

15 February 2018

Howard Reed
Director Resource Assessments
Department of Planning and Environment
GPO Box 39
SYDNEY NSW 2001

Dear Howard,

RE: MOUNT PLEASANT OPERATION (DA 92/97 MOD 3) – REQUEST FOR ADDITIONAL INFORMATION

In response to the Department's letter dated 22 December 2017 requesting additional information on MACH Energy Australia's (MACH Energy's) proposed Mine Optimisation Modification (Modification 3), we have responded in the same order raised in the Department's request.

Noise

Information Request:

The Environmental Assessment (EA) identifies that the delineation of noise assessment groups (NAGs) has been amended relative to the existing approved project. The Department does not consider that sufficient justification has been provided for the proposed changes in NAGs, which would increase the existing noise criteria applicable to a substantial number of properties. Further, the Department is not yet convinced that all of the proposed extensions to existing NAG boundaries are reflective of background levels in these locations.

I also note that the proposed NAG boundaries appear to cover a broad range of predicted noise levels, for example NAG 8 includes predicted impacts ranging between 45 dB in the west to less than 35 dB in the east. Given this range of predicted impacts, the Department is unlikely to recommend the application of uniform noise criteria for all residents within these areas, especially in areas such as east Muswellbrook where the project is predicted to meet lower noise limits. I would therefore request that further consideration is given to the refinement and differentiation of receivers within NAGs (especially NAGs 6, 7 and 8).

Further, the Department is concerned that the reliance on previous studies and justification provided in relation to changes proposed in the EA do not address the contemporary noise assessment requirements requested in the Department's letter of 2 June 2016.

MACH Energy Response

Wilkinson Murray's (2017) proposed revisions to the NAGs address some identified limitations/issues with the previously consented NAG boundaries.

In summary these were (Figure 1):

- A number of the NAGs were redundant (i.e. NAGs 1, 2, 3, 4 and 10).
- Minor adjustment to NAG 5 and 11 boundaries to include additional proximal residences identified by MACH Energy's new dwelling verification along major transport corridors.
- Adjust NAG 6 and 8 eastern boundaries to better reflect land use where the previous NAG had an arbitrary boundary bisecting the town of Muswellbrook.
- Some other minor changes to better reflect local property boundaries.

Review of current default noise impact assessment criteria for Mt Arthur (Project Approval 09-0062) Receiver Zones also generally indicates close correlation with the NAG boundary adjustments proposed in Modification 3 (Figure 2). However, residences to the south-east of NAGs 6 and 8 currently have a default noise impact criteria of 35/35/35 A-weighted decibels (dBA) (day/evening/night) for the Mount Pleasant Operation, whereas these same residences have default noise impact criteria of 39/39/39 dBA (day/evening/night) for Mt Arthur "Receiver Zone E" (Figure 2).

Contemporary compliance noise monitoring conducted by MACH Energy, Mt Arthur and Muswellbrook Coal also confirm that the background noise environment around the built up areas of Muswellbrook is typically materially higher than Industrial Noise Policy default background noise levels (Table 1 and Figure 2).

The existing background noise levels measured by MACH Energy and Muswellbrook Coal do include local mining sources, but are more typically dominated by non-mining noise sources (e.g. insects or traffic). The publically available noise monitoring data measured by Mt Arthur, however, provides an estimate of the noise contribution from that mine only (i.e. total noise measured would likely be materially higher with other sources included).

Table 1: Background Noise – Recent Muswellbrook Noise Compliance Monitoring Summary

| Site | Proximal Noise Monitoring Location (Figure 2) | L _{Aeq} dBA (Log Average) | | | L _{A90} dBA (Log Average) | | |
|--|---|------------------------------------|-----------------|-------|------------------------------------|-----------------|-----------------|
| | | Day | Evening | Night | Day | Evening | Night |
| Mount Pleasant Operation ^a | N-AT4 | 61 | 58 | 49 | 40 | 36 | 33 |
| | N-AT5 | 62 | 60 | 61 | 37 | 41 | 38 |
| Muswellbrook Coal Mine ^{b, c} | R15 | 48 ^d | 44 ^d | 39 | 36 ^d | 36 ^d | 34 ^d |
| | R17 | 59 ^d | 58 ^d | 39 | 39 ^d | 37 ^d | 32 ^d |
| Mt Arthur Coal Mine ^{b, e} | NP07 | - | - | 33 | - | - | - |
| | NP10 | - | - | 35 | - | - | - |
| | NP16 | - | - | 33 | - | - | - |

After: Mount Pleasant Operation – 2017 Attended Noise Monitoring Reports.

