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3 August 2018

Secretariat
Independent Planning Commission
Level 3, 201 Elizabeth Street
Sydney NSW 2000

Attention: Jorge Van Den Brande

Dear Jorge,

RE: MOUNT PLEASANT OPERATION MODIFICATION 3 – LATE HTBA WRITTEN SUBMISSION

Further to the Secretariat of the Independent Planning Commission (IPC) providing an email of 23 July providing web-links to the Hunter Thoroughbred Breeders Association (HTBA) submissions to the IPC, please find herein MACH Energy's response to the HTBA additional materials for consideration by the Department of Planning and Environment and the IPC.

MACH Energy notes that the HTBA additional submission was made well after the IPC deadline for submissions, and overall the thrust of the submission is very similar to the HTBA submission made to the Department on Modification 3 approximately one year earlier.

The concerns raised are generally consistent with previous Modification 3 submissions and therefore have already been addressed, where relevant, in MACH Energy's Response to Submissions report (October 2017) and the Department of Planning and Environment's Mount Pleasant Coal Mine Extension of Mine Life (DA 92/97 MOD 3) Environmental Assessment Report (June, 2018) (the Assessment Report).

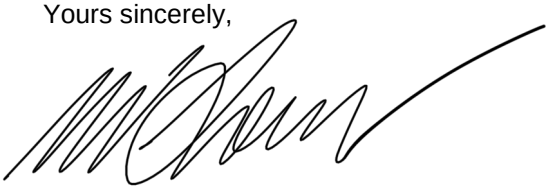
Notwithstanding, a response to the points raised in the HTBA's most recent submission is provided in the enclosed table. MACH Energy notes that it has previously responded to the Bengalla Mine submission (subsequently withdrawn) in its Response to Submissions report (October 2017).

MACH Energy notes that the Hunter Valley equine industry has reportedly flourished and grown over the last 30 years and particularly in the last decade. In this same period the Bengalla Mine, Mt Arthur Mine, Dartbrook Mine and Muswellbrook Mine have been operating, and in most cases expanding, in the Muswellbrook area.

The HTBA suggestion that an extension of six years to the operational life of an approved and operating mine located directly between the existing Bengalla and Dartbrook Mines, and some proposed improvements to the Mount Pleasant Operation final landform could cause the demise of the equine industry in the Hunter Valley is considered to be unfounded.

Please contact the undersigned if you have any queries regarding the responses enclosed.

Yours sincerely,



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

Enclosure 1 Response Table – HTBA Late Submission

cc: Mr Howard Reed, Department of Planning and Environment.

Table 1
Response Table – HTBA Late Submission

Subject	Issue Raised	Response
Economics	HTBA and Marsden Jacob Associates raised a concern that no cost benefit analysis has been undertaken, asserted that this contravenes a relevant guideline, and the IPC will not be able to consider the costs and benefits of the proposal to the State.	Modification 3 does not constitute a new State Significant Development application that would necessitate completion of an Environment Impact Statement, including an associated cost-benefit analysis in accordance with the *Guidelines for the economic assessment of mining and coal seam gas proposals*. The Mount Pleasant Operation Mine Optimisation Modification Environmental Assessment (the Environmental Assessment) provided economic justification for Modification 3 to the extent necessary. Further, the Division of Resources and Geoscience has provided advice to the New South Wales (NSW) Government with respect to Modification 3 as follows (DRG, 2017): *Over the life of the Project, the value of coal production sold on the export thermal market would be nearly $4 billion in current dollars. The net present value of this revenue stream has been estimated by DRG at approximately $2.6 billion. Capital investment over the life of Mount Pleasant to end 2020 would be of the order of $365 million.* *The Project would provide continuing employment for the 380 employees that will be employed at Mount Pleasant.* *…* *DRG has calculated that in a typical full production year the State will receive around $50 million per annum in royalty and $306 million over the life of the Modification. The net present value of this royalty stream would be $199 million using a 7% real discount rate.* MACH Energy also notes the air quality and noise assessments conducted for the Environmental Assessment concluded that the approved impacts of the Mount Pleasant Operation would effectively be unchanged by the Modification (i.e. key environmental externalities remain unchanged). Notwithstanding, the Mount Pleasant Operation will be operated in a manner as to minimise potential impacts on the environment and land uses on adjoining lands (as described in Section 4 and 5 of the Environmental Assessment). The ultimate weighing up of the potential impacts and benefits of the Modification lies with the determining authority (i.e. the IPC).
	HTBA asserts the Modification 3 proposal reflects a mine that is uneconomic.	MACH Energy notes that the Mount Pleasant Operation is a tier one thermal coal asset with a low overburden strip ratio and significant coal reserves. It goes without saying that MACH Energy would not be developing the Mount Pleasant Operation asset if it was not an economically viable deposit. Consistent with MACH Energy's previous statements, MACH is developing a life of mine plan for the Mount Pleasant Operation to support a State Significant Development application for the Mount Pleasant Operation beyond 2026.
	HTBA asserts the economics of Modification 3 are flawed as the mine fleet has been underestimated.	Refer to the response on mine planning below.

