APPENDIX O

BIODIVERSITY CORRIDOR (VEGETATED BUFFER CORRIDOR) PLAN

MAULES CREEK COAL MINE

BIODIVERSITY CORRIDOR PLAN

August 2021

Edition	Rev	Comments	Date
1	1	Initial Draft Document	18 April 2013
1	2	Report Submitted to SEWPAC (now DAWE) for Approval	9 May 2013
2	1	Revision to address stakeholder comments	18 January 2021
2	2	Revision to address stakeholder comments	17 August 2021

Contents

Tables

Figures

Appendices

Appendix A Risk Assessment

1 INTRODUCTION

1.1 BACKGROUND

The Maules Creek Coal Mine (MCCM) is located in the Gunnedah Basin approximately 18 kilometres (km) north-east of Boggabri in New South Wales (NSW). The MCCM is a joint venture between Aston Coal 2 Pty Limited (a wholly owned subsidiary of Whitehaven Coal Limited [Whitehaven]) (75 percent [%]), ICRA MC Pty Ltd (an entity associated with ITOCHU Corporation) (15%) and J-Power Australia Pty Ltd (a wholly owned subsidiary of Electric Power Development Co., Ltd.) (10%). Maules Creek Coal Pty Ltd (MCC) is a wholly owned subsidiary of Whitehaven which manages the MCCM on behalf of Aston Coal 2 Pty Ltd, ICRA MC Pty Ltd and J Power Australia Pty Ltd.

The Commonwealth Minister for the Environment granted approval for the MCCM under the Commonwealth *Environment Protection and Biodiversity Conservation Act, 1999* (EPBC Act) in 2013 (EPBC Approval 2010/5566). A requirement of the MCCM EPBC Approval, is the preparation and implementation of this Biodiversity Corridor Plan (BCP). The biodiversity corridor, subject to the plan, is defined under the EPBC Approval 2010/5566 as:

