NSW GOVERNMENT

NSW Resources Regulator

FWP0001014

DARGUES GOLD MINE FORWARD PROGRAM

Tuesday 12 April 2022 to Friday 11 April 2025

Contents

Summary

DETAIL	
Mine	Dargues Gold Mine
Reference	FWP0001014
Forward program commencement date	Tuesday 12 April 2022
Forward program end date	Friday 11 April 2025
Forward program revision (if applicable)	
Contact	Enzo Guarino
Mining leases	ML 1675 (1992)
Project location	BIG ISLAND MINING PTY LTD
Date of submission	Wednesday 27 July 2022

Important

The department may make the information in your program and any supporting information available for inspection by members of the public, including by publication on its website or by displaying the information at any of its offices. If you consider any part of your program to be confidential, please communicate this to the department via the message function on this submission within the NSW Resources Regulator Portal.

Three-year forecast – surface disturbance activities

Project description

Dargues Gold Mine (DGM) is located approximately 60km's southeast of Canberra, immediately to the north of the village of Majors Creek and approximately 13km's south of Braidwood. Modified Project Approval for State Significant Development 10_0054 Modification 4 (PA 10_0054 MOD4 or the Project Approval) and Mining Lease 1675 (ML1675) are held by Big Island Mining Pty Ltd (BIM) a wholly owned subsidiary of Aurelia Metals Limited (Aurelia).

Description of surface disturbance activities

Exploration activities

Exploration activities will be conducted within the mining lease over the course of the forecast period. It is anticipated that exploration areas developed during the forecast would be progressively rehabilitated following completion of activities. Indicative locations of these exploration areas have been provided in Plans 2A, 2B and 2C.

Construction activities

Dargues Gold Mine will be undertaking construction activities in accordance with project approval to ensure the ongoing operational and environmental performance.
FY23 TSF Stage 3/4 lift construction Mod 5 - Water management dam and associated pipelines to the processing plant Access tracks for monitoring locations and exploration works Exploration activity – series of 10x10 pads
FY24 TSF Stage 4 lift construction Access tracks for monitoring locations and exploration works Exploration activity – series of 10x10 pads

FY25

Access tracks for monitoring locations and exploration works

Exploration activity – series of 10x10 pads

Mining schedule

Mining development method and sequencing and general mine features.

Continuation of existing mining activities using underground stope mining methods.

Ore is mined at Dargues via conventional bottom-up longhole stoping and trucked from the underground mine to a surface stockpile adjacent to the process plant. Stope voids are backfilled with either cemented hydraulic fill or waste rock. Mine access is via a boxcut and decline from the surface.

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

Waste rock will be emplaced within the waste rock dump over the next three-year period. This waste rock will be stored until it is required for the TSF dam lift construction works. Construction will be conducted in accordance with the Construction Environmental Management Plan prepared for the Waste Rock Facility.

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

The DGM Tailings dam will undergo another series of lifts during the forecast period. Lift 3 and Lift 4 will be constructed in FY 23 and FY 24 respectively. Construction will be conducted in accordance with the Construction Environmental Management Plan prepared for the TSF facility.

Subject to a DA modification approval, DGM plan to build a new water management dam in the Northwest corner of the lease area. This dam will provide enough storage to meet the mines use and water management requirements.

Waste disposal and materials handling operations.

DGM has an integrated Waste Management Contract with a licenced waste contractor to manage waste streams on site. This contractor is responsible for the management and disposal of waste on site. DGM maintains a register of regulated waste collected by the licensed waste contractor for disposal.

Key waste streams (apart from waste rock) that will be generated over the next three years comprise of:

- Recyclable and non-recyclable general wastes;
- Sewage and effluent; and

• Other wastes from mining and workshop activities (e.g. waste oils, scrap metal and used tyres).

General waste minimisation principles (i.e. reduce, re-use and recycling) will continue to be applied at the DGM to minimise the quantity of wastes that require off-site disposal.

All general domestic waste (e.g. general solid [putrescibles] and general solid [non putrescible] waste as defined in Waste Classification Guidelines Part 1: Classifying Waste [EPA, 2014]) and general recyclable products will continue to be collected by an appropriately licensed contractor.

Hydrocarbon compounds will continue to be stored in bunded areas in accordance with the requirements of Australian Standard (AS) 1940:2004 The Storage and Handling of Flammable and Combustible Liquids.

