



Site	Wollongong Coal	DOC ID	RVC EC PLN 021
Type	Plan	Date Published	August 2022
Doc Title	Forward Program		

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# ***Forward Program***

## **RVC EC PLN 021**



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## SUMMARY TABLE

Property	Value
<b>Name of Mine</b>	Russell Vale Colliery
<b>Annual Rehabilitation Report Reporting Period Commencement Date:</b>	1 July 2021
<b>Forward Program Commencement Date</b>	1 August 2022
<b>Mining Leases</b>	CCL 745 (expires 27/12/2023) ML 1575 (expires 22/03/2029) MPL 271 (expires 09/05/2033)
<b>Name of Lease Holder</b>	Wollongong Coal Limited
<b>Date of Submission</b>	1 August 2022
<b>Approved by</b>	Richard Sheehan, Group Environmental Manager
<b>Document Owner</b>	Richard Sheehan, Group Environmental Manager
<b>Effective Date</b>	1 August 2022

Version	Date	Review Team	Nature of the Amendment
D1	23/6/22	WCL	Original draft
F1	20/7/22	WCL	Final

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## 1 FORWARD PROGRAM

The Forward Program for RVC has been developed in accordance with Part 2 of the NSW Resources Regulator Form and Way – *Annual Rehabilitation Report and Forward Program for Large Mines* (2021) and Clause 9 and 13 of Schedule 8A of *Mining Regulation 2016* (Regulation).

An amendment to the Mining Regulation 2016 (Regulation) under the Mining Act 1992 (Mining Act) commenced on 2 July 2021. The amendment provided new standard rehabilitation conditions for mining leases which replaces existing mining leases. Condition 13(1) of CCL 745, ML 1575 and MPL 271 stipulates the requirement of this Forward Program to describe the mining and rehabilitation activities forecast over a three-year period across the RVC lease area.

### 1.1 Three-year forecast – surface disturbance activities

#### 1.1.1 Project description

RVC (formerly known as NRE No 1 Colliery) is an underground coal mine operated by Wollongong Coal Limited (WCL). RVC is located approximately 8 km north of Wollongong and 70 km south of Sydney, within the local government areas (LGAs) of Wollongong and Wollondilly in the Illawarra region of NSW.

The South Bulli Coal Mining Company commenced mining on the slopes of the Illawarra Escarpment in the late-19th Century. Continuous mining has occurred since 1887 and surface facilities have operated at the Russell Vale site since this time. Historically, operations at Russell Vale Colliery have undertaken mining activities in the Wongawilli, Balgownie and Bulli seams at varying depths of cover. Most recent mining has occurred in the Wongawilli Seam.

With the advent of more sophisticated mining methods in the 1960s, workings progressed further west of the Illawarra Escarpment. Subsequently, four ventilation shafts (Shaft Numbers 1, 2, 3 and 5) and a shaft to provide personnel and materials access to the workings (No. 4 Shaft) were sunk to the west of the escarpment. Mining commenced in the early 1990s beneath the catchment of Cataract Dam.

Mining of the Wongawilli seam (No. 3 seam) in the area has been undertaken for more than 15 years. Prior to mining within the No. 3 seam, initial mining in the area was undertaken in the Bulli and Balgownie seams (No. 1 and 2 seams).

In August 2004, production temporarily ceased, and the mine was placed on care and maintenance until 3 December 2004 when it was sold to Gujarat NRE Coking Coal Ltd (NRE) by Bellpac Pty Ltd. Mining recommenced at NRE No.1 Colliery in July 2005. The coal washery at Russell Vale ceased operation in March 2003.

NRE mined the Bulli seam in areas known as 310, 312 and 'P' panels, as well as in the Wongawilli seam in an area known as Wonga Mains and LW 4 and 5 in Wonga East. WCL mined the first 365m of LW6 which ended in July 2015. RCV was then placed in care and maintenance.



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Previous mine owners sought approval to expand the longwall mining operations at RVC in 2009, with subsequent amendments to submissions by new owners WCL in 2013 and 2019 in response to reviews undertaken by the NSW Department of Planning and Environment (DPE). The July 2019 submission provided major changes to the project to significantly reduce impacts from subsidence, including an amended mine plan which no longer involves longwall mining.

