



**NSW  
Resources  
Regulator**

FWP0001205

# **COORABIN CLAY MINE FORWARD PROGRAM**

Saturday 24 June 2023 to Tuesday 23 June 2026

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## Summary

DETAIL	
<b>Mine</b>	Coorabin Clay Mine
<b>Reference</b>	FWP0001205
<b>Forward program commencement date</b>	Saturday 24 June 2023
<b>Forward program end date</b>	Tuesday 23 June 2026
<b>Forward program revision (if applicable)</b>	
<b>Contact</b>	Georgina Thompson
<b>Mining leases</b>	ML 1196 (1973), PLL 1155 (1924)
<b>Project location</b>	PGH Bricks & Pavers Pty Ltd
<b>Date of submission</b>	Wednesday 23 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

Oaklands Mine is located on Lot 1 DP 831425 off Coorabbin Road, Oaklands. The site is located approximately 7 kilometres north east of Oaklands.

The mine is comprised of the following components:

- Extraction of clay material and pre stripping;
- Transportation of resource off ML 1196 and PLL 1155 to the Albury Brickworks;
- Extraction of product is consented depth of:
  - 23 metres according to DA 6/2000.
  - 35 metres for part of the area and the surface and soil below thereof to depth of 6.096 metres for the remainder of ML 1196.
  - Whole 30.48 metres with a surface exception of 6.1 metres below the surface of that portion indicated by red tint on the plan contained in the lease dated 24 June 1966.

There are no consented limits to production, however extraction is generally in the order of 50,000 tonnes per annum.

## Description of surface disturbance activities

### Exploration activities

No exploration is proposed in the next three years.

### Construction activities

No construction activities within the mine lease.

### Mining schedule

Mining development method and sequencing and general mine features.

Extraction will occur in western portion of the existing pit and continue to progress west. The existing batter slopes of 1 horizontal: 0.7 vertical for the clay will be continued. Topsoil and

overburden stripping will be required. Topsoil stripping is undertaken using a D6 dozer, where available, and will separately take the seed bank layer and then the topsoil down to the top of the weathered rock. An excavator or frontend loader will load internal haul truck and construct low (2-3 metres) stockpiles for later use. Clay with vegetation matter will be mined using an excavator and loaded onto internal haul trucks to be placed on areas ready for burden. Clay is ripped and pushed using a dozer into stockpiles onto the mine floor. Front end loader and or excavator loads this onto internal haul trucks and placed onto the stockpile pad.

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

Stockpiles of overburden and topsoil will continue in existing emplacement areas and on the perimeter as bunding on the site.

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

Not applicable.

Waste disposal and materials handling operations.

Putrescible waste, such as non-recyclables from the office and workshop will be collected by Council waste pickups. Hydrocarbons from potential fuel spills will be contained and collected using spill kits and will be taken to an appropriately licensed landfill and documented. Any contaminated soils will be assessed and will be treated as directed by appropriately qualified specialists.

**Key production milestones**

MATERIAL	UNIT	YEAR 1	YEAR 2	YEAR 3
<b>Stripped topsoil</b> <small>(if applicable)</small>	(m <sup>3</sup> )	600	600	600
<b>Rock/overburden</b>	(m <sup>3</sup> )	0	0	0
<b>Ore</b>	(Mt)	0.2	0.2	0.2
<b>Reject material<sup>1</sup></b>	(Mt)	0	0	0
<b>Product</b>	(Mt)	0	0	0

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

# Three-year rehabilitation forecast

## Rehabilitation planning schedule

### Rehabilitation planning schedule

Not applicable.

### Stakeholder consultation

The Annual Rehabilitation Report is provided to the Resources Regulator and Urana Council. Any feedback from the Regulator or Council will be considered in future rehabilitation operations and plans. No other consultation is planned.

### Rehabilitation studies, risk assessments and/or design work

Year 1 -3

There are no rehabilitation trials planned in the next three years.

Assessment of topsoil volume requirements for rehabilitation to be quantified.

Soil characterisation results from topsoil stockpiles to be incorporated into the rehabilitation risk assessment. This will be assessed in the next 12 months as stated above. Soil samples have been obtained from topsoil stockpiles and will be tested from suitability.

