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Environmental Management System

Rix's Creek South

BIODIVERSITY MANAGEMENT PLAN

Doc No:	Biodiversity Management Plan
Doc Owner:	Environment Manager – Rix's Creek Pty Limited
Final Review / Approval:	Group Environment Manager – The Bloomfield Group
Signed:	Chris Knight. MEM,BSc,(Newcastle) MAIG, JP.
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Biodiversity Management Plan



1 Introduction

Rix's Creek Mine (RCM) is an open cut coal mine owned and operated by The Bloomfield Group (Bloomfield). RCM comprises the original Rix's Creek Mine, now known as Rix's Creek South (RCS) and the former Integra Open Cut Project Mine now known as Rix's Creek North (RCN).

RCM is located approximately 5 to 10 km north-west of Singleton both east and west of the New England Highway (NEH) (**Figure 1**).

This Biodiversity Management Plan has been prepared, reviewed and internally approved by the following suitably qualified and experience persons;

- Kirstin Blaikie Hansen Bailey, MSc (Wildlife Ecology), BSc (Zoology).
- Dianne Munro, Hansen Bailey, MEnvLaw BSc.
- Chris Knight, The Bloomfield Group, MEM, BSc. (Newcastle).

People responsible for the compilation review and internal approval of this document have a combined experience of environmental science, environmental law and management of over 60 years.

This Biodiversity Management Plan (BMP) forms part of a series of Environmental Management Plans for RCM. This BMP is applicable to RCS only and is the primary tool that will be utilised to manage biodiversity and the biodiversity offsets for RCS.

The management of biodiversity at RCN is managed under the separate *Biodiversity Management Plan Rix's Creek North* (Bloomfield, 2016).

1.1 Background

Operations at RCS commenced in 1990. Mining has been completed in the original Pit 1 and Pit 2 areas in line with Development Approval DA 49/94 on the east side of the New England Highway (NEH), which have been mostly backfilled and rehabilitated. RCS received approval for State Significant Development (SSD) 6300 on 12 October 2019 which allows expansion of the West Pit on the west side of the NEH and mining of a small section on the eastern side of the highway. The approved operations within RCS are shown in **Figure 2**.

RCS is approved under SSD 6300 until 12 October 2040 to extract coal at up to 3.6 Mtpa ROM for the following operations:

- West Pit (previously known as Pit 3) and associated OEAs;
- North Pit (on the eastern side of the New England Highway);
- RCS CHPP;
- Train loading facility located on the RCN rail loop and clean coal stockpiles; and
- Associated maintenance and administration buildings.

Mining operations under SSD 6300 commenced on 24 February 2020.

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1.2 Local Setting

RCS is located in the Hunter Valley region of New South Wales (NSW), northwest of Singleton and southeast of Camberwell (see **Figure 1**).

The area surrounding RCS typically comprises various open cut and underground coal mining operations, agricultural operations, industrial and commercial activities and a mix of rural residences and urban residential areas.

The majority of land to the north-west of RCS is privately owned or owned by Ashton Mine. A number of private residences are also located surrounding RCS, as shown in **Figure 1**. The highest density of private residences is located to the south-east and an industrial precinct is located to the south of RCM. The private residences are more sparsely located in areas to the west, north and northeast.

1.3 Document Structure

The remainder of the BMP is structured as follows:

- **Section 2**: Outlines the statutory requirements applicable to the BMP.
- Section 3: Describes the Stakeholder Consultation undertaken.
- **Section 4**: Describes the existing environment and the impact on biodiversity.
- **Section 5**: Discusses the Biodiversity Offset Strategy.
- Section 6: Describes the management measures for biodiversity.
- Section 7: Outlines the monitoring conducted.
- Section 8: Describes the compliance protocol.
- **Section 9**: Provides details for the reporting and review of the environmental performance process.
- Section 10: Provides a summary of responsibilities relevant to this BMP.
- Section 11: Provides the references cited in the BMP.

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Figure 1 Locality

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Source: Appendix 2 SSD 6300

Figure 2 Conceptual Approved Rix's Creek South Mine

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2 Statutory Requirements

2.1 Biodiversity Management Plan Conditions

The operations at Rix's Creek South are subject to the conditions contained in SSD 6300 dated 12 October 2019.

The specific requirements for the BMP and where each condition is addressed within the plan are provided in **Table 1**. Other relevant conditions are provided in **Appendix A**.

Ref	Condition						Section
Condition B43	The Applicant must retire the biodiversity credits specified in Table 5 below to offset the biodiversity impacts of the development. The retirement of credits must be carried out in consultation with BCD and in accordance with the Biodiversity Offset Scheme of the BC Act, to the satisfaction of the BCT.						5
	Table 5: Biodiversity credit requirements						5
	Credit Type	Stage 1 Credits Required	Stage 2 Credits Required	Stage 3 Credits Required	Stage 4 Credits Required	Total Credits Required	
	Ecosystem Credits						
	HU906 - Zone 2: Bull Oak grassy woodland of the central Hunter Valley (PCT 1692)	-	4	-	-	4	
	HU819 - Zone 4: Narrow-leaved Ironbark - Native Olive shrubby open forest of the central and upper Hunter (PCT 1605)	145	302	217	86	750	
	HU962 - Zone 5: Grey Box grassy open forest of the central and lower Hunter Valley (PCT 1748)	13	-	-	15	28	

Table 1 SSD 6300 Management Plan Conditions

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Ref		С	ondition				Section
	HU819 - Zone 7: Derived native grassland Narrow- leaved Ironbark - Native Olive shrubby open forest of the central and upper Hunter (PCT 1605)	1,112	566	871	330	2,879	
	HU819 - Zone 8: Narrow-leaved Ironbark -Native Olive shrubby open forest of the central and upper Hunter (PCT 1605)	173	138	153	183	647	
	HU818 - Zone 10: Narrow-leaved Ironbark -Grey Box - Spotted Gum shrub - grass woodland of the central and lower Hunter (PCT 2150)	120	-	-	-	120	
	Total					4,428	
	 Notes: To identify the surface disturbance areas associated with Stages 1, 2, 3 and 4 in Table 5 refer to the applicable figure in Appendix 5, or as updated in the approved Biodiversity Management Plan. The credits in Table 5 were calculated in accordance with Framework for Biodiversity Assessment of the NSW Biodiversity Offset Policy for Major Projects (OEH, 2014) and may need to be converted to reasonably equivalent 'biodiversity credits', within the meaning of the BC Act, if the credits are to be retired in accordance with the Biodiversity Offsets Scheme of the BC Act. 						
	Staged Retirement Within 12 months of commencing mining operations under this consent, or other timeframe agreed by the Planning Secretary, the Applicant must retire the Stage 1 credits a specified in Table 5.						5.1
	Prior to the commencement of surface disturbance associated with Stage 2, Stage 3 or Stage 4, or other timeframe agreed by the Planning Secretary, the Applicant must retire the relevant credits for these stages as specified in Table 5.						5.2

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Ref	Condition	Section			
	With the agreement of the Planning Secretary, the Applicant may adjust the staging of credit retirements in Table 5. Except in accordance with condition B47, the relevant credits must be retired, prior to the commencement of the associated surface disturbance.	5.2			
	With the agreement of the Planning Secretary, the Applicant carry over surplus retired credits to satisfy requirements of a later stage. This may occur, for example, where approved clearing for an earlier stage was not undertaken, but the impact has already been offset.				
	With the agreement of the Planning Secretary, biodiversity credits associated with any undisturbed areas agreed under condition B47 as not to be subject to any surface disturbance may be removed from the total credit obligations in Table 5.	5.2			
	Prior to commencing construction of the cut and cover tunnel, the Applicant must ensure that any biodiversity impacts relating to disturbance during construction of the tunnel and the temporary side track road have been offset to the satisfaction of BCD.	5.3			
	Biodiversity Management Plan				
Condition B50	Condition B50 The Applicant must prepare a Biodiversity Management Plan to the satisfaction of the Planning Secretary. This plan must				
	(a) Be prepared by a suitably qualified and experienced person/s;	Title Page			
	(b) Be prepared in consultation with OEH;	Appendix B			
	(c) Be submitted to the Planning Secretary for approval within six months of commencing development under this consent;	Appendix B			
	(d) Describe the short, medium, and long-term measures to be undertaken to manage vegetation and fauna habitat on the site;	6			
	 (e) Describe how biodiversity management would be integrated with similar measures within other management plans, including the Rehabilitation Management Plan referred to in condition B72; 	6			
	(f) Include a Biodiversity Offset Strategy that:				
	 (i) Describes how the biodiversity credits in Table 5 (and any required under condition B49) will be identified, secured and returned; and 	5			