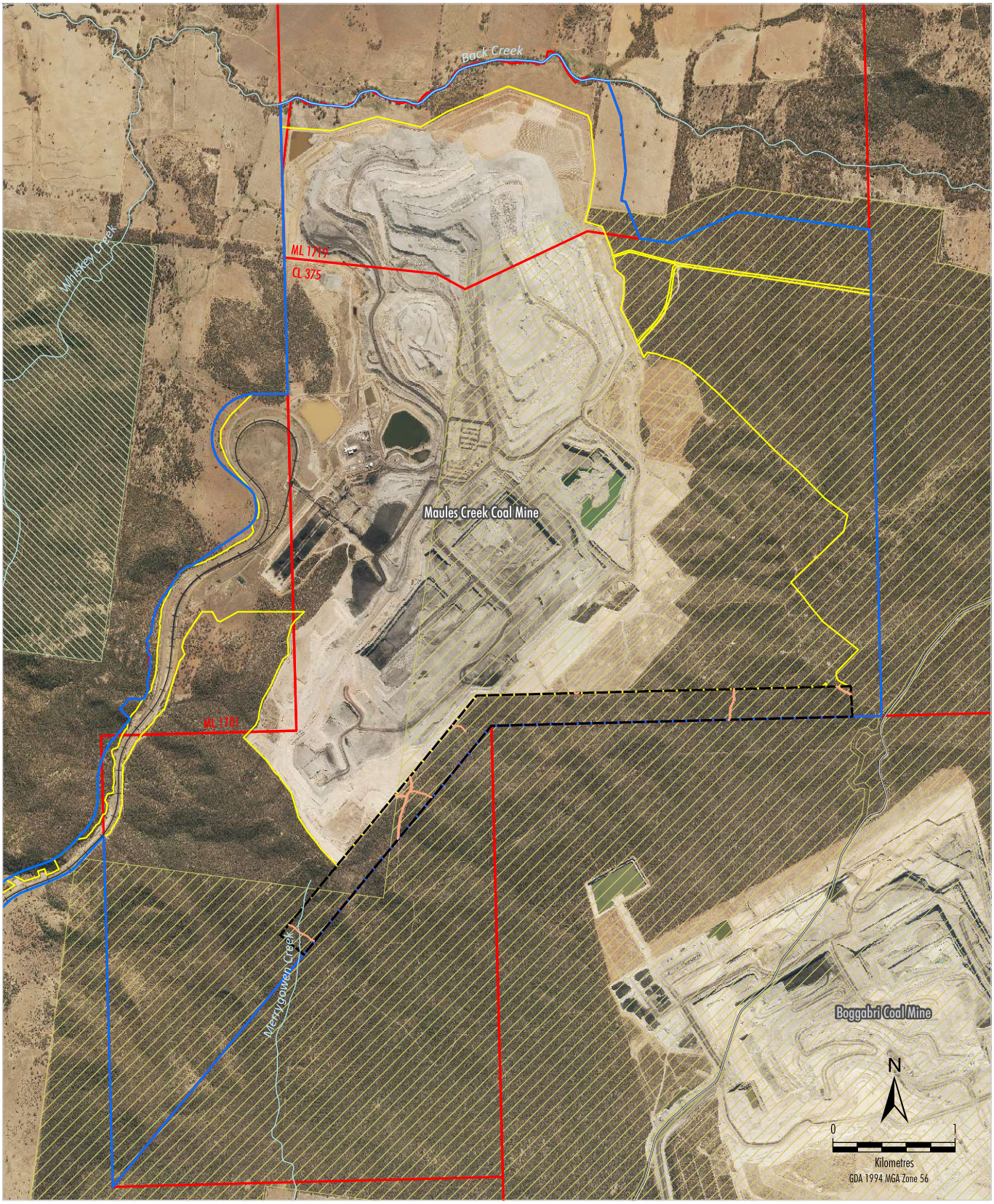
> *An area of native vegetation at least 250 m wide that has not been previously cleared for mining, which links the existing native vegetation to the east and west of the Maules Creek and Boggabri coal mine leases and is located within the Maules Creek coal mine lease where it is adjacent to the Boggabri coal mine lease boundary. The purpose is to ensure that a minimum 500 m wide native vegetation corridor is maintained between the Boggabri and Maules Creek mines and that any alternative corridor provides equivalent or better ecosystem functionality (including habitat for the regent honeyeater, swift parrot and greater long-eared bat).*

The biodiversity corridor is located across low hills known as the Willow Tree Range. The Willow Tree Range is a dry, stony and relatively infertile sandstone ridgeline elevated at approximately 360 metres (m) above sea level. At this present time, the vegetation within the biodiversity corridor exists as part of a much larger patch of native vegetation within the Leard State Forest and adjoining private land. The area set aside as the biodiversity corridor will not take on the configuration of the specified width corridor until mining for both the MCCM and BCM advance to within 500 m of each other. The biodiversity corridor is shown in Figure 1.

1.2 PURPOSE OF THE BIODIVERSITY CORRIDOR PLAN

The purpose of this BCP is to provide a plan that addresses the requirements of Condition 3 of EPBC Approval 2010/5566 which states:

> *The person taking the action must submit a Biodiversity Corridor plan for the approval of the Minister within three months of the date of this approval. The plan must address the following matters:*
>
> *a) protection of native vegetation of a total width of 500 metres (m) where the Maules Creek coal lease boundary is adjacent to the Boggabri coal mine lease boundary;*
>
> *b) maintenance in perpetuity of this area as a biodiversity corridor, and*
>
> *c) evidence that the biodiversity corridor will be protected in perpetuity through a legal mechanism that would provide the equivalent protection of a conservation covenant.*
>
> *The approved Biodiversity Corridor must be implemented.*



WHC-20-74_BCP_201B

LEGEND
- Mining Tenement Boundary
- NPWS Estate
- State Forest
- Project Boundary
- Approximate Extent of Existing/Approved Surface Development
- Corridor Access Tracks
- Indicative Biodiversity Corridor

