

Our ref: DA92/97-PA-100

Mr Chris Lauritzen
General Manager – Resource Development
MACH Energy Australia Pty Ltd
Suite 1, Level 3, 426 King Street
Newcastle West NSW 2302

18/03/2024

Subject: Approval of Mount Pleasant Operation (DA 92/97) Rehabilitation Strategy

Dear Mr Lauritzen

I refer to the Rehabilitation Strategy submitted to the Department for review following approval of the Modification 6, in accordance with Condition 54, Schedule 3 of the Mt Pleasant Operation development consent (DA 92/97).

The Department has carefully reviewed the Rehabilitation Strategy and is satisfied that it meets the requirements of the relevant conditions in DA 92/97.

Accordingly, as nominee of the Planning Secretary, I approve the Rehabilitation Strategy (Version 03).

You are reminded that if there are any inconsistencies between the Rehabilitation Strategy and the conditions of approval, the conditions prevail.

Please ensure you make the document publicly available on the project website at the earliest convenience.

If you wish to discuss the matter further, please contact Tegan Cole on 02 9895 6457.

Yours sincerely



Joe Fittell

Team Leader

Energy and Resource Assessments

As nominee of the Planning Secretary



MOUNT PLEASANT OPERATION

REHABILITATION STRATEGY

Document ID:	MP001-0000-H&S-PLN-0023		
Company:	MACH Energy Australia Pty Ltd		
Effective Date:	18 March 2024	Status:	Final
Endorsed By:	Andrew Reid	Revision Number:	03

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1 INTRODUCTION

The Mount Pleasant Operation (MPO) is located in the Upper Hunter Valley of New South Wales (NSW), approximately 3 kilometres (km) north-west of Muswellbrook and approximately 50 km north-west of Singleton (Figure 1). The village of Aberdeen and locality of Kayuga are also located approximately 5 km north-northeast and 1 km north of the MPO boundary, respectively (Figure 1).

The proponent of the MPO is MACH Energy Australia Pty Ltd (MACH Energy), which purchased the MPO from Coal & Allied Operations Pty Ltd (Coal & Allied) in 2016.

Development of the MPO is undertaken within Mining Lease (ML) 1645, ML 1713, ML 1708, ML 1709, ML 1750 and ML 1829 and is operated in accordance with the relevant Authorities for the above MLs and in accordance with NSW Development Consent DA 92/97 and Commonwealth Approval EPBC 2011/5795. Other key approvals, licences and permits for the MPO are summarised in the MPO's Environmental Management Strategy.

1.1 HISTORY OF OPERATIONS

The initial development application for the MPO was made in 1997. This was supported by an Environmental Impact Statement (EIS) prepared by Environmental Resources Management (ERM) Mitchell McCotter (ERM Mitchell McCotter, 1997). On 22 December 1999, the then Minister for Urban Affairs and Planning granted Development Consent DA 92/97 to Coal & Allied. This allowed for the "Construction and operation of an open cut coal mine, coal preparation plant, transport and rail loading facilities and associated facilities" at the MPO. The consent allowed for operations 24 hours per day seven days per week and the extraction of 197 million tonnes (Mt) of run-of-mine (ROM) coal over a 21 year period, at a rate of up to 10.5 Mt of ROM coal per year.

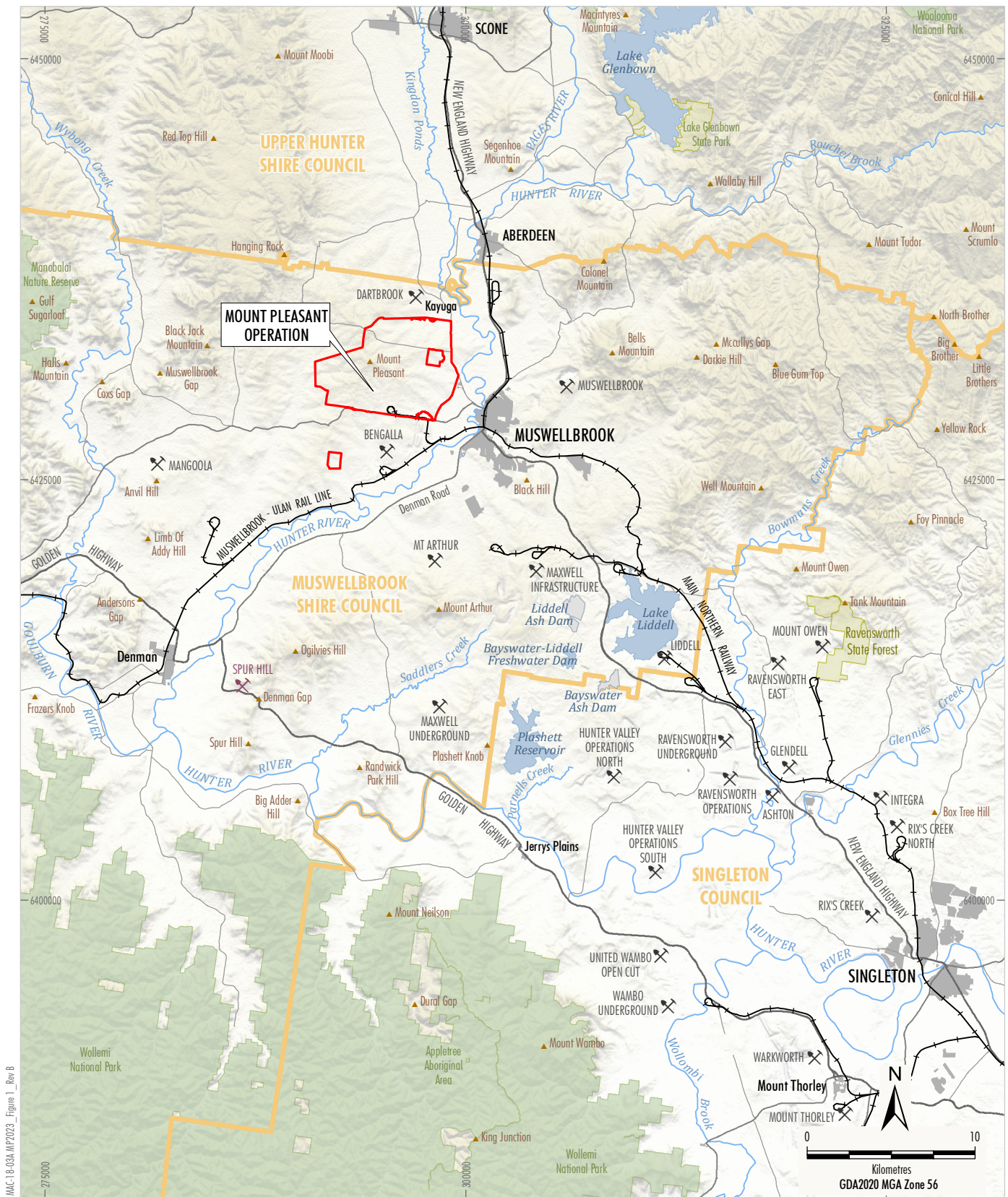
Environmental Dam 1 (ED1) and an associated gravel access track were constructed in 2004. In November 2005, a high level spillway was added to ED1 to accommodate larger rainfall events.

The Mount Pleasant Project Modification (MOD 1) was submitted on 19 May 2010 with a supporting Environmental Assessment (EA) prepared by EMGA Mitchell McLennan (EMGA Mitchell McLennan, 2010). MOD 1 included the provision of an infrastructure envelope for siting the mine infrastructure, the provision of an optional conveyor/service corridor linking the MPO facilities with the Muswellbrook-Ulan Rail Line and modification of the existing Development Consent DA 92/97 boundaries to accommodate the optional conveyor/service corridor and minor administrative changes. MOD 1 was approved on 19 September 2011.

Prior to MACH Energy acquisition (in 2016), activities undertaken on-site were largely limited to routine agricultural management activities such as weed and pest control, fence maintenance, fire break and fire trail maintenance, and seed harvesting. Since the Development Consent was granted, regular monitoring of a range of baseline environmental aspects has been undertaken in the vicinity of the MPO, including noise, air quality, surface water and groundwater monitoring.

The MPO South Pit Haul Road Modification (MOD 2) was submitted on 30 January 2017 with a supporting EA prepared by MACH Energy (MACH Energy, 2017a). MOD 2 proposed to realign an internal haul road to enable more efficient access to the South Pit open cut, with no other material changes to the approved MPO. MOD 2 was approved on 29 March 2017.

The MPO Mine Optimisation Modification (MOD 3) was submitted on 31 May 2017 with a supporting EA prepared by MACH Energy (MACH Energy, 2017b). MOD 3 comprised an extension to the time limit on mining operations (to 22 December 2026) and extensions to the South Pit Eastern Out of Pit Emplacement to facilitate development of an improved final landform. MOD 3 was approved on 24 August 2018.



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MOUNT PLEASANT OPERATION

Regional Location

Figure 1

The MPO Rail Modification (MOD 4) was submitted on 18 December 2017 with a supporting EA prepared by MACH Energy (MACH Energy, 2017c). MOD 4 proposed the following changes:

- duplication of the approved rail spur, rail loop, conveyor and rail load-out facility and associated services;
- duplication of the Hunter River water supply pump station, water pipeline and associated electricity supply that followed the original rail spur alignment; and
- demolition and removal of the redundant approved infrastructure within the extent of the Bengalla Mine, once the new rail, product loading and water supply infrastructure has been commissioned and is fully operational.

MOD 4 was approved on 16 November 2018 by the Secretary of the NSW Department of Planning and Environment (DPE) (under Delegation). The MPO continues to be developed and operated under the currently approved MOD 4 of Development Consent DA 92/97. This Rehabilitation Strategy reflects the currently approved MPO under MOD 4 of Development Consent DA 92/97.

Appendix 2 of the modified Development Consent DA 92/97 illustrates the Conceptual Project Layout Plans of the approved MPO at 2021 and 2025, Approved Surface Disturbance Plan and Conceptual Final Landform incorporating the MOD 4 infrastructure relocations. Appendix 2 of the modified Development Consent DA 92/97 is provided in Attachment 1 of this Strategy.

Figures 2 and 3 show the approved surface disturbance plan for the approved MPO and the completed MOD 4 infrastructure components, respectively.

Modification 5 (MOD 5) was submitted to rectify an administrative error in Development Consent DA 92/97 and was approved by DPE on 29 June 2022.

Modification 6 (MOD 6) was submitted to modify Development Consent DA 92/97 and was approved on 6 November 2023. MOD 6 will allow for the construction and operation of a re-transmission facility including a tower or mast, shed and associated transmission infrastructure to re-transmit local digital television (DTV) signals from the Broadcast Australia site at Rossgole Lookout. Appendix 2 of the modified Development Consent DA 92/97 illustrates the Revised Approved Surface Disturbance Plan incorporating the MOD 6 infrastructure (Attachment 1).

Separate to Development Consent DA 92/97, on 22 January 2021, MACH Energy submitted the Mount Pleasant Optimisation Project (the Project) Environmental Impact Statement in support of a State Significant Development (SSD) 10418 under Part 4 of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act). Key aspects of the Mount Pleasant Optimisation Project generally involve (among other things):

- increased open cut extraction within the MPO's existing MLs;
- a staged increase in extraction, handling and processing of ROM coal up to 21 million tonnes per annum;
- upgrades to existing infrastructure and new infrastructure to support mining of the proposed Project; and
- an extension to the time limit on mining operations to 22 December 2048.

On 6 September 2022, the NSW Independent Planning Commission approved the development application for the Mount Pleasant Optimisation Project (SSD 10418), in accordance with Part 4 of the EP&A Act. This Rehabilitation Strategy does not address the requirements of SSD 10418.

1.2 PURPOSE AND SCOPE

This Rehabilitation Strategy has been prepared by MACH Energy to satisfy the requirements under Development Consent DA 92/97 and specifically Schedule 3, Condition 54. The role of this Rehabilitation Strategy, as well as the key components of the rehabilitation implementation and improvement methodology at the MPO, are shown on Figure 4.

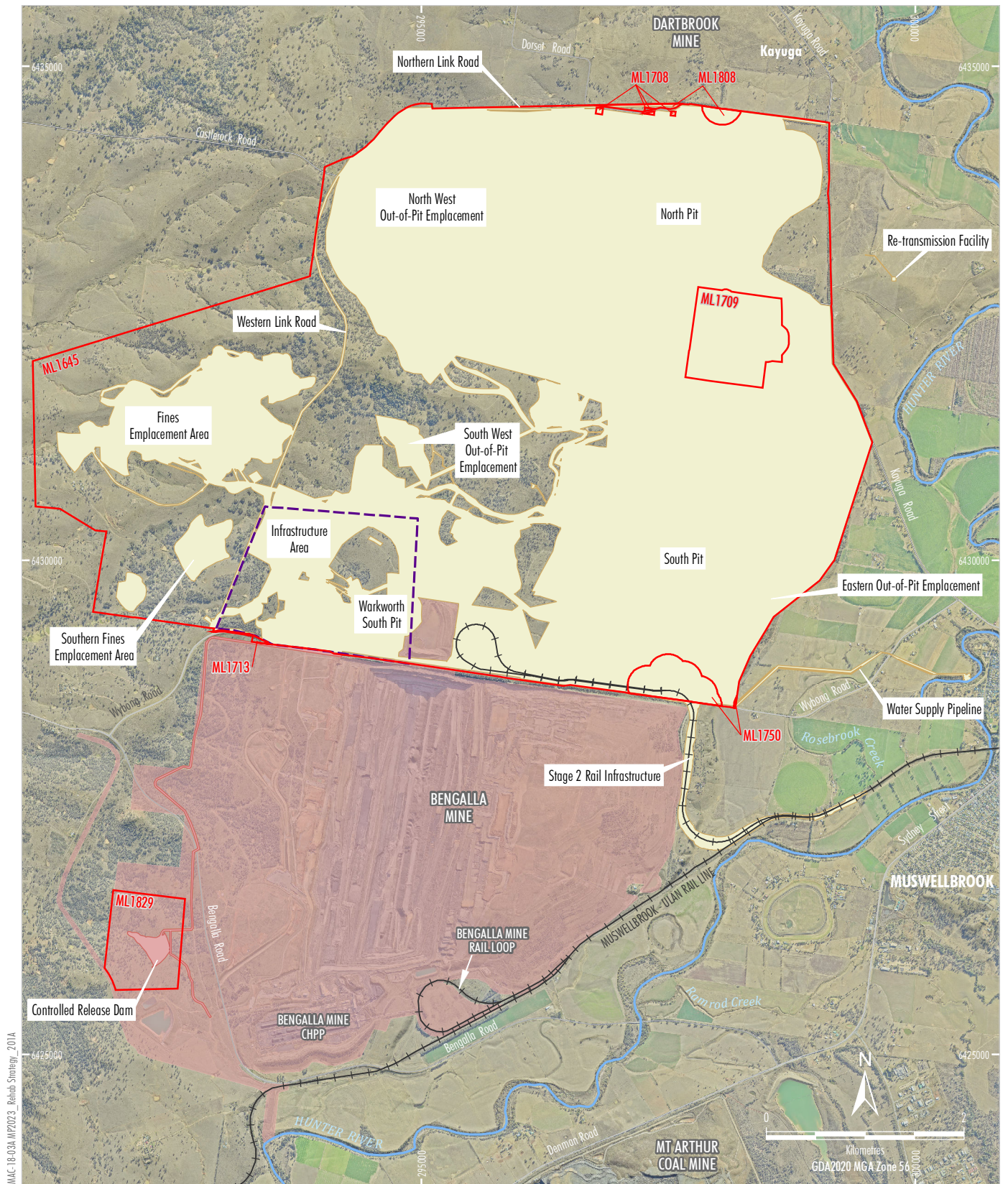
Version 1 and 2 of the Rehabilitation Strategy was prepared in accordance with the requirements of the *ESG3: Mining Operations Plan (MOP) Guidelines* (Department Trade and Investment Regional Infrastructure and Services, 2013).

The previous version of the Rehabilitation Strategy (Version 2) was prepared to incorporate updates to maintain consistency with the MPO's Mining Operations Plan and Rehabilitation Management Plan (1 July 2021 – 30 June 2023) (herein referred to as 2021-2023 MOP/RMP), approved by the NSW Resources Regulator on 24 June 2021. However, as of 1 August 2022, MPO operates under a Rehabilitation Management Plan (RMP) along with the supporting Annual Rehabilitation Report and Forward Program which has replaced the 2021-2023 MOP/RMP.

The contents of this Rehabilitation Strategy have been updated to maintain consistency with the latest MPO RMP (Version 2) and associated Annual Rehabilitation Report and Forward Program which was prepared in accordance with the NSW Resource Regulator Form and Way – *Rehabilitation Management Plan for Large Mines* (July 2021), under amendment to the *Mining Regulation 2016* under the *Mining Act 1992*.

MACH Energy has revised this Rehabilitation Strategy, as required, to maintain consistency with the MPO RMP approved by the NSW Resources Regulator under the provisions of the NSW *Mining Amendment (Standard Conditions of Mining Leases) – Rehabilitation Regulation 2021*.

The Rehabilitation Strategy applies to all employees and contractors at the MPO and covers all areas within the MPO boundary. The Rehabilitation Strategy applies to the life of the MPO, including (but not limited to) the period of mining operations specified in Development Consent DA 92/97, which currently permits mining until 22 December 2026. As required by Condition 5, Schedule 2 of Development Consent DA 92/97, the Rehabilitation Strategy will continue to apply (excluding mining operations) beyond 22 December 2026, as required, until the rehabilitation and any additional undertakings (required by the Secretary of DPE (now the NSW Department of Planning, Housing and Infrastructure [DPHI]), or the NSW Resources Regulator) have been carried out satisfactorily.



