NSW GOVERNMENT

NSW Resources Regulator

FWP0001210

# BRINGELLY CLAY MINE FORWARD PROGRAM

Saturday 1 July 2023 to Tuesday 30 June 2026

# Contents

# Summary

| DETAIL | |
|---|---|
| **Mine** | Bringelly Clay Mine |
| **Reference** | FWP0001210 |
| **Forward program commencement date** | Saturday 1 July 2023 |
| **Forward program end date** | Tuesday 30 June 2026 |
| **Forward program revision (if applicable)** | |
| **Contact** | Georgina Thompson |
| **Mining leases** | ML 1731 (1992) |
| **Project location** | PGH Bricks & Pavers Pty Ltd |
| **Date of submission** | Wednesday 30 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

The Bringelly Clay / Shale Mine (ML 1731) is located off Greendale Road NSW, situated on Lot 100, DP1203966, is approximately 18km west of Liverpool, in the Camden Council Government Area. The project site is currently used for quarrying, brick production and associated activities. The current consent on the site permits quarry extraction of up to 200,000 tonnes per annum, brick production of up to 263,500 tonnes per annum and to receive up to 321,000 tonnes of raw materials for brickmaking in any calendar year. Operations undertaken within this development footprint comprise the following:

- A crushing and manufacturing plant;

- Stockpiling areas;

- A product storage and delivery area; and

- An active quarry.

Mining is limited by the consent to 46m AHD.

## 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. The brick plant may get an upgrade within this period.

**Mining schedule**

Mining development method and sequencing and general mine features.

The 2015 Hyder Environmental Impact Statement (EIS), divides the site into “Quarry Cells” which were identified A to I. Extraction will occur in the area identified as Cell G as well as extending the existing void into the overburden emplacement area in the north-east (Cell E). The existing batter slopes of 1 horizontal: 2 vertical or 26 degrees for the clay and 1 horizontal: 1.5 vertical or 35 degrees for the Blue Shale will be continued. Overburden in area E has been stripped and laid back, this material has been hauled and used to create the northern visual

and acoustic bund wall north of area D. Mining is active in southern portions of area E and C, winning brown and blue shale. This area is expected to remain active throughout the forward program period. In Cell G, vegetation will be stripped on top of the hill initially, overburden and then clay. The mining activities will be restricted to the western portion of the hill as outlined in the EIS. Haulage off the hill will either be to the south and around onto the existing haul road and onto the stockpile area or north off the working benches. The development of the mining of the hill will be benched and targeted around the varying intersected product layers such as Clay, Brown Shale and Blue Shale.

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

Overburden will be used to top up existing bunds on the western portion of the site. Additional materials may also be used to assist with surface water management devices, i.e. clean diversion drains. Excess material will be loaded onto internal haul trucks to be placed on areas ready for burden or construct low (2-3 metres) stockpiles for later use.

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

Not applicable

Waste disposal and materials handling operations.

Raw natural burden materials like sandstone, siderite and laminite will be stored for rehabilitation purposes and back filling when required. 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 licenced landfill and documented. Any contaminated soils will be assessed and will be treated as directed by appropriately qualified specialists.

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

## Key production milestones

| MATERIAL | UNIT | YEAR 1 | YEAR 2 | YEAR 3 |
|---|---|---|---|---|
| **Stripped topsoil** (if applicable) | ($m^3$) | 760 | 400 | 400 |
| **Rock/overburden** | ($m^3$) | 16,000 | 15,000 | 15,000 |
| **Ore** | (Mt) | 0.17 | 0.17 | 0.17 |
| **Reject material**[1] | (Mt) | 0 | 0 | 0 |
| **Product** | (Mt) | 0 | 0 | 0 |

# Three-year rehabilitation forecast

## Rehabilitation planning schedule

**Rehabilitation planning schedule**

Year 1

Topsoil used for landform establishment to be tested for suitability and depth prior to seeding.

Year 2

Not applicable

Year 3

Not applicable

**Stakeholder consultation**

The Annual Review is provided to the Resources Regulator. Any feedback from the Regulator will be considered in future rehabilitation operations and plans. The Community Consultative Committee will meet at least annually and minutes are available on the PGH website. No other consultation is planned.

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

Water management in the western boundary has been reviewed to reduce clean water flows into the main pit. Design works intended to divert clean water from the pit were completed in July 2023.

# Rehabilitation research and trials

| RRT NUMBER | PROJECT/TRIAL NAME | OBJECTIVE OF TRIAL/PROJECT | METHODOLOGY | EXPECTED DATE OF COMPLETION | STATUS |
|---|---|---|---|---|---|
| FWP0001210 | | | | | |

## Rehabilitation maintenance and corrective actions

Soil testing will be undertaken to assess suitability for revegetation on newly constructed bunds and drainage lines.

## Rehabilitation schedule

The construction of the northern bund wall (not on the mine lease) and western bund wall clean water diversion devices has been completed. These areas will be topsoiled and seeded with native grass species. No more rehabilitation is scheduled to occur within the reporting period beyond the maintenance of existing rehabilitation areas.