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Ref	Condition	Section
	 (ii) If adjustments are made to the staging of credit retirements in Table 5 (see conditions B46), detail the adjusted stages and associated surface disturbance areas; and 	5
	(g) Describe the measures to be implemented within the approved disturbance areas to:	
	(i) Minimise the amount of clearing;	6.1.1
	(ii) Minimise impacts on fauna, including undertaking pre-clearance surveys;	6.1.2
	(iii) Provide for the salvage, transplanting and/or propagation of any threatened flora found during pre-clearance surveys, in accordance with the Guidelines for the translocation of Threatened Plants in Australia (Vallee et al., 2004); and	6.1.3
	(iv) Maximise the salvage of resources, including tree hollows, vegetation and soil resources, for beneficial reuse, including fauna habitat enhancement.	6.1.3
	(h) Describe the measures to be implemented on the site to:	
	 (i) Minimise impacts to threatened ecological communities listed under the BC Act and the EPBC Act, and contribute to conservation strategies for these communities; 	6.2.1
	 (ii) Minimise impacts on fauna habitat resources such as hunting and foraging areas, habitat trees, fallen timber and hollow- baring trees; 	6.2.1
	 (iii) Enhance the quality of vegetation, vegetation connectivity and wildlife corridors including through the assisted regeneration and/or targeted revegetation of appropriate canopy, sub- canopy, understory and ground strata; 	6.2.2
	(iv) Introduce naturally scarce fauna habitat features such as nest boxes and salvaged tree hollows and promote the use of these introduced habitat features by threatened fauna species, including Squirrel Glider;	6.2.3
	(v) Manage any potential conflicts with Aboriginal heritage values; and	6.2.4
	(vi) Protect vegetation and fauna habitat outside of the approved disturbance areas;	6.2.1

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Ref	Condition	Section
	(vii) Manage the collection and propagation of seed from the local area;	6.2.2
	(viii) Control weeds, including measures to avoid and mitigate the spread of noxious weeds;	6.2.5
	(ix) Control feral pests with consideration of actions identified in relevant threat abatement plans;	6.2.6
	(x) Control erosion;	
	(xi) Manage any grazing and agriculture;	6.2.8
	(xii) Control access to vegetated or revegetated areas; and	6.2.10
	(xiii) Manage bushfire hazards;	6.2.9
	 (i) Include a seasonally-based program to monitor and report on the effectiveness of the above measures, progress against the detailed performance indicators and completion criteria, and improvements that could be implemented to improve biodiversity outcomes; 	7
	 (j) Identify the potential risks to the successful implementation of the Biodiversity Offset Strategy, and include a description of the contingency measures to be implemented to mitigate against these risks; and 	5.4
	(k) Include details of who would be responsible for monitoring, reviewing, and implementing the plan.	10
Condition B51	The Applicant must implement the Biodiversity Management Plan as approved by the Planning Secretary.	

2.1.1 Rehabilitation Objectives

Condition B50(e) of SSD 6300 requires biodiversity management to be integrated with other management plans. Condition B69 of SSD 6300 requires Bloomfield to comply with the objectives in Table 6 of that condition. These objectives are generally covered in the *Rehabilitation Strategy* (Bloomfield, 2020a). The Rehabilitation Objective in **Table 2** is discussed in this document.

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Table 2Rehabilitation Objectives

Feature	Objective	Section
Areas proposed for native ecosystem re-	 Establish/restore self-sustaining native open woodland ecosystems 	6.2.2
establishment	Establish local plant community types	6.2.2
	Establish:	
	 riparian vegetation, within any diverted and/or re- established creek lines and retained water features; 	6.2.2
	 habitat, feed and foraging resources for threatened fauna species; and 	6.2.3
	 vegetation connectivity and wildlife corridors, as far as is reasonable and feasible. 	6.2.2

2.2 Environmental Impact Statement Commitments

Appendix C lists the Biodiversity management commitments made in the *Rix's Creek Continuation of Mining Environmental Impact Statement* (AECOM, 2015) (RCS EIS) and indicates where each is addressed in this BMP.

2.3 Commonwealth Environment Protection and Biodiversity Conservation Act 1999

The RCS Continuation Project (the Project) was referred to the Commonwealth Department of Environment and Energy in 2014 (EPBC 2014/7348) and deemed not to be a controlled action under Part 7 of the EPBC Act on 21 November 2014.

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2.4 Plan Objectives and Performance Indicators

The primary objectives of the BMP and associated performance indicators are presented in Table 3.

Objectives	Performance Indicators
Compliance with legislative requirements	 Compliance with the planning approval Compliance with the management actions in Section 6
Minimise the impacts of the development on Biodiversity.	 Implementation of the management actions in Section 6. Compliance with the Biodiversity Offset Strategy in Section 5.

Table 3Plan Objective and Performance Indicators

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3 Stakeholder Consultation

3.1 Department of Planning, Industry and Environment

Condition B50(c) of SSD 6300 requires Bloomfield to submit the BMP to the Secretary of DPIE (Planning Secretary) for approval within six months of commencing development. Development commenced on 24 February 2020.

The final BMP was submitted to DPIE for approval on 18 August with a request for further information from DPIE received on 16 November 2020. A copy of this request is provided in **Appendix B** and where each item has been addressed is provided in **Table B1** in **Appendix B**.

A copy of regulatory correspondence associated with this plan is provided in Appendix B.

3.2 Biodiversity & Conservation Division

The draft BMP was provided to the Biodiversity and Conservation Division (BCD) on 09 July 2020 for consultation and comment. At the date of the initial submission of this plan to DPIE (18 August 2020), no response had been provided on the plan from BCD.

Response from BCD was received on 4 September 2020, where BCD noted the following recommendations;

- BCD recommends that topsoil and subsoil stockpiles are managed in a way that preserves their biodiversity values prior to use in rehabilitation areas.
- BCD recommends that the rehabilitation monitoring sites (including analogue sites) are set up as Biodiversity Assessment Method plots and include the assessment of canopy cover for shrub and canopy species.
- BCD recommends that groundcover and shrub species are selectively harvested from new mining areas ahead of mining and transplanted in the rehabilitation areas to maintain local biodiversity.
- BCD recommends that the reference to 'OEH' in Section 4.1 is replaced with 'BCD'.

A copy of the response from BCD is provided in Appendix B. Table B2 lists BCD's issues and where each item has been addressed in this BMP.

3.3 Community Consultative Committee

The draft BMP was provided to the Rix's Creek Mine Community Consultative Committee on 09 July 2020 for consultation and comment. At the date of the submission of this plan to DPIE no response has been received from the CCC.

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4 Existing Environment and RCS Impacts

The *Ecology Report for the Continuation of Rix's Creek Mine, Singleton LGA* (Eastcoast Flora Survey, 2015) (Ecology Report) submitted in support of the RCS EIS described the biodiversity values within the disturbance area and assessed the potential impact of the Project on the flora and fauna.

4.1 Local Environment

The Ecology Report conducted database searches, a review of previous studies and undertook fieldwork, including flora and fauna surveys.

The Ecology Report identified two State-listed threatened ecological communities (TEC) (Central Hunter Grey Box-Ironbark Woodland; Hunter Lowlands Redgum Forest), one Commonwealth listed threatened community (Central Hunter Valley Eucalypt Forest and Woodland) and one threatened fauna species (Squirrel Glider, *Petaurus norfolcensis*).

The bulk of the Project Area supports Derived Native Grassland across landscapes formerly forested by Ironbark (*Eucalyptus crebra*), and which have been used for grazing over many decades. Advice received from BCD indicated that this Ironbark-dominated vegetation (PCT 1605: *Narrow-leaved Ironbark; Native Olive shrubby open forest of the central and upper Hunter*) did not form part of any State-listed TEC in the Hunter Valley, and consequently was deemed of lowered significance. From a Commonwealth perspective, these grasslands are also excluded from Commonwealth-listed communities (Eastcoast Flora, 2015).

The assessment in the Ecology Report was conducted following the *Biodiversity Certification Assessment Methodology* (NSW DECCW, 2011) (BCAM) and the *BioBanking Assessment Methodology and Credit Calculator Operation Manual* (NSW DECC, 2008), under the *Threatened Species Conservation Act* 1995 (TSC Act).

In 2016, the TSC Act was replaced by the *Biodiversity Conservation Act 2016* (BC Act), and BCAM was replaced with the 'Biodiversity Assessment Method' (BAM).

4.2 Impact Assessment

Since the Ecology Report was completed, the project boundaries have been revised to 'Option 2'. The approved assessed area is shown in **Figure 3**.

The letter report *Rix's Creek Continuation Project* – *Staging of biodiversity offsets* (EMM, 2019) identified that Option 2 results in the disturbance of 257.45 ha as shown in **Table 4**.

The number of credits required to offset these areas at each Offset Stage are also shown in **Table 4**. These credits have been assessed under the Framework for Biodiversity Assessment.

A conversion factor has been applied to the credits to establish equivalency between the *Framework for Biodiversity Assessment* (OEH, 2014) (FDA) and the more recent BAM. The equivalent credits were approved by the DPIE Director Conservation Programs on 20 February 2020. The revised total credits are shown in **Table 4**.

Credits will be managed in a staged approached as discussed in the Offset Strategy in Section 5.