Development Consent MP 09\_0013 (the Development Consent) for the revised Russell Vale East (RVE) Underground Expansion Project (UEP) was approved by the Independent Planning Commission (IPC) of NSW on 8 December 2020. The approved development involves mining of panels within the Wonga East area by means of non-caving bord and pillar mining technique only, with workings designed to be long term stable with negligible subsidence impacts.

The RVC pit top contains the Wongawilli Seam main mine portals and caters for mine ventilation, mining equipment, vehicle and machinery maintenance, mine supplies, administration, coal transport to the surface, and a 44,000-tonne capacity stockpiling facility.

There is currently one main transport entry into the mine, namely a roadway for rubber tyred vehicles. The rubber tyred vehicles are the primary transport system that services the mine. Coal is transported from the workings to the surface of the mine via conveyor.

Mining operations including secondary extraction are currently approved under MP 09\_0013 until 2026, however WCL do not anticipate the commencement of mine closure at this time. Current knowledge of existing coal seam reserves within the RVC lease area indicate approximately 25 years of resources remain unmined. WCL is continuing the due diligence process of assessing the feasibility of extracting further resources within the RVC lease area.

To date, no rehabilitation works have been completed at RVC. Due to the nature of underground mining, only a relatively small surface disturbance footprint is required for operation of the mine. This has limited the opportunities for rehabilitation works to be undertaken at RVC.

### 1.1.2 Description of surface disturbance activities

#### a. Exploration activities

Exploration activities are undertaken across the RVC lease area to accumulate data on geology, coal quality, strata conditions, gas characteristics and groundwater.

The most recently completed drilling program in the RVC lease area was undertaken in 2021 and included 11 drill hole sites. The data and information resulting from this exploration program is being utilised to update the resource model and future mine planning.

Additional drill holes to install groundwater monitoring bores may also be required to facilitate monitoring requirements in accordance with the Extraction Plan. Where required, groundwater monitoring bores will be licenced under the *Water Management Act 2000* or the *Water Act 1912*.

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## b. Construction activities

Construction activities anticipated to occur within the Forward Program term relate to the commencement of Stage 2 operations, including installation of the new truck loading bins and associated conveyors. This new surface infrastructure will be constructed within the existing Pit Top disturbance area and will not require any additional disturbance.

Demolition and decommissioning activities performed onsite within the forward program period include the removal of elements of the remaining components of the coal washery and truck including the former surge bin (i.e. decommissioning redundant infrastructure).

## c. Mining schedule

The mining operations utilise continuous miner units with no secondary extraction operations. The installation of strata support will utilise both onboard bolting units and mobile bolting units. The coal will be transferred from the continuous miners to panel conveyors by shuttle cars which will transfer to the main belt system to deliver the coal to the surface stockpile.

Underground mining approved under Development Consent MP 09\_0013 will be completed in a staged approach. This approach includes the approved 'second workings' for the following:

- Stage 1(a) – panel PC21 and sub panels PC22, PC23, PC24 and PC25 to the west of Mount Ousley Road adjacent to the Cataract Storage Reservoir.
- Stage 1(b) – panels PC07 and PC08 to the east of Mount Ousley Road.
- Stage 2 – panels PC27, PC28, PC29, PC30, PC31, PC32, PC33 and PC34 to the west of Mount Ousley Road adjacent to the Cataract Storage Reservoir.

The indicative location of the proposed workings are shown in **Plan 2**.

Mining will be undertaken within CCL 745 using a non-caving bord and pillar method targeting the Wongawilli Seam. Mining will generally occur from west to east with panels capable of being extracted simultaneously.

Material production for the duration of the Forward Program term is summarised in **Table 1.1**.

**Table 1.1 Material Production Schedule**

Material	Unit	Year 1 (FY2022/23)	Year 2 (FY2023/24)	Year 3 (FY2024/25)
Stripped topsoil	m <sup>3</sup>	0	0	0
Rock/overburden	m <sup>3</sup>	0	0	0
Ore or ROM coal extracted	t	1,200,000	1,200,000	1,200,000
Reject material	t	0	0	0
Product	t	1,200,000	1,200,000	1,200,000

ROM coal extracted from underground workings is transported to the RVC Pit Top facility for stockpiling and loading into trucks for transportation to Port Kembla Coal Terminal. There are no coal washery facilities on site, and as such, no tailings are produced or stored at RVC.

All waste generated within the RVC lease area is managed in accordance with the approved Waste Management Plan. Methods for managing various sources of waste generated at RVC are detailed below.

