



**NSW
Resources
Regulator**

ARR0001240

HUNTER VALLEY OPERATIONS ANNUAL REHABILITATION REPORT

Sunday 1 January 2023 to Sunday 31 December 2023

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Summary table

DETAIL	
Mine	Hunter Valley Operations
Reference	ARR0001240
Annual report period commencement date	Sunday 1 January 2023
Annual report period end date	Sunday 31 December 2023
Forward program	FWP0001133
Mining leases	ML 1705 (1992), ML 1748 (1992), ML 1869 (1992), ML 1871 (1992), ML 1622 (1992), ML 1474 (1992), ML 1811 (1992), CCL 755 (1973), ML 1526 (1992), ML 1704 (1992), ML 1849 (1992), ML 1841 (1992), ML 1870 (1992), CL 360 (1973), ML 1560 (1992), CCL 714 (1973), ML 1428 (1992), ML 1840 (1992), ML 1359 (1992), CL 584 (1973), ML 1732 (1992), ML 1589 (1992), CL 359 (1973), ML 1753 (1992), CL 327 (1973), ML 1482 (1992), CML 4 (1992), ML 1867 (1992), ML 1324 (1992), ML 1682 (1992), ML 1406 (1992), ML 1734 (1992), CL 398 (1973), ML 1706 (1992), ML 1634 (1992), ML 1710 (1992), ML 1707 (1992), ML 1465 (1992), ML 1500 (1992), ML 1337 (1992), ML 1810 (1992)
Lease holder(s)	COAL & ALLIED OPERATIONS PTY LTD, ANOTERO PTY LIMITED
Contact	Thomas Scott
Date of submission	Thursday 28 March 2024

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

Hunter Valley Operations (HVO) is situated in the Upper Hunter Valley between Singleton and Muswellbrook, approximately 24 km northwest of Singleton, and approximately 100 km northwest of Newcastle. The Hunter River geographically divides HVO into HVO North (DA 450-10-2003) and HVO South (PA_06_0261); however, they are integrated operationally with personnel, equipment and materials utilised as required. HVO is a jointly controlled operation through a Joint Venture (JV) between Glencore (49%) and Yancoal (51%). HVO North includes the Carrington Pit, West Pit (which includes the Mitchell Pit and Wilton Pit), North Pit Tailings Storage Facility (TSF), Dam 6W TSF, Newdell Coal Preparation Plant (NCP), Hunter Valley Coal Preparation Plant (HVCPP), Howick Coal Preparation Plant (HCPP), and the stockpiling/train loading facilities at Newdell Load Point (NLP) and Hunter Valley Load Point (HVLP). HVO South includes Cheshunt Pit, Riverview Pit and Lemington South Pit.

Life of mine

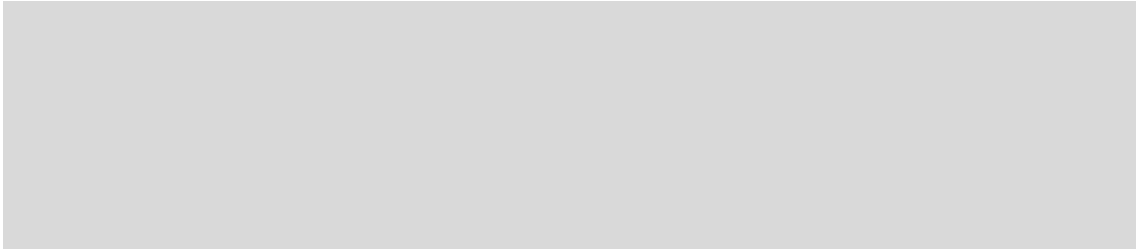
6 years

Current development consents, leases and licences

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

PA06-0261

DA450-10-2003



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

ML 1705 (1992), ML 1748 (1992), ML 1869 (1992), ML 1871 (1992), ML 1622 (1992), ML 1474 (1992), ML 1811 (1992), CCL 755 (1973), ML 1526 (1992), ML 1704 (1992), ML 1849 (1992), ML 1841 (1992), ML 1870 (1992), CL 360 (1973), ML 1560 (1992), CCL 714 (1973), ML 1428 (1992), ML 1840 (1992), ML 1359 (1992), CL 584 (1973), ML 1732 (1992), ML 1589 (1992), CL 359 (1973), ML 1753 (1992), CL 327 (1973), ML 1482 (1992), CML 4 (1992), ML 1867 (1992), ML 1324 (1992), ML 1682 (1992), ML 1406 (1992), ML 1734 (1992), CL 398 (1973), ML 1706 (1992), ML 1634 (1992), ML 1710 (1992), ML 1707 (1992), ML 1465 (1992), ML 1500 (1992), ML 1337 (1992), ML 1810 (1992)

