



**NSW  
Resources  
Regulator**

**ARR0001209**

# **SOUTHERN OPERATIONS ANNUAL REHABILITATION REPORT**

**Sunday 1 January 2023 to Sunday 31 December 2023**

# Contents

Summary table .....	-1
Important .....	-1
Mine details.....	-1
Project description.....	-1
Life of mine .....	-1
Current development consents, leases and licences.....	-1
Changes to land ownership and land use .....	-1
Surface disturbance and rehabilitation activities during the reporting period .....	-1
Disturbance and rehabilitation statistics.....	-1
Current disturbance and rehabilitation progression .....	-1
Rehabilitation key performance indicators (KPIs) .....	-1
Progressive achievement of established rehabilitation.....	-1
Variation to the rehabilitation schedule.....	-1
Rehabilitation monitoring and research findings .....	-1
Rehabilitation monitoring.....	-1
Status of performance against rehabilitation objectives and rehabilitation completion criteria .....	-1
Outcomes of rehabilitation research and trials .....	13
Attachment 1 – Reporting Definitions .....	17
Attachment 2 – Definitions.....	20
Attachment 3 – Rehabilitation Complaints.....	26
Attachment 4 – Stakeholder consultation.....	-1
Attachment 5 – Plans.....	28

## Summary table

DETAIL	
Mine	Southern Operations
Reference	ARR0001209
Annual report period commencement date	Sunday 1 January 2023
Annual report period end date	Sunday 31 December 2023
Forward program	FWP0001091
Mining leases	CML 13 (1973), CML 8 (1973), CML 9 (1973), CML 10 (1973), CML 12 (1973), ML 1249 (1973), CML 11 (1973)
Lease holder(s)	Perilya Broken Hill Limited
Contact	Jack Flanagan
Date of submission	Monday 11 March 2024

## 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

The Southern Operations Mine (Mine), located on the south-western border of the city of Broken Hill, is owned and operated by Perilya Broken Hill Limited (Company), a wholly owned subsidiary of Perilya Limited. The Company acquired the Mine from Pasminco Limited in 2002. Due to the long history of operations at the Mine Site, the Mine continues to operate under Continuing Use Rights afforded by Section 4.65 of the NSW Environmental Planning and Assessment Act 1979 and therefore is not subject to conditions requiring overarching development consent. As such, the Mine is not constrained by an approved Mine life or end date for mining operations. Based on current extraction rates and the extent of known mineralisation at the Mine Site, it is anticipated that mining operations will cease by 2030. However, it is noted that changes to anticipated extraction and production rates and/or the discovery of additional mineralisation could result in the actual completion date being extended.

### Life of mine

6 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*

CML 13 (1973), CML 8 (1973), CML 9 (1973), CML 10 (1973), CML 12 (1973), ML 1249 (1973), CML 11 (1973)

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

- Excavation – Groundwater WAL40959
- EL6447 (1992 Act)
- EL6689 (1992 Act)
- EPL 2688
- EL6774 (1992 Act)
- Tailing Storage Facility Site D Approval Letter - dated 18/02/1986
- DA 146/2010
- DA 11/0052
- Sublease CML 7 (2021)

- DA 07/0018

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

No changes to approvals during the reporting period.

## Changes to land ownership and land use

No changes to land ownership and land use has occurred during the annual reporting period to Perilya's knowledge.

# 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

As discussed in the previous Annual Rehabilitation Report (ARR), the construction of Cell 4 of the Tailing Storage Facility (TSF) (Site D) was continued and completed in the reporting period. The soil footprint generated from the construction phase of Cell 4 has been stockpiled on Cell 1 and hydroseeded. Rehabilitation included continued preparation of Cell 1 and 2 for soil, clay and waste rock stockpiling as described in the rehabilitation management plan (RMP). Additional waste rock capping was applied to the exposed lower batter of Site AB, but works were delayed during the reporting period. As Site AB has experienced erosion of the past 10 years since it was first rehabilitated, the erosion protection of waste rock is consistent with the batters on older TSFs at Southern Operations and Site D Cell 3. In the reporting period, Site D Cell 3 was decommissioned and will be capped with clay to minimise associated dust pollution in the following reporting period. Ongoing auxiliary works on roads and buildings were undertaken to upgrade and maintain performance of site facilities as described in construction and mining schedule sections of the forward program.