LEGEND

- Mining Lease Boundary (Mount Pleasant Operation)
- Approximate Extent of Existing/Approved Surface Development (DA92/97) ¹
- Infrastructure Area Envelope
- Existing/Approved Mount Pleasant Operation Infrastructure within Bengalla Mine Approved Disturbance Boundary (SSD-5170)
- Bengalla Mine Approved Disturbance Boundary (SSD-5170)

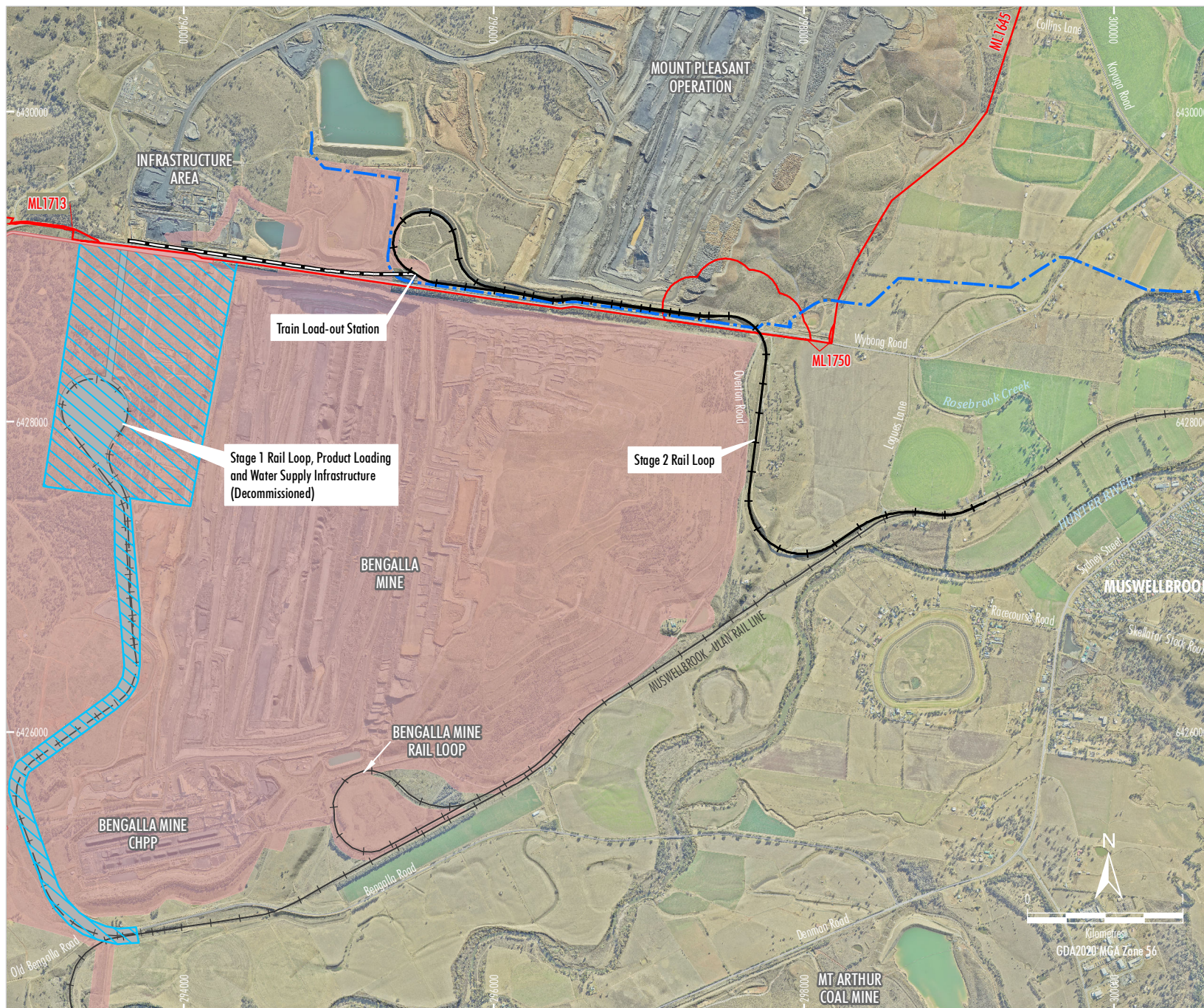
NOTE

¹ Excludes some incidental Project components such as water management infrastructure, road diversions, access tracks, topsoil stockpiles, power supply, temporary offices, signalling, other ancillary works and construction disturbance.

Source: MACH (2023); NSW Spatial Services (2023)
Orthophoto: MACH (Jun 2023)

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MOUNT PLEASANT OPERATION
General Arrangement

Figure 2



LEGEND

- Mining Lease Boundary (Mount Pleasant Operation)
- Infrastructure removed under the Terms of Condition 37, Schedule 3
- Bengalla Mine Approved Disturbance Boundary (SSD-5170)

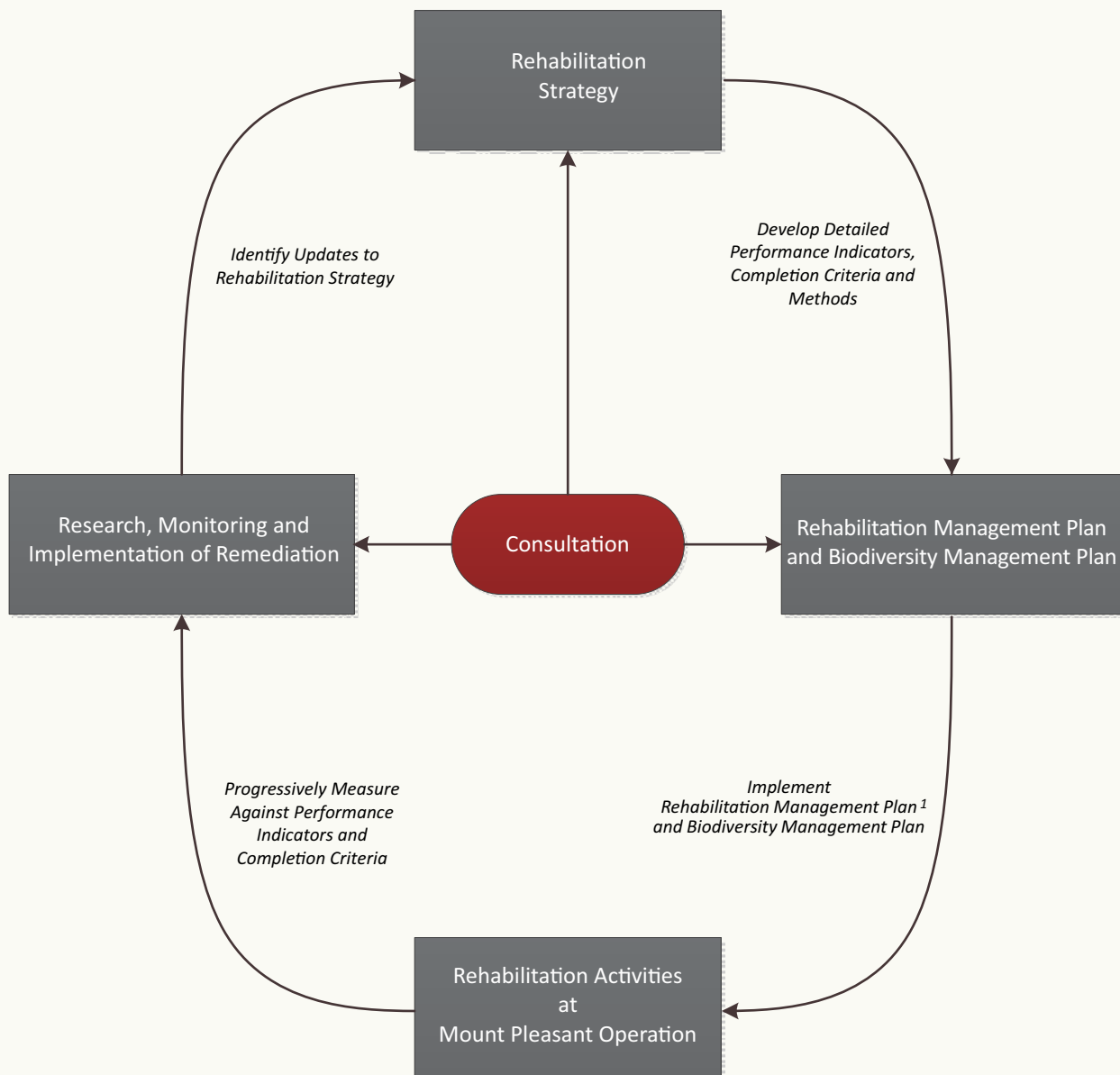
Key Elements of Modification 4

- Rail Alignment
- Product Conveyor
- Water Pipeline and associated Electricity Transmission Line

Source: MACH (2023); NSW Spatial Services (2023); Department of Planning and Environment (2016)
 Orthophoto: MACH (Jun 2023)

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 MOUNT PLEASANT OPERATION
 Modification 4
 Rail and Water Supply Alignments

Figure 3



NOTE

¹ As of 1 August 2022, MPO operates under a Rehabilitation Management Plan, along with the supporting Annual Rehabilitation Report and Forward Program which has replaced the Mining Operations Plan (1 July 2021 - 30 June 2023).

1.2.1 Previous Versions

A previous version of the Rehabilitation Strategy (Version 1) was submitted by Coal & Allied and was approved on 23 July 2012. MACH Energy prepared a 'Preliminary Rehabilitation Strategy' as part of the *Mount Pleasant Operation - Mine Optimisation Modification Response to Submissions* (MACH Energy, 2017d) for which this Rehabilitation Strategy has built upon to address Condition 54, Schedule 3 of Development Consent DA 92/97. The preliminary version of the Rehabilitation Strategy prepared by MACH Energy provided a contemporary outline of MACH Energy's proposed objectives and measures to implement rehabilitation at the MPO, following the approval of MOD 3/MOD 4, and was approved by the DPIE (now DPHI) on 16 May 2019.

Version 2 of the Rehabilitation Strategy was approved on 24 February 2022 and included updates to maintain consistency with the MPO's 2021-2023 MOP/RMP, approved by the NSW Resources Regulator on 24 June 2021.

As required by Condition 54, Schedule 3 of Development Consent DA 92/97, the Rehabilitation Strategy was submitted to NSW Resources Regulator and the Muswellbrook Shire Council (MSC) for the purposes of consultation. The Rehabilitation Strategy was prepared on behalf of MACH Energy by Dr David Freudenberger (whose appointment has been approved by DPIE (now DPHI) [letter dated 18 September 2018] as a 'suitably qualified and experienced person').

Consistent with the requirements of the NSW *Mining Amendment (Standard Conditions of Mining Leases) – Rehabilitation Regulation 2021*, enacted on 2 July 2021, MACH Energy prepared a MPO RMP for the MPO by 2 July 2022 (or as otherwise agreed with the NSW Resources Regulator) in accordance with NSW Resources Regulator's relevant guidelines. Following submission of the MPO RMP by the NSW Resources Regulator, MACH Energy revised the Rehabilitation Strategy, as required, to maintain consistency between the documents.

1.2.2 Current Version

This Rehabilitation Strategy (Version 3) has been updated to replace the previous versions prepared by MACH Energy (approved in February 2022) described in Section 1.2.1 and includes updates to reflect the approval of MOD 6 (6 November 2023).

This Rehabilitation Strategy and associated figures has also been updated to:

- include the mining lease boundary (ML 1829) which allows for the operation of water discharge infrastructure; and
- reflect the transfer of ML 1645 (south of Wybong Road) to Bengalla Mine and the status of activities under Schedule 3, Condition 37 of Development Consent DA 92/97 (Section 4.2).

As required under Schedule 3, Condition 54 of Development Consent DA 92/97, a draft version of this Rehabilitation Strategy was submitted to NSW Resources Regulator and MSC for the purposes of consultation. Appendix A details the comments received by MSC on the draft Rehabilitation Strategy and MACH's response. MSC's suggested edits were made to this version of the Rehabilitation Strategy.

1.3 STRUCTURE OF THE REHABILITATION STRATEGY

The remainder of the Rehabilitation Strategy is structured as follows:

- Section 2: Outlines the statutory obligations relevant to this Rehabilitation Strategy.
- Section 3: Outlines the key rehabilitation strategies proposed at the MPO.
- Section 4: Provides an indicative schedule for rehabilitation and describes progressive rehabilitation at the MPO.
- Section 5: Describes the Annual Review and continuous improvement process.
- Section 6: Summarises the rehabilitation monitoring and research programme at the MPO.
- Section 7: Provides references used in this Rehabilitation Strategy.

Table 1 (Continued)
Rehabilitation Management Development Consent DA 92/97 Conditions

MPO Development Consent DA 92/97		Section where addressed in this Rehabilitation Strategy document
Other land affected by the development	<ul style="list-style-type: none"> Restore ecosystem function, including maintaining or establishing self-sustaining ecosystems comprised of local native plant species (unless Resources Regulator agrees otherwise) 	Section 3.2
Final Landform	<ul style="list-style-type: none"> Stable and sustainable for the intended post-mining land use/s Integrated with surrounding natural landforms Incorporate micro-relief and drainage lines that are consistent with surrounding topography, to the greatest extent practicable Maximise surface water drainage to the natural environment (excluding final void catchment) 	Section 3.1.3
Final voids	<ul style="list-style-type: none"> Designed as long term groundwater sinks to maximise ground water flows across back filled pits to the final void Minimise to the greatest extent practicable: <ul style="list-style-type: none"> the size and depth of final voids; the drainage catchment of final voids; any high wall instability risk; and the risk of flood interaction 	Section 3.1.3 and 3.4
Surface infrastructure of the development	<ul style="list-style-type: none"> To be decommissioned and removed, unless the Resources Regulator agrees otherwise 	Section 3.1.1 and Section 3.5
Rehabilitation materials	<ul style="list-style-type: none"> Materials from areas disturbed under this consent (including topsoils, substrates and seeds) are to be recovered, managed and used as rehabilitation resources, to the greatest extent practicable 	Section 3.1.4
Water quality	<ul style="list-style-type: none"> Water retained on the site is fit for the intended post-mining land use/s Water discharged from the site is suitable for receiving waters and fit for aquatic ecology and riparian vegetation 	Section 3.5
Community	<ul style="list-style-type: none"> Ensure public safety Minimise adverse socio-economic effects associated with mine closure 	Section 3.6

Table 1 (Continued)
Rehabilitation Management Development Consent DA 92/97 Conditions

MPO Development Consent DA 92/97	Section where addressed in this Rehabilitation Strategy document
<p>54. By the end of January 2019, unless otherwise agreed by the Secretary, the Applicant must prepare a Rehabilitation Strategy for the development to the satisfaction of the Secretary. This strategy must:</p> <ul style="list-style-type: none"> (a) be prepared by a suitably qualified and experienced person/s whose appointment has been endorsed by the Secretary; (b) be prepared in consultation with the Resources Regulator and Council; (c) build upon the Rehabilitation Objectives in Table 11 and the conceptual final landform depicted in Figure 4 in Appendix 2, including identification of opportunities for increasing the areas of woodland and habitat connectivity within the rehabilitated landscape; (d) include details of the canopy, sub-canopy, understorey and ground strata species to be established in the rehabilitation areas, with a particular focus on ensuring the achievement of an appropriate level of diversity and mix of functional groups within each target community; and (e) include an indicative schedule for the staged rehabilitation of the development. (f) include a protocol for periodic trials to demonstrate that the proposed agricultural land capability of grassland areas in the final landform is being achieved; and (g) include a protocol for periodic trials to demonstrate that the target vegetation communities proposed in rehabilitated woodland areas and fauna habitat is being achieved. <p>The Applicant must implement the approved strategy as approved from time to time by the Secretary.</p>	<p>This Rehabilitation Strategy</p> <p>Section 1.2.2</p> <p>Section 1.2.2</p> <p>Section 3</p> <p>Section 3.2</p> <p>Section 4.3</p> <p>Section 6</p> <p>Section 6</p>
<p>Progressive Rehabilitation</p> <p>55. The Applicant must rehabilitate the site progressively, that is, as soon as reasonably practicable following disturbance. All reasonable steps must be taken to minimise the total area exposed at any time. Interim stabilisation and temporary vegetation strategies must be employed when areas prone to dust generation, soil erosion and weed incursion cannot be permanently rehabilitated.</p> <p>Note: It is accepted that some parts of the site that are progressively rehabilitated may be subject to further disturbance at some later stage of the development.</p>	<p>Section 4.1</p>
<p>55A. The Applicant must implement all reasonable and feasible measures to provide for the interim stabilisation and temporary vegetation of the existing rail loop and infrastructure corridor, as soon as reasonably practicable following the removal of infrastructure as required under condition 37.</p> <p>Note: The Applicant's obligations under this condition will cease following the transfer or grant of a mining lease over that part of ML 1645 south of Wybong Road to the operator of Bengalla mine (or its nominee).</p>	<p>Section 4.2</p>

Table 1 (Continued)
Rehabilitation Management Development Consent DA 92/97 Conditions

MPO Development Consent DA 92/97	Section where addressed in this Rehabilitation Strategy document
Statement of Commitments	
<p>Redundant Infrastructure Removal in Bengalla Mine Footprint</p> <ul style="list-style-type: none"> <i>MACH Energy will stabilise redundant rail infrastructure areas within the footprint of the Bengalla Mine such that they do not pose an ongoing material source of dust emissions (i.e. seeding to establish a cover crop and/or application of a dust suppressant) prior to management of these areas being transferred to Bengalla Mine.</i> <i>Existing Mount Pleasant Operation rail spur erosion and sediment control water management structures (e.g. sediment fences) within the footprint of Bengalla Mine will also be left in place, subject to agreement of Bengalla Mine.</i> 	<p>Section 4.2</p>

3 REHABILITATION STRATEGY

Sections 3.1 to 3.6 provide a description of rehabilitation strategies to address the objectives in Condition 53, Schedule 3 of Development Consent DA 92/97.

3.1 GENERAL REHABILITATION PRINCIPLES

This section describes the post-mining land use and rehabilitation domains, and general principles that will be applied to all rehabilitated landforms at the MPO.