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



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

Nil changes to DA450-10-2003. PA06-0261 MOD8 Approved 6 February 2023. Permits construction of an Ammonium Nitrate Storage Compound.

Changes to land ownership and land use

Nil.

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

During 2023, the following rehabilitation and disturbance activities were completed: 57.7ha of new rehabilitation; 98.7ha of GMD progression rehabilitation; 54.9ha of new disturbance; 95.9ha of rehabilitation disturbance. The completed rehabilitation exceeded the Forward Program target (of 44.0ha) by 14.2ha when considering new rehabilitation, and by 112.4ha when taking into account the GMD progression rehabilitation completed in 2023. The location of the rehabilitation activities were generally consistent with the Forward Program, with rehabilitation being completed in the West Pit, Riverview Pit and Cheshunt Dumps. The location of the proposed disturbance areas were also generally consistent with the Forward Program, with the majority of new disturbance occurring in HVO North for the development of the Mitchell Pit. Rehabilitation was completed in line with the HVO South Project Approval (PA06_0261) during 2023. The pro-rata rehabilitation rate from the HVO South EIS for 2023 was 71.4ha with 55.93ha of new rehabilitation and 94.23 ha of GMD being completed resulting in 150.2ha being seeded in HVO South during 2023. The Rehabilitation pro-rata rate for the HVO North EIS (DA4510-10-2003) was 26.2ha. 1.8ha of new rehabilitation and 4.4 ha of GMD was seeded in 2023 resulting in 6.2ha of rehabilitation being completed in HVO North. This is less than EIS predictions due to the slower than expected rate of mining progression in HVO North.

Rehabilitation planning activities that were conducted, including any specialist studies

During 2023 HVO completed ongoing refinement of the landform and drainage design for the natural landform at HVO South. HVO also engaged an agronomist to complete a gap analysis on what is required to bring the Alluvial Lands Rehabilitation Area up to certification. These works will continue in 2024 along with a detailed review of pasture rehabilitation areas.

Overview of subsidence repair and/or remediation works undertaken

Not applicable.

Overview of rehabilitation management and maintenance activities

Rehabilitation maintenance was undertaken generally in accordance with the detailed maintenance program in 2023. Activities undertaken include: preparation and seeding of 98.7ha of GMD areas; 374ha of weed maintenance including spraying, wick wiping slashing and mulching of weeds focusing on galenia, Acacia saligna and exotic pastures such as Rhodes

grass and Green Panic; topsoil stockpile inspections, weed management and seeding; aerial seeding and fertilising of 399ha in both HVO South and HVO North; and spring and autumn 1080 dog baiting within and adjacent to rehabilitation areas.

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

During 2023, works continued on the drainage structures on the WOOP dump in response to NTCE0009902 and NTCE009942. HVO finalised a remediation plan for the area in consultation with Local Land Services in 2023. This remediation plan includes a detailed water management design and contour repair plan to ensure long term stability of the area. The tender for execution of these works has been awarded and works are due to be complete in June 2024, subject to landowner approvals. HVO also finalised the remediation plan for the East TSF Rehabilitation area during 2023. The works are due to commence in April 2024 with completion in October 2024 in line with the Enforceable Undertaking with the NSW Environmental Protection Agency.

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

Not applicable.