Source: NSW Spatial Services (2020); Orthophoto Whitehaven Coal (April 2019)

WHITEHAVEN COAL

MAULES CREEK BIODIVERSITY CORRIDOR PLAN

Biodiversity Corridor Location

Figure 1

1.3 STRUCTURE OF THE DOCUMENT

This BCP is structured to address the requirements in Condition 3 of EPBC Approval 2010/5566 and includes the following information:

- Section 2 describes measures to protect native vegetation within the biodiversity corridor.
- Section 3 describes the measures that MCCM will implement to maintain the native vegetation in the biodiversity corridor in perpetuity.
- Section 4 describes the evidence that the biodiversity corridor will be protected in perpetuity.

The measures described in this plan have been implemented by MCC since commencement of the MCCM.

2 MEASURES TO PROTECT NATIVE VEGETATION

MCC has various measures to protect native vegetation outside the approved clearing limit under EPBC Approval 2010/5566, including native vegetation within the biodiversity corridor. These measures include:

- land disturbance protocol (LDP) (Section 2.1);
- marking the limits of clearing (Section 2.2);
- controlling access (Section 2.3); and
- staff education (Section 2.4).

These measures are SMART (Specific, Measurable, Achievable, Realistic, Time-bound) as described below. A table analysing the risks and measures is provided in Appendix A in consideration of the *Environmental Management Plan Guidelines* (Department of the Environment, 2014).

In addition to the below, MCC minimises mine surface water runoff, artificial lighting, and mine generated dust through its existing management programmes.

2.1 LAND DISTURBANCE PROTOCOL

MCC has a LDP form used to manage the clearance process and to document all licensing, safety and management requirements. The LDP form is an environmental checklist that must be completed prior to each stage of clearing by the person responsible for the clearing activities, the relevant technical expert signed off by MCC's Environmental Superintendent or a delegate, and finally authorised by the Site Manager or a delegate as described in the Mining Operations Plan (MOP).

A key requirement of the LDP is the confirmation that any proposed vegetation clearing is allowed by the project approval. The LDP process includes using a Geographical Information System (GIS) to assist in checking relevant features such as tenement and approval boundaries, mapped vegetation and archaeological features.

Additionally, activities in proximity to the biodiversity corridor involve inspections to manage and ensure potential mining impacts are minimised and managed appropriately.

This measure is SMART.

2.2 MARKING LIMITS OF CLEARING

To protect native vegetation outside the approved clearing limit under EPBC Approval 2010/5566, the following management measures will be undertaken in regard to marking the limits of clearing:

- The current limits of clearing will be marked any time prior to clearing either by high visibility tape at appropriate intervals, fencing or an equivalent boundary marker.
- Disturbance at any time will be restricted to the delineated area and no stockpiling of equipment, machinery, soil or vegetation will occur beyond the marked clearing limit.

The person responsible for the clearance activities will ensure that the boundary markers are installed to enable the suitable environmental and technical inspections of the proposed disturbance can be undertaken, and ultimately that disturbance can be limited to the marked area approved for disturbance. The completion of this activity will be recorded and signed off in the LDP form. This measure is SMART.

2.3 CONTROL OF ACCESS

Measures will be implemented to control access to the MCCM Project Boundary (which includes the biodiversity corridor).

Fencing
Fences are at selected locations around the perimeter of the MCCM Project Boundary. In areas where the biodiversity corridor can be directly accessed from the active mining area, fencing and signage is present to limit and inform personnel of the restricted access to those whom have been authorised to enter. Fences are periodically inspected to monitor access and integrity of the fence. Please refer to Section 2.5 regarding implementation and monitoring measures.

Gates
Access to the MCCM Project Boundary has been restricted through the use of locked gates. Only authorised personnel have access to keys. All persons entering the mine site are required to enter through the security gate which this both manned and has electronic barriers accessible via induction cards. Please refer to Section 2.5 regarding implementation and monitoring measures.

