NSW GOVERNMENT

NSW Resources Regulator

FWP0001220

TAHMOOR COLLIERY FORWARD PROGRAM

Wednesday 15 June 2022 to Saturday 14 June 2025

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Summary

DETAIL	
Mine	Tahmoor Colliery
Reference	FWP0001220
Forward program commencement date	Wednesday 15 June 2022
Forward program end date	Saturday 14 June 2025
Forward program revision (if applicable)	FWP0001090
Contact	Zina Ainsworth
Mining leases	ML 1539 (1992), CCL 747 (1973), ML 1308 (1992), ML 1642 (1992), ML 1376 (1992), CCL 716 (1973)
Project location	Tahmoor Coal Pty Ltd
Date of submission	Friday 11 August 2023

Important

The department may make the information in your program and any supporting information available for inspection by members of the public, including by publication on its website or by displaying the information at any of its offices. If you consider any part of your program to be confidential, please communicate this to the department via the message function on this submission within the NSW Resources Regulator Portal.

Three-year forecast – surface disturbance activities

Project description

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 manufacturing. 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.

Description of surface disturbance activities

Exploration activities

Tahmoor Coal will continue to undertake exploration activities within the mining leases, assessment leases and exploration licences to increase the accuracy of the site geological model. Works will include continued structural, coal quality and crop line drilling. Reporting for these drilling programs will be conducted as per mining lease requirements.
Additional drill holes to install groundwater monitoring bores may also be required. Where required, monitoring bores will be licenced under the Water Management Act 2000 or the Water Act 1912, depending on the aquifers being intersected and monitored. Geotechnical and test pits will be undertaken as required.

Construction activities

Construction activities to be undertaken as part of the Tahmoor South project will be undertaken wholly within previously disturbed areas and include:

- CHPP Noise Mitigation Works.

This surface infrastructure will be constructed within the existing Pit-top disturbance area and will not require any additional disturbance. As these activities will be undertaken within

disturbed areas and include upgrades to existing infrastructure only, they are not depicted on plans required under the ARRFP.

Mining schedule

Mining development method and sequencing and general mine features.

An indicative underground mining schedule for development and secondary extraction of LW S1A-S6A is provided below.

Mining of LW S1A commenced in October 2022, with LW S6A scheduled for completion in July 2026. It is estimated that each longwall will be extracted in approximately 6 to 8 months. The rate of longwall retreat is anticipated to range from 50-80 m per week, depending on geological conditions and support regime. Tahmoor Coal operates seven days a week, 24 hours a day on a roster basis.

Mine Schedule for LW S2A-S6A:

Longwall Panel Estimated Start Date Estimated Completion Date Estimated Duration

Longwalls South 1A (LW S1A) 19/10/2022 18/06/2023 242 days

Longwalls South 2A (LW S2A) 8/07/2023 07/02/2024 214 days

Longwalls South 3A (LW S3A) 29/02/202 22/09/2024 206 days

Longwalls South 4A (LW S4A) 28/10/2024 28/05/2025 212 days

Longwalls South 5A (LW S5A) 28/06/2025 07/02/2026 224 days

Longwalls South 6A (LW S6A) 10/03/2026 25/07/2026 215 days

Areas identified for emplacements, the sequencing of emplacements, construction, and management.

Reject emplacements will be confined to the Reject Emplacement Area (REA) and progressively rehabilitated in accordance with the Forward program - Year 1, Year 2 and Year 3 spacial data and maps. Current emplacement is occuring in the South-west section of the REA with continued progressive filling to achieve the final landform in accordance with the EIS for the Tahmoor South SSD 8445 Consent.

Processing infrastructure activities and the location of tailings facilities and schedule for emplacement.

Tahmoor Coal processes Run of Mine (ROM) Coal at an on-site Coal Handling and Preparation Plant (CHPP). The CHPP utilises crushing and screening, primary and secondary cyclones, and a flotation circuit to produce coking and thermal coal product which is stockpiled, before being loaded and transported by rail to Port Kembla Coal Terminal.

