



**NSW
Resources
Regulator**

ARR0001414

MUSWELLBROOK COAL ANNUAL REHABILITATION REPORT

Monday 1 January 2024 to Tuesday 31 December 2024

Summary table

DETAIL	
Mine	Muswellbrook Coal
Reference	ARR0001414
Annual report period commencement date	Monday 1 January 2024
Annual report period end date	Tuesday 31 December 2024
Forward program	FWP0001309
Mining leases	ML 1304 (1992), CCL 713 (1973), ML 1562 (1992)
Lease holder(s)	Muswellbrook Coal Company Ltd
Contact	Julie Thomas
Date of submission	Monday 17 March 2025

Important

The department may make the information in your report 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 report to be confidential, please communicate this to the department via the message function on this submission within the NSW Resources Regulator Portal.

Mine details

Project description

Muswellbrook Coal Company Limited (MCC) operates the Muswellbrook Open Cut Coal Mine (the site), located approximately three kilometres (km) to the north-east of Muswellbrook in the Hunter Valley of New South Wales. MCC is a wholly owned subsidiary of Idemitsu Australia Pty Limited (IA). On 1 September 2003, Development Consent for DA 205/2002 was granted by Muswellbrook Shire Council (MSC) to extend the former MCC No.1 Open Cut. The No.1 Open Cut Extension commenced operations in March 2005 and has a capacity to produce up to 2,000,000 tonnes coal per annum with mining operations approved until end of 2022. A modification to the consent was granted on 27 February 2024 to align rehabilitation requirements with updated mining lease conditions, to allow the removal of land associated with the Muswellbrook Bypass and other administrative changes.

Life of mine

0 years

Current development consents, leases and licences

Development consents granted under the *Environmental Planning and Assessment Act 1979*

DA205/2002
DA205/2002
DA205/2002
DA205/2002
DA205/2002
DA205/2002
DA205/2002
DA205/2002
DA205/2002
DA205/2002

Authorisations covering the mining area granted under the *Mining Act 1992*

ML 1304 (1992), CCL 713 (1973), ML 1562 (1992)

Any other approvals, licences, or authorities issued by government agencies that are relevant to the progress of mining operation and rehabilitation activities

Environmental Protection Licence 656
DA 80/2022
Water Licences WAL39806, WAL41503 and WAL41521

Summary of the scope and/or purpose of the new applications or modifications to existing approvals (if applicable)

A modification to the consent was granted on 27 February 2024 to align rehabilitation requirements with updated mining lease conditions, to allow the removal of land associated with the Muswellbrook Bypass and other administrative changes.

Changes to land ownership and land use

The list of applicable land ownership in the RMP was expanded during the reporting period to align with the expanded scope of the RMP. This has been an administrative change only and has not affected the activities at MCC.

Surface disturbance and rehabilitation activities during the reporting period

Surface disturbance and rehabilitation activities that were conducted and an analysis of the progress against the rehabilitation schedule

Activities on site during this reporting period have focused on rehabilitation of the site. There was minor surface disturbance undertaken during the reporting period to allow for shaping around the CHPP area. The proposed work was to complete installation of drop structures and contour drains, application of gypsum (8-10t/ha) and growth media (compost material at 100t/ha), and seeding of areas within Open Cut 1. During the reporting period, carbonaceous material was removed from the CHPP and stockpile areas and dumped into Open Cut 1. This work identified more carbonaceous material than expected, and this delayed the bulk shaping and water management structure installation in this area. In addition, other operational constraints prevented the finalisation of some areas that were proposed to be rehabilitated during this reporting period. To offset the areas that couldn't be finalised, additional areas were brought forward and completed during the reporting period. These changes allowed the same number of hectares to be rehabilitated as was originally planned, albeit in slightly different locations.

Rehabilitation planning activities that were conducted, including any specialist studies

During the reporting period, water management structures (drop structures and contour drains) were redesigned to allow for changes in the final landform that Thiess Rehabilitation made in the previous reporting period. Installation of these water management structures commenced during the reporting period. During the reporting period MCC continued with a series of studies relating to mine closure. The studies are being undertaken in consultation with Subject Matter Experts (SME's) and they include rehabilitation activities and other activities relating to mine relinquishment. The outcomes of these studies that are applicable to the ongoing rehabilitation of the site will be included in future revisions of the Rehabilitation Management Plan (RMP). No changes were made to the RMP this reporting period as a result of the mine closure studies. As part of the mine closure studies and planning for future rehabilitation activities, MCC continued with contamination assessments of the site during the reporting period. The key assessment completed this reporting period was the explosives storage compounds, which were decommissioned following the completion of blasting at MCC.