The general principles are based on the principles provided in the *National Standards for the Practice of Ecological Restoration in Australia, 2nd Edition* (Society for Ecological Restoration Australasia [SERA], 2018) as follows:

1. *Ecological restoration practice is based on an appropriate local indigenous reference ecosystem.*
2. *Restoration inputs will be dictated by level of resilience and degradation.*
3. *Recovery of ecosystem attributes is facilitated by identifying clear targets, goals and objectives.*
4. *The goal of ecological restoration is full recovery, insofar as possible, even if outcomes take long timeframes or involve high inputs.*
5. *Restoration science and practice are synergistic.*
6. *Social aspects are critical to successful ecological restoration.*

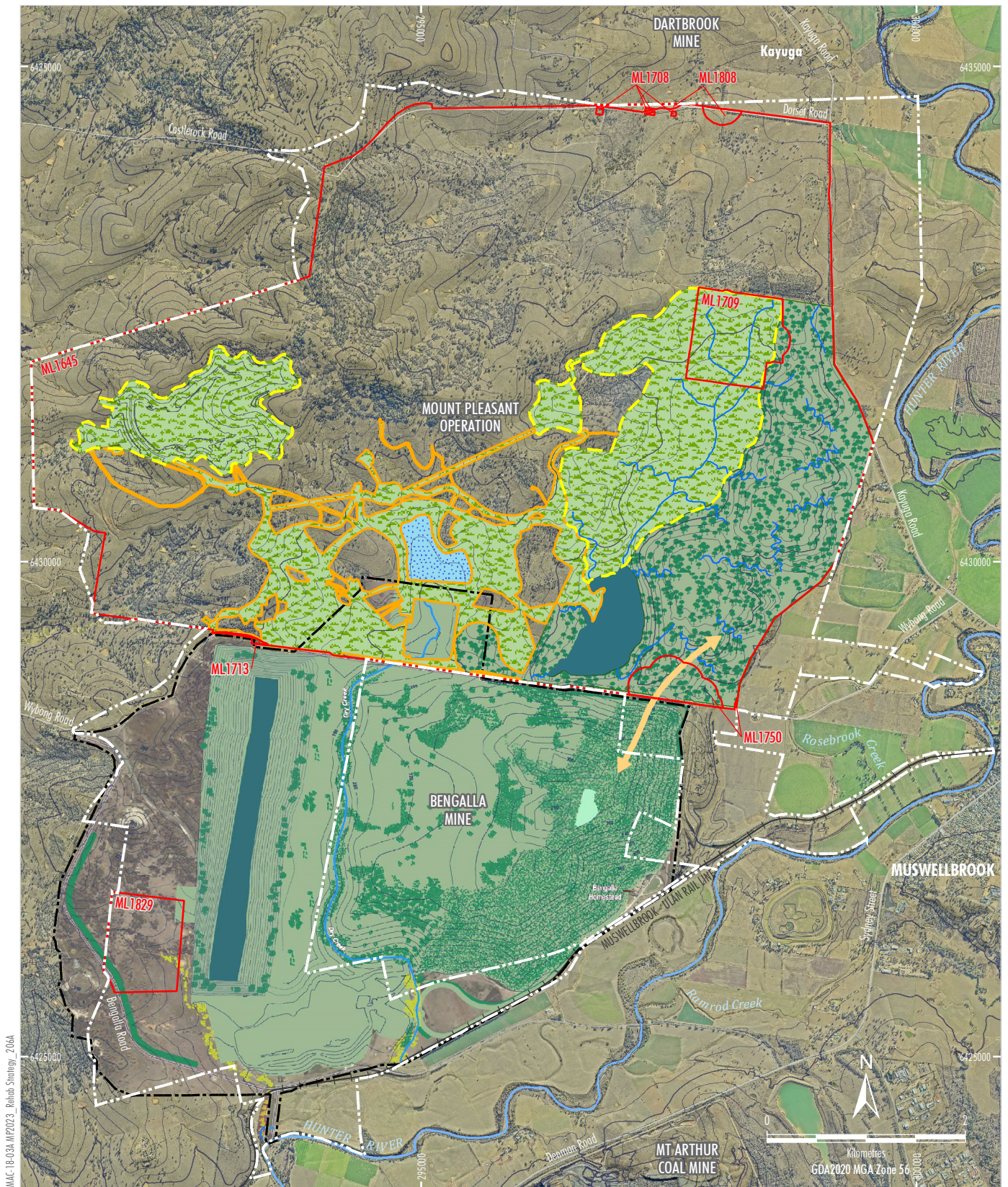
3.1.1 Post-Mining Land Use and Rehabilitation Domains

MACH Energy has undertaken a preliminary assessment of potential post-mining land uses (e.g. nature conservation, agriculture) taking into account relevant strategic land use objectives of the area in the vicinity of the MPO and the potential benefits of the post-mining land use to the environment, future landholders and the community. This has included consultation with MSC who has indicated a preference for the inclusion of some intensive agricultural/industrial post-mining land uses that provide employment for the local community.

Provisional Post-Mining Land Use Domains are shown on Figure 5 and described in Table 2. Table 2 has been prepared in accordance with the *Form and Way for Rehabilitation Management Plans for Large Mines* (NSW Resources Regulator, 2021), where each of the Secondary Domains are characterised by a similar post-mining land use objective.

The Post-Mining Land Use Domains will be reviewed in consultation with key stakeholders (including the MSC, relevant regulatory agencies [including the DPIE (now DPHI), NSW Resources Regulator, and the NSW Department of Primary Industries [DPI] Agriculture], and the MPO's CCC) during the life of the MPO as part of the MPO RMP and Rehabilitation Strategy revision process (Section 5). As described in Section 1.2.2, MACH Energy will revise this Rehabilitation Strategy, as required, to maintain consistency with the MPO RMP submitted to the NSW Resources Regulator under the provisions of the *NSW Mining Amendment (Standard Conditions of Mining Leases) – Rehabilitation Regulation 2021*.

As rehabilitation progresses, an independent Land Capability Assessment will be undertaken using the *Land and soil capability assessment scheme: second approximation - a general rural land evaluation system for New South Wales* (NSW Office of Environment and Heritage [OEH], 2012) to identify specific locations suitable for low intensity agricultural activities.



MAC-18-03A.MP2023 - Rehab Strategy - 2064

- LEGEND**
- Project Approval Boundary *
 - Mining Lease Boundary (Mount Pleasant Operation)
 - Secondary/Post-mining Land Use Domains**
 - Domain A - Native Ecosystem
 - Domain B - Agricultural - Grazing
 - Domain G - Water Storage (Excluding Final Void)
 - Domain J - Final Void
 - Potential Low Intensity Agriculture Area
 - Potential High Intensity Agriculture Area
 - Drainage Line
 - Wildlife Corridor

* Appendix 1 of Development Consent DA 92/97

Bengalla Mine Conceptual Final Landform **

- Project Boundary (Appendix 9 of Development Consent SSD-5170) (Dated February 2023)

** Digitised from Appendix 9 of Development Consent (SSD-5170) and amended in the Mount Pleasant Operation CHPP area.

Note: Figure excludes some project components such as water management infrastructure, infrastructure within the Infrastructure Area Envelope, offsite coal transport infrastructure, road diversions, access tracks, topsoil stockpiles, power supply, temporary offices, signalling, other ancillary works and construction disturbance.

Source: MACH (2023); NSW Spatial Services (2023); Department of Planning and Environment (2016) Orthophoto: MACH (Jun 2023)

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MOUNT PLEASANT OPERATION
Indicative Final Rehabilitation
and Post-mining Land Use Analysis

Figure 5

Table 2
Provisional Post-Mining Land Use Domains

Code	Secondary Domain	Description
J	Final Void	<ul style="list-style-type: none"> Infrastructure will be decommissioned and removed (unless the NSW Resources Regulator agrees otherwise). Residual final void waterbody. Final void (and associated drainage network) will be shaped to reflect a less engineered profile that is more consistent with the surrounding natural environment. Final void designed as long-term groundwater sink to maximise groundwater flows across back filled pits to the final void. Could provide long-term use for recreational or industrial activities.
G	Water Infrastructure and Storage	<ul style="list-style-type: none"> Water management infrastructure that will remain post-mining (e.g. upslope diversions). The Mine Water Dam has been identified as a potential long-term source of water for nearby intensive land uses (subject to obtaining relevant regulatory approvals).
B	Rehabilitation Area – Agricultural Land	<ul style="list-style-type: none"> Infrastructure will be decommissioned and removed (unless DRG agrees otherwise). Areas that will be rehabilitated to a standard suitable for agricultural (or industrial) post-mining land use (including potential intensive land use areas). Potential intensive land use areas have been identified based on proximity to nearby supporting infrastructure and/or water storage facilities.
A	Rehabilitation Area – Native Woodland/ Grassland	<ul style="list-style-type: none"> Infrastructure will be decommissioned and removed (unless the NSW Resources Regulator agrees otherwise). Areas that will be rehabilitated to native woodland/grassland. Consistent with MSC's recommendations, the eastern face of the MPO final landform will be revegetated with native tree and shrub species. Other Domain A areas have been selected based on slope (i.e. areas that will be of reduced agricultural use). Provisional Plant Community Types (PCTs) are discussed in Section 3.2.

Based on the above, and as shown on Figure 5, the final MPO domains will include:

- Domain 1B – Infrastructure Area rehabilitated to Agricultural Land;
- Domain 1A – Infrastructure Area rehabilitated to Native Woodland/Grassland;
- Domain 2B – Fines Emplacement Area rehabilitated to Agricultural Land;
- Domain 3G – Water Infrastructure and Storage retained post-mining;
- Domain 3A – Water Management Area rehabilitated to Native Woodland/Grassland;
- Domain 4J – Final Void;
- Domain 5B – Overburden Emplacement Area rehabilitated to Agricultural Land; and
- Domain 5A – Overburden Emplacement Area rehabilitated to Native Woodland/Grassland.

Rehabilitation objectives have been developed for the MPO's rehabilitation domains and are described in detail in the MPO RMP along with the Annual Rehabilitation Report and Forward Program (and will continued to be included in future versions of the MPO RMP).

3.1.2 Rehabilitation Phases

The rehabilitation phases for the MPO are summarised below:

- Decommissioning Phase – removal of hard stand areas, buildings, contaminated materials, hazardous materials.
- Landform Establishment Phase – incorporates gradient, slope, aspect, drainage, substrate material characterisation and morphology.
- Growing Media Development Phase – incorporates physical, chemical and biological components of the growing media and ameliorants that are used to optimise the potential of the media in terms of the preferred vegetative cover.
- Ecosystem and Land Use Establishment Phase – incorporates revegetated lands and habitat augmentation; species selection, species presence and growth together with weed and pest animal control/management; and establishment of flora.
 - Areas at the Ecosystem and Land Use Establishment phase at the MPO reflects lands where habitat features have been placed, and the area has been topsoiled, deep ripped and revegetated with species relevant to the post-mining land use of the area (e.g. native woodland/grassland species or select pasture species). For MPO Overburden Emplacement areas this includes land that has been seeded with stabilising sterile cover crop species and native grass, shrub and tree species representative of the target Plant Community Types (PCTs) (Section 3.2).
- Ecosystem and Land Use Sustainability Phase – incorporates rehabilitation of key ecosystem attributes including plant species composition, floristic structure, nutrient cycling, natural recruitment and connectivity characteristic of a sustainable landscape.
- Phase 6 – Relinquished Lands – land use and landscape is deemed as suitable to be relinquished from the Mining Lease.

As described in Section 4.1, temporary rehabilitation, including hydromulching and seeding with sterile cover crops, of temporary landforms (e.g. mine access roads and construction areas etc.), will be undertaken across the site to minimise the total area exposed at any time. This temporary rehabilitation will be undertaken where areas prone to dust generation, soil erosion and weed incursion cannot be permanently rehabilitated, in accordance with Condition 55, Schedule 3 of Development Consent DA 92/97. Temporary rehabilitation will be undertaken within 6 months of these areas becoming available. Temporary rehabilitation is described in further detail in the MPO RMP and associated Annual Rehabilitation Report and Forward Program and will continue to be described in future versions of the MPO RMP.

3.1.3 Final Landform

MACH Energy is aware of the level of local interest with respect to the shape and form of MPO final mine landforms. MACH Energy has therefore developed the following design principles for the MPO final landform:

- The emplacement landform will be designed to look less “engineered” when viewed from Muswellbrook (i.e. incorporation of macro-relief to avoid simple blocky forms).
- Surface water drainage from the waste emplacement landform will incorporate micro-relief to increase drainage stability and avoid major engineered drop structures where practical.
- The final void (and associated drainage network) will be shaped to reflect a less engineered profile that is more consistent with the surrounding natural environment.

The following subsections provide further discussion of how these principles will be applied.

Design Integration of Macro and Micro Relief

The emplacement extension and other proposed changes to the final landform that were approved as part of MOD 3 were intended to improve the overall appearance of the MPO landform by incorporating the following concepts:

- The final landform surface of the upper lifts on the eastern side of the emplacement will be varied to break up the horizon line when viewed from the east.
- The toe of the emplacement will be extended in plan to form a more complex shape that better aligns with the underlying topography.

These elements of macro-relief on the eastern face of the final landform create a number of spurs and valleys, with the high points on the landform aligning with the spurs to further improve the more natural appearance of the landform from viewpoints to the north-east and south-east. The objective of the final landform is to develop drainage features in the post-mine landform that mitigate erosion potential. This will be achieved by incorporating micro-relief into the drainage design.

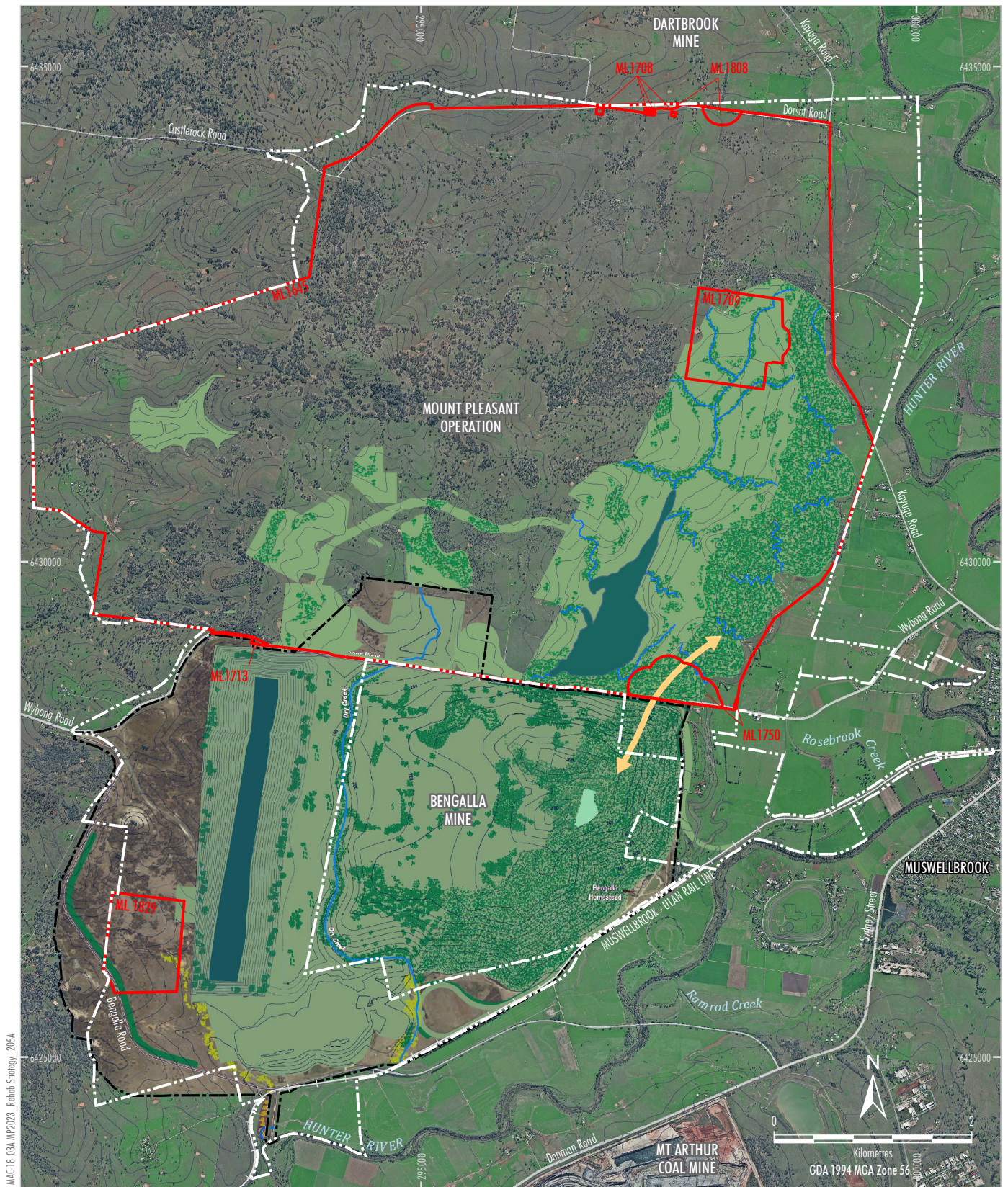
The NSW Mineral Council's *Rehabilitation by Design Practice Notes* (2007) and Department of Environment & Climate Change's *Managing Urban Stormwater Soils and Construction Volume 2E Mines and Quarries* (2008) provide principles for the construction of stable batter slopes. These principles include:

- Use of a combination of convex and concave outer batters to convey runoff (i.e. as opposed to fixed slope batters).
- Appropriately spaced benches to reduce the velocity of runoff.
- Gentler slope gradients.

MACH Energy has considered these principles in developing the conceptual final landform shown on Figure 6.

In particular, MACH Energy will implement the following measures to increase the stability of the final landform:

- Establish bench drains where necessary to convey runoff from batter slopes to sub-catchment drainage lines and investigate opportunities to develop small ephemeral wetlands.
- Maximise the number of sub-catchments to reduce the catchment area of individual constructed drainage lines.
- Establish meandering drainage lines that increase the total drainage length and therefore result in gentler stream bed gradients.
- Where practical, design drainage lines to generally produce a complex and concave stream bed profile.
- Establish diverse and variable density native tree and shrub cover on the outer face of the Eastern Out of Pit Emplacement and in final landform drainage features to promote stability of the final landform.



