MACHEnergy

Mount Pleasant Operation

A JOINT VENTURE WITH JCDA Japan Coal Development Australia

Mount Pleasant Optimisation Project

JUNE 2022

Agenda

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MACH Energy Representatives

Ferdian Purnamasidi Managing Director	▪ 19+ years business experience across a range of industries with primary focus in the resources sector ▪ Official Salim Group representative for Australia and Director of ASX listed company KGL Resources ▪ Bachelor of Commerce and Diploma of Business Management from Curtin University, Western Australia
Chris Lauritzen General Manager – Resource Development	▪ 35+ years experience in the International coal industry in technical and general management roles ▪ Previously worked for 22 years with Rio Tinto, 7 years at Kaltim Prima Coal Indonesia, Global Coal Commodity Specialist with BHP Billiton ▪ Bachelor of Science (Geology), Fellow of AusIMM, GAICD.
Richard Bailey General Manager – Operations	▪ 35+ years construction and mining experience predominantly in the coal sector ▪ 25 years with Rio Tinto including with Hunter Valley Operations, Antelope Coal in the US and at Mount Thorley Warkworth in the Hunter Valley ▪ Bachelor of Engineering (Civil) University of Newcastle

MACH Energy Background

The Indonesia-Australia Comprehensive Economic Partnership creates a framework for the two countries to unlock the vast potential of bilateral economic partnership.

MACH is part of the Salim Group, one of Indonesia's largest conglomerates. Mount Pleasant Operation is an example of the bilateral partnership.

Mount Pleasant Operation is regularly engaged with DFAT, the Indonesian Embassy, and visiting Indonesian Business Leaders.

Mount Pleasant Operation Timeline

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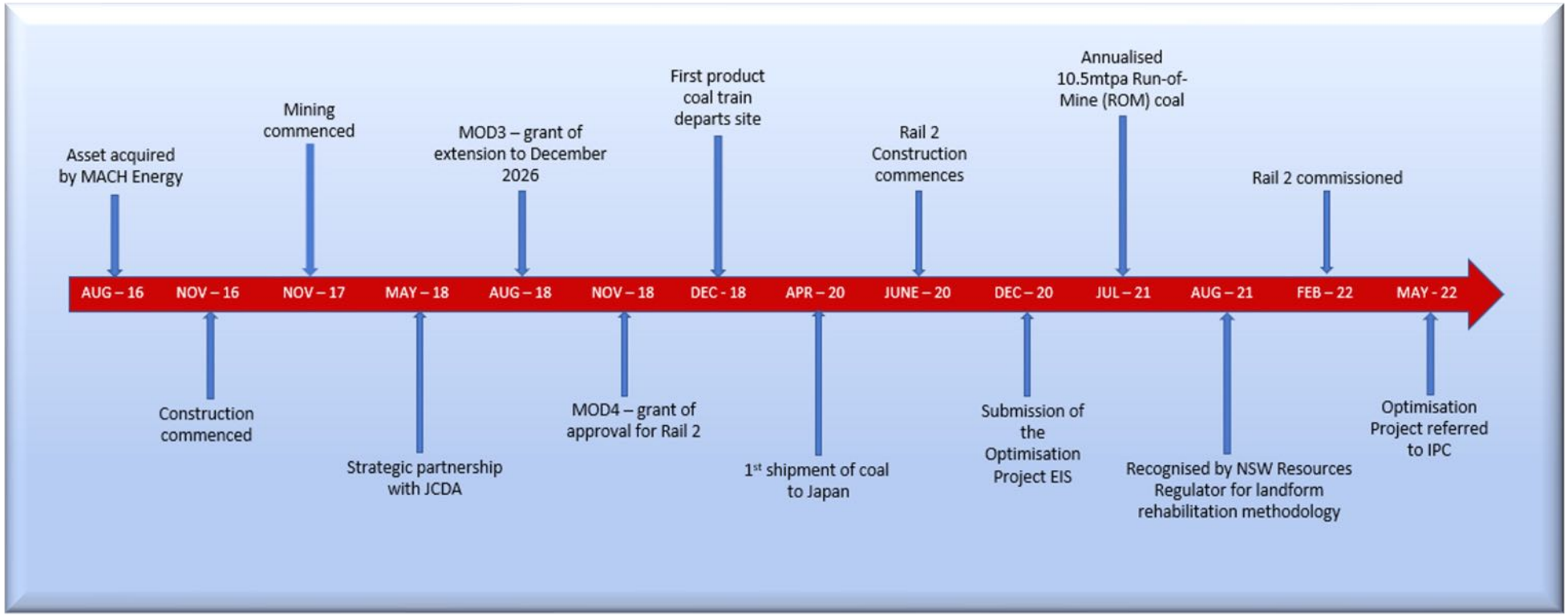

Project Location - Regional

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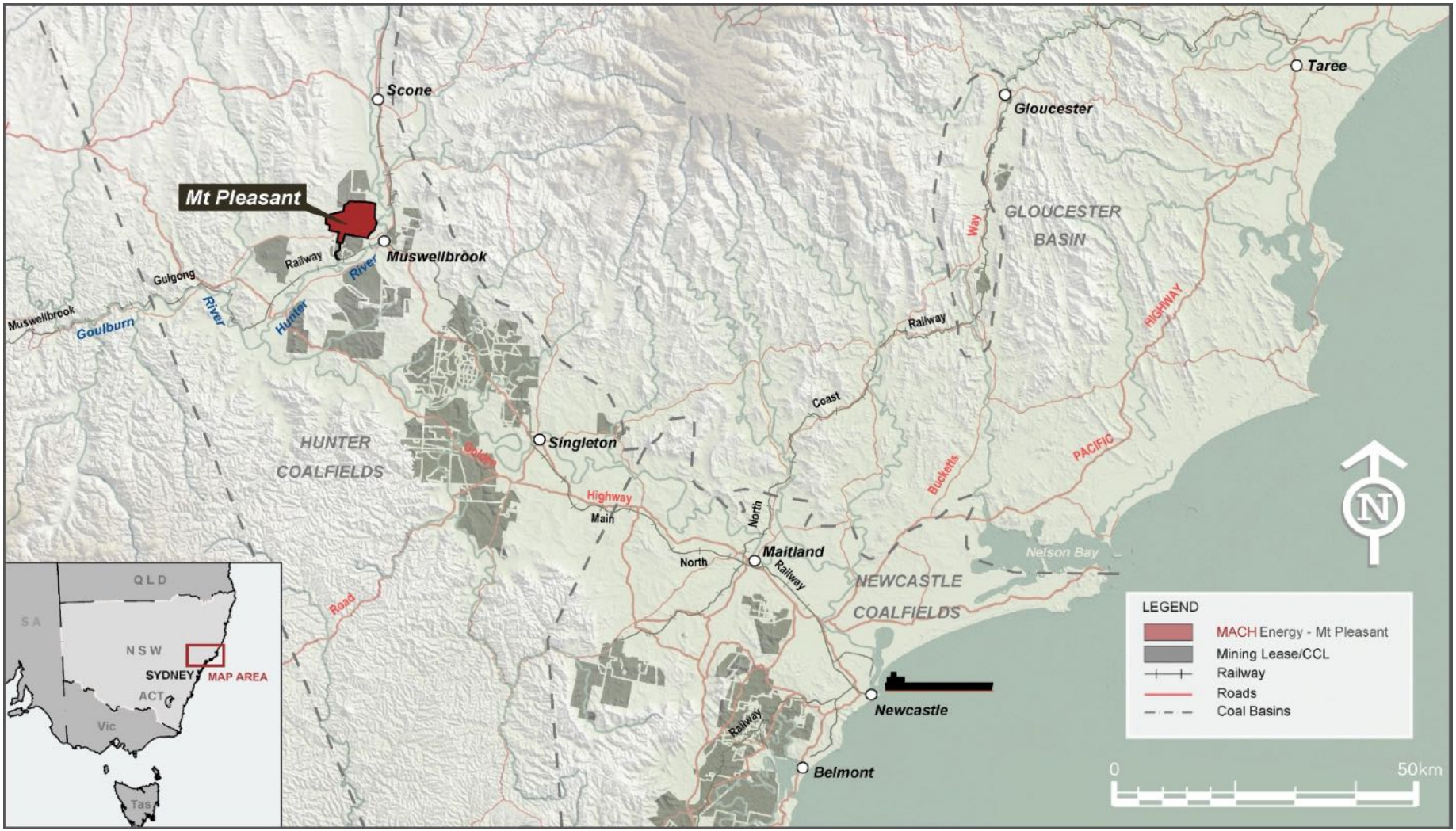
Mount Pleasant Operation is located in the Hunter Valley, approximately 135km from the Ports of NCIG and PWCS in Newcastle



Project Location

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- Recognised mining precinct
- Dartbrook to immediate north
- Bengalla to immediate south
- Mt Arthur and Maxwell Underground further south
- Muswellbrook coal to the east
- Mangoola to the west

Approvals Overview

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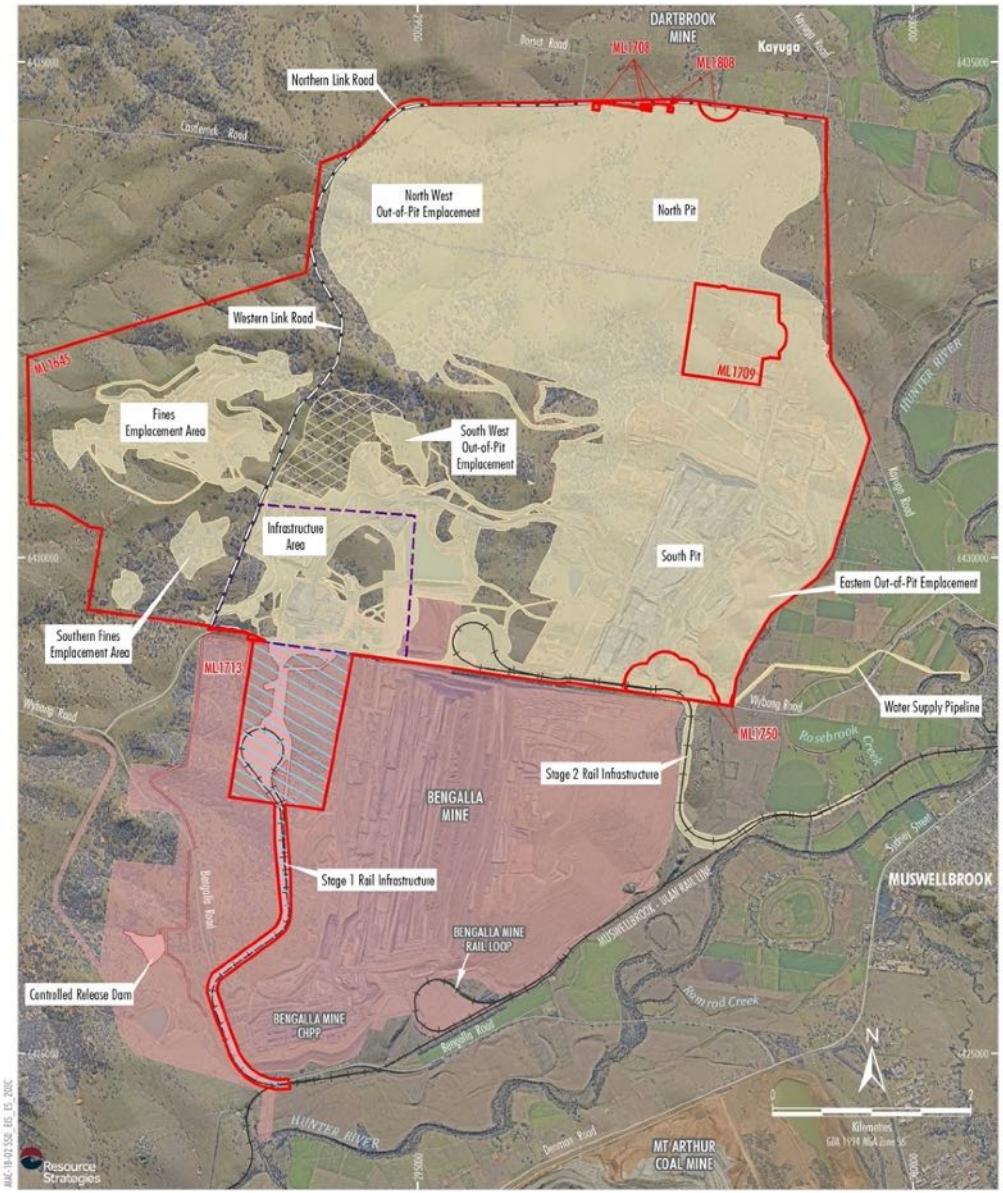

- Approved under EP&A Act, December 1999:
  - 10.5 Mtpa ROM coal
  - Three out-of-pit waste rock emplacements
  - Northern and Western Link Roads
  - Multiple final voids
  - Four modifications – current life to 2026
- Approved under the EPBC Act in 2012, approval extends to 2040

LEGEND
- Mining Lease Boundary (Mount Pleasant Operation)
- Approximate Extent of Existing/Approved Surface Development (DA92/97) [1]
- Area Relinquished for Overburden Emplacement and Major Infrastructure
- Infrastructure Area Envelope
- Northern and Western Link Road
- Infrastructure to be removed under the Terms of Condition 37, Schedule 3 (DA92/97)
- Bengalla Mine Approved Disturbance Boundary (SSD-5170)
- Existing/Approved Mount Pleasant Operation Infrastructure within Bengalla Mine Approved Disturbance Boundary (SSD-5170) [1]

