

ARR0001012

TARRAWONGA COAL MINE ANNUAL REHABILITATION REPORT

Saturday 1 January 2022 to Saturday 31 December 2022

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Summary table

DETAIL

Mine	Tarrawonga Coal Mine
Reference	ARR0001012
Annual report period commencement date	Saturday 1 January 2022
Annual report period end date	Saturday 31 December 2022
Forward program	FWP0001053
Mining leases	ML 1693 (1992), ML 1579 (1992), ML 1749 (1992), ML 1685 (1992)
Lease holder(s)	Whitehaven Coal Mining Limited
Contact	Daryl Robinson
Date of submission	Tuesday 7 March 2023

Important

The department may make the information in your report 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 report to be confidential, please communicate this to the department via the message function on this submission within the NSW Resources Regulator Portal.

Mine details

Project description

Tarrawonga Coal Mine (Tarrawonga) (formerly known as East Boggabri Coal Mine) is an open cut coal mine owned and operated by Tarrawonga Coal Pty Limited, a wholly owned subsidiary of Whitehaven Coal Limited (Whitehaven) located approximately 15 kilometres (km) north-east of Boggabri and 42 km north-northwest of Gunnedah, NSW. Tarrawonga is approved under PA 11_0047 to carry out mining operations at a maximum rate of 3.5 million tonnes per annum (Mtpa) using truck and excavator method until the end of December 2030. Coal is hauled by road to the Gunnedah CHPP approximately 4km NW of Gunnedah town and then railed to the Port of Newcastle on the Mungindi-Werris Creek railway.

Life of mine

7 years

Current development consents, leases and licences

Development consents granted under the *Environmental Planning and Assessment Act 1979*

Authorisations covering the mining area granted under the *Mining Act 1992*

ML 1693 (1992), ML 1579 (1992), ML 1749 (1992), ML 1685 (1992)

Any other approvals, licences, or authorities issued by government agencies that are relevant to the progress of mining operation and rehabilitation activities

Summary of the scope and/or purpose of the new applications or modifications to existing approvals (if applicable)

N/A

Changes to land ownership and land use

N/A

Surface disturbance and rehabilitation activities during the reporting period

Surface disturbance and rehabilitation activities that were conducted and an analysis of the progress against the rehabilitation schedule

The 2022 calendar year disturbance had already been completed when the forward program was submitted. Therefore the CY 2022 disturbance activities were already submitted in July 2022. For Calendar year 2023 (Year 1 in the new Forward Program) some clearing has been brought forward to enable construction of a new mine water dam to replace the existing dam which will be mined through in FY24/25.

The 2022 rehabilitation activities were significantly impacted by regional flooding events of the Namoi River and smaller creeks closer to the mine. Access was significantly impaired between September and November, production was affected and normal shifts did not recommence until site access was re-established reliably. Following re-establishment of site access the dig area in the Southern Emplacement Area (SEA) was saturated which slowed progress on the landform establishment in December. For the Northern Emplacement Area (NEA) operations were also impacted due to operators not being able to access site for the times when flooding impacted the surrounding roads. However the ecosystem establishment activities were completed in December and landform scheduled to be completed in 2024 was brought forward to offset the delay in the SEA. However overall the total scheduled landform establishment area was not achieved due to the delays from the flooding events.

The rejects material submitted for 2022 was cited in t not Mt. Therefore the reported amount of 0.45Mt should be compared to 0.7Mt

Rehabilitation planning activities that were conducted, including any specialist studies

Landform design was conducted throughout 2022 with a landform design being approved for the NEA areas for 2023 to 2025 and a design approved for the SEA for 2023 to 2025. Tarrawonga's landform design for 2023 has been based on a geomorphic landform design using 'Geo-fluv' modelling software to ensure that the final landform blends in with the surrounding topography. There has been some re-design work over 2022 to ensure that the 'traditional' style landform with contour banks links up to the geomorphic areas and remains within the design constraints of Tarrawonga's Project Approval PA11_0047.

No demolition, heritage or contamination planning activities were conducted in 2022. A Water Management Audit was completed which assessed Tarrawonga's erosion and sediment control management.

Overview of subsidence repair and/or remediation works undertaken

During site establishment of the contractors completing the ecosystem establishment in the NEA some gully erosion was discovered in the rehabilitation completed in 2021. This gully erosion was at the point where a contour bank met the drop structure. The erosion was repaired, the join between the contour and drop structure was improved and an extra contour was installed above the area to further reduce water flows along the affected contour bank.