Signage
Signage is in place to assist in communicating that access restrictions apply to authorised personnel. The biodiversity corridor has signage in place at regular intervals to identify and delineate the biodiversity corridor and associated restricted access. The signage is in place in areas directly accessible from the active mining area. Please refer to Section 2.5 regarding implementation and monitoring.

Induction and staff education is described below.

2.4 INDUCTIONS AND STAFF EDUCATION

Staff, contractors and visitors who intend to enter the biodiversity corridor will be inducted prior to entry to make them aware of their role and responsibilities for the protection of the biodiversity corridor.

Engagement is undertaken with the adjoining mining company, Idemitsu Coal, who equally have conditions of approval in relation to the biodiversity corridor.

This measure is SMART.

2.5 SUMMARY

Table 2-1 provides the measures described in Section 2, timeframe for implementation, targets, corrective actions and monitoring planned for each measure.

Table 2-1
Summary of Measures to Protect Native Vegetation

Measure	Timeframe for Implementation	Targets	Corrective Actions	Monitoring
Land Disturbance Protocol (Section 2.1)	Prior to clearing	No unauthorised clearing	N/A	Authorisation by the Site Manager or a delegate
Marking the Limits of Clearing (Section 2.2)	Prior to clearing	No unauthorised clearing	N/A	Authorisation by Site Manager or a delegate
Controlling Access (Section 2.3)	Prior to entry	No staff, contractors or visitors entering the corridor without an induction	N/A	Periodic inspections.
Staff Education (Section 2.4)	Prior to entry	No staff, contractors or visitors entering the corridor without an induction	N/A	Periodic inspections.

3 MEASURES TO MAINTAIN THE NATIVE VEGETATION

MCC has various measures to maintain native vegetation outside the approved clearing limit under EPBC Approval 2010/5566, including the biodiversity corridor. In accordance with Condition 3(b) of EPBC Approval 2010/5566, this section describes measures to maintain the native vegetation within the biodiversity corridor in its current state without additional degradation from weeds, animal pests or bushfire. The biodiversity corridor occurs in Leard State Forest (State-owned zoned for forestry and mining) and MCC will undertake measures in consultation with NSW Forestry Corporation.

These measures are SMART (Specific, Measurable, Achievable, Realistic, Timebound) as described below. A table analysing the risks and measures is provided in Appendix A in consideration of the *Environmental Management Plan Guidelines* (Department of the Environment, 2014).

3.1 CONTROL OF WEEDS

A weed control program will be undertaken to control the occurrence and spread of weed species (e.g. Weeds of National Significance [WoNS] and priority weeds) in the MCCM Project Boundary (which includes the biodiversity corridor) in accordance with the NSW *Biosecurity Act, 2015*. The weed control program will involve:

- identifying weeds;
- application of weed control techniques in areas requiring weed control; and
- follow-up inspection weed control as required.

Weed control will be undertaken for the targeted weed species based on seasonal conditions.

Follow-up weed control will be undertaken as required, in areas that have received past weeding treatments. Follow-up treatments ensure pressure is maintained on weeds, assisting regenerating native plants to out-compete weed species.

Monitoring will be undertaken to document the change in the type, extent and density of major weed occurrences in the MCCM Project Boundary over time and provide recommendations about appropriate weed control required. Environmental weeds (e.g. WoNS) and priority weeds will be monitored via inspections in the MCCM Project Boundary by a suitably qualified person(s) with experience in identification of weeds. Mapping will be prepared showing the extent of weeds requiring control. Environmental weeds (e.g. WoNS) and priority weeds will be monitored at least annually.