Project Location

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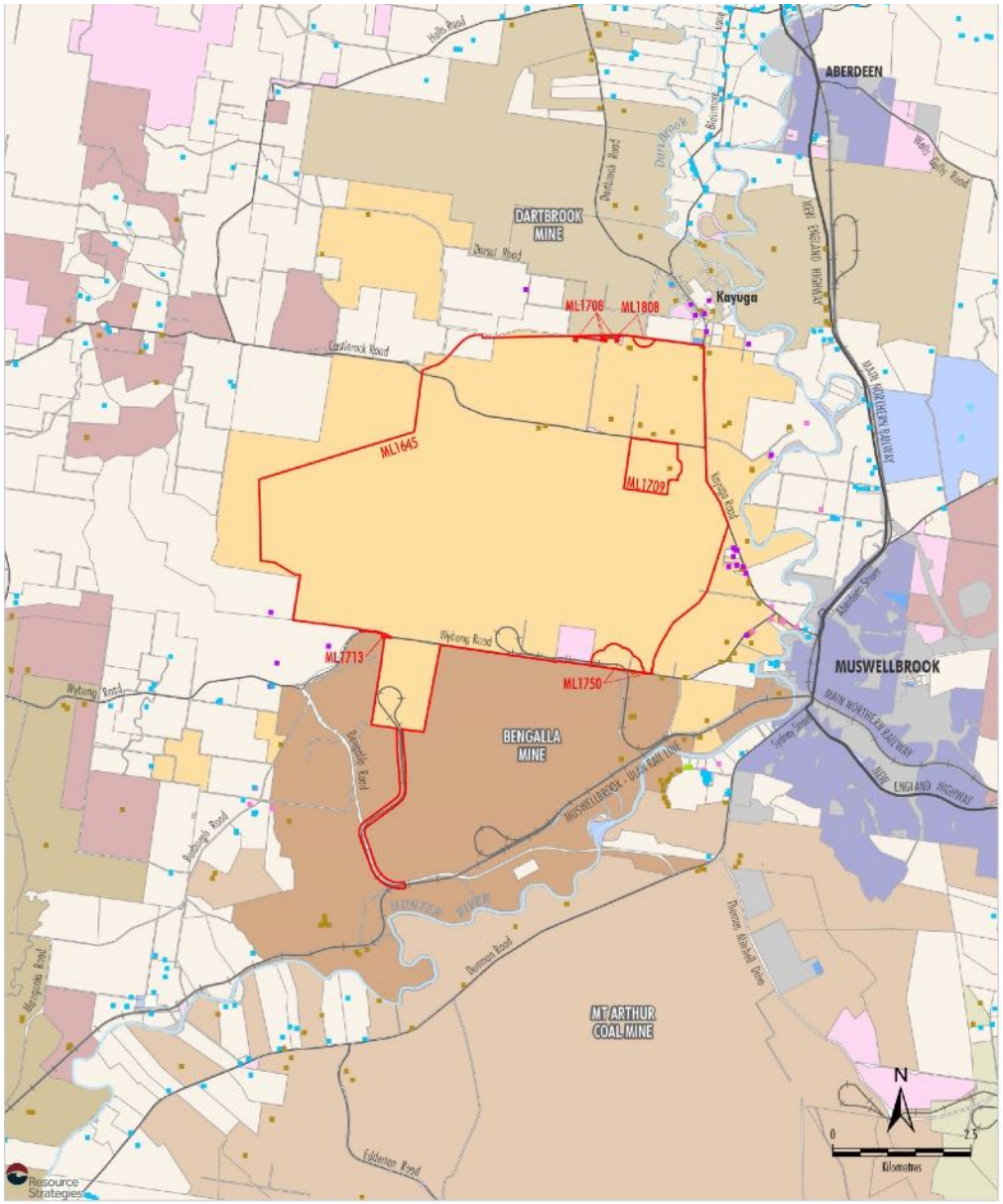

- Extensive mine-owned land
- MACH owns additional land east and west of Project
- Parcel of private land on Northern Link Road alignment

LEGEND
- Mining Lease Boundary (Mount Pleasant Operation)
- Mount Pleasant-controlled
- Bengalla-controlled
- Dartbrook-controlled
- Mangoola-controlled
- Muswellbrook Coal-controlled
- Mt Arthur-controlled
- Other Mining/Resource-controlled
- Crown
- The State of NSW
- Muswellbrook Shire Council
- Upper Hunter Shire Council
- Privately-owned Land
- Muswellbrook and Upper Hunter LEP Zones B2, B5, R1, R5
- Muswellbrook and Upper Hunter LEP Zones IN1, SP2, RE1, RE2, W1

Category of Rural Residence under DA92/97
- Mine-owned
- Privately-owned - Acquisition on Request
- Privately-owned - Mitigation on Request
- Privately-owned - Mitigation/Acquisition on Request*
- Other Privately-owned

* Mitigation on Request - rail noise/Aquisition up Request - air quality. MACH is only required to acquire and/or install air quality mitigation measures at this property if not reasonably achievable under a separate approval for the Bengalla Mine.

Existing Operations

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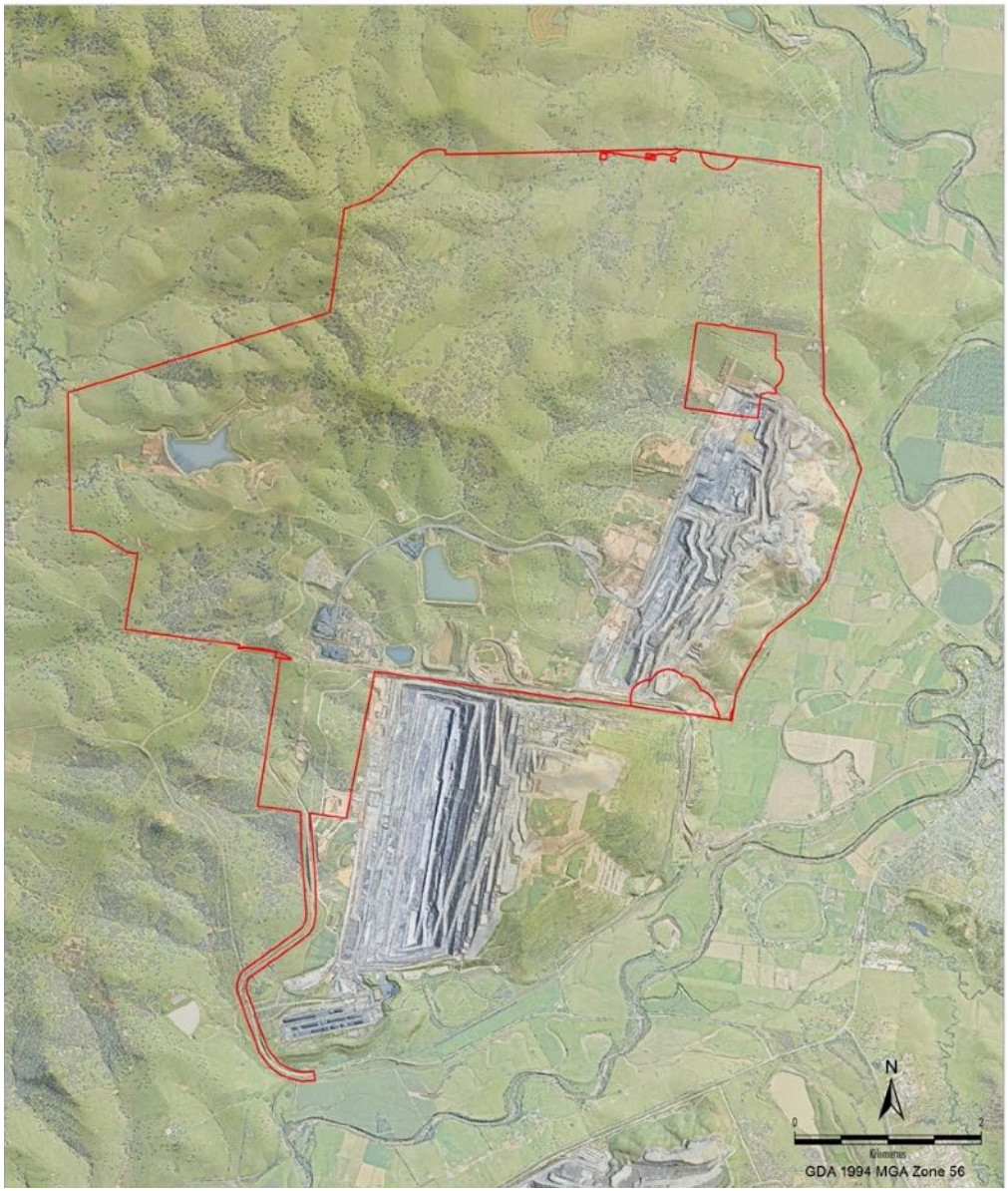


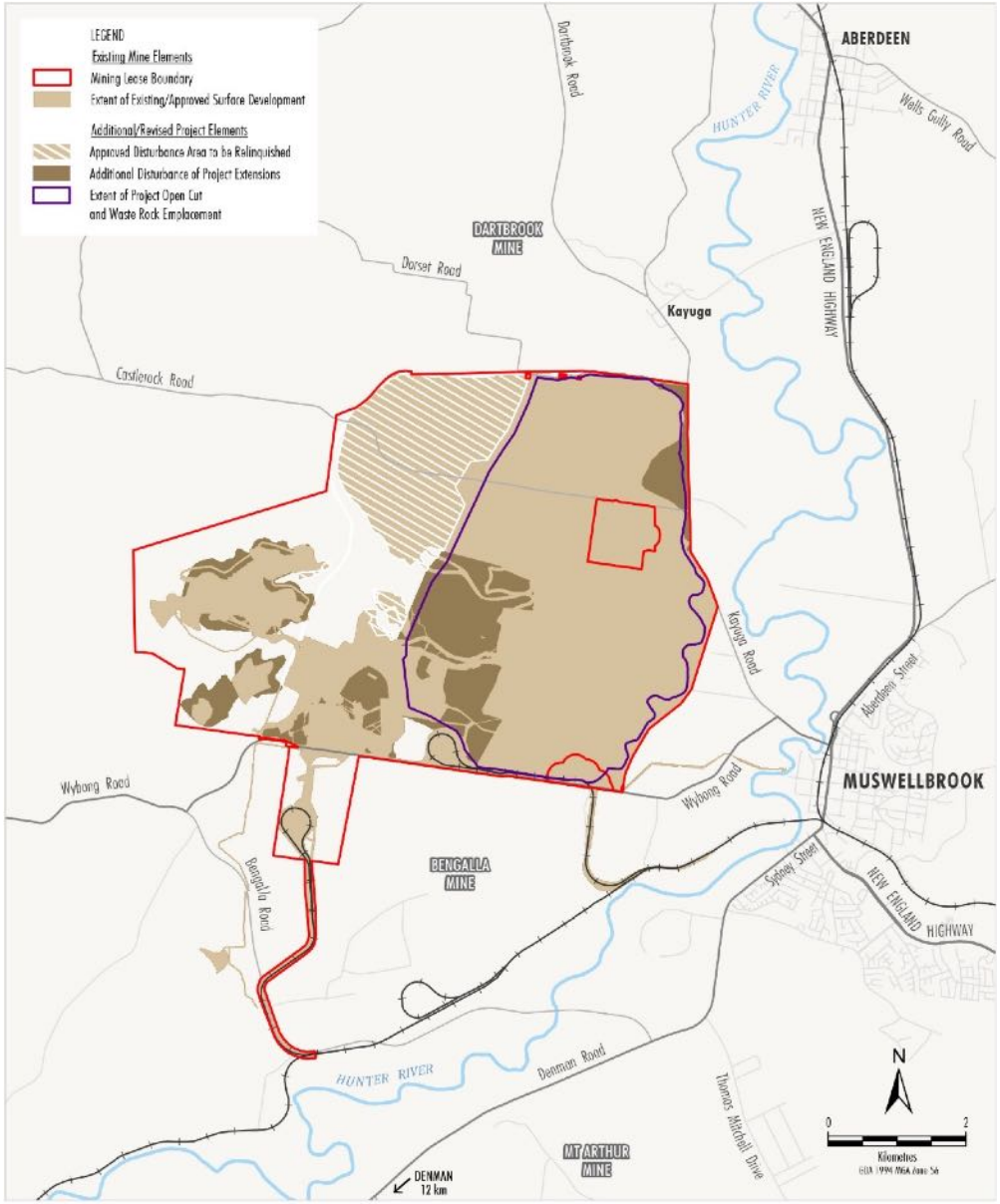
- December 2021 aerial photograph
- Key features of existing Operation

Employment and Contribution

- Purchase and initial establishment of the asset was approximately $1 billion
- The Operation currently employs approximately 440 people (380 in Mod 3), inclusive of MACH employees/contractors
- The mine has significant operational expenditure in Muswellbrook Shire, the Hunter region and NSW
- Community contributions and sponsorships and ACDF
- Recent Rail 2 construction capital expenditure has been approximately $240 million
- The Mount Pleasant Operation has contributed approximately $200 million in royalty payments to the NSW Government to date

>$100 million of these royalty payments to the NSW State Government have been made in the last 12 months

Project Overview



- Extension of the mine life from 2026 to 2048
- All pits mining to Edderton Seam floor to improve resource recovery
- Gradual, staged increase in mining rate as pit moves west
- Continued mining of coal resources as other mines in the region downsize
- Consolidation through relinquishment of part of the approved mine area

