



**NSW
Resources
Regulator**

ARR0001110

AUSTAR COAL MINE ANNUAL REHABILITATION REPORT

Friday 1 July 2022 to Friday 30 June 2023

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Summary table

DETAIL	
Mine	Austar Coal Mine
Reference	ARR0001110
Annual report period commencement date	Friday 1 July 2022
Annual report period end date	Friday 30 June 2023
Forward program	FWP0001025
Mining leases	ML 1345 (1992), ML 1677 (1992), ML 1283 (1906), ML 1157 (1906), ML 1666 (1992), MPL 23 (1906), MPL 204 (1906), DSL 89 (1901), MPL 233 (1906), MPL 1364 (1906), ML 1851 (1992), ML 1661 (1992), MPL 269 (1906), CCL 752 (1973), ML 1550 (1992), MPL 217 (1906), CML 2 (1992), CCL 728 (1973), ML 1388 (1992)
Lease holder(s)	Austar Coal Mine Pty Limited
Contact	Carly McCormack
Date of submission	Friday 29 September 2023

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

Austar Coal Mine Pty Limited (Austar), a subsidiary of Yancoal Australia Limited (Yancoal), operates the Austar Coal Mine, an underground coal mine located approximately 10 kilometres (km) southwest of Cessnock in the Lower Hunter Valley in NSW. Austar Coal Mine incorporates the former Pelton, Ellalong, Cessnock No. 1 (Kalingo) and Bellbird South Collieries and includes coal extraction, handling, processing and rail and road transport facilities. Pit top facilities are located on Middle Road, Paxton, and the Coal Handling and Preparation Plant (CHPP) is located at Wollombi Road, Pelton.

On 26 February 2021, a decision was made by the Yancoal board to transition the Austar Coal Mine from care and maintenance to closure. Austar is currently in the closure planning stage with investigations and studies being undertaken to inform the closure process.

Life of mine

0 years

Current development consents, leases and licences

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

DA29/95
DA29/95
DA29/95
DA29/95
PA 08_0111
PA 08_0111
DA29/95
DA29/95
DA29/95
DA29/95
PA 08_0111
DA29/95
DA29/95
DA29/95
PA 08_0111
PA 08_0111

DA29/95
DA29/95
DA29/95
PA 08_0111
PA 08_0111
DA29/95

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

ML 1345 (1992), ML 1677 (1992), ML 1283 (1906), ML 1157 (1906), ML 1666 (1992), MPL 23 (1906), MPL 204 (1906), DSL 89 (1901), MPL 233 (1906), MPL 1364 (1906), ML 1851 (1992), ML 1661 (1992), MPL 269 (1906), CCL 752 (1973), ML 1550 (1992), MPL 217 (1906), CML 2 (1992), CCL 728 (1973), ML 1388 (1992)

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

WAL 19181
Numerous Cessnock City Council DA's
Environment Protection Licence (EPL) 416
WAL 41504

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

On 1 June 2023, Yancoal were advised that ML1851 was granted over the area of MLA 521. ML1851 covers the water management dams at the Austar Coal Handling and Preparation Plant.

Changes to land ownership and land use

No changes during reporting period

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

Limited surface disturbance or rehabilitation activities were undertaken during the reporting period. The mine was partially sealed (backfilling of shafts still to occur) on 11 October 2022 and ventilation of the underground has ceased. Decommissioning and equipment recovery activities continue in preparation for demolition.

This is generally consistent with the previous FP and RMP which states that Austar is currently at the PFS stage of mine closure, undertaking technical studies and site investigations to address closure knowledge gaps, as described below.

Rehabilitation planning activities that were conducted, including any specialist studies

The following specialist studies have been undertaken during the reporting period to inform future mine rehabilitation and closure activities. The timing of these studies was generally in accordance with the site RMP and previous FP schedule. The outcomes of the studies will inform the detailed mine closure plan and RMP as the site progresses to the feasibility stage of closure.

- groundwater
- surface water
- contamination
- geochemical and materials assessment
- geotechnical assessment
- waste management strategy
- historic heritage assessment
- subsidence and land stability
- capping strategy
- revegetation strategy
- final land use options assessment study
- landform design trade-off study
- surface infrastructure study
- decommissioning plan

- hazardous materials study and
- demolition study.

Overview of subsidence repair and/or remediation works undertaken

Due to wetter than average conditions over 2021, 2022 and in the first half of the reporting period, sinkholes developed in historic shallow mine workings in CML 2, east of Wollombi Road at Bellbird and West Cessnock. Subsidence Advisory NSW were notified, with the area subsequently fenced and repairs commenced. Repair works are ongoing and have been hampered by sections of temporary fencing being stolen on several occasions.

Overview of rehabilitation management and maintenance activities

The primary rehabilitation maintenance activities undertaken during the reporting period were:

- Ongoing weed management of the rehabilitation areas at Aberdare Extended Emplacement Area (EEA), Bellbird Areas 12 and 13 and the Cessnock No.1 Colliery/Kalingo Infrastructure Area.
- General weed management across the Mining Lease areas, as identified in the site Weed Action Plan and annual weed report. In addition to the rehabilitation areas, weed management activities focused on areas previously disturbed by historic clearing, site works, or in areas adjacent to roadsides or in riparian zones. During the reporting period approximately 73 hectares of weeds were treated including:
 - o Acacia saligna
 - o Blackberry (Rubus Fruticosus)
 - o Camphor Laurel (Cinnamomum camphora)
 - o Coolatai Grass (Hyparrhenia hirta)
 - o Green Cestrum (Cestrum parquai)
 - o Lantana (Lantana sp.)
 - o Mother of Millions (Bryophyllum sp.)
 - o Pampas Grass (Cortaderia sp.)
 - o Privet (Ligustrum sp.)
 - o Tobacco Bush (Solanum Mauritianum); and
 - o General seasonal weeds

- Installation of additional concrete barriers to prevent trespasser access to the Bellbird Areas 12 and 13, Aberdare EEA, Kalingo Infrastructure Area and multiple access track entry points across the Mining Lease.
- Ongoing fencing repairs due to trespasser damage
- Slashing of grassland rehabilitation areas
- Clean-up and removal of rubbish dumped on site
- Annual rehabilitation ecological monitoring

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

No notices or directions received from NSW Resources Regulator during the period.

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

Not applicable during the reporting period.

Key production milestones

MATERIAL	UNIT	FWP0001025 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)	210.28
B Total active disturbance	(ha)	154.31
C Land prepared for rehabilitation	(ha)	18.21
D Ecosystem and land use establishment	(ha)	37.76
E Ecosystem and land use development	(ha)	0
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)	0
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	%	0

Progressive achievement of established rehabilitation

ELEMENT	UNIT	THIS REPORT
L Established rehabilitation - agricultural final land uses	%	0
M Established rehabilitation - native ecosystem final land uses	%	0
N Established rehabilitation - other/non-vegetated final land uses	%	0

Variation to the rehabilitation schedule

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

Not applicable. Activities undertaken during the reporting period were consistent with the most recent forward plan.

Key factors that delayed progressive rehabilitation

Not applicable.

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

Future disturbance and rehabilitation will be undertaken in accordance with the Detailed Mine Closure Plan (once developed) and the Rehabilitation Management Plan.

Rehabilitation monitoring and research findings

Rehabilitation monitoring

The rehabilitation monitoring carried out in the annual reporting period

The monitoring report concluded that the key to progression for each of the rehabilitation areas will be the ongoing suppression of weed cover, however that this will vary depending upon final land use targets.

The report noted that previous weed control works appear to have been undertaken with high levels of success, however that this work is needed on an ongoing basis. Several weed species were identified for priority control, particularly some exotic perennial grasses that are not regarded as pasture appropriate species.