## Rehabilitation planning activities that were conducted, including any specialist studies

Rehabilitation planning in relation to Southern Operations tailings storage facility closure and capping design for the TSFs and final landform was conducted during the reporting period. This was in response to notices issued by the NSW Resources Regulator to progress the “Southern Operations Tailings Storage Facilities: TSF Closure Program Status Update” and progress the capping design to ensure rehabilitation planning of the final landform fulfils requirements of DA 11/0052. Details of Perilya’s response to the notices and ongoing rehabilitation planning activities are detailed below.

## Overview of subsidence repair and/or remediation works undertaken

Southern Operation has no active surface subsidence areas. As with the previous reporting period, minor erosion remediation works have been undertaken during the reporting period.

## Overview of rehabilitation management and maintenance activities

During the 2021 reporting period Perilya developed a weed management plan with a schedule of four seasonally weed management campaigns across the site with a focus on newly seeded areas. Four campaigns occurred during the reporting period in February, May, July and September. The current methodology involves spot spraying weeds of concern (Salvation Jane,

Mexican Poppy, Mustard Weed) identified in the Perilya Souther Operations weed management plan.

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

"The Resources Regulator issued notices NTCE0012572 and NTCE0012829 on 26 October 2023. As a result, Perilya engaged with ATC Williams and SRK Consulting to progress on the "Southern Operations Tailings Storage Facilities: TSF Closure Program Status Update" and progress the capping design for each TSF which is due by 28 June 2024. The Regulator required PBHL to engage a suitably qualified tailings expert to progress the planning for the overall design, capping and final landform development of Site A/B, Site C and Site D TSFs. ATC Williams is currently undergoing the process of fulfilling requirements of and anticipated timeline for these include: • A Basis of Design Document and Design Options (Q1 2024) • Closure Strategy Optimisation (Q1 2024) • Detailed Design (Q2 2024) • Schedule of Quantities (Q2 2024) • Construction Documentation (Q3 2024) SRK Consulting was engaged to complete a materials characterisation program required by the Resources Regulator. SRK completed a field sample to collect samples of waste rock, tailings and soils in 2022. The kinetic testing is currently undergoing which will assist in completing a material balance and water quality model report."

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

During the reporting period rehabilitation objectives were submitted for review and approval by the NSW Resources Regulator, at the time of reporting no final land use criteria have been approved.

## Key production milestones

MATERIAL	UNIT	FWP0001091 YEAR 1	THIS REPORT
<b>Stripped topsoil</b> (if applicable)	(m <sup>3</sup> )	132,200	0
<b>Rock/overburden</b>	(m <sup>3</sup> )	251,921	18,072
<b>Ore</b>	(Mt)	1,071,767	1.11
<b>Reject material<sup>1</sup></b>	(Mt)	1,302,800	1.27
<b>Product</b>	(Mt)	134,814	0.09

<sup>1</sup> This includes coarse rejects, tailings and any other wastes resulting from beneficiation.



## Disturbance and rehabilitation statistics

### Current disturbance and rehabilitation progression

ELEMENT	UNIT	THIS REPORT
A Total surface disturbance footprint	(ha)	413.38
B Total active disturbance	(ha)	401.46
C Land prepared for rehabilitation	(ha)	0
D Ecosystem and land use establishment	(ha)	11.93
E Ecosystem and land use development	(ha)	0
F Rehabilitation completion	(ha)	0

### Rehabilitation key performance indicators (KPIs)

ELEMENT	UNIT	THIS REPORT
G Total new active disturbance area	(ha)	NA - this value will display after 2nd year ARR submission as calculation relies on comparison between sequential yearly ARR data
H New rehabilitation commenced during annual reporting period	(ha)	NA - this value will display after 2nd year ARR submission as calculation relies on comparison between sequential yearly ARR data
I Established rehabilitation	(ha)	0
J Annual rehabilitation to disturbance ratio	%	NA - this value will display after 2nd year ARR submission as calculation relies on comparison between sequential yearly ARR data
K Rehabilitated land to total mine footprint	%	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

During the reporting year the planned forward program activities include the rock armouring of the Lower batter of Site AB and final lift batter of Site D Cell 3. The captured forecast plans included the entire final batter area for Site D Cell 3 and the primary drain. This was not achieved due to the removal of the primary drain from the land use establishment as ongoing operation use of the drain is required as Cell 3 remains active until capping which will occur in the next 5 years.