Mt Arthur - 2015, 2016 and 2017 Annual Environmental Management Reviews and 2017 Environmental Monitoring Data¹;

Muswellbrook Coal – Environmental Noise Monitoring Reports May 2015 through to December 2017²;

Notes:

- = Data not reported.

a = Monitoring data obtained in 2017 – Mount Pleasant Operation not operating during the evening/night periods.

b = Last three complete years of publicly available monitoring data used (i.e. 2015-2017), where available.

c = No contemporary publicly available data available for monitoring location R16 (data available to November 2015 only).

d = 2017 data not publicly available.

e = Mt Arthur Coal Mine data reported as estimated Mt Arthur Coal Mine contribution only, not total noise measured.

¹ <https://www.bhp.com/environment/regulatory-information>

² <https://www.idemitsu.com.au/operations/muswellbrook-coal/approvals-plans-reports/>

Review of the Muswellbrook Local Environmental Plan zonings also indicate Wilkinson Murray's proposed revised NAG 6 and NAG 8 eastern boundaries are generally reflective of the residential/developed area of Muswellbrook (Figure 3).

The Noise and Blasting Assessment (Wilkinson Murray, 2017) concludes that Modification 3 would not materially change the approved operational noise envelope of the Mount Pleasant Operation. In practice, therefore, noise levels in the east of Muswellbrook will continue to be dominated by noise sources associated with local land use and the more proximal industrial noise sources of Muswellbrook Coal and Mt Arthur Coal.

Mount Pleasant Operation will continue to conduct real time noise monitoring and manage its mining operations as required to maintain noise compliance at the western boundaries of NAGs 6 and 8. Demonstration of ongoing noise compliance at the nearest boundaries of NAGs 6 and 8 will negate the need for any Mount Pleasant Operation noise monitoring in the east of Muswellbrook.

MACH Energy accepts that the Department will select which of the proposed updates should be made to the current NAG boundaries (and the associated Development Consent DA 92/97 Table 3). MACH Energy understands that the Department is concerned about community perception of proposed improvements to the NAG 6 and 8 boundaries, given the Mount Pleasant Operation noise envelope would effectively remain unchanged. MACH Energy would therefore accept the Department's decision, if it were to elect not to amend the eastern boundaries of NAGs 6 and 8.

MACH Energy does, however, request that due consideration be given to the information above in determining which of the suggested NAG improvements will be adopted. MACH Energy suggests that a simplified table of Noise Impact Assessment Criteria (refer Enclosure 2) could replace the current Table 3 in the Development Consent, if the NAGs are simplified.

Water

Information Request:

It would appear from the layout of the water management system that dams MWD and ED3 would be located on the site's boundary with Bengalla Mine. The RTS identifies that, while no spills were simulated for the Fines Emplacement Area and MWD, any rainfall in excess of the design criteria for the Mine Water Dam would flow to the Dry Creek Diversion Project. Having considered the current setting of the surface water environment, the Department notes that, if there is sufficient excess water to spill from the MWD, this rainfall event coupled with the additional MWD water could also exceed the capacity of structures in place for the Dry Creek Diversion and pose a risk of spilling into areas of land owned by the adjacent Bengalla Mine.

In the unlikely event that the dams overtop and flow to the south, this could result in potential pollution and safety risks, as well as operational disruptions to Bengalla Mine. An alternative option that has been applied at other mine sites throughout the Hunter Valley would involve spillway designs for MWD and ED3 that direct water towards the east and flood the Mount Pleasant open cut pit instead of travelling offsite to the south. The Department understands that MACH Energy is continuing to negotiate with Bengalla over potential surface water interactions and management systems and requests that you provide an update on the appropriate management and/or retention of water onsite in the unlikely event that these dams fill beyond capacity.