- LEGEND**
- Project Approval Boundary *
 - Mining Lease Boundary (Mount Pleasant Operation)
 - Final Void
 - Final Rehabilitation
 - Drainage Line
 - Wildlife Corridor

Bengalla Mine Conceptual Final Landform **
 Project Boundary (Appendix 9 of Development Consent SSD-5170)
 (Dated February 2023)

** Digitised from Appendix 9 of Development Consent (SSD-5170)
 and amended in the Mount Pleasant Operation CHPP area.

Source: NSW Spatial Services (2019); Department of Planning
 and Environment (2016); MACH (2021, 2023)
 Orthophoto: MACH (Aug 2016)

* Appendix 1 of Development Consent DA 92/97

Note: Figure excludes some project components such as water
 management infrastructure, infrastructure within the Infrastructure Area
 Envelope, offsite coal transport infrastructure, road diversions, access
 tracks, topsoil stockpiles, power supply, temporary offices, signalling, other
 ancillary works and construction disturbance.

MACHEnergy
 MOUNT PLEASANT OPERATION
 Conceptual Final Landform
 - Figure 4 of Appendix 2 of DA 92/97

Figure 6

The final landform drainage lines will be designed to accommodate natural erosive processes. This will be achieved through consideration of key erosional and geomorphic characteristics such as nature of bed material (e.g. particle size), presence of rock outcrops, bed features (such as cascades, pool and riffle zones) as well as bed and bank vegetation.

Geomorphic features will be incorporated into the design of the relevant final landform drainages. This will also be informed by investigation into the physical characteristics of waste rock and soil materials at the MPO for provision of appropriate rock, sub-soil and topsoil material for use on outer batters and in drainage features. To construct rock-armoured drainage features (i.e. following initial settlement of the geomorphic landform), or for erosion mitigation, some areas initially established to woodland or pasture rehabilitation may need to be re-disturbed by subsequent stages of work.

Further refinement of the conceptual final landform has been undertaken and has involved GeoFluv™ modelling and other similar catchment/drainage review and landform design software to incorporate micro-relief and drainage/erosion control to limit the need for bench drains on the outer batters of the Eastern Out of Pit Emplacement.

Throughout the life of the MPO, the conceptual final landform may be revised to reflect the outcomes of the above investigations, in consultation with MSC and relevant NSW Government agencies. Progressive updates to the final landform that are consistent with the design intent concepts outlined above will be documented in the MPO RMP.

General Design Concepts – Outer Batters of Eastern Out of Pit Emplacement

The design improvement work conducted by MACH Energy to date for the outer batters of the Eastern Out of Pit Emplacement has maintained an average outer emplacement slope of approximately 10 degrees, to be generally consistent with the approved final landform of the MPO.

In order to develop a more natural looking landform, MACH Energy has incorporated significant areas of the outer emplacement batters at slopes of less than 10 degrees (lower slopes), and more limited areas of slopes up to approximately 14 degrees (upper slopes), to provide visually important slope variation, while also maintaining waste rock emplacement capacity.

Figures 7 and 8 provide visual simulations that illustrate how the implementation of the concepts described in this section result in a significantly improved final landform for the MPO.

In practice, significantly steeper slopes than 14 degrees in post-mining landforms can be sufficiently stable in the long term (as in the natural Hunter Valley environment), provided that they are utilised in positions in the final landform that have minimal upslope catchment (e.g. upper slopes) and are part of an integrated geomorphologically robust landform design that reflects the composition of the waste rock material.

MACH Energy will continue to refine the design of the proposed final landform, and where relevant, will justify areas to be constructed at steep grades (including slopes greater than 14 degrees) on the basis of maintaining waste emplacement capacity and how this is acceptable due to its hydrological/drainage position and/or geomorphically robust design in the final landform, in the MPO RMP.

External Drainage

The conceptual final landform shown on Figure 6 is representative of the final landform that will remain if the MPO does not obtain suitable future authorisations to continue mining beyond 2026. In the event that mining did not proceed past 2026, the final landform will involve a range of earthworks to push down areas of the final highwalls and low-walls; the outcome being a single void remaining in the south with a relatively natural looking shape (Figure 6).



LEGEND
 Established Rehabilitation



MAC-18-03 MP 2021_Rehab Strategy_002A

MACHEnergy
 MOUNT PLEASANT OPERATION
 Final Landform Simulation -
 Floodplain Properties
 (Kayuga Road)
Figure 7



LEGEND
 Established Rehabilitation



MAC-18-03 MP 2021_Rehab Strategy_003A

MACHEnergy
 MOUNT PLEASANT OPERATION
 Final Landform Simulation -
 Muswellbrook (Hill Street)

Figure 8

In the final landform (Figure 6), MACH Energy has sought to minimise the catchment area that reports to the eastern face of the Eastern Out of Pit Emplacement, to minimise the volume of water reporting to drainage features on the outer batters, and therefore minimise the need for highly visible traditional engineered linear drop structures.

The southern and eastern batters of the rehabilitated emplacement final landforms will drain externally to local tributary streams and ultimately to the Hunter River.

Internal Drainage

To minimise the area of steep slopes and the land sterilised by the final void, MACH Energy has designed the final landform to provide for gently sloping areas to the west of the Eastern Out of Pit Emplacement. These areas can potentially be utilised for productive agricultural industries (Section 3.3).

This includes a central area where incident rainfall will report to the final void, in part because there is a natural ridgeline to the immediate west of the open cut that remains as a topographic constraint to potential off-site site drainage of the central area if mining were to cease in 2026. It is noted that this ridgeline will be mined through in the originally approved 21 year mine life.

The design of the final void will be refined as required to ensure that the final void will not spill to the environment and will provide a groundwater sink (MACH Energy, 2017b). Final void modelling has been re-evaluated as part of the Mount Pleasant Optimisation Project application (Section 1.1). Outcomes from the contemporary modelling will be incorporated into future versions of the MPO Groundwater Management Plan and the MPO RMP that will be prepared for the Mount Pleasant Optimisation Project.

Out of Pit Emplacement – Outer Batters Construction Methodology

To facilitate the more rapid establishment of the final landform profiles, MACH Energy will generally construct the outer batters of the eastern face of the waste emplacement in 10 metre (m) lifts that also facilitate the construction of more variable compound final landform slopes.

To maximise the topographic shielding of the evening and night-time mining operations, daytime only construction and final shaping of the outer parts of the Eastern Out of Pit Emplacement will be prioritised. This approach has the advantage of providing a visual and noise attenuation barrier between the open cut operations and the town of Muswellbrook, as well as facilitating the rapid establishment of initial rehabilitation on the lower portions of the emplacement (Section 4.1).

3.1.4 Rehabilitation Materials

MACH Energy will undertake measures to retain as much material as practicable from the pre-mining landform and surrounds to be used during rehabilitation. Such measures include:

- Implementing a Vegetation Clearance Protocol which will identify and retain material for rehabilitation including habitat material (e.g. tree hollows, stag trees, coarse woody debris and rocks) and seeding vegetation for seed collection prior to clearing.
- Seed collection and propagation using the on-site Seed Harvesting Facility.
- Rehabilitation material characterisation in order to:
 - identify any physical or chemical deficiencies or limiting factors;
 - develop selective placement strategies or develop soil amelioration techniques;
 - identify material for use in the root zone, which is capable of supporting sustainable vegetation establishment, growth and natural replacement;

- identify materials that limit plant growth or which may contaminate surface or groundwater (e.g. salinity), and hence may require special handling, treatment or disposal; and
 - identify any propensity for spontaneous combustion.
- Topsoil stripping (guided by soil mapping) and management in designated stockpiles.

Where possible, topsoil will be directly transported to rehabilitation areas. Where this is not possible, topsoil stockpiles will be established separate to subsoil stockpiles and away from active transport corridors.

Subsoils would also be stockpiled for use in the MPO rehabilitation program. Soil testing would be undertaken to inform whether any amelioration of the soils (i.e. gypsum or lime treatment) is required prior to or during reapplication on MPO rehabilitation areas.

Some externally sourced materials (i.e. select rock for armouring drainage lines) may also be required throughout the mine life.

Soil management is described in further detail in the MPO RMP and associated Annual Rehabilitation Report and Forward Program (and will continue to be described in future versions of the MPO RMP).

A detailed description of how salvaged habitat materials (e.g. stag trees, coarse wood debris) and collected native seed from vegetation clearance areas will be stored at the on-site Seed Harvesting Facility and used in the rehabilitation program is provided in the MPO Biodiversity Management Plan.

3.2 AREAS PROPOSED FOR NATIVE ECOSYSTEM RE-ESTABLISHMENT

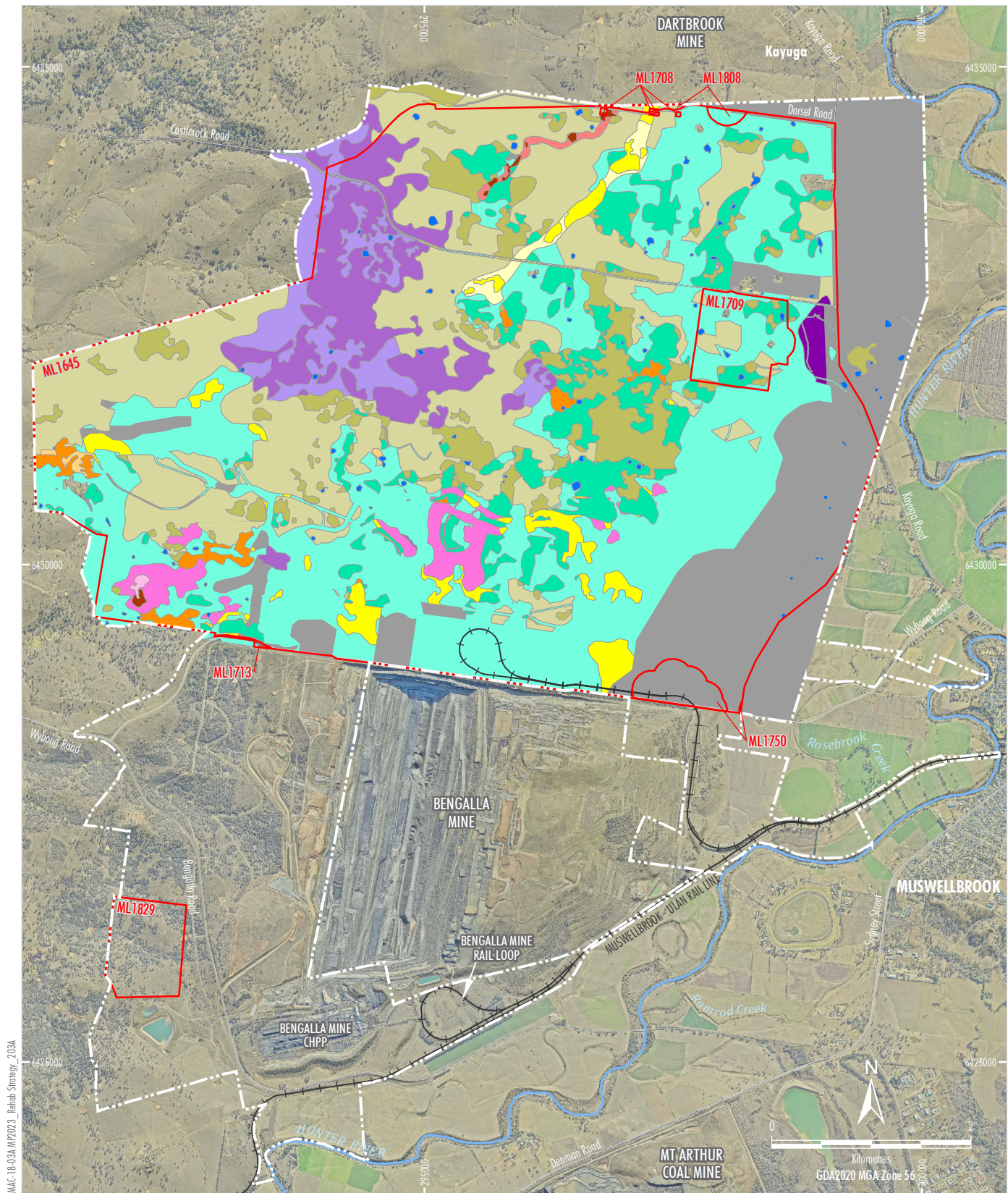
In accordance with the rehabilitation objectives in Table 11 of Condition 53, Schedule 3 of Development Consent DA 92/97, the proposed native ecosystem areas will aim to restore self-sustaining native woodland ecosystems characteristic of vegetation communities found in the local area. In addition, MACH Energy is required to include development of:

- potential habitat for threatened flora and fauna species;
- riparian habitat, within any diverted and/or re-established creek lines and retained water features; and
- wildlife corridors, as far as is reasonable and feasible.

The following subsections provide a description of measures to be implemented to meet these objectives.

3.2.1 Native Woodland Ecosystems and Habitat for Threatened Flora and Fauna

Updated vegetation mapping of the MPO area was undertaken by HunterEco in 2018 (Figure 9), following approval of MOD 3. This mapping was undertaken in order to align vegetation communities with contemporary Plant Community Type (PCT) definitions, as well as to inform target woodland ecosystems and species selection for rehabilitation. The updated vegetation mapping has been supplemented in areas by earlier vegetation mapping, undertaken by Cumberland Ecology in 2011.



Source: MACH (2023); Hunter Eco (2018); NSW Spatial Services (2023)
Orthophoto: MACH (Jun 2023)



LEGEND

Project Approval Boundary*

Mining Lease Boundary (Mount Pleasant Operation)

Railway

Major River

Vegetation Mapping

- White Box - Narrow-leaved Ironbark - Blakely's Red Gum [DNG] ¹
- White Box - Narrow-leaved Ironbark - Blakely's Red Gum ¹
- Spotted Gum - Narrow-leaved Ironbark Woodland [DNG]
- Spotted Gum - Narrow-leaved Ironbark Woodland ²
- Spotted Gum - Grey Box x White Box Woodland/Forest [DNG]
- Spotted Gum - Grey Box x White Box Woodland/Forest ²
- Slaty Box Woodland [DNG]
- Narrow-leaved Ironbark - Grey Box grassy woodland [DNG]

- Narrow-leaved Ironbark - Grey Box grassy woodland ³
- Narrow-leaved Ironbark Shrubby Forest [DNG]
- Narrow-leaved Ironbark Shrubby Forest ³
- Grey Box x White Box Grassy Woodland [DNG] ¹
- Grey Box x White Box Grassy Woodland ¹
- Forest Red Gum Grassy Open Forest [DNG] ¹
- Forest Red Gum Grassy Open Forest ¹
- Non-native
- Dam

- ¹ TEC Listed BC Act: White Box Yellow Box Blakely's Red Gum Woodland
² TEC Listed BC Act: Central Hunter Ironbark-Spotted Gum-Grey Box Forest in the New South Wales North Coast and Sydney Basin Bioregions
³ TEC Listed BC Act: Central Hunter Grey Box-Ironbark Woodland in the New South Wales North Coast and Sydney Basin Bioregions

* Appendix 1 of Development Consent DA 92/97

MACHEnergy
 MOUNT PLEASANT OPERATION
 Vegetation Community Boundaries

Figure 9

Analysis of this vegetation mapping indicates that the most widespread PCTs being disturbed by the MPO are the following:

- PCT 483 – Grey Box - White Box grassy open woodland on basalt hills in the Merriwa region, upper Hunter Valley (representative of the White Box EEC listed under the BC Act and EPBC Act).
- PCT 1604 – Narrow-leaved Ironbark - Grey Box - Spotted Gum shrub - grass woodland of the central and lower Hunter.
- PCT 1605 – Narrow-leaved Ironbark - Native Olive shrubby open forest of the central and upper Hunter.

These communities will be targeted for rehabilitation on appropriate slopes, as ecosystems characteristic of vegetation communities found in the local area and also to provide potential habitat for threatened flora and fauna. In addition to these key PCTs, PCT 1543 *Rusty Fig - Native Quince - Native Olive dry rainforest of the Central Hunter Valley* is being trialled in aspect planting (i.e. targeted suitable areas) surrounding drainage areas of rehabilitated landforms. PCT 1543 occurs surrounding riparian areas within the local Muswellbrook region and often associated with/occurs adjacent to PCT 1605. Supporting information regarding the suitability of PCT 1543 was provided to the DPIE (now DPHI) with the submission of Version 2 of the Rehabilitation Strategy.

The eastern face of the final landform will be targeted for revegetation using the species characteristic of these PCTs as conceptually shown on Figure 5 (i.e. Domain A – Native Woodland/Grassland) and Figure 6. These PCTs are proposed to provide potential habitat (in the long-term) for threatened flora and fauna that have been previously recorded in the area, including:

- Woodland birds:
 - Grey-crowned Babbler (eastern subspecies) (*Pomatostomus temporalis temporalis*).
 - Brown Treecreeper (eastern subspecies) (*Climacteris picumnus victoriae*).
 - Speckled Warbler (*Chthonicola sagittata*).
 - Black-chinned Honeyeater (eastern subspecies) (*Melithreptus gularis gularis*).
 - Diamond Firetail (*Stagonopleura guttata*).
 - Varied Sittella (*Daphoenositta chrysoptera*).
- Mammals:
 - Squirrel Glider (*Petaurus norfolcensis*).
 - Spotted-tailed Quoll (*Dasyurus maculatus*).
 - Eastern Freetail-bat (*Mormopterus norfolkensis*).
 - Yellow-bellied Sheath-tail-bat (*Saccolaimus flaviventris*).
 - Eastern Bentwing-Bat (*Miniopterus schreibersii oceanensis*).
 - Grey-headed Flying-fox (*Pteropus poliocephalus*).
 - Eastern False Pipistrelle (*Falsistrellus tasmaniensis*).
 - Southern Myotis (*Myotis macropus*).
 - Greater Broad-nosed Bat (*Scoteanax rueppellii*).
 - Eastern Cave Bat (*Vespadelus troughtoni*).
- Flora:
 - Tiger Orchid (*Cymbidium canaliculatum*) – Endangered Population in the Hunter Catchment.

Provisional species lists for the target PCT communities targeted for revegetation of the MPO (as well as a targeted native grass and sterile cover crop species list) is provided in Table 3. These species lists and seed mixes may be subject to amendment due to availability from MPO's Seed Harvesting Facility and/or from external providers. It is anticipated that the provisional list of species for the target PCTs will be further augmented and refined over the life of the MPO based on the results of rehabilitation monitoring, on-site rehabilitation investigations and trials and consultation with key stakeholders.