Key Optimisation Features

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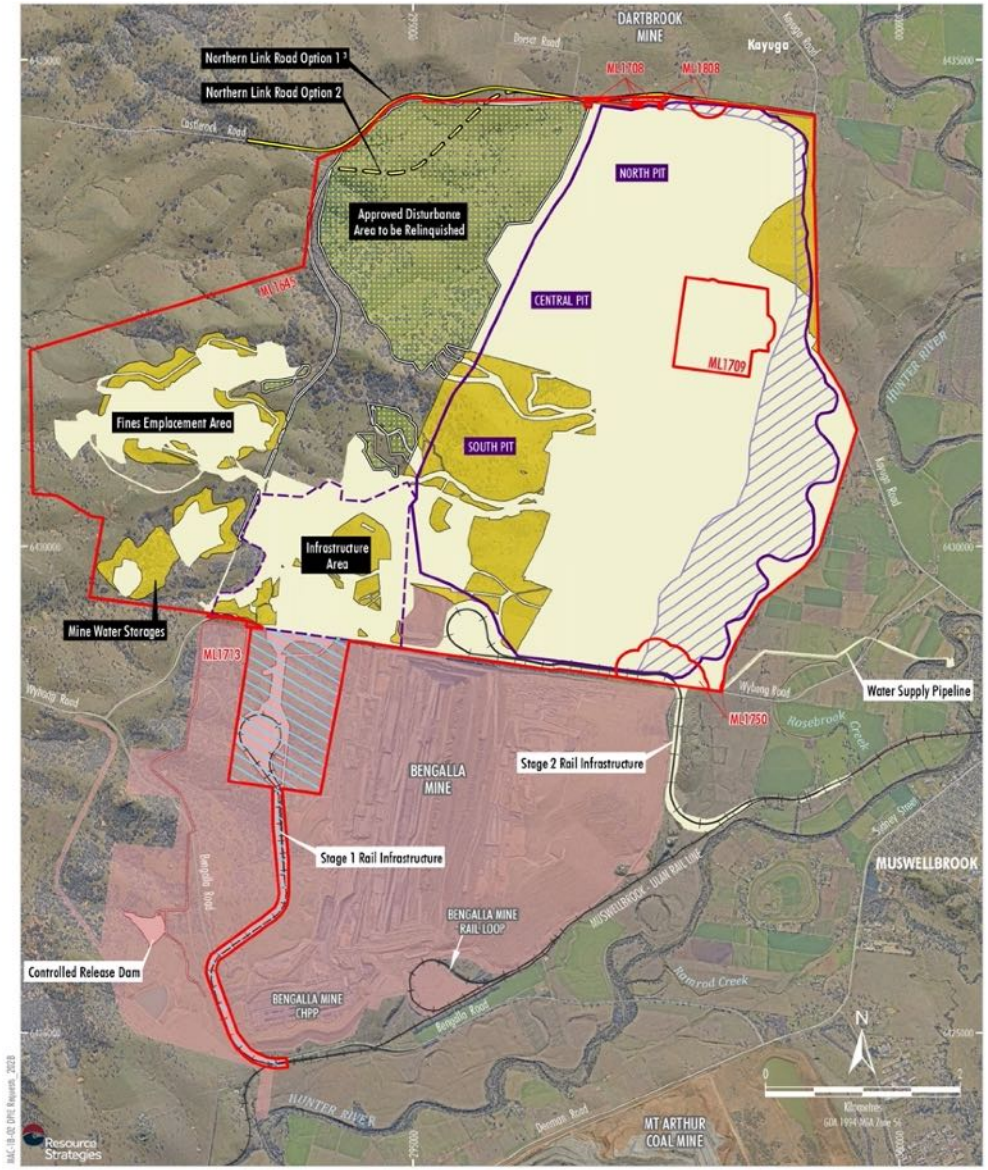


- The Relinquishment Area facilitates Project infill areas *without increasing total land disturbance*
- Relinquishment Area higher habitat values would *result in a Project net positive regional biodiversity outcome*
- The higher single integrated waste rock emplacement *reduces the number of out-of-pit emplacements*
- Western Link Road is not required, and *Northern Link Road realigned*
- Proposed Mine Water Dams *maximise use of approved disturbance areas*

LEGEND

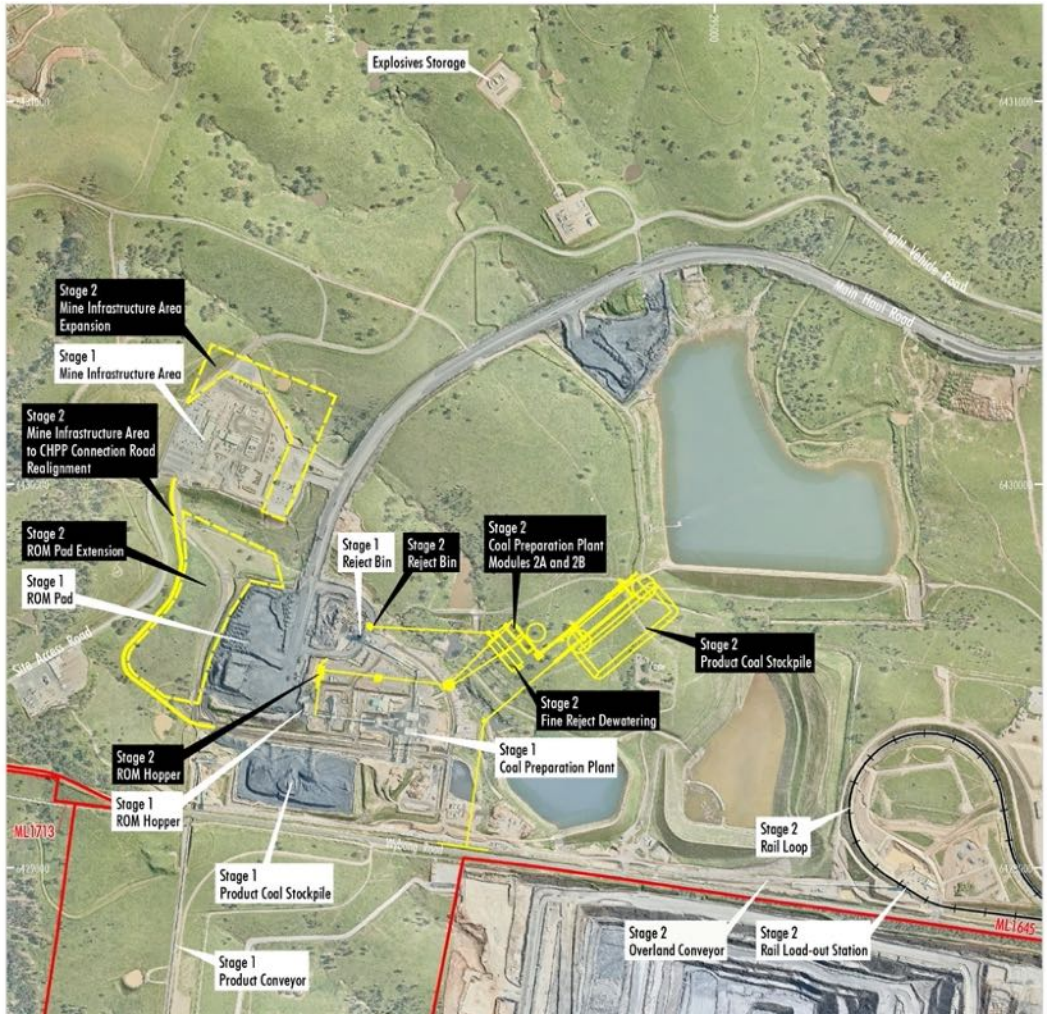
Existing Mine Elements

- Mining Lease Boundary (Mount Pleasant Operation)
- Project Continuation of Existing/Approved Surface Development (DA92/97) [1]
- Infrastructure to be removed under the Terms of Condition 37, Schedule 3 (DA92/97)
- Bengalla Mine Approved Disturbance Boundary (SSD-5170)
- Existing/Approved Mount Pleasant Operation Infrastructure within Bengalla Mine Approved Disturbance Boundary (SSD-5170) [1]

Additional/Revised Project Elements

- Approved Disturbance Area to be Relinquished [2]
- Approximate Additional Disturbance of Project Extensions [1]
- Northern Link Road Option 1 Centreline [3]
- Northern Link Road Option 2 Centreline
- Approximate Extent of Project Open Cut and Waste Rock Emplacement Landforms
- Approximate Extent of Project Out-of-Pit Waste Emplacement
- Revised Infrastructure Area Envelope

Key Optimisation Features



- Project builds on and *integrates with existing Mount Pleasant Operation infrastructure*
- Project maximises use of the existing fines emplacement, and *new CHPP modules incorporate fine reject dewatering*
- Staged nature of Project production provides *managed incremental expansion*
- Project life to 2048 would provide *certainty for MACH, suppliers, customers, the community and workforce*

Key Optimisation Features

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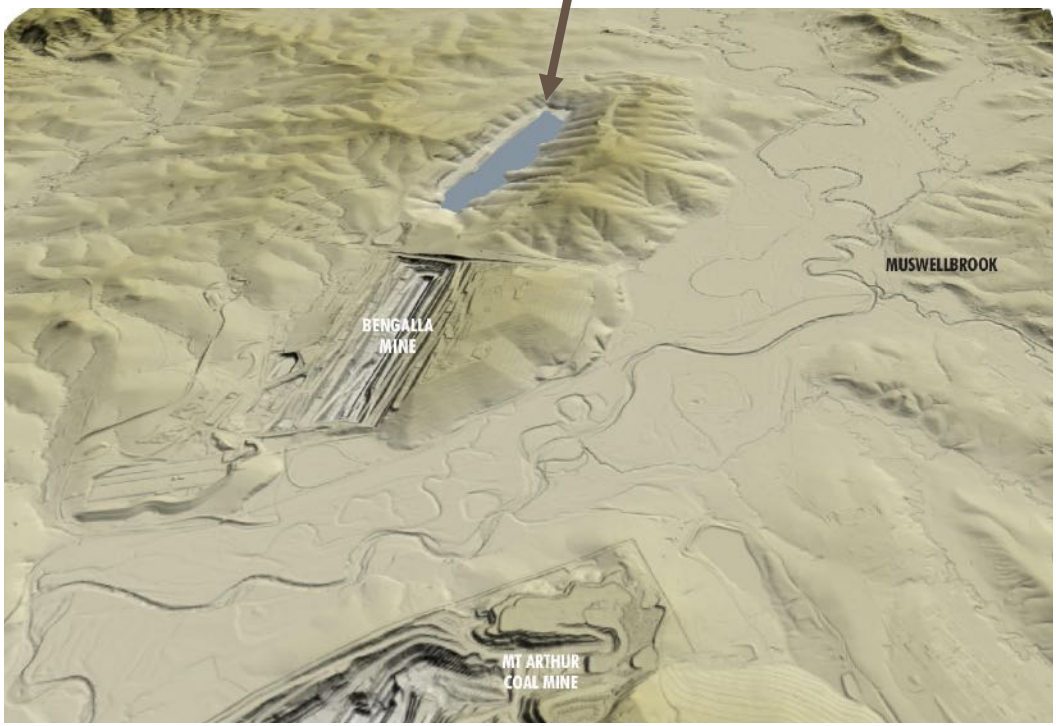
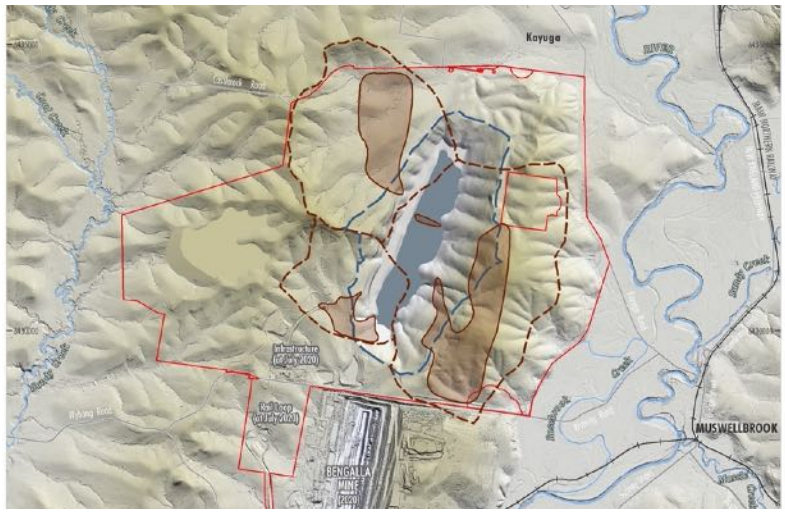
Project Final Void



- The geomorphic design and final void shaping *integrates the final landform with existing topographic forms*
- The consistent pit floor and single integrated emplacement *reduces the number of final voids*
- The single deeper final void *reduces void area and catchment*



