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TAHMOOR SOUTH - BIODIVERSITY MANAGEMENT PLAN

Tahmoor Coal

Author: - Zina Ainsworth

Contents

1 Introduction

1.1 Background

Tahmoor Coal Pty Ltd (Tahmoor Coal) owns and operates Tahmoor Mine, an underground coal mine extracting coking coal which is an ingredient in the production of steel. The mine surface operations are located south of Tahmoor NSW, which is within the greater Sydney Basin - approximately 80 km southwest of Sydney. Tahmoor Mine is within the Wollondilly Shire Council (WSC) Local Government Area (LGA). Underground workings extend north under the town of Tahmoor and Picton with two ventilation shafts being located on the outskirts of town. The location of Tahmoor Mine in the regional context is shown in **.**

Tahmoor Mine surface facilities are situated in between the townships of Tahmoor and Bargo, and adjacent to Remembrance Drive on land owned by Tahmoor Coal with mining conducted under both crown and freehold property (see). Surface facilities at Tahmoor Mine include administration buildings and offices, a materials store, diesel tanks, electrical workshop, mechanical workshop, bathhouse, ventilation fan, Coal Handling Preparation Plant (CHPP), storage areas, run of mine stockpile and product stockpiles. A third party owned power station is also located on-site and utilises methane from the mines' gas drainage system to produce electricity. Extracted coal is processed on site prior to transportation via rail to the Port Kembla Coal Terminal.

An Environmental Impact Statement (EIS) was exhibited in early 2019 seeking approval for the extraction of up to 48 million tonnes (Mt) of ROM coal over a 13-year mine life. Tahmoor Coal subsequently revised the proposed mine design and submitted amended development applications on two occasions (in February and August 2020). In April 2021, Tahmoor Coal received Development Consent SSD 8445 (the Consent) for the Tahmoor South Project, which involves use of the existing surface infrastructure and the extension of underground longwall mining to the south of existing workings. The Project has consent to extract up to 4 Mtpa of ROM coal, with a total of up to 33 Mt of ROM coal extracted over a 10-year period until 31 December 2033.

1.2 Purpose

The purpose of this Biodiversity Management Plan (BMP) is to provide a framework for Tahmoor Coal (TC) personnel to ensure that compliance with Development Consent (SSD 8445) (the Consent) Condition B38, Schedule 2, is achieved with relevant internal and external regulatory requirements related to Biodiversity management at Tahmoor Coal. The plan ensures that impacts on biodiversity are minimised and managed within a structured framework.

1.3 Scope

This BMP includes specific management measures and monitoring requirements relating to biodiversity, which are specified in **Section 2**. Specifically, the area applicable to this BMP (the study area) is shown in **Figure 2**, which includes activities relating to the following:

1) Vegetation clearing and surface disturbance associated with the construction and operation of the Vent shaft at TSC1 (no longer being constructed), transmission easement, and Refuse Emplacement Area (REA), including:
   a) Habitat protection prior and during construction and during operation
   b) Pre-clearance management measures and surveys
   c) Clearing of vegetation
   d) Weed control
   e) Feral pest animal control
   f) Bushfire hazard management
   g) Fauna injury and entrapment procedures

2) Management actions and measures to achieve biodiversity outcomes suggested for inclusion in any future Rehabilitation Plan for the REA.

This BMP is a standalone report that satisfies consent condition B38. It addresses management of biodiversity values in relation to above ground impacts of construction and operation of the Mine. It does not include management and monitoring of impacts that may arise from subsidence, these are addressed in a separate BMP that forms a part of the relevant extraction plan (**Section 1.6**).

1.4 Preparation of this BMP

This BMP has been prepared by Niche Environment and Heritage Pty Ltd (Niche) on behalf of Tahmoor Coal.

Luke Baker (Niche Discipline Manager -Ecologist; and BAM Accredited Assessor) has prepared this BMP. Luke Baker has been endorsed by the Department of Planning, Industry and Environment (DPIE) as a suitability qualified ecologist to prepare this BMP (**Appendix G**).

1.5 Structure of BMP

The structure of this BMP has been summarised in **Table 1** below.

Table 1 Structure of BMP

Section	Content
1 Introduction	Overview of BMP, purpose and scope
2 Planning	Requirements for this BMP.
3 Stakeholder Consultation	Summary of stakeholder consultation
4 Biodiversity values	Description of the Existing Environment Relevant to this BMP
5 Environmental Management	Details of the management measures to be implemented pre-construction; during construction; and post-construction (operation).
6 Monitoring	Monitoring and performance criteria related to each of the management actions to be implemented pre-construction; during construction; and post-construction (operation).
7 Implementation and Reporting	Processes associated with the reporting of incidents, auditing and roles and responsibilities
8 Review and Improvement	Process for review of the BMP
9 Document Information	Information relevant to the preparation of the BMP
10 Change Information	Record of the changes to the content of the BMP
Appendix	Supporting information relevant to the BMP

1.6 Relationships with other Management Plans

This BMP provides broad scale biodiversity management measures for the management of direct impacts to terrestrial biodiversity values, and outlines subsidence management strategies and measures that are discussed in detail in the extraction plan BMP. Consent condition C8 of Development Application Approval (SSD 8445) stipulates the need for an extraction plan, which is to include a:

- Subsidence Monitoring Plan
- Built Features Management Plan
- Water Management Plan

- Biodiversity Management Plan (in draft)
- Land Management Plan
- Heritage Management Plan
- Public Safety Management Plan
- Trigger Action Response Plan/s
- Contingency Plan.

This BMP is intended to be substantially integrated with the Rehabilitation Strategy and Rehabilitation Management Plan to ensure biodiversity objectives are achieved through rehabilitation of the site during and post life of mine.

The BMP includes recommendations to protect habitat outside the disturbance area for consideration in the preparation of the Water Management Plan in relation to erosion and sedimentation (**Section 5.2.4, 5.3.5 and 5.4.3**).

The BMP also offers recommendations to be included in Tahmoor Coals existing Bushfire Management Plan (**Section 5.5.3**).

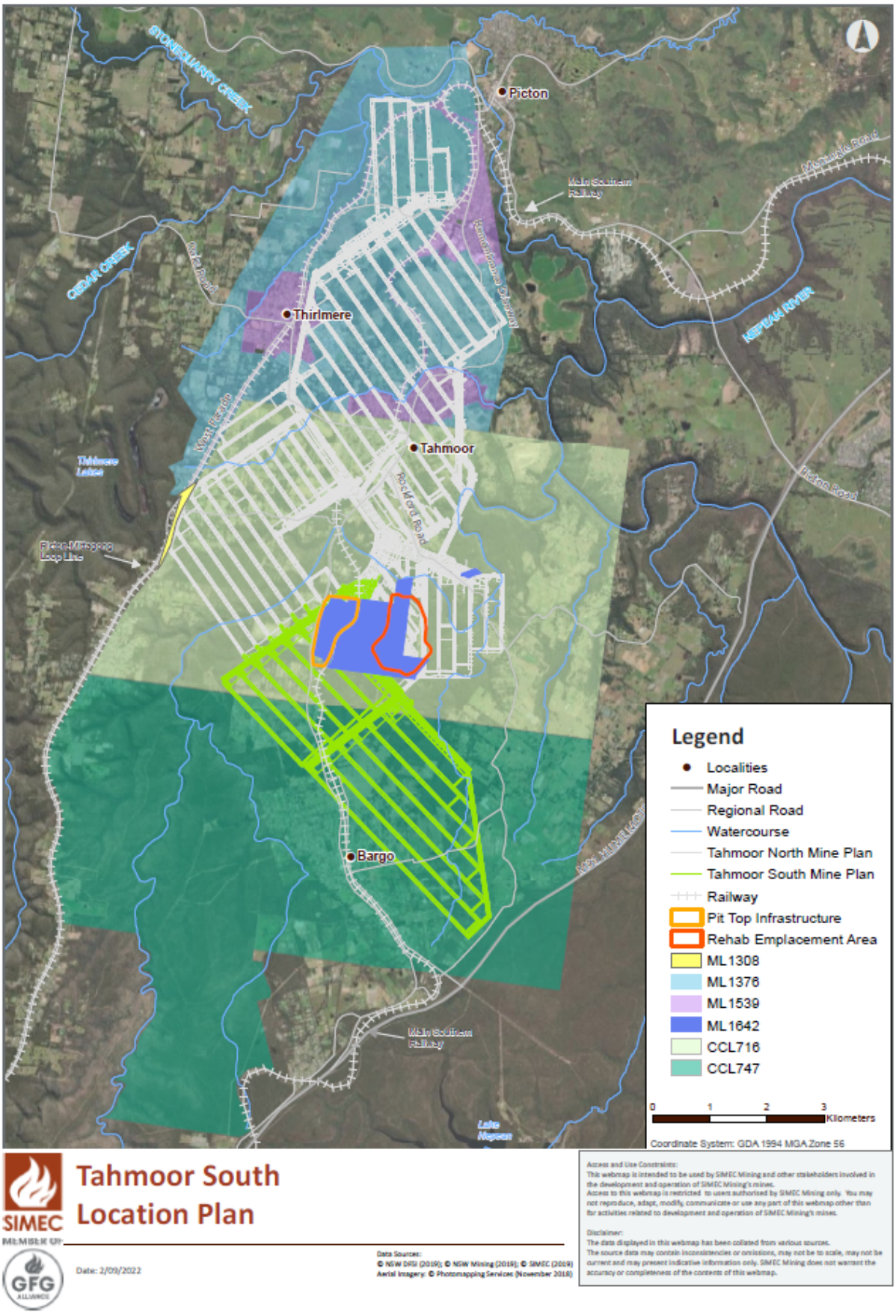

Figure 1 Tahmoor Coal Site Location

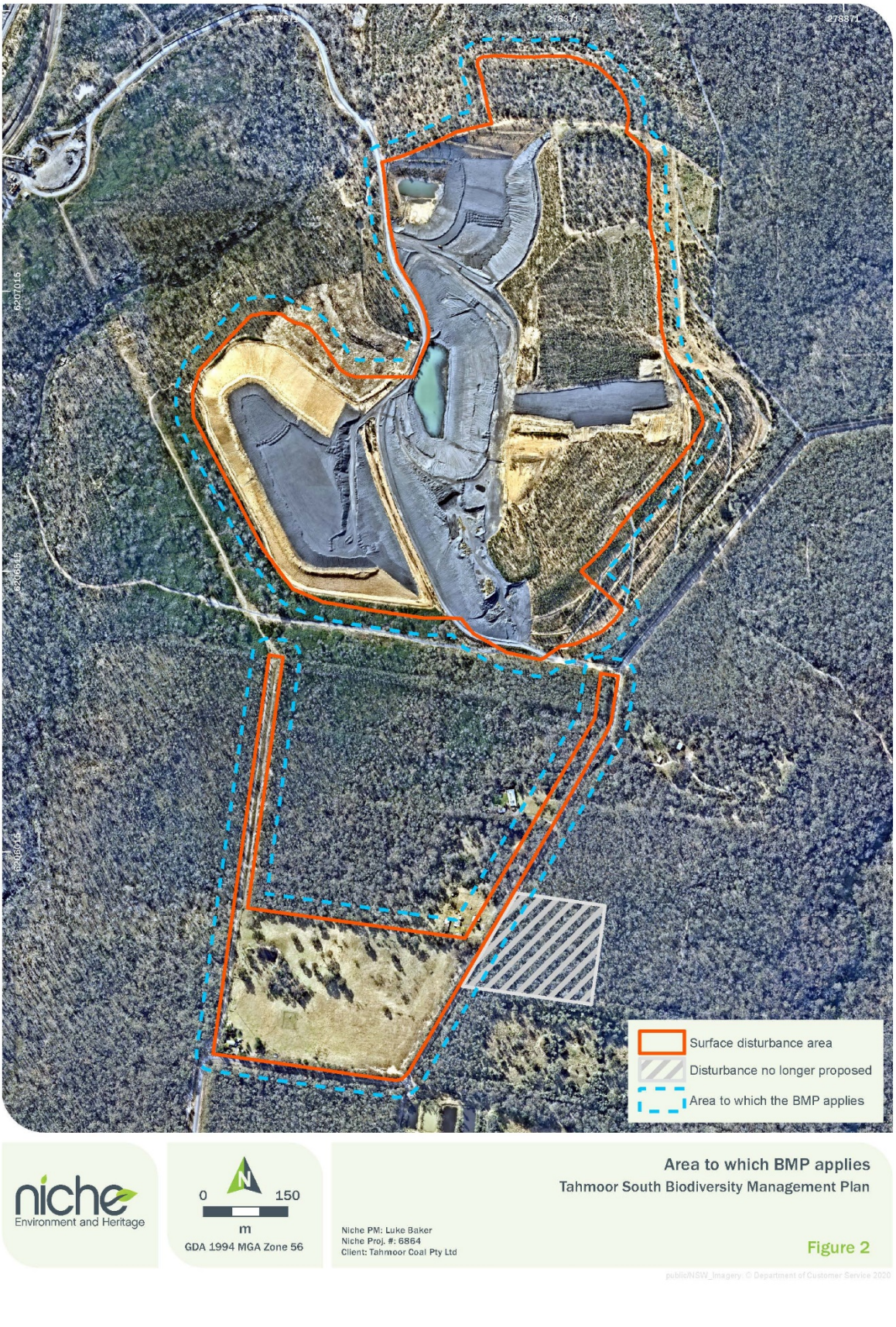

Figure 2 Area applicable to the BMP (note TSC1 no longer being constructed) (REA only disturbance area)

2 Planning

2.1 Statutory Requirements and Legislation

2.1.1 Development Consent Conditions

The requirement for this BMP is established by Condition B under Schedule 2 of the Development Consent (SSD 8445). **Table 2** outlines the requirements under this condition that are applicable to this BMP, and identifies the sections in which these requirements have been addressed.

Table 2 Relevant Development Consent (SSD 8445) (the Consent) Conditions

<table>
<tr><th>Condition Reference</th><th>Condition</th><th>Section of BMP</th></tr>
<tr><td>B37</td><td>Within 2 years of the date of commencement of development under this consent, unless otherwise agreed by the Planning Secretary, the Applicant must retire the biodiversity credits specified in Table 6 below or as recalculated to the satisfaction of the Biodiversity Conservation Trust (BCT). The retirement of credits must be carried out in consultation with Biodiversity Conservation and Science (BCS) and in accordance with the Biodiversity Offsets Scheme of the BC Act, to the satisfaction of the BCT.
Table 5: Biodiversity credit requirements
<table><tr><th>Credit Type</th><th>Total Credits Required</th></tr><tr><td>Ecosystem Credits</td><td></td></tr><tr><td>PCT1395 Narrow-leaved Ironbark - Broad-leaved Ironbark - Grey Gum open forest</td><td>455</td></tr><tr><td>PCT1081 Red Bloodwood - Grey Gum woodland on the edges of the Cumberland Plain, Sydney Basin</td><td>399</td></tr><tr><td>Species Credits</td><td></td></tr><tr><td>Small-flower grevillea (Grevillea parviflora subsp. parviflora)</td><td>770</td></tr><tr><td>Bargo geebung (Persoonia Bargoensis)</td><td>77</td></tr><tr><td>Koala (Phascolarctos cinereus)</td><td>107</td></tr><tr><td>Large-eared pied bat (Chalinolobus dwyeri)</td><td>54</td></tr><tr><td>Large-footed myotis (Myotis Macropus)</td><td>91</td></tr><tr><td>Eastern cave bat (Vespadelus troughtoni)</td><td>54</td></tr><tr><td>Eastern pygmy-possum (Cercartetus nanus)</td><td>82</td></tr></table>Notes:
• 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 need to be converted to reasonably equivalent 'biodiversity credits', within the meaning of the BC Act.
• The available credit retirement options for the development include purchase and retirement of open market available biodiversity credits, payment into the Biodiversity Conservation Fund or establishment of a Biodiversity Stewardship Site.</td><td>Retirement of biodiversity offset credits is addressed in Section 7.1</td></tr>
<tr><td>B38</td><td>The Applicant must prepare a Biodiversity Management Plan for all areas of the development, to the satisfaction of the Planning Secretary. This plan must:</td><td>Direct impacts of the development: Section 5.1 to Section 5.6
Subsidence impacts of the development: Section 5.7</td></tr>
<tr><td>(a)</td><td>be prepared by a suitably qualified and experienced person/s whose appointment has been endorsed by the Planning Secretary;</td><td>Section 0</td></tr>
<tr><td>(b)</td><td>be prepared in consultation with BCS;</td><td>Section 3.2</td></tr>
<tr><td>(c)</td><td>describe the short, medium, and long term measures to be undertaken to retain and manage the remnant vegetation and fauna habitat on the site;</td><td>This report includes short-medium term measures in Sections 5.2, 5.3 and 5.5.1. Medium-long term measures are included in Section 5.4 and requirements for ongoing improvements to improve habitat for remnant vegetation and fauna are included in Sections 5.5.3 and 5.6</td></tr>
<tr><td>(d)</td><td>describe how biodiversity management would be integrated with similar measures within other management plans,</td><td>Section 1.6</td></tr>
</table>

Condition Reference	Condition	Section of BMP
	including the Rehabilitation Management Plan (and Rehabilitation Strategy) referred to in condition 860;	
(e)	describe the measures to be implemented within the approved disturbance areas to;	NA
(e) i	minimise the amount of vegetation clearing, in particular, by micro-siting surface infrastructure to avoid impacts lo minimize clearing of CEECs;	**Section 5.2.1**
(e) ii	minimise impacts on fauna, including undertaking pre-clearance surveys;	**Sections 5.2.5** and **5.2.6**
(e) iii	provide for the salvage, transplanting and/or propagation of threatened flora found during pre-clearance surveys, in accordance with the Guidelines for the Translocation of Threatened Plants in Australia (Commander et al., 2018), where feasible; and	Initial salvage of threatened plants is addressed in **Section 5.2.5**, while suggested uses is included in **Section 5.6**
(e) iv	maximise the salvage of resources, including tree hollows, vegetation and soil resources, for beneficial reuse, including fauna habitat enhancement;	Preparation for salvage of habitat is addressed in **Section 5.2.5**, salvage during clearing activities is addressed in **Section 5.2.6**, and reuse of habitat features in **Section 5.6**
(e) v	re-establish habitat for the Koala, as well as other threatened fauna;	**Sections 5.6**
(f)	describe the measures to be implemented on the site to:	NA
(f) i	minimise impacts to threatened ecological communities listed under the BC Act and EPBC Act, and contribute to conservation strategies for these communities;	Designing infrastructure to minimise impacts is addressed in **Section 5.2.1**, impact minimisation and mitigation is addressed in **Section 5.2.6.2** along with a demonstration of contributions to conservation strategies.
(f) ii	minimise impacts on fauna habitat resources such as hunting and foraging areas, habitat trees, fallen timber and hollow-bearing trees;	Designing infrastructure to minimise impacts is addressed in **Section 5.2.1**, measures to minimise impact is addressed in **Sections 5.2.2, 5.2.3** and **5.3**
(f) 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, understorey and ground strata;	Facilitation of natural regeneration and landscaping of disturbance areas (except the REA) is addressed in **Section 5.4.2**, while suggested measures for consideration in the Rehabilitation Management Plan are provided in **Section 5.6**
(f) v	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;	Suggested measures for consideration in the and Rehabilitation Management Plan, including introduction of scarce habitat features, are provided in **Section 5.6**
(f) vi	manage any potential conflicts with Aboriginal heritage values;	Not applicable to this BMP, refer to the Heritage Management Plan
(f) vii	protect vegetation and fauna habitat outside of the approved disturbance areas;	**Sections 5.2.2, 5.2.3** and **5.2.4**
(f) viii	manage the collection and propagation of seed from the local area;	Preparation for collection and propagation is addressed in **Section 5.2.5**, and suggested use of propagated plants is in **Section 5.6**
(f) ix	control weeds, including measures to avoid and mitigate the spread of weeds;	**Sections 5.2.3, 5.3.3, 5.3.4** and **5.4.1**
(f) x	control feral pests with consideration of actions identified in relevant threat abatement plans;	**Section 5.4.3**

Condition Reference	Condition	Section of BMP
(f) xi	control access to vegetated or revegetated areas; and	**Section 5.2.2 and 5.4.4**
(f) xii	manage bushfire hazards;	**Section 5.5.3**, also see the Bushfire Management Plan.
(g)	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 identify improvements that could be implemented to improve biodiversity outcomes;	Monitoring and reporting are discussed in **Section 60**, and **Section 7** This BMP is subject to regular review and improvements will be implemented in accordance with **Section 8.** The Rehabilitation Management Plan will improve biodiversity outcomes based on the requirements provided in **Section 5.6.**
(h)	identify the potential risks to the successful implementation of the Biodiversity Management Plan, and include a description of the contingency measures to be implemented to mitigate against these risks; and	Risks are addressed in **Section 6.3** and contingency plan is included in **Section 6.2.**
(i)	include details of who would be responsible for monitoring, reviewing, and implementing the plan.	**Sections 6, 7.8** and **8**
B39	The Applicant must not commence construction until the Biodiversity Management Plan is approved by the Planning Secretary.	NA
B40	The Applicant must implement the Biodiversity Management Plan as approved by the Planning Secretary.	NA

2.1.2 Management Plan Requirements

Development Consent (SSD 8445) E5 outlines the general requirements for all management plans**. Table 3** outlines the requirements under this condition that are relevant to this BMP, and identifies the section in which these requirements have been addressed.

Table 3 Management Plan Requirements

Condition Reference	Condition	Section of BMP
E5	Management plans required under this consent must be prepared in accordance with relevant guidelines, and include:	NA
(a)	a summary of relevant background or baseline data;	**Section 4**
(b)	details of:	NA
(b) (i)	the relevant statutory requirements (including any relevant approval, licence or lease conditions);	**Section 2.1**
(b) (ii)	any relevant limits or performance measures and criteria; and	**Section 2.1.3**
(b) (iii)	the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the development or any management measures;	**Section 6.4**
(c)	any relevant commitments or recommendations identified in the document/s listed in condition A2(c);	**Section 2.4**
(d)	a description of the measures to be implemented to comply with the relevant statutory requirements, limits, or performance measures and criteria;	**Sections 2.1.1** and **6.40**
(e)	a program to monitor and report on the:	NA
(e) (i)	impacts and environmental performance of the development; and	**Section 6**
(e) (ii)	effectiveness of the management measures set out pursuant to condition E5(d);	**Section 6.4**

Condition Reference	Condition	Section of BMP
(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;	**Section 6.2**
(g)	a program to investigate and implement ways to improve the environmental performance of the development over time;	**Sections 6.4** and **8**
(h)	a protocol for managing and reporting any:	NA
(h) (i)	incident, non-compliance or exceedance of any impact assessment criterion or performance criterion;	**Sections 6.4, 7.4** and **7.5**
(h) (ii)	complaint; or	**Section 7.67.6**
(h) (iii)	failure to comply with other statutory requirements;	**Sections 7.5**
(i)	public sources of information and data to assist stakeholders in understanding environmental impacts of the development; and	**Section 9.1**
(j)	a protocol for periodic review of the plan.	**Section 8**

2.1.3 Environment Protection and Biodiversity Conservation Act

Tahmoor Coal received project approval under Section 130(1) and 133(1) of the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) for the Tahmoor South Project on 1 October 2021.