Overview of subsidence repair and/or remediation works undertaken

Subsidence is not expected to impact on areas of rehabilitation. Historical bord and pillar underground mining has been undertaken at the site, which typically results in minimal

subsidence therefore the risk of impact to rehabilitation is considered very low. No subsidence repair and/or remediation was required during the reporting period.

Overview of rehabilitation management and maintenance activities

Minimal rehabilitation management and maintenance activities were required this reporting period. The activities that did occur included weed control, and wild dog and rabbit control.

Details of any rehabilitation actions taken as required by any letters, notices or directions issued by government agencies, including the NSW Resources Regulator

In June 2022, MCC received a Notice under the Mining Act 1992 section 240 from the Resources Regulator. This notice resulted from a site inspection conducted in March 2022 where concerns were raised about areas of erosion that were identified in a previous inspection in April 2021 and during the 2021 Independent Environmental Audit. The s240 Notice has directed MCC to undertake an assessment of the long-term erosional stability of the approved final landforms as part of the rehabilitation of the mine, using an industry accepted Landform Evolution Model. This assessment was completed during the previous reporting period. A recommendation from the initial assessment was to redo the Landform Evolution Modelling for the proposed water structures in Open Cut 1. This reassessment was proposed to be completed during this reporting period, however, was not completed due to changes to the final landform and associated changes to the proposed water management structures in Open Cut 1. The changes to the proposed water management structures were not completed during this reporting period, so the Landform Evolution Modelling could not be completed. This work will be completed during the next reporting period.

Details of any rehabilitation areas that have achieved the final land use

There are no areas at MCC that have achieved final land use.

Key production milestones

MATERIAL	UNIT	FWP0001309 YEAR 1		THIS REPORT
Stripped topsoil <small>(if applicable)</small>	(m ³)		0	0
Rock/overburden	(m ³)		0	0
Ore	(Mt)		0	0
Reject material¹	(Mt)		0	0
Product	(Mt)		0	0

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

Disturbance and rehabilitation statistics

Current disturbance and rehabilitation progression

ELEMENT	UNIT	THIS REPORT
A Total surface disturbance footprint	(ha)	621.49
B Total active disturbance	(ha)	136.77
C Land prepared for rehabilitation	(ha)	0
D Ecosystem and land use establishment	(ha)	134.3
E Ecosystem and land use development	(ha)	350.43
F Rehabilitation completion	(ha)	0

Rehabilitation key performance indicators (KPIs)

ELEMENT	UNIT	THIS REPORT
G Total new active disturbance area	(ha)	NA - this value will display after 2nd year ARR submission as calculation relies on comparison between sequential yearly ARR data
H New rehabilitation commenced during annual reporting period	(ha)	NA - this value will display after 2nd year ARR submission as calculation relies on comparison between sequential yearly ARR data
I Established rehabilitation	(ha)	350.43
J Annual rehabilitation to disturbance ratio	%	NA - this value will display after 2nd year ARR submission as calculation relies on comparison between sequential yearly ARR data
K Rehabilitated land to total mine footprint	%	56.38

Progressive achievement of established rehabilitation

ELEMENT	UNIT	THIS REPORT
L Established rehabilitation - agricultural final land uses	%	68.52
M Established rehabilitation - native ecosystem final land uses	%	31.06
N Established rehabilitation - other/non-vegetated final land uses	%	0.13

Variation to the rehabilitation schedule

Identify the components of the most recent forward program that were not achieved

There were variations to the rehabilitation schedule for this reporting period. These variations related to the locations that were rehabilitated while still obtaining the KPI for the number of hectares to be rehabilitated this reporting period. The reasons for this variation include:

- More carbonaceous material than expected was identified in the CHPP and stockpile area that needed to be removed, which delayed the construction of the drop structures in this area. Reshaping and seeding of this area, along with the installation of the contour banks was completed.
- To complete a proposed area in the western side of Open Cut 1, access to the water fill point needed to be cut and as an alternative location wasn't available at the time, this work did not proceed.
- Dump designs were changed to optimise the schedule to keep access open through the middle of the operation for final dumping locations. This resulted in a proposed area in the south of Open Cut 1 not being able to be completed.
- To offset the proposed areas that couldn't be rehabilitated an area in the north-western area of Open Cut 1 was expedited and rehabilitated during the reporting period.

