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23/07/2021

Dear Mr Masters

**Mt Pleasant Coal (DA92/97)  
Annual Review 2020 (revised)**

Reference is made to the revised Annual Review for the period 1 January 2020 to 31 December 2020, submitted to the Department of Planning, Industry and Environment (the Department) on 22 July 2021 as required under Schedule 5 condition 3 of DA92/97, as modified (the consent).

The Department has reviewed the Annual Review and considers it to satisfy the reporting requirements of the approval and the Department's *Annual Review Guideline* (October 2015). Please make publicly available a copy of the 2020 Annual Review on the company website.

Please note that the Department's acceptance of this Annual Review is not endorsement of the compliance status of the project. Non-compliances identified in the Annual Review will be assessed in accordance with the Department's Compliance Policy. Further correspondence may be sent in relation to non-compliances.

Should you need to discuss the above, please contact Heidi Watters, Team Leader Compliance on 02 6575 3401 or email [compliance@planning.nsw.gov.au](mailto:compliance@planning.nsw.gov.au)

Yours sincerely

A handwritten signature in black ink that reads 'H Watters'.

Heidi Watters  
Team Leader Northern  
Compliance

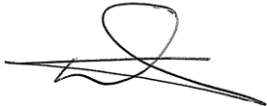
As nominee of the Planning Secretary



**MOUNT PLEASANT OPERATION**

**2020 ANNUAL REVIEW &  
ANNUAL REHABILITATION REPORT**

<b>Document ID:</b>	20200120		
<b>Company:</b>	MACH Energy Australia Pty Ltd		
<b>Effective Date:</b>	23 July 2021	<b>Status:</b>	Issued for Use
<b>Approved By:</b>	Richard Bailey	<b>Revision Number:</b>	00

MOUNT PLEASANT OPERATION 2020 ANNUAL REVIEW	
Name of Operation	Mount Pleasant Operation
Name of Operator	MACH Energy Australia Pty Ltd
Development Consent	Development Consent DA 92/97
Name of Holder of Development Consent	MACH Energy Australia Pty Ltd
Mining Leases	Mining Lease 1645, Mining Lease 1708, Mining Lease 1709, Mining Lease 1713, Mining Lease 1750 and Mining Lease 1808
Name of Holder of Mining Leases	MACH Energy Australia Pty Ltd J.C.D Australia Pty Ltd
Water Licences	Water Access Licences – see Table 3 Bore Licence Certificate 20BL168734
Name of Holder of Water Licences	MACH Energy Australia Pty Ltd
MOP Start Date	1 July 2020
MOP End Date	30 June 2021
Annual Review Start Date	1 January 2020
Annual Review End Date	31 December 2020
<p>I, Richard Bailey, certify that this audit report is a true and accurate record of the compliance status of the Mount Pleasant Operation for the period 1 January to 31 December 2020 and that I am authorised to make this statement on behalf of MACH Energy Australia Pty Ltd.</p> <p>Note.</p> <p>a) <i>The Annual Review is an ‘environmental audit’ for the purposes of section 122B(2) of the Environmental Planning and Assessment Act 1979. Section 122E provides that a person must not include false or misleading information (or provide information for inclusion in) an audit report produced to the Minister in connection with an environmental audit if the person knows that the information is false or misleading in a material respect. The maximum penalty is, in the case of a corporation, \$1 million and for an individual, \$250,000.</i></p> <p>b) <i>The Crimes Act 1900 contains other offences relating to false and misleading information: section 192G (Intention to defraud by false or misleading statement—maximum penalty 5 years imprisonment); sections 307A, 307B and 307C (False or misleading applications/information/documents—maximum penalty 2 years imprisonment or \$22,000, or both).</i></p>	
Name of Authorised Reporting Officer	Richard Bailey
Title of Authorised Reporting Officer	General Manager Operations
Signature of Authorised Reporting Officer	
Date	31 March 2021

## STATEMENT OF COMPLIANCE

The compliance status of the Mount Pleasant Operation with its relevant approval conditions at the end of the reporting period (31 December 2020) is provided in Table SoC-1.

**Table SoC-1  
Statement of Compliance**

Were all conditions of the relevant approval(s) complied with?	
Development Consent DA 92/97	No
EPBC 2011/5795	Yes
Environment Protection Licence 20850	No
Authorisation 459	Yes
Mining Lease 1645	Yes
Mining Lease 1708	Yes
Mining Lease 1709	Yes
Mining Lease 1713	Yes
Mining Lease 1750	Yes
Mining Lease 1808	Yes
Water licences (as per Table 3)	Yes
Bore Licence Certificate 20BL168734	Yes

Table SoC-2 summarises non-compliances with the approval conditions. Non-compliances are characterised as shown in Table SoC-3. During the reporting period, there were five observations that resulted in non-compliances against sixteen approval conditions (Table SoC-2).

Final outcomes of the investigation of the blast fume event on 15 June 2020 are to be determined, and therefore this event is not included in Table SoC-2 below. Further details regarding the event are included in Sections 5.2 and 10.2 of this Annual Review. Outcomes of the investigation will be reported in the next Annual Review.

**Table SoC-2  
Summary of Non-Compliances**

Relevant Approval	Condition Number	Condition Description	Compliance Status	Comment	Report Section
Development Consent DA 92/97	S2 C12	Applicant must ensure all plant and equipment used on site is maintained and operated in a proper and efficient manner.	NC	See Table 29	Section 10.2
Development Consent DA 92/97	S3 C20	Applicant must comply with all air quality criteria.	NC	See Table 29	Section 10.2
Development Consent DA 92/97	S3 C22	Applicant must comply with all air quality operating conditions.	NC	See Table 29	Section 10.2
Development Consent DA 92/97	S3 C23	Applicant must prepare and implement an Air Quality and Greenhouse Gas Management Plan.	NC	See Table 29	Section 10.2
Development Consent DA 92/97	S3 C24	Applicant must ensure that there is a meteorological station operating in the vicinity of the site for the life of the development.	NC	See Table 29	Section 10.2
Development Consent DA 92/97	S3 C49	Applicant must minimise waste and ensure that the waste generated is appropriately stored, handled or disposed of.	NC	See Table 29	Section 10.2

Relevant Approval	Condition Number	Condition Description	Compliance Status	Comment	Report Section
Development Consent DA 92/97	S3 C52	The Applicant must prepare and implement a Waste Management Plan.	NC	See Table 29	Section 10.2
Statement of Commitments	-	Air Quality Management will be undertaken according to the Air Quality Management Plan.	NC	See Table 29	Section 10.2
EPL 20850	O1.1	Licensee must carry out activities in a competent manner.	NC	See Table 29	Section 10.2
EPL 20850	O2.1	All plant and equipment used on site is maintained and operated in a proper and efficient manner.	NC	See Table 29	Section 10.2
EPL 20850	O3.1	Premises must be maintained in a condition which minimises dust emissions.	NC	See Table 29	Section 10.2
EPL 20850	O3.2	Activities must be carried out in a manner that will minimise dust emissions.	NC	See Table 29	Section 10.2
EPL 20850	O3.3	All trafficable, coal storage and vehicle manoeuvring areas must be maintained in a way that minimises dust emissions.	NC	See Table 29	Section 10.2
EPL 20850	M2.2	Air Quality must be continuously monitored.	NC	See Table 29	Section 10.2
EPL 20850	M4.1	Meteorological monitoring must be undertaken continuously.	NC	See Table 29	Section 10.2
EPL 20850	M8.1	Licensee must record PM <sub>10</sub> levels at a specified location and frequency.	NC	See Table 29	Section 10.2

**Table SoC-3  
Compliance Status Key for Table SoC-2 – Non-Compliances**

Risk Level	Colour Code	Comment
High	Non-compliant	Non-compliance with potential for significant environmental consequences, regardless of the likelihood of occurrence.
Medium	Non-compliant	Non-compliance with: <ul style="list-style-type: none"> <li>potential for serious environmental consequences, but is unlikely to occur; or</li> <li>potential for moderate environmental consequences, but is likely to occur.</li> </ul>
Low	Non-compliant	Non-compliance with: <ul style="list-style-type: none"> <li>potential for moderate environmental consequences, but is unlikely to occur; or</li> <li>potential for low environmental consequences, but is likely to occur.</li> </ul>
Administrative Non-compliance	Non-compliant	Only to be applied where the non-compliance does not result in any risk of environmental harm (e.g. submitting a report to government later than required under approval conditions).

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## 1 INTRODUCTION

The Mount Pleasant Operation (MPO) is located in the Upper Hunter Valley of New South Wales (NSW), approximately 3 kilometres (km) north-west of Muswellbrook and approximately 50 km north-west of Singleton (Figure 1). The villages of Aberdeen and locality of Kayuga are also located approximately 5 km north-northeast and 1 km north of the MPO boundary, respectively (Figure 1). MACH Energy Australia Pty Ltd (MACH Energy) purchased the MPO from Coal & Allied Operations Pty Ltd (Coal & Allied) in 2016.

MACH Mount Pleasant Operations Pty Ltd is the manager of the MPO as agent for, and on behalf of, the unincorporated Mount Pleasant Joint Venture between MACH Energy (95 per cent [%] owner) and J.C.D. Australia Pty Ltd (5% owner).

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

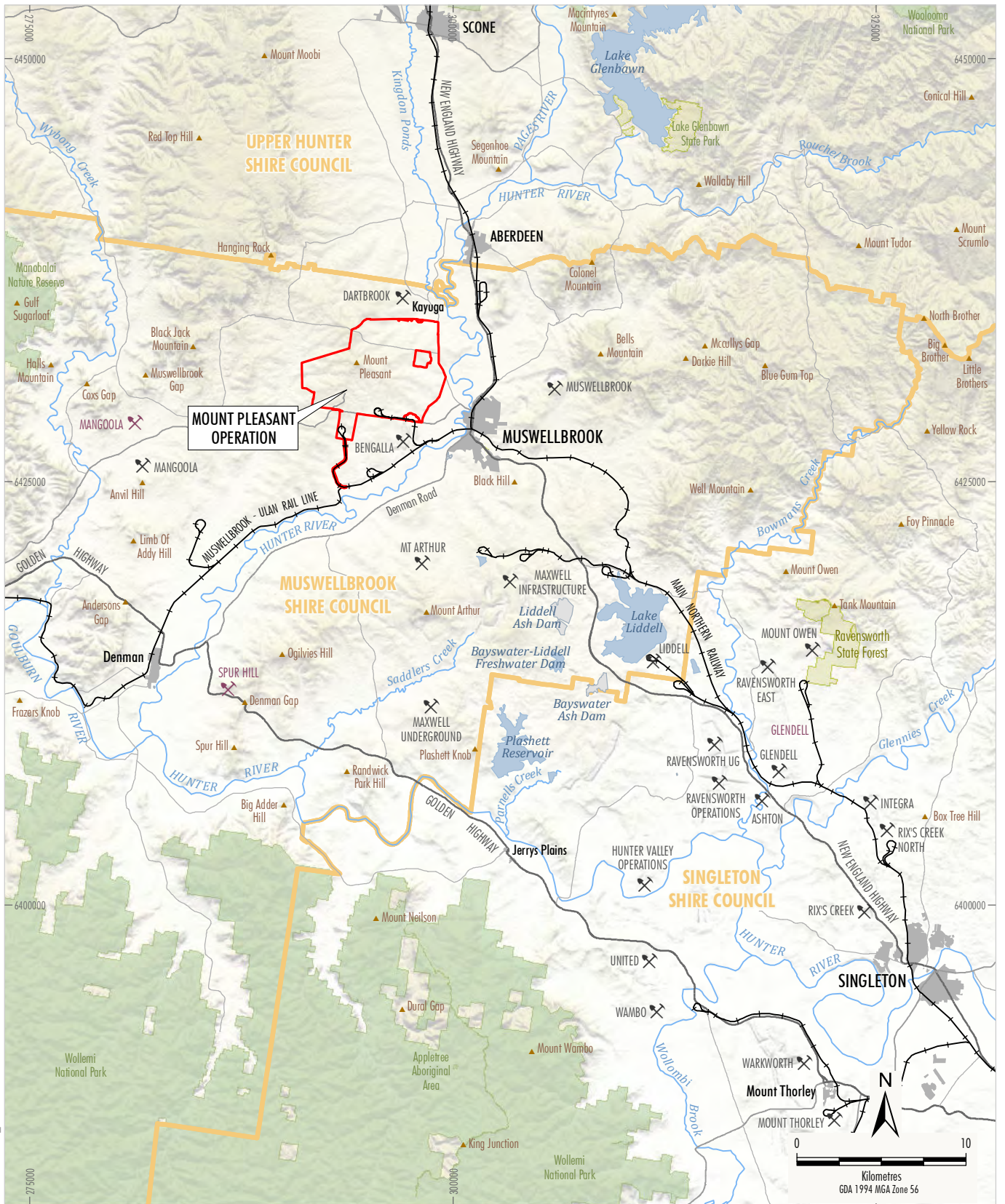
The MPO Modification 1 (MOD 1) was submitted for approval on 19 May 2010. MOD 1 included the provision of an infrastructure envelope for siting the mine infrastructure, the provision of an optional conveyor/service corridor linking the MPO facilities with the Muswellbrook-Ulan Rail Line and modification of the existing Development Consent DA 92/97 boundaries to accommodate the optional conveyor/service corridor and minor administrative changes. MOD 1 was approved on 19 September 2011.

The MPO South Pit Haul Road Modification (MOD 2) was submitted for approval on 30 January 2017 with a supporting Environmental Assessment (EA) prepared by MACH Energy (MACH Energy, 2017a). MOD 2 proposed to realign an indicative internal haul road to enable more efficient access to the South Pit open cut. MOD 2 was approved on 29 March 2017.

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

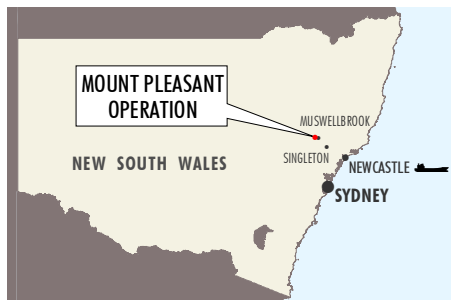
The MPO Rail Modification (MOD 4) was submitted on 18 December 2017. MOD 4 proposed the following changes:

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



MACH 18-03-AR 2020\_2018

Source: NSW Spatial Services (2021)



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

**MACHEnergy**  
MOUNT PLEASANT OPERATION  
Project Location

**Figure 1**

MOD 4 was approved on 16 November 2018. Appendix 2 of the modified Development Consent DA 92/97 illustrates the Conceptual Project Layout Plan of the approved MPO at 2021 and 2025, Approved Surface Disturbance Plan and Conceptual Final Landform incorporating the MOD 4 infrastructure relocations (Development Consent DA 92/97 Attachment 1). MOD 4 construction work commenced during the reporting period.

Figure 2 shows the general arrangement of the MPO, as well as the extent of disturbance and rehabilitation at the end of 2020 and the forecast additional disturbance and rehabilitation proposed for 2021.

## 1.1 PURPOSE AND SCOPE

This Annual Review details MACH Energy's environmental and community performance for the reporting period 1 January 2020 to 31 December 2020. This Annual Review has been prepared in accordance with the Department of Planning, Industry and Environment (DPIE) *Post-approval requirements for State significant mining developments - Annual Review Guideline – October 2015* (Department of Planning and Environment [DPE], 2015a) and MACH Energy's statutory approvals (Section 2), specifically Condition 3, Schedule 5 of Development Consent DA 92/97 and Condition 3(f) of Mining Leases (MLs) 1645, 1708, 1709, 1713, 1750 and 1808.

This Annual Review is not intended to be an exhaustive description of MACH Energy's operations, approvals and activities, rather it is a summary of MACH Energy's compliance status with respect to MACH Energy's statutory approvals.

In March 2017, the Secretary of the DPIE revised the submission timing of the MPO Annual Review to the end of March each year.

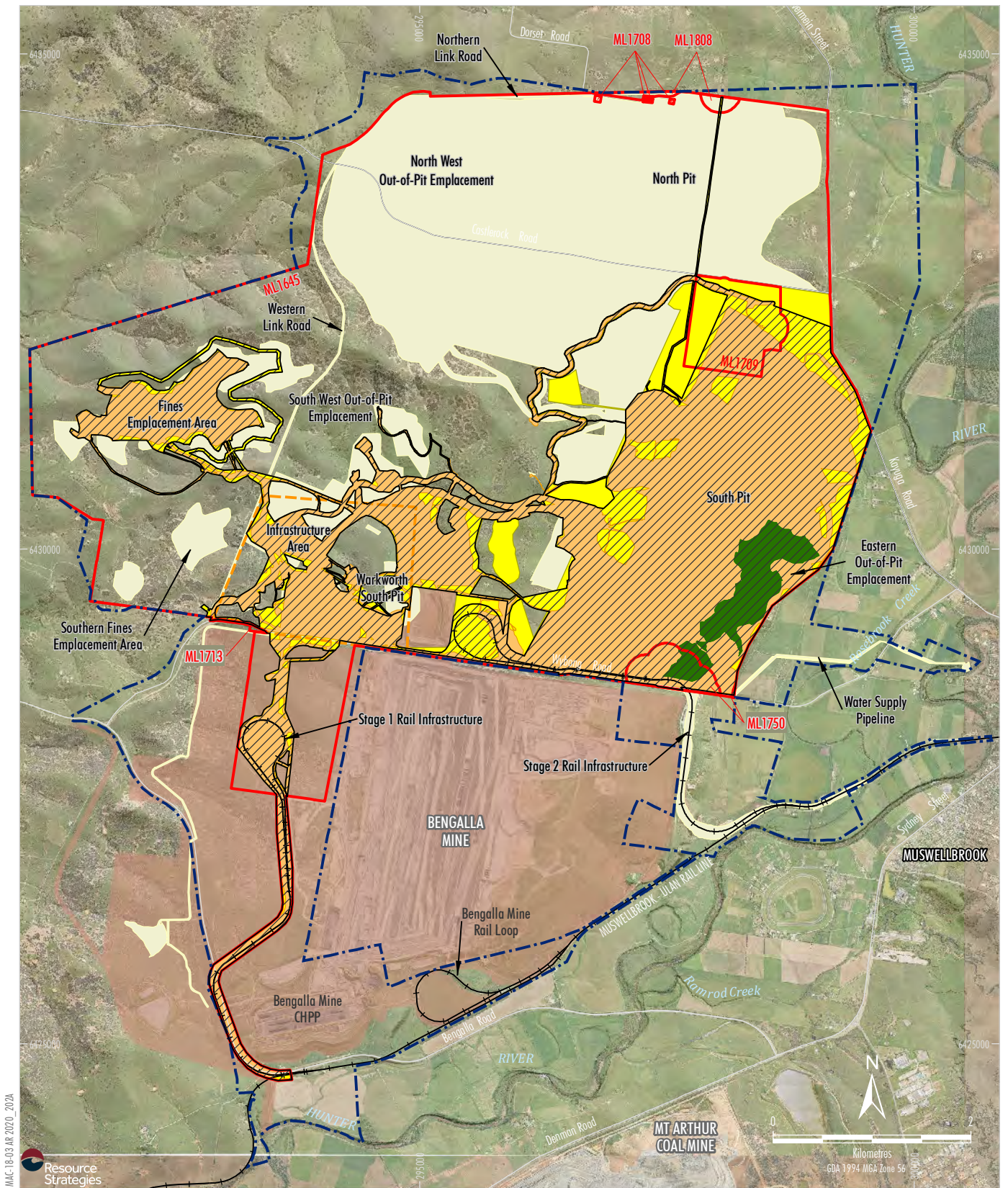
This Annual Review is distributed to a range of stakeholders including government authorities, Muswellbrook Shire Council (MSC) and members of the Community Consultative Committee (CCC). A copy of the Annual Review will be made publicly available on the MACH Energy website (<https://machenergyaustralia.com.au/mount-pleasant/documentation/>).

## 1.2 KEY PERSONNEL

Contact details for key MACH Energy personnel responsible for the environmental and community management of the MPO are provided in Table 1.

**Table 1**  
**Key Personnel**

Position	Contact	Phone Number
General Manager - Operations	Richard Bailey	0417 412 962
General Manager - Resource Development	Chris Lauritzen	0438 985 197
Environmental Superintendent	Andrew Reid	0411 440 912
Land and Property Superintendent	Ian Webber	0428 162 856
External Relations Manager	Ngaire Baker	0400 214 885



MACH-18-03-AR-2020\_202A  
Resource Strategies

- LEGEND**
- Mining Lease Boundary
  - Development Consent Boundary
  - Approximate Extent of Existing/Approved Surface Development (DA92/97) <sup>1</sup>
  - Infrastructure Area Envelope
  - MOP Footprint <sup>2</sup>
  - End 2020 Active Disturbance Area
  - End 2020 Rehabilitation Area
  - 2021 Forecast Additional Disturbance Area
  - Bengalla Mine Approved Disturbance Boundary (SSD-5170)

**NOTES**

<sup>1</sup> Excludes some incidental Project components such as water management infrastructure, infrastructure within the Infrastructure Area Envelope, offsite coal transport infrastructure, road diversions, access tracks, topsoil stockpiles, power supply, temporary offices, signalling, other ancillary works and construction disturbance.

<sup>2</sup> Mount Pleasant Operation Mining Operations Plan and Rehabilitation Management Plan (July 2020)

Source: MACH Energy (2021); NSW Spatial Services (2021); Department of Planning and Environment (2016) Orthophoto: MACH Energy (Jan 2021)

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MOUNT PLEASANT OPERATION  
2020 Mining Activities

**Figure 2**

## 2 APPROVALS

The MPO operates under a number of statutory approvals, leases and licences that regulate activities at the MPO (Tables 2 and 3).

**Table 2**  
**Consent, Lease and Licence Details**

Consent/Lease/Licence	Authority	Grant/Renewal	Expiry Date
Development Consent DA 92/97 <sup>1</sup>	DPIE	22/12/1999	-
EPBC Approval 2011/5795	DAWE	16/11/2020 <sup>2</sup>	28/10/2040
EPL 20850	EPA	24/11/2016 <sup>3</sup>	-
Authorisation 459	MEG	07/04/1992	08/04/2018 <sup>4</sup>
ML 1645	MEG	17/12/2010	17/12/2031
ML 1708	MEG	02/02/2015	02/02/2036
ML 1709	MEG	02/02/2015	02/02/2036
ML 1713	MEG	02/02/2015	02/02/2036
ML 1750	MEG	03/03/2017	03/03/2038
ML 1808	MEG	29/09/2020	29/09/2041
Bore Licence Certificate 20BL168734	Dol - L&W	13/03/2003	Perpetuity

Note:

EPBC = *Environment Protection and Biodiversity Conservation Act 1999*;

DAWE = Commonwealth Department of Agriculture, Water and the Environment (formerly Commonwealth Department of the Environment and Energy);

EPL = Environment Protection Licence, ML = Mining Lease, EPA = NSW Environment Protection Authority;

MEG = Mining, Exploration and Geosciences within the Department of Regional NSW (formerly Division of Resources and Geoscience); and Dol - L&W = NSW Department of Industry – Lands & Water.

<sup>1</sup> EPBC Approval 2011/5795, originally granted on 29 February 2012, was extended from 28 October 2035 to 28 October 2040 on 16 November 2020.

<sup>2</sup> Development Consent DA 92/97 has been modified four times since the original approval was granted in 1999. Approval for MOD 1 was granted on 19 September 2011, approval for MOD 2 was granted on 29 March 2017, approval for MOD 3 was granted on 24 August 2018 and approval for MOD 4 was granted on 16 November 2018.

<sup>3</sup> EPA varied EPL 20850 on 12 August 2020. This Annual Review references the varied EPL 20850 conditions.

<sup>4</sup> A renewal request has been submitted and is currently awaiting approval. The existing approval will continue until the renewal is approved.

During this reporting period MACH Energy personnel also undertook refresher training on environmental legislation which was facilitated by a third-party legal firm.

MACH Energy will continue to manage its existing Water Access Licences (WALs) (Table 3) and acquire new licences, as required during the next reporting period.

**Table 3**  
**MACH Energy Water Access Licences (Water Management Act 2000)**

Water Sharing Plan	Water Source	Licence Number	Entitlement (Unit)
<i>Water Sharing Plan for the Hunter Unregulated and Alluvial Water Sources, 2009</i>	Hunter Regulated River Alluvial Water Source	18253	74
		18266	68
		18206	24
		18199	5
		18122	33
		18131	60
		21503	21
	Muswellbrook Water Source	23935	41
	Sydney Basin – North Coast Groundwater Source	41437	640
		40298	90
	Krui River Water Source	18336	12
	Hunter Regulated River Water Source	879	224
		880	124
		1113	366
		973	3
		974	210
		975	8
		988	156
		989	8
		1307	37.5
		1229	480
		1230	8
		1259	33.2
		1227	99
		1258	5
		992	75
		7808	36
		702	267
		1260	4.8
		993	265
		1308	15.1
		604	183
		605	8
		677	24
		1338	17.5
		662	9
663		16	
10775		243	
41438	455		
638	125		
639	134		



## 2.1 MANAGEMENT PLANS

Development Consent DA 92/97 requires MACH Energy to submit management plans and strategies prior to carrying out any development on-site. The currently approved MPO management plans are summarised in Table 4.

**Table 4**  
**Approved Management Plans**

Plan	Relevant Development Consent DA 92/97 Condition	Approval Date
Mining Operations Plan and Rehabilitation Management Plan (MOP) (1 July 2019 – 30 June 2020)	Schedule 3, Condition 56	28 June 2019
Mining Operations Plan and Rehabilitation Management Plan (MOP) (1 July 2020 – 30 June 2021) <sup>1</sup>	Schedule 3, Condition 56	1 July 2020
Noise Management Plan (NMP)	Schedule 3, Condition 9	31 October 2019
Air Quality and Greenhouse Gas Management Plan (AQGGMP)	Schedule 3, Condition 23	24 May 2019
Aboriginal Heritage Management Plan (AHMP)	Schedule 3, Condition 36	31 October 2019
Water Management Plan (WMP)	Schedule 3, Condition 28	31 October 2019 <sup>2</sup>
Blast Management Plan (BMP)	Schedule 3, Condition 17	14 April 2020
Visual Impact Management Plan (VIMP) (previously the Landscape Management Plan)	Schedule 3, Condition 47	31 October 2019
Waste Management Plan (WasteMP)	Schedule 3, Condition 52	14 January 2019
Rehabilitation Strategy	Schedule 3, Condition 54	16 May 2019
Biodiversity Management Plan	Schedule 3, Condition 32	31 October 2019
Environmental Management Strategy	Schedule 5, Condition 1	14 January 2019 <sup>3</sup>
Construction Environmental Management Plan (CEMP)	Schedule 3, Condition 44I	10 March 2020

<sup>1</sup> The approved MOP meets the requirements for a Rehabilitation Management Plan (RMP) (Condition 56, Schedule 3 of Development Consent [DA 92/97]).

<sup>2</sup> The WMP was revised during the reporting period following the completion of the Independent Environmental Audit (IEA) undertaken by MACH Energy in accordance with Condition 9, Schedule 5 of Development Consent DA 92/97. The revised WMP was lodged with DPIE for approval on 26 November 2020.

<sup>3</sup> The Environmental Management Strategy was revised during the reporting period to update the MPO environmental monitoring locations to reflect the approval of site-wide Environmental Management Plans (updated following the approval of MOD 4), and to update the complains management procedure. The revised Environmental Management Strategy was lodged with DPIE for approval on 26 March 2020.

A summary of updates approved for the listed management plans during the reporting period is provided below:

- The MOP was updated to include contemporary information on the MPO's current mine planning, including construction, mine development, topsoil management and rehabilitation. The MOP term was updated to 1 July 2020 to 30 June 2021.
- The BMP has been updated to relocate blast monitoring site B-VO2 to more accurately represent sensitive receivers.
- The CEMP was prepared to manage construction-related impacts associated with the construction of the MOD 4 infrastructure.

In accordance with Condition 4, Schedule 5 of Development Consent DA 92/97, MACH Energy will review, and if necessary, revise, the strategies, plans and programs required under the consent within three months of the submission of this Annual Review, to the satisfaction of the Secretary of the DPIE.

### 3 OPERATIONS SUMMARY

#### 3.1 MINING OPERATIONS

MACH Energy commenced substantial works at the MPO on 25 November 2016. During 2020, MACH Energy completed the following construction activities on site, including:

- commencement of Rail Loop, Train Load-Out and Hunter River Pump Station relocation approved as part of MOD 4;
- completion of relocating the 66-kilovolt (kV) powerline to enable full development of mining in Pits E and F;
- construction of a permanent flocculant plant to dose secondary flocculant at the discharge point into the Fines Emplacement Area;
- installation of visual bunding and vegetation screening as required to provide screening of the MPO from sensitive viewpoints;
- completion of clean water diversion drainage to the west of Pits B, C, D, E, F to prevent clean water accumulation in the open cut; and
- ongoing progressive rehabilitation of temporary construction areas and mining areas.

Mining activities that occurred during the reporting period included:

- continuation of steady-state coal extraction within Pits A, B, C and D;
- continued mine development and steady-state coal extraction from Pits E and F;
- ongoing modifications and upgrades to the Coal Handling and Preparation Plant (CHPP) including replacement of the Tertiary Sizing Station and Fines Product Cyclones; and
- ongoing progressive rehabilitation of the Eastern Out of Pit Overburden Emplacement Area (including reprofiling of areas in accordance with geomorphic design principles [i.e. including macro and micro relief]).

During the reporting period, a total of 8.54 Mt of ROM coal was produced.

The amounts of waste rock, overburden, ROM coal, coarse reject, fine reject and product coal produced during the previous reporting period, current reporting period and forecast for the next reporting period, are outlined in Table 5.

**Table 5  
Production Summary**

Material	Approved Limit	2019 Reporting Period (Actual)	2020 Reporting Period (Actual)	2021 Reporting Period (Forecast)
Waste Rock/Overburden (Mbcm)	N/A	18.49	24.04	25.83
ROM Coal (Mt)	10.5 Mt per calendar year <sup>1</sup>	5.97	8.54	10.5
Coarse Reject (Mt)	N/A	0.09	1.22	2.00
Fine Rejects (Mt)	N/A	0.04	0.39	0.91
Saleable Product (Mt)	N/A	5.61	6.11	7.43

Note:

Mbcm = million bank cubic metres, N/A = not applicable and Mt = million tonnes.

<sup>1</sup> Condition 6, Schedule 2 of Development Consent DA 92/97 relevantly states:

*The Applicant must not extract more than 10.5 million tonnes of ROM coal from the site in a calendar year.*

### 3.2 OTHER OPERATIONS

Key operational conditions outlined in Schedule 2 of Development Consent DA 92/97 and their corresponding compliance status during the reporting period are outlined in Table 6.

### 3.3 ACTIVITIES FORECAST FOR THE NEXT REPORTING PERIOD

The following construction activities are forecast to be undertaken during the 2021 reporting period:

- ongoing construction of Rail Loop, Train Load-Out and relocation of the Hunter River Pump Station;
- potential commencement of decommissioning and removal of the existing rail spur and loop, and associated rail infrastructure<sup>1</sup>;
- installation of visual bunding and vegetation screening as required, to provide screening of the MPO from sensitive viewpoints;
- continuation of MOD 4 construction activities;
- commencement of new clean water diversion drainage at the perimeter of the Fines Emplacement Area in preparation for the next dam lift; and
- progressive rehabilitation of temporary construction areas and mining areas.

The following mining-related activities are forecast to be undertaken during the 2021 reporting period:

- continuation of steady-state coal extraction within Pits A, B, C, D, E and F;
- continued mine development of the South Pit and associated waste emplacement;
- ongoing minor modifications to the CHPP; and
- ongoing progressive rehabilitation of the Eastern Out of Pit Overburden Emplacement Area (including reprofiling of areas in accordance with geomorphic design principles [i.e. including macro and micro relief]).

Further information regarding proposed construction and mining activities in 2021 is provided in the approved MOP.

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<sup>1</sup> Subject to the completion of relocation of the Rail Loop, Train Load-Out and Hunter River Pump Station approved as part of MOD 4.

**Table 6**  
**Key Operational Conditions Met**

Operational Condition from Development Consent DA 92/97		Condition Met?	Comment
Limits on Consent (Condition 5, Schedule 2)	5. <i>The Applicant may carry out mining operations on the site until 22 December 2026.</i> <i>Note: Under this consent, the Applicant is required to rehabilitate the site and carry out additional undertakings to the satisfaction of both the Secretary and DRG. Consequently this consent will continue to apply in all other respects - other than the right to conduct mining operations - until the rehabilitation of the site and these additional undertakings have been carried out satisfactorily.</i>	Yes	-
Coal Extraction (Condition 6, Schedule 2)	6. <i>The Applicant must not extract more than 10.5 million tonnes of ROM coal from the site in a calendar year.</i>	Yes	ROM coal extraction did not exceed 10.5 Mt during 2020.
Coal Transport (Condition 7, Schedule 2)	7. <i>Product coal may only be transported from the site by rail.</i>	Yes	Product coal was transported from the site by rail only.
Train Movement (Condition 8, Schedule 2)	8. <i>The Applicant must ensure that train movements at the site (ie arrival or dispatch) do not exceed:</i> <i>(a) a maximum of 18 per day; or</i> <i>(b) 6 per day, averaged over each calendar year.</i> <i>Note: In this condition, “day” means any 24-hour period.</i>	Yes	The maximum number of train movements at the site was 12 in one day. The average number of train movements was approximately 4 per day.
Structural Adequacy (Condition 9, Schedule 2)	9. <i>All new buildings and structures, and any alterations or additions to existing buildings and structures, that are part of the development, must be constructed in accordance with:</i> <i>(a) the relevant requirements of the BCA; and</i> <i>(b) any additional requirements of SA NSW where the building or structure is located on land within a declared Mine Subsidence District.</i> <i>Notes:</i> <ul style="list-style-type: none"> <li>• <i><u>Under Part 6 of the EP&amp;A Act, the Applicant is required to obtain construction and occupation certificates for the proposed building works;</u></i></li> <li>• <i><u>Part 8 of the EP&amp;A Regulation sets out the requirements for the certification of the development;</u></i></li> <li>• <i><u>The development is located in the Muswellbrook Mine Subsidence District. Under Section 21 of the Mine Subsidence Compensation Act 2017, the Applicant is required to obtain the Chief Executive of SA NSW’s approval before carrying out certain development in a Mine Subsidence District.</u></i></li> </ul>	Yes	All buildings constructed during the reporting period were constructed in accordance with the Building Code of Australia (BCA) and the Subsidence Advisory (SA) NSW.

**Table 6 (Continued)**  
**Key Operational Conditions Met**

Operational Condition from Development Consent DA 92/97		Condition Met?	Comment
Demolition (Condition 10, Schedule 2)	10. <i>The Applicant must ensure that all demolition work on site is carried out in accordance with AS 2601-2001: The Demolition of Structures, or its latest version.</i>	Yes	Demolition work was carried out in accordance with AS 2601-2001.
Protection of Public Infrastructure (Condition 11, Schedule 2)	11. <i>Unless the Applicant and the applicable authority agree otherwise, the Applicant must:</i> <i>(a) repair, or pay the full costs associated with repairing, any public infrastructure that is damaged by the development; and</i> <i>(b) relocate, or pay the full costs associated with relocating, any public infrastructure that needs to be relocated as a result of the development,</i> <i><u>Note: This condition does not include matters that are expressly provided for in the conditions of this consent, such as the maintenance of public roads.</u></i>	Yes	During the reporting period, mine affected properties were vacated and their electricity was disconnected. This included removal of associated power poles and wires services.  MACH Energy incurred the full costs of these removals.
Operation of Plant and Equipment (Condition 12, Schedule 2)	12. <i>The Applicant must ensure that all plant and equipment used on site, or to transport coal from the site, is:</i> <i>(a) maintained in a proper and efficient condition; and</i> <i>(b) operated in a proper and efficient manner.</i>	No	All plant and equipment in use at the MPO is maintained in suitable condition. During the site inspection component of the Independent Environmental Audit (IEA), the auditor considered that some items of mobile equipment were not being operated in a proper and efficient manner and additional water carts could have been employed, based on the visual assessment levels in the EPA's Dust Assessment Handbook (EPA, 2019).

**Table 6 (Continued)  
Key Operational Conditions Met**

Operational Condition from Development Consent DA 92/97		Condition Met?	Comment
Operation of Plant and Equipment (Condition 12, Schedule 2) (Continued)			<p>At the time of the observation, MPO personnel considered the dust levels to be in the 'Dust emissions are increasing an operations should consider if further action to reduce dust is required' category (EPA, 2019). Due to the context of the activities and meteorological conditions (i.e. significant distance from the site boundary and sensitive receptors, light winds generally from the south-west [i.e. not towards key closest receptors]), additional dust control were not warranted. Further, no real time dust alarms were triggered at the time of the observations. Notwithstanding, water carts were called to attend the pit area in question.</p> <p>Six out of the seven recommendations regarding this non-compliance were completed by MACH Energy during the report period (Appendix E). The final recommendation is currently being investigated by MACH Energy (Table 26).</p>

#### 4 ACTIONS REQUIRED FROM PREVIOUS ANNUAL REVIEW

A reconciliation of the actions required by the DPIE, the previous Annual Review and actions taken in response by MACH Energy during the reporting period are outlined in Table 7.

**Table 7**  
**Actions Required by the DPIE and 2019 Annual Review**

Action	Requested by	Action Taken by Operator	Section Reference
<i>Operations Summary – please include a summary of train movements and the calculated average daily train movements for the reporting period to confirm compliance with Schedule 2 condition 8 of the consent.</i>	DPIE	A summary of train movements and the calculated average daily train movements for the reporting period have been specified in the section within this Annual Review.	Section 3.2 and Appendix F
<i>Complaints – please provide a comparison of complaint number and type to the previous five years and a discussion and/or graph showing complaint trends.</i>	DPIE	The comparison of complaint number and type to the previous five years and a discussion and/or graph showing complaint trends have been added in the Community section within this Annual Review.	Section 8
<i>Revision of the BMP to revise the location of monitoring location B-VO02.</i>	2019 Annual Review	BMP was revised to show the relocated monitoring site B-V02.	Section 2.1
<i>Update of the MOP/RMP.</i>	2019 Annual Review	MOP was updated during the reporting period.	Section 2.1
<i>Continue to progress action items from the erosion and sediment control internal audit in February 2019.</i>	2019 Annual Review	Erosion and sediment control actions were continued in accordance with the 2019 Annual Review and the 2020 IEA Report (Appendix D).	Section 7.1
<i>Continue progressive rehabilitation of final landform profiles.</i>	2019 Annual Review	Progressive rehabilitation was continued.	Section 7
<i>Continued operational improvements to minimise potential noise and air quality impacts.</i>	2019 Annual Review	Management measures undertaken to minimise potential noise and air quality impacts have been summarised in sections within this Annual Review.	Sections 5.2, 5.3 and 5.4
<i>Commencement of the rail loop and train load out relocation and Hunter River Pipeline relocation, as per MOD 4.</i>	2019 Annual Review	Status of the MOD 4 construction works has been included in the section within this Annual Review.	Section 3
<i>Continuation of coal washing and generation/emplacment of fine reject material.</i>	2019 Annual Review	Coal washing and reject emplacement continued during the reporting period.	Section 3.1
<i>Increasing coal export volumes/rates and associated train movements.</i>	2019 Annual Review	Production summary and a summary of train movements have been included in sections within this Annual Review.	Sections 3.1 and 3.2, and Appendix F
<i>Completion of associated dams and drains to manage sediment control and water infrastructure in the new pits.</i>	2019 Annual Review	A summary of construction activities undertaken during the reporting period has been included in the section within this Annual Review, including completion of water management structures.	Section 3.1

**Table 7 (Continued)**  
**Actions Required by the DPIE and 2019 Annual Review**

Action	Requested by	Action Taken by Operator	Section Reference
<i>IEA to occur in accordance with Schedule 5, Condition 9 of Development Consent DA 92/97.</i>	2019 Annual Review	The IEA was undertaken and finalised during the reporting period.	Section 9
<i>Trigger levels for surface water monitoring sites W11-W16 to be established.</i>	2019 Annual Review	The WMP was revised to include trigger levels for sites W11-W16 and updated pH trigger levels for sites W2 and W6A during the reporting period. The WMP was lodged with DPIE for approval during the reporting period.	Sections 2.1 and 6.1.
<i>PH trigger levels for surface water monitoring sites W2 and W6A to be reviewed and updated if necessary.</i>			



## 5 ENVIRONMENTAL PERFORMANCE

### 5.1 METEOROLOGY

Meteorological monitoring was undertaken during the reporting period at the mine meteorological stations along Kayuga Road (M-WS4) and Wybong Road (M-WM2) (Figure 3). Data collected included 10 minute, hourly and 24 hourly wind speed, wind direction, sigma, temperature, humidity, solar radiation and rainfall measurements. Data collected during the reporting period has been summarised for rainfall, temperature and wind in the following subsections. M-WS4 has been utilised for this summary as the original meteorological station at the MPO.

#### 5.1.1 Rainfall

During the reporting period, 785.9 millimetres (mm) of rain was recorded over 65 wet days at the MPO weather station M-WS4. The highest daily rainfall was 60.0 mm on 17 February 2020.

There was an increase in the cumulative rainfall and the number of wet days for the reporting period in comparison to the 2019 reporting period (357.1 mm and 29 days, respectively). Cumulative rainfall at the MPO has generally been consistent with 2019 levels since the commencement of the MPO, except for 2016 and 2020 where significantly more rainfall fell on site.

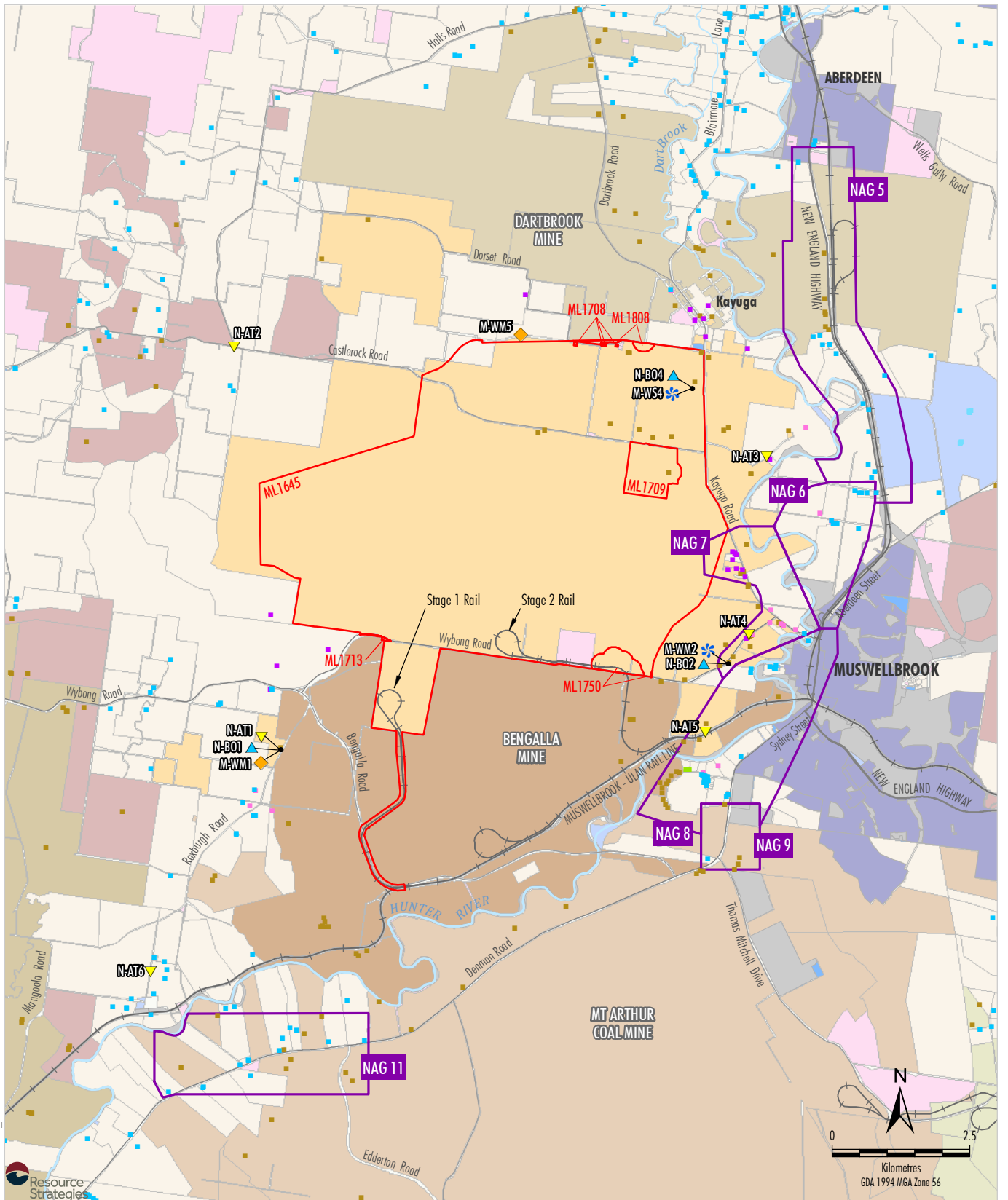
The monthly rainfall distribution, number of wet days and cumulative rainfall is summarised in Table 8. Monthly rainfall records and cumulative rainfall over the reporting period are shown in Chart 1.

#### 5.1.2 Temperature

During the reporting period, the maximum temperature recorded at the MPO weather station M-WS4 was 41.1 degrees Celsius (°C) (1 December) and the minimum temperature recorded was -1.8°C (12 May). Monthly minimum and maximum temperatures derived from hourly temperature measurements are presented in Table 9. Monthly mean temperatures are shown in Chart 2. Monthly temperatures at the MPO in 2020 are generally consistent with those measured since 2017.

#### 5.1.3 Wind Speed and Direction

During the reporting period, the majority of prevailing winds were from the south-southeast and north-west. Only a very minor percentage of winds were generated from the south-west and almost none were generated from the north-east. This is consistent with trends observed in previous Annual Reviews (Coal & Allied, 2014, 2015 and 2016; MACH Energy, 2017b; MACH Energy, 2018b; MACH Energy, 2019 and MACH Energy, 2020a). An annual wind rose is presented in Chart 3.



MAC:18-03 AR 2020\_2044



Source: MACH (2021); NSW Spatial Services (2021)

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

- Noise Assessment Group (NAG) (DA 92/97)
- Category of Rural Residence under DA92/97**
- Mine-owned
- Privately-owned - Acquisition on Request
- Privately-owned - Mitigation on Request
- Privately-owned - Mitigation/Acquisition on Request\*
- Other Privately-owned
- Monitoring Sites**
- ▼ Noise Monitoring, Attended Noise
- ▲ Noise Monitoring, Real-time Noise Monitoring Site
- ✪ Weather Station
- ◆ Weather Mast

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

**MACHEnergy**  
 MOUNT PLEASANT OPERATION  
 Noise and Meteorological  
 Monitoring Sites

**Figure 3**

**Table 8  
Rainfall Summary 2020**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Monthly Rainfall (mm)	74.2	131.4	55.5	75.5	47.1	27.8	81.6	26.4	31.8	94.4	29.2	111.0
Cumulative Rainfall (mm)	74.2	205.6	261.2	336.7	383.7	411.5	493.1	519.5	551.3	645.7	674.9	785.9
Wet Days*	6	9	7	4	5	2	6	4	4	6	3	9

Note:

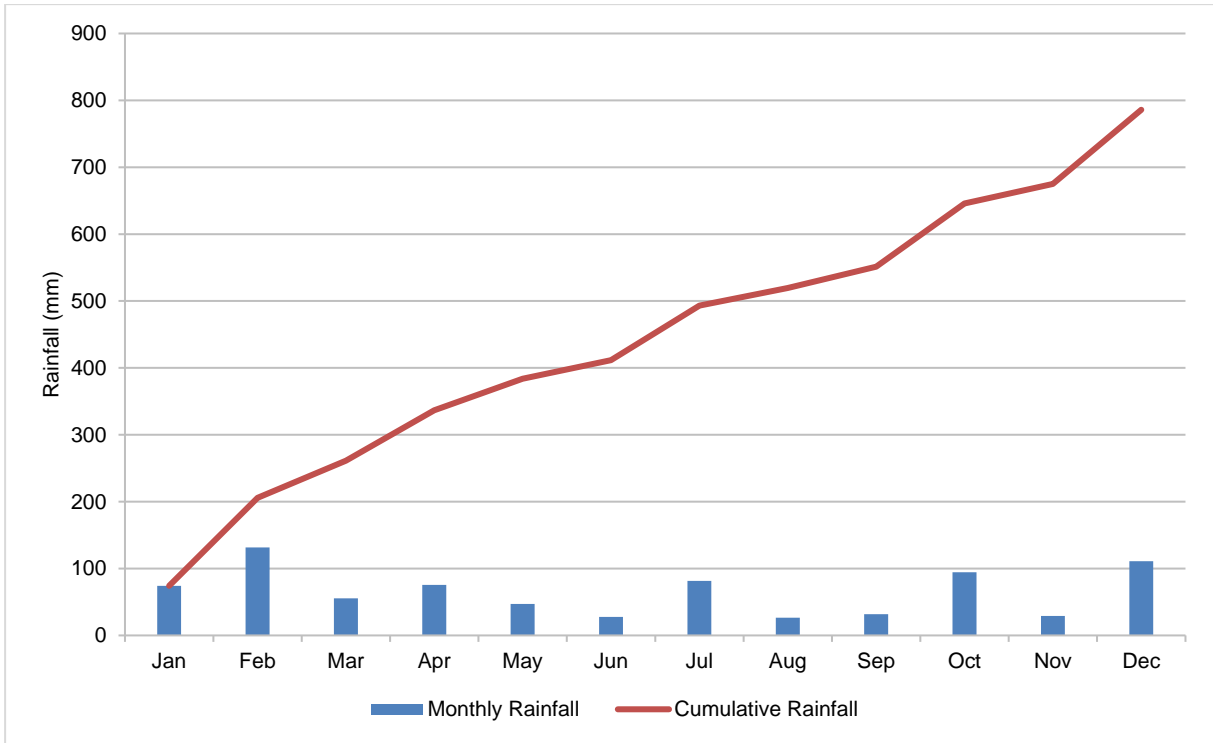
\* Wet days are classified as days receiving rainfall greater than 2 mm.

**Table 9  
Temperature Summary 2020**

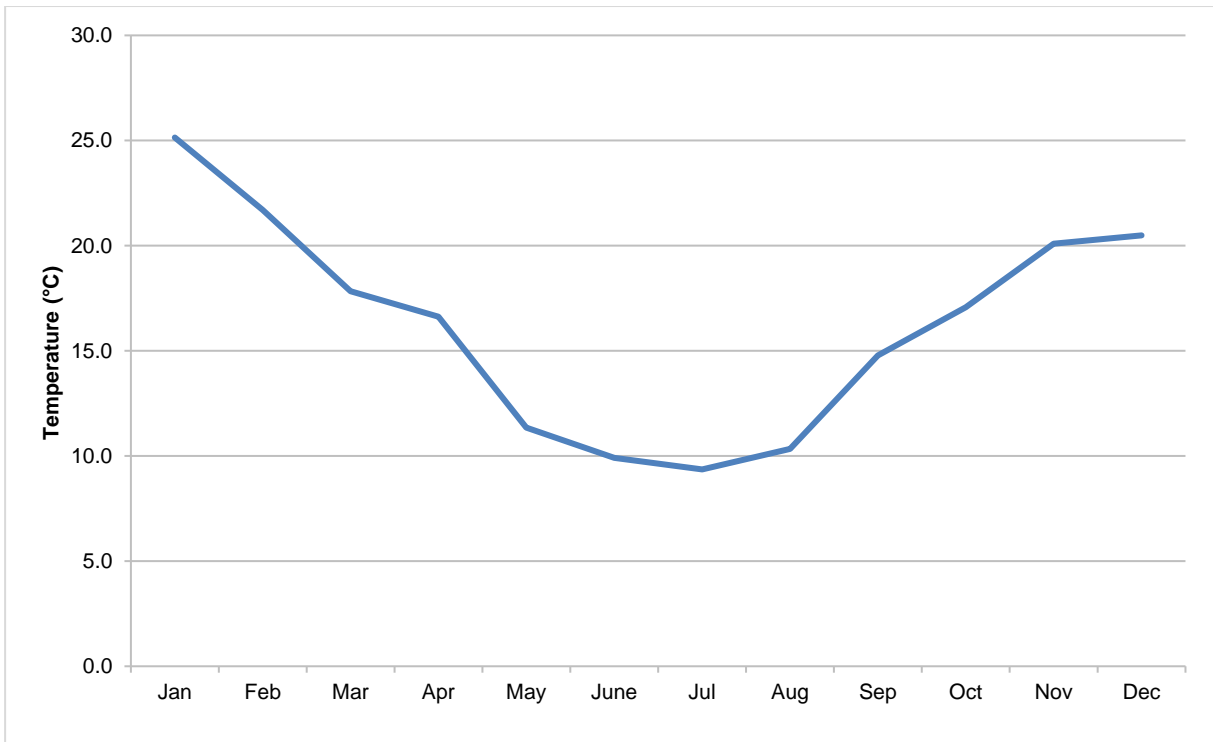
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Minimum Temperature (°C)	16.1*	12.8	8.4	4.9*	-1.8*	-0.8*	-1.2*	-0.9*	1.0*	5.5	6.4	7.6
Maximum Temperature (°C)	41.1*	40.7	33.0	27.1*	24.8*	19.7*	20.3*	24.0*	27.7*	31.5	40.7	41.1

Note:

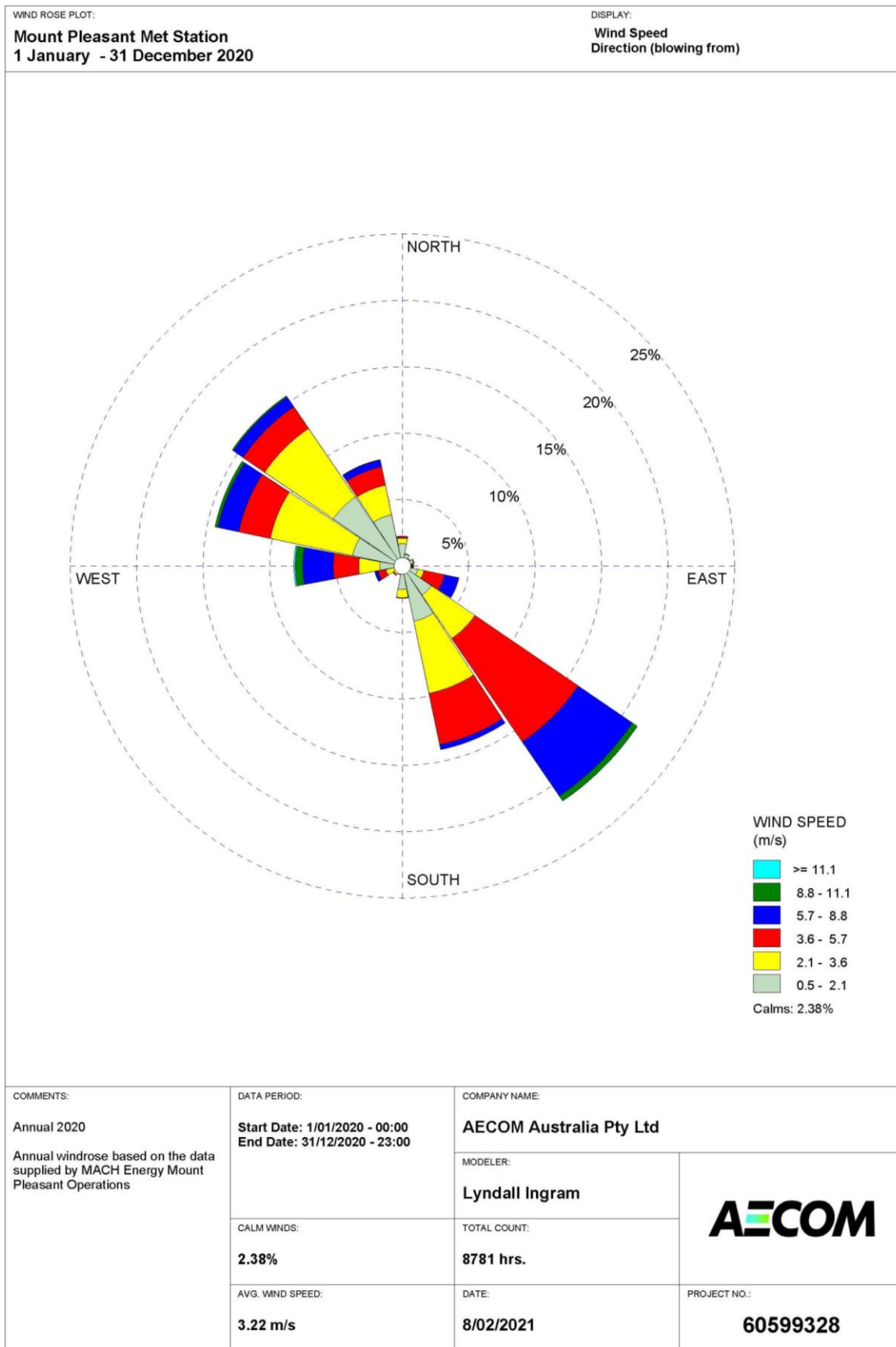
\* Indicates some temperature data taken from the Muswellbrook NW: Upper Hunter Air Quality Monitoring Network Monitor due to technical issues with M-WS4.



**Chart 1: MPO Monthly and Cumulative Rainfall 2020**



**Chart 2: MPO Monthly Mean Temperature 2020**



**Chart 3: MPO Annual Wind Rose 2020**

## 5.2 NOISE

Key noise criteria for the MPO are defined in Tables 3 and 5 of Development Consent DA 92/97 (Conditions 3 and 5, Schedule 3) and EPL 20850 (Condition P1.3). Additional noise conditions relating to land acquisition, noise mitigation upon request, rail noise, noise monitoring and preparation of the NMP are also detailed in these approval documents.

### 5.2.1 Approval Criteria and Management Plan Requirements

#### *Development Consent DA 92/97 and EPL 20850*

The Noise Impact Assessment Criteria defined in Table 3 of Development Consent DA 92/97 (Condition 3, Schedule 3) is provided in Table 10.

**Table 10**  
**Noise Impact Assessment Criteria (dBA)**

Location	Day	Evening	Night	
	L <sub>Aeq</sub> (15min)	L <sub>Aeq</sub> (15min)	L <sub>Aeq</sub> (15min)	LA1(1min)
68, 74	43	42	42	45
86a	42	42	42	45
35, 35b, 77	42	41	41	45
79, 80a, 140c, 526	41	41	41	45
289	41	40	40	45
84a, 139, 154, 203, 257, 258a	40	40	40	45
83	40	39	39	45
86b, 140a, 202, 259	39	39	39	45
198, 202b	38	38	38	45
260, 261	37	37	37	45
169, 272	36	36	36	45
NAG 5 - All privately-owned land	41	40	39	45
NAG 6 - All privately-owned land	37	37	37	45
NAG 7 - All privately-owned land	40	37	37	45
NAG 8 - All privately-owned land	41	39	39	45
NAG 9 - All privately-owned land	39	38	37	45
NAG 11 - All privately-owned land	37	36	35	45
All other privately-owned land	35	35	35	45

Source: Development Consent DA 92/97 and EPL 20850.

Notes: dBA = A-weighted decibels.

L<sub>Aeq</sub> = A-weighted equivalent continuous noise level.

The cumulative noise criteria defined in Table 5 of Development Consent DA 92/97 (Condition 5, Schedule 3) are provided in Table 11.

**Table 11**  
**Cumulative Noise Criteria (dBA)**

Location	Day	Evening	Night
	L <sub>Aeq(period)</sub>	L <sub>Aeq(period)</sub>	L <sub>Aeq(period)</sub>
NAG 8, 9	55	45	40
All other privately-owned land	50	45	40

Note: L<sub>Aeq(period)</sub> = equivalent continuous noise level over a measured period.

The construction noise criteria defined in Table 10A of Development Consent DA 92/97 (Condition 44H, Schedule 3) are provided in Table 12.

**Table 12**  
**Construction Noise Criteria (dBA)**

Location	Standard Construction Hours
	L <sub>Aeq(15min)</sub>
67, 215, 216, 218,219	47
206, 217, 220, 221, 225, 532, 533	48
222, 223, 531	49
224, 530	50
19, 20, 21, 207, 289	51
527, 528	56
529	54
68*	57
23*	69
All other privately-owned land	5 dBA above the daytime operational L <sub>Aeq(15min)</sub> noise criteria in Table 10

Source: Development Consent DA 92/97

Note: L<sub>Aeq(15min)</sub> = equivalent continuous noise level over a 15 minute period.

\* This land is now owned by MACH Energy.

Noise criteria and other noise related conditions stipulated in EPL 20850 are generally consistent with those prescribed in Development Consent DA 92/97.

### **Noise Management Plan**

MACH Energy revised the NMP during the previous reporting period in response to the MOD 4 approval (16 November 2018) in accordance with Condition 4, Schedule 5 of Development Consent DA 92/97. The NMP was approved on 31 October 2019.

The NMP describes the following construction and operational noise controls to be implemented to limit construction and operational noise:

- Plant will operate in less exposed areas during the more sensitive evening/night period.
- Vegetation clearance will be limited to daytime hours.
- ‘Quackers’ will be used in place of reverse beepers.
- Noise suppression will be provided on major operational mobile plant.
- Temporary cessation of work within an area, or from a particularly noisy piece of equipment, will be considered when adverse weather conditions are present.
- All plant and machinery used on-site will be maintained regularly to minimise noise generation.

- All plant and machinery used on-site will be operated in a proper and efficient manner (e.g. at correct speed) to minimise noise generation.
- Regular communication and updates will be provided to local residents on the status and nature of site construction and operational activities.
- In the event of a complaint from a local resident, MACH Energy will implement the complaints response process.

The following performance indicators are specified in the NMP to track the performance of the MPO:

- Effective implementation of the Real-time Response Protocol for noise.
- Results of operator attended noise monitoring, conducted and assessed in accordance with the *NSW Industrial Noise Policy* (Environmental Protection Authority [EPA], 2000) and *Noise Policy for Industry* (NPfI) as relevant, are compliant with the noise criteria in Table 11.
- Complaints are minimised and appropriate management actions are implemented following receipt of a complaint.

## 5.2.2 Performance During the Reporting Period

### ***Operator Attended Noise Monitoring***

Operator attended monitoring was undertaken monthly by Global Acoustics Pty Ltd during the 2020 reporting period, in accordance with the NMP and EPL 20850. Operator attended monitoring was undertaken at six locations selected to represent privately-owned receivers surrounding the MPO, as shown on Figure 3 and in Table 13.

**Table 13  
Noise Monitoring Locations**

Monitoring Location				Justification
Site ID	Description	Easting	Northing	
N-AT1	South-west of the MPO	291465	6427182	Representative of dwellings to the south-west
N-AT2	North-west of the MPO	290608	6434490	Representative of dwellings to the north-west
N-AT3	East of the MPO	300270	6432503	Representative of dwellings to the north-east and east (e.g. NAG 5)
N-AT4	South-east of the MPO	299947	6429264	Representative of dwellings to the east (i.e. NAGs 6 and 7)
N-AT5	South-east of the MPO	299161	6427503	Representative of dwellings to the south-east (i.e. NAGs 8 and 9)
N-AT6	South-west of the MPO	289092	6423155	Representative of dwellings to the south-southwest (e.g. NAG 11)

During the reporting period, MACH Energy complied with all statutory conditions relating to noise. A summary of the noise monitoring results recorded during the reporting period are presented in Appendix A.

Monitoring was undertaken in accordance with EPL 20850 and Australian Standard AS1055 'Acoustics, Description and Measurement of Environmental Noise'.



All applicable measured noise levels attributable to the MPO were generally compliant with the relevant noise criteria from Development Consent DA 92/97 and EPL 20850 during the reporting period, except for one elevated  $L_{Aeq(15min)}$  reading in July and three elevated  $L_{Aeq(1min)}$  readings in April and July. Follow-up monitoring for the elevated reading in April showed no further investigation was required. Investigation of the elevated recordings in July found the elevated noise levels were unlikely to have exceeded the applicable noise criteria at relevant sensitive receivers. Following the investigation, DPIE confirmed that no further action on the matter was required. There were no exceedances of the construction noise criteria from Development Consent DA 92/97 during the reporting period.

Results of the operator attended noise monitoring for each monitoring round during the reporting period are available in the monthly reporting on the MACH Energy website (<https://machenergyaustralia.com.au/mount-pleasant/documentation/>).

### ***Real-time Noise Monitoring***

Real-time monitoring systems were installed at three locations (N-BO1, N-BO2 and N-BO4) in November 2016 prior to construction work commencing on-site (Figure 3). Real-time noise monitoring was undertaken at these locations 24 hours per day, seven days per week for the duration of the reporting period. A new real time monitor, N-BO5, was installed in June 2020. The real-time noise monitoring was not used to assess compliance with noise criteria, but instead was used for ongoing performance assessment and to inform implementation of real-time response management actions.

During the reporting period, a number of real-time noise monitoring triggers occurred, which prompted the implementation of real-time response management actions where these were related to mining noise from the MPO, consistent with the Real-time Response Protocol outlined in the NMP.

### ***Complaints***

A total of 58 noise-related complaints were received by MACH Energy during 2020 (see Complaints Summary 2020: <https://machenergyaustralia.com.au/mount-pleasant/documentation/>). The number of noise-related complaints received during the reporting period was 42% less than in the previous reporting period. In response to the complaints, the noise monitoring records were reviewed and the External Relations Manager (ERM) organised the cessation of noise-intensive works where necessary. In all cases, the ERM made further contact with the complainant to provide an update of the noise activities. All operator attended noise monitoring results for the reporting period were compliant.

### **5.2.3 Trends and Key Management Implications**

There were several instances where elevated noise levels were recorded during operator attended monitoring surveys in 2020. The elevated noise levels were recorded at N-AT3 in July and N-AT4 in April (Appendix A). Follow-up monitoring indicated compliance with the relevant noise criteria. The monitoring results are generally consistent with the results recorded during the 2019 reporting period (MACH Energy, 2020a). Noise levels were observed to have slightly increased from 2019 levels at N-AT3 as mining progressed north (i.e. towards the monitor) during the reporting period. Similarly, noise levels slightly decreased at N-AT4 as mining progressed north (i.e. away from the monitor) during the reporting period.

No environmental performance or management issues occurred regarding noise during the reporting period.

Noise-related complaints decreased in 2020 compared to 2019 due to the continued development of the Eastern Out-of-Pit Overburden Emplacement Area, which provides shielding of operations to Muswellbrook and nearby residences.

### **Comparison to MOD 3 Predictions**

MOD 3 predictions for noise were modelled for three scenarios during the mine life (i.e. Year 2018, Year 2021 and Year 2025). The attended monitoring noise levels were generally below the predicted  $L_{Aeq(15min)}$  levels under adverse meteorological conditions. One measured  $L_{Aeq(15min)}$  noise level levels at N-AT3 in July was slightly above the MOD 3 predicted levels.

The elevated level recorded was not linked to any specific operational practices, and no trend of elevated levels was observed. Such minor differences between levels and predicted levels are likely due to the inherent uncertainties associated with predictive modelling (e.g. activities may not occur in the same location, or at the same magnitude, as anticipated when developing predictive models).

#### **5.2.4 Implemented or Proposed Management Actions**

All noise management measures outlined in the NMP and summarised in Section 5.2.1 were undertaken during the reporting period. In particular, MACH Energy continued to implement real-time noise monitoring at the three real-time noise monitoring locations with the Real-time Response Protocol used where appropriate.

In addition, MACH Energy commissioned a review of the MPO's noise management regime by a recognised noise specialist. The review's findings indicate the MPO's existing noise management practices are commensurate with best practice. Notwithstanding, some minor revisions to the noise monitoring network were recommended. MACH Energy commenced implementation of the review's recommendations late in the reporting period, and this will continue in the next reporting period.

### **5.3 BLASTING**

Airblast overpressure and ground vibration assessment criteria for the MPO are defined in Table 7 of Development Consent DA 92/97 (Condition 10, Schedule 3) and EPL 20850 (Conditions L4.2, L4.3, L4.4 and L4.5). Additional conditions relating to blasting hours and frequency, property inspections and investigations, monitoring locations, measurement methodology, operating conditions and preparation of the BMP, are also detailed in these approval documents.

During the reporting period, an updated BMP was prepared by MACH Energy to reflect the change in location of blast monitoring site B-VO2. The BMP was approved on 14 April 2020.

