make other such alternate arrangements as agreed to with relevant regulators.  Management of offset properties for conservation purposes will be described in a Rehabilitation Offset Management Plan (or equivalent).
31.	MCM will implement appropriate security mechanisms to ensure that offset areas and rehabilitated areas (at the completion on mining) are protected in the long-term.
32.	MCM will continue to consult with OEH on the inclusion of relevant Moolarben owned properties into the existing Avisford Nature Reserve.
<b>Aboriginal Archaeology and Cultural Heritage</b>	
33.	The salvage and the protection of all known Aboriginal objects within the Project Boundary will be managed in accordance with the measures described in the PPR, subsequent supporting documents and an approved Aboriginal Cultural Heritage Management Plan for the MCC which has been prepared

Ref	Commitment
	<p>in consultation with local Aboriginal community stakeholders and the OEH.</p> <p>Prior to finalisation and approval of the Aboriginal Cultural Heritage Management Plan, the description of significance, development area, potential impacts, management strategies and current management status for all sites in the Stage 2 area will be reviewed by a suitably experienced and qualified archaeologist.</p>
34.	<p>Unsurveyed areas such as the Powers Management Area will be assessed and managed in accordance with the procedures agreed to with local Aboriginal community stakeholders and approved in the Aboriginal Cultural Heritage Management Plan for the MCC.</p>
35.	<p>MCM will manage the Aboriginal conservation zones as outlined in the PPR and subsequent supporting documents in consultation with local Aboriginal community stakeholders.</p>
<b>Rehabilitation</b>	
36.	<p>MCM will rehabilitate the Stage 2 project area to restore forest and woodland across the valley landscape, including rehabilitating 631 ha of currently degraded secondary grasslands.</p> <p>Areas of derived native grassland, secondary grassland and exotic grassland will be rehabilitated to treed landscapes.</p>
37.	<p>MCM will implement best practice environmental management to progressively rehabilitate mined and degraded non-mined areas with a focus on the re-establishment of C/EEC Box Gum Woodland and threatened species habitat.</p>
38.	<p>The gradients of final landform slopes will be generally designed to be no more than 10 to 14 degrees. However, where the out-of-pit (OOP) emplacement area is spatially constrained the final gradients of these slopes will be limited to a maximum of 20 degrees, provided it is agreed to by the relevant regulators.</p>
<b>Traffic and Transport</b>	
39.	<p>Early morning and evening shift changes will be outside school bus service times, and where feasible will be offset from existing Ulan and Wilpinjong mine shift changes over time to minimise peak traffic loads on the road network.</p>
40.	<p>MCM will work with MRWC and Ulan and Wilpinjong coal mines to generally improve road safety and traffic management on the local road network.</p>
<b>Visual</b>	
41.	<p>Rehabilitation will be carried out on disturbed areas as soon as practical after disturbance with emphasis on bunding and the OOP emplacement area.</p>
42.	<p>Infrastructure lighting will be designed to control light spill with directional lighting in elevated and exposed areas and will utilise low intensity lights to the level necessary for operational and safety requirements to minimise adverse night lighting impacts.</p>

<b>Community</b>	
43.	MCM will provide fair and reasonable community enhancement contributions for Stage 2 of the MCC to MWRC, which will augment the existing VPA for Stage 1.
44.	MCM will consult with the community, neighbouring industry and government authorities in relation to the MCC.
45.	MCM will employ appropriately qualified persons residing in the MWRC area where feasible. MCM will also provide traineeships for young people residing in the MWRC area.
<b>Reporting</b>	
46.	MCM will prepare an Annual Review (which summarises monitoring results and reviews performance) and distribute it to the relevant regulatory authorities and the MCM CCC.

**APPENDIX 4**  
**UG1 MINE LAYOUT AND LOCATION OF NATURAL AND BUILT FEATURES**



**Figure 4.1: Natural and Heritage Features – UG1 Mining Domain**

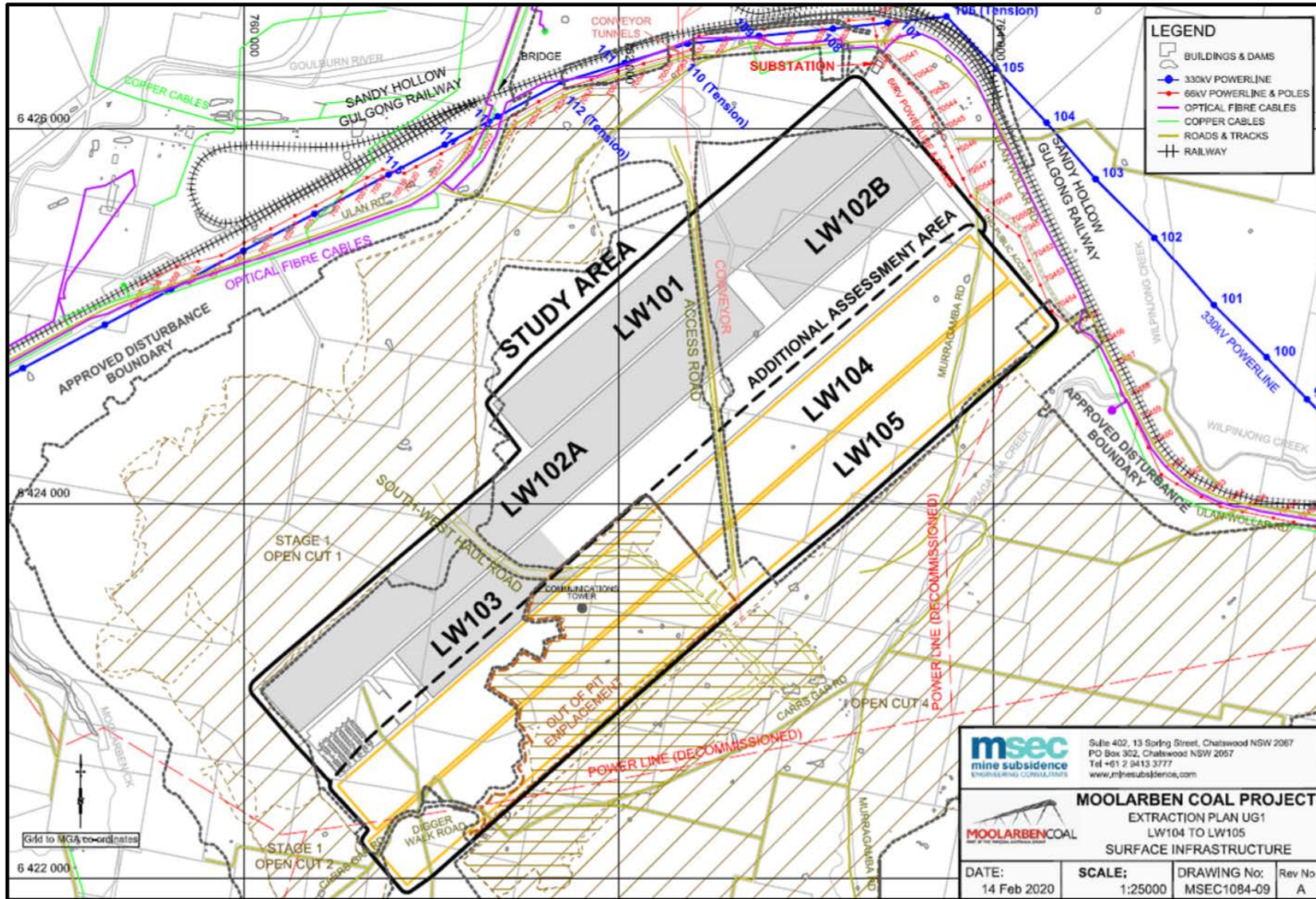
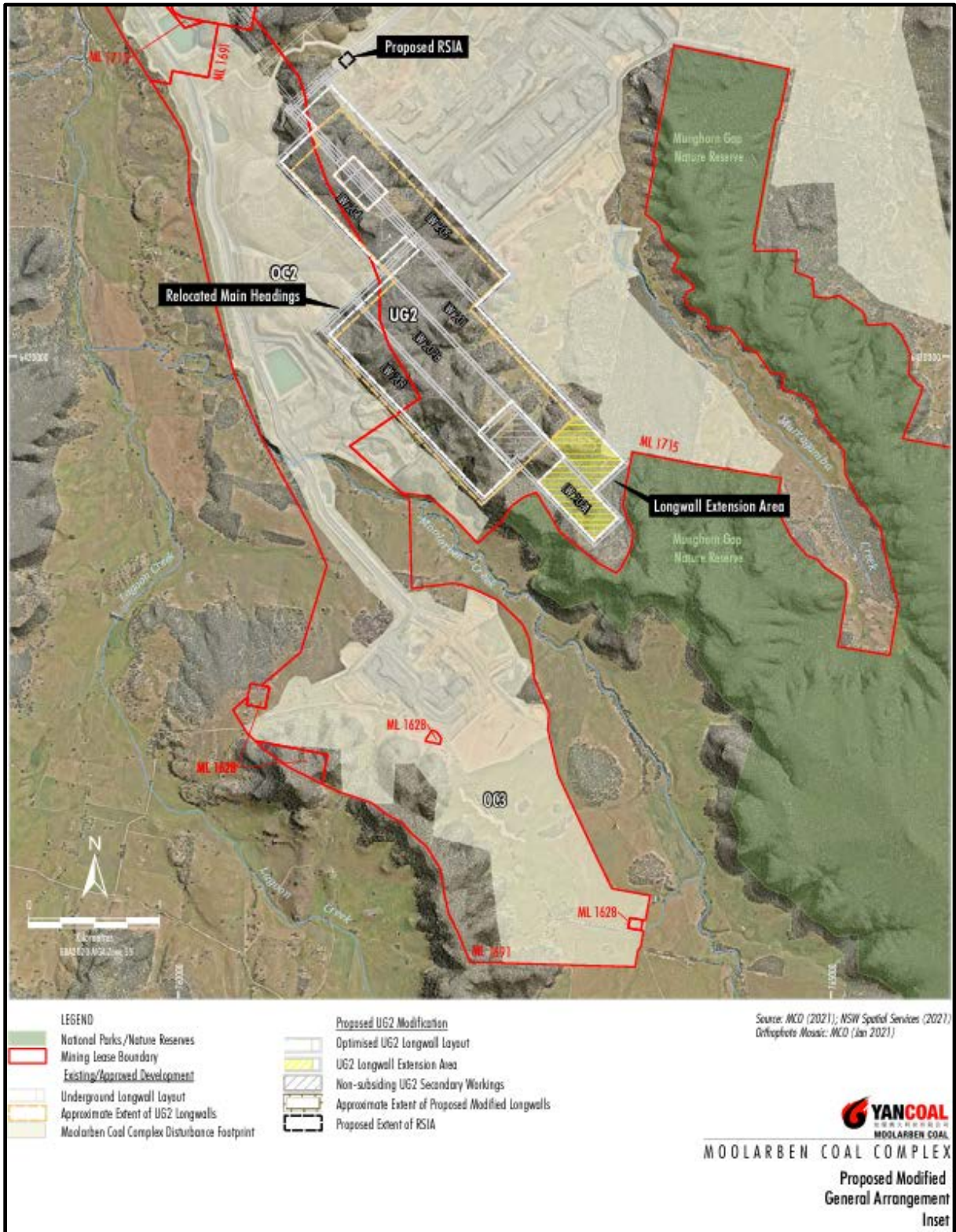


