MACH Energy Australia Pty Ltd

ABN 34 608 495 441

t: +61 8 6141 7100
e: info@machenergyaustralia.com.au
www.machenergyaustralia.com.au

30 January 2017
Minister for Planning
c/- Director Resource Assessments
Department of Planning & Environment
320 Pitt St, Sydney 2000

Attention: Howard Reed

Dear Howard,

RE: MOUNT PLEASANT OPERATION (DA 92/97) – SOUTH PIT HAUL ROAD MODIFICATION

MACH Energy Australia Pty Ltd (MACH Energy) acquired the Mount Pleasant Operation from Coal and Allied Operations Pty Ltd (Rio Tinto) on 4 August 2016.

The approved Mount Pleasant Operation includes the construction and operation of an open cut coal mine and associated infrastructure located approximately four kilometres north-west of Muswellbrook in the Upper Hunter Valley of New South Wales (NSW) (Figure 1, Enclosure 1).

The potential environmental impacts associated with the development were originally assessed in an Environmental Impact Statement (EIS) prepared by ERM Mitchell McCotter in September 1997. The Mount Pleasant Operation was approved under Part 4 of the NSW *Environmental Planning and Assessment Act, 1979* (EP&A Act) on 22 December 1999 (Development Consent [DA 92/97]) and was subsequently modified on 19 September 2011 under section 75W of the EP&A Act.

MACH Energy requests that the Minister for Planning modify Appendix 2 of the Mount Pleasant Operation Development Consent (DA 92/97) under section 75W(4) of the EP&A Act to allow for the realignment of one of the internal haul roads (herein referred to as the South Pit Haul Road Modification). MACH Energy requests that the Minister for Planning assesses the proposed South Pit Haul Road Modification under section 75W of the EP&A Act.

Proposed Modification

Following a review of the Mount Pleasant Operation infrastructure requirements as part of detailed design, MACH Energy has identified opportunities to enable more efficient access to the South Pit open cut. The South Pit Haul Road Modification therefore proposes the realignment of the indicative internal haul road between the South Pit and the Infrastructure Area (Figure 2, Enclosure 1)[1].

[1] The portions of the haul road alignments shown on Figures 2, 3 and 4 (Enclosure 1) within the Infrastructure Area Envelope are indicative only and are provided for comparison purposes for assessments within this modification application. MACH Energy retains the flexibility for locating infrastructure within the Infrastructure Area Envelop that was provided by the previous modification to Development Consent (DA 92/97), approved on 19 September 2011 under section 75W of the EP&A Act.

The haul road realignment also has benefits for personnel safety and onsite water management in consideration of infrastructure developed near the approved haul road alignment by the Bengalla Mining Company (the Dry Creek diversion works) since the haul road was originally conceptually designed in 1997.

There would be no change associated with the South Pit Haul Road Modification to the following aspects of the approved Mount Pleasant Operation:

- Annual maximum waste rock removal or run-of-mine (ROM) coal production.
- Annual maximum coal processed by the coal handling and preparation plant (CHPP).
- Offsite coal transport.
- Impact to heritage sites.
- Water management, supply and disposal.
- Mine life.
- Hours of operation.
- Operation or construction workforce.

Table 1
Overview of the Approved Mount Pleasant Operation and the Proposed South Pit Haul Road Modification

Project Component	Approved Mount Pleasant Operation	Proposed Modification
ROM Coal Production	ROM coal production at a rate of up to 10.5 million tonnes per annum.	Unchanged.
Waste Rock Management	Waste rock would be placed within mine voids, out-of-pit emplacements and the Fines Emplacement Area and would also be used to construct the southern bund wall.	Unchanged.
Waste Rock Production	Waste rock removal at a rate of up to approximately 53 million bank cubic metres per annum.	Unchanged.
Coal Beneficiation	Beneficiation of ROM coal in an on-site CHPP.	Unchanged.
Coal Transport	Coal transport to the Muswellbrook Merriwa Railway would be via either (but not both): • a conveyor/service corridor to the Bengalla Mine; or • rail via an on-site rail loop and loader facilities, including loadout conveyor and bin. Coal would be transported to the Port of Newcastle for export along the Muswellbrook Merriwa Railway and then the Main North Railway.	Unchanged.
Coal Rejects	Coarse rejects would be placed within mined out voids, out-of-pit emplacements and used to build fine reject emplacement walls. Fine rejects would be stored in the Fines Emplacement Area.	Unchanged.
Project Layout Plan	Appendix 2 of Development Consent (DA 92/97) provides layout of the project at Year 20.	Realignment of one of the indicative internal haul roads.

Table 1 (Continued)
Overview of the Approved Mount Pleasant Operation and the Proposed South Pit Haul Road Modification

Project Component	Approved Mount Pleasant Operation	Proposed Modification
Water Supply and Disposal	Water requirements for the mine and CHPP would be met from pit groundwater inflows, catchment runoff and make-up water from the Hunter River. Surplus water would be discharged into the Hunter River (or its tributaries) in compliance with the Hunter Salinity Trading Scheme and an EPL. Potable water for the industrial area would be sourced from the Hunter River and treated on site to the required standards.	Unchanged.
Mine Life	21 years from the date of grant of Development Consent (DA 92/97) (i.e. from 22 December 1999 until 22 December 2020).	Unchanged.
Hours of Operation	Operations are approved to be undertaken 24 hours per day, seven days per week.	Unchanged.
Operational Workforce	Average operational workforce over the life of the mine of approximately 332 people, and an estimated peak of approximately 380 people.	Unchanged.
Construction Workforce	A construction workforce of up to approximately 253 people would be required.	Unchanged.

Justification for the Modification of the Mount Pleasant Operation

MACH Energy proposed to realign one of the internal haul roads to allow for more efficient haulage between the South Pit and the Infrastructure Area. In consideration of the nature and scale of the South Pit Haul Road Modification compared to the approved Mount Pleasant Operation, MACH Energy considers that this realignment results in a neutral overall environmental impact, because:

- the haul road alignments shown in Appendix 2 of the Development Consent (DA 92/97) are labeled as “indicative infrastructure area”;
- there would be no material change to operational noise levels at private receivers;
- there would be no material change to air quality impacts at private receivers;
- there would be no material change to the overall area of vegetation disturbance;
- impacts to heritage would be comparable to the current haul road alignment;
- the realignment would have a minor beneficial impact on residences of Muswellbrook relating to decreased direct lighting from mobile plant travelling east on the haul road; and
- the realignment would not result in any other material environmental impact compared to the conceptual haul road alignment currently shown in Appendix 2 of the Development Consent (DA 92/97).

In addition, the South Pit Haul Road Modification would not require any change to performance limits specified in Development Consent (DA 92/97), Environment Protection Licence 20850, nor Aboriginal Heritage Impact Permit (AHIP) #C0002053.

MACH Energy has consulted with the NSW Department of Planning & Environment (August, 2016), the Mount Pleasant Operation Community Consultative Committee (December, 2016), the Muswellbrook Shire Council (December, 2016) and Bengalla Mining Company (December, 2016) in relation to the South Pit Haul Road Modification. Feedback received by these consultee's has been considered by MACH Energy in the preparation of this South Pit Haul Road Modification.

Environmental Review

Table 2 provides a review of the key environmental aspect associated with the Mount Pleasant Operation.

Table 2
Environmental Review

Environmental Aspect (from DA 92/97)	Environmental Review of the South Pit Haul Road Modification
Noise	No material adverse implications for operational noise levels at private receivers due to the central location of the proposed haul road in relation to the project footprint and distance to private receivers. No change to noise management.
Blasting	No change to blasting or blast management.
Air Quality	No material adverse implications for air quality at private receivers due to the location of the proposed haul road in relation to the overall project and private receivers. No change to air quality management.
Water Resources	No change to groundwater impacts. No material change to surface water management, water balance or existing erosion and sediment control procedures.
Ecology (Biodiversity)	No material change to the overall area of vegetation disturbance. No material change to fauna habitat disturbed.
Heritage	No increase in disturbance of Aboriginal heritage sites. Historic heritage sites managed in accordance with existing commitments.
Transport	No change to offsite coal transport. No change to public road upgrades or workforce.
Visual	No change to visual character considering the proposed haul road's central location in relation to the approved extent of the Mount Pleasant Operation. Portions of the proposed haul road alignment not oriented towards Muswellbrook and therefore would have a minor beneficial impact to residences of Muswellbrook relating to decreased direct lighting from mobile plant travelling east on the haul road.
Bushfire	No change to bushfire risk.
Waste	No change to waste management.
Rehabilitation	No change to the rehabilitation strategy.

The Mount Pleasant Operation, incorporating the South Pit Haul Road Modification, would continue to be operated in accordance with approved management plans under Development Consent (DA 92/97). Further discussion of the potential noise, air quality, ecology and Aboriginal heritage impacts is provided below.

Air Quality Considerations

The Mount Pleasant Operation is subject to various air quality criteria, which are specified in Development Consent (DA 92/97). Extracts from Development Consent (DA 92/97) including these criteria are presented in Enclosure 2.

The proposed haul road is situated between the two existing approved main out-of-pit haul roads (Figure 2, Enclosure 1). The haulage of coal and waste is a significant source of open cut mining related particulate matter. However, the location of the ROM coal haulage paths between the open cut and the CHPP within the Infrastructure Area Envelope (including the approved and proposed haul roads) is more remote from potentially sensitive private receivers than the approved active open cut mining areas, major waste rock emplacement areas and infrastructure areas (Figure 3, Enclosure 1).

In addition, as shown on Figure 3 (Enclosure 1), both the approved and proposed haul roads converge at the CHPP. Therefore, there is no change in the minimum distance from the approved and proposed haul roads to the nearest private residence, located approximately 1.7 km to the south-west (Figure 3, Enclosure 1).

In accordance with the Development Consent (DA 92/97) and previous air quality assessments for the project, MACH Energy will implement best practice air quality controls and has established a real-time air quality monitoring system (Figure 2, Enclosure 1) to maintain compliance with the air quality criteria specified in Development Consent (DA 92/97) (Enclosure 2). MACH Energy will also review predictive meteorological forecasting to plan daily mining operations cognisant of forecasted weather.