#### **5.3.1 Approval Criteria and Management Plan Requirements**

##### ***Development Consent DA 92/97 and EPL 20850***

A summary of the assessment criteria for blasting is included in Table 14.

**Table 14**  
**Assessment Criteria for Blasting**

Location	Airblast Overpressure (dB[Lin Peak])	Ground Vibration (mm/s)	Allowable Exceedance
Residence on privately-owned land	120	10	0%
	115	5	5% of the total number of blasts over a period of 12 months
Historic heritage sites	-	10	0%
All public infrastructure	-	50	0%

Source: Table 7 of Development Consent DA 92/97 (Condition 10, Schedule 3).

Note: mm/s = millimetres per second; dB = decibels.

Conditions L4.2, L4.3, L4.4 and L4.5 of EPL 20850 contain the same blasting assessment criteria for residences on privately-owned land as specified in Table 15. However, EPL 20850 requires that monitoring does not exceed these criteria at monitoring site B-VOC rather than at all residences on privately-owned land (Figure 4).

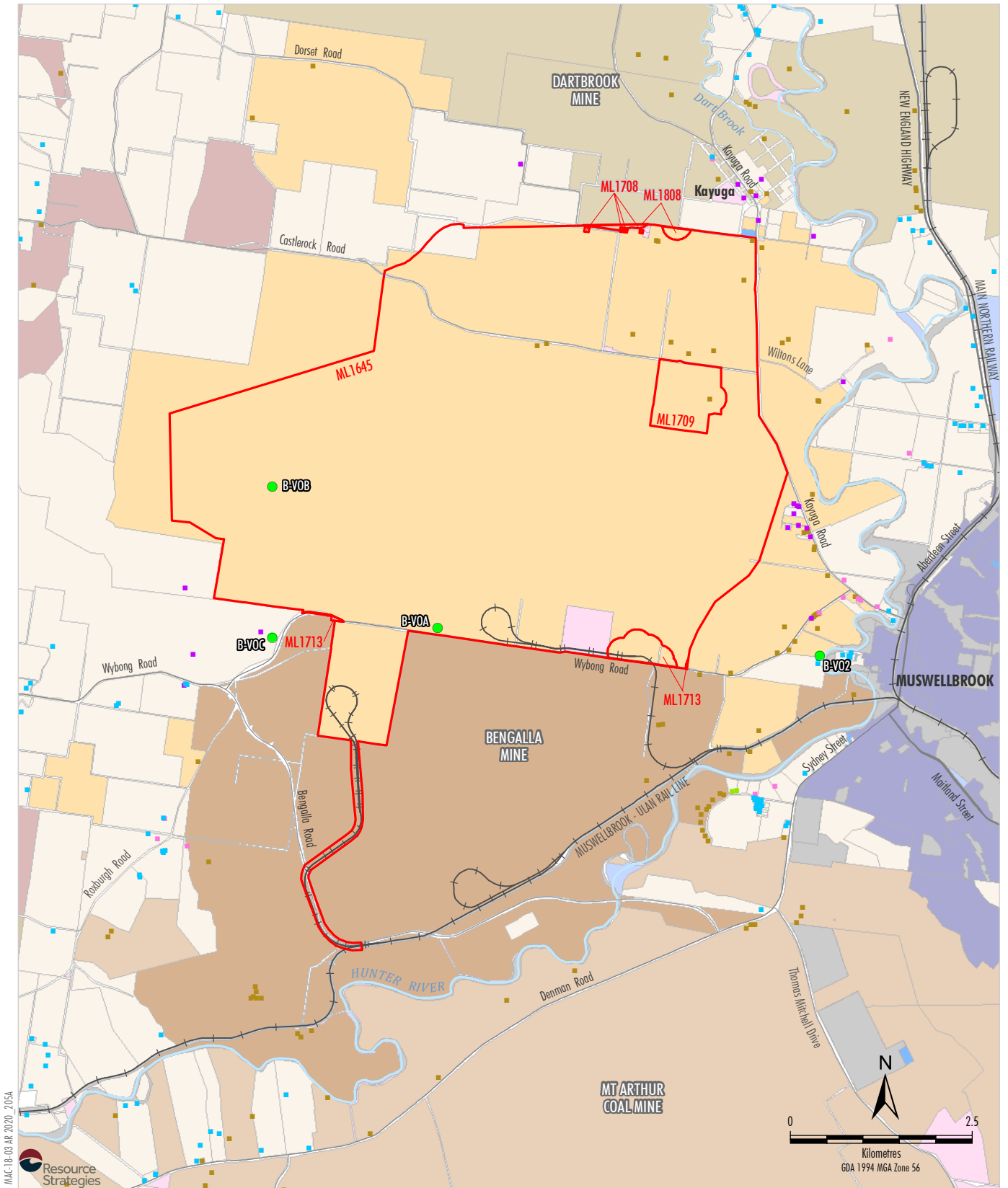
Airblast overpressure, ground vibration and fume monitoring were conducted for every blast event at the blast monitoring sites shown on Figure 4.

### 5.3.2 Performance During the Reporting Period

A total of 74 blasts occurred during the reporting period as shown in Appendix B. All recorded blast measurements were in accordance with the relevant blasting criteria (Section 5.3.1). While relevant blast overpressure and vibration criteria were met, a blast on 15 June 2020 generated blast fume that resulted in three community complaints and regulatory action by the EPA in relation to EPL 20850, condition L4.6; (final outcomes of the investigation are to be determined). Following the incident, MACH Energy undertook an investigation into the cause and self-reported the incident to the DPIE and EPA. As a result of the investigation, the mining contractor amended key pre-blast procedures to reduce the potential for a similar event to occur in the future. No other similar blast fume events occurred during the reporting period.

#### **Comparison to MOD 3 Predictions**

A comparison of MPO's blast performance against the MOD 3 predictions is summarised in Table 15. While Table 15 provides a comparison of MOD 3 predictions at a number of sensitive receivers located around the MPO to the airblast overpressure and ground vibration levels recorded in 2020 at the blast monitors, the majority of the sensitive receivers are located significant distances from the blast monitors. It is therefore difficult to draw conclusions regarding how the recorded levels compare to the MOD 3 predictions. Monitors B-VOC and B-VO2, however, are located in close proximity to Receiver 43 and Receiver 67 respectively, and therefore the MOD 3 predictions at these sensitive receivers and the levels recorded at B-VOC and B-VO2 can be realistically compared.



MAC:18-03 AR: 2020\_205A



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

Category of Rural Residence under DA92/97

- Mine-owned
- Privately-owned - Acquisition on Request
- Privately-owned - Mitigation on Request
- Privately-owned - Mitigation/Acquisition on Request\*
- Other Privately-owned

Monitoring Sites

- Blast Monitoring, Blasting (Vibration/Overpressure)

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

Source: MACH (2021); NSW Spatial Services (2021)

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Blast Monitoring Sites

Figure 4

**Table 15**  
**Comparison of MOD 3 Predictions and 2020 Raw Monitoring Data**

Closest Receiver ID	MOD 3 Predictions		Closest Blast Monitoring Site to Land Holder	Maximum Recorded Level in 2020	
	Airblast Overpressure (dBL [in Peak])	Ground Vibration (mm/s)		Airblast Overpressure (dBL [in Peak])	Ground Vibration (mm/s)
43	111.6 to 112.4	0.9 to 1.4	B-VOC	112	2.85
272	111.1 to 111.2	0.5 to 0.6	B-VOC	112	2.85
153	111.3 to 111.5	0.6 to 0.8	B-VOA	112.4	2.47
147	111.3 to 111.8	0.7 to 1	B-VO2	112.2	1.65
136	111.7 to 112.8	0.9 to 1.6	B-VO2	112.2	1.65
121	112.6 to 115.7	1.5 to 3.7	B-VO2	112.2	1.65
112	112.8 to 116.4	1.6 to 4.3	B-VO2	112.2	1.65
67	112.9 to 115.4	1.6 to 3.5	B-VO2	112.2	1.65
23	113.3 to 115.2	1.9 to 3.3	B-VO2	112.2	1.65

Source: Table 8-1 of MPO MOD 3 Noise & Blasting Assessment.

Note: mm/s = millimetres per second; dB = decibels.

The differences in recorded and predicted levels at Receiver 43/B-VOC and Receiver 67/B-VO2 may be due to a difference in site conditions, compared to the empirical data used to establish the predictions. Blast monitoring data will continue to be collected and a site-specific empirical prediction model will continue to be refined to assist blast planning and performance review.

### Complaints

A total of 17 blasting-related complaints were received by MACH Energy during 2020 (see Complaints Summary 2020: <https://machenergyaustralia.com.au/mount-pleasant/documentation/>). The number of blasting-related complaints received during the reporting period was 56% less than that received in the previous reporting period. There were three blasting-related complaints made following the blast fume incident on 15 June 2020. In response to the complaints, blasting activities were reviewed for compliance. All blasting results for the reporting period were compliant with relevant blast overpressure and vibration criteria (Section 5.3.2). Following the compliance review, the ERM made further contact with the complainants to provide an update of the blasting activities.

### 5.3.3 Trends and Key Management Implications

There were 74 blasts recorded during 2020, compared with 67 in 2019. Blasting-related complaints decreased in 2020 compared to 2019 due to the continued progression of mining activities away from Muswellbrook and nearby residences.

Airblast overpressure and ground vibration levels recorded during 2020 generally decreased compared with 2019 as blasting occurred further from Muswellbrook and nearby receivers as mining activities progressed west during the reporting period. All overpressure and vibration measurements during the reporting period complied with the relevant criteria within Development Consent DA 92/97 and EPL 20850.

Review of the blast fume incident in June 2020, of which the outcomes of the regulatory investigation are yet to be finalised, indicated amendments to pre-blast procedures were required to reduce the potential for a similar event to occur in the future.

### **5.3.4 Implemented or Proposed Management Actions**

Notifications of upcoming blasts were provided on MACH Energy's and Muswellbrook Shire Council's websites. In addition, MACH Energy notified private landholders or residents who expressed an interest in being informed of the MPO blasting schedule and were, therefore, on the MPO pre-blast notification register.

Any blasts within 500 m of Wybong, Kayuga, Castlerock and Dorset Roads triggered a road closure and implementation of relevant mitigation measures. In 2020, eight road closures occurred on Wybong Road due to blasting activities within Pit A. Three road closures occurred on Castlerock Road and one road closure occurred on Kayuga Road. No other roads were closed due to blasting activities.

During the reporting period, site B-VO2 was relocated approximately 1,350 m east of its previous position to more accurately represent the nearest private residential receivers to the MPO.

All appropriate steps to reduce dust generation from blasting and ensure best practice blasting techniques were undertaken in accordance with the MPO BMP. MACH Energy will continue to implement these measures.

As a result of the blast fume incident in June 2020, of which the outcomes of the regulatory investigation are yet to be finalised, the mining contractor amended key pre-blast procedures to reduce the potential for a similar event to occur in the future. This included adjustment of the fume probability prediction model, additional surveillance cameras/drones and updates to the blasting Trigger Action Response Plan.

## **5.4 AIR QUALITY**

Air quality criteria for the MPO are presented in Tables 8, 9 and 10 of Development Consent DA 92/97 (Condition 20, Schedule 3) and EPL 20850 (Condition O3.5). Additional conditions relating to operating conditions, greenhouse gas emissions, odour, acquisition criteria and preparation of the AQGGMP are also provided in Development Consent DA 92/97 and EPL 20850.

### **5.4.1 Approval Criteria and Management Plan Requirements**

#### ***Development Consent DA 92/97***

In accordance with Condition 20, Schedule 3 of Development Consent DA 92/97, MACH Energy must ensure that all reasonable and feasible avoidance mitigation measures are employed so that particulate matter emissions generated by the MPO do not exceed the criteria summarised in Table 16 at any residence on privately-owned land (excluding land subject to acquisition upon request for potential air quality impacts).

**Table 16**  
**Approval Criteria for Particulate Matter**

	Pollutant	Averaging Period	<sup>d</sup> Criterion
Long-term Impact Assessment Criteria	TSP	Annual	<sup>a</sup> 90 µg/m <sup>3</sup>
	PM <sub>10</sub>	Annual	<sup>a</sup> 25 µg/m <sup>3</sup>
	PM <sub>2.5</sub>	Annual	<sup>a</sup> 8 µg/m <sup>3</sup>
	Deposited Dust <sup>c,d</sup>	Annual	<sup>b</sup> 2 g/m <sup>2</sup> /month
<sup>a</sup> 4 g/m <sup>2</sup> /month			
Short-term Impact Assessment Criteria	PM <sub>10</sub>	24 hour	<sup>b</sup> 50 µg/m <sup>3</sup>
	PM <sub>2.5</sub>	24 hour	<sup>b</sup> 25 µg/m <sup>3</sup>

Source: Development Consent DA 92/97 (Condition 20, Schedule 3).

Note: TSP = Total Suspended Particulates;

PM<sub>10</sub> = particulate matter less than or equal to 10 micrometres in diameter;

PM<sub>2.5</sub> = particulate matter less than or equal to 2.5 micrometres in diameter; and

µg/m<sup>3</sup> = micrograms per cubic metre; g/m<sup>2</sup>/month = grams per square metre per month.

<sup>a</sup> Total impact (i.e. incremental increase in concentrations due to the development plus background concentrations due to all other sources).

<sup>b</sup> Incremental impact (i.e. incremental increase in concentrations due to the development on its own).

<sup>c</sup> 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.

<sup>d</sup> Excludes extraordinary events such as bushfires, prescribed burning, dust storms, sea fog, fire incidents or any other activity agreed by the Secretary.

### Environment Protection Licence 20850

Air quality criteria and other air quality related conditions stipulated in EPL 20850 are generally consistent with those prescribed in Development Consent DA 92/97, with the exception of Conditions O3.4 to O3.9, which state:

#### O3 Dust

...

O3.4 The Licensee must cease all dust generating activities during adverse conditions being the occurrence of both:

- i) the adverse wind conditions set out in Condition O3.5 (b), and
- ii) the adverse PM10 concentrations set out in Condition O3.5 (c).

O3.5 For the purpose of Condition O3.4 the following definitions apply:

- (a) 'dust generating activities' means drilling, blasting, earthworks, construction activities, all hauling activities on unsealed haul roads, all overburden and coal extraction operations including loading and dumping activities and grader, loader, dozer and dragline operations.
- (b) 'adverse wind conditions' means the 1-hour average wind direction between 250 degrees and 340 degrees (inclusive) measured at the Muswellbrook NW Upper Hunter Air Quality Monitoring Network monitor. Australian Standard AS3580.14-2014 is to be used to calculate the 1 hour average wind direction.
- (c) 'adverse PM10 concentrations' means a rolling 24-hour average PM10 concentration of equal to or greater than 44 micrograms per cubic metre measured at the Muswellbrook NW Upper Hunter Air Quality Monitoring Network monitoring station.
- (d) Operation of watercarts is permitted at all times.

- (e) *Activities within the Coal Handling and Preparation Plant and Materials Handling Area, including run-of-mine (ROM) coal, product coal handling (including dozer/loader operations) and train loading operations as identified in blue on plan titled 'Mt Pleasant Coal Mine Materials Handling Area Dust Exclusion Zone General Arrangement' drawing number MP001-0000-GEN-DRG-0026 (EPA ref Doc19/282883) are not included as dust generating activities provided all automated dust suppression spray systems at the ROM hopper, conveyor transfer points and product stockpiles are in use, at least one water cart is in use on the ROM stockpile and an adjustable hood is lowered onto rail wagons loadings.*

O3.6 *Shutdown of dust generating activities required by Condition O3.4 must be completed within 1 hour of receiving data that triggers action required by Condition O3.4.*

O3.7 *The licensee may resume dust generating activities at the premises when:*

- (a) *adverse wind conditions as defined in Condition O3.5(b); or*
- (b) *adverse PM10 concentrations as defined in Condition O3.5(c) are not measured for a minimum time period of 1 hour from the time that cessation of dust generation activities is completed.*

O3.8 *At any time when there is no access to the meteorological data or PM10 data from the Muswellbrook NW Upper Hunter Air Quality Monitoring Network monitoring station, definitions of 'adverse wind conditions' and 'adverse PM10 concentrations' in condition O3.5 are replaced with:*

- *'adverse wind conditions' means a 1-hour average wind direction between 245 and 345 degrees (inclusive) measured at EPA Monitoring Point 11, identified in condition P1.3*
- *'adverse PM10 concentrations' means a rolling 24-hour average PM10 concentration of equal to or greater than 44 micrograms per cubic metre measured at the EPA Monitoring Point 1, identified in condition P1.3*

*Note: If at any time, there is no access to the Muswellbrook NW Upper Hunter Air Quality Monitoring Network monitoring station and to either 1-hour average wind direction data from monitoring point 11 or PM 10 data from monitoring point 1 the licensee must cease dust generating activities at the premises.*

O3.9 *For the purpose of condition O3.5 (e), dust suppression systems must be operated in a manner to ensure that there is no visible dust emissions emitted from the premises.*

### **Air Quality and Greenhouse Gas Management Plan**

MACH Energy prepared an AQGGMP during the previous reporting period, which was approved on 24 May 2019. The AQGGMP was revised to reflect the approval of MOD 3 and 4 and update the real-time response triggers to align with the amended dust conditions within EPL 20850 as described above.

The AQGGMP outlines the reasonable and feasible mitigation and management measures adopted at the MPO in accordance with Condition 20, Schedule 3 of Development Consent DA 92/97. The reasonable and feasible mitigation measures include:

- specific management measures for adverse weather conditions (e.g. ceasing all dust generating activities during specific weather conditions as required by Conditions O3.4 to O3.9 of EPL 20850);
- general dust management measures (e.g. use of water carts to minimise wheel-generated dust);
- the use of predictive modelling to assist in day-to-day planning;
- real-time response protocols with tiered management actions based on several alert levels;
- odour and fume management measures;
- greenhouse gas emission reduction strategies; and
- cumulative air quality management, including a protocol for communication with representatives of other mining operations.



### 5.4.2 Performance During the Reporting Period

#### Dust Deposition

During the reporting period, dust deposition levels were collected at 13 dust deposition gauges situated around the MPO boundary (Figure 5). The gauges were sited in accordance with AS 3580.1.1:2007 and analysed for mass of total insoluble matter and ash in accordance with AS 3580.10.1-2003.

Annual average levels of insoluble solids (i.e. dust deposition) are presented in Chart 4. Chart 5 provides a comparison between annual average dust deposition levels at each of the monitoring sites from 2014 to 2020.

Monthly data that is highly contaminated (e.g. from bird droppings, insects or proximal construction works) has been excluded from annual average dust deposition levels. Notably, the calculated levels for gauge D12 exclude six monthly recordings, and the calculated levels for gauge D13 exclude five monthly recordings.

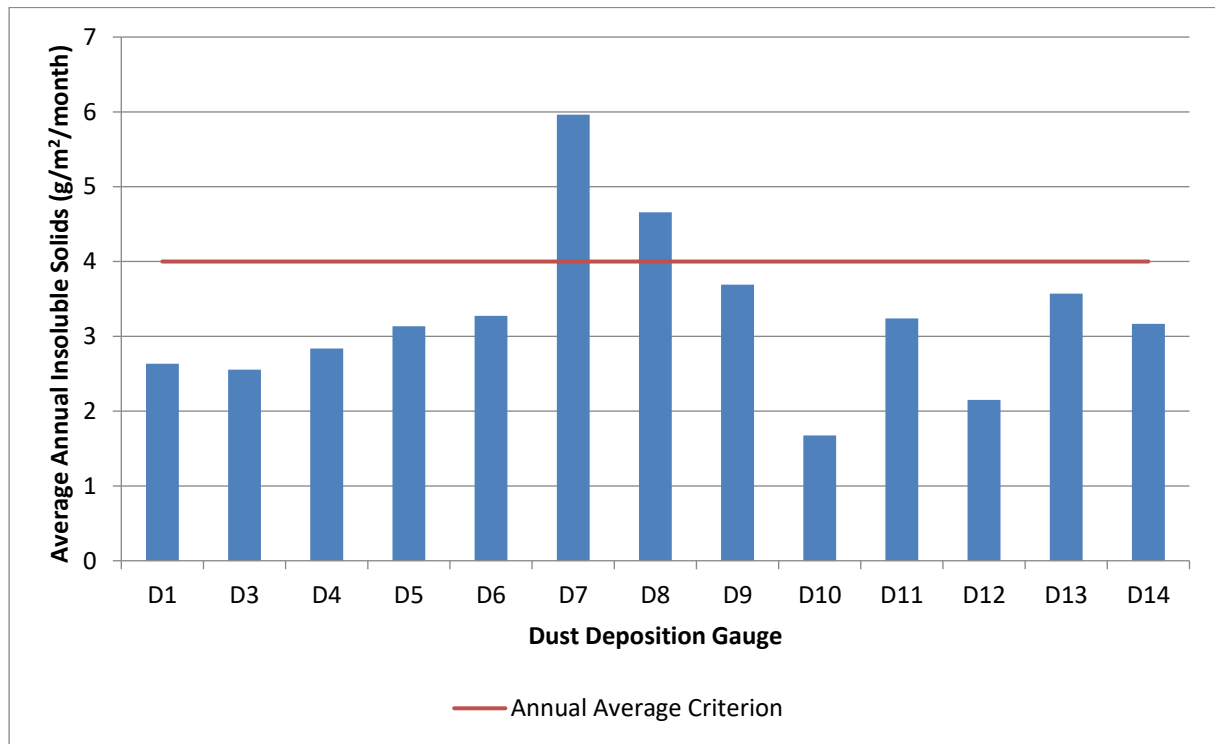
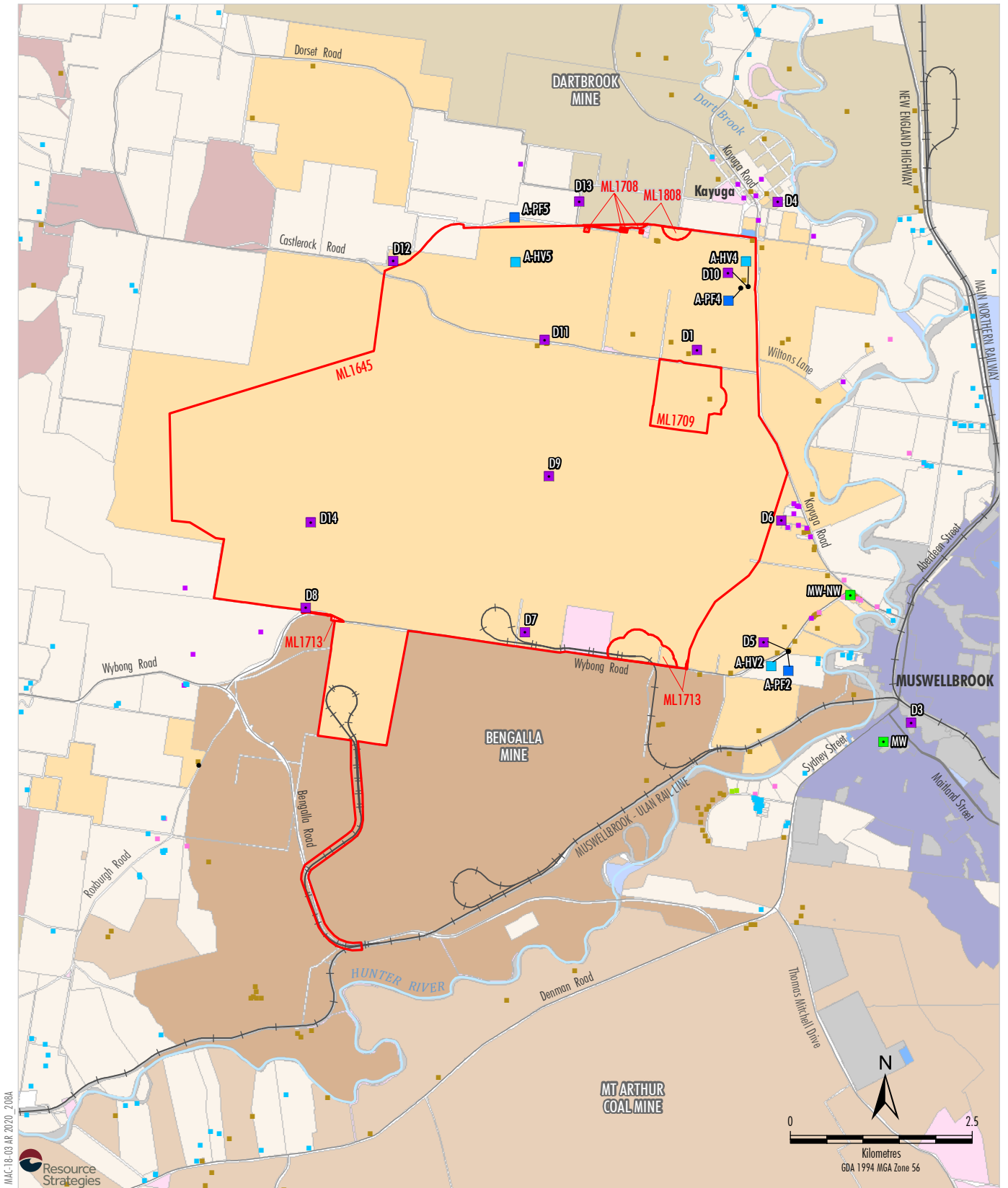


Chart 4: 2020 Annual Average Insoluble Solids



MAC:18-03 AR 2020\_2 DBA



Source: MACH (2021); NSW Spatial Services (2021)

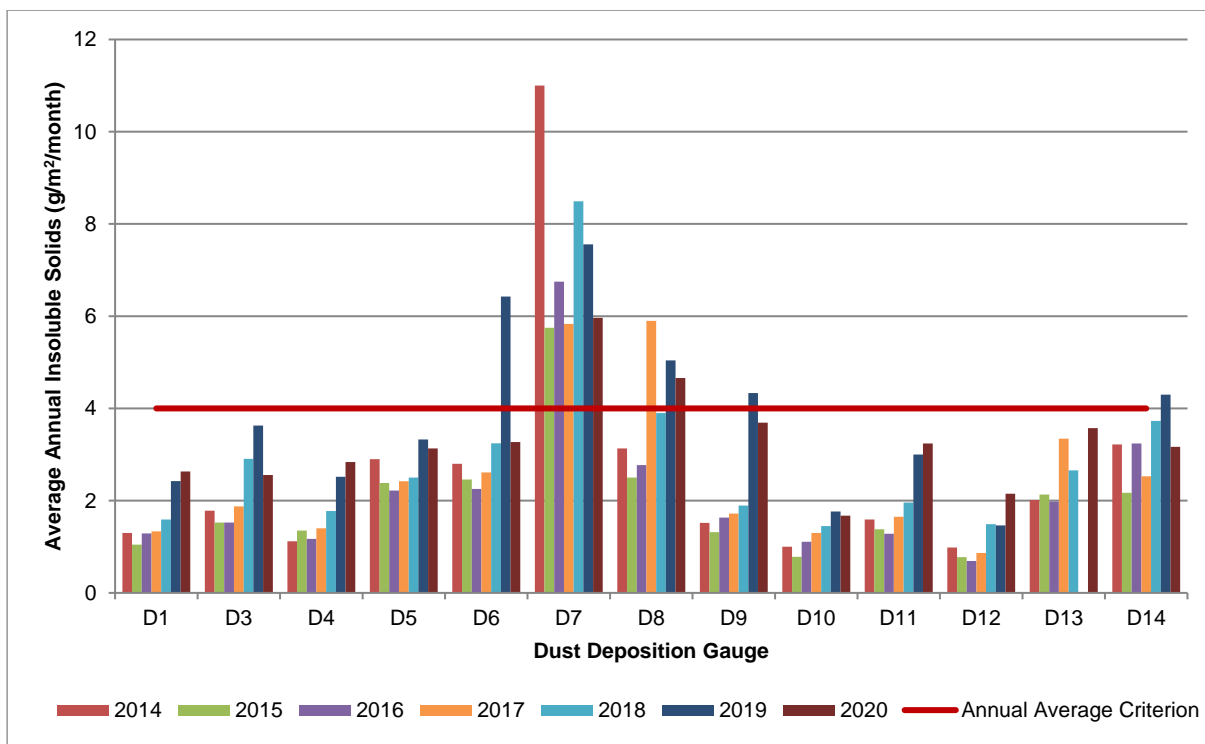
- LEGEND**
- Mining Lease Boundary (Mount Pleasant Operation)
  - Mount Pleasant-controlled
  - Bengalla-controlled
  - Dartbrook-controlled
  - Mangoola-controlled
  - Muswellbrook Coal-controlled
  - Mt Arthur-controlled
  - Crown
  - The State of NSW
  - Muswellbrook Shire Council
  - Privately-owned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

- Category of Rural Residence under DA92/97**
- Mine-owned
  - Privately-owned - Acquisition on Request
  - Privately-owned - Mitigation on Request
  - Privately-owned - Mitigation/Acquisition on Request\*
  - Other Privately-owned
- Monitoring Sites**
- Air Quality - High Volume Sampler
  - Air Quality - Palas Fidas
  - Dust Deposition Gauge
  - Upper Hunter Air Quality Monitoring Network

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

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Air Quality Monitoring Sites

**Figure 5**



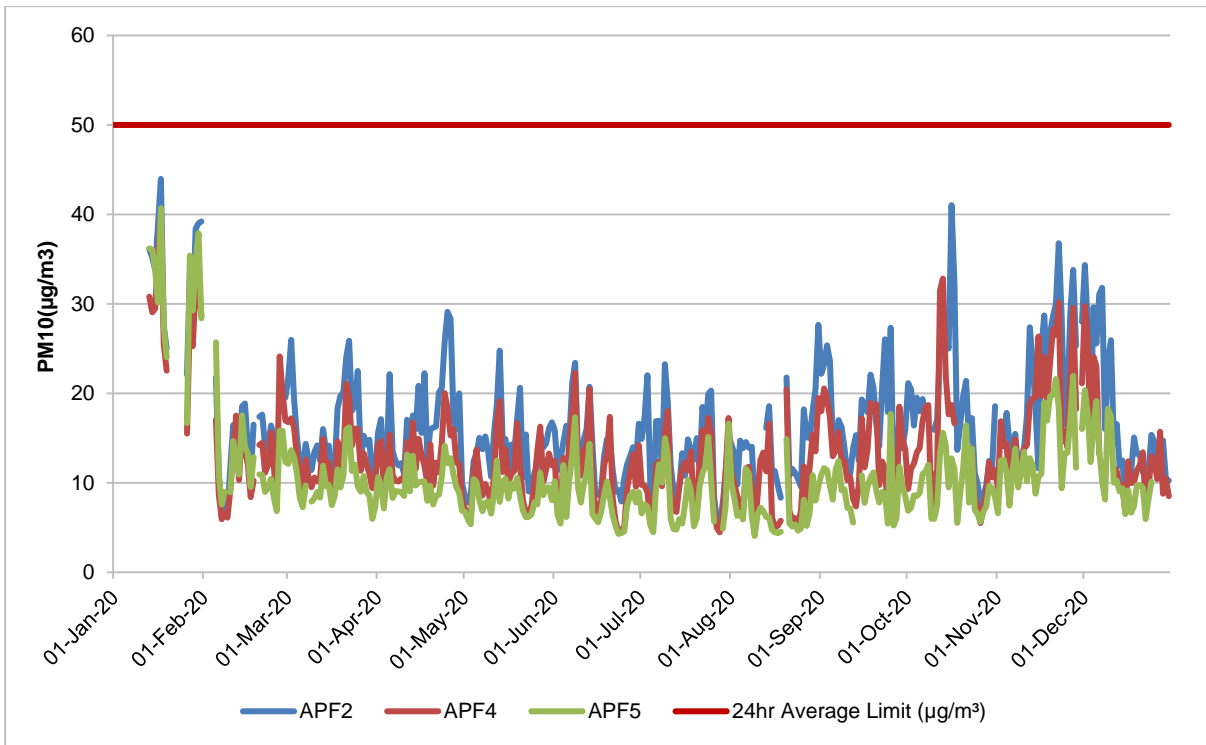
**Chart 5: 2014 - 2020 Annual Average Insoluble Solids**

**PM<sub>10</sub> and PM<sub>2.5</sub>**

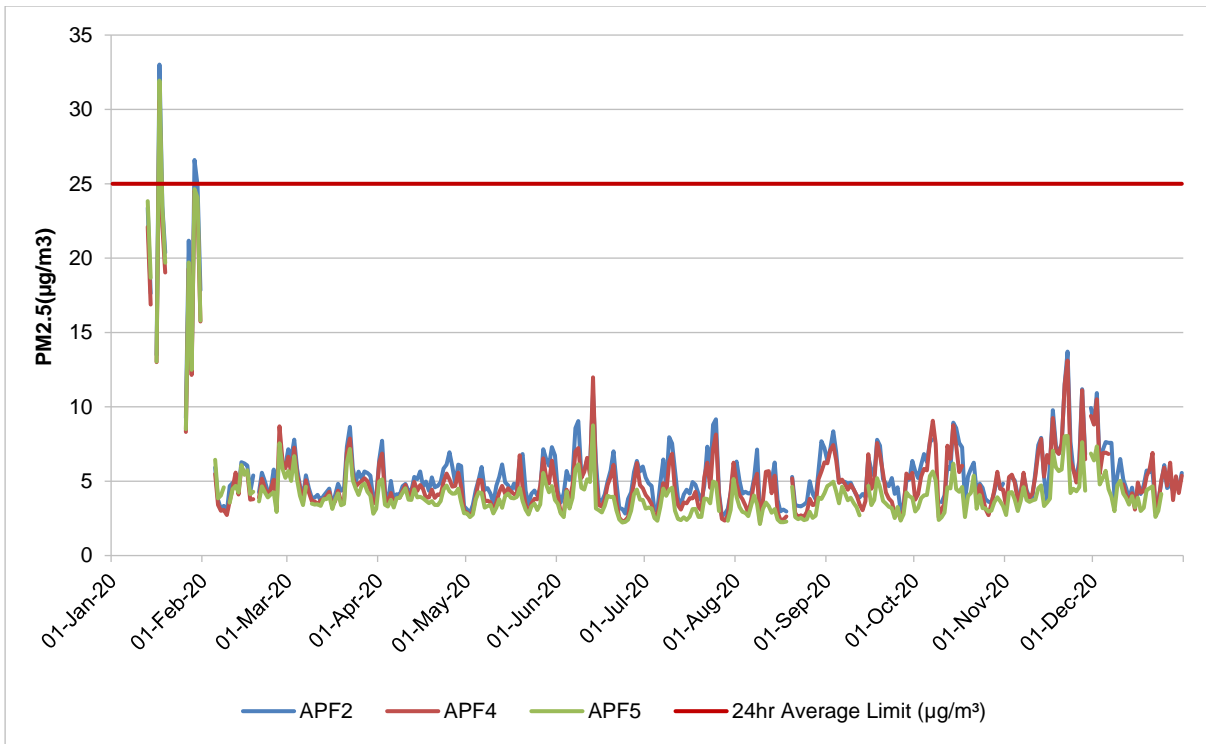
Palas Fidas monitoring systems were installed at three locations (Figure 5) in late 2016. The Palas Fidas systems collected PM<sub>10</sub> and PM<sub>2.5</sub> data continuously, which was averaged over 24 hours (Chart 6 and Chart 7) and annually (Chart 8 and Chart 9).

The data presented excludes ‘extraordinary events’, consistent with Condition 20, Schedule 3 of Development Consent DA 92/97. A total of 24 ‘extraordinary event’ days in 2020 were advised by the DPIE, with the majority associated with bushfire activity and some dust storms/regional dust events. MACH Energy notes that air quality levels in the vicinity of the MPO may have been materially affected by regional dust or bushfire events that occurred on other days. For example, the *Air Quality Monitoring Network Upper Hunter Summer 2019-20 seasonal newsletter* (DPIE, 2020) indicates bushfire smoke led to elevated air quality levels at monitoring stations in the Upper Hunter Region on some days that were not advised by the DPIE to be extraordinary event days.

Notwithstanding, MACH has conservatively adopted only the ‘extraordinary event’ days advised by the DPIE when presenting monitoring data in this Annual Review. Results inclusive of ‘extraordinary events’ are provided in Appendix C for completeness.



**Chart 6: 24 hour Average PM<sub>10</sub> Levels**



**Chart 7: 24 hour Average PM<sub>2.5</sub> Levels**

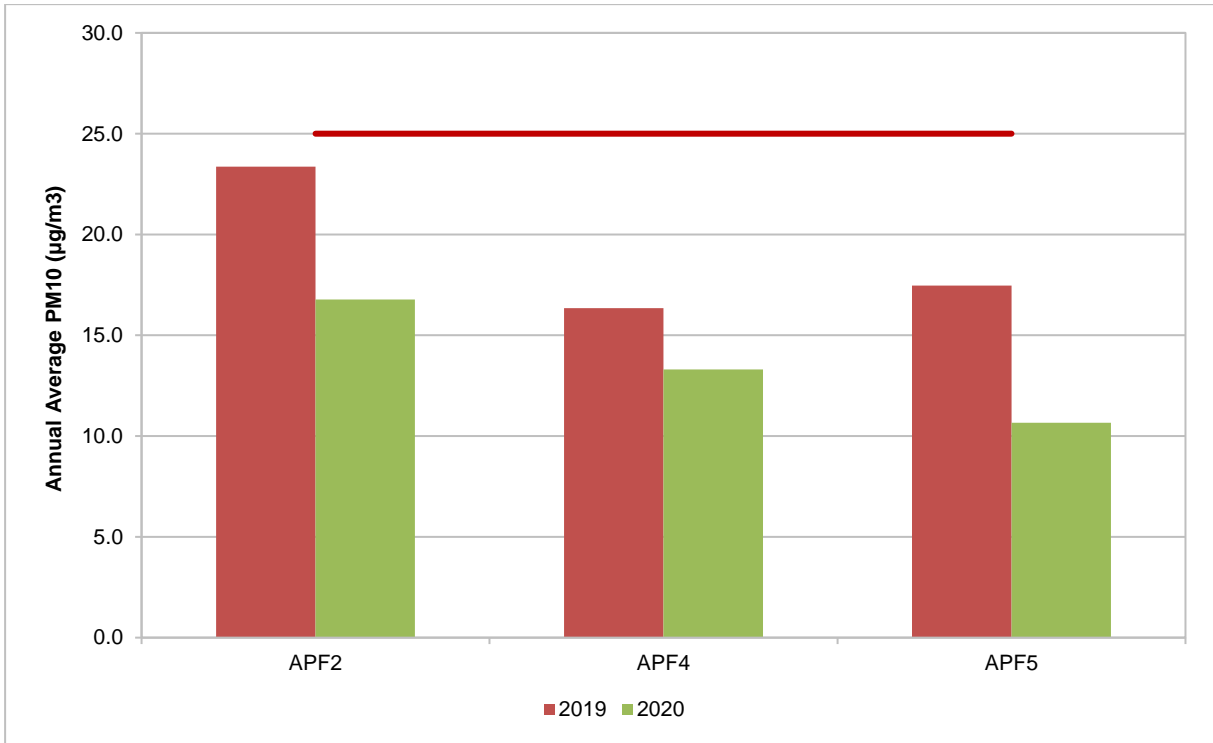


Chart 8: Annual Average PM<sub>10</sub> Levels

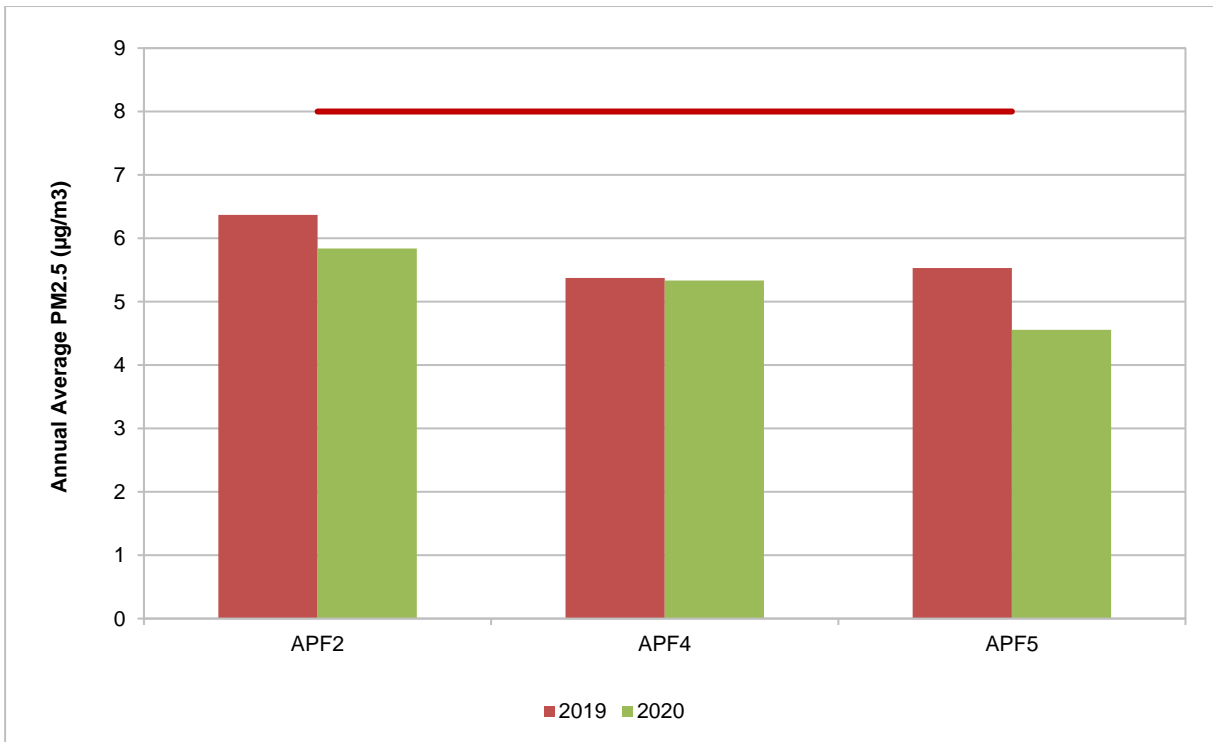


Chart 9: Annual Average PM<sub>2.5</sub> Levels

### Total Suspended Particulate

TSP levels were recorded at the three High Volume Air Sampler (HVAS) systems (A-HV2, A-HV4 and A-HV5) located adjacent to the three Palas Fidas monitors (Figure 5). These HVAS systems were sited in conjunction with the Palas Fidas monitors in late 2016. Annual average TSP levels are presented in Chart 10.

Note the data presented excludes 'extraordinary events', consistent with Condition 20, Schedule 3 of Development Consent DA 92/97. Results inclusive of 'extraordinary events' are provided in Appendix C for completeness.

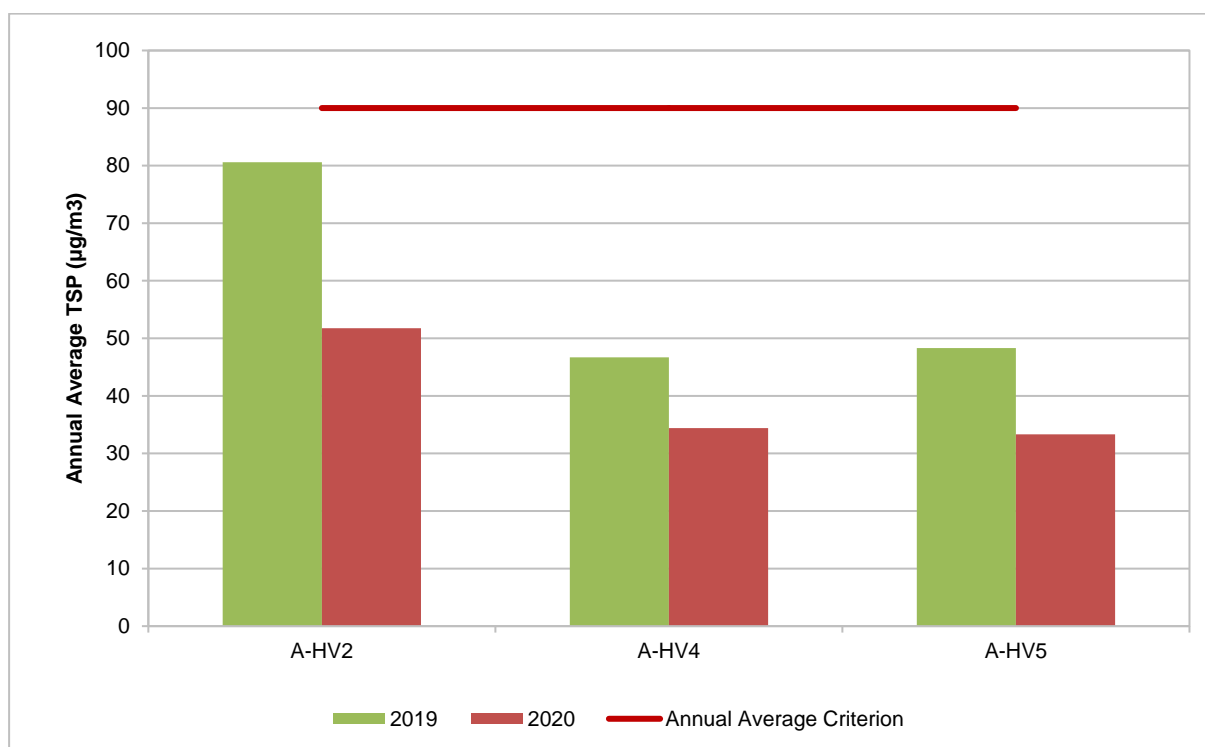


Chart 10: Annual Average TSP Levels

### Complaints

A total of 16 air quality-related complaints were received by MACH Energy during 2020 (see Complaints Summary 2020: <https://machenergyaustralia.com.au/mount-pleasant/documentation/>). In response to the complaints, particulate matter levels at nearby monitoring locations were reviewed. For all complaints, the air quality levels at nearby monitoring stations were below the relevant criteria when the complaint was received.

### 5.4.3 Trends and Key Management Implications

#### Dust Deposition

Dust deposition levels decreased between 2019 and 2020 at most dust deposition gauges at the MPO. The decrease in dust deposition levels is likely to have been influenced, at least in part, by the weakening of drought conditions in late 2020. Annual average levels of deposited dust were recorded above the long-term impact assessment criteria of 4 g/m<sup>2</sup>/month at D7 and D8.

D7 is located within the MPO boundary between the MPO and a neighbouring mining operation (Figure 5). Due to its proximity to the northern boundary of the main pit of the neighbouring mining operation, D7 is directly influenced by both the MPO and the neighbouring mining operation. Therefore, whilst this site has continued to be monitored, it is not used to assess compliance or to represent residential receivers in the area.

D8 is located to the west of the MPO mining area and is considered representative of the nearest privately-owned residences to the south-west, which are subject to acquisition upon request for potential air quality impacts (Figure 5). In accordance with Condition 20, Schedule 3 of Development Consent DA 92/97, the annual average dust deposition criterion does not apply at such residences. Given the significant distance to the closest privately-owned residences without acquisition upon request rights for potential air quality impacts (Figure 5), it is considered unlikely the criterion would be exceeded at those residences (Appendix G).

### ***PM<sub>10</sub> and PM<sub>2.5</sub>***

The measured 24-hour average PM<sub>10</sub> levels on applicable days (i.e. days not considered to be 'extraordinary events') were below the Project-only criterion during the reporting period.

Chart 6 shows that PM<sub>10</sub> levels fluctuated at the three monitors throughout the year, with no apparent trends other than APF2 generally recording higher levels than APF4 and APF5. Chart 8 indicates annual average PM<sub>10</sub> levels declined between 2019 and 2020. Review of the recorded data inclusive of 'extraordinary event' days indicates a similar trend, likely due to weakening of drought conditions during the reporting period (in other words, the effect of weakening drought conditions is apparent regardless of whether 'extraordinary events', typically related to bushfires, are considered) (refer Charts C1 and C3 in Appendix C).

Real-time monitoring of PM<sub>2.5</sub> was undertaken during the reporting period at the three Palas Fidas monitors (Figure 5). The measured cumulative 24 hour average PM<sub>2.5</sub> levels on applicable days (i.e. days not considered to be 'extraordinary events') were generally below the relevant criteria during the reporting period, with the exception of three elevated levels on 17 January and one elevated reading at APF2 on 29 January. On 17 January, analysis showed that APF2 and APF4 were not downwind of the MPO for more than 10% of the day and therefore the MPO was unlikely to be the cause of the elevated levels on 17 January. Similarly, on 29 January, APF2 was downwind of the MPO for less than 10% of the day. APF5 was found to be downwind of the MPO on 17 January for 96% of the day, and the contribution to the PM<sub>2.5</sub> levels by the MPO was estimated to be less than 1 µg/m<sup>3</sup> using an upwind/downwind concentration differential methodology. Since the estimated incremental contribution for the MPO was less than 25 µg/m<sup>3</sup> for each of the elevated readings, the MPO is considered compliant with Development Consent DA 92/97 Schedule 3, Condition 20 Table 9 (Appendix G).

Chart 7 shows that PM<sub>2.5</sub> levels fluctuated at the three monitors throughout the year, with no apparent trends other than a general increase in levels during January, likely due to the significant bushfire activity. Chart 9 indicates annual average PM<sub>2.5</sub> levels slightly decreased between 2019 and 2020. Review of the recorded data inclusive of 'extraordinary event' days shows annual average PM<sub>2.5</sub> levels decreased materially in 2020, indicating the bushfires in early 2020 contributed less to the annual average PM<sub>2.5</sub> levels in 2020 than the bushfires that occurred in late 2019 did to the 2019 annual average PM<sub>2.5</sub> levels (refer Charts C2 and C4 in Appendix C).

### ***Total Suspended Particulate***

The annual average TSP levels based on the measured TSP levels on applicable days (i.e. days not considered to be 'extraordinary events') were compliant with the annual average TSP criterion during the reporting period.

Similar to PM<sub>10</sub> and PM<sub>2.5</sub>, review of the recorded data inclusive of 'extraordinary event' days indicates annual average TSP levels decreased materially in 2020, likely due to the significant bushfire activity in late 2019 (refer Chart C5 in Appendix C), though no other trends are apparent.

### **Comparison to MOD 3 Predictions**

MOD 3 predictions for air quality were modelled for three scenarios during the mine life (i.e. Year 2018, Year 2021 and Year 2025). Monitored annual average levels of insoluble solids were generally below the MOD 3 Scenario 1 and 2 predictions. Annual average PM<sub>2.5</sub> levels in 2020 were above the MOD 3 predicted levels, while PM<sub>10</sub> levels were generally below the MOD 3 predictions. Annual average TSP concentrations recorded at monitoring site A-HV2 were above the predicted TSP concentration for Scenario 1 and 2 in MOD 3. Annual average PM<sub>10</sub> concentrations recorded at monitoring site APF4 were above the predicted PM<sub>10</sub> levels for Scenario 2 in MOD 3.

The inconsistencies observed between the monitoring results and the MOD 3 predictions are likely to be due to differences in background air quality levels (e.g. due to the drought conditions experienced in NSW in early 2020 and significant bushfire activity – even with 'extraordinary event' days removed where applicable). In addition, there is inherent uncertainty associated with predictive modelling (e.g. activities may not occur in the same location, or at the same magnitude, as anticipated when developing predictive models). Further, the sensitive receptors (residences) are generally not located immediately adjacent the nearest monitoring sites (e.g. monitoring sites may be located closer to mining activity).

#### **5.4.4 Implemented or Proposed Management Actions**

In accordance with Conditions O3.4 and O3.5 of EPL 20850, all dust generating activities at the MPO must be ceased when specific adverse conditions are identified at the on-site meteorological station and/or at the Muswellbrook NW Upper Hunter Air Quality Monitoring Network monitor.

Dust generating activities were discontinued on a number of occasions during 2020 in accordance with Conditions O3.4 and O3.5 of EPL 20850, for a total of 86 hours across 13 days (i.e. all items of major mobile equipment were shut down for 86 hours each in accordance with Conditions O3.4 and O3.5 of EPL 20850).

In addition to ceasing operations due to elevated monitoring results in accordance with Conditions O3.4 and O3.5 of EPL 20850, operations were ceased on several other occasions in response to the generation of visible dust, for a total of 617 hours across the mining fleet.

All appropriate steps to reduce dust generation were undertaken in accordance with the MPO AQGGMP, consistent with Condition 20, Schedule 3 of Development Consent DA 92/97. MACH Energy will continue to implement these dust mitigation measures.

### **5.5 BIODIVERSITY**

A BMP was prepared by MACH Energy in accordance with Condition 32, Schedule 3 of Development Consent DA 92/97 and approved on 14 January 2019.



### 5.5.1 Approval Criteria and Management Plan Requirements

MACH Energy implements biodiversity management actions in accordance with the approved BMP. In order to ensure appropriate management actions are applied, and to evaluate the vegetation and fauna habitat condition at the MPO, the BMP implements a Biodiversity Monitoring Program. The program includes the following components:

- weed monitoring;
- vertebrate pest monitoring;
- monitoring of access; and
- rehabilitation monitoring.

### 5.5.2 Implemented or Proposed Management Actions

In 2020, the following biodiversity related management actions were undertaken:

- Weed control measures carried out by Enright Land Management and other contractors on various properties within MPO and adjoining properties. Weeds found on the properties were sprayed or manually removed. These included Boxthorn, Prickly Pear, Creeping Acacia and St Johns Wort.
- Pest control measures implemented by Enright Land Management and other contractors on various properties within the MPO and adjoining properties. These included shooting and wild dog baiting.
- Pre-clearance surveys undertaken by MACH Energy Environmental Advisor and/or an ecologist consultant (Umwelt) including:
  - surveys for the Pit E/F area prior to commencement of mining in April 2020;
  - surveys for the Pit D overburden emplacement area prior to commencement of overburden emplacement activities in August 2020;
  - surveys for the Rail 2 project areas; and
  - surveys undertaken prior to disturbance as part of all Ground Disturbance Permits (GDPs) throughout 2020.
- Clearing supervision was undertaken by a MACH Energy Environmental Advisor and/or an ecologist consultant (Umwelt), which included fauna management (i.e. spotter catching) and habitat tree felling supervision.
- No threatened fauna species were recorded during clearing activities.
- A Tiger Orchid (*Cymbidium canaliculatum*) translocation program was undertaken in 2020 and included the relocation of two Tiger Orchids from the active mining area (Narla Environmental, 2020).
- Connectivity planting between the site rehabilitation and the Hunter River riparian zone vegetation was undertaken.
- Annual, bi-annual and regular monitoring was carried out by MACH Energy.

## 5.6 HERITAGE

MACH Energy manages Aboriginal heritage on-site in accordance with Aboriginal Heritage Impact Permits (AHIPs) (i.e. AHIPs #C0002053, #C0002092 and #C0004783) issued by the Heritage NSW within the NSW Department of Premier and Cabinet (former Biodiversity and Conservation Division [BCD] within DPIE), and in accordance with the approved AHMP, prepared in accordance with Condition 36, Schedule 3 of Development Consent DA 92/97.

MACH Energy submitted an AHIP variation application to extend the time period of AHIP #C0002092 to allow all necessary works outlined in the AHIP #C0002092 to be undertaken at the MPO. AHIP #C0002092 variation application was approved by Heritage NSW on 3 December 2020.

### **5.6.1 Approval Criteria and Management Plan Requirements**

During the reporting period, all Aboriginal heritage management activities were carried out in accordance with the AHMP. The AHMP contains a range of management measures related to recording and surface collection, archaeological excavation, artefact analysis, artefact management, scarred tree removal, archaeological salvage, archaeological monitoring, and an Aboriginal conservation strategy.

### **5.6.2 Implemented or Proposed Management Actions**

During the reporting period, the following on-ground management measures relevant to heritage (Aboriginal and historic heritage) were undertaken at the MPO:

- Surface salvage collection for Aboriginal artefacts was undertaken within AHIP #C0004783 area in June 2020.
- Surface salvage collection for Aboriginal artefacts within AHIP #C0002053 area was undertaken in November 2020.
- The following Aboriginal Objects Due Diligence Assessments were undertaken:
  - Assessments for the MOD 4 infrastructure undertaken by Niche in June, July and October 2020.
  - Assessment for the proposed geotechnical investigations to inform the proposed development of the Mine Water Dam 2 (MWD 2) undertaken by Niche in October 2020.
- The annual meeting with RAPs was undertaken to provide a general update on the management of Aboriginal heritage in August 2020.
- Ongoing progression of suitable arrangements to provide appropriate long-term security for the Aboriginal Heritage Conservation Area (Area A).
- Ongoing conservation management works at the Negoa Homestead including structural works and removal of non-heritage components.
- Ongoing update of the MPO Aboriginal Site Database and Geographic Information System (GIS) data.

During the next reporting period, MACH Energy anticipates undertaking the following heritage works:

- Continue to progress appropriate long-term security for the Aboriginal Heritage Conservation Area (Area A).
- Continuation of consultation regarding the potential Aboriginal Heritage Conservation Areas B and C.
- Continue to undertake appropriate conservation management works at the Negoa Homestead.
- Cultural Cool Burn in partnership with the Rural Fire Service and the Firestick Alliance (dependent on burn conditions).

## 5.7 EXPLORATION

No exploration activities were conducted during the reporting period.

## 5.8 WASTE

Operational waste data was collected during the reporting period by the waste contractor and is presented in Table 17. No waste tyres were buried on site during the reporting period. Waste levels have remained generally consistent between 2019<sup>2</sup> and 2020.

The WasteMP contains management measures on waste storage, segregation, transport and disposal, as well as provisions for waste monitoring. The latest version of the WasteMP was approved by DPIE on 14 January 2019.

The Fines Emplacement Area Review was undertaken in 2020 as per the approved Waste Management Plan. The review found that the implementation of the adopted fine rejects emplacement strategy based on hydraulic transport and deposition into the current Fines Emplacement Area has been broadly effective. Currently, it is not feasible to undertake an in-pit fines emplacement area nor to use mechanical dewatering to support the co-disposal of tailings with coarse rejects. However, it was recommended that MACH Energy consider additional dewatering with any subsequent CHPP upgrades (ATC Williams, 2020).

## 5.9 TOPSOIL MANAGEMENT

During the reporting period, topsoil stockpiles were located adjacent to active disturbance areas and areas to be rehabilitated, as shown on Figure 6. A total of approximately 2,536,977 m<sup>3</sup> of topsoil was stored in stockpiles during the reporting period. This, in accordance with the MOP/RMP, is approximately 907,746 m<sup>3</sup> ahead of topsoil budgeted for the end of the MOP Period (30 June 2021). A topsoil register with individual volumes for each stockpile is kept and maintained on-site.

Topsoil was stripped ahead of disturbance activities and where possible, placed onto rehabilitation areas immediately. Where it was impractical to respread topsoil immediately it was stockpiled, and sign posted. The stockpiles were then shaped, ripped and direct seeded with a species mix containing sterile pasture species, native grass and shrub tree seed to maintain seed reserves and microbial soil associations.

During the reporting period, MACH Energy also commenced a topsoil stockpile research trial that aims to assess the effectiveness of the MPO's 'Soil Stockpile Management' practices and the 'Soil Replacement on Rehabilitation Areas' practices as outlined in the MPO MOP/RMP. The overarching aim for soil stockpile management at the MPO is to maintain soil viability, seed reserves and microbial soil associations to assist successful rehabilitation outcomes at the MPO.

MACH Energy has engaged the University of Newcastle to design and undertake the trial. The trial will involve microbial sampling and soil testing at two 5 m high Trial Topsoil Stockpile's (refer Trial Topsoil Stockpiles 1 and 2 on Figure 6) and at six other 3 m high control topsoil stockpiles. The study will involve a comparison of the results from 5 m high trial stockpiles against the results from the 3 m high control stockpiles. The results from the trial will be used to inform soil stockpile management practices at the MPO and improve the soil ecosystem on MPO rehabilitation areas. Results from the trial will also be used as inputs for the SIBERIA software program that supports geomorphic landform design modelling (including erosion modelling) at the MPO.

<sup>2</sup> The 2019 Annual Review incorrectly reported the amount of general waste collected at the MPO as 4342.59 tonnes instead of 342.59 tonnes.

Microbial and soil sampling and analysis has commenced for four of the six control 3 m high soil stockpiles. Initial results from these control samples indicate that soils are generally low in nutrients, however Total soil nutrient parameters are within standard agricultural reference ranges. Soil structural results generally indicate poor soil structure within the control stockpiles sampled but that has the potential to improve as the vegetation cover increases. The first round of sampling and analysis from Trial Topsoil Stockpiles 1 and 2, and the remaining two control stockpiles, is expected to be available in the next reporting period.

## **5.10 VISUAL AMENITY AND LIGHTING**

A VIMP was prepared by MACH Energy in accordance with Condition 47, Schedule 3 of Development Consent DA 92/97 and approved on 31 October 2019.

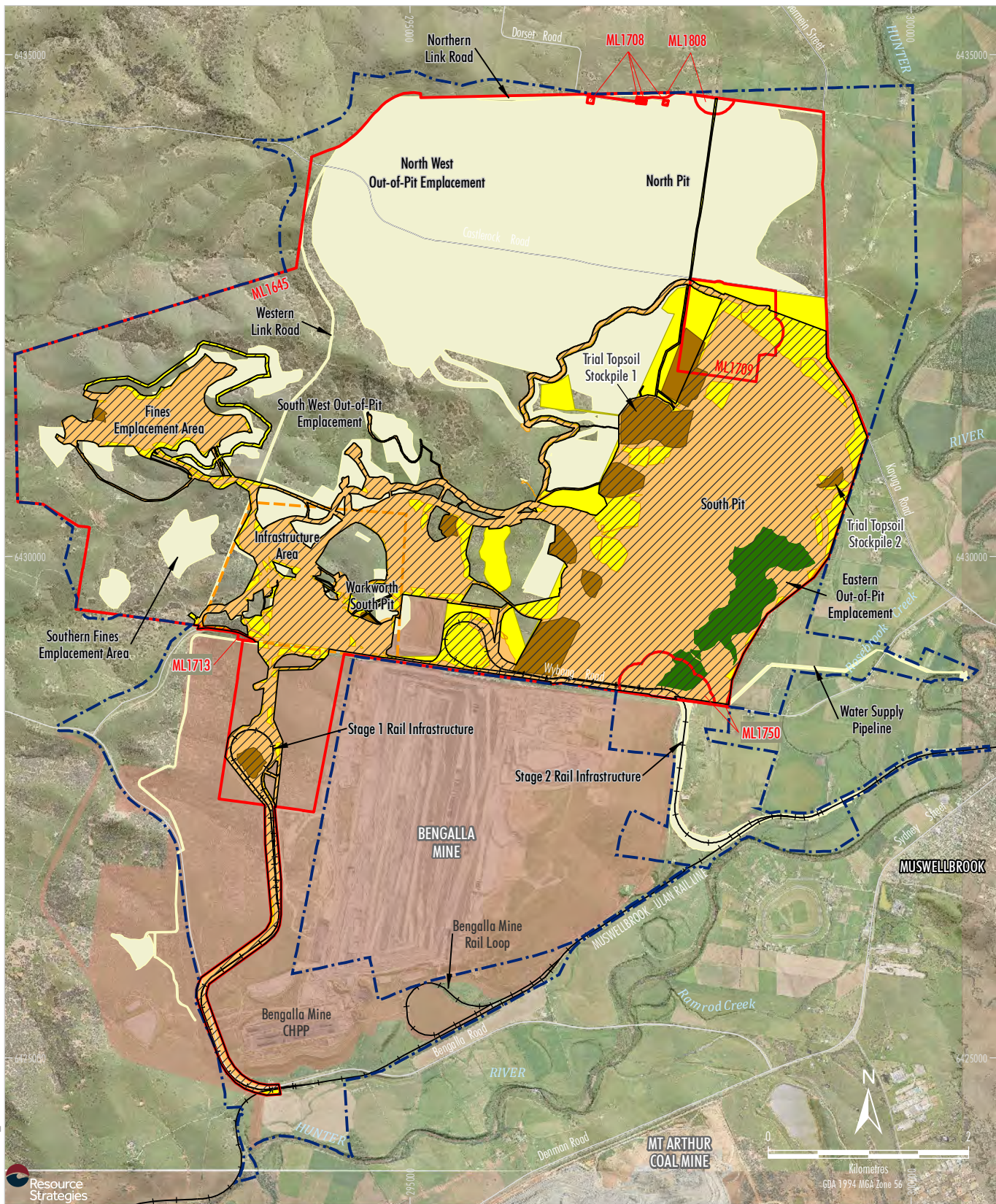
The VIMP describes MACH Energy's management approach to minimising visual amenity and lighting impacts on surrounding receivers.

Visual landscaping activities were undertaken during the reporting period. These included:

- tree planting of over 10,000 trees in the following areas:
  - tree screen infill planting along key roads with views of the MPO such as Kayuga and Wybong Roads;
  - tree planting along the main MPO site entrance, access road, operations office carpark and infrastructure areas;
  - tree planting along the eastern extent of Mining Lease 1645; and
  - tree planting along the Hunter River fauna connectivity area;
- implementation of visual bunding/tree screen planting along the CHPP road on the western edge of the ROM coal storage area;
- continued extension of visual barrier fencing along Wybong Road adjacent to the CHPP; and
- general maintenance of the abovementioned areas.

Targets for visual landscaping growth and survival rates were achieved for 2020 as a result of drought conditions easing. However, in some areas, the abundance of weeds had an impact on survival rates. During the reporting period, contractors were employed to water tree screens during dry periods.

Consistent with the previous reporting period, a total of 16 visual-related complaints were received by MACH Energy during 2020 (see Complaints Summary 2020: <https://machenergyaustralia.com.au/mount-pleasant/documentation/>). In response to each complaint, an investigation was triggered. Following the investigation, the ERM made further contact with the complainant to provide an update on how MACH Energy has addressed the issue of the complaint.



MAC18-03 AR 2020\_2016C

- LEGEND**
- Mining Lease Boundary
  - Development Consent Boundary
  - Approximate Extent of Existing/Approved Surface Development (DA92/97) <sup>1</sup>
  - Infrastructure Area Envelope
  - MOP Footprint <sup>2</sup>
  - End 2020 Active Disturbance Area
  - End 2020 Topsoil Stockpile Location
  - End 2020 Rehabilitation Area
  - 2021 Forecast Additional Disturbance Area
  - Bengalla Mine Approved Disturbance Boundary (SSD-5170)

**NOTES**

<sup>1</sup> Excludes some incidental Project components such as water management infrastructure, infrastructure within the Infrastructure Area Envelope, offsite coal transport infrastructure, road diversions, access tracks, topsoil stockpiles, power supply, temporary offices, signalling, other ancillary works and construction disturbance.

<sup>2</sup> Mount Pleasant Operation Mining Operations Plan and Rehabilitation Management Plan (July 2020)

Source: MACH Energy (2021); NSW Spatial Services (2021); Department of Planning and Environment (2016) Orthophoto: MACH Energy (Jan 2021)

**MACHEnergy**  
MOUNT PLEASANT OPERATION  
Topsoil Stockpile Locations

**Figure 6**

**Table 17**  
**MPO Waste Data**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
General Waste (t)	35.61	11.91	26.07	19.08	10.88	15.13	18.54	24.30	21.22	18.13	17.99	18.92	237.76
ACM <sup>1</sup> (t)	0	0	0	0	0	0	0	0	0	0	0	3	3
Recycled Waste (t)	13.43	17.72	11.24	42.07	41.80	34.48	29.13	31.96	77.75	35.56	19.83	40.17	395.12
Liquid Effluent (kL)	69.00	71.00	83.50	75.00	110.20	113.50	92.00	47.70	67.50	64.80	88.50	52.00	934.70

Note:

t = tonnes; kL = kilolitres.

<sup>1</sup> Asbestos is managed in accordance with an internal Asbestos Control Plan. All asbestos removal work is handled with appropriate respiratory protective equipment and is supervised by a competent person approved by SafeWork NSW. Asbestos is transported off-site and disposed of at a lawful disposal facility licensed by EPA.

### **5.11 CONTAMINATED LAND**

Some non-friable Asbestos Containing Materials (ACM) were identified within the Rail 2 project area during the reporting period. Approximately 3 t of the ACM was removed by a qualified and licensed contractor and disposed of to an approved ACM disposal facility, in accordance with the Asbestos Management Plan detailed in Appendix C of the CEMP.

### **5.12 SPONTANEOUS COMBUSTION MANAGEMENT**

Inspections of coal stockpiles for spontaneous combustion were undertaken regularly. There were two spontaneous combustion events at the MPO during the reporting period.

The first spontaneous combustion event occurred in the Bayswater coal seam in Pit D on 27 April 2020, where visible flames were noticed coming from the coal seam. The area was continually inspected, with dozers tasked to cover the heated material. The area has since been mined through and processed at the CHPP.

