NSW GOVERNMENT

NSW Resources Regulator

FWP0001662

COORABIN CLAY MINE FORWARD PROGRAM

Tuesday 24 June 2025 to Friday 23 June 2028

Summary

DETAIL	
Mine	Coorabin Clay Mine
Reference	FWP0001662
Forward program commencement date	Tuesday 24 June 2025
Forward program end date	Friday 23 June 2028
Forward program revision (if applicable)	
Contact	Sinead Kelly
Mining leases	ML 1196 (1973), PLL 1155 (1924)
Project location	Pgh Bricks & Pavers Pty Limited
Date of submission	Wednesday 13 August 2025

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 for the duration of the Forward Program period.

Construction activities

No construction is proposed for the duration of the Forward Program period.

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 westerly though no new disturbance is proposed in this forward program. The existing batter slopes of 1 horizontal: 0.7 vertical for the clay will be continued. Topsoil and overburden stripping may 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 meters) 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
Stripped topsoil (if applicable)	(m^3)	600	600	600
Rock/overburden	(m^3)	46,000	46,000	46,000
Ore	(Mt)	0.03	0.03	0.03
Reject material[1]	(Mt)	0	0	0
Product	(Mt)	0	0	0

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

Three-year rehabilitation forecast

Rehabilitation planning schedule

Rehabilitation planning schedule

No new rehabilitation areas are currently proposed. If new areas of rehabilitation are proposed an amended FWP will be submitted.

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. Soil samples have been obtained from topsoil stockpiles and will be tested from suitability.

NSW Resources Regulator

Rehabilitation research and trials

RRT NUMBER	PROJECT/TRIAL NAME	OBJECTIVE OF TRIAL/PROJECT	METHODOLOGY	EXPECTED DATE OF COMPLETION	STATUS
FWP0001662					

Rehabilitation maintenance and corrective actions

No issues were raised in the previous ARR 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.

Completion of rehabilitation

No rehabilitation areas are considered complete.

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
A1	**Total disturbance footprint - surface disturbance**	(ha)	11.5	11.5	11.5
B	**Total active disturbance**	(ha)	8.32	8.32	8.32
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 disturbance area during reporting period**	(ha)			
P	**Total new area of land proposed for rehabilitation during the reporting period**	(ha)			
Q	**Annual rehabilitation to disturbance ratio**				