Figure 4.2 - Built Features – UG1 Mining Domain

**Appendix 4B**  
**UG2 MINING LAYOUT AND LOCATION OF NATURAL AND BUILT FEATURES**



**Figure 4.3 – UG2 Mining Layout**

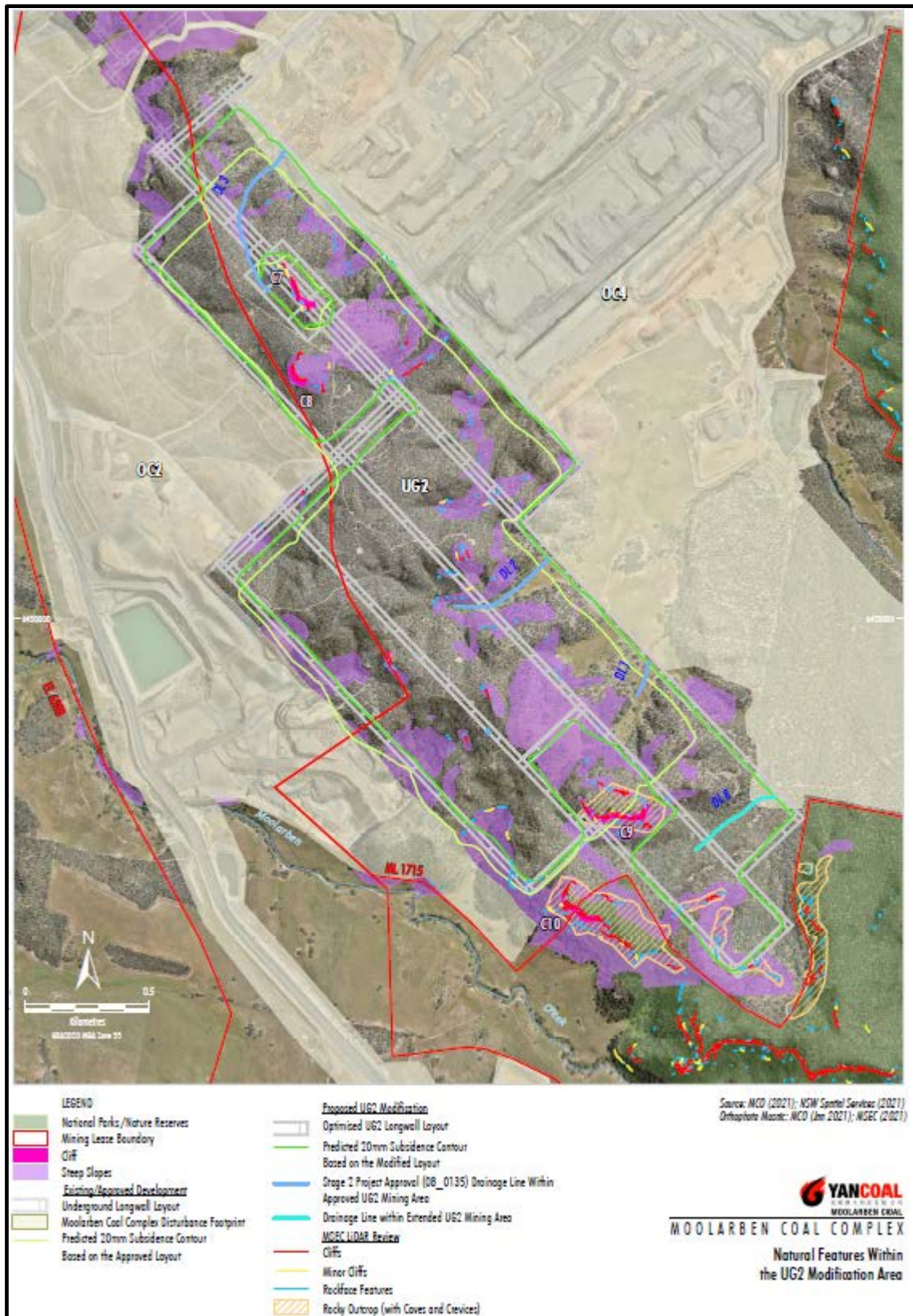


Figure 4.4 - Natural Features – UG2 Mining Domain

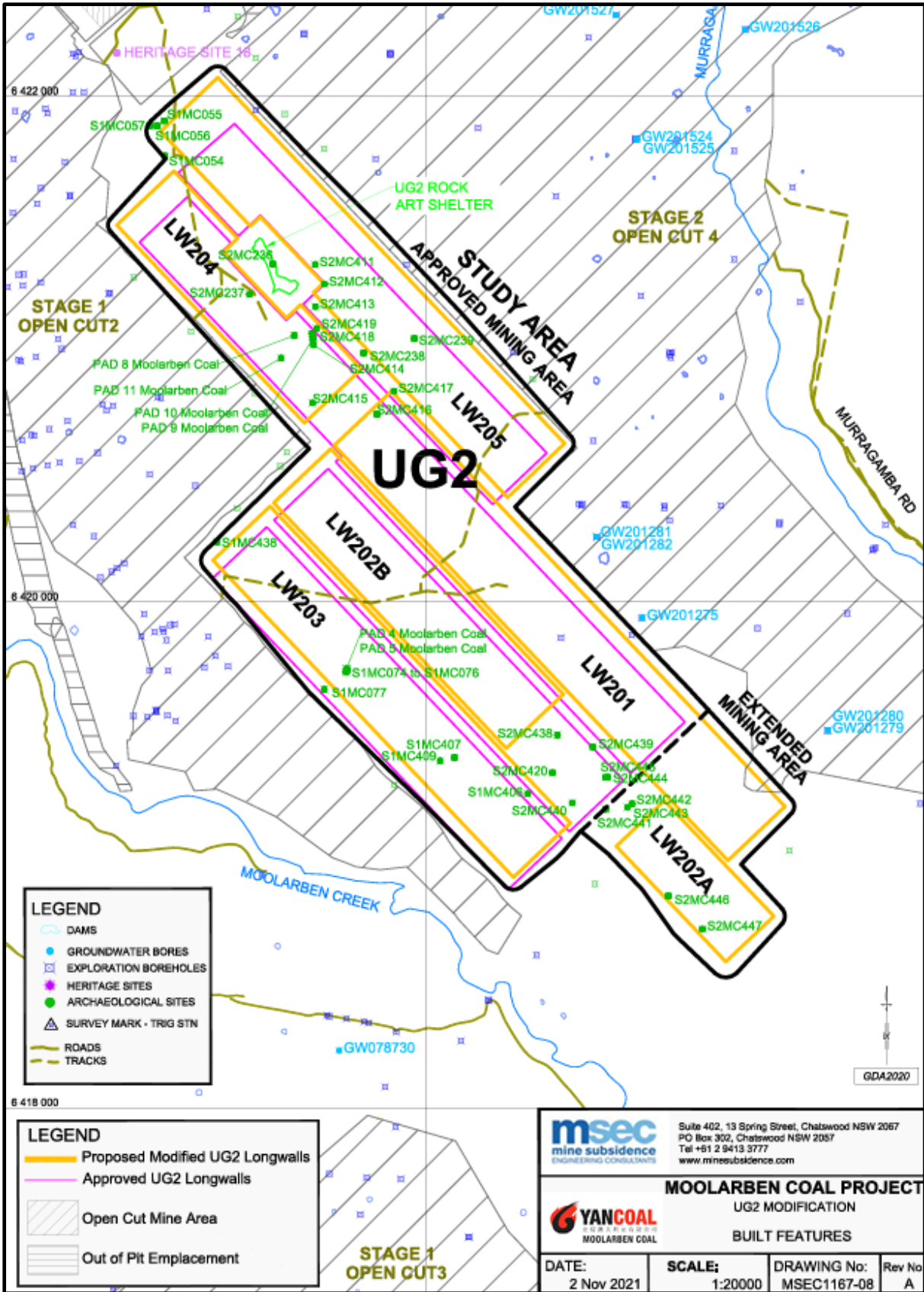


Figure 4.5 - Built and Heritage Features – UG2 Mining Domain



## APPENDIX 5 PROPERTY NUMBERS AND LAND OWNERSHIP

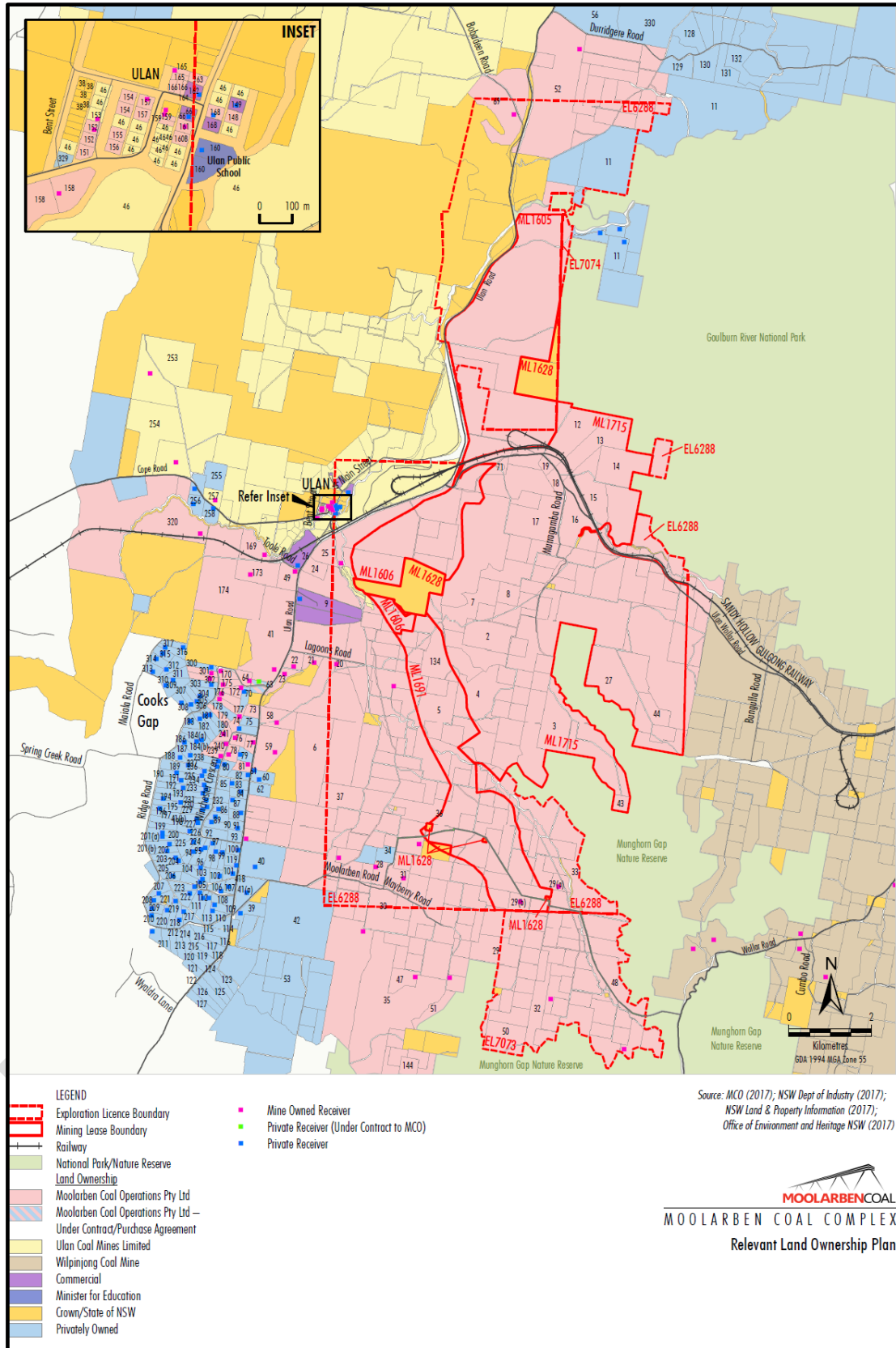


Figure 5.1 Relevant Land Ownership

Ref No	Landholder	Ref No	Landholder	Ref No	Landholder	Ref No	Landholder
1-8	Moolarben Coal Operations Pty Ltd	101(a)	PJ Keams	190	T & LK Sahyoun	300	CM Collins & CY Marshall
9	Orica Australia Pty Limited	102	KA Roberts	191	BW & TS Lasham	301-302	Moolarben Coal Operations Pty Ltd
10	Moolarben Coal Operations Pty Ltd	103	SB Burnett & SL Grant	192	D Williams	303	HJ Ungaro
11	JE Mullins & CD Imrie	104	RA & LA Deeben	193	DJ Maloney	304	G Balajan
12-25	Moolarben Coal Operations Pty Ltd	105	DJ & N Katsikaris	194	PM & K Potts	305	L Barisic & M Aul
26	Forty North Pty Limited	106	TB & JH Reid	195	R Cottam	306	E Armstrong
27-33	Moolarben Coal Operations Pty Ltd	107	ZJ & M & AA Raso	196	F Saxberg & M Weir	307	M Chant & NK Young
34	T Rheinberger	108	R Varga	197	PGG & I Neilsen	308	NA Dower
35-37	Moolarben Coal Operations Pty Ltd	109	DA Evans	198	GR & ME Metcalfe	309	GS Maher
38	The State of New South Wales	110	JT Thompson & HT Evans	199	PGG & I Neilsen	310	KI Death
39	RM & DJ Sprigg	111	GJ & NJ McEwan	200	VK Grimshaw	311	BJ & LC Williamson
40	JM Devenish	112	MJ & LM Croft	201	KR & GM Towerton	312	MS & JJ Ioannou
41	Moolarben Coal Operations Pty Ltd	113	CPG Ratcliff	202	H & VF Butler	313	NJ & BDE Pracy
41(a&b)	PP Libertis	114	TF & K Holland	203	DJ Miller	314	SL Ford
42	C & L Schmidt	115	PR McLean	204	RB & JE Donnan	315	WJ Richards & BJ Uzelac
43-44	Moolarben Coal Operations Pty Ltd	116	DJ & SM Reid	205	DW Sparrow & M Tallan	316	CR Vassel & CM Williams
45	Advance Energy	117	JM Dick	206	CA Marshall & R Vella	317	RJ Hore & V Bingham
46	Ulan Coal Mines Limited	118	A Scott	207	AA & DM Smith	320	Moolarben Coal Operations Pty Ltd
46(b)	North-Eastern Wiradjuri Wilpinjong Community Fund Limited	119	PJ Keams	208	SA & CR Hasaart	325	S & T Fevale
47-52	Moolarben Coal Operations Pty Ltd	120	PS & DR Ord	209	F Mawson	326	AW & LM Murray
53	WD & MS Bryant	121	EJ Cullen	210	JM & AM Tebutt	327	CA Tanner
54	MA & C Harris	122	WF Wirth	211	SA McGregor & WJ Gray	328	Essential Energy
56	V Cundy	123	G Tuck-Lee & Symons	212	E & M Lepik	329	G Tuck-Lee
58-59	Moolarben Coal Operations Pty Ltd	124	WJ & HE Bailey	213	D & J Parsonage	330	Nwiran Pty Limited
60	CL Rayner & DM Munday	125	DB McBride	214	KK & EG O'Neil		
61	MA Miller	126	MP Julian	215	SG & PM Green		
62	R Menchin	127	BKT & SA Bracken	216	G Holland & FA Handicott		
63	BF & B Whiticker	128	AW Sims	217	GF & GEL Soady		
64	Moolarben Coal Operations Pty Ltd	129	M Yelds	219	T & S Riger		
66	Rostheme Pty Limited	130	GP McEwen	220	SJ Rusten & NJ Smith		
69	Moolarben Coal Operations Pty Ltd	131	GR & RA King	221	The State of New South Wales		
70	DJ & A Coventry	132	N Atkins	222	BJ Purtell		
71	Moolarben Coal Operations Pty Ltd	134	Moolarben Coal Operations Pty Ltd	223	EW Palmer & JM Stewart		
73-74	Moolarben Coal Operations Pty Ltd	144	Moolarben Coal Operations Pty Ltd	224	RS & PCC Dupond		
75	P Ban	148	Moolarben Coal Operations Pty Ltd	225	G & RF Douletas		
76-78	Moolarben Coal Operations Pty Ltd	149	Mid-Western Regional Council	226	LAA & FC Muscat		
79	PTJ & SE Nagle	151-152	Moolarben Coal Operations Pty Ltd	227	WP & JA Hughes		
80	W & D Sebelic	153	Ulan Coal Mine Limited	229	JJ & BA Lowe		
81	Moolarben Coal Operations Pty Ltd	154-159	Moolarben Coal Operations Pty Ltd	230	DA Hoole & DT Rawlinson		
82	SC Hungerford & MC Clemens	160	Minister For Education And Training	231	T Morrison & SM Benny		
83	DS Sebelic	160(b)	Moolarben Coal Operations Pty Ltd	232	L & JA Haaring		
85	J & Z Nikolovski	161	Moolarben Coal Operations Pty Ltd	233	K & D Boal		
86	NW Harris	162	Rowmint Pty Limited	234	D & L Gaw		
87	BJ & K Howe	163-166	Moolarben Coal Operations Pty Ltd	235	LM & RS Wilson		
88	BC Meyers	168	PJL Constructions Pty Limited	236	RG & CA Donovan		
89	MV & HM Glover & E & BJ Tomlinson	169-170	Moolarben Coal Operations Pty Ltd	237	B & S Stokes		
90	SA Powell	171	AD & SA McGregor	238	B Powell		
91	HM Graham	172-177	Moolarben Coal Operations Pty Ltd	239-241	Moolarben Coal Operations Pty Ltd		
92	VA Pulicino & J, S & G Bonnici	178	PR Stone	244	JT & YR Jones		
93	F & M Fenech	180	CD & LL Barrett	245	MP & KLE Cresham		
94	LK Mittermayer	181	SM Forster	247	J & K Batshon		
95	BJ Withington	182	J Dutoitcook	248	G Boustani		
96	D Lazic	183	R & EA Steines	249	CJ & JI Eldridge		
97	DJ & MD Smith	184(a&b)	IA Stevenson	251	NF Potter & CE Selley		
98	ME & JJ Piper	186	RW & J Adamson	253-254	Ulan Coal Limited		
99	DE Jenner & WB Jensen	187	BT & KM Feeney	255	HJ & H Schmitz		
100	W Ellem	188	KR & T Fielding	256	RC Campbell		
101	RD & DMZ Hull	189	GA Fay	258	PM & CD Elias		

Table 5.1: Landowners

## APPENDIX 6 NOISE COMPLIANCE ASSESSMENT

### Applicable Meteorological Conditions

1. The noise criteria in Table 3 of the conditions are to apply under all meteorological conditions except the following:
  - (a) wind speeds greater than 3 m/s at 10 metres above ground level; or
  - (b) stability category F temperature inversion conditions and wind speeds greater than 2 m/s at 10 m above ground level; or
  - (c) stability category G temperature inversion conditions.