Key factors that delayed progressive rehabilitation

There were variations to the rehabilitation schedule for this reporting period. These variations related to the locations that were rehabilitated while still obtaining the KPI for the number of hectares to be rehabilitated this reporting period. The reasons for this variation include:

- More carbonaceous material than expected was identified in the CHPP and stockpile area that needed to be removed, which delayed the construction of the drop structures in this area. Reshaping and seeding of this area, along with the installation of the contour banks was completed.
- To complete a proposed area in the western side of Open Cut 1, access to the water fill point needed to be cut and as an alternative location wasn't available at the time, this work did not proceed.
- Dump designs were changed to optimise the schedule to keep access open through the middle of the operation for final dumping locations. This

resulted in a proposed area in the south of Open Cut 1 not being able to be completed. •

To offset the proposed areas that couldn't be rehabilitated an area in the north-western area of Open Cut 1 was expedited and rehabilitated during the reporting period. Corrective action was taken through the year to achieve the total number of hectares, with no further corrective action required. These changes will not affect future rehabilitation progression.

Outline actions that will be included in the forward program and carried out to minimise disturbance and undertake progressive rehabilitation as far as reasonably practical

A contract is in place with Thiess Rehabilitation to complete the bulk shaping and rehabilitation of Open Cut 1. Activities to be completed by Thiess Rehabilitation are included in the Forward Program. As mining has ceased, only small areas of disturbance are required to allow for final shaping and rehabilitation.

Rehabilitation monitoring and research findings

Rehabilitation monitoring

The rehabilitation monitoring carried out in the annual reporting period

Based on the results of the 2024 period, Rehabilitation woodland sites are performing well with species assemblages containing more than the minimum 25% of species being characteristic of the Vegetation Classes and Threatened Ecological Communities within the region. All sites also recorded native overstorey species that occur in Plant Community Types and associated Threatened Ecological Communities within the region and are in the recommended species in Table 12 of the RMP (MCC 2024). Based on the results of the 2024 period, Rehabilitation pasture sites are performing well. Overall, ground cover was good with all sites above the minimum >50% ground cover required. Rehabilitation is moving towards achieving the final land use as soon as reasonably practicable. The Rehabilitation Monitoring Report demonstrated that overall, the rehabilitation areas are performing well. When the results were compared to relevant completion criteria, three assessed items did not reach the target. These were the native overstorey and native ground cover levels at the woodland rehabilitation sites, and the weed cover at the pasture sites.

Status of performance against rehabilitation objectives and rehabilitation completion criteria

The monitoring program that has been implemented

Rehabilitation monitoring was undertaken during the reporting period in accordance with the requirements of the Rehabilitation Management Plan.

Are all rehabilitation areas in Landform Establishment phase or higher represented in the monitoring program to assess performance against the rehabilitation objectives and approved or, if not yet approved rehabilitation completion criteria and final landform and rehabilitation plan?

Yes

Year rehabilitation areas will be included as part of the monitoring program

An appraisal of whether rehabilitation is moving towards achieving the proposed rehabilitation objectives, approved or, if not yet approved, rehabilitation completion criteria and final landform and rehabilitation plan as soon as reasonably practicable.

The Rehabilitation Monitoring Report demonstrated that overall, the rehabilitation areas are performing well. When the results were compared to relevant completion criteria, three

assessed items did not reach the target. These were the native overstorey and native ground cover levels at the woodland rehabilitation sites, and the weed cover at the pasture sites. The Rehabilitation Monitoring Report identified that targeted weed management may be required to prevent degradation of rehabilitated areas. The Rehabilitation Monitoring Report also identified that rehabilitation woodland areas may require further intervention (weed control or overseeding with competitive native species) to decrease weed cover/exotic grass cover and increase native grass cover to allow them to reach the completion criterion benchmark for native groundcover.

Appraisal description

Rehabilitation is moving towards achieving the final land use as soon as reasonably practicable.