Attachment 1 – Reporting Definitions

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

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

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

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

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

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

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

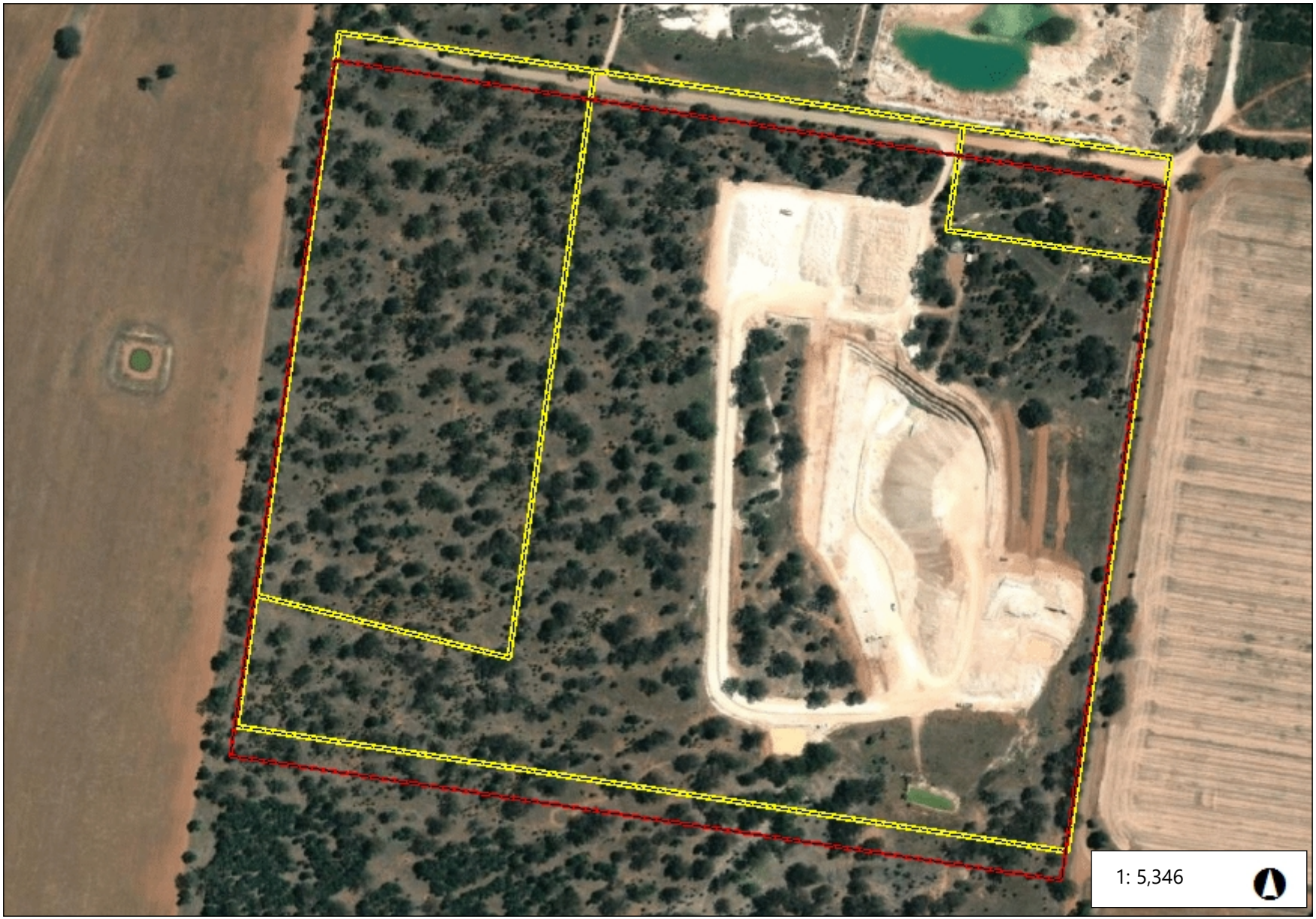
Attachment 3 – Plans

Plan 2A V0.pdf

Plan 2B V0.pdf

Plan 2C V0.pdf

Coorabin Clay Mine Plan 2A. FWP 2025. Year 1 24/06/2025 - 23/06/2026



Legend

- Project Approval Boundary
- Mine Operations Area
- World Imagery
- Low Resolution 15m Imagery
- High Resolution 60cm Imagery
- High Resolution 30cm Imagery
- Citations