2.1.4 Performance Measures and Criteria

Consent Condition E5 (b) (ii) outlines the requirement for management plans to provide details of any relevant limits or performance measures and criteria. The following definitions have been applied:

- Limit - Any limit set within the Consent or other statutory document.
- Criteria –Any criterion set within the Consent or other statutory document.
- Performance Measures/Objectives – Environmental management performance measures and/or objectives as outlined within Schedule 2 Part B the Consent. Performance Measures and/or objectives outlined within Schedule 2 Part C of the Consent will be managed within the relevant Extraction Plan.

Consent Condition E5 (b) (ii) lists the criteria applicable to Noise; Reject Emplacement; Air Quality; Water Management and Rehabilitation. The criteria listed in Consent Condition E5 (b) (ii) are not specifically relevant to this BMP, yet the biodiversity assessments completed and the details within this BMP may assist with the Tahmoor South Project Rehabilitation Strategy and Rehabilitation Management Plan.

Table 4 outlines the criteria which, while addressed in other management plans, are also discussed within this BMP.

Table 4 Limits, Performance Measures/Objectives and Criteria

Limit, Measure/Objectives or Criteria	Description	Section of BMP
B33 Water Management Performance Measures - Erosion and sediment control works	• Design, install and maintain erosion and sediment controls in accordance with the guidance series Managing Urban Stormwater: Soils and Construction including Volume 1: Blue Book (Landcom, 2004), Volume 2A: Installation of Services (DECC, 2008), Volume 2C: Unsealed Roads (DECC, 2008), Volume 2D: Main Road Construction (DECC, 2008) and Volume 2E: Mines and Quarries (DECC, 2008) • Design, install and maintain any new infrastructure within 40 metres of watercourses in accordance with the guidance series for Controlled Activities on Waterfront Land (DPI Water, 2012)	Sedimentation control discussed in **Sections 5.2.4, 5.3.5** and **5.4.3**. Also refer to the Water Management Plan

Limit, Measure/Objectives or Criteria	Description	Section of BMP
	• Design, install and maintain any new creek crossings generally in accordance with the Fisheries NSW Policy and Guidelines for Fish Habitat Conservation and Management (DPI, 2013) and Why Do Fish Need To Cross The Road? Fish Passage Requirements for Waterway Crossings (NSW Fisheries 2003). • Ensure all works on waterfront land are consistent with the guidance series for Controlled Activities on Waterfront Land (DPI Water, 2012)	
B56 Rehabilitation objectives - All areas of the site affected by the development	• Safe, stable and non-polluting • Fit for the intended post-mining land use/s • Achieve the final landform and post-mining land use/s as soon as practicable after cessation of mining operations • Minimise post-mining environmental impacts	Not applicable to this BMP. Refer to the Rehabilitation Management Plan
B56 Rehabilitation objectives - Areas proposed for native ecosystem re-establishment	• Establish/restore self-sustaining native woodland ecosystems, with a focus on establishing local plant community types, as described in the EIS and in Table 5 of the Consent. • Establish: - habitat, feed and foraging resources for threatened fauna species; - local vegetation connectivity and wildlife corridors, as far as is reasonable and feasible	Refer to the Rehabilitation Management Plan. Requirements for inclusions in Rehabilitation Management Plan provided in **Section 5.6.**
B56 Rehabilitation objectives - Surface infrastructure of the development	• To be decommissioned and removed, unless the Resource Regulator agrees otherwise • All surface infrastructure sites will be revegetated with suitable local native plant species to a landform consistent with the surrounding environment	Refer to the Rehabilitation Management Plan Requirements for inclusions in Rehabilitation Management Plan provided in **Section 5.6**.

2.2 Performance Indicators

Performance Indicators are defined as 'Tahmoor Coal derived environmental performance indicators set to maintain compliance with the performance measures and/or objectives outlined within Schedule 2 Part B of the Consent'. Performance indicators are addressed in conjunction with their associated monitoring actions in **Section 6**.

2.3 Other Leases and Licences

All development consents, leases, licences, and other relevant approvals are stored in the Cority Compliance Management database, which is administered by both site and Liberty GFG Corporate. A summary of the relevant mining leases is provided in **Table 5**. A summary of other approvals and licences are provided in **Table 6**.

Table 5 Mining Lease

Lease	Title	Granted	Expires
CCL 716	Original Tahmoor Leases	15/06/1990	13/03/2021 (approval pending)
CCL 747	Bargo Mining Lease	23/05/1990	06/11/2025

ML 1376	Tahmoor North Lease	28/08/1995	28/08/2043
ML 1308	Small Western lease to west of CCL716	02/03/1993	02/03/2035
ML1642	Pit-top and REA surface Mining Lease	27/08/2010	27/08/2031
ML 1539	Tahmoor North Extensions Lease	16/06/2003	16/06/2024

Table 6 Approvals/Licences

Approval Title / Description	Date Granted	Expiry Date
Environmental Protection Licence 1389	01/05/2012	No Expiry
WAL36442 and WAL25777	6/12/2013	No Expiry
XSTR200005 Dangerous Goods Licence	02/02/2017	02/02/2027

2.4 EIS Commitments

Condition A2 (g) of the Development Consent (SSD 8445) states that the development may only be carried out generally in accordance with the EIS. The relevant EIS documents include:

a) Tahmoor South Project Environmental Impact Statement, Volumes 1 to 7, dated January 2019;
b) Tahmoor South Project Amendment Report, including Appendices A to R and response to submissions, dated February 2020;
c) Tahmoor South Project Second Amendment Report, Appendices A to O and response to submissions, dated August 2020; and
d) Additional information responses dated 14 September 2020 (including Appendices A to L), 23 October 2020 and 4 November 2020.

The relevant EIS commitments, including the sections of this BMP where the commitments have been addressed, are outlined in **Table 7**.

Table 7 EIS Commitments

EIS Reference	Commitment	Section of BMP
TE-1	Monitor site disturbance works to, where possible, avoid or minimise impacts to terrestrial ecology.	Management actions provided in **Section 5** Monitoring detailed in **Section 6.**
TE-2	Revise and update the existing Biodiversity Management Plan.	This Biodiversity Management Plan
TE-3	Undertake on-going monitoring of potential flora and fauna impacts, including ongoing amphibian monitoring. Monitoring to be reported annually within the Annual Environmental Monitoring Report.	Not applicable to this plan. To be addressed within the relevant Extraction Plan.
TE-4	Implement the Tahmoor South Project Biodiversity Offset Strategy.	Biodiversity offset strategy is not addressed in this BMP.
358/SAR	Terrestrial ecology Transmission lines - the proposed transmission lines has been revised to maximise the existing cleared land, road and existing easement as much as practical. Clearing is therefore only required where vegetation encroaches on the proposed transmission	Pre-clearing surveys detailed in **Section 5.2.5.**

	line easement. The installation of the transmission line has also been designed to avoid direct impact to threatened flora by: • Engaging a suitably qualified ecologist to be present during clearing associated with the transmission line easement to: ○ clearly mark the threatened plants to ensure that the contractors avoid impacts during clearing event; and ○ be present during the installation of the power poles to safeguard against direct impacts to the threatened plants. The transmission line will require on-going maintenance, such as slashing of vegetation within the easement to a height of 2 m. Given the plants will not grow above 2 m in height, the long-term maintenance slashing is unlikely to impact the threatened plants."	

3 Stakeholder Consultation

3.1 Internal Stakeholder Communication

Internal stakeholders include employees, contractors and visitors of Tahmoor Coal. *TAH-HSEC-00039– Stakeholder Engagement Plan* has been developed to include the following:

a) Methods of communication between internal stakeholders;

b) Types of information that is communicated between internal stakeholders;

c) Responsibilities for communication of information to internal stakeholders; and

d) Review of communication methods, including the consideration of feedback to / from internal stakeholders.

3.2 External Stakeholder Communication

External stakeholders include neighbours and the local / regional community, local council, state and federal government agencies and regulators, and press / media. External stakeholders are identified in accordance with *TAH-HSEC-00031- Community Development Plan and TAH-HSEC-00039 – Stakeholder Engagement Plan*. External stakeholder communication is undertaken in accordance with *TAH-HSEC-00039– Stakeholder Engagement Plan*.

Tahmoor Coal's Stakeholder Engagement Plan includes information on the following topics:

a) Methods of communication to external stakeholders.

b) Types of information that is communicated between external stakeholders.

c) Responsibilities for communication of information to external stakeholders.

d) Review of communication methods, including the consideration of feedback to / from external stakeholders.

A key objective of ongoing stakeholder engagement is to maintain positive relationships established with the local community and other external stakeholders.

3.3 Consultation to Date

A draft version of this management plan was distributed to the following stakeholders for review and feedback:

a) List Consulted Parties

The feedback provided by stakeholders is summarised within **Table 8** below.

Table 8 Consultation to Date

Consulted Parties	Consultation Conducted	Outcomes of Consultation
Biodiversity Conservation and Science	21/10/2021	BCS comments were received and addressed – refer to Appendix F

4 Biodiversity values

4.1 Previous Biodiversity Assessments

The biodiversity values applicable to the BMP have been assessed in detail in the following studies:

- Appendix E of Tahmoor South Project Amendment February 2020: Biodiversity Assessment Report of the Updated Project dated February 2020 (Niche 2020a)
- Appendix E of Tahmoor South Project Amendment August 2020: Biodiversity Assessment Update dated August 2020 (Niche 2020b).

The above reports have assessed the impact to both State and Commonwealth listed biodiversity in accordance with the OEH (2018) Framework for Biodiversity Assessment, and associated State and Commonwealth guidelines. The Niche (2020b) includes a biodiversity offset strategy for all unavoidable impacts to biodiversity.

Furthermore, the area subject to this BMP and the general locality has been assessed by numerous field campaigns and monitoring over the past decade. A summary of the key reports and monitoring applicable to the BMP are listed below and should be referred to for further detail regarding the status of terrestrial biodiversity.

- Niche (2021), Tahmoor Mine Western Domain Terrestrial Ecology Monitoring Report Riparian vegetation and amphibian monitoring Autumn 2021. Prepared for Tahmoor Coal. Dated February 2021
- Niche (2020a) Tahmoor South Project –Amended Biodiversity Assessment Report, February 2020
- Niche (2020b) Tahmoor South Project Amendment August 2020: Biodiversity Assessment Update dated August 2020
- Niche (2020c) Tahmoor South Project, Aquatic Ecology Assessment, Prepared for SIMEC
- Niche (2020d), Tahmoor Mine Western Domain Terrestrial Ecology Monitoring Report Riparian vegetation and amphibian monitoring Autumn 2018-2020. Prepared for Tahmoor Coal. Dated May 2020.
- Niche (2020e), Tahmoor Mine Redbank Creek Terrestrial Ecology Monitoring Report Autumn riparian vegetation and frog monitoring 2018 - 2020. Prepared for Tahmoor Coal. Dated June 2020.
- Niche (2020f), Tahmoor Mine Redbank Creek Terrestrial Ecology Monitoring Report Spring riparian vegetation and frog monitoring 2017 - 2019. Prepared for Tahmoor Coal. Dated February 2020.
- Niche (2020g), Tahmoor Mine Western Domain Terrestrial Ecology Monitoring Report Spring riparian vegetation and amphibian monitoring 2019-2020. Prepared for Tahmoor Coal. Dated January 2020.
- Niche (2019a), Tahmoor Mine Western Domain Terrestrial Ecology Baseline Monitoring Report - Baseline riparian vegetation and frog monitoring report 2019. Prepared for Tahmoor Coal. Dated July 2019.
- Niche (2019b), Tahmoor Mine Redbank Creek Terrestrial Ecology Monitoring Report Riparian vegetation and frog monitoring report 2017 — 2019. Prepared for Tahmoor Coal. Dated August 2019.
- Niche (2018a) Tahmoor South Project, Prepared for SIMEC Mining Pty Ltd, dated November 2018
- Niche (2018b), Tahmoor Colliery Longwalls 31 to 37 - Baseline riparian vegetation and frog monitoring report 2018. Prepared for Tahmoor Coal. Dated July 2018.
- Niche (2014a) Tahmoor South Aquatic Ecology Impact Assessment, Prepared for Tahmoor Coal 2014.
- Niche (2014b) Tahmoor South Project Terrestrial Monitoring Project Year 2013-2014.
- Niche (2013) Tahmoor South Project Terrestrial Monitoring Project Year 2012-2013.
- Niche (2012) Tahmoor South Project Pilot Study, Prepared for Tahmoor Coal.

4.2 Native Vegetation

As detailed in the Niche (2020b) Biodiversity assessment, the Tahmoor South Project will impact on two Plant Community Types (PCTs):

- Approximately 10.10 ha of PCT1395 Narrow-leaved Ironbark -Broad-leaved Ironbark -Grey Gum open forest (HN556). This PCT, which has been attributed to two vegetation classes which is reflective of historic disturbance.
- Approximately 14.22 ha of mine site rehabilitation located on the former REA, which was assigned a 'best fit' PCT, PCT1081 Red Bloodwood - Grey Gum woodland on the edges of the Cumberland Plain, Sydney Basin (HN564).

A summary of the area of impact has been provided in **Table 9**, and shown on **Figure 3.**

However, since the Niche (2020b) Biodiversity Assessment, Tahmoor Coal has refined the location of Ventilation Shafts and any associated transmission line to minimise the amount of vegetation proposed. This is consistent with condition B38(e)i, which requires minimisation of the amount of vegetation clearing.

The revised disturbance footprint reduces the vegetation clearing by 6.04 ha and 2.80 ha, which was previously associated with the TSC1 and TSC 2 locations respectively. The Powerline easement is also no longer required and confines the total disturbance for the Tahmoor South project to be within the REA boundary. The total of vegetation clearing is now reduced to 14.22 ha from 24.32 ha, of which is mine rehabilitation vegetation (**Table 9**).

Table 9 Plant Community Types (PCTS) and associated impact area

Plant community type	Area (ha) as detailed in Niche (2020) Biodiversity Assessment					Revised vegetation clearing (2022)
	REA	Powerline	TSC1	TSC2	Total	Total revised disturbance
Mine rehabilitation vegetation (best fit –PCT1081 *Red Bloodwood -Grey Gum woodland on the edges of the Cumberland Plain, Sydney Basin* (HN564)	14.22	0	0	0	14.22	**14.22**
PCT1395 *Narrow-leaved Ironbark -Broad-leaved Ironbark -Grey Gum open forest* (HN556) Good	0	0.66	0.66	2.8	4.12	**0**
PCT1395 *Narrow-leaved Ironbark -Broad-leaved Ironbark -Grey Gum open forest* (HN556) Derived	0	0.6	5.38	0	5.98	**0**
Total (ha)	14.22	1.26	6.04	2.8	24.32	**14.22**

4.3 Threatened Ecological Communities

The Tahmoor South Project would impact upon one Threatened Ecological Community (TEC): Shale Sandstone Transition Forest of the Sydney Basin Bioregion, a Critically Endangered Ecological Community (CEEC) under both the NSW *Biodiversity Conservation Act 2016 (*BC Act) Act and Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

The TEC is associated with the occurrence of PCT 1395 *Narrow-leaved Ironbark -Broad-leaved Ironbark - Grey Gum open forest of the edges of the Cumberland Plain, Sydney Basin.*

A total of 7.30 ha will no longer be impacted by the Tahmoor South Project (**Table 10**), which takes into consideration and changes to ventilation shafts and associated transmission line locations no longer needed. The construction of a Booster fan has replaced the need for the construction of additional ventilation shafts at TSC1 and TSC2 and its associated transmission line. This is consistent with condition B38(e) i, which requires minimisation of the amount of vegetation clearing in relation to TECs.

The area of Shale Sandstone Transition Forest no longer being impacted and immediately adjacent areas, is shown in **Table 10**.

Table 10 Reduced impact to Shale Sandstone Transition Areas

Shale Sandstone Transition Forest condition class	Area (ha)
PCT1395 Narrow-leaved Ironbark -Broad-leaved Ironbark -Grey Gum open forest (HN556) Derived6	5.98
PCT1395 Narrow-leaved Ironbark -Broad-leaved Ironbark -Grey Gum open forest (HN556) Good	1.32
Total	7.30

4.4 Threatened Flora

As detailed in the Niche (2020a) Biodiversity Assessment, seven threatened flora were recorded during the assessment, including: *Acacia bynoeana* (recorded outside Study Area), *Epacris purpurascens* var. *purpurascens, Grevillea parviflora* subsp. *parviflora, Persoonia hirsuta, Persoonia glaucescens* var. *glaucescens, Persoonia bargoensis,* and *Pomaderris brunnea.*

The locations of the threatened flora are shown on **Error! Reference source not found.**.

As shown on **Figure 4**, a large population of *Pomaderris brunnea* was recorded immediately adjacent to the riparian habitat of Teatree Hollow Creek. None of this population will be directly impacted by the Project. Similarly, the large populations of *Grevillea parviflora* subsp. *parviflora* and *Persoonia bargoensis* which occurs immediately adjacent to the surface infrastructure will not be directly impacted.

Within the area proposed for surface infrastructure, only *Grevillea parviflora* subsp. *parviflora*, and *Persoonia bargoensis* were recorded, and will not be subject to direct impacts. The number of individuals recorded within the area of direct impact were detailed in the Niche (2020a) Biodiversity Assessment, and have been provided in **Table 11**, and shown on **Figure 4.**

As detailed in the Niche (2020a) Biodiversity Assessment, threatened flora that occur within the vicinity of the proposed transmission line easement will no longer be impacted, however if the project is re-visited in the future impacts will be avoided through the mitigation measures proposed in **Section 5.2.5.2** and **Section 5.2.6**. Furthermore, the number of plants to be impacted has been reduced to zero with the discontinuation of the vent shaft construction projects (TSC1 and TSC2).

Table 11 Impact to threatened flora

Species	No. of plants impacted detailed in Niche (2020a)	No. of plants to be impacted based on revised ventilation shaft layout
Persoonia bargoensis	1	0
Grevillea parviflora subsp. *parviflora*	55	0

4.5 Threatened Fauna and habitat

A detailed impact assessment has been assessed in Niche (2020a; 2020b) which concludes a total of 24.32 ha of habitat would be directly impacted for the surface infrastructure (**Table 9**). Through the

discontinuation of the ventilation shaft construction projects, this amount of habitat has been reduced to 14.22 ha, consisting of 14.22 ha of vegetation associated with previously mine rehabilitated vegetation.

As detailed in the Niche (2020a; 2020b), eleven threatened fauna were recorded within the Study Area, within, or immediately adjacent to the proposed surface infrastructure disturbance footprint (**Error! Reference source not found. 4**).

Threatened fauna recorded include:

- Glossy Black Cockatoo (*Calyptorhynchus lathami*);
- Varied Sittella (*Daphoenositta chrysoptera*);
- Little Eagle (*Hieraaetus morphnoides*);
- Powerful Owl (*Ninox strenua*);
- Scarlet Robin (*Petroica boodang*);
- Sooty Owl (*Tyto tenebricosa*);
- Eastern False Pipistrelle (*Falsistrellus tasmaniensis*);
- Eastern Bent-wing Bat (*Miniopterus orianae oceanensis*);
- Eastern Free-tail Bat (*Micronomus norfolkensis*);
- Large-footed Myotis (*Myotis macropu*s); and
- Eastern Cave Bat (*Vespadelus troughtoni*).

Two threatened amphibians - Red-crowned Toadlet (*Pseudophryne australis*) and Giant Burrowing Frog (*Heleioporus australiacus*), were recorded during the Niche Amphibian Monitoring Program in 2013 (Niche 2013), however both records were outside the Study Area.

A biodiversity offset strategy for threatened fauna and their habitat has been detailed in Niche (2020a), which concluded a biodiversity offset is required for the removal of 4.12 ha of habitat associated with the Large-footed Myotis, Koala (*Phascolarctos cinereus*), Large-eared Pied Bat (*Chalinolobus dwyeri*), Eastern Cave Bat and Eastern Pygmy Possum (*Cercartetus nanus*).

4.6 Weeds

During the Niche surveys to support the Biodiversity Assessment for the Tahmoor South Project, weeds were opportunistically recorded across all the PCTs within the disturbance area and immediately adjacent.

Key weeds recorded include the following:

- Cobblers Pegs (*Bidens Pilosa*; HTE);
- Rhodes Grass (*Chloris gayana*; HTE);
- African Lovegrass (*Eragrostis curvula*; HTE);
- Cats-ear (*Hypochaeris radicata*);
- Paspalum (*Paspalum dilatum*; HTE);
- Kikuyu grass (*Cenchrus cladestinum*);
- Plantain (*Plantago lanceolata*);
- Fireweed (*Senecio madagascariensis*; HTE/WoNS/PW);
- Pigeon grass (*Setaria gracilis*);
- Dandelion (*Taraxacum officinale*); and
- Purpletop (*Verbena bonariensis*).

Of the weeds recorded, only one is regarded as a Weed of National Significance: Fireweed (*Senecio madagascariensis*). Weeds of National Significance are regarded as the worst weeds in Australia due to their invasiveness, potential to spread, and economic and environmental impacts, and are listed under the National Weeds Strategy.

Priority weeds are plants that have been assessed as causing economic loss to agriculture, and significant environmental impacts on State, regional and local levels. The only priority weed recorded is *Senecio madagascariensis* (Fireweed).

The above weeds occur within all PCTs recorded in the study area, however the greatest occurrence is within areas that have been historically cleared, such as the derived grassland areas, and the areas adjacent to Charlies Point Road and the transmission lines easement.

Measures to control weeds are detailed in **Sections 5.3.3, 5.3.4** and **5.4.1.**

4.7 Feral pests

During the Niche surveys to support the Biodiversity Assessment for the Tahmoor South Project, evidence of feral pests (rabbits and foxes) was recorded within the REA and within the derived grassland areas. At the time of the survey, the evidence of feral pest occupancy was relatively low. The feral species are more likely to occupy the areas subject to historical clearing events, rather than intact woodland/forest habitat types.