## Rehabilitation research and trials

RRT NUMBER	PROJECT/TRIAL NAME	OBJECTIVE OF TRIAL/PROJECT	METHODOLOGY	EXPECTED DATE OF COMPLETION	STATUS
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FWP0001205

## Rehabilitation maintenance and corrective actions

No issues were raised in the previous AR period.

## Rehabilitation schedule

Infilling of the former pit void with overburden material is expected to continue progressively. Aside from this, no rehabilitation is planned in the next three years.

## Subsidence remediation for underground operations

There is no current evidence of subsidence on the site that requires remediation during the next three years.



## 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)	11.5	11.5	11.5
B Total active disturbance	(ha)	8.31	8.31	8.31
P Total new area of land proposed for active rehabilitation	(ha)	0	0	0

### Rehabilitation key performance indicators (KPIs)

FORECAST	UNIT	YEAR 1	YEAR 2	YEAR 3
O Total new active disturbance area	(ha)	1.38		
P Total new area of land proposed for active rehabilitation during the reporting period	(ha)			
Q Annual rehabilitation to disturbance ratio				

## Attachment 1 – Reporting Definitions

REPORTING CATEGORY	DEFINITION
<p><b>A</b> Total disturbance footprint – surface disturbance</p>	<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>
<p><b>B</b> Total active disturbance</p>	<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>
<p><b>C</b> Rehabilitation – land preparation</p>	<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>
<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>

REPORTING CATEGORY	DEFINITION
O	The area of any new active disturbance that will be created during the next three years, as defined under definition A1 (definition A1 Table 5).
P	The sum of any new rehabilitation to be commenced in the next three years. These areas may be in the phases “Rehabilitation - Land Preparation” or the “Ecosystem & Land Use Establishment” (definitions C & D in Table 5).
Q	The rehabilitation to disturbance ratio (S / R) indicates how many hectares of new rehabilitation are undertaken for each hectare of land disturbed during the three years. A ratio of 1/1 indicates that the area of new rehabilitation and disturbance in that period are the same.

## 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>	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"> <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 – Plans

BO\_FWP\_Plan 2A.pdf

BO\_FWP\_Plan 2B.pdf

BO\_FWP\_Plan 2C.pdf

Forward Program (LARGE MINE) v2.1

# Coorabin Clay Mine - Plan 2A - Forecast Data (Year 1) - 26/07/23



## Legend

### Forecast Data Year1

- Forecast Disturbance
- Forecast Land Prepared for Rehabi
- Ecosystem and Land Use Establish

### Project Approval Boundary

### World Imagery

Low Resolution 15m Imagery

High Resolution 60cm Imagery

High Resolution 30cm Imagery

Citations

1: 5,346



271.6 0 135.79 271.6 Meters

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THIS MAP IS NOT TO BE USED FOR NAVIGATION

## Notes

Themes:

Forecast Data (Year 1) - ID 5709

Project Approval Boundary - ID 1588






# Coorabin Clay Mine - Plan 2B - Forecast Data (Year 2) - 26/07/23



## Legend

### Forecast Data Year2

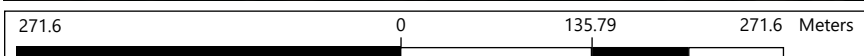
-  Forecast Disturbance
-  Forecast Land Prepared for Rehabi
-  Ecosystem and Land Use Establish

### Project Approval Boundary

### World Imagery

- Low Resolution 15m Imagery
- High Resolution 60cm Imagery
- High Resolution 30cm Imagery
- Citations

1: 5,346



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## Notes

Themes:  
Forecast Data (Year 2) - ID 5710  
Project Approval Boundary - ID 1588



# Coorabin Clay Mine - Plan 2C - Forecast Data (Year 3) - 26/07/23



- Legend**
- ▨ Forecast Disturbance
  - ▨ Forecast Land Prepared for Rehabi
  - ▨ Ecosystem and Land Use Establish
  - Project Approval Boundary
- World Imagery
- Low Resolution 15m Imagery
  - High Resolution 60cm Imagery
  - High Resolution 30cm Imagery
- Citations

1: 5,346



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**Notes**

Themes:  
Forecast Data (Year 3) - ID 5711  
Project Approval Boundary - ID 1588

## Site Registration

Date

September 2017

Complete the following fields prior to calculating the Security Deposit.