Rehabilitation monitoring program findings

The rehabilitation monitoring program undertaken this year aligns with the rehabilitation monitoring program included in the Rehabilitation Management Plan. All rehabilitation areas in the Ecosystem and Land Use Development phase are represented in the rehabilitation monitoring program to assess performance against the rehabilitation objectives, rehabilitation completion criteria and final landform and rehabilitation plan. • Woodland Summary

All of the Rehabilitation woodland areas met the required completion criteria targets for characteristic species assemblage, priority and HTE weed burden cover and evidence of characteristic species seedlings. • Rehabilitation woodland areas met two of the four components of the completion criteria targets for foliage cover being native midstorey and litter, however, native overstorey fell just below the 10th percentile variation range of the analogue woodland sites and native ground cover fell well below the 10th percentile variation range of the analogue woodland sites. Rehabilitation woodland areas may require further intervention (weed control or overseeding with competitive native species) to decrease weed cover/exotic grass cover and increase native grass cover to allow them to reach the completion criterion benchmark for native groundcover. • Monitoring confirms that multiple native fauna species including ground-dwelling mammals, woodland birds, microbats, and reptiles are utilising rehabilitation woodlands across the site and that various fauna habitats are available for use by these species. • Little significant active erosion occurring, no immediate action is required. • Pasture Summary • All of the Rehabilitation pasture areas met the required completion criteria targets for groundcover, herbage biomass, priority weed burden and pasture composition (pasture quality). •

Weed management is recommended to reduce the priority weed burden for Coolatai grass at rehabilitation pasture site RP4 and African Lovegrass at RP6. • Little significant active erosion occurring, no immediate action is required. • Rehabilitation is moving towards achieving the final land use as soon as reasonably practicable.

Performance issues and their causes including identification of any knowledge gaps that must be addressed

The Rehabilitation Monitoring Report identified that targeted weed management may be required to prevent degradation of rehabilitated areas. The Rehabilitation Monitoring Report also identified that rehabilitation woodland areas may require further intervention (weed control or overseeding with competitive native species) to decrease weed cover/exotic grass cover and increase native grass cover to allow them to reach the completion criterion benchmark for native groundcover.

Outcomes of rehabilitation research and trials

RRT NUMBER	PROJECT/TRIAL NAME	OBJECTIVE OF TRIAL/PROJECT	METHODOLOGY	EXPECTED DATE OF COMPLETION	STATUS	ON TRACK?
RRT0001039	Landform Evolution Modelling	To assess the long term erosional stability of the approved final landform.	An assessment using an industry accepted Landscape Evolution Model will be used to determine the long-term erosional behaviour of the site.	21 Feb 2024	Complete	Yes

Outcomes of completed trials and research

N/A

Attachment 1 – Reporting Definitions

REPORTING CATEGORY	DEFINITION
<p>A1 Total disturbance footprint – surface disturbance</p>	<p>All areas within a mining lease that either have at some point in time or continue to pose a rehabilitation liability due to surface disturbance activities.</p> <p>The total disturbance footprint is the sum of the total active disturbance, decommissioning, landform establishment, growth medium development, ecosystem and land use establishment, ecosystem and land use development and rehabilitation completion (see definitions below).</p> <p>Underground mining operations should not include the footprint of underground mining areas/subsidence management areas in the total disturbance footprint.</p>
<p>A2 Underground Mining Area</p>	<p>Underground mining operations areas/subsidence management areas.</p>
<p>B Total active disturbance</p>	<p>Includes on-lease exploration areas, stripped areas ahead of mining, infrastructure areas, water management infrastructure, sewage treatment facilities, topsoil stockpile areas, access tracks and haul roads, active mining areas, waste rock emplacements (active/unshaped/in or out-of-pit), tailings dams (active/unshaped/uncapped) and temporary stabilised areas (e.g. areas sown with temporary cover crops for dust mitigation and temporary rehabilitation).</p>
<p>C Rehabilitation – land preparation</p>	<p>Includes the sum of all disturbed land within a mining lease that have commenced any, or all, of the following phases of rehabilitation – decommissioning, landform establishment and growth medium development.</p> <p>Refer to the glossary of terms in this document for the definition of these phases of rehabilitation.</p>