Subject	Issue Raised	Response
Economics (Continued)	HTBA asserts that the economic justification of construction and subsequent removal of the rail loop (and how the coal will be removed from site after the removal of the rail loop) is not explained.	As described in the Modification 3 Response to Submissions report, in September 2017 MACH Energy submitted a separate modification application for an alternative Mount Pleasant Operation rail out-loading system (Modification 4). Further, the Department's Assessment Report describes Modification 4 as follows: *On 22 September 2017, MACH lodged an application for Modification 4 of DA 92/97. The application, which is currently being assessed by the Department, seeks approval for the proposed relocation of the infrastructure corridor. The modification would entail:* • *duplication of product coal transport infrastructure, including construction and operation of a rail spur, rail loop, conveyor, rail load-out facility and associated services;* • *duplication of water supply infrastructure, including construction and operation of a pump station, water pipeline to the Hunter River and associated electricity supply; and* • *demolition and removal of the existing approved product coal transport infrastructure and water supply infrastructure within the extent of Bengalla, once the new infrastructure is fully operational.* *BMC has indicated its support for Modifications 3 and 4 and that it would assist in making land available for construction of long-term rail and ancillary infrastructure for Mount Pleasant. In the event that Modification 4 (addressing the relocation of the infrastructure corridor) is not approved, Mount Pleasant would not be able to transport coal directly from the site. Under these circumstances MACH would therefore need to seek alternative options for coal transportation, such as agreement with BMC to process and/or transport coal via its facilities or exploration of alternative transportation routes with other neighbouring operations.* As highlighted in the Division of Resources and Geoscience quotation above in response to HTBA's assertion regarding cost benefit analysis, the anticipated revenue stream from the proposed Modification 3 mine life extension has been quantified in the Billions of dollars. MACH Energy can therefore confirm it is economically viable for the Mount Pleasant Operation to expend some tens of Millions of dollars to develop the rail spur and loop in the approved location (already near completion) and to subsequently relocate the infrastructure in accordance with Modification 4 (should it be approved) and remove the redundant structures prior to 31 October 2022. The additional infrastructure capital cost would be more than offset by the value of earlier coal production.
Mine and Mining Plans	The HTBA and Mr Michael White assert MACH Energy has underestimated the mining equipment required to conduct mining in 2021, and therefore any associated assessments also underestimate impacts, or must overstate mine progression. It is asserted this brings into question all associated Environmental Assessment findings.	MACH Energy confirms that the excavators described in the Environmental Assessment do have sufficient capacity to move the proposed volume of waste rock. The projected major excavators in 2021 as described in the Environmental Assessment comprise 2 x Liebherr 996 excavators and 2 x Hitachi 3600 excavators supported by a Front End Loader operating on coal. One of the Hitachi 3600 excavators would operate on coal or waste rock depending on demand, and this provides additional waste rock excavator capacity (e.g. during Liebherr 996 downtime) that may not have been factored into Mr White's calculations. It is further noted that some major mining companies do not match the operating efficiencies per excavator of smaller mining companies or specialist mining contractors. MACH Energy also notes that the performance of the Mount Pleasant Operation will continue to be adaptive to meet relevant Development Consent DA 92/97 and Environment Protection Licence (EPL) conditions. Hence the number or type of major mobile fleet items utilised is not critical, what is critical is that the performance of the mine is continually adapted as necessary to maintain compliance with applicable consent criteria at the nearest sensitive private receivers. The Modification 3 proposed open cut mining method provides the flexibility to modify operations as is required in response to changing environmental conditions.

Subject	Issue Raised	Response
Mine and Mining Plans (Continued)	The HTBA and Mr Michael White assert Modification 3 includes material changes to the Mount Pleasant Operation fine rejects emplacement strategy, and that these changes would have adverse environmental outcomes.	Modification 3 does not propose to alter the fines reject emplacement strategy of the approved Mount Pleasant Operation. MACH Energy notes that the NSW Dams Safety Committee sets design criteria and regulates compliance for regulated water storages in NSW, including the Fines Emplacement Area. The Mount Pleasant Operation's fines emplacement is being constructed in accordance with contemporary NSW Dams Safety Committee design criteria as well as Waste Management, Water Management and Mining Operation Plans approved by relevant NSW Government agencies.
	The HTBA asserts it is not credible that the mine life is only intended to be for a short period, and a 21 year proposal should be assessed.	Consistent with MACH Energy's previous statements, MACH is developing a life of mine plan to support a State Significant Development application for the Mount Pleasant Operation beyond 2026. There is no legal impediment under NSW planning law to MACH Energy seeking to modify Development Consent DA 92/97 to extend the duration of mining operations to 2026 in the interim.
	The HTBA asserts the "… *Commission is currently faced with a challenge to properly understand and assess this proposal. This challenge is similar to trying to decipher a large mosaic by only being able to see six tiles."*	MACH Energy appreciates the colourful language in this statement, however, Modification 3 is, in fact, a simple proposal that primarily comprises two key elements: • an extension to the time limit on mining operations to provide for open cut mining operations to 22 December 2026 (i.e. modify Condition 5, Schedule 2 of Development Consent DA 92/97 to add six years); and • extensions to the Eastern Out of Pit Emplacement to better align with underlying topography and facilitate development of a final landform that is more consistent with the characteristics of the local topography. MACH Energy notes neither the Department nor the IPC members have expressed to MACH Energy any material lack of understanding of the nature of the Modification proposed, or its relationship to the proposed Rail Modification (i.e. Modification 4).
Air Quality	HTBA and Stephenson Environmental highlight that existing monitoring data shows exceedances of the 24 hour and annual average $PM_{2.5}$[1] and 24 hour average PM_{10}[2] criterion and therefore assert the Upper Hunter could not accommodate Modification 3.	Mach Energy notes discussion of existing air quality and existing exceedances of the applicable air quality criteria, particularly winter-time exceedances of applicable $PM_{2.5}$ criteria in suburban areas, is included in the Modification 3 Air Quality and Greenhouse Gas Assessment (the AQGHGA) and the Response to Submissions report. These documents also highlight that Modification 3 would not increase the air quality emissions of the approved Mount Pleasant Operation. The potential for the proposed mitigation to avoid short term exceedances of PM_{10} and $PM_{2.5}$ criteria related to the Mount Pleasant Operation was noted by the NSW Environment Protection Authority (EPA) in its submission on Modification 3. MACH Energy notes the data provided by Stephenson Environmental to support the assertion there are regular exceedances of the PM_{10} criterion in fact shows no exceedances of the 50 micrograms per cubic metre (µg/m³) 24 hour average criterion. A significant portion of the data provided is daily maximum levels, whereas the relevant criterion is a 24 hour average. The data provided by Stephenson Environmental does, however, emphasise the seasonal variation in $PM_{2.5}$ levels within the suburban areas of Muswellbrook described in the AQGHGA and the Response to Submissions report.