<b>Mine Name:</b>	<input type="text" value="Oaklands Clay Mine"/>		
<b>Lease(s):</b>	<input type="text" value="ML1196 &amp; PLL1155"/>		
<b>Title Holder:</b>	<input type="text" value="Boral CSR Bricks Pty Ltd"/>		
<b>Mine Operator:</b>	<input type="text" value="Boral CSR Bricks Pty Ltd"/>		
<b>Expiry of MOP:</b>	<input type="text" value="1/4/2017"/>		
<b>Current Security:</b>	<input type="text"/>	<b>Date of last Security Deposit review</b>	<input type="text"/>
<b>Mine Contact:</b>	<input type="text" value="Mr Joe Gauci"/>		
<b>Position:</b>	<input type="text" value="Mine Manager"/>		
<b>Address:</b>	<input type="text" value="56-67 Cecil Road"/>		
	<input type="text" value="Cecil Park NSW 2171"/>		
	<input type="text"/>		
<b>Phone:</b>	<input type="text" value="0417 683 526"/>	<b>Email:</b>	<input type="text" value="jgauci@csr.com.au"/>





Open Cut and Underground Summary Rehabilitation Cost Estimation

Note: Sections of this page are automatically filled in from the registration page

Mine Name: Oaklands Clay Mine
Lease(s): ML1196 & PLL1155
Mine Owner: Boral CSR Bricks Pty Ltd
Mine Operator: Boral CSR Bricks Pty Ltd
Expiry of MOP: 1/4/2017
Current Security: [ ] Date of Last Security Deposit Review: [ ]
Mine Contact: Mr Joe Gauci
Position: Mine Manager
Address: 56-67 Cecil Road, Cecil Park NSW 2171
Phone: 0417 683 526 Email: jgauci@csr.com.au

Table with 2 columns: Domain, Security Deposit. Rows include Domain 1: Infrastructure (86,359.56), Domain 2: Tailings & Rejects, Domain 3: Overburden & Waste, Domain 4: Active Mine & Voids (48,072.80), Domain 5: Subsidence & Management (158,700.00), Subtotal (Domains and Sundry Items) (\$293,132.36), Contingency (10% \$29,313.24), Post Closure Environmental Monitoring (10% \$29,313.24), Project Management and Surveying (10% \$29,313.24), Total Security Deposit for the Mining Project (excl. of GST) (\$381,072.07)

Note: GST is not included in the above calculation or as part of rehabilitation security deposits required by the Department

- Alterations have been made to unit prices within this spreadsheet. (Attach a separate sheet providing details of changes).
The proposed rehabilitation design is generally consistent with the development consent for the project.

This Registration Form, Summary Report and calculation pages are to be printed and attached as an appendix the AEMR or MOP.

This mine security calculation has been estimated using the best available information at the time. It is a true and accurate reflection of the total rehabilitation liability held by this mine.

Joe Gauci
Company Representatives Name

11/09/2017
Date

National Materials Manger
Company Representatives Role / Responsibility

Signature



## Open Cut and Underground Operations

Domain 1a: Infrastructure

Total Cost for Infrastructure Domain

**\$86,360**

**Additional Assumptions:** Record any relevant assumptions to this domain below:

Key Rehabilitation Area Data for Domain		Enter data below manually
Total Landform Establishment:		
Total Growth Media Development:		
Total Ecosystem Establishment:		

Management Precinct	Activity / Description	Applicable (Y or N)	Quantity	Unit	Default Unit Rate	Alternative Unit Rate	Total Cost	Basis for Costs Estimation and Additional Relevant Information	Description / Notes:
Termination of Services and Demolition Works	Demolish and remove small buildings/tanks (admin buildings, single story accommodation etc) and disposal on-site/locally	Y	132	m2	\$65.00		\$8,580	surface infrastructure for underground mining will be removed i.e. small sheds and mine head.	Simple structure to demolish, assumes no greater than 2 stories high. Does not include transport to regional disposal facility or equivalent.
	Remove concrete pads & footings (<300 mm thickness) and disposal on-site/locally	Y	132	m2	\$37.00		\$4,884		Breaking up slab and disposal or for conversion to aggregate. Generally haulage rates will be \$0.60 - \$1.20 / km, depending on truck fleet, loaders etc. For off-site disposal use alternate rate option and add \$0.90 / km for transport.
<b>Termination of Services and Demolition Works Subtotal</b>							<b>\$13,464</b>		
<b>Rail Infrastructure Subtotal</b>							<b>\$0</b>		