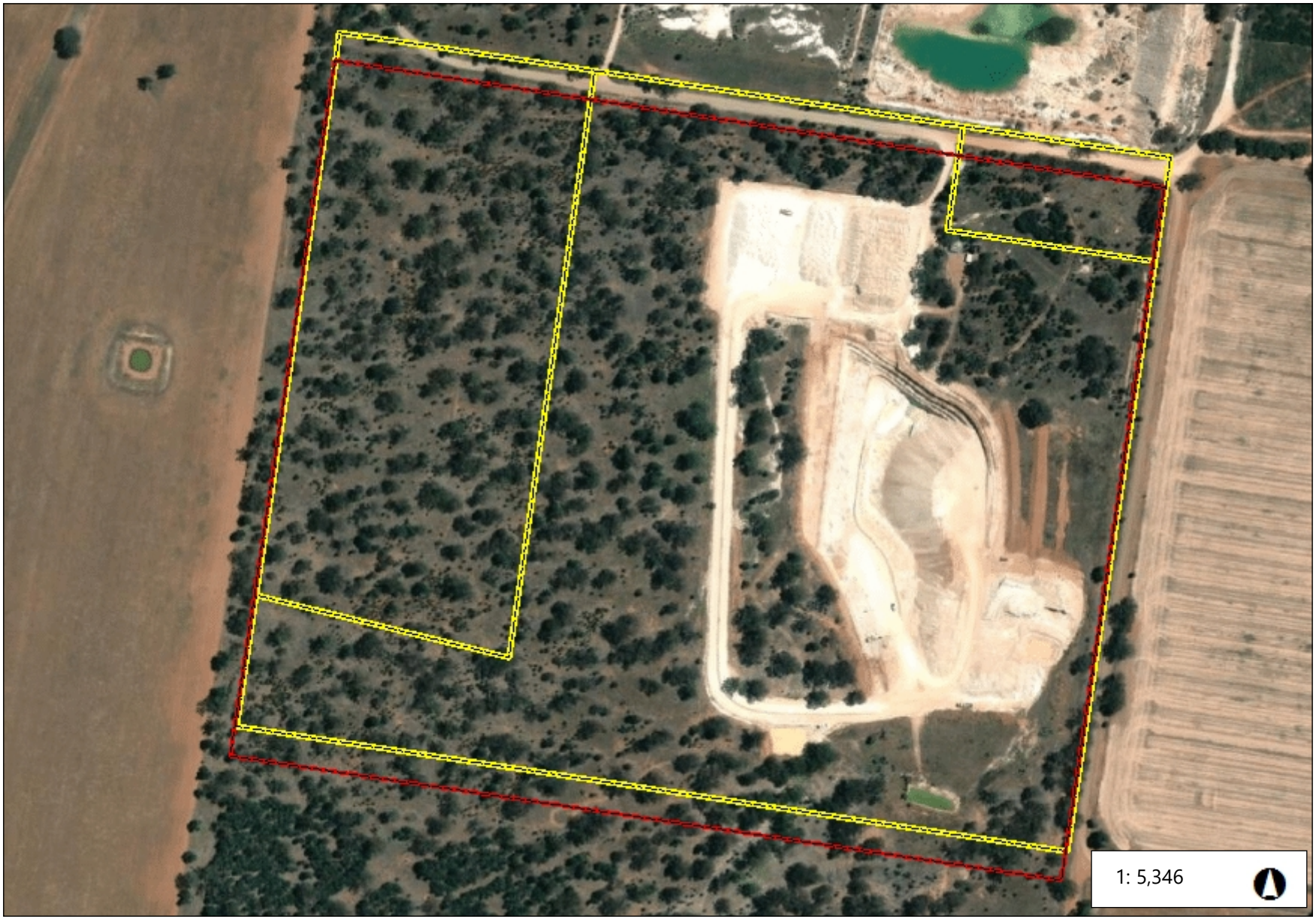
Notes

Plan Date: 15/07/2025
Submission IDs: 7859, 10457
Nil new disturbance/
rehabilitation proposed.

271.6 0 135.79 271.6 Meters

WGS_1984_Web_Mercator_Auxiliary_Sphere

Coorabin Clay Mine Plan 2B. FWP 2025. Year 2 24/06/2026 - 23/06/2027



Legend

- Project Approval Boundary
- Mine Operations Area
- World Imagery
- Low Resolution 15m Imagery
- High Resolution 60cm Imagery
- High Resolution 30cm Imagery
- Citations

Notes

Plan Date: 15/07/2025
Submission IDs: 7859, 10458
Nil new disturbance/
rehabilitation proposed.