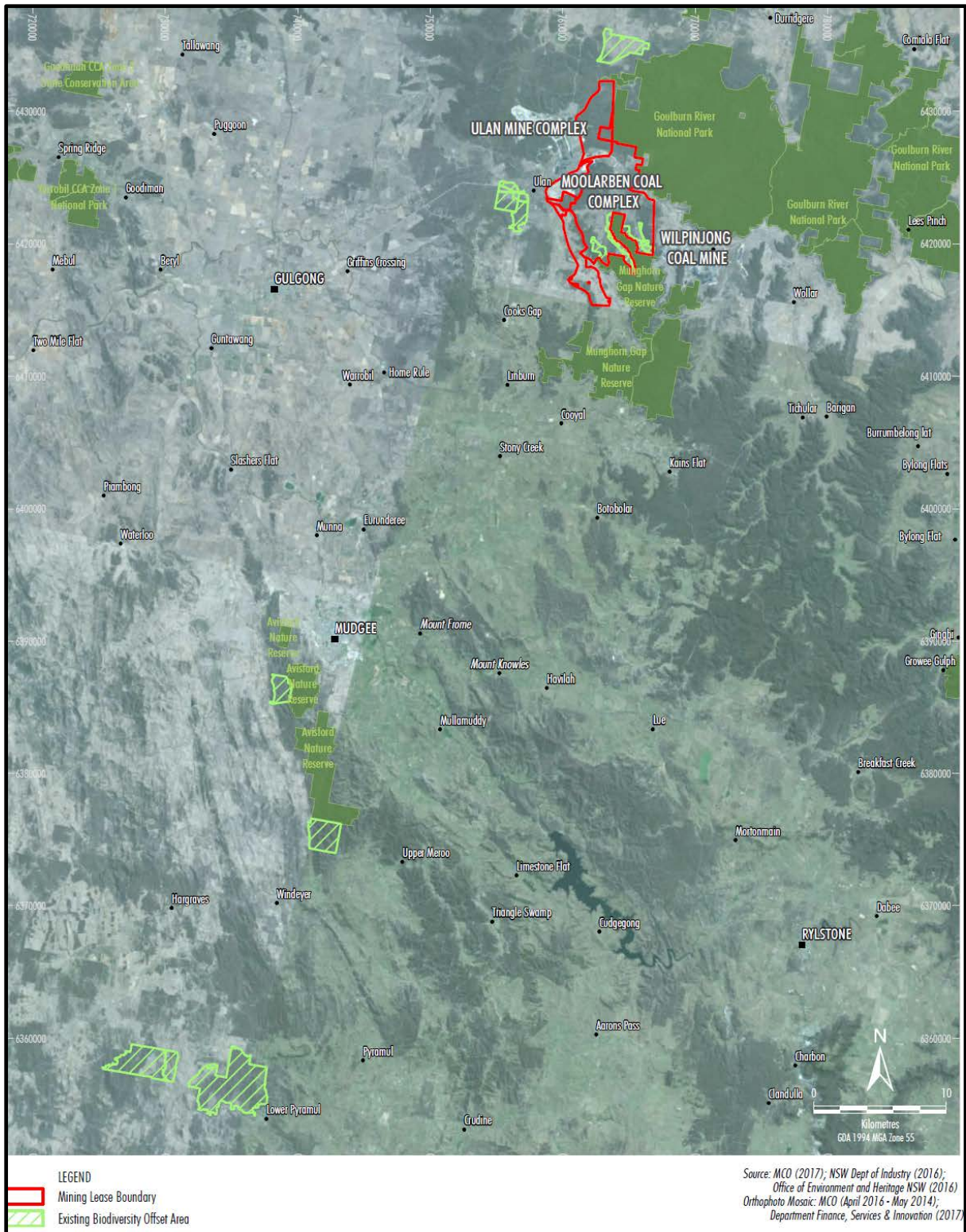
### Determination of Meteorological Conditions

2. Except for wind speed at microphone height, the data to be used for determining meteorological conditions **must** 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 12 times a year, unless the Secretary directs otherwise.
5. Unless the Secretary agrees otherwise, this monitoring is to be carried out in accordance with the relevant requirements for reviewing performance set out in the *NSW Noise Policy for Industry* (as amended from time to time), in particular the requirements relating to:
  - (d) monitoring locations for the collection of representative noise data;
  - (e) meteorological conditions during which collection of noise data is not appropriate;
  - (f) equipment used to collect noise data, and conformity with Australian Standards relevant to such equipment; and
  - (g) modifications to noise data collected, including for the exclusion of extraneous noise and/or penalties for modifying factors apart from adjustments for duration.

## APPENDIX 7 BIODIVERSITY OFFSET STRATEGY



**Figure 7.1 Stage 2 Biodiversity Offset Areas**

Table 7.1

**MOOLARBEN STAGE 2  
ACTUAL & POTENTIAL THREATENED FAUNA SPECIES LIST**

#	Common Name	Scientific Name	TSC	EPBC
	<b>MAMMALS</b>			
1	Yellow-bellied Sheath-tail Bat	<i>Scolaimus flaviventris</i>	V	
2	Large-eared Pied Bat	<i>Chalinolobus dwyeri</i>	V	V
3	Little Pied Bat	<i>Chalinolobus picatus</i>	V	
4	Eastern Bent-wing Bat	<i>Miniopterus orinae/schreibersii</i>	V	
5	Greater Long-eared Bat	<i>Nyctophilus timoriensis</i>	V	V
6	Squirrel Glider	<i>Petaurus norfolcensis</i>	V	
7	Eastern Pygmy-possum	<i>Cercartetus nanus</i>	V	
8	Spotted-tailed Quoll	<i>Dasyurus maculatus</i>	E	E
9	Eastern-false Pipistrelle	<i>Falsistrellus tasmaniensis</i>	V	
10	Eastern Freetail Bat	<i>Mormopterus norfolkensis</i>	V	
11	Yellow-bellied Glider	<i>Petaurus australis</i>	V	
12	Koala	<i>Phascolarctos cinereus</i>	V	
13	Grey-headed Flying-fox	<i>Pteropus poliocephalus</i>	V	V
14	Greater Broad-nosed Bat	<i>Scoteanax rueppellii</i>	V	
15	Eastern Cave Bat	<i>Vespadelus trougtoni</i>	V	
	<b>BIRDS</b>			
16	Square-tailed Kite	<i>Lophoicinia isua</i>	V	
17	Glossy Black Cockatoo	<i>Calyptorhynchus lathami</i>	V	
18	Gang Gang Cockatoo	<i>Callocephalon fimbriatum</i>	V	
19	Powerful Owl	<i>Ninox strenua</i>	V	
20	White-throated Needletail	<i>Hirundapus caudacutus</i>		M
21	Rainbow Bee-eater	<i>Merops ornatus</i>		M
22	Brown Treecreeper	<i>Climacteris picumnus</i>	V	
23	Speckled Warbler	<i>Chthinicola sagittata</i>	V	
24	Black-chinned Honeyeater	<i>Melithreptus gularis</i>	V	
25	Painted Honeyeater	<i>Grantiella picta</i>	V	
26	Grey-crowned Babbler	<i>Pomatostomus temporalis</i>	V	
27	Hooded Robin	<i>Melanodryas cucullata</i>	V	
28	Gilbert's Whistler	<i>Pachycephala inornata</i>	V	
29	Rufous Fantail	<i>Rhipidura fuliginosa</i>		M
30	Satin Flycatcher	<i>Myiagra cyanoleuca</i>		M
31	Diamond Firetail	<i>Stagonopleura guttata</i>	V	
32	Swift Parrot	<i>Lathamus discolor</i>	E	E, M
33	Little Eagle	<i>Hieraaetus morphnoides</i>	V	
34	Cattle Egret	<i>Ardea ibis</i>		M
35	Varied Sittella	<i>Daphoenositta chrysoptera</i>	V	
36	Little Lorikeet	<i>Glossopsitta pusilla</i>	V	
37	White-fronted Chat	<i>Epthianura albifrons</i>	V	
38	Scarlet Robin	<i>Petroica boodang</i>	V	
39	Spotted Harrier	<i>Circus assimilis</i>	V	
40	Bush Stone Curlew	<i>Burhinus grallarius</i>	E	
41	Turquoise Parrot	<i>Neophema pulchella</i>	V	
42	Barking Owl	<i>Ninox connivens</i>	V	
43	Masked Owl	<i>Tyto novaehollandiae</i>	V	V
44	Regent Honeyeater	<i>Xanthomyza Phrygia</i>	CE	E, M
45	Superb Parrot	<i>Polytelis swainsonii</i>	V	V
46	Flame Robin	<i>Petroica phoenicea</i>	V	