The second spontaneous combustion involved the ignition of some carbonaceous material on 22 December 2020 in Pit D dump. Remediation plans were put in place prior to requiring a dozer to cut down the dump system. The area is continually being inspected with dozers tasked to cover the heated material.

## 6 WATER MANAGEMENT

A WMP was prepared by MACH Energy in accordance with Condition 28, Schedule 3 of Development Consent DA 92/97 and approved on 31 October 2019.

The WMP includes the following monitoring network (Figure 7):

- 17 surface water monitoring locations (W1 – W17);
- nine stream health monitoring locations (HR1 – HR6, DB, MC and SC); and
- groundwater monitoring bores covering all major hydrogeological units.

Mining activities in 2020 were undertaken in accordance with the erosion and sediment control provisions of the approved WMP.

There were no water discharges from the MPO in 2020. Any future discharges of mine water will be undertaken in accordance with Development Consent DA 92/97 (Condition 26, Schedule 3), Development Consent SSD-5170 (i.e. Bengalla Mine's Development Consent) and EPL 20850.

### 6.1 SURFACE WATER

#### 6.1.1 Approval Criteria

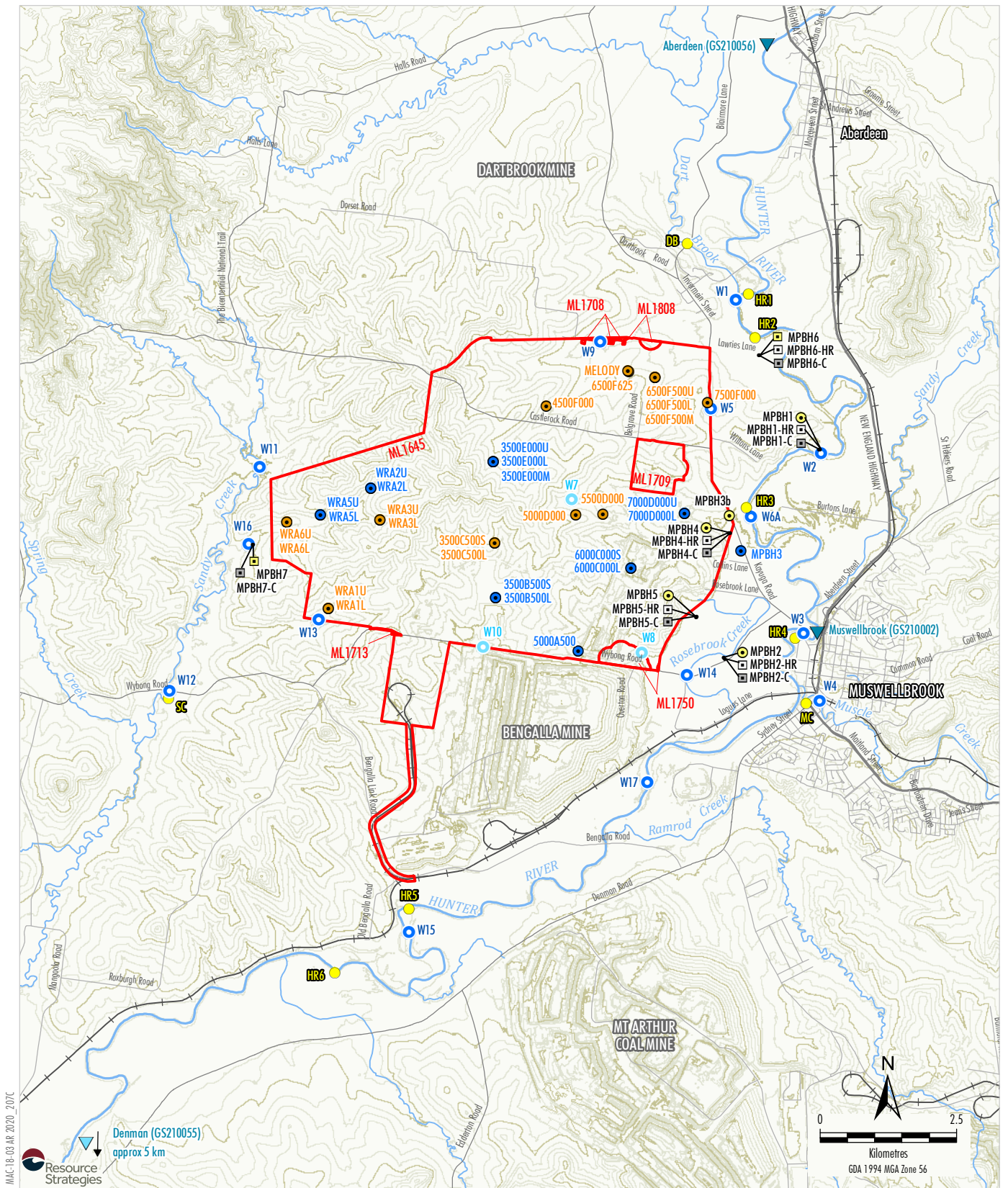
##### *Surface Water Quality*

Surface water monitoring is undertaken monthly and/or event based at 17 locations (Figure 7) for pH, EC, Total Suspended Solids (TSS) and total dissolved solids (TDS). Water samples are also collected quarterly at these sites for laboratory analysis. Monitoring at sites W7 and W8 have been discontinued due to being disturbed by mining activities. Monitoring at site W10 has been discontinued as the site is located on Dry Creek directly downstream of the Bengalla Mine Dry Creek Diversion Project.

Establishment of the baseline conditions of key watercourses prior to the commencement of coal extraction was undertaken through surface water monitoring. Monitoring data has been reviewed against site-specific surface water quality triggers, developed using the *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* (Australian and New Zealand Environment and Conservation Council & Agriculture and Resource Management Council of Australia and New Zealand [ANZECC & ARMCANZ], 2000).

Trigger levels have not been established for sites upstream of the MPO (i.e. W1 and W4) because these cannot be affected by the MPO. Sites located on the Hunter River and the unnamed drainage line (monitored adjacent to Wybong Road) (i.e. W2 and W6) contain sufficient data to develop trigger levels (with the exception of TDS trigger levels for these sites). Updated trigger levels have been proposed for sites W2 and W6 as part of the WMP update undertaken during the reporting period (Section 2.1). Once approved, reporting against the new trigger levels will be provided in the next Annual Review. Some sites (i.e. W5 and W9) are located on ephemeral drainage lines that are frequently dry and do not have sufficient data to develop site-specific trigger levels. ANZECC & ARMCANZ (2000) default trigger levels for these sites have been adopted, until such time as sufficient data is available to develop site-specific triggers.





Source: MACH Energy (2021); NSW Spatial Services (2021); NSW Department of Primary Industries - Water (2016)

**MACHEnergy**  
 MOUNT PLEASANT OPERATION  
 Surface Water and Groundwater  
 Monitoring Locations

Figure 7

- LEGEND**
- Mining Lease Boundary
  - Contour (10 m Intervals)
  - ▼ DPI Water Gauging Station
  - Surface Water Monitoring
  - Stream Health Monitoring Site
  - Surface Water Monitoring Site
  - Historical Surface Water Monitoring Site
  - Newly Established Mount Pleasant Monitoring
  - Standpipe - Coal Seam
  - Standpipe - Interburden
  - Standpipe - Alluvium
  - Mount Pleasant Monitoring
  - Standpipe
  - Standpipe - Alluvium
  - Standpipe - Historical

W17 has been assigned preliminary trigger values from the Bengalla Water Management Plan (Bengalla Mining Company [BMC], 2017). MACH Energy has established preliminary triggers at this site as it is the only site downstream of MPO's footprint on the Hunter River that is not also downstream of the Bengalla Mine footprint. MACH Energy therefore considers this site particularly important for assessing potential surface water impacts associated with the MPO (i.e. in the absence of any potential influence from Bengalla Mine).

Trigger levels for the remaining water monitoring sites (i.e. W11-W16 [Figure 7]) have been proposed as part of the WMP update undertaken during the reporting period (Section 2.1). Once approved, reporting against the new trigger levels will be provided in the next Annual Review. The site-specific trigger levels are listed in Table 18.

**Table 18**  
**Surface Water Quality Trigger Levels**

Site	pH	EC ( $\mu\text{S}/\text{cm}$ )	TSS (mg/L)
	20 <sup>th</sup> – 80 <sup>th</sup> Percentile Trigger Levels	80 <sup>th</sup> Percentile Trigger Level	80 <sup>th</sup> Percentile Trigger Level
<b>Site Specific Trigger Levels</b>			
W2	7.8 – 8.3	539	18
W6A*	7.8 – 8.4	496	19
<b>Default Trigger Levels<sup>^</sup></b>			
W5	6.5 – 7.5	350	-
W7	6.5 – 7.5	350	-
W9	6.5 – 7.5	350	-
<b>Bengalla Mine Trigger Levels<sup>#</sup></b>			
W17	6.5 – 8.1	650	40

Note:

EC = electrical conductivity;  $\mu\text{S}/\text{cm}$  = microsiemens per centimetre and mg/L = milligrams per litre.

\* Due to safe access no longer being available at site W6, triggers developed for this site will now be used at the new monitoring location W6A, approximately 500 m downstream of W6, as described in Section 7.3.

<sup>^</sup> Default trigger levels are based on the ANZECC & ARM CANZ (2000) guideline values for upland rivers in south-east Australia. ANZECC & ARM CANZ (2000) does not provide guideline values for TSS.

<sup>#</sup> Preliminary trigger values have been sourced from the Bengalla Water Management Plan (BMC, 2017), which have been established from baseline data for monitoring sites adjacent to W17 (e.g. Bengalla sites W01, W02 and W03), as well as the ANZECC & ARM CANZ (2000) guideline.

Trigger levels are not regarded as assessment criteria, rather they are used as an indicator of potential impacts and to initiate investigations into the surface water quality as reported by the monitoring program.

An investigation is triggered when both:

- a water quality indicator at a downstream receiving water monitoring location is above (or outside the range of) the trigger levels for three consecutive sampling events; and
- a water quality indicator at a downstream receiving water monitoring location is above (or below in event of a trigger of the lower pH limit) the indicator of the corresponding upstream monitoring location (where such a monitoring location exists) sampled on the same day.

The majority of sites are located on ephemeral drainage lines and therefore do not regularly experience flow for sampling. During the reporting period, sites W5, W9, W13 and W14 had insufficient water for monthly manual sampling and therefore either do not have full datasets or have no data presented in Section 6.1.2.

## Stream Health

Stream health monitoring continued during the reporting period at six sites outlined in the WMP located on the Hunter River (HR1, HR2, HR3, HR4, HR5 and HR6), as well as three additional sites located on Sandy Creek (SC), Dart Brook (DB) and Muscle Creek (MC) (Figure 7).

Stream health is monitored bi-annually during spring and autumn using the Australian River Assessment System (AusRivAS) aquatic invertebrate monitoring protocol. In addition to the aquatic macro invertebrate sampling, monitoring also includes: fish observations, site water quality, stream condition and presence of aquatic and riparian edge plants. Two rounds of monitoring were undertaken during the reporting period, in May 2020 (autumn) and November 2020 (spring).

Trigger levels have been developed at two of the Hunter River stream health monitoring sites, as outlined in Table 19.

**Table 19**  
**Stream Health Trigger Levels**

Site ID	Baseline Band of Impairment Score	Trigger Level (O/E Taxa)
Hunt 571	B	0.54
Hunt 854	A	0.84

O/E = Observed/Expected.

Should a measured O/E taxa value at a particular site deteriorate below the range for its baseline band of impairment score at two successive monitoring rounds, the stream health investigation protocol (refer to the WMP) would be initiated.

Revised stream health trigger levels and the stream health investigation protocol were proposed as part of the WMP update undertaken during the reporting period (Section 2.1). Once approved, reporting against the new trigger levels will be provided in the next Annual Review.

### 6.1.2 Performance During the Reporting Period

#### Surface Water Monitoring

Surface water monitoring for the reporting period has been split into three groups:

- monitoring in the Hunter River (sites W1, W2, W3, W6A, W15 and W17);
- monitoring in Sandy, Muscle and Rosebrook Creeks (sites W4, W11, W12, W13, W14 and W16); and
- monitoring in other ephemeral creeks and gullies.

When there is no data available (e.g. due to prolonged dry conditions), charts are not presented in the following sub-sections.

Additional event-based monitoring was carried out in February and December, resulting in multiple monitoring records instead of one (7 February, 10 February and 18 February, and 22 December and 29 December, respectively).

Hunter River

Monitored pH values for the Hunter River monitoring sites during the reporting period are shown in Chart 11. Additionally, a comparison between 2017, 2018, 2019 and 2020 pH values is provided in Chart 12.

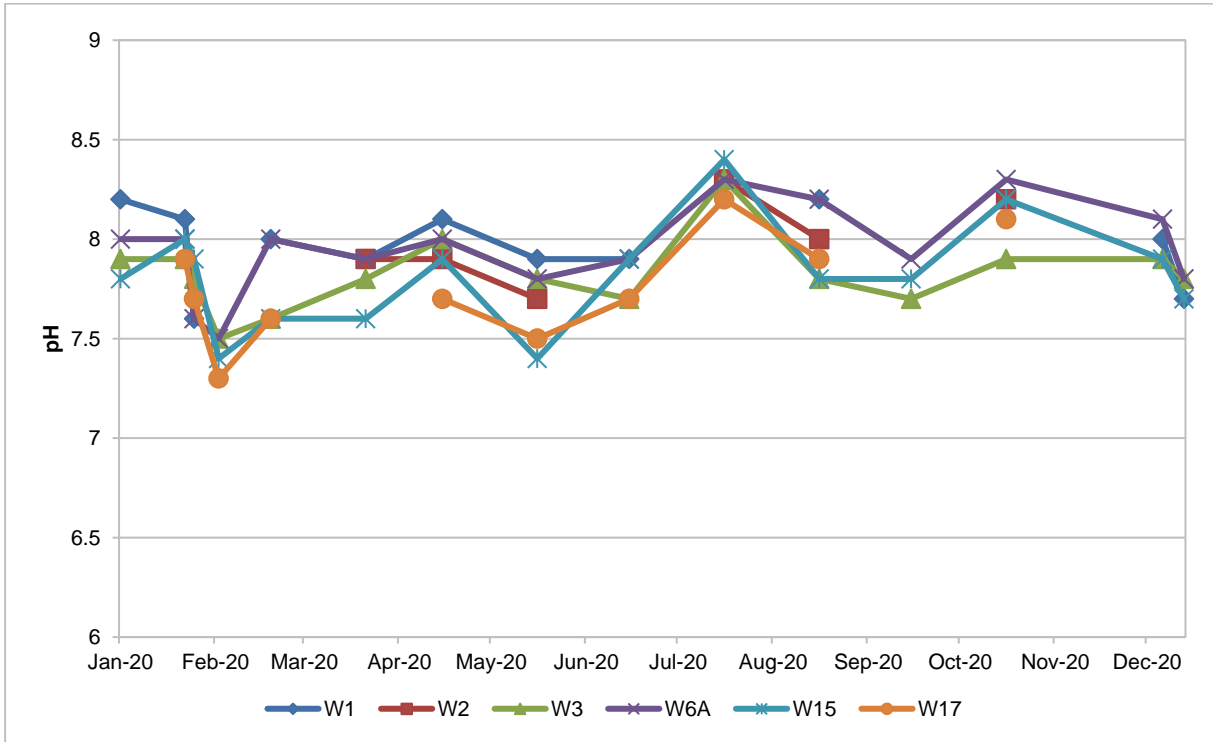


Chart 11: Hunter River pH Levels 2020

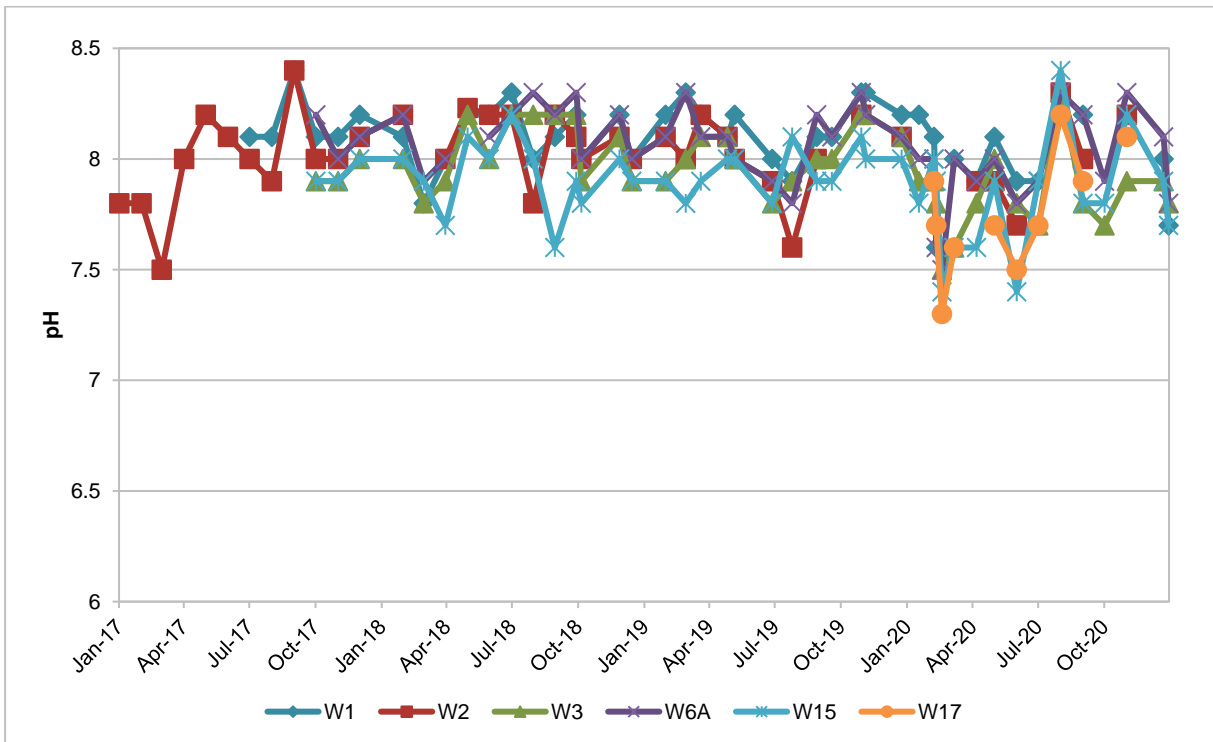


Chart 12: Hunter River pH Levels 2017 – 2020

EC values for the 2020 monitoring period are shown in Chart 13. Additionally, a comparison between 2017, 2018, 2019 and 2020 EC values is provided in Chart 14.

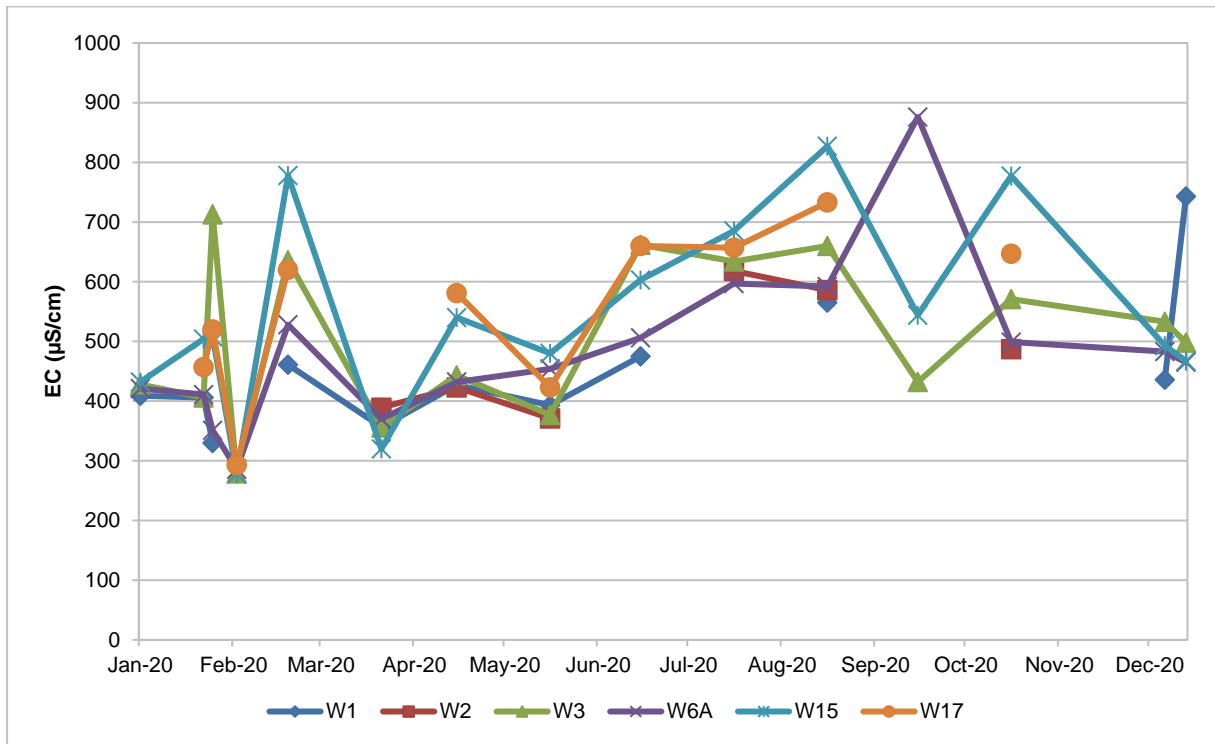


Chart 13: Hunter River EC Levels 2020

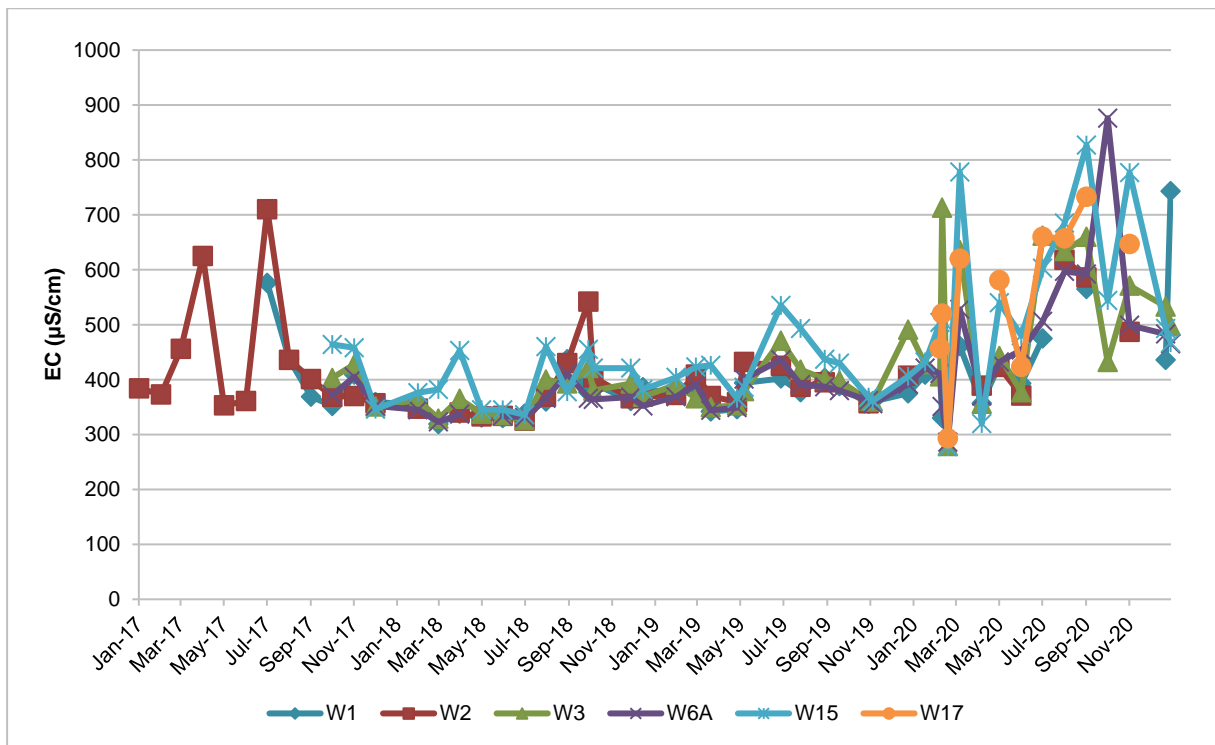


Chart 14: Hunter River EC Levels 2017 – 2020

TSS values for the 2020 monitoring period are shown in Chart 15. Additionally, a comparison between 2017, 2018, 2019 and 2020 TSS values is provided in Chart 16.

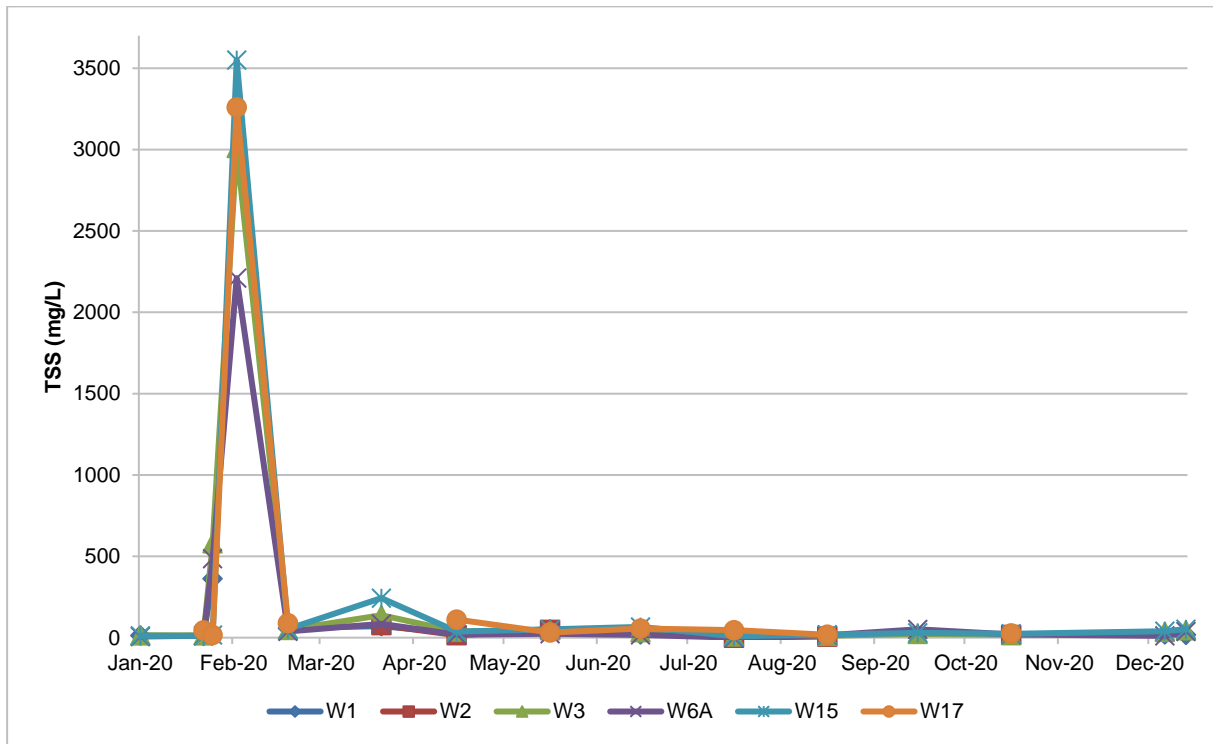


Chart 15: Hunter River TSS Levels 2020

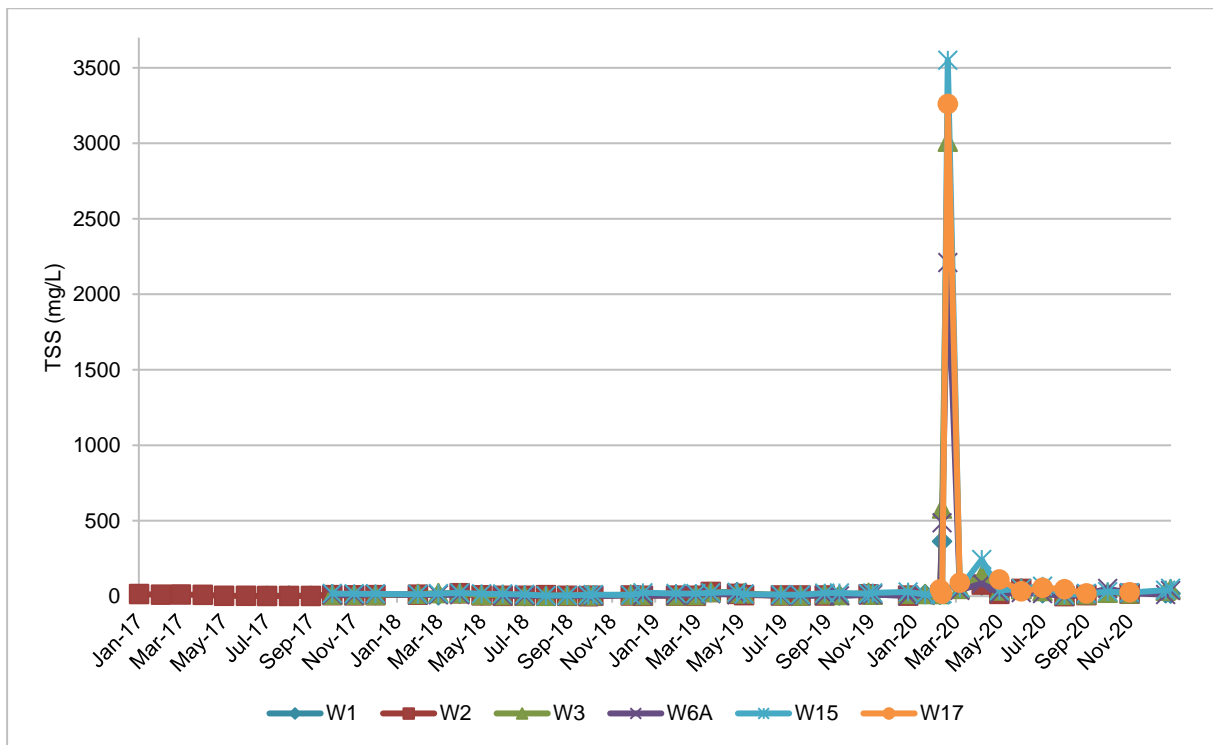


Chart 16: Hunter River TSS Levels 2017 – 2020

TDS values for the 2020 monitoring period are shown in Chart 17. Additionally, a comparison between 2017, 2018, 2019 and 2020 TDS values is provided in Chart 18.

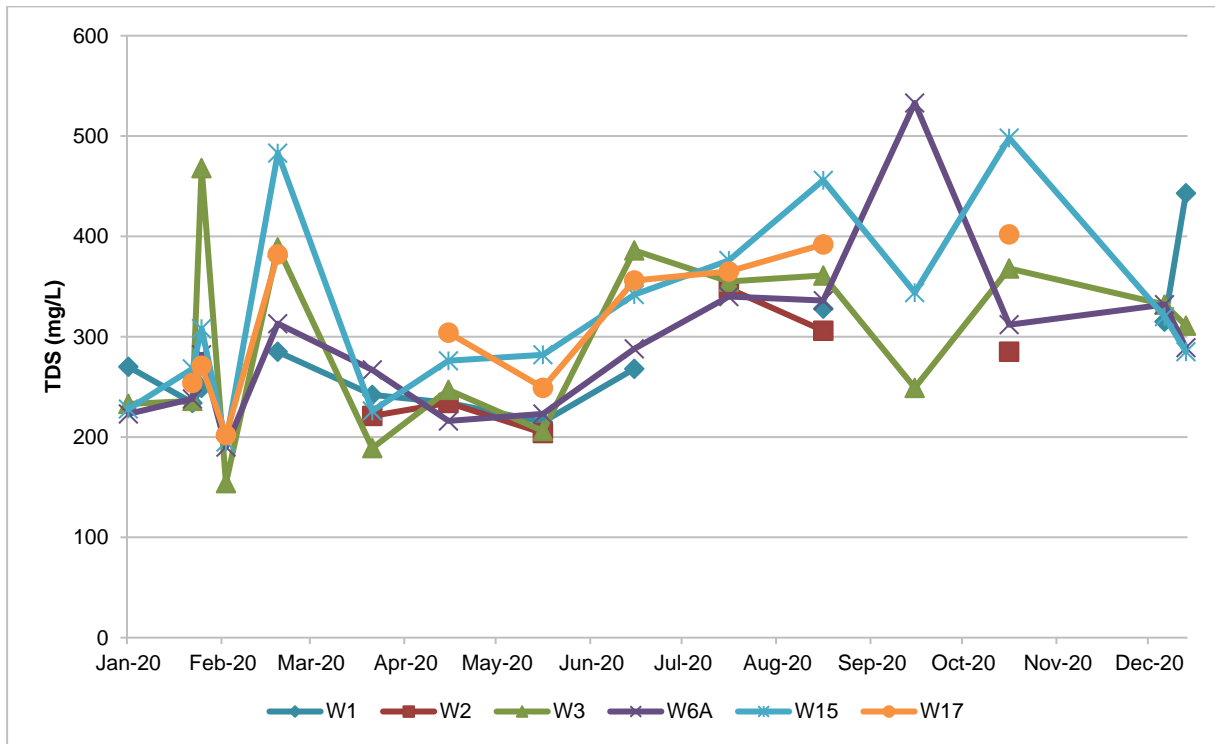


Chart 17: Hunter River TDS Levels 2020

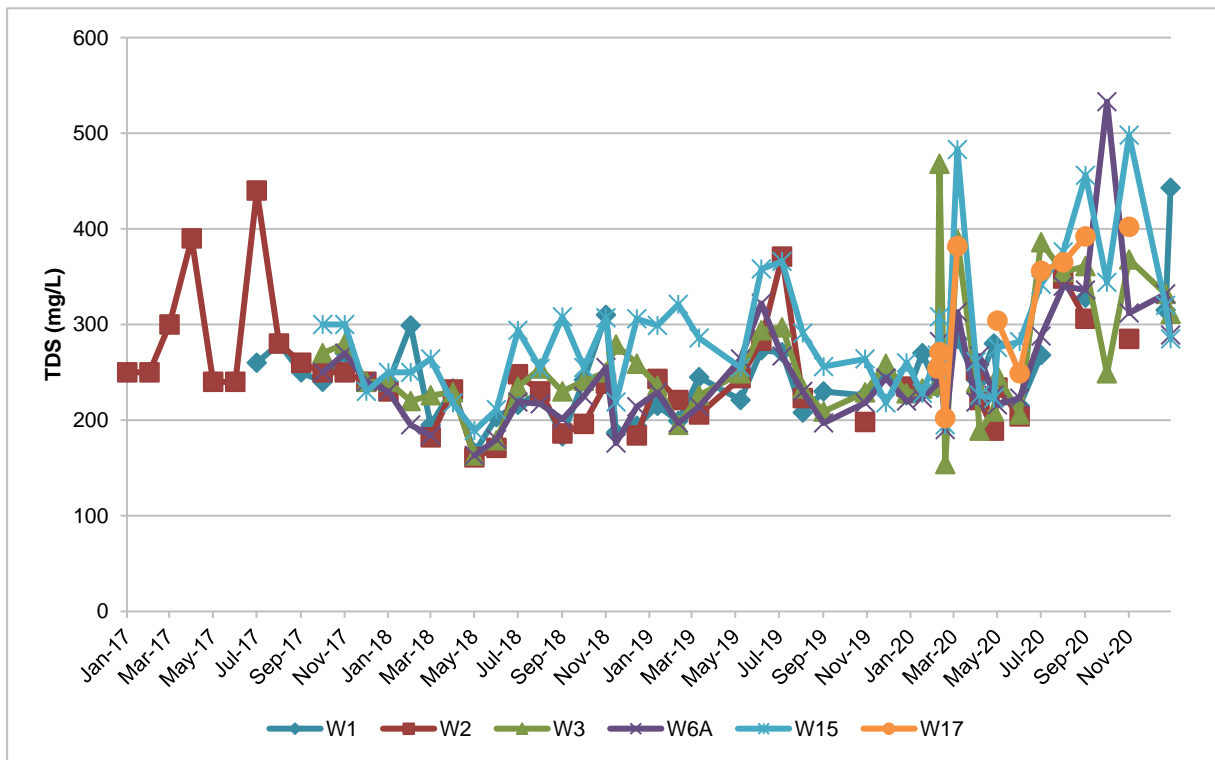


Chart 18: Hunter River TDS Levels 2017 – 2020

Sandy, Muscle and Rosebrook Creeks

Monitored pH values for the Sandy, Muscle and Rosebrook Creek monitoring sites during the reporting period are shown in Chart 19. Additionally, a comparison between 2017, 2018, 2019 and 2020 pH values is provided in Chart 20.

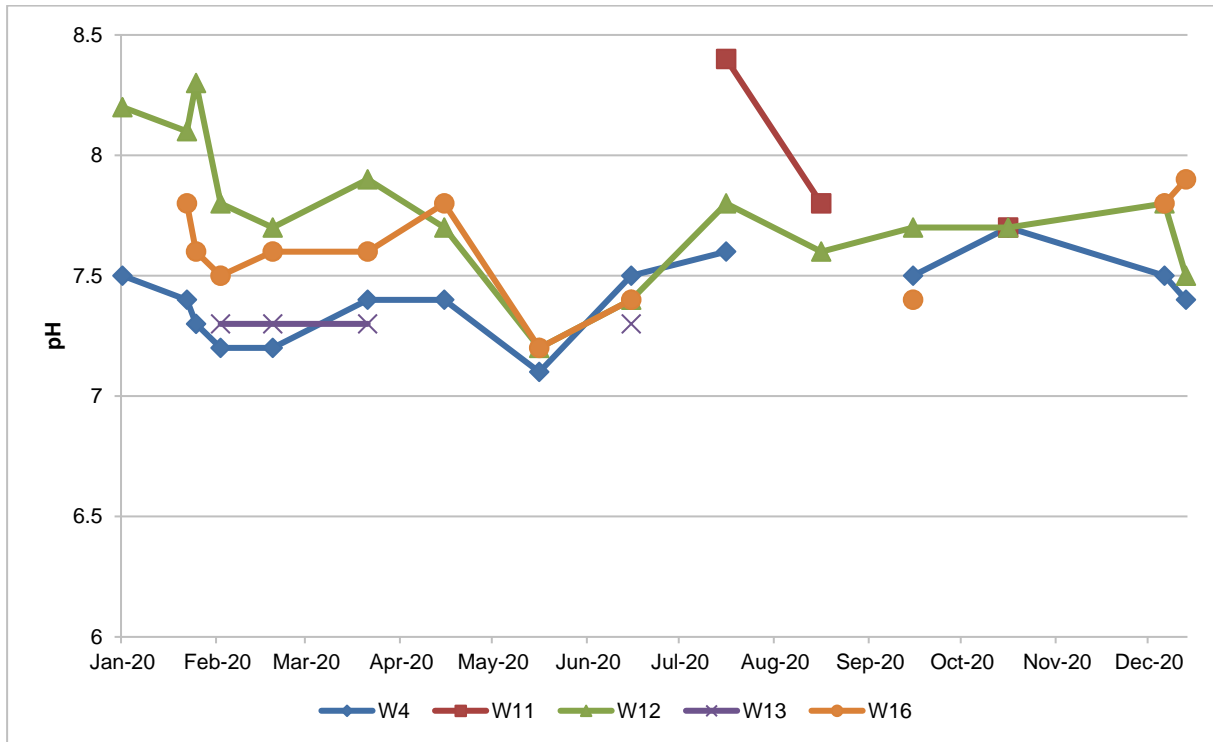


Chart 19: Sandy, Muscle and Rosebrook Creeks pH Levels 2020

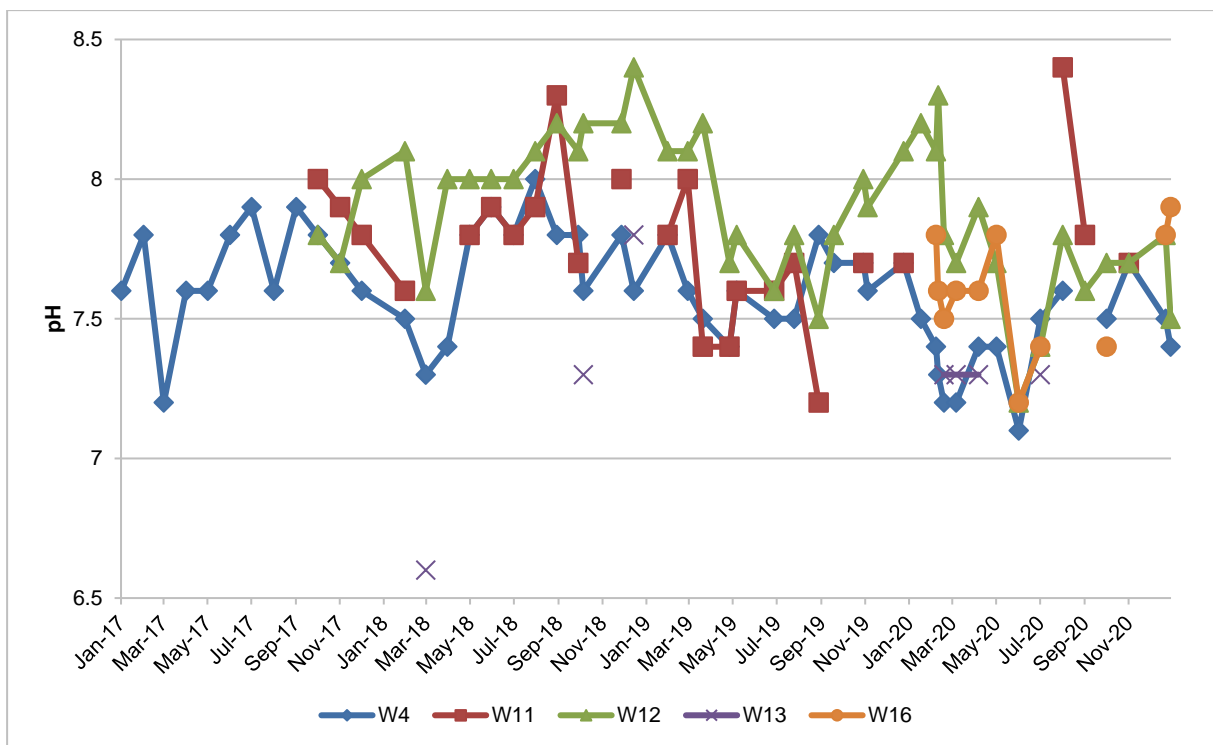


Chart 20: Sandy, Muscle and Rosebrook Creeks pH Levels 2017 – 2020



EC values for the 2020 monitoring period are shown in Chart 21. Additionally, a comparison between 2017, 2018, 2019 and 2020 EC values is provided in Chart 22.

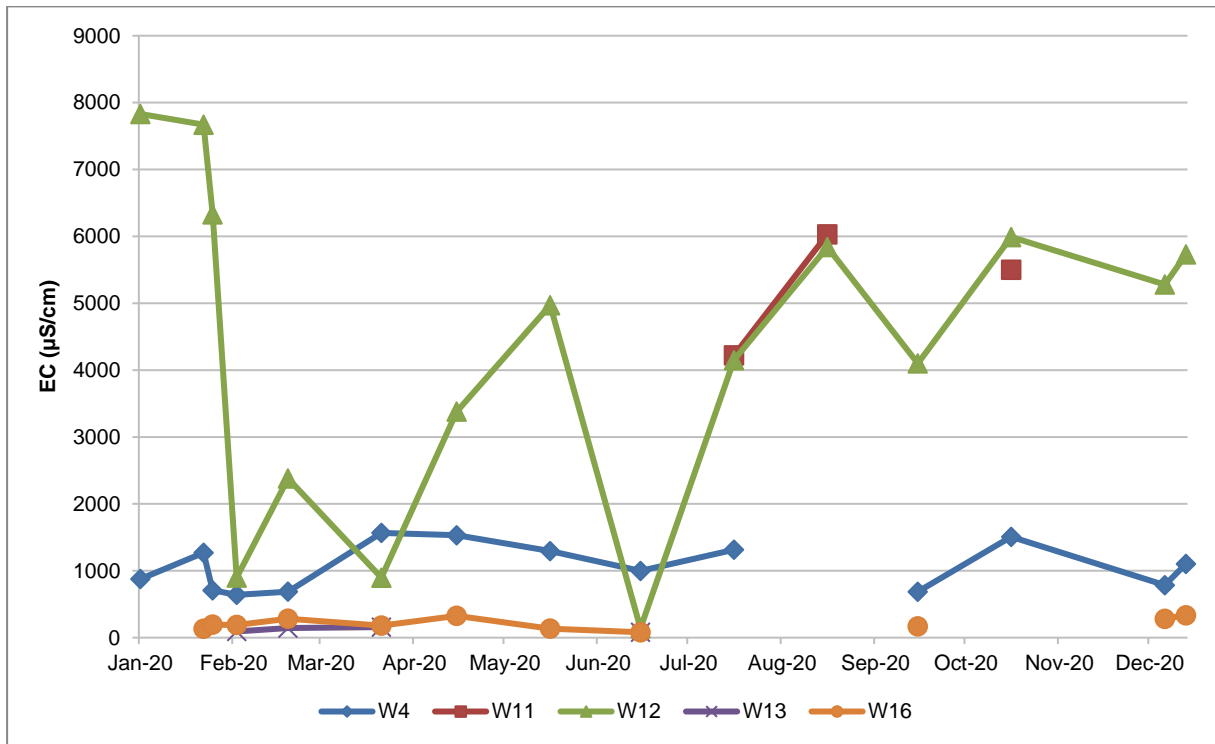


Chart 21: Sandy, Muscle and Rosebrook Creeks EC Levels 2020

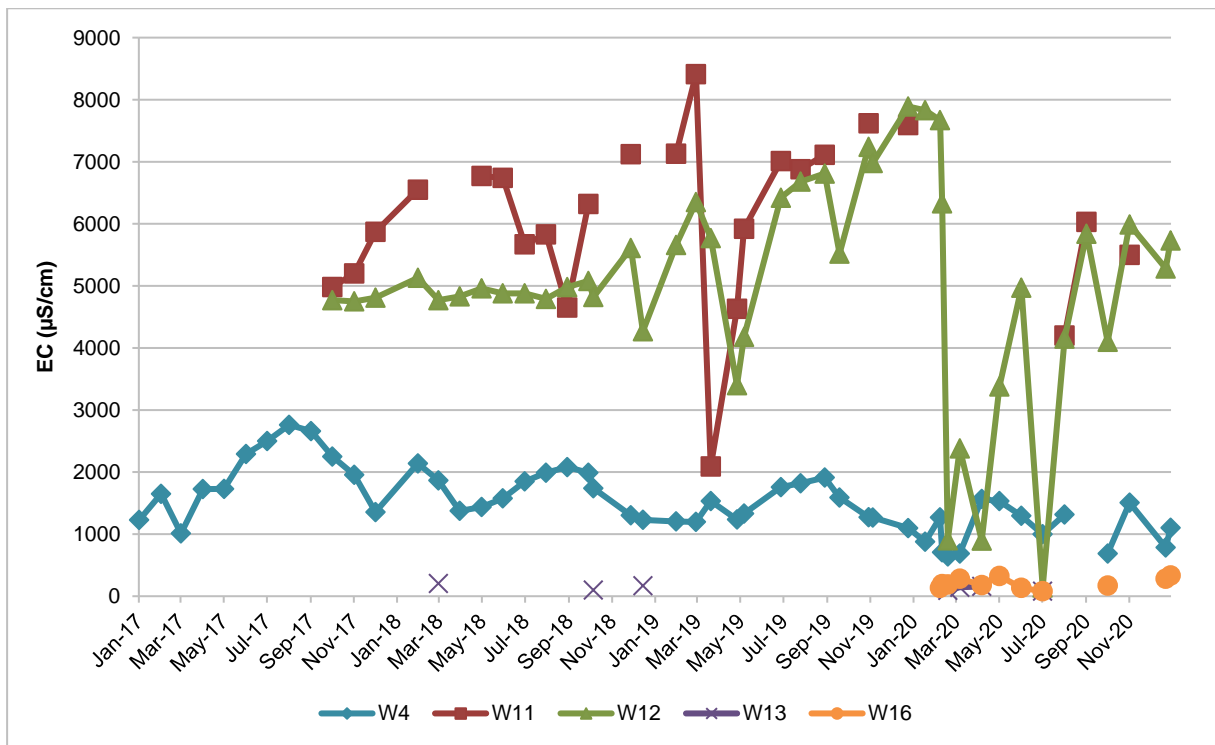


Chart 22: Sandy, Muscle and Rosebrook Creeks EC Levels 2017 – 2020

TSS values for the 2020 monitoring period are shown in Chart 23. Additionally, a comparison between 2017, 2018, 2019 and 2020 TSS values is provided in Chart 24.

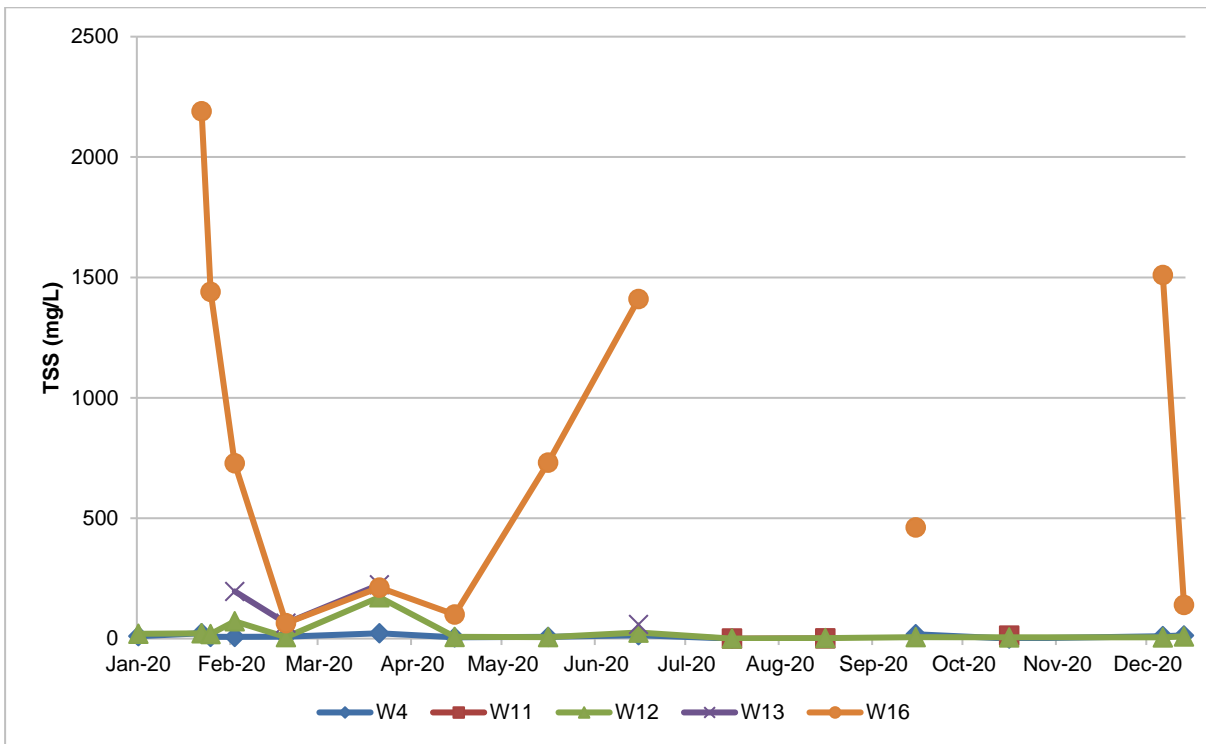


Chart 23: Sandy, Muscle and Rosebrook Creeks TSS Levels 2020

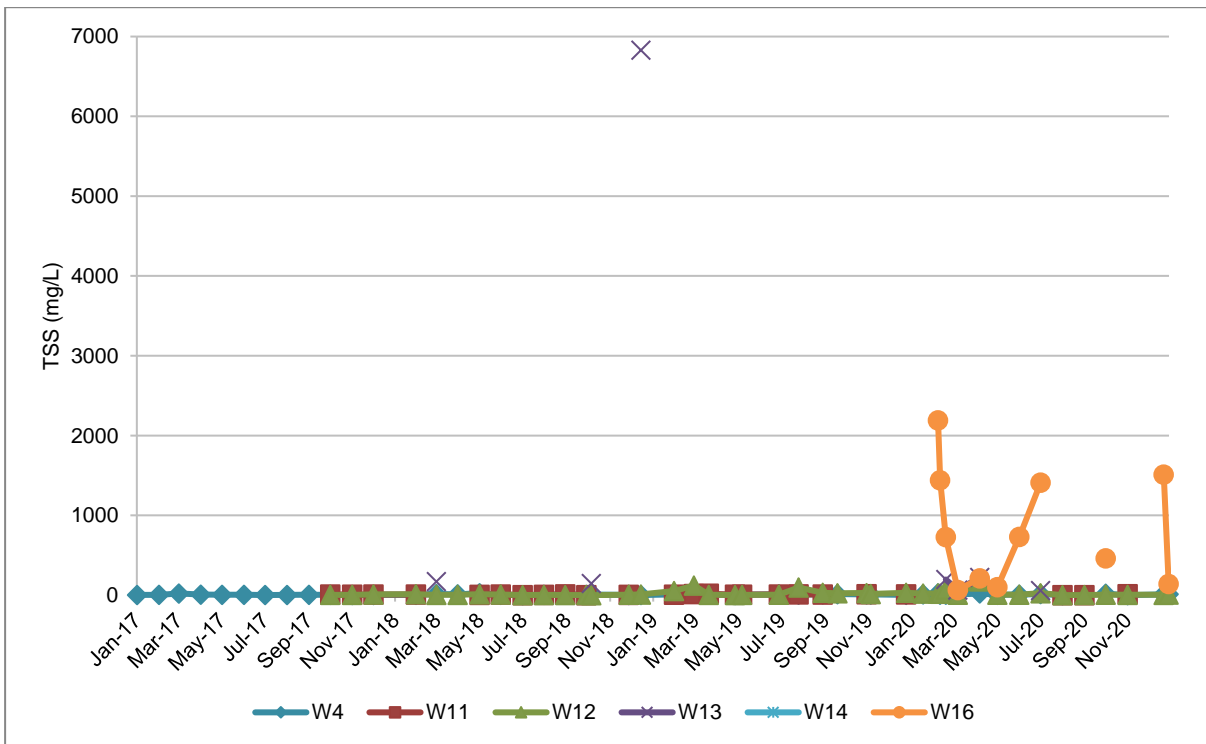


Chart 24: Sandy, Muscle and Rosebrook Creeks TSS Levels 2017 - 2020

Recorded TDS values for the 2020 monitoring period are shown in Chart 25. Additionally, a comparison between 2017, 2018, 2019 and 2020 TDS values is provided in Chart 26.

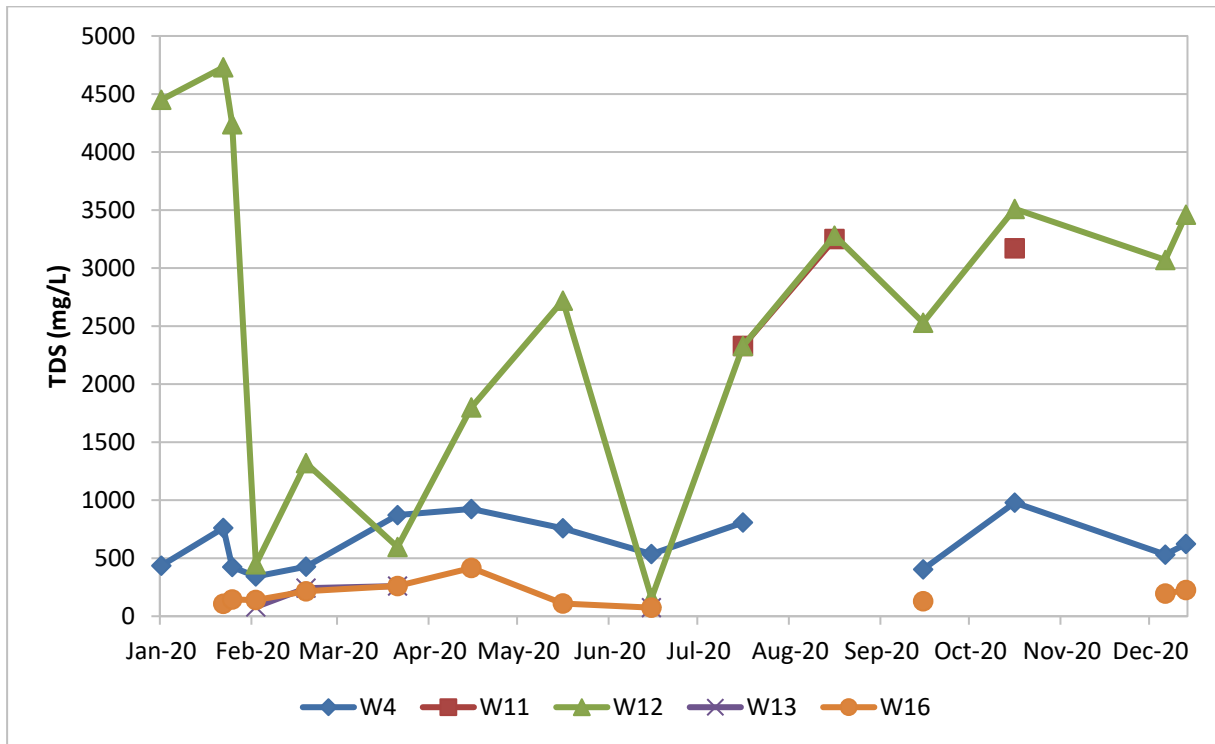


Chart 25: Sandy, Muscle and Rosebrook Creeks TDS Levels 2020

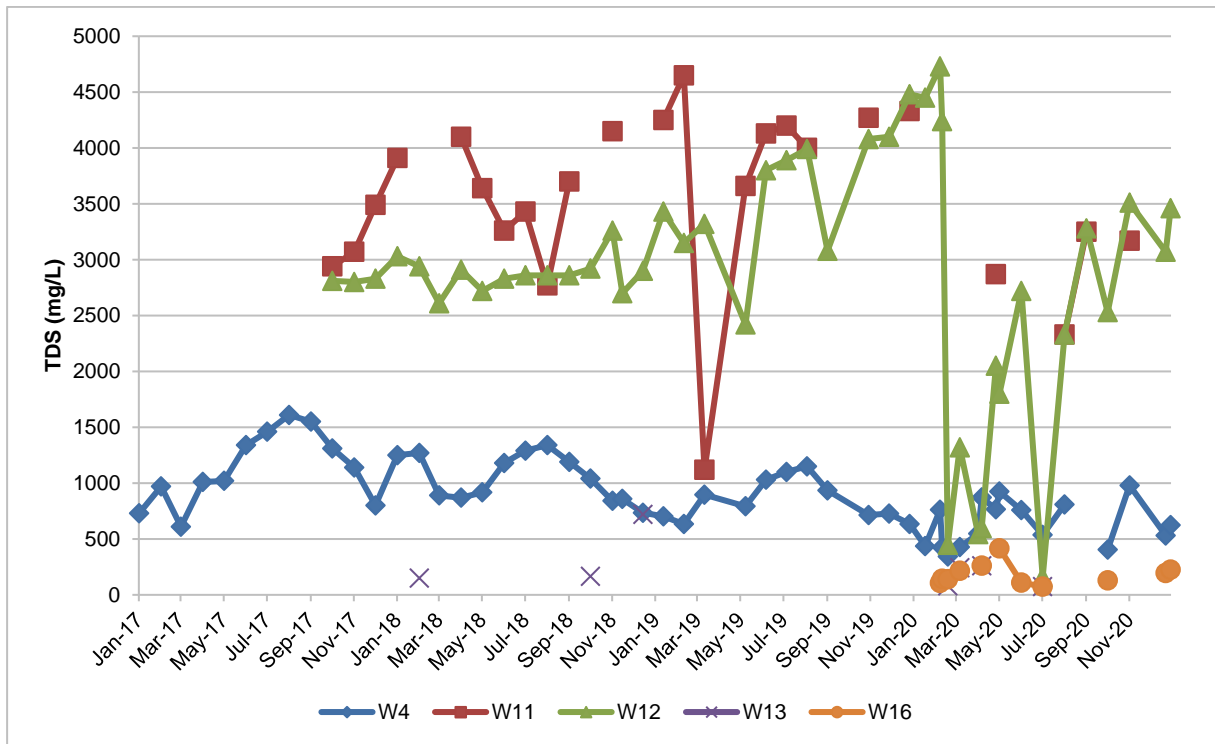


Chart 26: Sandy, Muscle and Rosebrook Creeks TDS Levels 2017–2020

### 6.1.3 Trends and Key Management Implications

#### **Surface Water Monitoring**

##### *Hunter River Sites (W1, W2, W3, W6A, W15 & W17)*

During the reporting period, pH levels at the Hunter River sites ranged from 7.2 to 8.4. The Hunter River sites stayed within their relevant pH investigation trigger levels, with the exception of one slightly lowered reading at site W2 during June 2020, and two slightly lowered readings at W6A, recorded during the additional event-based monitoring on 10 and 18 February. Only site W2 has been consistently monitored for water quality since 2017. A comparison with 2017, 2018 and 2019 pH levels show that pH levels have stayed consistently between 7.2 and 8.4 to date.

EC monitoring results for site W2 remained relatively consistent with the exception of two spikes above the trigger levels in August and September. EC values at W2 returned to values below the trigger levels in subsequent monitoring rounds. Site W6A showed elevated EC measurements in March and between July and November 2020. Site W17 also showed elevated EC readings between July and September 2020. Following exceedance of the EC trigger levels for three consecutive sampling events at sites W6A and W17, the Surface Water Quality Response Protocol was implemented in accordance with the WMP, which indicated that the elevated EC levels at sites W6A and W17 was not attributed to MPO activities. EC values at W1, W3 and W15 remained relatively consistent throughout the reporting period.

TSS levels for sites W2, W6A and W17 exceeded the trigger levels on a number of occasions during the reporting period. W2 had elevated TSS levels in April and June 2020. Upstream monitoring site W1 also showed elevated TSS values during these months. TSS values at W2 returned to values below the trigger levels in subsequent monitoring rounds. Site W6A showed elevated TSS measurements during the additional event-based monitoring on 10 and 18 February, as well as during March, April, June, October, November and December 2020 monitoring rounds. TSS levels recorded at W6A in March and June were lower than the levels recorded at an upstream site W1 during these months. TSS levels for site W17 stayed within the relevant trigger levels with the exception of elevated readings on 7 February, 10 February (event-based monitoring round), March, May, July and August 2020. The TSS results may have been influenced by external factors such as heavier rainfall than other sites received, and topography of the area which allows additional runoff from surrounding farmland (AECOM, 2020) after an extended period of drought conditions.

TDS levels for all Hunter River sites generally fluctuated between approximately 200 mg/L and 500 mg/L.

##### *Sandy, Muscle and Rosebrook Creek Sites (W4, W11, W12, W13, W14 & W16)*

Monitored pH values during the reporting period at the Sandy, Muscle and Rosebrook Creek sites ranged from 7.1 to 8.4. Only site W4 has been consistently measured for water quality since 2017. Monitoring since 2017 shows generally consistent values of pH for site W4.

EC monitoring results at sites W4 and W16 remained generally consistent during the reporting period, fluctuating between approximately 600 to 1,500  $\mu\text{S}/\text{cm}$  and 100 to 300  $\mu\text{S}/\text{cm}$ , respectively. Sites W11 and W13 were not accessible for most of the reporting period due to wet conditions, resulting in a limited number of samples collected. The monitored EC levels for the sites were generally consistent with, or lower than, the levels recorded between 2017 – 2019. EC levels recorded at site W12 were largely consistent during the reporting period.

TSS values were generally consistent in sites W4, W11 and W12 during the reporting period. W16 showed elevated samples in February, June, July and December 2020 due to rainfall events prior to the sampling.

TDS values generally stayed consistent throughout the reporting period at the Sandy, Muscle and Rosebrook Creek sites, and generally correlated with the trend recorded for EC levels at the sites.

The 2017 – 2020 trends for pH and TSS for site W4 were generally consistent with observations made in the EIS (ERM Mitchell McCotter, 1997). EC and TDS levels at site W4 have increased since recordings made in the EIS. This site is located on Muscle Creek within Muswellbrook, upstream of the MPO and therefore any increase is not associated with MPO activities. This site has naturally occurring salts in surrounding soils and rocks, and data from previous annual reviews indicates that large fluctuations at this site are not unusual (Coal & Allied, 2016; MACH Energy, 2017b; MACH Energy, 2018a and 2018b; MACH Energy, 2019; MACH Energy, 2020a).

### ***Stream Health Monitoring***

The Autumn 2020 Stream Health Monitoring Report was prepared following the May 2020 monitoring round. The key findings of the report were as follows:

- Sites within Dart Brook, Muscle Creek and Sandy Creek indicate these catchments have been degraded by historical land use. Water quality data, particularly elevated salinity and low dissolved oxygen, reflects the condition of their catchments.
- Results from the AusRivAS analyses indicate that the condition of the Hunter River and associated tributaries has improved since the Spring 2019 survey, however, macroinvertebrate assemblages at all of the sites sampled continued to be dominated by pollution-tolerant taxa.
- No aquatic species of conservation significance were recorded at the monitoring sites.
- Increased level of diversity was measured at the time of the Autumn 2020 survey compared to Spring 2019 survey, however, analysis suggested that the changes were not due to the MPO.
- Species composition of fish sampled in Autumn 2020 was comparable with that observed in previous surveys.
- Measurements taken up to the present survey (Autumn 2020) have not detected any statistically significant changes that could be indicative of an impact associated with the MPO.

The Spring 2020 Stream Health Monitoring Report was prepared following the November 2020 monitoring round. The findings of the report were as follows:

- Sites within Dart Brook, Muscle Creek and Sandy Creek indicate these catchments have been degraded by historical land use. Water quality data, particularly elevated salinity and low dissolved oxygen, reflects the condition of their catchments.
- Despite above average rainfall within the catchment for the majority of 2020, no flow was recorded within ephemeral waters that drain from the eastern portion of the MPO to the Hunter River, including Rosebrook Creek.
- No aquatic species of conservation significance were recorded at the monitoring sites.
- Results from the AusRivAS analyses indicate that macroinvertebrate assemblages at all of the sites sampled were dominated by pollution-tolerant taxa.
- Increased level of diversity was measured at the time of the Spring 2020 survey compared to Autumn 2020 survey, however, analysis suggested that the changes were not due to the MPO.
- Band levels remained steady or improved between the Autumn and Spring 2020 surveys.
- Overall, examination results from the 2020 Spring survey did not detect any measurable change that could indicate an impact associated with the MPO.

The stream health trigger levels established within the WMP were exceeded on each sampling occasion since 2017. These consecutive exceedances trigger the stream health investigation protocol in accordance with the Surface and Groundwater Response Protocol (SGWRP). However, as previously stated in the Spring and Autumn 2020 Stream Health Monitoring Reports prepared by Bio-Analysis Pty Ltd, the investigation is not considered warranted as:

- the trigger levels developed within the SWMP are based on historical data presented in Hose and Turak (2004), which were collected on one sampling occasion at the sites;
- the MPO has been a nil discharge site in accordance with EPL 20850 throughout the monitoring period;
- external influences including rural and urban run-off and flow regulations are likely to have impacted aquatic biota within the monitoring sites since the baseline survey was carried out; and
- seasonal variation of the structure of assemblages of macroinvertebrates occurred (Stark and Phillips, 2009).

MACH Energy will continue to monitor stream health during autumn and spring in future monitoring periods. As recommended in the previous stream health monitoring reports for the MPO, revised stream health trigger levels and the stream health investigation protocol were proposed as part of the WMP update undertaken during the reporting period (Section 2.1). Once approved, monitoring and reporting against the new trigger levels will be undertaken.

## 6.2 GROUNDWATER

### 6.2.1 Approval Criteria and Management Plan Requirements

Groundwater monitoring is undertaken at a network of bores which are broadly distributed across the MPO area (Figure 7) and which cover all major hydrogeological units.

Groundwater monitoring includes:

- manually monitoring of water levels on a quarterly basis;
- quarterly sampling of pH and EC;
- annual sampling of a suite of laboratory parameters; and
- regular groundwater inflows as recorded from flow meters or recording of pumping times and rates.