REPORTING CATEGORY	DEFINITION
D Ecosystem and land use establishment	<p>Includes the area which has been seeded/planted with the target vegetation species for the intended final land use. However, vegetation has not matured to a stage where it can be demonstrated that it will be sustainable for the long term and or require only a maintenance regime consistent with target reference/analogue sites.</p> <p>Typically, rehabilitation areas would be in this phase for at least two years (and usually more) before rehabilitation can be classified as being in the ecosystem and land use development phase. This phase does not apply to infrastructure areas that are being retained as part of final land use for the site.</p>
E Ecosystem and Land Use Development	<p>Rehabilitation has matured to a level where target revegetation outcomes are on a trajectory towards meeting the final rehabilitation objectives and rehabilitation completion criteria (as verified by monitoring).</p> <p>This phase includes infrastructure areas that are to be retained for an approved post mining land use, following completion of all necessary measures to render the infrastructure fit for this purpose (for example structural integrity).</p>
F Rehabilitation Completion	<p>The NSW Resources Regulator has determined in writing that the mining area has achieved the approved rehabilitation objectives and approved rehabilitation completion criteria and final landform and rehabilitation plan following the submission of <i>Form: ESF2 Rehabilitation completion and/or review of rehabilitation cost estimate and/or notification of mine or petroleum site closure</i>.</p>
G New active disturbance area	<p>The area of any new active disturbance that has been created during the annual reporting period (definition A1 in Table 5).</p>
H New rehabilitation commenced during annual reporting period	<p>The sum of any new rehabilitation commenced in the annual reporting period. These areas may be in the rehabilitation land preparation phase or the ecosystem & land use establishment phase (definitions C and D in Table 5).</p>
I Established rehabilitation (hectares)	<p>The total area of land that is verified to be within either the ecosystem and land use development phase or the rehabilitation completion phase (definitions E & F in Table 5).</p>

REPORTING CATEGORY		DEFINITION
J	Annual rehabilitation to disturbance ratio	The rehabilitation to disturbance ratio (H/G) indicates how many hectares of new rehabilitation are undertaken for each hectare of land disturbed during the year. A ratio of 1/1 indicates that the area of new rehabilitation and disturbance in that year are the same.
K	% Rehabilitated land to total mine footprint	The proportion of the total mine footprint (area of land that has been disturbed by past or present surface disturbance activities) that has established rehabilitation ($I/A1 \times 100$). For open cut mining, the proportion of the total mine footprint verified to be “established rehabilitation” should substantially increase as an operation progresses towards mine closure.
L	Established rehabilitation for agricultural final land uses (hectares)	The percentage of total area of land that is verified to be within either the ecosystem and land use development phase or the rehabilitation completion phase (definitions E & F in Table 5) that have been returned to an agricultural final land use.
M	Established rehabilitation for native ecosystem final land uses (hectares)	The percentage of total area of land that is verified to be within either the ecosystem and land use development phase or rehabilitation completion phase (definitions E & F in Table 5) that have been returned to native ecosystem final land use.
N	Established rehabilitation for other/non-vegetated final land uses (hectares)	The percentage of total area of land that is verified to be within either the ecosystem and land use development phase or the rehabilitation completion phase (definitions E & F in Table 5) that have been returned to other/non-vegetated final land use.