It is unclear how the water discharges from the various water storage facilities, such as dams and fines emplacement areas, will be treated before discharge to the receiving environment. For example, it is proposed that the Fines Emplacement Area and ED2 discharge to Sandy Creek, SD4 to the Hunter River and SD1 and SD3 to Rosebrook Creek (Figure 6 in Appendix E of the EA). These water storage facilities could contain a range of pollutants such as coal fines, oil and grease and suspended particulates. While a preliminary response to these matters has been provided in the RTS, the EPA and the Department have residual concerns with the management of these potential impacts. Please provide more detail regarding the treatment and licensing of various discharges to meet suitable water quality standards for receiving waters.

MACH Energy Response

The location, management and spillway designs of these water management structures has limited nexus with Modification 3, which is primarily a continuation of the approved Mount Pleasant Operation to 2026. The location and function of these structures under Modification 3 would remain consistent with the existing approved Water Management Plan.

However, MACH Energy accepts that the Bengalla Mine may have some concern about the potential for any overflows reporting to its mining operations, or any change to the existing risk profile for flooding operational interruptions to the Bengalla Mine open cut. MACH Energy therefore provides the following response to the key concerns raised.

Mine Water Dam

Development of a MWD spillway east to connect to the open cut is impractical due to topography. The Bengalla Continuation Project was proposed, and was approved in 2015, with the MWD immediately upstream of CW1 (refer Figure 33 of the Mount Pleasant Mine Environmental Impact Statement and Figure 25 of the Bengalla Continuation Project Environmental Impact Statement).

MWD has always had a spillway design that reports to “Dry Creek”, which is now upstream of CW1.

The MWD as currently approved would detain water in a high rainfall event and reduce the volume of water potentially reporting to Bengalla Mine’s CW1. The retention capacity of the MWD (approx. 2,000 ML) is more than double the retention capacity of CW1 (approx. 900 ML). Operational protocols stipulate the pumping to the MWD will cease if the MWD is already holding 1,300 ML of water (leaving approximately 700 ML of additional retention capacity for stormwater runoff).

The MWD therefore significantly increases the total water retention capacity within the “Dry Creek” catchment north of Wybong Road and hence protection for Bengalla Mine from potential flooding related operational interruption.

Further:

- The MWD is operated with pumping rules so that sufficient freeboard for a 1% AEP storm event (i.e. 1 in 100 year ARI) would be accommodated above the operating maximum water level, with no spill to the environment (i.e. the “Dry Creek” diversion system).
- MACH Energy will also implement additional clean water diversions upstream of the MWD to decrease its upslope catchment, further reducing dam inflows under high rainfall events and increasing the current storm capacity.

- In the event that the maximum operational water level is reached, the Mount Pleasant Operation would cease pumping from any other site storages to the dam.
- If the MWD reaches a more critical water level, MACH Energy would then commence dewatering the MWD to alternative water storages (including the open cut if required).
- In the very unlikely event that the MWD was to spill a small volume of water to CW1 (e.g. due to an operational systems failure), there would then be an opportunity to pump CW1 back to the MWD.

The MWD is classified as a High C Consequence Category dam under the *NSW Dams Safety Act, 1978* and is managed in accordance with these requirements to maintain public safety, including the safety of the Bengalla Mine and its employees. MACH Energy will continue to manage the MWD in accordance with the requirements of the Dams Safety Committee, including the implementation of appropriate monitoring and surveillance procedures.

Environmental Dam 3

ED3 further reduces the design catchment area of CW1, as it now collects water from the west of CW1 in MACH Energy's infrastructure area.

ED3 has been sized and constructed to 1% AEP spill risk (i.e. 1 in 100 year ARI). In the event of overtopping of ED3, water would report under Wybong Road to Bengalla Mine. However, MACH Energy has installed a pump and pipeline system at ED3 to dewater the storage to the MWD, to provide additional transfer capability, over and above the passive design capacity.