[1] Particulate matter with an equivalent aerodynamic diameter of 2.5 micrometres or less.
[2] Particulate matter with an equivalent aerodynamic diameter of 10 micrometres or less.

Subject	Issue Raised	Response
Air Quality (Continued)	HTBA and Stephenson Environmental assert a reactive dust mitigation strategy to manage compliance is unacceptable and cannot be conditioned.	As described in the AQGHGA, the proposed mitigation strategy incorporates both proactive and reactive mitigation measures. The potential for the proposed mitigation to avoid short term exceedances of PM_{10} and $PM_{2.5}$ criteria related to the Mount Pleasant Operation was noted by the NSW EPA in its submission on Modification 3. It is particularly noted Development Consent DA 92/97 and the Mount Pleasant Operation EPL both already include conditions that require the implementation of proactive and reactive mitigation measures. It should be noted the Mount Pleasant Operation currently operates in accordance with an approved Air Quality and Greenhouse Gas Management Plan. The Air Quality and Greenhouse Gas Management Plan describes protocols for the implementation of proactive and reactive mitigation measures, including the use of predictive meteorological and air quality forecasting as well as various actions based on a tiered alarm system.
	HTBA asserts the AQGHGA impacts are understated, particularly due to the mining plan comments raised by Mr White.	Refer to the response on mine planning above.
	Stephenson Environmental asserts the AQGHGA does not expand on the difference between the air quality-related conditions in the Development Consent and EPL.	MACH Energy notes the AQGHGA includes all relevant air quality conditions currently within Development Consent DA 92/97 and the EPL in full.
	Stephenson Environmental asserts the AQGHGA does not refer to the latest $PM_{2.5}$ criteria.	MACH Energy notes Stephenson Environmental appears to have misinterpreted the text within the AQGHGA. The AQGHGA states the *Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales* (the Approved Methods) (EPA, 2017) was updated in 2017 to include criteria for $PM_{2.5}$, however Development Consent DA 92/97 and the EPL do not yet include criteria for $PM_{2.5}$. The AQGHGA does assess the predicted impacts of the modified Project against contemporary criteria for $PM_{2.5}$ documented in the Approved Methods (EPA, 2017). Further, it is noted the Department has proposed draft Development Consent DA 92/97 Conditions that include $PM_{2.5}$ compliance criteria (i.e. Condition 2, Schedule 3).
	Stephenson Environmental asserts the AQGHGA claims the modified Mount Pleasant Operation has lower air quality emissions than other mines in the region and this comparison is unsubstantiated.	MACH Energy notes Stephenson Environmental appears to have misinterpreted the text within the AQGHGA. Rather than comparing the emissions of the Mount Pleasant Operation to other mines in the region, the AQGHGA states the emissions associated with the modified Mount Pleasant would be significantly lower than the approved Mount Pleasant Operation due to the mining method and the adoption of contemporary, best practice mitigation and management measures. The potential for some reduction in emissions associated with the Modification is highlighted by the Department in its Assessment Report: *MACH is not proposing any major changes to the approved construction, mining methods or any other major dust generating activities that would materially increase air quality impacts. In fact, as the modification would not be using a dragline it would be expected to reduce dust emissions.*

Subject	Issue Raised	Response
Air Quality (Continued)	HTBA and Stephenson Environmental note the AQGHGA predicts a number of exceedances of the annual average PM_{10} criterion at private receptors and assert: *The Commission cannot rely upon the Department's recommendations to update air quality criteria in the conditions of consent and grant further acquisition upon request rights as these actions do not and will not address the underlying, and cumulative, negative air quality impacts of this Project to this region.*	MACH Energy notes the AQGHGA is a contemporary air quality assessment conducted in accordance with the latest relevant guideline (i.e. the Approved Methods [EPA, 2017]) by a recognised expert in the field who has previously been commissioned by the Department for peer review assessments (Todoroski Air Sciences). The AQGHGA highlights that the proposed Modification 3 would not increase the air quality emissions of the approved Mount Pleasant Operation. The context of the predicted exceedances of the cumulative annual average PM_{10} criterion, including the significant conservatism of the cumulative assessment and locations of the relevant receivers adjacent other significant sources of particulate matter, has been described in detail in the AQGHGA, the Response to Submissions report and subsequent Response to Agency Comments. MACH Energy understands the predicted exceedances of the cumulative annual average PM_{10} criterion have therefore been carefully considered by the Department during the preparation of its Assessment Report and draft Development Consent DA 92/97 conditions. MACH Energy notes the application of acquisition upon request rights to receivers is set out in the NSW Government's (2014) *Voluntary Land Acquisition and Mitigation Policy for State Significant Mining, Petroleum and Extractive Industry Developments*. This document provides guidance to the application of such rights following the implementation of feasible and reasonable mitigation and management measures.
Water	The HTBA and OD Hydrology assert the Modification would materially alter the groundwater impacts of the approved Mount Pleasant Operation, and raise concerns that the Modification has not been assessed in accordance with the Aquifer Interference Policy.	MACH Energy notes this issue has previously been addressed in the Modification 3 Response to Submissions report (Section 6.3.5 and Attachment 1) – it is noted the Environmental Assessment states the following (Section 6.2) (emphasis added): ***Aquifer Interference Policy*** *The AIP (NSW Government, 2012b) has been developed by the NSW Government as a component of the NSW Government's Strategic Regional Land Use Policy. The AIP applies State-wide and details water licence and impact assessment requirements.* *…* ***As the Modification would not change the approved open cut extent and maximum rate of mining, impacts on groundwater resources arising from the Modification would be negligible. It therefore follows that the Modification would fall within the Level 1 minimal impact criteria under the AIP, when compared to the approved impacts of the Mount Pleasant Operation.*** *…* Further, the Department has stated in its Assessment Report: *The **Department of Industry- Water** (DoI Water) raised no concerns over the proposed modification, but requested that MACH update the mine's Water, Rehabilitation and Waste Management Plans should the modification application be approved. DoI Water also advised that a Water Access Licence (WAL) should be obtained to accommodate groundwater inflows into the open cut pit until 2026 and that MACH should update its Groundwater Management Plan to reflect the extended mining period. The Department notes that, under DA 92/97, MACH is already required to revise its relevant strategies, plans and programs following a modification and to seek any relevant water licences under the Water Act 1912 and/or Water Management Act 2000.*