Additional key air quality management and mitigation measures that would be implemented during construction and/or use (as appropriate) of the proposed haul road include:

- Predictive meteorological and air quality modeling to inform day to day mining activities and implementation of management measures.
- Speed limits imposed on all roads for safety reasons, resulting in reduced wheel generated dust.
- Haul road constructed to achieve a compact, stable and durable surface, preferentially using material with a low silt/fines content.
- Ongoing maintenance including defined road edges and periodic removal of excessive fine/silty material.
- Regular watering, including consideration of the use of chemical dust suppressants based on the performance of the haul road.

As a further level of real-time control, in accordance with the Mount Pleasant Operations Environment Protection Licence 20850, MACH Energy will also monitor particulate matter less than 10 micrometres in size (PM_{10}) concentrations at the Muswellbrook NW Monitor maintained by the NSW Office of Environment and Heritage, and in the event of both adverse winds and elevated PM_{10} concentrations at this location, will cease active mining operations until conditions improve.

MACH Energy considers that the existing air quality criteria specified in Development Consent (DA 92/97) can be met with the haul road realignment proposed by this modification and therefore does not propose any variation to the existing criteria.

Based on the above, it is not anticipated that the proposed relocation of the internal haul road would have any material adverse implications for air quality at private receivers.

Noise Considerations

The Mount Pleasant Operation is subject to various noise criteria, which are specified in Development Consent (DA 92/97). These criteria were derived from noise modelling of the Mount Pleasant Operation in 2010. Extracts from Development Consent (DA 92/97) including these criteria are presented in Enclosure 3.

The discussion above (in the air quality section) outlines that the approved and proposed internal haul roads are not proximal to any private receivers relative to other active mining areas, nor any closer to the nearest private residence. As the haul roads are located in the more central project area, they are a less prominent potential noise source for private receivers relative to the mobile equipment that are located in the approved open pits and waste rock emplacement areas (Figure 3, Enclosure 1).

In accordance with the Development Consent (DA 92/97) and previous noise assessments for the operation, MACH Energy will implement best practice noise controls and has established a real-time noise monitoring system (Figure 2, Enclosure 1) to maintain compliance with the noise criteria specified in Development Consent (DA 92/97) (Enclosure 3). MACH Energy will also review predictive meteorological forecasting to plan daily mining operations cognisant of forecasted weather.

Additional key noise management and mitigation measures that would be implemented during construction and/or use (as appropriate) of the proposed haul road include:

- Predictive meteorological and noise modeling to inform day to day mining activities and implementation of management measures.
- Noise suppression on all major operational mobile plant, where reasonable and feasible.
- Sound power level testing of new operational fleet and representative annual testing of fleet to identify potential degradation of noise performance.
- Plant and machinery used on site will be maintained regularly to minimise noise generation.
- Plant and machinery used on site will be operated in a proper and efficient manner (e.g. at correct speed) to minimise noise generation.

MACH Energy considers that the existing noise criteria specified in Development Consent (DA 92/97) can be met with the haul road realignment proposed by this modification and therefore does not propose any variation to the existing criteria.

Based on the above, it is not anticipated that the proposed relocation of the haul road would have any material adverse implications for operational noise levels at private receivers.

Ecology Considerations

Since the 1997 EIS and 2011 modification, further detailed vegetation mapping has been undertaken at the Mount Pleasant Operation by Dr Colin Driscoll of Hunter Eco (Hunter Eco, 2016). This contemporary mapping is included as Enclosure 4 of this letter and used in this environmental review when comparing the vegetation communities impacted by the approved and proposed haul road alignments.

Based on 2016 contemporary vegetation mapping, the **approved** haul road would disturb approximately 5.3 hectares (ha) of woodland and 16.6 ha of grassland communities[2]. Of these communities, approximately 5.4 ha equates to the NSW *Threatened Species Conservation Act, 1995* (TSC Act) listed *White Box Yellow Box Blakely's Red Gum Woodland* Threatened Ecological Community (including approximately 5.1 ha of derived native grassland) and approximately 0.6 ha equates to the TSC Act listed *Hunter Lowland Redgum Forest in the Sydney Basin and NSW North Coast Bioregions* Threatened Ecological Community.

The **proposed** haul road alignment would disturb approximately 7.9 ha of woodland and 12 ha of grassland communities. Of these communities, approximately 1.3 ha equates to the TSC Act listed *Central Hunter Ironbark-Spotted Gum-Grey Box Forest in the NSW North Coast and Sydney Basin Bioregions* Threatened Ecological Community.

There is no TSC Act listed *White Box Yellow Box Blakely's Red Gum Woodland* Threatened Ecological Community nor TSC Act listed *Hunter Lowland Redgum Forest in the Sydney Basin and NSW North Coast Bioregions* Threatened Ecological Community within the disturbance footprint of the proposed haul road.

Therefore, key changes to vegetation impacts between the approved and proposed haul roads are:

- 4.7 ha less overall TSC Act listed threatened ecological communities within the proposed haul road alignment compared to the approved haul road alignment.
- 1.3 ha of a TSC Act listed threatened ecological community within proposed haul road alignment that is not present within the approved haul road alignment (i.e. the *Central Hunter Ironbark-Spotted Gum-Grey Box Forest in the NSW North Coast and Sydney Basin Bioregions* Threatened Ecological Community).

[2] The disturbance area associated with the approved haul road has been calculated based on a 75 metre wide corridor (average width of the proposed haul road alignment engineering design) to allow for cut and fill, water management and temporary construction disturbance. The alignment provided in the 1997 EIS is a conceptual alignment that does not represent a disturbance footprint.

Disturbance associated with both the approved and proposed haul roads has been calculated excluding any parts of the haul roads that are located within the Approximate Extent of Approved Surface Disturbance (Figure 2, Enclosure 1) (i.e. excludes the sections of haul roads within the extent of the approved open cut mine).

The areas described above are summarised in Tables 3 and 4.

Table 3
Comparison of Vegetation Communities

Vegetation Community		Status*		Area (ha)	
		TSC Act	EPBC Act	Approved Haul Road Alignment	Proposed Haul Road Alignment
Forest Red Gum	Derived Native Grassland	-	-	0.1	-
	Grassy Woodland	EEC[1]	-	0.6	-
Narrow-leaved Ironbark	Derived Native Grassland	-	-	11.4	12
	Grassy Woodland	-	CEEC[2]	4.4	6.6
White Box	Derived Native Grassland	EEC[3]	CEEC[3]	5.1	-
	Grassy Woodland	EEC[3]	CEEC[3]	0.3	-
Spotted Gum	Grassy Woodland	EEC[4]	CEEC[2]	-	1.3
			Total	**21.9**	**19.9**

* Threatened ecological community status under the TSC Act and/or EPBC Act (current as at 5 December 2016).

1 Hunter Lowland Redgum Forest in the Sydney Basin and New South Wales North Coast Bioregions (TSC Act).

2 Central Hunter Valley Eucalypt Forest and Woodland (EPBC Act).

3 White Box Yellow Box Blakely's Red Gum Woodland (TSC Act)/ White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland (EPBC Act).

4 Central Hunter Ironbark – Spotted Gum – Grey Box Forest in the NSW North Coast and Sydney Basin Bioregions (TSC Act).

Table 4
Comparison of TSC Act Listed Threatened Ecological Communities

Threatened Ecological Community*		Approved Haul Road Alignment (ha)	Proposed Haul Road Alignment (ha)
Hunter Lowland Redgum Forest in the Sydney Basin and New South Wales North Coast Bioregions	Grassy Woodland	0.6	-
White Box Yellow Box Blakely's Red Gum Woodland	Derived Native Grassland	5.1	-
	Grassy Woodland	0.3	-
Central Hunter Ironbark – Spotted Gum – Grey Box Forest in the NSW North Coast and Sydney Basin Bioregions	Grassy Woodland	-	1.3
	Total	**6.0**	**1.3**

* Threatened ecological community status under the TSC Act (current as at 5 December 2016).

In addition, as stated in Enclosure 4 there is no material difference in fauna habitat resources present along the approved haul road alignment compared to the proposed haul road alignment.

MACH Energy holds and manages a 13,522 ha biodiversity offset that was established as part of the Mount Pleasant Operation approval under the Commonwealth *Environment Protection and Biodiversity Conservation Act, 1999* (EPBC Act) in 2011 (Rio Tinto, 2015 – *Offset Management Plan Mount Pleasant Project*). The Mount Pleasant Operation Development Consent (DA 92/97) does not require a biodiversity offset for any disturbance associated with the "Approximate Extent of Approved Surface Development (1997 EIS Year 20)", as shown on Figure 2 (Enclosure 1), or approved supporting infrastructure.

In accordance with previous commitments, MACH Energy is currently undertaking additional work to further refine the vegetation mapping within the 13,522 ha EPBC Act biodiversity offset. MACH Energy expects to be able to more than adequately offset the 1.3 ha of TSC Act listed *Central Hunter Ironbark-Spotted Gum-Grey Box Forest in the NSW North Coast and Sydney Basin Bioregions* Threatened Ecological Community within the existing EPBC Act biodiversity offset as part of this work.

Ecological resources onsite would continue to be managed in accordance with the Biodiversity Management Plan required under Development Consent (DA 92/97) and the onsite Ground Disturbance Permit process. In particular, the onsite Ground Disturbance Permit process includes a vegetation clearance protocol aimed at minimising impact to native fauna species and salvaging habitat resources for beneficial reuse in rehabilitation areas.

Aboriginal Heritage Considerations

MACH Energy holds AHIP #C0002053 for the Mount Pleasant Operation which allows for the management and disturbance of any Aboriginal object located within the AHIP boundary.

Section A (vii) of AHIP #C0002053 states that the AHIP provides for:

> "*Harm to all unknown Aboriginal objects within the AHIP Application Area*".

Schedule C2 of AHIP #C0002053 states that the permit applies to:

> "*all Aboriginal objects in, on or under the land which is identified on the Figure (1) The lands to which this AHIP applies – AHIP extent for the Mount Pleasant Coal Mine Lease – ML 1645, Wybong and Kayuga Roads, MOUNT PLEASANT NSW 2333*".