These species lists have been developed in consultation with specialist ecologists, including Greg Major, a Restoration Ecologist, and Dr Carmen Castor who has 18 years' experience in research in mine site native ecosystems rehabilitation in the Hunter Valley. Supporting information, prepared by Greg Major and Dr Castor, regarding development of, and justification for, the species lists for the target PCTs, was provided to the DPIE (now DPHI) with the submission of Version 2 of this Rehabilitation Strategy. Alternate native species relevant to the target rehabilitation PCTs have also been identified that could be used in the rehabilitation program in the event of limited seed supply.

A revegetation rationale has been developed to guide where each PCT will be re-established on MPO final landforms (e.g. Ironbark communities would be more suited to upper slope areas and Grey Box – White Box communities would be more suited to lower slopes and flatter areas). The annual rehabilitation plans include details of target PCTs and PCT planting plans/maps.

Consistent with the MSC's recommendations, highly competitive exotic grasses (e.g. Rhodes Grass [*Chloris gayana*]) and non-local Australian species (e.g. Golden Wreath Wattle [*Acacia saligna*]) will not be used anywhere on-site.

Table 3
Plant Community Types and Provisional Species Lists Proposed for Native Ecosystem Rehabilitation

Species	Common Name
PCT 483 Grey Box/White Box Grassy Open Woodland	
<i>Eucalyptus moluccana</i>	Grey Box
<i>E. albens</i>	White Box
<i>E. melliodora</i>	Yellow Box
<i>Angophora floribunda</i>	Rough-bark Apple
<i>Brachychiton populneus</i>	Kurrajong
<i>Notelaea microcarpa</i>	Native Olive
<i>Psyrax odorata</i>	Shiny-leaved Canthium
<i>Acacia falcata</i>	Falcata Wattle
<i>Acacia decora</i>	Western Golden Wattle
<i>Acacia paradoxa</i>	Kangaroo Thorn
<i>Acacia decurrens</i>	Green Wattle
<i>Dodonaea viscosa</i>	Hop Bush
<i>Daviesia ulicifolia</i>	Gorse-bitter Pea
<i>Sida hackettiana</i>	Spiked Sida
<i>Calotis lappulaceae</i>	Burr Daisy
<i>Einadia hastata</i>	Nodding Saltbush
<i>Enchylaena tomentosa</i>	Ruby Saltbush
<i>Atriplex semibaccata</i>	Creeping Saltbush
<i>Einadia trigonos</i>	Fishweed
Native grass and sterile cover crop mix (see below)	

Table 3 (Continued)
Plant Community Types and Provisional Species Lists Proposed for Native Ecosystem Rehabilitation

Species	Common Name
PCT 1605 Narrow leaved Ironbark / Native Olive Shrubby Open Forest	
<i>Eucalyptus crebra</i>	Narrow-leaved Ironbark
<i>Notelaea microcarpa</i>	Native Olive
<i>Myoporum montanum</i>	Boobialla
<i>Olearia elliptica</i>	Sticky Daisy Bush
<i>Breynia oblongifolia</i>	Coffee Bush
<i>Acacia paradoxa</i>	Kangaroo Wattle
<i>Acacia falcata</i>	Falcate Wattle
<i>Acacia decora</i>	Western Golden Wattle
<i>Dodonaea viscosa</i>	Hop Bush
<i>Sida hackettiana</i>	Spiked Sida
<i>Lomandra longifolia</i>	Matt Rush
<i>Solanum cinereum</i>	Nawarra Burr
<i>Calotis lappulaceae</i>	Burr Daisy
<i>Einadia hastata</i>	Nodding Saltbush
<i>Enchylaena tomentosa</i>	Ruby Saltbush
<i>Atriplex semibaccata</i>	Creeping Saltbush
Native grass and sterile cover crop mix (see below)	

Table 3 (Continued)
Plant Community Types and Provisional Species Lists Proposed for Native Ecosystem Rehabilitation

Species	Common Name
PCT 1604 Narrow leaved Ironbark/ Grey Box/ Spotted Gum Shrub / Grass Woodland	
<i>Eucalyptus moluccana</i>	Grey Box
<i>E. crebra</i>	Narrow-leaved Ironbark
<i>Corymbia maculata</i>	Spotted Gum
<i>Eucalyptus tereticornis</i>	Forest Red Gum
<i>Eucalyptus fibrosa</i>	Broad-leaved Ironbark
<i>Acacia parvipinnula</i>	Silver-stem Wattle
<i>Acacia amblygona</i>	Fan Wattle
<i>Bursaria spinosa</i>	Blackthorn
<i>Olearia elliptica</i>	Sticky Daisy Bush
<i>Dodonaea viscosa</i>	Hop Bush
<i>Acacia decora</i>	Western Golden Wattle
<i>Acacia paradoxa</i>	Kangaroo Thorn
<i>Daviesia ulicifolia</i>	Gorse Bitter Pea
<i>Acacia falcata</i>	Falcate Wattle
<i>Indigofera australis</i>	Native Indigo
<i>Kunzea ambigua</i>	Tick Bush
<i>Breynia oblongifolia</i>	Coffee Bush
<i>Allocasuarina luehmannii</i>	Bull Oak
<i>Einadia hastata</i>	Nodding Saltbush
<i>Enchylaena tomentosa</i>	Ruby Saltbush
<i>Atriplex semibaccata</i>	Creeping Saltbush
<i>Sida hackettiana</i>	Spiked Sida
<i>Dysphania carinata</i>	Green Crumbweed
Native grass and sterile cover crop mix (see below)	

Table 3 (Continued)
Plant Community Types and Provisional Species Lists Proposed for Native Ecosystem Rehabilitation

Species	Common Name	Species	Common Name
TRIAL PCT 1543 Rusty Fig – Native Quince – Native Olive Dry Rainforest of the Central Hunter Valley			
<i>Alectryon subcinereus</i>	Native Quince	<i>Geijera parvifolia</i>	Wilga
<i>Ficus rubignosa f rubignosa</i>	Rusty Fig	<i>Geijera salicifolia</i>	Scrub Wilga
<i>Melia azedarach</i>	White Cedar	<i>Olearia elliptica</i>	Sticky Daisy Bush
<i>Allocasuarina torulosa</i>	Forest Oak	<i>Teucrium juncea</i>	Bead Bush
<i>Angophora floribunda</i>	Rough-barked Apple	<i>Einadia trigonos</i>	Fishweed
<i>Brachychiton populneus</i>	Kurrajong	<i>Lomandra longifolia</i>	Matt Rush
<i>Casuarina cunninghamiana</i>	River Oak	<i>Carex appressa</i>	Tall Sedge
<i>Acacia falcata</i>	Falcate Wattle	<i>Enchylaena tomentosa</i>	Ruby Saltbush
<i>Acacia decora</i>	Western Golden Wattle	<i>Sida hackettiana</i>	Spiked Sida
<i>Acacia paradoxa</i>	Kangaroo Thorn	<i>Dysphania carinata</i>	Green Crumbweed
<i>Acacia implexa</i>	Hickory	<i>Gahnia aspera</i>	Saw Sedge
<i>Dodonaea viscosa</i>	Hop Bush	<i>Atriplex semibaccata</i>	Berry Saltbush
<i>Melicope micrococca</i>	White Euodia	Native grass and sterile cover crop mix	
<i>Myrsine howittiana</i>	Brush Muttonwood		
<i>Myrsine variabilis</i>	Muttonwood		
<i>Streblus brunonianus</i>	Whalebone Tree		
<i>Clerodendrum tomentosum</i>	Hairy Clerodendrum		
<i>Notelaea microcarpa</i>	Native Olive		
<i>Breynia obongifolia</i>	Coffee Bush		
<i>Bursaria spinosa</i>	Blackthorn		
<i>Ficus coronata</i>	Sandpaper Fig		

Table 3 (Continued)
Plant Community Types and Provisional Species Lists Proposed for Native Ecosystem Rehabilitation

Species	Common Name
Native Grass and Sterile Cover Crop Mix*	
<i>Aristida</i> mix (includes <i>A. ramosa</i> , <i>A. vagans</i>)	Purple Wiregrass, Threeawn Speargrass
<i>Austrodanthonia</i> mix (includes <i>A. setacea</i> , <i>A. fulva</i> , <i>A. caespitosa</i>)	Smallflower Wallaby Grass, Wallaby Grass, Ringed Wallaby Grass
<i>Austrostipa scabra</i>	Speargrass
<i>Austrostipa verticillata</i>	Slender Bamboo Grass
<i>Bothriochloa macra</i> and <i>B. decipiens</i>	Red Grass
<i>Dichelachne micrantha</i>	Shorthair Plumegrass
<i>Chloris truncata</i>	Windmill Grass
<i>Cymbopogon refractus</i>	Barbed Wire Grass
<i>Dichanthium sericeum</i>	Queensland Bluegrass
<i>Microlaena stipoides</i>	Weeping grass
<i>Panicum effusum</i>	Hairy Panic
<i>Eragrostis</i> sp.	Lovegrass
<i>Elymus scaber</i>	Common Wheatgrass
<i>Digitaria</i> sp.	Umbrella Grass
<i>Sporobolus creber</i>	Western Rat-tail Grass
<i>Themeda triandra</i>	Kangaroo Grass
<i>Cynodon dactylon</i> #	Couch Grass
<i>Echinochloa esculenta</i> #	Japanese Millet
<i>Avena sativa</i> #	Oats

* Includes but is not limited to the above species and includes species endemic to the area.

Sterile cover crop species.

Habitat features including habitat/stag trees, rock piles and log piles, will be installed to provide fauna habitat across MPO rehabilitation areas. Where practicable, a minimum of two habitat/stag trees, two log piles and two rock piles will be installed per hectare across Secondary Domain A – Native Woodland/Grassland areas (excluding inappropriate areas e.g. drainage features and water managements structures within Secondary Domain A). Where this is not possible, further augmentation of habitat will consider the use of supplementary features such as nest and bat boxes.

The habitat requirements of the fauna species outlined in Section 3.2.2 will be considered when selecting and placing features across the landscape. Habitat/stag trees will be selected based upon the presence of hollows, loose bark, height and branches for nesting. Rock for rock piles where possible will be of sandstone of similar material. Log piles will be used to recreate 'fallen timber' within the landscape, and will be placed parallel to the contour so minimise erosion potential downslope.

3.2.2 Riparian Habitat

The main drainage feature within the vicinity of the MPO is the Hunter River which flows in a southerly direction approximately 1 km to the east of the MPO area. The pre-mining environment of the MPO consists of a number of ephemeral drainage lines that drain to the Hunter River, however no perennial streams/creeks exist on-site.

The final landform design will contain ephemeral drainage lines as conceptually shown by blue lines on Figures 5 and 6. These drainage lines will be targeted for the creation of riparian habitat. As described in Section 3.1.3, final landform drainage lines will be designed to accommodate natural erosive processes and will incorporate geomorphic characteristics such as nature of bed material (e.g. particle size), presence of rock outcrops, bed features (such as cascades, pool and riffle zones) as well as bed and bank vegetation. The detailed design will involve modelling and other similar catchment/drainage and landform design software to determine specific locations and design features of drainage line/riparian habitat areas.

As described in Section 3.2.1, PCT 1543 *Rusty Fig* – *Native Quince* – *Native Olive dry rainforest of the Central Hunter Valley* is being trialled in aspect planting surrounding drainage areas of rehabilitated landforms. PCT 543 is being trialled due to its association with PCT 1605 and presence surrounding riparian areas within the local Muswellbrook region.

The main retained water features in the final landform will be the final void and potentially the Mine Water Dam on the southern ML boundary (Figure 5).

Revegetation of the void walls/batters will use species that are appropriate for its steepness and aspect, however this is not envisaged to create a riparian ecosystem, rather, this vegetation will be used for stabilisation and aesthetic purposes.

The Mine Water Dam at the southern ML boundary (Figure 5) will potentially be retained to support agricultural land uses and provide conditions for establishment of riparian habitat. If the water storage is retained, vegetation species occurring in riparian areas of the surrounds will be used for revegetation. Species which may be targeted for revegetation of this area will include:

- Upper stratum – River Red Gum (*Eucalyptus camaldulensis*), River Sheoak (*Casuarina cunninghamiana* subsp. *Cunninghamiana*), Rough-barked Apple (*Angophora floribunda*).
- Middle stratum – Tree Violet (*Melicactus dentatus*), Willow Bottlebrush (*Callistemon salignus*).
- Lower stratum – Slender Bamboo Grass (*Austrostipa verticillata*), Wallaby Grasses (*Rytidosperma* spp.), Couch Grass (*Cynodon dactylon*), Weeping Grass (*Microlaena stipoides*), Red Grass (*Bothriochloa macra*), Tall Spike-rush (*Eleocharis sphacelata*), Spiny-headed Mat-rush (*Lomandra longifolia*), Tall Sedge (*Carex appressa*).

During the operational phase of the MPO, riparian vegetation (including sedge and rush species) would also be established around sediment dams to provide areas of riparian habitat.

3.2.3 Wildlife Corridors

Consistent with MSC's recommendations for the Bengalla Mine final landform, the eastern face of the MPO final landform will be revegetated with native tree, shrub and grass species as shown in Figure 5 (i.e. Secondary Domain A – Native Woodland/Grassland) and Figure 6. This will allow the landform to assimilate with the open woodland communities in the surrounding environment.

The revegetated eastern face would provide a contiguous wildlife corridor with the revegetated eastern face of the Bengalla Mine for native woodland bird species (Figures 5 and 6). Given the close proximity of the revegetated woodland areas, bird species could utilise both areas for habitat establishment and foraging. In addition, the vegetation on the eastern face of the MPO Eastern Out of Pit Overburden Emplacement would develop a contiguous wildlife corridor with the Bengalla Mine rehabilitation and surrounding remnant woodland, and also be visually consistent with the revegetation of the eastern face of the Bengalla Mine landform. As described in Section 3.2.1, standing dead stag/habitat trees will be installed across the MPO Eastern Out of Pit Overburden Emplacement to provide immediate habitat 'stepping stones' prior to development of planted trees over the next few decades.

MACH Energy has undertaken preliminary consultation with the Bengalla Mining Company regarding integration of rehabilitation across the MPO and the Bengalla Mine. MACH Energy proposes to continue collaboration with the Bengalla Mining Company by (for example) undertaking joint rehabilitation workshops to discuss rehabilitation strategies, revegetation species and implementation measures. MACH Energy is committed to information sharing to facilitate integration of rehabilitation across the MPO and the Bengalla Mine.

3.3 AREAS PROPOSED FOR AGRICULTURAL LAND

During consultation, MSC indicated a preference for the option of intensive agricultural/industrial post-mining land uses that provide potential employment for the local community. Consequently, rehabilitation of the MPO will consider both low and high intensity agricultural land uses subject to Land Capability Assessments. Low intensity agriculture will consist of reinstating grazing capability. High intensity agriculture will be targeted on former infrastructure sites with low slopes and internal drainage, and may include, for example, feedlots, poultries or agricultural produce processing facilities, and glasshouses. However until such a time a proposal is developed for such uses, these areas would be rehabilitated to low intensity agriculture. Descriptions of currently proposed low and high intensity agriculture post mining land uses is provided below. These land uses may be refined through further consultation with MSC and other stakeholders (including the MPO's CCC) during the MPO mine life.

Low Intensity Agriculture

Following landform reconstruction using the strategies described in Section 3.1.3, areas proposed for low intensity agriculture (Figure 5) will be prepared to accommodate sustainable/managed livestock grazing. The objective will be to establish areas to be classified as Land Capability Class 4, Class 5 or Class 6 lands. The definitions of Land Capability Classes 4, 5 and 6 are provided in Table 4 (consistent with the OEH [2012] *The land and soil capability assessment scheme: second approximation – a general rural land evaluation system for New South Wales*). It should be noted that although the definitions of Land Capability Class 5 and 6 lands include land uses such as forestry and nature conservation (in addition to grazing), MACH Energy does not propose to establish forestry on the rehabilitation areas proposed for low intensity or high intensity agriculture.

Table 4
Land Capability Classes Proposed for Low Intensity Agriculture

Class	Definition
4	Moderate capability land: Land has moderate to high limitations for high-impact land uses. Will restrict land management options for regular high-impact land uses such as cropping, high-intensity grazing and horticulture. These limitations can only be managed by specialised management practices with a high level of knowledge, expertise, inputs, investment and technology.
5	Moderate–low capability land: Land has high limitations for high-impact land uses. Will largely restrict land use to grazing, some horticulture (orchards), forestry and nature conservation. The limitations need to be carefully managed to prevent long-term degradation.
6	Low capability land: Land has very high limitations for high-impact land uses. Land use restricted to low-impact land uses such as grazing, forestry and nature conservation. Careful management of limitations is required to prevent severe land and environmental degradation.

Source: OEH (2012).

Low intensity agricultural rehabilitation areas will be cultivated and broadcast sown with suitable pasture species. The species mix will be developed in consultation with an Agronomist, and depend on the growth media available and environmental conditions at the time of rehabilitation. Species selection will aim to minimise encroachment on rehabilitation areas proposed for native ecosystem re-establishment.

Improved pasture species commonly present in the surrounding grazing areas to the MPO that will be considered for rehabilitation of low intensity agricultural areas include:

- Subterranean Clover (*Trifolium subterranean*).
- White Clover (*Trifolium repens*).
- Lucerne (*Medicago sativa*).
- Green Panic (*Panicum maximum* var. *trichoglume*).
- Kikuyu Grass (*Pennisetum clandestinum*).
- Perennial Ryegrass (*Lolium perenne*).
- Phalaris (*Phalaris aquatica*).
- Oat (*Avena sativa*).

Native grass species will also be considered in pasture species mixes such as Couch Grass Wallaby grasses and *Austrostipa* spp. (Spear grasses) which have been shown to develop well in post-mining landscapes of the Hunter Valley (Huxtable, Koen and Waterhouse, 2005).

Areas on the final landform likely to be lower in soil moisture (e.g. steeper terrain) will be targeted for establishment of native grasses due to their ability to withstand such conditions in comparison to introduced pasture species.

Fines Emplacement Area Rehabilitation

The overarching objective for rehabilitation of the Fines Emplacement Area is to establish a safe, stable and non-polluting landform with a sustainable surface cover that minimises erosion (to prevent exposure of the underlying fines material) and sustains grassland vegetation in the long-term.