Subject	Issue Raised	Response
Water (Continued)	The HTBA and OD Hydrology assert the recently published Hunter Subregion Bioregional Assessment hydrological modelling by Herron et al (2018) suggests there will be adverse hydrological change in the Muswellbrook area and potentially large changes in flow regime and water availability in the Hunter River, with the implied inference that the proposed Modification 3 may add to, or contribute to, deleterious impacts on water security and supply reliability.	Bioregional Assessments are prepared for the Commonwealth, cover very large areas and are inherently conservative. MACH Energy notes the following pertinent facts: • Herron et al (2018)[3] includes the approved complete 20 year footprint of the Mount Pleasant Operation in its cumulative modelling scenario (coal resource development pathway). • The modelling incorporates 41 "baseline mines" and 17 "additional coal resource developments" (including the full development of the Mount Pleasant Operation) in the Hunter Subregion. • The ongoing development of neighbouring mines and development of the full approved extent of the Mount Pleasant Operation would logically be expected to result in hydrological change in the Muswellbrook area. • It is noted that the predicted incremental impacts of all of the 17 "additional coal resource developments" on flows in the Hunter River were estimated without representing the operational management of dams in the highly regulated Hunter River. • It is noted that mining operations in the Hunter Valley are required to hold water access licences to fully account for all groundwater and surface water extractions (e.g. under the *Water Management Act, 2000*). MACH also notes the construction and operation of the Mount Pleasant Operation is currently undertaken in accordance with an approved Water Management Plan. The Environmental Assessment considered the potential impacts of the Modification on water resources and concluded the Modification would not result in a material change to the groundwater and surface water impacts of the approved Mount Pleasant Operation, given the Modification would not: • significantly alter the approved general arrangement of the Mount Pleasant Operation; • significantly increase the development area of the mine; • increase the approved annual maximum ROM coal and waste rock production rates; or • include any significant changes to the approved water management system at the site.

[3] Herron NF, Macfarlane C, Henderson BL, Post DA, O'Grady A, Rachakonda PK, Wilkins A, Peeters L, Dawes WR, McVicar TR, Hosack G, Ickowicz A, Hayes KR, Dambacher J, Barry S, Brandon C, Zhang YQ, Crosbie R, Viney NR, Sudholz C, Mount R, Tetreault-Campbell S, Marvanek S, Buettikofer H, Gonzalez D, Crawford D, Schmidt RK and Lewis S (2018) *Impact and risk analysis for the Hunter subregion. Product 3-4 for the Hunter subregion from the Northern Sydney Basin Bioregional Assessment*. Department of the Environment and Energy, Bureau of Meteorology, CSIRO and Geoscience Australia, Australia.

Subject	Issue Raised	Response
Water (Continued)		The Modification would result in some minor changes to catchment excision associated with the Mount Pleasant Operation as a result of the emplacement extension. HEC (2017) reviewed the potential impact of the catchment excision and concluded it would not result in an increase to the total maximum excised catchment associated with the Mount Pleasant Operation (at any one time), due to the delay to the commencement of the approved North Pit. Therefore, any potential incremental impacts from the Modification on the Hunter River catchment would be negligible (HEC, 2017). HEC (2017) also undertook contemporary site water balance modelling, including an assessment of potential water take and discharges to the Hunter River. The outcomes of the contemporary modelling undertaken by HEC (2017) are not materially different to the outcomes of the water management system modelling presented in the 1997 EIS (ERM Mitchell McCotter, 1997). MACH Energy provides some selected quotations from Herron et al (2018) below that may provide the Department and the IPC with a more nuanced understanding of the key findings of Herron et al (2018) with respect to the concerns that have been raised by the HTBA (emphasis added). Section 3.7 – Summary: *The Assessment is regional and cumulative, and provides an important framework for local-scale environmental impact assessments of new coal resource developments, and the local geological, hydrogeological and hydrological modelling that support them. The results do not replace the need for detailed site-specific studies, nor should they be used to supplant the results of detailed studies that may be required under state legislation. …* Section 3.7.4 – Gaps, limitations and opportunities: *This impact and risk analysis allows governments, industry and the community to focus on areas that are potentially impacted when making regulatory, water management and planning decisions. Due to the conservative nature of the modelling, the greatest confidence in results is for those areas that are very unlikely to be impacted (that is, outside the zone of potential hydrological change). …* Section 3.1.7.2 – Hydrological changes: *Potentially large changes in flow regime are predicted in the Wyong River, Loders Creek, Saddlers Creek, Wollar Creek and two unnamed creeks near the Mount Pleasant and Mount Thorley–Warkworth coal mines. The unnamed creeks are small, hence impacts are localised.* *The Hunter Regulated River, into which these creeks flow, is not very sensitive to changes in inflows from these creeks. …* *Results for the Hunter Regulated River show that decreases in mean annual flow of between 1% and 2% are very likely, and decreases of more than about 2% upstream of the junction with Loders Creek, or 3% to 4% downstream of this point to Greta, are very unlikely. These changes need to be interpreted with caution, since the Australian Water Resources Assessment river model (AWRA-R) has not been constructed to specifically represent operational management of releases from Glenbawn and Glennies Creek storages.* *Generally, the modelled changes are small relative to the interannual variability due to climate, especially for annual flow and high-flow days. There is a chance that increases in low-flow days could affect flow regimes in streams near all the mining areas, with smaller intermittent and perennial streams close to additional coal resource developments in the Central Hunter and Lower Hunter particularly at risk.*