3.2 CONTROL OF FERAL ANIMALS

A feral animal control program will be undertaken to reduce the abundance of feral animals in the MCCM Project Boundary (which includes the biodiversity corridor) and maintain a low abundance of feral animals. The feral animal program will involve:

- identifying feral animals through monitoring;
- application of feral animal control techniques in areas requiring control;
- follow-up monitoring of feral animal control areas; and

- follow-up feral animal control if required.

Feral animal control will be undertaken in consideration of the control recommendations outlined in the Department of Primary Industries (DPI) *Vertebrate Pest Control Manual* (DPI, 2020) and that control strategies follow the NSW Codes of Practices (COPs) and Standard Operating Procedures (SOPs).

The abundance and distribution of feral animals within the MCCM Project Boundary will be monitored to provide the necessary information to trigger management actions and determine the efficacy of control measures aimed at reducing feral animal abundance. Feral animal monitoring will adopt the relevant methodologies for specific feral animals, generally in accordance with the NSW DPI *Monitoring Techniques for Vertebrate Pests* (Mitchell and Balogh, 2007a to e) so that a range of methods may be used such as transects, spotlighting, sand pads, cameras, traps, etc. Feral animals will be monitored on a frequency agreed with the NSW Department of Planning, Industry and Environment (DPIE).

3.3 BUSHFIRE MANAGEMENT

MCCM is suitability equipped to respond to any fires on site and assist the NSW Rural Fire Service, Forestry Corporation NSW, emergency services and National Parks and Wildlife Service as much as possible if there is a fire in the surrounding area.

3.4 SUMMARY

Table 3-1 provides the measures described in Section 3, timeframe for implementation, targets, corrective actions and monitoring planned for each measure.

Table 3-1
Summary of Measures to Maintain Native Vegetation

Measure	Timeframe for Implementation	Targets	Corrective Actions	Monitoring
Control of Weeds (Section 3.1)	• Monitoring surveys biannually • Management control informed by survey results	• Control the spread of Weeds of National Significance [WoNS] and priority weeds.	• Incorporate into subsequent monitoring and management	Biannual
Control of Animal Pests (Section 3.2)	• Monitoring surveys biannually. • Feral animals will be monitored on a frequency agreed with the NSW Department of Planning, Industry and Environment (DPIE).	• Monitoring completed bi-annually • Feral animal control informed by monitoring	• Feral animal control undertaken considering the Department of Primary Industries (DPI) Vertebrate Pest Control Manual (DPI, 2020)	Biannual
Bushfire Management (Section 3.3)	• Response provided as required	• No uncontrolled fires caused by MCCM mining activities	• N/A	As required

4 MECHANISM FOR PERPETUAL PROTECTION

Condition 3 of EPBC Approval 2010/5566 states that this plan must address a number of matters including:

> *c) evidence that the biodiversity corridor will be protected in perpetuity through a legal mechanism that would provide the equivalent protection of a conservation covenant.*
>
> *The approved Biodiversity Corridor must be implemented.*

In 2013, when the EPBC Act approval was granted, it was acknowledged by the Department that the biodiversity corridor occurs in Leard State Forest (State-owned zoned for forestry and mining). The Statement of Reasons issued by the Commonwealth Minister for the Environment under section 130(1) and 133 of the EPBC Act provides some insight as to the manner in which the biodiversity corridor was conditioned. Relevant extracts are provided below.

> *The department is of the view that Whitehaven would be unable to secure a conservation covenant on the corridor. However, under NSW conditions the barrier coal can only be mined if there is a legally secured corridor of equal ecological function in place. Therefore, the department recommends that the requirement to secure a legally binding conservation covenant to protect the proposed 500m wildlife corridor be removed in favour of requiring the proponent to prepare a plan that achieves an equivalent environmental outcome. Any attempt to alter the width or level of protection for the corridor would be subject to your approval, through conditions specifying that any variation must be approved by the minister.*

The EPBC Approval 2010/5566 provides a legal mechanism to protect the biodiversity corridor until such time that the approval expires (31 December 2053). This is because Condition 3 of EPBC Approval 2010/5566 requires preparation of this plan to protect and maintain the corridor and states that the approved biodiversity corridor must be implemented (Section 2).