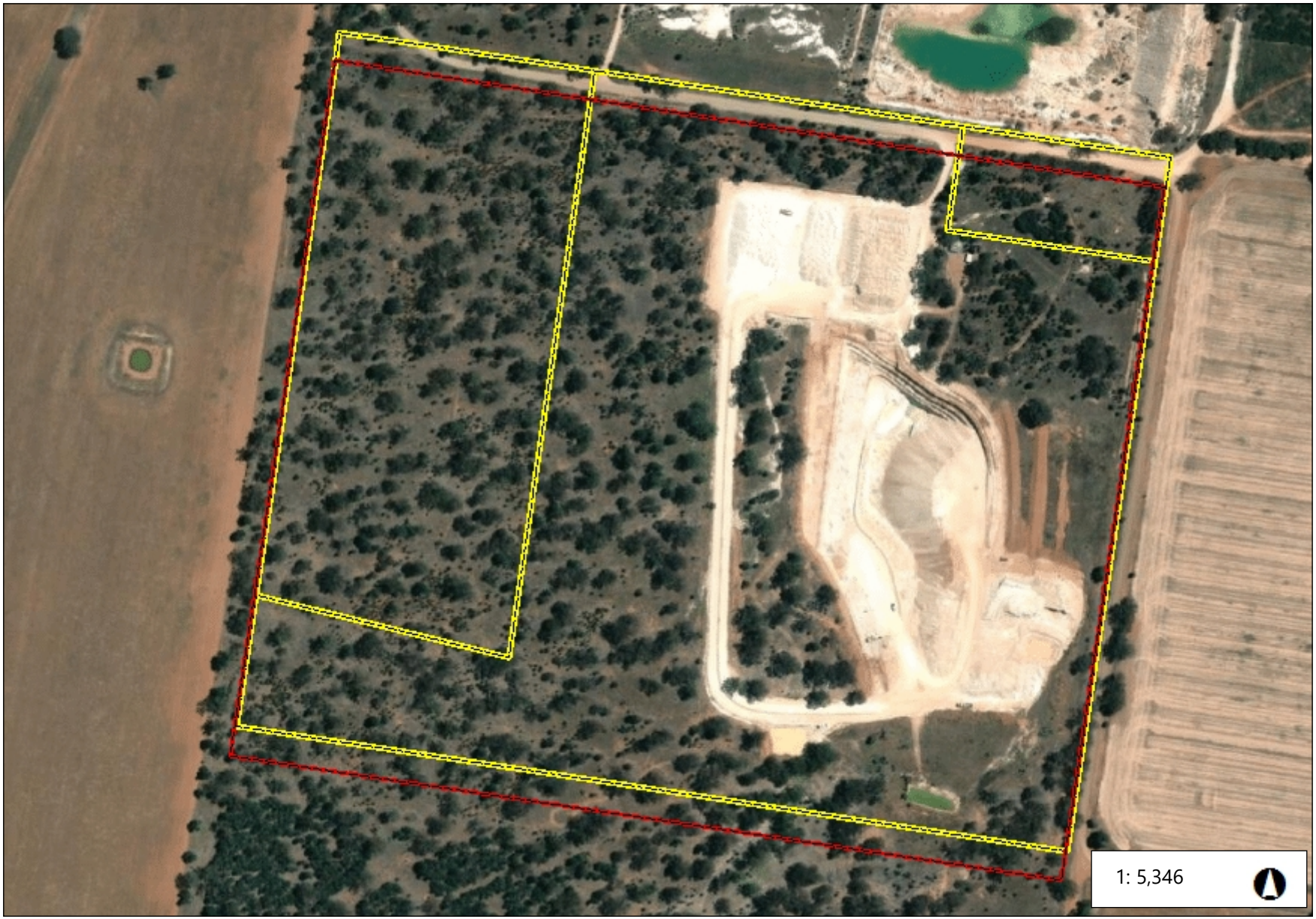
271.6 0 135.79 271.6 Meters

WGS_1984_Web_Mercator_Auxiliary_Sphere

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

THIS MAP IS NOT TO BE USED FOR NAVIGATION

Coorabin Clay Mine Plan 2C. FWP 2025. Year 3 24/06/2027 - 23/06/2028



Legend

- Project Approval Boundary
- Mine Operations Area
- World Imagery
- Low Resolution 15m Imagery
- High Resolution 60cm Imagery
- High Resolution 30cm Imagery
- Citations

Notes

Plan Date: 15/07/2025
Submission IDs: 7859, 10459
Nil new disturbance/rehabilitation proposed.

271.6 0 135.79 271.6 Meters

WGS_1984_Web_Mercator_Auxiliary_Sphere

Site Registration

Date August 2025

Complete the following fields prior to calculating the Security Deposit.

Mine Name:	Coorabin Clay Mine
Lease(s):	ML1196 & PLL1155
Title Holder:	PGH Bricks & Pavers Pty Ltd
Term of RCE:	From 24/06/2026 to 23/06/2028 (FWP0001662)
Current Security:	$390,000
Date of last Security Deposit review	31/10/2024
Mine Contact:	Joe Gauci, jgauci@csr.com.au, 59-67 Cecil Road, Cecil Park, NSW, 2171, 0419 683 526
List key changes since previous submission:	Nil changes proposed since last submission.