Other feral animals that may occupy the study area and immediately surrounds on occasion include feral cats and feral deer. Feral pigs, wild dogs and feral goats are unlikely to frequent the study area.

Measures to monitor and control feral pests are detailed in **Section 5.4.4**.

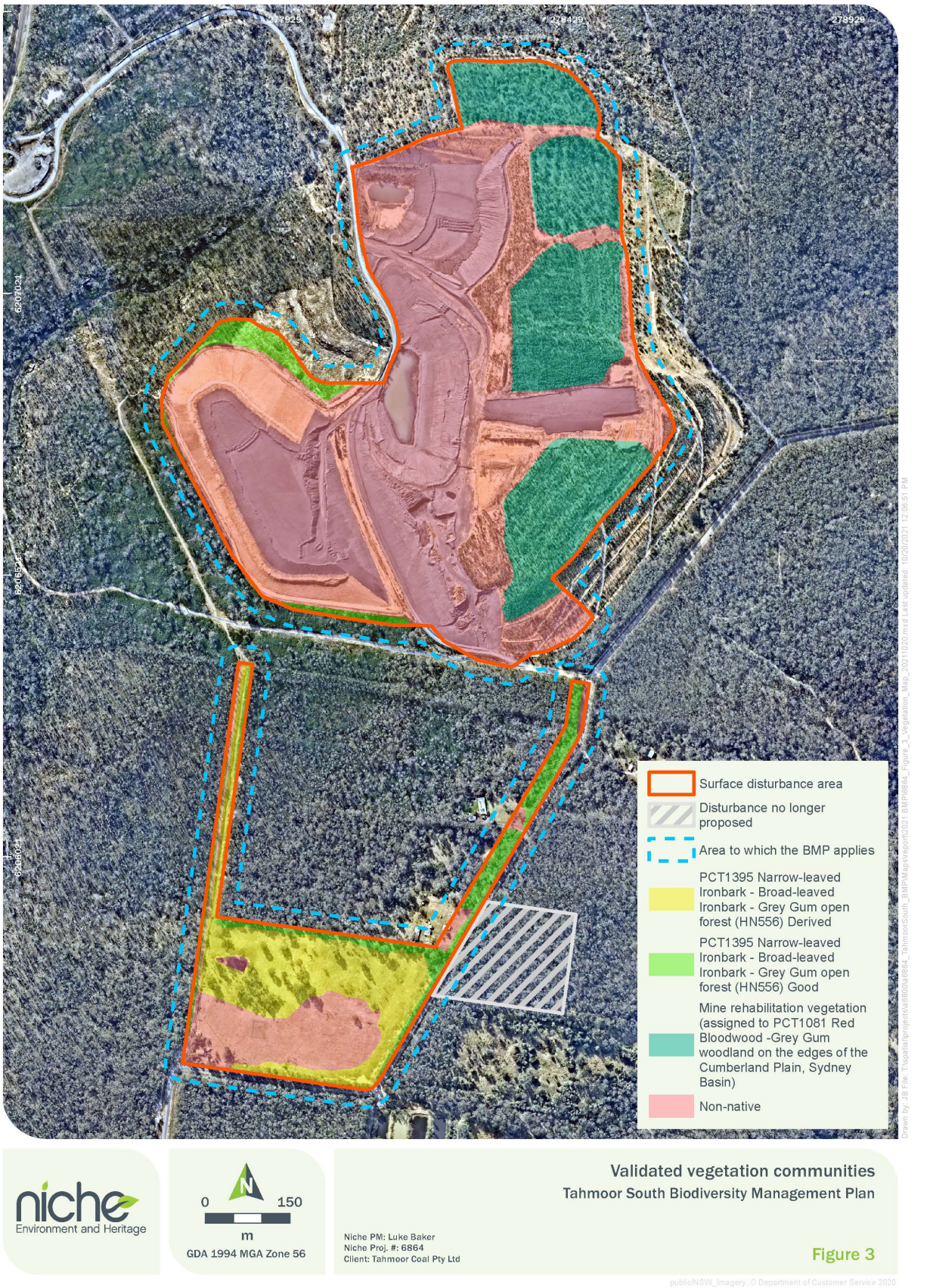

Figure 3. Vegetation mapping

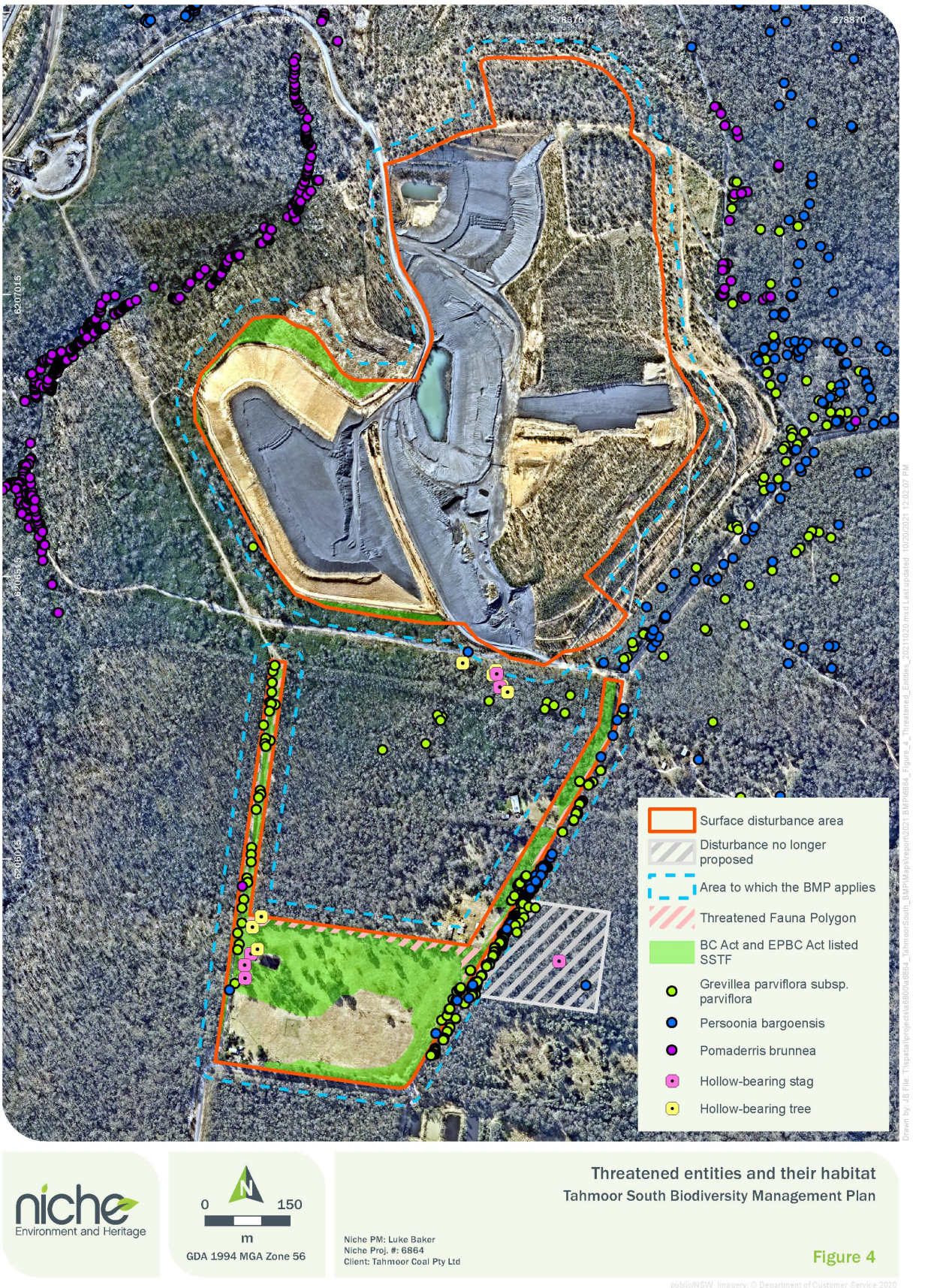

Figure 4. Threatened Ecological Communities and Threatened Species

5 Environmental Management

5.1 Approach to Management

As detailed in **Section 4**, the key biodiversity features that occur within, and immediately adjacent to the study area include:

- Native vegetation, including Shale Sandstone Transition Forest TEC;
- Threatened flora, namely *Persoonia bargoensis* and *Grevillea parviflora* subsp. *parviflora;*
- Habitat for threatened fauna, including 14 hollow-bearing trees within the disturbance area.

The management actions proposed in this section aim to avoid and minimise impacts as far as practical.

The management actions have been addressed for pre-construction, construction, post-construction/operation of the Project. A summary of the management actions, including responsibility, performance criteria, monitoring adaptive management is provided in **Table 17**, with additional detail relating to each management measure provided in this section.

5.2 Pre-construction Management Measures

5.2.1 Vegetation and Fauna Protection Through Design and Micro-siting Infrastructure

As detailed in **Section 4** and shown on **Figure 3**, the Project will result in the direct impacts to approximately 14.22 ha of native vegetation and associated habitat. The biodiversity impacts will be offset per the biodiversity offset strategy.

As per condition B38 (e) i, Tahmoor Coal has discontinued the ventilation construction projects to reduce surface impacts and will install a booster fan underground to counteract ventilation requirements are met for underground workings.

The biodiversity offset credits are being recalculated to reflect the reduced impact to threatened entities to the satisfaction of the BCT in accordance with Condition B37 (**Section 7.1**). The details of the updated reduced impact that demonstrate minimisation of impacts through discontinuation of the vent shaft constructions and revised biodiversity offset credit requirements would be provided to the BCT in a separate report for review and consideration. The biodiversity offset credits would be retired accordingly following confirmation of acceptance by BCT.

5.2.2 Demarcation of Clearing Area and Construction Area

Prior to any vegetation clearing works commencing, vegetation clearing limits will be clearly demarcated using bunting to prevent unauthorised clearing and impacts to vegetation and minimise impacts to threatened ecological communities listed under the BC Act and EPBC Act, and their constituent fauna.

The use of bunting will allow ease of movement of any fauna present in the disturbance footprint.

Prior to construction works commencing, the construction area will be bounded by Australian Temporary Fencing (ATF) to prevent encroachment of heavy plant, vehicles, and personnel into the native vegetation. ATF fencing will display signs stating that access is not permitted to native vegetation.

Prior to construction works commencing, tree protection fencing will be installed around trees that are not required to be removed to facilitate the development and will be retained within the construction area, this particularly applies to trees in the approved development area for the ventilation shafts.

ATF fencing and tree protection fencing will comply with the minimum tree protection standards as outlined in Australian Standard AS 49702009 'Protection of trees on development sites', i.e., fencing is required to protect the tree and the tree root protection zone, such that no canopy should be overhanging the fencing. This will prevent any stockpiling or standing of heavy plant from occurring within the tree root protection zone.

ATF fencing will minimise impacts on fauna habitat resources outside the disturbance footprint. ATF fencing will assist to discourage fauna from entering the construction area, but be easily modified to create a gate and allow any trapped fauna to escape. No construction activities will take place while fauna is trapped within the construction area. If fauna become trapped within the construction compound, the trapped and injured fauna procedure will be implemented, as detailed in **Section 5.5.2**.

5.2.3 Contractor Education

Contractor site induction will include:

- Communication to each contractor regarding sensitive environmental features (i.e., threatened flora, fauna habitat and threatened ecological community) and to emphasise that access to demarcated native vegetation is not permitted;
- Communication of the procedures to be followed in the event that fauna is found during vegetation clearing (**Section 5.5.2**);
- Arrive Clean, Leave Clean (Department of the Environment (DOE) 2015a) guidelines to be incorporated into contractor education:
    - Contractor education to ensure their personal protective equipment (PPE) (i.e., boots and clothes) is free from mud and/or weed propagules if entry into the native vegetation is unavoidable;
    - Driver education to ensure drivers remain on signposted tracks and understand and implement appropriate vehicle hygiene;
- Ensuring all contractors are aware that it is their responsibility to report to their supervisor any observed fault in sediment fencing, tree protection, construction perimeter fencing or any fault that presents a real or perceived risk to biodiversity.

5.2.4 Erosion and Sediment Management

Erosion and sediment will be controlled in accordance with the *TAH-HSEC-00374 Erosion and Sediment Control Plan* (ESCP) and the *TAH-HSEC-00369 Water Management Plan* (WMP) in accordance with Section B34 (e) (iii) of the conditions of consent.

The main objectives of erosion and sediment control at Tahmoor Coal include:

a) Meeting the requirements of development consent relevant to the operation of the Tahmoor Coal;
b) Minimizing the amount of land utilized for mining and undertaking rehabilitation activities which commensurate with operational requirements;
c) Preventing contamination of clean water by mining activities, particularly with respect to Tea Tree Hollow and the Bargo River;
d) Establishing and maintaining controlled diversion of clean water around mining activities into existing watercourses so as to reduce the volume of sediment laden material;
e) Detaining all dirty water by the use of appropriate run-off controls and storage;
f) Conducting the Erosion & Sediment Control Program in a manner which meets or exceeds the requirements of all regulatory agencies;
g) Establishing responsibilities for the management of Erosion and Sediment Control issues at Tahmoor Coal.

Erosion and sediment management will be undertaken in accordance with Managing Urban Stormwater: Soils and Construction (The Blue Book) (Landcom 2004). In the interest of protecting biodiversity during construction, the following measures apply:

- Implement the standard erosion and sediment controls for the duration of construction works and regularly maintain erosion and sediment controls during construction and until excavated areas are vegetated or sealed.

- Appropriate controls to minimise impacts to water quality from erosion will include the use of silt curtains and other measures where appropriate in accordance with Managing Urban Stormwater: Soils and construction - Volume 1 (Landcom 2004).
- The site is predominately within the catchment for Tea Tree Hollow, with a small part to the east falling within the Bargo River Catchment. There are no named waterways within the site. Silt curtains are to be installed prior to construction downslope of the construction compound to the east and west, and downslope of any unsealed roads. They will be left in place for the duration of construction.
- The construction contractor will monitor and maintain sedimentation measures monthly and as soon as possible after moderate – heavy rainfall and adjust sedimentation measures as required.
- All contractors have a responsibility to report to their supervisor any observed fault in sediment fencing.
- On completion of construction activities, the sediment controls are to be removed and the surrounding area remediated the level of disturbance would hinder natural regeneration, see **Section 5.4.2** for regeneration and landscaping measures.

5.2.4.1 Mitigating Breeches

All erosion control measures will be contained within the site, downslope of areas to undergo soil disturbance. However, if significant breaches are found on inspection that cannot be remediated within the site, additional sediment control may need to be implemented in impacted area.

Any sediment control implemented will undergo permanent stabilisation on completion of the construction phase. Refer to **Section 5.4.2** for natural regeneration and planting to rehabilitate disturbed areas and **Section 5.4.3** for guidelines on post construction soil stabilisation.

5.2.5 Pre-clearance Management Measures and Surveys

Pre-clearance surveys are required to minimise impacts on flora and fauna during vegetation clearing. Pre-clearance surveys for threatened fauna, and the salvage, transplanting and/or propagation of any threatened flora species present within the disturbance area will be undertaken at least one week prior to planned vegetation clearing activities. Performance indicators associated with pre-clearance work can be found in **Section 6.4**.

5.2.5.1 Pre-clearance Management Measures and Surveys for Fauna

Prior to clearing, all hollow-bearing trees and stags, and any trees containing nests or dreys, and salvageable standing and fallen timber within the clearing footprint will be clearly marked and observed by a qualified ecologist for signs of roosting/nesting fauna. All hollows in living and dead wood, as well as all suitable fallen and standing dead wood will be identified to be salvaged.

A two-staged approach to vegetation clearing is outlined in **Section 5.2.6**. If no fauna or active nests or dreys are observed during the pre-clearance surveys, then clearing may proceed to the first stage. If roosting/nesting fauna are observed, then clearing works will be required to be delayed until any nesting fauna have vacated the construction site.

5.2.5.2 Pre-clearance Management Measures and Surveys for Flora

Prior to clearing, all threatened flora species occurring within the disturbance area will be clearly marked by a qualified ecologist. These individuals will be salvaged, transplanted, or propagated (depending on species suitability for each option) by qualified bush regenerators prior to commencement of clearing activities. The threatened flora species known to occur within the disturbance footprint are shown on **Figure 4** and include:

- *Grevillea parviflora* subsp. *parviflora*
- *Persoonia bargoensis.*

Whole plant translocation (i.e., The transplantation of mature plants or seedlings from an area due to be affected by development to an unaffected area) will be the method of translocation used. The benefit of implementing the whole plant translocation method in this situation is that there are known, suitable recipient populations of the affected species in the locality. Translocated threatened plants will be relocated to within unaffected areas of the species population.

The other methods considered were direct seeding/propagating harvested seeds and planting propagated nursery grown cuttings, both of which have potential to impose substantial delays on the project timeline. Both species produce soft fruits, the abundance of which would depend greatly on favourable seasonal factors. Soft fruits can be difficult to propagate and could fail, which would then result in the requirement to wait for the following season to collect additional seed. Propagation from cuttings would be limited by the naturally small size of the two species, and should cuttings fail to establish, the harvested individuals would then face whole plant translocation in a compromised state.

5.2.5.3 Management Measures for Threatened Flora Translocation

The current disturbance footprint will avoid all known threatened flora. However, if any are found during the pre-clearance surveys, they may be salvaged and transplanted in accordance with consent condition B38 e (iii). Salvage and transplanting will be undertaken in accordance with the Guidelines for the Translocation of Threatened Plants in Australia (Commander *et al.*, 2018), where feasible, and consider the NSW Translocation Operational Policy (DPIE 2019).

If any threatened flora is found within the disturbance footprint during the pre-clearance surveys, a suitably qualified and experienced bush regenerator with the appropriate scientific licence for threatened flora transplantation will be engaged well in advance of the desired transplantation completion date. A Translocation Plan will be prepared. A translocation application for additional approvals may also need to be prepared (i.e., approval from Commonwealth regulator for translocation of EPBC Act listed species – see Page 55 of Commander et al. 2018 for steps in the approval process). Management measures for threatened flora translocation are:

- Engage a suitably qualified and experienced bush regenerator with the appropriate scientific licence for threatened flora transplantation;
- The engaged professional will prepare a Translocation Plan which will contain specific management measures.

5.2.6 Clearing of Vegetation

Key points for vegetation clearing are:

- Where possible, schedule clearing to occur in mid-Autumn, which is outside of breeding and nesting periods and outside hibernation (torpor) periods of threatened fauna species that are known or considered highly or moderately likely to occur in the disturbance area.
- Comply with EIS commitment 358/SAR:
    - Clearing and moving of habitat features within the transmission line will be undertaken under the supervision and direction of a qualified ecologist.
    - Installation of power poles will be undertaken under the supervision of a suitably qualified ecologist to safeguard against direct impacts to the threatened plants.

Performance indicators associated with vegetation clearing can be found in **Section 6.4.**

5.2.6.1 Maximise the salvage of resources

Salvageable habitat features (including hollows in living and dead wood, standing, and fallen dead wood, and rocks) identified during the pre-clearance survey will be retained for placement in the REA and/or distributed into adjacent habitat.

- Salvaged habitat features that are being retained for use in the rehabilitation of the REA will be stored wholly within the existing disturbance footprint.
- Excess salvaged habitat features that will not fit in designated storage areas for reuse in rehabilitation may be placed into adjacent habitat as permanent features under the supervision of an ecologist
- Placement of salvaged habitat features into adjacent habitat will be undertaken using lifting machinery such as a crane so that disturbance to the native vegetation is avoided.

Salvaged topsoil will be suitable for reuse in rehabilitation of the REA where possible. Suitable topsoil will be sourced from areas of clearing that are inhabited only by native flora species. Store in stockpiles for reuse in rehabilitating the REA, but, if possible, minimise the time the topsoil spends in stockpiles to minimise the depletion of soil seed bank.

5.2.6.2 Threatened Ecological Communities

The amount of vegetation clearing will be minimised by micro-siting surface infrastructure such that the impacts to the CEEC have been reduced to avoid impacts CEECs (**Section 5.2.1**).

Additionally, any trees within the Vent shaft site that do not require removal to facilitate the construction of the Ventilation Shaft and its supporting infrastructure will be retained and protected. Further, the REA will be rehabilitated with flora species characteristic of SSTF to:

a) increase the range of available genetic material for the local extent of SSTF; and
b) improve habitat for threatened species, particularly Koalas (Section 5.6).

Retirement of biodiversity credits will be undertaken in accordance with Condition B37, Schedule 1, Part B (**Section 7.1**), thus contributing to ongoing preservation of SSTF and any other affected threatened entities in accordance with the BC Act.

Approved conservation advice from DoE (2014) in relation to Shale Sandstone Transition Forest suggests the following items in **Table 12.**

Table 12 Approved conservation advice for SSTF

Recommended Conservation Strategies (DoE 2014)	Where incorporated in BMP
Actions should avoid further clearance and fragmentation of surrounding ecological communities and native vegetation, including derived grasslands/shrublands. A buffer zone should be applied to minimise impacts from any activities adjacent to patches	Micro-siting and tree preservation is discussed in **Section 5.2.1** and construction area demarcation is addressed in **Section 5.2.2**
Ensure that plantings and any remnant trees are left to grow to maturity, and where necessary install artificial hollows (e.g., nest boxes)	Tree preservation is discussed in **Section 5.2.1**, active revegetation is addressed in **Section 5.4.2**
Fallen logs create habitat for a range of fauna. Retain and add logs to areas to improve habitat quality. A variation in log sizes and requirements are necessary for species specific utilization	Salvage and reuse of habitat features is addressed in **Section 5.2.6.1** and **Section 5.6**
Monitor for signs of new disease and identify new weed incursions early and manage for local eradication	Weed prevention is addressed in **Section 5.2.3** and **Section 5.3.3**, and weed control is addressed in **Section 5.3.4** and **Section 5.4.1**
Control introduced pest animals to allow natural regeneration and to manage threats, especially to threatened species.	Introduced pest control is discussed in **Section 5.4.4.**

5.2.6.3 Vegetation Clearing Procedure

The process for vegetation clearing will involve the following stages:

Stage 1

All non-habitat vegetation may be removed (i.e., under-scrubbing leaving hollow-bearing/habitat trees in place). Habitat trees to remain in place untouched for a minimum of 48 hours to allow unassisted departure of native fauna from remaining habitat.