As shown on Figure 4 (Enclosure 1), the proposed haul road alignment is located wholly within AHIP #C0002053. In accordance with AHIP #C0002053 and the Mount Pleasant Operation Aboriginal Heritage Management Plan, all known Aboriginal heritage sites have been salvaged in the vicinity of both the approved and the proposed haul roads.

Visual Considerations

The proposed haul road alignment traverses low parts of the natural landscape for a longer distance than the approved haul road alignment. Based on the extent of the haul road alignments shown on Figures 2, 3 and 4 (Enclosure 1), this results in a shorter distance that the headlights of mobile plant travelling east are expected to be directly visible from Muswellbrook (i.e. projecting directly towards Muswellbrook with no intervening natural topography). The relative distances are approximately 680 m for the approved haul road alignment and approximately 230 m for the proposed haul road alignment.

The approximate locations along the approved and proposed haul road alignments at which headlights of mobile plant are expected to be visible from Muswellbrook are provided on Figure 4 (Enclosure 1) as "Viewpoints". These locations were determined by ATC Williams Pty Ltd (civil engineering design consultants) from a three dimensional topographical model using 2016 LIDAR data.

In addition to the direct lighting effects discussed above, the proposed haul road alignment would also have some minor benefits in terms of also reducing indirect lighting effects in Muswellbrook compared to the approved haul road alignment. Based on the extent of the haul road alignments shown on Figures 2, 3 and 4 (Enclosure 1), mobile plant travelling towards the South Pit (ignoring intervening natural topography) would be generally aligned with Muswellbrook for approximately 2.4 km (86%) of the journey on the approved haul road alignment compared to approximately 1.3 km (42%) of the journey on the proposed haul road alignment. This would be expected to have a minor benefit to the residents of Muswellbrook by decreasing the indirect light glow from mobile plant on the haul road when the lights are not directly visible.

Based on the above, the proposed haul road alignment would have minor beneficial impact to residences of Muswellbrook relating to both decreased direct and indirect lighting impacts from mobile plant travelling east on the realigned haul road.

Approval Pathway

Clause 12 of Schedule 6A of the EP&A Act provides that section 75W of Part 3A of the EP&A Act continues to apply to modifications of development consents referred to in clause 8J(8) of the NSW *Environmental Planning and Assessment Regulation,* 2000 (EP&A Regulation) following the repeal of Part 3A.

The Mount Pleasant Operation was approved under Part 4 of the EP&A Act in 1999 by development consent under Section 101 of the Act. Therefore the Development Consent (DA 92/97) is a development consent that falls within clause 8J(8)(a) of the EP&A Regulation.

That is, section 75W of the EP&A Act continues to apply to modifications to the Mount Pleasant Operation Development Consent (DA 92/97), notwithstanding its repeal[3].

[3] Part 3A of the EP&A Act (as in force immediately before its repeal) continues to apply for the Mount Pleasant Operation. The description and quotations of relevant references to clauses of Part 3A in this document are as if Part 3A of the EP&A Act is still in force.

Approval for the South Pit Haul Road Modification is sought as a modification to the Development Consent (DA 92/97) under section 75W of the EP&A Act. Section 75W of the EP&A Act relevantly provides:

> ***75W Modification of Minister's approval***
>
> *(1) In this section:*
> ***Minister's approval** means an approval to carry out a project under this Part, and includes an approval of a concept plan.*
> ***Modification of approval** means changing the terms of a Minister's approval, including:*
> *(a) revoking or varying a condition of the approval or imposing an additional condition of the approval, and*
> *(b) changing the terms of any determination made by the Minister under Division 3 in connection with the approval.*
> *(2) The proponent may request the Minister to modify the Minister's approval for a project. The Minister's approval for a modification is not required if the project as modified will be consistent with the existing approval under this Part.*
> *(3) The request for the Minister's approval is to be lodged with the Director-General. The Director-General may notify the proponent of environmental assessment requirements with respect to the proposed modification that the proponent must comply with before the matter will be considered by the Minister.*
> *(4) The Minister may modify the approval (with or without conditions) or disapprove of the modification.*
> *…*

MACH Energy requests the Minister for Planning assesses the proposed modification under section 75W of the EP&A Act.

Approval under the EPBC Act is not required for the South Pit Haul Road Modification because:

- the Mount Pleasant EPBC Approval (EPBC 2011/5795) permits clearing up to 2,591 ha of the Federally listed threatened community *White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland;*
- there is a 5.4 ha reduction in the disturbance of *White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland* associated with the South Pit Haul Road Modification (Table 4);
- the Mount Pleasant EPBC Approval (EPBC 2011/5795) permits clearing associated with the Mount Pleasant Operation anywhere within the Mount Pleasant Development Consent boundary; and
- while two vegetation communities[4] within the proposed haul road alignment equate to the EPBC Act listed *Central Hunter Valley Eucalypt Forest and Woodland* Threatened Ecological Community (combined total of 7.9 ha compared to 4.4 ha within the approved haul road alignment, Table 3), this community was not listed under the EPBC Act at the time of the Mount Pleasant Operation controlled action decision[5].

[4] Including Narrow-leaved Ironbark (grassy woodland) and Spotted Gum (grassy woodland).

[5] Community not listed under the EPBC Act at the time of the controlled action decision (4 February 2011 for the controlled action decision versus 7 May 2015 for the community's listing) and therefore not required to be assessed (refer section 158A of the EPBC Act).

Requested Modification of Development Consent (DA 92/97)

As described above, in consideration of the nature and scale of the South Pit Haul Road Modification compared to the approved Mount Pleasant Operation, MACH Energy considers that the realignment results in a neutral overall environmental impact, and a minor beneficial impact to residences of Muswellbrook relating to decreased direct lighting from mobile plant travelling east on the realigned haul road.

MACH Energy requests that the Minister for Planning (or delegate) modifies Appendix 2 of the Mount Pleasant Operation Development Consent (DA 92/97) under section 75W(4) of the EP&A Act by replacing this diagram with the figure provided in Enclosure 5.

Consistent with the Project Layout Plan currently provided in Appendix 2 of Development Consent (DA 92/97), the figure provided in Enclosure 5 of this modification does not include any haul roads (nor any other infrastructure) within the Infrastructure Area Envelope. This is consistent with the flexibility within the Infrastructure Area Envelope that was provided by a previous modification to Development Consent (DA 92/97), approved on 19 September 2011 under section 75W of the EP&A Act for locating infrastructure.

Please do not hesitate to contact the undersigned should you wish to discuss.

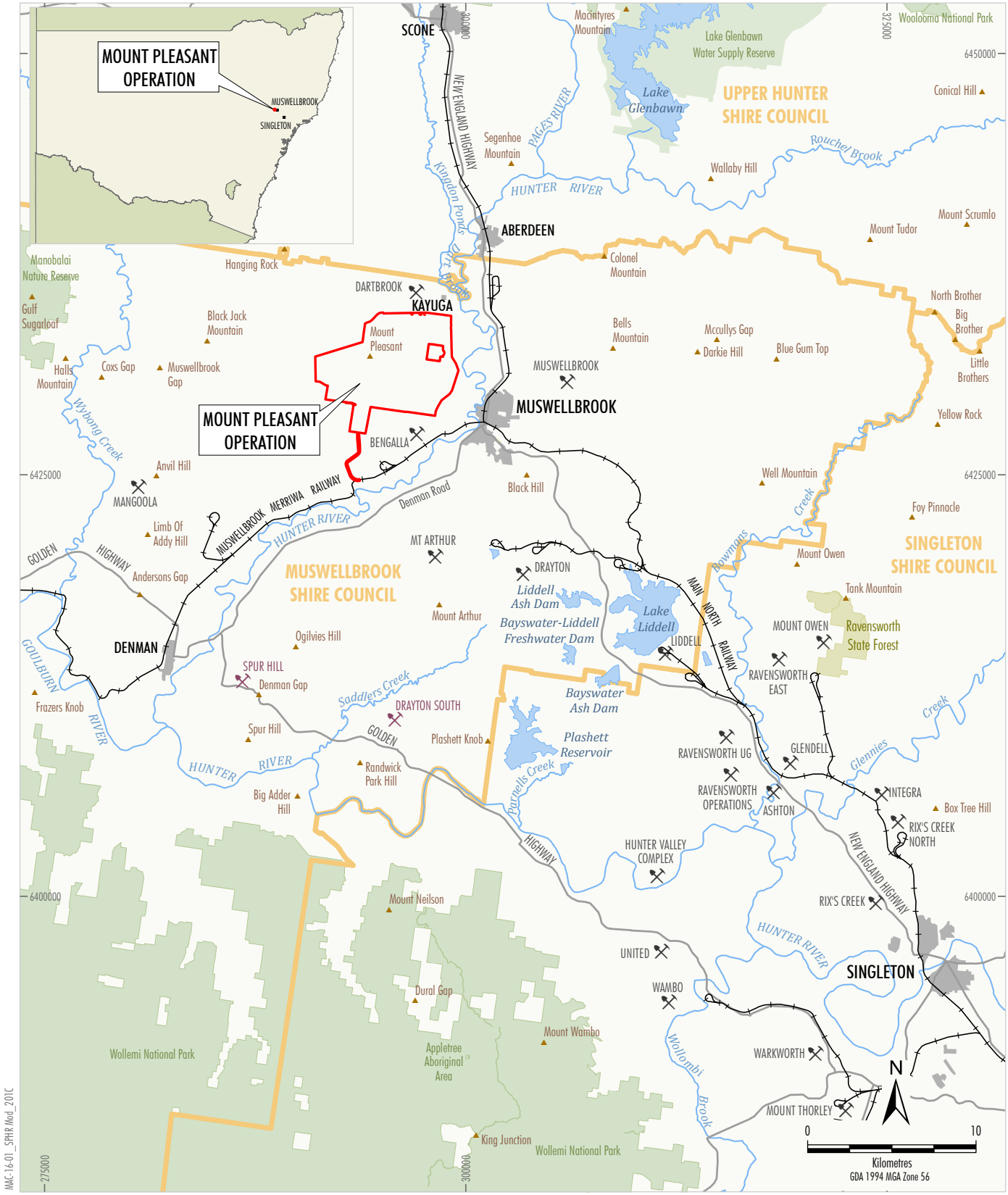
Yours sincerely,

Chris Lauritzen
General Manager – Resource Development
MACH Energy Australia Pty Ltd