Key production milestones

MATERIAL	UNIT	YEAR 1	YEAR 2	YEAR 3
Stripped topsoil (if applicable)	(m^3)	1,260	250	1,250
Rock/overburden	(m^3)	248,623	103,364	0
Ore	(Mt)	0.36	0.36	0.29
Reject material[1]	(Mt)	0.34	0.28	0.03
Product	(Mt)	0.02	0.02	0

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

Three-year rehabilitation forecast

Rehabilitation planning schedule

Rehabilitation planning schedule

The recent risk assessment identified the need to conduct investigations into tailings capping opportunities as part of the closure of the facility. Work will commence on the following treatment plan during the 3 year forecast period:

TP 10: Commence a TSF capping study to investigate potential capping opportunities. This may include a capping trial.

Defined milestones for this project will be developed as part of the project scope (TBD).

Stakeholder consultation

Quarterly meeting

Community consultative committee (CCC) (contains members from Council, Community and mine site)

Forum to discuss and communicate plans for mine development and rehabilitation activities

Actions arising from this consultation tracked in the meeting minutes and uploaded to the DGM Website

Ongoing

Stakeholders - CCC, Community members around Majors Creek, Araluen, Braidwood and Government agencies including Mod 5 Consultation (already completed 3 public forums)
Consultation will be conducted for any future modifications to the development consent.

Rehabilitation studies, risk assessments and/or design work

Several knowledge gaps were identified during a recent a risk assessment conducted for the preparation of the current DGM RMP. These knowledge gaps have been documented as treatment plans to be actioned over the 3 year forward program period. These treatment plans are as follows.

TP1 Develop a rehabilitation procedure prior to commencing rehabilitation activities. This will outline additional information for material testing, use of ameliorants, shaping, seeding and maintenance. This will include key roles and responsibilities (including contractors).

TP2 Develop a quality assurance signoff process for each stage of rehabilitation. This would include field signoff and sign off by the sites environmental representative and cover all the rehabilitation phases. Preclearance would be managed by the Ground Disturbance Permit and soil stripping procedure.

TP3 Soils and material (including capping material and topsoil) balance to be conducted. Includes creation of a database for each topsoil stockpile (volume, quality).

TP8 Develop a historical mining register for all mining impacts on the lease.

TP 9 In consultation with stakeholder develop a 'Retained Infrastructure' Plan. This could lead to a requirement for a consent modification.

TP 11 A rehabilitation monitoring program is to be developed prior to commencing rehabilitation activities, with this to be completed by a specialist consultant. Update and include in the RMP.

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Rehabilitation research and trials

RRT NUMBER	PROJECT/TRIAL NAME	OBJECTIVE OF TRIAL/PROJECT	METHODOLOGY	EXPECTED DATE OF COMPLETION	STATUS
FWP0001014					

Rehabilitation maintenance and corrective actions

Dargues Gold Mine has minimal areas of rehabilitation requiring maintenance due to the small rehabilitation footprint and active nature of the mine. Regular site inspections will identify any maintenance tasks required on existing rehabilitated areas. Corrective action will be put in place if rehabilitation is not tracking towards rehabilitation objectives and completion criteria.

Rehabilitation schedule

Plan 2A-2C, the Mining and Rehabilitation Forecast, spatially outlines the rehabilitation schedule.

Dargues Gold Mine will undertake rehabilitation as soon as reasonably practical once areas of disturbance are made available for rehabilitation activities. This will be dependent on factors such as availability of land for rehabilitation, current and future use of infrastructure and disturbance areas.

Rehabilitation works for the forecast period is limited to minor rehabilitation works of exploration disturbance areas and field tracks. See Spatial data for details.

Subsidence remediation for underground operations

Due to the backfilling of stopes following the completion of mining activities no impacts from subsidence are expected that require rehabilitation works.