Fine reject from the coal washing process is dried using a belt press filter and mixed with coarse reject before being conveyed to the on-site Refuse Emplacement Area (REA). Refuse is emplaced using haul trucks and reshaped by dozers, before being capped with topsoil and progressively rehabilitated.

All coal and reject handling are by a fully enclosed conveyor system, with the exception of the tripper conveyor to the primary product stockpile. All operations described in this section are expected to remain for the Life of Mine.

Waste disposal and materials handling operations.

Waste is managed across Tahmoor Coal leases in accordance with the sites Waste Management Plan (WMP) and in compliance with the Waste Classification Guidelines Part 1: Classifying Waste (EPA 2014).

Tahmoor Coal has engaged a licensed contractor to act as the authorized agent to manage and track the transport of waste from Tahmoor Mine.

Various bins are placed across the site to assist with waste segregation. Waste produced on site should be put in the appropriate bin and if no bin fits the description of that waste, it should be placed in a bunded area and covered in case of rainfall. A member of the Environment and Community Department should then be provided with details of the waste material so they can forward it to the sites licensed waste contractor for correct off-site disposal.

All wastes that have the potential to cause environmental harm (e.g. hazardous waste) should be placed in secure areas on site. Adequate containment (bunding) is provided to minimise the potential for spillage or leaching which could affect surface water quality or cause soil contamination. Bunded areas are constructed and operated generally in accordance with the EPA's Technical Guideline "Bunding and Spill Management" and Australian Standard (1940-2004) "The Storage and Handling of Flammable and Combustible Liquids". Particular waste streams, such as waste oil, are also managed to provide that they are safe from likely ignition sources to minimise the risk of fire.

Key production milestones

MATERIAL	UNIT	YEAR 1	YEAR 2	YEAR 3
Stripped topsoil (if applicable)	(m^3)	8,680	0	13,549
Rock/ overburden	(m^3)	0	0	0
Ore	(Mt)	0	0	0
Reject material[1]	(Mt)	840,118	1,126,000	1,121,000
Product	(Mt)	1,739,350	2,001,000	1,835,000

[1] This includes coarse rejects, tailings and any other wastes resulting from beneficiation.

Three-year rehabilitation forecast

Rehabilitation maintenance and corrective actions

The rehabilitation monitoring program as outlined in Section 8 of the Rehabilitation Management Plan (RMP) will be used to identify any maintenance actions required and whether further works are required to achieve specific closure criteria.

The rehabilitation care and maintenance program will be undertaken following the completion of rehabilitation activities at the site and will be utilised to facilitate the sites rehabilitation progression towards achieving the closure criteria. The management and maintenance program will include, as required, measures such as:

- weeds and feral animal control
- erosion and drainage control works
- environmental monitoring and management of surface water, groundwater, acid drainage, spontaneous combustion, ecology and land capability in line with other approved environmental management plans required by the development
- re-seeding/planting of rehabilitation areas that may have failed (e.g. lack of germination, high plant mortality rate, adverse weather conditions, bushfire etc) or require the establishment of later phase successional species
- repair of fence lines, access tracks and other general related land management activities.

Further actions that have been identified in the latest Annual Review and Annual Rehab walkover are tracked in our compliance software for completion.

Rehabilitation schedule

Limited opportunities for rehabilitation are available during the Tahmoor Mine operational period due to the minimal surface disturbance required to support underground mining operations. Almost all current disturbance areas within the Tahmoor Mine lease are envisaged to be required for the duration of the life of mine and will therefore be rehabilitated at mine closure.

Rehabilitation over the next three years will be limited to the REA and creek remediation works currently being completed in Myrtle and Redbank Creek. Further information can be found within the Rehabilitation Management Plan, Rehabilitation Strategy and CAMP (Corrective Action Management Plan) for Redbank and Myrtle Creek.