Key production milestones

MATERIAL	UNIT	FWP0001133 YEAR 1	THIS REPORT
Stripped topsoil <small>(if applicable)</small>	(m ³)	386,900	89,750
Rock/overburden	(m ³)	95,190,000	99,410,000
Ore	(Mt)	15,270,000	15.28
Reject material¹	(Mt)	3,060,000	4.05
Product	(Mt)	10,390,000	10.52

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)	6,964.78
B Total active disturbance	(ha)	4,161.1
C Land prepared for rehabilitation	(ha)	0
D Ecosystem and land use establishment	(ha)	2,803.69
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

As outlined in the sections above, rehabilitation completed in 2023 exceeded the targets in the Forward Program. Disturbance however fell short of the targets set in the Forward Program: • 54.9ha of new disturbance completed vs target of 327.3ha • 95.9ha of rehabilitation disturbance completed vs target of 180.5ha This was due to a delay in clearing works associated with the commencement of the Mitchell Pit in HVO North. It is expected that these areas will be progressed in 2024.

Key factors that delayed progressive rehabilitation

There were no issues that delayed progressive rehabilitation during 2023 and all rehabilitation was completed as scheduled.

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

As outlined in the Forward Program, HVO conducts a detailed Budget and Life of Mine process on an annual basis which identifies areas of disturbance required, and areas forecast for rehabilitation. These areas are checked against EIS projections, and incorporated into the Annual Mine Closure and Rehabilitation Plan which allows tracking of progress throughout the year.

Rehabilitation monitoring and research findings

Rehabilitation monitoring

The rehabilitation monitoring carried out in the annual reporting period

The drier conditions prevailing in 2023 have had a significant effect on remnant and rehabilitation vegetation throughout the HVO sites. Examples of excellent early-stage native woodland rehabilitation are at sites such as WES20160503, WES 20220103, CHE20210101, CHE20210102, CHE20210103 and RIV20200101. Slightly older examples can be seen at LEM20150103 and LEM20150104. Despite the drier conditions these sites recorded 29-36 native plant species, compared to the reference site range of 33-49 species. This diversity was well spread through canopy, mid-storey and ground layer species and across a range of plant families. HTE/Priority weed cover also tended to be lower in these blocks, although weeds are still present and require control. Other sites were much lower in native diversity and had higher cover of high threat and priority weeds. Older sites, such as WES2000801 and WES20010304 were dominated by a canopy of sugar gum (*Eucalyptus cladocalyx*). These sites also tended to have a sparse understorey dominated by golden wreath wattle (*Acacia saligna*). Pasture rehabilitation areas tended to have a wide variety of native and exotic pasture species. Small stands of native trees and shrubs are scattered through many blocks. Exotic pasture areas tended to be dominated by Rhodes grass and green panic, with other weeds often present. Native grass and forb species were also often present, increasing diversity, resilience and overall pasture quality.

Status of performance against rehabilitation objectives and rehabilitation completion criteria

The monitoring program that has been implemented

As outlined above, the LTM monitoring program includes a detailed assessment of rehabilitation performance and evaluation of results against completion criteria.

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.

Overall, the majority of the rehabilitation blocks monitored in 2023 are trending towards meeting the rehabilitation criteria. Generally, older rehabilitation blocks (prior to 2015) exhibited lower target species diversity and higher weed coverage. Recommendations have been made to improve these blocks and a detailed maintenance plan has been developed. Monitoring results from younger blocks generally identified a higher abundance of species from target communities, lower weed presence and less erosion. HVO has developed a detailed maintenance plan for all rehabilitation blocks on site, which will be implemented continuously to continue progressing rehabilitation towards closure criteria.

Appraisal description

There are performance issues preventing rehabilitation moving towards achieving the final land use as soon as reasonably practicable.

Rehabilitation monitoring program findings

The monitoring program for 2023 included: Long term ecological monitoring program. This program splits rehabilitation areas into Initial Establishment Monitoring (IEM) sites that are less than three years old, and Long Term Monitoring (LTM) sites that are older than three years. The IEM methodology is a rapid style assessment principally to determine germination success and landform stability. The LTM methodology include more detailed assessments of rehabilitation performance and are targeted towards evaluating progress of rehabilitation towards fulfilling completion criteria and, ultimately, the targeted post-mining land use. During 2023, 52 IEM and 66 LTM rehabilitation sites and 2 reference sites were monitored. Annual Rehabilitation Walkover. This inspection provides a general assessment on rehabilitation health and potential emerging issues that require maintenance (e.g. weeds, erosion, poor growth rates). The walkover inspection does not review rehabilitation areas against the closure criteria, but provides management recommendations to assist the rehabilitation in moving towards the criteria. During 2023, 38 rehabilitation blocks were inspected as part of the walkover assessment. In addition to the above formal monitoring programs, HVO environmental staff conduct ongoing, regular inspections of rehabilitation areas to ensure emerging issues are captured and addressed outside of the annual monitoring periods.