ED3 is classified as a Significant Consequence Category dam under the *NSW Dams Safety Act, 1978* and is managed in accordance with these requirements to maintain public safety, including the safety of the Bengalla Mine and its employees. MACH Energy will continue to manage ED3 in accordance with the requirements of the Dams Safety Committee, including the implementation of appropriate monitoring and surveillance procedures.

Potential for Uncontrolled Water Release

Operational interruption of the Mount Pleasant Operation due to pumping to the open cut will at all times be prioritized over an unauthorised discharge to the environment from the MWD, ED3 and the Fines Emplacement Area.

It is noted that MACH Energy does not currently have an Environmental Protection Licence that authorises controlled discharge into "Dry Creek" immediately downstream of the MWD. In the event that such a discharge was to occur, MACH Energy understands that this would be treated as an unauthorised discharge and therefore a non-compliance with the Development Consent DA 92/97 and EPL 20850.

It should be noted that no spills were simulated from the MWD in the Modification 3 water balance modelling, which simulated 121 years of historical rainfall data (refer Appendix E of the Environmental Assessment, Section 4.6, page 25).

Consistent with DSC requirements, the Fines Emplacement Area is operated so that sufficient operational freeboard is maintained for a 1% AEP 72-hour design storm event with no spill to the environment.

It should be noted that no spills were simulated from the Fines Emplacement Area in the Modification 3 water balance modelling, which simulated 121 years of historical rainfall data (refer Appendix E of the Environmental Assessment, Section 4.6, page 25).

The Fines Emplacement Area is classified as a High C Consequence Category dam under the *NSW Dams Safety Act, 1978* and is managed in accordance with these requirements to maintain public safety.

MACH Energy accepts its full responsibility to manage its major dams, conduct dam inspections and notify relevant stakeholders under the requirements of the *Dams Safety Act, 1978*, and would accept any associated liability for failure to adhere to the requirements of this Act.

All other Sediment Dams and Environment Dams would be designed and operated in accordance with the relevant Landcom (2004) and DECC (2008) guidelines and an approved Water Management Plan.

Controlled Water Release System

Since lodgement of the Modification 3 Environmental Assessment, MACH Energy has continued to consult with representatives of the Bengalla Mine to address its concerns regarding the approved Mount Pleasant Operation water management infrastructure. Following a joint workshop on-site, Bengalla Mine wrote to MACH Energy advising that the use of Bengalla Mine's Dry Creek Diversion infrastructure (CW1 and associated pipeline) to convey Mount Pleasant Operation controlled discharge to the Hunter River is not feasible.

Bengalla Mine also reiterated its agreement to provide the alternative controlled release system approved as part of the Bengalla Continuation Project. Bengalla Mine obtained Development Consent under SSD-5170 to develop a controlled release system for the Mount Pleasant Operation as compensation for the construction and operation of CW1 downstream of the MWD.

The major components of this approved infrastructure (described as the Dry Creek Interaction Agreement infrastructure) to support Mount Pleasant Operation controlled water releases comprise:

- an additional 300 ML Mount Pleasant Discharge Dam 1;
- an approximately 6.4 km long, bi-directional water pipeline and pumping system from the MWD to the Mount Pleasant Discharge Dam 1;
- associated electrical work required for the above to be constructed and operated; and
- construction of a downstream channel to reduce the potential for scour as a result of the controlled water discharges.

Water balance modelling conducted for Modification 3 (HEC, 2017) does not show a need to conduct controlled releases from the Mount Pleasant Operation in accordance with the Hunter River Salinity Trading Scheme until later in the mine life, when the open cut catchment area is larger.

However, MACH Energy acknowledges that the development and commissioning of these facilities would allay some of the concerns raised by the Environment Protection Authority and Bengalla Mine with respect to a perceived future risk of a potential uncontrolled release from the Mount Pleasant Operation. Access to the additional water storage buffer capacity of the dam (300 ML) and the controlled release facility would then be available in the unlikely event that such a need arises in the initial life of the mine.

Mount Pleasant Operation would make use of this approved infrastructure as required in accordance with the Dry Creek Interaction Agreement, a subsidiary agreement under the Master Co-operation Agreement between the two operations.