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Credit Type	Total Area (ha)	Stage 1 Credits Required	Stage 2 Credits Required	Stage 3 Credits Required	Stage 4 Credits Required	Total Credits Required	Revised Credits
HU906 - Zone 2: Bull Oak grassy woodland of the central Hunter Valley (PCT 1692)	0.1	-	4	-	-	4	2
HU819 - Zone 4: Narrow-leaved Ironbark - Native Olive shrubby open forest of the central and upper Hunter (PCT 1605)	15.16	145	302	217	86	750	429
HU962 - Zone 5: Grey Box grassy open forest of the central and lower Hunter Valley (PCT 1748)	0.76	13	-	-	15	28	13
HU819 - Zone 7: Derived native grassland Narrow- leaved Ironbark - Native Olive shrubby open forest of the central and upper Hunter (PCT 1605)	116.78	1,112	566	871	330	2,879	2007
HU819 - Zone 8: Narrow-leaved Ironbark -Native Olive shrubby open forest of the central and upper Hunter (PCT 1605)	22.87	173	138	153	183	647	324
HU818 - Zone 10: Narrow-leaved Ironbark -Grey Box - Spotted Gum shrub - grass woodland of the central and lower Hunter (PCT 2150)	3.96	120	-	-	-	120	61
Total	257.45					4,428	2,836

Table 4
Credit Requirements for each Vegetation Zone and Offset Stage

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Figure 3 Approved Assessment Area and Offset Staging

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5 Biodiversity Offset Strategy

Bloomfield has established a Biodiversity Offset Strategy (BOS) to compensate for the biodiversity impacts as a result of the Project (**Section 4.2**). As detailed in a letter to DPIE dated 4 February 2019 (*Rix's Creek Continuation Project, Response to Recommendations – Request for additional information from the Department of Planning and Environment* (Bloomfield, 2019)), the BOS will consist of:

- Establishment of Biodiversity Stewardship Site(s) (BSS) under Biodiversity Stewardship Agreement(s) (BSA), ensuring in perpetuity conservation and reporting;
- Purchase of 'like for like' credits from the market; and/or
- Payments into the Biodiversity Conservation Fund (BCF).

The retirement of biodiversity credits will be staged in line with the actual disturbance of areas which are anticipated as follows (EMM, 2019):

- Stage 1 June 2020;
- Stage 2 June 2023;
- Stage 3 June 2026; and
- Stage 4 June 2029.

The number of credits required for each stage is listed in the development consent conditions in **Table 1**.

Condition B50(f)(ii) requires any adjustments to the staging of credits to be detailed in the BMP. No adjustments are currently planned.

In accordance with Condition B46, agreement will be sought from the Planning Secretary for the adjustment of the staging of surface disturbance and associated credit retirement, if required in the future.

5.1 Stage 1

In accordance with Condition B44, Stage 1 credits must be retired within 12 months of commencing mining operations under SSD 6300. The consent commenced on 24 February 2020.

Retirement of credits for Stage 1 will occur through credits generated by the Biodiversity Offset Property 'Berewin' and purchase of credits from the market. Payment in the BCF will also be considered.

Bloomfield is in the process of applying for a Stewardship Agreement over the Berewin property with the BCT. A Biodiversity Stewardship Site Assessment Report (BSSAR), Biodiversity Stewardship Site Management Plan (BSSMP) and Total Fund Deposit (TFD) estimate have been developed. At the time of writing, the documentation is under review by the BCT. The BSSMP, when available will be included in Appendix D of this Plan.

The PCT 563 credits generated by Berewin will be used to offset the credits required for PCT 1605 – Zone 7 in Stage 1.

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5.2 Stages 2 to 4

The timing for disturbance for the remaining stages is indicatively shown in **Section 5**. Condition B45 requires that the credits for each stage are retired prior to commencement of surface disturbance in those areas.

For Stage 2, it is proposed that the remaining PCT 563 credits from the Berewin offset property will be used to offset the credits required for PCT 1605 – Zone 7. The remaining credits will be purchased from the market in the first instance and/or retired through payment into the BCT. This will be confirmed through consultation with BCD and BCT.

The BMP will be updated to describe the proposed BOS for the remaining stages prior to the commencement of surface disturbance in these areas.

Where surplus credits are identified, for example, where approved clearing for an earlier stage was not undertaken but the impact has already been offset, agreement will be sought from the Planning Secretary to carry these credits over to another stage of disturbance, in accordance with Condition B47.

Should the mine plan change to leave areas previously proposed to be disturbed as undisturbed, agreement will be sought from the Planning Secretary to remove the associated credits from the total credit obligations, in accordance with Condition B48.

5.3 Cut and Cover Tunnel

The cut and cover tunnel is proposed to commence construction before 2025. Prior to this date, biodiversity assessments will be undertaken and the credits required to offset the impacts will be determined. These credits will be offset prior to construction commencing in accordance with Condition B49.

5.4 Potential Risks

Potential risks to the successful implementation of the BOS include not retiring credits in time to allow development to occur as proposed and the offset property management actions not improving biodiversity values.

The retirement of suitable credits needs to be completed prior to any disturbance for Stages 2 to 4. Developing a suitable strategy can be a lengthy process and long lead times are required to ensure a successful strategy is agreed with BCD. To minimise the risk of not implementing the BOS in a timely manner, Bloomfield will endeavour to ensure the options for each stage are developed and agreed with BCD early.

Bloomfield is required to submit a BSSMP as part of the Stewardship Agreement discussed in **Section 5.1**. The BSSMP details the actions to be taken to improve the biodiversity values of the property. Biodiversity monitoring will be completed every five years at established monitoring locations. The monitoring report will identify any areas of concern and will provide recommendations for improvement. The management plan will be updated every five years following monitoring to incorporate any required changes. As outlined in **Section 5.1**, the BSSMP is currently under review by the BCT. Once the document is approved, it will be included at **Appendix D**.

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6 Operational Land

This section encompasses the mitigation measures to minimise the impact on biodiversity within the Project Boundary, including the new disturbance area shown on **Figure 2** and mine-owned non-mining land within the defined operational area.

Activities outlined in this section integrate with the rehabilitation activities described in the *Rehabilitation Strategy* (Bloomfield, 2020a) and the *Mining Operations Plan* (Bloomfield, 2020b) (MOP). The MOP meets the requirements of the 'Rehabilitation Management Plan' required under Condition B74.

6.1 Mitigation Measures – New Disturbance Area

Condition B50(g) requires Bloomfield to minimise impacts and maximise the salvage of resources within the new disturbance area.

6.1.1 Permit to Disturb

The 'Permit to Disturb' process applies to all proposed disturbance works on Bloomfield owned land within the defined operational area that has not previously been disturbed by mining activities.

The new disturbance area boundary (**Figure 2**) will be maintained on the Bloomfield GIS system. When a request for a Permit is made to the Environment Team, a search is made of the GIS database to identify where the proposed disturbance footprint of the Permit request lies in relation to the approved disturbance boundary.

No disturbance for mining activities will be permitted outside the approved disturbance boundary. Disturbance for other activities, such as exploration, will trigger a requirement for ecology surveys in accordance with regulatory requirements.

The boundary will be clearly mapped on the drawings and plans supplied to relevant personnel and contractors. Where necessary, the boundary will be surveyed and pegged. The requirement to remain within the boundary will be discussed with the Supervisor responsible for the clearing.

The Technical Services team will ensure the minimisation of clearing required under Condition B50(g)(i) by incorporating the following into mine planning:

- Utilising the disturbance boundary in all planning;
- Limiting the cleared width to that required to effectively operate the mine; and
- Programming the works so that only the areas which are scheduled for mining activities are cleared (Bloomfield, 2020a).

6.1.2 Pre-clearance Procedure

As part of the Permit to Disturb process, ecological pre-clearing and clearing surveys will be carried out by a suitably qualified and experienced ecological consultant at the time of clearing. This will include the inspection of any habitat trees and microhabitats such as fallen logs.

Hollow dependent fauna are more likely to be utilising tree hollows for breeding purposes between the months of September to February. Consequently, the most appropriate times for the felling of trees is

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between March and August. In situations where tree felling is required outside of this period, careful inspection of hollows will be undertaken by a qualified fauna ecologist prior to and immediately after tree felling.

Any trees that show signs of current or recent use will be gently tapped with earthmoving equipment 24 hours prior to felling to encourage fauna to abandon the area of their own accord. Physical relocation of fauna may also be undertaken if necessary.

In accordance with Condition B50(g)(iii), the surveys will also identify any threatened flora which, where possible, will be relocated into a rehabilitation or mine owned non-mining area, in accordance with the *Guidelines for the Translocation of Threatened Plants in Australia* (Vallee et al., 2004).

6.1.3 Resource salvage

During the pre-clearance survey (**Section 6.1.2**), suitable salvage items such as hollow trees and stag trees will be recorded and marked. These items will be collected during clearing activities for reuse on rehabilitation areas.

Opportunistic seed harvesting will also occur during clearing activities, where a seed resource is available. Harvested seed will be used in rehabilitation where required.

Topsoil stripping closely follows clearing operations and if vegetation has been mulched, including trees and shrubs, the mulch is incorporated into the topsoil during the stripping operation. Topsoil stripping is closely monitored to ensure that only the top layer of topsoil or suitable subsoils is taken (nominally 100 mm to 150 mm). Where practicable stripped soils are direct-placed on prepared rehabilitation areas. Where direct placement is not possible, the stripped top soil and sub soil will be stockpiled separately for future use in accordance with stripping and stockpiling procedures which include stockpile heights of not greater than 3 metres and seeded with a sterile cover crop. As the final approved landuse is cattle grazing, tropical grasses may also be sown to establish groundcover over the stockpiled areas. It is intended that topsoil will be utilised within three years of removal, however this is not always practical given the large amount of rehabilitation that will be required to be completed at mine closure due to the nature of the mining process.