## APPENDIX 8 ABORIGINAL HERITAGE

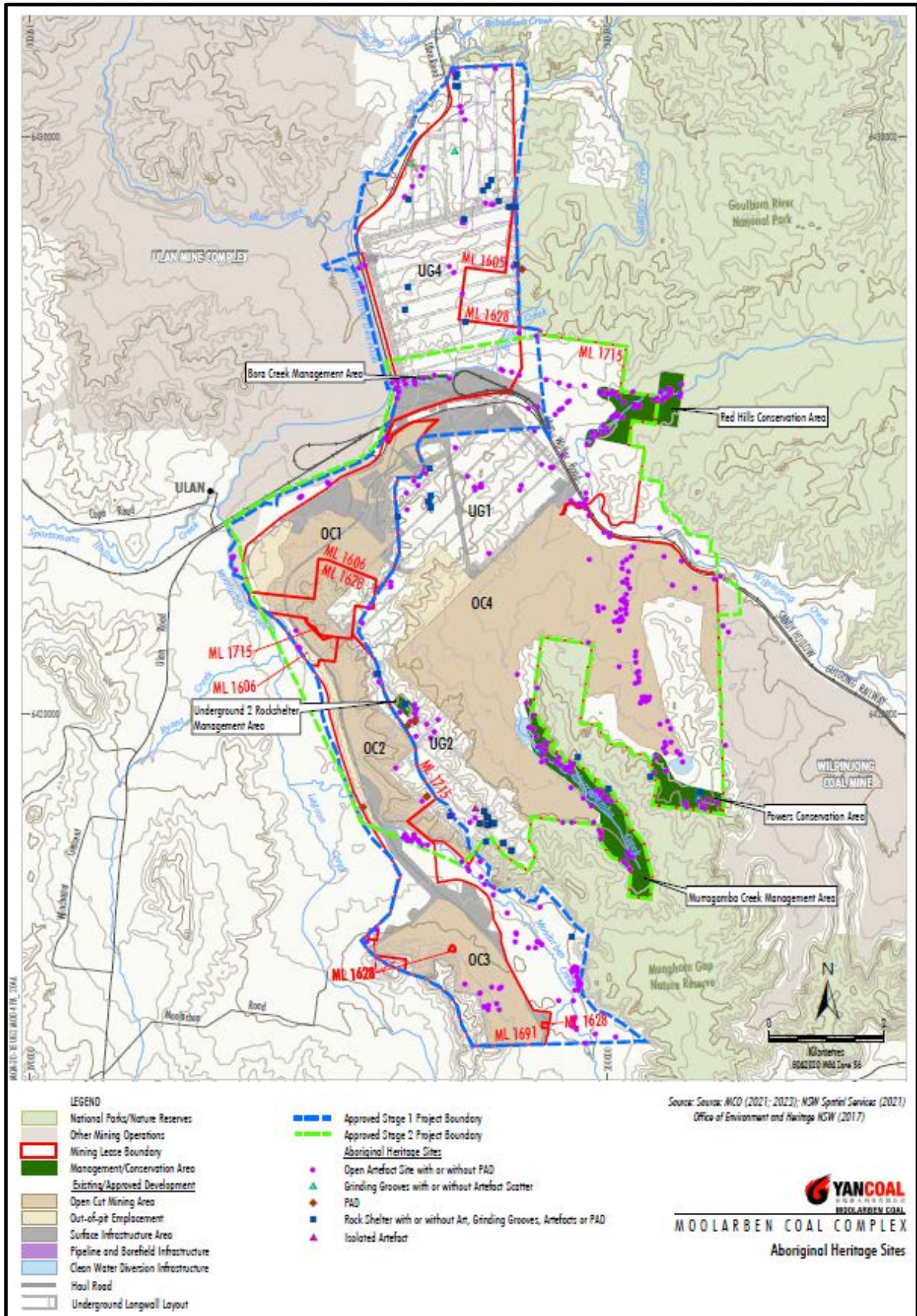


Figure 8.1 Aboriginal Cultural Heritage Sites

Table 8.1 Aboriginal Cultural Heritage Sites

AHIMS	Site Name	Site Type	AHIMS	Site Name	Site Type
36-3-0691	CE-15-IF	Isolated Find	36-3-2621	S1MC339	Rock shelter with PAD
36-3-0237	MC11	Open Artefact Site	36-3-2622	S1MC340	Rock shelter with PAD
36-3-0223	MC2	Open Artefact Site	36-3-2623	S1MC341	Rock shelter with PAD
36-3-0241	MC4	Open Artefact Site	36-3-2624	S1MC342	Rock shelter with PAD
36-3-0240	MC6	Artefact Scatter	36-3-2625	S1MC343	Rock shelter with PAD
36-3-0337	MC7	Open Artefact Site	36-3-2626	S1MC344	Rock shelter with artefacts
36-3-0239	MC8	Open Artefact Site	36-3-2627	S1MC345	Rock shelter with PAD
36-3-0222	Moolarben Creek MC1	Artefact Scatter	36-3-2628	S1MC346	Rock shelter with PAD
36-3-3144	MUG1-Mod 1	Isolated Find	36-3-2629	S1MC347	Rock shelter with PAD
36-3-0837	PAD 1 Moolarben Coal	Rock Shelter and PAD	36-3-2630	S1MC348	Rock shelter with PAD
36-3-0956	PAD 10 Moolarben Coal	Rock Shelter with PAD	36-3-2631	S1MC349	Rock shelter with PAD
36-3-0957	PAD 11 Moolarben Coal	Rock Shelter with PAD	36-3-2632	S1MC350	Rock shelter with PAD
36-3-0958	PAD 12 Moolarben Coal	PAD and Rockshelter	36-3-2633	S1MC351	Rock shelter with PAD
36-3-0838	PAD 2 Moolarben Coal	Artefact Scatter and PAD	36-3-2634	S1MC352	Rock shelter with PAD
36-3-0839	PAD 3 Moolarben Coal	Artefact Scatter and PAD	36-3-2635	S1MC353	Rock shelter with PAD
36-3-0883	PAD 4 Moolarben Coal	PAD	36-3-2636	S1MC354	Rock shelter with PAD
36-3-0884	PAD 5 Moolarben Coal	Rock Shelter with PAD	36-3-2660	S1MC355	Artefact Scatter
36-3-0885	PAD 6 Moolarben Coal	PAD	36-3-2661	S1MC356	Isolated Find
36-3-0113	PAD 7 Moolarben Coal	PAD	36-3-2662	S1MC357	Artefact Scatter
36-3-0954	PAD 8 Moolarben Coal	Rock Shelter with Artefacts and PAD	36-3-1150	S2MC001	Isolated Find
36-3-0955	PAD 9 Moolarben Coal	Rock Shelter with PAD	36-3-1151	S2MC002	Isolated Find
36-3-0798	S1MC001	Scarred Tree	36-3-1152	S2MC003	Artefact Scatter
36-3-0799	S1MC002	Artefact Scatter	36-3-1153	S2MC004	Isolated Find
36-3-0800	S1MC003	Isolated Find	36-3-1154	S2MC005	Artefact Scatter
36-3-0801	S1MC004	Isolated Find	36-3-1155	S2MC006	Artefact Scatter
36-3-0802	S1MC005	Artefact Scatter	36-3-1156	S2MC007	Isolated Find
36-3-0803	S1MC006	Isolated Find	36-3-1157	S2MC008	Isolated Find
36-3-0804	S1MC007	Isolated Find	36-3-1158	S2MC009	Isolated Find
36-3-0805	S1MC008	Isolated Find	36-3-1159	S2MC010	Artefact Scatter
36-3-0806	S1MC009	Isolated Find	36-3-1160	S2MC011	Isolated Find
36-3-0807	S1MC010	Isolated Find	36-3-1161	S2MC012	Isolated Find
36-3-0808	S1MC011	Artefact Scatter	36-3-1162	S2MC013	Isolated Find
36-3-0809	S1MC012	Isolated Find	36-3-1163	S2MC014	Artefact Scatter
36-3-0810	S1MC013	Isolated Find	36-3-1164	S2MC015	Artefact Scatter
36-3-0811	S1MC014	Isolated Find	36-3-1165	S2MC016	Artefact Scatter
36-3-0812	S1MC015	Isolated Find	36-3-1166	S2MC017	Artefact Scatter
36-3-0813	S1MC016	Isolated Find	36-3-1167	S2MC018	Artefact Scatter and PAD
36-3-0814	S1MC017	Isolated Find	36-3-1168	S2MC019	Isolated Find
36-3-0815	S1MC018	Isolated Find	36-3-1169	S2MC020	Artefact Scatter
36-3-0816	S1MC019	Isolated Find	36-3-1170	S2MC021	Isolated Find
36-3-0817	S1MC020	Isolated Find	36-3-1171	S2MC022	Artefact Scatter
36-3-0818	S1MC021	Isolated Find	36-3-1172	S2MC023	Isolated Find
36-3-0819	S1MC022	Isolated Find	36-3-1173	S2MC024	Isolated Find
36-3-0820	S1MC023	Isolated Find	36-3-1174	S2MC025	Isolated Find
36-3-0821	S1MC024	Isolated Find	36-3-0238	S2MC028, MC10	Open Artefact Site
36-3-0822	S1MC025	Isolated Find	36-3-1175	S2MC029	Artefact Scatter

AHIMS	Site Name	Site Type	AHIMS	Site Name	Site Type
36-3-0823	S1MC026	Isolated Find	36-3-1176	S2MC030	Artefact Scatter
36-3-0824	S1MC027	Isolated Find	36-3-1177	S2MC031	Isolated Find
36-3-0825	S1MC028	Isolated Find	36-3-1178	S2MC032	Artefact Scatter
36-3-0826	S1MC029	Isolated Find	36-3-1179	S2MC033	Artefact Scatter
36-3-0827	S1MC030	Isolated Find	36-3-1180	S2MC034	Isolated Find
36-3-0828	S1MC031	Isolated Find	36-3-1181	S2MC035	Isolated Find
36-3-0829	S1MC032	Isolated Find	36-3-1182	S2MC036	Isolated Find
36-3-0830	S1MC033	Isolated Find	36-3-1183	S2MC037	Isolated Find
36-3-0831	S1MC034	Isolated Find	36-3-1184	S2MC038	Artefact Scatter
36-3-0832	S1MC035	Isolated Find	36-3-1185	S2MC039	Artefact Scatter
36-3-0833	S1MC036	Isolated Find	36-3-1186	S2MC040	Artefact Scatter
36-3-0834	S1MC037	Isolated Find	36-3-1186b	S2MC041	Isolated Find
36-3-0835	S1MC038	Isolated Find	36-3-1187	S2MC042	Artefact Scatter
36-3-0836	S1MC039	Isolated Find	36-3-1188	S2MC043	Artefact Scatter
36-3-0845	S1MC040	Artefact Scatter	36-3-1189	S2MC044	Artefact Scatter
36-3-0846	S1MC041	Isolated Find	36-3-1190	S2MC045	Artefact Scatter
36-3-0847	S1MC042	Isolated Find	36-3-1191	S2MC046	Artefact Scatter
36-3-0848	S1MC043	Artefact Scatter	36-3-1192	S2MC047	Artefact Scatter
36-3-0849	S1MC044	Isolated Find	36-3-1193	S2MC048	Artefact Scatter
36-3-0850	S1MC045	Isolated Find	36-3-1194	S2MC049	Isolated Find
36-3-0851	S1MC046	Isolated Find	36-3-1195	S2MC050	Artefact Scatter
36-3-0852	S1MC047	Isolated Find	36-3-1196	S2MC051	Artefact Scatter
36-3-0853	S1MC048	Isolated Find	36-3-1197	S2MC052	Isolated Find
36-3-0854	S1MC049	Isolated Find	36-3-1198	S2MC053	Artefact Scatter
36-3-0855	S1MC050	Isolated Find	36-3-1199	S2MC054	Artefact Scatter
36-3-0856	S1MC051	Isolated Find	36-3-1200	S2MC055	Artefact Scatter
36-3-0857	S1MC052	Isolated Find	36-3-1201	S2MC056	Artefact Scatter
36-3-0858	S1MC053	Artefact Scatter	36-3-1202	S2MC057	Artefact Scatter
36-3-0859	S1MC054	Artefact Scatter	36-3-1203	S2MC058	Artefact Scatter
36-3-0860	S1MC055	Rock Shelter with Artefacts	36-3-1204	S2MC059	Artefact Scatter
36-3-0861	S1MC056	Rock Shelter with Artefacts	36-3-1206	S2MC059b	Isolated Find
36-3-0862	S1MC057	Artefact Scatter	36-3-1207	S2MC060	Isolated Find
36-3-0863	S1MC058	Artefact Scatter	36-3-1208	S2MC061	Artefact Scatter
36-3-0864	S1MC059	Artefact Scatter	36-3-1209	S2MC062	Artefact Scatter
36-3-0865	S1MC060	Artefact Scatter	36-3-1210	S2MC063	Artefact Scatter
36-3-0866	S1MC061	Isolated Find	36-3-1211	S2MC064	Artefact Scatter
36-3-0867	S1MC062	Isolated Find	36-3-1212	S2MC065	Artefact Scatter
36-3-0868	S1MC063	Isolated Find	36-3-1213	S2MC066	Isolated Find
36-3-0869	S1MC064	Isolated Find	36-3-1214	S2MC067	Artefact Scatter
36-3-0870	S1MC065	Isolated Find	36-3-1215	S2MC068	Isolated Find
36-3-0871	S1MC066	Artefact Scatter	36-3-1216	S2MC069	Isolated Find
36-3-0872	S1MC067	Artefact Scatter	36-3-1217	S2MC070	Artefact Scatter
36-3-0873	S1MC068	Isolated Find	36-3-1218	S2MC071	Artefact Scatter
36-3-0874	S1MC069	Isolated Find	36-3-1219	S2MC072	Artefact Scatter
36-3-0875	S1MC070	Isolated Find	36-3-1220	S2MC073	Isolated Find
36-3-0876	S1MC071	Isolated Find	36-3-2581	S2MC074	Artefact Scatter
36-3-0877	S1MC072	Isolated Find	36-3-1221	S2MC075	Isolated Find
36-3-0878	S1MC073	Isolated Find	36-3-1222	S2MC076	Artefact Scatter
36-3-0879	S1MC074	Isolated Find	36-3-1223	S2MC077	Artefact Scatter
36-3-0880	S1MC075	Isolated Find	36-3-1224	S2MC078	Artefact Scatter
36-3-0881	S1MC076	Isolated Find	36-3-1225	S2MC079	Isolated Find
36-3-0882	S1MC077	Isolated Find	36-3-1226	S2MC080	Artefact Scatter
36-3-0886	S1MC078	Artefact Scatter	36-3-1227	S2MC081	Artefact Scatter
36-3-0887	S1MC079	Isolated Find	36-3-1228	S2MC082	Artefact Scatter
36-3-0888	S1MC080	Isolated Find	36-3-1229	S2MC083	Isolated Find
36-3-0889	S1MC081	Isolated Find	36-3-1230	S2MC084	Isolated Find
36-3-0890	S1MC082	Isolated Find	36-3-1231	S2MC085	Isolated Find
36-3-0891	S1MC083	Isolated Find	36-3-1232	S2MC086	Artefact Scatter
36-3-0892	S1MC084	Artefact Scatter	36-3-1233	S2MC087	Artefact Scatter
36-3-0893	S1MC085	Isolated Find	36-3-1234	S2MC088	Artefact Scatter