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	<p>An area that has been disturbed and that requires rehabilitation.</p> <p>This may include areas such as on-licence exploration areas, stripped areas ahead of mining, infrastructure areas, water management infrastructure, sewage treatment facilities, topsoil stockpile areas, access tracks and haul roads, active mining areas, waste emplacements (active/unshaped/in or out-of-pit), tailings dams (active/unshaped/uncapped), and areas requiring rehabilitation that are temporarily stabilised (i.e. managed to minimise dust generation and/or erosion).</p>
Domain	<p>An area (or areas) of the land that has been disturbed by mining and has a specific operational use (mining domain) or specific final land use (final land use domain). Land within a domain typically has similar geochemical and/or geophysical characteristics and therefore requires specific rehabilitation activities to achieve the associated final land use.</p>
Ecosystem and Land Use Development	<p>This phase of rehabilitation consists of the activities to manage maturing rehabilitation areas on a trajectory to achieving the approved rehabilitation objectives and completion criteria.</p> <p>For vegetated land uses this phase may include processes to develop characteristics of functional self-sustaining ecosystems, such as nutrient recycling, vegetation flowering and reproduction, and increasing habitat complexity, and development of a productive, self-sustaining soil profile.</p> <p>This phase of rehabilitation may include specific vegetation management strategies and maintenance such as tree thinning, supplementary plantings and weed management.</p>
Ecosystem and Land Use Establishment	<p>This phase of rehabilitation consists of the processes to establish the approved final land use following construction of the final landform.</p> <p>For vegetated land uses this rehabilitation phase includes establishing the desired vegetation community and implementing land management activities such as weed control. This phase of rehabilitation may also include habitat augmentation such as installation of nest boxes.</p>
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	<p>This phase of rehabilitation consists of activities required to establish the physical, chemical and biological components of the substrate required to establish the desired vegetation community (including short lived pioneer species).</p> <p>This phase may include spreading the prepared landform with topsoil and/or subsoil and/or soil substitutes, applying soil ameliorants to enhance the physical, chemical and biological characteristics of the growth media, and actions to minimise loss of growth media due to erosion.</p>
Habitat	Has the same meaning as that term under the <i>Biodiversity Conservation Act 2016</i> and the <i>Fisheries Management Act 1994</i> (as relevant).
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 <i>Mining Act 1992</i> .
Landform Establishment	<p>This phase of rehabilitation consists of the processes and activities required to construct the final landform.</p> <p>In addition to profiling the surface of rehabilitation areas to the approved final landform profile this phase may include works to construct surface water drainage features, encapsulate problematic materials such as tailings, and prepare a substrate with the desired physical and chemical characteristics (e.g. rock raking or ameliorating sodic materials).</p>
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	<p>Means the NSW Resources Regulator’s online portal that lease holders must use (via a registered account) to:</p> <ul style="list-style-type: none"> ■ 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. <p>Data submitted to the mine rehabilitation portal is collated in a centralised geodatabase for use by the NSW Resources Regulator to regulate rehabilitation performance of lease holders.</p>
Mining area	As defined in the <i>Mining Act 1992</i> .
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 <i>Mining Act 1992</i> .
Native vegetation	Has the same meaning as that term under section 60B of the <i>Local Land Services Act 2013</i> .
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: <ul style="list-style-type: none"> ■ 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 <i>Form ESF2 Rehabilitation completion and/or review of rehabilitation cost estimate</i> 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	<p>Means any persons or bodies who may be affected by the mining operations, including rehabilitation, carried out on the lease land, and includes:</p> <ul style="list-style-type: none"> ■ 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 <i>Protection of the Environment Operations Act 1997</i> .

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

Attachment 3 – Rehabilitation Complaints

DATE	COMPLAINANT	COMPLAINT DETAILS	RESPONSE DETAILS	STATUS OF RESPONSE	DATE RESPONSE COMPLETED (IF APPLICABLE)
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Attachment 4 – Stakeholder consultation