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## Construction Waste

Infrastructure construction activities are not expected to generate a significant amount of waste material as these will involve predominately modular/prefabricated components which are assembled offsite. Other construction wastes that may be generated include office, domestic and maintenance/workshop waste.

Any wastes generated during construction works will be removed from site by a licensed waste management contractor to a licensed waste disposal facility.

## Office Waste

Office wastes are largely comprised of paper, office stationery, cardboard/packaging and printer ink cartridges. Minimal quantities of office wastes are generated at RVC, most of which is recycled.

## Domestic Waste

Domestic waste generated at RVC includes food scraps, food/drink packaging and other putrescible wastes. Recycling is undertaken where possible (e.g. aluminium cans, glass bottles) while the rest of the waste is disposed of offsite by a licensed contractor to an appropriately licensed landfill facility.

## 1.2 Three-year rehabilitation forecast

### 1.2.1 Rehabilitation planning schedule

Surface disturbance required for operations within the RVC lease area continues to be restricted to the current operational areas that are largely consistent with historical operations. As a result, whilst minimal opportunities for progressive rehabilitation exist, WCL will continue to explore and identify any potential opportunities for rehabilitation where possible, with any such works commencing as soon as reasonably practicable.

Within the forward program period, works relating to rehabilitation will largely be limited to scoping and planning during the operational phase of the mine.

Further rehabilitation research and trials are discussed in **Section 1.2.2** below.

### 1.2.2 Rehabilitation research and trials

WCL is proposing to undertake the following programs to better inform the mine closure rehabilitation planning process.

## Material Balance Assessment

The current availability of substrate materials (namely topsoil) suitable for landform establishment and growth medium development has been identified as a potential constraint to future rehabilitation works across the RVC lease area. Due to the continued use of the operations area, long history of mining operations, and new surface disturbance works being confined to existing disturbed areas, limited rehabilitation resources (e.g. topsoil) are available on site.

WCL planning for closure rehabilitation works will continue as part of the Forward Program. This includes undertaking a materials balance assessment relative to the final landform to quantify existing available rehabilitation resources and identify any material gaps that may be required to be filled during final rehabilitation works.

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Should a material imbalance be identified, WCL will assess available options for overcoming this imbalance to ensure suitable volumes of rehabilitation resources are available prior to mine closure.

This material balance assessment process is projected to commence in Year 2 of the Forward Program.

### **Contaminated Land Review**

WCL is proposing to undertake a contaminated land review throughout Domain 1 (pit top facilities) to better understand the potential extent of contamination originating from historical underground mining operations on the site. Due to the age and history of operations undertaken within the Domain 1 pit top facilities, there is a likelihood for previously unidentified contaminated materials to be discovered on site.

The aim of this investigation will be to determine the extent of any potential contamination to allow for an understanding of the need for further investigation. Further investigation will determine the need and or pathways to manage any identified contamination to ensure consistency with regard to the preferred final land use for the site.

#### **1.2.3 Rehabilitation maintenance and corrective actions**

There are currently no active rehabilitation areas within the RVC lease area and as such no rehabilitation maintenance or corrective actions are required.

Management of future rehabilitation areas will include the following measures:

- Weed and feral animal control, including:
  - Execution of the weed management program and associated rehabilitation in accordance with the Surface Operations Biodiversity Management Plan (SOBMP).
  - Feral animal exclusion via fencing of sensitive rehabilitation areas and execution of the ongoing feral animal control programs in accordance with the SOBMP.
- Erosion and drainage control measures such as filter fences, strategic buffer planting and similar controls detailed in the Surface Operations Water Management Plan (SOWMP) – Erosion and Sediment Control Plan, water management infrastructure (as required and if suitable in lieu of the final land use/s), supported by ongoing inspections of potential erosion impacts.
- Ongoing environmental monitoring and management of surface water, groundwater, ecology and land capability in accordance with approved management plans required by MP 09\_0013.
- Ongoing monitoring and maintenance of rehabilitated areas. This will be continued until it can be demonstrated that the rehabilitation has satisfied the completion criteria.

WCL currently maintains the existing environment within the lease area in accordance with the approved Biodiversity Management Plans and/or site-specific management plans.

#### **1.2.4 Rehabilitation schedule**

As discussed, limited opportunities for rehabilitation are available during the current RVC mine life relative to the current UEP MP09\_0013 approval due to the minimal surface disturbance required to support ongoing underground mining operations. Almost all current disturbance

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areas within the RVC lease are required for the duration of the life of mine and will therefore be rehabilitated at mine closure.