Progressive mining and rehabilitation statistics

Three-yearly forecast cumulative disturbance and rehabilitation progression

	FORECAST	UNIT	YEAR 1	YEAR 2	YEAR 3
A	**Total surface disturbance footprint**	(ha)	68.25	68.25	68.25
B	**Total active disturbance**	(ha)	68.25	68.25	68.25
C	**Land prepared for rehabilitation**	(ha)	0	0	0
D	**Ecosystem and land use establishment**	(ha)	0	0.18	1.25

Rehabilitation key performance indicators (KPIs)

	FORECAST	UNIT	YEAR 1	YEAR 2	YEAR 3
O	**Total new active disturbance area**	(ha)	7.59		
P	**Area proposed for active rehabilitation**	(ha)		0.18	1.08
Q	**Annual rehabilitation to disturbance ratio**				

Attachment 1 – Reporting Definitions

REPORTING CATEGORY		DEFINITION
A	Total disturbance footprint – surface disturbance	All areas within a mining lease that either have at some point in time or continue to pose a rehabilitation liability due to surface disturbance activities. The total disturbance footprint is the sum of the total active disturbance, decommissioning, landform establishment, growth medium development, ecosystem and land use establishment, ecosystem and land use development and rehabilitation completion (see definitions below). Underground mining operations should not include the footprint of underground mining areas/subsidence management areas in the total disturbance footprint.
B	Total active disturbance	Includes on-lease exploration areas, stripped areas ahead of mining, infrastructure areas, water management infrastructure, sewage treatment facilities, topsoil stockpile areas, access tracks and haul roads, active mining areas, waste rock emplacements (active/unshaped/in or out-of-pit), tailings dams (active/unshaped/uncapped) and temporary stabilised areas (e.g. areas sown with temporary cover crops for dust mitigation and temporary rehabilitation).
C	Rehabilitation – land preparation	Includes the sum of all disturbed land within a mining lease that have commenced any, or all, of the following phases of rehabilitation– decommissioning, landform establishment and growth medium development. Refer to the glossary of terms in this document for the definition of these phases of rehabilitation.
D	Ecosystem and land use establishment	Includes the area which has been seeded/planted with the target vegetation species for the intended final land use. However, vegetation has not matured to a stage where it can be demonstrated that it will be sustainable for the long term and or require only a maintenance regime consistent with target reference/analogue sites. Typically, rehabilitation areas would be in this phase for at least two years (and usually more) before rehabilitation can be classified as being in the ecosystem and land use development phase. This phase does not apply to infrastructure areas that are being retained as part of final land use for the site.

REPORTING CATEGORY		DEFINITION
O		The area of any new active disturbance that will be created during the next three years, as defined under definition A1 (definition A1 Table 5).
P		The sum of any new rehabilitation to be commenced in the next three years. These areas may be in the phases "Rehabilitation - Land Preparation" or the "Ecosystem & Land Use Establishment" (definitions C & D in Table 5).
Q		The rehabilitation to disturbance ratio (S / R) indicates how many hectares of new rehabilitation are undertaken for each hectare of land disturbed during the three years. A ratio of 1/1 indicates that the area of new rehabilitation and disturbance in that period are the same.

Attachment 2 – Definitions

WORD	DEFINITION
Active	In the context of rehabilitation, land associated with mining domains is considered 'active' for the period following disturbance until the commencement of rehabilitation.
Active mining phase of rehabilitation	In the context of rehabilitation, the active mining phase of rehabilitation constitutes the rehabilitation activities undertaken during mining operations such as salvaging and managing soil resources, salvaging habitat resources, and native seed collection. This phase also includes management actions taken during operations to manage risks to rehabilitation and enhance rehabilitation outcomes such as selective handling of waste rock and management of tailings emplacements.
Analogue site	In the context of rehabilitation, an analogue site is a 'reference site' that represents an example of the defining characteristics (such as vegetation composition and structure or agricultural productivity) of the final land use. Characteristics of analogue sites can be assessed to develop the rehabilitation objectives and completion criteria for final land use domains.
Annual rehabilitation report and forward program	As described in the Mining Regulation 2016.
Annual reporting period	As defined in the Mining Regulation 2016.
Closure	A whole-of-mine-life process, which typically culminates in the relinquishment of the mining lease. It includes decommissioning and rehabilitation to achieve the approved final land use(s).
Decommissioning	The process of removing mining infrastructure and removing contaminants and hazardous materials.
Decommissioning Phase of Rehabilitation	Activities associated with the removal of mining infrastructure and removal and/or remediation of contaminants and hazardous materials. In the context of the rehabilitation management plan this phase of rehabilitation may also include studies and assessments associated with decommissioning and demolition of infrastructure or works carried out to make safe or 'fit for purpose' built infrastructure to be retained for future use(s) following lease relinquishment.