All sites had signs of human access and/or interference such as rubbish, star picket removal and motor bike tracks. These have potential to be damaging to rehabilitating vegetation due to crushing of regenerating plants, potential for ignition/spread of bushfire, and potential to spread or introduce further weed species.

It was observed that the Kalingo area is comparatively less subject to human disturbance than Bellbird Areas 12 and 13 and the Aberdare REA.

It was noted that due to ongoing preferable weather conditions the diversity and vegetative cover have generally increased since baseline monitoring commenced. This has reduced the exposed/bare earth and therefore erosion potential. Conditions have also favoured weed growth, with a few species dominating and likely out-competing more preferential species.

Status of performance against rehabilitation objectives and rehabilitation completion criteria

The monitoring program that has been implemented

Tabulated results of the monitoring for each rehabilitation area have been provided by the monitoring consultant and compared to Performance Criteria for the Ecosystem and Land use Establishment and Sustainability phases and the trigger action response plan (TARP) from the RMP.

Based on the monitoring results, all areas of rehabilitation are still considered to be in the Ecosystem and Land Use Establishment Phase. The major findings are lack of appropriate species for the targeted vegetation community and the current level of weed presence.

Performance criteria and monitoring requirements and final land use vegetation types for the site are being reviewed and refined as part of the detailed mine closure planning work currently being undertaken.

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?

0

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

2024

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.

Based on the comparison against current performance criteria, it was concluded by the ecological monitoring consultants that the rehabilitation areas are progressing towards the Ecosystem and Land Use Sustainability Phase.

Based on the comparison of monitoring results against the RMP TARP, recommended actions with respect to remediation of dirt bike paths and weed management were provided.

Rehabilitation Objectives for the site have been approved by the Resources Regulator. The site is moving towards the approved rehabilitation objectives in current rehabilitation maintenance and planning. The current completion criteria will be further refined during detailed mine closure planning, with proposed final completion criteria and an updated final landform and rehabilitation plan submitted to the Resources Regulator for consultation and approval following completion of the detailed mine closure plan.

Appraisal description

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

Rehabilitation monitoring program findings

Annual rehabilitation monitoring was undertaken across all existing Austar rehabilitation areas and associated reference sites during May 2023. Methodologies were consistent with those outlined in the Austar RMP and included:

Walkover inspections comprising a traverse of the rehabilitated areas with the following documented:

- General assessment of the health of the rehabilitated vegetation
- Visual assessment of vegetation cover, species diversity and stage of growth
- Identification of weeds and pests including density of infestation and observable impacts on rehabilitation
- Evidence of erosion (rill, gully and tunnel)

- Stability and functioning of any erosion and sediment control and water management structures
- Evidence of unauthorised access to the rehabilitated areas and
- Evidence of use of rehabilitation area by native fauna species.

Grassland monitoring comprised 5m x 5m plots assessing percentages of vegetation, weeds, canopy vegetation, documentation of flora species, their cover and abundance, and photo monitoring.

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

Outcomes of rehabilitation research and trials

RRT NUMBER	PROJECT/TRIAL NAME	OBJECTIVE OF TRIAL/PROJECT	METHODOLOGY	EXPECTED DATE OF COMPLETION	UPDATED DATE OF COMPLETION	STATUS	ON TRACK?	ON TRACK UPDATE
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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
<p>D Ecosystem and land use establishment</p>	<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>
<p>E Ecosystem and Land Use Development</p>	<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>
<p>F Rehabilitation Completion</p>	<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>
<p>G New active disturbance area</p>	<p>The area of any new active disturbance that has been created during the annual reporting period (definition A1 in Table 5).</p>
<p>H New rehabilitation commenced during annual reporting period</p>	<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>
<p>I Established rehabilitation (hectares)</p>	<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
<p>J Annual rehabilitation to disturbance ratio</p>	<p>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.</p>
<p>K % Rehabilitated land to total mine footprint</p>	<p>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.</p>
<p>L Established rehabilitation for agricultural final land uses (hectares)</p>	<p>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.</p>
<p>M Established rehabilitation for native ecosystem final land uses (hectares)</p>	<p>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.</p>
<p>N Established rehabilitation for other/non-vegetated final land uses (hectares)</p>	<p>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.</p>

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	Means any persons or bodies who may be affected by the mining operations, including rehabilitation, carried out on the lease land, and includes: <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
21 Sep 2022	Community Consultative Committee	CCC meeting	<p>Discussion regarding progress of early works activities including decommissioning and removal of redundant mining equipment, partial/temporary mine sealing to minimise ongoing mine maintenance requirements prior to permanent sealing, decommissioning of redundant, non-heritage mining infrastructure at the Pit Top and CHPP.</p> <p>Discussion on results and recommendations of rehabilitation monitoring completed in Q2 of 2022.</p> <p>Presentation on mine closure planning progress update.</p>	Meeting minutes kept and any actions documented.
7 Dec 2022	NSW EPA, NSW Resources Regulator, DPE, Crown Lands	Mine closure progress update meeting	Austar provided updates on closure project early works, Pre- Feasibility Study (PFS) site investigations, stakeholder engagement, key technical studies – including final land use options assessment, historic heritage, groundwater, contamination, geotechnical assessment, landform and capping materials, surface water, mine sealing, demolition and HAZMAT, landform stability and mine subsidence.	Meeting minutes kept and any actions documented.
14 Jun 2023	NSW EPA, NSW Resources Regulator, DPE, Crown Lands	Mine closure update meeting	Agency update meeting covering closure progress including early works, preliminary study milestones achieved, progress against Forward Program, stakeholder engagement, site investigations and key technical studies update.	Meeting minutes kept and actions documented.
16 Feb 2023	NSW Resources Regulator and Crown Lands	Site inspection and meeting	Site inspection to introduce Crown Lands to the Austar Coal Mine site and carry out inspection of the parts of the site within Crown Lands ownership. On departure of	Meeting minutes kept and any actions documented.