Of the limited available opportunities for progressive rehabilitation, WCL has identified the following works to be undertaken in the short term.

### **Sealing of Portals 2, 5, 18 and 19**

WCL will commence planning for the permanent sealing of Portals 2, 5, 18 and 19 of the Bulli and Balgownie seam workings, including progression of the design, notification and approval process with the appropriate regulatory bodies including the NSW RR. Mine planning has indicated these portals are no longer required and will be sealed so as not to pose a hazard to operations or the surrounding environment.

Planning works will commence during Year 1 of the Forward Program. The timing of these works will be determined during the planning process.

### **Decommissioning of Redundant Infrastructure**

Decommissioning of the old surface coal clearance systems, including the old conveyors, coal bins and truck load out facility will be undertaken in Years 1 and 2 of the Forward Program. This equipment is no longer required for mining operations and will aid in improving visual amenity from community areas.

### **Rehabilitation of the No. 1 and No. 2 Shaft Areas**

During Year 1 and Year 2 of the Forward Program, preliminary scoping works investigating the design and approval requirements of rehabilitating the No. 1 and No. 2 shaft sites will commence. Mine planning has identified that these shafts are redundant to current and future mining operations and therefore decommissioning planning works are to commence.

Decommissioning and commencement of rehabilitation works for one of the vent shafts are targeted to be undertaken during Year 3 of the Forward Program.

### **1.2.5 Subsidence remediation for underground operations**

As subsidence impact predictions are based on the low levels of subsidence predicted across the RVC lease area, ongoing subsidence monitoring provides an effective precautionary control to manage subsidence impacts more broadly within the UEP workings.

A Subsidence Monitoring Program has been developed in accordance with MP 09\_0013 and considers recommendations contained within the completed Subsidence Assessment (SCT, 2021) relative to the approved Stage 1 and proposed Stage 2 extraction.

Subsidence impacts are managed in accordance with the relevant Trigger Action Response Plans (TARPs) prepared for the approved Stage 1 Extraction Plan and as proposed for future Stage 2 mining. Although not anticipated, any subsidence impacts which require appropriate remediation will be undertaken in accordance with the relevant TARP.

## **1.3 Plan 2 – Mining and rehabilitation three-year forecast**

### **1.3.1 Submission of Plan 2 spatial data to the mine rehabilitation portal**

Plan 2 will be submitted to the NSW Resources Regulator in the form of spatial data for this plan. A copy of this plan is provided in **Section 1.3.2**.