Employment and Contributions

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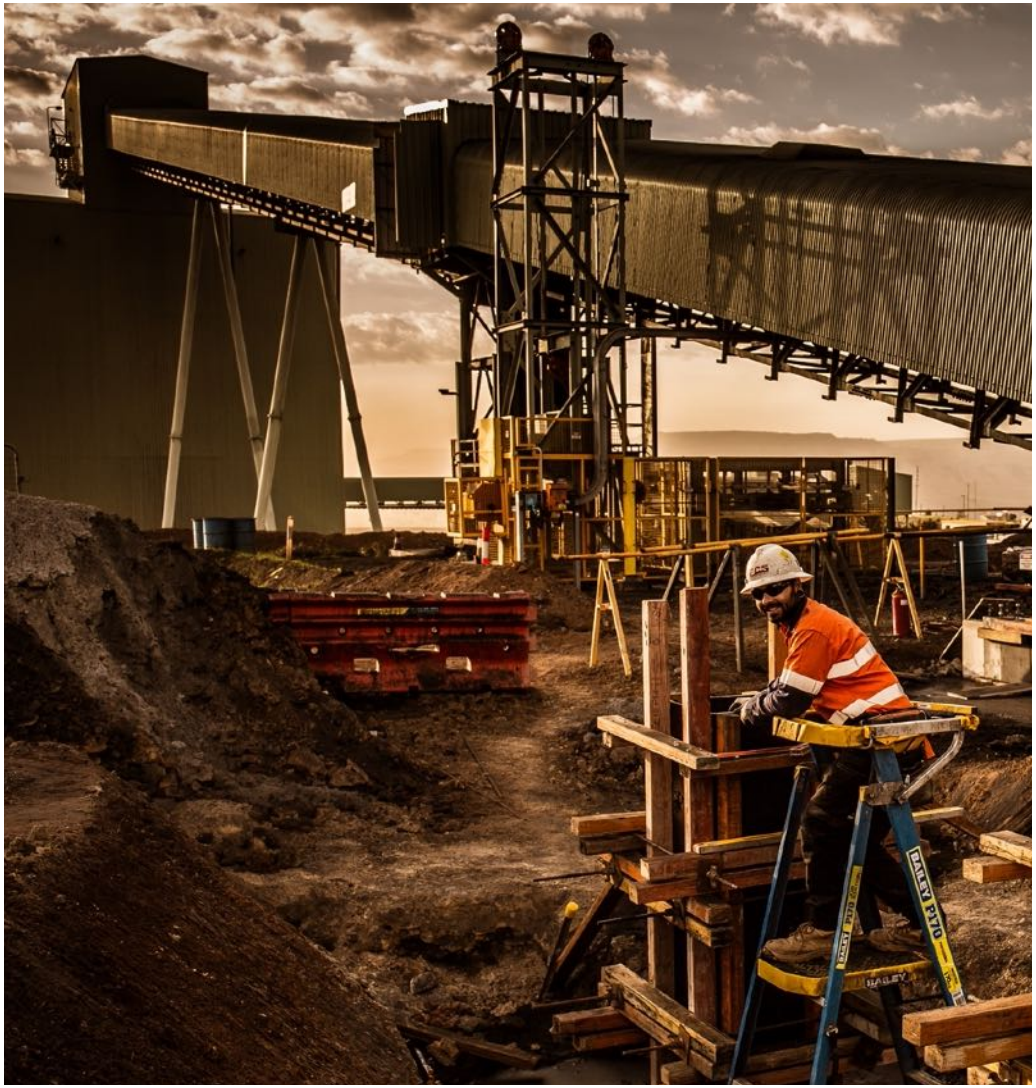
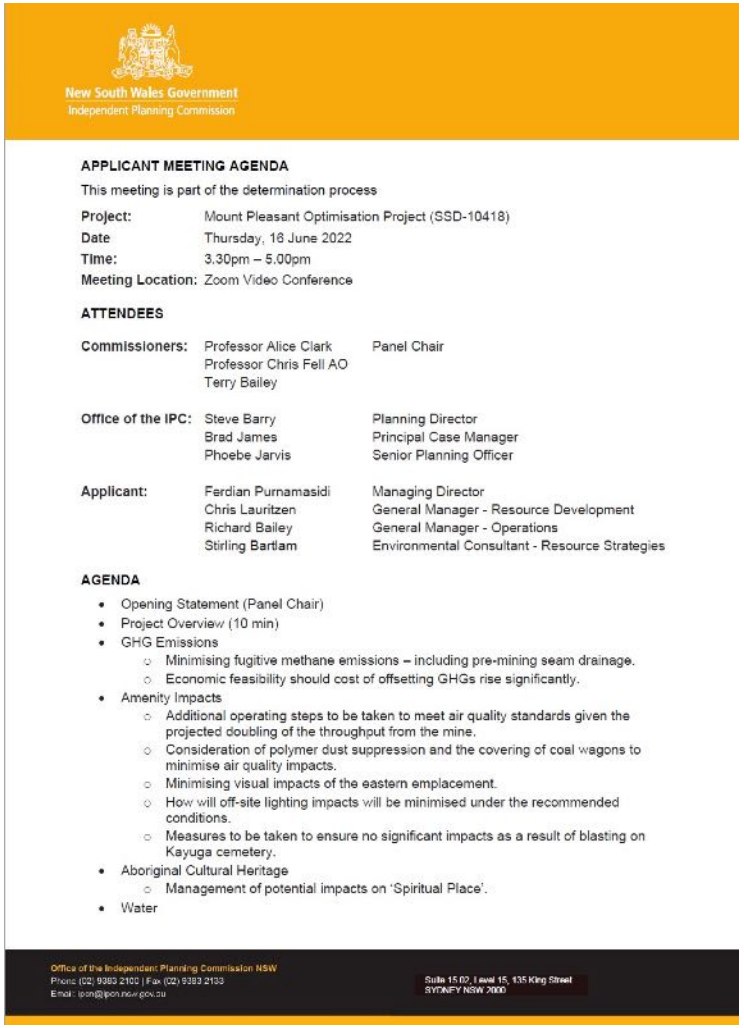


- Approximately $950 million in capital expenditure
- Project expansion as other operating regional mines deplete existing reserves:
  - Average of 600 FTE employees
  - 830 FTE peak (in 2041)
- Multiple construction phases with associated additional workforce demands
- Approximately $2 billion in royalties to State of NSW ($684 million PV)
- Applicable State and Commonwealth taxes and VPA payments to MSC and UHSC
- Continued contributions to and sponsorships of community organisations

IPC Specific Agenda Items



New South Wales Government
Independent Planning Commission

APPLICANT MEETING AGENDA

This meeting is part of the determination process

Project:	Mount Pleasant Optimisation Project (SSD-10418)	
Date	Thursday, 16 June 2022	
Time:	3.30pm – 5.00pm	
Meeting Location:	Zoom Video Conference	

ATTENDEES

Commissioners:	Professor Alice Clark	Panel Chair
	Professor Chris Fell AO	
	Terry Bailey	
Office of the IPC:	Steve Barry	Planning Director
	Brad James	Principal Case Manager
	Phoebe Jarvis	Senior Planning Officer
Applicant:	Ferdian Purnamasidi	Managing Director
	Chris Lauritzen	General Manager - Resource Development
	Richard Bailey	General Manager - Operations
	Stirling Bartlam	Environmental Consultant - Resource Strategies

AGENDA

- Opening Statement (Panel Chair)
- Project Overview (10 min)
- GHG Emissions
  - Minimising fugitive methane emissions – including pre-mining seam drainage.
  - Economic feasibility should cost of offsetting GHGs rise significantly.
- Amenity Impacts
  - Additional operating steps to be taken to meet air quality standards given the projected doubling of the throughput from the mine.
  - Consideration of polymer dust suppression and the covering of coal wagons to minimise air quality impacts.
  - Minimising visual impacts of the eastern emplacement.
  - How will off-site lighting impacts will be minimised under the recommended conditions.
  - Measures to be taken to ensure no significant impacts as a result of blasting on Kayuga cemetery.
- Aboriginal Cultural Heritage
  - Management of potential impacts on 'Spiritual Place'.
- Water

Office of the Independent Planning Commission NSW
Phone: (02) 9383 2100 | Fax: (02) 9383 2133
Email: ipcn@ipcn.nsw.gov.au
Suite 15.02, Level 15, 135 King Street
SYDNEY NSW 2000

IPC Agenda Items

- *GHG Emissions*
- *Amenity Impacts*
- *Aboriginal Cultural Heritage*
- *Water*
- *Social Impacts*
- *Department's Assessment Report and Associated Conditions*

Greenhouse Gas Emissions

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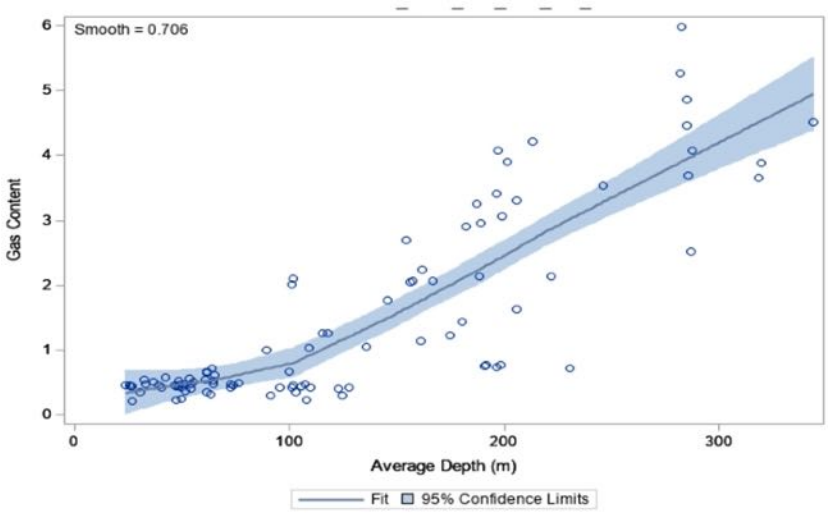
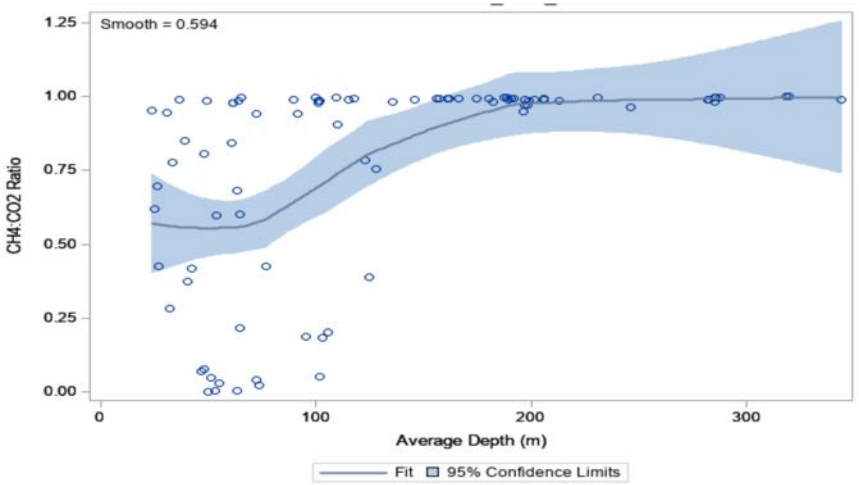
IPC Agenda Items

- GHG Emissions
  - Minimising fugitive methane emissions – including pre-mining seam drainage.
  - Economic feasibility should cost of offsetting GHGs rise significantly.





- Multi-seam open cut context with low gas content
- MACH has evaluated extensive gas borehole data
- Generally below four and average of approximately one cubic metre of gas per tonne of ROM coal within the open cut mine extents
- Gas content and methane content increases with seam depth

Greenhouse Gas Emissions

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IPC Agenda Items

- GHG Emissions
  - Minimising fugitive methane emissions – including pre-mining seam drainage.
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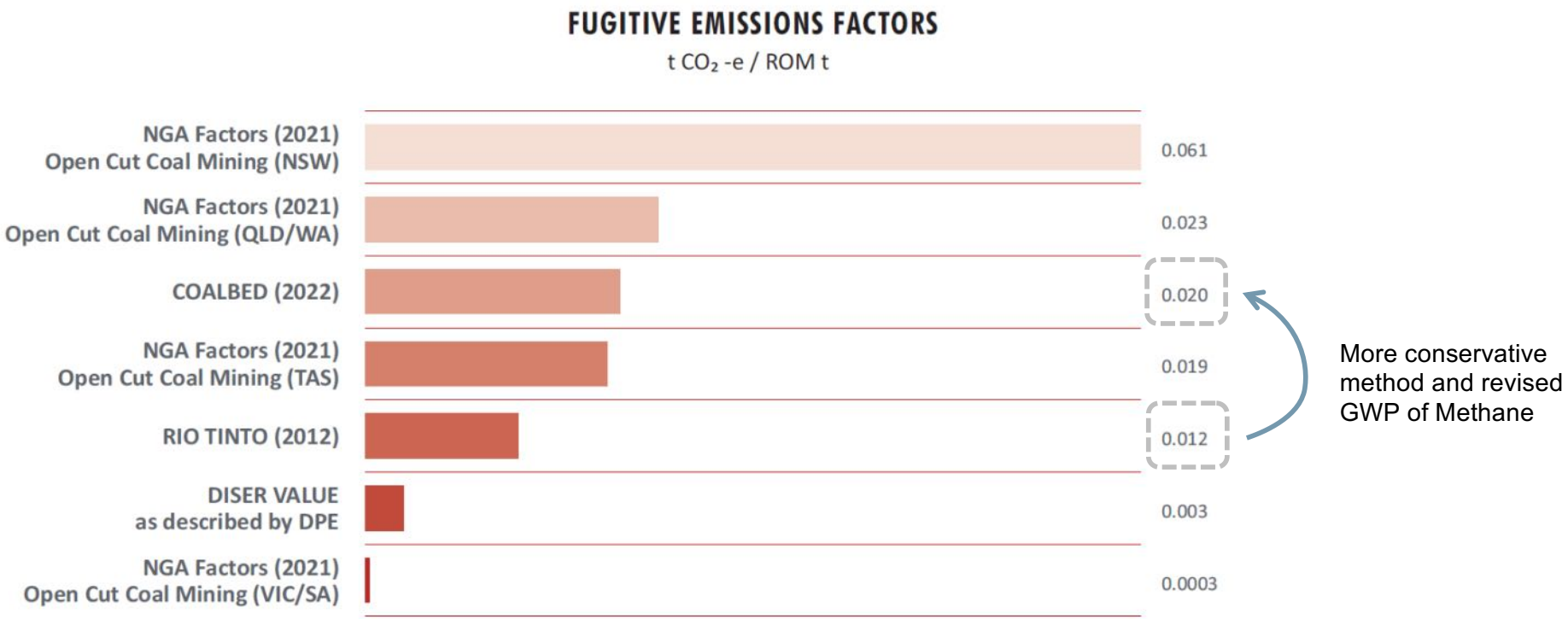

Greenhouse Gas Emissions

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IPC Agenda Items

- GHG Emissions
  - Minimising fugitive methane emissions – including pre-mining seam drainage.
  - Economic feasibility should cost of offsetting GHGs rise significantly.