### Key factors that delayed progressive rehabilitation

Change in personnel and delays in site designs meant there was limited progression of rehabilitation during the reporting year. Perilya has engaged ATC Williams and SKR Consulting to support the rehabilitation planning of the Tailings Storage Facility Closure and redesigning of the final landform to ensure effective closure plans are in place. Perilya is on track to submit details of these plans to the Resources Regulator in June 2024.

### 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

Following the construction of the final cell of Site D and finalised design and construction of Site AB, which is expected in the next reporting period, there is no planned increase in new surface disturbance as part of the current operation. Research and trials on knowledge gaps for the proposed final land use have been identified through risk assessment and progression of rehabilitation has been scheduled as soon as practical following end of operational use and completion of related research and trials.

# Rehabilitation monitoring and research findings

## Rehabilitation monitoring

### The rehabilitation monitoring carried out in the annual reporting period

EFA assessments will be the primary monitoring method used to assess the progress of rehabilitation towards rehabilitation criteria however this has not yet occurred during the reporting period.

## Status of performance against rehabilitation objectives and rehabilitation completion criteria

### The monitoring program that has been implemented

As described in the rehabilitation management plan (RMP), ecosystem function analysis (EFA) assessments will form the primary monitoring method used to assess the progress of rehabilitation towards rehabilitation criteria. The first EFA assessment of rehabilitation areas will occur in the next reporting period following seeding and suitable above average rainfall condition. During the next reporting period an assessment of the rock armouring of TSFs will be assessed for this proposed final land use.

### 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?

0

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

2027

### 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.

Rehabilitation objectives and completion criteria were submitted during the reporting period and are schedule to be assessed by the Resources Regulator in the next reporting period. Rehabilitation objectives and completion criteria were submitted during the reporting period and waiting approval. Historic rehabilitation requires assessment under the newly developed and proposed completion criteria and continued consultation on knowledge gaps has been planned to ensure progression to final landform.

### **Appraisal description**

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

### **Rehabilitation monitoring program findings**

No rehabilitation monitoring data was collected in the reporting period. In the next reporting period ecosystem functioning assessments will be the primary monitoring method used to assess the progress of rehabilitation towards rehabilitation criteria.

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

Knowledge gaps that have been identified relate to topsoil resources, use of waste rock in final land use, management of Historic Heritage items and final land use options for areas classified as contaminated. The following research, trials and plans have been scheduled to address the knowledge gaps.

- Southern Operations Site D Long-term Growth Medium Trials (RRT0001044)
- Growth Medium Development Study (RRT0001053)
- Remediation Options Assessment (RRT0001058)
- Program of Kinetic Column Leach Testing (RRT0001054)
- Heritage Implementation Plan (RRT0001056)
- Heritage Interpretation Plan (RRT0001057)
- Closure Management Plan (RRT0001055)