Stage 2

- Removal of habitat trees under the supervision of an ecologist. Trees will be gently tapped with machinery several times (with several minutes wait in between) to encourage any resident fauna to leave.
- Habitat trees with hollows will be dismantled in pieces so that hollows are retained and lowered gently. Hollows will be inspected and any wildlife relocated or the hollow to be retained in situ until wildlife can be relocated effectively.
- Where fauna has not fled or does not seem likely to flee from a hollow the ecologist will advise on the potential to block hollow exits and move the section of the hollow-bearing tree with the fauna to the conservation area where the exits can be unblocked at an appropriate time of day and the animal left to exit and move on its own.
    - Where this method of relocation is not considered acceptable by the ecologist, the ecologist will attempt to capture or encourage any un-injured fauna that is capable to move or relocate from the project site.
    - If it proves difficult to remove an animal from a hollow, these trees/logs will be left on the ground overnight to give these animals a chance to relocate before the tree is mulched or moved.
    - Typically, most fauna in this situation will have multiple roosts throughout the region and will vacate the hollow and move away from the impact footprint.
- Any small and nocturnal fauna that are unable to relocate themselves, such as micro-bats, lactating females, will be captured, placed into individual calico bags, and then stored in a cool location for release after dusk. Any captured fauna will be released into suitable habitat off-site.
- If an animal is injured during these works, the ecologist will ensure that they receive the appropriate level of care. Depending on the level of injury, WIRES and/or the nearest veterinary clinic will be contacted to take the animal into care upon delivery by the ecologist.

5.3 During Construction Management Measures

5.3.1 Demarcation of Clearing Area and Construction Area

Continue to implement the management measures in **Section 5.2.2** for the duration of construction.

5.3.2 Contractor Education

Continue to implement the management measures in **Section 5.2.3** for the duration of construction and throughout the operational phase.

5.3.3 Weed Prevention

Weed prevention measures and methods for their implementation are detailed in **Table 13** below.

Table 13 Weed prevention measures and methods for their implementation

Weed Prevention Measure	Method of Implementation
Ensure all materials brought into the construction site (e.g., soil, mulch, gravel etc.) are certified free of weeds and pathogens	Environmental Manager responsible for approving all materials purchased or salvaged to be brought on site.

Weed Prevention Measure	Method of Implementation
Ensure correct machinery, vehicle and boot hygiene will be observed to help prevent the spread of invasive plant diseases and weeds threatening native plants, animals, and ecosystems. This will reduce the risk of introducing and spreading soil pathogens such as *Phytophthora cinnamomi* or *Batrachochytrium dendrobatidis* which causes amphibian chytrid fungus disease into the site, which may be inadvertently transferred into the adjacent environment	Contractor education is undertaken on induction and monthly. Methods of implementation to ensure all items are addressed is discussed in **Section 5.2.3.**
Use a wash-down facility for vehicles and machinery, or wash-down on a hard, well-drained surface, such as on a road	
Clean PPE (Personal Protective Equipment), especially boots, prior to unavoidable entry on foot into the native vegetation and rehabilitation area	
Minimise activities that cause soil disturbance as is practicable by: • Reducing disturbance footprints • Reducing soil disturbance by machinery where practical.	Micro-siting will reduce the area subject to soil disturbance, which is addressed in **Section 5.2.6.3**, and limiting area of soil disturbance for construction is addressed in the Erosion and Sediment Control Plan (ESCP).
Undertake planting and landscaping as soon as practicable after completion of an REA domain/construction activity.	Rehabilitation of the REA will be addressed in a Rehabilitation Strategy and Rehabilitation Management Plan. Section 5.6 contains required actions to be included in the Rehabilitation Management Plan to ensure improvement of biodiversity values is delivered.

5.3.4 Weed Control

This section of the report provides measures and actions to control weeds. Performance indicators can be found in **Section 6.40**.

5.3.4.1 Weed Control Actions

Weed maintenance in all areas disturbed as a result of construction (i.e., not including the REA rehabilitation) will be undertaken twice yearly at the beginning of Spring and Autumn to target weeds during peak growing periods as is best practice.

- Undertake maintenance weeding twice yearly in the disturbance footprint and the immediate adjacent natural bushland where weed incursion has been identified. The frequency and timing will be revised by a qualified bush regenerator depending on weed incursions; and
- Undertake follow-up inspections to assess the effectiveness of the weed management measures implemented and identify the requirement for any additional management measures.

5.3.4.2 Weed Control Methods

Weeds recorded on site are predominately herbaceous, they are detailed in **Section 4.6** and their specific control methods (where available) are provided in **APPENDIX E – Weed Species Control Methods**. The suite of weed species present should be regarded as ever changing as new weeds may be introduced by wind, stormwater runoff, native and pest animals, people and machinery (despite best efforts to adhere to weed prevention measures; **Sections 5.2.3** and **5.3.3**). As such, the generic weed control methods provided are suited to the site, however they will also allow bush regeneration subcontractors the greatest amount of flexibility to adapt to the ever-changing requirements of weed control and achieve the best outcomes for biodiversity on ground.

- Priority of weed control works will be determined according to the status of weeds found on site. The following hierarchy is given to target weed infestations:
    - Weeds of National Significance ('WoNS') (Commonwealth of Australia 2022)
    - Weeds listed under the NSW Biosecurity Act 2015 or the Biosecurity Regulation 2017 (NSW Government 2022b; 2022c)
    - Priority weeds listed for the Greater Sydney (NSW DPI 2022).
    - Secondary weeds, i.e. woody weeds, vines and abundant herbaceous weeds.
- Weeds should be treated in accordance with the recommended methods in the NSW Weed Control Handbook (Department of Primary Industries (DPI) 2018).
- An integrated weed management approach involving a combination of hand weeding and various chemical application will be implemented to avoid harm to non-target native species.
- Hand weeding reduces risk to adjacent non-target vegetation. Best applied to annuals and perennials, or immature woody weeds and vines.
- Given the nature of the site and expected type of weed incursions, there are limitations associated with hand removal. Best applied to annuals/perennials (large infestation), grasses, woody weeds, and vines. A mix of spot-spraying, Cut & Paint, and Scrape & Paint techniques can be utilised to apply chemicals to target weed species.
- Timing is important, thus planning to take advantage of seasonal attributes is key. For example., moist soil conditions after rain are good for hand-weeding and knowing flowering times to specific target weeds to spray before seed-set or during active growing. However, weeding on loose soil on steep slopes after rain is not practical or safe, and will be accounted for during maintenance weeding planning.
- Weed propagules will be disposed of appropriately at a green waste facility to minimise potential weed spread to the adjoining areas of bushland.

5.3.4.3 Herbicide Use

- Herbicides will only be used by appropriately trained and qualified bush regenerators or contractors.
- Chemical control options are provided in the New South Wales Weed Control Handbook available from NSW Department of Primary Industries WeedWise website (DPI 2018).
- Application of herbicides near waterways will be undertaken in accordance with the guidelines for use in and around water prepared by Cooperative Research Centre for Australian Weed Management (2005).
- Consider the most effective herbicide for the job regarding effect on target weed species, and chemical persistence in soil and water.
- Avoid over-spraying to mitigate soil being left bare and susceptible to erosion.
- All herbicide use will be as listed on the herbicide label, or as permitted by the Australian Pesticides and Veterinary Medicines Authority Off-label Permits.

5.3.5 Erosion and Sediment Management

Continue to implement the management measures in **Section 5.2.4** throughout construction.

5.4 Post Construction and During Operation Management Measures

5.4.1 On-going Weed Control

Continue to implement **Section 5.3.4** for 5 years after completion of construction, however, modify frequency of weed maintenance to adhere to the frequencies below. Weed maintenance in all areas disturbed as a result of construction (i.e., not including the REA rehabilitation) will be undertaken twice yearly at the beginning of Spring and Autumn to target weeds during peak growing periods as is best practice.

- The weed density and the age of the regenerating/revegetated area will dictate the frequency of weed maintenance. For example, assuming low-moderate weed incursion given the intact surrounding bushland and edge effect of the disturbed land and access roads, the recommended frequency of management for areas may include:
    - Naturally regenerating areas allowed to return to bushland 2 times a year.
    - Revegetated areas of 0-1 years will be weeded between 6-12 times a year.
    - Revegetated areas of 2-5 years will be weeded between 4-6 times a year.
    - Revegetated areas of 6+ years will be weeded 2-4 times a year.
- The frequency may vary due to the response of vegetation on the site (level of weed re-incursion); hence it is recommended that management be adaptive.

5.4.2 Regeneration and Landscaping

This section relates natural areas that have been disturbed to facilitated construction, and which are intended to be allowed to regenerate naturally on completion of construction activities (i.e., bushland adjacent to infrastructure/powerpoles/roads). Regeneration and landscaping measures for the REA have been provided in **Section 5.6** and included in the Rehabilitation Management Plan .

The site and surrounding bushland are in a moderate to good condition and existing regeneration in the transmission line and on the roadsides has been used as the basis of the assumption that disturbed areas will regenerate naturally in the absence of any unpredicted mitigating factors such as severe sedimentation or stock piling. Disturbed areas will be allowed to naturally regenerate from the soil seed bank when no longer needed to be clear.

Active regeneration may be required where significant disturbances have occurred (eg. stock piling, sedimentation breeches etc.) in order to comply with Condition B38 f(iii) to enhance the quality of vegetation, vegetation connectivity and wildlife corridors. Any areas of significant disturbance will be monitored, and active regeneration implemented. Active planting may be undertaken as a remediation measure in areas where natural regeneration is not considered to be progressing. The following points apply to assisted regeneration of cleared areas:

- Planting palette will be comprised of species of the PCTs recorded in undisturbed adjacent habitat (see **Section 4.2** and **APPENDIX D – Flora species for revegetation**), with consideration for incorporating preferred koala food trees listed in **Table 15**).
- In-fill planting to supplement natural regeneration will be undertaken each year in spring for at least two years, with monitoring for tubestock success for 5 years following construction.
- Large areas of unsuccessful tubestock will be recorded as they may indicate the requirement for soil improvement prior to replacement planting to ensure greater establishment success.
- During weed maintenance activity, established plants, particularly trees that are tall enough, will have tree guards removed in order not to inhibit growth.
- Ideally, watering will be applied for 4-6 weeks post planting and in the summer of the first year to ensure survival and establishment.
- Appropriately qualified bush regenerators will undertake active and infill planting and maintenance including weed control.

5.4.3 Erosion and Sediment Management

On completion of construction the erosion and sedimentation measures (i.e., silt curtains etc.) will be removed and disposed of appropriately after the area has undergone remediation and stabilisation by suitably qualified bush regeneration contractors within 1 year of construction completion.

Remediation and soil stabilisation methods may include placement of coir logs and jute matting, however the specific needs for any incidence requiring active regeneration will be specified by suitably qualified bush regeneration contractors engaged to undertake the works.

5.4.4 Feral Pest Animal Control

The *Biosecurity Act 2015* and *Local Land Services Act 2013* work together to regulate operations relating to feral animals, among other matters. The Greater Sydney Regional Strategic Pest Animal Plan aids the implementation of the state legislation at a regional level (LLS 2018). The legislation places the responsibility of feral animal control and management with the landowner, who will undertake actions to mitigate threats posed by feral animals.

Greater Sydney Local Land Services (GSLLS) are responsible for coordinating feral animal control programs with landholders and local Councils and implementing Regional Strategic Pest Animal Plans to achieve the goals of the State and National level pest management strategies and threat abatement plans.

Greater Sydney Regional Strategic Pest Animal Plan 2018 – 2023 (GSLLS, 2018) is the relevant regional pest management plan. The following state and national threat abatement plans may also apply:

- NSW Invasive Species Plan 2018 – 2021 (DPI, 2018a)
- NSW Fox Threat Abatement Plan (OEH, 2011)
- Threat abatement plan for competition and land degradation by rabbits (DEE, 2016)
- Threat abatement plan for predation by feral cats (DoE, 2015b)
- Threat abatement plan for predation by European red fox (DEWHA, 2008)
- Competition and land degradation by unmanaged goats (DEWHA 2008a)
- Threat abatement plan for predation, habitat degradation, competition, and disease transmission by feral pigs (Sus scrofa) (DEE, 2017)

5.4.4.1 Approach to Feral Pest Animal Control at Tahmoor South

Most pest species are highly mobile and can readily replace those that are killed in control programs. Unless actions are well planned and coordinated across a broad area, individual control programs are unlikely to have a lasting effect. As such, there are no specific management measures to control feral pest animals (eg. trapping, shooting), however the approach detailed below will be undertaken.

Methods of pest control may be chemical (pesticides), biological, or physical, but they are unlikely to have any lasting effect on pest species populations unless they are undertaken as part of a broader (group) feral animal control program. Local Land Services (LLS) coordinates group programs using a variety of control methods. Therefore, pest management (when required) at the site will be undertaken in consultation/collaboration with LLS and local Council, to achieve maximum benefit for biodiversity.

Given there is currently no baseline data regarding the existing populations of pest species at the site (with the exception of presence/absence data recorded by Niche during field campaigns listed in **Section 4.1**), the approach to feral animal control will be as follows:

1) Consult with LLS and/or Council to determine if there are any applicable feral pest control programs that can be considered in relation to the current Project.
2) Continue monitoring the presence of pest species population for fluctuations (see **Section 5.4.4.2**)
3) Undertake pest control actions once the presence of pests is understood.

Monitoring and methods are further discussed below:

5.4.4.2 Monitoring

Current monitoring is in place, which consists of cage trapping. Additional feral pest monitoring will be established in consultation with a qualified ecologist from the commencement of the BMP. Actions taken in response to any identified increase in pest activity will be highly dependent on consultation with LLS and Council. It is envisaged that the pest monitoring will entail:

- Camera trap monitoring placed across the area immediately adjacent to the study area. Two to four camera traps will be enough to detect the presence of rabbits, foxes, and feral cats.
- Site walk over to determine the presence of dens, burrows and scats within the study area and immediate surrounds.

Data will be collected in late Spring and/or late Autumn. Data collected may provide insight into key locations for targeted pest control if required:

- Pest species group i.e., Deer, Rabbit, Fox, Cat, Dog, Rat etc.
- Location of camera trap
- Number of camera triggers per pest species at each camera
- Date and season.

5.4.4.3 Methods for the Control of Pest Animals

Feral pest control may be undertaken using one, or a combination of the methods listed in **Table 14** below. A qualified pest contractor will be consulted to advise on the suitability of each method. The level of intensity will be determined based on the monitoring results, and existing feral pest control programs in the area.

It is envisaged that the site will be treated once a year by methods in the table during the pre-construction, construction, and operational phase.

Table 14 Pest control methods that may be considered

Control type	Target species	Details
Poison baiting	Wild dogs, cats and foxes	Under Section 4.4.1 of the *Pesticides Act 1999* Pesticide Control (1080 bait products) Order, 1080 wild dog baits must not be laid within one hundred and fifty (150) metres of a habitation. Some exceptions apply, however LLS will be consulted with regards to any baiting plan. Additionally, Section 4.2 states that 1080 wild dog baits must not be laid within close proximity to urban areas unless the baiting program is planned in conjunction with, and has been approved by, an Authorised Control Officer. A program approved under this condition must include strategies for minimising risk to non-target animals. Further, the Pesticide Control (1080 Bait Products) Order 2020 states that not more than 20 baits per 100 hectares are to be used. To acquire and use 1080, Pindone, RHDV, or PAPP baits in NSW, you must be accredited (or under the direct supervision of an accredited person) with an AQF3 Chemical Accreditation or Vertebrate Pesticide Induction Training (VPIT) course accreditation.
Trapping	Wild dogs, cats, foxes, wild pigs	Live trapping may be a suitable method of pest control to be used within the site, however it still poses a risk to non-target domestic animals. Trapping may be undertaken to remove particularly problematic individual animals. However, as with the other methods of pest control, trapping at the site alone is unlikely to make any significant difference to pest populations unless it is undertaken as part of a larger regional group control program. Key points for consideration with regards animal welfare and to trapping are: • Set traps at dusk and check traps just before dawn to ensure safe release of nocturnal native species

Control type	Target species	Details
		• Check trapped non-target animals for injuries prior to release and take into care where necessary • Arrange for ethical and humane euthanasia of introduced species prior to the trapping campaign • If animals must be moved, cover them to minimise distress. • Trapping for effective animal control • Choose suitably sized traps • Place traps along regular animal trails (e.g., along fence lines, creeks etc.) • Ensure traps are as natural as possible (e.g., create an illusion of a tunnel by covering the trap with natural materials, weather traps to remove unnatural scent, wear gloves to avoid imparting human scent). Refer to A Guide to Fox and Feral Cat Control for more tips for a successful trapping campaign and animal welfare considerations including actions for trapped non-target animals (Butcher & Hill 2017), and Trapping feral animals in bushland remnants for improving trap efficiency (Wheatbelt NRM n.d.).
Den fumigation and ripping	Fox, rabbits	Den fumigation is suitable to control rabbit populations in high conservation value areas and in areas. Den ripping destroys warrens using a tractor or bulldozer fitted with single or multiple-tined rippers. The technique used will vary depending on local conditions such as soil type, position of warrens and type of equipment available. Given that this destructive method of pest control is not consistent with the environment conservation aims of this BMP, it is not recommended.
Other options considered		Other options of pest control include shooting and biological control. Shooting is an unsuitable method of pest control at this site as it poses ignition risks, risks to infrastructure integrity, staff, and nearby residents. Recent biological control programs include the release of the Rabbit Haemorrhagic Disease Virus known as RHDV1-K5 (RHDV) throughout the region commencing 17 February 2021. This type of pest control is effective at large, regionwide scales and would not be appropriate to implement on site.

5.4.5 Fauna Habitat Improvement

5.4.5.1 Improvement of Koala habitat

In accordance with Condition B38 (e)v, Koala food trees will be planted in the REA rehabilitation area to re-establish Koala habitat. Monitoring and performance indicators are provided in the Rehabilitation Management Plan, required measures for inclusion in the Rehabilitation Management Plan are provided in **Section 5.6**.

Micro-siting and minimising impacts to native vegetation will preclude any significant capacity for re-establishment of Koala habitat in areas cleared for construction without compromising asset protection zones. Preferred Koala food trees are required to form part of the planting palette for active regeneration where it may be required (**Section 5.4.2**).

5.4.5.2 Installation of scarce habitat features

In accordance with Condition B38 (f)iv, nest boxes will be installed in the REA rehabilitation area. Monitoring and performance indicators will be provided in the Rehabilitation Management Plan, required measures for inclusion in the Rehabilitation Management Plan are provided in **Section 5.6**. Salvaged logs will be placed prior to preparation of the area for planting, however nest boxes may only be installed when the trees are large enough to support them (**Section 5.6**).

5.4.6 Management Measures for Native Seed Collection and Propagation

Native seed collection should be undertaken in accordance with the Australian benchmark guidelines developed by Florabank for native seed collection. Appropriately qualified, experienced and licenced contractors must be used for native seed collection, and must adopt the Model Code of Practice and Refer to the following resources as is the current industry standard:

- Florabank Guidelines: Model Code of Practice
- Florabank Guideline 1: Native Seed Storage for revegetation
- Florabank Guideline 2: Basic Methods For Drying, Extraction And Cleaning Native Plant Seed
- Florabank Guideline 3: Improving On Basic Native Seed Storage
- Florabank Guideline 4: Keeping Records On Native Seed
- Florabank Guideline 5: Seed Collection from Woody Plants for Local Revegetation
- Florabank Guideline 6: Native Seed Collection
- Florabank Guideline 7: Seed Production Areas for Woody Native Plants
- Florabank Guideline 8: Basic Germination and Viability Tests For Native Seed Plant
- Florabank Guideline 9: Using Native Grass Seed In Revegetation
- NSW Office of Environment and Heritage: Seed Collecting
- Greening Australia (2003): Revegetation Techniques

5.4.6.1 Native Seed Collection

The Native Seed Collection Strategy is to be prepared and undertaken by the bush regeneration subcontractor engaged to undertake the works.

APPENDIX D – Flora species for revegetation identifies the flora species found in SSTF. It is recommended that at least two to three species from each of the growth-form groups (trees; shrubs; sub-shrubs; herbs and vines; and grass and grass-like plants) be targeted for collection. The target species will depend on flowering times and/or the practicality and ease of seed harvest. Note, seed and tubestock of many of these species (and others indigenous to SSTF), are readily available from local nurseries/suppliers.

5.4.6.2 Using the Seed for Revegetation

A combination of planting propagated tubestock and direct seeding will be used to revegetate the REA. The following management measures are to be incorporated in the Native Seed Collection Strategy to be prepared by the subcontractor engaged to undertake the works:

- The native seed to be used for propagation of tubestock will be propagated by a suitably qualified native plant nursery engaged to undertake the work;
- Direct seeding of harvested seeds will be undertaken by the bush regeneration subcontractor engaged to undertake the works;
- Seed collection for tubestock propagation must commence on completion of construction in order for the tubestock to mature sufficiently by the time the first cells of the REA are ready for rehabilitation;
- Seed must be harvested yearly to keep a continual supply of tubestock and seed for direct seeding as the cells of the REA become progressively available for revegetation;
- The soil on the REA will be highly disturbed reject materials and will require substantial and stabilisation preparation prior to planting and/or direct seeding. Further, placement of salvaged logs must be completed after soil preparation and before planting/seeding;
- Direct seeding will be followed up by light raking to lightly bury the seed and improve chances of germination and seedling establishment; and
- Seed viability and ability to germinate depend greatly on the quality of the harvested seed, and the soil into which it is sown. As such, it is suggested that seed viability testing is undertaken prior to

direct seeding would enable the contractor to gauge the density at which seed harvested on site should be sown, thus reducing the likelihood of under-sowing resulting in insufficient germination and seedling establishment or over-sowing and wasting a scarce resource.

5.5 Management Measures and Procedures Applicable to All Stages

5.5.1 Management of Potential Conflicts with Aboriginal Heritage Values

There are no biodiversity management conflicts with Aboriginal heritage values within the area to which the BMP applies.

5.5.2 Fauna Injury and Entrapment Procedure

The following procedure will guide actions taken in the event that fauna is injured during any clearing activity or trapped and/or injured during construction or operation.

1. Should fauna be observed near the works area, and they are potentially at risk of being harmed, then the following procedure will be followed:
    a. Contact the site supervisor
    b. The site supervisor reviews if the animal is at risk of being harmed
    - If yes, all works in the vicinity of the animal (works in other areas may continue) will be halted. The animal, if highly mobile (such as Kangaroo) will be slowly and gently encouraged to leave the construction area (i.e., corralled toward).
    - If the animal is not at risk of being harmed, then works will be halted in the vicinity of the animal until it moves on (works may continue in other areas of the site).
    - If the animal is not capable of moving on of its own accord, then the following steps will ensue.