AUSTAR COAL MINE ANNUAL REHABILITATION REPORT

ARR0001110 | Friday 1 July 2022 to Friday 30 June 2023

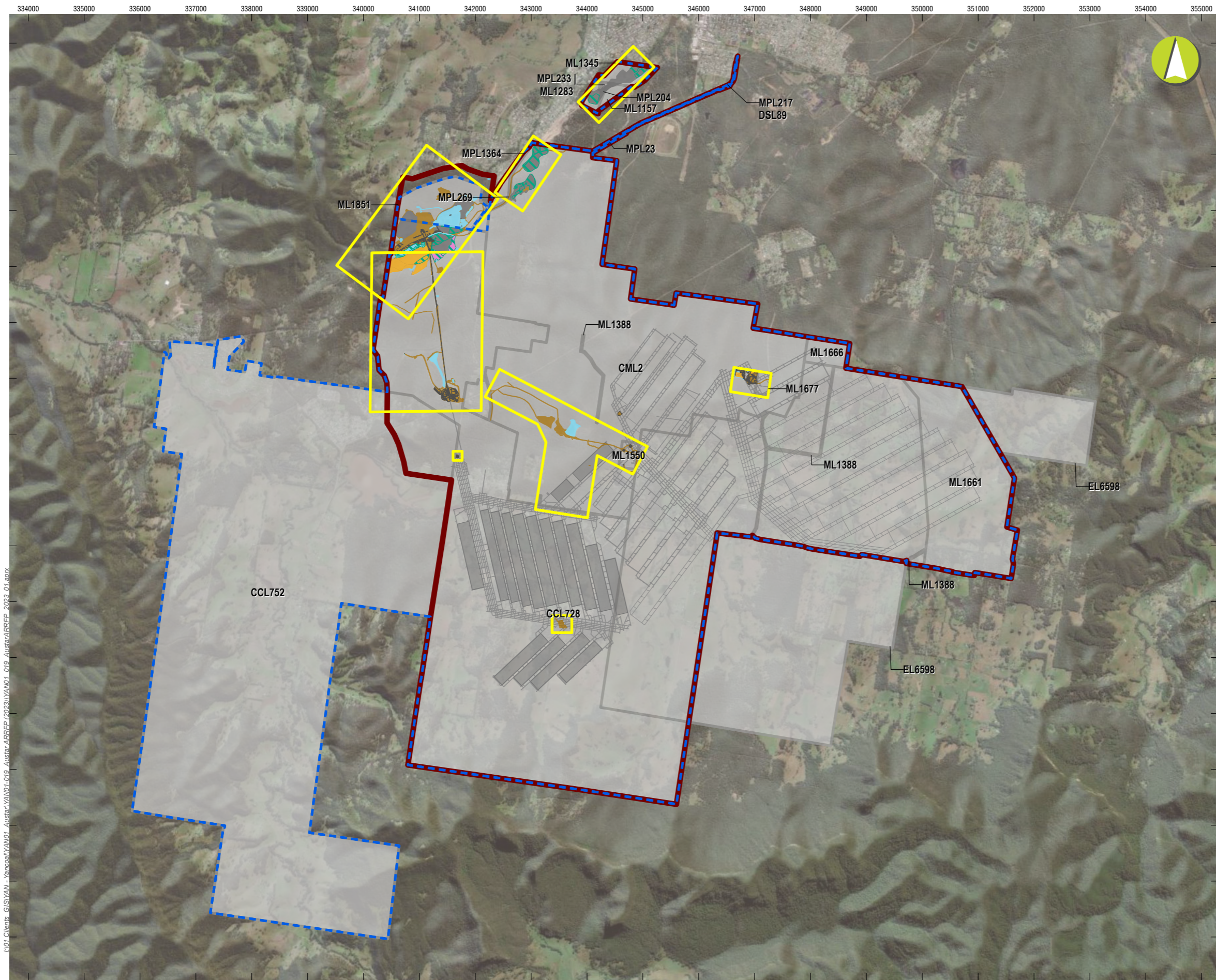
DATE	STAKEHOLDER	CONSULTATION ACTIVITIES AND FORMS	MATTERS SUBJECT TO CONSULTATION	ACTIONS TAKEN
			Crown Lands personnel, Resources Regulator inspected the remainder of the surface leases, except Kitchener SIS (due to time constraints).	
15 Mar 2023	NSW Resources Regulator	Mine closure update meeting	Agency update meeting covering progress on knowledge gap assessments, site investigations, stakeholder consultation, decommissioning activities, revegetation strategy and technical studies.	Meeting minutes kept and any actions documented.
29 Sep 2022	NSW Resources Regulator	Mine closure planning update meeting	Mine closure planning update. Discussions on stakeholder engagement activities, site investigations updates, surface works decommissioning, mine sealing activities, demolition planning, final land use options assessment, historic heritage, groundwater, contamination, geochemical assessment, landform and capping materials assessment, surface water, mine sealing, demolition and HAZMAT, landform stability and subsidence, Rehabilitation Management Plan and Forward Plan updates.	Meeting minutes kept and any actions documented.
22 Mar 2023	Community Consultative Committee	CCC meeting	Discussion regarding progress of early works activities including partial mine sealing and specialist studies, conceptual final landform design, submission of Rehabilitation Objectives Statement, Final Landform and Rehabilitation Plan, Forward Program and Rehabilitation Management Plan. Presentation on mine closure planning progress update.	Meeting minutes kept and any actions documented.

Attachment 5 – Plans

YAN01_019_ARRFP_Plan1A_CurrentStatusMining_01.zip

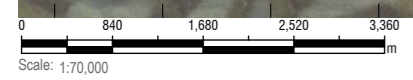
YAN01_019_ARRFP_Plan1B_CurrentLandformContours_01.pdf

Annual Report (LARGE MINE) v1.6



- LEGEND**
- Project Approval Boundary
 - Colliery Holding Boundary
 - Austar Mine Plan
 - Historic Workings
 - Inset Boundaries (see detailed figures)
- Current Authorisations**
- Coal - Current Titles
- Mining Domain Type**
- Domain 1: Infrastructure Area
 - Domain 2: Tailings Storage Facility
 - Domain 3: Water Management Area
 - Domain 4: Overburden Emplacement Area
 - Domain 5: Active Mining Area (Open cut void)
- Rehabilitation Phase**
- Decommissioning
 - Ecosystem and Land Use Establishment

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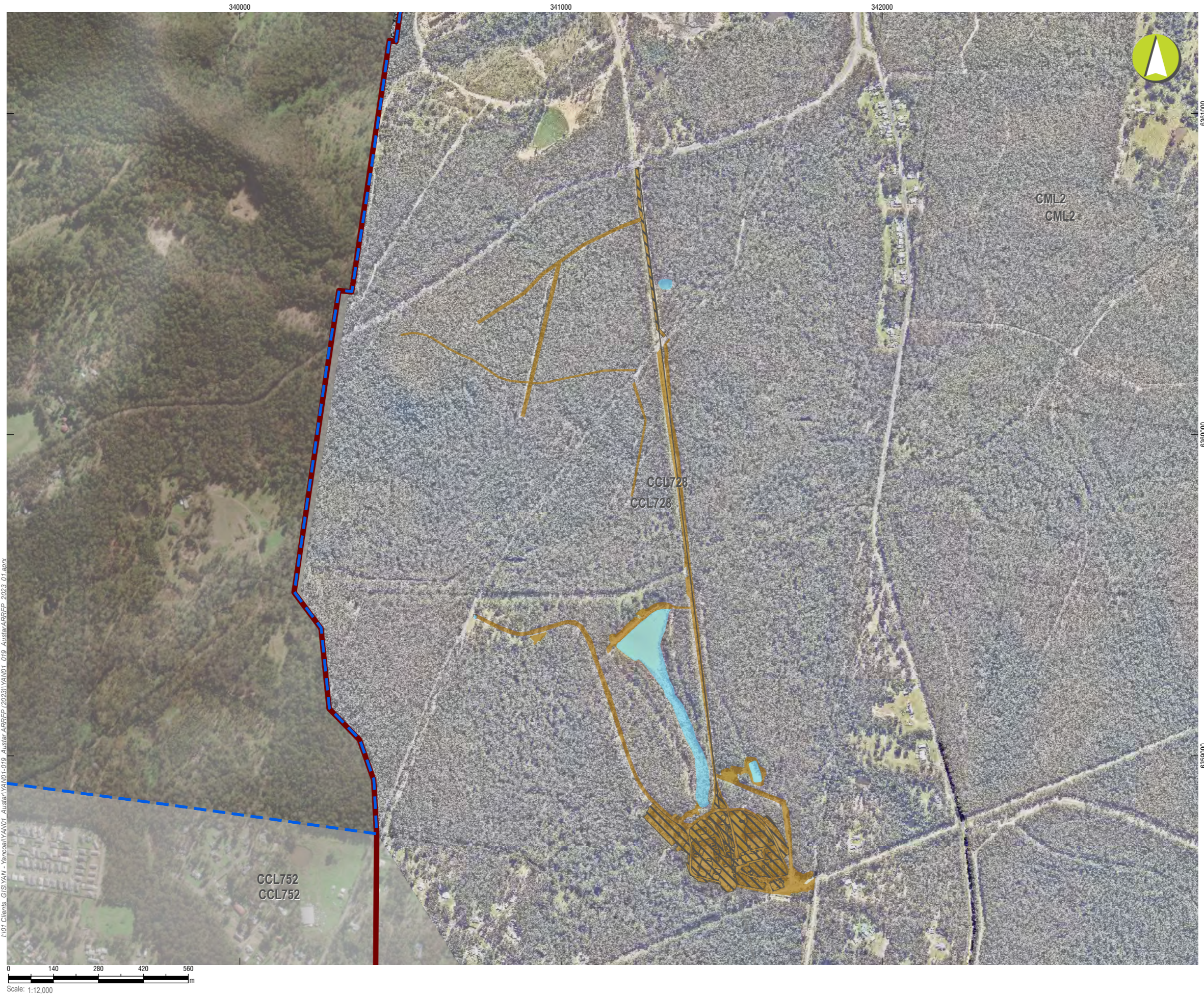