During pre-clearance surveys if threatened species are identified they will be transplanted and or propagated if reasonably practicable in accordance with the *Guidelines for the Translocation of Threatened Plants in Australia* (Vallee et al., 2004).

The proposed use of felled vegetation will follow current best practice and may include the collection of timber for fencing; mulching and incorporating with ground cover, mulching understorey species and saplings and incorporating into stripped topsoil; and respreading large woody debris onto re-contoured land. Stag trees will be installed on to the post mining landscape as part of the rehabilitation program to optimise future potential habitat for arboreal and avian fauna.

6.2 Mitigation Measures – Site

Condition B50(h) requires Bloomfield to describe the measures to generally manage biodiversity across the site.

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6.2.1 Permit to Disturb

As discussed in **Section 6.1.1**, Bloomfield has implemented a Permit to Disturb process to manage clearing on site.

To minimise impacts to TECs and fauna habitat resources, including fauna resources such as hunting and foraging areas, outside the new disturbance boundary, no clearing will occur unless in accordance with applicable regulations. In the case that disturbance is essential (e.g. the clearing of pads for exploration work, or ongoing farming rights and practices) due diligence ecology surveys will be completed by a suitably qualified person in the proposed disturbance area in accordance with applicable regulations. Where possible, the disturbance may be re-located to avoid any sensitive areas.

Potential impacts on the ecology of the area have shown that the Project will have negligible effects. Surveys across the site have revealed the presence of two State-listed threatened communities (Central Hunter Grey Box-Ironbark Woodland; Hunter Lowlands Redgum Forest) totalling ~1.5 hectares, one Commonwealth-listed threatened community (Central Hunter Valley Eucalypt Forest and Woodland) totalling ~5.8 ha, one threatened fauna species (Squirrel Glider), and no threatened plants. Potential impacts on these threatened entities are manageable and acceptable, given the highly fragmented landscape in which the Project Area lies. – Source Rix's Creek Continuation Project- Ecology Report for the Continuation of Rix's Creek Mine, Singleton LGA. 2015

Where the disturbance cannot be relocated, disturbance will be kept to the minimum possible for safe and effective farming or exploration operations. Material will be salvaged for re-use as discussed in **Section 6.1.3**. For temporary disturbance, topsoil will remain in place and rehabilitation will occur as soon as possible after the use of the area.

6.2.2 Vegetation Enhancement

As outlined in the *Rehabilitation Strategy* (Bloomfield, 2020a), the mine-owned non-mining land will be generally used for grazing in line with the current land use. Corridors of trees over pasture will be created in the rehabilitation which will link with existing native vegetation as far as reasonably feasible. Native vegetation in the mine owned non-mining land will be managed in the context of grazing and biodiversity (Bloomfield, 2020a).

Where the monitoring discussed in **Section 7** identifies a decrease in monitored vegetation parameters within any trees over pasture corridors in the mine owned non-mining land, enhancement of vegetation may be undertaken where it does not affect cattle productivity using direct seeding or tubestock planting. Seed collected from cleared areas (**Section 6.1.3**) will be used wherever possible.

The revegetation program will utilise locally sourced seed, where practically available at the time required, to ensure locally endemic species are incorporated into revegetation areas. A seed collection program aims to provide 75% of the seed as local provenance material, where available and in accordance with legislation (Bloomfield, 2020a).

Native open woodland will be considered to be self-sustaining when there is evidence of succession, that is flora is regenerating without requiring augmentation.

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Bloomfield will not be diverting or re-establishing creek lines and therefore no riparian vegetation will be established.

6.2.3 Habitat Augmentation

Nesting boxes for a range of arboreal and avian species will be established in older areas of rehabilitated lands once tree heights are adequate to support them and provide primary habitat for these species, as they recolonise these areas. Prior to habitat removal in the western area an ecologist will be engaged to determine the amount and type of best boxes required, including specific boxes for the squirrel glider, to be installed in areas of older rehabilitation to encourage recolonisation.

During the EA only one squirrel glider was observed, while eleven common Brushtail possums were observed. (Source Ecology Report for the Continuation of Rix's Creek Mine, Singleton LGA 2015- Stephen Bell).

6.2.4 Aboriginal Heritage

Aboriginal Heritage is managed per the *Aboriginal Cultural Heritage Management Plan* (Bloomfield, 2020c) (ACHMP). All known Aboriginal Heritage sites are maintained in the GIS database and provide to relevant personnel through the Permit to Disturb process. Any unknown sites that are discovered will be managed as outlined in the ACHMP. Any potential conflict identified during mining will be managed in accordance with *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 (Part 6 National Parks and Wildlife Act 1974)*, as required.

6.2.5 Weed Management

All noxious weeds will be managed and controlled as per the requirements of the Noxious Weeds Act 1993.

Particular attention will be paid to the control of African Olive (*Olea europaea* subsp *cuspidate*) across the site as the invasion of this species is listed as a potential key threatening process to the Central Hunter Grey Box- Ironbark Woodland and the Hunter Lowlands Redgum Forest both of which are listed under the BC Act (Bloomfield, 2020a).

During the stockpiled term of topsoil and subsoil, management of weeds will be undertaken.

6.2.6 Vertebrate Pest Management

Bloomfield has in place an annual feral animal management and control program that will also be carried out for the life of RCS. This control plans consists of annual wild dog and fox baiting in association with regional baiting programs conducted by Local Land Services. (LLS). All work will be implemented in close liaison with the staff of the Local Land Services and in close communication with adjoining land users to ensure a coordinated approach to pest management (Bloomfield, 2020a).

6.2.7 Erosion

Erosion impacts at RCS are managed as outlined the *Water Management Plan* (WMP) (Bloomfield, 2020d) which includes an Erosion and Sediment Control Plan (ESCP). All erosion and sediment management and

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related control structures are consistent with the specifications contained in *Managing urban stormwater* – *soils and construction, Volume 1, 4th edition* (Landcom, 2004) and particularly *Volume 2E Mines and Quarries* (DECC, 2008b).

Prior to the disturbance of land associated with any activities at the site, appropriate erosion controls are established and approved by the Environment Manager (or delegate).

General measures in place at RCS to minimise erosion during operation include:

- Installing erosion controls prior to the disturbance of any land;
- Minimising the extent of disturbance to the extent that is practical;
- Reducing the rate of water flow across the ground (e.g. through the use of rock check dams and flow capture and arrest devices) particularly on exposed surfaces and in areas where water concentrates;
- Ripping of rehabilitation areas to promote infiltration;
- Use of fast germinating and establishing plant species to assist in surface stabilisation;
- Protecting natural drainage lines and watercourses by constructing erosion control devices which include sediment retention dams and diversion banks and channels; and
- Restricting access to rehabilitated areas (Bloomfield, 2020a).

6.2.8 Grazing and agriculture

The current land use for the mine owned non-mining land is grazing (Bloomfield, 2020a). Grazing will be managed to ensure the stocking rates are sustainable.

Bloomfield employs a Property Manager with agronomy qualifications who manages cattle grazing across rehabilitated and surrounding buffer lands to ensure stocking rates are sustainable.

Where degradation of land has been identified, grazing will be excluded through fencing until those areas are considered to have recovered.

'Crash' grazing may be used to reduce the bushfire load of areas, where required.

6.2.9 Bushfire Hazards

Rix's Creek Mine is required to manage bushfire hazard in Biodiversity Offset Areas

Activities that will be undertaken to limit the risk of fire occurring in, or spreading into the BOAs include;

- Annual slashing of boundary fences to create fire breaks
- Maintenance of access tracks via slashing for bushfire fighting purposes and fire breaks

Bushfire hazards are managed as outlined in the *Bushfire Management Plan* (Bloomfield, 2020e) see Section 7.4 of the Bushfire Management Plan).

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6.2.10 Access

To the south east and east of RCS, the rail corridor and lack of available road connections create a barrier to entry. Similarly, to the north-west, Rix's Creek North and associated landholdings prevent public access.

Neighbouring properties adjoining RCS generally include a number of agricultural holdings. To the southwest the majority of this land is owned by Bloomfield and leased for grazing. To the north-west landholdings are generally larger and rural dwellings are located at some distance from active mine workings. Mine boundaries to the west of the New England Highway are generally secured by post and wire fencing to prevent stock entering RCS. Residents living in these properties are generally longstanding residents. No public access is available through these properties to the active mine site (AECOM, 2015).

Access to the rehabilitation areas and mine owned non-mining lands is restricted to relevant personnel. Existing access tracks will be used at all times.

There are no areas around the mine that are considered to have an elevated risk of collisions with wildlife which might require speed limits to be considered.

6.2.11 Inductions

The site inductions undertaken by relevant site personnel and contractors will include the controls to manage biodiversity on site. All relevant site personnel and contractors involved in proposed works that have the possibility of impacting on biodiversity will undertake an induction on the specific controls in place for their work. Records of these inductions will be maintained in accordance with Bloomfield internal procedures.