## 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) | 24.87 | 25.21 | 26.63 |
| B | **Total active disturbance** | (ha) | 21.23 | 21.58 | 22.99 |
| 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) | 1.04 | 0.34 | 1.42 |
| 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.<br><br>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).<br><br>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.<br><br>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.<br><br>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.<br>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.<br>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.<br>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.<br>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.<br>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.<br>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:<br>■ upload rehabilitation geographical information system (GIS) spatial data<br>■ develop rehabilitation GIS spatial data (using online tracing functions)<br>■ generate rehabilitation plans and rehabilitation statistics using the map viewer and Rehabilitation Key Performance Indicator functionalities.<br>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:<br>■ active mining<br>■ decommissioning<br>■ landform Establishment<br>■ growth medium development<br>■ ecosystem and land use establishment<br>■ 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:<br>■ the relevant development consent authority<br>■ the local council<br>■ the relevant landholder(s)<br>■ community consultative committee (if required under the development consent) or equivalent consultative group<br>■ affected land holder(s)<br>■ government agencies relevant to the final land use<br>■ affected infrastructure authorities (electricity, telecommunications, water, pipeline, road, rail authorities)<br>■ local Aboriginal communities, and<br>■ 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.*

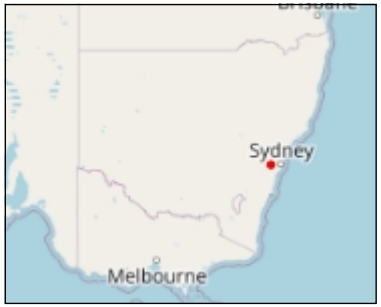
# Attachment 3 – Plans

Plan 2A V1.pdf

Plan 2B.pdf

Plan 2C.pdf

# Bringelly Clay Mine - Plan 2A - Forecast Data (Year 1) - 18/08/23


## Legend

**Rehabilitation**
- Decommissioning
- Landform Establishment
- Growth Media Development
- Ecosystem and Land Use Establish
- Ecosystem and Land Use Developr
- Relinquishment (Rehabilitated)
- Rehabilitation Completion

**Disturbance**
- Beneficiation Facility
- Infrastructure Area
- Other
- Overburden Emplacement Area
- Tailings Storage Facility
- Underground Mining Area (SMP)
- Active Mining Area (Open cut void)
- Water Management Area

**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

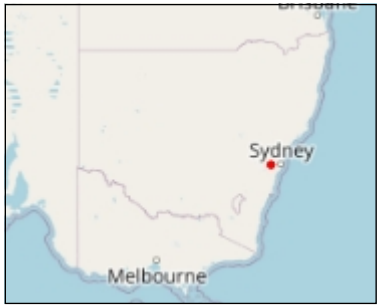
## Notes

Forecast Data (Year 1) - 5927
Project Approval Boundary - ID 2123

543.2 0 271.58 543.2 Meters

WGS_1984_Web_Mercator_Auxiliary_Sphere

# Bringelly 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

## Notes

Forecast Data (Year 2) - 5663

458.6 0 229.31 458.6 Meters

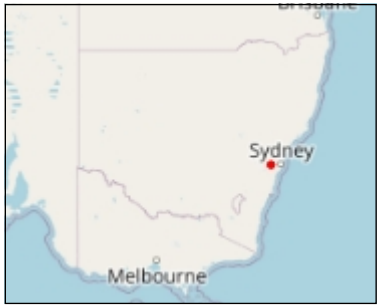
WGS_1984_Web_Mercator_Auxiliary_Sphere



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

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


## Legend

Forecast Data Year3

- 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

## Notes

Forecast Data (Year 3) - 5661

458.6 0 229.31 458.6 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

## Site Registration

Complete the following fields prior to calculating the security bond.

| | | | |
|---|---|---|---|
| **Mine Name:** | Bringelly Clay Mine | | |
| **Lease(s)** | 1731 | | |
| **Mine Owner** | Boral CSR Bricks Pty Ltd | | |
| **Mine Operator** | Boral CSR Bricks Pty Ltd | | |
| **Expiry of MOP** | 1/3/2023 | | |
| **Current Security** | $776,000 | **Date of last Security Bond review** | 24/08/2015 |
| **Mine Contact** | Joe Gauci | | |
| **Position** | Raw Materials Manager (NSW, Vic, SA) | | |
| **Address** | 56-67 Cecil Rd<br>Cecil Park NSW 2171 | | |
| **Phone** | 0417 683 526 | **e-mail** | jgauci@pghbricks.com.au |

# Site Description

The following site specific information is requested to provide background information in the context of calculating the security bond.

## Summary of Mine Activities

| | |
|---|---|
| **Total annual production (tonnes):** | 120000 |
| **Mine lease area (ha):** | 37 |
| **Area of extraction (ha):** | 10 |
| **Area of disturbance (ha):** | 24 |
| **Rehabilitation in progress (ha):** | 4 |
| **Rehabilitation complete (ha):** | |
| | |
| | |
| | |

☑ Plan(s) attached

**NOTE:**
**Ensure rehabilitation cost calculation reflects all environmental issues affecting the lease. Contingencies should be allocated where costs have not been incorporated elsewhere in the estimation.**

## Environmental Sensitivities

**Surrounding land use (tick all that apply):**

- ☐ Cropping
- ☑ Pasture
- ☐ Forest
- ☐ Undisturbed habitat
- ☑ Urban

**Environmental Issues affecting site (tick all that apply)**

- ☐ Threatened flora
- ☐ Threatened fauna
- ☐ Cultural heritage items
- ☐ Natural heritage features
- ☐ Mine subsidence
- ☑ Surface water pollution
- ☐ Ground water pollution
- ☐ Hydrocarbon contamination
- ☐ Methane drainage/venting
- ☐ Spontaneous combustion
- ☐ Acid Mine Drainage
- ☐ Within drinking water catchment
- ☐ Other (describe below)

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# Summary Rehabilitation Cost Calculation