2. If an animal is found within the site that is injured the following procedure will be implemented:
    a. Contact the site supervisor
    b. The site supervisor determines the most appropriate person to engage:
    - Project ecologist, or
    - The Wildlife Information and Rescue Services (WIRES), who will respond to all sick, injured or orphaned native wildlife queries.

3. If the injuries are too great for the animal to be relocated, then the animal will be taken to a WIRES Wildlife Carer or Veterinary Clinic.

5.5.3 Bushfire Hazard Management

Tahmoor Coal currently has a Bushfire Management Plan, which will continue to be implemented. The Bushfire Management Plan has been updated by a suitably qualified bushfire consultant, to address the following for the Tahmoor South Project, which are intended to protect the bushland and the assets from fire/bushfire:

- Prevention of fire ignition from machinery during construction and operation;
- Vehicles to contain fire extinguishers and spill kits;
- Fire awareness and fire safety training to be included in the induction of all Tahmoor South personnel and contractors required to access the site to reduce the risk of bushfire;
- Asset protection zones to be maintained by slashing; and

- Weed control in asset protection zones may constitute slashing to achieve required vegetation height to allow emergency response vehicle access.
- Given the proximity of the site to the bushland and the flammable nature of Tahmoor's product, ecological burns in the adjacent bushland are not recommended. Selective slashing in adjacent bushland by a suitably qualified bush regeneration subcontractor may also be considered as an approach to reducing bushfire fuel loads, maintaining a mosaic of structurally diverse woodland and protecting the assets. Advice for achieving ecological bushfire hazard reduction would be required to be provided by a suitably qualified bushfire consultant.

5.6 REA Rehabilitation Management

Rehabilitation of the REA will be undertaken in stages. Details pertaining to the rehabilitation of the REA are described in the Rehabilitation Strategy and Rehabilitation Management Plan, which has been prepared in accordance with Consent Condition B58, B59, B60 and Condition E5. Substantial integration of the BMP, Rehabilitation Strategy and Rehabilitation Management Plan are required to achieve the biodiversity objectives for the rehabilitated site for closure purposes.

Table 15 below outlines measures that have also been incorporated into the Rehabilitation Management Plan for positive outcomes for biodiversity.

Table 15 Biodiversity Measures for REA Rehabilitation

Measure	Description
Maximise the use of salvaged resources, including tree hollows, vegetation, and soil resources, for beneficial reuse, including fauna habitat enhancement (B38 (e) iv)	• Salvaged habitat features that have been stockpiled since clearing was undertaken may be evenly placed on the ground throughout the rehabilitation area under the supervision of a qualified ecologist. • Placement of coarse woody debris in the rehabilitation areas will not exceed benchmark values as specified in BioNet Vegetation Classification (or equivalent) at the time of commencement of the relevant stage of rehabilitation. • No monitoring will be undertaken following placement of coarse woody debris habitat features, as the surrounding habitat will consist of planted tubestock and take a substantial amount of time to recover to a point where it is conducive to regular use of introduced coarse woody debris by local native fauna. • Salvage topsoil suitable for reuse in rehabilitation of the REA. Store in piles for reuse in rehabilitating the REA. • If feasible, source fresh donor topsoil from newly cleared areas supporting any of the PCTs that occur within and adjacent to the disturbance area. The use of fresh donor soil would promote establishment of native species from the soil seedbank. Case studies found the use of fresh donor topsoil resulted in the establishment of at least 33% more species than the use of stockpiled topsoil (Commonwealth of Australia 2016).
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 (B38 (f) v)	Note in relation to condition (f) v, which states to "…promote the use of these introduced habitat features by threatened fauna species": Promotion of the use of nest boxes by target species typically requires the nest box program to be extensive and to target a single species or species group (i.e., threatened gliders) to achieve any level of success (e.g., Libois et al., 2012; Rueegger et al., 2013; Olah et al., 2014). Otherwise, there is limited empirical evidence to suggest that nest boxes will be occupied by target threatened species to the extent that the local population would benefit (Goldingay et al., 2015). Additionally, the site is surrounded by in-tact native vegetation which likely supports many naturally occurring hollows. As such, use of the nest boxes by any common species will be taken to indicate that a naturally occurring hollow in native bushland is vacant for potential use by more sensitive threatened species.

Measure	Description
	• A nest box strategy is to be prepared which provides guidelines for the placement and monitoring of nest boxes within the REA rehabilitation areas once planted trees reach an average Diameter at Breast Height (DBH) of 20 centimetres (cm) and are likely to be capable of supporting an occupied nest box (Le Roux et al. 2016). This measure may assist to encourage fauna to move back into the rehabilitation areas. • Nest box selection will target the range of threatened fauna recorded or considered to have a moderate to high likelihood of occurrence (see **Section 4.5**). • Nest boxes will be placed in trees by climbing arborists under the supervision of a qualified ecologist.

Re-establish habitat for the Koala, as well as other threatened fauna (B38 (e) v)	• Habitat needs to minimise the likelihood of vehicle strike. Avoid planting near main roads when restoring habitat. When constructing new roads or obstacles, avoid putting them within and between koala habitat patches. Fences can also create barriers to koala movement. Avoid planting feed trees around fences (Wegner & Taws, 2019).
	• A range of species composition and structure is required to support other threatened fauna within the revegetated area, particularly species for foraging, shelter, and breeding.
	• According to Wegner and Taws (2019) Koalas prefer areas that have:
	  ○ Minimum 30% of total canopy trees as preferred food trees;
	  ○ A mix of non-eucalypt trees and shrubs for shelter and other behavioural purposes (social); dense foliage species help koalas stay cool in summer;
	  ○ Koala forage from both young and old food trees, with DBH ranging between 26 and 80 centimetres. Koalas prefer to rest on old trees;
	  ○ Water source nearby to increase higher leaf moisture and water to drink; and
	  ○ Good connectivity between habitat patches will support Koalas and other threatened fauna, however Koalas can travel distances of several kilometres across open ground.
	• Use a diverse planting palette but include plenty of koala feed trees from the list of koala use trees as defined by Schedule 2 of the State Environmental Planning Policy (Koala Habitat Protection) 2020 and DPIE (2021). Listed Koala feed trees that can be found in the neighbouring PCT's and are known to be preferred by local koalas are:
	  ○ Grey Gum (*Eucalyptus punctata*);
	  ○ Forest red gum (*E. tereticornis*); and
	  ○ Blue-leaved Stringy Bark (*Eucalyptus agglomerata*).

Enhance the quality of vegetation, vegetation connectivity and wildlife corridors including through the assisted regeneration and/or targeted revegetation of appropriate canopy, sub-canopy, understorey and ground strata (B38 (f) iii)	• Good site preparation and follow-up maintenance of plantings are critical to their long-term viability. Some sites may require several years of watering and weed management. • Planting palette will be comprised of species of the PCTs recorded in undisturbed adjacent habitat (see **Section 4.2**). • Planting densities will aim to mimic the PCT composition. • In-fill replacement planting to replace unsuccessful tubestock will be undertaken each year in autumn for at least two years per domain. • Large areas of unsuccessful tubestock will be recorded as they may indicate the requirement for soil improvement prior to replacement planting to ensure greater establishment success. • During weed maintenance activity, established plants, particularly trees that are tall enough, will have tree guards removed in order not to inhibit growth. • Ideally, watering will be applied for 4-6 weeks post planting and in the summer of the first year to ensure survival and establishment. • Appropriately qualified bush regenerators must undertake the rehabilitation planting, infill planting and maintenance including weed control.

Measure	Description
Manage the collection and propagation of seed from the local area (B38 (f) viii)	• Seed harvesting and propagation from surrounding areas (and threatened species) will begin at least two years before rehabilitation of the REA commences, this will ensure the tubestock is well established prior to planting. • Appropriately qualified bush regenerators must prepare and implement a Native Seed Collection Strategy, which adheres to the Australian benchmark guidelines developed by Florabank for native seed collection. • Appropriately qualified, experienced, and licenced contractors must be used for native seed collection and must adopt the Model Code of Practice. • Appropriately qualified bush regenerators must undertake the salvage, transplanting and propagation of any flora species, and collection and propagation of seed from the local area. • Utilise locally sourced seed wherever possible to propagate tubestock to be used for revegetation
Minimise impacts to threatened ecological communities listed under the BC Act and EPBC Act, and contribute to conservation strategies for these communities (B38 (f) i)	• The planting palette will be comprised of diagnostic species of the PCTs recorded in undisturbed adjacent habitat. • Areas of revegetation will aim to mimic the species composition of SSTF – these areas will be specified in a Rehabilitation Management Plan.
Control weeds, including measures to avoid and mitigate the spread of weeds (B38 (f) ix)	In addition to the weed control measures detailed in **Section 5.3.1**, the following weed control measures apply to the REA. • Appropriately qualified bush regenerators must undertake the revegetation maintenance including weed control. • Undertake maintenance weeding in the disturbance footprint and adjacent natural bushland where weed incursion has been identified. Dependent on the weed density and the age of the revegetated area will dictate the frequency of weed maintenance after completion of the domain. • Spot spraying is recommended to control weeds on steep slopes at risk of erosion. • Jute matting may be used to secure steep slopes of the REA and supress weed growth.

5.7 Subsidence Management Strategies and Measures

5.7.1 Mine Design Considerations

The Tahmoor South Domain mine plan has undergone a series of amendments since the issue of the first EIS for the Tahmoor South Project in 2014. These mine plan revisions are summarised below:

- EIS Submission (2014): Original EIS submission, which was placed on hold and subsequently withdrawn in late 2015.
- EIS Submission (January 2019): Updated EIS submission based on revised Secretary's Environmental Assessment Requirements (SEARs) issued in June 2018.
- Project Amendment Report (February 2020): The mine design was modified to reduce potential environmental impacts of the Project through the reduction in the extent of longwall mining. This was achieved by the following modifications:
    - Removal of LW 109, which was located directly beneath Dog Trap Creek, resulting in elimination of direct impacts to Aboriginal heritage items;
    - Configuration of the longwall layout to comprise two series of shorter longwall panels;

- Reduction in the proposed longwall width, from approximately 305 m to approximately 285 m; and
- Reduction in the height of extraction within the longwall panels from up to 2.85 m to up to 2.6 m.

- Second Amendment Report (August 2020): The mine design was again modified to further reduce potential environmental impacts. This included the removal of two longwalls in the southern part of the mine near the township of Bargo (LW 107B and LW108B), which would result in a reduction in magnitude of subsidence impacts.

The numerous modifications of the Tahmoor South Domain mine plan have resulted in a reduction of the magnitude and extent of subsidence impacts, as well as avoidance of significant impact to sensitive surface features of the environment, including Aboriginal heritage items.

The current mine plan proposes to complete underground mining with access to the Tahmoor South Domain provided from the existing pit top facilities. This mine design consideration minimises surface impacts from mining through the avoidance of establishing new surface facilities.

5.7.2 Management and Remediation Measures

5.7.2.1 Management Measures

There are no management measures identified for terrestrial or aquatic biodiversity in relation to the extraction of LW S1A – S6A. All potential impacts to biodiversity that may arise would be from modification to stream flow. As such, the Water Management Plan contains Management and remediation measures for rectifying impacts to stream flow.

5.7.2.2 Remediation Measures

There are no remediation measures identified for terrestrial or aquatic biodiversity in relation to the extraction of LW S1A – S6A. In the event of impact to flow refer to the Water Management Plan and any Corrective Management Action Plan that may be created in response to identified impacts.

5.7.2.3 Verification Methods

Niche recommend aquatic monitoring to be undertaken following any remediation measures implemented to rectify impacts to stream flow.

5.7.3 Trigger Action Response Plan

A series of TARPs have been developed to address various components of aquatic and terrestrial ecology using the performance indicators for implementation during LW S1A-S6A mining, in accordance with Condition C8(g)(viii) of the Consent (refer to the Extraction Plan Biodiversity Management Plan).

The primary actions of the TARP are to:

- Define appropriate trigger levels for aquatic and terrestrial ecology in proximity to waterbodies;
- Develop specific actions to respond to high risk of exceedance of any performance measure to ensure that the measure is not exceeded; and
- Present a plan in the event performance measures are exceeded or are likely to be exceeded and describe the management / corrective actions to be implemented (i.e., notifications to relevant agencies, groundwater monthly/quarterly reviews, revision in any Corrective Action Management Plan and/or Six-monthly Subsidence Impact Reports and/or Annual Review).

Level 1 of each TARP indicates that the environment is performing within normal levels or natural variability. Deviation from baseline or expected condition triggers an increased level of risk to the environment (Level 2 or higher based on escalating corresponding risk).

6 Monitoring

Monitoring and inspections of disturbed areas will be conducted to assess the effectiveness of control programs (weeds, pests etc.) and to ascertain the requirement for further work.

The effectiveness of biodiversity management controls will continue to be evaluated throughout the life of the mine and additional management controls will be investigated and implemented where practicable.

A summary of management measures and their effectiveness is provided in **Section 6.1**. Adaptive management and continuous improvement measures pursuant Consent Condition B38 E5 (d) will be implemented accordingly as outlined in **Section 6.4**.

6.1 Periodic Auditing

Internal monthly audits will take place to assess the performance of the following measures against the performance indicators in **Table 17:**

- Fauna injury and entrapment (**Appendix A**)
- Maintenance of Asset protection zones (covered in the bushfire management plan)
- Disturbance area demarcation (covered in the Ground Disturbance Permit and Work Authorisation Permit)
- Erosion and sediment control measures (**Appendix B** and the Ground Disturbance Permit)
- Contractor education (undertaken through delivery of annual environmental awareness training), and
- Weed prevention (**Appendix B**).

Annual audits (Appendix A) will take place to assess the effectiveness of the following management actions:

- Ongoing weed control
- Feral pest animal control, and
- Fire-fighting equipment.

6.2 Contingency Plan

In accordance with Condition E5 (f) of the Consent, in the event that monitoring indicates performance measures are considered to have been exceeded or are likely to be exceeded, a contingency plan will be implemented. This contingency plan will include:

- Investigation, identification and assessment of exceedance or likely exceedance;
- An audit of the current BMP and existing management measures;
- Identification of management measure improvements or required remediation measures;
- Identification of additional monitoring where required to inform proposed remediation measure effectiveness.

The success of remediation measures that have been implemented for any exceedance would be reviewed as part of any Corrective Action Management Plan and documented in the Annual Review.

6.2.1 Adaptive Management/Continuous Improvement

In accordance with Condition E4 of the Consent, where any exceedance of the criteria or performance measures outlined within this document has occurred, Tahmoor Mine will:

a) take all reasonable and feasible steps to ensure that the exceedance ceases and does not recur;

b) consider all reasonable and feasible options for remediation (where relevant) and submit a report to the Department describing those options and any preferred remediation measures or other course of action;
c) within 14 days of the exceedance occurring (or other timeframe agreed by the Planning Secretary), submit a report to the Planning Secretary describing these remediation options and any preferred remediation measures or other course of action; and
d) implement reasonable remediation measures as directed by the Planning Secretary

Tahmoor Coal have adopted the "Plan-Do-Check-Act" model as shown in Figure . This model will be applied to all aspects of Tahmoor Coal's environmental management and is utilised to embed the continuous improvement process in all system documents.

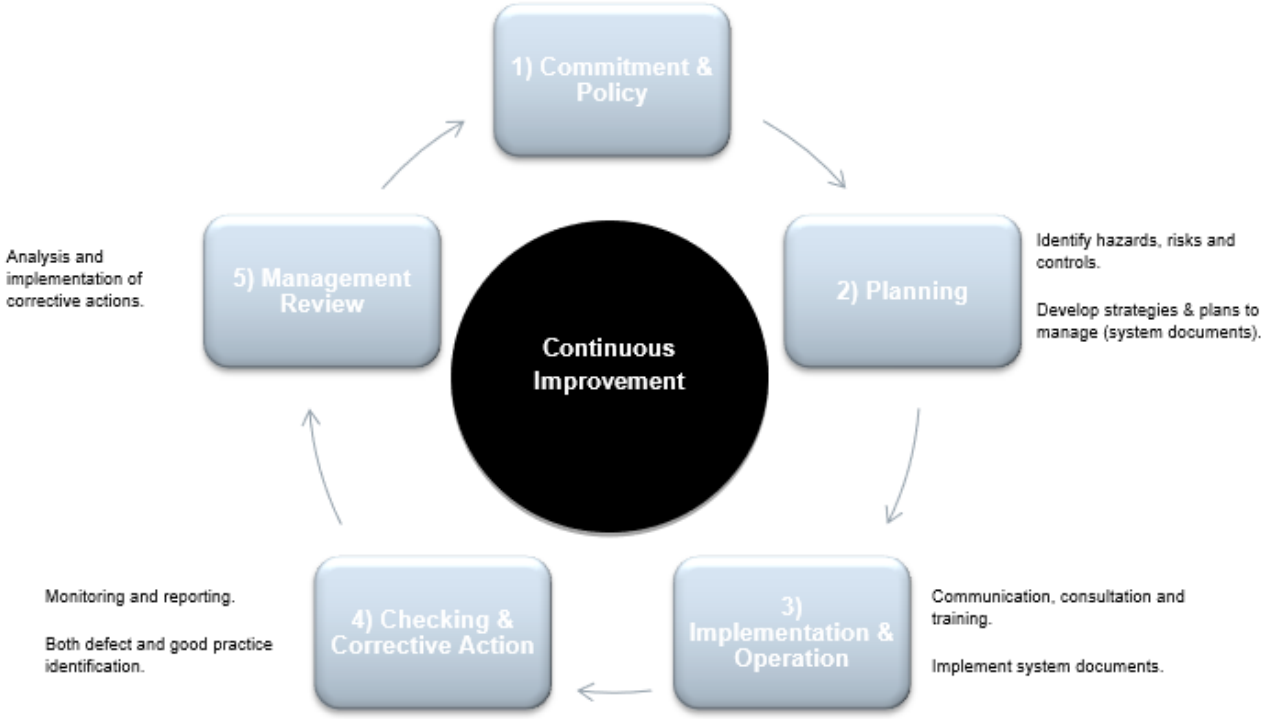

Figure 5: Continuous Improvement Model

6.3 Risks to the successful implementation of the BMP

Environmental factors present the greatest degree of risk to the implementation of the BMP as these are uncontrollable variables. Non-environmental risks can be controlled at the site level. Details of risks, the perceived severity of risk to biodiversity and contingency actions are provided in **Table 16** below.

Table 16 Risks to the successful implementation of the BMP and contingency actions

Risk aspect	Risk level	Contingency actions
Environmental factors		
Drought supressing growth and/or preventing natural regeneration following disturbance or increasing the rate of tubestock loss in planted areas.	High	Additional extended period of watering tubestock will be implemented following planting through Spring until the end of Autumn in the absence of adequate rain to reduce losses.
Excessive rain causing significant breeches of sediment and erosion control measures and subsequent damage	High	Coir logs, jute matting and active revegetation will be used to rehabilitate any affected adjacent habitat, and

to the adjacent habitat.		will assist to mitigate topsoil loss during future excessive rain events.
Bushfire that would result in a change in structure and successional pathway of regenerating native vegetation and/or significant losses to planted vegetation.	High	There is nothing that can be done to mitigate bushfire impacts to revegetation that would not require additional clearing to establish an asset protection zone. Incorporation of ecological slashing cycles of adjacent vegetation may be considered to be incorporated into the Bushfire Management Plan, which would assist in reducing fuel loads while maintaining a diverse mosaic of habitat structure in the surrounding bushland.
Non-environmental factors		
Noncompliance of contractors with environmental awareness training resulting in damage to the environment and introduction of weeds.	Moderate	Provided in **Table 17.**
Subcontractor continually fails to complete their task correctly (e.g. install sedimentation measures or undertake weed control poorly).	Low	All engaged subcontractors will be identified with pre-qualified checks to make sure only qualified personnel attend the site. All personnel are inducted and undergo environmental awareness training. Continued failure of a subcontractor to perform their duties should trigger reassignment of the contract to another provider.
Shortage of materials for mitigation measures (e.g. sediment fencing or ATF Fencing) or interruptions to the supply chain.	Moderate	Work will not commence until all appropriate environmental protection measures are in place or a suitable and effective alternative has been installed.

6.4 Monitoring, Performance Indicators and Contingency Plan

The monitoring and associated performance indicators associated with each of the management actions are provided in **Table 17**. The table also includes details on the responsibility of the action, and the contingency measure if required.

Table 17 Monitoring and performance indicators

Management activity	Term	Monitoring proposed	Responsibility	Performance Indicator	Contingency action	Report on effectiveness/completion
Pre-construction						
Vegetation and Fauna Protection Through Design and Micro-siting Infrastructure	Short term	Not required.	Design team, regulator consultation representatives	Infrastructure designed to utilise as little space as possible to maximise the amount of habitat retained.	Revise plans based on regulator comments until approval is granted.	Vegetation and fauna protection through design and micro-siting Infrastructure deemed effective on approval of detailed design drawings by DPIE in accordance with condition A9.
Demarcation of Clearing Area and Construction Area	Short term – before and during construction	Pre-clearing audit to determine if fencing is installed correctly in the right locations.	Environmental Manager	Fence is in place and no vegetation clearing to occur beyond clearing limits.	Fix the fence to comply with **Section 5.2.2**. Where any clearing has been undertaken outside demarcated area active revegetation must commence immediately per **Section 5.4.2.**	Results of monthly audit are filed and can be made available on request. Rectification of breech to be inspected by project Ecologist and confirmation of effectiveness to be provided in a letter report.
Contractor Education	Long term – environmental awareness training in place and ongoing	Monthly audit.	Environmental Manager	No evidence of encroachment by heavy plant, vehicles or personnel in retained areas	Re-educate contractors in accordance with **Section 5.2.3.** Where any breech has occurred outside demarcated area that results in a loss to vegetation, active revegetation must commence immediately per **Section 5.4.2.**	Results of monthly audit are filed and can be made available on request. Rectification of breech to be inspected by project Ecologist and confirmation of effectiveness to be provided in a letter report.
Erosion and Sediment Management	Medium term – at least 1 year after construction or until all sediment	Monthly audit.	Environmental Manager	Sediment fencing installed in accordance with the Blue Book (Landcom	Repair sediment fencing to comply with the Blue Book (Landcom 2004), and mitigate erosion and	Results of monthly audit are filed and can be made available on request. Rectification of breech to be

	issues are resolved.			2004). No breeches of sediment fencing. No major erosion left unmitigated.	sedimentation in accordance with **Section 5.2.4.** Active revegetation must commence immediately per **Section 5.4.2** where any significant breech in erosion and sediment control that has resulted in damage to native vegetation.	inspected by project Ecologist and confirmation of effectiveness to be provided in a letter report.
Pre-clearance Management Measures and Surveys - Fauna	Short term – at least 1 week before vegetation clearing	Monitoring not required. Supervision during clearing operation to be undertaken.	Project Ecologist	Minimal impacts to fauna during vegetation clearing activities.	Implement fauna injury and entrapment procedure in **Section 5.5.1.**	Supervising Ecologist to provide results and confirmation of effectiveness in a letter report.
Pre-clearance Management Measures and Surveys - Flora	Short term – at least 1 week before vegetation clearing	Monitoring the translocated plants will form a part of the translocation plan to be prepared by the suitably qualified and experienced bush regenerators engaged to undertake the works.	Project Bush Regenerator	All threatened flora species within the disturbance area salvaged for transplantation and/or propagation.	To be specified in the translocation plan.	This measure is variably effective depending on species, preparation and characteristics of recipient sites, bush-regenerator skill. On completion of each monitoring event the Project Bush Regenerator would submit a summary of results and recommendations for improvements.
Clearing of Vegetation - Maximise the salvage of resources	Short term – at least 1 week before vegetation clearing	Not required.	NA	Salvage and subsequent relocation and/or storage for later reuse of habitat features. Salvage of all suitable topsoil inhabited by native flora species.	Where salvaged resources are inappropriate or inadequate, additional resources to be sourced from another nearby local development.	Project ecologist to supervise relocation, reuse and/or storage of habitat features and provide a letter report confirming satisfactory completion.