Open Cut and Underground Summary Rehabilitation Cost Estimation

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

Mine Name: Coorabin Clay Mine

Lease(s): ML1196 & PLL1155

Title Holder: PGH Bricks & Pavers Pty Ltd

Term of RCE: From 24/06/2026 to 23/06/2028 (FWP0001662)

Current Security: $390,000 **Date of Last Security Deposit Review:** 31/10/2024

Mine Contact: Joe Gauci, jgauci@csr.com.au, 59-67 Cecil Road, Cecil Park, NSW, 2171, 0419 683 526

Domain		Security Deposit
Domain 1: Infrastructure		79,463.00
Domain 2: Tailings & Rejects		
Domain 3: Overburden & Waste		2,775.00
Domain 4: Active Mine & Voids		66,900.00
Domain 5: Subsidence & Management		150,945.00
Subtotal (Domains and Sundry Items)		**$300,083.00**
Contingency	**10%**	$30,008.30
Post Closure Environmental Monitoring	**10%**	$30,008.30
Project Management and Surveying	**10%**	$30,008.30
Total Security Deposit for the Mining Project (excl. of GST)		**$390,107.90**

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 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

13/08/2025
Date

National Raw Materials Manager
Company Representatives Role / Responsibility


Signature

Open Cut and Underground Operations

Domain 1a: Infrastructure

Total Cost for Infrastructure Domain $79,463

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	$61.00		$8,052		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	$36.00		$4,752		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.

						Contaminated Materials Subtotal	$0		
	Seal small adits (width ≤3 m) accessible by men and/or machinery or neither requiring a bulkhead –backfill with appropriate material against a concrete bulkhead existing or to be constructed. The rate includes reshaping and rehabilitation of the batter around the entrance of the adit	Y	1	allow	$25,000		$25,000		Costs estimated from executed works program in NSW from multiple sites. Rate assumes standard works program with suitable access, and additional roof and rib stabilisation works etc. is not required.
						Vents, Shafts and Boreholes Subtotal	$25,000		
						Roads and Tracks Subtotal	$0		
						Earthworks / Structural Works Subtotal	$0		
Rehabilitation	Source, cart and spread growth media - haul distance <1 km	Y	4100	m3	$3.26		$13,351	< =1km	Undertaken with 623 scraper and 14 M grader.
	Trim, rock rake & deep rip (includes levelling / landscaping and rip in 1 direction)	Y	4.1	ha	$1,130.00		$4,633		Undertaken using D10 dozer and 16M grader.
	Direct seeding / fertiliser (tree or native grass species)	Y	4.1	ha	$4,135		$16,954		Includes treating, weighing, mixing with fertiliser + spreading by tractor or helicopter (aerial seeding).
	Single application of fertiliser (pasture)	Y	4.1	ha	$420.00		$1,722		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.
						Rehabilitation Subtotal	$36,659		
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.
						Water Management Subtotal	$5,000		
						Maintenance of Rehabilitated Areas Subtotal	$0		
						Additional Items Subtotal	$0		
						Total Cost for Infrastructure Domain		**$79,463**	

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:*

	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:
						Contaminated Materials Subtotal	$0		
						Roads and Tracks Subtotal	$0		
						Earthworks / Structural Works (Landform Establishment) Subtotal	$0		
						Mine Waste Subtotal	$0		
						Land Preparation and Revegetation (Growth Media Development and Ecosystem Establishment) Subtotal	$0		
						Water Management Subtotal	$0		
						Maintenance of Rehabilitated Areas Subtotal	$0		
						Additional Items Subtotal	$0		
						Total Cost for Tailings & Rejects Domain	**$0**		