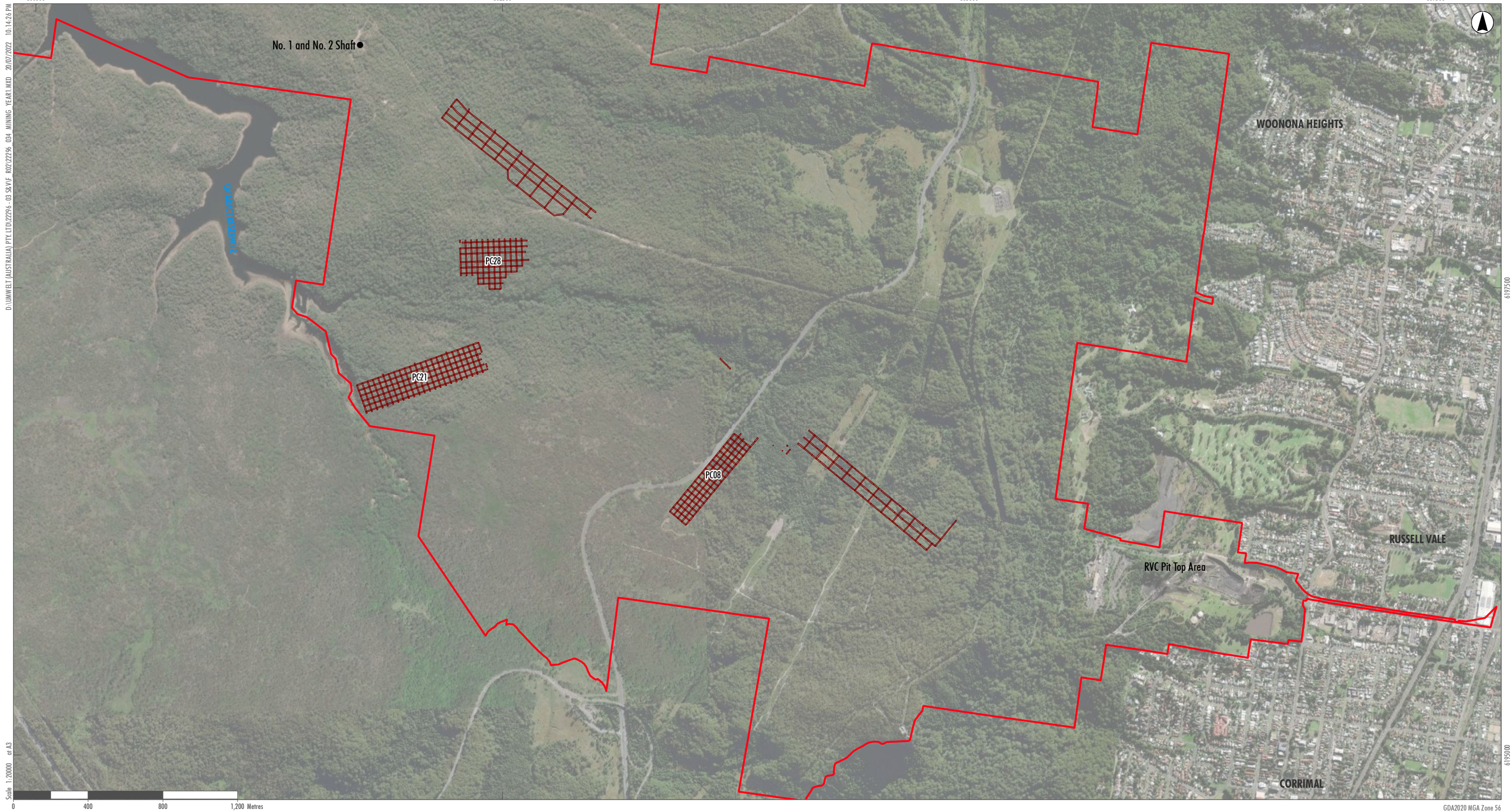


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### 1.3.2 Submission of Plan 2 electronic copy (PDF)

An electronic PDF copy of Plan 2 will be submitted to the NSW RR spatial portal with this document. Due to the significant size of the entire RVC lease area and the nature of relatively small, isolated disturbance areas (namely the RVC Pit Top area and shaft sites), Plan 2 has been separated into a series of sub-plans to convey an appropriate level of detail as required. It is noted that Plans for No. 3, 4 and 5 shaft sites have been omitted as there are no mining activities or rehabilitation works relevant to these disturbance areas during the Forward Program.