Clearing of Vegetation - Threatened Ecological Communities	Short term – at least 1 week before vegetation clearing	Monitoring not required. Supervision during clearing operation to be undertaken.	Project Ecologist	Minimal impacts to Threatened Ecological Communities during vegetation clearing activities.	Active revegetation must commence immediately per **Section 5.4.2** where any breech of limit of clearing demarcation has resulted in damage to native vegetation.	Supervising Ecologist to provide results and confirmation of effectiveness in a letter report. Rectification of breech to be inspected by project Ecologist and confirmation of effectiveness to be provided in a letter report.
Clearing of Vegetation - Vegetation Clearing Procedure	Short term – at least 1 week before vegetation clearing	Monitoring not required. Supervision during clearing operation to be undertaken.	Project Ecologist	Minimal impacts to fauna during vegetation clearing activities.	Implement fauna injury and entrapment procedure in **Section 5.5.1.**	Supervising Ecologist to provide results and confirmation of effectiveness in a letter report. Rectification of breech to be inspected by project Ecologist and confirmation of effectiveness to be provided in a letter report.
During construction						
Weed Prevention	Long term – for the duration of construction and throughout operation	Monthly audit.	Environmental Manager	Relevant information included in site induction and Tool Box talk.	Re-educate contractors in accordance with **Section 5.2.3.** Where any breech has occurred outside demarcated area that results in a loss to vegetation, active revegetation must commence immediately per **Section 5.4.2.**	Results of monthly audit are filed and can be made available on request. Rectification of breech to be inspected by project Ecologist and confirmation of effectiveness to be provided in a letter report.
Weed Control	Long term – for the duration of construction and throughout operation	Biannual walk over in early Spring and early Autumn by site bush regenerator prior to weed maintenance.	Project Ecologist and Project Bush Regenerator	Minimal incursion of weeds into adjacent habitat. Weed densities stay within a reasonable range of baseline.	Additional weeding event to control major incursions.	Project bush regenerator to provide short letter report containing results of inspection, determine extent of weed occurrence and report on adaptive management actions required.

Erosion and Sediment Control	Medium term – at least 1 year after construction or until all sediment issues are resolved.	Monthly audit.	Environmental Manager	No breeches of sediment fencing. No major erosion left unmitigated.	Repair sediment fencing, mitigate erosion and sedimentation in accordance with **Section 5.2.4.** Active revegetation must commence immediately per **Section 5.4.2** where any significant breech in erosion and sediment control that has resulted in damage to native vegetation.	Results of monthly audit are filed and can be made available on request. Rectification of breech to be inspected by project Ecologist and confirmation of effectiveness to be provided in a letter report.
Demarcation of Clearing Area and Construction Area	Short term – before and during construction	Monthly audit to determine if fencing is installed correctly / damage repaired	Environmental Manager	No evidence of encroachment by heavy plant, vehicles or personnel	Fix the fence to comply with **Section 5.2.2**. Where any clearing has been undertaken outside demarcated area active revegetation must commence immediately per **Section 5.4.2.**	Results of monthly audit are filed and can be made available on request. Rectification of breech to be inspected by project Ecologist and confirmation of effectiveness to be provided in a letter report.
Post Construction and During Operation Management Measures						
On-going Weed Control	Long term – for 5 years after construction completion	Biannual walk over in early Spring and early Autumn by site bush regenerator prior to weed maintenance to assess the extent of weed coverage and direct the frequency/timing of the weed control going forward.	Project Bush Regenerator	Minimal incursion of weeds into adjacent habitat. Weed densities stay within a reasonable range of baseline.	Additional weeding event to control major incursions.	Project bush regenerator to provide short letter report containing results of inspection, determine extent of weed occurrence and report on adaptive management actions required.
Regeneration and Landscaping	Medium term – years 1 - 5 after	Biannual walk over in early Spring and early	Project Bush Regenerator	Any areas where natural regeneration	Active planting to be implemented where	Project bush regenerator to provide short letter report

	construction where any active planting is required to assist regeneration	Autumn by bush regenerator to inspect areas of known severe disturbance and identify others that may require active planting. Annual Autumn walkover in year 2 to identify needs for in-fill planting, and years 3-5 monitoring for tubestock success.		is restricted in relation to surrounding natural regeneration to receive supplementary planting. Restricted being less than 25% of cover in comparison to cover of adjacent natural regeneration and/or no canopy species are regenerating.	required after year 1 annual walk-over. Infill planting where required after year 2 walk-over.	containing results of inspection, determine extent of active planting required and report on success of active planting to date. Additionally include and adaptive management actions required.
Erosion and Sediment Management	Medium term – remove sedimentation measures (eg. silt curtains) after remediation and stabilisation has been undertaken	Monthly Audit and Biannual walk over in early Spring and early Autumn by bush regenerator.	Environmental Manager and Project Bush Regenerator	Any areas within and adjacent to the site that are natural or regenerating bushland and have had erosion and sedimentation measures implemented undergo stabilisation by bush regenerators and all wastes are disposed of appropriately.	Active revegetation must commence immediately on removal of sedimentation measures per **Section 5.4.2.** Where any significant failure in stabilisation occurs, stabilisation must be reattempted immediately.	Results of monthly audit are filed and can be made available on request. Rectification of breech to be inspected by project bush regenerator at each seasonal monitoring even and confirmation of effectiveness of stabilisation to be provided in a letter report.
Feral Pest Animal Control – Group programs	Long term – ongoing as needed when required by trigger for group control programs	Monitoring as below.	Environmental Manager	Participation in LLS managed Group feral animal control programs if available.	NA	Participation in group control program deemed to be more effective than any site based pest control program, as supported by best practice recommendations.
Feral Pest Animal Control –	Long term – Feral pest animal	Annual monitoring using camera traps in	Environmental Manager	Grounds monitored to determine	If pest activity is excessive, approach LLS for guidance	Comply with any additional reporting and record keeping

Monitoring	control monitoring in place and ongoing	pre-determined locations to identify excessive pest activity.		whether pest activity warrants additional measures beyond Group feral animal control programs.	on additional measures that can be implemented.	requirements of other methods recommended by LLS should they be required.
Management Measures and Procedures Applicable to All Stages						
Fauna Injury and Entrapment Procedure	Long term – ongoing	Record all encounters that result in injury or entrapment: • Species • Location • Outcome (i.e., fauna death, fauna received care from WIRES/Vet, fauna escaped) At monthly audit review records and determine whether there is any particular location causing frequent incidences (more than twice).	Environmental Manager	Ideally no incidents, or all injured fauna to receive appropriate care.	Address any identifiable causes for repeated fauna injury and entrapment and continue to evaluate records of incidents.	Results of monthly audit are filed and can be made available on request.
Bushfire Hazard Management	Long term – ongoing	Monthly Audit and Biannual walk over in early Spring and early Autumn by bush regenerator.	Safety Manager and Project Bush Regenerator	Vegetation in asset protection zones is maintained at a suitable height. Weeds in asset protection zones are controlled and there is minimal incursion of weeds into adjacent habitat.	Have APZ maintenance undertaken if APZ is deemed unsafe. Additional weeding event to control major incursions.	Results of monthly audit are filed and can be made available on request. Project bush regenerator to provide short letter report containing results of inspection, determine extent of weed occurrence and report on adaptive management actions required.
Bushfire Hazard	Long term –	Yearly audit	Safety Manager	All fire safety	Have equipment tagged	Results of audits are filed and

Management	ongoing			equipment is tagged and tested as required.	and tested if due.	can be made available on request.

6.4.1 Recommended Monitoring Plan for REA Rehabilitation

Details pertaining to monitoring of the rehabilitation within the REA will be described in a Rehabilitation Strategy and Rehabilitation Management Plan, which has been prepared in accordance with Consent Condition B58, B59, B60 and Condition E5. Substantial integration of the BMP, Rehabilitation Strategy and Rehabilitation Management Plan are required to achieve the biodiversity objectives for the rehabilitated site. It is anticipated that an annual monitoring program of the REA will be undertaken in early spring, commencing in the first spring that Rehabilitation activities are commenced for the first completed domain.

Monitoring the REA rehabilitation to achieve biodiversity outcomes is required to include a multifaceted approach consisting of the following aspects:

- Weed incursion control and maintenance
- Monitoring to determine the trees meet readiness criteria for the preparation of the nest box monitoring plan and installation of nest boxes
- Monitoring for the use of the rehabilitation site by Koalas and other threatened fauna

In addition to the Rehabilitation Strategy and Rehabilitation Management Plan, other plans may also be required to achieve biodiversity outcomes. These include but are not limited to:

- Nest box management and monitoring plan when the revegetated areas contain trees large enough to support nest boxes.
- Translocation plan for threatened flora in the event that threatened flora are found within the disturbance footprint during the pre-clearance survey (to be prepared by bush regeneration subcontractor engaged to undertake translocation works)
- Revegetation and weed management plan (to be prepared by bush regeneration subcontractor engaged to undertake the works)
- Native seed collection and propagation strategy (to be prepared by bush regeneration subcontractor engaged to undertake the works).

7 Implementation and Reporting

7.1 Biodiversity Credit Obligations

In accordance with Condition B37, Schedule 1, Part B the Applicant must retire the biodiversity credits specified in the consent conditions or as recalculated to the satisfaction of the BCT within 2 years of the date of commencement of development under this consent, unless otherwise agreed by the Planning Secretary. The retirement of credits must be carried out in consultation with BCS and in accordance with the Biodiversity Offsets Scheme of the BC Act, to the satisfaction of the BCT.

7.2 Tahmoor Environmental Management Strategy (EMS) Framework

The Tahmoor Environmental Management Strategy (EMS) Framework (TAH-HSEC-00375) provides the strategic context for the environmental management of Tahmoor Coal and forms part of the broader Health, Safety, Environment and Community (HSEC) management systems at Tahmoor Coal. The EMS outlines how Tahmoor Coal manages environment and community (E&C) aspects, impacts and performance. It provides a framework for the standards, plans and procedures implemented to ensure operations are managed in accordance with the ISO:14001 principles.

The objectives of the EMS are:

a) To provide an overall framework for environmental management at Tahmoor utilising the principles of ISO:14001;

b) To ensure compliance with all development consent, licences and approvals at Tahmoor Coal;

c) To detail the relationship and interactions between various operational and environmental components at Tahmoor Coal;

d) To provide effective mechanisms for external communications, maintaining a relationship with the local community; and

e) To assist Tahmoor Coal employees and contractors in administering their responsibilities regarding environmental management.

This plan will be implemented in conjunction with the EMS framework.

7.3 General Reporting

General reporting requirements in accordance with Consent Condition E13 and E14, including submitting an Annual Review by the end of March each year (or other timeframe agreed by the Planning Secretary). The Annual Review will:

a) describe the development (including any rehabilitation) that was carried out in the previous calendar year, and the development that is proposed to be carried out over the current calendar year;
b) include a comprehensive review of the monitoring results and complaints records of the development over the previous calendar year, including a comparison of these results against the:
    i. relevant statutory requirements, limits or performance measures/criteria;
    ii. (requirements of any plan or program required under this consent;
    iii. monitoring results of previous years; and
    iv. relevant predictions in the EIS.
c) identify any non-compliance or incident which occurred in the previous calendar year, and describe what actions were (or are being) taken to rectify the non-compliance and avoid reoccurrence;
d) evaluate and report on:
    i. the effectiveness of the noise and air quality management systems; and
    ii. compliance with the performance measures, criteria and operating conditions of this consent;

e) identify any trends in the monitoring data over the life of the development and provide any raw monitoring data as requested by the Planning Secretary;
f) identify any discrepancies between the predicted and actual impacts of the development, and analyse the potential cause of any significant discrepancies; and
g) describe what measures will be implemented over the next calendar year to improve the environmental performance of the development.

Copies of the Annual Review will be submitted to Council and relevant agencies and made available to the CCC and any interested person upon request.

7.4 Incidents

The Consent defines an incident 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*'.

Material Harm is defined within the Consent as 'harm to the environment that:

- involves actual or potential harm to the health or safety of human beings or to the environment that is not trivial, or results in actual or potential loss or property damage of an amount, or
- amounts in aggregate, exceeding $10,000, (such loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment)

This definition excludes "harm" that is authorised under either this consent or any other statutory approval.'

Tahmoor Coal manages and responds to incidents in accordance with the following plans:

a) Emergency and Incident Manual (TAH-HSEC-232).
b) Pollution Incident Response Management Plan (TAH-HSEC-00155)
c) Notification of Environmental Pollution Incidents (TAH-HSEC-00224)

These plans have been developed to manage preparation, incident response and reporting requirements under the Protection of the Environment Operations Act 1997 (NSW). The management plans provide roles and responsibilities, management strategies, action and response plans and record management protocols for incidents and emergencies.

A Written Incident Notification will be submitted to the Planning Secretary via the Major Projects website within seven days after Tahmoor Coal becomes aware of an incident.

Written Incident Notifications will include:

a) the development and application number;
b) details of the incident (date, time, location, a brief description of what occurred and why it is classified as an incident);
c) how the incident was detected;
d) when Tahmoor Coal became aware of the incident;
e) any actual or potential non-compliance with conditions of consent;
f) describe what immediate steps were taken in relation to the incident;
g) identify further action(s) that will be taken in relation to the incident; and
h) identify a project contact for further communication regarding the incident.

Within 30 days of the date on which the incident occurred or as otherwise agreed to by the Planning Secretary, Tahmoor Coal will provide the Planning Secretary and any relevant public authorities (as determined by the Planning Secretary) with a Detailed Incident Report.

Detailed Incident Reports will include:

a) a summary of the incident;
b) outcomes of an incident investigation, including identification of the cause of the incident;

c) details of the corrective and preventative actions that have been, or will be, implemented to address the incident and prevent recurrence; and
d) details of any communication with other stakeholders regarding the incident.

7.5 Non-Compliances

The Consent defines a non-compliance as 'an occurrence, set of circumstances or development that is in breach of the consent'.

Non-compliances or system defects detected during monitoring, inspections and audits will be managed in accordance with the Tahmoor Coal Environmental Management Framework Document (TAH-HSEC-00173), with corrective action plans developed and implemented to rectify any issues.

The Planning Secretary will be notified in writing via the Major Projects website within seven days after Tahmoor Colliery becomes aware of any non-compliance.

If a non-compliance is detected, the following steps will be followed:

a) Identify and confirm the non-compliance (i.e., review against approval criteria or condition and confirm that a non-compliance has occurred);
b) Complete internal environmental incident reporting documentation including an investigation to capture all relevant information;
c) In accordance with the relevant approval, determine what action (i.e., external reporting) is required. Specifically, determine if immediate reporting is required and to which stakeholders, or ensure that the event is captured for future reporting;
d) Following the incident investigation, develop a corrective action plan aimed at preventing future re-occurrence; and
e) Complete all required reporting and consult with relevant agencies on the corrective action plan to be implemented.

A non-compliance notification will identify the following:

a) the development and the application number,
b) the condition of consent that the development is non-compliant with
c) the way in which it does not comply and the reasons for the non-compliance (if known); and
d) any actions which have been, or will be, undertaken to address the non-compliance.

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

7.6 Complaints and Disputes

Community Complaints at Tahmoor Coal are managed in accordance with *TAH-HSEC-00039- Stakeholder Engagement Management Plan* and *TAH-HSEC-00120- Community Complaints & Enquiry Procedure*. Tahmoor Coal operates a 24-hour complaints line (1800 154 415) for receiving community complaints and other stakeholder communications. The general process detailed in TAH-HSEC-00120- Community Complaints & Enquiry Procedure for responding to complaints is:

a) Acknowledging all complaints and responding to the complainant within 24 hours where practicable;
b) Registering all complaint details in Cority;
c) Investigating complaints impartially considering the facts and the circumstances prevailing at the time;
d) Implementing corrective actions if required; and
e) Reporting to relevant stakeholders of investigation outcomes and corrective actions taken.

A record of all community complaints in relation to activities undertaken by the licensee will be kept in a legible form and be in accordance to Tahmoor Coal's Environmental Protection Licence 1389.

The following information will also be kept in the event of a community complaint; as required by Section M4 in Tahmoor Coal's EPL 1389:

a) The date and time of the complaint;
b) The method by which the complaint was made;
c) Any personal details of the complainant which were provided by the complainant or a note to that effect;
d) The nature of the complaint;
e) The action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant; and
f) If no action was taken by the licensee, the reasons why no action was taken.

These records will be kept for at least 4 years after the complaint was made and be able to be produced to any authorised officer who asks to see them.

In the event of a dispute or conflict between Tahmoor Coal personnel and a member of the community, the Tahmoor Coal E&C Manager will facilitate communication between both parties to reach a resolution, which may include a meeting with the complainant to discuss the issue.

Where relevant, negotiations will be initiated in accordance with any relevant Consent conditions. This general process is documented in TAH-HSEC-00039- Stakeholder Engagement Management Plan . If a dispute cannot be resolved, the matter will be escalated to involve the site Operations Manager or General Manager as required and may involve consultation with the relevant government agency to assist in reaching a determination on the matter

7.7 Risk and Change Management

Aspects and impacts at Tahmoor Coal are considered for operational activities, legislative requirements and internal and external stakeholder views. Key aspects and impacts are identified during the annual review of the Tahmoor Coal Environment and Community (E&C) Broad Brush Risk Assessment (BBRA) and the operational Life of Mine (LOM) Risk Assessment and Site Wide Broad-Brush Risk Assessment (Mine BBRA).

The purpose of the E&C BBRA is to identify significant E&C aspects and impacts across the site, the risk they pose and the controls necessary to effectively manage them. Management of potential impacts is prioritised according to the level of risk each aspect is assigned. Once all identified aspects, impacts, risks and management controls have been identified within the Annual E&C Risk Assessment, associated plans are updated accordingly.

The purposed of the Mine BBRA is to identify significant aspects and impacts of operations at a site level. Existing or proposed management controls are identified to reduce the risk of impacts on the E&C. The need for any new (or modifications to existing) approvals is also identified during this process.

The LOM Risk Assessment considers aspects and impacts of business activities at a strategic level. These risk assessments cover the life of mine risks associated with each operation. The outcomes of the LOM Risk Assessment are used in conjunction with the Tahmoor Coal E&C BBRA and Mine BBRA to develop the annual capital and operational budget and the associated work schedule.

In accordance with Tahmoor Coal's Health & Safety Management System, project and activity specific risk assessments are completed as required and include assessment of E&C risks.

7.8 Roles & Responsibilities

E&C management is regarded as part of the responsibilities of all employees and contractors at Tahmoor Coal. Specific information pertaining to the role, responsibility, authority and accountability of key personnel involved in environmental management at Tahmoor Coal is provided in **Table 18** below.

Table 18 Accountabilities

Role	Accountabilities for this document
Operations Manager	Provide adequate environmental personnel/resources for implementation of this plan and associated plans.
Environment & Community Manager	Facilitate a process of managing overall compliance with regulatory requirements and undertake external reporting for legislative non-compliances as required. Determine adequate resources and funds are available to ensure the effectiveness of this procedure; and certify compliance and adherence to this plan. Develop, implement and maintain this plan. Liaise with relevant government authorities in relation to regulatory conditions and compliance issue. Liaise with the community as required and as per the Stakeholder Engagement Strategy, including facilitation of Community Consultative Committee meetings.
All Managers	Activities under their control will be undertaken in accordance with this plan and associated management plans and site procedures. Manage environmental controls within their jurisdiction are operated and maintained in a proper and efficient manner. Report all environmental incidents and complaints in a timely manner.

Role	Accountabilities for this document
Environmental Specialist	Responsible for coordinating environmental compliance on-site including timely completion of monitoring and reporting in accordance with internal and external requirements. Sign off on the accuracy of reports and the suitability of recommendations. Develop, implement, review and maintain this plan and system documents. Implement process for self-assessment audits. Assign persons responsible for completion of audit actions and set a due by date. Monitor that planned actions arising out of audits are implemented. Ensure all community complaints are addressed, investigated and appropriately managed as per site procedures, and reported internally as per internal requirements.
All Coordinators	Activities under their control will be undertaken in accordance with this plan and associated management plans and site procedures. Manage environmental controls within their jurisdiction are operated and maintained in a proper and efficient manner. Report all environmental incidents and complaints in a timely manner.
All Persons	Activities under their control will be undertaken in accordance with this plan and associated management plans and site procedures. Manage environmental controls within their jurisdiction are operated and maintained in a proper and efficient manner. Report all environmental incidents and complaints in a timely manner.

7.9 Internal Audits & Reviews

In accordance with internal company requirements, Tahmoor Coal has implemented a system for the monitoring and review of E&C performance at the site. Tahmoor Coal will provide ongoing monitoring and regular management review of E&C performance to:

a) Confirm the adequacy and effectiveness of management plans, procedures and standards;

b) Address any identified weaknesses;

c) Share good performance and lessons learnt with other sites; and

d) Ensure ongoing compliance with all leases, licences and approvals.