Draft Project Consent Conditions (DPE, 2022)

B34. Within 12 months of approval of the Air Quality Management and Greenhouse Gas Plan and then every 3 years during the life of mining operations (and any period of suspension of ROM coal extraction and/or processing), the Air Quality and Greenhouse Gas Management Plan must be updated to include the following information in relation to Scope 1 and Scope 2 GHGEs:

(a) a review of abatement technologies relevant to the development's GHGEs;

(b) a detailed review of the feasibility of implementing various GHGE abatement options, and economic considerations for the development;

(c) a 3-year action plan to investigate and implement reasonable and feasible measures to minimise GHGEs; and

(d) a reporting of compliance with the performance measures in Table 4, and revise where reasonable and feasible to minimise GHGEs

*B37. In determining compliance with the performance measures in **Table 4**, ….*

*… **If, following this consideration, the Planning Secretary determines that the Applicant has exceeded any of these performance measures, including revised performance measures determined under condition B34, then the Applicant must offset the excess CO2-e emissions within six months of the Planning Secretary's determination, using a mechanism to the satisfaction of the Planning Secretary.***

Greenhouse Gas Emissions

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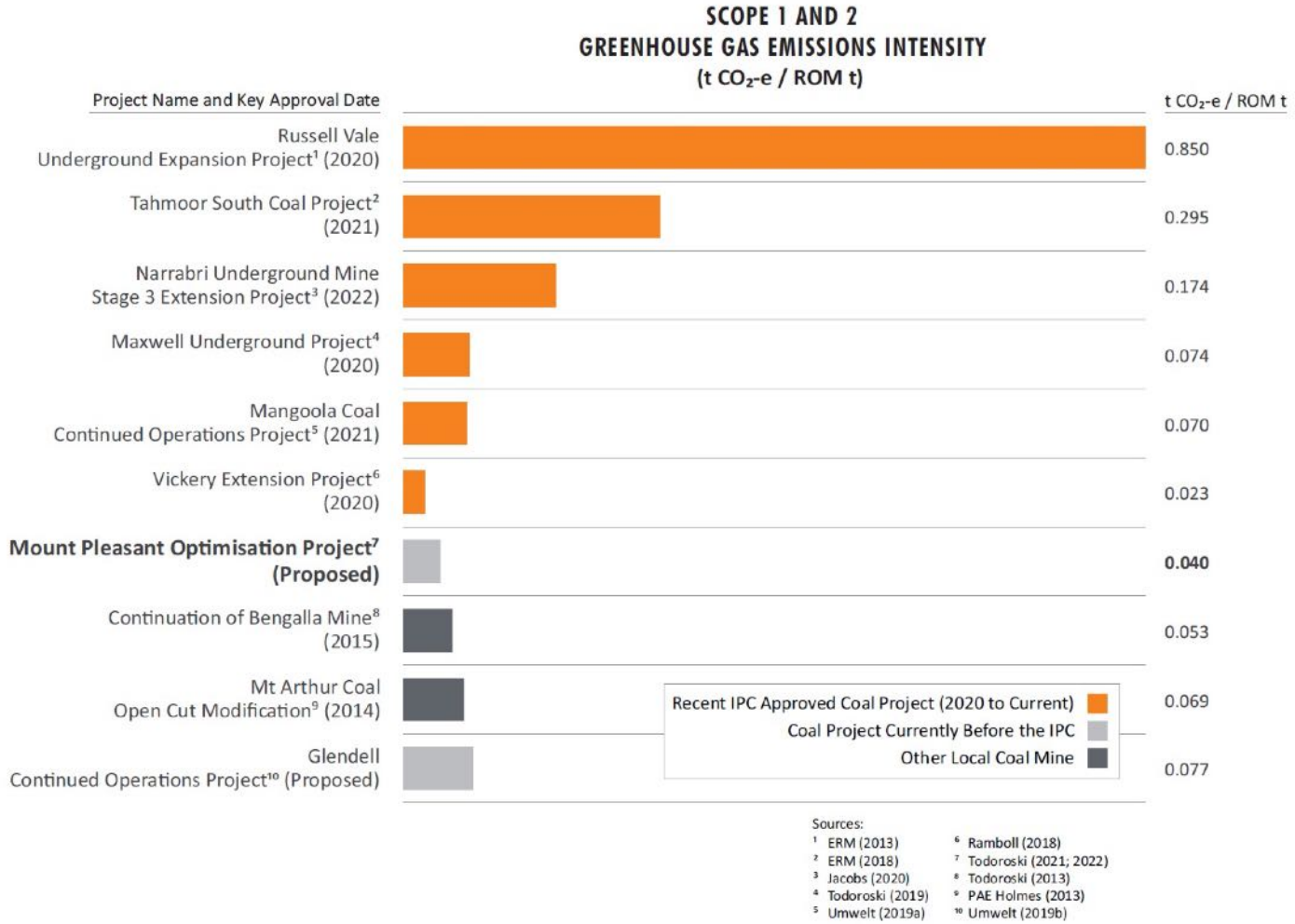
IPC Agenda Items

Consideration of estimated GHG intensity per tonne of ROM coal produced:



Amenity – Air Quality (Noise)

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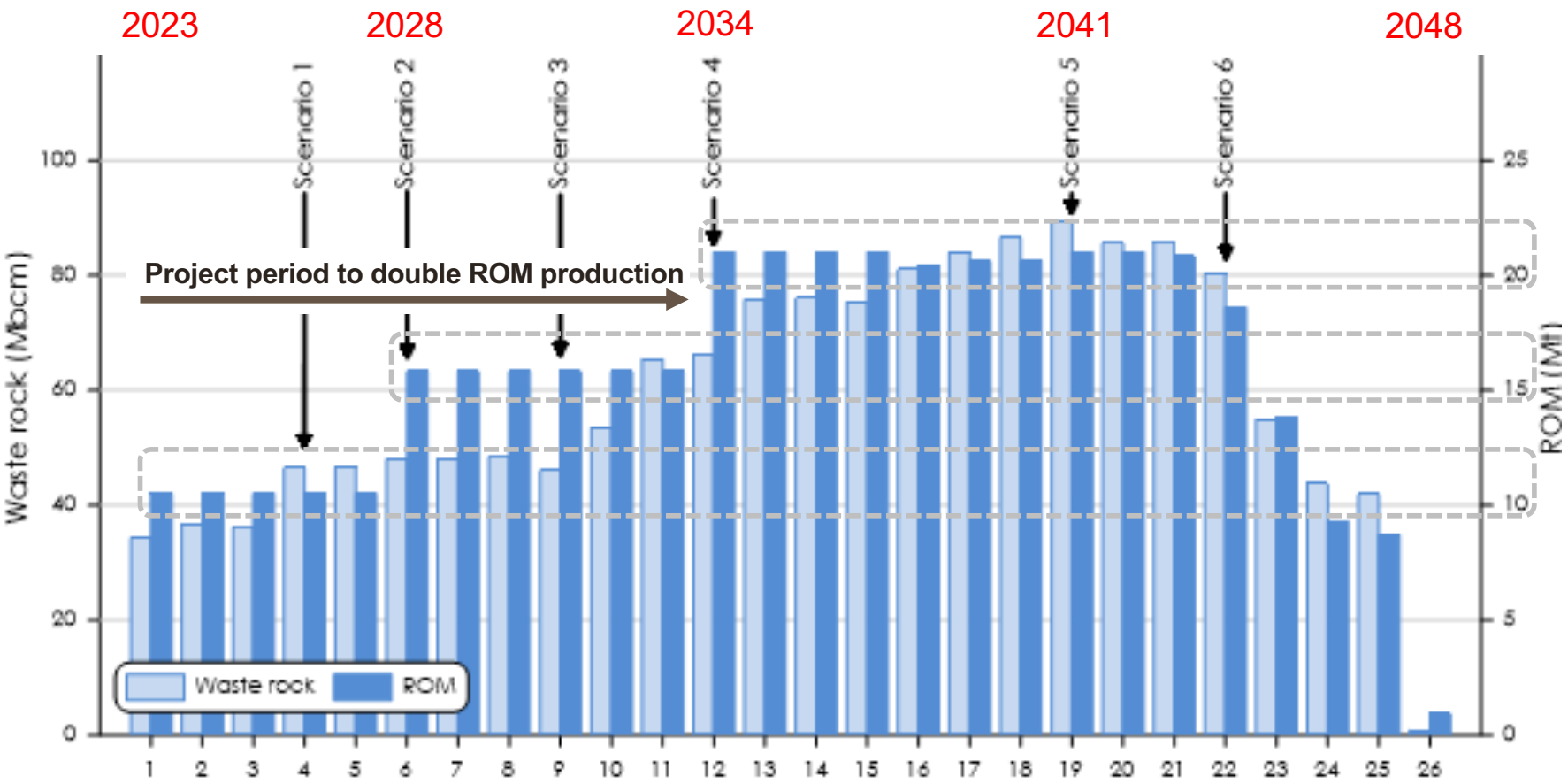
- Amenity Impacts
  - Additional operating steps to be taken to meet air quality standards given the projected doubling of the throughput from the mine.

IPC Agenda Items



Amenity – Air Quality (Noise)

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IPC Agenda Items

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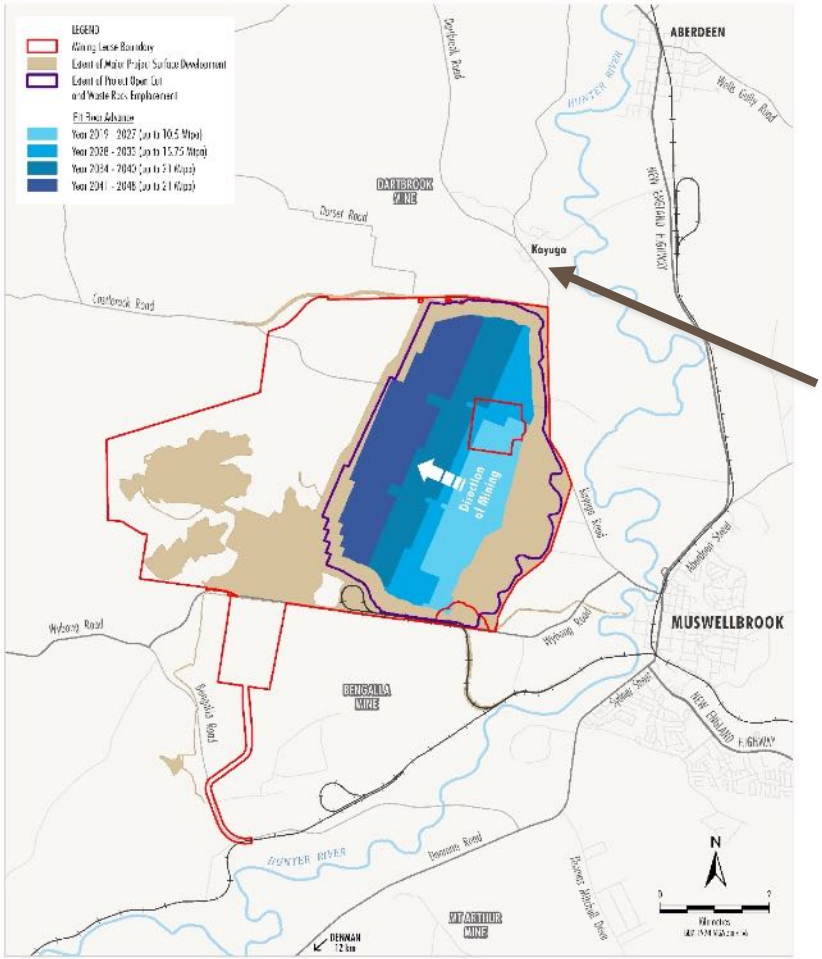
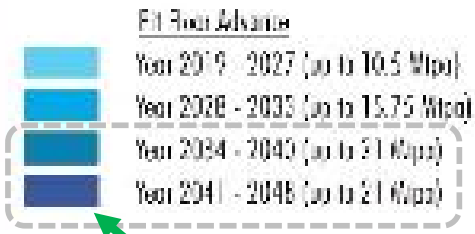


Mining rate increases as mine moves away from Muswellbrook



Peak ROM coal production

Peak waste rock production year (2041)