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

| | |
|---|---|
| **Mine Name:** | Bringelly Clay Mine |
| **Lease(s):** | 1731 |
| **Mine Owner:** | Boral CSR Bricks Pty Ltd |
| **Mine Operator:** | Boral CSR Bricks Pty Ltd |
| **Expiry of MOP:** | 1/3/2023 |
| **Current Security:** | $ 776,000.00 |
| **Date of Last Security Bond Review:** | 24/08/2015 |
| **Mine Contact:** | Joe Gauci |
| **Position:** | Raw Materials Manager (NSW, Vic, SA) |
| **Address:** | 56-67 Cecil Rd<br>Cecil Park NSW 2171 |
| **Phone:** | 0417 683 526 |
| **email:** | jgauci@pghbricks.com.au |

| Domain | Security Deposit |
|---|---|
| Domain 1: Infrastructure Areas | $71,004.94 |
| Domain 2: Tailings & Rejects Emplacements (if applicable) | |
| Domain 3: Waste Rock Dumps | $27,356.56 |
| Domain 4: Active Quarry & Voids | $482,104.91 |
| Domain 5: Other | |
| | |
| | |
| | |
| | |
| **Sub-Total (Domains and Sundry Items)** | **$580,466.41** |
| | |
| Contingency | $70,585.63 |
| Third Party Project Management | $125,389.84 |
| | |
| **Total Security Deposit for the Mining Project (excl. of GST)** | **$776,441.88** |

**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.**

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 | 31/03/2016 |
|---|---|---|
| **Signature**<br>**General Manager** | **Print Name** | **Date:** |
| | | |
| **Signature**<br>**Accepted: DRE Reporting Officer** | **Print Name** | **Date:** |

# Domain 1: Infrastructure Areas

**Detail of person filling out the Worksheet:**

| | |
|---|---|
| **Name** | Lisa Thomson |
| **Position** | Environmental Consultant |
| **Department** | VGT Pty Ltd |
| **Date** | 31/3/16 |

**Legend:**

| | |
|---|---|
| | Item fixed no entry required |
| | Input from site optional (if information available) |
| | Input mandatory |

