NSW GOVERNMENT

NSW Resources Regulator

FWP0001493

ANDERSONS PIT FORWARD PROGRAM

Friday 23 August 2024 to Sunday 22 August 2027

Summary

DETAIL	
Mine	Andersons Pit
Reference	FWP0001493
Forward program commencement date	Friday 23 August 2024
Forward program end date	Sunday 22 August 2027
Forward program revision (if applicable)	
Contact	Sinead Kelly
Mining leases	ML 1229 (1973)
Project location	PGH Bricks & Pavers Pty Ltd
Date of submission	Friday 18 October 2024

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

The Mine located approximately 7 kilometers northeast of Albury in Springdale Heights and has operated under Mining Lease (ML) 1229 since 24 August 1990 to extract clay and shale. The ML covers 7.98 hectares and is located on Lot 2 DP 856969 owned by the Proponent under freehold title. ML 1229 was renewed 14 May 2013 and is valid until 23 August 2032. The resource in Andersons Clay Mine consists of two types of clay, a weathered granite from the Silurian period and a weathered Phyllite from the upper Ordovician. Both products are mixed with the local highly plastic Jindera clay providing PGH with a very unique type of brick product. Albury City Council granted consent 1/8/1990 (DA N 72) with no sunset clause.

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 on the mine floor and mine face will continue to progress south. The existing batter slopes of 2 horizontal: 1 vertical for the clay will be continued. Clearing works will be undertaken around large trees and material will be stockpiled or shredded into mulch for rehabilitation works, using excavator and D6 dozer. Topsoil stripping will be undertaken using a D6 dozer where available, which will separately take the seed bank layer and then the top soil 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 / Shale will be mined using a excavator and dump trucks and placed directly onto stockpiles on the mine floor. A front end loader or excavator loads highway haul trucks and hauls material to the Jindera brick factory before placing material into layered product stockpiles. Approximately 7,000-8,000 tonnes of overburden and 5,000 tonnes of topsoil are expected to be encountered over the next three years. Approximately 25,000 tonnes of clay is the forecast extraction level

per annum for the next three years. As shown on Figure 2C, no new disturbance of land on ML1229 is proposed for years 2-3 in this FWP.

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

Stockpiles of overburden and topsoil will continue in existing emplacement areas within the south east of the pit and on the perimeter as bunding around the site.

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

Nil.

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)	3,570	3,570	3,570
Rock/overburden	(m^3)	4,000	4,000	4,000
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

Year 1 - Topsoil (stored on site) suitability for rehabilitation to be assessed and prior to new lands becoming available for topsoil emplacement. Assessment of topsoil volume requirements for rehabilitation to be assessed and prior to undertaking topsoil spreading on land formed areas. Review and update Rehabilitation Management Plan to ensure compliance with new regulation reforms. Year 2 - No planning activities scheduled. Year 3 - No planning activities scheduled and no new disturbance proposed. Placement of overburden may commence in the northern portion of the site where there is sufficient room to the east of the pit sump. Catchment calculations will confirm if any changes to water management are required.

Stakeholder consultation

The ARR is provided to Albury City Council each year once approved by the Resources Regulator. Any feedback from Council will be considered in future rehabilitation operations and plans.

Rehabilitation studies, risk assessments and/or design work

Year 1 -3 Monitoring vegetation trials on the existing north-eastern rehabilitation area. Visual monitoring and photography are utilised to assess the success of vegetation planted in previous years. Year 1 Update the rehabilitation risk assessment and include in the updated RMP. No changes to the design works are planned in the next 3 years.

NSW Resources Regulator

Rehabilitation research and trials

RRT NUMBER	PROJECT/TRIAL NAME	OBJECTIVE OF TRIAL/PROJECT	METHODOLOGY	EXPECTED DATE OF COMPLETION	STATUS
FWP0001493					

Rehabilitation maintenance and corrective actions

Soil characterisation results to be incorporated into the rehabilitation risk assessment. Soil samples have been obtained from topsoil stockpiles and will be tested from suitability. Training and competencies process in relation to rehabilitation to be developed and implemented. No other issues were raised in the previous AR period.

Rehabilitation schedule

Rehabilitation monitoring will continue along the north-eastern portion of the site. Battering of the western highwall has been delayed due to the possibility of expansion. Placement of overburden in the east of the pit sump area may commence in Year 1 of this FWP.

Completion of rehabilitation

Not applicable, no current rehabilitation areas are expected to be completed within the next three years.

Subsidence remediation for underground operations

Not applicable.