Amenity – Air Quality

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IPC Agenda Items

- Amenity Impacts
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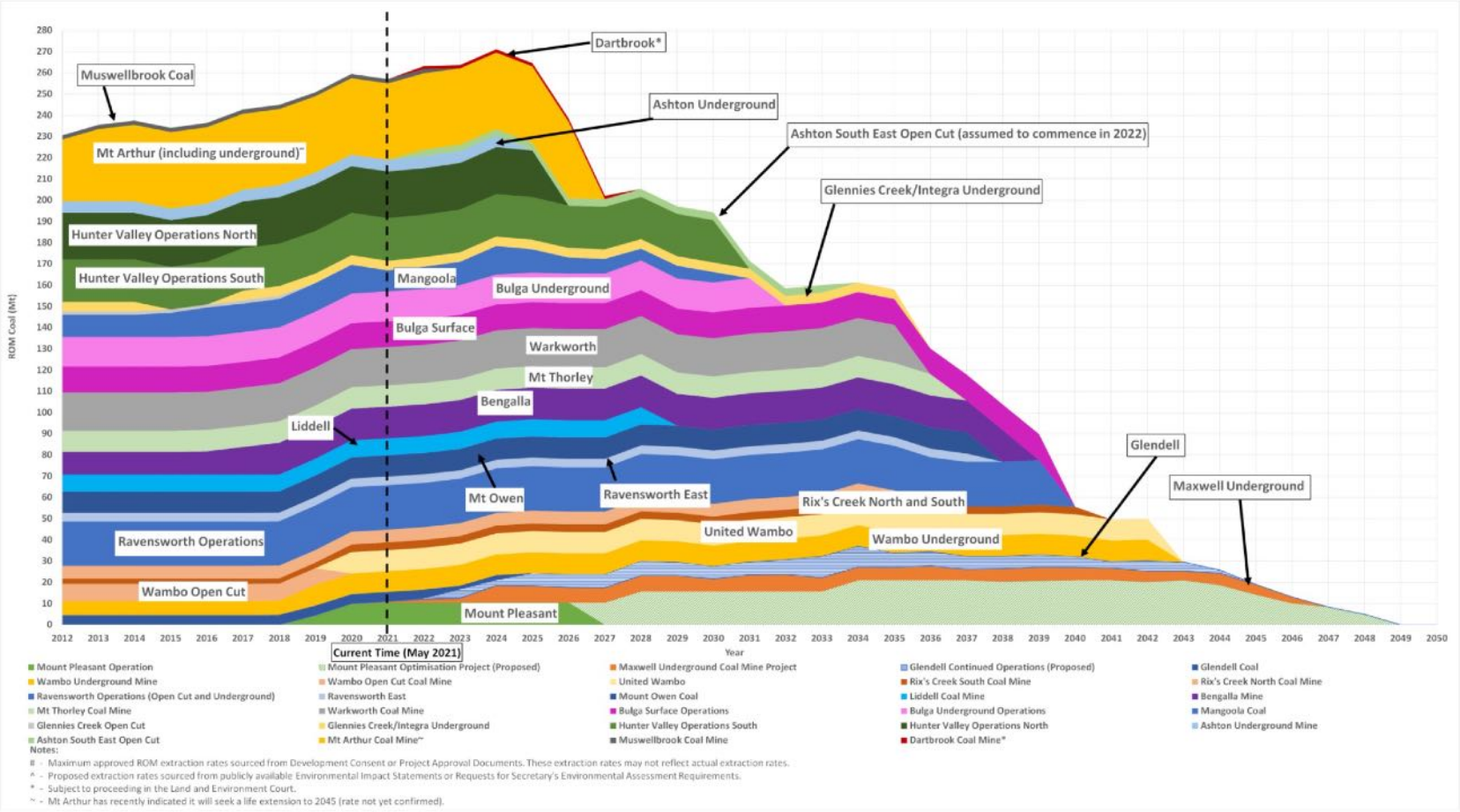
Graph 4: MACH Submissions Report (2021)



Amenity – Air Quality

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- Amenity Impacts
  - Additional operating steps to be taken to meet air quality standards given the projected doubling of the throughput from the mine.

IPC Agenda Items

Key dust mitigation measures include:

- application of water and regular maintenance of unsealed surfaces;
- enclosure of ROM coal hoppers;
- conveyors and transfer points are enclosed and water sprays operated at transfer points, if required; and
- application of water to stabilise the surface of stockpiles and inactive exposed areas.

Reactive strategies include high dust concentration alarms and modification of mining activities (green/amber/red)

Relevant dust-generating operations are ceased under relevant wind direction and dust level triggers in EPL 20850

Amenity – Air Quality

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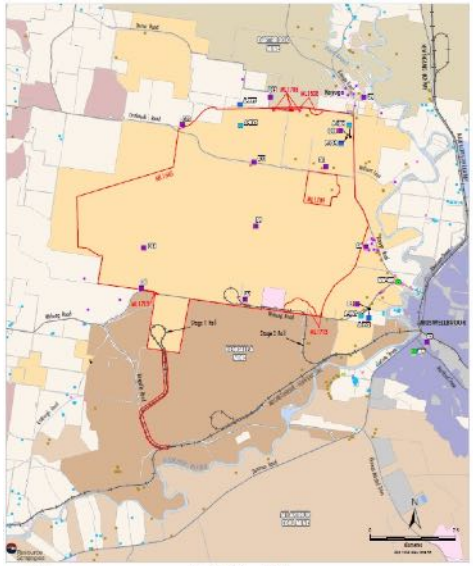
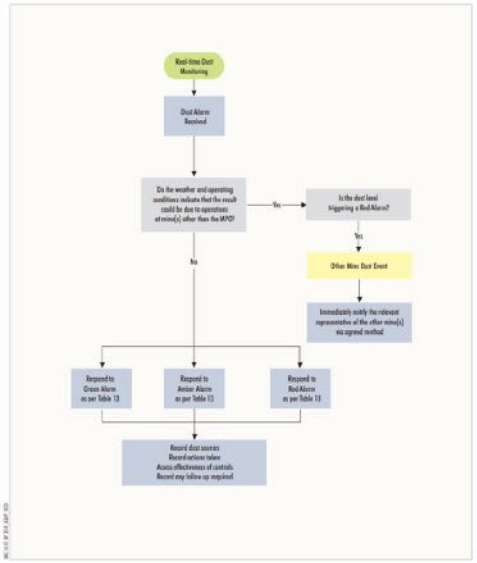
- Amenity Impacts
  - Additional operating steps to be taken to meet air quality standards given the projected doubling of the throughput from the mine.

Monitor	Rolling 1 hour Average Wind Direction	Rolling 24 hour Average PM_{10} concentration		
		Green	Amber	Red
MW-NW[a]	Between 250 degrees (°) and 340° (inclusive) measured at MW-NW	≥38 µg/m³	≥41 µg/m³	≥44 µg/m³
A-PF2[b]	Between 245° and 345° (inclusive) measured at A-PF2	≥38 µg/m³	≥41 µg/m³	≥44 µg/m³
A-PF2	Between 245° and 345° (inclusive) measured at A-PF2	≥40 µg/m³	≥44 µg/m³	≥50 µg/m³ [c]
A-PF4	Between 180° and 270° (inclusive) measured at A-PF4	≥40 µg/m³	≥45 µg/m³	≥50 µg/m³ [c]
A-PF5	Between 135° and 225° (inclusive) measured at A-PF4	≥40 µg/m³	≥45 µg/m³	≥50 µg/m³ [c]





IPC Agenda Items

Draft Project Consent Conditions (DPE, 2022)

Air Quality and Greenhouse Gas Operating Conditions

B31. The Applicant must:

…
(c) operate a comprehensive air quality management system that uses a combination of predictive meteorological forecasting and real-time air quality monitoring data to guide the day-to-day planning of mining operations and the implementation of both proactive and reactive air quality mitigation measures to ensure compliance with the relevant conditions of this consent;
…

Amenity – Air Quality

- Amenity Impacts **IPC Agenda Items**
  - Consideration of polymer dust suppression and the covering of coal wagons to minimise air quality impacts.

Key extracts from: ***https://www.epa.nsw.gov.au/your-environment/air/regional-air-quality/coal-train-dust-management***

...

Aug 2014 The EPA engages Professor Ryan to reanalyse the data in the ARTC report. Her findings largely support the conclusions of ARTC's study. Download the re-analysis report, Re-analysis of ARTC data on Particulate Emissions from Coal Trains (PDF 600KB)

- loaded coal trains, empty coal trains and freight trains are associated with a statistically significant increase (approximately 10%) in particulate matter compared with background levels
- there is no evidence supporting differences between loaded coal trains, empty coal trains or freight trains with respect to associated levels of particulates

...

Final analysis

Professor Ryan's findings concluded that particulate increases are not likely to be caused by diesel exhaust emissions from trains, but by particulate matter being stirred up from the rail tracks as trains passed by.

- The number of trains had no impact on particulate levels. This dispels, to some extent, the hypothesis that diesel exhaust was responsible for much of the observed increases in particulate levels associated with trains passing.
- Whether it had rained the previous day had a significant impact on particulate levels, indicating the increased particulate levels were caused by trains stirring up dust that had settled earlier.

Amenity – Visual

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Amenity – Visual

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- Amenity Impacts **IPC Agenda Items**
  - Minimising visual impacts of the eastern emplacement.

Amenity – Visual

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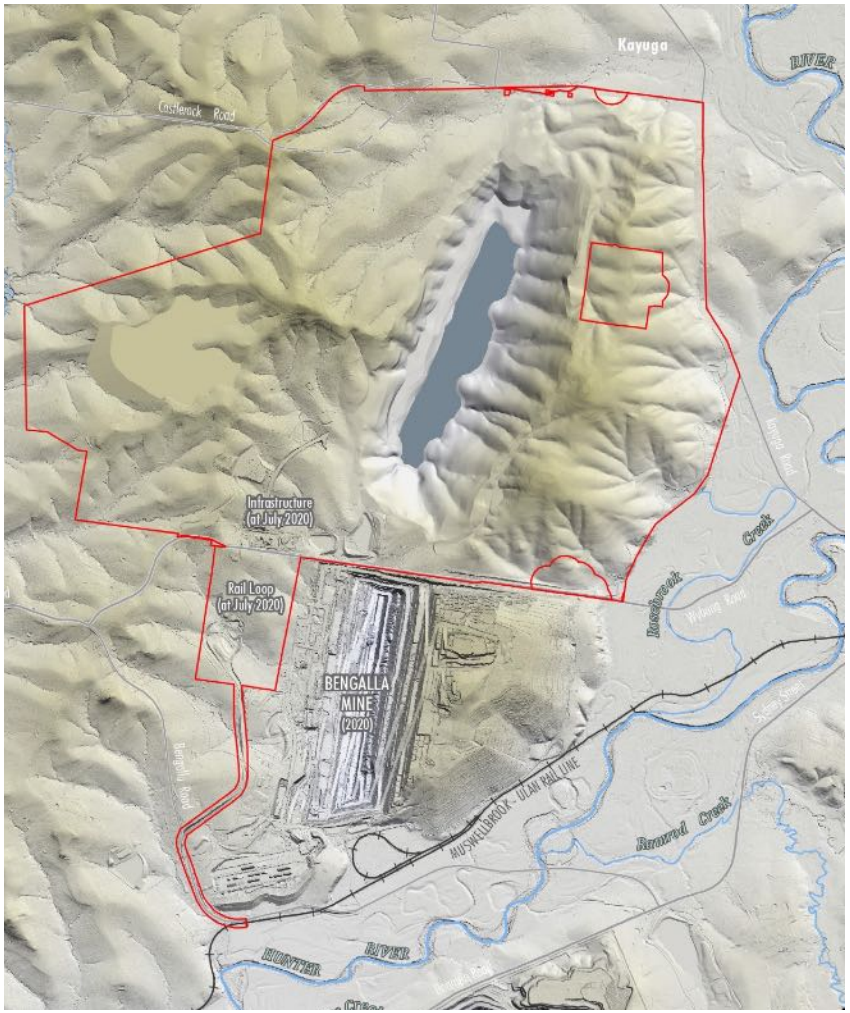
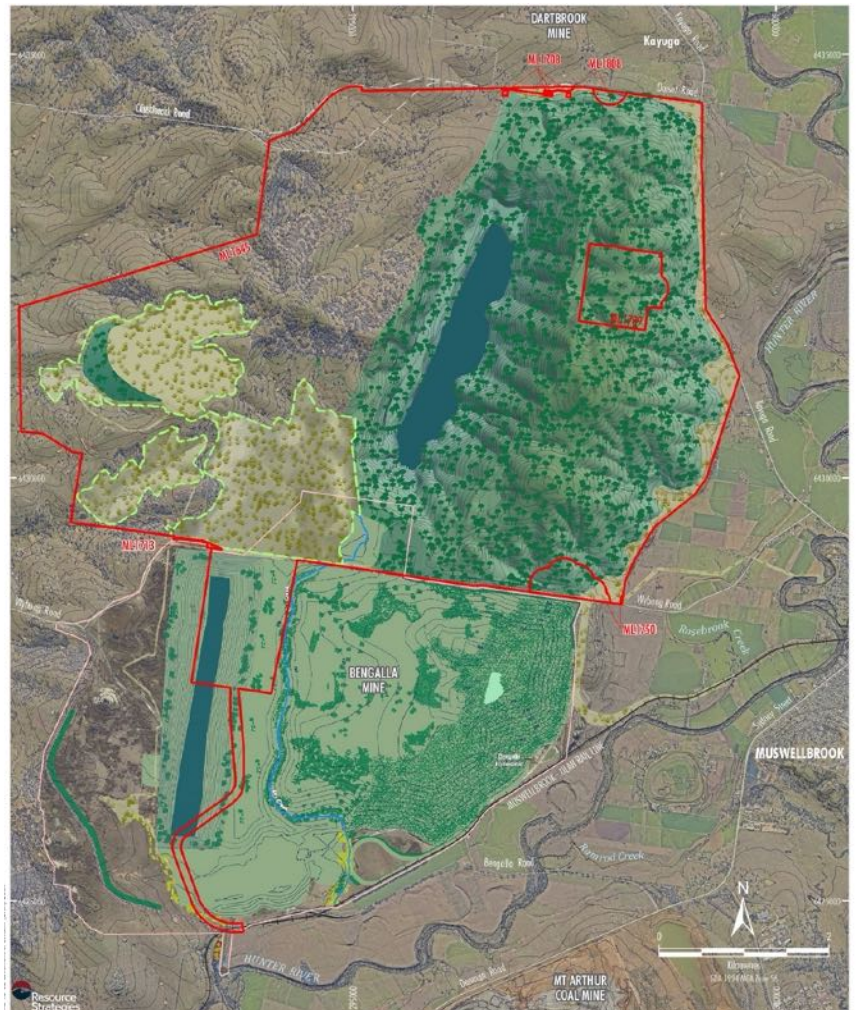
IPC Agenda Items