## Outcomes of rehabilitation research and trials

RRT NUMBER	PROJECT/TRIAL NAME	OBJECTIVE OF TRIAL/PROJECT	METHODOLOGY	EXPECTED DATE OF COMPLETION	STATUS	ON TRACK?
RRT000104 4	Southern Operations Site D Long-term Growth Medium Trials	To assess long-term performance of growth medium types in situ and the suitability of different growth medium types for the establishment of sustainable vegetation communities on rehabilitated TSFs.	Established four distinct contiguous 20m x 20m plots on top of Cell 1 of Site D. Each plot received the following treatments. 1. Control plot containing TSF clay capping material only. 2. Plot containing mixture of fine-grade waste rock and topsoil material (50:50 ratio) 3. Plot containing mixture of coarse-grade waste rock and topsoil material (50:50 ratio) 4. Plot containing topsoil material only. This was followed up by regular opportunistic visual monitoring of trial plots.	31 Dec 2022	Ongoing	Yes
RRT000105 3	Growth Medium Development Study	Assessing amelioration options for existing growth medium resource stockpiles and comparing characteristics with analogue sites.	<ul style="list-style-type: none"> <li>Characterise existing stockpiled growth medium resources at the Mine Site.</li> <li>Assess the suitability of stockpiled growth medium for revegetation by comparing key characteristics with those of growth medium at analogue sites.</li> <li>Determine the need for any growth medium amelioration to support revegetation.</li> </ul>	31 Dec 2024	Not started	Yes
RRT000105 4	Program of Kinetic Column Leach Tests	Understand solute release from waste rock and tailings samples.	<ul style="list-style-type: none"> <li>Yield data on solute release under optimal conditions for sulfide oxidation.</li> <li>Calculate sulfide oxidation rate based</li> </ul>	30 Jun 2024	Not started	Yes

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RRT NUMBER	PROJECT/TRIAL NAME	OBJECTIVE OF TRIAL/PROJECT	METHODOLOGY	EXPECTED DATE OF COMPLETION	STATUS	ON TRACK?
			<p>on sulfate release rates. • Measure oxygen consumption rate due to sulfide oxidation. • Assess oxygen consumption mechanisms to provide understanding of mine waste weathering process. • Data used as basis for predictive modellings of future mine-affected water quality and to guide mine waste management decisions.</p>			
RRT0001055	Closure Management Plan	Define action plans for multiple key closure assessments.	<p>1. Engineer Assessment of Structures - establish assessment requirements for retained structures, and stability requirements for historic TSF. 2. Contaminated Site Assessment - establish procedure for sampling and testing of contaminated materials. 3. Post-Closure Surface and Groundwater Assessment - establish target water quality parameters for final land use. 4. Hazardous Materials Assessment - identify/investigate hazardous materials and their management requirements.</p>	31 Dec 2026	Not started	Yes
RRT0001056	Heritage Implementation Plan	Provide framework for the assessment of individual historic heritage items based on the decision matrix provided in the Strategic Historic Heritage Management Plan (SHHMP).	<p>• identify appropriate management actions and outcomes for individual historic heritage items by applying the decision matrix provided in the SHHMP. • provide a schedule for the management and prioritisation of individual heritage items across the Company's three mine sites in Broken Hill. • identify any legislative</p>	31 Dec 2024	Not started	Yes

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ARR0001209 | Sunday 1 January 2023 to Sunday 31 December 2023

RRT NUMBER	PROJECT/TRIAL NAME	OBJECTIVE OF TRIAL/PROJECT	METHODOLOGY	EXPECTED DATE OF COMPLETION	STATUS	ON TRACK?
			requirements for development consent, licences and/or permits prior to the demolition or alteration of individual heritage items, as required.			
RRT0001057	Heritage Interpretation Plan	Record/present the heritage values of individual historic heritage items within the Mine and guide future tourism land uses within the Mine Site.	<ul style="list-style-type: none"> <li>identify opportunities for tourism and educational experiences associated with historic heritage items and the Company's three mine sites in Broken Hill more broadly.</li> <li>identify any additional structures and/or infrastructure which need to be retained to support final tourism land uses.</li> <li>determine the types of structures and/or infrastructure which need to be constructed to support final tourism land uses (e.g. access roads, lookout areas, signage) and the best locations for these.</li> </ul>	30 Jun 2025	Not started	Yes
RRT0001058	Remediation Options Assessment	Provide risk based approach on best option analyses for remediating a highly contaminated area.	<p>Risk analysis of options with consideration of potential health and environmental impacts. The assessment will concentrate on highly contaminated areas, including the following.</p> <ul style="list-style-type: none"> <li>McCulloch's Flat at North Mine.</li> <li>Historic tailings adjacent to Site AB at Southern Operations. The focus of the assessment will be on treatment options including extraction and capping of contaminated material.</li> </ul>	31 Dec 2023	Ongoing	Yes