Progressive mining and rehabilitation statistics

Three-yearly forecast cumulative disturbance and rehabilitation progression

	FORECAST	UNIT	YEAR 1	YEAR 2	YEAR 3
A	**Total surface disturbance footprint**	(ha)	145.87	145.87	152.42
B	**Total active disturbance**	(ha)	139.48	139.48	141.89
P	**Total new area of land proposed for active rehabilitation**	(ha)	6.39	6.39	10.53

Attachment 1 – Reporting Definitions

REPORTING CATEGORY		DEFINITION
A	Total disturbance footprint – surface disturbance	All areas within a mining lease that either have at some point in time or continue to pose a rehabilitation liability due to surface disturbance activities. The total disturbance footprint is the sum of the total active disturbance, decommissioning, landform establishment, growth medium development, ecosystem and land use establishment, ecosystem and land use development and rehabilitation completion (see definitions below). Underground mining operations should not include the footprint of underground mining areas/subsidence management areas in the total disturbance footprint.
B	Total active disturbance	Includes on-lease exploration areas, stripped areas ahead of mining, infrastructure areas, water management infrastructure, sewage treatment facilities, topsoil stockpile areas, access tracks and haul roads, active mining areas, waste rock emplacements (active/unshaped/in or out-of-pit), tailings dams (active/unshaped/uncapped) and temporary stabilised areas (e.g. areas sown with temporary cover crops for dust mitigation and temporary rehabilitation).
C	Rehabilitation – land preparation	Includes the sum of all disturbed land within a mining lease that have commenced any, or all, of the following phases of rehabilitation– decommissioning, landform establishment and growth medium development. Refer to the glossary of terms in this document for the definition of these phases of rehabilitation.
D	Ecosystem and land use establishment	Includes the area which has been seeded/planted with the target vegetation species for the intended final land use. However, vegetation has not matured to a stage where it can be demonstrated that it will be sustainable for the long term and or require only a maintenance regime consistent with target reference/analogue sites. Typically, rehabilitation areas would be in this phase for at least two years (and usually more) before rehabilitation can be classified as being in the ecosystem and land use development phase. This phase does not apply to infrastructure areas that are being retained as part of final land use for the site.

Attachment 2 – Definitions

WORD	DEFINITION
Active	In the context of rehabilitation, land associated with mining domains is considered 'active' for the period following disturbance until the commencement of rehabilitation.
Active mining phase of rehabilitation	In the context of rehabilitation, the active mining phase of rehabilitation constitutes the rehabilitation activities undertaken during mining operations such assalvaging and managing soil resources, salvaging habitat resources, and native seed collection. This phase also includes management actions taken during operations to manage risks to rehabilitation and enhance rehabilitation outcomes such as selective handling of waste rock and management of tailings emplacements.
Analogue site	In the context of rehabilitation, an analogue site is a 'reference site' that represents an example of the defining characteristics (such as vegetation composition and structure or agricultural productivity) of the final land use. Characteristics of analogue sites can be assessed to develop the rehabilitation objectives and completion criteria for final land use domains.
Annual rehabilitation report and forward program	As described in the Mining Regulation 2016.
Annual reporting period	As defined in the Mining Regulation 2016.
Closure	A whole-of-mine-life process, which typically culminates in the relinquishment of the mining lease. It includes decommissioning and rehabilitation to achieve the approved final land use(s).
Decommissioning	The process of removing mining infrastructure and removing contaminants and hazardous materials.
Decommissioning Phase of Rehabilitation	Activities associated with the removal of mining infrastructure and removal and/or remediation of contaminants and hazardous materials. In the context of the rehabilitation management plan this phase of rehabilitation may also include studies and assessments associated with decommissioning and demolition of infrastructure or works carried out to make safe or 'fit for purpose' built infrastructure to be retained for future use(s) following lease relinquishment.