Open Cut and Underground Operations

Domain 3a: Overburden & Waste

Total Cost for Overburden & Waste Domain $2,775

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

No Acid Sulfate Soils (ASS) located on-site	**Key Rehabilitation Area Data for Domain**	**Enter data below manually**
	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:
						Contaminated Materials Subtotal	$0		
						Roads and Tracks Subtotal	$0		
						Earthworks / Structural Works (Landform Establishment) Subtotal	$0		
						Mine Waste Subtotal	$0		
						Land Preparation and Revegetation (Growth Media Development and Ecosystem Establishment) Subtotal	$0		
						Water Management Subtotal	$0		
Maintenance of Rehabilitated Areas	Maintenance of areas that have been shaped and seeded and revegetation has been 'successful'	Y	3	ha	$925		$2,775		Rehabilitation maintenance might include re-seeding, watering, fertilising, minor re-shaping, erosion control, inspections/audits - does not include major repair works.
						Maintenance of Rehabilitated Areas Subtotal	$2,775		
						Additional Items Subtotal	$0		
						Total Cost for Overburden & Waste Domain		**$2,775**	

Open Cut and Underground Operations

Domain 4a: Active Mine & Voids

Total Cost for Active Mine & Voids Domain $66,900

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:
						Open Cut Subtotal	$0		
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	$1.19		$28,560	> 50m - 100m < push	Assumes D11 dozer push @ 375 bcm/hr.
	Minor reshaping and pushing	Y	4	ha	$3,900		$15,600		D10 Dozer @ $400 per hour and 16 H grader @ $230 per hour (50% utilisation).
						Earthworks / Structural Works (Landform Establishment) Subtotal	$44,160		
Land Preparation and Revegetation (Growth Media Development and Ecosystem Establishment)	Trim, rock rake & deep rip (includes levelling / landscaping and rip in 1 direction)	Y	4	ha	$1,130.00		$4,520		Undertaken using D10 dozer and 16M grader.
	Direct seeding / fertiliser (tree or native grass species)	Y	4	ha	$4,135		$16,540		Includes treating, weighing, mixing with fertiliser + spreading by tractor or helicopter (aerial seeding).
	Single application of fertiliser (pasture)	Y	4	ha	$420.00		$1,680		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.
						Land Preparation and Revegetation (Growth Media Development and Ecosystem Establishment) Subtotal	$22,740		
						Water Management Subtotal	$0		
						Maintenance of Rehabilitated Areas Subtotal	$0		
						Additional Items Subtotal	$0		
						Total Cost for Active Mine & Voids Domain	**$66,900**		