Austar Coal ARRFP 2023







Current Status of Mining and Rehabilitation

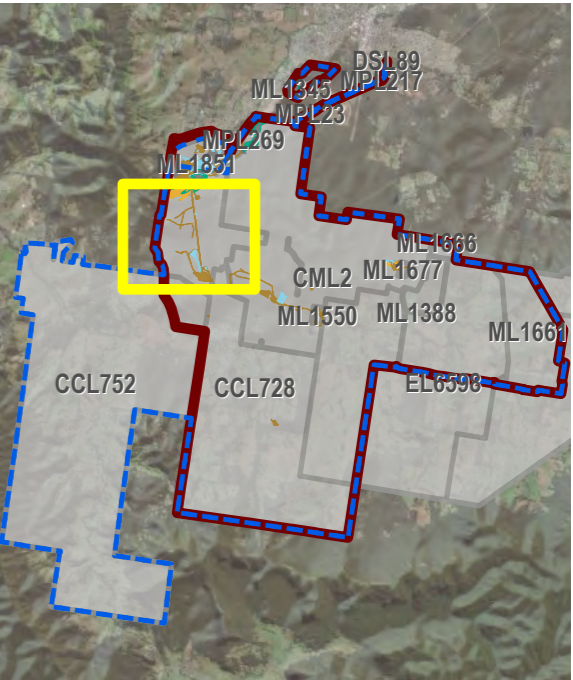
PLAN 1A

Mine name	Austar Coal Mine
Plan name	
Year of anticipated relinquishment	TBA on final submission
Data theme submission ID No.	2133 2258
Spatial Reference	GDA2020 MGA Zone 56
Plan date (date created)	25/09/2023



LEGEND

-  Project Approval Boundary
-  Colliery Holding Boundary
-  Austar Mine Plan
- Current Authorisations**
-  Coal - Current Titles
- Mining Domain Type**
-  Domain 1: Infrastructure Area
-  Domain 3: Water Management Area
- Rehabilitation Phase**
-  Decommissioning



Austar Coal ARRF 2023

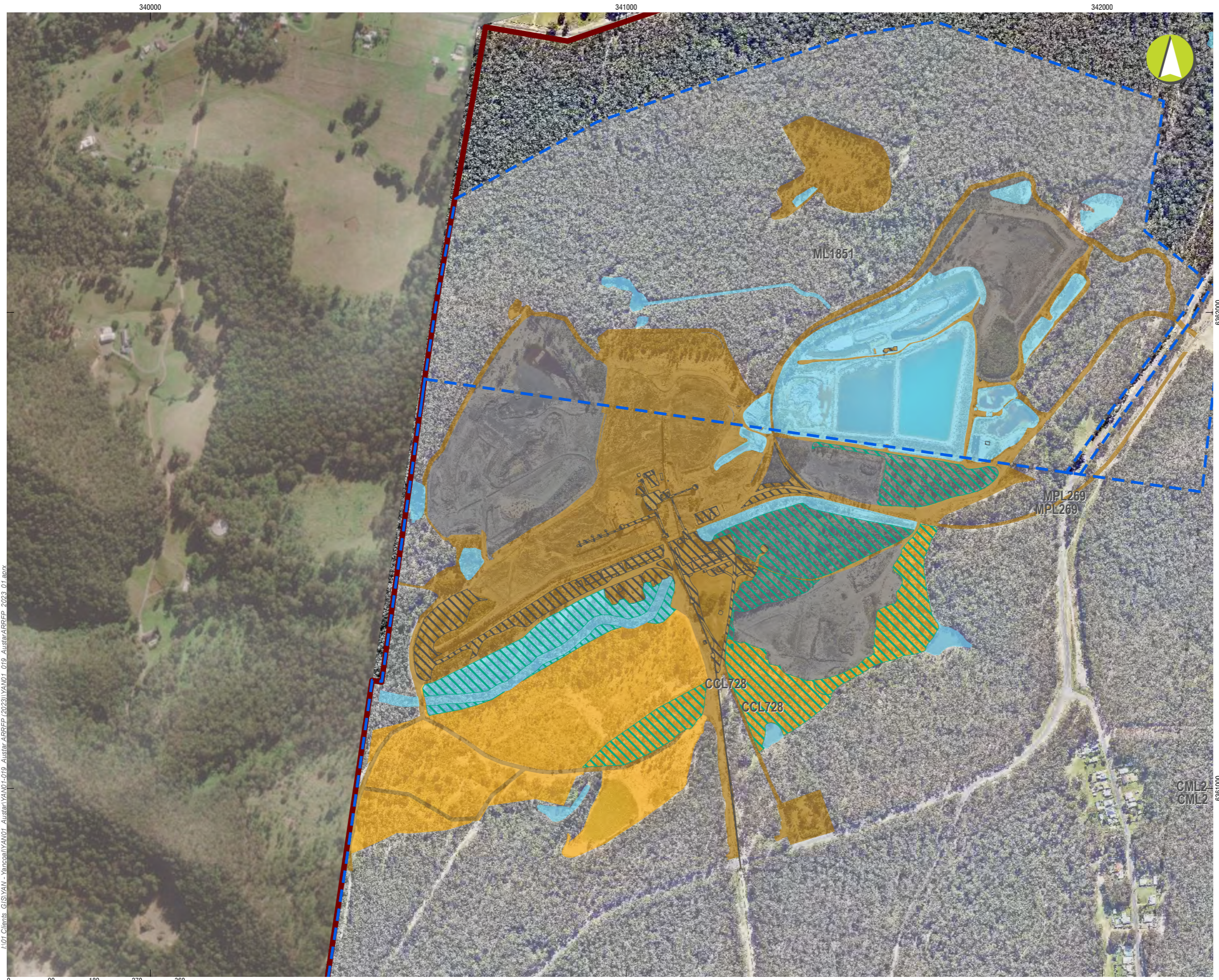
CMA 1 - Austar Pit Top Facilities

Current Status of Mining and Rehabilitation










PLAN 1A

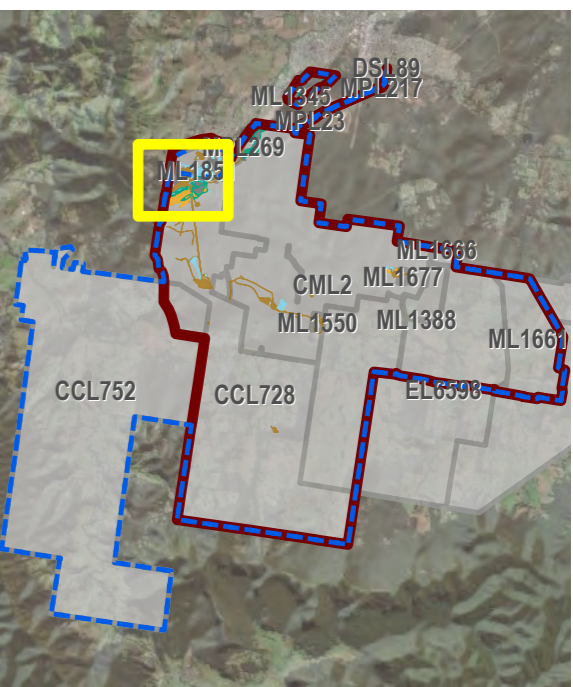
Mine name	Austar Coal Mine
Plan name	
Year of anticipated relinquishment	TBA on final submission
Data theme submission ID No.	xxxx xxxx
Spatial Reference	GDA2020 MGA Zone 56
Plan date (date created)	26/09/2023