MACH Energy will work with Bengalla Mine to ensure this infrastructure is designed, constructed and commissioned (and utilised by the Mount Pleasant Operation to manage its site water) as deemed necessary by the site water balance, to the satisfaction of the Department of Planning and Environment and the Environment Protection Authority. MACH Energy requests that the use of this approved infrastructure is reflected in the Department's draft determination materials for Modification 3 (e.g. by inclusion of this letter in the list of relevant EIS/EA documents, or alternatively by inclusion of an additional Development Consent Condition).

Rail

Information Request:

Please provide an update on the progress of negotiations with Bengalla regarding the relocation of the rail loop and proposed timeframes for this to occur.

MACH Energy Response:

Since the Department's letter, MACH Energy has completed an Environmental Assessment for the proposed Rail Modification (Modification 4) and this has recently completed the public exhibition stage.

Modification 4 was prepared in consultation with the Bengalla Mine and the Muswellbrook Shire Council and would provide a permanent solution to move the approved Mount Pleasant Operation rail spur and loop to the east and north of the Bengalla Mine.

Please do not hesitate to contact the undersigned if you require further information.

Yours sincerely



Chris Lauritzen

General Manager Resources Development
Mount Pleasant Operation

Enclosure 1

Noise Assessment Group Related Figures

Enclosure 2

Suggested Revised Noise Impact Assessment Criteria

ENCLOSURE 1

NOISE ASSESSMENT GROUP RELATED FIGURES

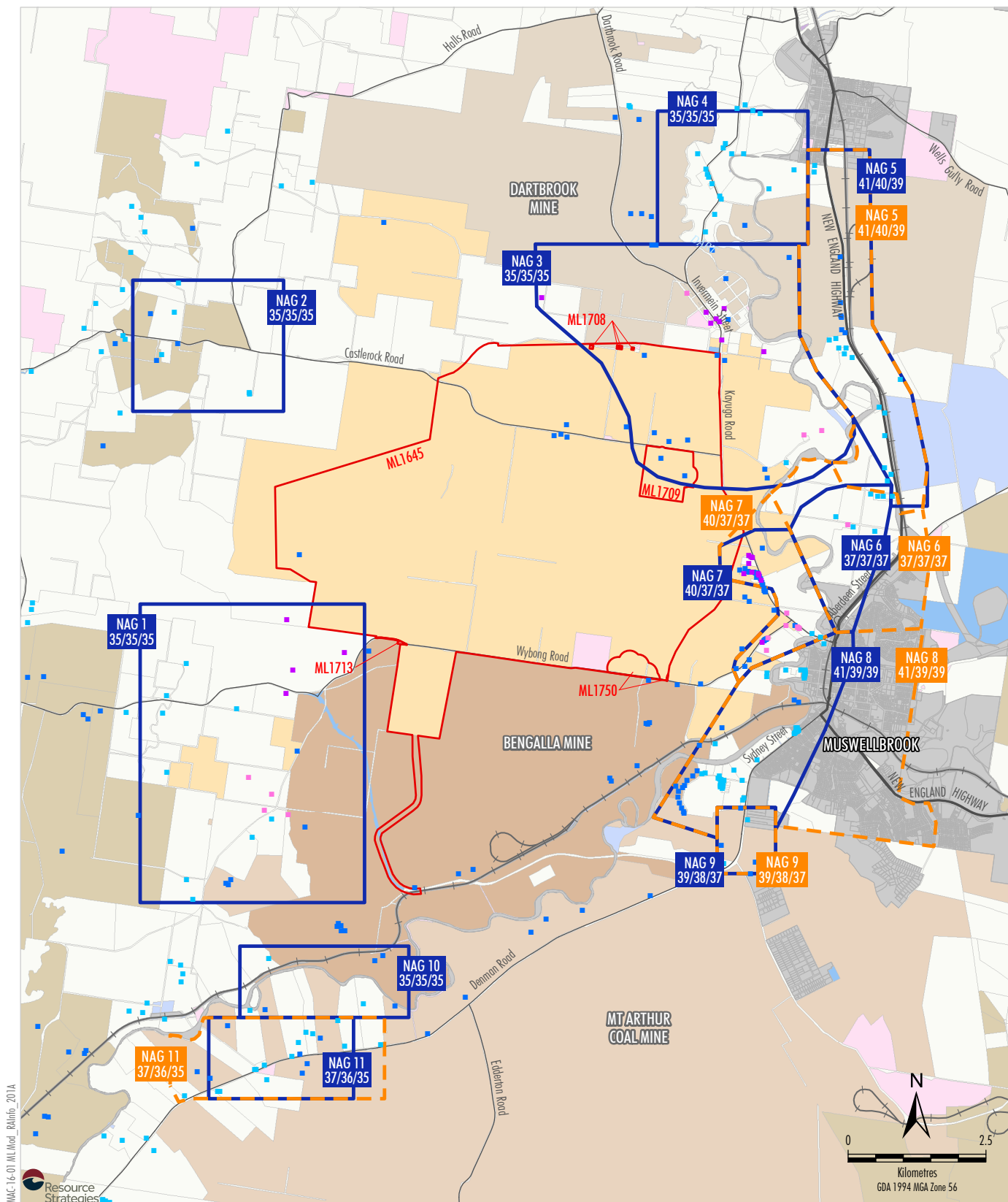
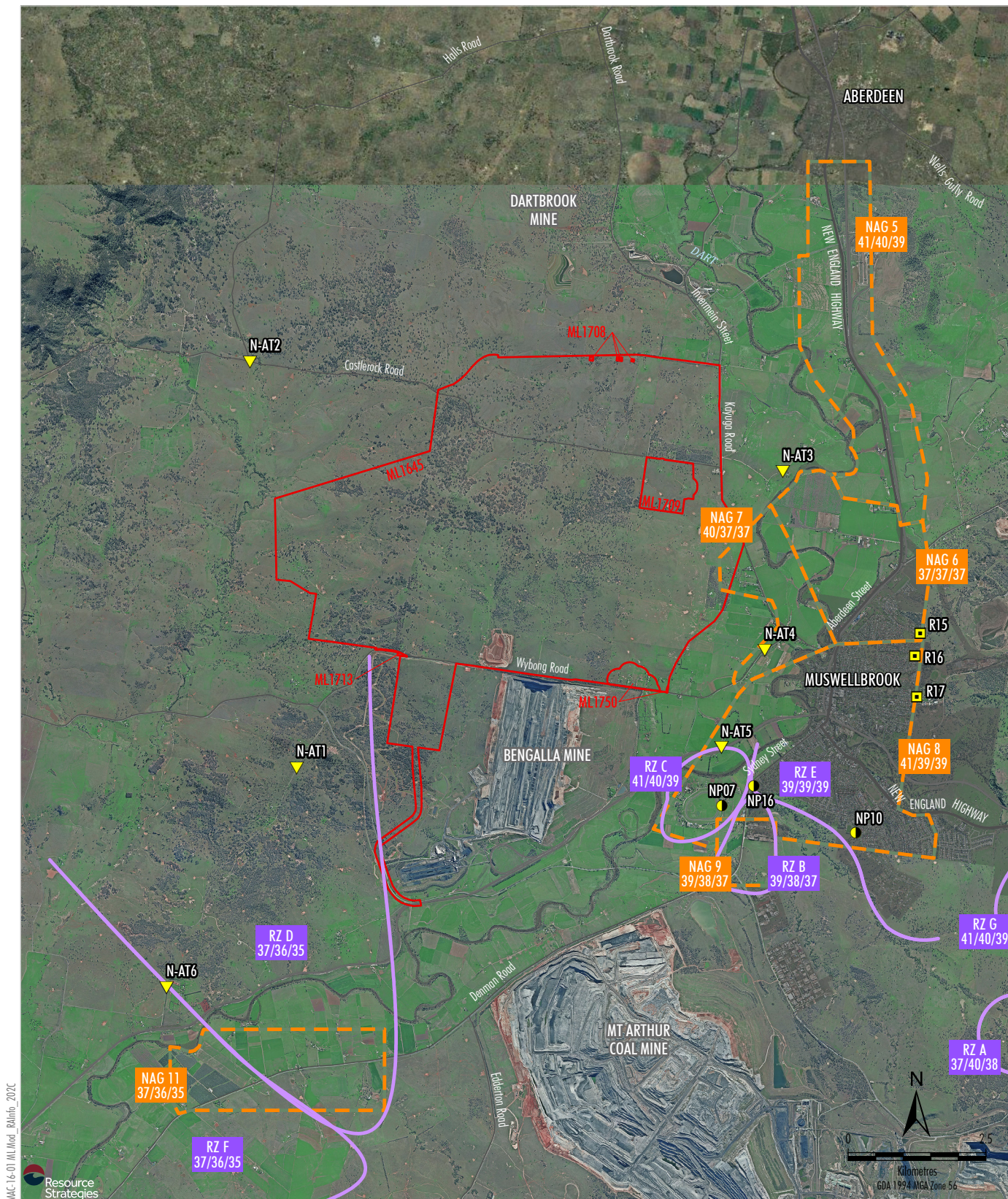