WORD	DEFINITION
Department	The Department of Regional NSW.
Disturbance	See Surface Disturbance.
Disturbance area	An area that has been disturbed and that requires rehabilitation. This may include areas such as on-licence exploration areas, stripped areas ahead of mining, infrastructure areas, water management infrastructure, sewage treatment facilities, topsoil stockpile areas, access tracks and haul roads, active mining areas, waste emplacements (active/unshaped/in or out-of-pit), tailings dams (active/unshaped/uncapped), and areas requiring rehabilitation that are temporarily stabilised (i.e. managed to minimise dust generation and/or erosion).
Domain	An area (or areas) of the land that has been disturbed by mining and has a specific operational use (mining domain) or specific final land use (final land use domain). Land within a domain typically has similar geochemical and/or geophysical characteristics and therefore requires specific rehabilitation activities to achieve the associated final land use.
Ecosystem and Land Use Development	This phase of rehabilitation consists of the activities to manage maturing rehabilitation areas on a trajectory to achieving the approved rehabilitation objectives and completion criteria. For vegetated land uses this phase may include processes to develop characteristics of functional self-sustaining ecosystems, such as nutrient recycling, vegetation flowering and reproduction, and increasing habitat complexity, and development of a productive, self-sustaining soil profile. This phase of rehabilitation may include specific vegetation management strategies and maintenance such as tree thinning, supplementary plantings and weed management.
Ecosystem and Land Use Establishment	This phase of rehabilitation consists of the processes to establish the approved final land use following construction of the final landform. For vegetated land uses this rehabilitation phase includes establishing the desired vegetation community and implementing land management activities such as weed control. This phase of rehabilitation may also include habitat augmentation such as installation of nest boxes.
Exploration	Has the same meaning as that term under the State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007.

WORD	DEFINITION
Final landform and rehabilitation plan	As defined in the Mining Regulation 2016.
Final land use	As defined in the Mining Regulation 2016.
Form and way	Means the form and way approved by the Secretary. Approved form and way documents are available on the Department's website.
Growth Medium Development	This phase of rehabilitation consists of activities required to establish the physical, chemical and biological components of the substrate required to establish the desired vegetation community (including short lived pioneer species. This phase may include spreading the prepared landform with topsoil and/or subsoil and/or soil substitutes, applying soil ameliorants to enhance the physical, chemical and biological characteristics of the growth media, and actions to minimise loss of growth media due to erosion.
Habitat	Has the same meaning as that term under the *Biodiversity Conservation Act 2016* and the *Fisheries Management Act 1994* (as relevant).
Indicator	An attribute of the biophysical environment (e.g. pH, topsoil depth, biomass) that can be used to approximate the progression of a biophysical process. It can be measured and audited to demonstrate (and track) the progress of an aspect of rehabilitation towards a desired completion criterion (i.e. defined end point). It may be aligned to an established protocol and used to evaluate changes in a system.
Land	As defined in the *Mining Act 1992.*
Landform Establishment	This phase of rehabilitation consists of the processes and activities required to construct the final landform. In addition to profiling the surface of rehabilitation areas to the approved final landform profile this phase may include works to construct surface water drainage features, encapsulate problematic materials such as tailings, and prepare a substrate with the desired physical and chemical characteristics (e.g. rock raking or ameliorating sodic materials).
Large mine	As defined in the Mining Regulation 2016.
Lease holder	The holder of a mining lease.

WORD	DEFINITION
Life of mine	The timeframe of how long a mine is approved to mine, from commencement to closure.
Mine rehabilitation portal	Means the NSW Resources Regulator's online portal that lease holders must use (via a registered account) to: ■ upload rehabilitation geographical information system (GIS) spatial data ■ develop rehabilitation GIS spatial data (using online tracing functions) ■ generate rehabilitation plans and rehabilitation statistics using the map viewer and Rehabilitation Key Performance Indicator functionalities. Data submitted to the mine rehabilitation portal is collated in a centralised geodatabase for use by the NSW Resources Regulator to regulate rehabilitation performance of lease holders.
Mining area	As defined in the *Mining Act 1992*.
Mining domain	A land management unit with a discrete operational function (e.g. overburden emplacement), and therefore similar geophysical characteristics, that will require specific rehabilitation treatments to achieve the final land use(s).
Mining land	As defined in the *Mining Act 1992*.
Native vegetation	Has the same meaning as that term under section 60B of the *Local Land Services Act 2013*.
Overburden	Material overlying coal or a mineral deposit.
Performance indicator	An attribute of the biophysical environment (for example pH, slope, topsoil depth, biomass) that can be used to demonstrate achievement of a rehabilitation objective. It can be measured and audited to demonstrate (and track) the progress of an aspect of rehabilitation towards a desired completion criterion, that is, a defined end point. It may be aligned to an established protocol and used to evaluate changes in a system.