WORD	DEFINITION
Department	The Department of Regional NSW.
Disturbance	See Surface Disturbance.
Disturbance area	An area that has been disturbed and that requires rehabilitation. This may include areas such as on-licence exploration areas, stripped areas ahead of mining, infrastructure areas, water management infrastructure, sewage treatment facilities, topsoil stockpile areas, access tracks and haul roads, active mining areas, waste emplacements (active/unshaped/in or out-of-pit), tailings dams (active/unshaped/uncapped), and areas requiring rehabilitation that are temporarily stabilised (i.e. managed to minimise dust generation and/or erosion).
Domain	An area (or areas) of the land that has been disturbed by mining and has a specific operational use (mining domain) or specific final land use (final land use domain). Land within a domain typically has similar geochemical and/or geophysical characteristics and therefore requires specific rehabilitation activities to achieve the associated final land use.
Ecosystem and Land Use Development	This phase of rehabilitation consists of the activities to manage maturing rehabilitation areas on a trajectory to achieving the approved rehabilitation objectives and completion criteria. For vegetated land uses this phase may include processes to develop characteristics of functional self-sustaining ecosystems, such as nutrient recycling, vegetation flowering and reproduction, and increasing habitat complexity, and development of a productive, self-sustaining soil profile. This phase of rehabilitation may include specific vegetation management strategies and maintenance such as tree thinning, supplementary plantings and weed management.
Ecosystem and Land Use Establishment	This phase of rehabilitation consists of the processes to establish the approved final land use following construction of the final landform. For vegetated land uses this rehabilitation phase includes establishing the desired vegetation community and implementing land management activities such as weed control. This phase of rehabilitation may also include habitat augmentation such as installation of nest boxes.
Exploration	Has the same meaning as that term under the State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007.

WORD	DEFINITION
Final landform and rehabilitation plan	As defined in the Mining Regulation 2016.
Final land use	As defined in the Mining Regulation 2016.
Form and way	Means the form and way approved by the Secretary. Approved form and way documents are available on the Department's website.
Growth Medium Development	This phase of rehabilitation consists of activities required to establish the physical, chemical and biological components of the substrate required to establish the desired vegetation community (including short lived pioneer species. This phase may include spreading the prepared landform with topsoil and/or subsoil and/or soil substitutes, applying soil ameliorants to enhance the physical, chemical and biological characteristics of the growth media, and actions to minimise loss of growth media due to erosion.
Habitat	Has the same meaning as that term under the *Biodiversity Conservation Act 2016* and the *Fisheries Management Act 1994* (as relevant).
Indicator	An attribute of the biophysical environment (e.g. pH, topsoil depth, biomass) that can be used to approximate the progression of a biophysical process. It can be measured and audited to demonstrate (and track) the progress of an aspect of rehabilitation towards a desired completion criterion (i.e. defined end point). It may be aligned to an established protocol and used to evaluate changes in a system.
Land	As defined in the *Mining Act 1992.*
Landform Establishment	This phase of rehabilitation consists of the processes and activities required to construct the final landform. In addition to profiling the surface of rehabilitation areas to the approved final landform profile this phase may include works to construct surface water drainage features, encapsulate problematic materials such as tailings, and prepare a substrate with the desired physical and chemical characteristics (e.g. rock raking or ameliorating sodic materials).
Large mine	As defined in the Mining Regulation 2016.
Lease holder	The holder of a mining lease.

WORD	DEFINITION
Life of mine	The timeframe of how long a mine is approved to mine, from commencement to closure.
Mine rehabilitation portal	Means the NSW Resources Regulator's online portal that lease holders must use (via a registered account) to: ■ upload rehabilitation geographical information system (GIS) spatial data ■ develop rehabilitation GIS spatial data (using online tracing functions) ■ generate rehabilitation plans and rehabilitation statistics using the map viewer and Rehabilitation Key Performance Indicator functionalities. Data submitted to the mine rehabilitation portal is collated in a centralised geodatabase for use by the NSW Resources Regulator to regulate rehabilitation performance of lease holders.
Mining area	As defined in the *Mining Act 1992*.
Mining domain	A land management unit with a discrete operational function (e.g. overburden emplacement), and therefore similar geophysical characteristics, that will require specific rehabilitation treatments to achieve the final land use(s).
Mining land	As defined in the *Mining Act 1992.*
Native vegetation	Has the same meaning as that term under section 60B of the *Local Land Services Act 2013.*
Overburden	Material overlying coal or a mineral deposit.
Performance indicator	An attribute of the biophysical environment (for example pH, slope, topsoil depth, biomass) that can be used to demonstrate achievement of a rehabilitation objective. It can be measured and audited to demonstrate (and track) the progress of an aspect of rehabilitation towards a desired completion criterion, that is, a defined end point. It may be aligned to an established protocol and used to evaluate changes in a system.