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

As outlined in the summary of monitoring results section, rehabilitation is generally progressing towards meeting long term closure criteria. However, weed presence is a performance issue within some rehabilitation areas that has the potential to hinder this

progression. On an annual basis, HVO conducts a rehabilitation walkover assessment which maps and quantifies weed type and coverage. This data is then used to update the maintenance plan for that block and allocate resources for control. The repetitive and ongoing nature of this monitoring and control cycles ensures that all weed infestations are controlled appropriately.

Outcomes of rehabilitation research and trials

RRT NUMBER	PROJECT/TRIAL NAME	OBJECTIVE OF TRIAL/PROJECT	METHODOLOGY	EXPECTED DATE OF COMPLETION	STATUS	ON TRACK?
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A

RR0001240

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	<p>The stages and sequences of actions required to rehabilitate disturbed land to achieve the final land use. The phases of rehabilitation are:</p> <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	<p>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.</p>
Rehabilitation Completion	<p>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.</p>
Rehabilitation Completion criteria	<p>As defined in the Mining Regulation 2016.</p>
Rehabilitation cost estimate	<p>As defined in the Mining Regulation 2016.</p>
Rehabilitation management plan	<p>As defined in the Mining Regulation 2016.</p>
Rehabilitation objectives	<p>As defined in the Mining Regulation 2016.</p>
Rehabilitation risk assessment	<p>As defined in the Mining Regulation 2016.</p>
Rehabilitation schedule	<p>The defined timeframes for progressive rehabilitation set out in the forward program.</p>

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
8 Nov 2023	Community Consultative Committee	Meeting	Update on rehab completion and maintenance in 2023	Nil. Documented via CCC Minutes available on HVO website.
17 Aug 2023	NSW Resources Regulator	Site visit	Familiarisation with HVO and tour of HVO North Rehabilitation Areas	Nil
9 Aug 2023	Community Consultative Committee	Meeting	Update on rehab completion and maintenance in 2023	Nil. Documented via CCC Minutes available on HVO website.