Figure 1



MACH-16-01 ML/Mod_Rainfo_202C

- LEGEND**
- Mining Lease Boundary
 - Muswellbrook and Upper Hunter LEPs Zones B2, B5, IN1, SP2, R2, R5, RE1, RE2 and W1
 - Crown
 - Crown/State of NSW
 - The State of NSW
 - Muswellbrook Shire Council
 - Upper Hunter Shire Council
 - Mount Pleasant Controlled
 - Bengalla Controlled
 - Dartbrook Controlled
 - Mt Arthur Controlled
 - Other Mining/Resource Company Controlled
 - Privately Owned Land

- Revised Noise Assessment Group (NAG)
- Default NAG Noise Criteria for Day/Evening/Night
- Mt Arthur Coal Mine Receiver Zone (RZ)
- Default RZ Noise Criteria for Day/Evening/Night
- Attended Noise Monitoring Sites
- ▼ Mount Pleasant Operation
- Mt Arthur Coal Mine
- Muswellbrook Coal

Source: NSW Land & Property Information (2017); NSW Division of Resources & Energy (2017)
 Orthophoto: MACH Energy (Aug 2016)

MACHEnergy
 MOUNT PLEASANT OPERATION
 Noise Monitoring Sites,
 Revised Noise Assessment Groups
 and Existing Mt Arthur Receiver Zones