Contaminated Materials Subtotal							\$0		
	Seal small adits (width <3 m) – install 0.5 concrete plug 3 m back from adit and backfill with appropriate material. The rate includes some reshaping of the batter around the entrance of the adit	Y	1	allow	\$25,000		\$25,000		Cost estimated from planned and executed works programs in NSW from multiple sites. Rate assumes standard works program with suitable access, and additional roof and rib stabilisation works etc. is not required.
	Maintenance and monitoring of sealed adits/portals and shafts (for a total of 5 years)	Y	1	allow	\$25,000		\$25,000		Estimate to undertake periodic inspections by a qualified person and provide a completions report for DRG sign-off.
<b>Vents, Shafts and Boreholes Subtotal</b>							<b>\$50,000</b>		
<b>Roads and Tracks Subtotal</b>							<b>\$0</b>		
<b>Earthworks / Structural Works Subtotal</b>							<b>\$0</b>		
Rehabilitation	Source, cart and spread growth media - haul distance <1 km	Y	2100	m3	\$3.26		\$6,838	<=1km	610 m3/hr with 4 x 657 scrapers at \$430/hr, D10 trimming at \$270/hr 3ha/day at 150mm depth
	Trim, rock rake & deep rip (includes levelling / landscaping and rip in 1 direction)	Y	2.1	ha	\$960.00		\$2,016	Stockpile are to be ripped	16H Grader @ \$212 per hour - ripping in 1 direction only
	Direct seeding / fertiliser (tree or native grass species)	Y	2.1	ha	\$2,095		\$4,400		Rate can fluctuate however this is a suitable standard rate.
	Single application of fertiliser (pasture)	Y	2.1	ha	\$420.00		\$882		Assumes 250 kg / ha. These rates have fluctuated over the last few years however in light of current conditions (lower fuel prices, reduced demand etc) this is a suitable standard rate.
	Purchase and erect warning signs	Y	1	allow	\$250.00		\$250		Compliance with AS 1319-1994 - Safety signs for the occupational environment - installed every 25 m.
<b>Rehabilitation Subtotal</b>							<b>\$14,386</b>		
Water Management	Clean water dams to be retained after decommissioning – make safe and minor earthworks	Y	2	allow	\$2,500		\$5,000		Provisional sum for earthworks and revegetation required to rehabilitate dam batters etc suitable for re-use by an alternate land-user - D6 Dozer (or similar) @ ~\$200 per hour and pasture grass.
<b>Water Management Subtotal</b>							<b>\$5,000</b>		
Maintenance of Rehabilitated Areas	Maintenance of areas that have been shaped and seeded and revegetation has been 'successful'	Y	3.9	ha	\$900		\$3,510		Rehabilitation maintenance might include re-seeding, watering, fertilising, minor re-shaping, erosion control, inspections/audits – does not include major repair works.
<b>Maintenance of Rehabilitated Areas Subtotal</b>							<b>\$3,510</b>		
<b>Additional Items Subtotal</b>							<b>\$0</b>		
<b>Total Cost for Infrastructure Domain</b>								<b>\$86,360</b>	

**Open Cut and Underground Operations**

Domain 2a: Tailings & Rejects

Total Cost for Tailings & Rejects Domain

**\$0**

**Additional Assumptions:** Record any relevant assumptions to this domain below:

No tailings or rejects on the site	<b>Key Rehabilitation Area Data for Domain</b>	<b>Enter data below manually</b>
	Total Landform Establishment:	
	Total Growth Media Development:	
	Total Ecosystem Establishment:	