Subject	Issue Raised	Response
Water (Continued)	The HTBA and OD Hydrology assert Modification 3 includes significant changes to the Mount Pleasant Operation water management system, particularly with respect to the Fines Emplacement Area.	Modification 3 does not propose to alter the fines reject emplacement strategy, not does it materially alter the principles of the water management system that is being implemented at the approved Mount Pleasant Operation. MACH Energy notes that the NSW Dams Safety Committee sets design criteria and regulates compliance for regulated water storages in NSW. The Mount Pleasant Operations fines emplacement is being constructed in accordance with contemporary NSW Dams Safety Committee design criteria as well as Waste Management, Water Management and Mining Operation Plans approved by relevant NSW Government agencies. The water management system of the Mount Pleasant Operation will continue to be operated in accordance with an approved Water Management Plan.
	The HTBA and OD Hydrology raised the concern that was initially raised by the EPA, with respect to the potential for spills from the Fines Emplacement Area.	MACH Energy notes this issue has already been addressed in the Response to Submissions report and the associated response to the Department's Request for Additional Information. Further, the Department's environmental assessment report states: *5.3.4 Water Discharges* *The design of Mount Pleasant's water management system indicates the potential for water discharges from various water storage facilities, including ED2 to Sandy Creek, SD1 and SD3 to Rosebrook Creek and SD4 and RLD to the Hunter River. As mentioned in Section 4.1, the EPA questioned whether water discharges from these water storage facilities would be treated before discharge to the receiving environment. Due to the quality of water contained in the Fines Emplacement Area (FEA), the EPA recommended that no water be discharged from it.* *MACH responded that its water storage facilities were designed to overflow only if a storm event exceeds their design capacity. Any water discharge from site must be covered by an EPL issued by the EPA and, should HRSTS credits be required, they would have to be obtained before discharging to the Hunter River. MACH stated that it would at all times prioritise pumping to the Mount Pleasant pit over unauthorised discharges from water storage facilities to the environment, even if it would cause operational disruption.* *In order to prevent discharge from the FEA, MACH has designed it to operate with sufficient freeboard to sustain a 1% AEP 72-hour storm event with no spill to the environment. Modelling, applying 121 years of rainfall data, indicates that no spills would occur at these design limits. Further, the FEA is classified as a 'High C Consequence Category' dam under the Dams Safety Act 1978 and would be managed in accordance with the DSC's requirements. MACH has committed to constructing and operating all sediment and environment dams in accordance with DoI Water's 'Blue Book'. The mine's existing Water Management Plan also includes requirements for dam design in its component Erosion and Sediment Control Plan.*

Subject	Issue Raised	Response
Water (Continued)	HTBA and OD Hydrology raised a concern about the reliability of water supply for the Mount Pleasant Operation.	The Site Water Balance Review report (HEC, 2017) has predicted the annual licensed extraction volumes from the Hunter River based on the water access licences held by MACH Energy and concludes water supply reliability would exceed 97% under average conditions (HEC, 2017). The outcomes of the contemporary modelling undertaken by HEC (2017) were not materially different to the outcomes of the water management system modelling presented in the 1997 EIS (ERM Mitchell McCotter, 1997). MACH Energy notes the HEC (2017) water balance analysis did not include allowance for potential operational water sharing opportunities that may arise with Dartbrook or Bengalla Mines over the life of the Mount Pleasant Operation to reduce water demand from the Hunter River. MACH Energy would undertake periodic updates to the site water balance modelling. This would allow MACH Energy to maintain the continuity of water supply for dust suppression by identifying and implementing additional management measures as required. These may include (HEC, 2017): • acquiring additional water access licences; • adding or relocating pumps to provide additional supply to truckfill points and/or installing additional truckfill points on the Mine Water Dam or other available water storages; • increasing the available water storage capacity on-site (e.g. providing additional in pit storage capacity) to provide additional buffer capacity; and/or • adjusting coal washing rates in the CHPP (and potentially producing additional bypass coal) as necessary in particularly dry periods to maintain continuity of dust suppression activities. The above is consistent with Condition 25, Schedule 3 of Development Consent DA 92/97 which requires MACH Energy to adjust its operations to match water supply.
Noise and Blasting	HTBA and ARUP assert additional background noise monitoring should have been undertaken to support the Modification 3 Noise and Blasting Assessment (the NBA) to determine noise limits for the Project.	The proposed Modification 3 is not a new State Significant Development application. The approved Mount Pleasant Operation is required to comply with the noise limits prescribed in Development Consent DA 92/97. These limits reflect the varying background noise environment and the fact that the NSW environmental assessment process recognises it may not be reasonable to achieve default noise level criteria at the nearest private residences to an industrial facility. The NBA conducted for the Modification has generally adopted the approved Mount Pleasant Operation noise limits as defined in Development Consent DA 92/97 (i.e. subject to addressing some past inconsistencies and addressing additional residences indentified by the MACH Energy contemporary dwelling verification exercise). The NBA includes analysis of each newly identified receiver and the applied noise limits. In addition, it is noted the NSW EPA is responsible for the regulation of operational noise in NSW and stated the following with respect to its review of the Modification NBA: *The noise and vibration components of the MACH Energy application to modifiy the consent for the Mount Pleasant Open Cut Coal Mine was reviewed. The EPA can support the proposed Modification subject to the following changes.* *…*