Enclosure 1	Figures
Enclosure 2	Air Quality Criteria – Development Consent (DA 92/97)
Enclosure 3	Noise Criteria – Development Consent (DA 92/97)
Enclosure 4	Contemporary Vegetation Mapping (Hunter Eco, 2016)
Enclosure 5	Revised Project Layout Plan

ENCLOSURE 1

FIGURES



LEGEND

- Mining Operation
- Proposed Mining Operations (Application Lodged)
- Mining Lease Boundary (Mount Pleasant)
- Railway
- Local Government Boundary
- State Forest
- National Parks and Wildlife Estate

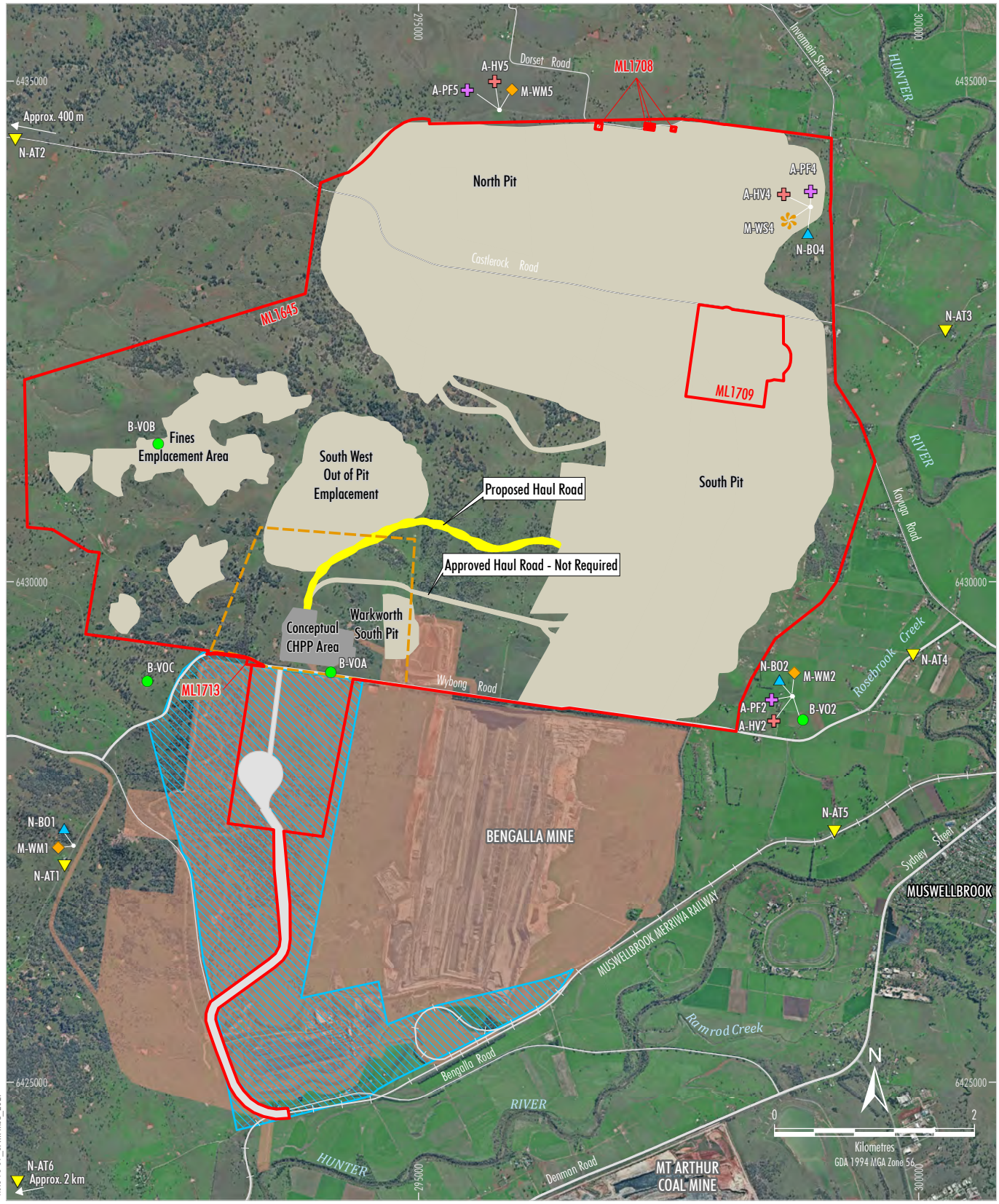
Source: Geoscience Australia (2006); NSW Division of Resources & Energy (2016); Land and Property Information (2016)

MACHEnergy

MOUNT PLEASANT OPERATION

Project Location

Figure 1



LEGEND

- Mining Lease Boundary
- Infrastructure Area Envelope
- Approximate Extent of Approved Surface Development (1997 EIS Year 20)*
- Indicative Offsite Coal Transport Infrastructure
- Conveyor/Services Corridor Envelope
- Bengalla Mine Approved Disturbance Boundary (SSD-5170)

Monitoring Site

- Air Quality - High Volume Sampler
- Air Quality - Palas Fidas/TEOM
- Blasting (Vibration/Overpressure)
- Attended Noise
- Noise - Barn Owl
- Weather Mast
- Weather Station

Note: * 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, other ancillary works and construction disturbance.

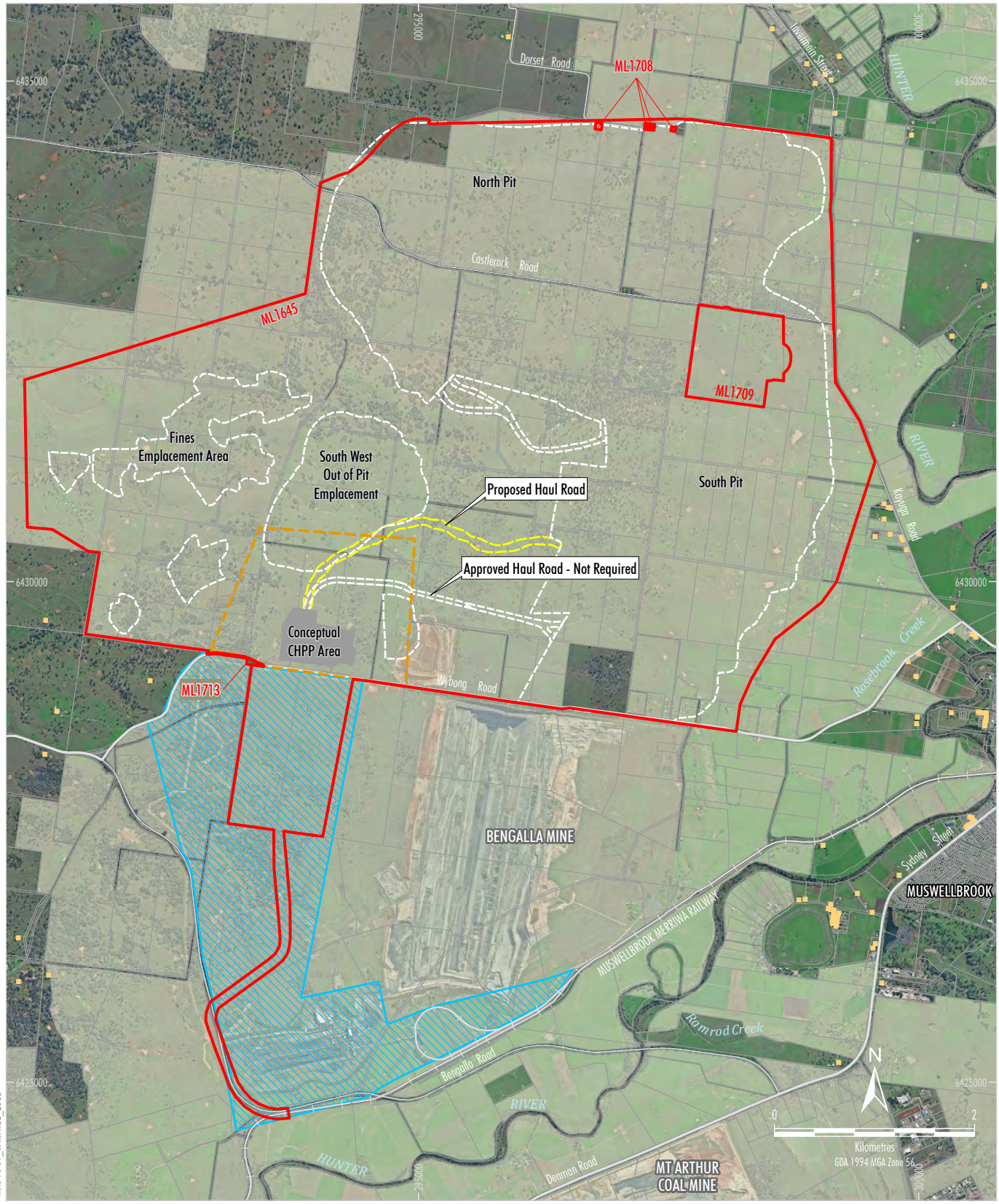
Source: NSW Land & Property Information (2015); NSW Division Resources & Energy (2016); Department of Planning and Environment (2016); MACH Energy (2016)

MACHEnergy

MOUNT PLEASANT OPERATION

Proposed Haul Road Alignment

Figure 2



MAC-16-01_SPHR Mod_206C

LEGEND

- Mining Lease Boundary
- Infrastructure Area Envelope
- Conveyor/Services Corridor Envelope
- Relevant Privately-owned Residence
- Mine Owned Land
- Approximate Extent of Approved Surface Development (1997 EIS Year 20)*
- Proposed Haul Road

Note: * 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, other ancillary works and construction disturbance.