| Management Precinct | Activity / Description | Quantity | Unit | Unit Price | Total Cost | Description / Notes: |
|---|---|---|---|---|---|---|
| **Workshops, Rock Crushing & Product Stockpile area(s)** | Disconnect and terminate services | 0 | @ | $12,773.29 | **$0.00** | This item includes disconnecting and terminating all services such as power, water and sewer. It is a "one off" cost |
| | Disconnect and terminate powerlines | | km | $14,050.62 | **$0.00** | This item includes the cost to terminate and remove powerlines, and is based on the average cost to construct. |
| | Demolish and remove small buildings | | $m^2$ | $89.41 | **$0.00** | Enter the total area of small buildings and offices (include weigh bridge) at the quarry. It should not include demountables which can be removed from site. It does not include workshops |
| | Demolish and remove industrial buildings | | $m^2$ | $204.37 | **$0.00** | Enter the total area of workshop facilities at the quarry |
| | Demolish / relocate crushers | | @ | $12,773.29 | **$0.00** | This includes the cost to dismantle the crusher and relocate from the site. |
| | Demolish and remove conveyors & gantries (includes overland conveyors) | | m | $70.25 | **$0.00** | Enter the sum of the total length of conveyor and gantries. This includes conveyor to rail load out areas. |
| | Remove Concrete pads and Footings | | $m^2$ | $12.77 | **$0.00** | Enter the total floor area the quarry workshops and buildings. |
| | Remove contaminated material from workshop and hardstand areas for disposal in the void **AND/OR** | | $m^3$ | $2.55 | **$0.00** | i) Enter the total volume (ie. area x depth of material) to be scalped off for disposal. **UNIT RATE:** Depends of the haulage distance to the point where the material is to be disposed |
| | Reshaping, capping, sealing of material presenting environmental difficulties (AMD, Hydrocarbon material, etc) | | Ha | $57,479.81 | **$0.00** | Enter the total area of material requiring capping or sealing. Where assessments have already been made and the presence/absence of contaminated material is know (and quantified) an alternative rate can be used. If this work has not been undertaken, a de |
| | Removal of UG tank (including pipes, bunds, etc). Include all facilities on site. | | @ | $95,799.69 | **$0.00** | A default rate per UGT is to be utilised. |
| | On site remediation of contaminated soil (<1000$m^3$) | | $m^3$ | $63.87 | **$0.00** | Where an assessment of the volume of contaminated soil has been made this volume is to be included. Where the volume in not known or has not been quantified a default volume of 1000m3 per fuel storage facility is to be used in cell C:22 |
| | On site remediation of contaminated soil (1000-10,000$m^3$) | | $m^3$ | $51.09 | **$0.00** | where an assessment of the volume of contaminated material has been made this volume is to be included. Where the volume in not know or has not been quantified a default volume of 1000$m^3$ per fuel storage facility is to be used |
| | On site remediation of contaminated soil (>10,000$m^3$) | | $m^3$ | $38.32 | **$0.00** | Where an assessment of the volume of contaminated soil has been made this volume is to be included. Where the volume in not known or has not been quantified a default volume of 1000$m^3$ per fuel storage facility is to be used in cell C:22 |
| | Final trim, rock rake & deep rip | 6.33 | Ha | $638.66 | **$4,042.75** | This item includes the Rock Crushing and Product stockpile areas and workshop areas |
| | Source, cart and spread topsoil. | 6330 | $m^3$ | $1.53 | **$9,702.59** | This includes sourcing, carting and spreading of a suitable volume of topsoil to cover the rock crushing and product stockpile areas. |
| | Spoil amelioration and supply and spread seed and fertiliser. | 6.33 | Ha | $4,726.12 | **$29,916.33** | This item includes the area requiring the addition of ameliorates such as lime or gypsum prior to the application of grass seed and fertiliser |
| | | | | **Precinct Security Deposit** | **$43,661.67** | |
| **Rail Line and Loop (if applicable)** | Remove Rail Loop and spur | | m | $7.66 | **$0.00** | This item includes the pulling up and removal from site of railway line and sleepers. Calculated as a lineal metre |
| | Reshape rail spur and loadout area | | Ha | $6,386.65 | **$0.00** | Enter the total area of the rail line footprint requiring to be covered with fertiliser (and/or lime & gypsum) prior to seeding **UNIT RATE:** Depends the required rehabilitation commitment (ie. |
| | Final trim, rock rake & deep rip | | Ha | $638.66 | **$0.00** | This item includes the area requiring minor reshaping, rock raking and deep ripping (only as required) to enhance revegetation program |
| | Spoil amelioration and supply and spread pasture seed and fertiliser. | | Ha | $4,726.12 | **$0.00** | This item includes the area requiring the addition of ameliorates such as lime or gypsum prior to the application of grass seed and fertiliser |
| | | | | **Precinct Security Deposit** | **$0.00** | |
| **Admin Buildings** | Disconnect and terminate services | 0 | @ | $6,386.65 | **$0.00** | This item includes disconnecting and terminating all services such as power, water and sewer. It is a "one off" cost |
| | Demolish and remove small buildings | | $m^2$ | $89.41 | **$0.00** | Enter the total area of small buildings and offices in the admin area. It should not include demountables which can be removed from site. It does not include workshops |
| | Demolish and remove industrial buildings | | $m^2$ | $204.37 | **$0.00** | Enter the total area of workshop facilities in the admin area. |
| | Remove Concrete pads, Footings and bitumen (carpark) | | $m^2$ | $12.77 | **$0.00** | Enter the total area the workshops and buildings. Include the area of any bitumen carparks (or similar) |
| | Final trim, rock rake & deep rip | | Ha | $638.66 | **$0.00** | This item includes the area requiring minor reshaping, rock raking and deep ripping (only as required) to enhance revegetation program |
| | Source, cart and spread topsoil. | | $m^3$ | $1.53 | **$0.00** | This includes sourcing, carting and spreading of a suitable volume of topsoil to cover the admin area and carparks. |
| | Spoil amelioration and supply and spread pasture seed and fertiliser. | | Ha | $4,726.12 | **$0.00** | Enter the total area of the admin, etc footprint requiring to be covered with fertiliser (and/or lime & gypsum) prior to seeding **UNIT RATE:** Depends the required rehabilitation commitment (ie. |
| | | | | **Precinct Security Deposit** | **$0.00** | |
| **Access & Haul Roads** | Reshape deep rip and ameliorate sealed unsealed roads | 1.74 | Ha | $6,386.65 | **$11,112.76** | Enter the total area of the road footprint requiring reshaping and deep ripping. |
| | Source, cart and spread topsoil. | 1740 | $m^3$ | $1.53 | **$2,667.06** | This includes sourcing, carting and spreading of a suitable volume of topsoil to cover the roads |
| | Spoil amelioration and supply and spread seed and fertiliser. | 1.74 | Ha | $4,726.12 | **$8,223.45** | This item includes the area requiring the addition of ameliorates such as lime or gypsum prior to the application of grass seed and fertiliser |
| | | | | **Precinct Security Deposit** | **$22,003.27** | |
| **Sewerage / Water Treatment Plant** | Disconnect and terminate services | 0 | @ | $3,193.32 | **$0.00** | This item includes disconnecting and terminating all services such as power, water and sewer. It is a "one off" cost |
| | Demolish and remove small buildings / tanks | | $m^2$ | $89.41 | **$0.00** | Enter the total area of small buildings and tanks. |
| | Remove contaminated material from areas for disposal (ie. chemical spillage in / around storage sheds). | | $m^3$ | $2.55 | **$0.00** | Enter the total volume (ie. area x depth of material) to be scalped off for disposal. **UNIT RATE:** Depends on the haulage distance to the point where the material is to be disposed |
| | Final trim, rock rake & deep rip | | Ha | $638.66 | **$0.00** | This item includes the area requiring minor reshaping, rock raking and deep ripping (only as required) to enhance revegetation program |
| | Source, cart and spread topsoil. | | $m^3$ | $1.53 | **$0.00** | This includes sourcing, carting and spreading of a suitable volume of topsoil to cover the sewerage and water treatment areas. |
| | Spoil amelioration and supply and spread seed and fertiliser. | | Ha | $4,726.12 | **$0.00** | This item includes the area requiring the addition of ameliorates such as lime or gypsum prior to the application of grass seed and fertiliser |
| | | | | **Precinct Security Deposit** | **$0.00** | |
| **Hardstand /Laydown Areas** | Remove contaminated material from areas for disposal (ie. chemical/hydrocarbon spillage in the hard stand area). | | $m^3$ | $2.55 | **$0.00** | Enter the total volume (ie. area x depth of material) to be scalped off for disposal. **UNIT RATE:** Depends of the haulage distance to the point where the material is to be disposed |
| | Final trim, rock rake & deep rip | | Ha | $638.66 | **$0.00** | This item includes the area requiring minor reshaping, rock raking and deep ripping (only as required) to enhance revegetation program |
| | Source, cart and spread topsoil. | | $m^3$ | $1.53 | **$0.00** | This includes sourcing, carting and spreading of a suitable volume of topsoil to cover the hardstand laydown areas. |
| | Spoil amelioration and supply and spread seed and fertiliser. | | Ha | $4,726.12 | **$0.00** | This item includes the area requiring the addition of ameliorates such as lime or gypsum prior to the application of grass seed and fertiliser |
| | | | | **Precinct Security Deposit** | **$0.00** | |

| | | | | | | |
|---|---|---|---|---|---|---|
| **Other** | Other 1- remediation of ponds (area of 0.87 Ha rate equivalent to above) | **0.89** | | $6,000.00 | **$5,340.00** | This item includes Final trim, rock rake & deep rip, Source, cart and spread topsoil, Spoil amelioration and supply and spread seed and fertiliser |
| | Other 2 <insert> | | | | **$0.00** | This item includes **<<to be added by the operator>>** |
| | Other 3 <insert> | | | | **$0.00** | This item includes **<<to be added by the operator>>** |
| | | | **Precinct Security Deposit** | | **$5,340.00** | |