Current rehabilitation concepts for the Fines Emplacement Area as described in the MPO EIS include capping fines with a layer of inert overburden material and then a layer of topsoil (ERM Mitchell McCotter, 1997). MACH Energy maintains capping and topsoil material proximal to the Fines Emplacement Area that would be sufficient to rehabilitate each stage of the Fines Emplacement Area. MACH Energy maintains a soil register to track soil stockpile volumes and soil usage on rehabilitation areas.

In accordance with Condition 52(c), Schedule 3 of the MPO's Development Consent DA 92/97, a Fines Emplacement Plan has been prepared and is provided in Appendix 1 of the MPO's Waste Management Plan. The Fines Emplacement Plan includes details of the Fines Emplacement Area design and fine rejects disposal strategies and operating procedures.

MACH Energy operates the Fines Emplacement Area using sub-aerial deposition which involves an extended period of air drying that maximises in-situ tailings densities and in turn maximises the storage efficiency of the facility as well as providing a more competent fines surface for future rehabilitation purposes. Other advantages of sub-aerial deposition include earlier facilitation of final rehabilitation due to a more competent fines surface and rapid recovery of water for reuse in the plant process. MACH Energy has completed construction of a permanent flocculant plant to dose secondary flocculant at the discharge point into the Fines Emplacement Area which will assist deposited fines to settle more quickly and release water to decant at a faster rate than conventional settling would allow.

As fines emplacement in the Fines Emplacement Area only commenced in late 2019, detailed rehabilitation concepts for the final landform remain in preparation.

MACH Energy has completed the Fines Emplacement Area Stage 1 Rehabilitation and Closure Strategy (SLR, 2021) and will continue to develop and update this Strategy following each staged lift of the Fines Emplacement Area.

The Fines Emplacement Area Stage 1 Rehabilitation and Closure Strategy addresses the following recommendations from the NSW Resources Regulator:

- The MPO should ensure the Fines Emplacement Area performance requirement to support the final land use is defined and the capping design is determined, including capping material types, thickness and engineering treatments (e.g. capillary breaks).
- The MPO should ensure that sufficient material is set aside to facilitate the future capping of the Fines Emplacement Area.

MACH Energy will continue to develop the final landform rehabilitation concepts which will be informed by the results of future tailings characterisation testwork and research project results (Section 6) geotechnical sampling, soil sampling and mapping, water quality and geochemistry results, dam compaction testing, groundwater and piezometer data and other research project results and will be guided by relevant industry guidelines (e.g. *Guidelines for the Decommissioning of Tailings Facilities* [NSW Resources Regulator, 2020] and *Guidelines on Tailings Dams* [Australian National Committee on Large Dams, 2019]). Future Fines Emplacement Area works will be described in detail in future revisions of the MPO RMP¹ and this Rehabilitation Strategy.

High Intensity Agriculture

High intensity agriculture areas have been proposed as a result of consultation with MSC who has indicated its preference for post mining land uses that may provide local employment. Activities that may be classed as high intensity agriculture include, for example, feedlots, poultries or agricultural produce processing facilities, and glasshouses. Until such a time a proposal is developed for such uses, these areas would be rehabilitated to low intensity agriculture. Areas proposed for high intensity agriculture have been identified on Figure 5, and have been nominally located at this stage due to their topography and proximity to a potential water storage dam (for water supply) in the final landform.

In order to stabilise and minimise erosion from the proposed high intensity agriculture areas, the following will be undertaken:

- reconstruction of the landform as described in Section 3.1.3;
- installation of drainage, erosion and sediment control features; and
- sowing of pasture species similar to areas of low intensity agriculture to stabilise the surface.

High intensity agriculture areas will be refined in consultation with MSC throughout the life of the MPO and will depend on such factors as commercial interest. Subject to further consultation, the MOD 4 rail loop and corridor may be maintained in the final landform as a valuable facility to support the potential high intensity agricultural activities (MACH Energy, 2017c). Any development of high intensity agriculture (and the possible retainment of the MOD 4 rail loop/corridor) will be subject to development approval, as necessary, with the relevant consent authority. If the MOD 4 rail loop/spur is not to be retained, the conveyors and rail infrastructure would be removed, the rail corridor cut and fill areas regraded and the rail corridor and rail loop will be rehabilitated.

¹ As of 1 August 2022, MPO operates under a RMP along with the supporting Annual Rehabilitation Report and Forward Program which has replaced the 2021-2023 MOP/RMP.

3.4 FINAL VOIDS

The final void, lowwalls and ramps cannot be rehabilitated progressively over the mine life as they are active until the end of production and waste rock emplacement/final landform establishment. The final void will be designed to minimise its size and depth by infilling some components where mine planning allows.

The final void landform will be rehabilitated with vegetation species appropriate for the complex landform. The highwall will be rehabilitated using the best reasonable and feasible rehabilitation technologies available and revegetated with species that are appropriate for its steepness and aspect.

Design alternatives for the final void will be continually evaluated and prepared as part of the closure planning process at the MPO and will be subject to ongoing regulatory consultation. In February 2021, MACH Energy conducted a 'think tank' exercise involving a diverse range of professionals to discuss options for the final land use of the MPO's final void and to identify which options merit further study.

Regardless of the final design alternative selected, the location of the final void will be outside the 100-year recurrence interval flood prone area of the Hunter River. Relevant geotechnical studies will be undertaken to assess the stability and provide guidance on measures to minimise instability. Appropriate measures will be used to limit access to steep areas around the final void to restrict cattle, pedestrian and vehicle access. These measures may include large rock placement, landform shaping, or fencing, as agreed with relevant government authorities prior to closure.

3.5 WATER QUALITY MANAGEMENT

Water runoff from the post-mining landform will either be retained on-site or will runoff/discharge to the surrounding environment. The quality of water retained on-site will be managed to be suitable for its proposed post-mining land use (e.g. low or high intensity grazing, native ecosystem). Water quality of runoff to the surrounding environment will be managed to be similar to waterways in the immediate catchment area. Measures proposed to manage water retained on-site and discharged off-site will include:

- The final landform will incorporate design features to minimise water runoff velocity and erosion potential such as micro and macro relief, a combination of convex and concave outer batters, and gentler slope gradients.
- Revegetation will be undertaken on all mine landforms in accordance with its proposed final land use.
- Erosion and sediment control structures will remain in place permanently (e.g. rock armour, drains) or until the catchment is rehabilitated and discharge water quality is similar to comparable undisturbed landforms (e.g. silt fencing, sediment dams).
- Mine water dams and sediment dams will be decontaminated prior to removal (or in the case of the Mine Water Dam potentially retained for post-mining land uses).
- Permanent water management structures will be designed and constructed, in accordance with best practice guidelines, including Landcom (2004) *Managing Urban Stormwater: Soils and Construction Volume 1, 4th Edition* (or latest version) and Department of Environment and Climate Change (2008) *Managing Urban Stormwater: Soils and Construction Volume 2* (or latest version).

Detailed management measures to ensure runoff is suitable for receiving waters and fit for aquatic ecology and riparian vegetation will be developed as part of mine closure planning and described in the MPO RMP.

Hazardous and Contaminated Materials

Hazardous materials will be stored on site in accordance with the NSW *Work Health and Safety Act 2011* and supporting *Work Health and Safety Regulation 2017* and the *Work Health and Safety (Mines and Petroleum Sites) Act 2013* and the supporting *Work Health and Safety (Mines and Petroleum Sites) Regulation 2014*.

Procedures and controls will be used to minimise the potential for land and water contamination from the handling, storage and disposal of hazardous substances. These controls will include storage within properly sealed containers and controlled areas, and bunding areas used for medium to long-term storage requirements. Storage and waste receival areas will be isolated from clean water catchments to minimise the risk of land or water pollution should an unplanned spill occur.

The response to any accidental spills or ground contamination will be assessed on a case-by-case basis and remediated using biodegradable spill absorbent and in accordance with any requirements of the SDS for the material. Hydrocarbon or chemical spills will be reported in the MPO incident reporting and management system with corrective and preventative measures taken as appropriate, in accordance with the MPO Pollution Incident Response Management Plan.

Hydrocarbon spills will be managed using bioremediation of the contaminated soils within the MPO bioremediation facility located adjacent the open cut pit or taken offsite for bioremediation at an appropriate facility.

These procedures, in addition to the water quality management measures described above, aim to ensure the site is non-polluting.

MACH Energy would undertake a Land Contamination Assessment following the cessation of mining operations to determine whether potential contamination issues exist on-site and if remediation is required. Any identified contaminated soils would be excavated and disposed of at a licenced facility and the area remediated in accordance with NSW *Contaminated Land Management Act 1997* requirements. The area would then be rehabilitated consistent with the MPO RMP, including revegetation with relevant plant species according to the areas Secondary Domain/post-mining land use.

3.6 PUBLIC SAFETY AND SOCIAL TRANSITION

During rehabilitation phase, the MPO will continue to restrict access to the public similar to that mining operations phase. Prior to site relinquishment, a risk assessment will be undertaken to determine if there are any further controls that need to be put in place to ensure public safety. Measures may include large rock placement, landform shaping, fencing, or signage to alert the public to a potential hazard.

A socio-economic study will be commissioned five years prior to expected mine closure, which will evaluate and address the following:

- developing a contemporary baseline of the MPO workforce and community profile;
- identifying potential socio-effects (positive and negative) of the mine closure on the MPO workforce, associated workforce (subcontractors, suppliers) and the broader community;
- in consultation with stakeholders, proposing measures to minimise potential negative effects and maximise potential positive effects of mine closure; and
- developing a draft implementation programme for the measures identified to address social effects.

MACH Energy will also consult with the Australian Communications and Media Authority, MSC, DPHI and relevant public broadcasters from approximately five years before the relinquishment of mining tenements associated with the MPO to resolve suitable post-operation arrangements for the ongoing operation of the Digital Television (DTV) re-transmission facility (if DTV remains a relevant free-to-air technology).

The findings of the socio-economic study may inform the subsequent versions of this Rehabilitation Strategy. For example, consultation undertaken to date with MSC has identified a preference for intensive agricultural/industrial post-mining land uses that provide employment for the local community. This has been taken into consideration in the final landform design and rehabilitation domains with proposed areas nominated for such land uses. If this preference changes over time, this Rehabilitation Strategy will be updated, considering the progress of final landform established and economic factors.

4 REHABILITATION SCHEDULE AND PROGRESSIVE REHABILITATION

Condition 55, Schedule 3 of Development Consent DA 92/97 requires MACH Energy to undertake progressive rehabilitation and to minimise the area of land exposed at any time. Condition 55A, Schedule 3 of Development Consent DA 92/97 requires that MACH Energy implement all reasonable and feasible measures to provide for the interim stabilisation and temporary revegetation of the existing rail loop and infrastructure corridor, as soon as reasonably practicable following its removal. Condition 54 (e), Schedule 3 of Development Consent DA 92/97 requires an indicative schedule for the staged rehabilitation of the MPO.

Section 4.1 describes progressive rehabilitation strategies proposed to be implemented across the site, and Section 4.2 describes the measures that will be implemented to provide interim stabilisation and temporary revegetation of the existing rail loop and infrastructure corridor. Section 4.3 provides an indicative schedule for rehabilitation of the MPO.

4.1 PROGRESSIVE REHABILITATION

MACH Energy will prioritise construction of the lower batters of the waste emplacement to the final landform profile, and the rapid spreading of topsoil and sowing of sterile cover crops to target early revegetation of these batters to progressively minimise visual impacts on Muswellbrook and other locations to the east.

The preferential use of 10 m lifts of the emplacement landform will result in more rapid establishment of the final surface levels. Using this approach, waste rock placement progresses more rapidly than the alternative of construction in 20 m emplacement lifts. Lifts greater than 10 m may however be used on occasion, if the 10 m lifts result in material economic constraints.

MACH Energy anticipates initial rehabilitation within six months of each subsequent dump panel lift being completed (subject to delays associated with climatic extremes). Initial rehabilitation will include targeting reshaping to final surface level and sowing of sterile cover crops of all outer emplacement batter lifts of the Eastern Out of Pit Emplacement.

Initial rehabilitation may also include hydromulching and seeding (with sterile cover crops) of temporary landforms (e.g. mine access roads and construction areas etc.). Initial rehabilitation will be undertaken across the site to minimise the total area exposed at any time, in accordance with Condition 55, Schedule 3 of Development Consent DA 92/97. Initial rehabilitation will be undertaken within six months of areas being available, where areas prone to dust generation, soil erosion and weed incursion cannot be permanently rehabilitated.

Where necessary, some rehabilitation would be temporary because the seeded or planted vegetation would be re-disturbed by subsequent stages of work (e.g. erosion remediation works, construction of rock armoured drains on the waste rock emplacement, or the removal of infrastructure post-mining). Re-disturbance of rehabilitation for drainage, removal of infrastructure, remediation or adaptive works is likely to occur across Secondary Domains A and B (Figure 5).

4.2 REHABILITATION OF THE RAIL LOOP AND INFRASTRUCTURE CORRIDOR

Condition 37, Schedule 3 of Development Consent DA 92/97 required MACH Energy to:

37. *The Applicant must, by no later than 31 October 2022:*

- (a) *remove all infrastructure associated with the development within Mining Lease No. 1645 (ML 1645) south of Wybong Road (other than infrastructure which the operator of the Bengalla mine agrees with the Applicant, in writing, can remain in situ);*
- (b) *do all things available to transfer or cause the grant of a mining lease over that part of ML 1645 south of Wybong Road to the operator of Bengalla mine or its nominee;*
- (c) *transfer the freehold land owned by the Applicant within ML 1645 south of Wybong Road to the operator of Bengalla mine (or its nominee) at rural market value;*
- (d) *release any easements for pipeline and rail spur within or in the vicinity of ML 1645 south of Wybong Road which benefit land owned by the Applicant; and*
- (e) *demolish the Bengalla Link Road bridge required under condition 38 (a) below and, unless otherwise agreed by the Secretary, reinstate the road reserve to the satisfaction of Council.*

Note: The rail loop and infrastructure corridor is shown in Figure 3 of Appendix 2.

Following removal of the existing rail loop and associated infrastructure within the footprint of the Bengalla Mine, initial rehabilitation was undertaken so the area did not pose an ongoing material source of dust emissions.

Initial rehabilitation included levelling/reforming the infrastructure area, followed by application of a dust suppressant and sowing of a sterile cover crop vegetation and/or native grasses. The MPO rail spur erosion and sediment control water management structures (e.g. sediment fences) within the footprint of Bengalla Mine was left in place, subject to the agreement of Bengalla Mine.

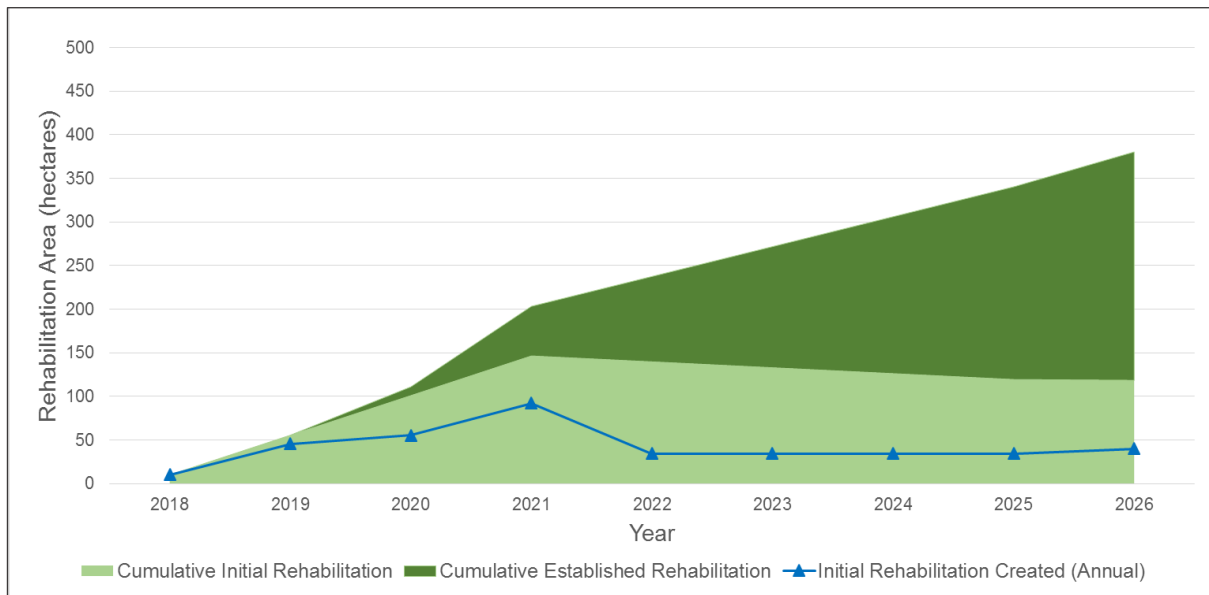
As required by Condition 37, Schedule 3 of Development Consent DA 92/97, the above decommissioning and interim rehabilitation works was completed by 31 October 2022. ML 1645 south of Wybong Road was partially transferred to Bengalla Mine on 23 December 2020.

4.3 REHABILITATION PROGRESS

Chart 1 provides a preliminary estimate of the progress of both initial and established rehabilitation at the MPO.

Chart 1 indicates that the progress of initial and established rehabilitation is highly subject to the planned progress of mining activities and the relative waste rock volumes generated. The area of rehabilitation achieved will initially be lower, followed by a period of rapid establishment of larger areas of rehabilitation once significant portions of the out of pit emplacement external batters are available at final surface level. As the MPO progresses, the rate of rehabilitation establishment will stabilise as a more steady state is achieved and mining advances at full scale behind the established South Pit Eastern Out of Pit Emplacement.

Chart 1
Preliminary Estimate of Rehabilitation Progress



Note: Timing subject to confirmation of mining rate and emplacement geometry as detailed in the MPO's Annual Rehabilitation Report and Forward Program and may vary due to factors outside of MACH Energy's control (e.g. climatic extremes).

The MPO RMP and associated Annual Rehabilitation Report and Forward Program (and future versions of the MPO RMP) details the rehabilitation concepts and activities that will be implemented over the MPO mine life to achieve the MPO's rehabilitation goals and completion criteria.