Overview of rehabilitation management and maintenance activities

During site establishment of the contractors completing the ecosystem establishment in the NEA some gully erosion was discovered in the rehabilitation completed in 2021. This gully erosion was at the point where a contour bank met the drop structure. The erosion was repaired, the join between the contour and drop structure was improved and an extra contour was installed above the area to further reduce water flows along the affected contour bank.

Weed control activities continued throughout 2022 using a specialist contractor. Feral animal control was conducted in October 2022 and pest fauna monitoring has been conducted with motion detecting cameras around site.

Details of any rehabilitation actions taken as required by any letters, notices or directions issued by government agencies, including the NSW Resources Regulator

No actions were required by notice or direction by government agencies during the reporting period.

Details of any rehabilitation areas that have achieved the final land use

Not applicable.

Key production milestones

MATERIAL	UNIT	FWP0001053 YEAR 1	THIS REPORT
Stripped topsoil (if applicable)	(m ³)	91,261	37,580
Rock/overburden	(m ³)	38,200,000	21,378,464
Ore	(Mt)	0	0
Reject material¹	(Mt)	700,000	0.45
Product	(Mt)	3.5	2.13

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

Disturbance and rehabilitation statistics

Current disturbance and rehabilitation progression

ELEMENT	UNIT	FWP0001053 YEAR 1	THIS REPORT
A Total surface disturbance footprint	(ha)	801.6	798.19
B Total active disturbance	(ha)	657.57	619.42
C Land prepared for rehabilitation	(ha)	38.14	5.91
D Ecosystem and land use establishment	(ha)	155.74	152.58
E Ecosystem and land use development	(ha)	N/A	0
F Rehabilitation completion	(ha)	N/A	0

Rehabilitation key performance indicators (KPIs)

ELEMENT	UNIT	FWP0001053 YEAR 1	THIS REPORT
G Total new active disturbance area	(ha)	11.99	0
H New rehabilitation commenced during annual reporting period	(ha)	49.84	0
J Annual rehabilitation to disturbance ratio	%	4.16	0
I Established rehabilitation	(ha)	N/A	0
K Rehabilitated land to total mine footprint	%	N/A	0

Progressive achievement of established rehabilitation

	ELEMENT	UNIT	THIS REPORT
L	Established rehabilitation - agricultural final land uses	%	0
M	Established rehabilitation - native ecosystem final land uses	%	0
N	Established rehabilitation - other/non-vegetated final land uses	%	0

Variation to the rehabilitation schedule

Identify the components of the most recent forward program that were not achieved

The 2022 calendar year disturbance had already been completed when the forward program was submitted. Therefore the CY 2022 disturbance activities were already submitted in July 2022. This is the cause of discrepancy between the figures reported in A and B above.

The 2022 rehabilitation activities were significantly impacted by regional flooding events of the Namoi River and smaller creeks closer to the mine. Access was significantly impaired between September and November, production was affected and normal shifts did not recommence until site access was re-established reliably. Following re-establishment of site access the dig area in the Southern Emplacement Area (SEA) was saturated which slowed progress on the landform establishment in December. For the Northern Emplacement Area (NEA) operations were also impacted due to operators not being able to access site for the times when flooding impacted the surrounding roads. However the ecosystem establishment activities were completed in December and landform scheduled to be completed in 2024 was brought forward to offset the delay in the SEA. However overall the total scheduled landform establishment area was not achieved due to the delays from the flooding events. The total landform achieved in 2022 was 26ha out of 38.14ha forecast. The total ecosystem achieved was 12.33ha compared to a forecast 11.7ha.

Key factors that delayed progressive rehabilitation

The key factors affecting the rehabilitation schedule have been weather and flooding impacts. The corrective actions proposed have been to reforecast rehabilitation schedule based on the revised final landform. This reforecast has identified areas of rehabilitation progression that would be prone to erosion and failure if undertaken before the designed drainage structures have been completed. Therefore the rehabilitation areas put forward in the new forward

program have been developed so that landform establishment areas are within a catchment area that has existing (or planned within the same time period) drainage.

In addition to this a further corrective measure has been to engage an external contractor to assist in progressing the landform establishment activities so that the remainder of the landform planned for 2022 can be completed by the end of FY in June and progressed to ecosystem establishment. This then enables the landform establishment area planned for 2023 to be scheduled to be completed between July and December 2023. Contractor assistance may also be scheduled to assist in the landform establishment activities in late 2023, if required to meet the target.