Subject	Issue Raised	Response
Noise and Blasting (Continued)	HTBA and ARUP assert the NBA should have assessed low frequency noise.	As described in the NBA and Response to Submissions report, low frequency noise has been considered, however based on experience at other mining operations in NSW, MACH Energy does not anticipate low frequency noise will be a significant operational concern with the application of contemporary assessment methodology (i.e. DEFRA[4] methodology).
	HTBA and ARUP dispute the use of the term "low noise" in relation to the mobile equipment modelled.	As described in the NBA, the use of "low noise" mobile equipment is a noise management commitment in relation to the approved Mount Pleasant Operation. The sound power levels modelled are sourced from Wilkinson Murray's extensive database. Wilkinson Murray's database is based on measurements taken at a number of operating mines in Australia.
	HTBA and ARUP assert the noise modelling conducted in support of the NBA should have been calibrated based on existing operational conditions.	Given the Mount Pleasant Operation was in the construction phase at the time the NBA was prepared, operational noise model calibration could not physically be undertaken. MACH Energy notes daytime mining commenced at the Mount Pleasant Operation in late 2017 and night-shift mining has not yet commenced.
	HTBA and ARUP assert the blasting criteria assessed in the NBA are only relevant to structures and therefore there is no assessment of impacts on humans or livestock.	MACH Energy notes the HTBA raised the same concern in its original submission on Modification 3. As described in the Response to Submissions report, the NBA did assess the potential blasting emissions of the Mount Pleasant Operation against the relevant criteria outlined in the guidelines prepared by the Australian and New Zealand Environment Council (1990) *Technical Basis for Guidelines to Minimise Annoyance due to Blasting Overpressure and Ground Vibration*, including criteria for the protection of human comfort. The Response to Submissions report also noted, as described in the NBA, the Project Blast Management Plan would include measures to reduce the potential overpressure and vibration impacts of the Mount Pleasant Operation, including procedures for the management of livestock in close proximity to blast events. Relevantly, the approved Blast Management Plan includes blasting performance criteria and procedures for livestock management when blasting in proximity to livestock.
	HTBA asserts the NBA impacts are understated, particularly due to the mining plan comments raised by Mr White.	Refer to the response on mine planning above.
	ARUP asserts the NBA should have used monitored blast results from proximal mines rather than theoretical levels.	MACH Energy notes the blast prediction equations adopted in the NBA are based on Wilkinson Murray's database that includes data from over 7,600 records of blasts undertaken in the Hunter Valley, including the Mt Arthur Coal Mine.

[4] Refers to the methodology developed by the United Kingdom Department for Environment, Food and Regional Affairs. This methodology has been adopted in the new *Noise Policy for Industry* (EPA, 2017).

Subject	Issue Raised	Response
Noise and Blasting (Continued)	HTBA and ARUP assert the NBA was completed using outdated modelling software that is not considered best practice.	MACH Energy notes the NBA is a contemporary noise and blasting assessment conducted by a professional acoustic consultancy (Wilkinson Murray). MACH Energy notes ARUP makes particular reference to the *Draft Industrial Noise Guideline* (EPA, 2015). This consultation draft document was never in-force and was in fact superseded in October 2017 by the *Noise Policy for Industry* (EPA, 2017). The conclusions ARUP has extrapolated from the *Draft Industrial Noise Guideline* are not valid in the context of the guideline that is in-force for new projects – i.e. the *Noise Policy for Industry* (EPA, 2017). Irrespective of the above, the NBA was conducted in accordance with the *Industrial Noise Policy* (EPA, 2000), which is the applicable NSW noise assessment guidance document for Modification 3. MACH Energy notes the Department and NSW EPA did not have any comments regarding the use of the Environmental Noise Model for the NBA.
Aboriginal Heritage	The HTBA and GML Heritage assert there is no discussion of intangible sites or social values.	These issues are similar in nature to issues previously raised in relation to Modification 3. Section 6.2.6 of the Modification 3 Response to Submissions report summarises the concerns raised by a number of horse breeding related NGOs and provides a response to these concerns. These included the level of assessment conducted, cumulative impacts, and impacts on aesthetic or intangible impacts. In regard to cultural (intangible) and/or social values and cumulative impacts, numerous archaeological and cultural assessments (including consideration of cumulative impacts) have been undertaken at the Mount Pleasant Operation and immediate surrounds. These include (but are not limited to): • Aboriginal cultural heritage assessments and archaeological surveys for the Mount Pleasant Operation: - *Mt Pleasant Coal Lease, New Muswellbrook, NSW: Archaeological survey for Aboriginal sites* (Rich, 1995). - *Mt Pleasant Mine EIS North-West Emplacement Area Archaeological Investigations* (ERM Mitchell McCotter, 1996). - *Mt Pleasant Mine EIS Fine Rejects Emplacement Area Archaeological Investigations* (ERM Mitchell McCotter, 1997b). - *Aboriginal Heritage Assessment: Mount Pleasant Block 1* (HLA-Envirosciences, 2007). - *Mount Pleasant Indigenous Archaeological Assessment Stage 2* (McCardle Cultural Heritage Management, 2007). - *Aboriginal Cultural Survey Stage 3 Mount Pleasant, NSW* (Roberts, 2007). - *Coal & Allied Stage 4 Mount Pleasant Aboriginal Cultural and Heritage Report* (Nur-Run-Gee, 2007). - *Technical Advisor Report: Cultural Heritage Investigations Stage 5 Mount Pleasant Mine, Hunter Valley* (Scarp Archaeology, 2009). - *Technical Advisor Report: Cultural Heritage Investigations, Conveyor Easement Survey, Mount Pleasant Mine, Hunter Valley* (Scarp Archaeology, 2010a). - *Technical Advisor Report: Cultural Heritage Investigations of the Proposed Broomfield Aboriginal Cultural Heritage Conservation Area for the Mount Pleasant Coal Mine, Hunter Valley, Muswellbrook LGA* (Scarp Archaeology, 2010b). - *Technical Advisor Preliminary Advice: Cultural Heritage Investigations - Mount Pleasant Mine, Hunter Valley Stage 6* (Scarp Archaeology, 2011). - *Mount Pleasant Operation Rail Modification Aboriginal Cultural Heritage Assessment* (Niche, 2017).