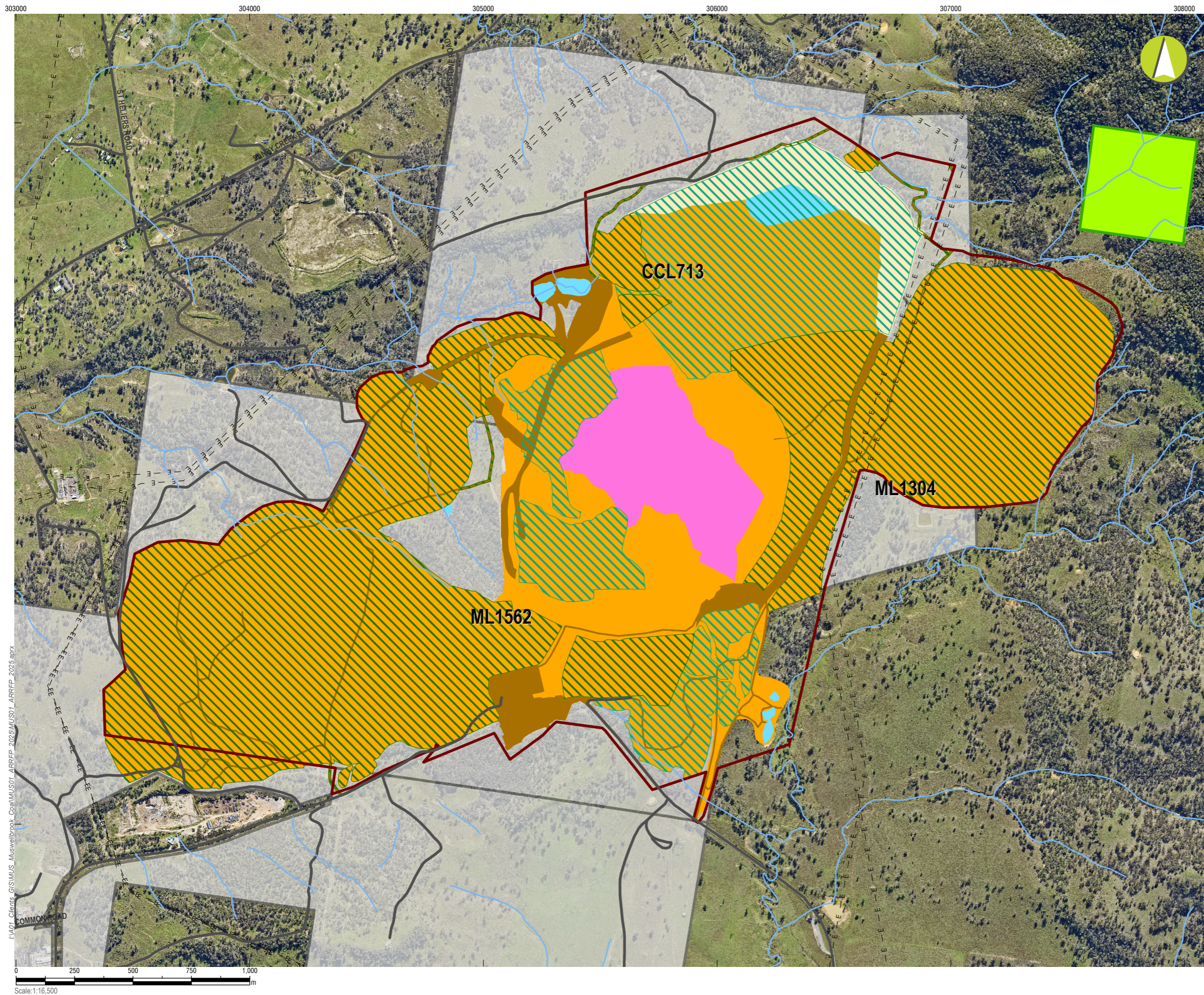
DATE	STAKEHOLDER	CONSULTATION ACTIVITIES AND FORMS	MATTERS SUBJECT TO CONSULTATION	ACTIONS TAKEN
1 May 2024	General Community	Newsletter	Update on rehabilitation and mine closure activities included in newsletter.	No action required.
4 Jun 2024	Community Consultative Committee	Meeting	Update on rehabilitation and mine closure activities included in general presentation.	General discussion during the meeting. No action required.
3 Dec 2024	Community Consultative Committee	Meeting	Update on rehabilitation and mine closure activities included in general presentation.	General discussion during the meeting. No action required.