Outline actions that will be included in the forward program and carried out to minimise disturbance and undertake progressive rehabilitation as far as reasonably practical

Actions in the forward program include the revision of the proposed areas for years 1-3 as described above. This has revised the areas planned for landform establishment (and then subsequent ecosystem establishment) to ensure they match with the revised final landform design incorporating geomorphic design principles and also the mining schedule. It has also been revised to ensure that rehabilitation completed is not left prone to erosion by progressing beyond effective drainage infrastructure for each area. The revised forward program also retains a pit access road that would otherwise have to be moved in year 2 which would potentially require more disturbance and be inefficient for haulage.

Rehabilitation monitoring and research findings

Rehabilitation monitoring

The rehabilitation monitoring carried out in the annual reporting period

In relation to the ground cover sites of the 16 plots monitored in 2021 and 2022, there is an increase in the desirable ground cover in 14 plots. In these plots, an increase in the ground cover of native species and litter, and a reduction in the percentage of bare earth, was recorded. This exhibits progression towards restoring ecosystem function (Table 11 RMP) and vegetation establishment of 85% ground cover.

Total groundcover (including exotic cover) at Tarrawonga Rapid Point Assessment (RPA) sites was generally moderate to high, with 67% of sites having groundcover above 70%, while two sites (13%) had very low groundcover. Native grasses were absent to occasional at most RPAs (67%), with the remainder having either frequent (20%) or common (13%) native grass presence.

All repeat sites in young rehabilitation (years seeded 2019–2021) exhibited an increase in seedling density, except for TCR21317 which remained similar. In the Northern Emplacement Area, all sites in recently established rehabilitation exhibited tree seedling densities ≥ 500 stems/ha, with most sites exhibiting around 1000 stems/ha. In the Southern Emplacement Area, densities were lower, with one site having 330 stems/ha and the other having 140 stems/ha.

Status of performance against rehabilitation objectives and rehabilitation completion criteria

The monitoring program that has been implemented

In relation to the ground cover sites of the 16 plots monitored in 2021 and 2022, there is an increase in the desirable ground cover in 14 plots. In these plots, an increase in the ground cover of native species and litter, and a reduction in the percentage of bare earth, was recorded. This exhibits progression towards restoring ecosystem function (Table 11 RMP) and vegetation establishment of 85% ground cover (Table 14 RMP).

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Are all rehabilitation areas in Landform Establishment phase or higher represented in the monitoring program to assess performance against the rehabilitation objectives and approved or, if not yet approved rehabilitation completion criteria and final landform and rehabilitation plan?

NO

Year rehabilitation areas will be included as part of the monitoring program

2024

An appraisal of whether rehabilitation is moving towards achieving the proposed rehabilitation objectives, approved or, if not yet approved, rehabilitation completion criteria and final landform and rehabilitation plan as soon as reasonably practicable.

Considering the detail in the status section above most monitoring sites have good ground cover. The repeat sites from areas seeded in 2019 to 2021 exhibited increases in seedling density. Native grasses were present at some monitoring sites indicating progression towards restoring ecosystem function (Table 11 RMP), vegetation establishment of 85% ground cover (Table 14 RMP), native species richness (Table 14 RMP) and native ground cover (grasses) (Table 14 RMP). The continued ecosystem monitoring, weed and feral animal control and infill planting programs planned for future years will ensure that the progression continues.

Appraisal description

Rehabilitation is moving towards achieving the final land use as soon as reasonably practicable.

Rehabilitation monitoring program findings

Biannual fauna surveys were conducted on the rehabilitated areas targeting birds. A total of five sites were surveyed in 2022, the highest number monitored since 2014 and the first time there has been more rehabilitation sites than control sites at TCM. The species richness for R03 in 2022 (16 species) is higher than the species richness recorded at the other two rehabilitation sites in the previous year, indicating a healthy environment at the site and good habitat availability for bird species. Brown Quail, Little Raven, Red Wattlebird and Common Myna, were recorded in 2022 for the first time at the TCM survey sites, indicating species

richness is increasing across the survey sites. A total of six species were recorded across all five survey sites (Weebill, Willie Wagtail, White-plumed Honeyeater, Superb Fairy-wren, Striated Pardalote and Noisy Miner). The aggressive exclusion of birds from habitat by Noisy Miners is recognised as a key threatening process, however, species richness for 2022 is higher compared to records since 2017, indicating that the aggressive behaviour of the Noisy Miner is not impacting the diversity of the birds at any of the sites.