Subject	Issue Raised	Response
Aboriginal Heritage (Continued)		• Application for an Aboriginal Heritage Impact Permit (AHIP) at the Mount Pleasant Operation (Coal & Allied, 2011). • Application for an AHIP at the Mount Pleasant Operation (Coal & Allied and MACH Energy, 2016). • Various archaeological assessments and surveys undertaken for the Bengalla Coal Mine (Rich, 1993; Environmental Resources Management Australia, 2007a). • Various salvage reports (Environmental Resources Management Australia, 2007b; ENSR Australia, 2008; RPS 2018). • On-going salvage, investigations and Aboriginal heritage management activities at the Mount Pleasant Operation. As required by the *National Parks and Wildlife Regulation, 2009,* the *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (Department of Environment Climate Change and Water, 2010) and other relevant guidelines (or preceding versions of these guidelines), relevant investigations included consultation with the Aboriginal community specifically on cultural heritage values (i.e. tangible and intangible values). Cultural information can be provided by the Aboriginal community at any stage in the development of these studies (e.g. at meetings, over the phone, in person, in written submissions etc.) and is required to be recorded and included in the documentation (except where the information has been requested to be kept confidential). An application to the NSW Office of Environment and Heritage (OEH) for an AHIP (e.g. the 2011 and 2016 AHIP applications made to OEH for the Mount Pleasant Operation), requires both tangible and intangible values to be considered. As quoted in one of the numerous guidelines relevant to an application for an AHIP, i.e. *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (Department of Environment Climate Change and Water, 2010): *The information required to inform the assessment of cultural significance includes:* • *the location of the objects and places in this development area that are of cultural and social significance to the local Aboriginal community* • *the types of objects/sites that occur across the development area (e.g. early occupation sites, dreaming sites, art sites, ceremonial, resource areas, quarries, missions etc)* • *a description of the significance of all the Aboriginal objects/sites to Aboriginal people past and present.* OEH has regulatory oversight of Aboriginal cultural heritage impact assessment and stated the following with respect to Modification 3 (OEH, 2017): *OEH reviewed the EA for impacts to Aboriginal cultural heritage … All Aboriginal heritage sites within the emplacement extension footprint are appropriately managed under existing permits and management plans. … Therefore, OEH has no concerns with the proposal.* The existing permit referred to by OEH is AHIP #C0002053, which extends across the full extent of the Modification 3 emplacement extension areas. AHIP #C0002053 was granted by OEH in 2016 following a rigorous assessment and application process, including consultation with Registered Aboriginal Parties. AHIP #C0002053 and the Aboriginal Heritage Management Plan (most recently approved in July 2017) cover the full extent of the Modification 3 emplacement extension areas. Therefore, no changes to the AHIP or the management measures described in the approved Aboriginal Heritage Management Plan are required for Modification 3.

Subject	Issue Raised	Response
Aboriginal Heritage (Continued)	The HTBA and GML Heritage assert the cumulative impact to Aboriginal heritage across the region has not been considered.	As described above, this issue has previously been raised and addressed in the Modification 3 Response to Submissions report. Notwithstanding, the response provided above, including reference to previous Aboriginal cultural heritage studies that have been prepared in accordance with the various codes and guidelines that govern preparation of Aboriginal cultural heritage assessments, demonstrates the comprehensiveness of previous assessments, including consideration of cumulative impacts.
	The HTBA and GML Heritage assert the impacts arising from the development and rehabilitation of final landforms on the Aboriginal cultural landscape are not considered.	With regard to rehabilitation and final landforms, the approved AHMP describes the short and long term management of salvaged materials. This includes an option to re-distribute salvaged material across rehabilitated lands: *"The temporary storage facility will continue to be used to store recovered Aboriginal objects until a long-term arrangement is agreed upon. This may include (but is not limited to) the permanent transferral of Aboriginal objects to a RAP, transferral to another party for storage and/or display (such as a local museum, historical society or educational institution) … and/or the relocation of the objects on the rehabilitated land".* This commitment would not change due to the proposed Modification 3 emplacement extension. MACH Energy therefore submits that the assessment undertaken as part of Modification 3 in relation to Aboriginal heritage is adequate and has been undertaken to the extent necessary.
Historic Heritage	The HTBA and GML Heritage reports assert the significance assessments are cursory, and the impact assessment is inadequate on the basis that there is no assessment of historic cultural landscapes or appropriate curtilages.	These issues are similar in nature to issues previously raised in relation to Modification 3. Section 6.2.6 of the Modification 3 Response to Submissions report summarises the concerns raised by a number of horse breeding related NGOs (including the level of assessment undertaken) and provides a response to these concerns. In regard to historic heritage, the significance assessments have been informed by detailed historical research and site inspections undertaken over a number of years. The level of detail is appropriate to assessment of the significance of the identified heritage places. Three sites of some local heritage significance have been identified in the vicinity of the emplacement extension. Two of these (a house and a potential dairy site) would be disturbed by the approved Mount Pleasant Operation regardless of the Modification. One of these (the house) has already been removed in consultation with Muswellbrook Shire Council following archival recording and relevant materials offered to a local historic society. The other site (a potential dairy site with very little evidence remaining on the surface) will be managed in accordance with an approved historic heritage management strategy. As a potential archaeological site, it makes no visual or aesthetic contribution to a cultural landscape. The third site (a quarry) would not be directly disturbed by the proposed Modification. As described in the Modification 3 Response to Submissions report, the NSW Heritage Council (2017) submission on Modification 3 advised no comment was required from the Heritage Council on the Modification proposal in relation to historic heritage. MACH Energy submits that the assessment undertaken as part of Modification 3 in relation to historic heritage is adequate and has been undertaken to the extent necessary.