Process or area specific internal audits are also conducted periodically, generally administered by the General Manager E&C, focussing on the following areas:

a) Air quality;

b) Water management;

c) Erosion and sediment control; and

d) Statutory approvals.

These audits may be conducted by consultants on behalf of Tahmoor Coal, by Liberty GFG employees or may be self-assessments conducted by Tahmoor Coal personnel. Audit results and corrective actions are recorded in Cority and assigned to responsible personnel for completion within appropriate timeframes.

7.10 Independent Environmental Audit

In accordance with Conditions E15 – E20 of the Consent, Tahmoor Coal will complete Independent Environmental Audits of the development at the frequencies determined within DPIE's *Independent Audit Post Approval Requirements (2020),* and outlined below in **Table 19**.

Table 19 Independent Audit Frequencies

Phase	Initial Independent Audit	Ongoing Independent Audit Intervals
Construction	Within 12 weeks of the commencement of construction	At intervals, no greater than 26 weeks from the date of the initial Independent Audit or as otherwise agreed by the Secretary.
Operation	Within 26 weeks of the commencement of operation	At intervals, no greater than 3 years or as otherwise agreed by the Secretary.
Closure /Rehabilitation	Within 52 weeks from notifying of suspension/ceasing of operations	At intervals no greater than 1 year or as otherwise agreed by the Secretary.

The audits will assess:

a) Environmental performance of the Mine;

b) Compliance with the requirements of all relevant:

   i. Development consents;

   ii. Mining leases;

   iii. Exploration Authorisations; and

   iv. Site environmental protection licence

The audit will also assess:

c) Environmental assessments; and

d) Plans and programs required by above approvals.

The audit will review the adequacy of the following requirements under the abovementioned approvals:

e) Strategies;

f) Plans; and

g) Programs

The audit will recommend appropriate measures and corrective actions to improve environmental performance at Tahmoor Coal. Audit results and corrective actions are recorded in Cority and assigned to responsible personnel for completion within appropriate timeframes.

7.11 Employee & Contractor Training

Environmental training for Tahmoor Coal employees and contractors is conducted in accordance with the Environment & Community Training Needs Analysis, which Tahmoor Coal manages through the Scenario Training Database. General environmental awareness training is provided to all employees and contractors annually through a generic visitor induction and the SafeCoal training session scheduled by the Tahmoor Coal Health, Safety & Training Department.

8 Review and Improvement

8.1 Plan Audit

Audits of the Biodiversity Management Plan will be conducted in consultation with the Plan owner and nominated individuals and shall focus on the content and implementation.

Audits on the content shall consist of a determination of understanding of the Biodiversity Management Plan by the individual's allocated responsibility under this plan.

Audits on the implementation shall consist of reviews of the safe working procedures and risk assessments developed to ensure safe operation of this Biodiversity Management Plan, they may also involve discussions with personnel involved in the management plan to determine understanding and compliance.

Should an audit of this Biodiversity Management Plan determine that a deficiency is evident in the content or implementation; a corrective action will be developed and implemented. Actions will be assigned to a nominated individual and tracked in Cority.

The Tahmoor Coal is responsible to verify that the nominated corrective action has been implemented by way of a follow up audit.

Any changes to the Biodiversity Management Plan will be managed and communicated to all personnel in line with the Change Management Process.

8.2 Plan Review

This Biodiversity Management Plan will be reviewed:

Event based: in accordance with Condition E7 (a) of the Consent, a review will be required within 3 months of any incident, event or finding that identifies an inadequacy in the Biodiversity Management Plan , risk assessment or associated documents to continue to effectively manage the identified hazard; a change to the workplace itself or any aspect of the work environment, a change to a system of work, a process or a procedure; or

Time based: in the absence of regular event-based reviews and in accordance with Condition E7 (b-e) of the Consent, this plan will be reviewed within three months of:

b) the submission of an Annual Review under Condition E13;
c) the submission of an Independent Environmental Audit under Condition E15;
d) (the approval of any modification of the conditions of this consent (unless the conditions require otherwise); or
e) notification of a change in development phase under Condition A19;

If deemed appropriate, external service providers may be included in the review process. All reviews will be documented.

9 Document Information

Relevant legislation, standards and other reference information will be regularly reviewed and monitored for updates and will be included in the site management system. Related documents and reference information in this section provides the linkage and source to develop and maintain site compliance information.

9.1 Access to Information

Information pertaining to Tahmoor Coal's general environmental performance against internal targets and external approvals criteria is reported to the community via the mine website and Tahmoor Coal's Community Consultative Committee (TCCCC). Examples of reports to government agencies include:

a) Environmental Protection Licence Annual Return (submitted to Environment Protection Authority);

b) Annual Review (submitted to Department of Planning & Infrastructure, Council, TCCCC etc.); and

c) Independent Environmental Audit (submitted to Department of Planning & Infrastructure).

These reports are prepared in accordance with relevant guidelines and *TAH-HSEC-00119- Communication and Engagement* and are published on Tahmoor Coal's website in accordance with *TAH-HSEC-00221- Website Management Procedure.*

9.2 Related Documents

Related documents, listed below in **Table 20**, are internal documents directly related to or referenced from this document.

Table 20 Related Documents

Number	Title
TAH-HSEC-00375	Tahmoor South Environmental Management System Framework
TAH-HSEC-00120	Community Complaints & Enquiry Procedure
TAH-HSEC-00221	Website Management Procedure
TAH-HSEC-00031	Community Development Plan
TAH-HSEC-00039	Stakeholder Engagement Plan
TAH-HSEC-00232	Emergency and Incident Manual
TAH-HSEC-00155	Pollution Incident Response Management Plan
TAH-HSEC-00224	Notification of Environmental Pollution Incidents

9.3 Reference Information

Reference information, listed in **Table 21** below, is information that is directly related to the development of this document or referenced from within this document.

Table 21 Reference Information

Title
Australian and New Zealand Environment and Conservation Council (ANZECC), Agriculture and Resources Management Council of Australia and New Zealand (ARMCANZ) (2000). *Australian and New Zealand Guidelines for Fresh and Marine Water Quality, National Water quality Management Strategy*, October 2000.
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10 Change Information

Table 22 Full details of the document history are recorded in the document control register, by version

Version	Date Reviewed	Review team (Consultation)	Change Summary
0.1	02/08/2021		Initial Document
0.2	18/10/2021	Luke Baker and Jessie Bear, Niche Environment and Heritage	Incorporate minor modifications, address requests for additional information, add Monthly Environmental Inspection checklist to appendices
0.3	01/12/2021	Luke Baker and Jessie Bear, Niche Environment and Heritage	Amendments made based on Tahmoor's feedback
0.4	02/12/2021	Luke Baker and Jessie Bear, Niche Environment and Heritage	Amendments made based on BCS's first round of feedback
0.5	10/03/2022	Luke Baker and Jessie Bear, Niche Environment and Heritage	Amendments made based on BCS's feedback and Request for Information
1.0	16/03/2022	Jessie Bear, Niche Environment and Heritage	Amendments made based on Tahmoor's feedback
2.0	17/06/2022	Natalie Brumby	Reviewed in accordance with Condition E7(b) of SSD 8445 following submission of the 2021 Annual Review to DPE. Reviewed in accordance with condition E7(e) of SSD 8445 following change in development phase under condition A9 (construction commencement on 16th May 2022).
3.0	19/10/2022	Natalie Brumby, Thomas O'Brien	Reviewed in accordance with Condition E7(c), (d) and (e) following an Independent Environmental Audit (10th August 2022), following the approval of any modification (Mod 1 approved 19th July 2022) and following the commencement of first and second workings (18th Oct 2022) of the Consent SSD 8445.
4.0	16/06/2023	Natalie Brumby	Reviewed in accordance with Condition E7(b) following the submission of an Annual Review (31st March 2023), Condition E7(c) following the submission of an Independent Environmental Audit (2nd June 2023) and Condition E7 (d) following the approval of any modification (MOD 2 - 13th June 2023) of the Consent SSD 8445.

Appendices

APPENDIX A – Monthly Audit Checklist

[insert date] Monthly Audit

Item	Satisfactory /completed	Details of Issue and Corrective Actions	Corrective Actions Taken	Not applicable
All stages				
Fauna Injury and Entrapment: Review records: • Are there any locations of repeat incidents? • Can any risks to fauna be reduced?	Yes: ⭘ No: ⭘	If yes, provide details:	⭘	⭘

[insert date] Yearly Audit

Item	Satisfactory /completed	Details of Issue and Corrective Actions	Corrective Actions Taken	Not applicable
All stages				
Weed Control - Is there any significant weed incursion into adjacent habitat?	Yes: ⭘ No: ⭘	If yes, provide details:	⭘	⭘
Feral Pest Animal Control – Monitoring – Is there any significant pest activity identified via camera traps and cage trap monitoring?	Yes: ⭘ No: ⭘	If yes, provide details:	⭘	⭘
Bushfire Hazard Management – is all equipment tagged and tested? Are all vehicles fitted with fire extinguishers?	Yes: ⭘ No: ⭘	If no, provide details:	⭘	⭘

APPENDIX B – Tahmoor Monthly Environmental Inspection Form

Inspection details	
Inspected by:	
Month of Inspection:	
Complies (if non-compliant assign action):	
General environmental conditions at the of inspection:	

Activity/Aspect	Y	N	N/A	Comments / Observations / Actions	Photo No.
Yard, Workshop and Store					
Hardcopy Chemalert and MSDS sheets available to employees and adhered to					
Hazardous substances storage segregated from work area with compliant signage displayed					
Hazardous storage area compliant, lockable, appropriate spill protection, bund capacity 110% of stored amount, roofed, etc.					
Hazardous waste properly isolated / stored					
Waste oil tank in good condition with level indicator visible					
Emergency equipment adequate and available; skill kits, fire extinguishers etc.					
Spill kit available and complete					
Portable bunds used for in-field hazardous materials storage					
Bund structures sealed, no contamination evident, well maintained with transfer points located within bund walls					
Excessive rainwater drained from bunds					
Oil/water separator in good condition and operating effectively					

Activity/Aspect	Y	N	N/A	Comments / Observations / Actions	Photo No.
Wash-down bay free of sediment and contaminants					
Waste recycling/reuse strategies in place and effective					
Sumps properly maintained and work effectively. No potential for overflow, well-sealed.					
No visible dust above tyre height (roads watered in dry weather)					
Vehicular noise attenuation working and in place					
Drains in good condition with minimal sediment build-up					
Water fill points operational					
Road condition acceptable					
Housekeeping of a high standard					
Lay down areas defined, clean, tidy					
No odour present					
Signage visible, present and appropriate					
Washery, ROM and Clean Coal Stockpiles					
Hardcopy Chemalert and MSDS sheets available to employees and adhered to					
Hazardous substances storage segregated from work area with compliant signage displayed					
Hazardous storage area compliant, lockable, appropriate spill protection, bund capacity 110% of stored amount, roofed, etc.					
Hazardous waste is properly isolated/stored					
Waste oil tank in good condition with level indicator visible					
Bund structures sealed, no contamination evident, well maintained with transfer points located within bund walls					
Bund drain valves closed and operational					

Activity/Aspect	Y	N	N/A	Comments / Observations / Actions	Photo No.
Excessive rainwater drained from bunds					
Portable bunds used for in-field hazardous materials storage					
Housekeeping of a high standard					
Spill kit available and complete					
PIRMP kit available in First Aid Room and complete					
Waste bins in adequate condition and location and utilized properly					
Sumps properly maintained and work effectively. No potential for overflow, well sealed.					
Oil/water separator in good condition and operating effectively					
Water fill points operational					
Vehicular and plant noise attenuation working and in place					
Emergency equipment adequate and available					
Drains in good condition with minimal sediment build-up					
Stockpile dust suppression adequate and effective					
No visible dust above tyre height (roads watered in dry weather)					
Stockpile erosion and sedimentation controls in place and effective e.g., contours, drains, drainage walls.					
No odour present					
Lay down areas defined, clean, tidy					
Road condition acceptable					
Signage visible, present and appropriate					
REA (Stockpiles. Haul roads, rehabilitation areas)					
Hardcopy Chemalert and MSDS sheets available to employees and adhered to					

Activity/Aspect	Y	N	N/A	Comments / Observations / Actions	Photo No.
Hazardous substances storage bunded and segregated from work area with compliant signage displayed					
Hazardous waste is properly isolated/stored					
Excessive rainwater drained from bunds					
Signage visible, present and appropriate					
Lay down areas defined, clean, tidy					
Spill kit available and complete					
Stockpile dust suppression adequate and effective					
Erosion and sedimentation controls in place and effective e.g., contours, drains, drainage walls. Drains in good condition; minimal sediment					
Road condition acceptable					
Water fill points operational					
Housekeeping of a high standard					
Emergency equipment adequate and available					
Rehabilitation and rehabilitation monitoring conducted as per rehabilitation plan					
Areas of degraded vegetation or lack of vegetation on rehabilitation areas					
Weeds and pest controlled					
Presence of feral animals					
Firebreaks present and in good condition					
Ventilation Shaft 1, 2 and 3					
Lay down areas defined, clean, tidy					

Activity/Aspect	Y	N	N/A	Comments / Observations / Actions	Photo No.
Water fill points operational					
Housekeeping of a high standard					
Spill kit available and complete					
Emergency equipment adequate and available					
No odour present					
Weeds and pest controlled					
Signage visible, present and appropriate					
Firebreaks present and in good condition					
Security around Shaft No 1 adequate. Ensure security of metal grill on top and no evidence of unauthorised access					
Bargo Shaft Site					
Security around Shaft adequate. Ensure security of metal grill on top and no evidence of unauthorised access					
General / Site Wide					
Security fencing maintained and security protocols adhered to, e.g., REA and main gates locked.					
Hardcopy Chemalert and MSDS sheets available to employees					
Housekeeping of a high standard					
Emergency equipment adequate and available					
Portable bunds used for in-field hazardous materials storage					
PRIMP kit available at Control and complete					
Waste bins in adequate condition and location and utilized properly					

Activity/Aspect	Y	N	N/A	Comments / Observations / Actions	Photo No.
Lay down areas defined, clean and tidy					
Stormwater channels tidy and in good condition					
LDP1 flow quality and volumes constantly monitored, recorded and reported					
Stormwater system is checked for failures, leaks, malfunctions and safety compliance. System routine maintenance is being conducted and reported as per its maintenance schedule					
Sewerage Treatment Plant maintenance schedule adhered to, high quality of housekeeping					
Drains are in good condition with minimal sediment build-up					
Noise monitoring systems in place and adequate					
Weeds and pest controlled					

Dam and Water Management									
Dam	**Water quality of a high standard Y/N**	**Excessive erosion or piping of dam wall Y/N**	**Cracking or Slumping (that could lead to wall failure) Y/N**	**Evidence of leaking (damp or areas of vegetation) Y/N**	**Spillway in poor condition Y/N**	**Drains in poor condition, not free flowing Y/N**	**Storage Volume % / Sediment Level**	**Pump available and working Y/N**	**Dam wall condition adequate Y/N**
M1									
M2									
M3									
M4									
S2 Stockpile									
S4									
S7									
S7A									
S7B									
S8									
S9									
STP1									
STP2									

APPENDIX C – Hollow-bearing tree Register

ID	latitude	longitude	Habitat feature
1	-34.26063	150.591691	Hollow-bearing tree
2	-34.260644	150.591651	Hollow-bearing stag
3	-34.260732	150.591796	Hollow-bearing tree
4	-34.260252	150.590944	Hollow-bearing tree
5	-34.265047	150.592668	Hollow-bearing stag
6	-34.264816	150.586738	Hollow-bearing stag
7	-34.264387	150.586784	Hollow-bearing tree
8	-34.264223	150.586961	Hollow-bearing tree
9	-34.264741	150.586866	Hollow-bearing tree
10	-34.2652	150.586617	Hollow-bearing stag
11	-34.264988	150.586616	Hollow-bearing stag
12	-34.260446	150.591523	Hollow-bearing tree
13	-34.260381	150.591583	Hollow-bearing tree
14	-34.260433	150.591599	Hollow-bearing stag

APPENDIX D – Flora species for revegetation

Species Name	PCT 1395	PCT 1081/1787	Adjacent mapped 1181/1789
Acacia binervata	✓		
Acacia decurrens	✓		
Acacia falcata	✓		
Acacia floribunda	✓		
Acacia hispidula			✓
Acacia implexa	✓		
Acacia linifolia		✓	✓
Acacia longifolia	✓		✓
Acacia myrtifolia		✓	
Acacia parramattensis	✓		
Acacia parvipinnula	✓		
Acacia suaveolens		✓	✓
Acacia terminalis	✓	✓	✓
Acacia ulicifolia	✓	✓	✓
Actinotus helianthi		✓	✓
Actinotus minor		✓	
Allocasuarina littoralis	✓	✓	✓
Allocasuarina torulosa	✓		✓
Amperea xiphoclada			✓
Angophora bakeri	✓	✓	✓
Angophora costata			
Angophora costata			✓
Angophora floribunda	✓		
Angophora hispida		✓	
Anisopogon avenaceus		✓	✓
Aristida vagans	✓	✓	✓
Arthropodium milleflorum	✓		
Astroloma humifusum	✓		
Astroloma pinifolium	✓		
Austrodanthonia fulva			✓
Austrodanthonia tenuior	✓		
Austrostipa pubescens	✓	✓	✓
Banksia marginata		✓	
Banksia oblongifolia		✓	
Banksia serrata		✓	✓
Banksia spinulosa			
Banksia spinulosa		✓	✓

Species Name	PCT 1395	PCT 1081/1787	Adjacent mapped 1181/1789
Billardiera scandens	✓	✓	✓
Blechnum cartilagineum			✓
Boronia ledifolia		✓	✓
Bossiaea heterophylla		✓	✓
Bossiaea obcordata			✓
Bossiaea prostrata	✓		
Bossiaea stephensonii		✓	
Brachyloma daphnoides		✓	
Breynia oblongifolia	✓		
Brunoniella australis	✓		
Brunoniella pumilio	✓		✓
Bursaria spinosa	✓		✓
Caesia parviflora	✓		
Calochlaena dubia			✓
Calotis dentex	✓		
Cassytha glabella	✓	✓	✓
Cassytha pubescens	✓	✓	✓
Caustis flexuosa		✓	✓
Ceratopetalum gummiferum			✓
Cheilanthes distans			✓
Cheilanthes sieberi subsp. sieberi	✓		✓
Clematis aristata	✓		✓
Clematis glycinoides	✓		
Correa reflexa			✓
Corymbia gummifera		✓	✓
Corymbia maculata	✓		
Crassula sieberiana			✓
Cryptandra amara		✓	
Cyathochaeta diandra		✓	✓
Cymbopogon refractus	✓		
Dampiera purpurea	✓		✓
Dampiera stricta		✓	✓
Desmodium varians	✓		
Dianella caerulea			✓
Dianella revoluta	✓	✓	✓
Dichelachne micrantha	✓		
Dichondra repens	✓		
Digitaria parviflora	✓		
Digitaria ramularis	✓		
Dillwynia retorta		✓	✓
Dodonaea triquetra	✓	✓	✓
Doryanthes excelsa			✓

Species Name	PCT 1395	PCT 1081/1787	Adjacent mapped 1181/1789
Echinopogon caespitosus	✓		
Echinopogon ovatus	✓		
Einadia hastata	✓		
Elaeocarpus reticulatus			✓
Entolasia marginata	✓		
Entolasia stricta	✓	✓	✓
Epacris pulchella		✓	✓
Eragrostis brownii	✓	✓	
Eragrostis leptostachya	✓		
Eriostemon australasius		✓	✓
Eucalyptus agglomerata			✓
Eucalyptus crebra	✓		
Eucalyptus fibrosa	✓		
Eucalyptus globoidea	✓		
Eucalyptus haemastoma		✓	
Eucalyptus oblonga	✓	✓	
Eucalyptus pilularis	✓		✓
Eucalyptus piperita		✓	✓
Eucalyptus punctata	✓	✓	✓
Eucalyptus sclerophylla		✓	
Eucalyptus tereticornis	✓		
Euchiton sphaericus	✓		
Exocarpos cupressiformis	✓		
Exocarpos strictus	✓		✓
Gahnia aspera	✓		
Galium binifolium	✓		✓
Glycine clandestina	✓		✓
Glycine microphylla	✓		
Glycine tabacina	✓		
Gompholobium glabratum		✓	
Gompholobium grandiflorum		✓	✓
Gonocarpus tetragynus	✓		
Gonocarpus teucrioides		✓	✓
Goodenia hederacea	✓	✓	✓
Grevillea buxifolia		✓	✓
Grevillea diffusa		✓	
Grevillea mucronulata		✓	✓
Grevillea sericea		✓	✓
Grevillea sphacelata		✓	
Hakea dactyloides		✓	✓
Hakea sericea	✓	✓	✓
Hardenbergia violacea	✓	✓	✓

Species Name	PCT 1395	PCT 1081/1787	Adjacent mapped 1181/1789
Hibbertia aspera	✓		
Hibbertia circumdans		✓	
Hibbertia diffusa	✓		
Hibbertia nitida			✓
Hibbertia sp. nov. 'Menai'		✓	
Hovea linearis	✓	✓	✓
Hypericum gramineum	✓		
Hypoxis hygrometrica	✓		
Imperata cylindrica var. major	✓		
Isopogon anemonifolius		✓	✓
Jacksonia scoparia	✓		
Kennedia rubicunda	✓		✓
Kunzea ambigua	✓	✓	
Lagenophora gracilis	✓		
Lambertia formosa		✓	✓
Lasiopetalum ferrugineum		✓	
Lasiopetalum rufum		✓	
Laxmannia gracilis	✓	✓	
Lepidosperma laterale	✓	✓	✓
Leptomeria acida			✓
Leptospermum arachnoides		✓	
Leptospermum polygalifolium		✓	✓
Leptospermum trinervium			
Leptospermum trinervium		✓	✓
Lepyrodia scariosa		✓	
Leucopogon ericoides		✓	✓
Leucopogon juniperinus	✓		
Leucopogon lanceolatus			✓
Leucopogon microphyllus		✓	
Lindsaea linearis		✓	
Lindsaea microphylla			✓
Lissanthe strigosa	✓		✓
Logania albiflora			✓
Lomandra confertifolia	✓		✓
Lomandra cylindrica	✓		✓
Lomandra filiformis	✓		✓
Lomandra gracilis			✓
Lomandra multiflora subsp. multiflora	✓		✓
Lomandra obliqua	✓		✓
Lomatia silaifolia	✓		✓
Macrozamia communis			✓