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7 Monitoring

7.1 Rehabilitation Monitoring

Representative rehabilitated monitoring sites are established across the site. As new areas of rehabilitation are finalised, new sites will be established in newly rehabilitated areas at an average of one "rehab" site per 20 ha of newly rehabilitated land. New analogue sites will be established in the mine owned non-mining land at a ratio of 10 "rehab sites" to 1 "analogue" site for both trees over pasture rehabilitation and pasture rehabilitation. Each site will be monitored within 12 months of establishment and then every two years after. This will provide three sets of monitoring data in the first five years following rehabilitation. Current rehabilitation monitoring and representative analogue sites are shown in **Figure 4.**

Each rehabilitation and analogue monitoring site will be permanently marked using steel pickets or similar and surveyed via GPS. The annual inspection protocol includes assessment of the following parameters:

- Landform:
 - Average slope gradient; and
 - Steepest slope gradient.
- Drainage:
 - Contour bank design number interval and gradient;
 - Contour banks discharge point; and
 - Other drainage structures dams, drop structures, diversions.
- Surface preparation:
 - Topsoil used source, depth;
 - \circ Ameliorants or supplements used rate / ha; and
 - Ripping depth / type.
- Vegetation establishment;
 - Method direct seeding or tubestock;
 - Seed mix species, rate, source;
 - Tubestock species, density, source; and
 - Fertiliser type, rate, timing of application.
- Carrying capacity and stocking rates
 - o Assessment of herbage mass and herbage composition;
 - Assessment of feed quality and potential carrying capacity;
 - Assessment of soil nutrient; and
 - Assessment of cattle weight.

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- Weeds distribution, density and species;
- Fauna recolonising the area in terms of species recorded and their indicators e.g. scats, tracks, nests;
- Vegetation groundcover as percentage, groundcover species; species diversity; evidence of recruitment; plant health;
- Nutrient recycling depth of litter; presence of cryptograms;
- Soils/surface condition with assessment of parameters relevant to pasture establishment and growth;
- Impact of bushfires extent of area burnt, impact on vegetation and ground cover;
- Land and soil capability;
- Fences, gates, stock movement corridors;
- Erosion and stability; and
- A photo showing the general rehabilitation condition

7.2 Native Flora and Fauna

A monitoring program focusing on habitat for native fauna and impact on flora will be undertaken by independent, suitably skilled and qualified persons to determine persistence and recolonisation of rehabilitated and offset areas in terms of current populations, including threatened species.

This program will include an annual assessment of the following parameters, complemented by periodic field based assessments by competent and qualified environmental site personnel.

- Fauna recolonising the area in terms of species recorded and their indicators e.g. scats, tracks, nests, use of introduced habitat features;
- Opportunistic sightings of fauna;
- Vegetation groundcover as percentage, groundcover species; species diversity– identifying the main species at each strata in terms of diversity and abundance; evidence of recruitment; plant health;
- Nutrient recycling depth of litter; groundcover;
- Weeds distribution, density and species;
- Erosion and stability;
- Habitat features;
- Site disturbance rubbish, damage to fences gates, unauthorised access; and
- Establishment of photo monitoring sites to show the general condition of the area at a fixed point of time and over time

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The report on the results of the monitoring program will include any recommendations for modifications that could be implemented to improve the biodiversity outcomes.

A summary of the annual monitoring program will be included in the Annual Review.

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Source: Mining Operations Plan

Figure 4 Current Rehabilitation and Analogue Monitoring Sites

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7.3 Timeframes for Monitoring

Indicative timeframes for the implementation of monitoring of rehabilitated and offset lands is defined in **Table 5**.

Table 5Indicative Monitoring Timeframes

Task	Occurrence	Parameters to be recorded
Regular inspection and reporting	Within 4 weeks of seeding	To assess for germination of cover crop and pasture species and assess for risk of erosion
	Quarterly – where areas < 12 months in age	Slope stability, localised erosion, maintenance requirements for erosion and sediment control features, changes in surface water movement and noted changes in plant health. Date rehabilitation works were undertaken (e.g. topsoil stripping, placement, seeding, tubestock planting and weed control)
Rehabilitation Monitoring Biannual inspection (every 2 years)	Every 2 years	Report to provide recommendations for remedial works that can be planned for implementation in spring, or as weather conditions dictate
Soil analysis	Prior to incorporation of Biosolids.	Undertaken to determine application amount for Biosolids.
	Every three years there after	Undertaken concurrently with Land and Soil Capability Class assessment
Pasture Productivity	Within 12 months of placement of growing media	Undertaken during Cattle Grazing trial assessment
	Every three years thereafter until cattle are introduced	Undertaken during Cattle Grazing trial assessment
	Annually and dependent on defined stocking rates post cattle being introduced to rehabilitated lands	Undertaken during Cattle Grazing trial assessment
Land and Soil Capability	Within 12 months of placement of growing media	Undertaken concurrently with Land and Soil Capability Class assessment
Assessment	Every three years there after	Undertaken concurrently with soil assessment

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Task	Occurrence	Parameters to be recorded	
Native Flora and Fauna	Spring	Undertaken concurrently with soil assessment	
Photographic	Within 12 months of placement of growing media	t Report to provide recommendations for remedial works that can be planned for implementation as weather conditions dictat	
	Biannual (every 2 years)	Undertaken as part of the Rehabilitation Monitoring	

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8 Compliance Protocol

8.1 Compliance Reporting

Condition E7 of SSD 6300 requires Bloomfield to immediately report any incidents to DPIE and any other relevant agencies. An incident is defined as:

"An occurrence or set of circumstances that causes or threatens to cause material harm and which may or may not be or cause a non-compliance."

An incident report includes:

- Identification of the development (including development application number and name);
- Location and nature of the incident;

Bloomfield is required to report any non-compliances to DPIE in writing within seven (7) days of becoming aware of the non-compliance under Condition E8 of SSD 6300. A non-compliance is defined as:

"An occurrence, set of circumstances or development that is a breach of this consent."

A non-compliance report includes:

- Identification of the development (including development application number and name);
- Set out the condition of this approval that the development is non-compliant with;
- The way in which it does not comply and the reasons for the non-compliance (if known)
- What actions have been, or will be, undertaken to address the non-compliance.

8.2 Complaints Handling

Bloomfield has a 24-hour telephone hotline (02 4930 2665) for the members of the public to lodge complaints and concerns or to raise issues associated with the operations. This service aims to promptly and effectively address community concerns and environmental matters.

The hotline number is advertised on the Bloomfield Group web site (<u>https://www.bloomcoll.com.au/</u>) and members of the community are encouraged to contact the hotline if they need to highlight any environmental issues or seek information regarding environmental aspects associated with RCM.

In addition, a member of the community can contact an RCM Environmental Advisor or Manager in person, by phone, e-mail or letter. Any person that is likely to be in a position to receive concerns is trained to deal with complaints in a professional and effective manner.

All complaints received are recorded in accordance with the *Privacy Act 1988* and lodged in the complaint register. The complaint register is only viewable by environmental personnel and is protected to prevent others viewing recorded information. All complainants are questioned if they would like their complaint and details recorded. Information which may be recorded includes:

- Date and time the complaint was lodged;
- The method by which the complaint was made;

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- Personal details provided by the complainant;
- Nature of the complaint;
- Action taken or if no action was taken, the reason why; and
- Follow up contact with the complainant following investigation.

All anonymous complaints will be received, investigated and actioned (if required). However, if no details are provided, Bloomfield will not be able to provide feedback to the complainant. The outcome of the complaint will be recorded in the register.

Only generalised, non-personal information is published in the monthly complaint register on the Company website. No personal details such as name, address, phone number are published or any other information which may allow the complainant to be identified. A summary of complaints also will be reported in the EPL Annual Return and Annual Review and presented at the CCC meetings.

The complaint record will be kept for at least four years after the complaint was made.

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9 **Reporting and Review**

9.1 Annual Review

By the end of March each year, Bloomfield will provide an Annual Review required under Condition E9 of SSD 6300 to the Planning Secretary. The Annual Review will

- Describe the development over the previous calendar year and that proposed for the next calendar year;
- Report on actual versus proposed surface disturbance;
- Summarise the environmental performance of RCM for the previous calendar year, including the effectiveness of noise and air quality management systems and compliance with relevant criteria,
- Include the presentation and analysis of the results of monitoring, including any relevant trends;
- Discuss any non-compliances, incidents, complaints and any management actions implemented at RCM over the reporting period.
- Identify any discrepancies between the predicted and actual impact of the development and analyse the potential cause of any significant discrepancy; and
- Include a description of what measures will be implemented over the coming year to improve environmental management.

The Annual Review will be made publicly available through placement on Bloomfield's website <u>http://www.bloomcoll.com.au/</u> and will be provided to the CCC.

9.2 Auditing

Under Condition E10 an independent environmental audit of the RCS operations will be conducted every three years and the results reported to the Secretary DPIE and made available on the website. This audit will consider any relevant biodiversity management information.