**Total Security Deposit for the "Domain"** **$71,004.94**

## Domain 2: Tailings & Rejects Emplacements (if applicable)

**Detail of person filling out the Worksheet:**

| | |
|---|---|
| **Name** | Lisa Thomson |
| **Position** | Environmental Consultant |
| **Department** | VGT Pty Ltd |
| **Date** | 31/3/16 |

**Legend:**

| | |
|---|---|
| | Item fixed no entry required |
| | Input from site optional (if information available) |
| | Input mandatory |

**Tailings Dam / Impoundment (Key Information):**

| | |
|---|---|
| **Materials Stored (ie. coal fines, coarse or co-disposed)** | |
| **Volume Stored (m3)** | |
| **Maximum Embankment Height (m)** | |
| **Maximum Embankment Length (m)** | |
| **Year Dam / Emplacement Commissioned** | |
| **Storage area (ha)** | |
| **Catchment Area of Tailings Dam / Emplacement (ha)** | |
| **Briefly describe embankment construction. (earthen, clay /rejects core, etc)** | |

| Management Precinct | Activity / Description | Quantity | Unit | Unit Price | Total Cost | Description / Notes: |
|---|---|---|---|---|---|---|
| **Tailings Dams / Emplacements** | Source, cart and spread suitable material to cap the tailings emplacement (cap thickness determined by MOP) | | $m^3$ | $2.55 | **$0.00** | This includes sourcing, carting and spreading of a suitable volume material to cap the tailings emplacement. The material must have appropriate chemical & physical properties. |
| | Apply engineered treatment as required (i.e. capping, capillary breaks, etc) - design in accordance with the MOP commitments. | | Ha | $57,479.81 | **$0.00** | This includes the area that requires engineering treatment is required to satisfy conditions of the MOP, This may include compaction or addition of multiple layers and / or capillary breaks. |
| | Reshape walls / buttress around the dam / emplacement - *earthworks only* | | Ha | $6,386.65 | **$0.00** | This includes the area that requires stabilisation and reshaping works around the walls of the emplacement (i.e. removal of rills and pipes that may present long term stability issues) |
| | Final trim, rock rake & deep rip | | Ha | $638.66 | **$0.00** | This item includes the area requiring minor reshaping, rock raking and deep ripping (only as required) to enhance revegetation program |
| | Structural works, banks waterways | | Ha | $1,788.26 | **$0.00** | This item includes the area requiring earthworks (banks, & drains, etc) to manage all surface water on the top of the emplacement to ensure that it is shed off the cap |
| | Source, cart and spread topsoil. | | $m^3$ | $1.53 | **$0.00** | This includes sourcing, carting and spreading of a suitable volume of topsoil to cover the tailings dam / emplacement |
| | Spoil amelioration and supply and spread seed and fertiliser. | | Ha | $4,726.12 | **$0.00** | This item includes the area requiring the addition of ameliorates such as lime or gypsum prior to the application of grass seed and fertiliser |
| | Maintenance of rehabilitated areas (up to 5 years) | | Ha | $830.26 | **$0.00** | This item includes the total area of rehabilitation that has been established and requires subsequent fertiliser application. It assumes application twice on the first five (5) years after establishment |
| | | **Precinct Security Deposit** | | | **$0.00** | |

| | | | | | |
|---|---|---|---|---|---|
| **Other** | Other 1 <insert> | | | **$0.00** | This item includes **<<to be added by the operator>>** |

| | | | | | |
|---|---|---|---|---|---|
| Other 2 <insert> | | | | **$0.00** | This item includes **<<to be added by the operator>>** |

| | | | | | | |
|---|---|---|---|---|---|---|
| | Other 3 <insert> | | | | $0.00 | This item includes **<<to be added by the operator>>** |
| | | | **Precinct Security Deposit** | | **$0.00** | |

| | |
|---|---|
| **Total Security Deposit for the "Domain"** | **$0.00** |

## Domain 3: Waste Rock Dumps

**Detail of person filling out the Worksheet:**

| | |
|---|---|
| **Name** | Lisa Thomson |
| **Position** | Environmental Consultant |
| **Department** | VGT Pty Ltd |
| **Date** | 31/3/16 |