Attachment 5 – Plans

Plan1A.zip

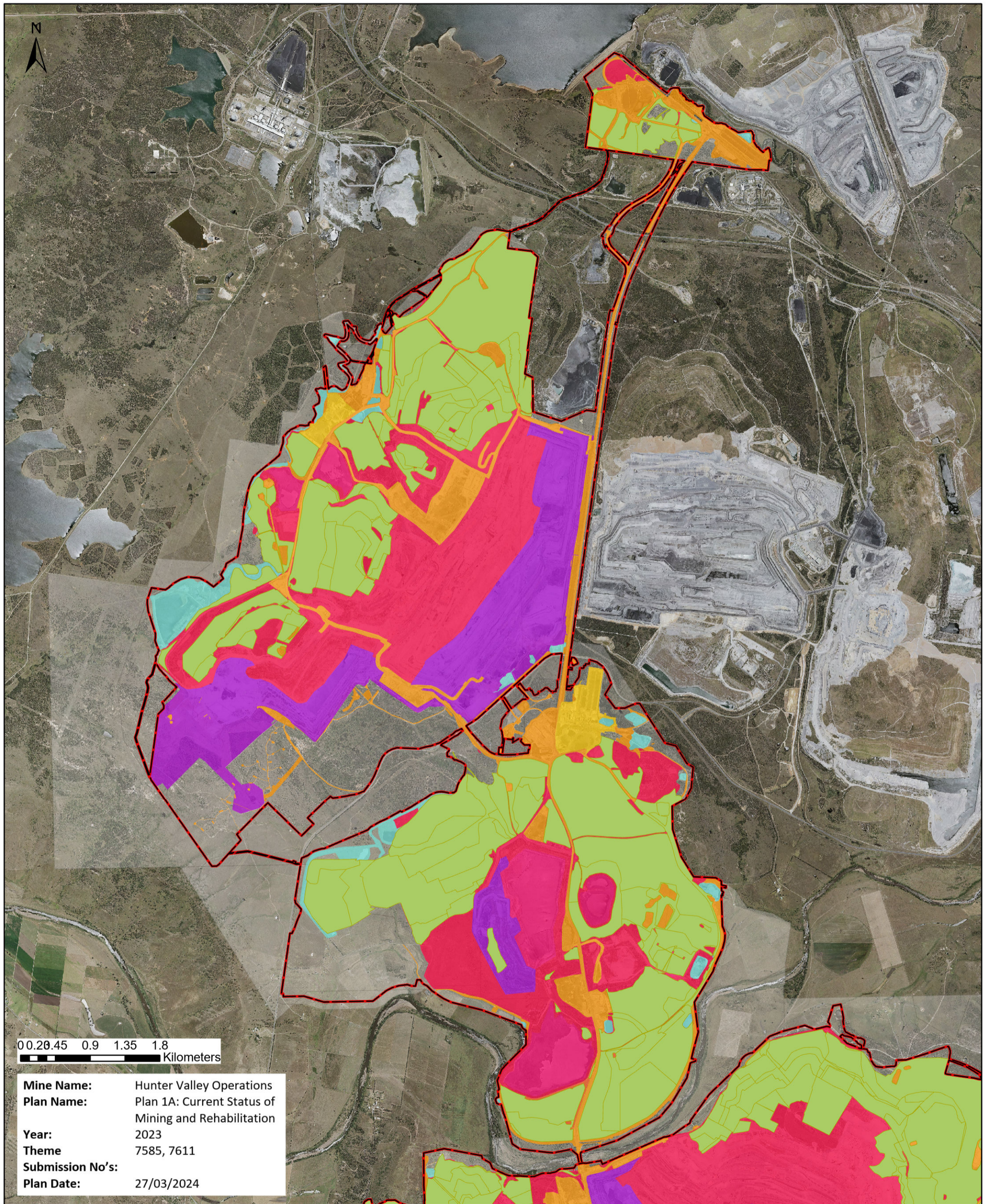
Plan1B.zip

Annual Report (LARGE MINE) v1.6

Hunter Valley Operations

Plan 1A: Current Status of Mining and Rehabilitation (HVO North)

HUNTER VALLEY OPERATIONS



0.0 0.20.45 0.9 1.35 1.8
Kilometers

Mine Name: Hunter Valley Operations
Plan Name: Plan 1A: Current Status of Mining and Rehabilitation
Year: 2023
Theme 7585, 7611
Submission No's:
Plan Date: 27/03/2024