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LEGEND

-  Project Approval Boundary
-  Colliery Holding Boundary
- Current Authorisations**
-  Coal - Current Titles
- Mining Domain Type**
-  Domain 1: Infrastructure Area
-  Domain 2: Tailings Storage Facility
-  Domain 3: Water Management Area
-  Domain 4: Overburden Emplacement Area
- Rehabilitation Phase**
-  Decommissioning
-  Ecosystem and Land Use Establishment



Austar Coal ARRF 2023

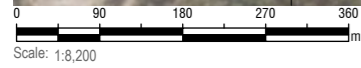
CMA 2 - Pelton CHPP - Inset 1

Current Status of Mining and Rehabilitation

PLAN 1A






Mine name	Austar Coal Mine
Plan name	
Year of anticipated relinquishment	TBA on final submission
Data theme submission ID No.	xxxx xxxx
Spatial Reference	GDA2020 MGA Zone 56
Plan date (date created)	26/09/2023

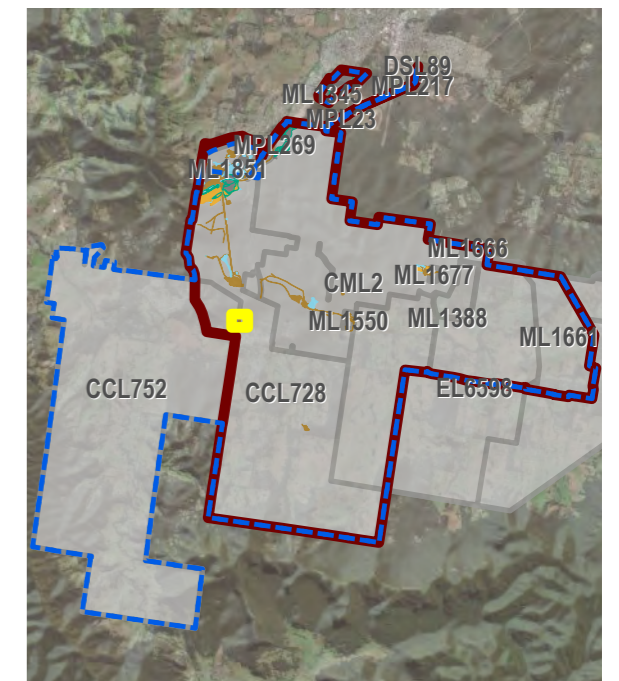
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LEGEND

-  Project Approval Boundary
-  Colliery Holding Boundary
-  Austar Mine Plan
- Current Authorisations**
-  Coal - Current Titles
- Mining Domain Type**
-  Domain 1: Infrastructure Area

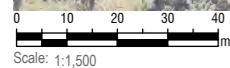


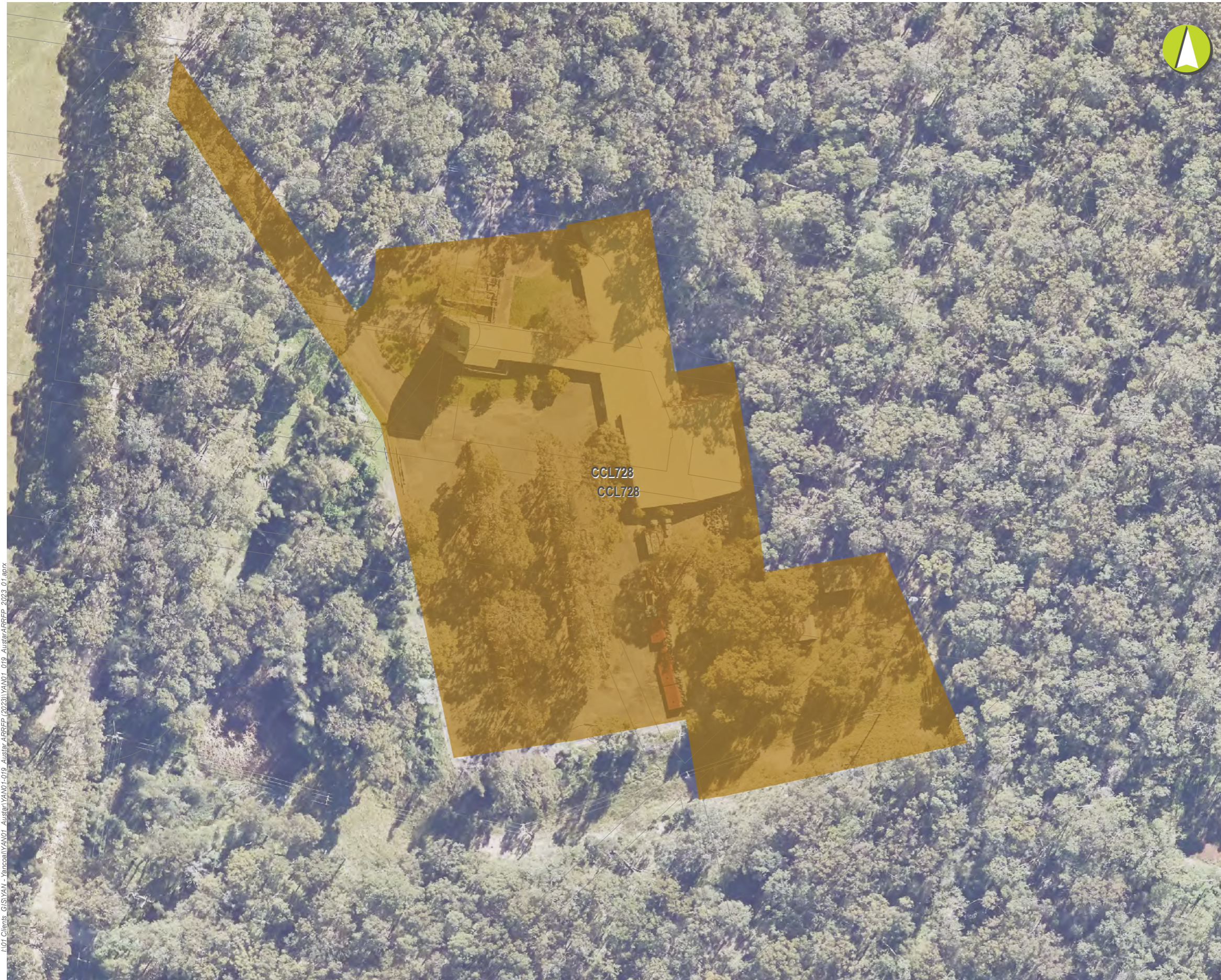
Austar Coal ARRF 2023
CMA 3 - No.1 Shaft - Inset

Current Status of Mining and Rehabilitation

PLAN 1A	
Mine name	Austar Coal Mine
Plan name	
Year of anticipated relinquishment	TBA on final submission
Data theme submission ID No.	xxxx xxxx
Spatial Reference	GDA2020 MGA Zone 56
Plan date (date created)	26/09/2023

LOT Clients: GIS\YAIN - Yainco\YAIN01-019 - Austar\ARRFP (2023)\YAIN01_019 - Austar\ARRFP_2023_01.mxd