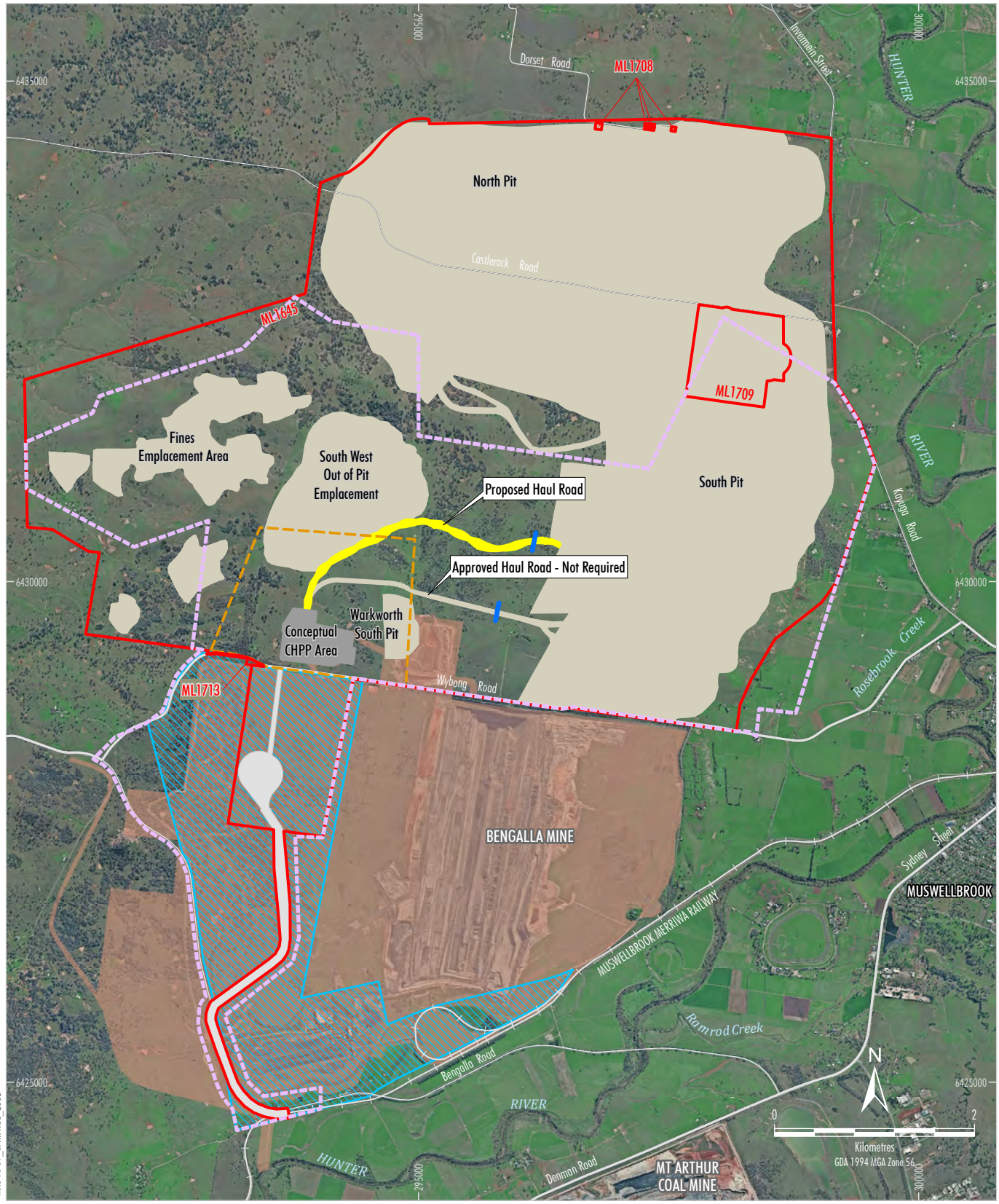
Source: NSW Land & Property Information (2015); NSW Division Resources & Energy (2016); Department of Planning and Environment (2016); MACH Energy (2016)

MACHEnergy

MOUNT PLEASANT OPERATION

Proximity of Proposed Haul Road to Nearest Private Residences

Figure 3



MAC-16-01_SPHR Mod_203E

LEGEND

- Mining Lease Boundary
- Infrastructure Area Envelope
- Approximate Extent of Approved Surface Development (1997 EIS Year 20)*
- Indicative Offsite Coal Transport Infrastructure
- Conveyor/Services Corridor Envelope
- Bengalla Mine Approved Disturbance Boundary (SSD-5170)
- AHIP # C0002053
- Viewpoint

Note: * 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, other ancillary works and construction disturbance.

Source: NSW Land & Property Information (2015); NSW Division Resources & Energy (2016); Department of Planning and Environment (2016); MACH Energy (2016)

MACHEnergy

MOUNT PLEASANT OPERATION

Current Extent of Aboriginal Heritage Impact Permit

Figure 4

ENCLOSURE 2

AIR QUALITY CRITERIA – DEVELOPMENT CONSENT (DA 92/97)

AIR QUALITY & GREENHOUSE GAS

Odour

18. The Applicant shall ensure that no offensive odours are emitted from the site, as defined under the POEO Act, unless otherwise authorised by an EPL.

Greenhouse Gas Emissions

19. The Applicant shall implement all reasonable and feasible measures to minimise the release of greenhouse gas emissions from the site.

Air Quality Criteria

20. Except for the air quality-affected land referred to in Table 1, the Applicant shall ensure that all reasonable and feasible avoidance and mitigation measures are employed so that particulate matter emissions generated by the development do not exceed the criteria listed in Tables 8, 9 or 10 at any residence on privately-owned land or on more than 25 percent of any privately-owned land.

Table 8: Long term criteria for particulate matter

Pollutant	***Averaging Period***	***[d] Criterion***
Total suspended particulate (TSP) matter	Annual	[a] 90 µg/m^3
Particulate matter < 10 µm (PM_{10})	Annual	[a] 30 µg/m^3

Table 9: Short term criterion for particulate matter

Pollutant	***Averaging Period***	***[d] Criterion***
Particulate matter < 10 µm (PM_{10})	24 hour	[a] 50 µg/m^3

Table 10: Long term criteria for deposited dust

Pollutant	***Averaging Period***	***Maximum increase in deposited dust level***	***Maximum total deposited dust level***
[c] Deposited dust	Annual	[b] 2 g/m^2/month	[a] 4 g/m^2/month

Notes to Tables 8-10:

[a] Total impact (i.e. incremental increase in concentrations due to the development plus background concentrations due to all other sources);

[b] Incremental impact (i.e. incremental increase in concentrations due to the development on its own);

[c] Deposited dust is to be assessed as insoluble solids as defined by Standards Australia, AS/NZS 3580.10.1:2003: Methods for Sampling and Analysis of Ambient Air - Determination of Particulate Matter - Deposited Matter - Gravimetric Method; and

[d] Excludes extraordinary events such as bushfires, prescribed burning, dust storms, sea fog, fire incidents or any other activity agreed by the Director-General.

Air Quality Acquisition Criteria

21. If particulate matter emissions generated by the development exceed the criteria in Tables 11, 12 or 13 at any residence on privately-owned land or on more than 25 percent of any privately-owned land, then upon receiving a written request for acquisition from the landowner the Applicant shall acquire the land in accordance with the procedures in conditions 6-7 of schedule 4.

Table 11: Long term acquisition criteria for particulate matter

Pollutant	***Averaging Period***	***[d] Criterion***
Total suspended particulate (TSP) matter	Annual	[a] 90 µg/m^3
Particulate matter < 10 µm (PM_{10})	Annual	[a] 30 µg/m^3

Table 12: Short term acquisition criteria for particulate matter

Pollutant	***Averaging period***	***[d] Criterion***
Particulate matter < 10 µm (PM_{10})	24 hour	[a] 150 µg/m^3
Particulate matter < 10 µm (PM_{10})	24 hour	[b] 50 µg/m^3

Table 13: Long term acquisition criteria for deposited dust

Pollutant	Averaging Period	Maximum increase in deposited dust level	Maximum total deposited dust level
[c] Deposited dust	Annual	[b] 2 g/m^2/month	[a] 4 g/m^2/month

Notes to Tables 11-13:

[a] *Total impact (i.e. incremental increase in concentrations due to the development plus background concentrations due to all other sources);*

[b] *Incremental impact (i.e. incremental increase in concentrations due to the development on its own);*

[c] *Deposited dust is to be assessed as insoluble solids as defined by Standards Australia, AS/NZS 3580.10.1:2003: Methods for Sampling and Analysis of Ambient Air - Determination of Particulate Matter - Deposited Matter - Gravimetric Method; and*

[d] *Excludes extraordinary events such as bushfires, prescribed burning, dust storms, sea fog, fire incidents or any other activity agreed by the Director-General.*

Operating Conditions

22. The Applicant shall:
    (a) implement best practice air quality management, including all reasonable and feasible measures to minimise offsite odour, fume and dust emissions of the development;
    (b) minimise any visible off-site air pollution;
    (c) minimise the surface disturbance on site;
    (d) regularly assess the real-time air quality monitoring and meteorological forecasting data and relocate, modify and/or stop operations on site to ensure compliance with the relevant conditions of this consent; and
    (e) co-ordinate the air quality management on site with the air quality management at nearby mines (including the Bengalla mine) to minimise the cumulative air quality impacts of the mines,

    to the satisfaction of the Director-General.

Air Quality and Greenhouse Gas Management Plan

23. The Applicant shall prepare and implement an Air Quality and Greenhouse Gas Management Plan for the development to the satisfaction of the Director-General. This plan must:
    (a) be submitted to the Director-General for approval prior to carrying out any development on site;
    (b) describe the measures that would be implemented to ensure compliance with the relevant conditions of this consent, including a real-time air quality management system that employs reactive and proactive mitigation measures;
    (c) include an air quality monitoring program that:
        - uses a combination of real-time monitors and supplementary monitors to evaluate the performance of the development;
        - includes $PM_{2.5}$ monitoring (although this obligation could be satisfied by the regional air quality monitoring network if sufficient justification is provided);
        - includes a protocol for determining exceedances of the relevant conditions of this consent; and
    (d) include a protocol that has been prepared in consultation with the owners of nearby mines to minimise the cumulative air quality impacts of the mines.

METEOROLOGICAL MONITORING

24. For the life of the development, the Applicant shall ensure that there is a meteorological station operating in the vicinity of the site that:
    (a) complies with the requirements in the *Approved Methods for Sampling of Air Pollutants in NSW* guideline; and
    (b) is capable of continuous real-time measurement of temperature lapse rate in accordance with the *NSW Industrial Noise Policy*, or as otherwise approved by the OEH.