**Outcomes of completed trials and research**

N/A



## Attachment 1 – Reporting Definitions

REPORTING CATEGORY	DEFINITION
<b>A1</b> 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>
<b>A2</b> Underground Mining Area	<p>Underground mining operations areas/subsidence management areas.</p>
<b>B</b> Total active disturbance	<p>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).</p>
<b>C</b> 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
<p><b>D</b> Ecosystem and land use establishment</p>	<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>
<p><b>E</b> Ecosystem and Land Use Development</p>	<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>
<p><b>F</b> Rehabilitation Completion</p>	<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>
<p><b>G</b> New active disturbance area</p>	<p>The area of any new active disturbance that has been created during the annual reporting period (definition A1 in Table 5).</p>
<p><b>H</b> New rehabilitation commenced during annual reporting period</p>	<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 &amp; land use establishment phase (definitions C and D in Table 5).</p>
<p><b>I</b> Established rehabilitation (hectares)</p>	<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 &amp; F in Table 5).</p>

REPORTING CATEGORY		DEFINITION
<b>J</b>	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.
<b>K</b>	% 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.
<b>L</b>	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.
<b>M</b>	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.
<b>N</b>	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
<b>Active</b>	In the context of rehabilitation, land associated with mining domains is considered 'active' for the period following disturbance until the commencement of rehabilitation.
<b>Active mining phase of rehabilitation</b>	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.
<b>Analogue site</b>	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.
<b>Annual rehabilitation report and forward program</b>	As described in the Mining Regulation 2016.
<b>Annual reporting period</b>	As defined in the Mining Regulation 2016.
<b>Closure</b>	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).
<b>Decommissioning</b>	The process of removing mining infrastructure and removing contaminants and hazardous materials.
<b>Decommissioning Phase of Rehabilitation</b>	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.

<b>WORD</b>	<b>DEFINITION</b>
<b>Department</b>	The Department of Regional NSW.
<b>Disturbance</b>	See Surface Disturbance.
<b>Disturbance area</b>	<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>
<b>Domain</b>	<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>
<b>Ecosystem and Land Use Development</b>	<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>
<b>Ecosystem and Land Use Establishment</b>	<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>
<b>Exploration</b>	Has the same meaning as that term under the State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007.

WORD	DEFINITION
<b>Final landform and rehabilitation plan</b>	As defined in the Mining Regulation 2016.
<b>Final land use</b>	As defined in the Mining Regulation 2016.
<b>Form and way</b>	Means the form and way approved by the Secretary. Approved form and way documents are available on the Department’s website.
<b>Growth Medium Development</b>	<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>
<b>Habitat</b>	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).
<b>Indicator</b>	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.
<b>Land</b>	As defined in the <i>Mining Act 1992</i> .
<b>Landform Establishment</b>	<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>
<b>Large mine</b>	As defined in the Mining Regulation 2016.
<b>Lease holder</b>	The holder of a mining lease.