Amenity – Visual

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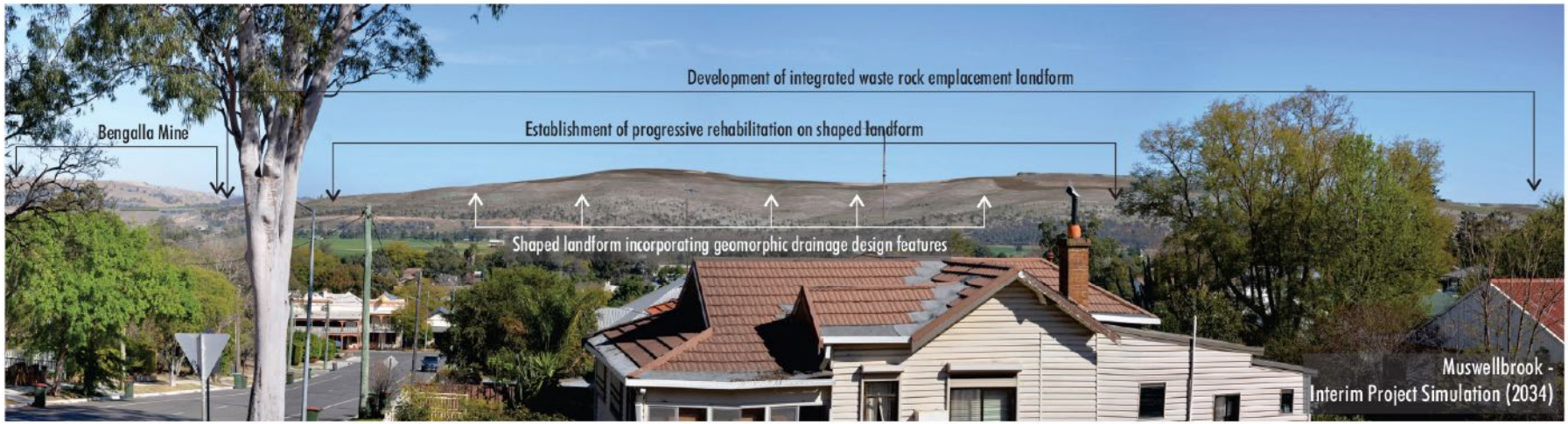
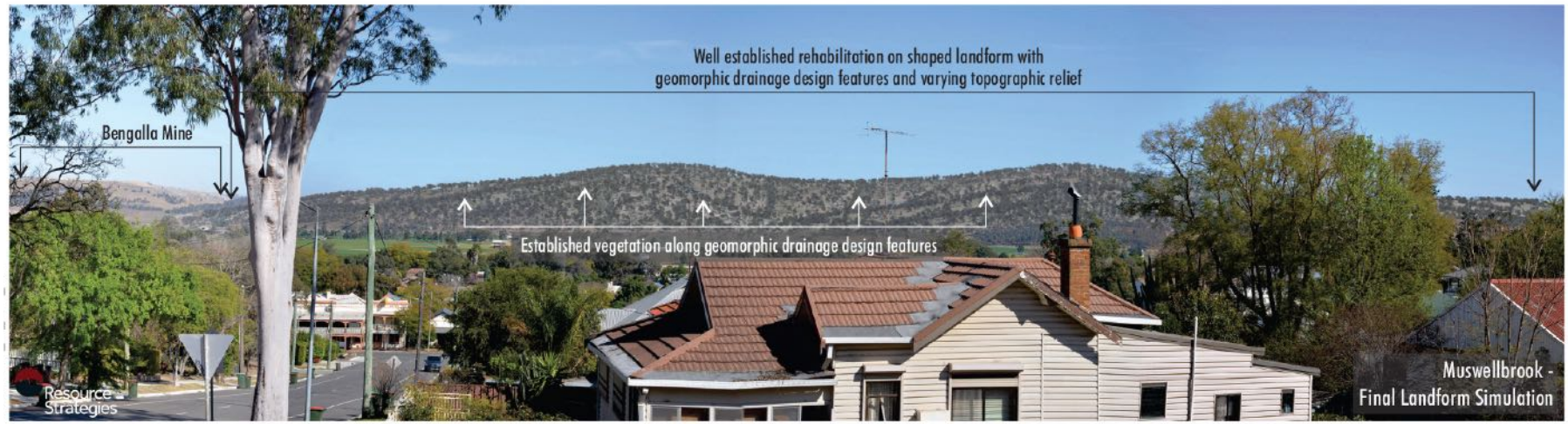
- Amenity Impacts **IPC Agenda Items**
  - Minimising visual impacts of the eastern emplacement.





Amenity – Lighting

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- Amenity Impacts
  - How will off-site lighting impacts will be minimised under the recommended conditions.

IPC Agenda Items

Draft Project Consent Conditions (DPE, 2022)

Visual Amenity and Lighting

B75. The Applicant must:

(a) take all reasonable steps to minimise** the visual and **off-site lighting impacts of the development;
(b) take all reasonable steps to shield views of mining operations and associated equipment from users of public roads and privately-owned residences;
(c) ensure no fixed outdoor lights shine directly above the horizontal or above the building line or any illuminated structure;
(d) ensure no in-pit mobile lighting rigs shine directly above the pit wall and other mobile lighting rigs do not shine directly above the horizontal (except where required for emergency safety purposes);
(e) ensure that all external lighting associated with the development complies with relevant Australian Standards including the latest version of Australian Standard AS4282 (INT) 1997 – Control of Obtrusive Effects of Outdoor Lighting;
(f) ensure that the visual appearance of any new buildings, structures, facilities or works (including paint colours and specifications) is aimed at blending as far as possible with the surrounding landscape.

Amenity – Kayuga Cemetery

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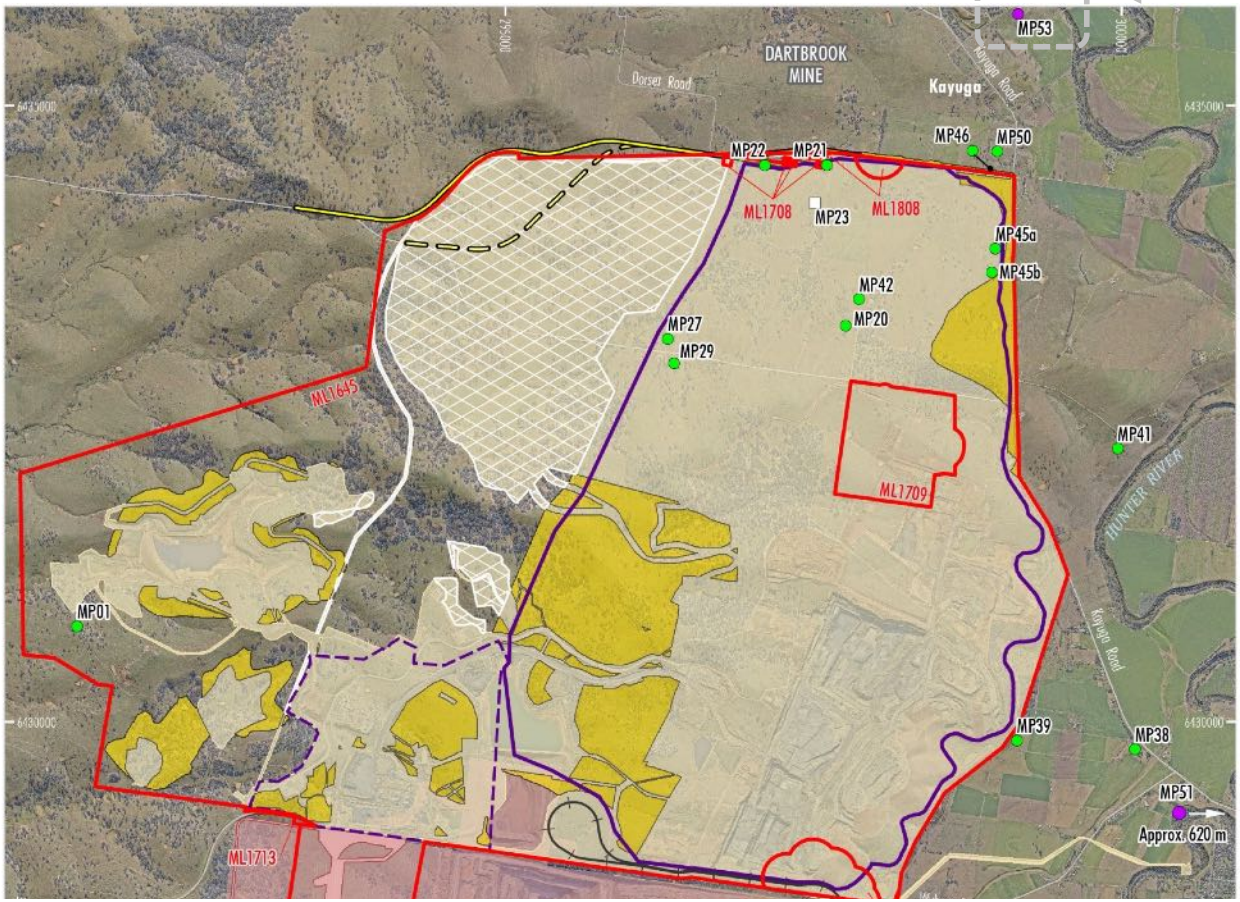
- Amenity Impacts
  - Measures to be taken to ensure no significant impacts as a result of blasting on Kayuga cemetery.

IPC Agenda Items



- SHR MP53 Kayuga Cemetery is located within the Dartbrook Mine's tenements north of the Project
- 1,492 m or more from the open cut
- Project maximum blast MIC (1,600 kg) would comply with the conservative historic heritage vibration criterion of 10 mm/s as specified in the draft Conditions
- Several privately-owned residences are located closer to the Project than Kayuga Cemetery - subject to more stringent human comfort criteria (vibration 5 mm/s)

Historic Heritage Sites
- Local Significance
- State Significance

Aboriginal Heritage

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- Aboriginal Cultural Heritage
  - Management of potential impacts on 'Spiritual Place'.

IPC Agenda Items

ACHA

AHIMS ID#	Site Name	Site Type	AHIP	Notes	Status	Significance	SSD Zone	Impacts: Type of Harm	Impacts: Degree of Harm	Impacts: Consequence of Harm	Rationale for Management Strategy	Recommended Management Strategy	Consequent Impacts	SSD Change
MTP-457	MTP-457	Spiritual Place	2053	Roberts 2007. Cultural value, not an Aboriginal object. Not listed on OEH AHIMS.	No further action required.	Uncertain	SSD Zone A1	Direct	Total	Total loss of value	Offset by other measures.	No further action required.	Total loss of value	No change.

One spiritual place is listed on the MPO Aboriginal Site Database, MTP-457, recorded by Roberts (2007) as a "steep slope overlooking flat possible taboo area (men's area)". No further information was presented by Roberts (2007) and the validity of this site remains uncertain. It is however, located within SSD Zone A1, with an approved AHIP in place for existing approved disturbance, and therefore further assessment is not warranted.

The 'spiritual place' reported by Roberts (2007) is of uncertain validity, however its location within SSD Zone A1, with an approved AHIP in place for existing approved disturbance, means that the appropriate management strategy for this item is 'no further action required'. The significant heritage salvage measures and conservation areas have acted to counterbalance any impacts to this item.