A detailed ecological field assessment of rehabilitated areas and analogue sites was undertaken during October/November 2022. Monitoring was undertaken using the Whitehaven Annual Rehabilitation Monitoring Methodology (WARM v1.4—Aspect Ecology 2022). Monitoring comprised:

- the establishment of one new ‘best-on-offer’ (DPIE 2020) local analogue woodland sites established in Leard State Forest, situated in native vegetation communities being Narrow-leaved Ironbark - cypress pine - White Box shrubby (Plant Community Type ID 592 in the BioNet Vegetation Classification System);
- the repeat monitoring of one site in PCT592;
- the establishment of two new ‘best-on-offer’ (DPIE 2020) local analogue woodland sites, situated in native vegetation communities compliant with White Box – Yellow Box – Blakely’s Red Gum Grassy Woodland and Derived Native Grassland critically endangered ecological community; in the MOP s3.2.3 (in the form of the grassy variant of White Box - White Cypress Pine shrub grass hills woodland in the Brigalow Belt South Bioregion and Nandewar Bioregion (Plant Community Type ID 435 in the BioNet Vegetation Classification System);
- sixteen Woodland Domain repeats, capturing all extant years seeded (2007–2020);
- four new rehabilitation site were established; and
- fifteen categorical Rehabilitation Point Assessments across the rehabilitation focussed on young rehabilitation.

A weed inspection over the rehabilitated areas was completed by a local agronomist in 2022.

In addition to this QAQC was conducted on the newly established landform and ecosystem areas in 2022. Landform establishment is not included in the Annual Monitoring- that is only the ecosystem establishment areas. This process identified some works that needed to be done on the contours of the landform prior to gr

Performance issues and their causes including identification of any knowledge gaps that must be addressed

Nil

Outcomes of rehabilitation research and trials

RRT NUMBER	PROJECT/TRIAL NAME	OBJECTIVE OF TRIAL/PROJECT	METHODOLOGY	EXPECTED DATE OF COMPLETION	UPDATEDDATE OF COMPLETION	STATUS	ON TRACK?	ON TRACK UPDATE
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Outcomes of completed trials and research

N/A

Attachment 1 – Reporting Definitions

REPORTING CATEGORY		DEFINITION
A1	Total disturbance footprint – surface disturbance	<p>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.</p> <p>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).</p> <p>Underground mining operations should not include the footprint of underground mining areas/subsidence management areas in the total disturbance footprint.</p>
A2	Underground Mining Area	Underground mining operations areas/subsidence management areas.
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	<p>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.</p> <p>Refer to the glossary of terms in this document for the definition of these phases of rehabilitation.</p>

REPORTING CATEGORY	DEFINITION
D Ecosystem and land use establishment	<p>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.</p> <p>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.</p>
E Ecosystem and Land Use Development	<p>Rehabilitation has matured to a level where target revegetation outcomes are on a trajectory towards meeting the final rehabilitation objectives and rehabilitation completion criteria (as verified by monitoring).</p> <p>This phase includes infrastructure areas that are to be retained for an approved post mining land use, following completion of all necessary measures to render the infrastructure fit for this purpose (for example structural integrity).</p>
F Rehabilitation Completion	<p>The NSW Resources Regulator has determined in writing that the mining area has achieved the approved rehabilitation objectives and approved rehabilitation completion criteria and final landform and rehabilitation plan following the submission of <i>Form: ESF2 Rehabilitation completion and/or review of rehabilitation cost estimate and/or notification of mine or petroleum site closure</i>.</p>
G New active disturbance area	<p>The area of any new active disturbance that has been created during the annual reporting period (definition A1 in Table 5).</p>
H New rehabilitation commenced during annual reporting period	<p>The sum of any new rehabilitation commenced in the annual reporting period. These areas may be in the rehabilitation land preparation phase or the ecosystem & land use establishment phase (definitions C and D in Table 5).</p>
I Established rehabilitation (hectares)	<p>The total area of land that is verified to be within either the ecosystem and land use development phase or the rehabilitation completion phase (definitions E & F in Table 5).</p>

REPORTING CATEGORY		DEFINITION
J	Annual rehabilitation to disturbance ratio	The rehabilitation to disturbance ratio (H/G) indicates how many hectares of new rehabilitation are undertaken for each hectare of land disturbed during the year. A ratio of 1/1 indicates that the area of new rehabilitation and disturbance in that year are the same.
K	% Rehabilitated land to total mine footprint	The proportion of the total mine footprint (area of land that has been disturbed by past or present surface disturbance activities) that has established rehabilitation ($I/A1 \times 100$). For open cut mining, the proportion of the total mine footprint verified to be “established rehabilitation” should substantially increase as an operation progresses towards mine closure.
L	Established rehabilitation for agricultural final land uses (hectares)	The percentage of total area of land that is verified to be within either the ecosystem and land use development phase or the rehabilitation completion phase (definitions E & F in Table 5) that have been returned to an agricultural final land use.
M	Established rehabilitation for native ecosystem final land uses (hectares)	The percentage of total area of land that is verified to be within either the ecosystem and land use development phase or rehabilitation completion phase (definitions E & F in Table 5) that have been returned to native ecosystem final land use.
N	Established rehabilitation for other/non-vegetated final land uses (hectares)	The percentage of total area of land that is verified to be within either the ecosystem and land use development phase or the rehabilitation completion phase (definitions E & F in Table 5) that have been returned to other/non-vegetated final land use.