AHIMS	Site Name	Site Type	AHIMS	Site Name	Site Type
36-3-0894	S1MC086	Isolated Find	36-3-1235	S2MC089	Artefact Scatter
36-3-0895	S1MC087	Isolated Find	36-3-1236	S2MC090	Isolated Find
36-3-0896	S1MC088	Isolated Find	36-3-1237	S2MC091	Isolated Find
36-3-0897	S1MC089	Isolated Find	36-3-1238	S2MC092	Isolated Find
36-3-0898	S1MC090	Isolated Find	36-3-1239	S2MC093	Artefact Scatter
36-3-0899	S1MC091	Isolated Find	36-3-1240	S2MC094	Isolated Find
36-3-0900	S1MC092	Isolated Find	36-3-1241	S2MC095	Isolated Find
36-3-0901	S1MC093	Isolated Find	36-3-1242	S2MC096	Artefact Scatter
36-3-0902	S1MC094	Artefact Scatter	36-3-1243	S2MC097	Artefact Scatter
36-3-0903	S1MC095	Isolated Find	36-3-1244	S2MC098	Isolated Find
36-3-0904	S1MC096	Isolated Find	36-3-1245	S2MC099	Isolated Find
36-3-0905	S1MC097	Isolated Find	36-3-1246	S2MC100	Artefact Scatter
36-3-0906	S1MC098	Isolated Find	36-3-1247	S2MC101	Artefact Scatter
36-3-0907	S1MC099	Isolated Find	36-3-1248	S2MC102	Isolated Find
36-3-0908	S1MC100	Isolated Find	36-3-1249	S2MC103	Isolated Find
36-3-0909	S1MC101	Isolated Find	36-3-1250	S2MC104	Artefact Scatter
36-3-0910	S1MC102	Artefact Scatter	36-3-1251	S2MC105	Isolated Find
36-3-0912	S1MC103	Artefact Scatter	36-3-1252	S2MC106	Isolated Find
36-3-0911	S1MC103a	Artefact Scatter	36-3-1253	S2MC107	Isolated Find
36-3-0913	S1MC104	Artefact Scatter	36-3-1254	S2MC108	Artefact Scatter
36-3-0914	S1MC105	Isolated Find	36-3-1255	S2MC109	Artefact Scatter
36-3-0915	S1MC106	Isolated Find	36-3-1256	S2MC110	Isolated Find
36-3-0916	S1MC107	Isolated Find	36-3-1257	S2MC111	Artefact Scatter
36-3-0917	S1MC108	Isolated Find	36-3-1258	S2MC112	Artefact Scatter
36-3-0918	S1MC109	Isolated Find	36-3-1259	S2MC113	Isolated Find
36-3-0919	S1MC110	Isolated Find	36-3-1260	S2MC114	Artefact Scatter
36-3-0920	S1MC111	Isolated Find	36-3-1261	S2MC115	Isolated Find
36-3-0921	S1MC112	Isolated Find	36-3-1262	S2MC116	Artefact Scatter
36-3-0922	S1MC113	Isolated Find	36-3-1263	S2MC117	Isolated Find
36-3-0923	S1MC114	Isolated Find	36-3-1264	S2MC118	Isolated Find
36-3-0924	S1MC115	Isolated Find	36-3-1265	S2MC119	Artefact Scatter
36-3-0925	S1MC116	Isolated Find	36-3-1266	S2MC120	Isolated Find
36-3-0926	S1MC117	Isolated Find	36-3-1267	S2MC121	Isolated Find
36-3-0927	S1MC118	Isolated Find	36-3-1268	S2MC122	Artefact Scatter
36-3-0928	S1MC119	Isolated Find	36-3-1269	S2MC123	Artefact Scatter
36-3-0929	S1MC120	Isolated Find	36-3-1270	S2MC124	Artefact Scatter
36-3-0930	S1MC121	Isolated Find	36-3-1271	S2MC125	Artefact Scatter
36-3-0931	S1MC122	Isolated Find	36-3-1272	S2MC126	Artefact Scatter
36-3-0932	S1MC123	Isolated Find	36-3-1273	S2MC127	Isolated Find
36-3-0933	S1MC124	Isolated Find	36-3-1274	S2MC128	Artefact Scatter
36-3-0934	S1MC125	Isolated Find	36-3-1275	S2MC129	Artefact Scatter
36-3-0935	S1MC126	Isolated Find	36-3-1276	S2MC130	Artefact Scatter
36-3-0936	S1MC127	Isolated Find	36-3-1277	S2MC131	Isolated Find
36-3-0937	S1MC128	Isolated Find	36-3-1278	S2MC132	Artefact Scatter
36-3-0938	S1MC129	Isolated Find	36-3-1279	S2MC133	Artefact Scatter
36-3-0939	S1MC130	Artefact Scatter	36-3-1280	S2MC134	Artefact Scatter
36-3-0940	S1MC131	Isolated Find	36-3-1281	S2MC135	Artefact Scatter
36-3-0941	S1MC132	Artefact Scatter	36-3-1282	S2MC136	Isolated Find
36-3-0942	S1MC133	Artefact Scatter	36-3-1283	S2MC137	Isolated Find
36-3-0943	S1MC134	Isolated Find	36-3-1284	S2MC138	Isolated Find
36-3-0944	S1MC135	Artefact Scatter	36-3-1285	S2MC139	Isolated Find
36-3-0945	S1MC136	Artefact Scatter	36-3-1286	S2MC140	Artefact Scatter
36-3-0946	S1MC137	Isolated Find	36-3-1287	S2MC141	Artefact Scatter
36-3-0947	S1MC138	Isolated Find	36-3-1288	S2MC142	Isolated Find
36-3-0948	S1MC139	Artefact Scatter	36-3-1289	S2MC143	Isolated Find
36-3-0949	S1MC140	Artefact Scatter	36-3-1290	S2MC144	Isolated Find
36-3-0950	S1MC141	Isolated Find	36-3-1291	S2MC145	Artefact Scatter
36-3-0951	S1MC142	Artefact Scatter	36-3-1292	S2MC146	Artefact Scatter
36-3-0952	S1MC143	Artefact Scatter	36-3-1293	S2MC147	Isolated Find
36-3-0953	S1MC144	Isolated Find	36-3-1294	S2MC148	Artefact Scatter
36-3-1029	S1MC213	Isolated Find	36-3-1295	S2MC149	Isolated Find
36-3-1041	S1MC225	Isolated Find	36-3-1296	S2MC150	Artefact Scatter

AHIMS	Site Name	Site Type	AHIMS	Site Name	Site Type
36-3-1042	S1MC226	Isolated Find	36-3-1297	S2MC151	Grinding Grooves and Artefact Scatter
36-3-1043	S1MC227	Isolated Find	36-3-1298	S2MC152	Artefact Scatter
36-3-1044	S1MC228	Artefact scatter	36-3-1299	S2MC153	Artefact Scatter
36-3-1045	S1MC229	Isolated Find	36-3-1300	S2MC154	Artefact Scatter
36-3-1046	S1MC230	Artefact Scatter	36-3-1301	S2MC155	Isolated Find
36-3-1047	S1MC231	Isolated Find	36-3-1302	S2MC156	Artefact Scatter
36-3-1048	S1MC232	Isolated Find	36-3-1303	S2MC157	Artefact Scatter
36-3-1049	S1MC233	Artefact Scatter	36-3-1304	S2MC158	Artefact Scatter
36-3-1050	S1MC234	Isolated Find	36-3-1305	S2MC159	Artefact Scatter
36-3-1051	S1MC235	Isolated Find	36-3-1306	S2MC160	Isolated Find
36-3-1052	S1MC236	Artefact Scatter	36-3-1307	S2MC161	Artefact Scatter
36-3-1053	S1MC237	Isolated Find	36-3-1308	S2MC162	Artefact Scatter
36-3-1054	S1MC238	Isolated Find	36-3-1309	S2MC163	Artefact Scatter
36-3-1055	S1MC239	Isolated Find	36-3-1310	S2MC164	Isolated Find
36-3-1056	S1MC240	Artefact Scatter	36-3-1311	S2MC165	Artefact Scatter
36-3-1057	S1MC241	Artefact Scatter	36-3-1312	S2MC166	Isolated Find
36-3-1058	S1MC242	Isolated Find	36-3-1313	S2MC167	Isolated Find
36-3-1059	S1MC243	Isolated Find	36-3-1314	S2MC168	Artefact Scatter
36-3-1060	S1MC244	Artefact Scatter	36-3-1315	S2MC169	Isolated Find
36-3-1113	S1MC244a	Artefact Scatter	36-3-1316	S2MC170	Artefact Scatter
36-3-1061	S1MC245	Isolated Find	36-3-1317	S2MC171	Artefact Scatter
36-3-1062	S1MC246	Isolated Find	36-3-1318	S2MC172	Artefact Scatter
36-3-1063	S1MC247	Isolated Find	36-3-1319	S2MC173	Isolated Find
36-3-1064	S1MC248	Isolated Find	36-3-1320	S2MC174	Isolated Find
36-3-1065	S1MC249	Isolated Find	36-3-1321	S2MC175	Isolated Find
36-3-1066	S1MC250	Isolated Find	36-3-1322	S2MC176	Artefact Scatter
36-3-1067	S1MC252	Isolated Find	36-3-1323	S2MC177	Artefact Scatter
36-3-1068	S1MC253	Isolated Find	36-3-1324	S2MC178	Artefact Scatter
36-3-1069	S1MC254	Artefact Scatter	36-3-1325	S2MC179	Artefact Scatter
36-3-1070	S1MC255	Artefact Scatter and PAD	36-3-1326	S2MC180	Artefact Scatter
36-3-1071	S1MC256	Artefact Scatter	36-3-1327	S2MC181	Artefact Scatter
36-3-1072	S1MC257	Artefact Scatter	36-3-1328	S2MC182	Isolated Find
36-3-1073	S1MC258	Artefact Scatter	36-3-1329	S2MC183	Artefact Scatter
36-3-1074	S1MC259	Isolated Find	36-3-1330	S2MC184	Isolated Find
36-3-1075	S1MC260	Isolated Find	36-3-1331	S2MC185	Isolated Find
36-3-1076	S1MC261	Rock Shelter with Artefacts	36-3-1332	S2MC186	Artefact Scatter
36-3-1077	S1MC262	Isolated Find	36-3-1333	S2MC187	Isolated Find
36-3-1078	S1MC263	Isolated Find	36-3-1334	S2MC188	Artefact Scatter
36-3-1079	S1MC264	Grinding Grooves and Artefact Scatter	36-3-1335	S2MC189	Isolated Find
36-3-1080	S1MC265	Artefact Scatter	36-3-1336	S2MC190	Isolated Find
36-3-1081	S1MC266	Isolated Find	36-3-1337	S2MC191	Artefact Scatter
36-3-1082	S1MC267	Rock Shelter with Artefacts	36-3-1338	S2MC192	Isolated Find
36-3-1083	S1MC268	Isolated Find	36-3-1339	S2MC193	Artefact Scatter
36-3-1084	S1MC269	Isolated Find	36-3-1340	S2MC194	Artefact Scatter
36-3-1085	S1MC270	Isolated Find	36-3-1341	S2MC195	Artefact Scatter
36-3-1086	S1MC271	Rock Shelter with Artefacts	36-3-1342	S2MC196	Artefact Scatter
36-3-1087	S1MC272	Artefact Scatter	36-3-1343	S2MC197	Artefact Scatter
36-3-1088	S1MC273	Isolated Find	36-3-1344	S2MC198	Artefact Scatter
36-3-1089	S1MC274	Isolated Find	36-3-1345	S2MC199	Artefact Scatter
36-3-1090	S1MC275	Isolated Find	36-3-1346	S2MC200	Artefact Scatter
36-3-1091	S1MC276	Isolated Find	36-3-1347, 36-3-1348	S2MC201	Artefact Scatter
36-3-1092	S1MC277	Isolated Find	36-3-1349	S2MC202	Artefact Scatter
36-3-1093	S1MC278	Isolated Find	36-3-1350	S2MC203	Artefact Scatter
36-3-1094	S1MC279	Isolated Find	36-3-1351	S2MC204	Artefact Scatter

AHIMS	Site Name	Site Type	AHIMS	Site Name	Site Type
36-3-0042	S1MC280; Ulan Creek 2	Rock Shelter with Artefacts and Grinding Grooves	36-3-1352	S2MC205	Artefact Scatter
36-3-1095	S1MC281	Artefact Scatter	36-3-1353	S2MC206	Artefact Scatter
36-3-1096	S1MC282	Artefact Scatter	36-3-1354	S2MC207	Artefact Scatter
36-3-0098	S1MC283	Rock Shelter with Artefacts	36-3-1355	S2MC208	Artefact Scatter
36-3-1098	S1MC284	Rock Shelter with Artefacts	36-3-1356	S2MC209	Artefact Scatter
36-3-1099	S1MC285	Rock Shelter with Artefacts	36-3-1357	S2MC210	Artefact Scatter
36-3-1100	S1MC286	Rock Shelter with Artefacts	36-3-1358	S2MC211	Isolated Find
36-3-1101	S1MC287	Rock Shelter with Artefacts	36-3-1359	S2MC212	Artefact Scatter
36-3-1102	S1MC288	Rock Shelter with Artefacts	36-3-1360	S2MC213	Isolated Find
36-3-1103	S1MC289	Rock Shelter with Artefacts	36-3-1361	S2MC214	Isolated Find
36-3-1104	S1MC290	Rock Shelter with Artefacts	36-3-1362	S2MC215	Artefact Scatter
36-3-1105	S1MC291	Isolated Find	36-3-1363	S2MC216	Artefact Scatter
36-3-1106	S1MC292	Isolated Find	36-3-1364	S2MC217	Artefact Scatter
36-3-1107	S1MC293	Isolated Find	36-3-1365	S2MC218	Artefact Scatter
36-3-1108	S1MC294	Rock Shelter with Artefacts	36-3-1366	S2MC219	Artefact Scatter
36-3-1109	S1MC295	Isolated Find	36-3-1367	S2MC220	Artefact Scatter
36-3-1110	S1MC296	Rock Shelter with Artefacts	36-3-1368	S2MC221	Isolated Find
36-3-1111	S1MC297	Rock Shelter with Artefacts	36-3-1369	S2MC222	Artefact Scatter
36-3-0840	S1MC298	Artefact Scatter	36-3-1370	S2MC223	Isolated Find
36-3-0841	S1MC299	Isolated Find	36-3-1371	S2MC224	Isolated Find
36-3-0842	S1MC300	Artefact Scatter	36-3-1372	S2MC225	Artefact Scatter
36-3-0843	S1MC301	Artefact Scatter	36-3-1373	S2MC226	Artefact Scatter
36-3-0844	S1MC302	Artefact Scatter	36-3-1374	S2MC227	Artefact Scatter
36-3-1140	S1MC303	Artefact Scatter	36-3-1375	S2MC228	Artefact Scatter
36-3-1141	S1MC304	Artefact Scatter	36-3-1376	S2MC229	Rock Shelter with Artefacts
36-3-1142	S1MC305	Artefact Scatter	36-3-1377	S2MC230	Isolated Find
36-3-1143	S1MC306	Isolated Find	36-3-1378	S2MC231	Rock Shelter with Artefacts
36-3-1144	S1MC307	Isolated Find	36-3-1379	S2MC232	Rock Shelter with Artefacts
36-3-1145	S1MC308	Artefact Scatter and PAD	36-3-1380	S2MC233	Rock Shelter with Artefacts
36-3-1146	S1MC309	Isolated Find	36-3-1381	S2MC234	Artefact Scatter
36-3-1137	S1MC310	Isolated Find	36-3-0016 & 36-3-0134	S2MC236	Rock Shelters with Art and Artefacts
36-3-1138	S1MC311	Isolated Find	36-3-1382	S2MC237	Isolated Find
36-3-1149	S1MC312	Isolated Find	36-3-1383	S2MC238	Artefact Scatter
36-3-1407	S1MC313 (NB1)	Artefact Scatter	36-3-1384	S2MC239	Artefact Scatter
36-3-1408	S1MC314 (NB2)	Artefact Scatter and PAD	36-3-1385	S2MC240	Artefact Scatter
36-3-1409	S1MC315 (NB3)	Isolated Find	36-3-1386	S2MC241	Artefact Scatter
36-3-1410	S1MC316 (NB4)	Artefact Scatter	36-3-1387	S2MC242	Isolated Find
36-3-1411	S1MC317 (NB5)	Isolated Find	36-3-1388	S2MC243	Isolated Find
36-3-1412	S1MC318 (NB6)	Isolated Find	36-3-1389	S2MC244	Isolated Find
36-3-1413	S1MC319 (NB7)	Isolated Find	36-3-1390	S2MC245	Isolated Find
36-3-1414	S1MC320 (NB8)	Isolated Find	36-3-1391	S2MC246	Isolated Find
36-3-1415	S1MC321 (NB9)	Isolated Find	36-3-1392	S2MC247	Artefact Scatter
36-3-1416	S1MC322 (NB10)	Artefact Scatter and PAD	36-3-1393	S2MC248	Artefact Scatter