WORD	DEFINITION
<b>Life of mine</b>	The timeframe of how long a mine is approved to mine, from commencement to closure.
<b>Mine rehabilitation portal</b>	<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"> <li>■ upload rehabilitation geographical information system (GIS) spatial data</li> <li>■ develop rehabilitation GIS spatial data (using online tracing functions)</li> <li>■ generate rehabilitation plans and rehabilitation statistics using the map viewer and Rehabilitation Key Performance Indicator functionalities.</li> </ul> <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>
<b>Mining area</b>	As defined in the <i>Mining Act 1992</i> .
<b>Mining domain</b>	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).
<b>Mining land</b>	As defined in the <i>Mining Act 1992</i> .
<b>Native vegetation</b>	Has the same meaning as that term under section 60B of the <i>Local Land Services Act 2013</i> .
<b>Overburden</b>	Material overlying coal or a mineral deposit.
<b>Performance indicator</b>	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
<b>Phases of rehabilitation</b>	The stages and sequences of actions required to rehabilitate disturbed land to achieve the final land use. The phases of rehabilitation are: <ul style="list-style-type: none"> <li>■ active mining</li> <li>■ decommissioning</li> <li>■ landform Establishment</li> <li>■ growth medium development</li> <li>■ ecosystem and land use establishment</li> <li>■ ecosystem and land use development.</li> </ul>
<b>Progressive rehabilitation</b>	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.
<b>Rehabilitation Completion</b>	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.
<b>Rehabilitation Completion criteria</b>	As defined in the Mining Regulation 2016.
<b>Rehabilitation cost estimate</b>	As defined in the Mining Regulation 2016.
<b>Rehabilitation management plan</b>	As defined in the Mining Regulation 2016.
<b>Rehabilitation objectives</b>	As defined in the Mining Regulation 2016.
<b>Rehabilitation risk assessment</b>	As defined in the Mining Regulation 2016.
<b>Rehabilitation schedule</b>	The defined timeframes for progressive rehabilitation set out in the forward program.



WORD	DEFINITION
<b>Relevant stakeholders</b>	<p>Means any persons or bodies who may be affected by the mining operations, including rehabilitation, carried out on the lease land, and includes:</p> <ul style="list-style-type: none"> <li>■ the relevant development consent authority</li> <li>■ the local council</li> <li>■ the relevant landholder(s)</li> <li>■ community consultative committee (if required under the development consent) or equivalent consultative group</li> <li>■ affected land holder(s)</li> <li>■ government agencies relevant to the final land use</li> <li>■ affected infrastructure authorities (electricity, telecommunications, water, pipeline, road, rail authorities)</li> <li>■ local Aboriginal communities, and</li> <li>■ any other person or body determined by the Minister to be a relevant stakeholder in relation to a mining lease.</li> </ul>
<b>Risk</b>	The effect of uncertainty on objectives. It is measured in terms of consequences and likelihood (AS/NZS ISO 31000:2009).
<b>Secretary</b>	The Secretary of the Department.
<b>Security deposit</b>	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).
<b>Surface disturbance</b>	Includes activities that disturb the surface of the mining area, including mining operations, ancillary mining activities and exploration.
<b>Tailings</b>	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 <sup>2</sup> .
<b>Waste</b>	Has the same meaning as that term under the <i>Protection of the Environment Operations Act 1997</i> .

<sup>2</sup> Commonwealth of Australia (DITR), 2007. *Tailings Management*.

## Attachment 3 – Rehabilitation Complaints

DATE	COMPLAINANT	COMPLAINT DETAILS	RESPONSE DETAILS	STATUS OF RESPONSE	DATE RESPONSE COMPLETED (IF APPLICABLE)
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## Attachment 4 – Stakeholder consultation

DATE	STAKEHOLDER	CONSULTATION ACTIVITIES AND FORMS	MATTERS SUBJECT TO CONSULTATION	ACTIONS TAKEN
5 Jul 2023	Resources Regulator	Teams Meeting	Rehabilitation / Heritage	No actions required
31 Oct 2023	Environmental Protection Agency	Site Visit	Environmental Monitoring and Rehabilitation	No actions required
13 Jul 2023	Resources Regulator	Teams Meeting	Rehabilitation / Heritage	No actions required
4 Sep 2023	Resources Regulator	Teams Meeting	NTCE0012829 and NTCE0012572, the TSF Closure Program Status Update, and a materials characterisation program	Perilya engaged ATC Williams to progress the over design, capping and final landform development of Site A/B, Site C and Site D TSFs. Perilya engaged SRK Consulting to undergo a materials characterisation program to assess and ensure suitable materials are available at the site to undertake required rehabilitation activities.
22 Jun 2023	Environmental Protection Agency	Site Visit	Environmental Monitoring and Rehabilitation	No actions required
9 Oct 2023	Resources Regulator	Site Visit and Meeting	Rehabilitation / Heritage	No actions required

## Attachment 5 – Plans

ARR\_Plan 1A .pdf

ARR\_Plan 1B.pdf

Annual Report (LARGE MINE) v1.6