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)	6.7	6.83	6.83
B	**Total active disturbance**	(ha)	5.7	5.82	5.82
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)	0.21	0.12	
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
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 241015.pdf

Plan 2B 241015.pdf

Plan 2C 241015.pdf

Andersons Pit, Plan 2A, FWP 23/08/2024 to 22/08/2027, 15/10/2024

Legend

- Forecast Data Year1
  - Forecast Disturbance
  - Forecast Land Prepared for Rehabi
  - Ecosystem and Land Use Establish
- Project Approval Boundary
- Mine Operations Area
- World Imagery
- Low Resolution 15m Imagery
- High Resolution 60cm Imagery
- High Resolution 30cm Imagery
- Citations

Notes

Submission IDs: 6147, 8635

206.7 0 103.33 206.7 Meters

WGS_1984_Web_Mercator_Auxiliary_Sphere

Andersons Pit, Plan 2B, FWP 23/08/2024 to 22/08/2027, 15/10/2024

Legend

- Forecast Data Year2
  - Forecast Disturbance
  - Forecast Land Prepared for Rehabi
  - Ecosystem and Land Use Establish
- Project Approval Boundary
- Mine Operations Area
- World Imagery
- Low Resolution 15m Imagery
- High Resolution 60cm Imagery
- High Resolution 30cm Imagery
- Citations

Notes

Submission IDs: 6147, 8636

206.7 0 103.33 206.7 Meters

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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

Andersons Pit, Plan 2C, FWP 23/08/2024 to 22/08/2027, 15/10/2024

Legend

- Forecast Data Year3
  - Forecast Disturbance
  - Forecast Land Prepared for Rehabi
  - Ecosystem and Land Use Establish
- Project Approval Boundary
- Mine Operations Area
- World Imagery
- Low Resolution 15m Imagery
- High Resolution 60cm Imagery
- High Resolution 30cm Imagery
- Citations

Notes

Submission IDs: 6147, Nil new disturbance proposed for Year 3 FWP

206.7 0 103.33 206.7 Meters

WGS_1984_Web_Mercator_Auxiliary_Sphere

Site Registration

Date October 2024

Complete the following fields prior to calculating the Security Deposit.

Mine Name:	Andersons Pit
Lease(s):	ML1229
Title Holder:	PGH Bricks & Pavers Pty Ltd
Term of RCE:	22/8/2027
Current Security:	$295,000
Date of last Security Deposit review	19/10/2023
Mine Contact:	Joe Gauci, 56-67 Cecil Road, Cecil Park, NSW, 2172. M:0417 683 526
List key changes since previous submission:	e.g. significant landform rehabilitation undertaken in domain xyz e.g. change in mine waste (tailings) capping rate

Open Cut Summary Rehabilitation Cost Estimation

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

Mine Name:	Andersons Pit
Lease(s):	ML1229
Authorisation Owner:	PGH Bricks & Pavers Pty Ltd
Term of RCE:	22/8/2027
Current Security:	$295,000
Date of Last Security Deposit Review:	19/10/2023
Mine Contact:	Joe Gauci, 56-67 Cecil Road, Cecil Park, NSW, 2172. M:0417 683 526

Domain		Security Deposit
Domain 1: Infrastructure		$1,368
Domain 2: Tailings & Rejects		
Domain 3: Overburden & Waste		$9,631
Domain 4: Active Mine & Voids		$206,140
Domain 5: Management Activities		$28,320
Subtotal (Domains and Sundry Items)		**$245,459**
Contingency	**10%**	$24,546
Post Closure Environmental Monitoring	**10%**	$24,546
Project Management and Surveying	**10%**	$24,546
Total Security Deposit for the Mining Project (excl. of GST)		**$319,097**

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 Respresentative's Name**

16/10/2024 — **Date**

National Raw Materials Manager — **Company Representative's Role / Responsibility**

Signature

Open Cut Operations

Domain 1a: Infrastructure

Total Cost for Infrastructure Domain $1,368

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 demountable structures on concrete stumps. Assumes not being re-used	Y	20	m2	$40.00		$800		Crib huts, temporary offices and other 'non permanent' structures. Does not include transport to regional disposal facility or equivalent.
						Termination of Services and Demolition Works Subtotal	$800		
						Rail Infrastructure Subtotal	$0		
						Contaminated Materials Subtotal	$0		
						Vents, Shafts and Boreholes Subtotal	$0		
Roads and Tracks	Unsealed roads / vehicle park-up areas – Minor earthworks, final trim and deep rip and seed (pasture grass)	Y	0.06	ha	$3,700		$222	Heavy vehicle parking area will be rehabilitated	D10 Dozer @ $400 per hour and 16 H grader @ $230 per hour (50% utilisation) - pasture grass seed
						Roads and Tracks Subtotal	$222		
						Earthworks / Structural Works (Landform Establishment) Subtotal	$0		
Land Preparation and Revegetation (Growth Media Development and Ecosystem Establishment)	Source, cart and spread growth media - haul distance <1 km	Y	64	m3	$3.26		$208	< =1km	Undertaken with 623 scraper and 14 M grader.
	Direct seeding / fertiliser (pasture grass species)	Y	0.06	ha	$1,875		$113		Includes treating, weighing, mixing with fertiliser + spreading by tractor or helicopter (aerial seeding).
	Single application of fertiliser (pasture)	Y	0.06	ha	$420.00		$25		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	$346		
						Water Management Subtotal	$0		
						Maintenance of Rehabilitated Areas Subtotal	$0		
						Additional Items Subtotal	$0		
						Total Cost for Infrastructure Domain	**$1,368**		