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 as salvaging 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	<p>An area that has been disturbed and that requires rehabilitation.</p> <p>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).</p>
Domain	<p>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.</p>
Ecosystem and Land Use Development	<p>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.</p> <p>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.</p> <p>This phase of rehabilitation may include specific vegetation management strategies and maintenance such as tree thinning, supplementary plantings and weed management.</p>
Ecosystem and Land Use Establishment	<p>This phase of rehabilitation consists of the processes to establish the approved final land use following construction of the final landform.</p> <p>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.</p>
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	<p>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).</p> <p>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.</p>
Habitat	Has the same meaning as that term under the <i>Biodiversity Conservation Act 2016</i> and the <i>Fisheries Management Act 1994</i> (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 <i>Mining Act 1992</i> .
Landform Establishment	<p>This phase of rehabilitation consists of the processes and activities required to construct the final landform.</p> <p>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).</p>
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	<p>Means the NSW Resources Regulator's online portal that lease holders must use (via a registered account) to:</p> <ul style="list-style-type: none"> ■ 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. <p>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.</p>
Mining area	As defined in the <i>Mining Act 1992</i> .
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 <i>Mining Act 1992</i> .
Native vegetation	Has the same meaning as that term under section 60B of the <i>Local Land Services Act 2013</i> .
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	<p>The stages and sequences of actions required to rehabilitate disturbed land to achieve the final land use. The phases of rehabilitation are:</p> <ul style="list-style-type: none"> ■ 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	<p>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 <i>Form ESF2 Rehabilitation completion and/or review of rehabilitation cost estimate</i> application by the lease holder.</p>
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: <ul style="list-style-type: none"> ■ 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 <i>Protection of the Environment Operations Act 1997</i> .

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

Attachment 2 – Rehabilitation Complaints

DATE	COMPLAINANT	COMPLAINT DETAILS	RESPONSE DETAILS	STATUS OF RESPONSE	DATE RESPONSE COMPLETED (IF APPLICABLE)
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Attachment 3 – Stakeholder consultation

DATE	STAKEHOLDER	CONSULTATION ACTIVITIES AND FORMS	MATTERS SUBJECT TO CONSULTATION	ACTIONS TAKEN
23 Nov 2022	CCC	Powerpoint presentation.	Rehab progress and planned activities.	None raised
23 Feb 2022	Community Consultative Committee (CCC)	Powerpoint presentation on current rehabilitation status, planned activities for the year.	Rehabilitation success, progress and planned activities.	Community representatives requested a site tour which was arranged for a suitable date.
25 May 2022	CCC	Powerpoint presentation followed by a site tour.	The site tour took in the whole of site and allowed personnel to describe the mining process from start to finish. There was a lot of interest in the ecosystem establishment activities particularly hiko/seedling planting.	Not applicable- all questions were answered at the time during the site tour.
12 Sep 2022	DPE, Forestry Corporation NSW, BCS, DPIE Water	Consultation on the Rehab Management Plan according to requirements of PA11_0047: Forestry Corporation NSW BCS DPIE Water	Final Land Use including landform Boundary Fencing Ongoing management of infrastructure remaining post closure. Surface cover constituents in established vegetation completion criteria. Rehabilitation Flora and Fauna Monitoring	Some minor changes to the Rehab MP were made in response to the consultation and this document has been uploaded to the website.
24 Aug 2022	CCC	Powerpoint presentation on site followed by panel discussion.	Rehabilitation progress and planned activities for the rest of the year. The Rehab Management Plan was also discussed as well as planned consultation.	No matters raised.
30 Aug 2022	FCNSW	Site Visit and tour of rehabilitation	Jarod Dashwood attended from FCNSW. He wanted to see the species of trees in Tarrawonga's older rehabilitation.	The site visit was in response to a request from the stakeholder.

Attachment 4 – Plans

Tarrawonga_Domains_Plan1A_RMP.pdf

MRC160_TCM_Plan1B_Contours.pdf

Annual Report (LARGE MINE) v1.3