WORD	DEFINITION
Phases of rehabilitation	The stages and sequences of actions required to rehabilitate disturbed land to achieve the final land use. The phases of rehabilitation are: ■ active mining ■ decommissioning ■ landform Establishment ■ growth medium development ■ ecosystem and land use establishment ■ ecosystem and land use development.
Progressive rehabilitation	The progress of rehabilitation towards achieving the approved rehabilitation completion criteria. This may be described in terms of domains, phases, performance indicators and rehabilitation completion criteria.
Rehabilitation Completion	The final phase of rehabilitation when a rehabilitation area has achieved the approved rehabilitation objectives and rehabilitation completion criteria for the final land use. Rehabilitation areas may be classified as complete when the NSW Resources Regulator has determined in writing that the relevant rehabilitation obligations have been fulfilled following submission of *Form ESF2 Rehabilitation completion and/or review of rehabilitation cost estimate* application by the lease holder.
Rehabilitation Completion criteria	As defined in the Mining Regulation 2016.
Rehabilitation cost estimate	As defined in the Mining Regulation 2016.
Rehabilitation management plan	As defined in the Mining Regulation 2016.
Rehabilitation objectives	As defined in the Mining Regulation 2016.
Rehabilitation risk assessment	As defined in the Mining Regulation 2016.
Rehabilitation schedule	The defined timeframes for progressive rehabilitation set out in the forward program.

WORD	DEFINITION
Relevant stakeholders	Means any persons or bodies who may be affected by the mining operations, including rehabilitation, carried out on the lease land, and includes: ■ the relevant development consent authority ■ the local council ■ the relevant landholder(s) ■ community consultative committee (if required under the development consent) or equivalent consultative group ■ affected land holder(s) ■ government agencies relevant to the final land use ■ affected infrastructure authorities (electricity, telecommunications, water, pipeline, road, rail authorities) ■ local Aboriginal communities, and ■ any other person or body determined by the Minister to be a relevant stakeholder in relation to a mining lease.
Risk	The effect of uncertainty on objectives. It is measured in terms of consequences and likelihood (AS/NZS ISO 31000:2009).
Secretary	The Secretary of the Department.
Security deposit	An amount that a mining lease holder is required to provide and maintain under a mining lease condition, to secure funding for the fulfilment of obligations under the lease (including obligations that may arise in the future).
Surface disturbance	Includes activities that disturb the surface of the mining area, including mining operations, ancillary mining activities and exploration.
Tailings	A combination of the fine-grained solid material remaining after the recoverable metals and minerals have been extracted from the mined ore, and any process water[2].
Waste	Has the same meaning as that term under the *Protection of the Environment Operations Act 1997*.

[2] Commonwealth of Australia (DITR), 2007. *Tailings Management*.

Plan 2A Mining and Rehabilitation - Year 1

Legend

Forecast Data Year1

- Forecast Disturbance
- Forecast Land Prepared for Rehabilitation
- Ecosystem and Land Use Establishment

World Imagery

Low Resolution 15m Imagery

High Resolution 60cm Imagery

High Resolution 30cm Imagery

Citations

Notes

458.6 0 229.31 458.6 Meters

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Plan 2B Mining and Rehabilitation - Year 2

Legend

Forecast Data Year2

- Forecast Disturbance
- Forecast Land Prepared for Rehabilitation
- Ecosystem and Land Use Establishment

World Imagery

Low Resolution 15m Imagery

High Resolution 60cm Imagery

High Resolution 30cm Imagery

Citations

Notes

458.6 0 229.31 458.6 Meters

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Plan 3A Mining and Rehabilitation - Year 3

Legend

Forecast Data Year3

- Forecast Disturbance
- Forecast Land Prepared for Rehabilitation
- Ecosystem and Land Use Establishment

World Imagery

Low Resolution 15m Imagery

High Resolution 60cm Imagery

High Resolution 30cm Imagery

Citations

Notes

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