The Department's *EPBC Act Policy Statement - Expiry Dates for Approvals* (Department of Sustainability, Environment, Water, Population and Communities [SEWPaC], 2013) states:

> *Approval conditions that involve offsets may require that an area of land is protected and managed 'in perpetuity'. However, it is not possible for an approval to have effect in perpetuity. In these cases, the approval period would cover the timeframe required to put in place the required contracts, agreements or covenants that will give effect to the conditions of approval.*

Prior to expiry of the EPBC Approval 2010/5566, MCC will pursue an alternate legal mechanism over the biodiversity corridor (or an alternative corridor) if one becomes available through consultation with the NSW Government or otherwise seek to extend the approval period to cover the timeframe required to put in place the required legal mechanism.

The MCCM and BCM EPBC Approvals 2010/5566 and 2009/5256 require MCC and Boggabri Coal Pty Limited to progressively revegetate native forest and woodland in the MCCM and BCM Project areas. It is anticipated that this will contribute to providing habitat opportunities for fauna prior to expiry of these approvals.

5 REPORTING AND REVIEW

5.1 REPORTING SURVEY DATA

In accordance with Condition 31 of the Approval Decision EPBC 2010/5566, survey data will be recorded so as to conform to data standards notified from time to time by DAWE. When requested by the DAWE, MCC will provide all species and ecological survey data and related survey information from ecological surveys undertaken for MNES. This survey data will be provided within 30 business days of request, or in a timeframe agreed to by DAWE in writing.

In accordance with Condition 39 of the Approval Decision EPBC 2010/5566, MCC will maintain accurate records substantiating all activities and outcomes associated with or relevant to Approval Decision EPBC 2010/5566, including measures taken to implement BCP, and make them available upon request to the DAWE.

5.2 REPORTING REQUIREMENTS

A report pertaining to the annual compliance with EPBC Approval 2010/5566 will be published on the MCCM website by 31 March each year after the anniversary of commencement of the MCCM in accordance with Condition 34 of the EPBC Approval 2010/5566. Non-compliance with any of the conditions will be reported to DAWE at the same time as the compliance report is published.

5.3 BIODIVERSITY CORRIDOR PLAN PUBLISHING

The BCP will be published on the MCC website. Any revisions to this BCP will be published on the MCC website within one month of being approved.

5.4 REVISION OF THE BIODIVERSITY CORRIDOR PLAN

In accordance with Condition 36 of the Approval Decision EPBC 2010/5566, if MCC wishes to carry out any activity otherwise than in accordance with this BCP (as it pertains to Approval Decision EPBC 2010/5566), MCC will submit a revised BCP to DAWE for the Minister's written approval. The varied activity shall not commence until the Minister has approved the revised plan in writing. The Minister will not approve a revised plan, unless the revised plan would result in an equivalent or improved environmental outcome. The BCP will be managed in accordance with this BCP (once approved) until such time as an alternative biodiversity corridor is identified and approved in a revised BCP (if identified and approved).

In accordance with Condition 37 of the Approval Decision EPBC 2010/5566, if the Commonwealth Minister believes that it is necessary or convenient for the better protection of listed threatened species and communities or listed migratory species to do so, the Minister may request MCC to make specified revisions to this BCP and submit the revised plan for the Minister's written approval. MCC must comply with any such request. The revised approved plan must be implemented. Unless the Minister has approved the revised plan then MCC must continue to implement the originally approved plan, as specified in the conditions.

6 REFERENCES

Department of Sustainability, Environment, Water, Population and Communities (2013) *EPBC Act Policy Statement - Expiry Dates for Approvals.*

Department of Primary Industries (2020) *Vertebrate Pesticide Manual.*

Mitchell, B. and Balogh, S. (2007a) *Monitoring Techniques for Vertebrate Pests, Feral Dogs*. NSW Department of Primary Industries, Orange.