WORD	DEFINITION
Phases of rehabilitation	The stages and sequences of actions required to rehabilitate disturbed land to achieve the final land use. The phases of rehabilitation are: ■ active mining ■ decommissioning ■ landform Establishment ■ growth medium development ■ ecosystem and land use establishment ■ ecosystem and land use development.
Progressive rehabilitation	The progress of rehabilitation towards achieving the approved rehabilitation completion criteria. This may be described in terms of domains, phases, performance indicators and rehabilitation completion criteria.
Rehabilitation Completion	The final phase of rehabilitation when a rehabilitation area has achieved the approved rehabilitation objectives and rehabilitation completion criteria for the final land use. Rehabilitation areas may be classified as complete when the NSW Resources Regulator has determined in writing that the relevant rehabilitation obligations have been fulfilled following submission of *Form ESF2 Rehabilitation completion and/or review of rehabilitation cost estimate* application by the lease holder.
Rehabilitation Completion criteria	As defined in the Mining Regulation 2016.
Rehabilitation cost estimate	As defined in the Mining Regulation 2016.
Rehabilitation management plan	As defined in the Mining Regulation 2016.
Rehabilitation objectives	As defined in the Mining Regulation 2016.
Rehabilitation risk assessment	As defined in the Mining Regulation 2016.
Rehabilitation schedule	The defined timeframes for progressive rehabilitation set out in the forward program.

WORD	DEFINITION
Relevant stakeholders	Means any persons or bodies who may be affected by the mining operations, including rehabilitation, carried out on the lease land, and includes: ■ the relevant development consent authority ■ the local council ■ the relevant landholder(s) ■ community consultative committee (if required under the development consent) or equivalent consultative group ■ affected land holder(s) ■ government agencies relevant to the final land use ■ affected infrastructure authorities (electricity, telecommunications, water, pipeline, road, rail authorities) ■ local Aboriginal communities, and ■ any other person or body determined by the Minister to be a relevant stakeholder in relation to a mining lease.
Risk	The effect of uncertainty on objectives. It is measured in terms of consequences and likelihood (AS/NZS ISO 31000:2009).
Secretary	The Secretary of the Department.
Security deposit	An amount that a mining lease holder is required to provide and maintain under a mining lease condition, to secure funding for the fulfilment of obligations under the lease (including obligations that may arise in the future).
Surface disturbance	Includes activities that disturb the surface of the mining area, including mining operations, ancillary mining activities and exploration.
Tailings	A combination of the fine-grained solid material remaining after the recoverable metals and minerals have been extracted from the mined ore, and any process water[2].
Waste	Has the same meaning as that term under the *Protection of the Environment Operations Act 1997*.