Species Name	PCT 1395	PCT 1081/1787	Adjacent mapped 1181/1789
Marsdenia suaveolens			✓
Microlaena stipoides var. stipoides	✓		
Monotoca scoparia			✓
Myrsine variabilis	✓		
Notelaea longifolia	✓		✓
Notodanthonia longifolia	✓		
Olearia microphylla	✓		
Olearia viscidula	✓		
Opercularia aspera			✓
Opercularia diphylla	✓		
Oxalis exilis	✓		
Oxalis perennans	✓		
Ozothamnus diosmifolius	✓		
Pandorea pandorana			✓
Panicum simile	✓		
Paspalidium distans	✓		
Patersonia glabrata			✓
Patersonia sericea			✓
Persoonia levis			
Persoonia levis			✓
Persoonia linearis	✓		✓
Persoonia pinifolia	✓		✓
Petrophile sessilis			✓
Philotheca scabra			✓
Phyllanthus hirtellus	✓		✓
Pimelea linifolia	✓		✓
Pittosporum undulatum	✓		
Platysace ericoides			✓
Platysace linearifolia			✓
Poa labillardierei var. labillardierei	✓		
Podolobium ilicifolium			✓
Polymeria calycina	✓		
Polyscias sambucifolia	✓		
Pomaderris discolor			✓
Pomaderris lanigera	✓		✓
Pomax umbellata	✓		✓
Poranthera microphylla	✓		
Pratia purpurascens	✓		
Pteridium esculentum			✓
Pultenaea daphnoides			✓
Pultenaea flexilis			✓

Species Name	PCT 1395	PCT 1081/1787	Adjacent mapped 1181/1789
Ricinocarpos pinifolius			✓
Smilax glyciphylla			✓
Solanum prinophyllum	✓		
Stylidium laricifolium			✓
Stylidium productum			✓
Stypandra glauca	✓		✓
Syncarpia glomulifera	✓		✓
Themeda australis	✓		
Tricoryne elatior	✓		
Vernonia cinerea var. cinerea	✓		
Veronica plebeia	✓		
Wahlenbergia gracilis	✓		✓
Xanthorrhoea arborea			✓
Xanthorrhoea concava			✓
Xanthorrhoea media			✓
Xanthosia pilosa			✓
Xanthosia tridentata			✓
Xylomelum pyriforme			✓
Zieria pilosa			✓
Lomandra obliqua	✓		✓
Lomatia silaifolia	✓		✓
Macrozamia communis			✓
Marsdenia suaveolens			✓
Microlaena stipoides var. stipoides	✓		
Monotoca scoparia			✓
Myrsine variabilis	✓		
Notelaea longifolia	✓		✓
Notodanthonia longifolia	✓		
Olearia microphylla	✓		
Olearia viscidula	✓		
Opercularia aspera			✓
Opercularia diphylla	✓		
Oxalis exilis	✓		
Oxalis perennans	✓		
Ozothamnus diosmifolius	✓		
Pandorea pandorana			✓
Panicum simile	✓		
Paspalidium distans	✓		
Patersonia glabrata			✓
Patersonia sericea			✓
Persoonia levis			

Species Name	PCT 1395	PCT 1081/1787	Adjacent mapped 1181/1789
Persoonia levis			✓
Persoonia linearis	✓		✓
Persoonia pinifolia	✓		✓
Petrophile sessilis			✓
Philotheca scabra			✓
Phyllanthus hirtellus	✓		✓
Pimelea linifolia	✓		✓
Pittosporum undulatum	✓		
Platysace ericoides			✓
Platysace linearifolia			✓
Poa labillardierei var. labillardierei	✓		
Podolobium ilicifolium			✓
Polymeria calycina	✓		
Polyscias sambucifolia	✓		
Pomaderris discolor			✓
Pomaderris lanigera	✓		✓
Pomax umbellata	✓		✓
Poranthera microphylla	✓		
Pratia purpurascens	✓		
Pteridium esculentum			✓
Pultenaea daphnoides			✓
Pultenaea flexilis			✓
Ricinocarpos pinifolius			✓
Smilax glyciphylla			✓
Solanum prinophyllum	✓		
Stylidium laricifolium			✓
Stylidium productum			✓
Stypandra glauca	✓		✓
Syncarpia glomulifera	✓		✓
Themeda australis	✓		
Tricoryne elatior	✓		
Vernonia cinerea var. cinerea	✓		
Veronica plebeia	✓		
Wahlenbergia gracilis	✓		✓
Xanthorrhoea arborea			✓
Xanthorrhoea concava			✓
Xanthorrhoea media			✓
Xanthosia pilosa			✓
Xanthosia tridentata			✓
Xylomelum pyriforme			✓
Zieria pilosa			✓

APPENDIX E – Weed Species Control Methods

The table below identified species observed during field survey. For all other weed species identified on site refer to the Weed Control Handbook (DPI 2018) for weed control methods.

Chemical control is not to be used in proximity to waterways or in a manner that allows spray drift or runoff into waterways or other sensitive natural features such as native vegetation.

Users of agricultural or veterinary chemical products must always read the label and any permit, before using the product, and strictly comply with the directions on the label and the conditions of any permit. Users are not absolved from compliance with the directions on the label or the conditions of the permit by reason of any statement made or not made in this information. To view permits or product labels go to the Australian Pesticides and Veterinary Medicines Authority website www.apvma.gov.au.

Common name	Scientific Name	Weed Status	Physical Control Methods	Chemical Control Methods
Cobblers Pegs	*Bidens Pilosa*	HTE	Hand weeding/manual removal	Non-selective herbicide
Rhodes Grass	*Chloris gayana*	HTE	Hand weeding/manual removal	Non-selective herbicide
African Lovegrass	*Eragrostis curvula*	HTE	Pasture improvement and grazing management will reduce re-establishment.	Glyphosate 360 g/L Roundup® 1.0 L per 100 L water Apply to actively growing plants.
Cats-ear	*Hypochaeris radicata*	-	Hand weeding/manual removal	Non-selective herbicide
Paspalum	*Paspalum dilatum*	HTE	Hand weeding/manual removal	Non-selective herbicide
Kikuyu grass	*Cenchrus cladestinum*	-	Hand weeding/manual removal	Non-selective herbicide
Plantain	*Plantago lanceolata*	-	Hand weeding/manual removal	Non-selective herbicide
Fireweed	*Senecio madagascariensis*	HTE/WoNS/PW Prohibition on dealings: Must not be imported into the State or sold. - *Biosecurity Act* 2015	Long-term fireweed control needs to consider that: • Most new seedlings appear in autumn. • Many new seedlings appear after rain when temperatures are 15-27°C. • Seedlings grow fast and can flower 6-10 weeks after emerging • Flowering and seeding occur mostly in spring • Some plants live for up to 3 years, the tops die back in spring and regrow the following autumn Fireweed seed buried deeper than two centimetres is unlikely to germinate • Long-term follow up is essential because about	Metsulfuron-methyl 600 g/kg Brush-off® 10 g in 100 L of water Spot spray application

Common name	Scientific Name	Weed Status	Physical Control Methods	Chemical Control Methods
			15% of seeds remain dormant for over 10 years.	
Pigeon grass	*Setaria gracilis*	-	Hand weeding/manual removal	Non-selective herbicide
Dandelion	*Taraxacum officinale*	-	Hand weeding/manual removal	Non-selective herbicide
Purpletop	*Verbena bonariensis*	-	Hand weeding/manual removal	Non-selective herbicide

APPENDIX F – Response to BCS

Responses received 21/10/2021

Attachment A:

Table 1: Biodiversity Management Plan comments

Issue no.	Document reference	Comment	Condition of Approval reference
1	Table 7 EIS commitments - EIS Reference TE-3 Section 1.6 Relationships with other Management Plans	The BMP states that ongoing monitoring of potential flora and fauna impacts, including amphibian monitoring, is addressed in the relevant extraction plan. Details of monitoring should be included in the BMP to ensure biodiversity issues are addressed holistically. It is also noted that Section 1.6 of the BMP states this BMP is a part of the broader "Extraction Plan" required in CoA C8. The Biodiversity Management Plan referred to in CoA C8 has the following requirements: • **Establishes baseline data** for existing habitat within the subsidence area, including water table depth, vegetation condition, stream morphology, key fish habitat and threatened species habitat; and • **Provides for the adaptive management** of potential impacts and environmental consequences of the proposed second workings on aquatic and terrestrial flora and fauna, with a specific focus on threatened species, populations and their habitats, EEC/CEECs and water dependent ecosystems. If biodiversity monitoring is to be addressed in a different Plan, this BMP should refer to that Plan and provide a broad framework of how the monitoring will be addressed to ensure that overlapping Plans containing similar issues are linked.	CoA C8
2	Section 4.4, Table 11 Threatened Flora	Text states that *Grevillea parviflora subsp. parviflora* and *Persoonia bargoensis* will be subject to unavoidable direct impacts within the surface infrastructure area. Table 11 states that 0 plants will be impacted "based on revised ventilation shaft layout". Please clarify.	
3	Section 5.2.1 Micro-siting	Text states that micro-siting is to be done in consultation with DPIE. Please clarify if this has been finalised and, if not, what is proposed to happen?	
4	Section 5.2.5.2 Translocation	Text states that translocation will be done in accordance with *Guidelines for the Translocation of Threatened Plants in Australia* (Commander et al.). Translocation should also consider the NSW Translocation Policy: https://www.environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Animals-and-plants/Threatened-species/translocation-operational-policy-180552.pdf Translocation is a complex matter and a Translocation Plan should be prepared and included as an appendix to this Biodiversity Management Plan. Further information on financial commitments to research and on-ground objectives should be included. Furthermore, • The proposal needs to provide a clear objective, desired outcomes, monitoring framework and risk mitigation measures for the translocation. • The translocation needs to be appropriately resourced. • Proteaceae including grevilleas and persoonias generally do not like having their roots disturbed. Translocation can be difficult and should be done in consultation with appropriate experts. • Where possible, collect seed and cuttings for propagation as well as attempting to translocate individuals. Seedlings might be more successful than adult plants.	CoA B38(e) (ii)

		• Translocation/propagation should be informed by a genetic assessment and representative sampling of genetic diversity to be lost and replicated at rehabilitation site. • If recipient site is within the area covered by conditions of approval then a license under the *Biodiversity Conservation Act* is not required however if outside of the area of approval, a licence will be required. This will need to consider the impact of translocation on the recipient site including any threatened ecological communities. • Soil testing at donor and recipient sites should be done to ensure capability/suitability. • The translocation program should be managed and implemented by suitably qualified company with experience in threatened species translocation. • We can provide a translocation template (developed by the Australian Botanic Garden Mount Annan) that could be used for planning and implementation if required.	
5	Sections 5.3, 5.4 Weed control	Provide detailed maps to clearly show where weed control, regeneration and landscaping, erosion and sediment management are to occur.	
6	Section 5.4.2 Regeneration and Landscaping	Provide a list of suitable species from PCTs in adjacent habitat.	
7	Section 5.4.4.2 Feral pest animal control	The BMP states that monitoring will be established, but proposes no timeframe (ie, immediately following clearing?). Proposed camera trap locations should be marked on a map.	CoA B38 (f)(ix), (g)
8	Section 5.6, Table 13 Biodiversity Measures for REA Rehabilitation	"Tahmoor Coal will prioritise the use of salvaged tree hollows for fauna habitat within revegetated areas". Further details are required. Where will these be placed? Will these be in trees or on ground? If in trees, how will they be secured? What monitoring will be done?	
9	Section 5.6, Table 13 Re-establish habitat for the Koala as well as other threatened fauna	Further detail is required including an expanded species list for planting. The *Koala Habitat Protection SEPP 21* includes a longer list of Koala use tree species.	CoA B38 (v)
10	Section 6.3 Risks to the successful implementation of the BMP	Risks are noted as "drought, excessive rain, bushfire". The BMP needs to suggest prevention/response measures to protect rehabilitation areas from these factors.	B38 (h)
11	Section 6.4.1 Recommended Monitoring Plan for REA Rehabilitation	BMP states that other plans may be required to achieve biodiversity outcomes. These should be incorporated into this BMP rather than left to an unspecified time in the future. These Plans include: • Nest box management and monitoring plan • Translocation plan for threatened flora (to be prepared by bush regeneration subcontractor engaged to undertake works) • Revegetation and weed management plan (to be prepared by bush regeneration subcontractor engaged to undertake the works) • Native seed collection and propagation strategy.	CoA B38

Agency	Comments	Response
BCS	The BMP states that ongoing monitoring of potential flora and fauna impacts, including amphibian monitoring, is addressed in the relevant extraction plan. Details of monitoring should be included in the BMP to ensure biodiversity issues are addressed holistically. It is also noted that Section 1.6 of the BMP states this BMP is a part of the broader "Extraction Plan" required in CoA C8. The Biodiversity Management Plan referred to in CoA C8 has the following requirements: ▪ Establishes baseline data for existing habitat within the subsidence area, including water table depth, vegetation condition, stream morphology, key fish habitat and threatened species habitat; and ▪ Provides for the adaptive management of potential impacts and environmental consequences of the proposed second workings on aquatic and terrestrial flora and fauna, with a specific focus on threatened species, populations and their habitats, EEC/CEECs and water dependent ecosystems. ▪ If biodiversity monitoring is to be addressed in a different Plan, this BMP should refer to that Plan and provide a broad framework of how the monitoring will be addressed to ensure that overlapping Plans containing similar issues are linked.	As this BMP is not a part of the broader Extraction Plan (as previously thought) it does not have the same requirements as the BMP referred to in CoA C8 This plan is a separate document that addresses ongoing monitoring of potential flora and fauna impacts, including amphibian monitoring.
BCS	Text states that Grevillea parviflora subsp. parviflora and Persoonia bargoensis will be subject to unavoidable direct impacts within the surface infrastructure area. Table 11 states that 0 plants will be impacted "based on revised ventilation shaft layout". Please clarify.	Micro-siting and design modifications have meant that impacts to these flora will be avoided – text was overlooked during update.
BCS	Text states that micro-siting is to be done in consultation with DPIE. Please clarify if this has been finalised and, if not, what is proposed to happen?	Pending arrangement
BCS	Text states that translocation will be done in accordance with Guidelines for the Translocation of Threatened Plants in Australia (Commander et al.). Translocation should also consider the NSW Translocation Policy: https://www.environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Animals-and-plants/Threatened-species/translocation-operational-policy-190552.pdf Translocation is a complex matter and a Translocation Plan should be prepared and included as an appendix to this Biodiversity Management Plan. Further information on financial commitments to research and on-ground objectives should be included. Furthermore,	Conditions of consent specify the Translocation of Threatened Plants in Australia (Commander et al.) is the one to be adhered to for any translocation of threatened flora. We have added the translocation policy as an additional source to be considered. As stated here, a translocation plan will need to be prepared by a suitably qualified and experienced professional. This is beyond Niche's scope of expertise and will need to be prepared by the contractor engaged to undertake translocation. Considering that known threatened flora are to be avoided, so too is the need for translocation and a translocation plan at

	• The proposal needs to provide a clear objective, desired outcomes, monitoring framework and risk mitigation measures for the translocation. • The translocation needs to be appropriately resourced. • Proteaceae including grevilleas and persoonias generally do not like having their roots disturbed. Translocation can be difficult and should be done in consultation with appropriate experts. • Where possible, collect seed and cuttings for propagation as well as attempting to translocate individuals. Seedlings might be more successful than adult plants. • Translocation/propagation should be informed by a genetic assessment and representative sampling of genetic diversity to be lost and replicated at rehabilitation site. • If recipient site is within the area covered by conditions of approval, then a license under the Biodiversity Conservation Act is not required however if outside of the area of approval, a licence will be required. This will need to consider the impact of translocation on the recipient site including any threatened ecological communities. • Soil testing at donor and recipient sites should be done to ensure capability/suitability. • The translocation program should be managed and implemented by suitably qualified company with experience in threatened species translocation. • We can provide a translocation template (developed by the Australian Botanic Garden Mount Annan) that could be used for planning and implementation if required.	this stage – unless any are found during the pre-clearance surveys.
BCS	Provide detailed maps to clearly show where weed control, regeneration and landscaping, erosion and sediment management are to occur.	Our shows the extent of where weed management will be carried out. BMP does not show the specific locations of sedimentation control/erosions etc. as this will be linked to the construction design and implementation.
BCS	Provide a list of suitable species from PCTs in adjacent habitat.	Added Appendix D – Flora species for revegetation
BCS	The BMP states that monitoring will be established, but proposes no timeframe (ie, immediately following clearing?). Proposed camera trap locations should be marked on a map.	BMP section 5.4.4.2 Monitoring states: Current monitoring is in place, which consists of cage trapping. Additional feral pest **monitoring will be established** in consultation with a qualified ecologist **from the commencement of the BMP**. Actions taken in response to any identified increase in pest activity will be highly dependent on consultation with LLS and Council.”

BCS	"Tahmoor Coal will prioritise the use of salvaged tree hollows for fauna habitat within revegetated areas." Further details are required. Where will these be placed? Will these be in trees or on ground? If in trees, how will they be secured? What monitoring will be done?	Planted saplings will not be large enough to support hollow logs – "on the ground throughout the rehabilitation area" "**No monitoring** will be undertaken following placement of coarse woody debris habitat features, as the surrounding habitat will consist of planted tubestock and take a substantial amount of time to recover to a point where it is conducive to regular use of introduced coarse woody debris by local native fauna. "
BCS	Further detail is required including an expanded species list for planting. The Koala Habitat Protection SEPP 21 includes a longer list of Koala use tree species.	The choice here is between including tree species that are not part of the surrounding PCTs for the perceived benefit of Koalas, OR mimicking the composition of surrounding PCTs and limiting the koala food trees to the few species known to be preferred by local Koalas. i.e., grey gum, red gum and blue-leaved stringy-bark. Note that not all koala use trees are koala feed trees –this statement has been clarified.
BCS	Risks are noted as "drought, excessive rain, bushfire". The BMP needs to suggest prevention/response measures to protect rehabilitation areas from these factors.	BMP Section 6.3 Risks to successful implementation of the BMP addresses this.
BCS	BMP states that other plans may be required to achieve biodiversity outcomes. These should be incorporated into this BMP rather than left to an unspecified time in the future. These Plans include: • Nest box management and monitoring plan • Translocation plan for threatened flora (to be prepared by bush regeneration subcontractor engaged to undertake works) • Revegetation and weed management plan (to be prepared by bush regeneration subcontractor engaged to undertake the works) • Native seed collection and propagation strategy.	**Nest box management and monitoring:** the revegetation area where the nest boxes will eventually be installed has not been planted yet and the trees will take a long time to reach maturity. If a plan were to be created now instead of when the trees are ready it would require significant revision before implementation anyway. Plot monitoring that will help to gauge when the trees will be ready has been proposed, thus triggering the need for a nest box plan to be created and implemented. **Translocation plan for threatened flora:** as previously mentioned, this will not be required unless any threatened flora are found in the disturbance footprint during the pre-clearance survey. **Revegetation and weed management plan:** as stated, this is to be prepared by bush regeneration subcontractor engaged to undertake the works. **Native seed collection and propagation strategy:** as stated, this is to be prepared by bush regeneration subcontractor engaged to undertake the works.

APPENDIX G - Letter of Endorsement

Planning, Industry & Environment

Ms Zina Ainsworth
Manager Environment and Community
SIMEC Mining
2975 Remembrance Drive
Tahmoor NSW 2573

16/08/2021

Dear Ms. Ainsworth

Tahmoor South Coal (SSD-8445)
Management Plan Experts Endorsement

I refer to your request (SSD-8445-PA-2) for the Secretary's approval of suitably qualified persons to prepare the Management Plans for the Tahmoor South Coal (SSD-8445).

The Department has reviewed the nominations and information you have provided and is satisfied that these experts are suitably qualified and experienced. Consequently, I can advise that the Secretary approves the appointment of the following experts to prepare the following Management Plans:

Management Plan	Suitably Qualified Person
Noise Management Plan	Michelle Grierson – Senior Environmental Scientist Umwelt Australia Pty Ltd Katie Teyhan (Technical Reviewer) - Associate Acoustics Manager Newcastle EMM
Spontaneous Combustion Management Plan	Michelle Grierson – Senior Environmental Scientist Umwelt Australia Pty Ltd
Water Management Plan	Camilla West - Senior Water Resources Scientist Tony Marszalek - Director and Principal Water Resources Engineer Hydro Engineering & Consulting Pty Ltd
Groundwater Management Plan	Will Minchin – Hydrogeologist Maxime Philibert - Hydrogeologist SLR Consulting
Biodiversity Management Plan	Luke Baker - Team Leader Ecology Niche Environment and Heritage
Rehabilitation Strategy	Michelle Grierson – Senior Environmental Scientist Umwelt Australia Pty Ltd
Traffic Management Plan	Michelle Grierson – Senior Environmental Scientist Umwelt Australia Pty Ltd
Social Impact Management Plan	Amanda Bateman – Community Liaison Specialist Tahmoor Coal Pty Ltd

It is noted that it was proposed that Michelle Grierson – Senior Environmental Scientist Umwelt Australia Pty Ltd was proposed to prepare the Air Quality and Greenhouse Gas Management Plan. Given the significance of the technical aspects associated with air quality and greenhouse gas emissions at the project, the Department requests that a technical specialist be proposed to work with Ms Grierson to prepare this Air Quality and Greenhouse Gas Management Plan. Please provide further details of the proposed air quality expert by lodging further details via the portal.

If you wish to discuss the matter further, please contact Wayne Jones on (02) 6575 3406.

Yours sincerely

Stephen O'Donoghue
Director
Resource Assessments
As nominee of the Secretary

APPENDIX H - Letter of Approval

Planning, Industry & Environment

Zina Ainsworth
Environment & Community Manager
Tahmoor Coal Pty Ltd
2975 Remembrance Drive
Tahmoor, NSW, 2573

14/04/2022

Dear Ms. Ainsworth

Tahmoor South Coal (SSD-8445)
Biodiversity Management Plan

I refer to the Biodiversity Management Plan submitted in accordance with Condition B38 of Schedule 2 of the Development Consent for the project name (SSD-8445).

The Department has carefully reviewed the document and is satisfied that it meets the requirements of the relevant conditions of consent.

Accordingly, the Secretary has approved the Biodiversity Management Plan (Revision 5, dated 16 March 2022). 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 Wayne Jones on (02) 6575 3406.

Yours sincerely

Wayne Jones
Team Leader - Post Approval
Resource Assessments

As nominee of the Secretary