SOIL & WATER

Note: Under the Water Act 1912 and/or the Water Management Act 2000, the Applicant is required to obtain water licences for the development.

Water Supply

25. The Applicant shall ensure that it has sufficient water for all stages of development, and if necessary, adjust the scale of mining operations on site, to match its available water supply to the satisfaction of the Director-General.

Water Discharges

26. The Applicant shall ensure that any surface water discharges from the site comply with the:
    (a) discharge limits (both volume and quality) set for the development in any EPL; or

ENCLOSURE 3

NOISE CRITERIA – DEVELOPMENT CONSENT (DA 92/97)

SCHEDULE 3
ENVIRONMENTAL PERFORMANCE CONDITIONS

ACQUISITION UPON REQUEST

1. Upon receiving a written request for acquisition from the owner of the land listed in Table 1, the Applicant shall acquire the land in accordance with the procedures in conditions 6-7 of schedule 4.

Table 1: Land subject to acquisition upon request

Receiver	***Receiver***
43, 44 – J.B. Moore	143, 161, 237 – J.S. & N.M. Lonergan
45 – B.A. & T.E. Strachan	147 – M.J. & R.G. Adnum
47 – B.L. & M.L. Bates	156 – J.E. & J.L. Lonergan
67 – J.M. Simpson	158 – J.M. Hoath
96 – R.P. Grey	159, 236 – J.E. & M.S. Ducey
101 – C. Austin	129 – R.M. & S.D. Farrell
102 – A. Mather	130 – M.J. Farrell
107 – B.L. Wilton	135, 309 – K.J. & G.M. Yore
108 – J.S. Gibson	146 – C.R & N.J. Hoath
112 – B.D. Barry	153 – G.M. Casey
118 – J. & C. Hayes	157 – R.B. Parkinson & S.A. Peberdy
120, 308 – D.L. & P.A. Moore	229 – C. Horne
121 – C & J.M. Moore	263 – R.R. & J.M. Hamilton
137, 138 A – D.H. MacIntyre	C – P.M. Yore
D – S. Yore	

Notes:

- *To identify the locations referred to in Table 1, see the figures in Appendix 5; and*
- *All land is noise affected, except receiver 67 which is air quality affected.*

ADDITIONAL NOISE AND DUST MITIGATION UPON REQUEST

2. Upon receiving a written request from the owner of any residence on the land listed in Table 1 or Table 2, the Applicant shall implement additional noise and/or dust mitigation measures (such as double-glazing, insulation, air filters, first flush roof water drainage system and/or air conditioning) at the residence in consultation with the landowner. These measures must be reasonable and feasible and related to the noise and/or dust impacts on the residence.

If within 3 months of receiving this request from the owner, the Applicant and the owner cannot agree on the measures to be implemented, or there is a dispute about the implementation of these measures, then either party may refer the matter to the Director-General for resolution.

Table 2: Land where additional noise mitigation measures are available on request

Receiver	***Receiver***
68 – Googe	203 – Millard
74 – Sormaz	205 – Dapkos Pty Ltd
77 – Purser	231 – Wicks
78, 80 – W.J. Adnum	240 – MacIntyre
79 – W.J. & D.W. Adnum	242 – Raphael
86, 290 – Cowtime Investments Pty Ltd	257 – Lane
139 – Upton	258 – Ellis
140 – Dapkos Pty Limited	259 – Peel
154 – Standing	279 – Parkinson

Note: To identify the locations referred to in Table 2, see the figures in Appendix 5.

NOISE

Noise Criteria

3. Except for the noise-affected land referred to in Table 1, the Applicant shall ensure that the noise generated by the development does not exceed the criteria in Table 3 at any residence on privately-owned land or on more than 25 percent of any privately-owned land.

Table 3: Noise criteria dB(A)

Location		Day	Evening	Night	
		$L_{Aeq(15min)}$	$L_{Aeq(15min)}$	$L_{Aeq(15min)}$	$L_{A1(1min)}$
NAG 1	260, 261	37	37	37	45
	258	40	40	40	45
	259	39	39	39	45
	All other privately-owned land	35	35	35	45
NAG 2	272	36	36	36	45
	All other privately-owned land	35	35	35	45
NAG 3	139, 154, 240	40	40	40	45
	241	39	39	39	45
	All other privately-owned land	35	35	35	45
NAG 4	169	36	36	36	45
	All other privately-owned land	35	35	35	45
NAG 5	All privately-owned land	41	40	39	45
NAG 6	205	41	41	41	45
	203, 242	40	40	40	45
	202	39	39	39	45
	204	38	38	38	45
	All other privately-owned land	37	37	37	45
NAG 7	68, 74, 279	43	42	42	45
	86, 290	42	42	42	45
	77	42	41	41	45
	79, 80, 231	41	41	41	45
	78	41	40	40	45
	All other privately-owned land	40	37	37	45
NAG 8	35	42	41	41	45
	289	41	40	40	45
	23, 84	40	40	40	45
	All other privately-owned land	41	39	39	45
NAG 9	All privately-owned land	39	38	37	45
NAG 10	All privately-owned land	35	35	35	45
NAG 11	All privately-owned land	37	36	35	45
All other privately-owned land		35	35	35	45

Notes:

- *To identify the locations referred to in Table 3, see the figures in Appendices 5 and 6.*
- *Noise generated by the development is to be measured in accordance with the relevant procedures and exemptions (including certain meteorological conditions), of the NSW Industrial Noise Policy.*

However, these criteria do not apply if the Applicant has a written agreement with the relevant landowner to exceed the criteria, and the Applicant has advised the Department in writing of the terms of this agreement.

Noise Acquisition Criteria

4. If the noise generated by the development exceeds the criteria in Table 4 at any residence on privately-owned land or on more than 25 percent of any privately-owned land, then upon receiving a written request for acquisition from the landowner, the Applicant shall acquire the land in accordance with the procedures in conditions 6-7 of schedule 4.

Table 4: Noise acquisition criteria dB(A)

Location	Day	Evening	Night
	$L_{Aeq(15min)}$	$L_{Aeq(15min)}$	$L_{Aeq(15min)}$
All privately-owned land in NAG 1, NAG 2, NAG 3, NAG 4, and NAG 10	40	40	40
All privately-owned land in NAG 5	46	45	44
All privately-owned land in NAG 6	42	42	42
All privately-owned land in NAG 7	45	42	42
All privately-owned land in NAG 8	46	44	44
All privately-owned land in NAG 9	44	43	42
All privately-owned land in NAG 11	42	41	40
All other privately-owned land	40	40	40

Notes:

- *To identify the locations referred to in Table 4, see the figures in Appendices 5 and 6;*
- *Noise generated by the development is to be measured in accordance with the relevant procedures and exemptions (including certain meteorological conditions), of the NSW Industrial Noise Policy; and*
- *For this condition to apply, the exceedances of the criteria must be systematic.*

Cumulative Noise Criteria

5. Except for the noise-affected land referred to in Table 1, the Applicant shall implement all reasonable and feasible measures to ensure that the noise generated by the development combined with the noise generated by other mines in the area does not exceed the criteria in Table 5 at any residence on privately-owned land or on more than 25 percent of any privately-owned land.

Table 5: Cumulative noise criteria dB(A) $L_{Aeq\ (period)}$

Location	Day	Evening	Night
NAG 8, 9	55	45	40
All other privately-owned land	50	45	40

Notes:

- *To identify the locations referred to in Table 5, see the figures in Appendices 5 and 6; and*
- *Cumulative noise is to be measured in accordance with the relevant procedures and exemptions (including certain meteorological conditions) of the NSW Industrial Noise Policy.*

Cumulative Noise Acquisition Criteria

6. If the noise generated by the development combined with the noise generated by other mines in the area exceeds the criteria in Table 6 at any residence on privately-owned land or on more than 25 percent of privately-owned land, then upon receiving a written request for acquisition from the landowner, the Applicant shall acquire the land on as equitable basis as possible with the relevant mines in accordance with the procedures in conditions 6-7 of schedule 4.

Table 6: Cumulative noise acquisition criteria dB(A) $L_{Aeq\ (period)}$

Location	Day	Evening	Night
NAG 8, 9	60	50	45
All other privately-owned land	55	50	45

Notes:

- *To identify the locations referred to in Table 6, see the figures in Appendices 5 and 6;*
- *Cumulative noise is to be measured in accordance with the relevant procedures and exemptions (including certain meteorological conditions), of the NSW Industrial Noise Policy; and*
- *For this condition to apply, the exceedances of the criteria must be systematic.*

Rail Noise

7. The Applicant shall ensure that its rail spur is only accessed by locomotives that are approved to operate on the NSW rail network in accordance with the noise limits in RailCorp's EPL (No. 12208) and ARTC's EPL (No. 3142).

ENCLOSURE 4

CONTEMPORARY VEGETATION MAPPING (HUNTER ECO, 2016)

MACH Energy Australia Pty Ltd
Mt Pleasant Mine
Muswellbrook NSW 2333

28 November 2016

Attn: Klay Marchant

Dear Klay

Mt Pleasant Mine South Pit Haul Road Modification Ecology

This is a report of a flora and vegetation assessment of the currently approved South Pit Haul Road and an area within which the currently approved South Pit Haul Road is proposed to be relocated.

Methods

Threatened Flora

A preliminary assessment of NSW BioNET records resulted in the following species considered possibly present given the location and habitat (after discounting all other threatened species and populations based on habitat present and geographical location):

- *Diuris tricolor* – Threatened Population in the Muswellbrook LGA
- *Prasophyllum petilum*
- *Cymbidium canaliculatum* – Threatened Population in the Hunter Catchment

Targeted surveys were conducted for these species. *Diuris tricolor* and *Prasophyllum petilum* are only discoverable during flowering in late September/early October. Survey for these species was carried out by Eco Logical on 4 and 5 October 2016 after confirmation that both species were flowering at control sites near the study area. *Cymbidium canaliculatum* is arboreal and visible any time of the year and was included in the vegetation community survey.

Vegetation Communities

The overall landscape is a mosaic of woodland patches and cleared grassland with scattered trees, all with a long history of grazing. Vegetation communities were assessed by the tree canopy species composition. The majority of tree species across the study area were identified by four-wheel drive vehicle and a laptop with a GIS showing position on an aerial image in real time by way of a GPS. Tree identities were entered directly into a database and shown as points over the image.