Management Precinct	Activity / Description	Applicable (Y or N)	Quantity	Unit	Default Unit Rate	Alternative Unit Rate	Total Cost	Basis for Costs Estimation and Additional Relevant Information	Description / Notes:
<b>Contaminated Materials Subtotal</b>							<b>\$0</b>		
<b>Roads and Tracks Subtotal</b>							<b>\$0</b>		
<b>Earthworks / Structural Works (Landform Establishment) Subtotal</b>							<b>\$0</b>		
	Reshaping, capping / sealing of structure likely to present considerable difficulties due to reactive materials (ARD / AMD / PAF / NMD / carbonaceous / saline), and / or physical properties (low shear strength greatly limiting equipment selection for material placement etc.)	Y		ha	\$170,000		\$0		This item includes sourcing, carting, spreading, moisture conditioning and compaction of a suitable volume of material to cap / cover facilities of high geochemical risk, and / or low shear strength that prohibits economically efficient construction methods. This rate assumes suitable capping material/s are available on site within 10 km, and an average cap thickness of approximately 2.5 m including growth media. This may require additional materials (i.e., capillary breaks, geofabric, etc.), specific material types (e.g. acid neutralising / consuming materials, competent rock etc.), and associated activities (i.e., load / haul / place / crush / screen / borrow etc.). Costs for haulage of specialised materials must be added separately if required.
<b>Mine Waste Subtotal</b>							<b>\$0</b>		
<b>Land Preparation and Revegetation (Growth Media Development and Ecosystem Establishment) Subtotal</b>							<b>\$0</b>		
<b>Water Management Subtotal</b>							<b>\$0</b>		
<b>Maintenance of Rehabilitated Areas Subtotal</b>							<b>\$0</b>		
<b>Additional Items Subtotal</b>							<b>\$0</b>		
<b>Total Cost for Tailings &amp; Rejects Domain</b>							<b>\$0</b>		

**Open Cut and Underground Operations**

Domain 3a: Overburden & Waste

Total Cost for Overburden & Waste Domain

**\$0**

**Additional Assumptions:** Record any relevant assumptions to this domain below:

No Acid Sulfate Soils (ASS) located on-site	<b>Key Rehabilitation Area Data for Domain</b>	<b>Enter data below manually</b>
	Total Landform Establishment:	17 ha
	Total Growth Media Development:	12 ha
	Total Ecosystem Establishment:	12 ha

Management Precinct	Activity / Description	Applicable (Y or N)	Quantity	Unit	Default Unit Rate	Alternative Unit Rate	Total Cost	Basis for Costs Estimation and Additional Relevant Information	Description / Notes:
<b>Contaminated Materials Subtotal</b>							<b>\$0</b>		
<b>Roads and Tracks Subtotal</b>							<b>\$0</b>		
<b>Earthworks / Structural Works (Landform Establishment) Subtotal</b>							<b>\$0</b>		
	Reshaping, capping / sealing of structure likely to present considerable difficulties due to reactive materials (ARD / AMD / PAF / NMD / carbonaceous / saline), and / or physical properties (low shear strength greatly limiting equipment selection for material placement etc.)	Y		ha	\$170,000		\$0		This item includes sourcing, carting, spreading, moisture conditioning and compaction of a suitable volume of material to cap / cover facilities of high geochemical risk, and / or low shear strength that prohibits economically efficient construction methods. This rate assumes suitable capping materials are available on site within 10 km, and an average cap thickness of approximately 2.5 m including growth media. This may require additional materials (i.e. capillary breaks, geofabric, etc.), specific material types (e.g. acid neutralising / consuming materials, competent rock etc.), and associated activities (i.e., load / haul / place / crush / screen / borrow etc.). Costs for haulage of specialised materials must be added separately if required.
<b>Mine Waste Subtotal</b>							<b>\$0</b>		
<b>Land Preparation and Revegetation (Growth Media Development and Ecosystem Establishment) Subtotal</b>							<b>\$0</b>		
<b>Water Management Subtotal</b>							<b>\$0</b>		
<b>Maintenance of Rehabilitated Areas Subtotal</b>							<b>\$0</b>		
<b>Additional Items Subtotal</b>							<b>\$0</b>		
<b>Total Cost for Overburden &amp; Waste Domain</b>							<b>\$0</b>		

## Open Cut and Underground Operations

Domain 4a: Active Mine & Voids

Total Cost for Active Mine & Voids Domain

**\$48,073**

**Additional Assumptions:** Record any relevant assumptions to this domain below:

	<b>Key Rehabilitation Area Data for Domain</b>	<b>Enter data below manually</b>
	Total Landform Establishment:	
	Total Growth Media Development:	
	Total Ecosystem Establishment:	