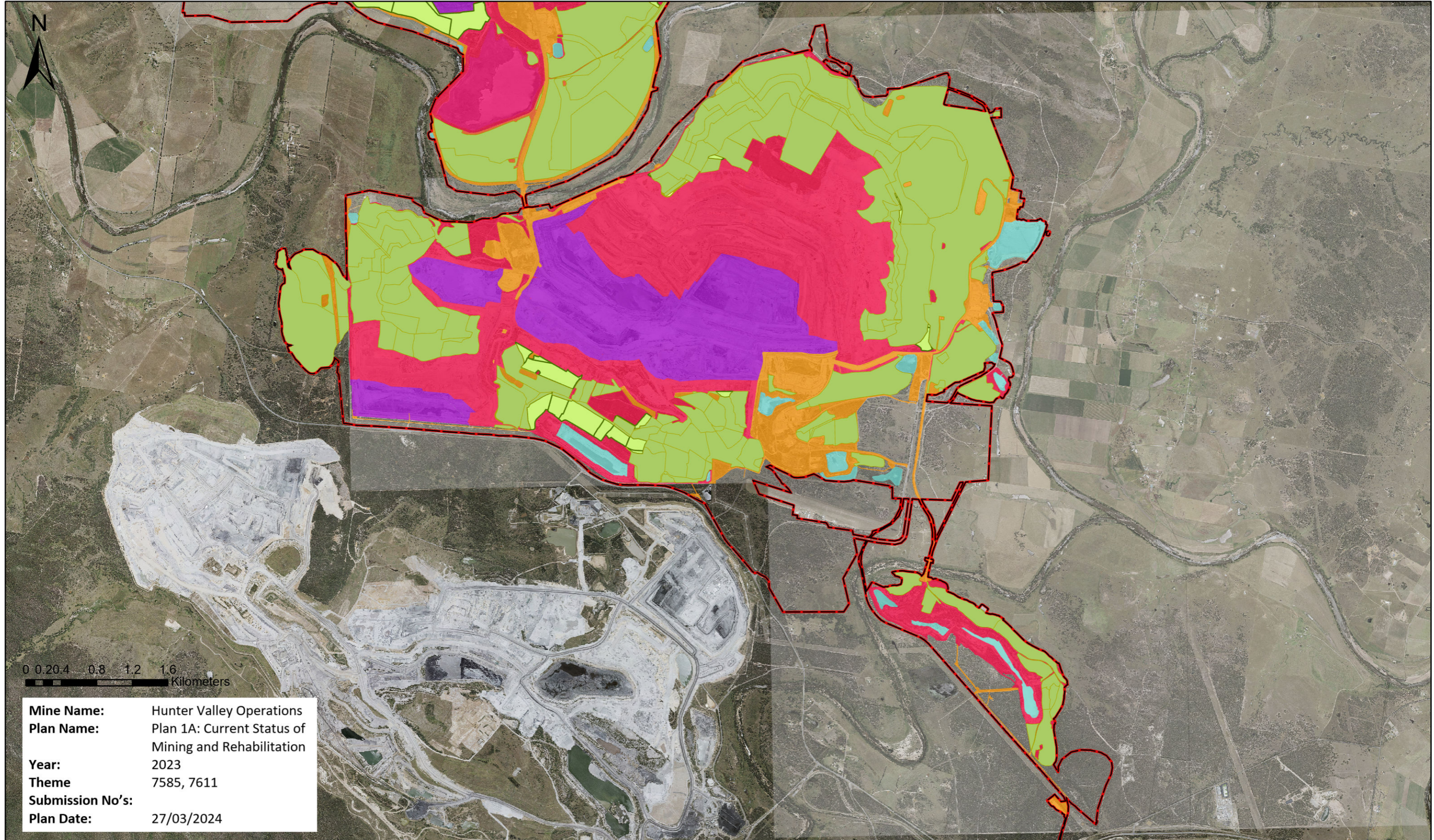
Legend

- | | | | |
|------------------------------------|-----------------------------|-----------------------------|--------------------------------------|
| Project Approval Boundary | Infrastructure Area | Water Management Area | Growth Media Development |
| Current Authorisations | Other | Rehabilitation Phase | Ecosystem and Land Use Establishment |
| Mining Domain Type | Overburden Emplacement Area | Decommissioning | Ecosystem and Land Use Development |
| Beneficiation Facility | Tailings Storage Facility | Landform Establishment | Relinquishment (Rehabilitated) |
| Active Mining Area (Open cut void) | | Rehabilitation Completion | |

Hunter Valley Operations

Plan 1A: Current Status of Mining and Rehabilitation (HVO South)