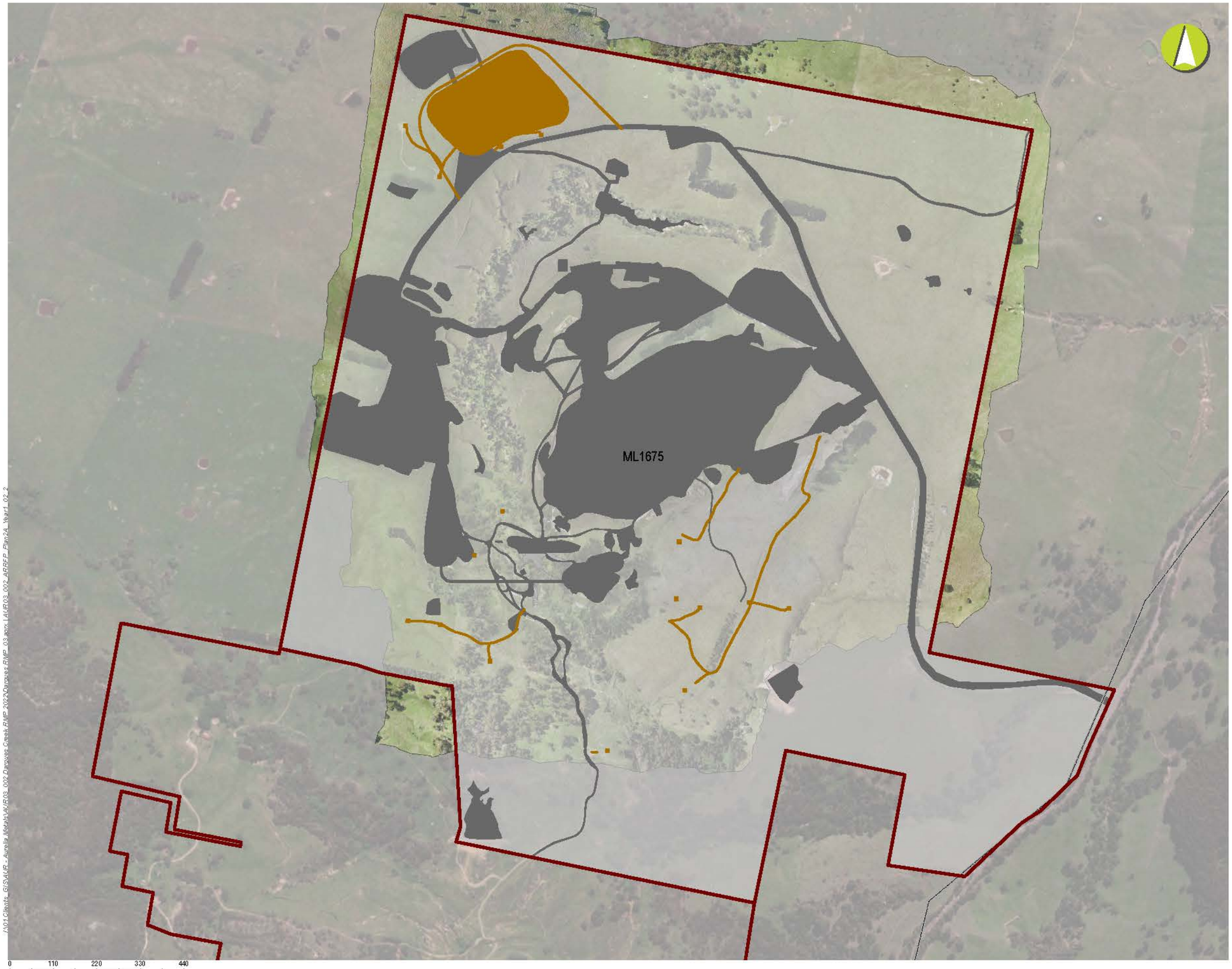
[2] Commonwealth of Australia (DITR), 2007. *Tailings Management.*

Attachment 3 – Plans

Plan 2A attachment not provided.

Plan 2B attachment not provided.

Plan 2C attachment not provided.



LEGEND

- Major Road
- Project Approval Boundary

Current Authorisations

- Minerals - Current Title - ML1675

Forecast Area Type - Year 1 (2023)

- Forecast Disturbance (2023)
- Previous Disturbance

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Source: Project Approval Boundary, disturbance, roads and Current Authorisations from Aurelia Metals (2022). Aerial imagery from Yancoal (2022).

Dargues Gold Mine 2022

Mining and Rehabilitation
Year 1 - FY2023
PLAN 2A

Mine name	Dargues Gold Mine
Plan name	Dargues Gold Mine RMP
Year of anticipated relinquishment	TBA following Portal Submission
Data theme submission ID No.	2276
Spatial Reference	GDA2020 MGA Zone 55
Plan date (date created)	27/07/2022