AHIMS	Site Name	Site Type	AHIMS	Site Name	Site Type
36-3-1417	S1MC323 (NB11)	Isolated Find	36-3-1394	S2MC249	Artefact Scatter
36-3-2597	S1MC324 (NB12)	Isolated Find	36-3-1395	S2MC250	Artefact Scatter and PAD
36-3-2607	S1MC325	Isolated Find	36-3-1396	S2MC251	Artefact Scatter and PAD
36-3-2608	S1MC326	Rock shelter with PAD	36-3-1397	S2MC252	Isolated Find
36-3-2609	S1MC327	Rock shelter with PAD	36-3-1398	S2MC253	Isolated Find
36-3-2610	S1MC328	Isolated Find	36-3-1399	S2MC254	Isolated Find
36-3-2611	S1MC329	Rock shelter with PAD	36-3-1400	S2MC255	Isolated Find
36-3-2612	S1MC330	Rock shelter with PAD	36-3-1401	S2MC256	Artefact Scatter
36-3-2613	S1MC331	Rock shelter with artefacts	36-3-1402	S2MC257	Isolated Find
36-3-2614	S1MC332	Rock shelter with PAD	36-3-1403	S2MC258	Artefact Scatter and PAD
36-3-2615	S1MC333	Rock shelter with PAD	36-3-1404	S2MC259	Isolated Find
36-3-2616	S1MC334	Rock shelter with PAD	36-3-1405	S2MC260	Isolated Find
36-3-2617	S1MC335	Rock shelter with PAD	36-3-1406	S2MC261a	Grinding Grooves and Isolated Find
36-3-2618	S1MC336	Rock shelter with PAD	36-3-2602	S2MC262	Artefact Scatter
36-3-2619	S1MC337	Rock shelter with PAD	36-3-3222	S2MC404	Artefact Scatter
36-3-2620	S1MC338	Rock shelter with PAD	36-3-0720; 36-3-0287	WC1 - Wilpinjong Creek 1	Open Artefact Site

AHIMS	Site Name	Site Type	AHIMS	Site Name	Site Type
36-3-0691	CE-15-IF	Isolated Find	36-3-2621	S1MC339	Rock shelter with PAD
36-3-0237	MC11	Open Artefact Site	36-3-2622	S1MC340	Rock shelter with PAD
36-3-0223	MC2	Open Artefact Site	36-3-2623	S1MC341	Rock shelter with PAD
36-3-0241	MC4	Open Artefact Site	36-3-2624	S1MC342	Rock shelter with PAD
36-3-0240	MC6	Artefact Scatter	36-3-2625	S1MC343	Rock shelter with PAD
36-3-0337	MC7	Open Artefact Site	36-3-2626	S1MC344	Rock shelter with artefacts
36-3-0239	MC8	Open Artefact Site	36-3-2627	S1MC345	Rock shelter with PAD
36-3-0222	Moolarben Creek MC1	Artefact Scatter	36-3-2628	S1MC346	Rock shelter with PAD
36-3-3144	MUG1-Mod 1	Isolated Find	36-3-2629	S1MC347	Rock shelter with PAD
36-3-0837	PAD 1 Moolarben Coal	Rock Shelter and PAD	36-3-2630	S1MC348	Rock shelter with PAD
36-3-0956	PAD 10 Moolarben Coal	PAD	36-3-2631	S1MC349	Rock shelter with PAD
36-3-0957	PAD 11 Moolarben Coal	PAD	36-3-2632	S1MC350	Rock shelter with PAD
36-3-0958	PAD 12 Moolarben Coal	PAD and Rockshelter	36-3-2633	S1MC351	Rock shelter with PAD
36-3-0838	PAD 2 Moolarben Coal	Artefact Scatter and PAD	36-3-2634	S1MC352	Rock shelter with PAD
36-3-0839	PAD 3 Moolarben Coal	Artefact Scatter and PAD	36-3-2635	S1MC353	Rock shelter with PAD
36-3-0883	PAD 4 Moolarben Coal	PAD	36-3-2636	S1MC354	Rock shelter with PAD
36-3-0884	PAD 5 Moolarben Coal	PAD	36-3-2660	S1MC355	Artefact Scatter
36-3-0885	PAD 6 Moolarben Coal	PAD	36-3-2661	S1MC356	Isolated Find
36-3-0113	PAD 7 Moolarben Coal	PAD	36-3-2662	S1MC357	Artefact Scatter
36-3-0954	PAD 8 Moolarben Coal	Artefact Scatter and PAD	36-3-1150	S2MC001	Isolated Find
36-3-0955	PAD 9 Moolarben Coal	PAD	36-3-1151	S2MC002	Isolated Find
36-3-0798	S1MC001	Scarred Tree	36-3-1152	S2MC003	Artefact Scatter
36-3-0799	S1MC002	Artefact Scatter	36-3-1153	S2MC004	Isolated Find
36-3-0800	S1MC003	Isolated Find	36-3-1154	S2MC005	Artefact Scatter

AHIMS	Site Name	Site Type	AHIMS	Site Name	Site Type
36-3-0801	S1MC004	Isolated Find	36-3-1155	S2MC006	Artefact Scatter
36-3-0802	S1MC005	Artefact Scatter	36-3-1156	S2MC007	Isolated Find
36-3-0803	S1MC006	Isolated Find	36-3-1157	S2MC008	Isolated Find
36-3-0804	S1MC007	Isolated Find	36-3-1158	S2MC009	Isolated Find
36-3-0805	S1MC008	Isolated Find	36-3-1159	S2MC010	Artefact Scatter
36-3-0806	S1MC009	Isolated Find	36-3-1160	S2MC011	Isolated Find
36-3-0807	S1MC010	Isolated Find	36-3-1161	S2MC012	Isolated Find
36-3-0808	S1MC011	Artefact Scatter	36-3-1162	S2MC013	Isolated Find
36-3-0809	S1MC012	Isolated Find	36-3-1163	S2MC014	Artefact Scatter
36-3-0810	S1MC013	Isolated Find	36-3-1164	S2MC015	Artefact Scatter
36-3-0811	S1MC014	Isolated Find	36-3-1165	S2MC016	Artefact Scatter
36-3-0812	S1MC015	Isolated Find	36-3-1166	S2MC017	Artefact Scatter
36-3-0813	S1MC016	Isolated Find	36-3-1167	S2MC018	Artefact Scatter and PAD
36-3-0814	S1MC017	Isolated Find	36-3-1168	S2MC019	Isolated Find
36-3-0815	S1MC018	Isolated Find	36-3-1169	S2MC020	Artefact Scatter
36-3-0816	S1MC019	Isolated Find	36-3-1170	S2MC021	Isolated Find
36-3-0817	S1MC020	Isolated Find	36-3-1171	S2MC022	Artefact Scatter
36-3-0818	S1MC021	Isolated Find	36-3-1172	S2MC023	Isolated Find
36-3-0819	S1MC022	Isolated Find	36-3-1173	S2MC024	Isolated Find
36-3-0820	S1MC023	Isolated Find	36-3-1174	S2MC025	Isolated Find
36-3-0821	S1MC024	Isolated Find	36-3-0238	S2MC028, MC10	Open Artefact Site
36-3-0822	S1MC025	Isolated Find	36-3-1175	S2MC029	Artefact Scatter
36-3-0823	S1MC026	Isolated Find	36-3-1176	S2MC030	Artefact Scatter
36-3-0824	S1MC027	Isolated Find	36-3-1177	S2MC031	Isolated Find
36-3-0825	S1MC028	Isolated Find	36-3-1178	S2MC032	Artefact Scatter
36-3-0826	S1MC029	Isolated Find	36-3-1179	S2MC033	Artefact Scatter
36-3-0827	S1MC030	Isolated Find	36-3-1180	S2MC034	Isolated Find
36-3-0828	S1MC031	Isolated Find	36-3-1181	S2MC035	Isolated Find
36-3-0829	S1MC032	Isolated Find	36-3-1182	S2MC036	Isolated Find
36-3-0830	S1MC033	Isolated Find	36-3-1183	S2MC037	Isolated Find
36-3-0831	S1MC034	Isolated Find	36-3-1184	S2MC038	Artefact Scatter
36-3-0832	S1MC035	Isolated Find	36-3-1185	S2MC039	Artefact Scatter
36-3-0833	S1MC036	Isolated Find	36-3-1186	S2MC040	Artefact Scatter
36-3-0834	S1MC037	Isolated Find	36-3-1186b	S2MC041	Isolated Find
36-3-0835	S1MC038	Isolated Find	36-3-1187	S2MC042	Artefact Scatter
36-3-0836	S1MC039	Isolated Find	36-3-1188	S2MC043	Artefact Scatter
36-3-0845	S1MC040	Artefact Scatter	36-3-1189	S2MC044	Artefact Scatter
36-3-0846	S1MC041	Isolated Find	36-3-1190	S2MC045	Artefact Scatter
36-3-0847	S1MC042	Isolated Find	36-3-1191	S2MC046	Artefact Scatter
36-3-0848	S1MC043	Artefact Scatter	36-3-1192	S2MC047	Artefact Scatter
36-3-0849	S1MC044	Isolated Find	36-3-1193	S2MC048	Artefact Scatter
36-3-0850	S1MC045	Isolated Find	36-3-1194	S2MC049	Isolated Find
36-3-0851	S1MC046	Isolated Find	36-3-1195	S2MC050	Artefact Scatter
36-3-0852	S1MC047	Isolated Find	36-3-1196	S2MC051	Artefact Scatter
36-3-0853	S1MC048	Isolated Find	36-3-1197	S2MC052	Isolated Find
36-3-0854	S1MC049	Isolated Find	36-3-1198	S2MC053	Artefact Scatter
36-3-0855	S1MC050	Isolated Find	36-3-1199	S2MC054	Artefact Scatter
36-3-0856	S1MC051	Isolated Find	36-3-1200	S2MC055	Artefact Scatter
36-3-0857	S1MC052	Isolated Find	36-3-1201	S2MC056	Artefact Scatter
36-3-0858	S1MC053	Artefact Scatter	36-3-1202	S2MC057	Artefact Scatter
36-3-0859	S1MC054	Artefact Scatter	36-3-1203	S2MC058	Artefact Scatter
36-3-0860	S1MC055	Rock Shelter with Artefacts	36-3-1204	S2MC059	Artefact Scatter
36-3-0861	S1MC056	Rock Shelter with Artefacts	36-3-1206	S2MC059b	Isolated Find
36-3-0862	S1MC057	Artefact Scatter	36-3-1207	S2MC060	Isolated Find
36-3-0863	S1MC058	Artefact Scatter	36-3-1208	S2MC061	Artefact Scatter
36-3-0864	S1MC059	Artefact Scatter	36-3-1209	S2MC062	Artefact Scatter
36-3-0865	S1MC060	Artefact Scatter	36-3-1210	S2MC063	Artefact Scatter
36-3-0866	S1MC061	Isolated Find	36-3-1211	S2MC064	Artefact Scatter
36-3-0867	S1MC062	Isolated Find	36-3-1212	S2MC065	Artefact Scatter
36-3-0868	S1MC063	Isolated Find	36-3-1213	S2MC066	Isolated Find

AHIMS	Site Name	Site Type	AHIMS	Site Name	Site Type
36-3-0869	S1MC064	Isolated Find	36-3-1214	S2MC067	Artefact Scatter
36-3-0870	S1MC065	Isolated Find	36-3-1215	S2MC068	Isolated Find
36-3-0871	S1MC066	Artefact Scatter	36-3-1216	S2MC069	Isolated Find
36-3-0872	S1MC067	Artefact Scatter	36-3-1217	S2MC070	Artefact Scatter
36-3-0873	S1MC068	Isolated Find	36-3-1218	S2MC071	Artefact Scatter
36-3-0874	S1MC069	Isolated Find	36-3-1219	S2MC072	Artefact Scatter
36-3-0875	S1MC070	Isolated Find	36-3-1220	S2MC073	Isolated Find
36-3-0876	S1MC071	Isolated Find	36-3-2581	S2MC074	Artefact Scatter
36-3-0877	S1MC072	Isolated Find	36-3-1221	S2MC075	Isolated Find
36-3-0878	S1MC073	Isolated Find	36-3-1222	S2MC076	Artefact Scatter
36-3-0879	S1MC074	Isolated Find	36-3-1223	S2MC077	Artefact Scatter
36-3-0880	S1MC075	Isolated Find	36-3-1224	S2MC078	Artefact Scatter
36-3-0881	S1MC076	Isolated Find	36-3-1225	S2MC079	Isolated Find
36-3-0882	S1MC077	Isolated Find	36-3-1226	S2MC080	Artefact Scatter
36-3-0886	S1MC078	Artefact Scatter	36-3-1227	S2MC081	Artefact Scatter
36-3-0887	S1MC079	Isolated Find	36-3-1228	S2MC082	Artefact Scatter
36-3-0888	S1MC080	Isolated Find	36-3-1229	S2MC083	Isolated Find
36-3-0889	S1MC081	Isolated Find	36-3-1230	S2MC084	Isolated Find
36-3-0890	S1MC082	Isolated Find	36-3-1231	S2MC085	Isolated Find
36-3-0891	S1MC083	Isolated Find	36-3-1232	S2MC086	Artefact Scatter
36-3-0892	S1MC084	Artefact Scatter	36-3-1233	S2MC087	Artefact Scatter
36-3-0893	S1MC085	Isolated Find	36-3-1234	S2MC088	Artefact Scatter
36-3-0894	S1MC086	Isolated Find	36-3-1235	S2MC089	Artefact Scatter
36-3-0895	S1MC087	Isolated Find	36-3-1236	S2MC090	Isolated Find
36-3-0896	S1MC088	Isolated Find	36-3-1237	S2MC091	Isolated Find
36-3-0897	S1MC089	Isolated Find	36-3-1238	S2MC092	Isolated Find
36-3-0898	S1MC090	Isolated Find	36-3-1239	S2MC093	Artefact Scatter
36-3-0899	S1MC091	Isolated Find	36-3-1240	S2MC094	Isolated Find
36-3-0900	S1MC092	Isolated Find	36-3-1241	S2MC095	Isolated Find
36-3-0901	S1MC093	Isolated Find	36-3-1242	S2MC096	Artefact Scatter
36-3-0902	S1MC094	Artefact Scatter	36-3-1243	S2MC097	Artefact Scatter
36-3-0903	S1MC095	Isolated Find	36-3-1244	S2MC098	Isolated Find
36-3-0904	S1MC096	Isolated Find	36-3-1245	S2MC099	Isolated Find
36-3-0905	S1MC097	Isolated Find	36-3-1246	S2MC100	Artefact Scatter
36-3-0906	S1MC098	Isolated Find	36-3-1247	S2MC101	Artefact Scatter
36-3-0907	S1MC099	Isolated Find	36-3-1248	S2MC102	Isolated Find
36-3-0908	S1MC100	Isolated Find	36-3-1249	S2MC103	Isolated Find
36-3-0909	S1MC101	Isolated Find	36-3-1250	S2MC104	Artefact Scatter
36-3-0910	S1MC102	Artefact Scatter	36-3-1251	S2MC105	Isolated Find
36-3-0912	S1MC103	Artefact Scatter	36-3-1252	S2MC106	Isolated Find
36-3-0911	S1MC103a	Artefact Scatter	36-3-1253	S2MC107	Isolated Find
36-3-0913	S1MC104	Artefact Scatter	36-3-1254	S2MC108	Artefact Scatter
36-3-0914	S1MC105	Isolated Find	36-3-1255	S2MC109	Artefact Scatter
36-3-0915	S1MC106	Isolated Find	36-3-1256	S2MC110	Isolated Find
36-3-0916	S1MC107	Isolated Find	36-3-1257	S2MC111	Artefact Scatter
36-3-0917	S1MC108	Isolated Find	36-3-1258	S2MC112	Artefact Scatter
36-3-0918	S1MC109	Isolated Find	36-3-1259	S2MC113	Isolated Find
36-3-0919	S1MC110	Isolated Find	36-3-1260	S2MC114	Artefact Scatter
36-3-0920	S1MC111	Isolated Find	36-3-1261	S2MC115	Isolated Find
36-3-0921	S1MC112	Isolated Find	36-3-1262	S2MC116	Artefact Scatter
36-3-0922	S1MC113	Isolated Find	36-3-1263	S2MC117	Isolated Find
36-3-0923	S1MC114	Isolated Find	36-3-1264	S2MC118	Isolated Find
36-3-0924	S1MC115	Isolated Find	36-3-1265	S2MC119	Artefact Scatter
36-3-0925	S1MC116	Isolated Find	36-3-1266	S2MC120	Isolated Find
36-3-0926	S1MC117	Isolated Find	36-3-1267	S2MC121	Isolated Find
36-3-0927	S1MC118	Isolated Find	36-3-1268	S2MC122	Artefact Scatter
36-3-0928	S1MC119	Isolated Find	36-3-1269	S2MC123	Artefact Scatter
36-3-0929	S1MC120	Isolated Find	36-3-1270	S2MC124	Artefact Scatter
36-3-0930	S1MC121	Isolated Find	36-3-1271	S2MC125	Artefact Scatter
36-3-0931	S1MC122	Isolated Find	36-3-1272	S2MC126	Artefact Scatter
36-3-0932	S1MC123	Isolated Find	36-3-1273	S2MC127	Isolated Find
36-3-0933	S1MC124	Isolated Find	36-3-1274	S2MC128	Artefact Scatter
36-3-0934	S1MC125	Isolated Find	36-3-1275	S2MC129	Artefact Scatter