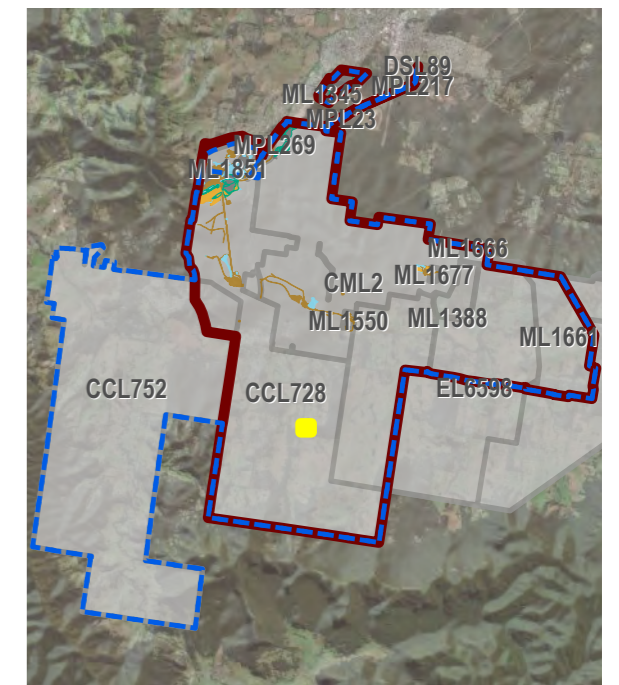


IEMA Clients: GIS/VAI - Yarco/VAI/01 - Auster ARRFP (2023) \VAI\01_019_Auster ARRFP_2023_01.aprx



LEGEND

- Project Approval Boundary
- Colliery Holding Boundary
- Auster Mine Plan
- Current Authorisations**
- Coal - Current Titles
- Mining Domain Type**
- Domain 1: Infrastructure Area



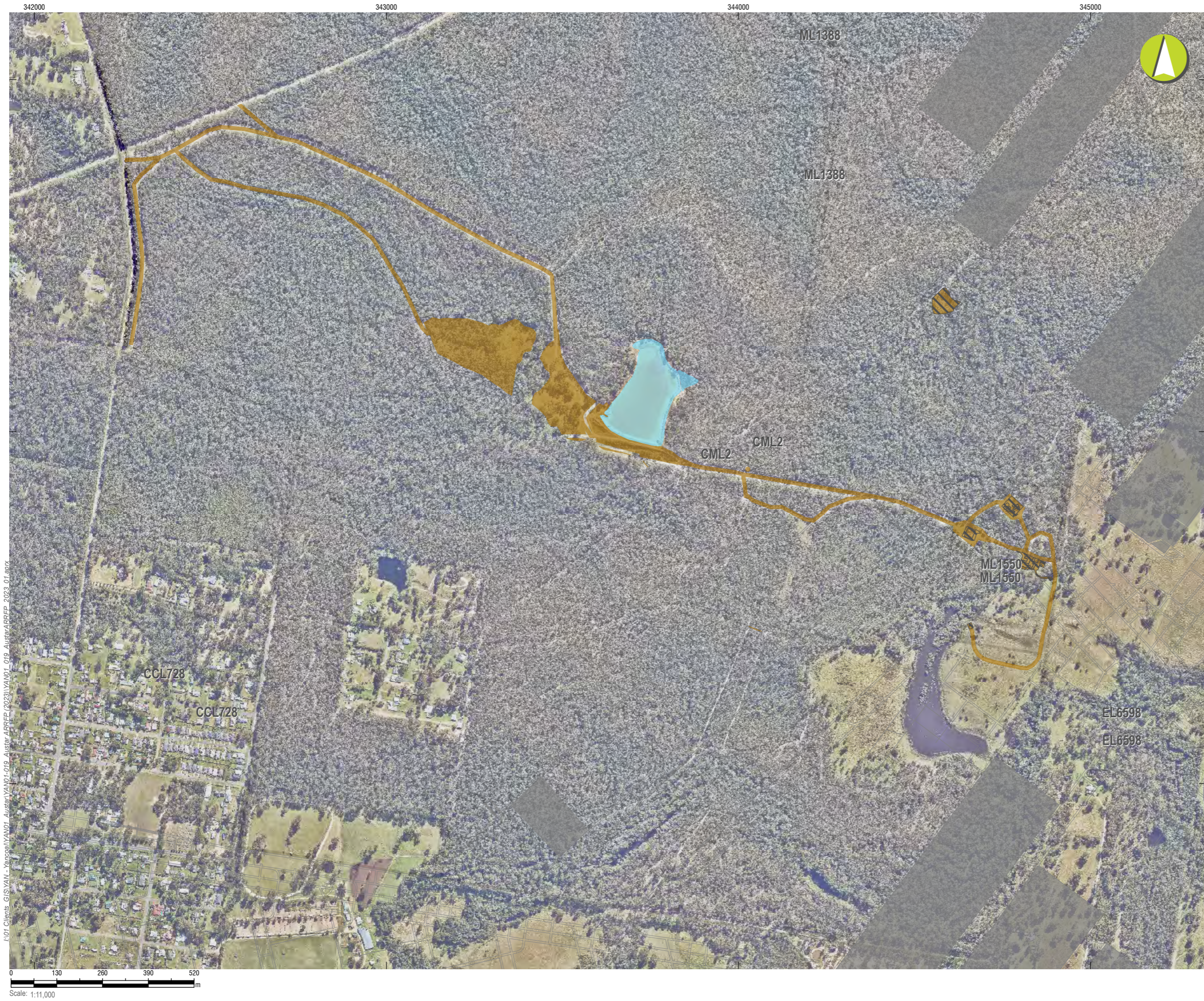
Auster Coal ARRFP 2023

CMA 4 - No.2 Shaft - Inset

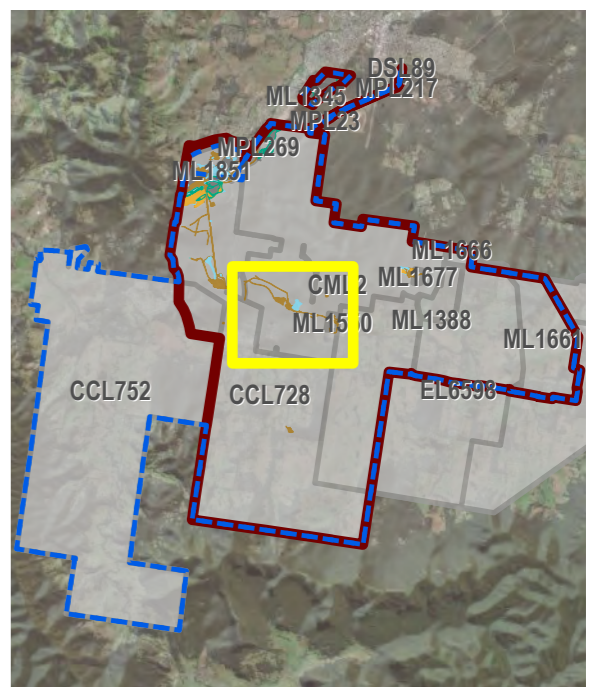
Current Status of Mining and Rehabilitation

PLAN 1A

Mine name	Auster Coal Mine
Plan name	
Year of anticipated relinquishment	TBA on final submission
Data theme submission ID No.	xxxx xxxx
Spatial Reference	GDA2020 MGA Zone 56
Plan date (date created)	26/09/2023



- LEGEND**
- Project Approval Boundary
 - Colliery Holding Boundary
 - Austar Mine Plan
 - Completed workings
 - Current Authorisations**
 - Coal - Current Titles
 - Mining Domain Type**
 - Domain 1: Infrastructure Area
 - Domain 3: Water Management Area
 - Rehabilitation Phase**
 - Decommissioning