Consistent with the *Form and Way – Rehabilitation Management Plan for Large Mines* (July 2021), to track rehabilitation progress, MACH Energy will prepare an Annual Rehabilitation Report and Forward Program associated with the MPO RMP. This will provide quantitative values of the total disturbance area and total rehabilitation area at the start and at the end of each preceding calendar year and values forecast over the next three years. The Annual Rehabilitation Report and Forward Program also includes supporting plans showing the progression of rehabilitation over the calendar year.

5 REVIEW AND IMPROVEMENT OF ENVIRONMENTAL PERFORMANCE

5.1 ANNUAL REVIEW

In accordance with Condition 3, Schedule 5 of Development Consent DA 92/97, MACH Energy will prepare an Annual Review report by the end of March each year which reviews and evaluates the environmental performance of the MPO for the preceding calendar year, or other such timing as agreed by the Secretary of the DPIE (now DPHI).

In relation to rehabilitation, the Annual Review will:

- include a summary of rehabilitation monitoring undertaken in accordance with the MPO RMP in the past year;
- identify any rehabilitation activities undertaken over the past year;
- identify any rehabilitation related non-compliance over the past year, and describe what actions were (or are being) taken to ensure compliance; and
- describe what rehabilitation activities will be implemented over the next year to improve the environmental performance of the MPO.

The Annual Review will be made publicly available on the MACH Energy website in accordance with Condition 11, Schedule 5 of Development Consent DA 92/97.

5.2 REHABILITATION STRATEGY REVISION

In accordance with Condition 4, Schedule 5 of Development Consent DA 92/97, this Rehabilitation Strategy will be reviewed, and if necessary revised (to the satisfaction of the Secretary of the DPIE [now DPHI]), within three months of the submission of:

- an Annual Review (Condition 3, Schedule 5 of Development Consent DA 92/97);
- an incident report (Condition 7, Schedule 5 of Development Consent DA 92/97);
- an Independent Environmental Audit (Condition 9, Schedule 5 of Development Consent DA 92/97); and
- any modification to the conditions of Development Consent DA 92/97.

Within four weeks of conducting any such revision, MACH Energy will advise the Secretary of the DPIE (now DPHI) of the outcomes of the review, and submit any revised documents to the Secretary of the DPIE (now DPHI) for approval.

In accordance with Condition 4A, Schedule 5 of Development Consent DA 92/97, MACH Energy may submit a revised Rehabilitation Strategy for the approval of the Secretary at any time, and may also submit any revision to this Rehabilitation Strategy required under Development Consent DA 92/97 on a staged basis.

If agreed with the Secretary of the DPIE (now DPHI), a revision to this Rehabilitation Strategy required under Development Consent DA 92/97 may be prepared without undertaking consultation with all parties nominated under the relevant Condition of Development Consent DA 92/97.

This Rehabilitation Strategy will be made publicly available on the MACH Energy website, in accordance with Condition 11, Schedule 5 of Development Consent DA 92/97.

6 REHABILITATION MONITORING AND RESEARCH

Monitoring of rehabilitation areas at the MPO is described in detail in the MPO RMP and associated Annual Rehabilitation Report and Forward Program (and will continue to be described in future versions of the MPO RMP). Rehabilitation monitoring will utilise the principles of a systems-based approach (e.g. Landscape Function Analysis [Tongway and Ludwig, 2011] or similar) to determine progress towards a self-sustaining ecosystem and compare the conditions of the rehabilitated areas with representative control sites. In the areas designated for native revegetation (Figures 5 and 6), Landscape Function Analysis will be supplemented with floristic monitoring and compared to vegetation benchmark completion criteria for the targeted PCTs.

Detailed performance indicators and completion criteria have been developed to assess rehabilitation success at the MPO and are provided in the MPO RMP (and will continue to be provided in future versions of the MPO RMP). The performance indicators and completion criteria set in the MPO RMP have been developed in consideration of the MPO's overarching rehabilitation objectives provided in Schedule 3, Condition 53 of Development Consent DA 92/97 (Table1); the six principles of the *National standards for the practice of ecological restoration in Australia* (Society for Ecological Restoration Australasia [SERA], 2018) and include quantitative benchmark values for the relevant plant community types to be established in MPO rehabilitation areas. The benchmark values have been included in the absence of data from analogue/reference sites which are representative of the MPO rehabilitation areas. Once a data set, collected over a number of monitoring campaigns, from the relevant reference sites has been obtained, the benchmark values will be revised to reflect the local reference site data. The rehabilitation performance indicators and completion criteria included in the MPO RMP prepared in accordance with the NSW *Mining Amendment (Standard Conditions of Mining Leases) – Rehabilitation Regulation 2021*, will be prepared in consideration of the NSW Resources Regulator's relevant guidelines.

Monitoring will inform the need for corrective actions/contingency measures, as described in the MPO RMP and associated Annual Rehabilitation Report and Forward Program (and in future versions of the MPO RMP). Section 10 of the MPO RMP includes a Trigger Action Response Plan which includes a description of the contingency measures that would be undertaken should rehabilitation monitoring indicate that a rehabilitation area is not trending towards its relevant completion criteria, and measures that would be undertaken in response to the occurrence of risk event. The status of rehabilitation may be evaluated using recognised frameworks such as the 'Progress Evaluation Recovery Wheel' (SERA, 2018). A Trigger Action Response Plan will continue to be included in future versions of the MPO's RMP.

The rehabilitation program at the MPO aims to incorporate management practices that have resulted from industry research into the establishment of woodland and grassland communities across mined landscapes, and in particular in the Hunter Valley region. The outcomes of the rehabilitation trials will be used to refine the rehabilitation program at the MPO.

As part of the rehabilitation program, MACH Energy will undertake research trials at the MPO as described in the MPO RMP and associated Annual Rehabilitation Report and Forward Program (and in future versions of the MPO RMP). These research trials will focus on research and management practices which are designed to enhance the woodland communities established across the rehabilitated landscape. MACH Energy proposes to build on industry research results to re-establish woodland in rehabilitated areas. MACH Energy will also conduct investigations (including soil testwork) to assess the characteristics of replaced soil and assess its suitability for rehabilitation of Class 4, 5 and 6 Land Capability agricultural lands, as determined by a Certified Professional Soil Scientist. The outcomes of the rehabilitation trials will be used to refine the rehabilitation program at the MPO. Refinements to the MPO rehabilitation program will be described in revised versions of the MPO RMP which will be provided for relevant regulatory agencies and other key stakeholders for comment and subject to approval by the DPIE (now DPHI).

6.1 REHABILITATION MONITORING PROGRAM

As discussed in the MPO RMP and associated Annual Rehabilitation Report and Forward Program, MACH Energy has collaborated with Umwelt Environmental Consultants to develop a Rehabilitation Monitoring Manual (RMM) for the MPO. The RMM has been prepared to guide rehabilitation monitoring at the MPO so that the monitoring program can be consistently replicated year to year and produces statistically robust and consistent data. The RMM describes MPO rehabilitation objectives, performance indicators and completion criteria for the progressive rehabilitation phases, and the rehabilitation monitoring methodologies and monitoring parameters.

A rehabilitation monitoring program has been implemented at MPO based on the performance indicators and completion criteria. The monitoring program described in the MPO RMP is the responsibility of the Environmental Superintendent. Details of rehabilitation performance will be reported in the Annual Review and updated in this report.

Where necessary, rehabilitation procedures will be amended based on the monitoring results, to continually improve rehabilitation standards.

6.1.1 Rehabilitation Quality Assurance Process

The overarching rehabilitation objectives including final land use for the MPO are formalised in Table 11, Condition 53, Schedule 3 of the Development Consent DA 92/97. The final land use is comprised of the following:

- Agricultural - Grazing comprising of both low and high intensity agricultural areas.
- Native Ecosystem, generally comprising:
 - Plant Community Type (PCT) 483 - Grey Box - White Box grassy open woodland on basalt hills in the Merriwa region, upper Hunter Valley (represents White Box Yellow Box Blakely's Red Gum Woodland endangered ecological community);
 - PCT 1604 - Narrow-leaved Ironbark - Grey Box - Spotted Gum shrub - grass woodland of the central and lower Hunter; and
 - PCT 1605 - Narrow-leaved Ironbark - Native Olive shrubby open forest of the central and upper Hunter.
- Water Storage (Excluding Final Void).
- Final Void.

Section 7 of the MPO RMP details the Rehabilitation Quality Assurance Process which outlines the rehabilitation, key actions and/or processes nominated for each phase throughout the life of the operations to ensure that:

- Rehabilitation is implemented in accordance with the nominated methodologies.
- Identified risks to rehabilitation are adequately addressed before proceeding to the next phase of rehabilitation.

The Rehabilitation Quality Assurance Process will be integrated into day-to-day operations at the MPO and implemented throughout the life of the operation, including into closure in order to meet the final land use objectives for the MPO. The Rehabilitation Quality Assurance Process is outlined in Table 5. Rehabilitation validation monitoring is undertaken as described in Section 8 of the MPO RMP.

Table 5
Rehabilitation Quality Assurance Process

Rehabilitation Phase	Quality Assurance Process	Responsibilities for Implementation	Documentation / Recording Process	Review Process and Timeframes
Active Mining	ITPs for each stage of rehabilitation Mine planning, both 5 year plan and LOM plan Weed and pest management programs Erosion and sediment control programs and inspections Monthly inspections Survey control	Technical Services Manager Environment Superintendent	ITPs Monthly inspections Annual Rehabilitation Report and Forward Program Topsoil inventory Quarterly weed management reports	Annually and/or following an incident
Decommissioning	Inspections and demolition reporting processes Contaminated land assessments	Technical Services Manager Environment Superintendent	Monthly waste reports Decommissioning reports As-constructed final landform plan	Annually and/or following an incident
Landform Establishment	ITPs for each stage of rehabilitation Mine planning, both 5 year plan and LOM plan Erosion and sediment control programs and inspections Monthly inspections Survey control	Technical Services Manager Environment Superintendent	ITPs Annual rehabilitation monitoring Monthly inspections	Annually and/or following an incident
Growth Media Development	ITPs for each stage of rehabilitation Topsoil inventory and management plan processes Weed and pest management programs Erosion and sediment control programs and inspections Monthly inspections Survey control	Environment Superintendent	ITPs Annual rehabilitation monitoring Monthly inspections Topsoil inventory Quarterly weed management reports	Annually and/or following an incident

Table 5 (Continued)
Rehabilitation Quality Assurance Process

Rehabilitation Phase	Quality Assurance Process	Responsibilities for Implementation	Documentation / Recording Process	Review Process and Timeframes
Ecosystem and Land Use Establishment	ITPs for each stage of rehabilitation Topsoil inventory and management plan processes Weed and pest management programs Erosion and sediment control programs and inspections Monthly inspections	Environment Superintendent	ITPs Annual rehabilitation monitoring Monthly inspections Quarterly weed management reports	Annually and/or following an incident
Ecosystem and Land Use Development	ITPs for each stage of rehabilitation Topsoil inventory and management plan processes Weed and pest management programs Erosion and sediment control programs and inspections Monthly inspections	Environment Superintendent	ITPs Annual rehabilitation monitoring Monthly inspections Quarterly weed management reports	Annually and/or following an incident

Note:

ITP = Inspection Test Plan.

ITP checks are quality assurance checks which are undertaken to ensure the rehabilitation specifications have been met). MACH Energy implements ITPs for Landform Design, Landform Construction Profiling, Topsoil Placement, Drainage Construction and Ripping and Seeding. Each ITP is required to be signed off by relevant MACH Energy personnel.

6.1.2 Future Rehabilitation Research, Modelling and Trials

As discussed in the MPO RMP, over the MPO life of mine, MACH Energy proposes to build on industry research results and conduct various research studies and trials to inform the most suitable practices that will enable the re-establishment of woodland and grassland areas on final mine landforms and disturbed areas of the MPO. Details of the research may include:

- Potential variables impacting on rehabilitation programs and causes of localised rehabilitation failure.
- Assessing rehabilitation strategies that have successfully reinstated woodland communities (or rehabilitation with species typical of various communities) on other mine sites, including:
 - establishing appropriate soil substrate: direct application of topsoil; stockpiled native topsoil; raw overburden and interburden material plus addition of biosolids/organic growth medium; addition of other organic material; rehabilitation trials on fines material;
 - establishment of the grassy understorey: grass species suitable for mine rehabilitation; low and high photosynthetic pathway species; establishing native herbs and forbs; establishing the shrubby understorey and overstorey;
 - seed distribution methods: hand-broadcasting; brush-matting; hydro-mulching; spreading seed-bearing hay; direct seeding; air seeding; and
 - progressive rehabilitation strategy: pre-stripping requirements; sequence of rehabilitation strategies.
- Rehabilitation irrigation trials, subject to weather conditions and water availability for the trial.
- Tiger Orchid (*Cymbidium canaliculatum*) propagation trial. MACH Energy currently conducts a Tiger Orchid translocation program, in collaboration with an ecologist, for the translocation of Tiger Orchids identified during MPO Vegetation Clearance Protocol works. The trial will involve excising parts of existing Tiger Orchids for propagation in a nursery. If successful, MACH Energy proposes to replace the propagated Tiger Orchids within MPO rehabilitation areas.

The review of the target vegetation communities proposed in rehabilitated woodland areas, grassland areas and fauna habitat and if they are being achieved at the MPO will be assessed using the Rehabilitation Quality Assurance Process (Table 5) and reviewed in 2025.

7 REFERENCES

- Australian National Committee on Large Dams (2019) *Guidelines on Tailings Dams*.
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- Landcom (2004) *Managing Urban Stormwater: Soils and Construction Volume 1, 4th Edition*. New South Wales Government.
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- MACH Energy Australia Pty Ltd (2017b) *Mount Pleasant Operation – Mine Optimisation Modification Environmental Assessment*.
- MACH Energy Australia Pty Ltd (2017c) *Mount Pleasant Operation – Rail Modification*.
- MACH Energy Australia Pty Ltd (2017d) *Mount Pleasant Operation – Mine Optimisation Modification Response to Submissions*.
- New South Wales Mineral Council (2007) *Rehabilitation by Design Practice Notes*.
- New South Wales Resources Regulator (2021) *Form and Way for Rehabilitation Management Plans for Large Mines*.
- New South Wales Resources Regulator (2021) *Guidelines for the Decommissioning of Tailings Facilities*.
- Office of Environment and Heritage (2012) *The land and soil capability assessment scheme: second approximation - a general rural land evaluation system for New South Wales*. Department of Premier and Cabinet. Sydney, NSW. ISBN 978 1 74293 634 5
- SLR Consulting Australia Pty Ltd (2021). *FEA Stage 1 Closure Report*.
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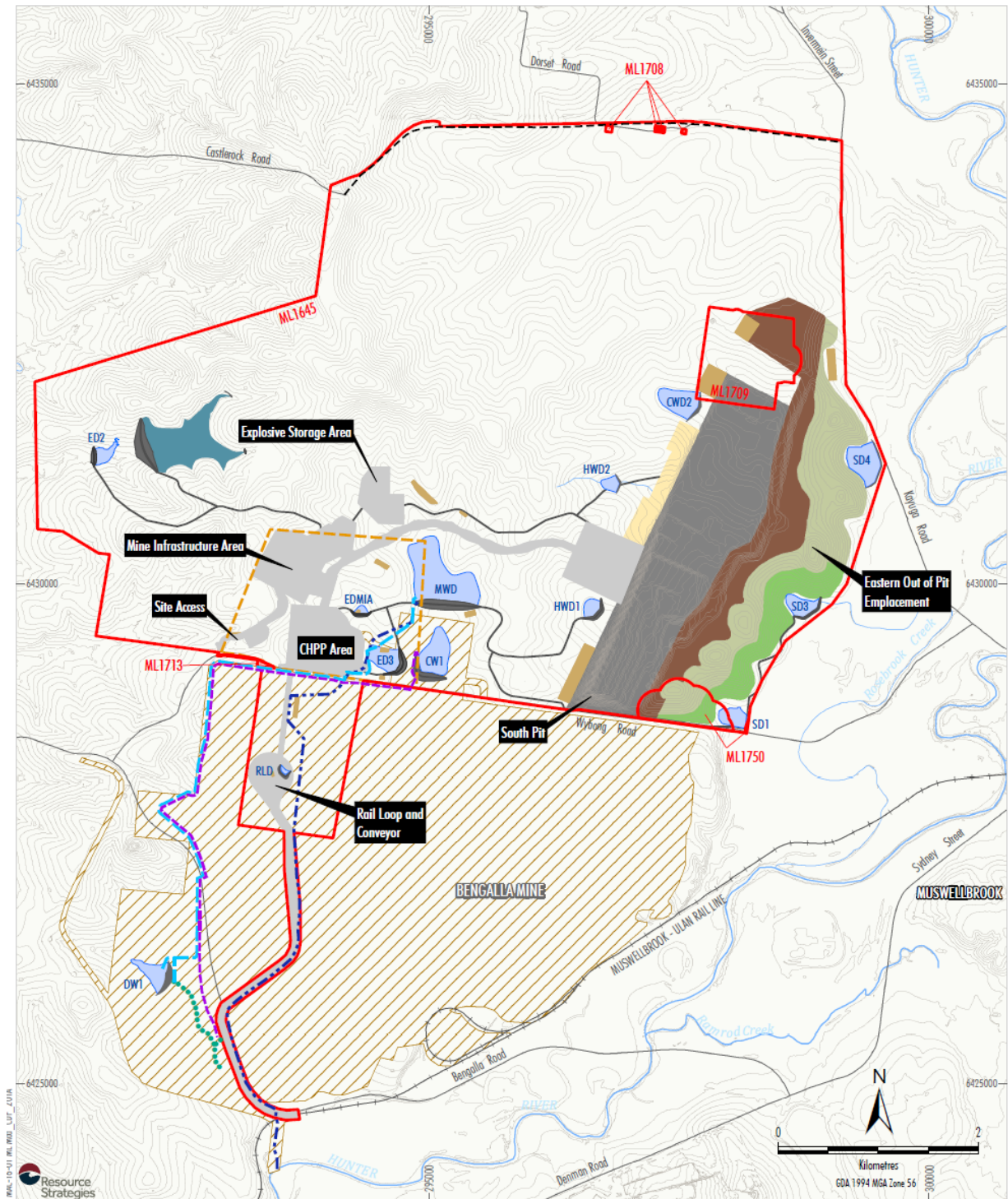
Tongway, D. J. & Ludwig, J. A. (2011) *Restoring disturbed landscapes, putting principles into practice*. Washington: Society for Ecological Restoration International, Island Press.