Legend

RVC Lease Area

CL 745

Year 1 Mining Area

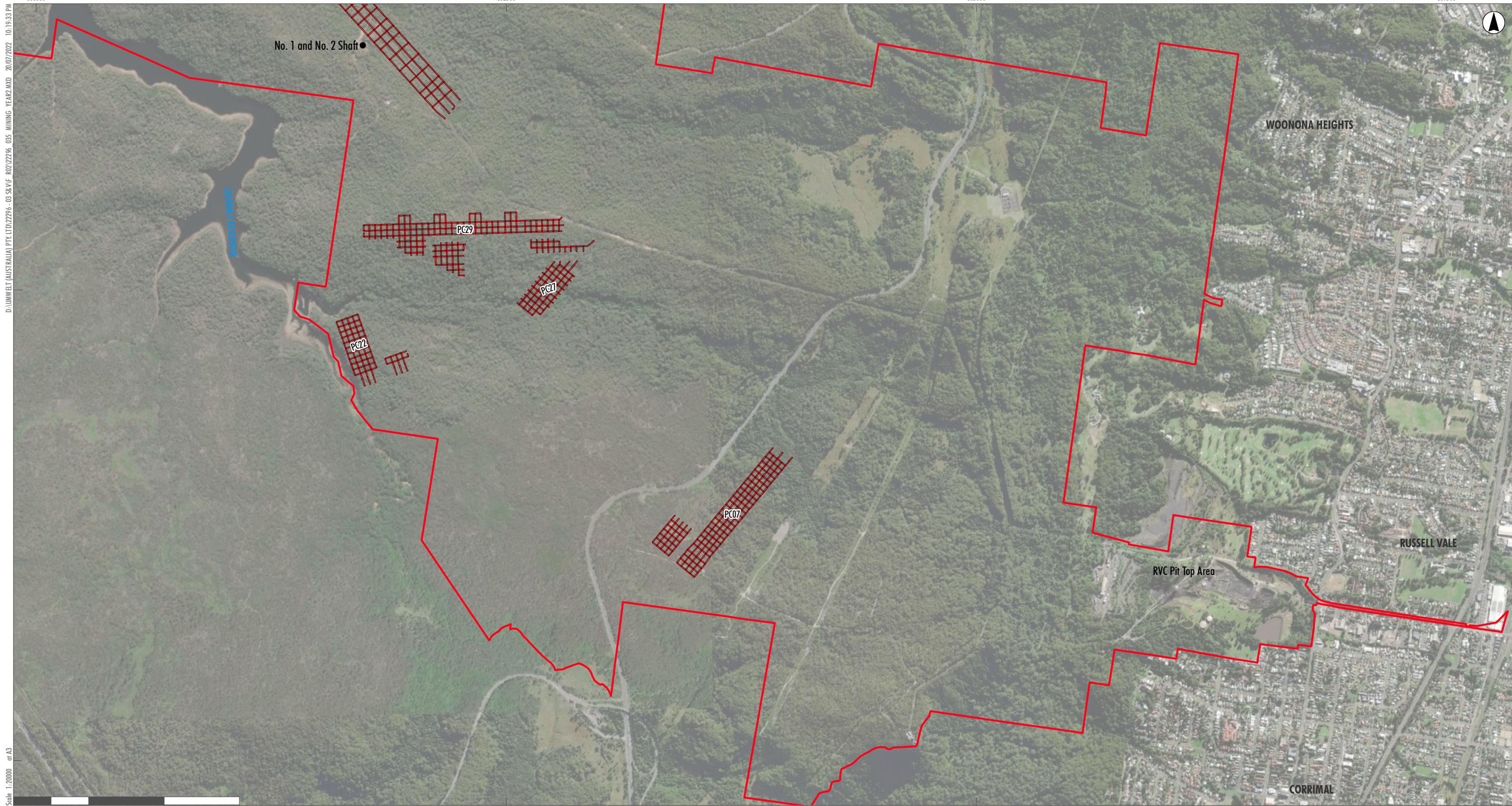
PLAN 2A I

Mining and Rehabilitation - Year 1





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- Legend
- RVC Lease Area
  - CL 745
  - Year 2 Mining Area