Actions and recommendations are communicated to senior management and actioned as necessary. Any relevant findings are considered in the planning processes as part of the Environmental Management System.

9.3 Management Plan Review

Condition E5 requires that, within three months of the submission of the following documents, Bloomfield will review, and if necessary, revise the BMP to the satisfaction of the Planning Secretary:

- Annual Review in accordance with Condition E9;
- Incident report under Condition E7;
- Audit report under Condition E10; or
- Modification to the conditions of SSD 6300 (unless the conditions require otherwise).

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When a review leads to revision of the BMP, then within six weeks of the review decision, unless the Secretary agrees otherwise, the revised BMP will be submitted to the Secretary for approval.

Any major amendments to the BMP that affect its application will be undertaken in consultation with the appropriate regulatory authorities and stakeholders. Minor changes such as formatting edits may be made with version control.

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10 Roles and Responsibilities

Relevant roles and responsibilities associated with this BMP are presented in Table 6 below.

Table 6Roles and Responsibilities

Role	Responsibilities	Section
Mine Manager	• Provide adequate resources for the implementation of this BMP.	6.2.11
	 Ensure biodiversity resources are salvaged during clearing operations. 	6.1.3
Environment Manager (or	 Implement this plan during mining operations to ensure compliance with consent requirements. 	2
delegate)	Ensure the Biodiversity Offset Strategy is implemented.	5
	 Implement the mitigation measures to minimise Biodiversity impacts. 	6
	 Ensure monitoring is conducted as required, using suitably experienced specialists where necessary. 	7
	 Responsible for ensuring that the plan is relevant to current operations. 	9.3
	 Responsible for inclusion of an induction component for all relevant mine personnel. 	6.2.11
	• Responsible for coordinating the reviews of this BMP.	9.3
	 Responsible for ensuring that the Permit to Disturb process is implemented. 	6.1.1
	Report all incidents and non-compliances.	8.1
	 Manage complaints and communication with complainants. 	8.2
	 Responsible for reporting the environmental performance to external stakeholders. 	9.1
	Review and update the plan as required.	Front Cover
All employees and contractors	 Responsible for complying with the management requirements and commitments contained within this management plan relevant to their roles. 	6.2.11
	 Responsible for reporting all non-compliances with this plan as per the Bloomfield reporting procedures. 	8.1

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11 References

AECOM (2015), Rix's Creek Continuation of Mining Environmental Impact Statement

Bloomfield (2016), Biodiversity Management Plan Rix's Creek North

Bloomfield (2019), *Rix's Creek Continuation Project, Response to Recommendations – Request for additional information from the Department of Planning and Environment*

Bloomfield (2020a), Rehabilitation Strategy

Bloomfield (2020b), Mining Operation Plan

Bloomfield (2020c), Aboriginal Cultural Heritage Management Plan

Bloomfield (2020d), Water Management Plan

Bloomfield (2020e), Bushfire Management Plan

Eastcoast Flora Survey (2015), Ecology Report for the Continuation of Rix's Creek Mine, Singleton LGA

EMM (2019), Rix's Creek Continuation Project - Staging of biodiversity offset

Hansen Bailey (2019), Response to IPCN Queries Following Proponent Meeting

Landcare (2004), Managing urban stormwater – soils and construction, Volume 1, 4th edition

NSW DECC (2008), BioBanking Assessment Methodology and Credit Calculator Operation Manual

NSW DECC (2008b), Managing urban stormwater - soils and construction, Volume 2E Mines and Quarries

NSW DECCW (2011), Biodiversity Certification Assessment Methodology

NSW DECCW (2010), Aboriginal cultural heritage consultation requirements for proponents 2010- Part 6 National Parks and Wildlife Act 1974.

Vallee et al. (2014), Guidelines for the Translocation of Threatened Plants in Australia

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Appendix A – Development Consent Conditions

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Table A 2SSD 6300 Consent Conditions

Ref	Legal Requirement	Section
Part E Condition E4	Management plans required under this consent must be prepared in accordance with any relevant guidelines, and include:	
	(a) a summary of relevant background or baseline data;	4
	(b) details of:	
	 (i) the relevant statutory requirements (including any relevant approval, licence or lease conditions); 	2
	(ii) any relevant limits or performance measures/criteria; and	N/A
	 (iii) 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; 	2.3
	(c) any relevant commitments or recommendations identified in the document/s listed in condition A2(c)	2.2
	 (d) a description of the measures that would be implemented to comply with the relevant statutory requirements, limits, or performance measures/criteria; 	6
	(e) a program to monitor and report on the:	
	(i) impacts and environmental performance of the project; and	9.1
	 (ii) effectiveness of any management measures (see (c) above); 	9.1
	 (f) a contingency plan to manage any unpredicted impacts and their consequences and to ensure that ongoing impacts reduce to levels below relevant impact assessment criteria as quickly as possible; 	7
	 (g) a program to investigate and implement ways to improve the environmental performance of the project over time; 	7
	(h) a protocol for managing and reporting any:	
	 (i) incident, non-compliance or exceedance of any impact assessment criteria or performance measure; 	8.1
	(ii) complaint; or	8.2

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Ref	Legal Requirement	Section
	(iii) failure to comply with other statutory requirements;	8.1
	 (i) public sources of information and data to assist stakeholders in understanding environmental impacts of the development; and 	9.1
	(j) a protocol for periodic review of the plan.	9.3
	Note: The Planning Secretary may waive some of these requirements if they are unnecessary or unwarranted for particular management plans.	
Condition E5	Revision of Strategies, Plans & Programs	9.3
	Within 3 months of:	
	(a) the submission of an incident report under condition E7;	
	(b) the submission of an annual review under condition E9;	
	(c) the submission of an Independent Environmental Audit under condition E10, or	
	(d) the modification of the conditions of this consent (unless the conditions require otherwise),	
	The suitability of existing strategies, plans, and programs required under this consent must be reviewed by the Applicant.	
Condition E6	Revision of Strategies, Plans & Programs	9.3
	If necessary, to either improve the environmental performance of the development or cater for a modification, the strategies, plans and programs required under this consent must be revised, to the satisfaction of the Planning Secretary. Where revisions are required, the revised document must be submitted to the Planning Secretary for approval within 6 weeks of the review.	
	Note: This is to ensure the strategies, plans and programs are updated on a regular basis, and incorporate any recommended measures to improve the environmental performance of the development.	

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Ref	Legal Requirement	Section
Condition E7	Incident Notification	8.1
	The Applicant must immediately notify the Department and any other relevant agencies immediately after it becomes aware of an incident. The notification must be in writing to compliance@planning.nsw.gov.au and identify the development (including the development application number and name) and set out the location and nature of the incident.	
Condition E8	Non-compliance Notification Within seven days of becoming aware of a non-compliance, the Applicant must notify the Department of the non-compliance. The notification must be in writing to compliance@planning.nsw.gov.au and identify the development (including the development application number and name), set out the condition of this approval that the development is non-compliant with, the way in which it does not comply and the reasons for the noncompliance (if known) and what actions have been, or will be, undertaken to address the non- compliance. Note: A non-compliance which has been notified as an incident does not need to also be notified as a non-compliance.	8.1

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Appendix B – Regulatory Correspondence

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Chris Knight	
From:	Steven Cox <steven.cox@environment.nsw.gov.au></steven.cox@environment.nsw.gov.au>
Sent:	Wednesday, 5 August 2020 4:10 PM
To:	Chris Knight
Subject:	RE: FOR ACTION & ADVICE : Consultation - Biodiversity Management Plan- Rix's Creek South Mine [ref:_00D7F6iTix_5007F12oJBu:ref] SSD-6300-PA-21

Hi Chris,

It looks there have been two system fails leading to us having not yet received your management plan for comment.

Firstly, at our end, a notification from the Major Projects Portal early in July that your plan was ready for comment didn't make it to my team until a few days ago. And secondly, the plan isn't on the major projects portal. This is a common problem with the portal – we often get notifications that a post approval management plan is ready for our review, but when we go to the portal, it isn't there.

The solution is, please chase your Planning and Assessment contact who should be able to work it out.

As a result we won't be able to meet your proposed 10 August due date. We'll assess a likely review date once we receive the request and document(s).

Regards Steven

Steven Cox Senior Team Leader Planning, Hunter Central Coast Branch

Biodiversity and Conservation Division | Department of Planning, Industry and Environment T 02 4927 3140 | M 0472 800 088 | E steven.cox@environment.nsw.gov.au Level 4/26, Honeysuckle Drive Newcastle NSW 2309 Locked Bag 1002, Dangar NSW 2309 www.dpie.nsw.gov.au

From 1 July 2020, the regulation of Aboriginal cultural heritage transferred from the Biodiversity and Conservation Division (Department of Planning, Industry and Environment) to Heritage NSW (Department of Premier and Cabinet). All Aboriginal cultural heritage requests, applications and enquiries (such as AHIPs, Integrated Development Applications and requests for lists of Aboriginal stakeholders) should be sent to heritagemailbox@environment.nsw.gov.au.

Currently working from home during Covid-19 restrictions and can be contacted on both above phone numbers.



Our Vision: Together, we create thriving environments, communities and economies.