Groundwater trigger levels have been developed for the MPO, based on the NSW Aquifer Interference Policy and the *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* (ANZECC & ARMCANZ, 2000). These trigger levels include standing water level (SWL) triggers for the eastern groundwater sites, and EC and pH for all sites, as presented in the WMP and in Tables 20 and 21.

Beneficial use categories have been assigned to each monitoring bore based on its 80<sup>th</sup> percentile baseline EC and the EC ranges specified in the WMP. Should a measured EC value exceed the beneficial use quality range EC for a particular bore at three successive monitoring rounds (as defined in the WMP), the groundwater investigation protocol, as detailed in the SGWRP, would be initiated.

Following the trigger of the Groundwater Quality Response Protocol in 2018, EC trigger levels for 6500F500 M&L, 4500F500 and 5500D000 and pH trigger levels for all groundwater monitoring sites were updated during the reporting period, as presented in the WMP.

**Table 20  
Groundwater Triggers – Water Level**

Bore	Screened Interval (mbgl)	Observed Groundwater Level (mbgl)		Trigger Level (mbgl)
		Minimum	80 <sup>th</sup> percentile	
MPBH1	12.6 – 18.6	8.8	9.7	11.7
MPBH2	11.5 – 17.5	11.6	12.2	14.2
MPBH3b	Well to 14 m	11.6	12.0	Dry (or 14.0 m)

**Table 21  
Groundwater Triggers – Water Quality**

Site	pH		pH Trigger Range	EC			
	20 <sup>th</sup> %ile	80 <sup>th</sup> %ile		80 <sup>th</sup> %ile (µS/cm)	Beneficial Use Category	Trigger (µS/cm)	
3500B500U	7.2	9.6*	6 – 8.5	3,530	Irrigation	7,800	
3500B500L	7.1	7.4		5,826	Irrigation	7,800	
3500C500U	7.1	7.4		5,664	Irrigation	7,800	
3500C500L	7.2	7.4		5,590	Irrigation	7,800	
4500F000	6.5	6.9		6,904	Saline	22,000	
5000D000	6.7	7.0		703	Potable	800	
5500D000	6.4	6.9		1,570	Irrigation	7,800	
6000C000U	6.4	7.1		4,984	Irrigation	7,800	
6000C000L	7.0	7.2		5,474	Irrigation	7,800	
6500F500U	6.8	7.0		5,778	Irrigation	7,800	
6500F500M	6.9	7.2		2,804	Irrigation	7,800	
6500F500L	6.5	7.0		1,526	Irrigation	7,800	
6500F625	6.7	7.0		4,086	Irrigation	7,800	
7000D000U	6.6	7.6		6,730	Irrigation	7,800	
7000D000L	6.6	6.8		1,370	Marginal Potable	2,350	
7500F000	6.7	7.6		5,918	Irrigation	7,800	
WRA1U	-	-		-	-	-	-
WRA1L	7.2	7.7		4,496	Irrigation	7,800	
WRA2U	6.7	7.0		4,108	Irrigation	7,800	
WRA2L	7.0	7.3		6,086	Irrigation	7,800	
WRA3U	7.1	7.5		9,020	Saline	22,000	
WRA3L	6.6	6.9		16,734	Saline	22,000	
WRA5U	7.1	7.4		4,772	Irrigation	7,800	
WRA5L	7.1	7.8		7,034	Irrigation	7,800	
WRA6U	6.8	7.0		11,240	Saline	22,000	
WRA6L	7.2	7.7		5,970	Irrigation	7,800	
MPBH1	6.8	7.1		590	Potable	800	
MPBH2	6.8	7.1		930	Marginal Potable	930**	
MPBH3	6.6	6.9		1,083	Marginal Potable	1,083**	
MPBH3b	7.4	7.7		4,420	Irrigation	7,800	

**Table 21 (Continued)**  
**Groundwater Triggers – Water Quality**

Site	pH		pH Trigger Range	EC		
	20 <sup>th</sup> %ile	80 <sup>th</sup> %ile		80 <sup>th</sup> %ile (µS/cm)	Beneficial Use Category	Trigger (µS/cm)
MPBH4 (formerly A1) <sup>^</sup>	-	-	6 – 8.5	-	-	-
MPBH5 (formerly B1) <sup>^</sup>	-	-		-	-	-
Melody Bore <sup>^</sup>	-	-		-	-	-

Notes:

- \* pH values for bore 3500B500S exceed the pH trigger range of 6 – 8.5 however, this bore was mined through in August 2018.
- \*\* Existing 80<sup>th</sup> percentile values have been adopted for these bores given the baseline water quality is close to potable and these sites are representative of the Hunter River alluvium.
- <sup>^</sup> Sufficient data is not yet available to develop baseline trigger ranges for new alluvial bores MPBH4 and MPBH5, or Melody Bore. This table will be revised with the appropriate values once the data becomes available. For more information on these bores refer to the WMP.

The pH trigger levels were updated to apply a single trigger range of 6 – 8.5. This decision was made as the proposed 20<sup>th</sup> to 80<sup>th</sup> percentile trigger ranges proved to be too narrow and resulted in exceedances of the triggers under neutral pH conditions. The adopted range of 6 – 8.5 pH units is consistent with the pH recommended by ANZECC & ARMCANZ (2000) to prevent corrosion of infrastructure associated with the groundwater, as well as the recommend range for drinking water as outlined in the Australian Drinking Water Quality Guidelines (National Health and Medical Research Council [NHMRC] & National Resource Management Ministerial Council [NRMMC], 2011).

At any bore where a monitored pH value is outside the applicable baseline range at three successive monitoring rounds, the groundwater investigation protocol would be initiated.

### 6.2.2 Performance During the Reporting Period

Monitoring bores are split into three categories:

- Groundwater Central Bores: representative of the hard rock aquifer (3500B500L&S, 3500C500L&S, 4500F000, 5500D000, 5000D000, 6000C000L&S, 6500F500L,M&U, 7000D000L&U, 7500F000, 6500F625 and Melody).
- Groundwater Eastern Bores: representative of the alluvial aquifer (MPBH1, MPBH1-C&HR, MPBH2, MPBH2-C&HR, MPBH3b, MPBH4, MPBH4-C&HR, MPBH5, MPBH5-C&HR, MPBH6 and MPBH6-C&HR).
- Groundwater Western Bores: representative of the hard rock aquifer in, or in the vicinity of, the Fine Rejects Dam (WRA1L&U, WRA2L&U, WRA3L&U, WRA5L&U, WRA6L&U, MPBH7 and MPBH7-C).

Bores 3500B500L&S, 6000C000L&S, 7000D000L&U, WRA2L&U and WRA5L&U were decommissioned prior to the reporting period. Notwithstanding, the data collected from these bores during previous years has been included to assist with trend analysis.

The results of monitoring SWL (measured in metres below ground level [mbgl]), EC and pH from 2015 to 2020 for the groundwater central bores are shown in Charts 27, 28 and 29 respectively.



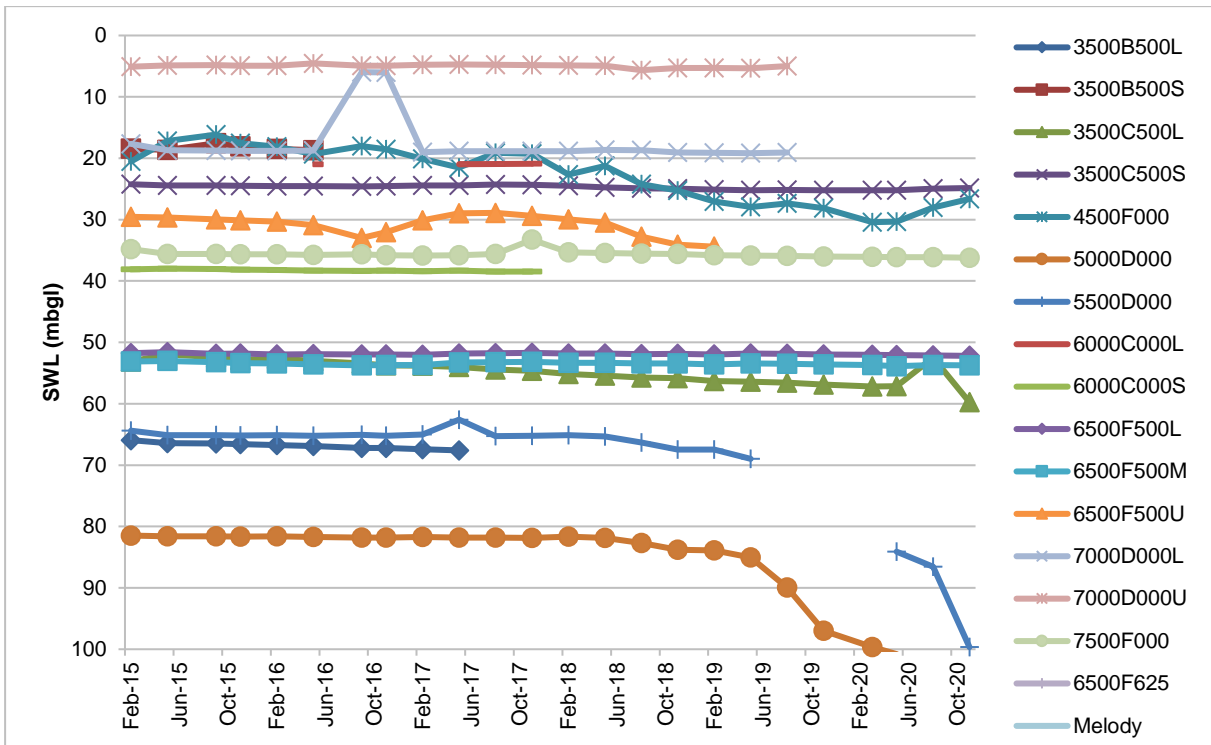


Chart 27: Groundwater Central Bores SWL 2015 – 2020

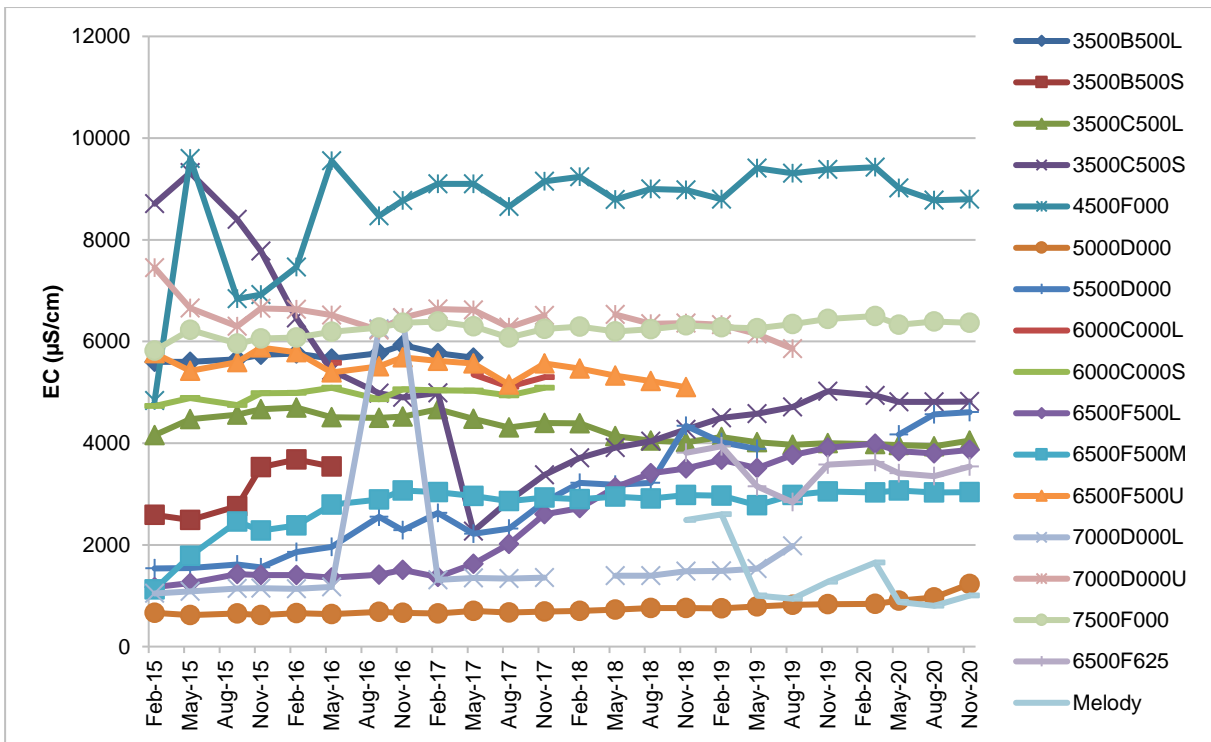
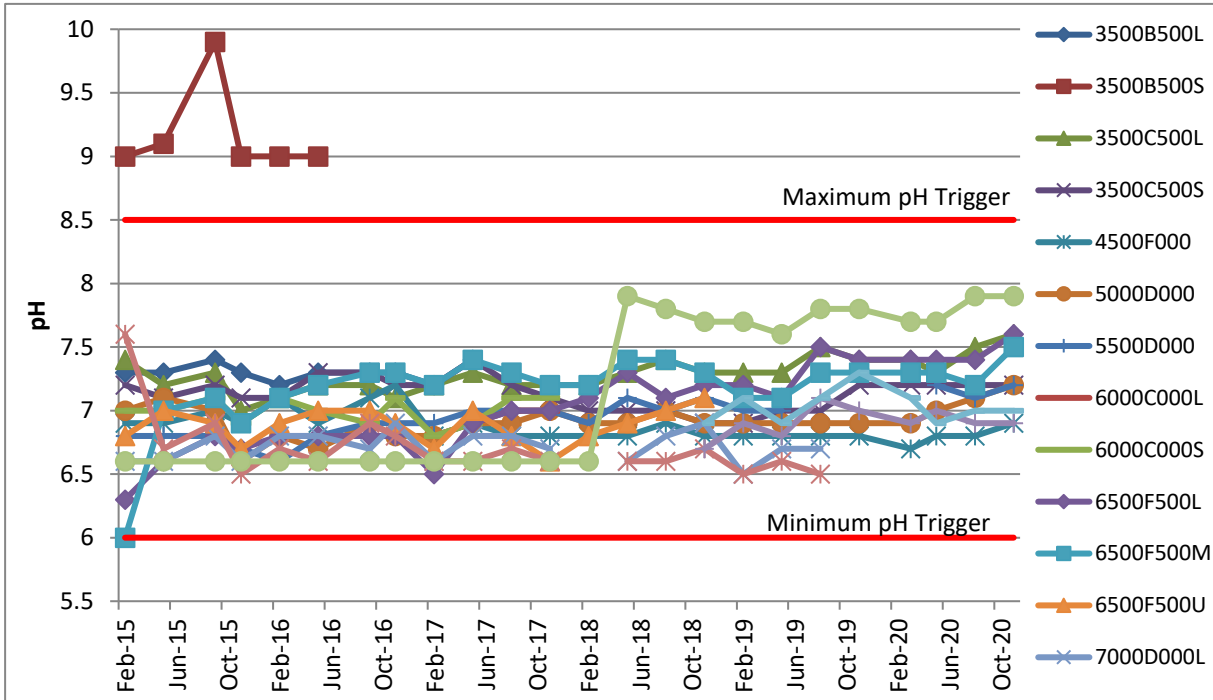
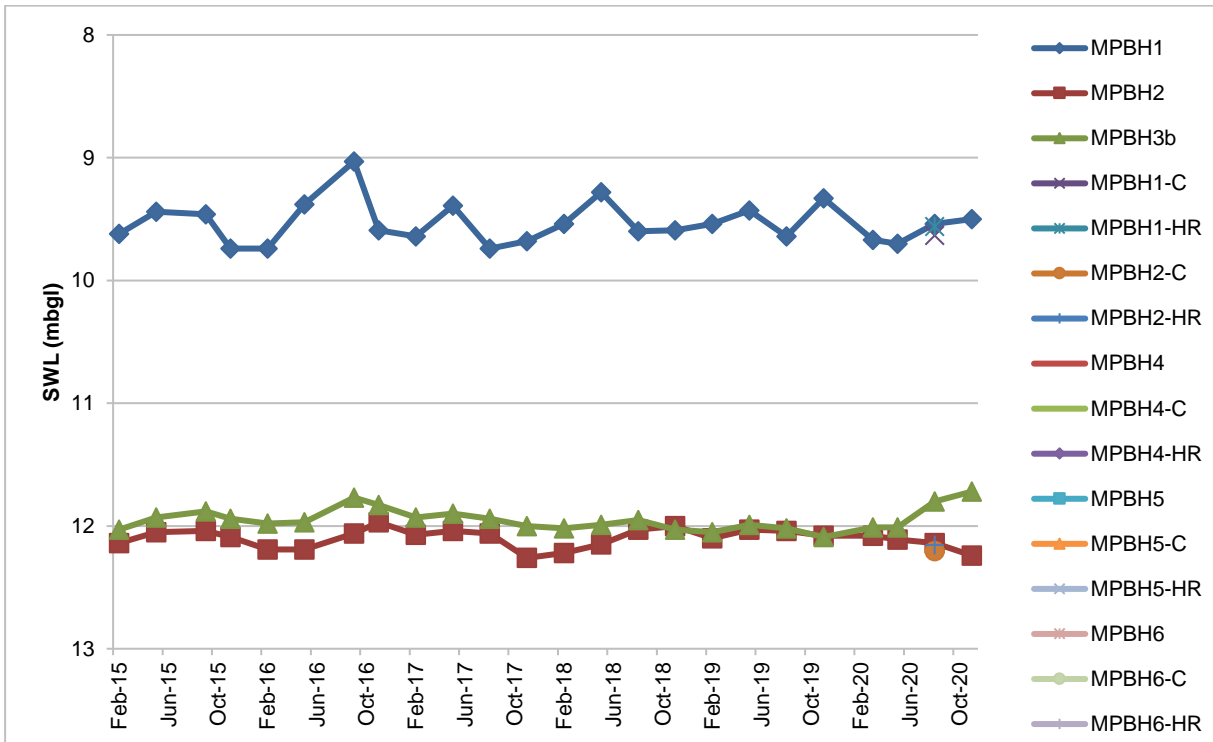


Chart 28: Groundwater Central Bores EC 2015 – 2020



**Chart 29: Groundwater Central Bores pH 2015 – 2020**

The results of monitoring SWL, EC and pH from 2015 to 2020 for the groundwater eastern bores are shown in Charts 30, 31 and 32 respectively.



**Chart 30: Groundwater Eastern Bores SWL 2015 – 2020**

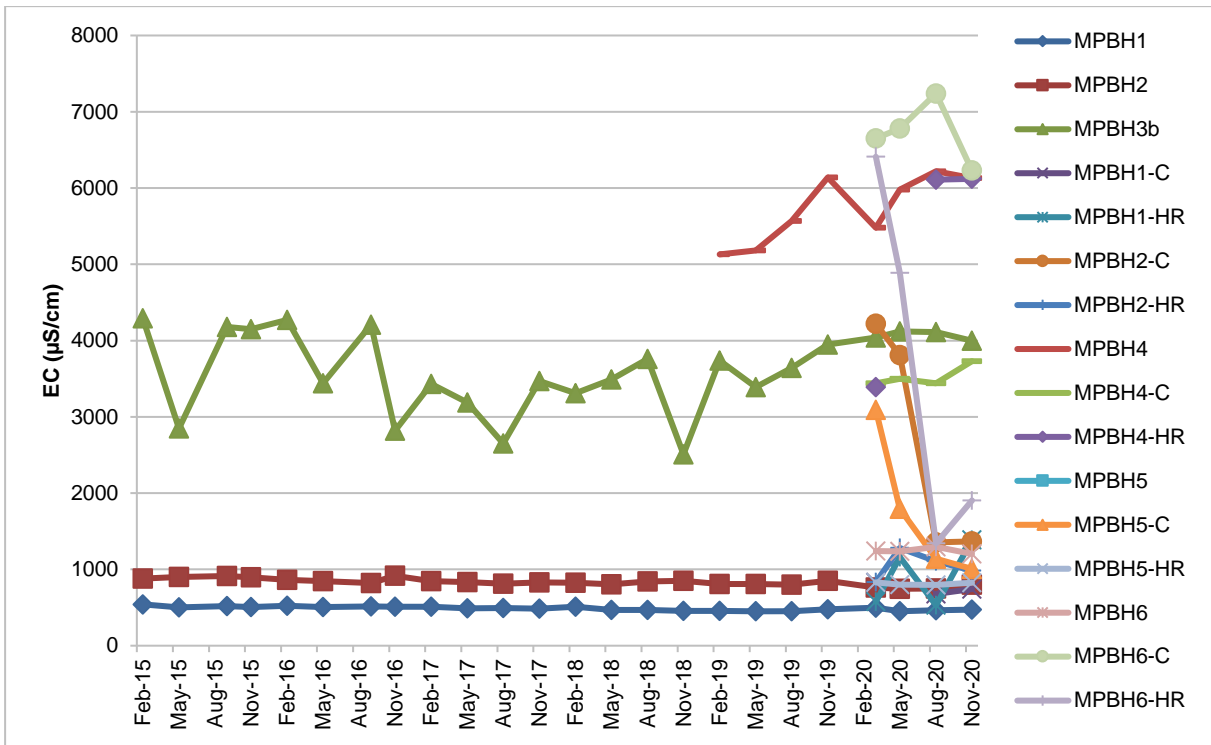


Chart 31: Groundwater Eastern Bores EC 2015 – 2020

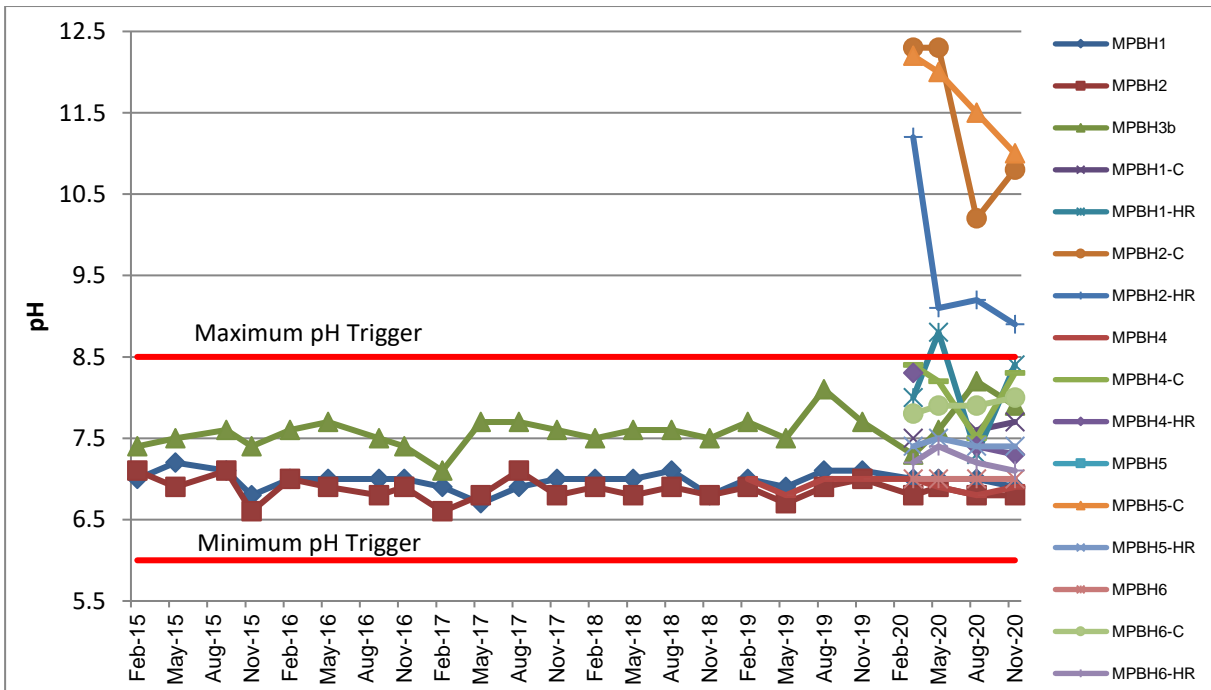


Chart 32: Groundwater Eastern Bores pH 2015 – 2020

The results of monitoring SWL, EC and pH from 2015 to 2020 for the groundwater western bores are shown in Charts 33, 34 and 35 respectively.

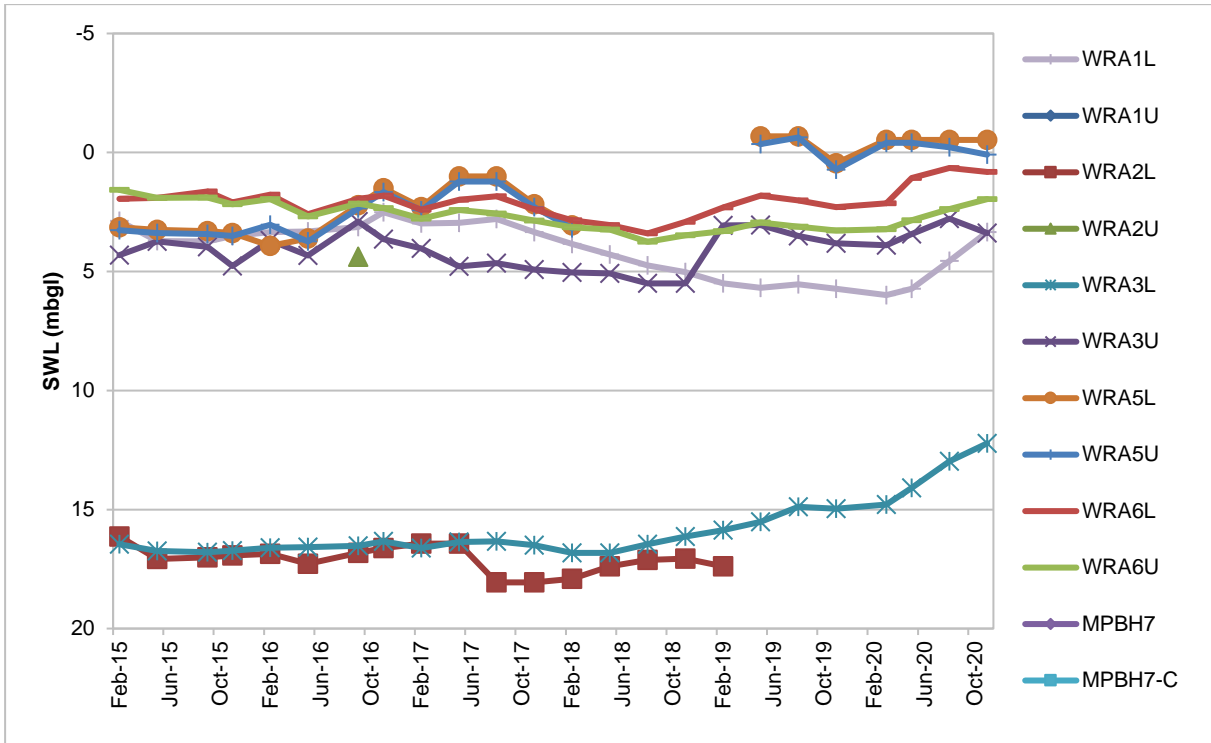


Chart 33: Groundwater Western Bores SWL 2015 – 2020

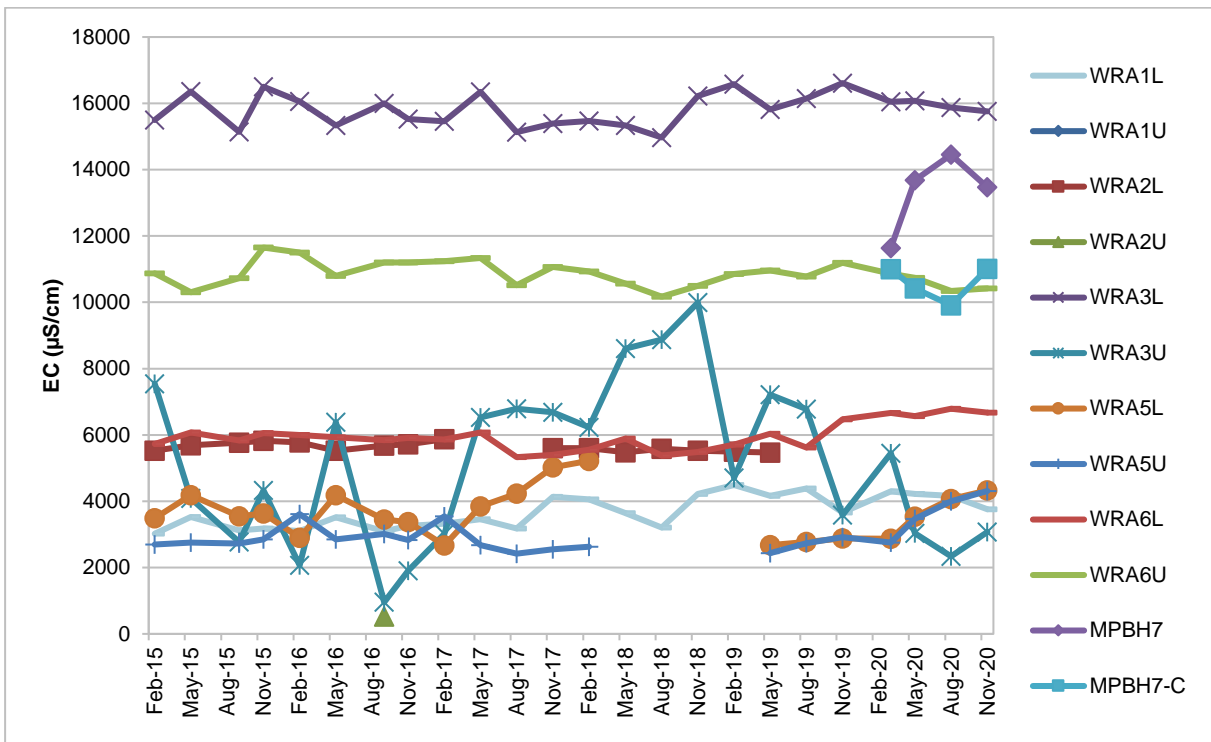
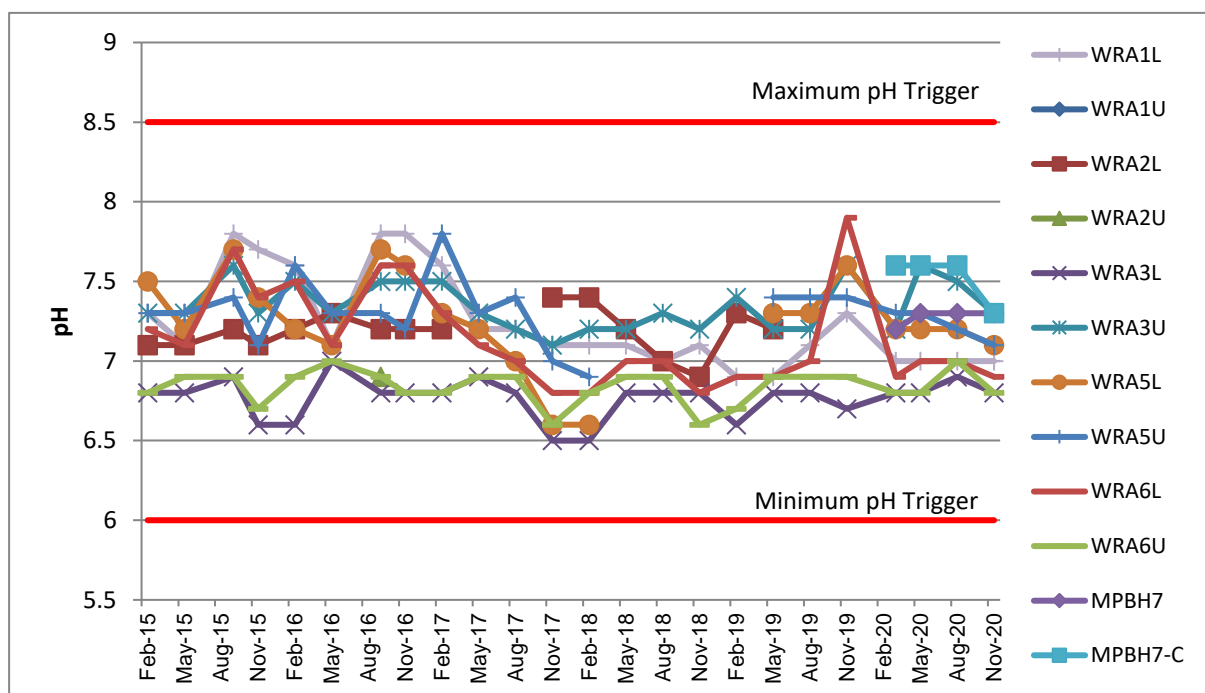


Chart 34: Groundwater Western Bores EC 2015 – 2020



**Chart 35: Groundwater Western Bores pH 2015 – 2020**

During the reporting period, sites 3500B500L and 3500B500S continued to be blocked on all monitoring rounds. Monitoring was also not undertaken at 6000C000L due to insufficient water levels, and at 6000C000S, due to disturbance. No samples were taken in sites MPBH5 and WRA1U due to dry conditions.

Sites MPBH1-C&HR, MPBH2-C&HR, MPBH4, MPBH4-C&HR, MPBH5, MPBH5-C&HR, MPBH6, MPBH6-C&HR, MPBH7 and MPBH7-C were newly added to the monitoring program during the reporting period to the east and west of the MPO (Figure 7). Monitoring at the sites commenced on March 2020. Nonetheless, there was insufficient water levels during the reporting period resulting in limited/no SWL measurements during the reporting period.

**6.2.3 Trends and Key Management Implications**

Monitored SWLs have stayed generally consistent from 2015 – 2020. SWL monitoring results remained generally consistent at all sites for the central and eastern bores. This is with the exception of sites 5000D000 and 5500D000, where a decrease in water levels has been observed since May 2019, and sites WRA1L, WRA2L&U, WRA3L, where the recorded water levels increased during the reporting period. Site 5000D000 monitors the Wynn and Edderton Seams and site 5500D000 monitors the Wynn Seam and interburden to the west of the open cut pit, and therefore this decline is to be expected due to depressurisation in these strata.

Consistent with trends observed in the 2016, 2017, 2018 and 2019 Annual Reviews (MACH Energy, 2017b; MACH Energy, 2018; MACH Energy, 2019; MACH Energy, 2020a), the majority of EC values for the central bores have trended slightly upwards (Chart 28). Some sites, however, recorded slightly decreased EC levels during the March 2020 monitoring round compared to the November 2019 monitoring round (e.g. sites 3500C500S, 4500F000, 6500F500L, 7500F000, 6500F625 and Melody). EC levels at these sites remained steady following the March 2020 monitoring round. Monitored EC values remained within historic ranges for the central bore sites.

EC values at eastern bores, which have been consistently measured for water quality since 2015, remained generally within historic ranges during the reporting period (Chart 34). The newly installed bores (i.e. MPBH1-C&HR, MPBH2-C&HR, MPBH4, MPBH4-C&HR, MPBH5, MPBH5-C&HR, MPBH6, MPBH6-C&HR, MPBH7 and MPBH7-C) remained generally steady during the reporting period. This is with the exception of sites MPBH2-C, MPBH5-C and MPBH6-HR, which declined during the reporting period. Continuing from trends observed in the 2015, 2016, 2017, 2018 and 2019 Annual Reviews (Coal & Allied, 2016; MACH Energy, 2017b; MACH Energy, 2018; MACH Energy 2019; MACH Energy, 2020a), site WRA3U showed the most variation during the reporting period. Long term trends at the western bores indicate that yearly fluctuations in EC are most common at the western bores compared to the eastern and central bores (Coal & Allied, 2016; MACH Energy, 2017b; MACH Energy, 2018; MACH Energy, 2020a). Site WRA3L showed higher EC levels than other western bores during the reporting period, which is consistent with recent years.

Consistent with trends observed in the 2015, 2016, 2017, 2018 and 2019 Annual Reviews (Coal & Allied, 2016; MACH Energy, 2017b; MACH Energy, 2018; MACH Energy, 2019, MACH Energy, 2020a), the pH values for the majority of sites have generally remained within the pH range of 6.5 to 8.0 during the reporting period, with the exception of sites MPBH1-HR, MPBH2-C and MPBH2-HR which recorded elevated pH levels during the reporting period. This is suspected to be due to these bores undergoing a period of settling and stasis throughout the reporting period following ongoing development after installation.

As described in Section 6.2.1, trigger levels have been developed as part of the approved WMP for EC and pH for all groundwater bores, with the exception of bores MPBH4, MPBH5, Melody and the newly installed monitoring bores<sup>3</sup>. As defined in Appendix 5 of the WMP (i.e. the Surface and Groundwater Response Protocol), monitored values outside the range of trigger levels for three consecutive monitoring rounds initiate the groundwater investigation protocol.

MPO complied with all SWL and pH criteria presented in the WMP during the reporting period.

EC samples taken in site 5000D000 were outside the trigger levels for three consecutive monitoring rounds (August 2019, November 2019 and March 2020). This triggered the Groundwater Quality Response Protocol in accordance with the WMP. All investigation and response procedures set out in the Groundwater Quality Response Protocol were undertaken by MACH. Additional groundwater monitoring was undertaken at bore 5000D000 during the March 2020, May 2020 and August 2020 monitoring rounds, which showed persistent elevated readings at the bore (Table 22). A suitably qualified hydrogeologist will be engaged to provide further advice, which may result in an amendment of groundwater trigger limits, during the next update of the Water Management Plan. Any advice provided from the engaged hydrogeologist and any relevant outcomes will be reported in the next reporting period.

The remainder of the MPO groundwater monitoring sites complied with the EC criteria presented in the WMP during the reporting period.

<sup>3</sup> Sufficient data is not yet available to develop baseline trigger ranges for new bores. Appropriate trigger levels will be established once sufficient data becomes available.

**Table 22**  
**5000D000 Groundwater Monitoring Results Summary**

Sampling Event	Maximum beneficial use trigger value (EC) ( $\mu\text{S}$ ) / cm)	Electrical Conductivity (EC) (uS/cm)	Electrical Conductivity (EC) (uS/cm) (Laboratory QA/QC Sample)	Depth to Water (DTW) metres below ground (mBG)
August 2019	800	<b>820</b>	-	90.85
November 2019		<b>834</b>	-	97.89
March 2020		<b>840</b>	-	100.52
May 2020		<b>906</b>	<b>897</b>	100.82
August 2020		<b>966</b>	<b>957</b>	105.67
November 2020		<b>1231</b>	<b>1270</b>	106.65

Note: Results shown in **bold** indicate that the bore has exceeded the adopted assessment criterion.

### 6.3 HUNTER RIVER SALINITY TRADING SCHEME DISCHARGES

MACH Energy has a total of 46 credits under the Hunter River Salinity Trading Scheme (HRSTS), however, no discharges to the Hunter River occurred during the reporting period. During the reporting period, an additional 26 credits were purchased.

### 6.4 WATER TAKE

A total of 2,568.8 megalitres (ML) of water was taken from Hunter Regulated River Water Source for use at the MPO during the water reporting period (1 July 2019 – 30 June 2020) (Table 23). This was 1,149.4 ML more than the previous water reporting period. This is due to the increased ROM coal production; increase in water demand from the CHPP for washing and preparation of product coal; and from the increased demand for haul road and stockpile dust suppression associated with the mine development and open cut pit expansion and associated with construction of MOD 4 infrastructure. The water take from the Hunter Regulated River Water Source was 1,071.2 ML less than the MPO total entitlement (3,640 ML) (Table 23).

**Table 23  
MPO Water Take**

Water Sharing Plan	Water Licence Number*	Entitlement	Total Pumping (ML)
Hunter Regulated River Water Source Hunter Regulated River Water Source (Continued)	1230	8	2,568.8
	1259	33	
	1227	99	
	1258	5	
	992	75	
	7808	36	
	702	267	
	1260	5	
	993	265	
	1308	15	
	604	183	
	605	8	
	677	24	
	1338	18	
	662	9	
	663	16	
	10775	243	
	41438	455	
	638	125	
	639	134	
	879	224	
	880	124	
	1113	366	
	973	3	
	974	210	
	975	8	
	988	156	
989	8		
1307	38		
1229	480		

Note:

ML = megalitres

\* several temporary licences were also used during the reporting period.



## 6.5 SITE WATER BALANCE

The Site Water Balance for the reporting period (i.e. 1 January 2020 to 31 December 2020) is provided in Table 24 in comparison to the 2019 site water balance.

The CHPP water demand increased from the previous reporting year due to an increase in ROM coal production and an increase in the volume of product coal to be washed and prepared for railing. Observed increase in fine rejects bleed water was associated with commencement in earnest of fine rejects deposition from the CHPP. Surface water runoff also increased compared to the 2019 reporting period, due to the increased rainfall during the period and expansion of the open cut pit footprint. Dust suppression was increased during the reporting period due to ongoing mine development and associated increases in haul road and stockpile areas, as well as dust suppression requirements associated with construction of MOD 4 infrastructure.

The recorded site water balance for the reporting period was generally consistent with MOD 3 predictions.

The initial five year mine plan site water balance for the MPO was undertaken in 2019. The site water balance was updated as part of the WMP update during the reporting period (Section 2.1).

**Table 24**  
**MPO Annual Water Balance**

	2019	2020
<b>Water Sources</b>	<b>Volume (ML/yr)</b>	<b>Volume (ML/yr)</b>
Surface Water Runoff	838*	2040*
Groundwater	7	8*
Fine Rejects Bleed Water	0	885
Hunter River Pumping (via WALs)	1419 <sup>†</sup>	1540
<b>Water Usage</b>	<b>Volume (ML/yr)</b>	<b>Volume (ML/yr)</b>
CHPP Demand	0	2222
Dust Suppression (Haul Road and Stockpiles)	757	1283
Vehicle Wash Demand	35	35*
<b>Water Loss</b>	<b>Volume (ML/yr)</b>	<b>Volume (ML/yr)</b>
Discharge to Hunter River (via HRSTS)	0	0
Evaporation	790	942*
Non Sediment Dam Spillage	0	0
Sediment Dam Spillage	0	0

Note: ML/yr = Megalitres per year.

\* This volume is calculated based on the initial five-year mine plan site water balance and adjusted accordingly with calculated rainfall over the reporting period(s).

<sup>†</sup> This was reported as 623 ML/yr in the 2019 Annual Review, consistent with the water reporting period (i.e. 1 July 2018 – 20 June 2019).

## 7 REHABILITATION

Proposed rehabilitation activities for the MPO are defined in the approved MOP/RMP, which has been developed to also meet the requirements for an RMP (Condition 56, Schedule 3 of Development Consent DA 92/97).

Details of the activities completed during the reporting period are outlined in Section 3.1. At the end of the reporting period, the total mine disturbance area was approximately 1,052 hectares (ha), which was 72 ha more than the forecast disturbance area. The total rehabilitation area was approximately 80 ha, which was around 30 ha less than the rehabilitation area forecasted in the 2019 Annual Review. This was predominantly due to unsuitable meteorological conditions for bulk shaping and revegetation activities including above average rainfall (i.e. 785.9 mm of rain recorded over 65 wet days as discussed in Section 5.1.1).

Whilst the rehabilitation area during the reporting period was approximately 30 ha less than that which was forecasted during the previous period, it is to be noted that the MPO at the time of reporting is on schedule to meet rehabilitation targets set out in the approved MOP/RMP by the end of the term (30 June 2021), as was the case for the 2019 reporting period and previous MOP/RMP term (1 July 2019 – 30 June 2020).

Table 25 summarises the approximate disturbance and rehabilitation areas from the 2019 and 2020 reporting periods and provides an estimate of the forecast areas for the 2021 reporting period.

**Table 25  
Rehabilitation Status**

Mine Area Type	Previous Reporting Period (ha Actual)	This Reporting Period (ha Actual)	Next Reporting Period (ha Forecast)
	2019	2020	2021
Total Mine Footprint <sup>1,6</sup>	895	1,052	1,179
Total Active Disturbance <sup>2,6</sup>	834	1,052	1,179
Land being prepared for Rehabilitation <sup>3</sup>	40	17	38
Land under active rehabilitation <sup>4</sup>	7.5	65	75
Completed rehabilitation <sup>5</sup>	0	0	0

<sup>1</sup> Total mine footprint includes all areas within a mining lease that either have posed at some point in time, or continue to pose, a rehabilitation liability due to mining and associated activities. As such, it is the sum of total active disturbance, decommissioning, landform establishment, growth medium development, ecosystem establishment, ecosystem development and relinquished lands (as defined in DRG MOP Guidelines).

<sup>2</sup> Total active disturbance includes all areas ultimately requiring rehabilitation, such as: on-lease exploration areas, stripped areas ahead of mining, infrastructure areas, water management infrastructure, sewage treatment facilities, topsoil stockpile areas, access tracks and haul roads, active mining areas, overburden emplacements (active/unshaped/in or out-of-pit), and the Fines Emplacement Area (active/unshaped/uncapped).

<sup>3</sup> Land being prepared for rehabilitation includes the sum of mine disturbed land that is under the following rehabilitation phases – decommissioning, landform establishment and growth medium development (as defined in DRG MOP Guidelines).

<sup>4</sup> Land under active rehabilitation includes areas under rehabilitation and being managed to achieve relinquishment - includes the following rehabilitation phases as described in the DRG MOP Guidelines – ‘ecosystem and land use establishment’ (area seeded OR surface developed in accordance with final land use) and ‘ecosystem and land use sustainability’ (revegetation assessed as showing signs of trending towards relinquishment OR infrastructure development).

<sup>5</sup> Completed rehabilitation – requires formal sign-off by the DRG that the area has successfully met the rehabilitation land use objectives and completion criteria.

<sup>6</sup> Includes topsoil stockpiles.

Rehabilitation of the Eastern Out of Pit Emplacement continued in 2020. An additional 57.5 ha was rehabilitated (Plate 1), which included:

- bulk and detailed re-shaping of overburden material to final landform;
- installation of habitat features such as stag trees and rock piles;
- topsoil spreading to a minimum depth of 100 mm;
- gypsum application at a rate of 10 tonnes per hectare (t/ha);
- deep ripping/tining along the contour of the final landform to a depth of 500mm;
- direct/hand seeding of EEC tree/shrub/grass indicative species plus an additional grass cover crop; and
- planting of approximately 100 native trees per hectare.

Rehabilitation areas were subject to ongoing weed and pest control measures throughout the reporting period to facilitate and promote successful vegetation establishment.



**Plate 1: Eastern Out of Pit Emplacement Rehabilitation**

Figure 2 shows the extent of active disturbance and rehabilitated areas at the end of the reporting period, as well as the forecast disturbance areas proposed in 2021.

The final land use goals for the MPO (as outlined within the MOP/RMP) are as follows:

- successful design and rehabilitation of landforms to ensure structural stability, revegetation success and containment of wastes; and
- post-mining land use compatible with surrounding land uses.

The conceptual final landform across the MPO is an undulating, free draining and less 'engineered' landform with an optimum post-mining land capability that supports low and high intensity agricultural land uses as well as grassland and woodland vegetation communities, as per the approved MOD 4 and current MOP/RMP. The MSC, the community and other stakeholders have indicated their preference for a landform that further integrates with the surrounding landscape. The MSC also indicated a preference for intensive agricultural/industrial post-mining land uses that provide employment for the local community.

The overarching objective for rehabilitation of the Fines Emplacement Area is to establish a safe, stable and non-polluting landform with a sustainable surface cover that minimises erosion (to prevent exposure of the underlying fines material) and sustains grassland vegetation in the long-term. During the reporting period, MACH Energy operated the Fines Emplacement Area using sub-aerial deposition which involves an extended period of air drying that maximises in-situ tailings densities, and in turn, maximises the storage efficiency of the facility as well as providing a more competent fines surface for future rehabilitation purposes.

During the reporting period, several former residential dwellings were demolished, and associated hazardous materials were removed and disposed off-site in accordance with the WasteMP.

## **7.1 EROSION AND SEDIMENT MANAGEMENT**

General erosion and sediment management measures were undertaken during the reporting period in accordance with the erosion and sediment control provisions of the approved WMP and included:

- installation and management of sediment fencing around disturbance areas of soil stockpiles and sediment dams;
- implementation and management of progressive erosion and sediment control measures as earthworks commenced in earnest for the MOD 4 construction works;
- construction of diversion drains and bunds;
- regular inspections of the completed dams and erosion and sediment control structures; and
- sowing of all verges and drains.

MACH Energy also undertook additional internal quarterly erosion and sediment control audits as per the IEA recommendations during the reporting period (Section 9).

Recommendations relating to erosion and sediment control have been provided as part of the IEA Report (Appendix D). MACH Energy's responses to the recommendations are summarised in Appendix E.

## **7.2 BUSHFIRE MANAGEMENT**

The main objectives of bushfire management at the MPO are to minimise the risk of bushfires and to rapidly control any outbreaks that might occur. Control measures are in place to:

- minimise potential spreading of bushfires in and around the MPO;
- protect people, property and assets;
- protect areas of heritage value; and
- protect threatened fauna and/or flora.

The control measures implemented to prevent and manage bushfires focus on minimising the amount of fuel available at the MPO and its surrounding land. These measures include:

- slashing of vegetation along roads and internal tracks that are used as fire trails and assist in dividing the site into control zones;
- the use of livestock to reduce pasture-based fuel loads on land suitable for grazing; and
- maintaining a network of water supply points to assist the NSW Rural Fire Service with logistical support.

During the reporting period, a range of activities were undertaken in respect to fire preparation in accordance with the Bushfire Management Plan, including:

- maintenance of property, boundary and roadside firebreaks;
- updating signage along the fire trail;
- monthly inspections of the firebreaks and firefighting equipment at MPO during the fire season;
- update of the Bushfire Management Plan;
- Site visit with the NSW Rural Fire Service to drive the fire trail with the local fire truck; and
- the use of livestock to reduce pasture-based fuel loads on land suitable for grazing.

There were no major outbreaks of fire at the MPO during the reporting period.

### **7.3 REHABILITATION MONITORING**

Various ecological works were undertaken at the MPO during the reporting period, including as part of the GDP process, and as part of flora and fauna surveys and assessments in support of a proposed State Significant Development (SSD) application. These works included mapping vegetation communities, searching for threatened flora species, communities and populations, and detailed floristic data collection at numerous survey plots.

The 2020 rehabilitation monitoring program was undertaken between 31 March and 2 April 2020 and included monitoring of analogue and the MPO rehabilitation sites. The 2020 rehabilitation monitoring program was undertaken in accordance with the MPO Rehabilitation Monitoring Manual (Ausecology, 2019). The MPO adopts a systems-based approach to rehabilitation monitoring (e.g. use of Ecosystem Function Analysis [Tongway and Ludwig, 2011]) to determine progress towards a self-sustaining ecosystem, including comparison to the analogue sites.

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

MACH Energy is collaborating with the University of Newcastle on several rehabilitation related research projects including:

- a research project that aims to convert fines material into suitable topsoil material; and
- a research project that analyses MPO topsoil characteristics for input into the SIBERIA software program that supports geomorphic landform design modelling.

During the reporting period, the aforementioned programs were ongoing. Initial results for the topsoil characteristics project are discussed in Section 5.9.

Further information regarding MPO rehabilitation monitoring methodologies is provided in the approved MOP/RMP.

#### **7.4 LAND MANAGEMENT**

Landscape management included removal, erection and general maintenance of fence lines in the MPO.

During the reporting period, extensive tree planting was undertaken along the visual tree screen and other areas in accordance with the VIMP, to assist in shielding the site as outline in Section 5.10. General maintenance of these areas was also carried out throughout the reporting period.

Weed and pest control measures undertaken during the reporting period are outlined in Section 5.5.2. Topsoil management is discussed in Section 5.9.

## 8 COMMUNITY

MACH Energy's approach to community relations is focused on extending and strengthening the relationships that MACH Energy representatives have already formed with the local community.

MACH Energy released a community newsletter in May 2020 and December 2020 outlining the community activities undertaken during the reporting period. MACH Energy plans to continue to release regular community newsletters in the next reporting period to inform stakeholders/interested parties of activities at the MPO. MACH Energy also commenced Rail Loop Project Community Newsletters in September 2020 and these are distributed throughout local communities on a monthly basis to keep residents informed of construction activities.

During the reporting period, MACH Energy undertook community relations in four key areas: communication, consultation and engagement, community development, and relationships with the local Aboriginal community. These activities are outlined in detail in the following sections.

### 8.1 COMMUNICATION

A number of points of communication have been established with the community. Members of the local community are encouraged to engage MACH Energy in the way that proves most convenient for them.

MACH Energy maintains a website (<https://machenergyaustralia.com.au/>) which is used to provide information to stakeholders and interested parties about the operation and environmental performance of the MPO. Information provided on the website includes key environmental management documentation, monthly environmental monitoring reports, an environmental complaints register (which is updated on a monthly basis), previous community newsletters, a new Projects Tab and CCC meeting minutes.

MACH Energy maintains a Community Hotline (1800 886 889), which is dedicated to the receipt of community complaints. The Community Hotline is publicly advertised in a variety of MACH Energy's public communication tools and is available during operating hours (i.e. 24/7), to receive any complaints. Communication received from the hotline is recorded in a Community and Stakeholder Engagement Database. This database (Consultation Manager) records all necessary information regarding the nature of the communication, and if necessary, any action taken by MACH Energy as a result of the communication. A separate General Enquiries Hotline (1800 931 872) and Blasting Hotline (1800 931 873) have been in operation since 2018 and provide callers with general information about MACH Energy and blasting times and location.

A total of 116 community complaints were received during the reporting period (see Complaints Summary 2020: <https://machenergyaustralia.com.au/mount-pleasant/documentation/>) compared with 240 complaints received during the last reporting period (i.e. a 52% decline in the total number of complaints received during the reporting period compared with that received in 2019). The community complaints for the reporting period related to:

- air quality (16);
- noise (58);
- blasting (17);
- visual (16); and
- others (9) (related to driver behaviour on local roads, odour and smoke).

Most of the complaints were received via the Community Hotline, however some complaints were made directly to the ERM, the Environmental Superintendent, the Land and Property Superintendent, the DPIE, and the EPA. Since the commencement of mining operations in 2017, the total number of complaints increased each year until 2019. This is likely due to the expansion of mining operations and the particularly intense bushfire and drought conditions that occurred in 2019. Chart 36 shows that the total number of complaints received reduced substantially in the reporting period, with significant reductions in the number of complaints received related to air quality, noise and blasting.

Air quality-related complaints were considerably lower during the reporting period due to a number of factors, including the advancement of the mining area and weather conditions, particularly the weakening of drought conditions in the second half of 2020.

The highest number of complaints received in 2020 were related to noise. Chart 37 shows that the bulk of noise-related complaints were received between April and July. Chart 37 also shows that a number of complaints were received from the Collins Lane/Kayuga Road area between February and August 2020. No further complaints were received from the Collins Lane/Kayuga Road area following August 2020.

Complaints regarding blasting also decreased in 2020 in comparison to 2019. This can be attributed to the advancement of mining operations away from the community of Muswellbrook.

Thorough investigations were undertaken in response to all complaints. For noise-, air quality- and blasting-related complaints, real-time monitors were reviewed and alarms were examined. Following the investigation, the ERM made contact with the complainant in a timely manner to describe the MPO activities that may have been causing the issue and the response/s from MACH Energy. Activities were modified or ceased where necessary.

## 8.2 CONSULTATION AND ENGAGEMENT

A CCC is administered by MACH Energy, with a membership comprised of an independent chair, and appropriate representation from MACH Energy and the general community. The CCC is operated in general accordance with the *Community Consultative Committee Guidelines* (DPIE, 2016).

In 2020, due to the Global COVID-19 pandemic, the approach to meetings was altered to accommodate the need for members to meet via “on-line” methods. Despite the pandemic, the CCC met five times during March, July, October, November (Extraordinary Meeting regarding the Mount Pleasant Optimisation Project) and December, one of which included a site tour (Plates 2 and 3). These meetings provided regular updates about the MPO, as well as an avenue to discuss aspects of the MPO that concerned community stakeholders. General discussions from these meetings related to:

- general overview of MPO progress;
- current status of approvals, management plans, modifications and supporting environmental documents;
- environmental monitoring and management;
- progress of land management activities at the MPO; and
- updates on community sponsorships, events, interactions and initiatives.

During the site visit undertaken during the reporting period, the CCC members visited the CHPP with the Senior Process Engineer and observed the rehabilitation progress (Plates 2 and 3).

MACH Energy invites a range of its team members to present updates to the committee as direct contact enhances the two-way communication between both parties.



Full meeting minutes for the 2020 CCC meetings are provided on the MACH Energy website (<https://machenergyaustralia.com.au/mount-pleasant/documentation/>).



**Plates 2 & 3: The CCC visit to observe the rehabilitation progress (Plate 2) and the CCC visit to the CHPP with Senior Process Engineer (Plate 3).**

### 8.3 COMMUNITY DEVELOPMENT

As part of acquisition of the MPO, MACH Energy has maintained the Aboriginal Community Development Fund (ACDF) developed by Coal & Allied. The fund was a community benefit specified in the Native Title Agreement made with the Wonnarua People in 2005. Since its commencement in 2006, the ACDF has contributed more than \$4 million into projects that benefit the Upper Hunter Valley Aboriginal community.

Since the acquisition, the MPO representatives have joined the existing ACDF community members to administer funds, manage its current projects and to seek-out new partnerships. An example of some of the key partnerships that were maintained during the reporting period as part of the ACDF are presented in Table 26.

**Table 26  
Aboriginal Community Development Fund Partnerships**

Partner	Description
The Gundi Program	The Gundi Program was launched in 2011 and is even stronger in 2020. Gundi aims to help Aboriginal inmates gain trades skills in custody and secure jobs once released. The Gundi Program builds housing for remote communities, offices and abolition blocks for many local companies. The Gundi Program provides building qualifications and work experience for inmates whilst in custody.
Polly Farmer Foundation – Enrichment Centre	Graham (Polly) Farmer Foundation assists aspiring Aboriginal students who have the capacity to complete school but, potentially in the absence of additional support, are unlikely to do so. Project staff work closely with students to provide them with intensive and targeted support throughout their secondary schooling.
Ungooroo Health Program for Muswellbrook & Singleton	The ACDF funding enables Ungooroo Aboriginal Corporation to address the current gaps in Health Service provision for Aboriginal people in the Muswellbrook & Singleton area. The current focusses are on addressing gaps in mental health and cycles of care in addressing chronic disease management.
The Aboriginal Oral History Project “In our own Words”	A Project to preserve the stories of Aboriginal people who make up the fabric of the Muswellbrook Aboriginal Community. The Project was launched in January 2021 and includes a hard cover book, web site and interviews with participants.

Category ● Blast ● Dust/Air Quality ● Lighting ● Noise ● Odour ● Other/Not Specified

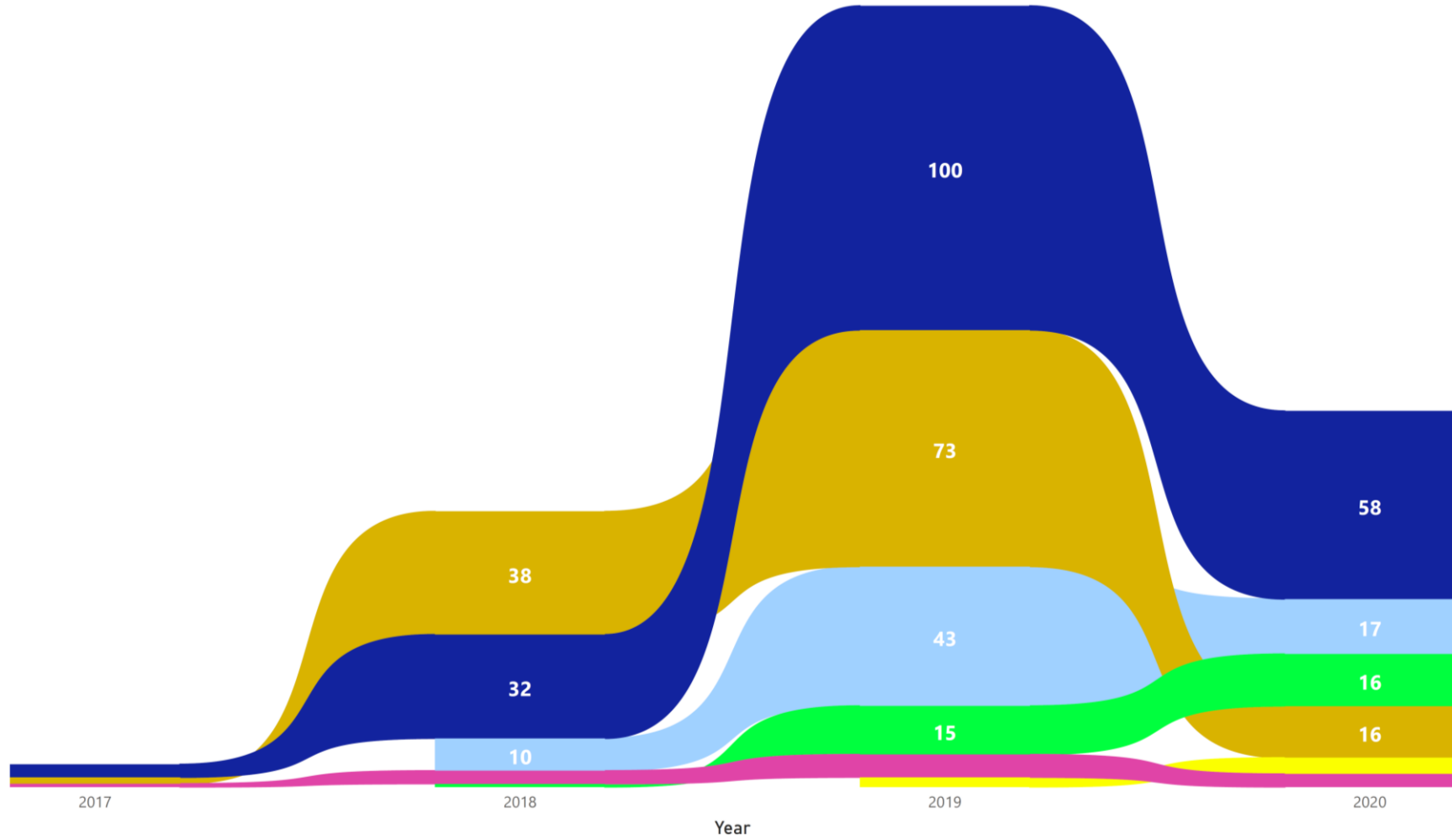
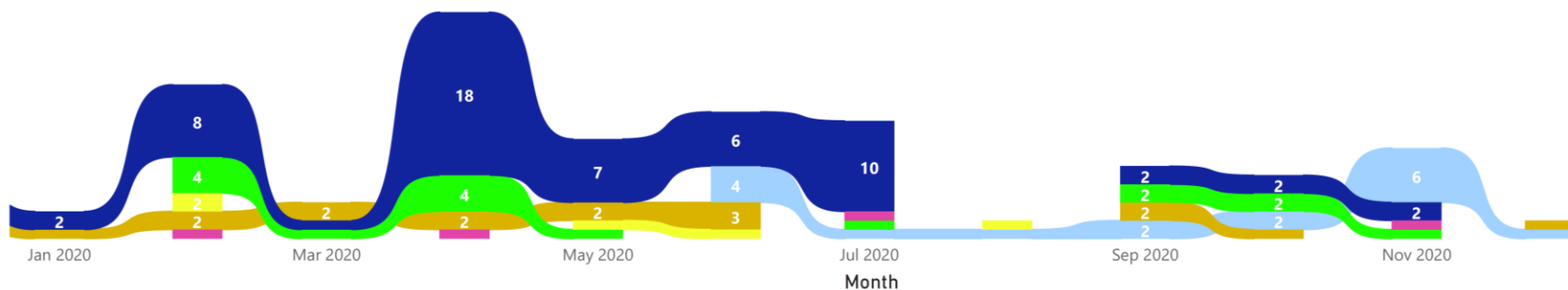


Chart 36: Complaints Analysis 2017-2020

Category ● Blast ● Dust/Air Quality ● Lighting ● Noise ● Odour ● Other/Not Specified



Location ● Burtons Ln ● Collins Ln/Kayuga Rd ● Kayuga ● Kayuga Rd/Wybong Rd - East ● New England Hwy ● Other Muswellbrook/Unknown ● Queen St/Barrington St Muswellbrook ● Sheppard Ave/Racecourse Rd

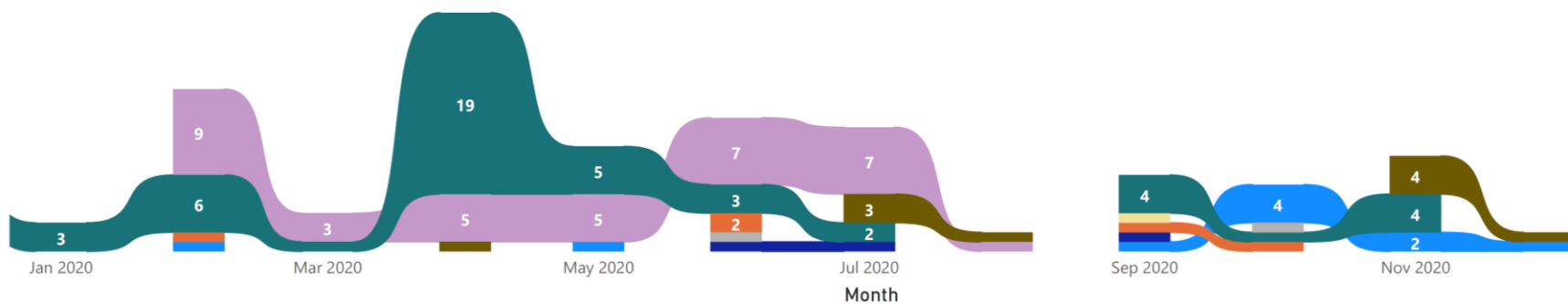


Chart 37: Complaints by Location and Type 2020

The MPO sponsored NAIDOC Week 2020, however, the Global Pandemic saw many local events in both Singleton and Muswellbrook postponed until 2021. The funds will be distributed across a range of activities, from primary schools through to the Upper Hunter NAIDOC Week Awards (MACH Energy, 2020b).

#### 8.4 RELATIONSHIPS WITH LOCAL ABORIGINAL COMMUNITY

MACH Energy works closely with the local Aboriginal community, including undertaking regular consultation with the RAPs. MACH Energy maintains a contact register, containing up to date contact details for the 84 RAPs, and is committed to maintaining ongoing consultation with these RAPs throughout the life of the MPO.

As outlined in Section 5.6.2, during 2020 archaeological salvages were carried out under AHIP #C0002092 in accordance with the AHMP (Plate 4). RAPs had a strong presence in these salvage activities.

NAIDOC Week activities were held later than expected, however, a small COVID-19 safe event was held on-site with local Aboriginal businessman and Blackrock Industries Managing Director, Steven Fordham. MACH Energy, Thiess, Sedgman and visiting contractors attended. Steven is pictured behind the story of the MACH Energy Journey as depicted by local Muswellbrook Aboriginal artist Mat Stair.



Plate 4: NAIDOC Week activities

## 9 INDEPENDENT ENVIRONMENTAL AUDIT

An IEA was completed during the reporting period in accordance with Condition 9, Schedule 5 of Development Consent DA 92/97.

The IEA considered compliance from 26 November 2017 (day after the previous 2017 IEA) to 27 February 2020. MACH Energy commissioned SLR Consulting Australia Pty Ltd (SLR) to complete the IEA, which was undertaken on-site from 25 – 27 February and 12 March 2020.

The audit included a review of:

- conditions contained within Development Consent DA 92/97, including the Statement of Commitments;
- EPL 20850;
- ML 1645, ML 1708, ML 1709, ML 1713 and ML 1750;
- WAL 879, WAL 880, WAL 41483 and WAL 1113; and
- implementation of the management plans prepared under Development Consent DA 92/97 (Table 4).

The number of non-compliances with the statutory conditions and implementation of the management plans recorded for the IEA period (i.e. 26 November 2017 – 27 February 2020) is summarised in Table 27.

**Table 27**  
**Summary of Audit Findings**

Non-compliances	Administrative Non-compliances	Observations
11	7	6

After: Appendix B of the IEA Report (Appendix D).

The IEA Report (Appendix D) was submitted to the DPIE (including an action response table addressing the audit findings) on 18 June 2020. A summary of outstanding actions from the IEA recommendations and MACH Energy's responses are summarised in Table 28 below. A summary of the IEA recommendations and MACH Energy responses is included in Appendix E.