AHIMS	Site Name	Site Type	AHIMS	Site Name	Site Type
36-3-0935	S1MC126	Isolated Find	36-3-1276	S2MC130	Artefact Scatter
36-3-0936	S1MC127	Isolated Find	36-3-1277	S2MC131	Isolated Find
36-3-0937	S1MC128	Isolated Find	36-3-1278	S2MC132	Artefact Scatter
36-3-0938	S1MC129	Isolated Find	36-3-1279	S2MC133	Artefact Scatter
36-3-0939	S1MC130	Artefact Scatter	36-3-1280	S2MC134	Artefact Scatter
36-3-0940	S1MC131	Isolated Find	36-3-1281	S2MC135	Artefact Scatter
36-3-0941	S1MC132	Artefact Scatter	36-3-1282	S2MC136	Isolated Find
36-3-0942	S1MC133	Artefact Scatter	36-3-1283	S2MC137	Isolated Find
36-3-0943	S1MC134	Isolated Find	36-3-1284	S2MC138	Isolated Find
36-3-0944	S1MC135	Artefact Scatter	36-3-1285	S2MC139	Isolated Find
36-3-0945	S1MC136	Artefact Scatter	36-3-1286	S2MC140	Artefact Scatter
36-3-0946	S1MC137	Isolated Find	36-3-1287	S2MC141	Artefact Scatter
36-3-0947	S1MC138	Isolated Find	36-3-1288	S2MC142	Isolated Find
36-3-0948	S1MC139	Artefact Scatter	36-3-1289	S2MC143	Isolated Find
36-3-0949	S1MC140	Artefact Scatter	36-3-1290	S2MC144	Isolated Find
36-3-0950	S1MC141	Isolated Find	36-3-1291	S2MC145	Artefact Scatter
36-3-0951	S1MC142	Artefact Scatter	36-3-1292	S2MC146	Artefact Scatter
36-3-0952	S1MC143	Artefact Scatter	36-3-1293	S2MC147	Isolated Find
36-3-0953	S1MC144	Isolated Find	36-3-1294	S2MC148	Artefact Scatter
36-3-1029	S1MC213	Isolated Find	36-3-1295	S2MC149	Isolated Find
36-3-1041	S1MC225	Isolated Find	36-3-1296	S2MC150	Artefact Scatter
36-3-1042	S1MC226	Isolated Find	36-3-1297	S2MC151	Grinding Grooves and Artefact Scatter
36-3-1043	S1MC227	Isolated Find	36-3-1298	S2MC152	Artefact Scatter
36-3-1044	S1MC228	Artefact scatter	36-3-1299	S2MC153	Artefact Scatter
36-3-1045	S1MC229	Isolated Find	36-3-1300	S2MC154	Artefact Scatter
36-3-1046	S1MC230	Artefact Scatter	36-3-1301	S2MC155	Isolated Find
36-3-1047	S1MC231	Isolated Find	36-3-1302	S2MC156	Artefact Scatter
36-3-1048	S1MC232	Isolated Find	36-3-1303	S2MC157	Artefact Scatter
36-3-1049	S1MC233	Artefact Scatter	36-3-1304	S2MC158	Artefact Scatter
36-3-1050	S1MC234	Isolated Find	36-3-1305	S2MC159	Artefact Scatter
36-3-1051	S1MC235	Isolated Find	36-3-1306	S2MC160	Isolated Find
36-3-1052	S1MC236	Artefact Scatter	36-3-1307	S2MC161	Artefact Scatter
36-3-1053	S1MC237	Isolated Find	36-3-1308	S2MC162	Artefact Scatter
36-3-1054	S1MC238	Isolated Find	36-3-1309	S2MC163	Artefact Scatter
36-3-1055	S1MC239	Isolated Find	36-3-1310	S2MC164	Isolated Find
36-3-1056	S1MC240	Artefact Scatter	36-3-1311	S2MC165	Artefact Scatter
36-3-1057	S1MC241	Artefact Scatter	36-3-1312	S2MC166	Isolated Find
36-3-1058	S1MC242	Isolated Find	36-3-1313	S2MC167	Isolated Find
36-3-1059	S1MC243	Isolated Find	36-3-1314	S2MC168	Artefact Scatter
36-3-1060	S1MC244	Artefact Scatter	36-3-1315	S2MC169	Isolated Find
36-3-1113	S1MC244a	Artefact Scatter	36-3-1316	S2MC170	Artefact Scatter
36-3-1061	S1MC245	Isolated Find	36-3-1317	S2MC171	Artefact Scatter
36-3-1062	S1MC246	Isolated Find	36-3-1318	S2MC172	Artefact Scatter
36-3-1063	S1MC247	Isolated Find	36-3-1319	S2MC173	Isolated Find
36-3-1064	S1MC248	Isolated Find	36-3-1320	S2MC174	Isolated Find
36-3-1065	S1MC249	Isolated Find	36-3-1321	S2MC175	Isolated Find
36-3-1066	S1MC250	Isolated Find	36-3-1322	S2MC176	Artefact Scatter
36-3-1067	S1MC252	Isolated Find	36-3-1323	S2MC177	Artefact Scatter
36-3-1068	S1MC253	Isolated Find	36-3-1324	S2MC178	Artefact Scatter
36-3-1069	S1MC254	Artefact Scatter	36-3-1325	S2MC179	Artefact Scatter
36-3-1070	S1MC255	Artefact Scatter and PAD	36-3-1326	S2MC180	Artefact Scatter
36-3-1071	S1MC256	Artefact Scatter	36-3-1327	S2MC181	Artefact Scatter
36-3-1072	S1MC257	Artefact Scatter	36-3-1328	S2MC182	Isolated Find
36-3-1073	S1MC258	Artefact Scatter	36-3-1329	S2MC183	Artefact Scatter
36-3-1074	S1MC259	Isolated Find	36-3-1330	S2MC184	Isolated Find
36-3-1075	S1MC260	Isolated Find	36-3-1331	S2MC185	Isolated Find
36-3-1076	S1MC261	Rock Shelter with Artefacts	36-3-1332	S2MC186	Artefact Scatter
36-3-1077	S1MC262	Isolated Find	36-3-1333	S2MC187	Isolated Find
36-3-1078	S1MC263	Isolated Find	36-3-1334	S2MC188	Artefact Scatter
36-3-1079	S1MC264	Grinding Grooves and Artefact Scatter	36-3-1335	S2MC189	Isolated Find

AHIMS	Site Name	Site Type	AHIMS	Site Name	Site Type
36-3-1080	S1MC265	Artefact Scatter	36-3-1336	S2MC190	Isolated Find
36-3-1081	S1MC266	Isolated Find	36-3-1337	S2MC191	Artefact Scatter
36-3-1082	S1MC267	Rock Shelter with Artefacts	36-3-1338	S2MC192	Isolated Find
36-3-1083	S1MC268	Isolated Find	36-3-1339	S2MC193	Artefact Scatter
36-3-1084	S1MC269	Isolated Find	36-3-1340	S2MC194	Artefact Scatter
36-3-1085	S1MC270	Isolated Find	36-3-1341	S2MC195	Artefact Scatter
36-3-1086	S1MC271	Rock Shelter with Artefacts	36-3-1342	S2MC196	Artefact Scatter
36-3-1087	S1MC272	Artefact Scatter	36-3-1343	S2MC197	Artefact Scatter
36-3-1088	S1MC273	Isolated Find	36-3-1344	S2MC198	Artefact Scatter
36-3-1089	S1MC274	Isolated Find	36-3-1345	S2MC199	Artefact Scatter
36-3-1090	S1MC275	Isolated Find	36-3-1346	S2MC200	Artefact Scatter
36-3-1091	S1MC276	Isolated Find	36-3-1347, 36-3-1348	S2MC201	Artefact Scatter
36-3-1092	S1MC277	Isolated Find	36-3-1349	S2MC202	Artefact Scatter
36-3-1093	S1MC278	Isolated Find	36-3-1350	S2MC203	Artefact Scatter
36-3-1094	S1MC279	Isolated Find	36-3-1351	S2MC204	Artefact Scatter
36-3-0042	S1MC280; Ulan Creek 2	Rock Shelter with Artefacts and Grinding Grooves	36-3-1352	S2MC205	Artefact Scatter
36-3-1095	S1MC281	Artefact Scatter	36-3-1353	S2MC206	Artefact Scatter
36-3-1096	S1MC282	Artefact Scatter	36-3-1354	S2MC207	Artefact Scatter
36-3-0098	S1MC283	Rock Shelter with Artefacts	36-3-1355	S2MC208	Artefact Scatter
36-3-1098	S1MC284	Rock Shelter with Artefacts	36-3-1356	S2MC209	Artefact Scatter
36-3-1099	S1MC285	Rock Shelter with Artefacts	36-3-1357	S2MC210	Artefact Scatter
36-3-1100	S1MC286	Rock Shelter with Artefacts	36-3-1358	S2MC211	Isolated Find
36-3-1101	S1MC287	Rock Shelter with Artefacts	36-3-1359	S2MC212	Artefact Scatter
36-3-1102	S1MC288	Rock Shelter with Artefacts	36-3-1360	S2MC213	Isolated Find
36-3-1103	S1MC289	Rock Shelter with Artefacts	36-3-1361	S2MC214	Isolated Find
36-3-1104	S1MC290	Rock Shelter with Artefacts	36-3-1362	S2MC215	Artefact Scatter
36-3-1105	S1MC291	Isolated Find	36-3-1363	S2MC216	Artefact Scatter
36-3-1106	S1MC292	Isolated Find	36-3-1364	S2MC217	Artefact Scatter
36-3-1107	S1MC293	Isolated Find	36-3-1365	S2MC218	Artefact Scatter
36-3-1108	S1MC294	Rock Shelter with Artefacts	36-3-1366	S2MC219	Artefact Scatter
36-3-1109	S1MC295	Isolated Find	36-3-1367	S2MC220	Artefact Scatter
36-3-1110	S1MC296	Rock Shelter with Artefacts	36-3-1368	S2MC221	Isolated Find
36-3-1111	S1MC297	Rock Shelter with Artefacts	36-3-1369	S2MC222	Artefact Scatter
36-3-0840	S1MC298	Artefact Scatter	36-3-1370	S2MC223	Isolated Find
36-3-0841	S1MC299	Isolated Find	36-3-1371	S2MC224	Isolated Find
36-3-0842	S1MC300	Artefact Scatter	36-3-1372	S2MC225	Artefact Scatter
36-3-0843	S1MC301	Artefact Scatter	36-3-1373	S2MC226	Artefact Scatter
36-3-0844	S1MC302	Artefact Scatter	36-3-1374	S2MC227	Artefact Scatter
36-3-1140	S1MC303	Artefact Scatter	36-3-1375	S2MC228	Artefact Scatter
36-3-1141	S1MC304	Artefact Scatter	36-3-1376	S2MC229	Rock Shelter with Artefacts
36-3-1142	S1MC305	Artefact Scatter	36-3-1377	S2MC230	Isolated Find
36-3-1143	S1MC306	Isolated Find	36-3-1378	S2MC231	Rock Shelter with Artefacts
36-3-1144	S1MC307	Isolated Find	36-3-1379	S2MC232	Rock Shelter with Artefacts
36-3-1145	S1MC308	Artefact Scatter and PAD	36-3-1380	S2MC233	Rock Shelter with Artefacts