Following collection of field data polygons were drawn around similar groups of canopy species split by condition of woodland or cleared grassland. These groups were then assigned to a vegetation community from the Plant Community Types (PCT) held in the NSW Vegetation Information System (VIS) database. Biometric Vegetation Types (BVT) occurring in the Hunter and Central Rivers CMA were also assigned.

Results

Threatened Flora

No threatened flora species were recorded during targeted surveys. Furthermore there are no threatened flora records within a five kilometre radius of the study area. The report of the threatened orchid survey conducted by Eco Logical is appended to this letter.

Vegetation Communities

Nine hundred and eight (908) trees were identified in the study area. Four PCT were mapped with each occurring in a grassy woodland and derived native grassland condition. These are detailed in the following table grouped by their assigned Formation, and shown in the attached map.

PCT	BVT	Condition	PCT Name	Class
Forested Wetlands				
1598	HU812	Derived Native Grassland	Forest Red Gum grassy open forest on floodplains of the lower Hunter	Coastal Floodplain Wetlands
1598	HU812	Grassy Woodland	Forest Red Gum grassy open forest on floodplains of the lower Hunter[1]	Coastal Floodplain Wetlands
Dry Sclerophyll Forests (Shrub/grass sub-formation)				
1605	HU819	Derived Native Grassland	Narrow-leaved Ironbark - Native Olive shrubby open forest of the central and upper Hunter	North-west Slopes Dry Sclerophyll Woodlands
1605	HU819	Grassy Woodland	Narrow-leaved Ironbark - Native Olive shrubby open forest of the central and upper Hunter[2]	North-west Slopes Dry Sclerophyll Woodlands
1602	HU816	Derived Native Grassland	Spotted Gum - Narrow-leaved Ironbark shrub - grass open forest of the central and lower Hunter	Hunter-Macleay Dry Sclerophyll Forests
1602	HU816	Grassy Woodland	Spotted Gum - Narrow-leaved Ironbark shrub - grass open forest of the central and lower Hunter[2,3]	Hunter-Macleay Dry Sclerophyll Forests
Grassy Woodlands				
483	HU690	Derived Native Grassland	Grey Box x White Box grassy open woodland on basalt hills in the Merriwa region, upper Hunter Valley[4]	Western Slopes Grassy Woodland
483	HU690	Grassy Woodland	Grey Box x White Box grassy open woodland on basalt hills in the Merriwa region, upper Hunter Valley[4]	Western Slopes Grassy Woodland

[1]Listed TSC Act, E: Hunter Lowland Redgum Forest in the Sydney Basin and New South Wales North Coast Bioregions
[2]Listed EPBC Act, CE: Central Hunter Valley Eucalypt Forest and Woodland
[3]Listed TSC Act, E: Central Hunter Ironbark - Spotted Gum - Grey Box Forest
[4]Listed TSC Act, E: White Box Yellow Box Blakely's Red Gum Woodland; Listed EPBC Act, CE: White Box Yellow Box Blakely's Red Gum Woodland

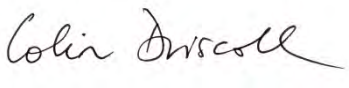
TSC Act NSW *Threatened Species Conservation Act 1995*
EPBC Act Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*

E = Endangered
CE = Critically Endangered

Of particular note was the clear separation of White Box and Narrow-leaved ironbark, a situation that has been found elsewhere in the Hunter Valley (S. Bell pers. com.). This provided difficulties with assigning a PCT since most available White Box communities either have a shrubby understorey or have co-dominant eucalypts or Cypress Pine species. The selected PCT 483 provided the best structural match.

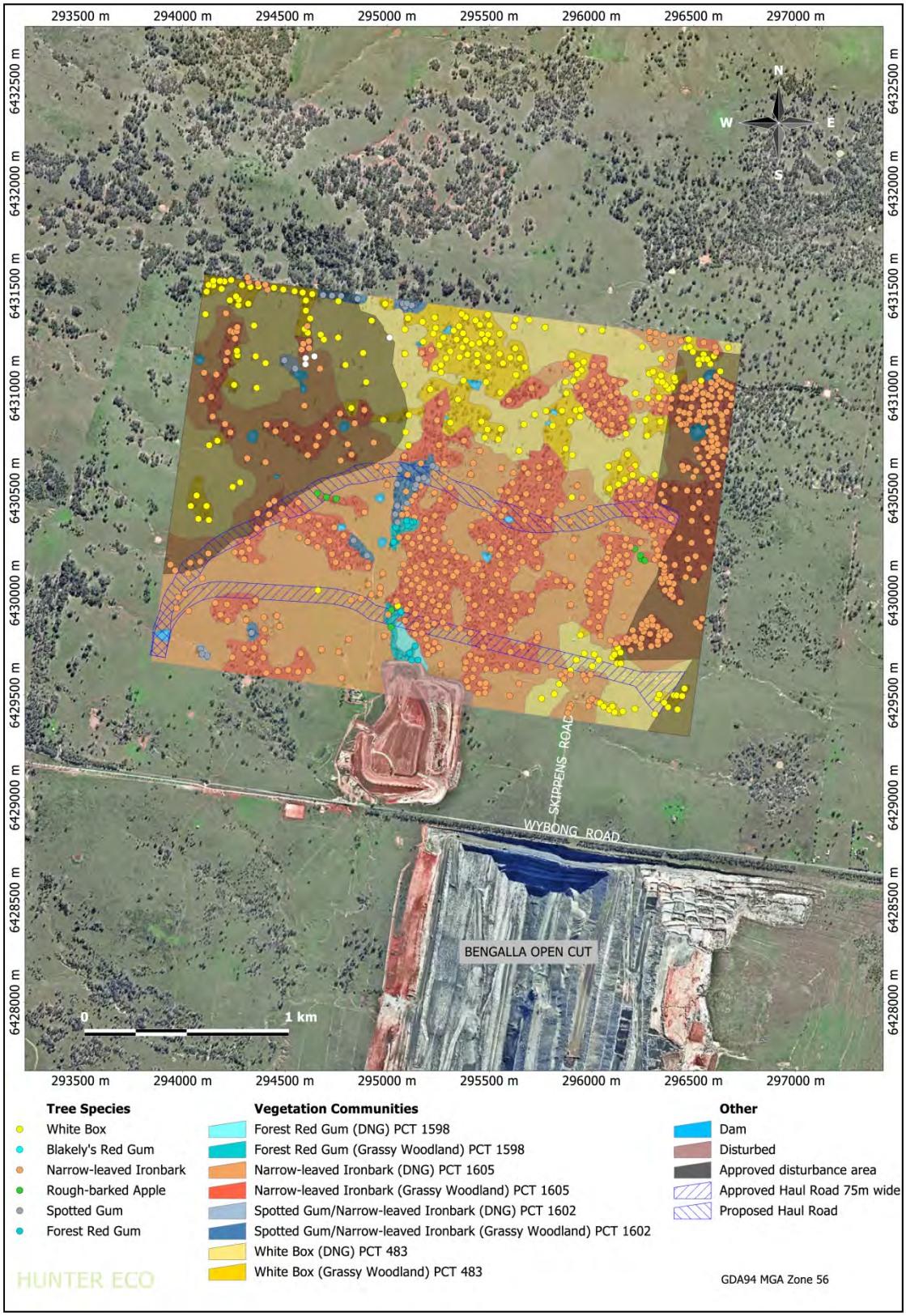
Fauna habitat attributes were consistent across the study area thus there would be no material difference between fauna habitat within the approved or proposed haul road easements.

Yours Faithfully
HUNTER ECO



Dr Colin Driscoll
Environmental Biologist

HUNTER ECO · ABN 25 112 984 240
PO Box 1047, Toronto, NSW 2283 **Phone/Fax** +61 2 4959 8016 **Mobile** 0438 773 029 **Email** cd_enviro@bigpond.com



HUNTER ECO · ABN 25 112 984 240
PO Box 1047, Toronto, NSW 2283 **Phone/Fax** +61 2 4959 8016 **Mobile** 0438 773 029 **Email** cd_enviro@bigpond.com

Eco Logical Australia

Targeted surveys for *Diuris tricolor* and *Prasophyllum petilum* – Mount Pleasant Operation

HUNTER ECO · ABN 25 112 984 240
PO Box 1047, Toronto, NSW 2283 **Phone/Fax** +61 2 4959 8016 **Mobile** 0438 773 029 **Email** cd_enviro@bigpond.com

Klay Marchant
MACH Energy
Delivered via email
klay.marchant@machenergyaustralia.com.au

ECO LOGICAL AUSTRALIA PTY LTD
ABN 87 096 512 088
www.ecoaus.com.au

Our ref: 5405

18 October 2016

Dear Klay,

Targeted surveys for *Diuris tricolor* and *Prasophyllum petilum* – Mount Pleasant Operation

The letter has been prepared to outline the methods and results of targeted surveys for two threatened orchid species, *Diuris tricolor* (Pine Donkey Orchid) and *Prasophyllum petilum* (Tarengo Leek Orchid, formerly known as *Prasophyllum sp. Wybong*) within two portions of the Mount Pleasant Operation owned by MACH Energy ('the study area', **Figure 1**).

D. tricolor is listed as a Vulnerable species and as an Endangered Population (within the Muswellbrook LGA) under the NSW *Threatened Species Conservation Act* 1995 (TSC Act). *P. petilum* is listed as an Endangered Species under the Commonwealth *Environment Protection and Biodiversity Conservation Act* 1999 (EPBC Act) and the TSC Act. One additional species, *Diuris pedunculata* listed as Endangered under the TSC and EPBC Acts, was also considered as part of the planning of the targeted surveys, although this species is mostly confined to the New England Tablelands area and was considered unlikely to occur within the study area (**Figure 1**).