**Table 28  
Summary of the Outstanding Actions from the 2020 Independent Environmental Audit Recommendations and MACH Energy’s Responses**

Item No.	Audit Recommendation	MACH Energy Response
Development Consent DA 92/97 S3 C 22 and 23  EPL 20850 O 3.1 – O 3.4	Cameras of the pits could be more widely distributed to key MACH Energy Staff. Investigate establishing a series of video cameras to enable monitoring of key areas at the site which have high potential for dust and visual impacts. These would include the pits and higher areas of the site. All required personnel have access to cameras.	Mount Pleasant Operation has multiple cameras within site, including those that cover the mining area.  MACH Energy is currently investigating the installation of additional cameras, and access to existing cameras.
Development Consent DA 92/97 S3 C 26	<p><i>Issue ID8</i></p> <p>There is an area where a drainage structure has failed near the MIA/workshop areas. This area flows into the mine water management system and does not go off site. This requires replacement and engineering advice.</p> <p><i>Issue ID9</i></p> <p>The CHPP requires erosion and sediment control review. SLR understand a significant amount of money has been set aside for this work and engineering designs are progressing. This area flows into the mine water management system and does not go off site.</p> <p>Implement the actions of the engineering review.</p> <p>Ensure the designs also include a review of the drains that fall just outside the CHPP area (near the Rejects Road). These are older degraded drainage lines.</p> <p>Note, since the Audit inspection some of these areas have been remediated. However additional work is still required in this area.</p>	<p>Remediation of the MIA drainage structures will be scoped with suitable engineering design and then remediated.</p> <p>There is currently significant engineering design being undertaken to update the mine water management and erosion and sediment control systems at the CHPP and preliminary budgets are approved. Once the review and design are finalised, works will commence.</p> <p>In the interim, temporary works have commenced in the area and include remediation of higher risk areas such as roads, bunded areas, drainage pipelines, and ensuring areas within the CHPP and train load-out (TLO) are safe for access.</p>
Development Consent DA 92/97 S3 C 26	<p><i>Issue ID13</i></p> <p>Review engineering controls to reduce the likelihood of any tailings spill going into the cleanwater dam. Possible use of sleeve to contain tailings pipeline.</p> <p>Note, evidence provided since the Audit inspection of the installation of end of line burst protection flow meters.</p>	<p>The fines emplacement pipeline has end of line burst protection flow meters which will trigger an alarm in the case of a spill.</p> <p>In addition, a review into additional controls will be undertaken for the section of the fines emplacement pipeline that goes over the clean water diversion drain.</p>
Development Consent DA 92/97 S3 C 33	REC: Continue the process of progressing the covenant for the Aboriginal Conservation Area.	MACH Energy is attempting to progress the covenant and is currently awaiting a response from DPIE.

**Table 28 (Continued)**  
**Summary of the Outstanding Actions from the 2020 Independent Environmental Audit Recommendations and MACH Energy’s Responses**

Item No.	Audit Recommendation	MACH Energy Response
Development Consent DA 92/97 S3 C 47	REC: It would be beneficial to have a camera in town pointing at the site for use of MACH Energy and contractors. This would assist in determining the impacts such as visual and dust.	Mount Pleasant Operation has multiple cameras within site, including those that cover the mining area. MACH Energy is currently investigating the installation of additional cameras, including to the east of MPO looking west.
Development Consent DA 92/97 S3 C 54	REC: Update the relevant document (MOP/RMP or Rehabilitation Strategy) to ensure there are no inconsistencies with the documents.	The Rehabilitation Strategy shows an overarching conceptual plan for rehabilitation at MPO, whereas the MOP provides detail and is updated on a more regular basis. As such, there are some inconsistencies between the two. These inconsistencies will be addressed when each of the plans are updated.
Development Consent DA 92/97 S5 C2	<p>REC: When management plan updates are required in the future consider creating a table system for mitigation measures with separate columns for:</p> <ul style="list-style-type: none"> <li>• Mitigation ID;</li> <li>• Mitigation Measure;</li> <li>• Reference document;</li> <li>• When required;</li> <li>• Responsibility.</li> </ul> <p>Based on discussions with site a staged approach is recommended.</p> <p>REC: When management plan updates are required in the future consider creating a table system for mitigation measures with separate columns for:</p> <ul style="list-style-type: none"> <li>• Mitigation ID;</li> <li>• Mitigation Measure;</li> <li>• Reference document;</li> <li>• When required;</li> <li>• Responsibility.</li> </ul> <p>Based on discussions with site a staged approach is recommended.</p>	Management plans will be updated as per the recommendation in a staged approach, at the time when each management plan requires update.

## **10 INCIDENTS AND NON-COMPLIANCES DURING THE REPORTING PERIOD**

### **10.1 ENVIRONMENTAL INCIDENTS**

The following reportable incident occurred during the reporting period:

- Blast fume event on 15 June 2020 (Section 5.3).

### **10.2 NON-COMPLIANCES**

A summary of non-compliances and potential non-compliances during the reporting period (i.e. 1 January – 31 December 2020), and, if applicable, the actions taken in response to the non-compliances, is outlined in Table 29. This includes non-compliances identified by SLR as part of the IEA (Appendix D).

Further detail regarding non-compliances recorded during the IEA (i.e. including non-compliances recorded outside of the reporting period) can be found in Appendix D.



**Table 29  
Compliance Summary**

Approval Document Reference	Non-Compliance Rating <sup>1</sup>	Observation	Action/Comment
<b>Independent Environmental Audit</b>			
Development Consent DA 92/97 Condition S2 C12	Low Risk	During the site inspection, a portion of the Light Vehicle Medium Vehicle Road (LVMV Road) was observed to have failed.	MACH Energy has completed repairs on the medium vehicle track, with detailed road upgrade design currently being undertaken.  MACH Energy has implemented, or is currently implementing, the recommendations from this non-compliance. For more detail regarding MACH Energy's response, see Appendix E.
EPL 20850 Condition O2.1	Low Risk	Additionally, the auditor considered the number of watercarts in operation at times during the site inspection was inadequate to reduce dust emissions from haul trucks.	
EPL 20850 Condition O3.1	Low Risk		
EPL 20850 Condition O3.2	Low Risk		
EPL 20850 Condition O3.3	Low Risk		
Statement of Commitments	Low Risk		
Development Consent DA 92/97 Condition S3 C20	Administrative	Incomplete data capture. No action required as data capture was high (at least 95% or 347 days) during the period.	No action or comment required. Continue to capture data and monitor.
EPL 20850 Condition M2.2	Administrative		
EPL 20850 Condition M8.1	Administrative		
Development Consent DA 92/97 Condition S3 C22	Low Risk	During the site inspection on 25 February 2020, dust was observed from some haul roads and an excavator loading overburden to trucks.  The operations were within the pit and a significant distance from the site boundary. The auditor noted that due to these circumstances, and the meteorological conditions at the time, it was unlikely that dust emissions would lead to off-site impacts.  Notwithstanding, the auditor considered that additional water trucks could have been employed and the dust from the excavator loading operations was above the relevant visual assessment level (triggering additional mitigation) in the EPA <i>Dust Assessment Handbook 2019</i> (EPA, 2019).	MACH Energy has implemented, or is currently implementing, the recommendations from this non-compliance. For more detail regarding MACH Energy's response, see Appendix E.
Development Consent DA 92/97 Condition S3 C23	Low Risk		

**Table 29 (Continued)  
Compliance Summary**

Approval Document Reference	Non-Compliance Rating <sup>1</sup>	Observation	Action/Comment
Development Consent DA 92/97 Condition S3 C24	Administrative	During the reporting period there was some downtime for the MSW-4 station, which resulted in a small loss of data.	No further action or comment required as the site had a high percentage of data recording during the period.
EPL 20850 Condition M4.1	Administrative	The auditor noted that between the two meteorological monitoring locations at site (MSW-4 and MSW-2), it is unlikely that both would be down at the same time.	
Development Consent DA 92/97 Condition S3 C49	Low Risk	The site investigation found the following: <ul style="list-style-type: none"> <li>• some waste was placed in the incorrect bin;</li> <li>• a small hydrocarbon spill;</li> <li>• a small oil drip from an engine without a drip tray underneath; and</li> <li>• some unbanded containers.</li> </ul>	MACH Energy will continuously communicate with employees and contractors regarding waste management practices at the MPO.  Waste areas have been tidied and bin labels updated as required.  Banding is being reviewed and will be updated as required.
Development Consent DA 92/97 Condition S3 C52	Low Risk		
EPL 20850 Condition O1.1	Low Risk		
<b>Potential Non-compliances</b>			
EPL 20850 Condition L4.6	N/A	A blast fume event occurred after a blast on 15 June 2020. Three complaints were received after the blast. The EPA's investigation into the incident is ongoing.	Following the incident, MACH Energy undertook an investigation into the cause and self-reported the incident to the DPIE and EPA. As a result of the investigation, the mining contractor amended some pre-blast procedures to reduce the potential for a similar event to occur in the future. Final outcomes of the investigation are to be determined, and will be reported in the next Annual Review.

<sup>1</sup> As per the audit findings documented in the IEA Report (Appendix D).

## **11 ACTIVITIES TO BE COMPLETED IN THE NEXT REPORTING PERIOD**

Key activities to be completed during the next reporting period include:

- Engagement of a suitably qualified hydrogeologist to provide further advice regarding exceedances recorded at site 5000D000.
- Continued monitoring of EC results at site W6A until June 2021 and communication of results to DPIE. Should the EC measurements at the site indicate persistent elevated EC measurements, a suitably qualified hydrologist will be engaged to provide advice.
- Continued consultation regarding the potential Aboriginal Heritage Conservation Areas.
- Continued collaboration with the University of Newcastle on various rehabilitation related research projects as described in Section 7.3.
- Continuation of MOD 4 construction activities.

## 12 REFERENCES

- ATC Williams (2020) Mount Pleasant Operations Review Management of Fines Emplacement.
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**APPENDIX A**  
**NOISE MONITORING SUMMARY 2020**

**Table A1**  
**L<sub>Aeq,15minute</sub> Attended Noise Monitoring Summary 2020**

Monitoring Location/Period		Jan <sup>1</sup>	Feb <sup>2</sup>	Mar <sup>3</sup>	Apr <sup>4</sup>	May <sup>5</sup>	Jun <sup>6</sup>	Jul <sup>7</sup>	Aug <sup>8</sup>	Sep <sup>9</sup>	Oct <sup>10</sup>	Nov <sup>11</sup>	Dec <sup>12</sup>
N-AT1	Night	IA	NM	IA	IA	IA	IA	IA	IA	26 dBA	IA	<30 dBA	IA
N-AT2	Night	<30 dBA	22 dBA	IA	25 dBA	<20 dBA	<20 dBA	29 dBA	30 dBA	IA	<25 dBA	22	<20 dBA
N-AT3	Night	NM	<25 dBA	NM	35 dBA	<35 dBA	35 dBA	41 dBA, 44 dBA*	37 dBA	35 dBA	<30 dBA	NM	IA
N-AT4	Night	IA	IA	30 dBA	36 dBA	IA	IA	33 dBA	IA	37 dBA	IA	IA	34
N-AT5	Night	IA	IA	37 dBA	<30 dBA	IA	IA	IA	IA	30 dBA	IA	<30 dBA	29
N-AT6	Night	NM	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA

Note:

dBA = A-weighted decibels.

IA = Inaudible.

NM = Not measurable.

■ Indicates criteria were not applicable due to meteorological conditions at the time of measurement.

Measurements undertaken on the following dates:

<sup>1</sup>: 13 January. <sup>2</sup>: 24 February. <sup>3</sup>: 18 March. <sup>4</sup>: 22 April. <sup>5</sup>: 19 May. <sup>6</sup>: 9 and 10 June. <sup>7</sup>: 20 July. <sup>8</sup>: 10 August. <sup>9</sup>: 16 September. <sup>10</sup>: 7 October. <sup>11</sup>: 19 November. <sup>12</sup>: 18 December.

\* A second measurement was taken for July due to low-frequency modifying factors being applicable at the time.

**Table A2**  
**L<sub>A1,1minute</sub> Attended Noise Monitoring Summary 2020**

Monitoring Location/Period		Jan <sup>1</sup>	Feb <sup>2</sup>	Mar <sup>3</sup>	Apr <sup>4</sup>	May <sup>5</sup>	Jun <sup>6</sup>	Jul <sup>7</sup>	Aug <sup>8</sup>	Sep <sup>9</sup>	Oct <sup>10</sup>	Nov <sup>11</sup>	Dec <sup>12</sup>
N-AT1	Night	IA	NM	IA	IA	IA	IA	IA	IA	30 dBA	IA	45 dBA	IA
N-AT2	Night	30 dBA	25 dBA	IA	32 dBA	33 dBA	<20 dBA	35 dBA	39 dBA	IA	28 dBA	30 dBA	<20 dBA
N-AT3	Night	IA	30 dBA	NM	41 dBA	38 dBA	43	<b>51 dBA, 51 dBA*</b>	44 dBA	41 dBA	32 dBA	NM	IA
N-AT4	Night	IA	IA	40 dBA	<b>50 dBA</b>	IA	IA	40	IA	44 dBA	IA	IA	40 dBA
N-AT5	Night	IA	IA	43 dBA	36 dBA	IA	IA	IA	IA	33 dBA	IA	37	37 dBA
N-AT6	Night	NM	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA

Note:

dBA = A-weighted decibels.

IA = Inaudible.

NM = Not measurable.

■ Indicates criteria were not applicable due to meteorological conditions at the time of measurement.

Measurements undertaken on the following dates:

<sup>1</sup>: 13 January. <sup>2</sup>: 24 February. <sup>3</sup>: 18 March. <sup>4</sup>: 22 April. <sup>5</sup>: 19 May. <sup>6</sup>: 9 and 10 June. <sup>7</sup>: 20 July. <sup>8</sup>: 10 August. <sup>9</sup>: 16 September. <sup>10</sup>: 7 October. <sup>11</sup>: 19 November. <sup>12</sup>: 18 December.

\* A second measurement was taken for July due to low-frequency modifying factors being applicable at the time.



**Table A3  
Cumulative Mining Noise Monitoring Summary 2020**

Monitoring Location/Period		Jan <sup>1</sup>	Feb <sup>2</sup>	Mar <sup>3</sup>	Apr <sup>4</sup>	May <sup>5</sup>	Jun <sup>6</sup>	Jul <sup>7</sup>	Aug <sup>8</sup>	Sep <sup>9</sup>	Oct <sup>10</sup>	Nov <sup>11</sup>	Dec <sup>12</sup>
N-AT1	Night	Nil	33 dBA	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	33	Nil
N-AT2	Night	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
N-AT3	Night	Nil	Nil	Nil	Nil	Nil	Nil	Nil, Nil*	Nil	Nil	Nil	Nil	Nil
N-AT4	Night	Nil	Nil	33 dBA	37 dBA	Nil	Nil	39 dBA	Nil	38	Nil	Nil	36 dBA
N-AT5	Night	Nil	Nil	37 dBA	<30 dBA	Nil	Nil	Nil	Nil	37	Nil	Nil	<30 dBA
N-AT6	Night	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil

Note:

dBA = A-weighted decibels.

IA = Inaudible.

NM = Not measurable.

Indicates criteria were not applicable due to meteorological conditions at the time of measurement.

Measurements undertaken on the following dates:

<sup>1</sup>: 13 January. <sup>2</sup>: 24 February. <sup>3</sup>: 18 March. <sup>4</sup>: 22 April. <sup>5</sup>: 19 May. <sup>6</sup>: 9 and 10 June. <sup>7</sup>: 20 July. <sup>8</sup>: 10 August. <sup>9</sup>: 16 September. <sup>10</sup>: 7 October. <sup>11</sup>: 19 November. <sup>12</sup>: 18 December.

\* A second measurement was taken for July due to low-frequency modifying factors being applicable at the time.

**APPENDIX B**  
**BLASTING SUMMARY 2020**

## Appendix B – Blast Monitoring Summary

### MPO Blast Monitoring Results – 2020

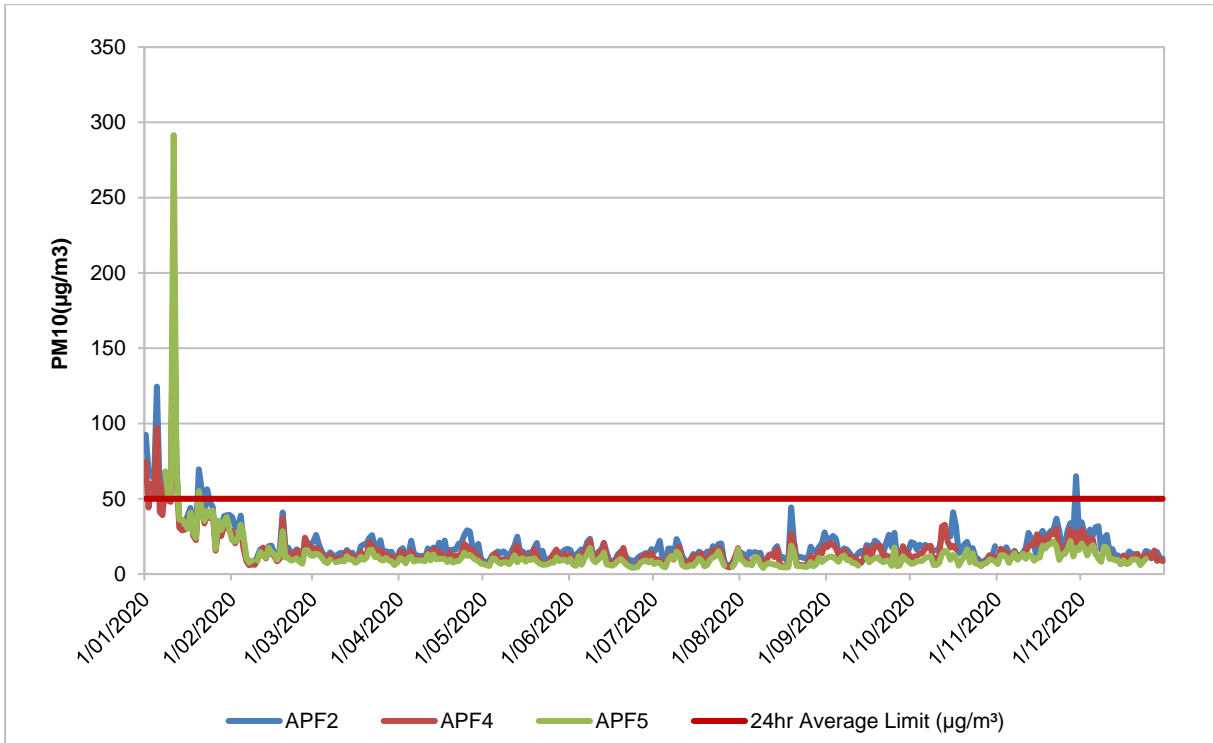
Date Fired	Time Fired	Vibration BVOA	Overpressure BVOA	Vibration BVOC	Overpressure BVOC	Vibration BVO2	Overpressure BVO2
02/01/2020	12:55	0.370 mm/s	104.2 DBL	0.200 mm/s	100.9 DBL	1.380 mm/s	100.5 DBL
07/01/2020	13:01	0.300 mm/s	95.9 DBL	0.110 mm/s	89.7 DBL	0.310 mm/s	101.2 DBL
09/01/2020	13:02	0.480 mm/s	110.7 DBL	0.380 mm/s	108.4 DBL	1.250 mm/s	109.7 DBL
13/01/2020	13:02	0.090 mm/s	103.2 DBL	0.250 mm/s	92.1 DBL	0.040 mm/s	101.3 DBL
14/01/2020	14:35	0.210 mm/s	92.7 DBL	0.140 mm/s	96.9 DBL	0.430 mm/s	108.5 DBL
28/01/2020	13:06	0.100 mm/s	86.8 DBL	0.050 mm/s	91.9 DBL	0.170 mm/s	98.4 DBL
05/02/2020	13:01	0.240 mm/s	93.4 DBL	0.240 mm/s	93.2 DBL	0.340 mm/s	96.8 DBL
06/02/2020	11:25	0.180 mm/s	101 DBL	0.060 mm/s	98.7 DBL	0.360 mm/s	97.6 DBL
12/02/2020	13:04	0.170 mm/s	90.9 DBL	0.110 mm/s	88.3 DBL	0.290 mm/s	95.9 DBL
21/02/2020	12:30	0.680 mm/s	98.3 DBL	0.480 mm/s	98.4 DBL	0.660 mm/s	97.1 DBL
25/02/2020	13:06	0.200 mm/s	89.4 DBL	0.140 mm/s	83 DBL	0.550 mm/s	99.3 DBL
04/03/2020	13:36	0.640 mm/s	102.3 DBL	0.440 mm/s	96.6 DBL	1.890 mm/s	101.3 DBL
12/03/2020	13:07	0.500 mm/s	111.6 DBL	0.350 mm/s	108.9 DBL	1.070 mm/s	101.6 DBL
13/03/2020	17:00	1.170 mm/s	104 DBL	0.600 mm/s	96.1 DBL	1.430 mm/s	103.2 DBL
18/03/2020	14:56	0.750 mm/s	101.5 DBL	0.400 mm/s	93 DBL	1.020 mm/s	106 DBL
19/03/2020	15:09	0.280 mm/s	90.6 DBL	0.470 mm/s	83 DBL	0.490 mm/s	100.5 DBL
24/03/2020	13:02	0.630 mm/s	97.1 DBL	0.350 mm/s	93.6 DBL	1.880 mm/s	103.5 DBL
30/03/2020	13:08	0.920 mm/s	98.3 DBL	0.620 mm/s	92.4 DBL	1.310 mm/s	105.1 DBL
03/04/2020	16:16	0.610 mm/s	99.1 DBL	0.400 mm/s	95.2 DBL	1.230 mm/s	103.9 DBL
09/04/2020	13:18	0.660 mm/s	97.5 DBL	0.220 mm/s	91.2 DBL	1.800 mm/s	110.2 DBL
09/04/2020	13:19	0.890 mm/s	112.4 DBL	0.490 mm/s	107.9 DBL	2.110 mm/s	110.2 DBL
20/04/2020	15:45	0.950 mm/s	103.7 DBL	0.440 mm/s	93.3 DBL	1.930 mm/s	106.9 DBL
21/04/2020	13:04	0.370 mm/s	100.4 DBL	0.200 mm/s	101 DBL	0.590 mm/s	107 DBL
21/04/2020	13:04	1.370 mm/s	101.4 DBL	1.200 mm/s	102 DBL	1.590 mm/s	108 DBL
23/04/2020	13:03	1.060 mm/s	103.9 DBL	0.310 mm/s	97 DBL	1.060 mm/s	103.9 DBL

Date Fired	Time Fired	Vibration BVOA	Overpressure BVOA	Vibration BVOC	Overpressure BVOC	Vibration BVO2	Overpressure BVO2
29/04/2020	12:59	0.570 mm/s	98.2 DBL	0.380 mm/s	100.8 DBL	1.770 mm/s	108.3 DBL
04/05/2020	13:07	0.230 mm/s	94.4 DBL	0.200 mm/s	84.3 DBL	0.430 mm/s	97.8 DBL
07/05/2020	14:15	0.210 mm/s	97.1 DBL	0.180 mm/s	103.9 DBL	0.959 mm/s	103.9 DBL
13/05/2020	13:04	0.080 mm/s	89.4 DBL	0.070 mm/s	81.9 DBL	0.120 mm/s	94.7 DBL
15/05/2020	13:01	0.460 mm/s	104 DBL	0.420 mm/s	92.7 DBL	0.850 mm/s	101.1 DBL
19/05/2020	13:01	0.580 mm/s	88.5 DBL	0.360 mm/s	82.2 DBL	0.770 mm/s	96.2 DBL
21/05/2020	12:51	0.090 mm/s	95.7 DBL	0.080 mm/s	84.3 DBL	0.110 mm/s	97 DBL
27/05/2020	12:04	0.380 mm/s	90.8 DBL	0.360 mm/s	83.2 DBL	0.550 mm/s	101 DBL
02/06/2020	10:55	0.350 mm/s	104.7 DBL	0.440 mm/s	111.7 DBL	0.440 mm/s	98.8 DBL
05/06/2020	11:20	0.390 mm/s	94.7 DBL	0.180 mm/s	90.6 DBL	0.350 mm/s	104.6 DBL
15/06/2020	16:40	0.480 mm/s	99.9 DBL	0.390 mm/s	89.6 DBL	0.760 mm/s	112.2 DBL
16/06/2020	13:03	2.470 mm/s	110 DBL	2.850 mm/s	102.4 DBL	0.410 mm/s	99.8 DBL
18/06/2020	13:05	0.410 mm/s	107.7 DBL	0.390 mm/s	97.4 DBL	0.940 mm/s	99.7 DBL
29/06/2020	15:39	0.290 mm/s	104.3 DBL	0.280 mm/s	101.3 DBL	0.800 mm/s	95.5 DBL
30/06/2020	14:06	0.390 mm/s	97.9 DBL	0.460 mm/s	99 DBL	0.760 mm/s	106.2 DBL
02/07/2020	09:11	0.190 mm/s	98.7 DBL	0.200 mm/s	92.3 DBL	0.550 mm/s	105.6 DBL
07/07/2020	13:48	0.020 mm/s	87 DBL	0.010 mm/s	80.5 DBL	0.010 mm/s	85.9 DBL
08/07/2020	13:00	0.650 mm/s	103.6 DBL	0.400 mm/s	94.7 DBL	0.840 mm/s	103.6 DBL
11/07/2020	14:15	0.430 mm/s	102 DBL	0.530 mm/s	93.3 DBL	0.420 mm/s	102.1 DBL
16/07/2020	13:07	1.070 mm/s	97.9 DBL	0.360 mm/s	91.1 DBL	0.770 mm/s	107.2 DBL
23/07/2020	13:07	0.940 mm/s	100.7 DBL	0.460 mm/s	95.3 DBL	0.910 mm/s	100.5 DBL
06/08/2020	13:12	0.830 mm/s	101 DBL	0.460 mm/s	90.5 DBL	0.890 mm/s	104.2 DBL
06/08/2020	13:12	0.600 mm/s	101 DBL	0.370 mm/s	92.2 DBL	0.600 mm/s	104.2 DBL
13/08/2020	15:08	0.460 mm/s	102.7 DBL	0.260 mm/s	95.7 DBL	0.300 mm/s	104 DBL
18/08/2020	10:20	1.280 mm/s	111 DBL	0.400 mm/s	102.6 DBL	0.600 mm/s	108.5 DBL
21/08/2020	09:30	0.230 mm/s	101.4 DBL	0.250 mm/s	100.3 DBL	0.360 mm/s	101.7 DBL
26/08/2020	13:12	0.620 mm/s	103 DBL	0.320 mm/s	95.3 DBL	0.960 mm/s	105.2 DBL
01/09/2020	14:37	1.400 mm/s	105.6 DBL	0.640 mm/s	97.6 DBL	0.820 mm/s	102.4 DBL

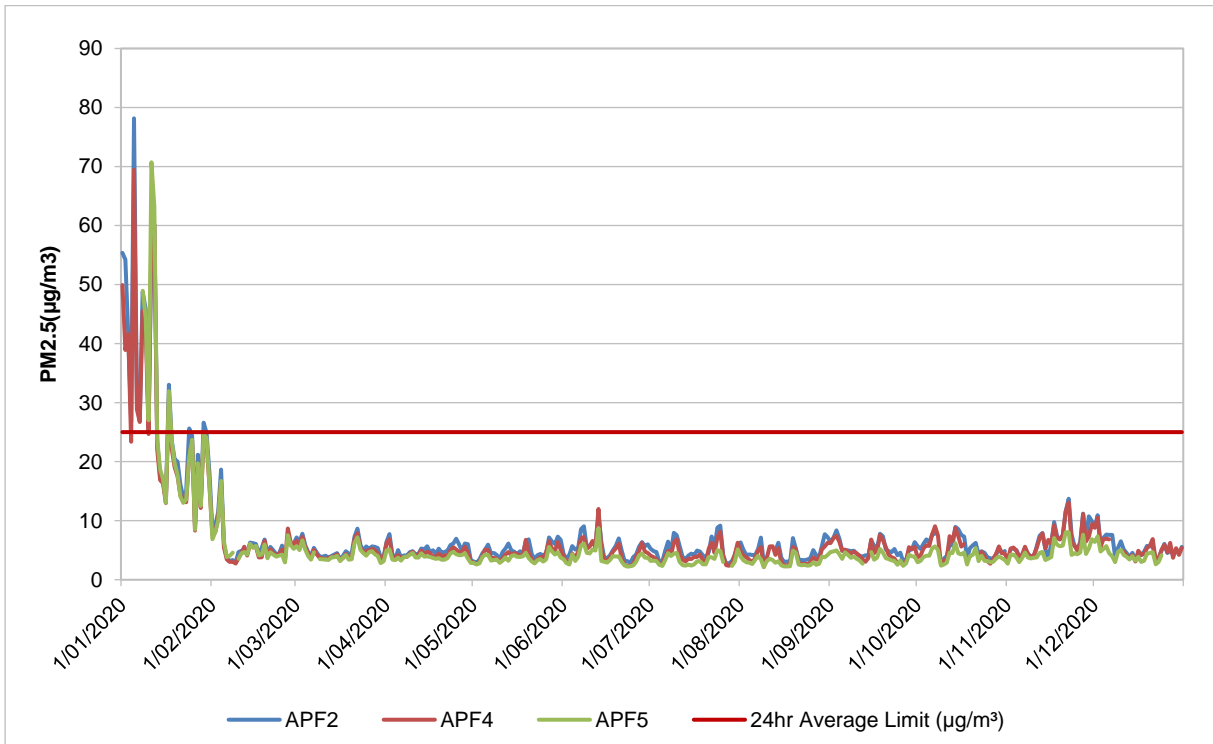
Date Fired	Time Fired	Vibration BVOA	Overpressure BVOA	Vibration BVOC	Overpressure BVOC	Vibration BVO2	Overpressure BVO2
09/09/2020	12:56	0.510 mm/s	104.7 DBL	0.300 mm/s	103 DBL	0.930 mm/s	107.5 DBL
17/09/2020	13:03	0.390 mm/s	100.1 DBL	0.220 mm/s	93.2 DBL	0.510 mm/s	102 DBL
23/09/2020	09:09	0.340 mm/s	102.8 DBL	0.160 mm/s	106.4 DBL	0.390 mm/s	111.2 DBL
24/09/2020	09:07	0.610 mm/s	101.6 DBL	0.290 mm/s	98.4 DBL	0.480 mm/s	101.6 DBL
01/10/2020	13:09	2.00 mm/s	104.1 DBL	1.10 mm/s	107.6 DBL	1.59 mm/s	104.6 DBL
09/10/2020	13:33	0.510 mm/s	99.9 DBL	0.430 mm/s	94.3 DBL	0.790 mm/s	109.4 DBL
20/10/2020	13:58	0.350 mm/s	104.7 DBL	0.350 mm/s	104.7 DBL	0.820 mm/s	98.3 DBL
22/10/2020	13:04	0.240 mm/s	105.6 DBL	0.150 mm/s	94 DBL	0.200 mm/s	99 DBL
28/10/2020	12:36	0.880 mm/s	101.9 DBL	0.360 mm/s	99.4 DBL	0.630 mm/s	103.6 DBL
30/10/2020	12:19	0.850 mm/s	95.3 DBL	0.290 mm/s	88.2 DBL	0.710 mm/s	96.9 DBL
05/11/2020	13:14	0.850 mm/s	95.3 DBL	0.290 mm/s	88.2 DBL	0.710 mm/s	96.9 DBL
11/11/2020	13:00	0.27 mm/s	100.1 DBL	0.110 mm/s	94.1 DBL	0.300 mm/s	98.4 DBL
17/11/2020	15:20	1.780 mm/s	101.2 DBL	101.600 mm/s	1.39 DBL	1.65 mm/s	100.6 DBL
20/11/2020	12:00	0.008 mm/s	102 DBL	0.060 mm/s	94.2 DBL	0.210 mm/s	94.2 DBL
26/11/2020	12:06	1.240 mm/s	97.4 DBL	0.380 mm/s	88.2 DBL	0.470 mm/s	107.7 DBL
27/11/2020	12:04	0.810 mm/s	100.2 DBL	95.100 mm/s	0.49 DBL	0.800 mm/s	104.3 DBL
09/12/2020	13:01	0.630 mm/s	97.5 DBL	0.530 mm/s	93.3 DBL	1.330 mm/s	99.1 DBL
11/12/2020	12:06	0.170 mm/s	118.8 DBL	0.120 mm/s	103.8 DBL	0.230 mm/s	106.6 DBL
16/12/2020	12:00	0.040 mm/s	95.1 DBL	0.020 mm/s	88.3 DBL	0.110 mm/s	93.9 DBL
21/12/2020	13:01	0.380 mm/s	91.6 DBL	0.290 mm/s	83.6 DBL	0.760 mm/s	96.4 DBL
23/12/2020	13:50	0.740 mm/s	113.4 DBL	0.310 mm/s	104.8 DBL	0.760 mm/s	109.4 DBL

**APPENDIX C**

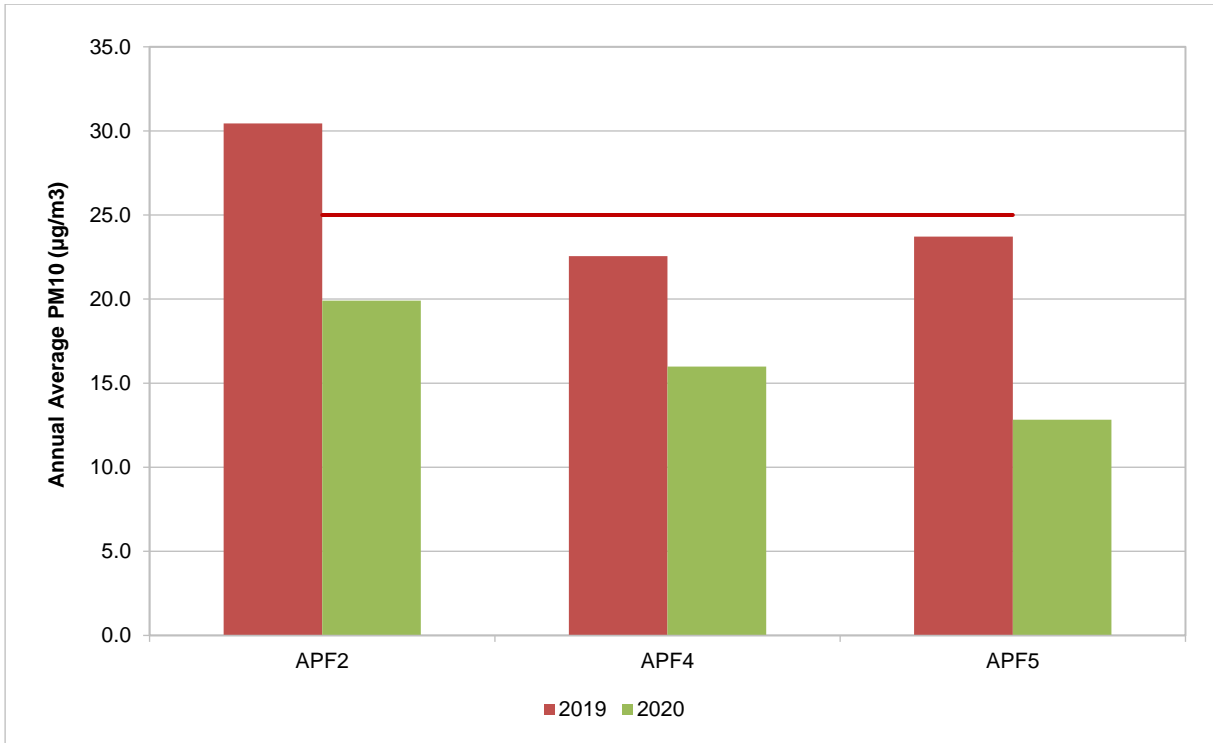
**PM<sub>2.5</sub>, PM<sub>10</sub> AND TSP LEVELS INCLUSIVE OF 'EXTRAORDINARY EVENTS'**



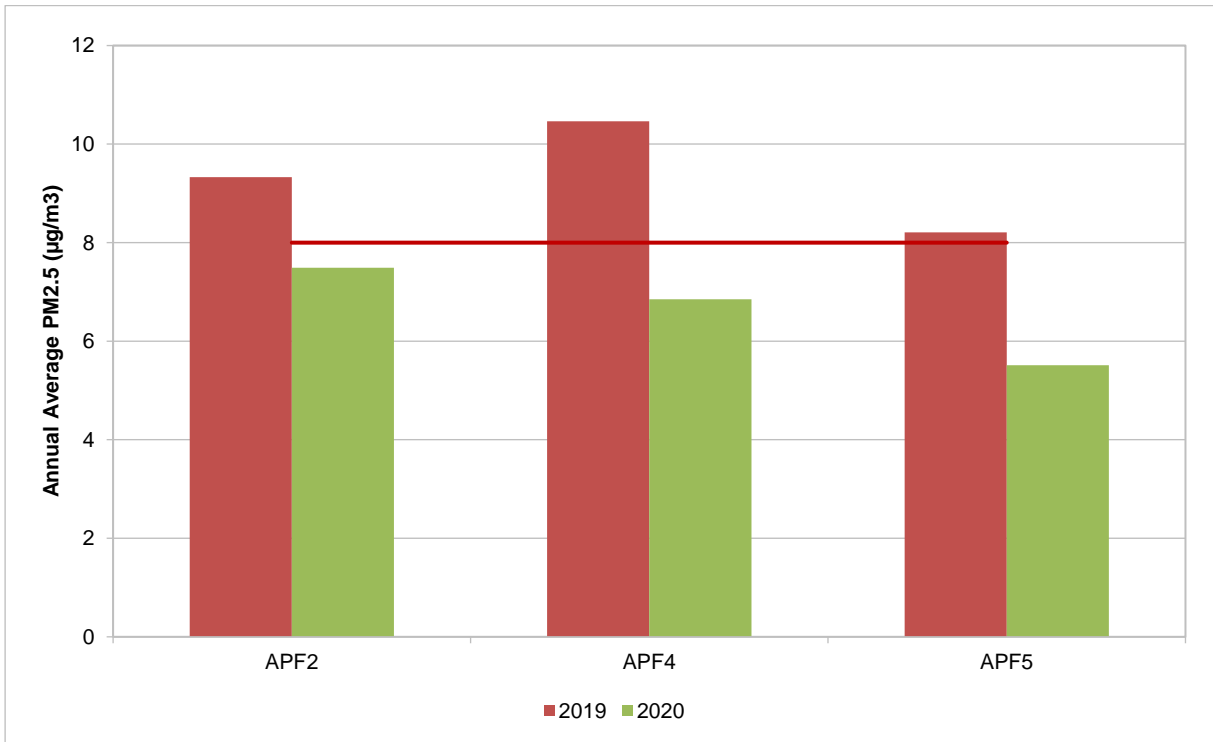
**Chart C1: 24-hour Average PM<sub>10</sub> Levels Inclusive of ‘Extraordinary Events’**



**Chart C2: 24-hour Average PM<sub>2.5</sub> Levels Inclusive of ‘Extraordinary Events’**

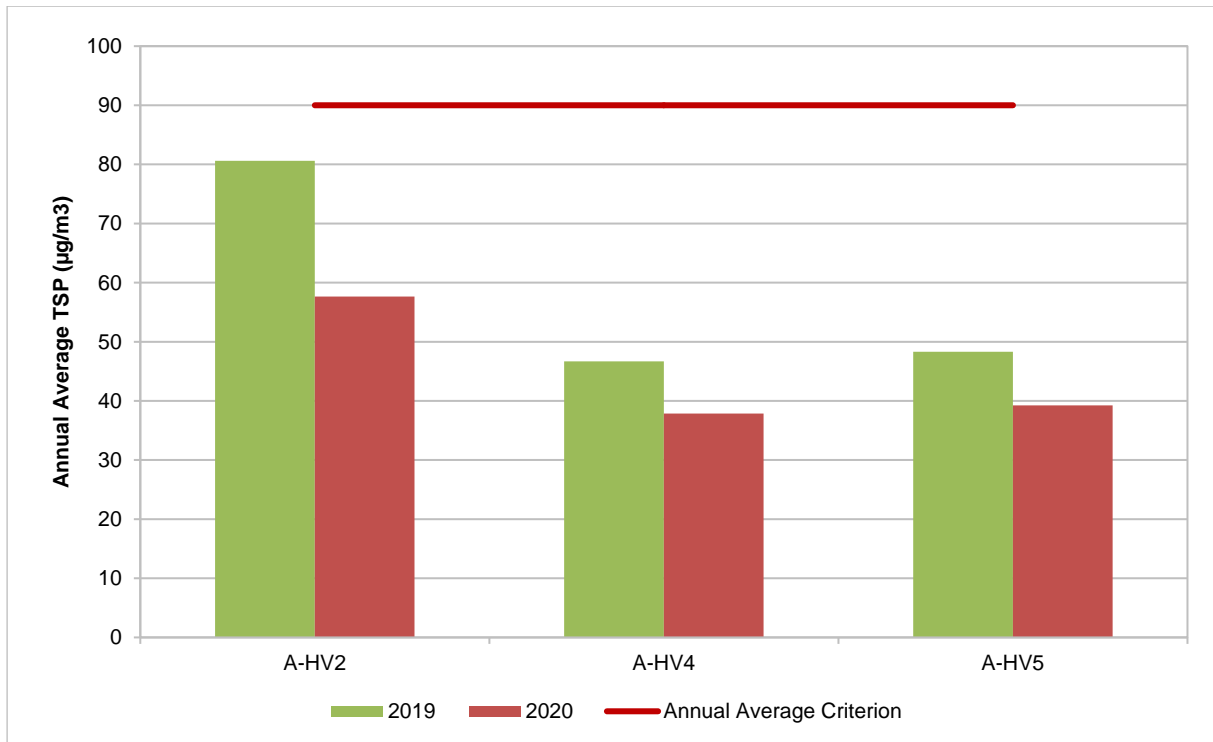


**Chart C3: Annual Average PM<sub>10</sub> Levels Inclusive of 'Extraordinary Events'**



**Chart C4: Annual Average PM<sub>2.5</sub> Levels Inclusive of 'Extraordinary Events'**





**Chart C5: Annual Average TSP Levels Inclusive of 'Extraordinary Events'**

**APPENDIX D**  
**INDEPENDENT ENVIRONMENTAL AUDIT**



Mr Andrew Reid  
Environmental Superintendent (Operations)  
MACH Energy Australia Pty Ltd  
1100 Wybong Road  
MUSWELLBROOK NSW 2333

By Email ONLY: [andrew.reid@machenergyaustralia.com.au](mailto:andrew.reid@machenergyaustralia.com.au)

06/07/2020

Dear Mr Reid

**MOUNT PLEASANT OPERATION (DA 92/97) – INDEPENDENT ENVIRONMENTAL AUDIT**

Reference is made to the Independent Environmental Audit (IEA) report and Response to Audit Recommendations (RAR) for the Mount Pleasant Operation, prepared as required by Schedule 5 condition 9 of DA 92/97, as modified (the consent) and submitted to the Department of Planning, Industry and Environment (the Department) on 18 June 2020.

The Department considers that the IEA report generally satisfies the reporting requirements of the consent/approval. Please note that acceptance of this report is not endorsement of the compliance status of the project.

Non-compliances identified in the IEA have been assessed in accordance with the Department's Compliance Policy, with the Department on this occasion determining to record the breaches and at this stage, no further enforcement action is proposed. However, please note that recording the breach does not preclude the Department from taking alternative enforcement action, should it become apparent that an alternative response is more appropriate.

Please include a status update for all actions provided in the RAR in the next Annual Review / Annual Environmental Management Report, until all actions are completed.

If you have any questions, please contact myself on (02) 6575 3401 or email to [compliance@planning.nsw.gov.au](mailto:compliance@planning.nsw.gov.au)

Yours sincerely

A handwritten signature in black ink that reads 'H Watters'.

Heidi Watters  
Team Leader Northern  
Compliance

As nominee of the Planning Secretary

**Mount Pleasant Operation**  
**Independent Environmental Audit**

**Prepared for:**  
MACH Energy  
PO Box 351  
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SLR Ref: 630.12984-R01  
Version No: -v0.1  
June 2020



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## BASIS OF REPORT

This report has been prepared by SLR Consulting Australia Pty Ltd (SLR) with all reasonable skill, care and diligence, and taking account of the timescale and resources allocated to it by agreement with MACH Energy (the Client). Information reported herein is based on the interpretation of data collected, which has been accepted in good faith as being accurate and valid.

This report is for the exclusive use of the Client. No warranties or guarantees are expressed or should be inferred by any third parties. This report may not be relied upon by other parties without written consent from SLR.

SLR disclaims any responsibility to the Client and others in respect of any matters outside the agreed scope of the work.

## DOCUMENT CONTROL

Reference	Date	Prepared	Checked	Authorised
630.12984-R01-v0.3	11 June 2020	Chris Jones	-	Chris Jones
630.12984-R01-v0.2	3 June 2020	Chris Jones	Tracey Ball	Chris Jones
630.12984-R01-v0.1	23 April 2020	Chris Jones	Tracey Ball	Chris Jones

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# 1 Introduction

## 1.1 Background

The Mount Pleasant Operation (MPO) is located in the Upper Hunter Valley of New South Wales (NSW), north-west of Muswellbrook and approximately 50 kilometres (km) north-west of Singleton (**Figure 1**). The villages of Aberdeen and Kayuga are located approximately 5 km north-northeast and 1 km north of the MPO boundary, respectively. The proponent of the MPO is MACH Energy Australia Pty Ltd (MACH Energy). As of April 2020, Thiess are the contract miner and Sedgmans operate the Coal Handling Preparation Plant.

The initial development application for the MPO was made in 1997. This was supported by an Environmental Impact Statement (EIS) prepared by Environmental Resources Management Mitchell McCotter (ERM Mitchell McCotter) (ERM Mitchell McCotter, 1997). On 22 December 1999, the then Minister for Urban Affairs and Planning granted Development Consent DA 92/97 to Coal & Allied Operations Pty Ltd (Coal & Allied). This allowed for the “Construction and operation of an open cut coal mine, coal preparation plant, transport and rail loading facilities and associated facilities” at the MPO.

The consent allowed for operations 24 hours per day, seven days per week and the extraction of 197 million tonnes (Mt) of run-of-mine (ROM) coal over a 21 year period, at a rate of up to 10.5 Mt of ROM coal per year.

The MPO Modification 1 (MOD 1) was submitted for approval on 19 May 2010. MOD 1 included the provision of an infrastructure envelope for siting the mine infrastructure, the provision of an optional conveyor/service corridor linking the MPO facilities with the Muswellbrook-Ulan Rail Line and modification of the existing Development Consent DA 92/97 boundaries to accommodate the optional conveyor/service corridor and minor administrative changes. MOD 1 was approved on 19 September 2011.

The MPO South Pit Haul Road Modification (MOD 2) was submitted for approval on 30 January 2017 with a supporting Environmental Assessment (EA) prepared by MACH Energy (MACH Energy, 2017a). MOD 2 proposed to realign an indicative internal haul road to enable more efficient access to the South Pit open cut. MOD 2 was approved on 29 March 2017.

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

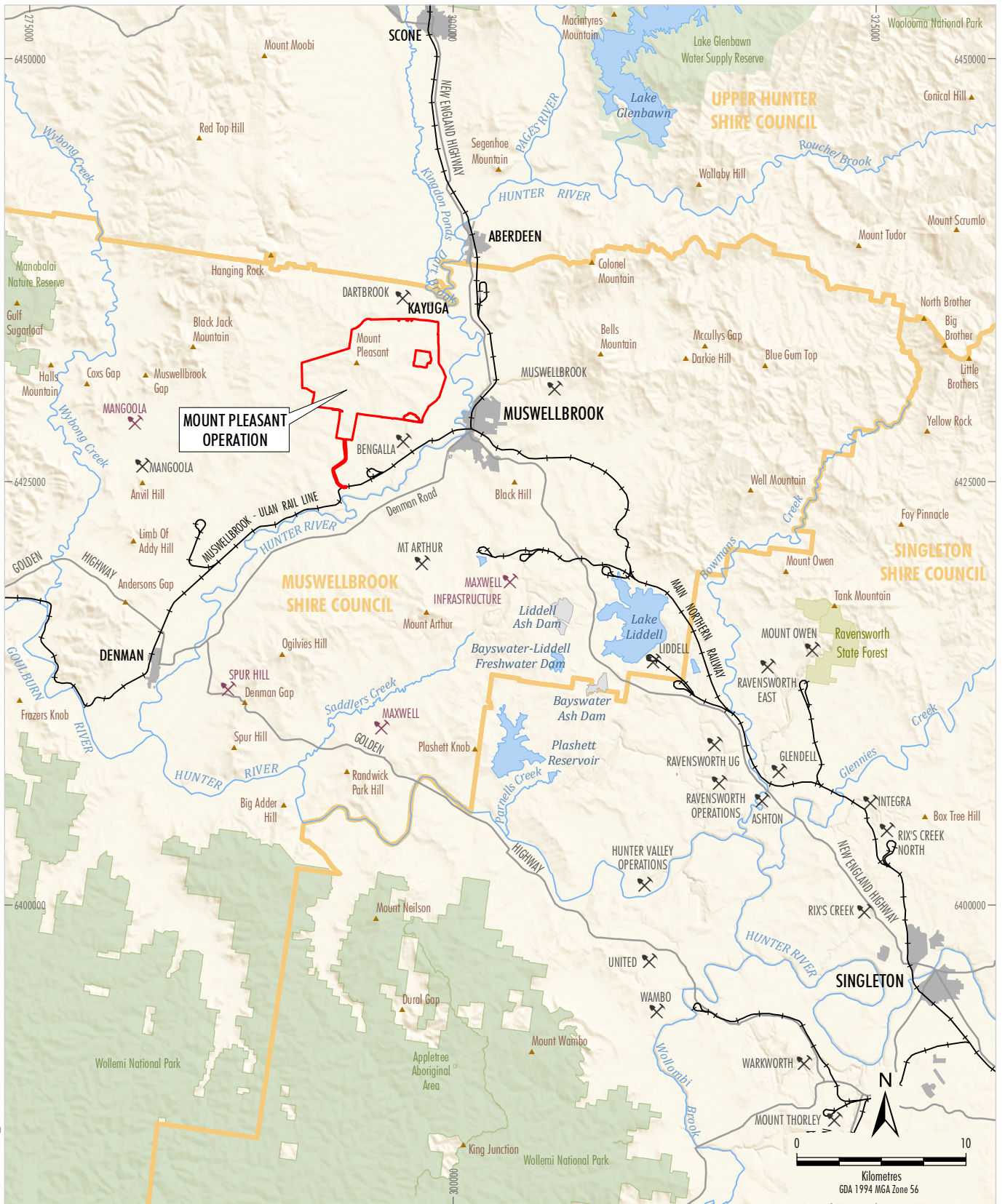
The MPO Rail Modification (MOD 4) was submitted on 18 December 2017. MOD 4 proposed the following changes:

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



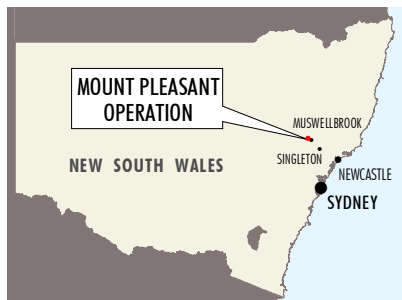
MOD 4 was approved on 16 November 2018. Appendix 2 of the modified Development Consent DA 92/97 illustrates the Conceptual Project Layout Plan of the approved MPO at 2021 and 2025, Approved Surface Disturbance Plan and Conceptual Final Landform incorporating the MOD 4 infrastructure relocations.

**Figure 1** shows the general site layout of the MPO.



MACH 18-03-AR 2019\_201A

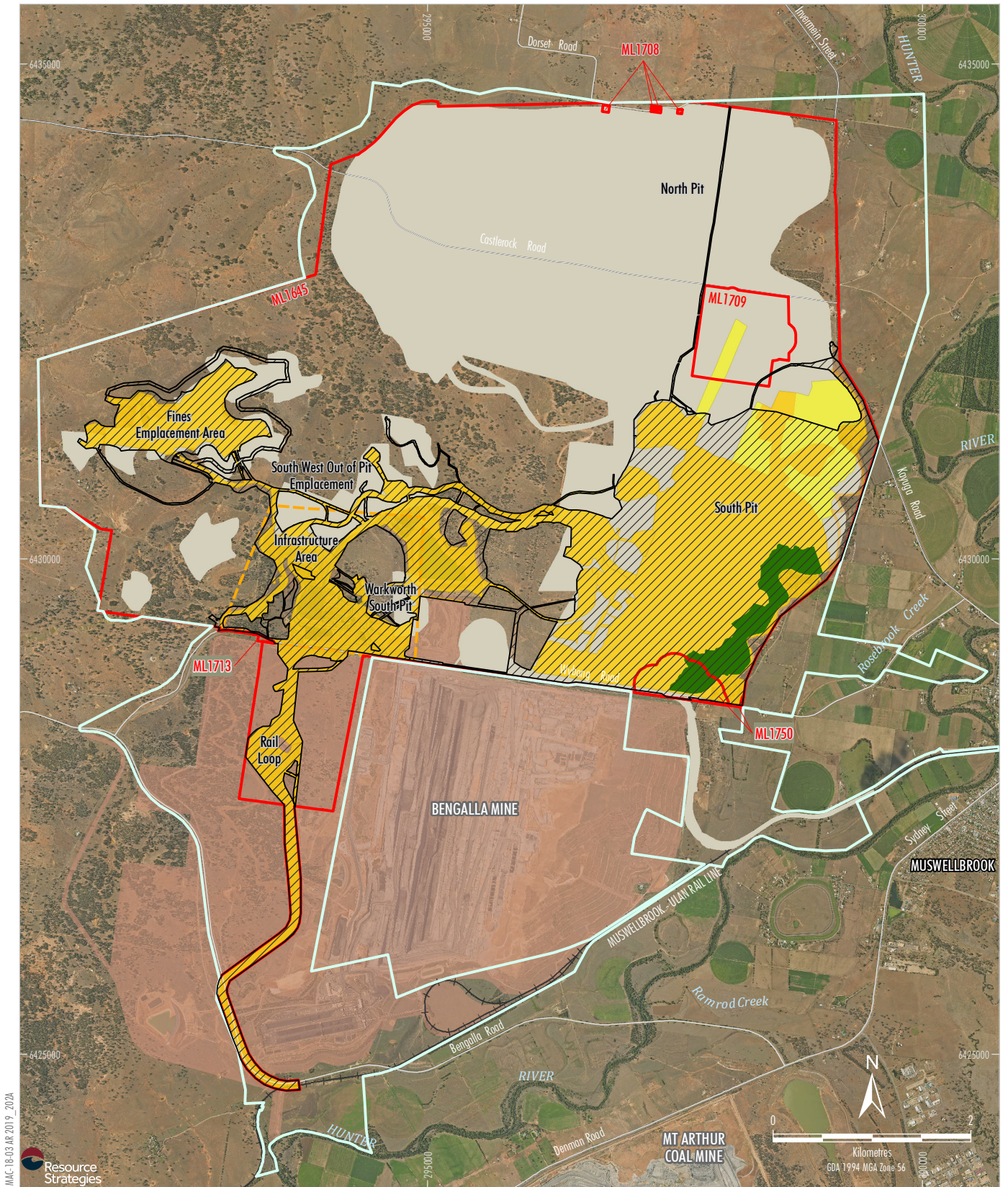
Source: NSW Spatial Services (2019)



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

**MACHEnergy**  
MOUNT PLEASANT OPTIMISATION PROJECT  
Project Location

**Figure 1**



MAC18-03 AR 2019\_202A  
Resource Strategies

- LEGEND**
- Mining Lease Boundary
  - Development Consent Boundary
  - Approximate Extent of Approved Surface Development <sup>1</sup>
  - Infrastructure Area Envelope
  - MOP Footprint <sup>+</sup>
  - End 2019 Active Disturbance Area
  - End 2019 Rehabilitation Area
  - 2020 Forecast Additional Disturbance Area
  - Bengalla Mine Approved Disturbance Boundary (SSD-5170)

**NOTE**  
 1. Excludes some project components such as water management infrastructure, infrastructure within the Infrastructure Area Envelope, offsite coal transport infrastructure, road diversions, access tracks, topsoil stockpiles, power supply, temporary offices, signalling, other ancillary works and construction disturbance.  
 + Mount Pleasant Operation Mining Operations Plan and Rehabilitation Management Plan (July 2019)

Source: MACH Energy (2020); NSW Spatial Services (2019); Department of Planning and Environment (2016)  
 Orthophoto: MACH Energy (Jan 2020)

**MACHEnergy**  
 MOUNT PLEASANT OPERATION  
 2019 Mining Activities

Figure 2

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## 1.2 Audit Scope

This Independent Environmental Audit (Audit) covers the period from 26 November 2017 (day after previous 2017 Independent Environmental Audit) to Day 3 of the site audit (27 February 2020).

The scope of the Audit is outlined in Schedule 5 Condition 9 of Development Consent DA 92/97 (as modified), and includes:

*9. By the end of March 2014, and every 3 years thereafter, unless the Secretary directs otherwise, the Applicant must commission, commence and pay the full cost of an Independent Environmental Audit of the development. This audit must:*

*(a) be conducted by a suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Secretary;*

*(b) include consultation with the relevant agencies and the CCC;*

*(c) assess the environmental performance of the development and whether it is complying with the requirements in this consent and any relevant EPL or Mining Lease or necessary water licences (including any assessment, plan or program required under these approvals);*

*(d) review the adequacy of strategies, plans or programs required under the abovementioned approvals (including whether the development has met or is trended towards the progressive performance and completion criteria detailed in these strategies, plans or programs);*

*(e) if necessary, recommend appropriate measures or actions to improve the environmental performance of the development, and/or any strategy, plan or program required under the abovementioned approvals; and*

*(f) be conducted and reported to the satisfaction of the Secretary.*

The Audit has assessed the key approvals and documentation outlined in **Section 4**, including:

- Development Consent DA 92/97 (including management plans under the consent and statement of commitments);
- Environment Protection Licence (EPL) 20850;
- Mining Leases (MLs) 1645, 1708, 1709, 1713 and 1750; and
- Water Licences - WAL 879, WAL 880, WAL 41438 and WAL 1113.

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## 1.3 Key Site Contacts

Contact details for the main MACH Energy contact is outlined below:

**Chloe Annandale**

**Environmental Advisor**

Email: Chloe.Annandale@machenergy.com.au

## 1.4 Audit Methodology

The Audit was undertaken onsite by SLR's Chris Jones (Lead Auditor and Rehabilitation Specialist) and Tracey Ball (Assistant Auditor).

The Noise and Blasting Specialist (Nathan Archer) and Air Quality Specialist (Ali Naghizadeh) assisted with a desktop review of relevant information during the Audit but they did not attend the site inspections.

The SLR Audit team are independent of MACH Energy as defined under Section 3.3 of the Department of Planning, Industry and Environment's (DPIE) *Independent Environmental Audit Guidelines* (October 2015).

Information was provided by MACH Energy during and following the Audit. SLR also sourced a large amount of information from the MACH Energy –MPO website.

The methodology for the Audit consisted of the following key steps:

- Introductory and close out meetings;
- Reviewing key documents provided by MACH Energy prior to the Audit;
- Consultation with relevant government agencies as per the Independent Environmental Audit Guideline requirements prior to the site component;
- Preparation of draft Audit Tables provided to MACH Energy prior to the site Audit;
- Site component of the Audit, included inspections and discussions with key MPO personnel;
- Review of additional relevant documentation obtained while onsite during the inspection or provided by MPO after the site inspection; and
- Client review and comment on the draft Audit report.

The site component was completed on the following days:

- 25 to 27 February 2020– including opening meeting, inspection, determination of compliance, and closeout meeting. Chris Jones from SLR also undertook auditing onsite on 12 March 2020 as the Audit team had not reviewed all relevant conditions of the approval from the earlier site visit.

Photographs taken during the site inspection are included in **Appendix A**. A large amount of evidence was viewed and collected as part of the Audit, including monitoring records, reports, and correspondence. While this key evidence has been referenced in **Section 2**, it has not been attached to this Audit report.

The Audit has been completed as per the *Independent Environmental Audit Guidelines* (DPIE October 2015).

The Audit team assessed the approvals and documentation outlined in **Section 4**.

### 1.4.1 Introductory and Close Out Meeting

Introductory and close out meetings were held for the Audit. At the opening meeting introductions were made by each of the meeting attendees and MPO personnel provided background details regarding the site to SLR. During the close out meeting a general discussion about compliance and areas for improvement was undertaken. **Table 1** lists those present at these meetings.

**Table 1 Meeting Attendees**

Name	Role and Company	Comment
Chris Jones	SLR Lead Auditor	Present at opening and closing meetings
Tracey Ball	SLR Assistant Auditor	Present at opening and closing meetings
Chloe Annandale	Mach Energy Environmental Advisor	Present at opening and closing meetings
Chris Masters	MACH Energy Environmental Advisor	Present at opening and closing meetings
Tom Wilson	MACH Energy Senior Process Engineer	Present at opening meeting
Ian Webber	MACH Energy Land and Property Superintendent	Present at opening meeting
Brad Fackender	MACH Energy Project Director	Present at opening meeting
Andrew Reid	MACH Energy Environmental Superintendent	Present at opening and closing meetings
Craig Hawkins	MACH Energy Site Coordinator	Present at opening meeting
Paul O'Loughlin	MACH Energy Principal Mining Engineer	Present at opening and closing meetings
Michael Redman	Thiess Project Manager	Present at opening and closing meetings
Whitney Claxton	Thiess Environment and Community Graduate	Present at opening and closing meetings
Peter York	Thiess Environment and Community Superintendent	Present at opening and closing meetings
Michelle Eckersley	Thiess Environment and Community Officer	Present at opening and closing meetings
Richard Bailey	MACH Energy General Manager - Operations	Present at opening meeting
Megan Kropp	Sedgman CHPP Manager	Present at opening and closing meetings
Ryan Fox	Thiess Mining Manager	Present at opening and closing meetings

## 1.5 Consultation Requirements

**Table 2** outlines the stakeholder consultation completed for the Audit, undertaken in accordance with the Audit Guidelines.

**Table 2 Stakeholder Consultation for the Audit**

Regulatory Authority	Contact Details	Comment from Stakeholder	SLR Response
DPIE	Heidi Watters Senior Compliance Officer Planning & Assessment   Department of Planning, Industry and Environment T02 65753401   E <a href="mailto:heidi.watters@planning.nsw.gov.au">heidi.watters@planning.nsw.gov.au</a>	<ol style="list-style-type: none"> <li>1. Adequacy of actions to address recommendations of the 2017 Audit, and the status of all actions.</li> <li>2. Air quality management and adequacy of responses to real time air quality alarms (e.g. how are these alarms responded to?). Can this process be improved?</li> <li>3. Appropriateness of monitoring locations (air, noise and blast) – are the locations representative of the current neighbouring private residences and are monitors sited in accordance with the relevant standards?</li> <li>4. Predicted (EA) air quality and noise impact compared to actual monitoring results.</li> <li>5. Predicted (EA) mining footprint and rehabilitation compared to actual (current) mine footprint and rehabilitation.</li> <li>6. Complaints management, particularly adequacy of responses to complaints during the IEA period and actions taken by MACH to reduce the number of repeat complainants.</li> </ol>	<ol style="list-style-type: none"> <li>1. The status of actions are assessed in the Annual Reviews. According to the 2019 Annual Review the last of the Audit actions relating to water management was completed in 2019.</li> <li>2. Air quality management and response to real time data was assessed. See <b>Section 5.3</b> for details and <b>Section 6</b> for recommendations.</li> <li>3. SLR has reviewed the management plans and do not have any recommendations specifically regarding changing monitoring locations. Monitoring is completed by trained contractors.</li> <li>4. This is assessed in the Annual Reviews. The site has generally been compliant with monitoring criteria throughout the Audit period.</li> <li>5. Based on the information provided activities have been completed within the EA disturbance footprint. The most up to date comparison of disturbance and rehabilitation are outlined in the Mining Operations Plan (MOP) and Annual Reviews. See <b>Section 5.1</b> for further details.</li> <li>6. Complaints are summarised in <b>Section 4.7</b>.</li> </ol>

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Regulatory Authority	Contact Details	Comment from Stakeholder	SLR Response
Environment Protection Authority (EPA)	Mark Hartwell Unit Head Operations – Hunter Contact no is the general EPA Newcastle Office no 02 49 08 6800 <a href="mailto:Mark.Hartwell@epa.nsw.gov.au">Mark.Hartwell@epa.nsw.gov.au</a>	No response from email to EPA on 15 January 2020.	Nil
Department of Environment, Energy and Science	info@environment.nsw.gov.au	No response from email on 15 January 2020.	Nil



Regulatory Authority	Contact Details	Comment from Stakeholder	SLR Response
Department of Planning and Environment – Resources Regulator (DPE-RR)	Jenn Warner Inspector Environment (Northern) Resources Regulator   Department of Planning, Industry and Environment T 02 40636668 E <a href="mailto:jenn.warner@planning.nsw.gov.au">jenn.warner@planning.nsw.gov.au</a>	<ol style="list-style-type: none"> <li>1. Review relevant mining leases and exploration licences as agreed with Resources Regulator;</li> <li>2. Undertake an assessment of compliance against the conditions of title related to environmental management;</li> <li>3. Verify that there is a current Mining Operations Plan (MOP) in place and it has been approved by the Regulator- review compliance against any conditions of approval of the MOP;</li> <li>4. Undertake a critical review of the MOP, including an assessment of its compatibility with the description of operations contained in the planning approval. In particular:                             <ul style="list-style-type: none"> <li>- Review the rehabilitation strategy as outlined in the MOP to determine if it is consistent with the Project Approval in terms of progressive rehabilitation schedule; and proposed final land use(s);</li> <li>- Review the rehabilitation objectives and completion criteria as outlined in the MOP to determine if they have been developed in accordance with the proposed final land use(s) as outlined in the Project Approval.</li> </ul> </li> </ol>	<ol style="list-style-type: none"> <li>1. Mining leases have been reviewed. However Exploration licenses are not a requirement of the Audit Guidelines and have therefore not been assessed. SLR however have audited the exploration conditions within the mining leases.</li> <li>2. Completed as part of the Audit.</li> <li>3. Current MOP has been approved. SLR has reviewed the compliance of the MOP against the Mining Lease conditions</li> <li>4. There were some differences in figures within the Rehabilitation Strategy and the MOP/RMP. See <b>Section 5.1.3</b>.</li> <li>5. There has been minimal rehabilitation monitoring completed at site due to the age of rehabilitation.</li> <li>6. Evidence of rehabilitation repair and maintenance. An area of rehabilitation was recently reshaped. Rehabilitation monitoring has recently commenced.</li> <li>7. Activities have been completed within the approved disturbance footprints. Annual updates are provided in the Annual Review.</li> </ol>

Regulatory Authority	Contact Details	Comment from Stakeholder	SLR Response
		<ol style="list-style-type: none"> <li>5. Review the development and implementation of any rehabilitation monitoring programs to assess performance against the nominated objectives and completion criteria -verified by reviewing monitoring reports and rehabilitation inspection records;</li> <li>6. Determine if a rehabilitation care and maintenance program has been developed and implemented based on the outcomes of monitoring program -verified by reviewing Annual Rehabilitation Programs or similar documentation;</li> <li>7. Confirm that mining operations are being conducted in accordance with the approved MOP (production, mining sequence etc.), including within the designated MOP approval boundary - to be verified by site plans and site inspection;</li> <li>8. Confirm that rehabilitation progress is consistent with the approved MOP as verified by site plans and a site inspection. This should include an evaluation against rehabilitation targets and whether the final landform is being developed in accordance with conceptual final landform in the Project Approval; and</li> <li>9. Based on a visual inspection, determine if there are any rehabilitation areas that appear to have failed or that have incurred an issue that may result in a delay in achieving the successful rehabilitation.</li> </ol>	<ol style="list-style-type: none"> <li>8. <b>Section 5.1.2</b> outlines disturbance and rehabilitation predictions against the MOP. the final landform of the site will progress over the coming years.</li> <li>9. There was an area of failed rehabilitation that was recently reshaped and seeded. At the time of the site inspection there was another area currently being reshaped This has since been completed. See <b>Section 5.1</b> for more details.</li> </ol>

Regulatory Authority	Contact Details	Comment from Stakeholder	SLR Response
Water NSW	Ellie Randall   Water Regulation Officer Natural Resources Access Regulator   Water Regulation (East) T: +61 2 4275 9308   F: +61 2 4224 9740 E: <a href="mailto:ellie.randall@nrar.nsw.gov.au">ellie.randall@nrar.nsw.gov.au</a>	Include a review of the Water Management Plan and Rehabilitation Management Plan. Review water licences for water take.	The Audit has covered the Water Management Plan and Rehabilitation Management Plan. SLR has also reviewed the water licences for water take.
Muswellbrook Shire Council	Sharon Pope Assistant Director Environment and Community Services P: (02) 6549 3868   F: (02) 6549 3701 <a href="mailto:Sharon.Pope@muswellbrook.nsw.gov.au">Sharon.Pope@muswellbrook.nsw.gov.au</a>	<ol style="list-style-type: none"> <li>1. Completion of the audit against key statutory requirements outlined in Section 2 of the DPIE Independent Environmental Audit Guidelines (e.g. assess the environmental performance of the project and whether it is complying with the requirements development approvals and any relevant EPL or Mining Lease, including any assessment, plan or program required under these approvals) would address areas of concern/interest held by Council.</li> <li>2. Ongoing rehabilitation of disturbed areas, including interim rehabilitation where final rehabilitation may be a more long-term action. Conditions of approval require reasonable attempts to minimise the amount of disturbed land on the site. Given the drought and adverse wind conditions over the past 2 years, visible dust has caused concern for the community. The dust does not solely originate from this site, but how these conditions are being addressed should be discussed in the audit.</li> </ol>	<ol style="list-style-type: none"> <li>1. Noted. The Audit covers these requirements.</li> <li>2. The mine plan has been designed to minimise disturbance. Rehabilitation and dust have both been assessed in this Audit. There is a program for progressive rehabilitation.</li> <li>3. Blasting was within criteria. A summary of blasting (including actual blast results) is provided in each Annual Review.</li> </ol>

Regulatory Authority	Contact Details	Comment from Stakeholder	SLR Response
		<p>3. Mine Blast impacts. There have been occasional impacts felt in the Muswellbrook Township from mine blasts over the past few years. Like dust, mine blasts issues can originate from many sites. It would be good to look at the number of times blasts on the site produced vibration and overpressure results that were close to the limits set and possibly see if this could be lessened by things the Mine could do differently.</p>	
<p>Community Consultative Committee (CCC)                      Chairperson</p>	<p>Dr W.E.J. Paradise AM  <a href="mailto:w.paradice@icloud.com">w.paradice@icloud.com</a>                      Mob +61 (0) 418 680 616</p>	<p>No response from email to CCC Chair on 15 January 2020.</p>	<p>Nil</p>

## 1.6 Statement of Independence

We can confirm independence based on the following:

- No one from the SLR Audit team is related to any proponent, owner, operator or other entity involved in the delivery of the project. Such a relationship includes that of employer/employee, a business partnership, sharing a common employer, a contractual arrangement outside an Independent Audit, or that of a spouse, partner, sibling, parent, or child;
- No one from SLR or the Audit team has any pecuniary interest in the project, proponent or related entities. Such an interest includes where there is a reasonable likelihood or expectation of financial gain (other than being reimbursed for performing the Audit) or loss to the auditor, or their spouse, partner, sibling, parent, or child;
- No one from SLR or the Audit team have provided services (not including independent reviews or auditing) to the current project with the result that the audit work performed by themselves or their company, except as otherwise declared to the Department prior to the audit;
- No one from SLR or the Audit team is an Environmental Representative for the Project; and
- No one from the proposed Audit team can or will accept any inducement, commission, gift or any other benefit from auditee organisations, their employees or any interested party, or knowingly allow colleagues to do so.