Attachment 5 – Plans

MUS01_ARRFP_Plan1A_CurrentStatusMining2024.pdf

MUS01_ARRFP_Plan1B_CurrentLFContours2024.pdf

Annual Report (LARGE MINE) v1.6



LEGEND

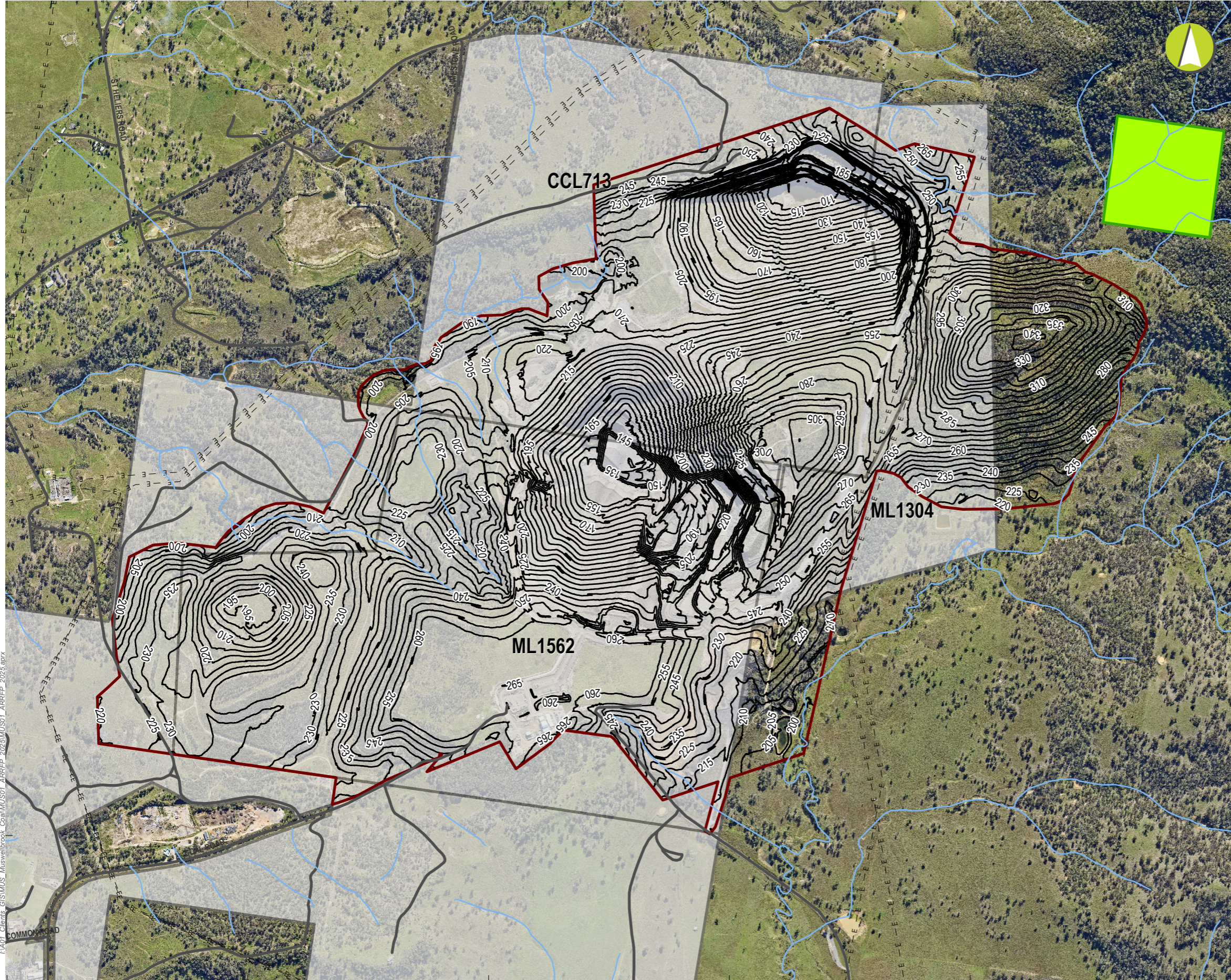
- Project Approval Boundary DA 205/2002
- Road
- Waterways
- Electricity Transmission Line
- Biodiversity Offset Area
- Current Authorisations**
- Coal - Current Titles
- Rehabilitation Phase**
- Ecosystem and Land Use Establishment
- Ecosystem and Land Use Development
- Mining Domain Type**
- Domain 1: Infrastructure Area
- Domain 3: Water Management Area
- Domain 4: Overburden Placement Area
- Domain 5: Active Mining Area (Open cut void)
- Domain 8: Other

Muswellbrook Coal

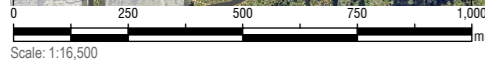
Current Status of Mining and Rehabilitation Plan

PLAN 1A	
Mine name	Muswellbrook Coal
Plan name	Muswellbrook Coal ARR
Year of anticipated relinquishment	2050
Data theme submission ID No.	TBD
Spatial Reference	GDA 1994 MGA Zone 56
Plan date (date created)	20/02/2025

303000 304000 305000 306000 307000 308000



- LEGEND**
- Project Approval Boundary DA 205/2002
 - Current Landform Contours (5m)
 - Road
 - Waterways
 - Electricity Transmission Line
 - Biodiversity Offset Area
- Current Authorisations**
- Coal - Current Titles



Muswellbrook Coal

Current Landform Contours

PLAN 1B

Mine name	Muswellbrook Coal
Plan name	Muswellbrook Coal ARR 2022
Year of anticipated relinquishment	2050
Data theme submission ID No.	TBD
Spatial Reference	GDA 1994 MGA Zone 56
Plan date (date created)	20/02/2025