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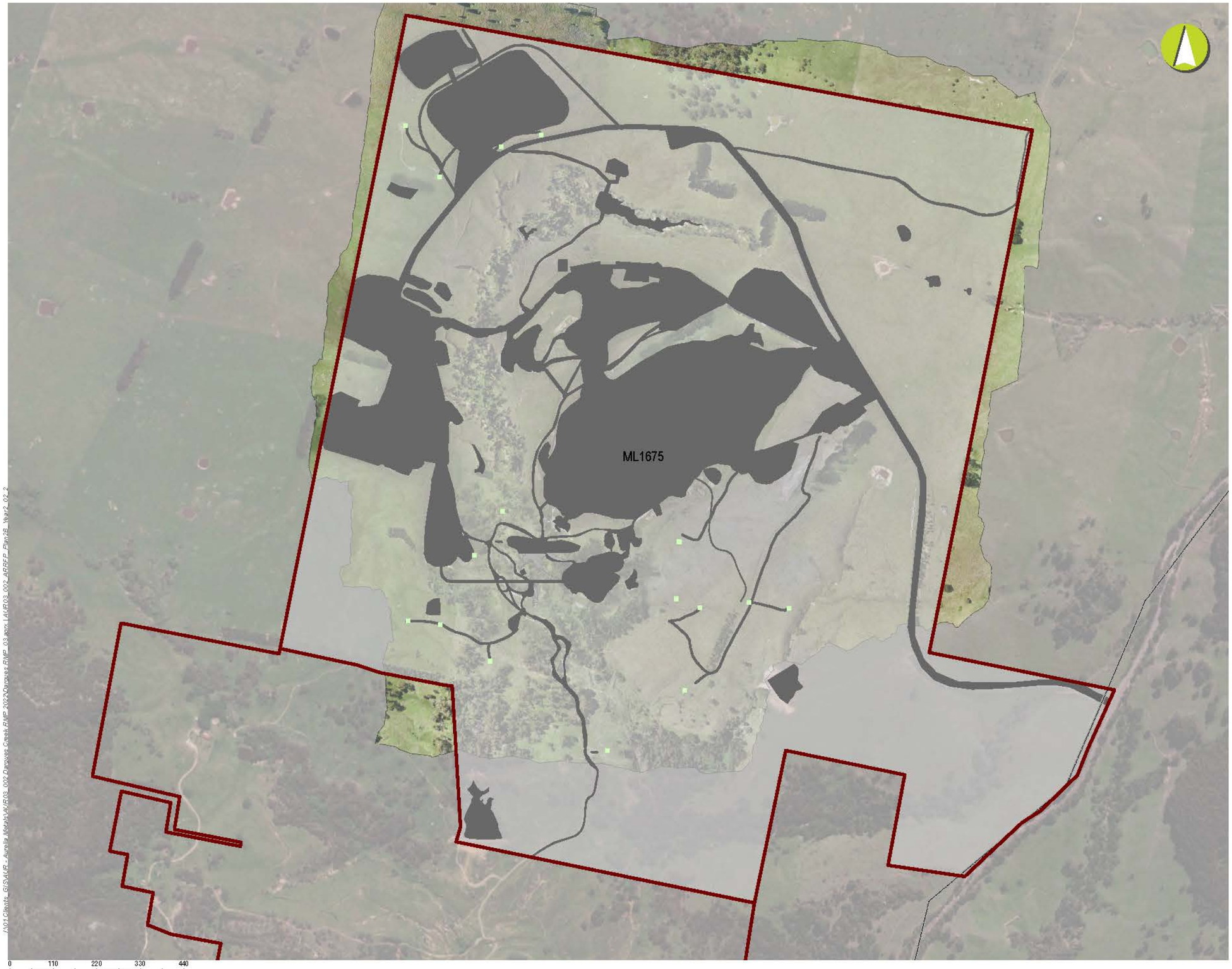

LEGEND

- Major Road
- Project Approval Boundary

Current Authorisations

- Minerals - Current Title - ML1675

Forecst Area Type - Year 2 (2024)