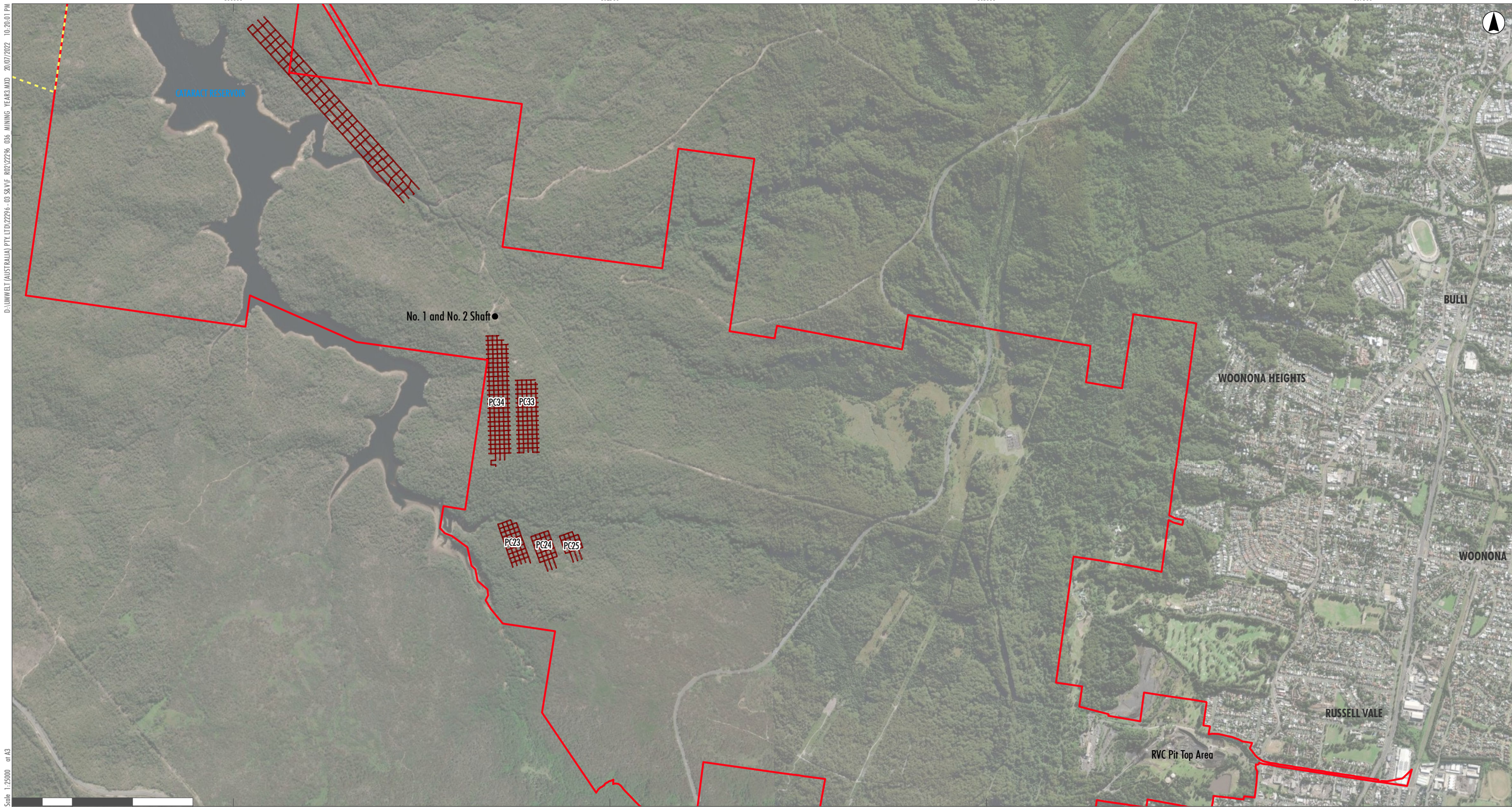
PLAN 2B I

Mining and rehabilitation - Year 2





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- Legend
- RVC Lease Area
  - CL 745
  - ML 1575
  - Year 3 Mining Area