Open Cut 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		
						Earthworks / Structural Works (Landform Establishment) 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 Operations

Domain 3a: Overburden & Waste

Total Cost for Overburden & Waste Domain $9,631

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)	Minor reshaping and pushing	Y	0.75	ha	$3,900		$2,925		D10 Dozer @ $400 per hour and 16 H grader @ $230 per hour (50% utilisation).
	Trim, rock rake & deep rip (includes levelling / landscaping and rip in 1 direction)	Y	0.75	ha	$1,130.00		$848		Undertaken using D10 dozer and 16M grader.
						Earthworks / Structural Works (Landform Establishment) Subtotal	$3,773		
						Mine Waste Subtotal	$0		
Land Preparation and Revegetation (Growth Media Development and Ecosystem Establishment)	Source, cart and spread growth media - haul distance <1 km	Y	750	m3	$3.26		$2,442	< =1km	Undertaken with 623 scraper and 14 M grader.
	Direct seeding / fertiliser (tree or native grass species)	Y	0.75	ha	$4,135		$3,101		Includes treating, weighing, mixing with fertiliser + spreading by tractor or helicopter (aerial seeding).
	Single application of fertiliser (pasture)	Y	0.75	ha	$420.00		$315		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	$5,858		
						Water Management Subtotal	$0		
						Maintenance of Rehabilitated Areas Subtotal	$0		
						Additional Items Subtotal	$0		
Total Cost for Overburden & Waste Domain							$9,631		

Open Cut Operations

Domain 4a: Active Mine & Voids

Total Cost for Active Mine & Voids Domain $206,140

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 push length	Y	67900	m3	$0.80		$54,193	< 50m push	Assumes D11 dozer push @ 400 bcm/hr.
	Minor reshaping and pushing	Y	4.5	ha	$3,900		$17,550		D10 Dozer @ $400 per hour and 16 H grader @ $230 per hour (50% utilisation).
	Trim, rock rake & deep rip (includes levelling / landscaping and rip in 1 direction)	Y	4.5	ha	$1,130.00		$5,085		Undertaken using D10 dozer and 16M grader.
						Earthworks / Structural Works (Landform Establishment) Subtotal	$76,828		
Land Preparation and Revegetation (Growth Media Development and Ecosystem Establishment)	Source, cart and spread growth media (Select Haul Distance from List)	Y	4500	m3	Select from List			Select Haul Distance Here	If topsoil is not available on-site, then Virgin Excavated Natural Material (VENM) may need to be externally sourced.
	Direct seeding / fertiliser (pasture grass species)	Y	4.5	ha	$1,875		$8,438		Includes treating, weighing, mixing with fertiliser + spreading by tractor or helicopter (aerial seeding).
	Supply from external sources a combination of virgin excavated natural material (VENM) and spoil from large excavation for filing voids and/or capping etc.	Y	1620	m3	$72.50		$117,450	The site has stored approximately 2,780 m3 of topsoil in perimeter bunds. Therefore of the 4,400m3 required, only 1,620m3 would be imported.	D10 push into void at $270/hr, Excavator ($220/hr) load Artic Trucks (90c/km) from imported stockpile - allow nominal rate of $60/m3 for imported fill material.
						Land Preparation and Revegetation (Growth Media Development and Ecosystem Establishment) Subtotal	$125,888		
Water Management	Clean water dams to be retained after decommissioning – make safe and minor earthworks	Y	1	allow	$2,500		$2,500	The pit sump will be converted to a clean water dam.	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	$2,500		
Maintenance of Rehabilitated Areas	Maintenance of areas that have been shaped and seeded and revegetation has been 'successful'	Y	1	ha	$925		$925		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	$925		
						Additional Items Subtotal	$0		
Total Cost for Active Mine & Voids Domain							**$206,140**		

Open Cut Operations

Domain 5a: Management Activities

Total Cost for Management Activities $28,320

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:
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		
Maintenance of Rehabilitated Areas	Pest management on buffer lands, non-disturbed, and rehabilitated areas	Y	2.4	ha	$150.00		$360		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	2.4	ha	$400.00		$960		Undisturbed areas within the lease boundary that require land management activities.
						Maintenance of Rehabilitated Areas Subtotal	$1,320		
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	**Although the site has an EPL, there are no significant issues as listed.**	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		
Mobilisation and Demobilisation	Mobilisation & Demobilisation for small mine or quarry - small fleet	Y	1	Item	$12,000		$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)	N		item	$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.
						Mobilisation and Demobilisation Subtotal	$12,000		
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 Management Activities							**$28,320**		

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.

Authrorisation Representatives Name ..... **Date** .....

Authorisation Representatives Role / Responsibility ..... **Signature** .....