- Ecosystem and Land Use Establishment (2024)
- Previous Disturbance

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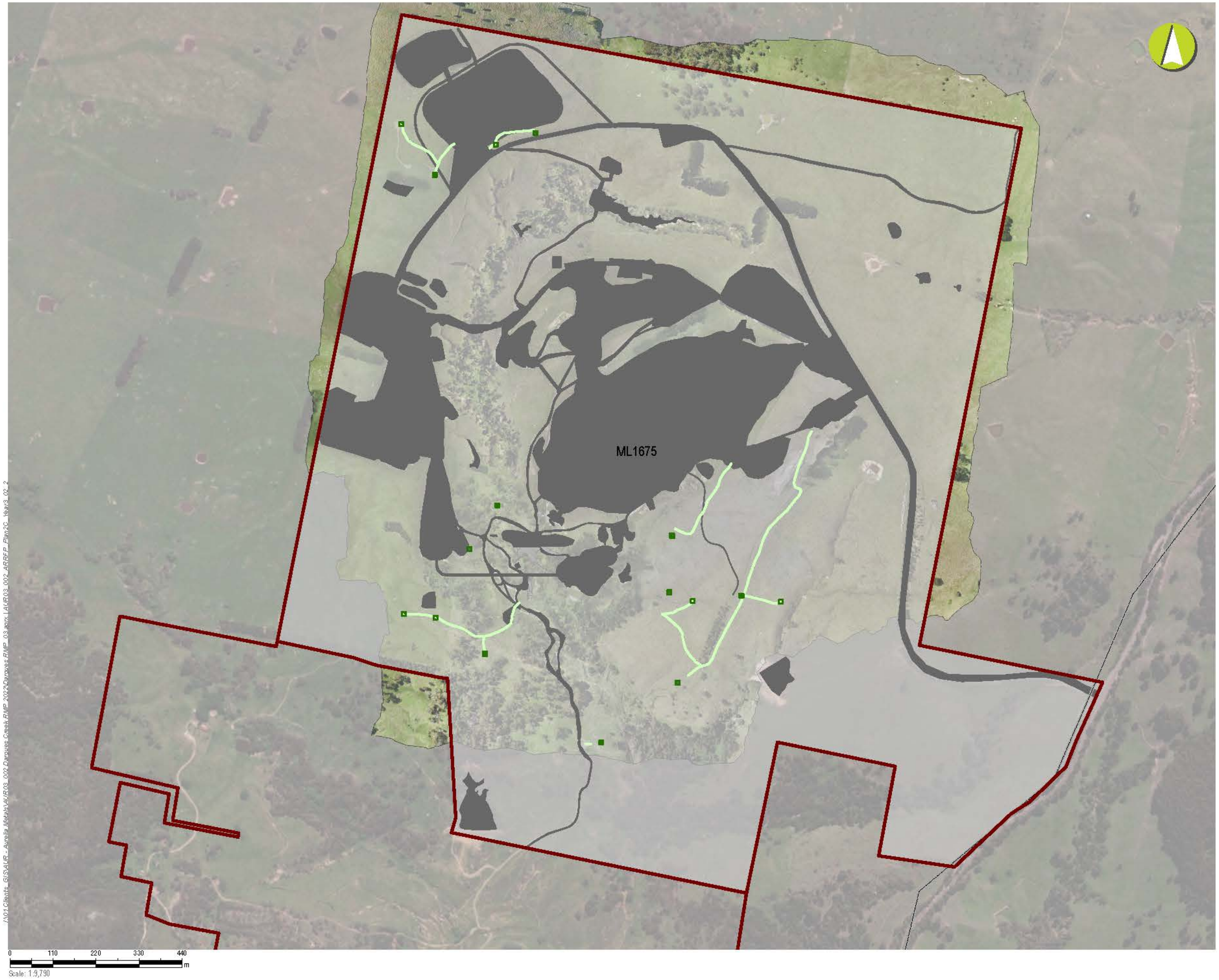
Source: Project Approval Boundary, disturbance, roads, rehabilitation and Current Authorisations from Aurelia Metals (2022).
Aerial imagery from Yancoal (2022).

Dargues Gold Mine 2022

Mining and Rehabilitation
Year 2 - FY2024
PLAN 2B

Mine name	Dargues Gold Mine
Plan name	Dargues Gold Mine RMP
Year of anticipated relinquishment	TBA following Portal Submission
Data theme submission ID No.	2277
Spatial Reference	GDA2020 MGA Zone 55
Plan date (date created)	27/07/2022



LEGEND

- Major Road
- Project Approval Boundary

Current Authorisations

- Minerals - Current Title - ML1675

Forecst Area Type - Year 3 (2025)

- Ecosystem and Land Use Establishment (2025)
- Previous Rehabilitation
- Previous Disturbance

Dargues Gold Mine 2022

Mining and Rehabilitation
Year 3 - FY2025
PLAN 2C

Mine name	Dargues Gold Mine
Plan name	Dargues Gold Mine RMP
Year of anticipated relinquishment	TBA following Portal Submission
Data theme submission ID No.	2278
Spatial Reference	GDA2020 MGA Zone 55
Plan date (date created)	27/07/2022

Source: Project Approval Boundary, disturbance, roads, rehabilitation and Current Authorisations from Aurelia Metals (2022).
Aerial imagery from Yancoal (2022).

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