## 2 Documents Reviewed and Referenced

Key documentation reviewed as part of the Audit includes:

- DA 92/97;
- EPL 20850;
- Mining leases (ML 1645, ML 1708, ML 1709, ML 1713 and ML 1750);
- Water Licences;
- Annual Reviews – 2017, 2018 and 2019;
- Monitoring results for meteorological, noise, air, water and blasting;
- Rehabilitation Monitoring Report;
- Transport Summary Spreadsheet;
- Environmental Management Plans – as per approval conditions;
- Mining Operations Plans/ Rehabilitation Management Plans (MOPs/ RMPs);
- Annual Returns – across the Audit period;
- Complaints log;
- Evidence of maintenance and calibration;
- CCC Meeting Minutes – across the Audit period; and
- Key consultation with government – including consultation and approval letters.





### 3 Assessment of Compliance

The terms used in the Audit to describe the level of compliance of the site with the relevant approval documentation are outlined in **Table 3** and **Table 4**. These are requirements of the DPIE’s *Independent Environmental Audit Guidelines* (October 2015).

**Table 3 Compliance Assessment Criteria**

Assessment	Criteria
<b>Compliant</b>	Where the Auditor has collected sufficient verifiable evidence to demonstrate that the intent and all elements of the requirement of the regulatory approval have been complied with within the scope of the Audit.
<b>Not Verified</b>	Where the Auditor has not been able to collect sufficient verifiable evidence to demonstrate that the intent and all elements of the requirement of the regulatory approval have been complied with within the scope of the Audit. In the absence of sufficient verification, the Auditor may in some instances be able to verify by other means (visual inspection, personal communication, etc.) that a requirement has been met. In such a situation, the requirement should still be assessed as not verified. However, the Auditor could note in the report that they have no reasons to believe that the operation is non-compliant with that requirement.
<b>Non-Compliant</b>	Where the Auditor has collected sufficient verifiable evidence to demonstrate that the intent of one or more specific elements of the regulatory approval have not been complied with within the scope of the Audit.
<b>Administrative Non-Compliance</b>	A technical non-compliance with a regulatory approval that would not impact on performance and that is considered minor in nature (e.g. report submitted but not on the due date, failed monitor or late monitoring session). This would not apply to performance-related aspects (e.g. exceedance of a noise limit) or where a requirement had not been met at all (e.g. noise management plan not prepared and submitted for approval).
<b>Not triggered</b>	A regulatory approval requirement has an activation or timing trigger that had not been met at the time of the Audit inspection; therefore, a determination of compliance could not be made.
<b>Observation</b>	Observations are recorded where the Audit identified issues of concern which do not strictly relate to the scope of the Audit or assessment of compliance. Further observations are considered to be indicators of potential non-compliances or areas where performance may be improved.
<b>Note</b>	A statement or fact, where no assessment of compliance is required.

**Table 4 Risk Levels for Non-Compliances**

Risk Level	Colour Code	Description
<b>High</b>		Non-compliance with potential for significant environmental consequences, regardless of the likelihood of occurrence.
<b>Medium</b>		Non-compliance with: <ul style="list-style-type: none"><li>• Potential for serious environmental consequences, but is unlikely to occur; or</li><li>• Potential for moderate environmental consequences but is likely to occur.</li></ul>
<b>Low</b>		Non-compliance with: <ul style="list-style-type: none"><li>• Potential for moderate environmental consequences, but is unlikely to occur; or</li><li>• Potential for low environmental consequences but is likely to occur.</li></ul>
<b>Administrative Non - Compliance</b>		Only to be applied where the non-compliance does not result in any risk of environmental harm (e.g. submitting a report to government later than required under approval conditions).



## 4 Approvals and Documentation

### 4.1 Previous Audit Recommendations

An update on the previous Audit recommendations are provided in the Annual Review's. The 2019 Annual Review stated there was only one remaining action from the 2017 Audit.

**Table 5 Update of previous Audit Actions**

Recommendation	MACH Energy Response
<p>Schedule 3 Condition 28 Water Management Plan Regularly updated Progressive Erosion and Sediment Control Plans are recommended for Rail Loop area as observation of controls in the area, and discussion with Environmental Superintendent are indicative of improvements that could be made in the area. Clean and dirty catchment confluence points should be a high priority for development of management strategy.</p> <p>An audit of sediment basins by a soil conservationist is believed to have been undertaken; recommendations for improvement should be implemented as soon as practicable.</p> <p>Basin markers (and marking of sediment storage zone) to be installed as soon as is practicable. Upon implementation, photographs of these points can assist in demonstrating compliance with discharge criteria.</p>	<p>As construction/improvement of the Rail Loop progressed, MACH Energy prepared progressive erosion and sediment control plans to achieve Managing Urban Stormwater - Soils and Construction Landcom (2004) standards. Clean and dirty water confluence points continued to be a high priority for the control plans and construction.</p> <p>Sediment basin audits were undertaken progressively on-site at least quarterly and triggered by the commencement of new areas of construction and rainfall events, with the recommendations from these audits implemented progressively. Basin levels were also monitored regularly.</p> <p>Action items from soil conservationist / erosion and sediment control specialist site audit have been undertaken throughout 2019 following audit completion in February. Some outstanding action items are either partially complete or are planned to commence in 2020. Basin markers have been installed in sediment dams.</p>

Recommendations relating to erosion and sediment control and water management are outlined in **Section 5.4**.

### 4.2 Project Approval

The conditions relating to DA 92/97 were assessed as part of this Audit. The Development Consent was first granted on 22 December 1999. DA 92/97 has been modified four times including:

- MOD 1 – approved 19 May 2010;
- MOD 2 – approved 29 March 2017;
- MOD 3 – approved 24 August 2018; and
- MOD 4 – approved 16 November 2018.

### 4.3 Environment Protection Licence

SLR assessed compliance against the EPL 20850 which has an anniversary date of 24 November. Conditions relate to limits, operations, monitoring and reporting.

## 4.4 Management Plans and Programs

The following management plans were assessed as part of the Audit. All the management plans reviewed are required according to DA 92/97 consent conditions with these documents placed on the MPO website. SLR only audited management plans on the MPO website with these outlined in the table below. Further details of the management plans, including implementation are included in the Compliance Spreadsheet (**Appendix 2**). Recommendations relating to management plan updates are included in **Section 6 and 7**.

**Table 6 Management Plans**

Management Plan	Requirement	Comment
Noise Management Plan	DA 92/97 Schedule 3, Condition 9	The management plan on the MPO website is dated 31/10/2019.
Blast Management Plan	DA 92/97 Schedule 3, Condition 17	The management plan on the MPO website is dated 14/01/2019.
Air Quality and Greenhouse Gas Management Plan	DA 92/97 Schedule 3, Condition 23	The management plan on the MPO website is dated 24/05/2019.
Water Management Plan including an Erosion and Sediment Control Plan, Surface Water Management Plan, Ground Water Monitoring Plan and a Surface and Groundwater Response Plan	DA 92/97 Schedule 3, Condition 28	The management plan on the MPO website is dated 31/10/2019.
Biodiversity Management Plan	DA 92/97 Schedule 3, Condition 32	The management plan on the MPO website is dated 31/10/2019.
Aboriginal Heritage Management Plan, which includes the Aboriginal Heritage Conservation Strategy	DA 92/97 Schedule 3, Condition 36	The management plan on the MPO website is dated 31/10/2019.
Road Maintenance Management Plan	DA 92/97 Schedule 3, Condition 41	Evidence of road maintenance plan dated April 2019 with this signed by MACH Energy and Council.
Construction Environmental Management Plan (MOD 4) which includes a Construction Traffic Management Plan, Historical Heritage Management Plan, Unexpected Contamination Protocol	DA 92/97 Schedule 3, Condition 44i	The management plan is on the MPO website and covers MOD 4. Approved on 10 March 2020.
Visual Impact Management Plan	DA 92/97 Schedule 3, Condition 47	The management plan on the MPO website is dated 31/10/2019.
Waste Management Plan	DA 92/97 Schedule 3, Condition 52	The management plan on the MPO website is dated 14/01/2019.

Management Plan	Requirement	Comment
Rehabilitation Strategy	DA 92/97 Schedule 3, Condition 54	The management plan on the MPO website is dated 16/05/2019.
Mining Operations Plan and Rehabilitation Management Plan	DA 92/97 Schedule 3, Condition 56	The MOP/RMP is on the MPO website is dated 28/06/2019.
Environmental Management Strategy	DA 92/97 Schedule 5, Condition 1	The management plan on the MPO website is dated 14/01/2019.

## 4.5 Mining Leases

The following mining leases (ML's) were reviewed as part of the Audit:

- ML 1645;
- ML 1708;
- ML 1709;
- ML1713; and
- ML 1750.

The main mining lease at site is ML 1645 covering the majority of the site. It should be noted that the leases all have the same conditions.

## 4.6 Water Access Licences

These are a series of water access licences (WAL's) at site with the reporting period being 1 July – 30 June. The WAL's are to take water from the Hunter Regulated River Water Source.

The period of WAL's compared to the Audit period differs, therefore SLR has assessed water take from the 2018 and 2019 Annual Reviews.

A total of 681.7 ML of water was taken from the WAL's in the 1 July 2017 – 30 June 2018 reporting period. A total of 622.9 ML of water was taken from the WAL's in the 1 July 2018 – 30 June 2019 reporting period. Both are within the licence water take requirements, with the site being compliant for water take.

## 4.7 Complaints

Complaints have been summarised in the site's complaints log and the Annual Review. Complaints are summarised below:

- 26 November 2017 - 31 December 2017 – 0 complaints;
- 1 January 2018 – 31 December 2018 – 113 complaints relating to air quality (58), noise (35), blasting (11), water (2), visual (3) and other (4);
- 1 January 2019 – 31 December 2019 – 240 complaints relating to air quality (75), noise (100), blasting (39), water (1). Visual (17) and 8 others eg. Lighting; and
- 1 January 2020 - 27 February 2020 – 12 complaints relating to air quality (1), noise (8) and other (3).

The greatest number of complaints related to air quality and noise. MACH Energy provided evidence of responding to complaints through the complaint management process. The large increase in complaints has occurred as the site has transitioned from construction to operations. It is noted that a large number of the complaints are made by a small number of people. Evidence was provided by MACH Energy illustrating meetings with regular complainants. Evidence was also provided of acquisitions and mitigation measures for noise.

## 4.8 Reportable Environmental Incidents

Based on the Annual Review and site records the following is a summary of reportable environmental incidents:

- 26 November 2017 - 31 December 2017 – 0 reportable incidents;
- 1 January 2018 – 31 December 2018 – 0 reportable incidents;
- 1 January 2019 – 31 December 2019 - 0 reportable incidents;
- 1 January 2020 - 27 February 2020 – 0 reportable incidents year to date.

## 4.9 Comparison Against EA Predictions

The DPIE requested the following:

1. Predicted (EA) air quality and noise impact compared to actual monitoring results; and
2. Predicted (EA) mining footprint and rehabilitation compared to actual (current) mine footprint and rehabilitation.

SLR reviewed monitoring results from the Annual Reviews to assess in comparing actual vs predicted impacts. There have been no exceedances of criteria for noise and blast monitoring, therefore the site has been within the EA predictions. There were some exceedances of air quality monitoring with these affected from extraordinary events and outside sources. The Annual Review has not indicated any non - compliances relating to air quality criteria. SLR has a recommendation for an air quality expert to assist with determining extraordinary events and compliance.

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## 5 Environmental Management – Specialist Assessments

### 5.1 Rehabilitation

#### 5.1.1 SLR Findings – Rehabilitation

With construction commencing in 2016 and first coal mining occurring in July 2018 there have been limited opportunities for rehabilitation.

The Resources Regulator audit found the mine's rehabilitation assessment processes could be improved.

Where rehabilitation issues were identified by the mine during inspections, there was *"no process to capture these issues, allocate corrective action tasks, track progress and close out those issues"*. *"Where issues were identified, they remain only on the inspection checklist," the regulator found.*

The site inspection by SLR that focused on rehabilitation determined:

- There was evidence of areas that have been recently shaped and rehabilitated using the geofluvial system. These looked to be well shaped landforms and ripped well on the contour to reduce erosion potential. There has been some large recent rainfall events with these newly shaped rehabilitation areas appearing to be generally stable with a good cover of temporary cover crop.
- Areas of rehabilitation were reshaped and repaired in 2019. Final ripping, topsoiling and seeding of some areas is due to be completed in the coming weeks (following Audit inspection).
- There was evidence of rill erosion and some gully erosion in a section of rehabilitation from 2019. This has been noted previously by MACH Energy and Thiess and the land will be reshaped. Since the site inspection component of the Audit some landform reshaping was undertaken. Gypsum has been used in rehabilitation to help promote growth and stabilize the soil.
- There was a recently constructed drain at the bottom of the rehabilitation area. There are recommendations relating to this area with this outlined in **Section 5.4**.
- SLR was provided evidence of the signoff system for landforms between Thiess and MACH Energy. This involved signoff by both parties at the different phases of rehabilitation including shaping, soil and seedlings.

It was noted that a rehabilitation risk assessment was completed in January 2020 with this to be used in the new MOP going forward. This request was based on the Section 240 notice on 1 November 2019 and required the proponent to:

*Undertake an assessment of the risks to the rehabilitation of the Site. The Rehabilitation Risk Assessment must identify and evaluate all potential risks to achieving the final land use and the specific measures to be implemented to mitigate those risks and have regard to the AS NZS ISO 31000:2009 Risk Management – Principles and Guidelines to support any rehabilitation risk assessment.*

Recommendations to rehabilitation are outlined in **Section 7**. Photographs are outlined in **Appendix A.4**.

### 5.1.2 Comparison again Disturbance and Rehabilitation Commitments

The DPIE requested *Predicted (EA) mining footprint and rehabilitation compared to actual (current) mine footprint and rehabilitation*. Based on the information provided activities have been completed within the EA disturbance footprint. The most up to date comparison of disturbance and rehabilitation commitments are in Annual Reviews.

**Table 7 Comparison of 2018 and 2019 Disturbance and Rehabilitation Predictions**

Mine Area Type	2018 Predicted (from 2017 Annual Review)	2018 Actual (from 2018 Annual Review)	2019 Predicted (from 2018 Annual Review)	2019 Actual (from 2019 Annual Review)
Total Mine Footprint	1,085 ha	701 ha	1020 ha	895 ha
Total Active Disturbance	1,075 ha	618 ha	895 ha	834 ha
Land being prepared for Rehabilitation	5 ha	3 ha	40 ha	39.4 ha
Land under active rehabilitation	5 ha	80 ha	85 ha	7.5 ha
Completed rehabilitation	0 ha	0 ha	0 ha	0 ha

There was less disturbance completed in 2018 compared to predicted disturbance. There was a greater amount of rehabilitation (being prepared or completed) in 2018 compared to predicted rehabilitation. Some rehabilitation areas were reshaped or disturbed again in 2019 which has led to a smaller amount of area under active rehabilitation compared to the 2018 Annual Review predictions.

### 5.1.3 Comparison between Rehabilitation Strategy and MOP

In the stakeholder feedback for this Audit, the Resources Regulator requested the following:

*Undertake a critical review of the MOP, including an assessment of its compatibility with the description of operations contained in the planning approval. In particular:*

- *Review the rehabilitation strategy as outlined in the MOP to determine if it is consistent with the Project Approval in terms of progressive rehabilitation schedule; and proposed final land use(s);*
- *Review the rehabilitation objectives and completion criteria as outlined in the MOP to determine if they have been developed in accordance with the proposed final land use(s) as outlined in the Project Approval.*

When reviewing the Rehabilitation Strategy and MOP/RMP it was determined there were some inconsistencies with figures/plans:

- Figure 3 (Provisional Post - mining Land Use Domains) and Figure 4 (Conceptual Final Landform) of the Rehabilitation Strategy have differences in final landuse.
- Figure 3 in the Rehabilitation Strategy has much of the area shown as Domain C - Agricultural Land, whereas Figure 4 in the Rehabilitation Strategy has much of the area being shown as both agricultural land and open woodland.
- Figure 3 in the Rehabilitation Strategy has a large area as Domain B - Water Infrastructure and Storage, whereas Figure 4 in the Rehabilitation Strategy has this area being rehabilitated woodland. Note: Plan 4 of the MOP has this area marked as Domain B - Water Infrastructure and Storage.
- Figure 3 in the Rehabilitation Strategy has a smaller area of riparian rehabilitation (along established drainage lines compared to Figure 4 in the Rehabilitation Strategy which has riparian vegetation.
- Domain A - Final Void appears to be smaller in the MOP/RMP compared to Figure 3 and 4 of the Rehabilitation Strategy.

It is noted the Rehabilitation Strategy was approved by DPIE on 16 May 2019 whilst the MOP/RMP was approved by the Resources Regulator on 28 June 2019. SLR recommends that these differences between these plans are corrected in the next round of management plan reviews.

Completion criteria have generally been developed in accordance with the MOP and Development Consent requirements. With rehabilitation only being completed for a short period of time, MACH Energy will not yet be meeting completion criteria. Based on discussions with MACH Energy, future rehabilitation monitoring will assess against key criteria requirements.

## 5.2 Noise and Blasting

### 5.2.1 SLR Findings – Noise and Blasting

The field inspection did not indicate any noise related issues with the Project. The following was noted relating to noise management:

- There has been several houses surrounding the mine that have had additional noise mitigation measures.
- There has been a large amount of evidence provided relating to community liaison.
- Noise monitoring results are available on the website. Noise monitoring reports and Annual Review state there has been no exceedance of noise criteria. Monitoring at the representative noise locations (Noise Assessment Groups (NAG's)). Based on site consultation, the acoustics consultancy does not inform the mine of the exact day and time of monitoring therefore this eliminates the risk of operations changing to reduce noise.
- Additional detail for noise management should be included in future Annual Reviews.
- Evidence was provided for sound power level testing for equipment.
- Evidence was provided for the changing operations during higher risk periods. Evidence was provided in the MACH Energy 'Whats Ap' Group where the Open Cut Examiner (OCE) have posted changed operations based on potential higher risk periods. Evidence provided that in Winter 2019 there was no bulk shaping at night in rehabilitation areas.

- Evidence was provided for the real time monitoring system which includes a system to predict areas where noise may be an issue in the upcoming 24 hours. It produces figures illustrating potential noise contours. MACH Energy and Thiess can both download sound files for real time monitoring.
- There was evidence of actions being implemented when the mine was the source of real time noise, including the movement of equipment completing out of pit shaping.
- Evidence of cumulative management through regular meetings. Data sharing does sometimes occur but there is no requirement under the Development Consent.
- Evidence of complaints management, including review of activities from complaints. The noise complaints are included in the Annual Review.
- Recommendations relating to noise management are outlined in **Section 7**.

The following was noted in relation to blast management:

- There were no exceedances of blast criteria during the Audit period.
- Evidence of community consultation and notification for blasting in accordance with the Blast Management Plan.
- Evidence of blasting results from Annual Review.
- No evidence of impacts of people, property or livestock. No evidence of impacts on heritage items, with none within the blast exclusion zones.
- It appears there has been no major issues with blasting fumes based on discussions with site and the review of incident and complaints logs.
- Evidence of co-ordination of blasts with Bengalla and other neighbours through blasting notification emails.
- Evidence of responding to complaints from Mount Pleasant blasting. Evidence provided by the MACH Energy External Relations Officer regarding blast management and community visits.
- There are a series of internal blasting monitors as well to gain more information about blasts.
- Recommendations relating to blasting are outlined in **Section 7**.

## 5.3 Air Quality

### 5.3.1 SLR Findings - Air Quality

#### Site Inspection:

SLR completed the site inspection component on 25 February 2020 and 26 February 2020. During the site inspection on 25 February 2020 dust management was generally managed effectively except in the BC pit. See photographs in **Appendix A.1**. SLR arrived at the look out into the BC pit at approximately 12:30pm on 25 February 2020. There was a lot of dust coming from the excavator loading overburden into haul trucks and then a lot of dust along the haul truck route. From a visual assessment the dust was well above the wheel height for haul trucks and was being tracked along the entire haul route. The dust remained within the pit, but when comparing to the EPA's 2019 *Dust Assessment Handbook* the dust from the haul trucks would be classified as requiring immediate action.





Dust levels require operators to take action to control dust, including potential to make operational changes.

Source: EPA's 2019 *Dust Assessment Handbook*

The Thiess Environment and Community Officer contacted the Open Cut Examiner (OCE) straight away and the OCE said 'they would go and check out the area'. Those completing the site inspection continued to watch activities within the BC pit. Ten minutes later a water truck arrived putting water on the area around the excavator and a section of the haulage route that was approximately 200m long. This reduced dust in this area that had been watered.

There was then no change in operations for approximately the next 30 minutes with digging and haulage continuing. There was no reduction in speed and no water truck used across the majority of the haulage route. The Thiess Environmental Officer tried to contact the OCE two more times but there was no change in activities. It is not known when the water truck recommenced operations in the haulage route as SLR left the BC pit lookout to continue the site inspection.

It should be noted however that the operations were within the pit and a significant distance from the site boundary and sensitive receptors. Light winds were present, generally from the south-west (i.e. not towards key closest receptors). As such, in-pit dust emissions would be considered unlikely to lead to off-site impacts. However despite, this additional controls should have been installed. It is noted that no real time dust alarms were triggered at the time of the observations.

During the follow up inspection on the 26 February 2020 there were water trucks being utilised along the haul route and an additional excavator operating in the BC pit. There was a noticeable improvement in dust management from the haul trucks and excavators. The lower drop heights from the excavators appeared to be reducing dust from overburden movement.

It is noted that a presentation was sent around to Thiess staff by email on the night of 25 February 2020 outlining the importance of dust management.

#### **Monitoring and Real-time System:**

- There are a series of air quality monitoring locations with high volume air samplers, depositional gauges and Palas Fidas real time monitors.
- EPL 20850 describes monitoring points 1 and 2 (A-PF2 and A-PF5 respectively) as TEOM particulate monitors. The equipment used on site are Palas Fidas dust monitors which are not TEOMs. Palas Fidas dust monitors:
- Use optical light scattering technology for the determination of particulate concentrations rather than tapered element oscillating microbalance technology used by TEOMs;
- Have no associated Australian Standard; and
- Have not been mentioned as an approved method for sampling of ambient PM<sub>10</sub> concentrations in the Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales document.
- Further, the company undertaking the air quality monitoring is not accredited for the methods used to undertake the particulate monitoring using the Palas Fidas dust monitors.

- It is noted that the AQMP for the site mentions: “PM<sub>10</sub> will be assessed for the purpose of real-time environmental management, as far as practicable, as defined by Standards Australia AS/NZS 3580.9.8.2008”. AS/NZS 3580.9.8.2008 being the Australian Standard for continuous sampling and analysis of PM<sub>10</sub> using a TEOM.
- Condition O3.5(b) in EPL 20850 defines “adverse wind conditions” for the MPO as a rolling 1 hour average wind direction between 250 degrees and 340 degrees (inclusive) measured at the Muswellbrook NW Upper Hunter Air Quality Monitoring Network monitor.
- There were numerous shut down days at the site based on the condition of the EPL. Some of the shutdown days in November 2019 and December 2019 were the result of excessive smoke across the region, rather than dust. Based on information provided to SLR there was one non - compliance regarding MACH Energy not implementing a shutdown within the required timeframe. MACH Energy self-reported the event to the EPA, and received an official caution from the EPA on 17 December 2019 as a shutdown on 24 October 2019 had exceeded the allowable 1 hour timeframe by 20 minutes. Whilst operations ceased within the hour (12:30pm), one haul truck continued until 12:34pm and three other haul trucks were reported to have continued hauling operations up until 12:50pm. MACH Energy has since implemented a procedure to ensure the site meets the timing requirements of shutdown conditions.
- Generally it appears that clearing is limited to the areas required for operations.
- Evidence of MACH Energy and Thiess using the air quality prediction system to plan operations around reducing air quality impacts. SLR requested records from several hot and windy days during the audit period. Detailed hourly breakdowns of any changes to the Thiess operations were provided to the audit team.
- Evidence of implementing actions based on the real-time data for green, amber and red trigger levels.
- There was evidence of regular meetings between sites in the area involving Mount Pleasant, Bengalla and Mount Arthur. Data sharing occurs between the sites, but there are no joint monitoring between operations.

Recommendations relating to air quality are outlined in **Section 6**.

## 5.4 Erosion and Sediment Control/Water Management

### 5.4.1 SLR Findings – Erosion and Sediment Control/Water Management

Although there was no requirement for erosion and sediment control/water management specialists as part of this Audit, this section was added to discuss this topic further.

A separate table has been created for water management/erosion and sediment recommendations because they cover specific areas at the site. Photographs are included in **Appendix A.3**.

**Table 8 Water Management /Erosion and Sediment Control Issues and Recommendations**

REC Issue ID	Aspect	General Finding	Recommendation	Photo Reference from Appendix A.3
1	Erosion and Sediment/General	Several minor to moderate erosion and sediment control issues were identified in the field.	Engaging an independent specialist to complete an erosion and sediment control/water management audit to identify all the erosion and sediment control/water management issues at site. Develop an action plan for erosion and sediment control/water management.	-
2	Erosion and Sediment/powerpole	The internal powerline pole that is located within the drainage line near the highwall dam may not be stable long term. The drainage line is heavily eroded in sections. This area flows into the mine water management system and does not go off site.	The internal powerline pole that is located within the drainage line near the highwall dam is to be monitored for integrity. Additional erosion and sediment control work is likely required to ensure the power line is not compromised by failure or movement.	Erosion Photo 5
3	Sediment Fencing	<p>It was noted that most of the sediment fences at the site are well maintained. There are some sediment fences along outskirts of the site that need maintenance or replacement. This includes the sediment fence along the eastern toe drain road.</p> <p>There was also a new drainage line that has been constructed near the current rehabilitation area, with sediment fencing having been installed within the drain. The sediment fencing within the newly constructed drain could fail if rainfall continues as sediment fences are designed for sheet flow, not channeled flow.</p>	<p>Review sediment fencing at the site and replace sections as required.</p> <p>Recommend adding a series of haybales or corr logs in the drainage line near the current rehabilitation area as we understand the drainage in that area will change within a year. When constructed as per the Blue Book, haybales or corr logs will be a far more effective erosion and sediment control for channelized flow than sediment fences.</p>	Erosion Photo 2

REC Issue ID	Aspect	General Finding	Recommendation	Photo Reference from Appendix A.3
4	Water/Erosion and Sediment - Dams	There are several dams at site where there is evidence of rill and gully erosion. Examples include many of the sediment dams and larger dams including the Mine Water Dam, SD1 and Fines Emplacement Area. For the Mine Water Dam, the drainage cutting only goes to the dam lining.	Repair larger rill and gully erosion (including Fines Emplacement Area). This includes the area where the culvert in the Mine Water Dam has created a drainage cutting into the Mine Water Dam. Review erosion and sediment control in this area. Consider extending the pipeline closer into the dam to prevent erosion.  Develop a strategy to minimise erosion of the dam walls.	Erosion Photo 10, 11, 12 and 16.
5	Water/Erosion and Sediment – Farm Dams	Farm dams are generally not shown on the Water Management Plan, however some farm dams within the mining operation area are used as temporary storage areas.	Include all dams in the Water Management Plan.	-
6	Water/Erosion and Sediment – Water NSW Usage	With Water NSW likely to be reducing the water allocation in 2020 it will be important for continual improvement in water usage at the site.	Complete a review of the impacts of the proposed water allocations on the site based on the water allocation limits. From an environmental management and mining perspective it is important that water for the use of dust management is maintained.	-

REC Issue ID	Aspect	General Finding	Recommendation	Photo Reference from Appendix A.3
7	Water/Erosion and Sediment – Bund Area	<p>As you enter the site a large section of the bund of the lefthand side of the entrance road has eroded. This erosion ranges from minor rilling to major gully erosion.</p> <p>A large amount of erosion was identified in the area around the drop structures at site. We understand work is planned to fix the problem. This area flows into the mine water management system and does not go off site.</p>	<p>Complete an erosion and sediment control design of the entrance road bund (borrow pit) to reduce the likelihood of erosion and sediment controls issues. Other features such as horizontal ripping or geofabric matting may be required to reduce the likelihood of erosion.</p>	Erosion Photo 1 and 15
8	Water/Erosion and Sediment – near pit top/workshop area	<p>There is an area where a drainage structure has failed near the MIA/workshop areas. This area flows into the mine water management system and does not go off site.</p>	<p>This requires replacement and engineering advice.</p>	Erosion Photo 3
9	Water/Erosion and Sediment - CHPP	<p>The CHPP requires erosion and sediment control review. SLR understand a significant amount of money has been set aside for this work and engineering designs are progressing. This area flows into the mine water management system and does not go off site.</p>	<p>Implement the actions of the engineering review.</p> <p>Ensure the designs also include a review of the drains that fall just outside the CHPP area (near the Rejects Road). These are older degraded drainage lines.</p> <p>Note, since the Audit inspection some of these areas have been remediated. However additional work is still required in this area.</p>	Erosion Photo 6-9

REC Issue ID	Aspect	General Finding	Recommendation	Photo Reference from Appendix A.3
10	Water/Erosion and Sediment – ED3 Drain	The drain at the construction offices is eroded. This area flows into the mine water management system and does not go off site.	<p>Undertake regular monitoring of the area.</p> <p>Install temporary erosion and sediment controls to ensure that the area remains stable until the area is re-constructed during MOD 4 works.</p>	Erosion Photo 13 and 14
11	Water/Erosion and Sediment – TLO Roadway	The roadway and other areas of the TLO is eroded. This area flows into the mine water management system and does not go off site.	<p>Undertake regular monitoring of the area.</p> <p>Use a grader to push eroded material back into gullies.</p> <p>It should be noted that evidence of remediation of erosion areas along this roadway was provided since the Audit site inspection.</p>	Erosion Photo 4
12	Cleanwater management	The light vehicle and medium vehicle track runs around the site, with most of the road within the 'cleanwater catchment'. It was noted that there is sediment fencing and good quality groundcover in many of the areas downstream of the road. However some areas in the western section of the haul road were bare, with no erosion and sediment controls downstream.	<p>Continue to maintain the light vehicle and medium vehicle road.</p> <p>Completion of seeding in bare areas which form part of the cleanwater catchment. Note, there has been evidence of some tree planting in this area since the Audit site inspection was completed.</p> <p>Review the need for sediment fencing some areas until grass cover is established.</p>	Erosion Photo 18

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REC Issue ID	Aspect	General Finding	Recommendation	Photo Reference from Appendix A.3
13	Tailings Pipeline	There is a cleanwater drain that crosses the fines pipeline. A leak in this area could result in tailings going into the cleanwater system.	Review engineering controls to reduce the likelihood of any tailings spill going into the cleanwater dam. Possible use of sleeve to contain tailings pipeline.  Note, evidence provided since the Audit inspection of the installation of end of line burst protection flow meters.	Water Management Photo 17

## 6 Audit Findings – Summary of Non – Compliances

**Table 9** outlines the summary of non - compliances and proposed recommendations relating to:

- Development Consent DA 92/97;
- Statement of Commitments;
- Management plans under the consent and statement of commitments;
- Environment Protection Licence (EPL) 20850;
- Mining Leases (MLs) 1645, 1708, 1709, 1713 and 1750; and
- Water Licences - WAL 879, WAL 880, WAL 41438 and WAL 1113.

**Table 9 Summary of Non - compliances**

Schedule and Condition Number	Condition	Compliance Status	Evidence	Recommendations
<b>Development Consent DA 92/97</b>				
S2 C12	<p><b>Operation of Plant and Equipment</b></p> <p>The Applicant must ensure that all plant and equipment used on site, or to transport coal from the site, is:</p> <p>(a) maintained in a proper and efficient condition; and</p> <p>(b) operated in a proper and efficient manner.</p>	Non-Compliant (Low Risk)	<p>a) Detailed JDE Plant Maintenance Schedule provided to SLR. This included evidence of past servicing and future servicing. This includes dozers, frana cranes and light vehicles.</p> <p>There was also evidence of the Thiess Plant Maintenance Schedule.</p>	See other conditions for specific recommendations regarding dust.



Schedule and Condition Number	Condition	Compliance Status	Evidence	Recommendations
			<p>Evidence of realtime noise and air maintenance and calibration for PM<sub>10</sub> monitors and noise monitors (Barn owls).</p> <p>Area of bitumen road along the light vehicle medium vehicle track has failed. This is general maintenance issue.</p> <p>b) <u>Non - Compliance for operations in a proper and efficient manner-</u> Based on the site inspection hauling of trucks was not being operated in a proper manner. SLR witnessed the overburden hauling of trucks from within the pit to the out of pit area around 12:30pm on 25 February 2020. During this time there was little use of watercarts. The watercart was only used on a small section of the haul route close to where the excavator was loading overburden into haul trucks. There was no speed reduction of haul trucks during the time of the site inspection. See Section 5 of the Audit Report for further details. Recommendations specifically relating to air quality are covered in other conditions.</p>	<p><b>REC 1 – Bitumen Track</b></p> <p>General recommendation relating to bitumen track (light vehicle medium vehicle track). Develop remediation plan for the failed sections. Repair the section of the light vehicle track where the bitumen has failed. Until the repair is complete regular watercarts are required to reduce dust impacts.</p>

Schedule and Condition Number	Condition	Compliance Status	Evidence	Recommendations
			<p>It should be noted however that the operations were within the pit and a significant distance from the site boundary and sensitive receptors. Light winds were present, generally from the south-west (i.e. not towards key closest receptors). As such, in-pit dust emissions would be considered unlikely to lead to off-site impacts. However despite this additional controls should have been installed. It is noted that no real time dust alarms were triggered at the time of the observations.</p>	
S3 C20	<p><b>Air Quality Criteria</b>                      Except for the air quality-affected land referred to in Table 1, the Applicant must 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.</p>	<p><b>Administrative Non-Compliance</b></p>	<p>Data reviewed during the Audit period. There has been some exceedances, however evidence has been provided to ensure these are not non - compliances. However admin non - compliances for full data capture.</p> <p>There were regional dust events nominated by the DPIE with these being excluded. There have also been 'bushfire events' which have been excluded by DPIE.</p> <p><u>Admin Non - Compliance</u> for data capture.</p>	<p>There is no specific recommendation as data capture was quite high during the Audit period.</p>

Schedule and Condition Number	Condition	Compliance Status	Evidence	Recommendations																													
	<p><i>Table 8: Long term criteria for particulate matter</i></p> <table border="1"> <thead> <tr> <th>Pollutant</th> <th>Averaging Period</th> <th><sup>d</sup>Criterion</th> </tr> </thead> <tbody> <tr> <td>Total suspended particulate (TSP) matter</td> <td>Annual</td> <td><sup>a</sup>90 µg/m<sup>3</sup></td> </tr> <tr> <td>Particulate matter &lt; 10 µm (PM<sub>10</sub>)</td> <td>Annual</td> <td><sup>a</sup>25 µg/m<sup>3</sup></td> </tr> <tr> <td>Particulate matter &lt; 2.5 µm (PM<sub>2.5</sub>)</td> <td>Annual</td> <td><sup>a</sup>8 µg/m<sup>3</sup></td> </tr> </tbody> </table> <p><i>Table 9: Short term criteria for particulate matter</i></p> <table border="1"> <thead> <tr> <th>Pollutant</th> <th>Averaging Period</th> <th><sup>d</sup>Criterion</th> </tr> </thead> <tbody> <tr> <td>Particulate matter &lt; 10 µm (PM<sub>10</sub>)</td> <td>24 hour</td> <td><sup>b</sup>50 µg/m<sup>3</sup></td> </tr> <tr> <td>Particulate matter &lt; 2.5 µm (PM<sub>2.5</sub>)</td> <td>24 hour</td> <td><sup>b</sup>25 µg/m<sup>3</sup></td> </tr> </tbody> </table> <p><i>Table 10: Long term criteria for deposited dust</i></p> <table border="1"> <thead> <tr> <th>Pollutant</th> <th>Averaging Period</th> <th>Maximum increase in deposited dust level</th> <th>Maximum total deposited dust level</th> </tr> </thead> <tbody> <tr> <td><sup>c</sup> Deposited dust</td> <td>Annual</td> <td><sup>b</sup>2 g/m<sup>2</sup>/month</td> <td><sup>a</sup>4 g/m<sup>2</sup>/month</td> </tr> </tbody> </table> <p>Notes to Tables 8-10:  <sup>a</sup> Total impact (i.e. incremental increase in concentrations due to the development plus background concentrations due to all other sources);  <sup>b</sup> Incremental impact (i.e. incremental increase in concentrations due to the development on its own);  <sup>c</sup> Deposited dust is to be assessed as insoluble solids as defined by Standards Australia, AS/NZS 3566.10.1.2003 Methods for Sampling and Analysis of Ambient Air - Determination of Particulate Matter - Deposited Matter - Gravimetric Method; and  <sup>d</sup> Excludes extraordinary events such as bushfires, prescribed burning, dust storms, sea fog, fire incidents or any other activity agreed by the Secretary.</p>	Pollutant	Averaging Period	<sup>d</sup> Criterion	Total suspended particulate (TSP) matter	Annual	<sup>a</sup> 90 µg/m <sup>3</sup>	Particulate matter < 10 µm (PM <sub>10</sub> )	Annual	<sup>a</sup> 25 µg/m <sup>3</sup>	Particulate matter < 2.5 µm (PM <sub>2.5</sub> )	Annual	<sup>a</sup> 8 µg/m <sup>3</sup>	Pollutant	Averaging Period	<sup>d</sup> Criterion	Particulate matter < 10 µm (PM <sub>10</sub> )	24 hour	<sup>b</sup> 50 µg/m <sup>3</sup>	Particulate matter < 2.5 µm (PM <sub>2.5</sub> )	24 hour	<sup>b</sup> 25 µg/m <sup>3</sup>	Pollutant	Averaging Period	Maximum increase in deposited dust level	Maximum total deposited dust level	<sup>c</sup> Deposited dust	Annual	<sup>b</sup> 2 g/m <sup>2</sup> /month	<sup>a</sup> 4 g/m <sup>2</sup> /month		<p>There was a malfunction APF4 in 2018. With this resulting in hiring a TEOM. This resulted in some lost data. However APF4 is an internal monitor.</p> <p>PM<sub>10</sub> was not monitored continuously at Point 1 during the reporting period, with capture rate being 99% or 362 days out of 365. Equipment malfunction and power outage were the primary cause of data loss.</p> <p>The 2019 Annual Review stated that:</p>	
Pollutant	Averaging Period	<sup>d</sup> Criterion																															
Total suspended particulate (TSP) matter	Annual	<sup>a</sup> 90 µg/m <sup>3</sup>																															
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Schedule and Condition Number	Condition	Compliance Status	Evidence	Recommendations
			<p><i>During the reporting period, it was identified that PM<sub>2.5</sub> monitoring results were consistently higher than would be expected. An investigation (with co-located TEOM monitoring) determined that the calibration factor being applied to the raw PM<sub>2.5</sub> and PM<sub>10</sub> measurements was incorrect (i.e. was overstating particulate levels). A letter describing the investigation and outcomes is provided in Appendix D of the 2019 Annual Review. The data presented in this document therefore applies the new calibration factors determined for PM<sub>2.5</sub> and PM<sub>10</sub>. Consistent with advice from the technical specialist who conducted the investigation, the new calibration factors have also been applied to data from previous years (including the 2018 data presented in this Annual Review).</i></p>	

Schedule and Condition Number	Condition	Compliance Status	Evidence	Recommendations
S3 C22	<p><b>Air Quality Operating Conditions</b></p> <p>The Applicant must:</p> <ul style="list-style-type: none"> <li>a) implement best practice air quality management, including all reasonable and feasible measures to minimise the odour, fume and dust emissions of the development;</li> <li>b) minimise visible air pollution generated by the development;</li> <li>c) minimise, where reasonable and feasible, the extent of potential dust generating surfaces exposed on the site at any given point in time;</li> <li>d) minimise the air quality impacts of the development during adverse meteorological conditions and extraordinary events (see Noted above under Tables 8-10);</li> <li>e) 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</li> </ul>	<p>Non-Compliant (Low Risk)</p>	<p>a) <u>Non Compliance -field evaluation</u>. Air quality issues identified during the audit. See Section 5.3 of the report for further details. Issues relating to dust from haul roads in the pit circuit and dust from the Excavator dumping overburden into the truck. The lack of a water truck when viewing into the BC pit on 25 February 2020 across the majority of the haulage route was not best practice. The dust was also above the visual assessment levels in the EPA Dust Assessment Handbook 2019 and additional mitigation measures should have been implemented.</p> <p>b) Mitigation measures outlined in the Air Quality and Greenhouse Gas Management Plan.</p> <p>c) It appears that clearing is limited to the areas required for operations.</p>	<p><b>REC 2 Dust</b></p> <p>R2.1 - Recommend reviewing the way dust is visually assessed with this based on the EPAs new Dust Management Handbook 2019.</p> <p>R2.2 - Increased training in visual dust management at site. This should be regularly discussed and documented in toolbox talks.</p> <p>R2.3 - Ensuring water trucks are sent to areas of the site prior to there being a problem. If there is a delay in providing this water truck then operations need to change (eg. Reduction in speed) or operations are to cease until adequate dust controls are available.</p> <p>R2.4 - Update the MOP to include a defined timeframe to revegetate soil stockpiles.</p> <p>R2.5 - Cameras of the pits could be more widely distributed to key MACH Energy Staff. Investigate establishing a series of video cameras to enable monitoring of key areas at the site which have high potential for dust and visual impacts.</p>

Schedule and Condition Number	Condition	Compliance Status	Evidence	Recommendations
	f) co-ordinate the air quality management on site with the air quality management at nearby mines (including the Bengalla mine) to minimise cumulative air quality impacts from the mines, to the satisfaction of the Secretary.		d) and e) This included records of shut down days and changed operations. Evidence of using the air quality prediction system to plan operations around reducing air quality impacts. SLR requested records from several hot and windy days during the audit period and detailed hourly breakdowns of any changes to the Thiess operations were provided	These would include the pits and higher areas of the site. All required personnel have access to cameras.  R2.6 - It is recommended that the calibration factor used with the Palas Fidas particulate monitors be based on a dataset that covers seasonal variations (rather than the single month the current calibration factors are based on) as changes in particulate loads, temperature, humidity, etc. can affect the instrument's readings.  R2.7 - It is recommended that an air quality expert be engaged to review exceedances of ambient air quality criteria where the exceedances are not due to exceptional events (as classified by the NSW DPIE) or invalid data. A summary report would also be included in the Annual Review.

Schedule and Condition Number	Condition	Compliance Status	Evidence	Recommendations
			<p>MACH Energy received an official caution on 17 December 2019 as a shutdown on 24 October 2019 had exceeded the allowable 1 hour timeframe by 20 minutes. Whilst operations ceased within the hour (12:30pm), one haul truck continued until 12:34pm and three other haul trucks were reported to have continued hauling operations up until 12:50pm. MACH Energy has since implemented a procedure to ensure the site meets the timing requirements of shutdown conditions. With regards to shutdown the non - compliance relates to the EPL condition for shut down, not the condition e) of this consent. As condition e) refers to 'compliance with conditions of consent' ie. Schedule 3 Condition 20 criteria.</p> <p>f) Evidence of regular meetings between sites. Data sharing if required between the sites, but there are no joint monitoring between operations.</p>	
S3 C23	<b>Air Quality and Greenhouse Gas Management Plan</b>	Non-Compliant (Low Risk)	<p><u>Preparation:</u></p> <p>a) Date prior to the Audit period;                      b) Section 7-11;</p>	As per <b>REC 2 Dust</b>

Schedule and Condition Number	Condition	Compliance Status	Evidence	Recommendations
	<p>The Applicant must prepare an Air Quality and Greenhouse Gas Management Plan for the development to the satisfaction of the Secretary. This plan must:</p> <ul style="list-style-type: none"> <li>a) be submitted to the Secretary for approval prior to carrying out any development on site;</li> <li>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;</li> <li>c) include an air quality monitoring program that:                             <ul style="list-style-type: none"> <li>• uses a combination of real-time monitors and supplementary monitors to evaluate the performance of the development;</li> <li>• includes PM<sub>2.5</sub> monitoring (although this obligation could be satisfied by the regional air quality monitoring network if sufficient justification is provided);</li> <li>• includes a protocol for determining exceedances of the relevant conditions of this consent; and</li> </ul> </li> </ul>		<p>c) Section 1 illustrates monitoring program.                      d) Section 9.8.</p> <p><u>Implementation:</u>                      The mitigation measures within the AQMP have been assessed for implementation.</p> <p><u>Non - compliance</u> with the AQMP in terms of watering of haul roads. Section 9.2 of the AQMP states:  <i>“Watercarts will be utilised as necessary to minimise excessive visible dust”.</i></p>	



Schedule and Condition Number	Condition	Compliance Status	Evidence	Recommendations
	<p>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. The Applicant must implement the management plan as approved by the Secretary.</p>		<p>Air quality issues identified during the site inspection component of the audit. See Section 5.3 of the report for further details. Issues relating to dust from haul roads in the pit circuit and dust from the excavator dumping overburden into the haul truck. The lack of a watercart when viewing into BC pit on 25 February 2020 across the majority of the haulage route was not evidence of best practice. The dust was also above the visual assessment levels in the EPA Dust Assessment Handbook 2019 and additional mitigation measures should have been implemented.</p> <p>It should be noted however that the operations were within the pit and a significant distance from the site boundary and sensitive receptors. Light winds were present, generally from the south-west (i.e. not towards key closest receptors). As such, in-pit dust emissions would be considered unlikely to lead to off-site impacts. However despite this additional controls should have been installed. It is noted that no real time dust alarms were triggered at the time of the observations.</p>	

Schedule and Condition Number	Condition	Compliance Status	Evidence	Recommendations
			<p>It was noted during the site inspection that some areas of soil stockpiles have not yet been seeded. These should be seeded. It is noted that the current commitment in the AQMP does not designate a timeframe for seeding of stockpiles.</p> <p>Long-term stockpiles will be revegetated as soon as practicable following completion.</p> <p>Also see the wording in Schedule 3 Condition 22 regarding the shutdown issue on day on 24 October 2019.</p>	
S3 C24	<p><b>Meteorological Monitoring</b></p> <p>For the life of the development, the Applicant must ensure that there is a meteorological station operating in the vicinity of the site that:</p> <ul style="list-style-type: none"> <li>a) complies with the requirements in the Approved Methods for Sampling of Air Pollutants in NSW guideline; and</li> <li>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 Secretary.</li> </ul>	Administrative Non-Compliance	<p>Monthly report by Ecotech.</p> <p>There has been some downtime for certain sensors during the audit period which has resulted in a small loss of data. This constitutes an admin non-compliance but this is consistent with most other mine sites. It should be noted there are two meteorological stations at site and it is unlikely that both would be down at the same time.</p>	No further recommendation as there was only a minor loss of data.

Schedule and Condition Number	Condition	Compliance Status	Evidence	Recommendations
			<p>Evidence of meteorological system with monthly reports.</p> <p>Evidence of live weather system with alarms going to Ecotech.</p>	
S3 C49	<p><b>Waste Minimisation and Disposal</b></p> <p>The Applicant must:</p> <ul style="list-style-type: none"> <li>a) minimise the waste (including coal reject) generated by the development;</li> <li>b) ensure that the waste generated by the development is appropriately stored, handled and disposed of in a lawful manner.</li> </ul>	Non-Compliant (Low Risk)	<ul style="list-style-type: none"> <li>a) Based on the evidence provided the site has minimised the amount of waste being generated.</li> <li>b) Non - compliance for implementation for waste storage however this was classified as a low risk. See Schedule 3 Condition 52.</li> </ul>	See Schedule 3 Condition 52.
S3 C52	<p><b>Waste Management Plan</b></p> <p>The Applicant must prepare a Waste Management Plan for the development to the satisfaction of the Secretary. This plan must:</p> <ul style="list-style-type: none"> <li>a) be prepared in consultation with DoI Water and DRG, and submitted to the Secretary for approval prior to carrying any development on site;</li> <li>b) describe the measures that would be implemented to avoid, minimise, reuse and recycle all waste streams generated by the development;</li> <li>c) include a fines emplacement plan; and</li> </ul>	Non-Compliant (Low Risk)	<p><u>Preparation:</u></p> <ul style="list-style-type: none"> <li>a) Current version of Waste Management Plan approved by DPIE on 14 January 2019. Evidence of consultation provided in site version of the management plan.</li> <li>b) Section 5.</li> <li>c) Appendix 1.</li> <li>d) Section 7.2. See Section.</li> </ul> <p><u>Implementation: Non - compliant for hydrocarbon and chemical storage.</u></p>	<p><b>REC 3 Waste</b></p> <p><u>R3.1: In - pit Storage</u></p> <ul style="list-style-type: none"> <li>a) &amp; b) Ensure all waste is separated out and stored in the correct waste or recycle bin.</li> <li>c) Ensure all hydrocarbon spills are cleaned up.</li> <li>d) All hydrocarbons and chemicals should be stored in bunded areas. Used drums and containers are still to be stored in a bunded area until they are taken off site.</li> </ul>

Schedule and Condition Number	Condition	Compliance Status	Evidence	Recommendations
	<p>d) a program to evaluate the fines emplacement plan and methods, with a view to emplacing fines within active mining areas.</p> <p>The Applicant must implement the management plan as approved by the Secretary.</p>		<p><u>In-pit storage area:</u></p> <p>a) The general waste bins contained oily rags and cardboard. In one bin the rags were soaked with hydrocarbon material and should have been placed in a separated oily rag bin.</p> <p>b) Oily rags were not stored in the oily rag bin. Instead, they were in bags on a pallet, with one bag open and oily rags spilling out on the ground.</p> <p>c) Small hydrocarbon spill identified.</p> <p>d) There were five 44 gallon drums (some full, some mostly empty) with oil. There were three bulky bins (some half full, some mostly empty)</p> <p><u>Workshop area:</u></p> <p>a) One unlabelled general waste bin. Other labelling was adequate.</p> <p>b) Small oil drip from an engine prepared for transport in the storage area. A drip tray was previously under the area but was removed due to heavy rain.</p>	<p><u>R3.2: Workshop Area</u></p> <p>a) Ensure Remondis label all waste bins.</p> <p>b) Place oil pan under any engines/equipment stored in unbunded areas, that have the potential to drip any hydrocarbons/fluid etc.</p> <p>c) Ensure all chemicals/hydrocarbons are banded. This includes both full and empty oil drums/containers. Old hydrocarbon containers should be removed from site as soon as practical.</p> <p><u>R3.3: Construction Offices</u></p> <p>a) Ensure all waste is separated out and stored in the correct waste or recycle bin.</p> <p>b) Ensure all chemicals/hydrocarbons are banded.</p> <p>c) Ensure all contaminated material is transported to the bioremediation area or disposed of offsite by a suitable qualified contractor.</p>

Schedule and Condition Number	Condition	Compliance Status	Evidence	Recommendations
			<p>c) There were six bulky bins of gear oil (85W-140) which were not banded. Based on site discussions they had been unloaded but were not yet stored in banded shipping containers. There were also approximately 20 mostly empty bulky bin containers not stored in bunds. There was seven 44 gallon drums (appeared full) with oil.</p> <p><u>Construction offices:</u></p> <p>a) Cardboard was in the general waste bin.</p> <p>b) Unbanded containers, oil drum and battery.</p> <p>c) Bagged contaminated soil from a diesel spill was in the storage area. Most of this material was from the spill kit.</p>	
<b>Statement of Commitments</b>				
-	<p><b>Air Quality</b>                      Air quality management for the Mount Pleasant Project will be undertaken in accordance with the Air Quality Management Plan which is a requirement under the existing development consent.</p>	<p>Non-Compliant (Low Risk)</p>	<p><u>Non - compliance</u> with the AQMP in terms of watering of haul roads. Section 9.2 of the AQMP states:</p> <p><i>'Watercarts will be utilised as necessary to minimise excessive visible dust'.</i></p>	

Schedule and Condition Number	Condition	Compliance Status	Evidence	Recommendations
			<p>Air quality issues identified during the site inspection component of the audit. See Section 5.3 of the report for further details. Issues relating to dust from haul roads in the pit circuit and dust from the Excavator dumping overburden into the haul truck. The lack of a watercart when viewing into BC pit on 25 February 2020 across the majority of the haulage route was not evidence of best practice. The dust was also above the visual assessment levels in the EPA Dust Assessment Handbook 2019 and additional mitigation measures should have been implemented.</p> <p>It should be noted however that the operations were within the pit and a significant distance from the site boundary and sensitive receptors. Light winds were present, generally from the south-west (i.e. not towards key closest receptors). As such, in-pit dust emissions would be considered unlikely to lead to off-site impacts. However despite this additional controls should have been installed. It is noted that no real time dust alarms were triggered at the time of the observations.</p>	

Schedule and Condition Number	Condition	Compliance Status	Evidence	Recommendations
			<p>It was noted during the site inspection that some areas of soil stockpiles have not yet been seeded. These should be seeded. It is noted that the current commitment in the AQMP does not designate a timeframe for seeding of stockpiles.</p> <p>Long-term stockpiles will be revegetated as soon as practicable following completion.</p>	
<b>Environment Protection Licence (EPL) 20850</b>				
O1.1	<p><b>Operating Conditions</b>                      Licensed activities must be carried out in a competent manner.                      This includes:</p> <ul style="list-style-type: none"> <li>a) the processing, handling, movement and storage of materials and substances used to carry out the activity; and</li> <li>b) the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.</li> </ul>	Non-Compliant (Low Risk)	<p>a) <u>Non-Compliant:</u> Dust issues (movement of material) identified with lack of water trucks along the haulage route on 25 March 2019 site inspection. See Section 5 of the main document for details.</p> <p>b) <u>Non-compliant:</u> Non - compliant for hydrocarbon and chemical storage.</p> <p><u>In-Pit Storage:</u></p> <p>a) The general waste bins contained oily rags and cardboard.</p>	As per <b>REC 3 Waste</b>

Schedule and Condition Number	Condition	Compliance Status	Evidence	Recommendations
			<p>b) Oily rags were not stored in the oily rag bin. Instead, they were in bags on a pallet, with one bag open and oily rags spilling out on the ground.</p> <p>c) Small hydrocarbon spill.</p> <p><u>Workshop Area:</u></p> <p>a) Unlabelled general waste bin.</p> <p>b) Oil drip from engine in storage area.</p> <p>c) Oil and flocculant were unbunded.</p> <p><u>Construction Offices:</u></p> <p>a) Cardboard was in the general waste bin.</p> <p>b) Unbunded containers, oil drum and battery.</p> <p>c) Bagged contaminated soil from a diesel spill was in the storage area.</p>	
O2.1	<p><b>Maintenance of Plant and Equipment</b>                      All plant and equipment installed at the premises or used in connection with the licensed activity:</p> <p>a) must be maintained in a proper and efficient condition; and</p> <p>b) must be operated in a proper and efficient manner.</p>	Non-Compliant (Low Risk)	<p>a) Detailed JDE Plant Maintenance Schedule provided to SLR. This included evidence of past servicing and future servicing. This includes dozers, frana cranes and light vehicles.</p> <p>There was also evidence of the Thiess Plant Maintenance Schedule.</p>	See other conditions for specific recommendations.



Schedule and Condition Number	Condition	Compliance Status	Evidence	Recommendations
			<p>Evidence of realtime noise and air maintenance and calibration for PM<sub>10</sub> monitors and noise monitors (Barn owls).</p> <p><u>b) Non - Compliance for operating in a proper and efficient manner</u> - Based on the site inspection hauling of trucks was not being completed in an efficient manner. SLR witnessed hauling of trucks looking into the pit from around 11:30 - 12:10pm on 25 February 2020 and there was little use of watercarts for 90% of the haulage route. See Section 5.2 of the Audit Report for further details. Recommendations specifically relating to air quality are covered in other conditions.</p>	

Schedule and Condition Number	Condition	Compliance Status	Evidence	Recommendations
			It should be noted however that the operations were within the pit and a significant distance from the site boundary and sensitive receptors. Light winds were present, generally from the south-west (i.e. not towards key closest receptors). As such, in-pit dust emissions would be considered unlikely to lead to off-site impacts. However despite this additional controls should have been installed. It is noted that no real time dust alarms were triggered at the time of the observations.	
O3.1	<b>Dust</b> The premises must be maintained in a condition which minimises or prevents the emission of dust from the premises.	<b>Non-Compliant (Low Risk)</b>	During the site inspection on 25 February 2020 noted that only a small section of the haul road to the BC pit was watered which means the site was not effectively minimising dust generation. Although no visible dust was seen leaving the site during the site inspection, effective mitigation measures were not implemented.  By not using watertrucks the site was not maintaining roads to minimise dust.	As per <b>REC 2 Dust</b>

Schedule and Condition Number	Condition	Compliance Status	Evidence	Recommendations
O3.2	<b>Dust</b> Activities occurring in or on the premises must be carried out in a manner that will minimise the generation, or emission from the premises, of wind-blown or traffic generated dust.	Non-Compliant (Low Risk)	During the site inspection on 25 February 2020 noted that only a small section of the haul road to the BC pit was watered which means the site was not effectively minimising dust generation. Although no visible dust was seen leaving the site during the site inspection, effective mitigation measures were not implemented.	As per <b>REC 2 Dust</b>
O3.3	<b>Dust</b> All trafficable areas, coal storage areas and vehicle manoeuvring areas in or on the premises must be maintained, at all times, in a condition that will minimise the generation, or emission from the premises, of wind-blown or traffic generated dust.	Non-Compliant (Low Risk)	During the site inspection on 25 February 2020 noted that the haul road to the pit was not maintained in a condition (minimal use of the watercart) to effectively minimise dust. Although no visible dust was seen leaving the site during the site inspection, effective mitigation measures were not implemented.  It is noted that the site has committed to progressive rehabilitation through the MOP.	As per <b>REC 2 Dust</b>
O3.4	<b>Dust</b>	Administrative Non-Compliance	There were numerous shut down days at the site based on the condition of the EPL. Some of the shutdown days in November and December 2019 were the result of excessive smoke across the region, rather than dust.	As per <b>REC 2 Dust</b>

Schedule and Condition Number	Condition	Compliance Status	Evidence	Recommendations
	The licensee must cease all dust generating activities during adverse conditions being the occurrence of both the adverse wind conditions set out in Condition O3.5 (b) and the adverse PM 10 concentrations set out in Condition O3.5(c).		<p>Based on information provided to SLR there was one non - compliance regarding MACH Energy not implementing a shutdown within the required timeframe. MACH Energy received an official caution on 17 December 2019 as a shutdown on 24 October 2019 had exceeded the allowable 1 hour timeframe by 20 minutes. Whilst operations ceased within the hour (12:30pm), one haul truck continued until 12:34pm and three other haul trucks were reported to have continued hauling operations up until 12:50pm. MACH Energy has since implemented a procedure to ensure the site meets the timing requirements of shutdown conditions.</p> <p>SLR has labelled this an <u>Admin Non - Compliance</u> as there was no evidence any impacts associated with the slight delay in shutting down all operations.</p>	
O3.6	<b>Dust</b>	<b>Administrative Non-Compliance</b>	There was a large amount of evidence provided for dust shutdown days. Evidence provided by Thiess illustrating changed operations and shutdowns.	As per <b>REC 2 Dust</b>

Schedule and Condition Number	Condition	Compliance Status	Evidence	Recommendations								
	Shutdown of dust generating activities required by Condition O3.4 must be completed within 1 hour of receiving data that triggers action required by Condition O3.4.		<p>Based on information provided to SLR this only occurred once however this still makes this a non - compliance. MACH Energy received an official caution as on 24 October 2019 the shutdown exceeded the allowable 1 hour timeframe by 20 minutes. Whilst operations ceased within the hour (12:30pm), one haul truck continued until 12:34pm and three other haul trucks were reported to have continued hauling operations up until 12:50pm.</p> <p>Generally it appears to site is implementing the appropriate shutdowns with only evidence provided for the one incident on 24 October 2019. MACH Energy has since implemented a procedure to ensure the site meets the timing requirements of shutdown conditions.</p>									
M2.2	<p><b>Air Quality Monitoring Requirements</b></p> <table border="1"> <thead> <tr> <th>Pollutant</th> <th>Units of measure</th> <th>Frequency</th> <th>Sampling Method</th> </tr> </thead> <tbody> <tr> <td>PM10</td> <td>milligrams per cubic metre</td> <td>Continuous</td> <td>Special Method 1</td> </tr> </tbody> </table>	Pollutant	Units of measure	Frequency	Sampling Method	PM10	milligrams per cubic metre	Continuous	Special Method 1	Administrative Non-Compliance	According to the 2018 Annual Review:	No further recommendations as the site had a high percentage of data recording during the Audit period.
Pollutant	Units of measure	Frequency	Sampling Method									
PM10	milligrams per cubic metre	Continuous	Special Method 1									

Schedule and Condition Number	Condition	Compliance Status	Evidence	Recommendations
			<p><i>PM<sub>10</sub> was not monitored continuously at Point 1 during the reporting period, with capture rate being 99% or 362 days out of 365. Equipment malfunction and power outage were the primary cause of data loss. No pollution or environmental harm occurred as a result of the non-compliance. The site had a high percentage for recorded data.</i></p> <p>PM<sub>10</sub> reported as µg/m<sup>3</sup> in 2017 and 2018 Annual Reviews.</p>	
M4.1	<p><b>Weather Monitoring</b></p> <p>At the point(s) identified below, the licensee must monitor (by sampling and obtaining results by analysis) the parameters specified in Column 1 of the table below, using the corresponding sampling method, units of measure, averaging period and sampling frequency, specified opposite in the Columns 2, 3, 4 and 5 respectively.</p>	Administrative Non-Compliance	<p>* Annual Returns refer to monitoring points 11 and 4.</p> <p>January 2019 Monthly Environmental Monitoring Report states:                      Weather data is measured continuously at the Kayuga Road meteorological station (M-WS4) (Point 4). In addition to air quality parameters, the weather station also measures wind speed and direction, temperature (at 2 m and 10 m), solar radiation, relative humidity, rainfall, atmospheric pressure, and sigma theta. All data was captured during January 2019.</p>	No further recommendations as the site had a high percentage of data recording during the Audit period.

Schedule and Condition Number	Condition	Compliance Status	Evidence	Recommendations																																																												
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Parameter	Sampling method	Units of measure	Averaging period	Frequency																																																												
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M8.1	<p><b>Other Monitoring and Recording Conditions</b></p> <p>The Licensee must record the average PM<sub>10</sub> concentration at Monitoring Points 1 and 2 at intervals of 10 minutes. This data must be made available upon request by any authorised officer of the EPA who asks to see them.</p>	Administrative Non-Compliance	<p>Evidence of PM<sub>10</sub> results.</p> <p>According to the 2018 Annual Review: PM<sub>10</sub> was not monitored continuously at Point 1 during the reporting period, with capture rate being 99% or 362 days out of 365. Equipment malfunction and power outage were the primary cause of data loss. No pollution or environmental harm occurred as a result of the non-compliance. The site had a high percentage for recorded data.</p> <p>There were times during 2017 and 2019 where there was no data capture. It should be noted that this is a common issue for this equipment and the site has maintained a high data capture rate.</p>	<p>No further recommendations as the site had a high percentage of data recording during the Audit period.</p>																																																												

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Schedule and Condition Number	Condition	Compliance Status	Evidence	Recommendations
<b>Mining Leases</b>				
Nil non - compliance identified.				



## 7 Additional Recommended Actions

Additional recommendations relating to compliant conditions are outlined within **Table 10**.