Aboriginal Heritage

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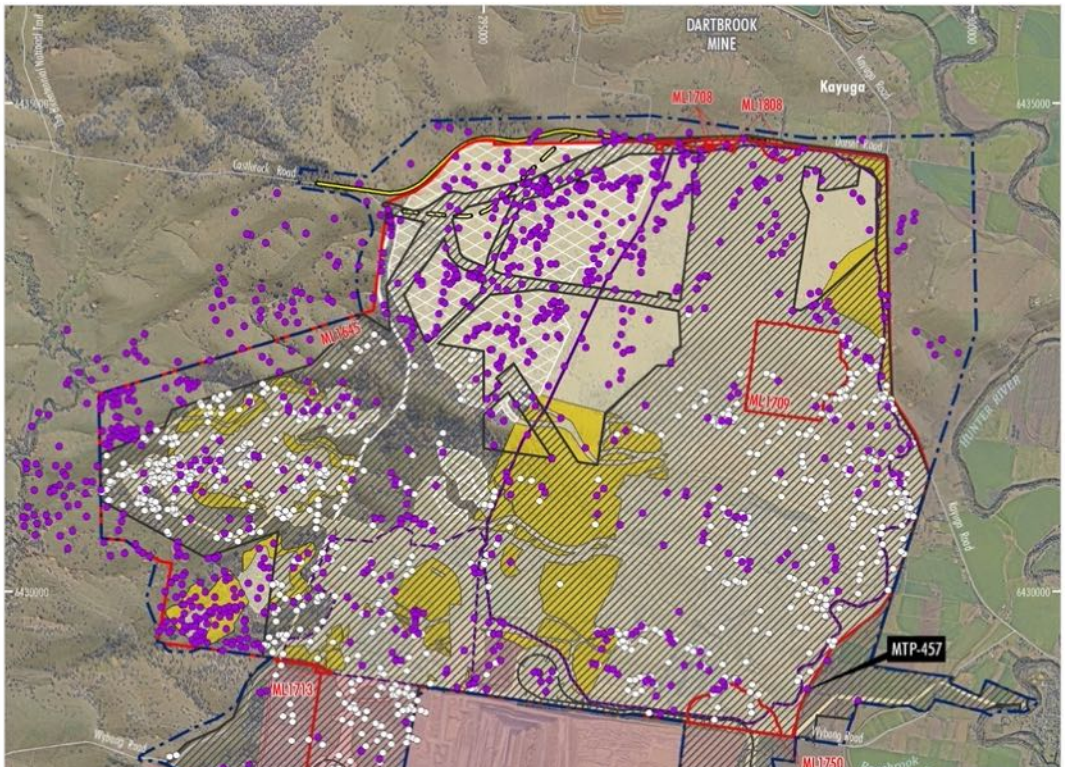
Aboriginal Cultural Values Report

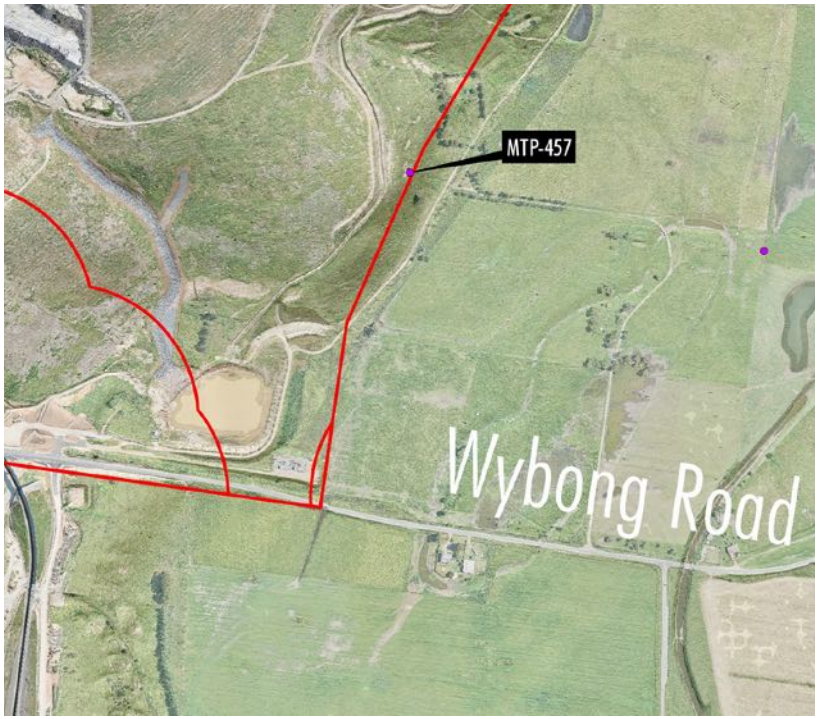
No specific sites or cultural areas were identified that require specific impact mitigation recommendations. Some more general recommendations have been formulated as a way to safeguard the identified Aboriginal cultural values.



Existing AHIP Areas
(AHIPs #C0002053, #C0002092, #C0004783)
Known Salvaged Site [4]
Other Recorded Aboriginal Heritage Site [4]

IPC Agenda Items

- Topographic and site context



Water – Post Mining Take

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- Water

  - Post-mining 'water takes' and how long they will occur post mining.

IPC Agenda Items

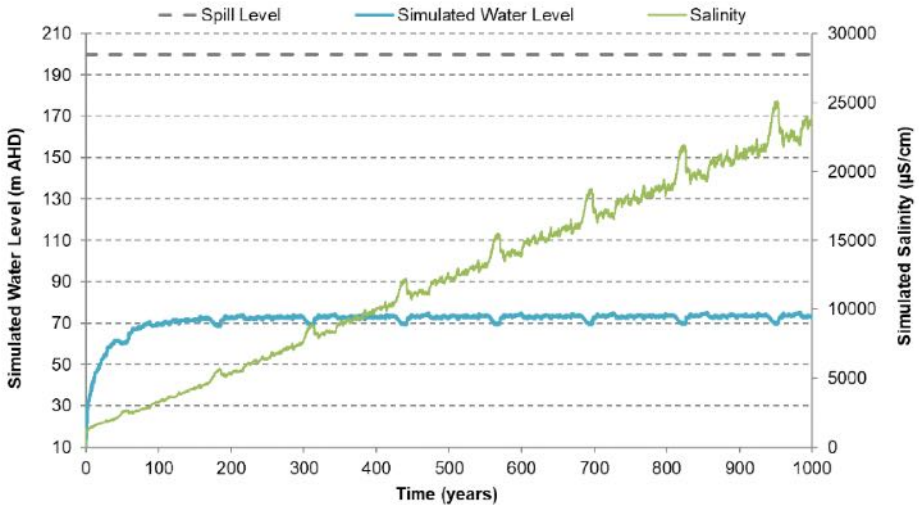
Water Source	Total Licences	MACH Licences	Post-Mining Water Take
Hunter Regulated River (Zone 1A)	63,521	961 (HS) 2,937 (GS)	33
Hunter Regulated River (Alluvium)	29,056	285	37
Muswellbrook	1,891	41	7
Dart Brook	29,472	20	14
Sydney Basin	68,743	730	48 (594 incl. spoil)

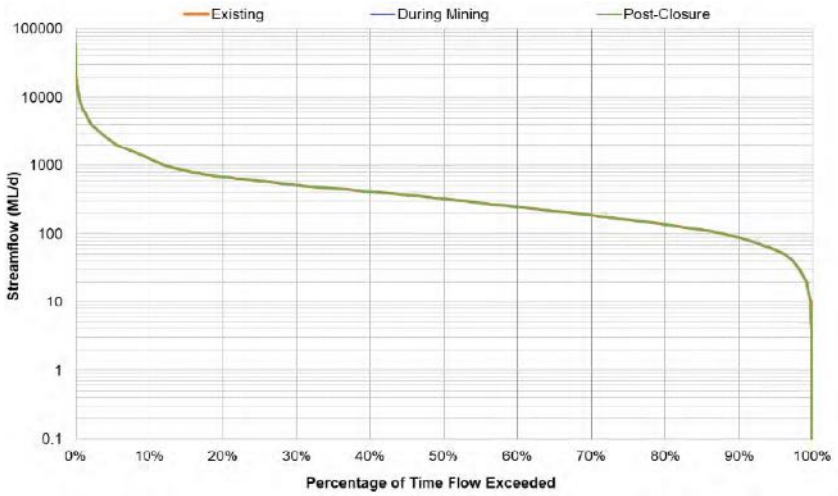
- Final Void would function as a permanent groundwater sink, with water take occurring in perpetuity
- Consistent with the AIP, water licences would be surrendered at end of mining to account for post-mining water take
- Licence requirements are negligible relative to total number of licences in the water sources (i.e. would not impact other water users in these water sources)

Water – Post Mining Take

- Water
  - Post-mining 'water takes' and how long they will occur post mining.

IPC Agenda Items

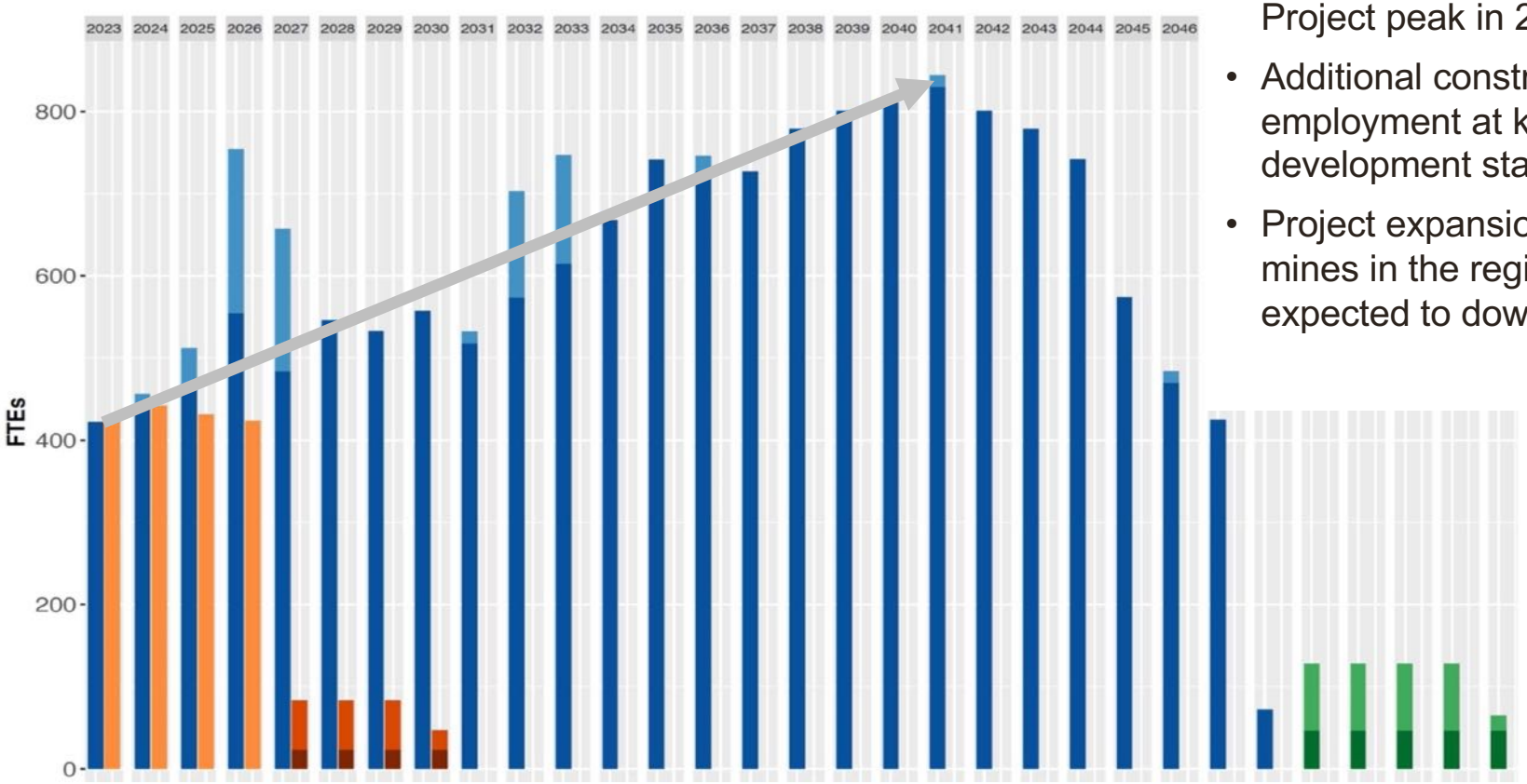




- Final Void water level would reach equilibrium after ~100 years.
- Water quality would remain below 10,000 µS/cm for ~300 years.
- Post-mining water take would have negligible effect on flow in the Hunter River (i.e. flow duration curves with/without post-mining water take are indistinguishable).

Social

- Social Impacts
  - Consideration given to housing security for the workforce.



IPC Agenda Items

- Operational employment growth is gradual with a Project peak in 2041
- Additional construction employment at key development stages
- Project expansion as other mines in the region are expected to downsize

DPE Assessment Report and Conditions

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IPC Agenda Items

The Project is a brownfield development that would optimise the Mount Pleasant Operation.

MACH accepts the findings of the NSW Department of Planning and Environment (DPE)'s Assessment Report and the recommended Conditions of Approval:

> *Mining, Exploration and Geoscience (MEG) is satisfied with the mine design and method, and that the project would provide an appropriate return to the NSW Government, including some $1.7 billion in royalties ($580 million net present value).*
>
> *325. MACH has proposed a number of mitigation measures to reduce noise and air quality impacts associated with the project, including staging the increase in production as mining moves away from Muswellbrook, designing the eastern emplacement to shield noise, construction of a noise barrier along the rail spur, and operational mitigation measures (e.g. relocation or shut down during adverse conditions).*
>
> *326. With these measures, the noise and air quality impacts associated with the project are predicted to reduce, in general, compared to the approved project. …*
>
> *329. The project would increase the height of the eastern emplacement between the mine and Muswellbrook from the approved 320 mAHD to 360 mAHD. However, the increased emplacement size would avoid the need for two approved emplacements, and MACH has introduced additional micro-relief to provide a more natural-looking final landform.*
>
> *330. The project would also consolidate the three approved final voids into a single final void, although this single final void would be considerably larger and deeper than the approved void.*

DPE Assessment Report and Conditions

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IPC Agenda Items

333. Scope 1 and Scope 2 emissions associated with the project would have a relatively low emissions intensity compared to other coal mining projects, which reflects the relatively low strip ratios at the mine, and the existing brownfields nature of the project, with significant existing mine infrastructure and established mining areas.

334. The project's emissions have been accounted for in the NSW GHG emissions projections in the Department's Net Zero Plan.

336. The Department also recognises that the project would provide significant social and economic benefits for the Upper Hunter and wider region, including:

- *continued direct employment at the mine for an average of 600 people, and up to 830 people;*
- *approximately 450 direct/indirect jobs in the Upper Hunter, and 650 in the wider Hunter region;*
- *$1.4 billion (NPV) net contribution to gross state product;*
- *$20 million (indexed) in contributions to Muswellbrook Shire Council, and $6 million (indexed) to Upper Hunter Shire Council, towards community enhancement projects.*

337. The Department has recommended a comprehensive and precautionary suite of conditions to ensure that the project would comply with acceptable criteria and standards, that the impacts would be consistent with MACH's predictions, and that residual impacts would be effectively minimised, managed and/or compensated.

Conclusion/Questions

MACHEnergy
Mount Pleasant Operation
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380→830

Increase in local operational jobs

Leading rehabilitation outcomes

Improved resource recovery and no significant increase in footprint


Thank You