GDA2020 MGA Zone 56

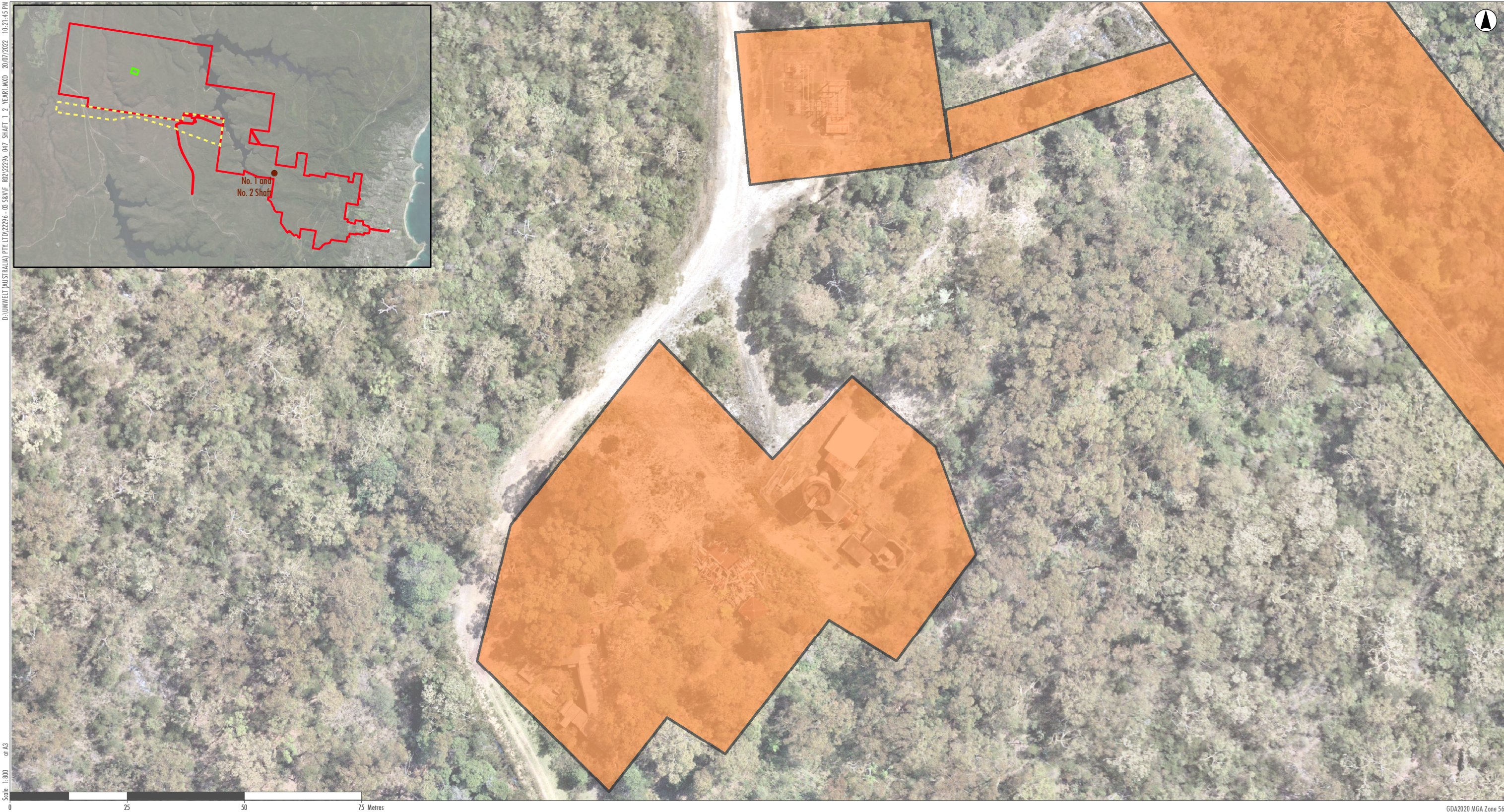
PLAN 2C I

Mining and Rehabilitation - Year 3





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Legend

RVC Lease Area

CL 745

MPL 271

ML 1575

Mining Domain

Infrastructure Area

PLAN 2A II

Mining and Rehabilitation - Year 1  
(Shaft No. 1 and No. 2)





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RVC Lease Area

CL 745

MPL 271

ML 1575

Mining Domain

Infrastructure Area

PLAN 2B II

Mining and Rehabilitation - Year 2  
(Shaft No. 1 and No. 2)





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#### Legend

##### RVC Lease Area

- CL 745
- MPL 271
- ML 1575

##### Rehabilitation Phase

- Decommissioning

##### Mining Domain

- Infrastructure Area

PLAN 2C II

Mining and Rehabilitation - Year 3  
(Shaft No. 1 and No. 2)

Image Source: Nearmap (2022) Data source: WCL (2022)

Mine Name: Russell Vale Colliery  
Title Holder: Wollongong Coal Limited  
Drawn By: Umwelt Australia  
Date Drawn: 21/07/2022



## 1.4 Progressive Mining and Rehabilitation Statistics

### 1.4.1 Three yearly forecast cumulative disturbance and rehabilitation progression

A summary of the forecast cumulative disturbance and rehabilitation progression during the Forward Program is included in **Table 1.2**.

**Table 1.2 Predicted cumulative disturbance and rehabilitation progression during the next three-year term**

Year	Year 1 (FY2022/2023)	Year 2 (FY2023/2024)	Year 3 (FY2024/2025)
Total disturbance footprint – surface disturbance (hectares)	58.67	58.67	58.67
Underground mining area (hectares)	105.88	163.82	213.86
Total active disturbance (hectares) <sup>1</sup>	58.67	58.67	58.67
Rehabilitation – land preparation	0	0	0
Ecosystem and land use establishment (hectares)	0	0	0

<sup>1</sup> Where 'total active disturbance' is assumed to not include active underground mining areas (i.e., limited to surface disturbance area).

### 1.4.2 Rehabilitation key performance indicators

A summary of the progressive rehabilitation key performance indicators (KPIs) during the Forward program is included in **Table 1.3**.

**Table 1.3 Progressive rehabilitation KPIs during the next three-year term**

Year	Year 1 (FY2022/2023)	Year 2 (FY2023/2024)	Year 3 (FY2024/2025)
Total new active disturbance area during reporting period (hectares)	0	0	0
Area of land proposed for active rehabilitation during reporting period (hectares)	0	0	0.77
Annual rehabilitation to disturbance ratio	0	0	0

## 1.5 Rehabilitation Cost Estimate

Please refer to Appendix A.



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## APPENDIX A: REHABILITATION COST ESTIMATE

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