**Legend:**

- **Item fixed no entry required**
- **Input from site optional (if information available)**
- **Input mandatory**

| Management Precinct | Activity / Description | Quantity | Unit | Unit Price | Total Cost | Description / Notes: |
|---|---|---|---|---|---|---|
| **Successful Rehabilitation** | Maintenance of **Established** Revegetated Area | | Ha | $830.26 | **$0.00** | This item includes the total area of rehabilitation that have been established and require subsequent fertiliser application. It assumes application twice on the first five (5) years after establishment |
| | Maintenance of Shaped Topsoiled and Seeded | | Ha | $830.26 | **$0.00** | This item includes the total area of that have been shaped, topsoiled and seeded and requires subsequent fertiliser application. It assumes application twice on the first five (5) years after establishment |
| | | | | **Precinct Security Deposit** | **$0.00** | |
| **Shaped Waste Rock Dumps** | Final trim, rock rake & deep rip | | Ha | $638.66 | **$0.00** | This item includes the area requiring minor reshaping, rock raking and deep ripping to enhance revegetation program |
| | Structural works, banks, rock lined waterways | | Ha | $1,788.26 | **$0.00** | This item includes the area requiring earthworks (banks, & drains, etc) to manage all surface water on the top of the emplacement to ensure that it is shed off the dump |
| | Source, cart and spread topsoil. | | $m^3$ | $1.53 | **$0.00** | This includes sourcing, carting and spreading of a suitable volume of toopsoil to cover the shaped overburden dumps. |
| | Spoil amelioration and supply and spread seed and fertiliser. | | Ha | $4,726.12 | **$0.00** | This item includes the area requiring the addition of ameliorates such as lime or gypsum prior to the application of grass seed and fertiliser |
| | Maintenance of rehabilitated areas (up to 5 years) | | Ha | $830.26 | **$0.00** | This item includes the total area of that have been shaped, topsoiled and seeded and requires subsequent fertiliser application. It assumes application twice on the first five (5) years after establishment |
| | | | | **Precinct Security Deposit** | **$0.00** | |
| **Unshaped Waste Rock Dumps** (minor reshaping required) | Minor pushing, final trim, rock rake & deep rip | 3.54 | Ha | $638.66 | **$2,260.87** | This item includes the area requiring minor reshaping, rock raking and deep ripping to enhance revegetation program |
| | Structural works, banks, rock lined waterways | | Ha | $1,788.26 | **$0.00** | This item includes the area requiring earthworks (banks, & drains, etc) to manage all surface water on the top of the emplacement to ensure that it is shed off the dump |
| | Source, cart and spread topsoil. | 3540 | $m^3$ | $1.53 | **$5,426.09** | This includes sourcing, carting and spreading of a suitable volume of topsoil to cover the tailings dam / emplacement |
| | Spoil amelioration and supply and spread seed and fertiliser. | 3.54 | Ha | $4,726.12 | **$16,730.46** | This item includes the area requiring the addition of ameliorates such as lime or gypsum prior to the application of grass seed and fertiliser |
| | Maintenance of rehabilitated areas (up to 5 years) | 3.54 | Ha | $830.26 | **$2,939.13** | This item includes the total area of that have been shaped, topsoiled and seeded and requires subsequent fertiliser application. It assumes application twice on the first five (5) years after establishment |
| | | | | **Precinct Security Deposit** | **$27,356.56** | |
| **Unshaped Waste Rock Dumps** (major earthworks required) | Major bulk pushing to achieve grades nominated in the MOP (i.e < 18°) | | $m^3$ | $1.41 | **$0.00** | This item includes the volume requiring **major** reshaping, rock raking and deep ripping (only as required) to enhance revegetation program |
| | Minor pushing, final trim, rock rake & deep rip | | Ha | $638.66 | **$0.00** | This item includes the area requiring minor reshaping, rock raking and deep ripping to enhance revegetation program |
| | Structural works, banks, rock lined waterways | | Ha | $1,788.26 | **$0.00** | This item includes the area requiring earthworks (banks, & drains, etc) to manage all surface water on the top of the dump to ensure that it the water is shed off |
| | Source, cart and spread topsoil. | | $m^3$ | $1.53 | **$0.00** | This includes sourcing, carting and spreading of a suitable volume of topsoil to cover the tailings dam / emplacement |
| | Spoil amelioration and supply and spread seed and fertiliser. | | Ha | $4,726.12 | **$0.00** | This item includes the area requiring the addition of ameliorates such as lime or gypsum prior to the application of grass seed and fertiliser |
| | Maintenance of rehabilitated areas (up to 5 years) | | Ha | $830.26 | **$0.00** | This item includes the total area of that have been shaped, topsoiled and seeded and requires subsequent fertiliser application. It assumes application twice in the first five (5) years after establishment |
| | | | | **Precinct Security Deposit** | **$0.00** | |
| **Other** | Other 1 <insert> | | | | **$0.00** | This item includes **<<to be added by the operator>>** |
| | Other 2 <insert> | | | | **$0.00** | This item includes **<<to be added by the operator>>** |
| | Other 3 <insert> | | | | **$0.00** | This item includes **<<to be added by the operator>>** |
| | | | | **Precinct Security Deposit** | **$0.00** | |

**Total Security Deposit for the "Domain"** **$27,356.56**

# Domain 4: Active Quarry & Voids

**Detail of person filling out the Worksheet:**

| | |
|---|---|
| **Name** | Lisa Thomson |
| **Position** | Environmental Consultant |
| **Department** | VGT Pty Ltd |
| **Date** | 31/3/16 |

**Legend:**

- Item fixed no entry required
- Input from site optional (if information available)
- Input mandatory