Subject	Issue Raised	Response
Visual Impact Assessment	HTBA and Mr Michael Wright assert there is no recognition in the Environmental Assessment of the proximity to the towns of Muswellbrook and Aberdeen and the importance of the Hunter River valley landscape to these towns.	MACH Energy notes that the Mount Pleasant Operation is a major existing approved and operating mine, and the proposed Modification 3 emplacement extension would remain off the Hunter River floodplain. Further, MACH Energy confirms the emplacement extension and other proposed changes to the final landform would alter views of the Mount Pleasant Operation, particularly when viewed from Muswellbrook and other local vantage points. The modified landform is intended to improve the overall appearance of the approved Mount Pleasant Operation landform by incorporating the following concepts: • the final landform surface of the upper lifts on the eastern side of the emplacement would be varied to break up the horizon line when viewed from the east; and • the toe of the emplacement would be extended to better align with the underlying topography. Delay to the commencement of the approved North Pit would result in some approved Mount Pleasant Operation mine landforms not being visible at some viewpoints during the life of the Modification. The Environmental Assessment identified the mine landforms would not be visible from receivers in Aberdeen and Kayuga during the life of the Modification as a result of an intervening vegetated ridgeline. During mining, the visual impacts of the Mount Pleasant Operation incorporating the Modification would be largely unchanged in Muswellbrook. However, the landform improvements have been specifically targeted at improving views of the final landform from Muswellbrook and other local vantage points (post-mining). As a result, the proposed landform improvements would further reduce the visual impacts following rehabilitation, by improving visual integration of the final landform with surrounding landscape topography and vegetation patterns and textures.
	HTBA and Mr Michael Wright assert a greater viewshed should have been considered in the Environmental Assessment, and cite the approved Landscape Management Plan prepared for Coal & Allied in 2012 that describes a greater viewshed.	MACH Energy notes that the current approved Landscape Management Plan prepared for Coal & Allied in 2012 shows a Mount Pleasant Operation mine landform that extends all the way to the northern boundary of the site, as it includes some development of the approved North Pit and associated waste rock emplacement landforms in the period to 2020 (reproduced as Figure 4 in Mr Wright's advice). It follows that the potential viewshed of the Modification 3 mine landform, where mining activities would remain constrained to South Pit in the proposed Modification period, would have a lesser visual catchment than a mine that extends over two adjoining open cut pits as is shown in the current approved Landscape Management Plan for the Mount Pleasant Operation. Refer also to the discussion above.
	HTBA and Mr Michael Wright assert insufficient representative views were simulated in the Environmental Assessment.	Refer to the response above with respect to the Modification 3 viewshed. Further, MACH Energy notes that a suggestion can always be made that additional, or alternative, viewpoints could have been simulated. However, the simulations provided in the Environmental Assessment were selected to be generally representative of key viewpoints originally assessed in 1997 and of particular relevance to the Modification. Viewpoint 1 was also particularly selected due to its proximity to a local shopping centre on Hill Street.

Subject	Issue Raised	Response
Visual Impact Assessment	HTBA and Mr Michael Wright assert that there is a lack of a buffer between the local towns and/or horse studs and the Mount Pleasant Operation.	MACH Energy is not sure what constitutes a "buffer" in the stated context of the concern as the towns and particularly the studs are all separated by some material distance (which acts to reduce potential visual impacts), plus some have intervening topography/vegetation and more significant distance separation. Notwithstanding, there are a few important factors that MACH Energy would note with respect to this articulated concern: • the Mount Pleasant Operation is a major approved and operating coal mine; • the initial Mount Pleasant Operation mine landforms are already visible from many locations in Muswellbrook and various locations on the local road network, including the New England Highway and this visibility will continue to increase as the mine progressively expands in accordance with existing approvals; and • the Modification 3 emplacement extension is proposed to improve the final landform outcome, particularly when viewed from locations to the east.
	HTBA and Mr Michael Wright assert thatindirect and dynamic visual impacts of mining are a very significant risk to the operation and viability of studs and raise a concern that these impacts were not considered in the Environmental Assessment.	Modification 3 would not materially alter the indirect and dynamic or night-lighting impacts of the approved Mount Pleasant Operation from more distant viewpoints such as the New England Highway, apart from temporal duration of operations and the proposed improvements to the out of pit emplacement final landform. Further, it is noted that the construction of the proposed emplacement extension would be undertaken in the daytime to manage potential noise emissions (as is articulated in the Environmental Assessment), and hence no material alteration to the approved night-lighting impacts of the approved Mount Pleasant operation would occur due to its construction. The maximum extent of the open cut pit and the approved maximum rate of mining would be unchanged by the Modification.
	HTBA and Mr Michael Wright assert that insufficient detail has been provided on the proposed modified mine landforms and staging.	The level of detail presented in the Environmental Assessment is appropriate for the Modification assessment (i.e. presenting conceptual final landform design for the emplacement extension). To inform the NSW Government's consideration of potential revisions to the rehabilitation related conditions in Development Consent DA 92/97, MACH Energy also prepared a Mount Pleasant Preliminary Rehabilitation Strategy (Attachment 2 to the Response to Submissions report) that outlined MACH Energy's position on these matters. MACH Energy notes the Department has subsequently provided updated draft Conditions for consideration by the IPC in its letter dated 24 July 2018 that provides a requirement for MACH Energy to prepare a Rehabilitation Strategy in consultation with the Division of Resources and Geoscience and Muswellbrook Shire Council and a Rehabilitation Management Plan in consultation with the Department, Office of Environment and Heritage, Department of Primary Industries and Muswellbrook Shire Council. Should the proposed Modification 3 landform improvements be approved, MACH Energy submits it is appropriate that further detail would be documented in these specific contexts in consultation with Government, and in accordance with Development Consent DA 92/97.
	HTBA and Mr Michael Wright assert the visual impact assessment of Modification 3 was deficient due to the various complaints above.	MACH Energy submits that the Environmental Assessment and associated supporting material has in fact assessed visual impacts to the extent necessary for the Modification. MACH Energy also notes the proposed landform improvements were a commonly raised positive aspect of the Modification in supporting submissions.