Figure 2

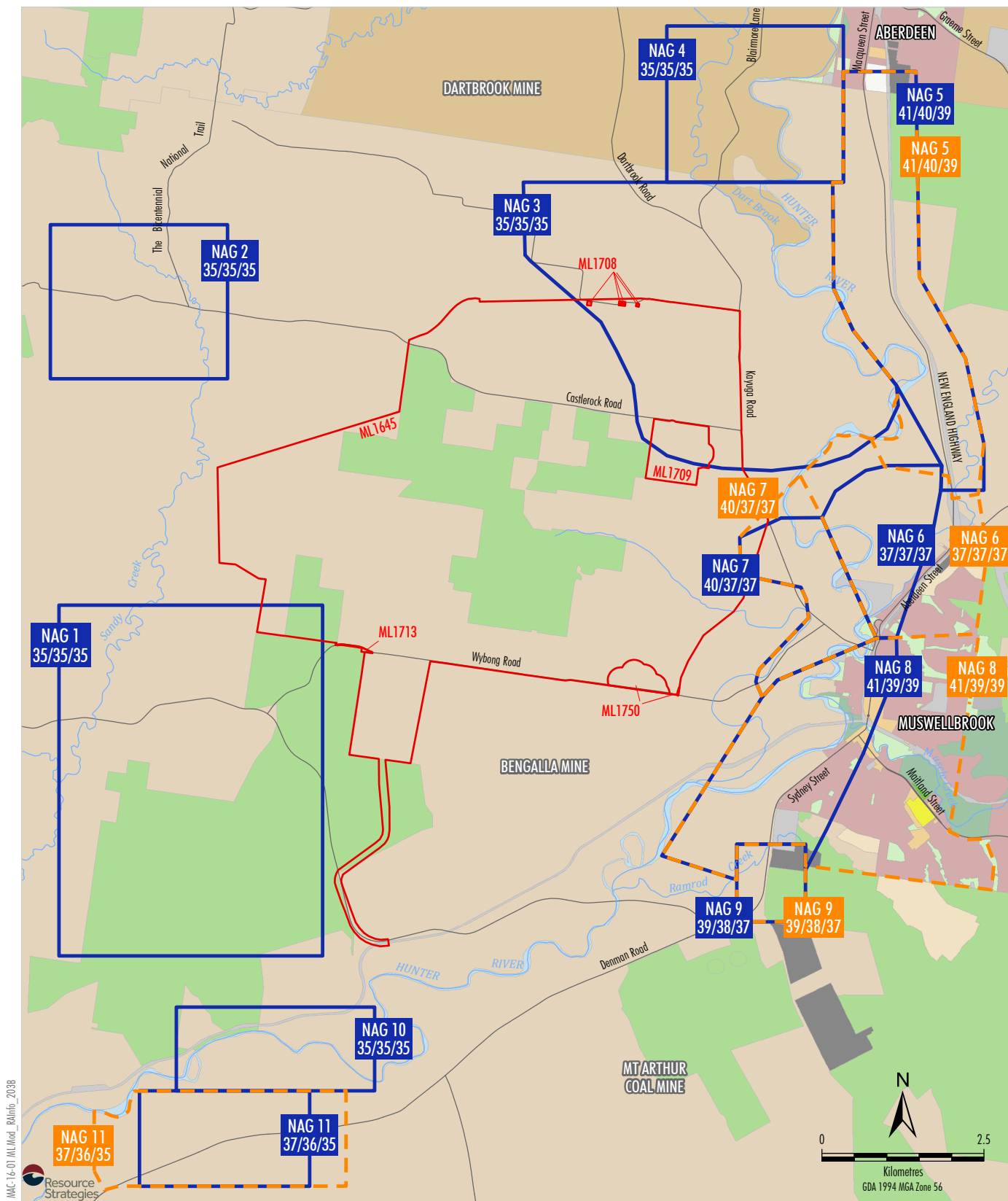


Figure 3

ENCLOSURE 2

SUGGESTED REVISED NOISE IMPACT ASSESSMENT CRITERIA

Proposed Noise Criteria (dBA)

| Location | Day | Evening | Night | |
|--|------------------------|------------------------|------------------------|----------------------|
| | L _{Aeq,15min} | L _{Aeq,15min} | L _{Aeq,15min} | L _{A1,1min} |
| 68, 74 | 43 | 42 | 42 | 45 |
| 86 | 42 | 42 | 42 | 45 |
| 35, 35b, 77 | 42 | 41 | 41 | 45 |
| 79, 80, 140c, 526 | 41 | 41 | 41 | 45 |
| 289 | 41 | 40 | 40 | 45 |
| 23, 84, 139, 154, 203, 257, 258a | 40 | 40 | 40 | 45 |
| 83 | 40 | 39 | 39 | 45 |
| 86b, 140, 202, 259 | 39 | 39 | 39 | 45 |
| 198, 204 | 38 | 38 | 38 | 45 |
| 260, 261 | 37 | 37 | 37 | 45 |
| 169, 272 | 36 | 36 | 36 | 45 |
| NAG 5 - All privately-owned land ¹ | 41 | 40 | 39 | 45 |
| NAG 6 - All privately-owned land ¹ | 37 | 37 | 37 | 45 |
| NAG 7 - All privately-owned land ¹ | 40 | 37 | 37 | 45 |
| NAG 8 - All privately-owned land ¹ | 41 | 39 | 39 | 45 |
| NAG 9 - All privately-owned land ¹ | 39 | 38 | 37 | 45 |
| NAG 11 - All privately-owned land ¹ | 37 | 36 | 35 | 45 |
| All other privately-owned land | 35 | 35 | 35 | 45 |

Note:

¹Excluding the privately-owned receivers with specific noise criteria listed.