**Table 10 Additional Recommendations**

Aspect	Recommendation
Water Management	<p><b>REC 4 Water Management</b></p> <p>See water management/erosion and sediment control table in <b>Section 5.4</b>. There is a total of 13 water management/erosion and sediment control recommendations.</p>
Noise Monitoring/Management	<p><b>REC 5 Noise Monitoring/Management</b></p> <p>R5.1: The monthly reports on the website should continue to report against how the site compared against the cumulative noise criteria.</p> <p>R5.2: It is recommended that an appendix is prepared to the Annual Review that summarises noise performance including:</p> <ul style="list-style-type: none"> <li>- date of monitoring;</li> <li>- compliance against NAG's noise criteria, including a table/tables that summarises actual noise levels during monitoring events; and</li> <li>- compliance against cumulative criteria.</li> </ul> <p>NOTE - these two recommendations have been addressed in the 2019 Annual Review and Monthly Reports with this completed following the initial findings during the site inspection.</p> <p>R5.3: Record the specific noise level triggers for good (green), caution (orange) and exceeding (red) in the Thiess real time noise monitoring system (computer program). Update the Noise Management Plan if required.</p>

Aspect	Recommendation
Blasting	<p><b>REC 6 Blasting</b></p> <p>R6.1: Any elevated blasting levels (ie. Above 115 dBL and above 120 dBL) should be discussed in the monthly environmental reports. This does not have to be detailed but it needs to identify there could be a non - compliance based on the blast criteria.</p> <p>R6.2: Include a cumulative assessment of the percentage of blasts &gt;115dBL year to date to ensure &lt;5%.</p> <p>R6.3: The time of the blasts for overpressure and vibration is not recorded in the 2017 and 2018 Annual Review. To be included in future Annual Reviews. NOTE – this has been addressed in the 2019 Annual Review.</p> <p>R6.4: The Annual Review and Monthly Environmental Reports should also record the day of the week that blasting occurred to verify no blasting is undertaken on a Sunday.</p> <p>R6.5 Ensure the Blast Scheduling information is available on the home page by a simple link ie. 'Upcoming Blasting'. It is not obvious to find the blast scheduling information on the current website.</p> <p>R6.6: Results of blast fume monitoring should be included in monthly reports and the Annual Review</p>
Weed Management	<p><b>REC 7 – Weed Management</b></p> <p>Continue to implement additional weed management activities onsite.</p>
Aboriginal Heritage	<p><b>REC 8 – Aboriginal Heritage</b></p> <p>Continue the process of progressing the covenant for the Aboriginal Conservation Area.</p>
Visual and Community Management	<p><b>REC 9 – Visual and Community</b></p> <p>It would be beneficial to have a camera in town pointing at the site for use of MACH Energy and contractors. This would assist in determining the impacts such as visual and dust.</p>

Aspect	Recommendation
Rehabilitation	<p><b>REC 10 - Rehabilitation</b></p> <p>R10.1: Reshape, rip, topsoil and seed areas of rehabilitation which have been noted by Thiess as areas where improvement is required. MACH Energy have since provided evidence that this has been completed.</p> <p>R10.2: Some seeding should be completed in the area above ED2 which is showing signs of erosion.</p> <p>R10.3: Adding a defined timeframe to the MOP for how long topsoil stockpiles are stored until a cover crop is required. MACH Energy have since provided evidence that this has been completed.</p> <p>R10.4: Update the relevant document (MOP/RMP or Rehabilitation Strategy) to ensure there are no inconsistencies with the documents.</p>
Management Plans	<p><b>REC 11 – Management Plans</b></p> <p>R11.1: When management plan updates are required in the future consider creating a table system for mitigation measures with separate columns for:</p> <ul style="list-style-type: none"> <li>• Mitigation ID;</li> <li>• Mitigation Measure;</li> <li>• Reference document;</li> <li>• When required;</li> <li>• Responsibility.</li> </ul> <p>Based on discussions with site a staged approach is recommended.</p> <p>R11.2: Update wording in the Annual Review to outline which management plans require updating and which management plans do not require updating.</p>

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## 8 Conclusion

SLR was endorsed as a suitably qualified, experienced and independent team of experts by the DPIE to conduct an Audit of the Mount Pleasant Operation under Development Approval (DA) 92/97 (as modified). The Audit assessed compliance against DA 92/97, EPL 20850, Mining Leases 1645, 1708, 1709, 1713 and 1750, and all associated management plans and strategies.

The Audit was conducted by Chris Jones (Audit Certification No. 120261) and Tracey Ball of SLR with a site visit undertaken between 25 and 27 February 2020, with a follow up site visit on 12 March 2020. Air quality specialist Ali Naghizadeh of SLR and noise, blast and vibration specialist Nathan Archer of SLR assisted in the desktop review.

The Audit consisted of a detailed desktop review, consultation with relevant agencies and the Community Consultative Committee, formal and informal interviews with Mount Pleasant Operation staff and a site inspection. The Audit was conducted to be consistent with Schedule 5 Condition 9 of DA 92/97.

The Audit generally identified a high level of compliance with no high or medium risks identified during the audit. Twelve were identified as low risk non-compliances. There were seven administrative non-compliances. It is noted that one visual dust incident on one day of the site visit equated for the majority of the low risk non-compliances. There were also some issues with waste management which has led to several non-compliances. Since the site visit, evidence has been provided by MACH Energy to rectify some of these non-compliances, including completion of an air quality toolbox for the Open Cut Examiners the evening of the site visit.

The site visit concluded that the Mount Pleasant Operation is generally compliant and well maintained, with highlights including:

- The use of a sophisticated system of real time monitoring for noise and air;
- Evidence of a detailed program between MACH Energy and the contractor to undertake landform design and shaping. This system is designed for sign off by all parties involved at the different steps in the rehabilitation process;
- Although there have been numerous complaints during the Audit period, evidence has been provided for the community engagement program to prevent and manage any community issues with the site;
- Compliance with noise and blasting criteria;
- Generally a high level of communication with major service contractors Thiess and Sedgman; and
- Evidence of continued interactions with surrounding mining operations.

# APPENDIX A

Photographs

## Appendix A.1– Air Quality Photographs



Photo Air 1- Haul Truck Dust Along Haulage Route



Photo Air 2 - Haul truck dust along haul route compared to area recently watered



Photo Air 3 -Dust generation from excavator staying within the pit floor



Photo Air 4 - Water trucks being effectively used on 26 February 2020 along the haulage route

## Appendix A.2– Biodiversity Photographs



Biodiversity Photo 1 - Galenia at site



Biodiversity Photo 2 - Prickly Pear at Site





**Biodiversity 3 - Likely footprints of feral cat or dog. Note evidence since provided of dog baiting in May 2020.**

## Appendix A.3– Erosion and Water Management Photographs



Erosion Photo 1 - Rill erosion in box cut area (near the carpark)



Erosion Photo 2 - Sediment fences within the drain may fail as sediment fences have been used in an area of concentrated flow



**Erosion Photo 3 - Rock lined drain near the pit top has failed and needs full redesign and rework**



**Erosion Photo 4 - Erosion along the roadway to the Train Load Out Area. Note – Evidence provided that erosion issue has been remediated, however maintenance is ongoing**



Erosion Photo 5 - Two power poles at site appear to be affected by erosion



Erosion Photo 6 - Erosion at CHPP



**Erosion Photo 7 - Erosion in the CHPP Area. Some works have completed since the site inspection (April 2020) but ongoing maintenance is required.**



**Erosion Photo 8 - Drainage Line behind the CHPP Area**



**Erosion Photo 9 - Erosion and sediment at the CHPP area**



**Erosion Photo 10 - Erosion within the fines emplacement area. Within the dirty water catchment.**



**Erosion Photo 11 - Erosion on road to the fines emplacement area. The photo was taken off the road to the decant pond, rather than to the fines emplacement area, and is wholly within the fines emplacement area.**



**Erosion Photo 12 - Erosion of the inside of the wall of the fines emplacement area**



Erosion Photo 13 - Erosion near the construction offices



Erosion Photo 14 - Erosion near construction offices





**Erosion Photo 15 - Blow out and erosion of rock drain on left hand side of the entrance road**



**Erosion Photo 16 - Erosion in the Mine Water Dam. Since the site inspection the area has been remediated**



**Water Management Photo 17- Fines disposal pipeline cross the cleanwater drain. Note, evidence provided since audit inspection of the installation end of line burst protection flow meters.**



**Erosion and Sediment Photo 18 - Some areas lacking vegetative cover in the clean water catchment. Note since the inspection evidence of some trees being**

## Appendix A.4– Rehabilitation Photographs



Rehabilitation Photo 1 - Topsoil Stockpiles to be seeded



Rehabilitation Photo 2 - Area recently shaped and seeded. Cover crop is well established



**Rehabilitation Photo 3 - Recently shaped and rehabilitated area**



**Rehabilitation Photo 4 - Area identified by MACH Energy to require additional rehabilitation works. Evidence provided that since the site inspection this area has been reworked**



Rehabilitation Photo 5 - Seeding is required in area above ED2 which is showing signs of erosion

## Appendix A.5– Waste and Hydrocarbon Management Photographs



Waste Photo 1 - Inpit storage area containing unbanded containers and bulky bins



Waste Photo 2- Inpit storage area- Incorrect waste segregation



**Waste Photo 3 - Inpit storage area containing oily rags not stored correctly**



**Waste Photo 4 - Workshop area - Gear oil not stored in bund**



Waste Photo 5 - Workshop area - Bulky bins not stored in bunds



Waste Photo 6- Workshop Area. 44 gallon drums containing oil have not been stored within bunds





**Waste Photo 7 - Construction offices. Drum not stored in bund. Contaminated soil has not been moved to the landfarm. Evidence provided since site inspection that this has been completed.**

# APPENDIX B

## Compliance Spreadsheets

## Development Consent (DA 92/97)

Condition Number	Condition	Compliance Status	Evidence	Recommended Action
<b>ADMINISTRATIVE CONDITIONS</b>				
<b>Obligation to minimise harm to the environment</b>				
1	In addition to meeting the specific performance measures and criteria established under this consent, the Applicant must implement all reasonable and feasible measures to prevent, and if prevention is not reasonable and feasible, minimise, any material harm to the environment that may result from the construction and operation of the development, and any rehabilitation required under this consent.	Compliant	Based on the information provided to SLR there have been no incidents which have triggered this condition (no material harm). There was an issue where the filling of Environmental Dam 3 caused seepage of clean water to neighbouring Bengalla Coal Mine. There was a detailed investigation and mitigation measures implemented. SLR has been provided no evidence of a prosecution or PIN regarding the issue. MACH Energy liaised with DPIE as part of this audit and DPIE responded to MACH Energy on 25 March 2020 stating <i>'there is no further action is required in regards to this matter from the development consent perspective'</i> .	
<b>Terms of Consent</b>				
2	The Applicant must carry out the development: (a) generally in accordance with the EIS, EA (MOD 1), EA (MOD 2), EA (MOD 3), EA (MOD 4) and project layout plans; and (b) in accordance with the Statement of Commitments and conditions of this consent.  Notes: • The project layout plans are shown in Appendix 2. • The Statement of Commitments is reproduced in Appendix 3.	Compliant	Based on the evidence provided the site has generally been operated generally in accordance with the EIS's and project layout plans. Note activities under MOD 4 have not yet commenced. There have been some non compliances, however generally completed activities in accordance with these documents.	
3	Consistent with the requirements in this consent, the Secretary may make written directions to the Applicant in relation to: (a) the content of any strategy, study, system, plan, program, review, audit, notification, report or correspondence submitted under or otherwise made in relation to this consent, including those that are required to be, and have been, approved by the Secretary; and (b) the implementation of any actions or measures contained in any such document referred to in condition 3(a).	Compliant	a) Evidence of management plans, including correspondence with different government agencies. b) Generally the site has been consistent with mitigation measures in management plans. There are some further recommendations relating to implementation of management plans in this report.	
4	The conditions of this consent and directions of the Secretary prevail to the extent of any inconsistency, ambiguity or conflict between them and a document/s listed in condition 2(a) above. In the event of an inconsistency, ambiguity or conflict between any of the document/s listed in condition 2(a) the most recent document prevails to the extent of the inconsistency, ambiguity or conflict.	Note	Noted	
<b>Limits on Consent</b>				
<b>Mining Operations</b>				
5	The Applicant may carry out mining operations on the site until 22 December 2026.  Note: Under this consent, the Applicant is required to rehabilitate the site and carry out additional undertakings to the satisfaction of both the Secretary and DRG. Consequently this consent will continue to apply in all other respects - other than the right to conduct mining operations - until the rehabilitation of the site and these additional undertakings have been carried out satisfactorily.	Compliant	Still within this period.	
<b>Coal Extraction</b>				
6	The Applicant must not extract more than 10.5 million tonnes of ROM coal from the site in a calendar year.	Compliant	2017 - 2.2Mt; 2018 - 6.5 Mt; 2019 - 5.97Mt  The site is still well within 2020 criteria. Evidence of daily tracking spreadsheets.	
<b>Coal Transport</b>				
7	Product coal may only be transported from the site by rail.	Compliant	Based on site communications all coal is delivered by rail.	
8	The Applicant must ensure that train movements at the site (ie arrival or dispatch) do not exceed: (a) a maximum of 18 per day; or (b) 6 per day, averaged over each calendar year. Note: In this condition, "day" means any 24-hour period.	Compliant	Evidence of train movements spreadsheet on website. Well within the limits.	
<b>STRUCTURAL ADEQUACY</b>				
9	All new buildings and structures, and any alterations or additions to existing buildings and structures, that are part of the development, must be constructed in accordance with: (a) the relevant requirements of the BCA; and (b) any additional requirements of SA NSW where the building or structure is located on land within a declared Mine Subsidence District.  Notes: • Under Part 6 of the EP&A Act, the Applicant is required to obtain construction and occupation certificates for the proposed building works. • Part 8 of the EP&A Regulation sets out the requirements for the certification of the development. • The development is located in the Muswellbrook Mine Subsidence District. Under section 21 of the Coal Mine Subsidence Compensation Act 2017, the Applicant is required to obtain the Chief Executive of SA NSW's approval before carrying out certain development in a Mine Subsidence District.	Compliant	Occupation certificate provided by 'Build Cert Consultants' dated 25 September 2018 titled 'Stage 1 - Early Works including earthworks and slab construction for administration and workshop buildings'.  Construction of CHPP has not yet fully been completed. A certificate is planned for 2020.  Based on site communications other buildings are temporary and need no certificate.	
<b>DEMOLITION</b>				
10	The Applicant must ensure that all demolition work on site is carried out in accordance with AS 2601- 2001: The Demolition of Structures, or its latest version.	Compliant	A detailed filing system for demolition was provided to SLR for the audit. There were numerous farm houses and buildings demolished as part of the project. There are still several planned for demolition. Evidence of demolition certificates, asbestos surveys and demolition by specialists in accordance with AS 2600.	
<b>PROTECTION OF PUBLIC INFRASTRUCTURE</b>				
11	Unless the Applicant and the applicable authority agree otherwise, the Applicant must: (a) repair, or pay the full costs associated with repairing, any public infrastructure that is damaged by the development; and (b) relocate, or pay the full costs associated with relocating, any public infrastructure that needs to be relocated as a result of the development.  Note: This condition does not include matters that are expressly provided for in the conditions of this consent, such as the maintenance of public roads.	Compliant	Based on liaison with MACH Energy, there were no instances where the damage to public infrastructure from MACH Energy operations.  During the period, mine affected properties were vacated, and their electricity was disconnected. This included removal of associated power poles and wires services. MACH Energy incurred the full costs of these removals.	
<b>OPERATION OF PLANT AND EQUIPMENT</b>				

**Development Consent (DA 92/97)**

Condition Number	Condition	Compliance Status	Evidence	Recommended Action							
12	The Applicant must ensure that all plant and equipment used on site, or to transport coal from the site, is: (a)maintained in a proper and efficient condition; and (b)operated in a proper and efficient manner.	Non-Compliant (Low Risk)	<p>a) Detailed JDE Plant Maintenance Schedule provided to SLR. This included evidence of past servicing and future servicing. This includes dozers, frana cranes and light vehicles.</p> <p>There was also evidence of the Thiess Plant Maintenance Schedule.</p> <p>Evidence of realtime noise and air maintenance and calibration for PM10 monitors and noise monitors (Barn owls).</p> <p>Area of bitumen road along the light vehicle medium vehicle track has failed. This is general maintenance issue.</p> <p>b) <u>Non - Compliance for operations in a proper and efficient manner</u>- Based on the site inspection hauling of trucks was not being operated in a proper manner. SLR witnessed the overburden hauling of trucks from within the pit to the out of pit area around 12:30pm on 25 February 2020. During this time there was little use of watercarts. The watercart was only used on a small section of the haul route close to where the excavator was loading overburden into haul trucks. There was no speed reduction of haul trucks during the time of the site inspection. See Section 5 of the Audit Report for further details. Recommendations specifically relating to air quality are covered in other conditions.</p> <p>It should be noted however that the operations were within the pit and a significant distance from the site boundary and sensitive receptors. Light winds were present, generally from the south-west (i.e. not towards key closest receptors). As such, in-pit dust emissions would be considered unlikely to lead to off-site impacts. However despite this additional controls should have been installed. It is noted that no real time dust alarms were triggered at the time of the observations.</p>	See other conditions for specific recommendations regarding dust.  General recommendation relating to bitumen track (light vehicle medium vehicle track). Develop remediation plan for the failed sections. Repair the section of the light vehicle track where the bitumen has failed. Until the repair is complete regular watercarts are required to reduce dust impacts.							
<b>APPLICATION OF EXISTING STRATEGIES, PLANS OR PROGRAMS</b>											
13	The Applicant must continue to apply existing management strategies, plans or monitoring programs approved prior to the approval of Modification 4, until the approval of a similar plan, strategy or program following the approval of Modification 4.	Compliant	All MOD 4 management plans have been approved.								
<b>PLANNING AGREEMENT</b>											
14	By the end of March 2012, unless otherwise agreed by the Secretary, the Applicant must enter into a planning agreement with Council in accordance with: (a)Division 6 of Part 4 of the EP&A Act; and (b)the terms of the Applicant's offer dated 14 February 2011, which is summarised in Appendix 4.  This agreement must provide for annual payments to be made to Council with the first period for payment commencing upon the commencement of development on the site.	Compliant	Evidence of VPA agreements. Letter dated 24 October 2018 from Muswellbrook Shire Council outlining contributions dating back to 2013. Also letter from Muswellbrook Shire Council in 2019.								
<b>EVIDENCE OF CONSULTATION</b>											
15	Where conditions of this consent require consultation with an identified party, the Applicant must: (a)consult with the relevant party prior to submitting the subject document to the Secretary for approval; and (b)provide details of the consultation undertaken including: (i)the outcome of that consultation, matters resolved and unresolved; and (ii)details of any disagreement remaining between the party consulted and the Applicant and how the Applicant has addressed the matters not resolved.	Compliant	Evidence of consultation in the 'site versions' of management plans. These information is not provided in the website version.  Evidence of consultation for acquisitions and implementing mitigation measures eg. Noise and air quality for the community.								
<b>COMPLIANCE</b>											
16	The Applicant must ensure that all of its employees, contractors (and their sub-contractors) are made aware of, and are instructed to comply with, the conditions of this consent relevant to activities they carry out in respect of the development.	Compliant	Evidence of Thiess Environmental Onboarding Presentation dated 2019. This is a detailed presentation outlining potential environmental impacts and the responsibilities of Thiess personnel as well as outlining key requirements of statutory approvals.  Evidence of Training Management Plan  Evidence of a select number of training records have been sighted.								
<b>APPLICABILITY OF GUIDELINES</b>											
17	References in the conditions of this consent to any guideline, protocol, Australian Standard or policy are to such guidelines, protocols, Standards or policies in the form they are in as at the date of this consent. However, consistent with the conditions of this consent and without altering any limits or criteria in this consent, the Secretary may, when issuing directions under this consent in respect of ongoing monitoring and management obligations, require compliance with an updated or revised version of such a guideline, protocol, Standard or policy, or a replacement of them.	Noted									
<b>SCHEDULE 3 ENVIRONMENTAL PERFORMANCE CONDITIONS</b>											
<b>ACQUISITION UPON REQUEST</b>											
1	If the Applicant receives a written request for acquisition from the owner of any land listed in Table 1, then the Applicant must acquire the land in accordance with the procedures in conditions 6-7 of Schedule 4.	Compliant	Based on liaison with MACH Energy, there was only one formal acquisition request received in 2016 with ongoing discussions into 2017 and 2018, with purchase in 2019.  Evidence of hard copy file of the acquisition process.								
	<p><i>Table 1: Land subject to acquisition upon request</i></p> <table border="1"> <thead> <tr> <th>Basis</th> <th>Receiver</th> </tr> </thead> <tbody> <tr> <td>Noise</td> <td>23, 45, 47, 67, 96, 102, 108, 112, 118, 120, 120c, 121, 136, 143a, 143b, 143c, 143d, 143e, 147, 153a, 153b, 156a, 157a, 158, 159, 447, 448, 449</td> </tr> <tr> <td>Noise &amp; Air</td> <td>43, 43b</td> </tr> <tr> <td>Air</td> <td>20<sup>1</sup>, 21<sup>1</sup></td> </tr> </tbody> </table>	Basis	Receiver	Noise	23, 45, 47, 67, 96, 102, 108, 112, 118, 120, 120c, 121, 136, 143a, 143b, 143c, 143d, 143e, 147, 153a, 153b, 156a, 157a, 158, 159, 447, 448, 449	Noise & Air	43, 43b	Air	20 <sup>1</sup> , 21 <sup>1</sup>		There are other landholders that favour the 'without prejudice process' MACH Energy talks to all properties with acquisition rights. MACH energy outlines the land holder can go through the formal pathway or the 'without prejudice pathway'.
Basis	Receiver										
Noise	23, 45, 47, 67, 96, 102, 108, 112, 118, 120, 120c, 121, 136, 143a, 143b, 143c, 143d, 143e, 147, 153a, 153b, 156a, 157a, 158, 159, 447, 448, 449										
Noise & Air	43, 43b										
Air	20 <sup>1</sup> , 21 <sup>1</sup>										
	Notes: 1. To identify the locations referred to in Table 1, see the figures in Appendix 5. 2. The Applicant is only required to acquire and/or install mitigation measures at this property if acquisition and/or mitigation is not reasonably achievable under a separate approval for the Bengalla mine.										
<b>ADDITIONAL MITIGATION UPON REQUEST</b>											
2	Upon receiving a written request from the owner of any residence on any land listed in Table 1 (unless the owner of that land has requested acquisition) or Table 2, the Applicant must implement additional: (a)noise mitigation measures (such as double-glazing, insulation and/or air conditioning); and/or (b)air quality mitigation measures (such as air filters, a first flush roof water drainage system and/or air conditioning), as relevant, at the residence(s) in consultation with the owner.  These measures must be reasonable and feasible, and directed towards reducing the noise and/or air quality impacts of the development on the residence(s). The Applicant must also be responsible for the reasonable costs of ongoing maintenance of these additional mitigation measures until the cessation of mining operations.  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 Secretary for resolution.	Compliant	Several examples of mitigation upon requests. 5 completed mitigations. Covers houses from Table 1 and 2.  Payment of electricity for several properties.  Comfort hush installed for noise management.  Evidence provided illustrating that MACH Energy are regularly liaising with the community								

# Development Consent (DA 92/97)

Condition Number	Condition	Compliance Status	Evidence	Recommended Action				
	<p><b>Table 2: Land where additional mitigation measures are available on request</b></p> <table border="1"> <thead> <tr> <th>Basis</th> <th>Receiver</th> </tr> </thead> <tbody> <tr> <td>Noise</td> <td>19, 20, 21, 68, 74, 77, 79, 80a, 84a, 86a, 139, 140a, 140c, 154, 203, 207, 257, 258, 259, 526</td> </tr> </tbody> </table> <p>Note: 1 To identify the locations referred to in Table 2, see the figures in Appendix 5.</p>	Basis	Receiver	Noise	19, 20, 21, 68, 74, 77, 79, 80a, 84a, 86a, 139, 140a, 140c, 154, 203, 207, 257, 258, 259, 526			
Basis	Receiver							
Noise	19, 20, 21, 68, 74, 77, 79, 80a, 84a, 86a, 139, 140a, 140c, 154, 203, 207, 257, 258, 259, 526							

## NOISE

### Noise Criteria

3	Except for the noise-affected land referred to in Table 1, the Applicant must ensure that the operational noise generated by the development does not exceed the criteria in Table 3 at any residence on privately-owned land.	--																																																																														
	<p><b>Table 3: Noise criteria dB(A)</b></p> <table border="1"> <thead> <tr> <th>Receiver or other location</th> <th>Day L<sub>day,evening</sub></th> <th>Evening L<sub>evening</sub></th> <th>Night L<sub>night</sub></th> </tr> </thead> <tbody> <tr><td>68, 74</td><td>43</td><td>42</td><td>42</td></tr> <tr><td>80a</td><td>42</td><td>42</td><td>42</td></tr> <tr><td>35, 35b, 77</td><td>42</td><td>41</td><td>41</td></tr> <tr><td>79, 80a, 140c, 526</td><td>41</td><td>41</td><td>41</td></tr> <tr><td>259</td><td>41</td><td>40</td><td>40</td></tr> <tr><td>84a, 139, 154, 203, 257, 258a</td><td>40</td><td>40</td><td>40</td></tr> <tr><td>83</td><td>40</td><td>39</td><td>39</td></tr> <tr><td>86a, 140b, 202, 259</td><td>39</td><td>38</td><td>38</td></tr> <tr><td>158, 202b</td><td>38</td><td>38</td><td>38</td></tr> <tr><td>280, 281</td><td>37</td><td>37</td><td>37</td></tr> <tr><td>169, 272</td><td>36</td><td>36</td><td>36</td></tr> <tr><td>NAG 5 - All privately-owned land</td><td>41</td><td>40</td><td>39</td></tr> <tr><td>NAG 6 - All privately-owned land</td><td>37</td><td>37</td><td>37</td></tr> <tr><td>NAG 7 - All privately-owned land</td><td>40</td><td>37</td><td>37</td></tr> <tr><td>NAG 8 - All privately-owned land</td><td>41</td><td>39</td><td>39</td></tr> <tr><td>NAG 9 - All privately-owned land</td><td>39</td><td>38</td><td>37</td></tr> <tr><td>NAG 11 - All privately-owned land</td><td>37</td><td>36</td><td>35</td></tr> <tr><td>All other privately-owned land</td><td>35</td><td>35</td><td>35</td></tr> </tbody> </table> <p>Evidence of noise monitoring in Annual Reviews. Note the 2017 Annual Review states: 'Operator attended monitoring was undertaken monthly by Global Acoustics Pty Ltd from January – June 2017 and quarterly thereafter, in accordance with the NMP and EPL 20850'. The 2018 Annual Review states: 'Operator attended monitoring was undertaken quarterly by Global Acoustics Pty Ltd from January – September 2018 and monthly thereafter during day, evening and/or night periods, in accordance with the NMP and EPL 20850'.</p> <p>Also evidence of noise monitoring results on the website. Noise monitoring reports and Annual Review state there has been no exceedance of noise criteria. Monitoring at the representative noise locations (Noise Assessment Groups (NAG's)). Based on site consultation, the acoustics consultancy does not inform the mine of the exact day and time of monitoring therefore this eliminates the risk of operations changing to reduce noise.</p>	Receiver or other location	Day L <sub>day,evening</sub>	Evening L <sub>evening</sub>	Night L <sub>night</sub>	68, 74	43	42	42	80a	42	42	42	35, 35b, 77	42	41	41	79, 80a, 140c, 526	41	41	41	259	41	40	40	84a, 139, 154, 203, 257, 258a	40	40	40	83	40	39	39	86a, 140b, 202, 259	39	38	38	158, 202b	38	38	38	280, 281	37	37	37	169, 272	36	36	36	NAG 5 - All privately-owned land	41	40	39	NAG 6 - All privately-owned land	37	37	37	NAG 7 - All privately-owned land	40	37	37	NAG 8 - All privately-owned land	41	39	39	NAG 9 - All privately-owned land	39	38	37	NAG 11 - All privately-owned land	37	36	35	All other privately-owned land	35	35	35	Compliant		
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### Cumulative Noise Criteria

5	Except for the noise-affected land referred to in Table 1, the Applicant must implement all reasonable and feasible measures to ensure that the operational 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.		<p>MACH Energy have been within cumulative noise limits according to the noise reports.</p> <p>Global Acoustics define cumulative noise as noise from MTP in conjunction with noise from one or more other mines. If MTP is inaudible or the only noise source, the measured cumulative noise is defined as 'Nil'.</p> <p>It is noted that prior to January 2020 the monthly environmental reports (EPL Reporting) on the website did not provide details of compliance with cumulative criteria and little data on noise levels was detailed in the 2017 and 2018 Annual Reviews.</p> <p>There is insufficient detail regarding noise compliance and results within the 2017 and 2018 Annual Review. To obtain the specific details of the noise compliance status the reader has to review all the individual reports. The individual noise reports are not available on the MACH Energy website. Noise results are summarised in the Monthly Reports which are available on the website (starting May 2018).</p> <p>These issues were raised during the Audit site visit in February 2020 and appear to have been rectified in the 2020 Monthly reports and 2019 Annual Review dated April 2020.</p>	<p>REC: The monthly reports on the website should continue to report against how the site compared against the cumulative noise criteria.</p> <p>REC: It is recommended that an appendix is prepared to the Annual Review that summarises noise performance including: - date of monitoring; - compliance against NAG's noise criteria, including a table/tables that summarises actual noise levels during monitoring events; and - compliance against cumulative criteria.</p> <p><b>NOTE - these recommendation have been addressed in the 2019 Annual Review and Monthly Reports with this completed following the initial findings during the site inspection.</b></p>												
	<p><b>Table 5: Cumulative noise criteria dB(A) L<sub>day,evening</sub></b></p> <table border="1"> <thead> <tr> <th>Location</th> <th>Day</th> <th>Evening</th> <th>Night</th> </tr> </thead> <tbody> <tr><td>NAG 8, 9</td><td>55</td><td>45</td><td>40</td></tr> <tr><td>All other privately-owned land</td><td>50</td><td>45</td><td>40</td></tr> </tbody> </table>	Location	Day	Evening	Night	NAG 8, 9	55	45	40	All other privately-owned land	50	45	40			
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### Rail Noise

7	The Applicant must only use locomotives and rolling stock that are approved to operate on the NSW rail network in accordance with the noise limits in Sydney Trains' EPL (No. 12208) and ARTC's EPL (No. 3142).	Compliant	Based on site communications all trains are ARTC or Aurizon trains. There is a contract with them regarding the fact that these trains must meet the Aurizon and ARTC trains. Any breach of this contract is the responsibility between ARTC and Aurizon.	
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8	The Applicant must: (a) implement best practice noise management, including all reasonable and feasible noise mitigation measures to minimise the construction, operational, low frequency, and rail noise generated by the development; (b) minimise the noise impacts of the development during temperature inversions; (c) regularly assess the real-time noise 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 (d) co-ordinate the noise management on site with the noise management at nearby mines (including the Bengalla mine) to minimise the cumulative noise impacts of the mines, to the satisfaction of the Secretary	Compliant	<p>Evidence provided by MACH Energy and Thiess to manage noise.</p> <p>a) Evidence includes monitoring, implementation of additional noise management on residents, sound power level testing. b) Evidence of changing operations during temperature inversions. Evidence was provided in the MACH Energy 'Whats Ap' Group where the Open Cut Examiner (OCE) have posted changed operations based on potential temperature inversions. Evidence provided that in Winter 2019 there was no bulk shaping at night in rehabilitation areas. c) Evidence provided of the real time monitoring system which includes a system to predict areas where noise may be an issue in the upcoming 24 hours. It produces figures illustrating potential noise contours. This can be used to change operations and also investigate complaints. d) Evidence of cumulative management through regular meetings. Data sharing does sometimes occur but there is no requirement under the Development Consent.</p>	
	Note: Monitoring under this consent is not required at all residences and the use of representative monitoring locations can be used to demonstrate compliance with criteria, if agreed to by the Secretary.	--		

### Noise Management Plan

9	The Applicant must prepare a Noise Management Plan for the development to the satisfaction of the Secretary. This plan must: (a) be submitted to the Secretary for approval by 30 June 2019, unless otherwise agreed by the Secretary; (b) describe the measures (including both proactive and reactive mitigation measures) to be implemented to: - ensure compliance with the noise criteria and operating conditions in this consent; - minimise rail noise (including wheel and brake squeal) to the greatest extent practicable; and - minimise the noise impacts of the development during noise-enhancing meteorological conditions when the operational noise criteria in this consent do not apply (see Notes to condition 3 of Schedule 3); (c) include a noise monitoring program that: - uses a combination of real-time and supplementary attended monitoring to evaluate the performance of the development; - accounts for the occurrence of any noise enhancement between the site, and any sensitive receivers located beyond the site boundary; and - includes a protocol for determining exceedances of the relevant conditions of this consent. (d) include a protocol that has been prepared in consultation with the owners of the nearby mines (including the Bengalla mine) to minimise the cumulative noise impacts of the mines.  The Applicant must implement the management plan as approved by the Secretary.	Compliant	<p><b>Preparation:</b> a) Evidence of submission on 27 June 2019 to DPIE. Evidence of consultation in the site version of the plan. b) Covered in Sections 7-10; c) Covered in Section 9; and d) Covered in Section 8.6.</p> <p><b>Implementation:</b> - Evidence of monitoring reports. The site has been compliant with noise criteria during the audit period. - Evidence of Sound Power Level testing - Thearle Engineering (14 October 2019). Also evidence of other sound power testing. - Evidence of real-time monitoring and predictive modelling system. See Section 5 of the main report for details. MACH Energy and Thiess can download sound files for real time monitoring. Actions are implemented if the mine is a source of the real time noise. - Records providing of changing operations. An example includes: Evidence from the CAT tool 27 Feb 2020 stating 'noise levels were green (under), however dozers working in exposed areas were instructed to use first gear only'. - There is cumulative noise management through regular meetings with Mount Arthur and Bengalla Mines. Also as per Section 8.6.1 of the Noise Management Plan for Cumulative Noise Management Protocol. - Based on site discussions - In winter – no bulk shaping at night in rehabilitation areas in 2019. Reduce impacts from temperature inversions. - Evidence of complaints management, including review of activities from complaints.</p>	REC: Record the specific noise level triggers for good (green), caution (orange) and exceeding (red) in the Thiess real time noise monitoring system (computer program). Update the Noise Management Plan if required.
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### BLASTING

#### Blasting Criteria

10	The Applicant must ensure that the blasting on the site does not cause exceedances of the criteria in Table 7.			
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**Development Consent (DA 92/97)**

Condition Number	Condition	Compliance Status	Evidence	Recommended Action
17	The Applicant must prepare a Blast Management Plan for the development to the satisfaction of the Secretary. This plan must: (a) be submitted to the Secretary for approval prior to carrying out any blasting on site; (b) describe the measures that would be implemented to ensure compliance with the relevant conditions of this consent; (c) include a road closure management plan, prepared in consultation with Council; (d) include a blast monitoring program for evaluating compliance with the relevant conditions of approval; and (e) include a protocol that has been prepared in consultation with the owners of nearby mines (including the Bengalla mine) for minimising and managing cumulative blasting impacts of the mines.  The Applicant must implement the management plan as approved by the Secretary.	Compliant	<b>Preparation:</b> a) DPIE have approved the most recent Blast Management Plan on 14 January 2019. Original approval prior to this Audit period; b) Sections 6, 9 and 11; c) Appendix B. Includes evidence of consultation. Details of road closure process included in the Blast Management Plan; d) Sections 10 (Blast Monitoring Program) and 13; e) Section 9.5.3. Includes details of pre blast and during blast management.  <b>Implementation:</b> * Blast monitoring results outlined in Annual Review and monthly reports. * Actions following potential non-compliances - evidence of consultation with DPIE when the blast was above 120dBA. This was proven to be compliant following letter from DPIE on 7 February 2020. * Evidence of response to complaints for blasting. Complaints log. Meeting with External Relations Officer illustrates that MACH Energy has visited properties during blasting events. There are a series of internal blasting monitors as well to gain more information about blasts.	

**AIR QUALITY & GREENHOUSE GAS**

Odour				
18	The Applicant must ensure that no offensive odours are emitted from the site, as defined under the POEO Act, unless otherwise authorised by an EPL.	Compliant	Review of complaints log.  One noise / odour complaint from Collins Lane on 20 February 2020.  Preliminary assessment by the MACH Energy indicates the odour was not from MACH Energy. No reason to determine this as a non-compliance.	

Greenhouse Gas Emissions				
19	The Applicant must implement all reasonable and feasible measures to minimise the release of greenhouse gas emissions from the site.	Compliant	Evidence of recording of greenhouse data. No issues identified from the audit.	

Air Quality Criteria																																																				
20	Except for the air quality-affected land referred to in Table 1, the Applicant must 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.  <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="4">Table 8: Long term criteria for particulate matter</th> </tr> <tr> <th>Pollutant</th> <th>Averaging Period</th> <th>Criteria</th> <th>Unit</th> </tr> </thead> <tbody> <tr> <td>Total suspended particulate (TSP) matter</td> <td>Annual</td> <td>150</td> <td>µg/m<sup>3</sup></td> </tr> <tr> <td>Particulate matter &lt; 10 µm (PM<sub>10</sub>)</td> <td>Annual</td> <td>125</td> <td>µg/m<sup>3</sup></td> </tr> <tr> <td>Particulate matter &lt; 2.5 µm (PM<sub>2.5</sub>)</td> <td>Annual</td> <td>75</td> <td>µg/m<sup>3</sup></td> </tr> </tbody> </table> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="4">Table 9: Short term criteria for particulate matter</th> </tr> <tr> <th>Pollutant</th> <th>Averaging Period</th> <th>Criteria</th> <th>Unit</th> </tr> </thead> <tbody> <tr> <td>Particulate matter &lt; 10 µm (PM<sub>10</sub>)</td> <td>24 hour</td> <td>350</td> <td>µg/m<sup>3</sup></td> </tr> <tr> <td>Particulate matter &lt; 2.5 µm (PM<sub>2.5</sub>)</td> <td>24 hour</td> <td>225</td> <td>µg/m<sup>3</sup></td> </tr> </tbody> </table> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="4">Table 10: Long term criteria for deposited dust</th> </tr> <tr> <th>Pollutant</th> <th>Averaging Period</th> <th>Maximum increase in deposited dust level</th> <th>Maximum total deposited dust level</th> </tr> </thead> <tbody> <tr> <td>Deposited dust</td> <td>Annual</td> <td>10 g/m<sup>2</sup>/month</td> <td>75 g/m<sup>2</sup>/month</td> </tr> </tbody> </table> <small>Notes to Tables 8-10:                      * Total annual (i.e. incremental increase in concentrations due to the development plus background concentrations due to all other sources).                      ** Incremental limit (i.e. incremental increase in concentrations due to the development on its own).                      † Deposited dust is to be assessed as in-situ solids as defined by Standards Australia, AS/NZS 1920:10 (2010) Methods for Sampling and Analysis of Ambient Air - Determination of Particulate Matter - Deposited Matter - Gravimetric Method, and                      ‡ Exclude exceptional events such as bushfires, prescribed burning, dust storms, sea fog, the incidents or any other activity approved by the Secretary.</small>	Table 8: Long term criteria for particulate matter				Pollutant	Averaging Period	Criteria	Unit	Total suspended particulate (TSP) matter	Annual	150	µg/m <sup>3</sup>	Particulate matter < 10 µm (PM <sub>10</sub> )	Annual	125	µg/m <sup>3</sup>	Particulate matter < 2.5 µm (PM <sub>2.5</sub> )	Annual	75	µg/m <sup>3</sup>	Table 9: Short term criteria for particulate matter				Pollutant	Averaging Period	Criteria	Unit	Particulate matter < 10 µm (PM <sub>10</sub> )	24 hour	350	µg/m <sup>3</sup>	Particulate matter < 2.5 µm (PM <sub>2.5</sub> )	24 hour	225	µg/m <sup>3</sup>	Table 10: Long term criteria for deposited dust				Pollutant	Averaging Period	Maximum increase in deposited dust level	Maximum total deposited dust level	Deposited dust	Annual	10 g/m <sup>2</sup> /month	75 g/m <sup>2</sup> /month	Administrative Non-Compliance	Data reviewed during the Audit period. There has been some exceedances, however evidence has been provided to ensure these are not non-compliances. However administrative non-compliances for full data capture.  There were regional dust events nominated by the DPIE with these being excluded. There have also been 'bushfire events' which have been excluded by DPIE.  <b>Admin Non - Compliance</b> for data capture.  There was a malfunction APF4 in 2018. With this resulting in hiring a TEOM. This resulted in some lost data. However APF4 is an internal monitor.  PM10 was not monitored continuously at Point 1 during the reporting period, with capture rate being 99% or 362 days out of 365. Equipment malfunction and power outage were the primary cause of data loss.  The 2019 Annual Review stated that:  <i>During the reporting period, it was identified that PM2.5 monitoring results were consistently higher than would be expected. An investigation (with co-located TEOM monitoring) determined that the calibration factor being applied to the raw PM2.5 and PM10 measurements was incorrect (i.e. was overstating particulate levels). A letter describing the investigation and outcomes is provided in Appendix D of the 2019 Annual Review. The data presented in this document therefore applies the new calibration factors determined for PM2.5 and PM10. Consistent with advice from the technical specialist who conducted the investigation, the new calibration factors have also been applied to data from previous years (including the 2018 data presented in this Annual Review).</i>	There is no specific recommendation as data capture was quite high during the Audit period.
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21	Deleted																																																			

Air Quality Operating Conditions				
22	22. The Applicant must: (a) implement best practice air quality management, including all reasonable and feasible measures to minimise the odour, fume and dust emissions of the development; (b) minimise visible air pollution generated by the development; (c) minimise, where reasonable and feasible, the extent of potential dust generating surfaces exposed on the site at any given point in time; (d) minimise the air quality impacts of the development during adverse meteorological conditions and extraordinary events (see Note d above under Tables 8-10); (e) 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 (f) co-ordinate the air quality management on site with the air quality management at nearby mines (including the Bengalla mine) to minimise cumulative air quality impacts from the mines, to the satisfaction of the Secretary.	Non-Compliant (Low Risk)	a) <b>Non Compliance - field evaluation.</b> Air quality issues identified during the audit. See Section 5.3 of the report for further details. Issues relating to dust from haul roads in the pit circuit and dust from the Excavator dumping overburden into the truck. The lack of a water truck when viewing into the BC pit on 25 February 2020 across the majority of the haulage route was not best practice. The dust was also above the visual assessment levels in the EPA Dust Assessment Handbook 2019 and additional mitigation measures should have been implemented. b) Mitigation measures outlined in the Air Quality and Greenhouse Gas Management Plan. c) It appears that clearing is limited to the areas required for operations. d) and e) This included records of shut down days and changed operations. Evidence of using the air quality prediction system to plan operations around reducing air quality impacts. SLR requested records from several hot and windy days during the audit period and detailed hourly breakdowns of any changes to the Thies operations were provided  MACH Energy received an official caution on 17 December 2019 as a shutdown on 24 October 2019 had exceeded the allowable 1 hour timeframe by 20 minutes. Whilst operations ceased within the hour (12:30pm), one haul truck continued until 12:34pm and three other haul trucks were reported to have continued hauling operations up until 12:50pm. MACH Energy has since implemented a procedure to ensure the site meets the timing requirements of shutdown conditions. With regards to shutdown the non-compliance relates to the EPL condition for shut down, not the condition e) of this consent. As condition e) refers to 'compliance with conditions of consent' ie. Schedule 3 Condition 20 criteria.  f) Evidence of regular meetings between sites. Data sharing if required between the sites, but there are no joint monitoring between operations.	Recommend reviewing the way dust is visually assessed with this based on the EPA's new Dust Management Handbook 2019.  Increased training in visual dust management at site. This should be regularly discussed and documented in toolbox talks.  Ensuring water trucks are sent to areas of the site prior to there being a problem. If there is a delay in providing this water truck then operations need to change (eg. Reduction in speed) or operations are to cease until adequate dust controls are available.  Update the MOP to include a defined timeframe to revegetate soil stockpiles.  Cameras of the pits could be more widely distributed to key MACH Energy Staff. Investigate establishing a series of video cameras to enable monitoring of key areas at the site which have high potential for dust and visual impacts. These would include the pits and higher areas of the site. All required personnel have access to cameras.  It is recommended that the calibration factor used with the Palas Fidas particulate monitors be based on a dataset that covers seasonal variations (rather than the single month the current calibration factors are based on) as changes in particulate loads, temperature, humidity, etc. can affect the instrument's readings.  It is recommended that an air quality expert be engaged to review exceedances of ambient air quality criteria where the exceedances are not due to exceptional events (as classified by the NSW DPIE) or invalid data. A summary report would also be included in the Annual Review.

**Air Quality and Greenhouse Gas Management Plan**

**Development Consent (DA 92/97)**

Condition Number	Condition	Compliance Status	Evidence	Recommended Action
23	<p>The Applicant must prepare an Air Quality and Greenhouse Gas Management Plan for the development to the satisfaction of the Secretary. This plan must:</p> <p>(a) be submitted to the Secretary for approval prior to carrying out any development on site;</p> <p>(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;</p> <p>(c) include an air quality monitoring program that:</p> <p>uses a combination of real-time monitors and supplementary monitors to evaluate the performance of the development;</p> <p>includes PM2.5 monitoring (although this obligation could be satisfied by the regional air quality monitoring network if sufficient justification is provided);</p> <p>includes a protocol for determining exceedances of the relevant conditions of this consent; and</p> <p>(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.</p> <p>The Applicant must implement the management plan as approved by the Secretary.</p>	Non-Compliant (Low Risk)	<p><u>Preparation:</u></p> <p>a) Date prior to the Audit period;</p> <p>b) Section 7-11;</p> <p>c) Section 1 illustrates monitoring program.</p> <p>d) Section 9.8.</p> <p><u>Implementation:</u></p> <p>The mitigation measures within the AQMP have been assessed for implementation.</p> <p><u>Non-compliance</u> with the AQMP in terms of watering of haul roads. Section 9.2 of the AQMP states: <i>Watercarts will be utilised as necessary to minimise excessive visible dust.</i></p> <p>Air quality issues identified during the site inspection component of the audit. See Section 5.3 of the report for further details. Issues relating to dust from haul roads in the pit circuit and dust from the excavator dumping overburden into the haul truck. The lack of a watercart when viewing into BC pit on 25 February 2020 across the majority of the haulage route was not evidence of best practice. The dust was also above the visual assessment levels in the EPA Dust Assessment Handbook 2019 and additional mitigation measures should have been implemented.</p> <p>It should be noted however that the operations were within the pit and a significant distance from the site boundary and sensitive receptors. Light winds were present, generally from the south-west (i.e. not towards key closest receptors). As such, in-pit dust emissions would be considered unlikely to lead to off-site impacts. However despite this additional controls should have been installed. It is noted that no real time dust alarms were triggered at the time of the observations.</p> <p>It was noted during the site inspection that some areas of soil stockpiles have not yet been seeded. These should be seeded. It is noted that the current commitment in the AQMP does not designate a timeframe for seeding of stockpiles.</p> <p><i>Long-term stockpiles will be revegetated as soon as practicable following completion.</i></p> <p>Also see the wording in Schedule 3 Condition 22 regarding the shutdown issue on day on 24 October 2019.</p>	<p>Recommend reviewing the way dust is visually assessed with this based on the EPAs new Dust Management Handbook 2019.</p> <p>Increased training in visual dust management at site. This should be regularly discussed and documented in toolbox talks.</p> <p>Ensuring water trucks are sent to areas of the site prior to there being a problem. If there is a delay in providing this water truck then operations need to change (eg. Reduction in speed) or operations are to cease until adequate dust controls are available.</p> <p>Update the MOP to include a defined timeframe to revegetate soil stockpiles.</p> <p>Cameras of the pits could be more widely distributed to key MACH Energy Staff. Investigate establishing a series of video cameras to enable monitoring of key areas at the site which have high potential for dust and visual impacts. These would include the pits and higher areas of the site. All required personnel have access to cameras.</p> <p>It is recommended that the calibration factor used with the Palas Fidas particulate monitors be based on a dataset that covers seasonal variations (rather than the single month the current calibration factors are based on) as changes in particulate loads, temperature, humidity, etc. can affect the instrument's readings.</p> <p>It is recommended that an air quality expert be engaged to review exceedances of ambient air quality criteria where the exceedances are not due to exceptional events (as classified by the NSW DPIE) or invalid data. A summary report would also be included in the Annual Review.</p>
<b>METEOROLOGICAL MONITORING</b>				
24	<p>For the life of the development, the Applicant must ensure that there is a meteorological station operating in the vicinity of the site that:</p> <p>(a) complies with the requirements in the Approved Methods for Sampling of Air Pollutants in NSW guideline; and</p> <p>(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 Secretary.</p>	Administrative Non-Compliance	<p>Monthly report by Ecotech.</p> <p>There has been some downtime for certain sensors during the audit period which has resulted in a small loss of data. This constitutes an admin non-compliance but this is consistent with most other mine sites. It should be noted there are two meteorological stations at site and it is unlikely that both would be down at the same time.</p> <p>Evidence of meteorological system with monthly reports.</p> <p>Evidence of live weather system with alarms going to Ecotech.</p>	No further recommendation as there was only a minor loss of data.
<b>SOIL &amp; WATER</b>				
Note:	Under the Water Act 1912 and/or the Water Management Act 2000, the Applicant is required to obtain water licences for the development.	Note	Noted	
<b>Water Supply</b>				
25	The Applicant must 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 Secretary.	Compliant	Based on water balances and discussions with site there has been enough water at site during even during the dry times. Use of water licences for water extraction.	
<b>Water Discharges</b>				
26	The Applicant must ensure that any surface water discharges from the site comply with the: <p>(a) discharge limits (both volume and quality) set for the development in any EPL; or</p> <p>(b) relevant provisions of the POEO Act or Protection of the Environment Operations (Hunter River Salinity Trading Scheme) Regulation 2002.</p>	Compliant	Based on feedback from MACH Energy there were no discharges during the Audit period. No discharges recorded in the Annual Review.	
<b>Compensatory Water Supply</b>				
27	<p>The Applicant must provide compensatory water supply to any landowner of privately-owned land whose water entitlements are adversely and directly impacted (other than an impact that is negligible) as a result of the development, in consultation with DoI Water, and to the satisfaction of the Secretary.</p> <p>The compensatory water supply measures must provide an alternative long-term supply of water that is equivalent, in quality and volume, to the loss attributed to the development. Equivalent water supply should be provided (at least on an interim basis) as soon as practicable after the loss is identified, unless otherwise agreed with the landowner.</p> <p>If the Applicant and the landowner 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 Secretary for resolution.</p> <p>If the Applicant is unable to provide an alternative long-term supply of water, then the Applicant must provide alternative compensation to the satisfaction of the Secretary.</p>	Compliant	Based on feedback from MACH Energy there were no requests for compensatory water supply during the Audit period. Nothing recorded in the Annual Review.	
<b>Water Management Plan</b>				
28	<p>The Applicant must prepare a Water Management Plan for the development to the satisfaction of the Secretary. This plan must be prepared in consultation with DoI Water and EPA, and be submitted to the Secretary for approval by 30 June 2019, unless otherwise agreed by the Secretary. The plan must include:</p> <p>(a) a Site Water Balance, which must:</p> <ul style="list-style-type: none"> <li>include details of:</li> <li>- sources and security of water supply;</li> <li>- water use on site;</li> <li>- water management on site;</li> <li>- any off-site water transfers; and</li> </ul> <p>- investigate and implement all reasonable and feasible measures to minimise water use by the development;</p> <p>(b) an Erosion and Sediment Control Plan, which must:</p> <ul style="list-style-type: none"> <li>identify activities that could cause soil erosion, generate sediment or affect flooding;</li> <li>describe measures to minimise soil erosion and the potential for the transport of sediment to downstream waters, and manage any flood risk;</li> <li>describe the location, function, and capacity of erosion and sediment control structures;</li> <li>describe what measures would be implemented to maintain the structures over time;</li> </ul> <p>(c) a Surface Water Management Plan, which must include:</p> <ul style="list-style-type: none"> <li>detailed baseline data on surface water flows and quality in creeks and other waterbodies that could potentially be affected by the development;</li> <li>surface water and stream health impact assessment criteria including trigger levels for investigating any potentially adverse surface water impacts;</li> <li>a program to monitor and maintain the bridge openings and culverts associated with the MOD 4 rail infrastructure and ensure that they remain clear of blockages;</li> <li>a program to monitor surface water flows and quality in the watercourses that could be affected by the project; and</li> <li>reporting procedures for the results of the monitoring program;</li> </ul>	Compliant	<p><u>Preparation:</u></p> <p>a) The Water Management Plan has been approved by DPIE with this dated 31 October 2019. Water Management Plan was submitted to DPIE on 28 June 2019. See Appendix 1 meets requirement of the condition.</p> <p>b) See Appendix 2</p> <p>c) See Appendix 3.</p> <p><u>Implementation:</u></p> <p>Seepage issue is further outlined in <b>Section 5.4</b> of the report.</p> <p>2018 Annual Review stated: <i>"Filling of Environmental Dam 3 caused seepage of clean water to neighbouring Bengalla Coal Mine. In May 2018, MPO were advised that seepage had been noted at Bengalla Coal Mine. MACH Energy and Bengalla Coal Mine are jointly undertaking engineering and hydrogeological reviews to determine the source of the seepage. No pollution or environmental harm occurred as a result of the non-compliance"</i></p> <p>There was a detailed investigation into the incident. Based on discussions with MACH Energy there has been no official cautions or PINs regarding the seepage issue. Evidence was provided of a letter from MACH Energy to DPIE on 20 March 2020 requesting the matter to be closed out. MACH Energy outlined the following to DPIE in the 20 March 2020 letter:</p> <p><i>"Following the investigations, MACH Energy has fully lined Environmental Dam 3 (i.e. with placed clay and geofabric), and has also lined the main Mine Water Dam to minimise the potential for seepage related to the ongoing operation of these storages. MACH Energy has also ensured all relevant and available monitoring information from both Environmental Dam 3 and Bengalla Mine is now considered in ongoing water management practices at the Mount Pleasant Operation"</i></p> <p>DPIE responded to MACH Energy on 25 March 2020 stating 'there is no further action is required in regards to this matter from the development consent perspective'.</p> <p>Evidence of water monitoring data and stream health monitoring. Monitoring for stream health every six months.</p> <p>Evidence of some erosion and sediment water management issues on site with this outlined in Section 5.4 of the Main report. These mostly related to erosion of drainage lines, erosion of bunds and dam walls. Although there are improvements required the site inspection did not indicate any areas where 'dirty water' is leaving site.</p>	REC: There are a selection of proposed water management and erosion and sediment upgrades with these outlined in Section 5.4.



**Development Consent (DA 92/97)**

Condition Number	Condition	Compliance Status	Evidence	Recommended Action
	<p>(d) a Groundwater Management Plan, which must include:</p> <ul style="list-style-type: none"> <li>• detailed plans, including design objectives and performance criteria, for the design and management of the proposed final voids;</li> <li>• detailed baseline data of groundwater levels, yield and quality in the region, and privately-owned groundwater bores, that could be affected by the development;</li> <li>• groundwater impact assessment criteria including trigger levels for investigating any potentially adverse groundwater impacts;</li> <li>• a program to monitor and assess:                             <ul style="list-style-type: none"> <li>o groundwater inflows to the mining operations;</li> <li>o impacts on regional and local (including alluvial) aquifers;</li> <li>o impacts on the groundwater supply of potentially affected landowners;</li> <li>o impacts on groundwater dependent ecosystems and riparian vegetation;</li> </ul> </li> <li>(e) a Surface and Ground Water Response Plan, which must include:                             <ul style="list-style-type: none"> <li>• a response protocol for any exceedances of the surface water and groundwater assessment criteria;</li> <li>• measures to offset the loss of any baseflow to watercourses caused by the development;</li> <li>• measures to prevent, minimise or offset groundwater leakage from alluvial aquifers caused by the development;</li> <li>• measures to compensate landowners of privately-owned land whose water supply is adversely affected by the development; and</li> <li>• measures to mitigate and/or offset any adverse impacts on groundwater dependent ecosystems or riparian vegetation.</li> </ul> </li> </ul> <p>The Applicant must implement the management plan as approved by the Secretary.</p>	Compliant	<p><u>Preparation:</u> d) See Appendix 4. e) See Appendix 5.</p> <p><u>Implementation:</u> Evidence of groundwater monitoring. MACH Energy had to implement the groundwater response plan based on the groundwater trigger levels. This was based on the drought. The Water Management Plan was revised based on new triggers. Covered in the 2018 Annual Review.</p> <p><i>In accordance with the SGWRP, these consecutive exceedances triggered the Groundwater Quality Response Protocol. The outcomes of the protocol were a recommendation by HydroSimulations for the trigger levels to be refined to more accurately reflect variation in water quality due to outside influences.</i></p>	
28A	<p>The Applicant must decommission the existing water supply infrastructure within the rail loop and infrastructure corridor, including the associated pump station, within 6 months of the commissioning of the MOD 4 water infrastructure.</p> <p>Notes: •The existing rail loop and infrastructure corridor is shown in Figure 3 of Appendix 2. •The decommissioning of infrastructure within the rail loop and infrastructure corridor is also controlled under condition 37 of Schedule 3</p>	Not Triggered	Still in final design stage to build the new rail loop.	
28B	<p>The Applicant must notify DoI Water, in writing, within 14 days of completing the following:</p> <p>(a) the commissioning of the MOD 4 water infrastructure; and (b) the decommissioning of existing water supply infrastructure within the rail loop and infrastructure corridor.</p>	Not Triggered	Still in final design stage to build the new rail loop.	

**BIODIVERSITY**

**Biodiversity Management Plan**

32	<p>The Applicant must prepare a Biodiversity Management Plan for the development to the satisfaction of the Secretary. This plan must:</p> <p>(a) be prepared in consultation with OEH and Council, and be submitted to the Secretary for approval by 30 June 2019, unless otherwise agreed by the Secretary;</p> <p>(b) include:</p> <ul style="list-style-type: none"> <li>- a description of the short, medium, and long term measures that would be implemented to:                             <ul style="list-style-type: none"> <li>- manage the remnant vegetation and habitat on the site; and</li> <li>- avoid and manage remnant vegetation and habitat within the relinquishment area;</li> </ul> </li> <li>- a detailed description of the measures that would be implemented over the next 3 years, including the procedures to be implemented for:                             <ul style="list-style-type: none"> <li>- implementing revegetation and regeneration within the disturbance areas, including establishment of canopy, sub-canopy (if relevant), understorey and ground strata;</li> <li>- maximising salvage and beneficial use of resources in areas that are to be impacted, including vegetative, soil and cultural heritage resources;</li> <li>- protecting vegetation and soil outside the disturbance areas;</li> <li>- rehabilitating creeks and drainage lines on the site, to minimise net loss of stream length and aquatic habitat;</li> <li>- managing salinity;</li> <li>- conserving and reusing topsoil;</li> <li>- undertaking pre-clearance surveys;</li> <li>- managing impacts on fauna;</li> <li>- landscaping the site and along public roads to minimise visual and lighting impacts;</li> <li>- collecting and propagating seed;</li> <li>- salvaging and reusing material from the site for habitat enhancement;</li> <li>- salvaging, transplanting and/or propagating threatened flora and native grassland;</li> <li>- controlling weeds and feral pests;</li> <li>- managing grazing and agriculture on site;</li> <li>- controlling access; and</li> <li>- bushfire management;</li> </ul> </li> <li>- a program to monitor and report on the effectiveness of these measures, and progress against the performance and completion criteria;</li> <li>- a description of the potential risks to successful revegetation, and a description of the contingency measures that would be implemented to mitigate these risks; and</li> <li>- details of who would be responsible for monitoring, reviewing, and implementing the plan.</li> </ul> <p>The Applicant must implement the management plan as approved by the Secretary.</p>	Compliant	<p><u>Preparation:</u> a) The most recently approved version of the Biodiversity MP was approved on 31 October 2019. This document has been reviewed as part of the Audit. Evidence of consultation provided in Section 1.1.2 of the MP. Includes consultation for MOD 4. Appendix A provides key correspondence. b) The key aspects of the dot points in this condition have been covered in Section 6-10 of the approved Biodiversity MP. The document is also set out with cross referencing tables outlining where sub conditions have been covered.</p> <p><u>Implementation:</u> Evidence of pre - clearing survey report prepared by Naria Environmental covering 2017-2019. Report dated August 2019. Includes mapping of ecological features. Includes evidence of stag tree and threatened flora and fauna management. Also evidence provided for several separate reports. Evidence of weed spraying marked up figure by Enright Weed Spraying dated 27 September 2019. This mostly focussed along roads and site boundaries. Receipts of weed spraying were sighted. Evidence of Tiger Orchid Translocation Report by Naria Environmental dated July 2019. Section 4.3.5 of the MPO Biodiversity Management Plan (BoiMP) states "that if disturbance cannot be modified, the Tiger Orchid (<i>Cymbidium canaliculatum</i>) will be salvaged prior to disturbance and relocated to proximal, suitable habitats in non-disturbance areas". The July 2019 report provides an update on the condition of the 5 translocated Tiger Orchids. All appear healthy. Evidence provided for tree seed salvage. Evidence of trees being used in rehabilitation.</p> <p><u>Field evidence</u> Some areas of weeds observed onsite ranging from minor to moderate. Evidence of weed management program in place however further work is required. SLR notes evidence provided since audit inspection of Q1 and Q2 weed management program being completed.</p>	REC: Continue to implement additional weed management activities onsite.
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		Compliant	<p><u>Implementation Assessment of Condition Requirements:</u></p> <ul style="list-style-type: none"> <li>• A description of the short, medium, and long term measures that would be implemented to:                             <ul style="list-style-type: none"> <li>- Manage the remnant vegetation and habitat on the site; Evidence of pre clearance permits.</li> <li>- Avoid and manage remnant vegetation and habitat within the relinquishment area; Evidence of pre clearance permits.</li> </ul> </li> <li>• A detailed description of the measures that would be implemented over the next 3 years, including the procedures to be implemented for:                             <ul style="list-style-type: none"> <li>- Implementing revegetation and regeneration within the disturbance areas, including establishment of canopy, sub-canopy (if relevant), understorey and ground strata; Evidence of seed mixes and a summary of rehabilitation program.</li> <li>- Maximising salvage and beneficial use of resources in areas that are to be impacted, including vegetative, soil and cultural heritage resources; Evidence of salvage.</li> <li>- Protecting vegetation and soil outside the disturbance areas; No evidence of issues.</li> <li>- Rehabilitating creeks and drainage lines on the site, to minimise net loss of stream length and aquatic habitat; Not yet triggered.</li> <li>- Managing salinity; Evidence of soil testing in rehabilitation and topsoil stockpiles. Water testing in dams.</li> <li>- Conserving and reusing topsoil; Evidence of topsoil stockpiles.</li> <li>- Undertaking pre-clearance surveys; Evidence of numerous pre clearance permits and ground disturbance permits.</li> <li>- Managing impacts on fauna; Pre clearance process including spotter catcher work. Evidence of trained spotter catchers. Evidence of annual wild dog baiting in the Annual Review.</li> <li>- Landscaping the site and along public roads to minimise visual and lighting impacts; No major issues identified.</li> <li>- Collecting and propagating seed; Evidence of seed propagation program from Diversity Native Seeds including November 2018 proposal for additional work.</li> <li>- Salvaging and reusing material from the site for habitat enhancement; Evidence of salvaged trees and rocks in rehabilitation. Use of stag trees.</li> <li>- Salvaging, transplanting and/or propagating threatened flora and native grassland; Evidence of Tiger Orchid translocation program.</li> <li>- Controlling weeds and feral pests; Evidence of weed management.</li> <li>- Managing grazing and agriculture on site - Grazing in mining leases but not in regeneration areas. Undertaken through leases.</li> <li>- Controlling access; No issues identified.</li> <li>- Bushfire management - Evidence in Annual Reviews for bushfire management.</li> </ul> </li> <li>• A program to monitor and report on the effectiveness of these measures, and progress against the performance and completion criteria; Evidence of monitoring and criteria</li> <li>• A description of the potential risks to successful revegetation, and a description of the contingency measures that would be implemented to mitigate these risks; Evidence of monitoring program. Covered in Table 10 and also within the RMP/MOP.</li> <li>• Details of who would be responsible for monitoring, reviewing, and implementing the plan. Noted. Monitoring and reporting completed.</li> </ul>	
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**HERITAGE**

Note:	Under the National Parks and Wildlife Act 1974 or the Heritage Act 1977, the Applicant is required to obtain approvals for any impacts to Aboriginal objects and/or significant relics.			
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**Aboriginal Heritage Conservation Strategy**