Open Cut and Underground Operations

Domain 5a: Subsidence & Management

Total Cost for Subsidence & Management Activities $150,945

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:
Subsidence Repairs	Minor stabilisation works and maintenance of mine subsidence areas - ripping etc.	N		ha	$1,470				Undertaken using Dozer. Costs subject to the extent of subsidence impacts
	Crack filling to repair subsidence impacts	N		m	$1,450				Undertake more substantial works to backfill cracks and/or sink holes (e.g., filling with mulch prior to grouting, grouting, etc.) Costs subject to the extent of subsidence impacts. Include >5 km haul of fill.
	Water course restoration to repair subsidence impacts	N		allow	Use alternate rate cell				Undertake more substantial works to remediate water courses (e.g., channel bed repairs, rock bar repairs, swamp stabilisation etc.)
	Create cut-through to re-establish natural water courses/drainage channels following subsidence	N		allow	$3,000				Includes all earthworks and revegetation required to re-establish the natural drainage profile of the subsided area.
					Subsidence Repairs Subtotal		$0		
Vents, Shafts and Boreholes	Maintenance and monitoring of sealed adits/portals and shafts (for a total of 5 years)	Y	1	allow	$25,000		$25,000		Assume 1 x day visual inspection (10hrs inc' travel) for suitably qualified / competent person + reporting, for an annual inspection @ $5,000 per year. Exclusions are intrusive investigation and testing (e.g. concrete strength etc).
					Vents, Shafts and Boreholes Subtotal		$25,000		
Water Management	On-site treatment of contaminated water due to high salt (includes removal of metals etc, brine disposal and cost of mobile water treatment unit)	N		ML	$3,600				Rate can fluctuate depending on treatment type however this is a suitable standard rate for current programs at mining operations.
	On-site treatment of contaminated water due to low pH (incudes removal of metals etc, neutralisation treatments and cost of mobile water treatment unit	N		ML	$1,500				Rate can fluctuate depending on treatment type however this is a suitable standard rate for current programs at mining operations.
					Water Management Subtotal		$0		
Creek Diversions	Repairs and/or stabilisation of new or compromised water course diversion	N		m	$2,500				Assumes material is suitable for revegetating and has a reasonable chance of stabilising.
	Long term maintenance of water course diversion – Channel constructed through backfilled material	N		m	$1,500				Assumes maintenance has been kept up and significant works are not required.
	Long term maintenance of water course diversion – Channel constructed through competent material	N		m	$750.00				Assumes maintenance has been kept up and significant works are not required.
	Installation of rock armouring	N		m2	$6.00				Assumes competent material is locally available - multiply costs by 2 for sourcing and transporting from offsite location.
					Creek Diversions Subtotal		$0		
Land Management	Pest management on buffer lands, non-disturbed, and rehabilitated areas	Y	19.9	ha	$150.00		$2,985		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	19.9	ha	$400.00		$7,960		Undisturbed areas within the lease boundary that require land management activities.
					Land Management Subtotal		$10,945		
Heritage Items	The restoration and care and maintenance of items that have heritage significance	N		allow	Use alternate rate cell				Item for the redistribution of Aboriginal artefacts, preservation of European heritage items or a combination of activities.
					Heritage Items Subtotal		$0		
Sundry Items	Development of an 'Unplanned' Project Closure Plan - State Significant Development with closure planning well progressed i.e. preferred cover design, closure environment modelled e.g. groundwater /subsidence / pit lakes, preliminary seal designs, etc. and only finalisation of detailed engineering deigns required	N		allow	$100,000				Provisional sum to be used to refine the conceptual closure plan into a detailed closure plan with execution strategies for rehabilitation activities. Assumes outcomes of studies readily available including modelling, landform design, geochemistry, demolition, etc. Costs to finalise options by domain and finalise designs for construction. Assume a simple site e.g. single open cut, no legacy operations historic in the area, little social dependence, etc. Depending on site size, complexity, final land use requirements and knowledge base investigations can range from ~$75k to >$1 M. Sites with more than 1 pit to add $50,000 to rate.
	Development of an 'Unplanned' Project Closure Plan - Non State Significant Development with at least ≥2 of the following aspects requiring closure planning, but no significant issues realised at this time: previous subsidence, medium or higher geochemistry risk and/or spontaneous combustion propensity, known/ likely contamination, tailings / rejects, final void	N		allow	$90,000				Provisional sum to be used to refine the conceptual closure plan into a detailed closure plan with execution strategies for rehabilitation activities. Estimated cost for developing closure plan including studies - basic to satisfy risks and decisions - includes risk assessment, options analysis, Closure Plan. Sites with more than 1 pit to add $50,000 to rate.