Austar Coal ARRF 2023
 CMA 5 - Cessnock No.1 Colliery / Kalingo Infrastructure Area

Current Status of Mining and Rehabilitation

PLAN 1A

Mine name	Austar Coal Mine
Plan name	
Year of anticipated relinquishment	TBA on final submission
Data theme submission ID No.	xxxx xxxx
Spatial Reference	GDA2020 MGA Zone 56
Plan date (date created)	26/09/2023

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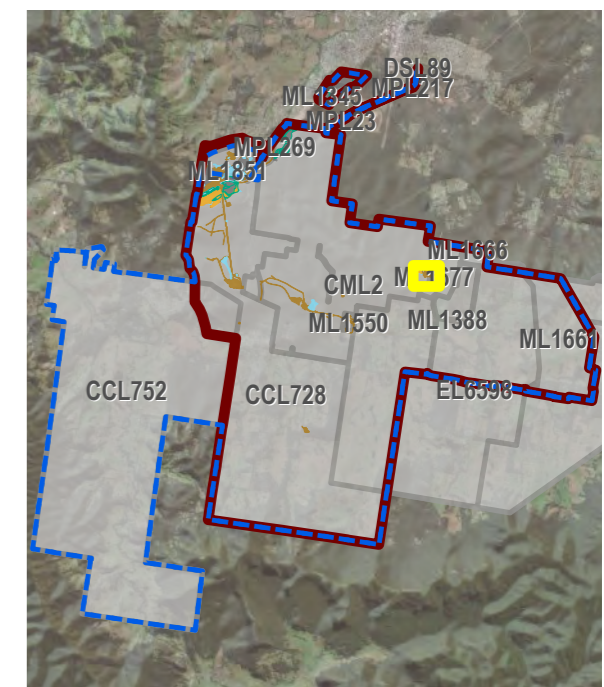
347000



- LEGEND**
- Project Approval Boundary
 - Colliery Holding Boundary
 - Austar Mine Plan
 - Completed workings
 - Current Authorisations**
 - Coal - Current Titles
 - Mining Domain Type**
 - Domain 1: Infrastructure Area
 - Domain 3: Water Management Area
 - Domain 4: Overburden Emplacement Area
 - Rehabilitation Phase**
 - Decommissioning

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LOT Clients: GIS\YAN - YAN\GIS\YAN01 - Austar ARRFP (2023)\YAN01_019 - Austar ARRFP 2023_01.dwg

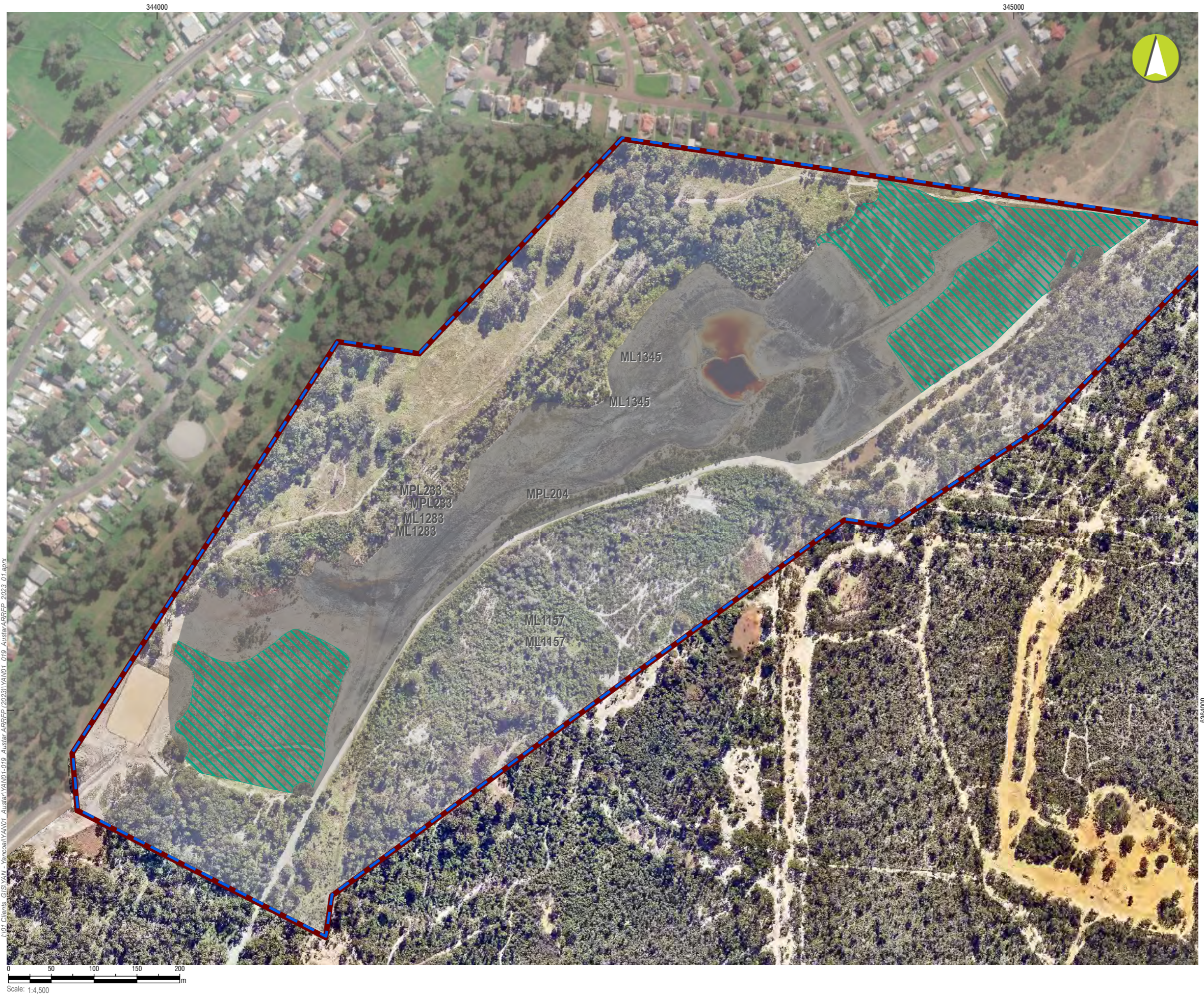


Austar Coal ARRFP 2023
CMA 6 - Kitchener Surface Infrastructure Site






Current Status of Mining and Rehabilitation

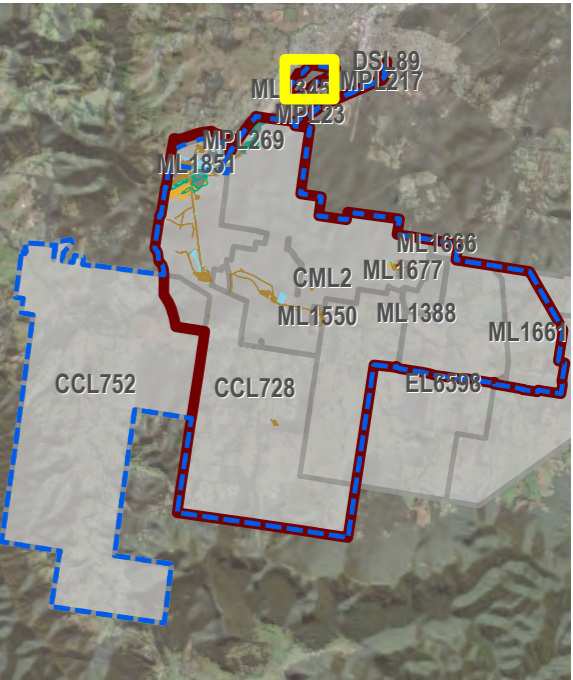
PLAN 1A

Mine name	Austar Coal Mine
Plan name	
Year of anticipated relinquishment	TBA on final submission
Data theme submission ID No.	xxxx xxxx
Spatial Reference	GDA2020 MGA Zone 56
Plan date (date created)	26/09/2023