We work flexibly. I'm sending this message now because it's a good time for me. I don't expect that you will read, respond to, or action this message outside of your own regular hours.

The Department of Planning, Industry and Environment acknowledges that it stands on Aboriginal land. We acknowledge the traditional custodians of the land and we show our respect for elders past, present and emerging through thoughtful and collaborative approaches to our 1

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work, seeking to demonstrate our ongoing commitment to providing places in which Aboriginal people are included socially, culturally and economically.

From: Environment Line <<u>info@environment.nsw.gov.au</u>> Sent: Monday, 3 August 2020 7:03 PM To: OEH Planning Matters Mailbox <<u>PlanningMatters@environment.nsw.gov.au</u>> Cc: <u>cknight@bloomcoll.com.au</u> Subject: FW: Consultation- Biodiversity Management Plan- Rix's Creek South Mine [ref:_00D7F6iTix._5007F12oJBu:ref]

Hi Team,

See consultation update below.

Kind regards,

EPA Environment Line | Department of Planning, Industry and Environment | ?: 131 555 | 02) 9995 5910 | Email: info@environment.nsw.gov.au 4 Parramatta Square, 12 Darcy Street, NSW 2150 www.dpie.nsw.gov.au

------Forwarded Message ------From: Chris Knight [cknight@bloomcoll.com.au] Sent: 3/08/2020 12:17 PM To: info@environment.nsw.gov.au Subject: Consultation- Biodiversity Management Plan- Rix's Creek South Mine

Hi BCD,

Just a quick email to follow up on the Biodiversity Management Plan for Rix's Creek South Mine which was submitted for consultation with BCD via the NSW Major Projects Portal on 9 July 2020.

In accordance with our Project Approval for SSD 6300 Rix's Creek Continuation we are required to submit the Biodiversity Management Plan within 6 months of commencement being 24 August 2020.

To allow time for inclusion of any comments or recommendations from the BCD can you please provide feedback on the above document by 10 August 2020, or sooner if possible please.

If you require anything further please don't hesitate to give me a call.

Best Regards,

2

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Chris Knight Environment Manager E: <u>cknight@bloomcoll.com.au</u> | T: 02 6578 8824 | M: 0403 058 777 W: www.bloomcoll.com.au PO Box 4, East Maitland, NSW 2323 WE CARE. WE DELIVER. North: Bridgman Road, South: Rixs Creek Lane, Singleton, NSW 2330 Australia

P base to be: Hyori have received to be e-mail in error, please worthy the sender him ediblely by reply e-mail and dekte all copies of to be transmission together with any attachments as the information contained and any attached files may be confidential and/or subject of legal professional privilege.



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This email is intended for the addressee(s) named and may contain confidential and/or privileged information.

If you are not the intended recipient, please notify the sender and then delete it immediately. Any views expressed in this email are those of the individual sender except where the sender expressly and with authority states them to be the views of the NSW Office of Environment and Heritage.

PLEASE CONSIDER THE ENVIRONMENT BEFORE PRINTING THIS EMAIL

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Our ref: DOC20/630526-2 Your ref: SSD 6300

Mr Chris Knight

Environment Manager Rix's Creek Coal Mine Singleton cknight@bloomcoll.com.au

Dear Mr Knight

Rix's Creek South Continuation of Mining Project (SSD 6300) - Biodiversity Management Plan

I refer to your e-mail dated 5 August 2020 in which The Bloomfield Group asked Biodiversity and Conservation Division (BCD) to review the *Biodiversity Management Plan* (dated 3 July 2020) for the Rix's Creek South Continuation of Mining Project. The *Biodiversity Management Plan* has been prepared to meet condition B50 (b) of the current consent (SSD 6300), which is to be prepared in consultation with BCD.

BCD has reviewed the *Biodiversity Management Plan*. BCD's recommendations are provided in **Attachment A** and detailed comments are provided in **Attachment B**. If you require any further information regarding this matter, please contact Robert Gibson, Regional Biodiversity Conservation Officer, on 4927 3154 or via email at rog.hcc@environment.nsw.gov.au

Yours sincerely

4 September 2020

STEVEN COX Senior Team Leader Planning Hunter Central Coast Branch Biodiversity and Conservation Division

Enclosure: Attachments A and B

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Rix's Creek South

Attachment A

BCD's recommendations

Rix's Creek South Continuation of Mining Project (SSD 6300) – Review of Biodiversity Management Plan

- 1. BCD recommends that topsoil and subsoil stockpiles are managed in a way that preserves their biodiversity values prior to use in rehabilitation areas.
- BCD recommends that the rehabilitation monitoring sites (including analogue sites) are set up as Biodiversity Assessment Method plots and include the assessment of canopy cover for shrub and canopy species.
- BCD recommends that groundcover and shrub species are selectively harvested from new mining areas ahead of mining and transplanted in the rehabilitation areas to maintain local biodiversity.
- 4. BCD recommends that the reference to 'OEH' in Section 4.1 is replaced with 'BCD'.

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Rix's Creek South

Attachment B

BCD's detailed comments

Rix's Creek South Continuation of Mining Project (SSD 6300) – Review of Biodiversity Management Plan

1. Salvaged topsoil that is stored prior to use in rehabilitation areas should be managed to preserve their biodiversity values

Section 6.1.2 'Resource salvage' discusses the collection of topsoil and useful subsoil from new mining areas and its use, as soon as possible, in rehabilitation areas. If not respread immediately in the rehabilitation areas, topsoil will begin to lose its fungi and other microorganisms, and some viable seeds. It may also be invaded by weeds that then may be introduced into the rehabilitation area. BCD recommends that soil and subsoil stockpiled prior to use in rehabilitation areas is managed in a way that includes:

- good quality topsoil, marginal quality topsoil and subsoils are stockpiled separately with those details recorded
- stockpiles are ideally up to 60 centimetres in depth, but limited to a maximum height of three metres and are windrowed to increase surface area
- stockpiles will be sown with sterile cover crops and a mix of locally native groundcover species
- stockpiles will be monitored for weed control
- that stockpiles are used within no more than three years.

Recommendation 1

BCD recommends that topsoil and subsoil stockpiles are managed in a way that preserves their biodiversity values prior to use in rehabilitation areas.

2. Canopy cover and shrub canopy cover should be assessed

Section 7.1 'Monitoring' describes that canopy cover will only be measured for groundcover species. This will miss measuring the rate of establishment of shrub and canopy species and identifying potential problems that could lead to the failure of rehabilitation. BCD recommends that the vegetation structure for all species in each fixed quadrat is measured. This can be done by recording the data in accordance with the Biodiversity Assessment Method 2017 (BCD, 2017) [https://www.environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Animals-and-plants/Biodiversity/biodiversity-assessment-method-

170206.pdf] and providing the raw quadrat data in the Annual Reviews. This will identify shrub and tree species that have died or are otherwise not doing well and will enable adaptive management to be implemented to ensure they are replaced in a timely manner.

Recommendation 2

BCD recommends that the rehabilitation monitoring sites (including analogue sites) are set up as Biodiversity Assessment Method plots and include the assessment of canopy cover for shrub and canopy species.

3. Salvaging groundcover and low shrubs from new mining areas is recommended

Section 6.1.2 'Resource salvage' discusses the opportunistic collection of seed from native vegetation in new areas to be mined, and that this seed will be used in rehabilitation areas. BCD recommends that groundcover and shrubs are also considered for harvesting and

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collection from these new mined areas to bolster the diversity of plants in the rehabilitation areas, and to maintain plants of local provenance in the area.

Recommendation 3

BCD recommends that groundcover and shrubs are selectively harvested from new mining areas ahead of mining and transplanted in the rehabilitation areas to maintain local biodiversity.

4. Replace the reference to OEH with BCD in Section 4.1

Section 4.1 refers to advice being received from OEH. Since the formation of the Biodiversity and Conservation Division from the former Office of Environment and Heritage, BCD recommends that this reference to OEH is replaced with a reference to BCD.

Recommendation 4

BCD recommends that the reference to 'OEH' in Section 4.1 is replaced with 'BCD'.