Mitchell, B. and Balogh, S. (2007b) *Monitoring Techniques for Vertebrate Pests, Rabbits*. NSW Department of Primary Industries, Orange.

Mitchell, B. and Balogh, S. (2007c) *Monitoring Techniques for Vertebrate Pests, Feral Pigs*. NSW Department of Primary Industries, Orange.

Mitchell, B. and Balogh, S. (2007d) *Monitoring Techniques for Vertebrate Pests, Foxes*. NSW Department of Primary Industries, Orange.

Mitchell, B. and Balogh, S. (2007e) *Monitoring Techniques for Vertebrate Pests, Goats*. NSW Department of Primary Industries, Orange.

APPENDIX A

RISK ASSESSMENT

Table A1
Risk Assessment

Risk Factor (Hazard)	Impact (Risk)	Before Management			Action/Control/Risk Mitigation Measure	After Management		
		Likelihood	Consequence	Risk Level		Likelihood	Consequence	Risk Level
Vegetation clearance	Unplanned vegetation clearance within the biodiversity corridor by mining related activities not managed by a Land Disturbance Protocol (LDP).	Possible	High	Medium	• Land Disturbance Protocol (Section 2.1) • Please refer to Table 2-1	Unlikely	Minor	Low
	Mining related disturbance in the biodiversity corridor prior to approval	Unlikely	High	Medium	• Marking the Limits of Clearing (Section 2.2) • Please refer to Table 2-1	Unlikely	Minor	Low
Access and unplanned disturbance	Unauthorised access by staff, contractors and visitors undertaking work.	Possible	Moderate	Medium	• Controlling Access (Section 2.3) • Please refer to Table 2-1	Unlikely	Minor	Low
	Unauthorised access and/or inadvertent disturbance	Possible	Moderate	Medium	• Staff Education (Section 2.4) • Please refer to Table 2-1	Unlikely	Minor	Low
Ecological hazards	Listed weed species are identified in the biodiversity corridor	Likely	Minor	Low	• Control of weeds (Section 3.1) • Refer to Table 3-1	Possible	Minor	Low
	Feral animals access the biodiversity corridor	Likely	Moderate	Medium	• Control of animal pests (Section 3.2) • Refer to Table 3-1	Possible	Minor	Low
	Indirect impacts beyond assessed criteria	Possible	Minor	Low	• Management of potential indirect impacts per relevant aspects of Project Approval PA10_0138.	Unlikely	Minor	Low
	Uncontrolled bushfire occurs in the biodiversity corridor	Possible	Major	High	• Bushfire management (Section 3.3) and Table 3-1	Unlikely	Moderate	Low

Table A-2 Likelihood and Consequence

Qualitative measure of likelihood (how likely is it that this event/issue will occur after control strategies have been put in place)	
Highly likely	Is expected to occur in most circumstances
Likely	Will probably occur during the life of the project
Possible	Might occur during the life of the project
Unlikely	Could occur but considered unlikely or doubtful
Rare	May occur in exceptional circumstances

Qualitative measure of consequences (what will be the consequence/result if this issue does occur rating)	
Minor	Minor incident of environmental damage that can be reversed
Moderate	Isolated but substantial instances of environmental damage that could be reversed with intensive efforts
High	Substantial instances of environmental damage that could be reversed with intensive efforts
Major	Major loss of environmental amenity and real danger of continuing
Critical	Severe widespread loss of environmental amenity and irrecoverable environmental damage

Source: Department of the Environment (2014)

Table A-3 Risk Rating

	Consequence				
	Minor	**Moderate**	**High**	**Major**	**Critical**
Highly Likely	Medium	High	High	Severe	Severe
Likely	Low	Medium	High	High	Severe
Possible	Low	Medium	Medium	High	Severe
Unlikely	Low	Low	Medium	High	High
Rare	Low	Low	Low	Medium	High

Source: Department of the Environment (2014)