AHIMS	Site Name	Site Type	AHIMS	Site Name	Site Type
36-3-1146	S1MC309	Isolated Find	36-3-1381	S2MC234	Artefact Scatter
36-3-1137	S1MC310	Isolated Find	36-3-0016 & 36-3-0134	S2MC236	Rock Shelters with Art and Artefacts
36-3-1138	S1MC311	Isolated Find	36-3-1382	S2MC237	Isolated Find
36-3-1149	S1MC312	Isolated Find	36-3-1383	S2MC238	Artefact Scatter
36-3-1407	S1MC313 (NB1)	Artefact Scatter	36-3-1384	S2MC239	Artefact Scatter
36-3-1408	S1MC314 (NB2)	Artefact Scatter and PAD	36-3-1385	S2MC240	Artefact Scatter
36-3-1409	S1MC315 (NB3)	Isolated Find	36-3-1386	S2MC241	Artefact Scatter
36-3-1410	S1MC316 (NB4)	Artefact Scatter	36-3-1387	S2MC242	Isolated Find
36-3-1411	S1MC317 (NB5)	Isolated Find	36-3-1388	S2MC243	Isolated Find
36-3-1412	S1MC318 (NB6)	Isolated Find	36-3-1389	S2MC244	Isolated Find
36-3-1413	S1MC319 (NB7)	Isolated Find	36-3-1390	S2MC245	Isolated Find
36-3-1414	S1MC320 (NB8)	Isolated Find	36-3-1391	S2MC246	Isolated Find
36-3-1415	S1MC321 (NB9)	Isolated Find	36-3-1392	S2MC247	Artefact Scatter
36-3-1416	S1MC322 (NB10)	Artefact Scatter and PAD	36-3-1393	S2MC248	Artefact Scatter
36-3-1417	S1MC323 (NB11)	Isolated Find	36-3-1394	S2MC249	Artefact Scatter
36-3-2597	S1MC324 (NB12)	Isolated Find	36-3-1395	S2MC250	Artefact Scatter and PAD
36-3-2607	S1MC325	Isolated Find	36-3-1396	S2MC251	Artefact Scatter and PAD
36-3-2608	S1MC326	Rock shelter with PAD	36-3-1397	S2MC252	Isolated Find
36-3-2609	S1MC327	Rock shelter with PAD	36-3-1398	S2MC253	Isolated Find
36-3-2610	S1MC328	Isolated Find	36-3-1399	S2MC254	Isolated Find
36-3-2611	S1MC329	Rock shelter with PAD	36-3-1400	S2MC255	Isolated Find
36-3-2612	S1MC330	Rock shelter with PAD	36-3-1401	S2MC256	Artefact Scatter
36-3-2613	S1MC331	Rock shelter with artefacts	36-3-1402	S2MC257	Isolated Find
36-3-2614	S1MC332	Rock shelter with PAD	36-3-1403	S2MC258	Artefact Scatter and PAD
36-3-2615	S1MC333	Rock shelter with PAD	36-3-1404	S2MC259	Isolated Find
36-3-2616	S1MC334	Rock shelter with PAD	36-3-1405	S2MC260	Isolated Find
36-3-2617	S1MC335	Rock shelter with PAD	36-3-1406	S2MC261a	Grinding Grooves and Isolated Find
36-3-2618	S1MC336	Rock shelter with PAD	36-3-2602	S2MC262	Artefact Scatter
36-3-2619	S1MC337	Rock shelter with PAD	36-3-3222	S2MC404	Artefact Scatter
36-3-2620	S1MC338	Rock shelter with PAD	36-3-0720; 36-3-0287	WC1 - Wilpinjong Creek 1	Open Artefact Site
36-3-3302	S1MC406	Artefact Scatter	36-3-3320	S2MC411	Artefact Scatter
36-3-3300	S1MC407	Artefact Scatter	36-3-3321	S2MC412	Isolated Find
36-3-3303	S1MC409	Rock Shelter with PAD	36-3-3322	S2MC413	Isolated Find
36-3-3454	S1MC438	Isolated Find	36-3-3323	S2MC414	Isolated Find
36-3-3809	S2MC440	Rock Shelter with Artefacts and PAD	36-3-3324	S2MC415	Isolated Find
36-3-3810	S2MC441	Rock Shelter with Artefacts and PAD	36-3-3450	S2MC416	Artefact Scatter
36-3-3812	S2MC442	Rock Shelter with PAD	36-3-3451	S2MC417	Artefact Scatter
36-3-3811	S2MC443	Rock Shelter with PAD	36-3-3449	S2MC418	Isolated Find
36-3-3813	S2MC444	Rock Shelter with PAD	36-3-3448	S2MC419	Artefact Scatter
36-3-3817	S2MC445	Rock Shelter with PAD	36-3-3452	S2MC420	Artefact Scatter
36-3-3814	S2MC446	Rock Shelter with Artefacts and PAD	36-3-3807	S2MC438	Isolated Find
36-3-3815	S2MC447	Rock Shelter with Artefact	36-3-3808	S2MC439	Rock Shelter with PAD

## APPENDIX 9 NON-ABORIGINAL HERITAGE

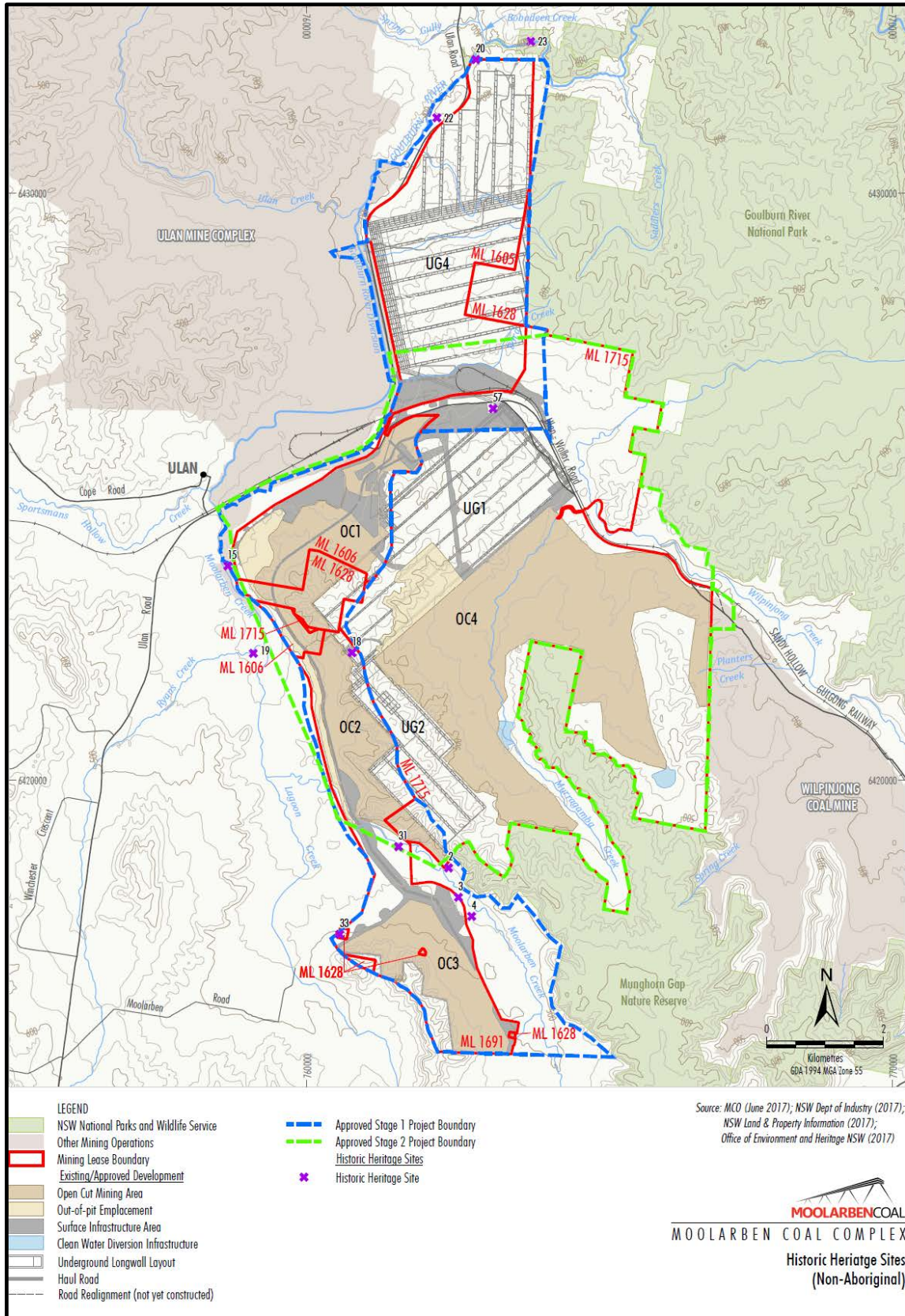


Figure 9.1: Historic Heritage Sites

Table 9.1

Item #	Item Name	Significance	Impact Status	Recommendation
8	Murrugamba School Site	Local – moderate	High - within Open Cut 4	Archival Record Archaeological Assessment
9	Farm Site	Local – high	High – within Open Cut 4	Historical Research Archival Record
11	Farm Site	Local – moderate	High - on boundary of Open Cut 4	Historical Research Archival Record Archaeological Assessment
18	Carr's Gap Road stone wall	Local – moderate	High - on boundary of Open Cut 4 and Underground 1	Historical Research Archival Record
35	House Site <sup>5</sup>	Local – intrusive	High - on boundary of Open Cut 4	No further action
36a	House Site	Local – high	High - within Open Cut 4	Historical Research Archival Record Archaeological Assessment
36b	Burial	Local – high	High - within Open Cut 4	Historical Research Archival Record Archaeological Assessment
37	House Site	Local – moderate	High - within Open Cut 4	Historical Research Archival Record
55	Water Trough and Spring Fed Well	Not assessed, but noted as an item of interest	Low/nil - outside area of Open Cut 4 – possible indirect impact by draining of water	Archival Record
56	Water Trough and Spring Fed Well	Not assessed, but noted as an item of interest	Low/nil - outside area of Open Cut 4 – possible indirect impact by draining of water	Archival Record
57	Feed Trough	Not assessed, but noted as an item of interest	High – adjacent to road re-alignments	Historical Research Archival Record Ex situ Conservation

## APPENDIX 10 REHABILITATION PLAN

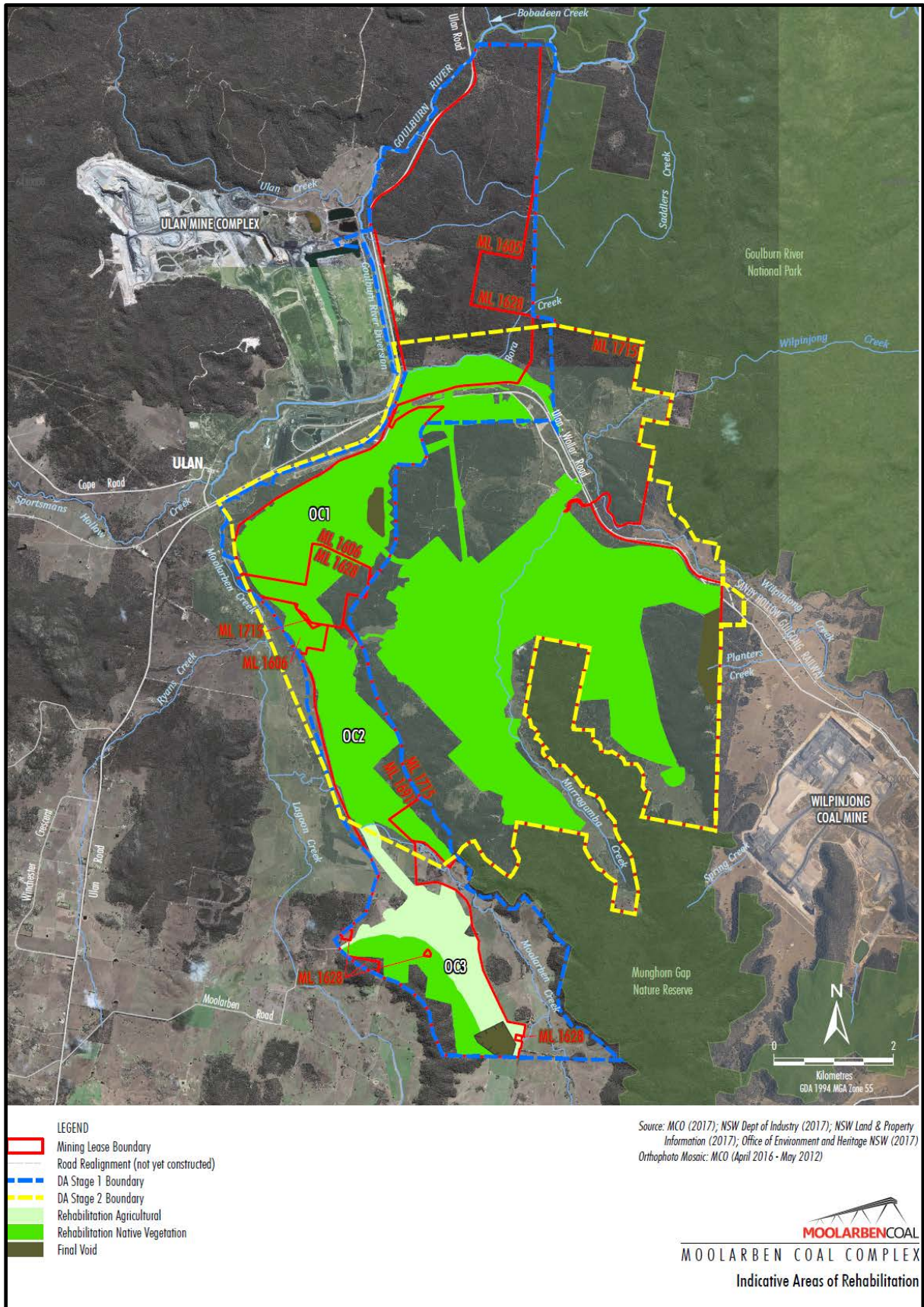


Figure 10.1: Indicative Rehabilitation Areas