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TABLE B1 Rix's Creek SSD-6300-PA-21 Post Approval Review



Document: Biodiversity Management Plan Revision: Final , August 2020

Reviewed: Charissa Pillay on "November 2020"

Biodiversity , Condition B50, Schedule 2	Sufficient (Yes/No/Partial)	Document reference and comment	Action Required	Company Response
B50 (a)	Partial	The Title page with details of the originator, reviewer and approver are noted.	Provide the qualifications to support this condition	See section 1 paragraph 3 pp 4
B50 (b)	Partial	The correspondence between BCD in Appendix B on the 5 August 2020 has been noted.	Submit the all comments from BCD to the department once received for a final review.	Comments from BCD were received on 4/9/2020 and have now been included. See Section 3.2 and Appendix B. Please note that all Changes in response to BCDE's comments are highlighted in BLUE
B50 (d)	Partial	Section 6.2.3 mentions the installation of next boxes for a range of arboreal and avian species. This is also to assist in the enhancement of habitat for threatened fauna species such as the Squirrel Glider.	Revise section to indicate the number of the fauna species Squirrel Glider known in the area. The number of next boxes to be installed and what will be the long-term measure to manage this fauna impact.	See update section 6.2.3 in yellow
		Section 6.2.6	Include a summary of the annual feral animal management that will be implemented short, medium and long- term.	See update section 6.2.6 in yellow
		Section 6.2.8	Include a summary on the Bushfire management and reference in the Bushfire Management Plan.	See update in Section 6.2.9

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TABLE B1 Rix's Creek SSD-6300-PA-21 Post Approval Review



Document: Biodiversity Management Plan Revision: Final , August 2020 Reviewed: Charissa Pillay on "November 2020"

		Section 6.2.9	Generally, revise the section to clearly describe how short, medium and long- term measures will be carried out to	Section 6.2.9 relates to Bushfire hazards- please provide further information to clarify.
			manage fauna habitat and vegetation onsite.	
B50 (e)	Partial	Section 6.2.9 There is no information on the relationship between BMP and Bushfire Management Plan	Revise the section to show how biodiversity integrates with Bushfire management	The approved final land =form and final land use is trees over pasture and pastures for cattle grazing. Bushfire is not considered to be related to biodiversity outcomes in this circumstance.
B50 (g) iii	Partial	Section 6.1.3 describes good resource salvage practices and measures to implemented during pre-clearance survey.	Describe measures that will be included in Transplanting and/or propagation of any threatened flora found during pre-clearing surveys	See section 6.1.3 in yellow
B50(h) i	Partial	Section 6.2.1 provides good description on the measures to be implemented.	In line with the condition include the threatened ecological communities identified/existing in the area and the conservation strategies proposed	See section 6.2.1 in yellow
B50(h) 11	Partial	Section 6.2.1 describes impacts to be minimised in TECs and fauna habitat resources and refers to 6.1.3	Revise section 6.2.1 to summarise the impacts on fauna resources such as hunting and foraging areas.	See section 6.2.1 in yellow
B50(h) iv	Partial	Section 6.2.3 describes the establishment of nest boxes for a range of arboreal and avian species. There is no number or systematic approach on how this will be implemented	Include the measures will be implemented onsite by use of the work "shall or "will". Include measures that will promote the use of these introduced habitat features by	See section 6.2.3 in yellow

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TABLE B1 Rix's Creek SSD-6300-PA-21 Post Approval Review



Document: Biodiversity Management Plan Revision: Final , August 2020 Reviewed: Charissa Pillay on "November 2020"

			threatened fauna species, including	
			Squirrel Glider	
B50(h) v	No	Section 6.2.4 describes the how sites are	Update section 6.2.4 to describes how	See section 6.2.4 in yellow and section 11
		maintained in the GIS database and how	measures will be implemented to	references.
		unknown sites discovered will be	manage any potential conflicts with	
		managed.	Aboriginal Heritage values	
B50(h) viii	Partial	Section 6.2.5 mentions the control of	Include the time period associated	
		weeds will be undertaken in direct	with consultation, will it occur prior or	Discussion with Council, LLS and Upper
		consultation with the Local Land Services,	during construction	Hunter Weeds Authority removed as is
		Singleton Council and Upper Hunter		not a requirement.
		Weeds Authority staff.		
B50(h)ix	Partial	Section 6.2.6 mentions an annual feral	Section to summarise the plan and	There is no threat abatement plan. See
		animal management and control program	program, include the consideration of	update to section 6.2.6 in yellow which
		in place	actions identified in relevant threat	describes the plan.
			abatement plans	
B50(h) xi	Partial	Section 6.2.8 briefly describes the	Update the section to include the	See update to section 6.2.8 in yellow.
		measure to manage grazing	management measures to be	
			implemented to address agriculture	
			and measures in place to ensure "the	
			stocking rates are sustainable"	
B50(h) xiii	No	Section 6.2.9 refers only to the Bushfire	This is noted however update the	See update to section 6.2.9 in yellow.
And Alexandree and Ale		Management Plan (Bloomfield, 2020e).	section to include a summary of	
			measures to be implemented to	
			manage bushfire as per the condition.	
B50(k)	Partial	Section 10 Table 6 list Role and	Update table to clearly demonstrate	See update Table 6 and update front
		Responsibilities referencing where in the	who is responsible to review the plan	cover of document in yellow.
		document the requirement is stated.		

-	

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Biodiversity Management Plan



Table B2

Issues Raised by BCD	Section Addressed or Response
Issue 1: BCD recommends that topsoil and subsoil stockpiles are	
managed in a way that preserves their biodiversity values prior to	
use in rehabilitation areas.	
-good quality topsoil, marginal quality topsoil and subsoils are	
stockpiled separately with those details recorded	Section 6.1.3
-stockpiles are ideally up to 60 centimetres in depth, but limited to	
a maximum height of three metres and are windrowed to increase	
surface area	Section 6.1.3
-stockpiles will be sown with sterile cover crops and a mix of locally	
native groundcover species	Section 6.1.3
-stockpiles will be monitored for weed control	Section 6.2.5
-that stockpiles are used within no more than three years.	Section 6.1.3
Issue 2: BCD recommends that the rehabilitation monitoring sites	This is not applicable. The
(including analogue sites) are set up as Biodiversity Assessment	Rehabilitation Management
Method plots and include the assessment of canopy cover for	Plan sets the criteria for
shrub and canopy species.	rehabilitation monitoring.
	While the BAM may be useful
	for areas being regenerated
	back to EEC it is not relevant to
	areas being regenerated back
	to pasture or trees over pasture
	where shrub cover is not
	required and there is no
	requirement for the
	determination of canopy cover.
Issue 3: Salvaging groundcover and low shrubs from new mining	
areas is recommended	Section 6.1.3
Issue 4: Replace the reference to "OEH" with "BCD" in Section 4.1	Section 4.1

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Chris Knight Environment Management Four Mile Creek Rd Ashtonfield, New South Wales 2323

23/12/2020

Dear Mr Knight

Rix's Creek Coal Extension –(SSD-6300-PA-21) Biodiversity Management Plan

I refer to the Biodiversity Management Plan which was submitted in accordance with Condition B50 of Schedule 2 of the Conditions of Consent for the **Rix's Creek Coal Extension – (SSD-6300-PA-21)**.

The Department has carefully reviewed the document and is satisfied that it addresses the recent RFI issued.

Accordingly, the Planning Secretary has approved the Biodiversity Management Plan (Revision 1.1, dated December 2020). Please ensure that the approved plan is placed on the project website at the earliest convenience.

If you wish to discuss the matter further, please contact Charissa Pillay on 02 99955944.

Yours sincerely

Matthew Sprott Director Resource Assessments (Coal & Quarries) As nominee of the Planning Secretary

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Appendix C – Environmental Commitments

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Table C1SSD 6300 Biodiversity Commitments

	Factor	Management and Mitigation Measures	Section
18	Potential impacts to biodiversity	Vegetation and habitat will be removed in a staged manner with the inspection of habitat trees carried out before and during felling operations.	6.1.2
19	Potential for native fauna habitat displacement during clearing	Significant ecological features associated with standing and dead timber will be assessed and monitored in accordance with the BMP. A qualified and experienced person will conduct pre-clearance surveys to ensure displaced wildlife is removed or relocated at the time of clearing.	6.1.2 6.1.2
20	Potential for native fauna habitat displacement during clearing	 In accordance with the BMP: Inspection of hollows will be undertaken by a qualified person prior to and immediately after tree felling; and Felled trees supporting hollows will be stockpiled for later use in rehabilitation activities. 	6.1.2 6.1.3
21	Potential for wildlife-vehicle collisions	In accordance with the BMP, speed limits will be considered in areas with a confirmed elevated risk of collisions with wildlife.	6.2.10
76	Unmined Land	 The buffer lands will be managed to enhance land use values during and after the life of the Project (whilst owned by Bloomfield). The management of these lands will include: Corridor management in context of grazing and biodiversity; Fencing and access control; Weed and vertebrate pest species control; Track construction and maintenance; Strategic grazing and stock control; and Bushfire management. 	6.2 6.2.2 6.2.10 6.2.5, 6.2.6 6.2.10 6.2.8 6.2.9

Document Title:	Biodiversity Manage	Biodiversity Management Plan – Rix's Creek South		Document Owner:	Chris Knight
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	Factor	Management and Mitigation Measures	Section
78	Ecosystem and Land use Establishment	Land use disturbance will be minimised by clearing the smallest practical area of land at any one time and leaving it exposed for the shortest possible time.	6.1.1
		Felled vegetation may be used for:	
		Timber for fencing; and/or	6.1.3
		 Incorporating ground cover, understorey species and saplings into stripped topsoil; and/or 	6.1.3
		 Re-spreading large woody debris onto re-contoured land; and/or 	6.1.3
		 Installation of stag trees as potential habitat and refuge for avian and arboreal fauna. 	6.1.3
79	Ecosystem and Land use Establishment	All noxious weeds will be managed and controlled as per the requirements of relevant legislation.	6.2.5
		A feral animal management and control program will be conducted annually across the Mine.	6.2.6
		All work will be implemented with the Local Land Services and adjoining land users where practical.	6.2.6

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Appendix D – Biodiversity Stewardship Site Management Plan

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