	Development of an 'Unplanned' Project Closure Plan - Non State Significant Development with no EPL and/or only one of the following relevant aspects: previous subsidence, low to medium geochemistry risk and/or spontaneous combustion propensity, known limited contamination, small approved final void	Y	1	allow	$15,000		$15,000		Assumes sediment control is the key concern for rehabilitation e.g. small mines, exploration operations. Includes risk assessment, sampling and analyses on <5 samples, one study and Closure Plan.
	Development of an 'Unplanned' Project Closure Plan - State Significant Development with only preliminary to conceptual closure planning in place	N		allow	$300,000				Includes costs for key investigations and studies including designs e.g. geochemistry, Contamination Remediation Action Plan, subsidence risk, cover/capping and final landform, site wide surface water, etc. Provisional sum to be used to refine the conceptual closure plan into a detailed closure plan with execution strategies for rehabilitation activities. Assume at least 15 types of studies required ranging from geotechnical to ecology and social, development of a closure plan including address of obligations. Assume a simple site e.g. single open cut, no legacy operations historic in the area, little social dependence, etc. Depending on site size, complexity, final land use requirements and knowledge base investigations can range to >$3 M. Sites with more than 1 pit to add $50,000 to rate.
	Development of an 'Unplanned' Project Closure Plan - Non State Significant Development with at least ≥2 of the following aspects resulting in significant issues requiring remediation: previous subsidence, medium or higher geochemistry risk and/or spontaneous combustion propensity, known/ likely contamination, tailings / rejects, final void	N		allow	$125,000				Includes costs for key investigations and studies including economic treatments and designs e.g. geochemistry, Contamination Remediation Action Plan, subsidence risk, cover/capping and final landform, site wide surface water, etc. Provisional sum to be used to refine the conceptual closure plan into a detailed closure plan with execution strategies for rehabilitation activities.
	Develop a Review of Environmental Factors (REF) to facilitate rehabilitation including contamination works.	N		allow	$27,950				Based on experience for a REF after completion of a detailed closure study (e.g. contamination investigation) costs could range from $10,000 to $100,000 ex GST. Note this does not apply to a Statement of Environmental Effects or Environmental Impact Statement.
	Site security during closure	N		yr.	$75,000				Provisional sum for site security measures required during closure. This includes nightly patrols and first response in the event of an out of hours incident.
	Choose type of HAZMAT Clean-up required - cleaning and decontaminating plant and equipment, chemical storage locations, oil and grease traps, tanks, vessels, and pipe work etc	N		allow	$0			Select type of HAZMAT Clean-up Required	Type of HAZMAT Clean-up required - cleaning and decontaminating plant and equipment, chemical storage locations, oil and grease traps, tanks, vessels, and pipe work etc
	Removal and disposal of radiation devices	N		each	$31,630				Provisional sum for removal and disposal of monitoring devices on conveyors using a radiation source (i.e., Americium – 241, Plutonium – 238, Caesium - 137 etc). Source Isotope type, quantity, strength, weight, source holder type, source holder weight, pick-up location (among others) will directly affect pricing.
	Additional fees for accessing State, Crown or other public lands for rehabilitation/remediation activities	N		allow	Use alternate rate cell				Provisional sum.
						Sundry Items Subtotal	$15,000		
Third Party Project Management	Mobilisation & Demobilisation for small mine or quarry - small fleet	N		Item	$12,000				May include specialist demolition equipment and/or suitable plant to execute bulk earthworks as required.
	Mobilisation & Demobilisation for small mine or quarry - medium to large fleet	N		Item	$35,000				May include specialist demolition equipment and/or suitable plant to execute bulk earthworks as required.
	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.
	Mobilisation & Demobilisation (Distance to site >150 km but <500 km)	N		item	$150,000				May include specialist demolition equipment and/or suitable plant to execute bulk earthworks as required.
	Mobilisation & Demobilisation (Distance to site >500 km but <1000 km)	N		item	$300,000				May include specialist demolition equipment and/or suitable plant to execute bulk earthworks as required.
	Mobilisation & Demobilisation (Distance to site >1000 km)	N		item	$500,000				May include specialist demolition equipment and/or suitable plant to execute bulk earthworks as required.
						Third Party Project Management Subtotal	$100,000		
Additional Items	Other 1 <insert>	N			This is				This item includes <<to be added by the operator>>
	Other 2 <insert>	N			deliberately				This item includes <<to be added by the operator>>
	Other 3 <insert>	N			left blank				This item includes <<to be added by the operator>>
						Additional Items Subtotal	$0		
Total Cost for Subsidence & Management Activities							**$150,945**		

Assumptions and rehabilitation requirements

List or record any assumptions made when completing this tool:

Regional NSW

Justification for Change of Rates in the Rehabilitation Cost Estimation Tool

Domain	Activity	DRG unit/rate	Adopted Rates	Justification

In completing the Rehabilitation Cost Estimation, we are seeking an adjustment to the rates currently utilised in the Rehabilitation Cost Estimation Tool. A justification for the rate change by a third party has been included and I confirm that only the rates identified in the above table have been altered in the Rehabilitation Cost Estimation Tool.

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Authrorisation Representatives Name

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Date

.....
Authorisation Representatives Role / Responsibility

.....
Signature