Management Precinct	Activity / Description	Applicable (Y or N)	Quantity	Unit	Default Unit Rate	Alternative Unit Rate	Total Cost	Basis for Costs Estimation and Additional Relevant Information	Description / Notes:
<b>Open Cut Subtotal</b>							<b>\$0</b>		
Earthworks / Structural Works (Landform Establishment)	Major bulk pushing to achieve grades nominated in the approval/permit – 50 m-75 m push length	Y	24000	m3	\$1.14		\$27,423	> 50m - 100m < push	D11 push at \$350 and 375 bcm/hr
	Minor reshaping and pushing	Y	2.8	ha	\$3,900		\$10,920		D10 Dozer @ \$332 per hour and 16H Grader @ \$212 per hour (50% utilisation).
<b>Earthworks / Structural Works (Landform Establishment) Subtotal</b>							<b>\$38,343</b>		
Land Preparation and Revegetation (Growth Media Development and Ecosystem Establishment)	Trim, rock rake & deep rip (includes levelling / landscaping and rip in 1 direction)	Y	2.8	ha	\$960.00		\$2,688		16H Grader @ \$212 per hour - ripping in 1 direction only.
	Direct seeding / fertiliser (tree or native grass species)	Y	2.8	ha	\$2,095		\$5,866		Rate can fluctuate however this is a suitable standard rate.
	Single application of fertiliser (pasture)	Y	2.8	ha	\$420.00		\$1,176		Assumes 250 kg / ha. These rates have fluctuated over the last few years however in light of current conditions (lower fuel prices, reduced demand etc) this is a suitable standard rate.
<b>Land Preparation and Revegetation (Growth Media Development and Ecosystem Establishment) Subtotal</b>							<b>\$9,730</b>		
<b>Water Management Subtotal</b>							<b>\$0</b>		
<b>Maintenance of Rehabilitated Areas Subtotal</b>							<b>\$0</b>		
<b>Additional Items Subtotal</b>							<b>\$0</b>		
<b>Total Cost for Active Mine &amp; Voids Domain</b>							<b>\$48,073</b>		

**Open Cut and Underground Operations**

Domain 5a: Subsidence & Management

Total Cost for Subsidence & Management Activities

**\$158,700**

Additional Assumptions: Record any relevant assumptions to this domain below:

Key Rehabilitation Area Data for Domain		Enter data below manually
Total Landform Establishment:		
Total Growth Media Development:		
Total Ecosystem Establishment:		

Management Precinct	Activity / Description	Applicable (Y or N)	Quantity	Unit	Default Unit Rate	Alternative Unit Rate	Total Cost	Basis for Costs Estimation and Additional Relevant Information	Description / Notes:
<b>Subsidence Repairs Subtotal</b>							<b>\$0</b>		
<b>Vents, Shafts and Boreholes Subtotal</b>							<b>\$0</b>		
<b>Water Management Subtotal</b>							<b>\$0</b>		
<b>Creek Diversions Subtotal</b>							<b>\$0</b>		
Land Management	Pest management on buffer lands, non-disturbed, and rehabilitated areas	Y	34	ha	\$150.00		\$5,100		Feral animal baiting programs if required and waste materials required to be removed.
	Land management of undisturbed areas (rehabilitation, weeds, ferals, erosion and sediment control works)	Y	34	ha	\$400.00		\$13,600		Undisturbed areas within the lease boundary that require land management activities.
<b>Land Management Subtotal</b>							<b>\$18,700</b>		
<b>Heritage Items Subtotal</b>							<b>\$0</b>		
Sundry Items	Development of an 'Unplanned' Project Closure Plan - Non State Significant Development	Y	1	allow	\$40,000		\$40,000	Non-SSD	Provisional sum to be used to refine the conceptual closure plan into a detailed closure plan with execution strategies for rehabilitation activities.
	DRG tender preparation and assessment, stakeholder consultation, risk assessment facilitation and management, statutory reporting and instruments, permitting and compliance requirements, document and data management	Y	1	allow	Use alternate rate cell		\$0		Provisional sum for the NSW Government to prepare tender documentation (i.e. demolition, waste disposal, earthworks, environmental management etc.) manage stakeholders and establish permitting and compliance requirements for closure.
<b>Sundry Items Subtotal</b>							<b>\$40,000</b>		
Third Party Project Management	Mobilisation & Demobilisation (Distance to site <150 km)	Y	1	item	\$100,000		\$100,000		May include specialist demolition equipment and/or suitable plant to execute bulk earthworks as required.
<b>Third Party Project Management Subtotal</b>							<b>\$100,000</b>		
<b>Additional Items Subtotal</b>							<b>\$0</b>		
<b>Total Cost for Subsidence &amp; Management Activities</b>							<b>\$158,700</b>		