ATTACHMENT 1

APPENDIX 2 OF DEVELOPMENT CONSENT DA 92/97

APPENDIX 2

FIGURE 1 - CONCEPTUAL PROJECT LAYOUT PLAN AT 2021

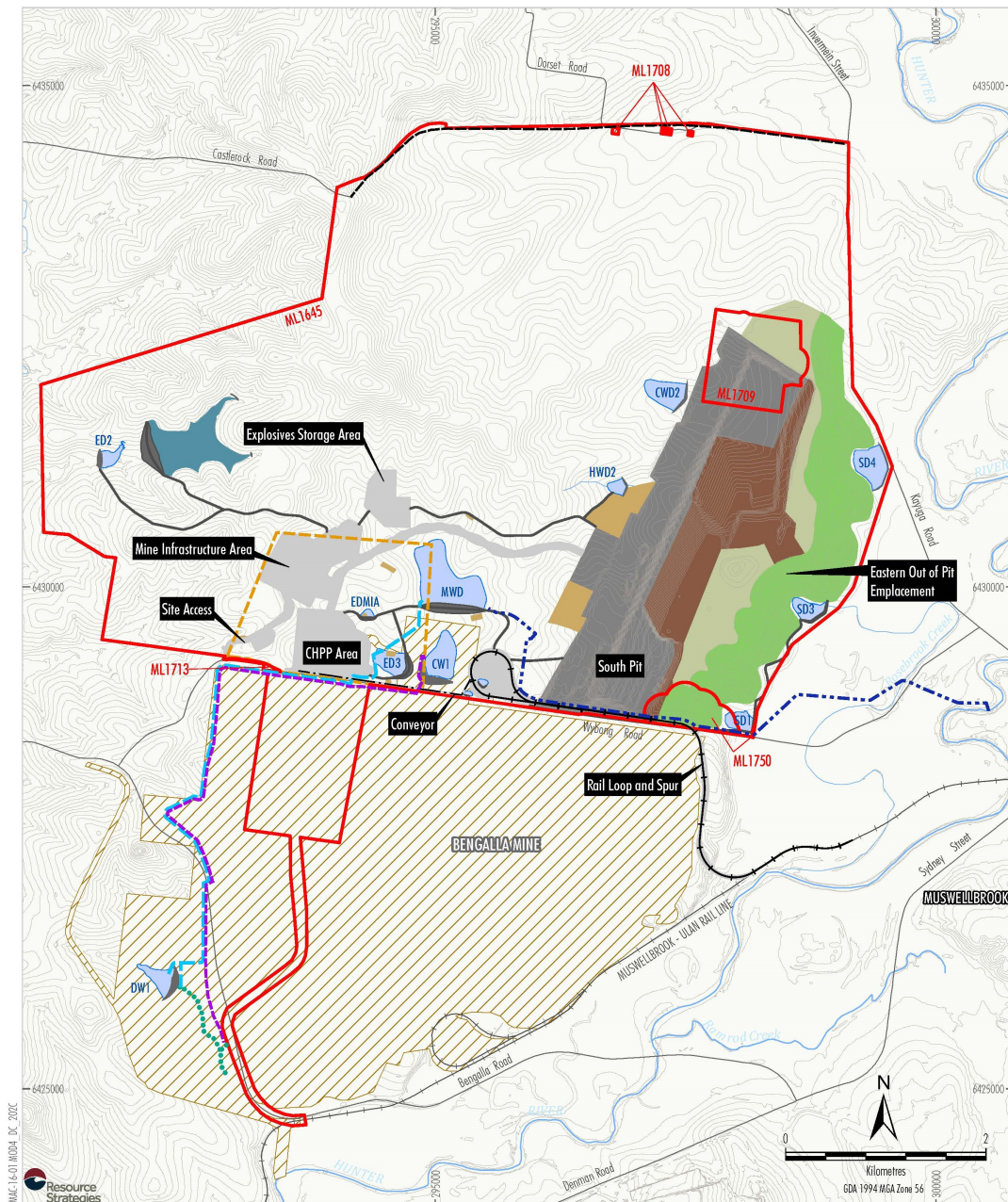


- LEGEND**
- Mining Lease Boundary
 - Bengalla Mine Approved Disturbance Boundary (SSD-5170)
 - Infrastructure Area Envelope
 - Active Stripping Area
 - Active Mining Area
 - Active Overburden Emplacement Area
 - Topsoil Stockpile
 - Initial Rehabilitation
 - Established Rehabilitation
 - Infrastructure and Borrow/Stockpile Area
 - Access Road
 - Northern Link Road
 - Indicative Water Pipeline Alignment
 - MPO Hunter River Supply Pipeline
 - MPO DW1 Pipeline (Bi-directional)
 - Bengalla Mine CW1 Pipeline
 - Approximate Extent of Scour Protection
 - Water Dam
 - Fines Emplacement Area

Source: NSW Land & Property Information (2017); NSW Division of Resources & Energy (2017); MACH Energy (2017)

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MOUNT PLEASANT OPERATION

FIGURE 2 - CONCEPTUAL PROJECT LAYOUT PLAN AT 2025



- LEGEND**
- Mining Lease Boundary
 - Bengalla Mine Approved Disturbance Boundary (SSD-5170)
 - Infrastructure Area Envelope
 - Active Mining Area
 - Active Overburden Emplacement Area
 - Topsoil Stockpile
 - Initial Rehabilitation
 - Established Rehabilitation
 - Infrastructure and Borrow/Stockpile Area
 - Access Road
 - Northern Link Road
 - Indicative Water Pipeline Alignment
 - MPO Hunter River Supply Pipeline
 - MPO DW1 Pipeline (Bi-directional)
 - Bengalla Mine CW1 Pipeline
 - Approximate Extent of Scour Protection
 - Water Dam
 - Fines Emplacement Area

Source: NSW Land & Property Information (2017); NSW Division of Resources & Energy (2017); MACH Energy (2018)

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MOUNT PLEASANT OPERATION

FIGURE 3 - APPROVED SURFACE DISTURBANCE PLAN

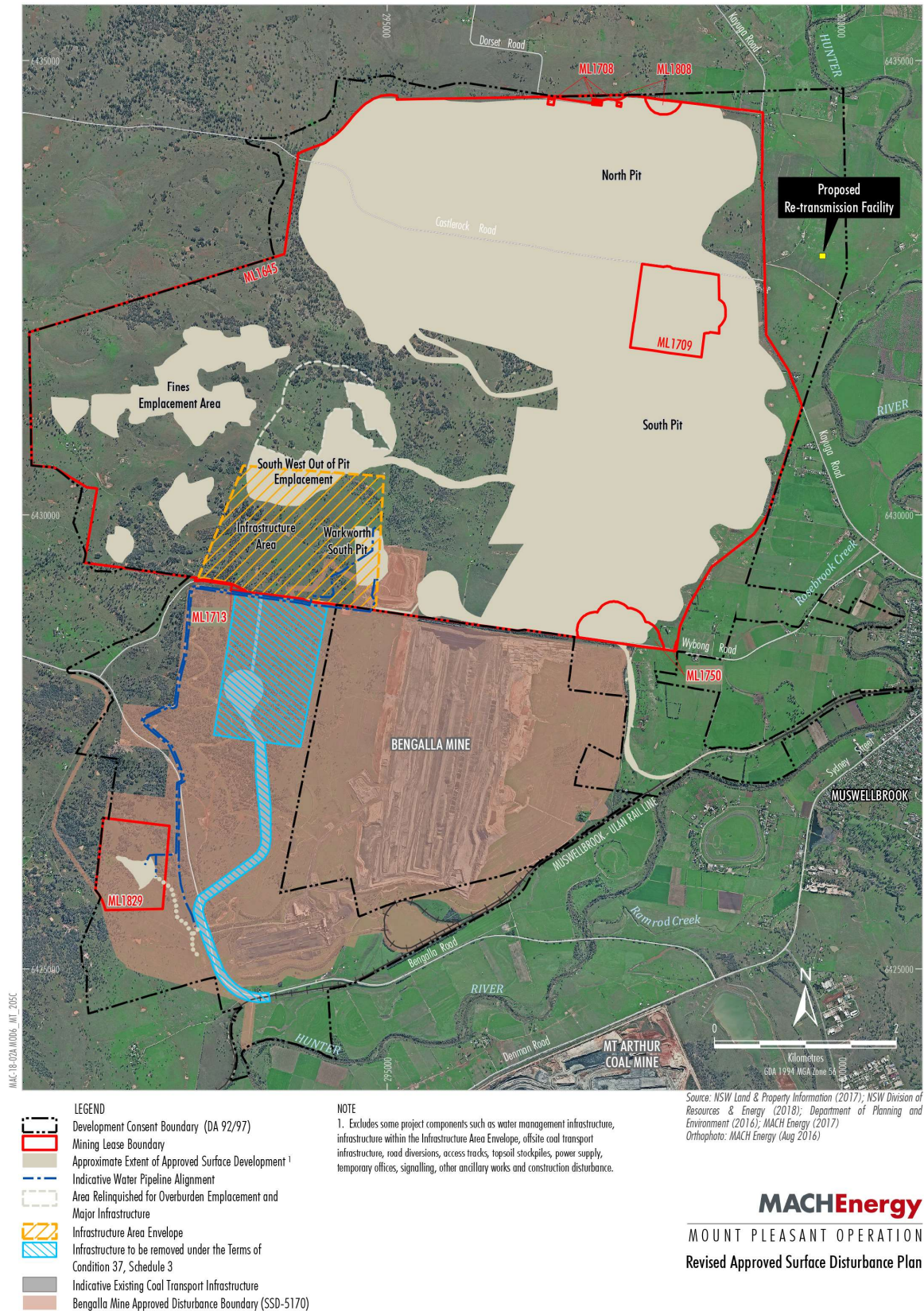
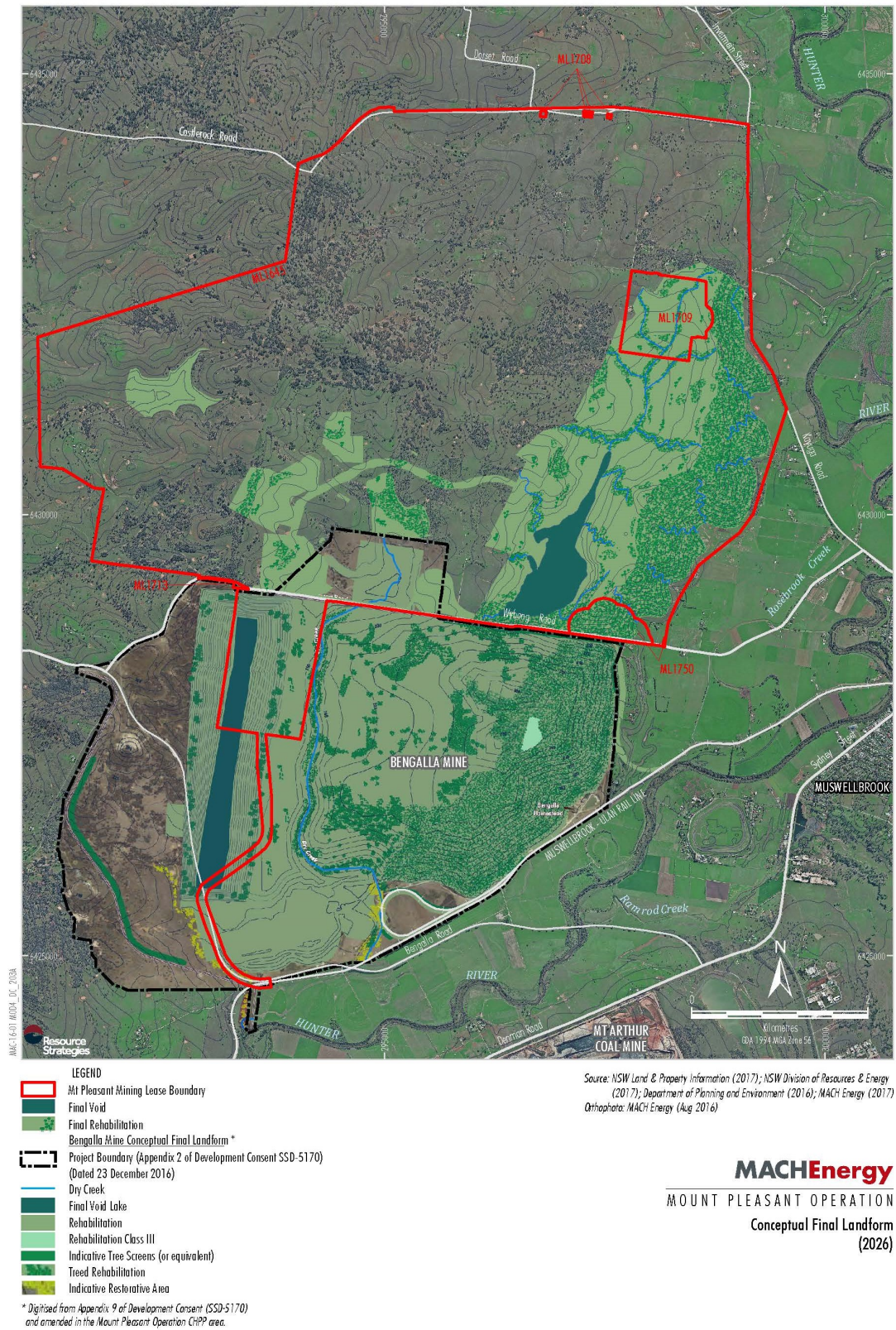


FIGURE 4 - CONCEPTUAL FINAL LANDFORM



APPENDIX A

CONSULTEE FEEDBACK – KEY CORRESPONDENCE

Enquiries
Please ask for Theresa Folpp
Direct 02 6549 3700
Our reference 24/3978

22 January 2024

Andrew Reid
Superintendent Environment (Operations)
MACH Energy

Dear Mr Reid

Mount Pleasant Mine DA 92/97 MOD6 – Council Staff Comments on the Updated Rehabilitation Strategy

Reference is made to the email titled '*Mount Pleasant Operation - Update of Environmental Management Plans following MOD 6 Approval*' dated 21 December 2023, requesting feedback on the updated Rehabilitation Strategy. The Rehabilitation Strategy required updating following approval of DA 92/97 MOD6.

DA 92/97 MOD6 allows for the construction and operation of a tower or mast, and associated transmission infrastructure, to re-transmit local DTV signals from the existing Broadcast Australia site at Rossgole Lookout.

The Rehabilitation Strategy was revised to capture the long-term considerations for the re-transmission facility as well as reflect the recent transition of rehabilitation management from the Mining Operations Plan to the Rehabilitation Management Plan.

Council staff appreciate the opportunity to comment on the Rehabilitation Strategy and its submission is as follows:

01. Section 1.2 – it would be useful to note that Versions 1 and 2 were prepared in accordance with the MOP Guidelines as this reference has been removed.
02. It appears that ML1829 has been added to the Rehabilitation Strategy to include the new water infrastructure, this should be described.
03. Clarification is required in relation to DA 92/97 Sch 3 Cond 37 referenced in Section 1.2, as follows:
 - i. Cond 37 references ML 1645 (south of Wybong Road), but ML 1645 (south of Wybong Road) appears to no longer exist on MinView; and
 - ii. The ML for the rail infrastructure (assumed to be ML1796) is now owned by Bengalla Mining Company and the rail has been removed, so perhaps the reference to Cond 37 could be removed from this section of the Rehabilitation Strategy, or Section 1.2 updated as the rail is no longer justification for the scope i.e north of Wybong Road. Section 4.2 should also be updated accordingly with a description of works undertaken and the current status of the area.
04. Department of Planning and Environment are now referred to as the Department of Planning, Housing and Infrastructure.

Council staff appreciates the opportunity to comment and would be pleased to provide additional information if requested. Should you need to discuss the above, please contact the undersigned on 02 6549 3700 or email council@muswellbrook.nsw.gov.au.

Yours faithfully

A handwritten signature in black ink that reads "J. Folpp". The signature is written in a cursive, slightly slanted style.

Theresa Folpp
Development Compliance Officer

Table A1
Rehabilitation Strategy (DA 92/97) – Comments from Muswellbrook Shire Council

Reference	MSC Comment	MACH Energy Response
1	Section 1.2 – it would be useful to note that Versions 1 and 2 were prepared in accordance with the MOP Guidelines as this reference has been removed.	Recommended text relating to the MOP Guidelines has been incorporated into Section 1.2 of the Rehabilitation Strategy.
2	It appears that ML1829 has been added to the Rehabilitation Strategy to include the new water infrastructure, this should be described.	Recommended text relating to the water infrastructure associated with ML 1829 has been incorporated into Section 1.2.2.
3	<p>Clarification is required in relation to DA 92/97 Sch 3 Cond 37 referenced in Section 1.2, as follows:</p> <ul style="list-style-type: none"> i. Cond 37 references ML 1645 (south of Wybong Road), but ML 1645 (south of Wybong Road) appears to no longer exist on MinView; and ii. The ML for the rail infrastructure (assumed to be ML1796) is now owned by Bengalla Mining Company and the rail has been removed, so perhaps the reference to Cond 37 could be removed from this section of the Rehabilitation Strategy, or Section 1.2 updated as the rail is no longer justification for the scope i.e north of Wybong Road. Section 4.2 should also be updated accordingly with a description of works undertaken and the current status of the area. 	<p>Reference to Schedule 3, Condition 37 has been removed from Section 1.2 and moved to Section 4.2.</p> <p>Section 4.2 has been updated to include the date of the partial transfer of ML 1645 to Bengalla Mine. This section has also been updated to detail the description of works undertaken (removal of existing rail loop and infrastructure) and rehabilitation undertaken in the area.</p>
4	Department of Planning and Environment are now referred to as the Department of Planning, Housing and Infrastructure.	All text referencing the Department of Planning and Environment (DPE) has been replaced with the Department of Planning, Housing and Infrastructure (DPHI) throughout the Rehabilitation Strategy.