| Management Precinct | Activity / Description | Quantity | Unit | Unit Price | Total Cost | Description / Notes: |
|---|---|---|---|---|---|---|
| **Active Pit** (including the voids and any internal benches or mine strips) | Major bulk pushing of the low wall are to achieve grades nominated in the MOP (i.e < 18°) | 0 | $m^3$ | $1.41 | **$0.00** | This item includes the volume requiring **major** reshaping, rock raking and deep ripping (only as required) to enhance revegetation program **UNIT RATE:** dozer push rate |
| | Active pit area - benches blasted and doze to < 18° | | $m^3$ | $1.41 | **$0.00** | This item includes the total area of rehabilitation that have been established and require subsequent fertiliser application. It assumes application twice on the first five (5) years after establishment **UNIT RATE:** drill & blast + dozer push |
| | Final trim, rock rake & deep rip | 7.92 | Ha | $638.66 | **$5,058.22** | This item includes the area requiring minor reshaping, rock raking and deep ripping to enhance revegetation program. |
| | Structural works, banks waterways | | Ha | $1,788.26 | **$0.00** | This item includes the area requiring earthworks (banks, & drains, etc) to manage all surface water on the top of the emplacement to ensure that it is shed off the reshaped areas. |
| | Source, cart and spread topsoil. | 7920 | $m^3$ | $2.55 | **$20,232.89** | This includes sourcing, carting and spreading of a suitable volume of topsoil to cover the tailings dam / emplacement |
| | Spoil amelioration and supply and spread / tree pasture seed and fertiliser. | 7.92 | Ha | $4,726.12 | **$37,430.85** | This item includes the area requiring the addition of ameliorates such as lime or gypsum prior to the application of grass seed and fertiliser |
| | | | | **Precinct Security Deposit** | **$62,721.97** | |
| **Ramps** | Major bulk pushing of the low wall are to achieve grades nominated in the MOP (i.e < 18°) | | $m^3$ | $1.41 | **$0.00** | This item includes the volume requiring **major** reshaping. |
| | Final trim, rock rake & deep rip | | Ha | $638.66 | **$0.00** | This item includes the area requiring minor reshaping, rock raking and deep ripping to enhance revegetation program. |
| | Structural works, banks waterways | | Ha | $1,788.26 | **$0.00** | This item includes the area requiring earthworks (banks, & drains, etc) to manage all surface water on the top of the emplacement to ensure that it is shed off the reshaped areas. |
| | Source, cart and spread topsoil. | | $m^3$ | $2.55 | **$0.00** | This includes sourcing, carting and spreading of a suitable volume of topsoil to cover the reshaped ramps |
| | Spoil amelioration and supply and spread pasture / tree seed and fertiliser. | | Ha | $4,726.12 | **$0.00** | This item includes the area requiring the addition of ameliorates such as lime or gypsum prior to the application of grass seed and fertiliser |
| | | | | **Precinct Security Deposit** | **$0.00** | |
| **Highwall treatment** | Drill & Blast Highwall **OR** | | $m^3$ | $0.89 | **$0.00** | This item includes the total area of rehabilitation that have been established and require subsequent fertiliser application. It assumes application twice on the first five (5) years after establishment **UNIT RATE:** drill & blast + dozer push |
| | Major bulk pushing of the high wall are to achieve grades nominated in the MOP (i.e < 18°) | 280000 | $m^3$ | $1.41 | **$393,417.39** | This item includes the volume requiring **major** reshaping, rock raking and deep ripping (only as required) to enhance revegetation program **UNIT RATE:** dozer push rate |
| | Final trim, rock rake & deep rip | 3.08 | Ha | $638.66 | **$1,967.09** | This item includes the area requiring minor reshaping, rock raking and deep ripping to enhance revegetation program. |
| | Source, cart and spread topsoil (at 20cm) | 6160 | $m^3$ | $1.53 | **$9,442.02** | This includes sourcing, carting and spreading of a suitable volume of topsoil to cover the reshaped area |
| | Spoil amelioration and supply and spread pasture seed and fertiliser. | 3.08 | Ha | $4,726.12 | **$14,556.44** | This item includes the area requiring the addition of ameliorates such as lime or gypsum prior to the application of grass seed and fertiliser |
| | Security Fence around steep section highwall | | m | $63.87 | **$0.00** | This item includes the erection of a 2m security fence (lineal metre) around the void and other dangerous areas. |
| | High wall treatment - (trench + safety berm) | | m | $73.45 | **$0.00** | This item includes the construction of a safety berm and rill (lineal metre) around the highwall to stop all vehicles, act accidentally driving over haul road (engineered control) |
| | | | | **Precinct Security Deposit** | **$419,382.94** | |
| **Disturbance ahead of Mining + water management structures** | Areas cleared ahead of mining - re-establish vegetation commensurate with surround vegetation | | Ha | $2,682.39 | **$0.00** | This includes the direct application of seed to restore the vegetation that was disturbed as part of clearing operations ahead of the mine. |
| | Areas topsoil stripped ahead of mining - source cart and respread topsoil | | $m^3$ | $2.55 | **$0.00** | This includes sourcing, carting and spreading of a suitable volume of topsoil to cover the that have been disturbed |
| | Reshape, deep rip, ameliorate and seed highwall / internal access roads and tracks | | Ha | $6,386.65 | **$0.00** | This item includes the area requiring the addition of ameliorates such as lime or gypsum prior to the application of grass / tree seed and fertiliser |
| | Reshape, deep rip, ameliorate and seed exploration lines / areas | | Ha | $4,726.12 | **$0.00** | This item includes the area requiring the addition of ameliorates such as lime or gypsum prior to the application of grass / tree seed and fertiliser |
| | Clean water dams to be retained after mine closure -make safe and minor earthworks. | | @ | $2,554.66 | **$0.00** | This item includes making the dam spillway, and walls stable and ensuring the integrity of the dam wall, etc. |
| | Dirty Water Dams (Drain and remove sediments to make dam water clean) | | $m^3$ | $4.09 | **$0.00** | This item includes draining the dam and removing 500mm of potentially contaminated (saline) sediments to be buried in the pit. **UNIT RATE:** must consider the distance from the dam to the disposal area |
| | | | | **Precinct Security Deposit** | **$0.00** | |
| **River & Creek Diversions** | Creek diversion - Channel maintenance through spoil / backfill (20% of estimated diversion construction costs due to unknown in landform stability) | | m | $383.20 | **$0.00** | This item includes the length (m) requiring ongoing maintenance of diversions constructed through unconsolidated overburden. This will include earthworks repairs and stabilisation following flow events. It assumes a suitably qualified engineer has designed and signed off on construction of the diversion |
| | Creek diversion - Channel maintenance insitu (10% of estimated construction cost for diversion) | | m | $191.60 | **$0.00** | This item includes the length (m) requiring ongoing maintenance of diversions constructed through unnatural ground. This will include earthworks repairs and stabilisation following flow events. It assumes a suitably qualified engineer has designed and signed off on construction of the diversion |
| | Creek diversion - Vegetation maintenance | | $m^2$ | $0.38 | **$0.00** | This item includes the ongoing maintenance of vegetation within the diversion channel & batters. |
| | | | | **Precinct Security Deposit** | **$0.00** | |
| **Other** | Other 1 <insert> | | | | **$0.00** | This item includes **<<to be added by the operator>>** |
| | Other 2 <insert> | | | | **$0.00** | This item includes **<<to be added by the operator>>** |
| | Other 3 <insert> | | | | **$0.00** | This item includes **<<to be added by the operator>>** |
| | | | | **Precinct Security Deposit** | **$0.00** | |