Methods

Targeted surveys for *D. tricolor* and *P. petilum* were undertaken within the study area on 4 and 5 October 2016 over approximately 16 hrs by Eco Logical Australia ecologist Brian Towle. Weather conditions during the survey period were fine with moderate to strong winds. A reference site of *D. tricolor* approximately 14 km south of the study area was inspected on the 4 October 2016 which confirmed that this species was flowering during the survey period (**Plate 1**). At this location *D. tricolor* was flowering abundantly which is attributed to the above average winter and spring rainfall. While no reference site was visited for *Prasophyllum petilum*, as no publicly accessible populations of this species were identified within proximity of the study area, this species was confirmed to be flowering at the Mangoola Mine site, approximately 12 km south-west of the study area, at the time of the targeted surveys (Stephen Bell *pers. comm*. 2016).

The targeted survey methodology involved a combination of random meander surveys and systematic targeted searches along parallel transects. Random meanders involving searches along meandering paths, were conducted across the study area to identify areas of potential habitat. Systematic targeted searches, involving traverses of the survey site in parallel transects, were undertaken in areas which were considered to represent potential habitat for the species, based upon evidence of lower grazing pressure.

Results

No individuals of *D. tricolor* or *P. petilum* were recorded within the study area and no species belonging to the family Orchidaceae were recorded within the study area. Meanders across the study area identified that much of the eastern portion of the study area did not represent potential habitat for the targeted orchid species as this area was heavily disturbed by agricultural activities. The western portion of the study area broadly met the habitat requirements of the two target species, although this area appears to have had a long history of disturbance associated with agricultural practices and in particular grazing. The entire study area was actively grazed at time of survey and the understorey vegetation across the study area included a very high cover of exotic species at the time of survey. Flora surveys targeted those areas which appeared to have lower grazing pressure as indicated by lower cover of annual exotic species and where native understorey diversity was greatest.

As no individuals of *D. tricolor* or *P. petilum* were recorded during targeted surveys conducted during the confirmed flowering period of these two species, it is considered unlikely that either of these species are present within the study area.

Yours sincerely,

Brian Towle

Senior Ecologist

Plate 1: *Diuris tricolor,* photo taken 4 October 2016 by Brian Towle, Muswellbrook LGA.

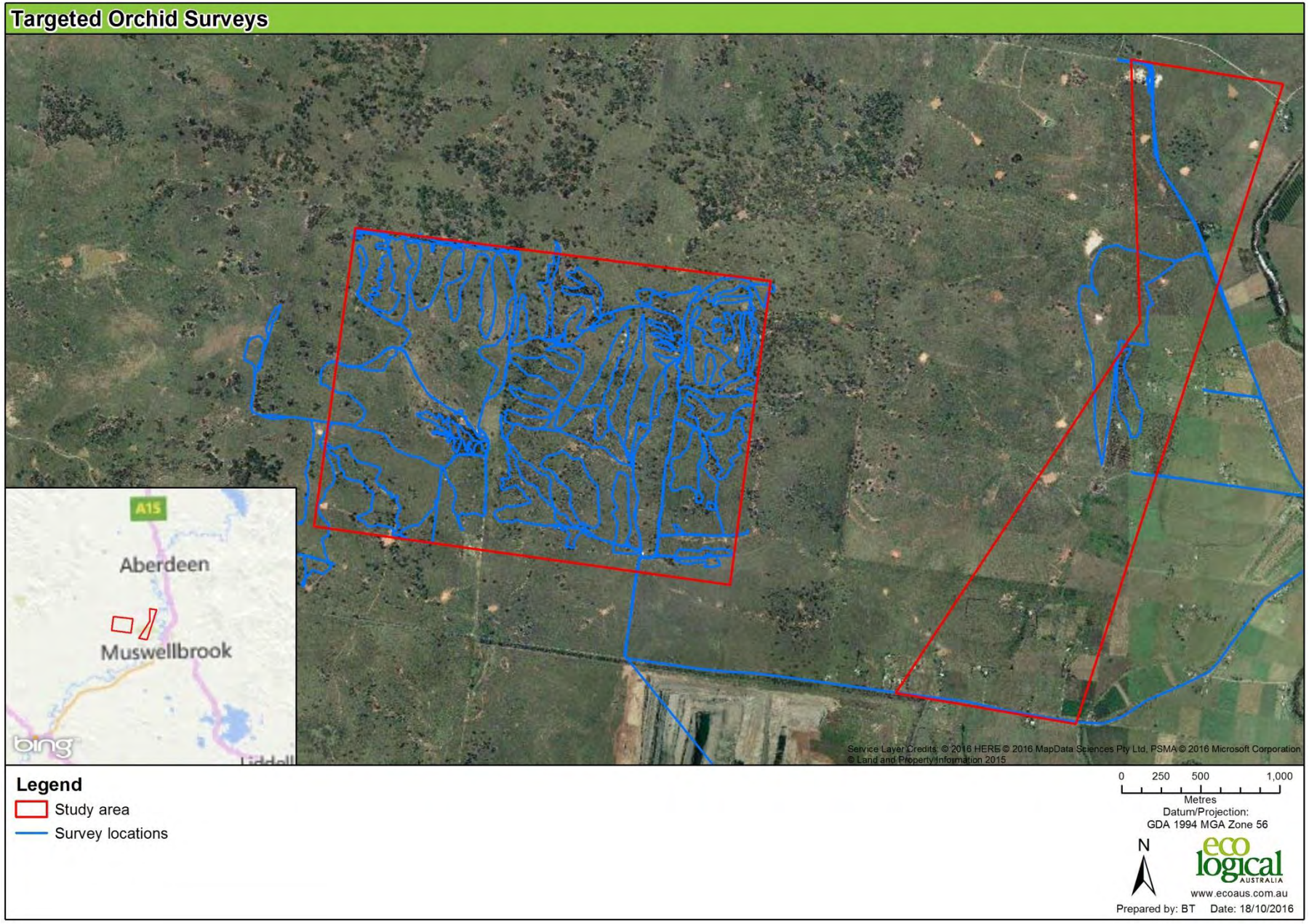
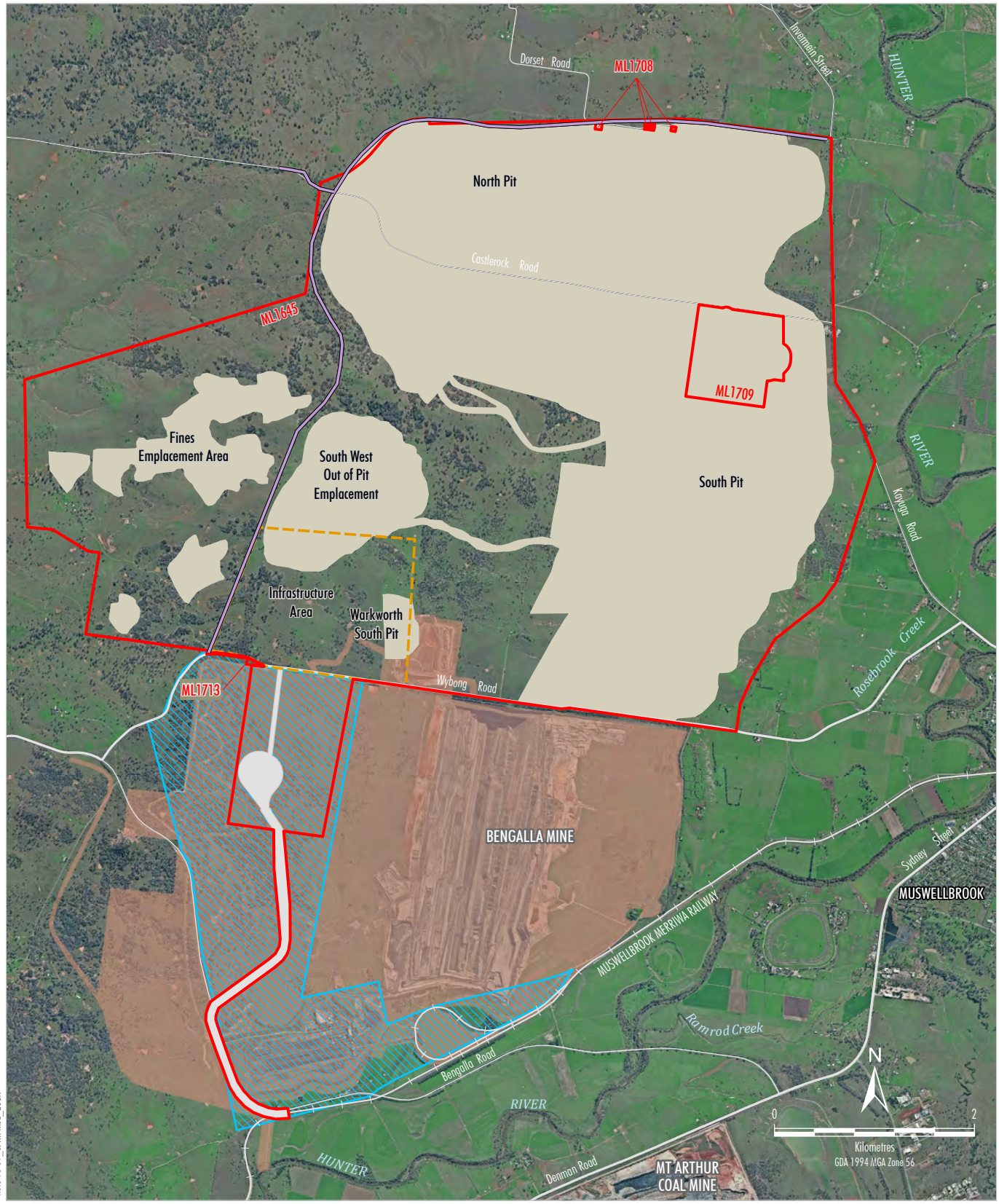


Figure 1: Study area and survey locations

ENCLOSURE 5

REVISED PROJECT LAYOUT PLAN



MAC-16-01_SPHR Mod_205A

LEGEND

- Mining Lease Boundary
- Infrastructure Area Envelope
- Approximate Extent of Approved Surface Development (1997 EIS Year 20)*
- Indicative Offsite Coal Transport Infrastructure
- Conveyor/Services Corridor Envelope
- Bengalla Mine (SSD-5170)
- Northern and Western Link Road

Note: * 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, other ancillary works and construction disturbance.

Source: NSW Land & Property Information (2015); NSW Division Resources & Energy (2016); Department of Planning and Environment (2016)

MACHEnergy

MOUNT PLEASANT OPERATION

Project Layout Plan