LEGEND

-  Project Approval Boundary
-  Colliery Holding Boundary
- Current Authorisations**
-  Coal - Current Titles
- Mining Domain Type**
-  Domain 2: Tailings Storage Facility
- Rehabilitation Phase**
-  Ecosystem and Land Use Establishment



Austar Coal ARRF 2023
CMA 7 - Aberdare Extended Emplacement Area





Current Status of Mining and Rehabilitation

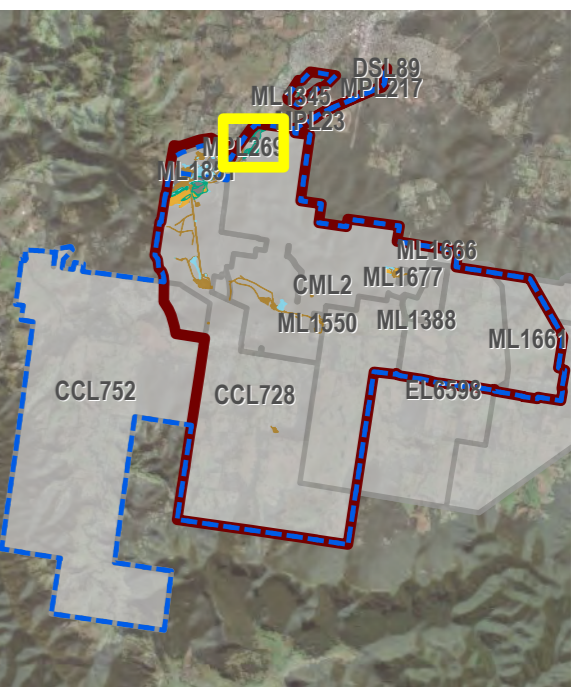
PLAN 1A	
Mine name	Austar Coal Mine
Plan name	
Year of anticipated relinquishment	TBA on final submission
Data theme submission ID No.	xxxx xxxx
Spatial Reference	GDA2020 MGA Zone 56
Plan date (date created)	26/09/2023

IEMA Clients: GIS VAIN - Yarracooball YAN01 - Austar ARRF (2023) VAIN01_019 - Austar ARRF 2023_01.aprx



LEGEND

-  Project Approval Boundary
-  Colliery Holding Boundary
- Current Authorisations**
-  Coal - Current Titles
- Mining Domain Type**
-  Domain 1: Infrastructure Area
-  Domain 2: Tailings Storage Facility
- Rehabilitation Phase**
-  Ecosystem and Land Use Establishment



Austar Coal ARRF 2023

CMA 8 - Bellbird Areas 12 and 13 - Inset

Current Status of Mining and Rehabilitation

PLAN 1A

Mine name	Austar Coal Mine
Plan name	
Year of anticipated relinquishment	TBA on final submission
Data theme submission ID No.	xxxx xxxx
Spatial Reference	GDA2020 MGA Zone 56
Plan date (date created)	26/09/2023

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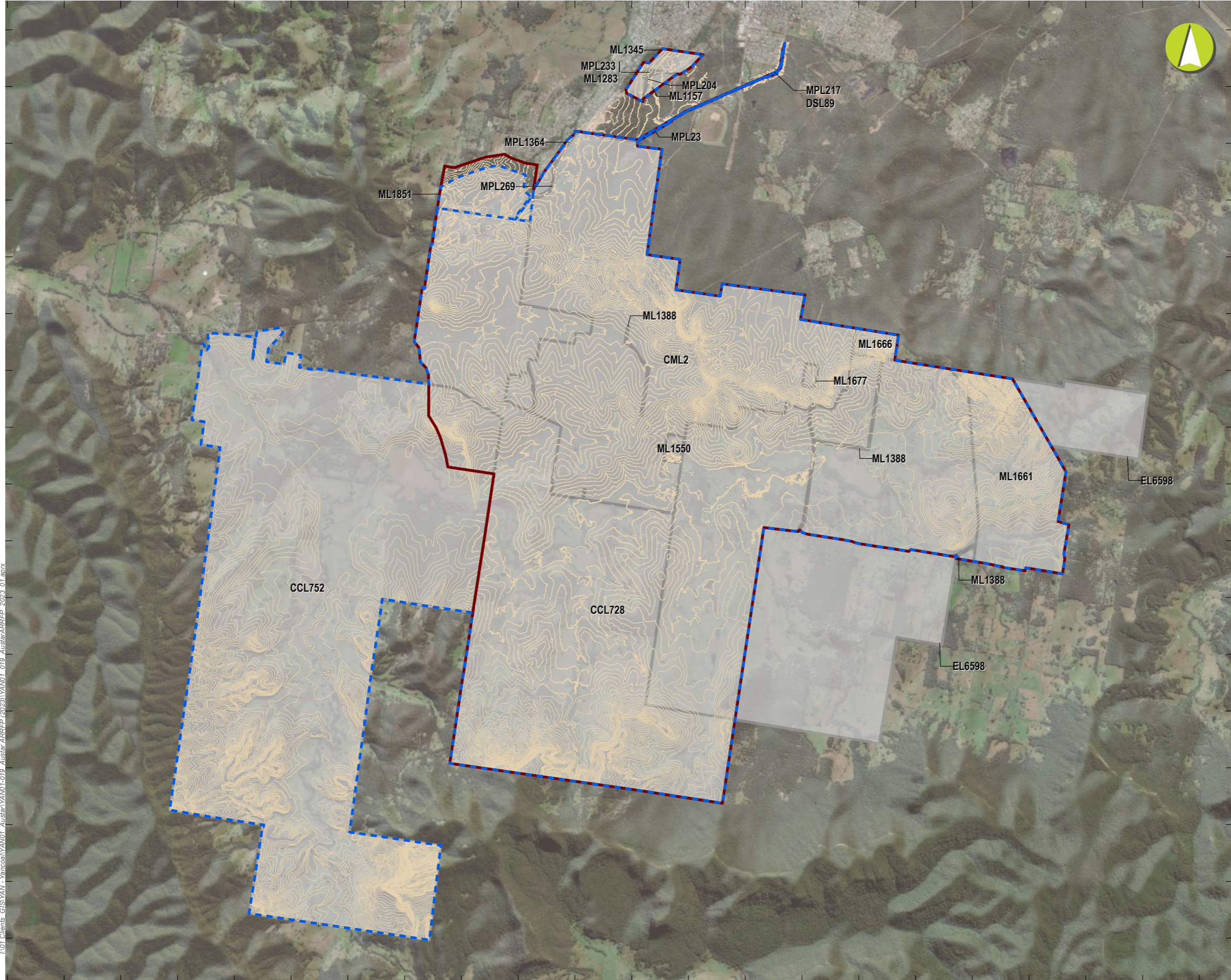
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0 840 1,680 2,520 3,360
Scale: 1:70,000



LEGEND

- Project Approval Boundary
- Colliery Holding Boundary
- Current Landform Contours (5m)
- Coal - Current Titles



Austar Coal ARRFP 2023

Current Landform Contours

Plan 1B

Mine name	Austar Coal Mine
Plan name	YAN01_019_ARRFP_Plan1B_CurrentLandformContours_01
Year of anticipated relinquishment	TBA on final submission
Data theme submission ID No.	2486
Spatial Reference	GDA2020 MGA Zone 56
Plan date (date created)	25/09/2023