**Total Security Deposit for the "Domain"** **$482,104.91**

## Domain 5: Other

**Detail of person filling out the Worksheet:**

| | |
|---|---|
| **Name** | Lisa Thomson |
| **Position** | Environmental Consultant |
| **Department** | VGT Pty Ltd |
| **Date** | 31/3/16 |

**Legend:**

| | |
|---|---|
| | Item fixed no entry required |
| | Input from site optional (if information available) |
| | Input mandatory |

| Management Precinct | Activity / Description | Quantity | Unit | Unit Price | Total Cost | Description / Notes: |
|---|---|---|---|---|---|---|
| **Other (eg. site contamination, closure plan preparation, etc)** | The restoration and care and maintenance of items that have historical significance and are to be retained after the cessation of mining | | @ | $25,546.58 | **$0.00** | This item includes ensuring that sufficient resources are made available to restore items of heritage significance and also provide money to enable the ongoing care and maintenance of the structure (if not the responsibility of any another stakeholder i.e. council, historical society) |
| | Cap exploration holes | | @ | $319.33 | **$0.00** | This includes capping & rehabilitation of all old Cap exploration holes around the site |
| | Construction / Deconstruction of Bridges and crossings | | @ | $0.00 | **$0.00** | Value to be provided by company |
| | Construction of Fencing - general | | @ | $63.87 | **$0.00** | Includes general fencing around site or site works |
| | Other 5 <insert> | | | | **$0.00** | This item includes **<<to be added by the operator>>** |
| | Other 6 <insert> | | | | **$0.00** | This item includes **<<to be added by the operator>>** |
| | Other 7 <insert> | | | | **$0.00** | This item includes **<<to be added by the operator>>** |
| | Other 8 <insert> | | | | **$0.00** | This item includes **<<to be added by the operator>>** |
| | Other 9 <insert> | | | | **$0.00** | This item includes **<<to be added by the operator>>** |
| | Other 10 <insert> | | | | **$0.00** | This item includes **<<to be added by the operator>>** |
| | | | | **Precinct Security Deposit** | **$0.00** | |

**Total Security Deposit for the "Domain"** **$0.00**

## Third Party Project Management & Contingencies

**Detail of person filling out the Worksheet:**

| | |
|---|---|
| **Name** | Lisa Thomson |
| **Position** | Environmental Consultant |
| **Department** | VGT Pty Ltd |
| **Date** | 31/3/16 |

**Legend:**

| | |
|---|---|
| | Item fixed no entry required |
| | Input from site optional (if information available) |
| | Input mandatory |

| Item | Activity / Description | Quantity | Unit | Cost | Total Cost | Description / Notes: |
|---|---|---|---|---|---|---|
| | | | | **Sub-Total (Domains)** | **$580,466.41** | |
| **Third Party Project Management** | Mobilisation & Demobilisation (third party contractor rates apply). | 1 | @ | $0.00 | **$0.00** | Cost would have to be determined (justified) on the basis of the equipment required and the distance of the mine from the likely contractor to be used. |
| | DRE Tender Preparation and Assessment | 1 | @ | $6,386.65 | **$6,386.65** | Values provided in this cell are provided as a minimum, and should be assessed based on the size of the site, and works required. |
| | Development of Unplanned Closure Plan | 1 | @ | $31,933.23 | **$31,933.23** | Values provided in this cell are provided as a minimum, and should be assessed based on the size of the site, and works required. |
| | Post closure environmental monitoring | 5% | % | $29,023.32 | **$29,023.32** | % of the subtotal for all domains |
| | Project Management & Surveying | 10% | % | $58,046.64 | **$58,046.64** | % of the subtotal for all domains |
| | Indexation | | @ | | **$0.00** | |
| | Other <insert> | | @ | | **$0.00** | |
| | Other <insert> | | @ | | **$0.00** | |
| | | | | **Sub-Total (Sundry Items)** | **$125,389.84** | |
| | | | | **Sub-Total (Domain and Sundry Items)** | **$705,856.25** | |
| **Contingency** | Contingency | 10% | % | $705,856.25 | **$70,585.63** | |
| | | | | **Precinct Security Deposit** | **$776,441.88** | **exclusive of GST** |

| | |
|---|---|
| **Sub-Total Rehabilitation Estimate for "Domains"** | $580,466.41 |
| **Total Rehabilitation Estimate for "Sundry Items"** | $125,389.84 |
| **Contingency (based on Sundry and Domains)** | $70,585.63 |