HUNTER VALLEY OPERATIONS



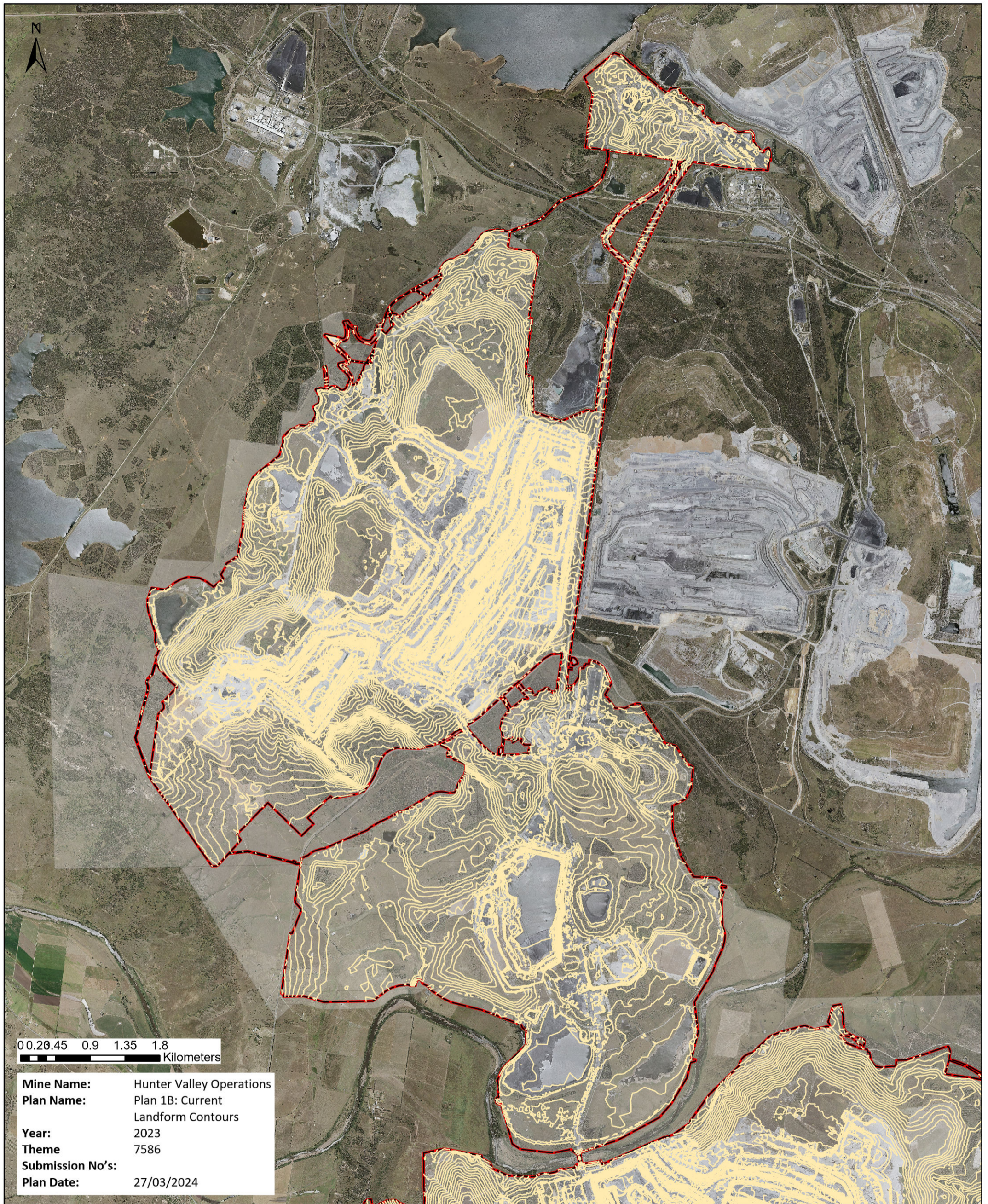
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|---------------------------|--------------------------------------|---------------------------|------------------------------------|
| Project Approval Boundary | Rehabilitation Phase | Mining Domain Type | Overburden Emplacement Area |
| Current Authorisations | Landform Establishment | Beneficiation Facility | Tailings Storage Facility |
| | Growth Media Development | Infrastructure Area | Active Mining Area (Open cut void) |
| | Ecosystem and Land Use Establishment | Other | Water Management Area |


Hunter Valley Operations

Plan 1B: Current Landform Contours (HVO North)

HUNTER VALLEY OPERATIONS



Legend

-  Project Approval Boundary
-  Current Authorisations
-  Current Landform Contours

Hunter Valley Operations

Plan 1B: Current Landform Contours (HVO South)




HUNTER VALLEY OPERATIONS



0 0.2 0.4 0.8 1.2 1.6
Kilometers

Mine Name:	Hunter Valley Operations
Plan Name:	Plan 1B: Current Landform Contours
Year:	2023
Theme	7586
Submission No's:	
Plan Date:	27/03/2024

Legend

-  Project Approval Boundary
-  Current Authorisations
-  Current Landform Contours