## Development Consent (DA 92/97)

Condition Number	Condition	Compliance Status	Evidence	Recommended Action
33	<p>The Applicant must prepare an Aboriginal Heritage Conservation Strategy for the development to the satisfaction of the Secretary. This strategy must:</p> <p>(a) be prepared by suitably qualified and experienced persons whose appointment has been endorsed by the Secretary;</p> <p>(b) be prepared in consultation with OEH and the Registered Aboriginal Parties;</p> <p>(c) be submitted to the Secretary for approval prior to carrying out any development on site;</p> <p>(d) provide for the establishment and conservation of an off-site Aboriginal cultural heritage conservation area/s that has comparable Aboriginal cultural heritage values (both cultural and archaeological) to the areas that would be developed on site;</p> <p>(e) describe the measures that would be implemented to provide appropriate long term security for the proposed Aboriginal cultural heritage conservation areas; and</p> <p>(f) include an action plan for the implementation of the strategy.</p> <p>The detailed measures for the implementation of the strategy are to be outlined in the Heritage Management Plan (see condition 36).</p> <p>The Applicant must implement the approved strategy as approved from time to time by the Secretary.</p>	Observation	<p><u>Preparation and Implementation:</u></p> <p>The Aboriginal Heritage Conservation Strategy forms Section 5 of the ACHMP. Most recent ACHMP was approved by DPIE on 31 October 2019. Evidence of consultation with RAP's on July 18 and 19, 2019.</p> <p>a) A revised version of this AHMP/Strategy was prepared on behalf of MACH Energy by Peter Kuskie of South East Archaeology and was approved by the Secretary of the Department of Planning and Environment on 5 July 2017. Consultation was undertaken with the OEH and the RAPs in accordance with Development Consent DA 92/97.</p> <p>b) Included in overarching ACHMP. Section 1.3. Consultation for 2019 update.</p> <p>c) Original construction and operation activities completed at site prior to this audit period. Management Plan updated for MOD 4 works.</p> <p>d) <u>Observation:</u> Based on discussions with MACH Energy there has been multiple discussions about getting the conservation area under a covenant with the OEH. There has been little feedback regarding this. DPIE and OEH have been liaising regarding the governments responsibility. Letter from 3 July 2019 from MACH Energy to DPIE trying to progress the covenant.</p> <p>e) Section 5.4 of the ACHMP provides an update on the long term security.</p> <p>f) Section 5.3.</p>	REC: Continue the process of progressing the covenant for the Aboriginal Conservation Area.
Note:	The Aboriginal cultural heritage conservation area/s may be combined with any similar offset/conservation area required for the development under Commonwealth legislation, subject to suitably offsetting the cultural heritage impacts of the development.			
34	34. Within 2 years of the approval of the Aboriginal Heritage Conservation Strategy, the Applicant must demonstrate to the satisfaction of the Secretary, that it has made suitable arrangements to provide appropriate long term security for the Aboriginal cultural heritage conservation area/s in the Aboriginal Heritage Conservation Strategy.	Observation	<p>Section 5.4 of the ACHMP provides an update on the long term security.</p> <p>In accordance with Condition 34, Schedule 3 of Development Consent DA 92/97, within 2 years of the approval of the Aboriginal Heritage Conservation Strategy, MACH Energy will demonstrate to the satisfaction of the Secretary of the DPIE that it has made suitable arrangements to provide appropriate long-term security for the Aboriginal Heritage Conservation Areas.</p> <p>In this regard, it is noted that correspondence from the Department of Planning and Environment dated 14 July 2016 stated the following in relation to the Aboriginal Heritage Conservation Areas:</p> <p><i>In light of the above, the Department is generally satisfied with the proposed staged approach for establishing the modified Broomfield Conservation Area.</i></p> <p>Based on discussions with MACH Energy there has been multiple discussions about getting the conservation area under a covenant with the OEH. There has been little feedback regarding this. DPIE and OEH have been liaising regarding the governments responsibility. Letter from 3 July 2019 from MACH Energy to DPIE trying to progress the covenant.</p>	As per Schedule 3 Condition 33 recommendation.
<b>Oral History</b>				
35	<p>By the end of December 2013, the Applicant must prepare a detailed history of the Mount Pleasant locality to the satisfaction of the Secretary. This history must:</p> <p>(a) be prepared by suitably qualified and experienced persons whose appointment has been endorsed by the Secretary;</p> <p>(b) be prepared in consultation with the OEH, the local history society, local community (including former residents as far as is practicable), and Registered Aboriginal Parties;</p> <p>(c) be prepared in accordance with the relevant Heritage Council of NSW guidelines; and</p> <p>(d) include detailed historical research as well as an oral history.</p>	Compliant	<p>This condition is prior to the audit period. The ACHMP states:</p> <p><i>The Oral History Report was prepared in 2004 (and subsequently reviewed in 2014). On 20 January 2014 then NSW Department of Planning and Infrastructure approved the report and advised that Condition 35, Schedule 3 of Development Consent DA 92/97 had been satisfied.</i></p>	
<b>Aboriginal Heritage Management Plan</b>				
36	<p>The Applicant must prepare a Aboriginal Heritage Management Plan for the development to the satisfaction of the Secretary. This plan must:</p> <p>(a) be prepared in consultation with OEH and the Registered Aboriginal Parties by suitably qualified and experienced persons whose appointment has been endorsed by the Secretary;</p> <p>(b) be submitted to the Secretary for approval by 30 June 2019, unless otherwise agreed by the Secretary;</p> <p>(c) include:</p> <ul style="list-style-type: none"> <li>- a detailed plan for the implementation of the approved Aboriginal Heritage Conservation Strategy (required under condition 34);</li> <li>- a description of the measures that would be implemented to: <ul style="list-style-type: none"> <li>- comply with the requirements of any Aboriginal Heritage Impact Permit issued for the development, including any approved archaeological testing and salvage program;</li> <li>- store the Aboriginal objects salvaged, both during construction and in the long term;</li> <li>- protect, monitor and/or manage all Aboriginal objects on site until the impacts of the development on these objects is unavoidable;</li> <li>- minimise the blasting impacts of the development on Aboriginal objects in the vicinity of the site;</li> <li>- manage the discovery of any human remains or previously unidentified Aboriginal objects on site;</li> <li>- enable Registered Aboriginal Parties to get reasonable access to the site during the development;</li> <li>- ensure Registered Aboriginal Parties are consulted about the conservation and management of Aboriginal cultural heritage on site; and</li> <li>- ensure construction personnel receive suitable heritage inductions prior to carrying out any development on site, and that suitable records are kept of these inductions.</li> </ul> </li> </ul> <p>The Applicant must implement the management plan as approved by the Secretary.</p>	Compliant	<p><u>Preparation:</u></p> <p>a) The most recently approved version of the ACHMP was approved on 31 October 2019. This document has been reviewed as part of the Audit. Evidence of consultation provided in Section 1.3 of the MP. Includes consultation for MOD 4. Appendix H provides key correspondence.</p> <p>b) Site has provided evidence of consultation with the RAP's.</p> <p>c) The key aspects of the dot points in this condition have been covered in Section 2-6 of the ACHMP. The document is set out with cross referencing tables outlining where sub conditions have been covered.</p> <p><u>Implementation:</u></p> <p>Evidence of inductions relating to heritage items in MACH Energy, Thiess and Sedgmans.</p> <p>Evidence of Heritage artefact keeping place at Broomfield Homestead. This is temporary keeping place. MACH Energy has been discussing with RAP's regarding a long term keeping place.</p> <p>Heritage items covered as part of this process. Evidence of ground disturbance permits. The salvaging generally occurs well before disturbance due to the time it takes for salvage. All those involved in disturbance have to sign onto the permit.</p> <p>Flagging and signage around areas of known heritage items.</p>	See recommendation from Schedule 3 Condition 33 about implementing the covenant.
Notes:	<ul style="list-style-type: none"> <li>- The Aboriginal Heritage Management Plan must be consistent with the requirements of any Aboriginal Heritage Impact Permit(s) issued by OEH relevant to the development.</li> <li>- The Applicant must ensure that Aboriginal site recording forms for newly recorded sites and Aboriginal site impact recording forms for salvaged sites are submitted to OEH for inclusion on the Aboriginal Heritage Information Management System database.</li> </ul>	Noted	Noted. ACHMP appears to meet the requirements of OEH.	
<b>Transport</b>				
<b>Removal of Rail Loop and Infrastructure Corridor</b>				
37	<p>The Applicant must, by no later than 31 October 2022:</p> <p>(a) remove all infrastructure associated with the development within Mining Lease No. 1645 (ML 1645) south of Wybong Road (other than infrastructure which the operator of the Bengalla mine agrees with the Applicant, in writing, can remain in situ);</p> <p>(b) do all things available to transfer or cause the grant of a mining lease over that part of ML 1645 south of Wybong Road to the operator of Bengalla mine or its nominee;</p> <p>(c) transfer the freehold land owned by the Applicant within ML 1645 south of Wybong Road to the operator of Bengalla mine (or its nominee) at rural market value;</p> <p>(d) release any easements for pipeline and rail spur within or in the vicinity of ML 1645 south of Wybong Road which benefit land owned by the Applicant; and</p> <p>(e) demolish the Bengalla Link Road bridge required under condition 38 (a) below and, unless otherwise agreed by the Secretary, reinstate the road reserve to the satisfaction of Council.</p>	Not Triggered	This corridor is still active. Condition not triggered.	
Note	The rail loop and infrastructure corridor is shown in Figure 3 of Appendix 2.			
<b>Road Works</b>				
Note:	Under the Roads Act 1993, the Applicant is required to obtain the consent of the appropriate roads authority prior to carrying out work on or over a public road.			
38	<p>The Applicant must, at its own expense:</p> <p>(a) construct a bridge to carry the Bengalla Link Road over the proposed Mount Pleasant rail loop, in consultation with the operators of the Bengalla Mine;</p> <p>(b) construct the Mount Pleasant Northern Link Road to Dorset Road, prior to the closure of Castlerock Road;</p> <p>(c) construct the Mount Pleasant Western Link Road (generally in accordance with Council's Western Roads Strategy) from the intersection of the Bengalla Link Road to the intersection of the Mount Pleasant Northern Link Road, prior to the closure of Wybong Road;</p> <p>(d) construct the Mount Pleasant Mine Access Road;</p> <p>(e) upgrade the Wybong Road from the Bengalla Link Road to the Mount Pleasant Mine Access Road; and</p> <p>(f) construct an overpass or underpass across Wybong Road, or other means of crossing Wybong Road, should a construction road be proposed, to the satisfaction of Council.</p>	Compliant	<p>Based on site communications all roads are Council Roads.</p> <p>A Road Works Schedule document was provided to SLR dated June 2019.</p> <p>a) Completed Jan 2018;</p> <p>b) Works proposed early 2024;</p> <p>c) The current mine plan does not require the closure of Wybong Road. MPO will update Council if this requirement changes;</p> <p>d) Completed December 2016;</p> <p>e) Completed January 2018; and</p> <p>f) Wybong Road crossing completed May 2018</p>	
39	<p>Should the following intersections be required, the Applicant must undertake construction works at:</p> <p>(a) the intersection of the Western Link Road and access to the mine site;</p> <p>(b) the intersection of the Bengalla Link Road and the Western Link Road;</p> <p>(c) the intersection of the Castlerock/Mount Pleasant Northern Link Road and the Western Link Road; and</p> <p>(d) the intersection of the Mount Pleasant Northern Link Road and Kayuga Road, to the satisfaction of Council and/or RMS.</p> <p>If there is any dispute between the Applicant and Council or RMS in relation to the funding or upgrade works, then any of the parties may refer the matter to the Secretary for resolution.</p>	Compliant	<p>A Road Works Schedule document was provided to SLR dated June 2019.</p> <p>a) Mount Pleasant site access intersection completed with the Wybong Road upgrade works.</p> <p>As per Condition 38 (c), Western Link Road should no longer be required. MPO will update Council if this requirement changes.</p> <p>b) Bengalla Link Road intersection works completed with the Wybong Road upgrade works.</p> <p>c) As per Condition 38 (b).</p> <p>d) As per Condition 38 (b).</p> <p>MACH Energy paid for all these road works. Based on site communications there have been no disputes. They were all Council roads.</p>	

## Development Consent (DA 92/97)

Condition Number	Condition	Compliance Status	Evidence	Recommended Action
39A	The Applicant must, by no later than 31 October 2022: (a)construct a rail overpass to carry the MOD 4 rail infrastructure over Wybong Road; (b)construct a road bridge to carry Overton Road over the MOD 4 rail infrastructure; and (c)partially realign Overton Road, as shown conceptually in Figure 5 of EA (MOD 4), in accordance with the relevant requirements of Austroads Guide to Road Design and to the satisfaction of Council.  The Secretary may waive or alter the above requirements if they are no longer required following the completion of the final design of the MOD 4 rail infrastructure.	Not Triggered	Not yet 2022  A Road Works Schedule document was provided to SLR dated June 2019. a) Commence works Late 2019, to be completed 2021 b) Current planning includes a rail overbridge crossing Overton and Wybong Roads. Commence works Late 2019, completed 2021. c) Current planning enables crossing of Overton Road without realignment.	
40	The Applicant must: (a)prepare a detailed schedule outlining the timing of the road works required by conditions 38, 39 and 39A by the end of June 2018; and (b)update this schedule annually, to the satisfaction of Council.	Compliant	Evidence sighted of letter from 26 June 2019.  Evidence sighted of June 2018 letter.	
<b>Road Maintenance</b>				
41	During the development, the Applicant must maintain the roads and intersections between the Bengalla Mine main entrance and the Mt Pleasant Mine main entrance, including: (a)part of the Bengalla Link Road; (b)part of the Wybong Road; and (c)part of the Mount Pleasant Western Link Road.  The Applicant must develop a Maintenance Management Plan in respect of these roads, to the satisfaction of Council.	Compliant	Evidence of road maintenance plan dated April 2019 with this signed by MACH Energy and Council. The plan outlines assets and maintenance. Based on site inspection there were no issues.  Minor evidence of maintenance including litter picks ups, removal of dead fauna, removal of any mud.	
<b>Thomas Mitchell Drive</b>				
41A	The Applicant must contribute to the upgrade and maintenance of Thomas Mitchell Drive, proportionate to its impact (based on usage) on that infrastructure, in accordance with the Contributions Study prepared by GHD titled, "Thomas Mitchell Drive Contributions Study, May 2015" as amended by the supplementary report dated, August 2018 (as amended from time to time), unless otherwise agreed with the Secretary.  For Thomas Mitchell Drive, the contributions must be paid to Council in accordance with: (a)the payment schedule in the Contributions Study for the upgrade works; and (b)the maintenance schedule established in accordance with the Contributions Study during the life of the development  unless otherwise agreed with Council.	Compliant	Evidence of road maintenance contributions from 2018 and 2019. Evidence of fees dating back to 2013.	
Notes:	*In making a determination about the applicable contribution/s under this condition, the Secretary will take into account the contributions already paid or required to be paid towards the upgrade and maintenance of the local road network in the Muswellbrook Local Government Area under this consent and any associated Planning Agreement with Council. *If there is a dispute between the relevant parties about the implementation of this condition, then any party may refer the matter to the Secretary for resolution.			
<b>Road Access and Signage</b>				
42	The Applicant must ensure that as far as possible the preferred mine access road route, as described in the EIS, is the only route used by employees and contractors travelling to the mine site from Muswellbrook.	Compliant	Mine access road sighted at audit. No reason to determine non - compliance. Staff and contractors are informed of the requirement to not use Wybong Road.	
43	The Applicant must maintain signs and give at least 24 hours notice of temporary road closures. The location and wording of the signs are to be approved by Council. A protocol is to be established, in consultation with the emergency service providers and Council, to permit the passage of emergency vehicles during road closures.	Compliant	Blasting schedule for the site. Evidence provided of notification of blasts. Evidence on the website of blast scheduling for each upcoming week. With this noting the proposed time of the blast and whether there is a road closure. It is noted that the Blast Scheduling pdfs are located within the 'Management Plans and Reporting' section of the website, which is not an obvious location. See recommendation. Also evidence of notification via the Muswellbrook Shire Council website.  Evidence sighted of greater than 24 hours notice for closing roads.  <a href="https://www.muswellbrook.nsw.gov.au/index.php/blasting/blasting-announcements">https://www.muswellbrook.nsw.gov.au/index.php/blasting/blasting-announcements</a>	
<b>Monitoring of Coal Transport</b>				
44	The Applicant must: (a)keep records of the: -amount of coal transported from the site (on a monthly basis); and -date and time of each train movement generated by the development; and (b)make these records available on its website at the end of each calendar year.	Compliant	The transport summary is shown on the website. It shows the features of condition a. <a href="https://machenergyaustralia.com.au/wp-content/uploads/Coal-Transport-Records.pdf">https://machenergyaustralia.com.au/wp-content/uploads/Coal-Transport-Records.pdf</a>	
<b>Construction of Rail and Water Supply Infrastructure</b>				
44A	The Applicant must carry out a detailed geotechnical investigation of former underground mine workings in the vicinity of the MOD 4 rail infrastructure. This investigation must: (a)be undertaken by suitably qualified and experienced persons; (b)be undertaken in consultation with SA NSW; (c)determine the extent of underground mine workings; (d)provide recommendations to ensure the geotechnical stability of MOD 4 rail infrastructure; and (e)be conducted and reported to the satisfaction of the Secretary. A final report detailing the outcomes of the geotechnical investigation must be submitted to the Secretary. The Applicant must not commence MOD 4 construction works in the vicinity of the former underground mine until the Geotechnical Investigation Report is approved by the Secretary.	Not Triggered	This has been commenced but that condition has not been triggered yet.	
44B	The Applicant must implement the recommendations of the Geotechnical Investigation Report to the satisfaction of the Secretary.	Not Triggered	This has been commenced but that condition has not been triggered yet.	
44C	The Applicant must design and construct the MOD 4 rail infrastructure to meet the following performance criteria during a 1% Annual Exceedance Probability flood event: (a)no more than 0.1 m increase in flood levels on any privately-owned land; (b)no more than 0.01 m increase in flood levels at any privately-owned residence or commercial spaces; (c)no more than 0.01 m increase in flood levels at any public roads servicing privately-owned properties; and (d)no more than 0.1 m per second increase in flood velocities at privately-owned residences or commercial spaces.	Not Triggered	This has been commenced but that condition has not been triggered yet.	
44D	The Applicant must commission an independent review of the final design of the MOD 4 rail infrastructure, including any associated hydraulic structures. This review must: (a)be undertaken by suitably qualified and experienced persons; (b)be undertaken in consultation with OEH; (c)demonstrate that the final design meets the performance criteria in condition 44C above; (d)be conducted and reported to the satisfaction of the Secretary. A final report detailing the outcomes of the independent review must be submitted to the Secretary. The Applicant must not commence MOD 4 construction works until the final report is approved by the Secretary.	Not Triggered	Final design has not yet been finalised.	

**Development Consent (DA 92/97)**

Condition Number	Condition	Compliance Status	Evidence	Recommended Action																						
44E	The Applicant must ensure that any asbestos encountered during MOD 4 construction works is monitored, handled, transported and disposed of by appropriately qualified and licensed contractors in accordance with the requirements of SafeWork NSW and relevant guidelines, including: (a)Work Health and Safety Regulation 2017; (b)SafeWork NSW Code of Practice – How to Manage and Control Asbestos in the Workplace September 2016; (c)SafeWork NSW Code of Practice – How to Safely Remove Asbestos September 2016; (d)Protection of the Environment Operations (Waste) Regulation 2014; and (e)the EPA’s Waste Classification Guidelines.	Not Triggered	No construction for MOD 4.																							
44F	All MOD 4 construction works outside of the Mining Lease Boundary must be carried out during Standard Construction Hours (7 am to 6 pm, Monday to Friday; and 8 am to 1 pm on Saturdays), unless the works are: (a)required by: -NSW Police; or -a public authority for the delivery of vehicles, plant or materials; or (b)required in an emergency to avoid the loss of life, damage to property or to prevent material harm to the environment; or (c)approved under an Out of Hours Work Protocol.	Not Triggered	No construction for MOD 4.																							
Note:	The Mining Lease Boundary is shown in Figure 2 of Appendix 2.																									
44G	If the Applicant proposes to undertake MOD 4 construction works (outside of the Mining Lease Boundary) outside the hours specified in condition 44F above, then the Applicant must prepare an Out of Hours Work Protocol for these works, to the satisfaction of the Secretary. This protocol must: (a)be prepared in consultation with the EPA and any residents who may be affected by the noise generated by these works; (b)address the relevant requirements of the Interim Construction Noise Guideline (DECC, 2009); and (c)be approved by the Secretary before any out of hours construction works are carried out. The Applicant must implement the Out of Hours Work Protocol as approved by the Secretary.	Not Triggered	No construction for MOD 4.																							
Note	For areas where construction noise is predicted to be at or below operational noise criteria at sensitive receptors, this is likely to provide sufficient justification for the need to operate outside of recommended standard hours as specified in the Interim Construction Noise Guideline (DECC, 2009).	Note																								
44H	The Applicant must ensure that the combined operational noise of the development and noise generated by the MOD 4 construction works outside of the Mining Lease Boundary does not exceed the criteria in Table 10A at any residence on privately-owned land.																									
	<p><u>Table 10A: Construction noise criteria</u></p> <table border="1"> <thead> <tr> <th>Receiver or other location</th> <th>Standard Construction Hours dB(A) <math>L_{Aeq}(15min)</math></th> </tr> </thead> <tbody> <tr><td>67, 215, 216, 218, 219</td><td>47</td></tr> <tr><td>206, 217, 220, 221, 225, 532, 533</td><td>48</td></tr> <tr><td>222, 223, 531</td><td>49</td></tr> <tr><td>224, 530</td><td>50</td></tr> <tr><td>19, 20, 21, 207, 269</td><td>51</td></tr> <tr><td>527, 528</td><td>56</td></tr> <tr><td>529</td><td>54</td></tr> <tr><td>68</td><td>57</td></tr> <tr><td>23</td><td>69</td></tr> <tr><td>All other privately-owned land</td><td>5 dB(A) above the daytime operational <math>L_{Aeq}(15min)</math> noise criteria in Table 3</td></tr> </tbody> </table>	Receiver or other location	Standard Construction Hours dB(A) $L_{Aeq}(15min)$	67, 215, 216, 218, 219	47	206, 217, 220, 221, 225, 532, 533	48	222, 223, 531	49	224, 530	50	19, 20, 21, 207, 269	51	527, 528	56	529	54	68	57	23	69	All other privately-owned land	5 dB(A) above the daytime operational $L_{Aeq}(15min)$ noise criteria in Table 3	Not Triggered	No construction for MOD 4.	
Receiver or other location	Standard Construction Hours dB(A) $L_{Aeq}(15min)$																									
67, 215, 216, 218, 219	47																									
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All other privately-owned land	5 dB(A) above the daytime operational $L_{Aeq}(15min)$ noise criteria in Table 3																									
Notes:	-To identify the locations referred to in Table 10A, see the figures in Appendix 5. -The Mining Lease Boundary is shown in Figure 2 of Appendix 2. -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, with the exception of the application of modifying factors under Fact Sheet C of the Noise Policy for Industry.  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.																									
44I	The Applicant must prepare a Construction Environmental Management Plan for MOD 4 construction works, to the satisfaction of the Secretary. This plan must: (a)be prepared in consultation with the EPA, Council and any relevant road or utilities authorities; (b)describe measures to be implemented to minimise construction-related noise, vibration, dust, biodiversity and visual impacts, including specific measures to minimise: -surface disturbance; and -the cumulative impacts of construction and operational noise; (c)describe detailed procedures to be implemented to: -notify affected landowners of upcoming construction activities; -receive, record, handle and respond to construction-related complaints; and -resolve any disputes that may arise during MOD 4 construction works; (d)include a Construction Traffic Management Plan which: -describes the measures to be implemented to minimise traffic safety issues and disruption to local road users, including managing light, heavy and over-dimensional vehicles during construction works; and -includes procedures for notifying other road users (including local bus operators) of any construction works that may disrupt their usual use of the road; and (e)include a Historic Heritage Management Plan which describes measures to implement the relevant historic heritage management commitments outlined in Appendix 3; and (f)include an Unexpected Contamination Protocol which describes the procedures to be implemented in the event that potentially contaminated material is identified during construction, including: -procedures for testing, removal and disposal of potentially contaminated material; and -measures to ensure compliance with the requirements of SafeWork NSW and relevant guidelines. The Applicant must not commence MOD 4 construction works until the Construction Environmental Management Plan is approved by the Secretary. The Applicant must implement the Construction Environmental Management Plan as approved by the Secretary.	Compliant	<u>Preparation:</u> CEMP submitted to Colin Phillips at DPIE on 20 November 2019. MOD4 CEMP has been approved by DPIE, and is available on the MACH Energy website. Submission of Mount Pleasant Operation (MPO) Construction Environmental Management Plan (CEMP) for review_approval.msg.  MACH Energy sent a copy of the CEMP back to DPIE on 21 February 2020. a) Evidence of consultation in Section 1.3; b) Section 5; c) Section 9; d) Section 5.5 and Appendix A; e) Section 5.6 and Appendix B; f) Section 5.7 and Appendix C.  <u>Implementation:</u> Approved on 10 March 2020. Only work related to the MOD 4 area has been archaeological clearing.  Management Plan not yet implemented. Ground disturbance permit is an appendix.																							
<b>VISUAL</b>																										
<b>Visual Amenity and Lighting</b>																										
45	The Applicant must: (a)implement all reasonable and feasible measures to minimise the visual and off-site lighting impacts of the development; (b)ensure no outdoor lights shine above the horizontal; and (c)ensure that all external lighting associated with the development complies with Australian Standard AS4282 (INT) 1997 – Control of Obtrusive Effects of Outdoor Lighting or its latest version, to the satisfaction of the Secretary.	Compliant	The lighting plants are passed to full specifications when they are delivered to site. These meet Australian standards. Based on site communications lighting plants are pointed down and orientated to reduce visual impacts. Evidence of completed checklist dated 13/11/2019.  Lighting areas were not reviewed as part of the audit as there was no access to the top dump for light vehicles.  There have been some visual/lighting complaints with these noted in the Annual Review and complaints log.																							
<b>Additional Visual Mitigation Measures</b>																										
46	46.Upon receiving a written request from the owner of any residence on privately-owned land which has, or would have, significant direct view of the mining operations on site, the Applicant must implement visual mitigation measures (such as landscaping treatments or vegetation screens) on the land in consultation with the landowner. These measures must be reasonable and feasible, and directed toward minimising the visibility of the mining operations from 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 Secretary for resolution.	Compliant	Based on site communications there has been no formal request.																							

## Development Consent (DA 92/97)

Condition Number	Condition	Compliance Status	Evidence	Recommended Action								
Notes:	Except in exceptional circumstances, the Secretary will not require additional visual impact mitigation to be undertaken for residences that are more than 3 kilometres from the mining operations											
<b>Visual Impact Management Plan</b>												
47	<p>The Applicant must prepare a Visual Impact Management Plan to mitigate the visual impacts of the development to the satisfaction of the Secretary. This plan must:</p> <ul style="list-style-type: none"> <li>(a) be prepared in consultation with Council, and submitted to the Secretary for approval by 30 June 2019, unless otherwise agreed by the Secretary;</li> <li>(b) provide for the establishment of trees and shrubs and/or the construction of mounding or bunding: <ul style="list-style-type: none"> <li>*along the access road to the mine site;</li> <li>*around the water storage dams and coal preparation plant;</li> <li>*at other areas identified as necessary for the maintenance of satisfactory visual amenity;</li> </ul> </li> <li>(c) include details of the visual appearance of all buildings, structures, facilities or works (including paint colours and specifications), aimed at blending as far as possible with the surrounding landscape; and</li> <li>(d) include detailed measures to minimise the visual impacts of the MOD 4 rail infrastructure, including: <ul style="list-style-type: none"> <li>*details regarding any proposed light screens, earth bunds and screen planting; and</li> <li>*procedures to monitor and maintain the effectiveness of visual impact mitigation measures for the life of the development.</li> </ul> </li> </ul> <p>The Applicant must implement the management plan as approved by the Secretary.</p>	Compliant	<p><u>Preparation:</u></p> <ul style="list-style-type: none"> <li>a) Current Visual Impact Management Plan approved by DPIE on 31 October 2019. Appendix A - Consultee feedback was available in the site document.</li> <li>b) Contained in Section 5.5. Bunding shown in figure.</li> <li>c) Section 5.4;</li> <li>d) Section 5.6 and 8.</li> </ul> <p><u>Implementation:</u></p> <p>The lighting plants are passed to full specifications when they are delivered to site. These meet Australian standards. Based on site communications lighting plants are pointed down and orientated to reduce visual impacts. Evidence of completed checklist dated 13/11/2019.</p> <p>Lighting plants were not reviewed as part of the audit.</p> <p>From discussions with site personnel and from the site inspection it was noted that the site is quite visible from Muswellbrook and surrounds. There are complaints relating to visual impacts with evidence provided to SLR illustrating the response by MACH Energy.</p>	REC: It would be beneficial to have a camera in town pointing at the site for use of MACH Energy and contractors. This would assist in determining the impacts such as visual and dust.								
<b>BUSHFIRE MANAGEMENT</b>												
48	<p>The Applicant must:</p> <ul style="list-style-type: none"> <li>(a) ensure that the development is suitably equipped to respond to any fires on site; and</li> <li>(b) assist the Rural Fire Service and emergency services as much as possible if there is a fire in the vicinity of the site.</li> </ul>	Compliant	<ul style="list-style-type: none"> <li>a) Evidence of fire management including water trucks. Also some water trucks are road registered. There is an emergency response team.</li> <li>b) Copy of the Bushfire management plan was provided.</li> </ul>									
<b>WASTE</b>												
<b>Waste Minimisation and Disposal</b>												
49	<p>The Applicant must:</p> <ul style="list-style-type: none"> <li>(a) minimise the waste (including coal reject) generated by the development;</li> <li>(b) ensure that the waste generated by the development is appropriately stored, handled and disposed of in a lawful manner.</li> </ul>	Non-Compliant (Low Risk)	<ul style="list-style-type: none"> <li>a) Based on the evidence provided the site has minimised the amount of waste being generated.</li> <li>b) Non-compliance for implementation for waste storage however this was classified as a low risk. See Schedule 3 Condition 52.</li> </ul>									
<b>On-site Sewage</b>												
50	The Applicant must ensure that all sewage generated on site is treated and disposed of to the satisfaction of Council.	Compliant	<p>Evidence of sewage treatment plant inspections. Dated 24.07.2019.</p> <p>Two facilities on site. Based on site communications there have been no issues.</p>									
<b>Disposal of Fine Rejects</b>												
51	The Applicant must not emplace fine rejects in the southern catchment without the written approval of the Secretary	Not Triggered	Based on site communications this has not been triggered. No evidence from inspection.									
<b>Waste Management Plan</b>												
52	<p>The Applicant must prepare a Waste Management Plan for the development to the satisfaction of the Secretary. This plan must:</p> <ul style="list-style-type: none"> <li>(a) be prepared in consultation with Dol Water and DRG, and submitted to the Secretary for approval prior to carrying any development on site;</li> <li>(b) describe the measures that would be implemented to avoid, minimise, reuse and recycle all waste streams generated by the development;</li> <li>(c) include a fines emplacement plan; and</li> <li>(d) a program to evaluate the fines emplacement plan and methods, with a view to emplacing fines within active mining areas.</li> </ul> <p>The Applicant must implement the management plan as approved by the Secretary.</p>	Non-Compliant (Low Risk)	<p><u>Preparation:</u></p> <ul style="list-style-type: none"> <li>a) Current version of Waste Management Plan approved by DPIE on 14 January 2019. Evidence of consultation provided in site version of the management plan.</li> <li>b) Section 5.</li> <li>c) Appendix 1.</li> <li>d) Section 7.2. See Section.</li> </ul> <p><u>Implementation:</u> Non-compliant for hydrocarbon and chemical storage.</p> <p><u>In-pit storage area:</u></p> <ul style="list-style-type: none"> <li>a) The general waste bins contained oily rags and cardboard. In one bin the rags were soaked with hydrocarbon material and should have been placed in a separated oily rag bin.</li> <li>b) Oily rags were not stored in the oily rag bin. Instead, they were in bags on a pallet, with one bag open and oily rags spilling out on the ground.</li> <li>c) Small hydrocarbon spill identified.</li> <li>d) There were five 44 gallon drums (some full, some mostly empty) with oil. There were three bulky bins (some half full, some mostly empty)</li> </ul> <p><u>Workshop area:</u></p> <ul style="list-style-type: none"> <li>a) One unlabelled general waste bin. Other labelling was adequate.</li> <li>b) Small oil drip from an engine prepared for transport in the storage area. A drip tray was previously under the area but was removed due to heavy rain.</li> <li>c) There were six bulky bins of gear oil (85W-140) which were not banded. Based on site discussions they had been unloaded but were not yet stored in banded shipping containers. There were also approximately 20 mostly empty bulky bin containers not stored in bunds. There was seven 44 gallon drums (appeared full) with oil.</li> </ul> <p><u>Construction offices:</u></p> <ul style="list-style-type: none"> <li>a) Cardboard was in the general waste bin.</li> <li>b) Unbanded containers, oil drum and battery.</li> <li>c) Bagged contaminated soil from a diesel spill was in the storage area. Most of this material was from the spill kit.</li> </ul>	<p><u>In-pit Storage</u></p> <ul style="list-style-type: none"> <li>a) &amp; b) Ensure all waste is separated out and stored in the correct waste or recycle bin.</li> <li>c) Ensure all hydrocarbon spills are cleaned up.</li> <li>d) All hydrocarbons and chemicals should be stored in banded areas. Used drums and containers are still to be stored in a banded area until they are taken off site.</li> </ul> <p><u>Workshop Area</u></p> <ul style="list-style-type: none"> <li>a) Ensure Remondis label all waste bins.</li> <li>b) Place oil pan under any engines/equipment stored in unbanded areas, that have the potential to drip any hydrocarbons/fluid etc.</li> <li>c) Ensure all chemicals/hydrocarbons are banded. This includes both full and empty oil drums/containers. Old hydrocarbon containers should be removed from site as soon as practical.</li> </ul> <p><u>Construction Offices</u></p> <ul style="list-style-type: none"> <li>a) Ensure all waste is separated out and stored in the correct waste or recycle bin.</li> <li>b) Ensure all chemicals/hydrocarbons are banded.</li> <li>c) Ensure all contaminated material is transported to the bioremediation area or disposed of offsite by a suitable qualified contractor.</li> </ul>								
<b>REHABILITATION</b>												
<b>Rehabilitation Objectives</b>												
	<p>The Applicant must rehabilitate the site to the satisfaction of DRG. This rehabilitation must be generally consistent with the conceptual final landform depicted in Figure 4 in Appendix 2, and comply with the objectives in Table 11.</p> <p><u>Table 11: Rehabilitation Objectives</u></p> <table border="1"> <thead> <tr> <th>Feature</th> <th>Objective</th> </tr> </thead> <tbody> <tr> <td>All areas of the site affected by the development</td> <td> <ul style="list-style-type: none"> <li>• Safe, stable &amp; non-polluting</li> <li>• Fit for the intended post-mining land uses</li> </ul> </td> </tr> <tr> <td>Areas proposed for native ecosystem re-establishment</td> <td> <ul style="list-style-type: none"> <li>• Restore self-sustaining native woodland ecosystems characteristic of vegetation communities found in the local area, as shown conceptually in Figure 4 in Appendix 2.</li> <li>• Establish areas of self-sustaining: <ul style="list-style-type: none"> <li>- riparian habitat, within any diverted and/or re-established creek lines and related water features;</li> <li>- potential habitat for threatened flora and fauna species; and</li> <li>- wildlife corridors, as far as is reasonable and feasible and as shown conceptually in Figure 4 in Appendix 2.</li> </ul> </li> </ul> </td> </tr> <tr> <td>Areas proposed for agricultural land</td> <td> <ul style="list-style-type: none"> <li>• Establish/restore grassland areas to support sustainable agricultural activities</li> </ul> </td> </tr> </tbody> </table>	Feature	Objective	All areas of the site affected by the development	<ul style="list-style-type: none"> <li>• Safe, stable &amp; non-polluting</li> <li>• Fit for the intended post-mining land uses</li> </ul>	Areas proposed for native ecosystem re-establishment	<ul style="list-style-type: none"> <li>• Restore self-sustaining native woodland ecosystems characteristic of vegetation communities found in the local area, as shown conceptually in Figure 4 in Appendix 2.</li> <li>• Establish areas of self-sustaining: <ul style="list-style-type: none"> <li>- riparian habitat, within any diverted and/or re-established creek lines and related water features;</li> <li>- potential habitat for threatened flora and fauna species; and</li> <li>- wildlife corridors, as far as is reasonable and feasible and as shown conceptually in Figure 4 in Appendix 2.</li> </ul> </li> </ul>	Areas proposed for agricultural land	<ul style="list-style-type: none"> <li>• Establish/restore grassland areas to support sustainable agricultural activities</li> </ul>			
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Development Consent (DA 92/97)

Condition Number	Condition	Compliance Status	Evidence	Recommended Action
53	<ul style="list-style-type: none"> <li>Other land affected by the development</li> <li>Final Landform</li> <li>Final voids</li> <li>Surface infrastructure of the development</li> <li>Rehabilitation materials</li> <li>Water quality</li> <li>Community</li> </ul>	Not Triggered	This has not yet been triggered. Section 5.1 of the IEA Main document outlines the rehabilitation status and also some recommendations.	
54	<p>By the end of January 2019, unless otherwise agreed by the Secretary, the Applicant must prepare a Rehabilitation Strategy for the development to the satisfaction of the Secretary. This strategy must:</p> <ul style="list-style-type: none"> <li>(a) be prepared by a suitably qualified and experienced person/s whose appointment has been endorsed by the Secretary;</li> <li>(b) be prepared in consultation with DRG and Council;</li> <li>(c) build upon the Rehabilitation Objectives in Table 11 and the conceptual final landform depicted in Figure 4 in Appendix 2, including identification of opportunities for increasing the areas of woodland and habitat connectivity within the rehabilitated landscape;</li> <li>(d) include details of the canopy, sub-canopy, understory and ground strata species to be established in the rehabilitation areas, with a particular focus on ensuring the achievement of an appropriate level of diversity and mix of functional groups within each target community; and</li> <li>(e) include an indicative schedule for the staged rehabilitation of the development.</li> </ul> <p>The Applicant must implement the approved strategy as approved from time to time by the Secretary.</p>	Observation	<p>Preparation:</p> <ul style="list-style-type: none"> <li>a) This Rehabilitation Strategy has been prepared on behalf of MACH Energy by Dr David Freudenberger (whose appointment has been approved by DPE [letter dated 18 September 2018] as a 'suitably qualified and experienced person'), to satisfy the requirements under Condition 54, Schedule 3 of Development Consent DA 92/97. DPE approved the most recent version of 16 May 2019.</li> </ul> <p>Evidence of email submission by 29 January 2019.</p> <ul style="list-style-type: none"> <li>b) It appears consultation was completed but there is minimal information about who, when and outcomes.</li> <li>c) Rehabilitation objectives outlined See Section 3;</li> <li>d) There is a seed list separated by different stratus. See Table 4;</li> <li>e) There is some generic information about staged rehabilitation (Section 4.3). Further information in the Rehabilitation Management Plan.</li> </ul> <p>When reviewing the Rehabilitation Strategy and MOP/RMP it was determined there were some inconsistencies with figures/plans:</p> <ul style="list-style-type: none"> <li>Figure 3 (Provisional Post - mining Land Use Domains) and Figure 4 (Conceptual Final Landform) of the Rehabilitation Strategy have differences in final landuse.</li> <li>Figure 3 in the Rehabilitation Strategy has much of the area shown as Domain C - Agricultural Land, whereas Figure 4 in the Rehabilitation Strategy has much of the area being shown as both agricultural land and open woodland.</li> <li>Figure 3 in the Rehabilitation Strategy has a large area as Domain B - Water Infrastructure and Storage, whereas Figure 4 in the Rehabilitation Strategy has this area being rehabilitated woodland.</li> <li>Note Plan 4 of the MOP has this area marked as Domain B - Water Infrastructure and Storage.</li> <li>Figure 3 in the Rehabilitation Strategy has a smaller area of riparian rehabilitation (along established drainage lines compared to Figure 4 in the Rehabilitation Strategy which has riparian vegetation).</li> <li>Domain A - Final Void appears to be smaller in the MOP/RMP compared to Figure 3 and 4 of the Rehabilitation Strategy.</li> </ul> <p>Implementation:</p> <p>See Section 5.1 of the main report for further details.</p> <p>Evidence of some rehabilitation areas with rill erosion and some gully erosion. This has been noted and will be reshaped by Thiess in the near future. Designs are being finalised. Evidence of areas that have been recently shaped and rehabilitated using the geofuv system. These looked to be well shaped landforms and ripped well on the horizontal to reduce erosion potential. Initial cover crop is coming through and most of the area has held up well in the recent rainfall.</p> <p>The area below the tailings dam is boggy and showing signs of erosion.</p>	<p>REC: Reshape, rip, topsoil and seed areas of rehabilitation which have been noted by Thiess as areas where improvement is required. <u>MACH Energy have since provided evidence that this has been completed.</u></p> <p>Some seeding should be completed in the area above ED2 which is showing signs of erosion.</p> <p>Adding a defined timeframe to the MOP for how long topsoil stockpiles are stored until a cover crop is required. <u>MACH Energy have since provided evidence that this has been completed.</u></p> <p>Update the relevant document (MOP/RMP or Rehabilitation Strategy) to ensure there are no inconsistencies with the documents.</p>
<b>Progressive Rehabilitation</b>				
55	The Applicant must rehabilitate the site progressively, that is, as soon as reasonably practicable following disturbance. All reasonable steps must be taken to minimise the total area exposed at any time. Interim stabilisation and temporary vegetation strategies must be employed when areas prone to dust generation, soil erosion and weed incursion cannot be permanently rehabilitated.	Compliant	Evidence of some progressive rehabilitation. However the site is still in its infancy therefore minimal has been completed. The mine plan is designed to minimise disturbance areas.	As per rehabilitation and erosion and sediment control recommendations.
55A	The Applicant must implement all reasonable and feasible measures to provide for the interim stabilisation and temporary vegetation of the existing rail loop and infrastructure corridor, as soon as reasonably practicable following the removal of infrastructure as required under condition 37.	Compliant	This area was viewed in the field. It should be noted that it is likely that much of the rail loop and infrastructure corridor will be removed in the next 2 years.	
Notes:	The Applicant's obligations under this condition will cease following the transfer or grant of a mining lease over that part of ML 1645 south of Wybong Road to the operator of Bengalla mine (or its nominee).			
<b>Rehabilitation Management Plan</b>				
56	<p>By the end of April 2019, unless otherwise agreed by the Secretary, the Applicant must prepare a Rehabilitation Management Plan for the development to the satisfaction of DRG. This plan must:</p> <ul style="list-style-type: none"> <li>(a) be prepared by a suitably qualified and experienced person/s whose appointment has been endorsed by the Secretary;</li> <li>(b) be prepared in consultation with the Department, DoI Water, OEI, DPI, and Council;</li> <li>(c) be prepared in accordance with any relevant DRG Guideline;</li> <li>(d) describe how the rehabilitation of the site would achieve the objectives identified in Table 11 and the outcomes described in the Rehabilitation Strategy referred to in condition 54;</li> <li>(e) include a detailed plan for the reinstatement and review of the proposed: <ul style="list-style-type: none"> <li>agricultural land capability of grassland areas in the final landform, including a protocol for periodic trials to demonstrate that the land capability is being achieved; and</li> <li>rehabilitated woodland areas and fauna habitat, including a protocol for periodic trials to demonstrate that the target vegetation community is being achieved;</li> </ul> </li> <li>(f) include detailed performance and completion criteria for evaluating the performance of the rehabilitation of the site, and for triggering remedial action (if necessary);</li> <li>(g) describe the measures to be implemented to ensure compliance with the relevant conditions of this consent, and address all aspects of rehabilitation including mine closure, final landform (including final voids), final land use/s and water management in the final landform;</li> <li>(h) include procedures for the use of interim stabilisation and temporary vegetation strategies, where reasonable to minimise the area exposed for dust generation;</li> <li>(i) include a program to monitor, independently audit and report on the effectiveness of the measures in condition 56(g), and progress against the detailed performance and completion criteria in condition 56(f);</li> <li>(j) to the maximum extent practicable build on and integrate with the other management plans required under this consent; and</li> <li>(k) include detailed scheduling for progressive rehabilitation to be initiated, undertaken and/or completed over the next three years.</li> </ul>	Observation	<p>Preparation:</p> <p>Evidence of three MOP's during the Audit period. Each MOP covered a one year period.</p> <p>Approval letter from the RR is dated 28 June 2019. Approval letter states the MOP/RMP was submitted to the RR on 4 June 2019. This is after the date of end of April outlined in the consent condition. However evidence provided of consultation with the RR during this period.</p> <ul style="list-style-type: none"> <li>a) and b)</li> </ul> <p>Section 1.3 of the MOP/RMP states:</p> <p>As required by Condition 56, Schedule 3 of Development Consent DA 92/97, a draft version of this MOP/RMP was submitted to the DPE, Department of Industry – Water (DoI Water), Office of Environment and Heritage (OEI), Department of Primary Industries (DPI) and the Muswellbrook Shire Council (MSC) for the purpose of consultation. No dates provided.</p> <p>The MOP/RMP was prepared on behalf of MACH Energy by Dr David Freudenberger (whose appointment has been approved by the DPE [letter dated 18/09/18] as a 'suitably qualified and experienced person'), to satisfy the requirements under Condition 56, Schedule 3 of Development Consent DA 92/97.</p> <ul style="list-style-type: none"> <li>c) MOP Guideline was used for the project;</li> <li>d) Covered in several sections;</li> <li>e) Sections 6-8;</li> <li>f) Section 6;</li> <li>g) Void management covered in several sections;</li> <li>h) Section 2.11;</li> <li>i) Sections 8, 11 and 12;</li> <li>j) Section 3 and 7.2.1;</li> <li>k) Section 7.2 and MOP Plans.</li> </ul> <p>Note, See Schedule 3 Condition 54 which outlines the difference in figures between the MOP and Rehabilitation Strategy. SLR has not labelled this condition compliant as we are not aware of which figures (Rehabilitation Strategy or MOP/RMP are correct).</p>	

**Development Consent (DA 92/97)**

Condition Number	Condition	Compliance Status	Evidence	Recommended Action
	The Applicant must implement the management plan as approved by DRG.		<p><u>Implementation:</u> See Section 5.1 of the main report for further details.</p> <p>Evidence of some rehabilitation areas with rill erosion and some gully erosion. This has been noted and will be reshaped by Thiess in the near future. Designs are being finalised. Evidence of areas that have been recently shaped and rehabilitated using a geomorphology design system. These looked to be well shaped landforms and ripped well on the horizontal to reduce erosion potential. Initial cover crop is coming through and most of the area has held up well in the recent rainfall.</p> <p>The area below the fines emplacement area is a natural spring according to discussions with MACH Energy. Area is reviewed as part of inspections. There are some signs of erosion in the area.</p>	

**SCHEDULE 4 ADDITIONAL PROCEDURES**

**Notification of Landowners**

1	<p>By the end of December 2011, the Applicant must:</p> <ul style="list-style-type: none"> <li>(a) notify in writing the owners of: <ul style="list-style-type: none"> <li>the land listed in Table 1 of Schedule 3 that they have the right to require the Applicant to acquire their land at any stage of the development;</li> <li>any residence on the noise-affected land in Table 1 or Table 2 of Schedule 3 that they are entitled to ask for additional noise mitigation measures to be installed at their residence at any stage of the development;</li> <li>any residences on the air quality-affected land listed in Table 1 that they are entitled to ask for additional air quality mitigation measures to be installed at their residence at any stage of the development;</li> <li>any privately-owned land within 2 kilometres of the approved open cut mining pit on the site that they are entitled to ask for an inspection to establish the baseline condition of any buildings and/or structures on their land, or to have a previous property inspection updated; and</li> </ul> </li> <li>(b) send a copy of the NSW Health fact sheet entitled "Mine Dust and You" (as may be updated from time to time) to the owners and/or existing tenants of any land (including mine-owned land) where the predictions in the documents listed in condition 2(a) of Schedule 2 identify that dust emissions generated by the development are likely to be greater than the relevant air quality criteria in Schedule 3 at any time during the life of the development.</li> </ul> <p>Within one month of any modification that leads to new land being added to Tables 1 or 2 of Schedule 3, the Applicant must notify affected land owners in accordance with the requirements of paragraph (a).</p>	Not Triggered	Historical condition. Well outside this audit period.	
1A	<p>Prior to entering into any tenancy agreement for any land owned by the Applicant that is predicted to experience exceedances of the recommended dust and/or noise criteria, the Applicant must:</p> <ul style="list-style-type: none"> <li>(a) advise the prospective tenants of the potential health and amenity impacts associated with living on the land, and give them a copy of the NSW Health fact sheet entitled "Mine Dust and You" (as may be updated from time to time); and</li> <li>(b) advise the prospective tenants of the rights they would have under this consent, to the satisfaction of the Secretary.</li> </ul>	Compliant	Section in the residential agreement for the 'right to mine'. Acknowledgement of potential mining impacts.	
2	<p>As soon as practicable after obtaining monitoring results showing:</p> <ul style="list-style-type: none"> <li>(a) exceedance of the relevant criteria in Schedule 3, the Applicant must notify the affected landowner and tenants in writing of the exceedance, and provide regular monitoring results to each of these parties until the development is complying with the relevant criteria again; and/or</li> <li>(b) an exceedance of the relevant criteria of Schedule 3, the Applicant must send a copy of the NSW Health fact sheet entitled "Mine Dust and You" (as may be updated from time to time) to the affected landowners and/or existing tenants of the land (including the tenants of any mine-owned land).</li> </ul>	Compliant	Section in the residential agreement for the 'right to mine'. Acknowledgement of potential mining impacts.	

**Independent Review**

3	<p>If an owner of privately-owned land considers the development to be exceeding the criteria in Schedule 3, then he/she may ask the Secretary in writing for an independent review of the impacts of the development on his/her land.</p> <p>If the Secretary is not satisfied that an independent review is warranted, the Secretary will notify the landowner in writing of that decision, and the reasons for that decision, within 21 days of the request for a review.</p> <p>If the Secretary is satisfied that an independent review is warranted, then within 2 months of the Secretary's decision, the Applicant must:</p> <ul style="list-style-type: none"> <li>(a) commission a suitably qualified, experienced and independent expert, whose appointment has been approved by the Secretary, to: <ul style="list-style-type: none"> <li>consult with the landowner to determine his/her concerns;</li> <li>conduct monitoring to determine whether the development is complying with the relevant criteria; and</li> <li>if the development is not complying with these criteria then: <ul style="list-style-type: none"> <li>determine if more than one mine is responsible for the exceedance, and if so the relative share of each mine towards the impact on the land;</li> <li>identify the measures that could be implemented to ensure compliance with the relevant criteria; and</li> </ul> </li> </ul> </li> <li>(b) give the Secretary and landowner a copy of the independent review.</li> </ul>	Compliant	<p>An independent review on air quality has been triggered, and MACH Energy is working with the DPIE in this regards. Investigations are ongoing.</p> <p>Based on consultation with DPIE this is only for air quality.</p> <p>Independent specialists have been engaged.</p>	
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**Land Acquisition**

6	<p>Within 3 months of receiving a written request from a landowner with acquisition rights, the Applicant must make a binding written offer to the landowner based on:</p> <ul style="list-style-type: none"> <li>(a) the current market value of the landowner's interest in the land at the date of this written request, as if the land was unaffected by the development, having regard to the: <ul style="list-style-type: none"> <li>existing and permissible use of the land, in accordance with the applicable planning instruments at the date of the written request; and</li> <li>presence of improvements on the land and/or any approved building or structure which has been physically commenced at the date of the landowner's written request, and is due to be completed subsequent to that date, but excluding any improvements that have resulted from the implementation of the additional mitigation measures required under condition 2 of Schedule 3;</li> </ul> </li> <li>(b) the reasonable costs associated with: <ul style="list-style-type: none"> <li>relocating within the Muswellbrook, Singleton or Scone local government area, or to any other local government area determined by the Secretary; and</li> <li>obtaining legal advice and expert advice for determining the acquisition price of the land, and the terms upon which it is to be acquired; and</li> <li>reasonable compensation for any disturbance caused by the land acquisition process.</li> </ul> </li> </ul> <p>However, if at the end of this period, the Applicant and landowner cannot agree on the acquisition price of the land and/or the terms upon which the land is to be acquired, then either party may refer the matter to the Secretary for resolution.</p> <p>Upon receiving such a request, the Secretary shall request the President of the NSW Division of the Australian Property Institute to appoint a qualified independent valuer to:</p> <ul style="list-style-type: none"> <li>consider submissions from both parties;</li> <li>determine a fair and reasonable acquisition price for the land and/or the terms upon which the land is to be acquired, having regard to the matters referred to in paragraphs (a)-(c) above;</li> <li>prepare a detailed report setting out the reasons for any determination; and</li> <li>provide a copy of the report to both parties.</li> </ul> <p>Within 14 days of receiving the independent valuer's report, the Applicant must make a binding written offer to the landowner to purchase the land at a price not less than the independent valuer's determination.</p>	Compliant	<p>There was only one property where this occurred. For other properties the site has completed the 'without prejudice discussions' which do not trigger this condition.</p> <p>For this property the procedure appeared to have followed the process of a)-c).</p>	
	<p>However, if either party disputes the independent valuer's determination, then within 14 days of receiving the independent valuer's report, they may refer the matter to the Secretary for review. Any request for a review must be accompanied by a detailed report setting out the reasons why the party disputes the independent valuer's determination. Following consultation with the independent valuer and both parties, the Secretary will determine a fair and reasonable acquisition price for the land, having regard to the matters referred to in paragraphs (a)-(c) above, the independent valuer's report, the detailed report of the party that disputes the independent valuer's determination and any other relevant submissions.</p> <p>Within 14 days of this determination, the Applicant must make a binding written offer to the landowner to purchase the land at a price not less than the Secretary's determination.</p> <p>If the landowner refuses to accept the Applicant's binding written offer under this condition within 6 months of the offer being made, then the Applicant's obligations to acquire the land shall cease, unless the Secretary determines otherwise.</p>			
7	The Applicant must pay all reasonable costs associated with the land acquisition process described in condition 6 above, including the costs associated with obtaining Council approval for any plan of subdivision (where permissible), and registration of this plan at the Office of the Registrar-General.	Compliant	Evidence provided of the entire process including the purchase.	

**SCHEDULE 5 ENVIRONMENTAL MANAGEMENT, REPORTING AND AUDITING**

**ENVIRONMENTAL MANAGEMENT**

## Development Consent (DA 92/97)

Condition Number	Condition	Compliance Status	Evidence	Recommended Action
<b>Environmental Management Strategy</b>				
1	<p>If the Secretary requires, the Applicant must prepare an Environmental Management Strategy for the development to the satisfaction of the Secretary. This strategy must:</p> <ul style="list-style-type: none"> <li>(a) be submitted to the Secretary for approval prior to carrying out any development on site;</li> <li>(b) provide the strategic framework for environmental management of the development;</li> <li>(c) identify the statutory approvals that apply to the development;</li> <li>(d) describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the development;</li> <li>(e) describe the procedures that would be implemented to: <ul style="list-style-type: none"> <li>- keep the local community and relevant agencies informed about the operation and environmental performance of the development;</li> <li>- receive, handle, respond to, and record complaints;</li> <li>- resolve any disputes that may arise during the course of the development;</li> <li>- respond to any non-compliance;</li> <li>- respond to emergencies; and</li> </ul> </li> <li>(f) include: <ul style="list-style-type: none"> <li>- copies of any strategies, plans and programs approved under the conditions of this consent; and</li> <li>- a clear plan depicting all the monitoring to be carried out in relation to the development.</li> </ul> </li> </ul> <p>The Applicant must implement the approved strategy as approved from time to time by the Secretary.</p>	Compliant	<p><b>Preparation:</b></p> <ul style="list-style-type: none"> <li>a) Date prior to this audit. DPIE have approved the most recent EMS on 14.01.2019.</li> <li>b) Covered in general document layout. Section 3 and 4;</li> <li>c) Section 4;</li> <li>d) Section 5.1;</li> <li>e) Procedures in Section 5 and 6;</li> <li>f) EMP's attached separately. Figure 4 outlines monitoring locations</li> </ul> <p><b>Implementation:</b></p> <ul style="list-style-type: none"> <li>- Evidence of complaints log on website;</li> <li>- Evidence of incident management system and reporting. Incident reporting for blast over 120dBA which turned out to be not a compliance issue.</li> <li>- Evidence of environmental compliance database which tracks consent conditions.</li> </ul>	
<b>Adaptive Management</b>				
1A	<p>The Applicant must assess and manage development-related risks to ensure that there are no exceedances of the criteria and/or performance measures in Schedule 3. Any exceedance of these criteria and/or performance measures constitutes a breach of this consent and may be subject to penalty or offence provisions under the EP&amp;A Act or EP&amp;A Regulation.</p> <p>Where any exceedance of these criteria and/or performance measures has occurred, the Applicant must, at the earliest opportunity:</p> <ul style="list-style-type: none"> <li>(a) take all reasonable and feasible steps to ensure that the exceedance ceases and does not recur;</li> <li>(b) consider all reasonable and feasible options for remediation (where relevant) and submit a report to the Department describing those options and any preferred remediation measures or other course of action; and</li> <li>(c) implement remediation measures as directed by the Secretary, to the satisfaction of the Secretary.</li> </ul>	Compliant	The 2017 -2019 Annual Reviews outline dust. There were no annual exceedances in dust in the 2018 Annual Review documents that weren't covered by extraordinary events or evidence of justification by MACH Energy/air quality specialist. There are numerous recommendations about dust covered previously.	
<b>Management Plan Requirements</b>				
2	<p>The Applicant must ensure that the management plans required under this consent are prepared in accordance with any relevant guidelines, and include:</p> <ul style="list-style-type: none"> <li>(a) detailed baseline data;</li> <li>(b) a description of: <ul style="list-style-type: none"> <li>- the relevant statutory requirements (including any relevant consent, licence or lease conditions);</li> <li>- any relevant limits or performance measures/criteria;</li> <li>- the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the development or any management measures;</li> </ul> </li> <li>(c) a description of the measures that would be implemented to comply with the relevant statutory requirements, limits, or performance measures/criteria;</li> <li>(d) a program to monitor and report on the: <ul style="list-style-type: none"> <li>- impacts and environmental performance of the development;</li> <li>- effectiveness of any management measures (see c above);</li> </ul> </li> <li>(e) a contingency plan to manage any unpredicted impacts and their consequences;</li> <li>(f) a program to investigate and implement ways to improve the environmental performance of the development over time;</li> <li>(g) a protocol for managing and reporting any: <ul style="list-style-type: none"> <li>- incidents;</li> <li>- complaints;</li> <li>- non-compliances with statutory requirements; and</li> <li>- exceedances of the impact assessment criteria and/or performance criteria; and</li> </ul> </li> <li>(h) a protocol for periodic review of the plan.</li> </ul> <p><i>Notes:</i> The Secretary may waive some of these requirements if they are unnecessary or unwarranted for particular management plans.</p>	Compliant	<p><b>Preparation:</b> Management Plans for the sites have been prepared to meet the 'All Management Plan' requirements. These are covered in various sections of the management plans.</p> <p><b>Implementation:</b> Covered under specific management plans.</p>	<p>REC: When management plan updates are required in the future consider creating a table system for mitigation measures with separate columns for:</p> <ul style="list-style-type: none"> <li>- Mitigation ID;</li> <li>- Mitigation Measure;</li> <li>- Reference document;</li> <li>- When required;</li> <li>- Responsibility.</li> </ul> <p>Based on discussions with site a staged approach is recommended.</p>
<b>Annual Review</b>				
3	<p>By the end of March each year (or other such timing as agreed by the Secretary), the Applicant must submit a report to the Department reviewing the environmental performance of the development to the satisfaction of the Secretary. This review must:</p> <ul style="list-style-type: none"> <li>(a) describe the development (including any rehabilitation) that was carried out in the past calendar year, and the development that is proposed to be carried out over the next calendar year;</li> <li>(b) include a comprehensive review of the monitoring results and complaints records of the development over the past calendar year, which includes a comparison of these results against the: <ul style="list-style-type: none"> <li>- relevant statutory requirements, limits or performance measures/criteria;</li> <li>- monitoring results of previous years; and</li> <li>- relevant predictions in the documents listed in condition 2(a) of Schedule 2;</li> </ul> </li> <li>(c) identify any non-compliance over the last year, and describe what actions were (or are being) taken to ensure compliance;</li> <li>(d) identify any trends in the monitoring data over the life of the development;</li> <li>(e) identify any discrepancies between the predicted and actual impacts of the development, and analyse the potential cause of any significant discrepancies; and</li> <li>(f) describe what measures will be implemented over the next year to improve the environmental performance of the development</li> </ul>	Compliant	<p>Evidence of 2017, 2018 and 2019 Annual Reviews.</p> <ul style="list-style-type: none"> <li>a) Covered in Section 3-8;</li> <li>b) Covered in Section 5 and 6;</li> <li>c) Section 1 and 10;</li> <li>d) Section 5 -7. The trend analysis has improved over the past three Annual Reviews. There has been a recommendation regarding some more specialist input, with trends to likely be discussed further during that report;</li> <li>e) Section 5-7;</li> <li>f) Section 11;</li> </ul>	<p><u>As per Schedule 3 Condition 5 recommendation.</u></p> <p>REC: It is recommended that an appendix is prepared to the Annual Review that summarises noise performance including:</p> <ul style="list-style-type: none"> <li>- date of monitoring;</li> <li>- compliance against NAG's noise criteria, including a table/tables that summarises actual noise levels during monitoring events; and</li> <li>- compliance against cumulative criteria.</li> </ul> <p><u>As per Schedule 3 Condition 22 and 23 recommendation.</u></p> <p>REC: It is recommended that an air quality expert be engaged to review exceedances of ambient air quality criteria where the exceedances are not due to exceptional events (as classified by the NSW DPIE) or invalid data. A summary report would also be included in the Annual Review.</p>
<b>Revision of Strategies, Plans and Programs</b>				
4	<p>Within 3 months of:</p> <ul style="list-style-type: none"> <li>(a) the submission of an annual review under condition 3 above;</li> <li>(b) the submission of an incident report under condition 7 below;</li> <li>(c) the submission of an audit under condition 9 below; and</li> <li>(d) any modification to the conditions of this consent,</li> </ul> <p>the Applicant must review, and if necessary revise, the strategies, plans, and programs required under this consent to the satisfaction of the Secretary.</p> <p>Within 4 weeks of conducting any such review, the Applicant must advise the Secretary of the outcomes of the review, and submit any revised documents for the approval of the Secretary.</p>	Compliant	<p>MOD 3 - Approved 24 August 2018.</p> <p>MOD 4 - Approved 16 November 2018.</p> <p>MACH Energy continues to review Mount Pleasant Operation Environmental Management Plans periodically in accordance with Schedule 5, Condition 4 of Development Consent DA 92/97.</p> <p>However, often when an Environmental Management Plan is reviewed the outcome is that no changes to the Plan are required.</p> <p>While the Annual Review &amp; Annual Rehabilitation Report may include a note as to Environmental Management Plans that are intended to be updated in the next Annual Review period, Schedule 5, Condition 4 allows up to 3 months following submission of the Annual Review to review all Environmental Management Plans, including in response to regulatory comments that may be received on the Annual Review itself. Therefore SLR is satisfied that reviews are at least being completed annually.</p> <p>Communications regarding the review and update of the EMPs were undertaken with the Department, including advising the outcomes of EMP reviews. It is also noted that the time between the submission of revised management plans for DPIE review, and their ultimate approval is dependent on DPIE administrative priorities at the time, and any supplementary queries that the DPIE may raise.</p>	<p>REC: Update wording in the Annual Review to outline which management plans require updating and which management plans do not require updating.</p>
<i>Notes:</i> The purpose of this condition is to ensure that strategies, plans and programs are regularly updated to incorporate any measures recommended to improve environmental performance of the project. In the event of an inconsistency between condition 4(d) above and any condition in Schedule 3 of this consent, the latter prevails.				
<b>Updating &amp; Staging Strategies, Plans or Programs</b>				
4A	<p>The Applicant may at any time submit revised strategies, plans or programs for the approval of the Secretary. With the agreement of the Secretary, the Applicant may also submit any strategy, plan or program required by this consent on a staged basis.</p> <p>With the agreement of the Secretary, the Applicant may prepare a revision or stage of any strategy, plan or program required under this consent without undertaking consultation with all parties nominated under the applicable condition in this consent.</p>	Compliant	Noted. The management plans have been regularly updated during the life of the operations.	
<i>Notes:</i> While any strategy, plan or program may be submitted on a staged basis, the Applicant must ensure that the existing operations on site are covered by suitable strategies, plans or programs at all times. If the submission of any strategy, plan or program is to be staged, then the relevant strategy, plan or program must clearly describe the specific stage to which the strategy, plan or program applies, the relationship of this stage to any future stages, and the trigger for updating the strategy, plan or program.				
<b>Management of Cumulative Impacts</b>				



### Development Consent (DA 92/97)

Condition Number	Condition	Compliance Status	Evidence	Recommended Action
5	<p>In conjunction with the owners of the nearby mines (including the Bengalla mine), the Applicant must use its best endeavours to minimise the cumulative impacts of the development on the surrounding area to the satisfaction of the Secretary.</p> <p>Note: Nothing in this consent is to be construed as requiring the Applicant to act in a manner which is contrary to the Trade Practices Act 1974.</p>	Compliant	<p>Evidence of cumulative management through meetings with Bengalla and Mt Arthur. Quarterly cumulative meetings.</p> <p>General manager meetings occur quarterly.</p> <p>Key monitoring programs include cumulative monitoring and management.</p> <p>There is some data sharing when required. There are some air quality monitors located on Bengalla land and also Bengalla monitors on MACH Energy land. However these are not common monitoring locations.</p> <p>Evidence of sharing of meteorological monitoring system.</p> <p>For a blast investigation MACH Energy used data from the racecourse road monitor (owned by Bengalla).</p>	
<b>Community Consultative Committee</b>				
6	<p>The Applicant must operate a Community Consultative Committee (CCC) for the development to the satisfaction of the Secretary. This CCC must be operated in general accordance with the Department's Community Consultative Committee Guidelines State Significant Projects November 2016, or its latest version.</p> <p>Note: The CCC is an advisory committee. The Department and other relevant agencies are responsible for ensuring that the Applicant complies with this consent.</p>	Compliant	<p>Evidence of CCC minutes on the website. CCC appears to have met the DPIE requirements.</p>	
<b>Incident Notification</b>				
7	<p>The Applicant must immediately notify the Department and any other relevant agencies immediately after it becomes aware of an incident. The notification must be in writing to <a href="mailto:compliance@planning.nsw.gov.au">compliance@planning.nsw.gov.au</a> and identify the development (including the development application number and name) and set out the location and nature of the incident.</p>	Compliant	<p>No reportable incidents defined as an 'incident' under the Development Consent condition. None reported in Annual Reviews.</p>	
<b>Non-Compliance Notification</b>				
7A	<p>Within seven days of becoming aware of a non-compliance, the Applicant must notify the Department of the non-compliance. The notification must be in writing to <a href="mailto:compliance@planning.nsw.gov.au">compliance@planning.nsw.gov.au</a> and identify the development (including the development application number and name), set out the condition of this consent that the development is non-compliant with, the way in which it does not comply and the reasons for the non-compliance (if known) and what actions have been, or will be, undertaken to address the non-compliance.</p>	Compliant	<p>Evidence of email from 2019 to DPIE stating the site may be non compliant with the PM10 2019 annual average.</p> <p>Potential blast exceedance notified within seven days. Following a study and detailed consultation with the DPIE concluded in a letter dated 7 February 2020 that 'the Department has determined that the blast did not cause exceedances of blasting criteria at any residence on privately owned land and therefore MACH Energy did not breach Schedule 3 Condition 10 of the Consent'.</p> <p>Based on site discussions and review of data there has been no non-compliances relating to criteria of this consent.</p>	
<b>Notes:</b> A non-compliance which has been notified as an incident does not need to also be notified as a non-compliance.				
<b>Monitoring and Environmental Audits</b>				
7B	<p>Any condition of this consent that requires the carrying out of monitoring or an environmental audit, whether directly or by way of a plan, strategy or program, is taken to be a condition requiring monitoring or an environmental audit under Division 9.4 of Part 9 of the EP&amp;A Act. This includes conditions in respect of incident notification, reporting and response, non-compliance notification, compliance report and independent audit.</p>	Note	Noted	
<b>Notes:</b> For the purposes of this condition, as set out in the EP&A Act, "monitoring" is monitoring of the development to provide data on compliance with the consent or on the environmental impact of the development, and an "environmental audit" is a periodic or particular documented evaluation of the development to provide information on compliance with the consent or the environmental management or impact of the development.				
<b>Regular Reporting</b>				
8	<p>The Applicant must provide regular reporting on the environmental performance of the development on its website, in accordance with the reporting arrangements in any plans or programs approved under the conditions of this consent, and to the satisfaction of the Secretary.</p>	Compliant	<p>Monthly reporting is provided on the website. Also Annual Reviews are provided.</p>	
<b>INDEPENDENT ENVIRONMENTAL AUDIT</b>				
9	<p>By the end of March 2014, and every 3 years thereafter, unless the Secretary directs otherwise, the Applicant must commission, commence and pay the full cost of an Independent Environmental Audit of the development. This audit must:</p> <ol style="list-style-type: none"><li>be conducted by a suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Secretary;</li><li>include consultation with the relevant agencies and the CCC;</li><li>assess the environmental performance of the development and whether it is complying with the requirements in this consent and any relevant EPL or Mining Lease or necessary water licences (including any assessment, plan or program required under these approvals);</li><li>review the adequacy of strategies, plans or programs required under the abovementioned approvals (including whether the development has met or is trending towards the progressive performance and completion criteria detailed in these strategies, plans or programs);</li><li>if necessary, recommend appropriate measures or actions to improve the environmental performance of the development, and/or any strategy, plan or program required under the abovementioned approvals; and</li><li>be conducted and reported to the satisfaction of the Secretary.</li></ol>	Compliant	<p><b>Previous IEA:</b></p> <ol style="list-style-type: none"><li>Previous site component of the audit was completed in December 2017. According to the previous audit report the audit period was from 1 January 2014 to the 25 November 2017. The timing was delayed due to the original construction timing. A letter was provided to Mount Pleasant on 6 January 2014 by DPIE outlining the delay in the first audit.</li><li>Evidence of consultation in Section 2.2;</li><li>Assessed throughout;</li><li>Assessed throughout;</li><li>Section 3 and 4; and</li><li>The audit report was first submitted to DPIE on 27 February 2018. Evidence of resubmission on 18 May 2018.</li></ol> <p>Status of actions from the previous Audit are provided in the Annual Review. These are tracked.</p> <p><b>This IEA:</b> SLR believe we have completed the audit to meet a-f requirements. This audit covers 25 November 2017 to 27 February 2020.</p>	
<b>Notes:</b> This audit team must be led by a suitably qualified auditor and include experts in any fields specified by the Secretary.				
10	<p>Within 12 weeks of commencing any audit, or as otherwise agreed by the Secretary, the Applicant must submit a copy of the audit report to the Secretary and any other NSW Government agency that requests it, together with its response to any recommendations contained in the audit report and a timetable for the implementation of these recommendations, as required. The Applicant must implement the audit report recommendations, to the satisfaction of the Secretary.</p>	Compliant	<p>The previous audit site inspection was on 5 December 2017, with the audit report first submitted to DPIE on 27 February 2018.</p>	
<b>ACCESS TO INFORMATION</b>				
11	<p>The Applicant must:</p> <ol style="list-style-type: none"><li>make the following information publicly available on its website:<ul style="list-style-type: none"><li>the documents listed in condition 2(a) of Schedule 2;</li><li>all current statutory approvals for the development;</li><li>approved strategies, plans and programs required under the conditions of this consent;</li><li>a comprehensive summary of the monitoring results of the development, which have been reported in accordance with the various plans and programs approved under the conditions of this consent;</li><li>a complaints register, which is to be updated on a monthly basis;</li><li>minutes of CCC meetings;</li><li>the annual reviews (over the last 5 years);</li><li>any independent environmental audit, and the Applicant's response to the recommendations in any audit;</li><li>any other matter required by the Secretary; and</li></ul></li><li>keep this information up to date, to the satisfaction of the Secretary.</li></ol>	Compliant	<p>Based on a review on 5 March 2020, all this information is available on the website.</p>	

# EPL 20850

Condition Number	Condition	Compliance Status	Evidence	Recommended Action																
<b>1. Administrative Conditions</b>																				
<b>A1 What the licence authorises and regulates</b>																				
A1.1	This licence authorises the carrying out of the scheduled activities listed below at the premises specified in A2. The activities are listed according to their scheduled activity classification, fee-based activity classification and the scale of the operation.  Unless otherwise further restricted by a condition of this licence, the scale at which the activity is carried out must not exceed the maximum scale specified in this condition.	Note																		
	<table border="1"> <thead> <tr> <th>Scheduled Activity</th> <th>Fee Based Activity</th> <th>Scale</th> </tr> </thead> <tbody> <tr> <td>Coal works</td> <td>Coal works</td> <td>&gt; 5000000 T annual handling capacity</td> </tr> <tr> <td>Mining for coal</td> <td>Mining for coal</td> <td>&gt; 5000000 T annual production capacity</td> </tr> </tbody> </table>	Scheduled Activity	Fee Based Activity	Scale	Coal works	Coal works	> 5000000 T annual handling capacity	Mining for coal	Mining for coal	> 5000000 T annual production capacity		Site inspection and 2017/2018 and 2018/2019 Annual Returns indicate that these activities were undertaken at the site.								
Scheduled Activity	Fee Based Activity	Scale																		
Coal works	Coal works	> 5000000 T annual handling capacity																		
Mining for coal	Mining for coal	> 5000000 T annual production capacity																		
A2	Premises or plant to which this licence applies																			
A2.1	The licence applies to the following premises:																			
	<table border="1"> <thead> <tr> <th>Premises Details</th> </tr> </thead> <tbody> <tr> <td>MOUNT PLEASANT OPERATION 1100 WYBONG ROAD MUSWELLBROOK NSW 2333</td> </tr> <tr> <td>AREA IDENTIFIED AS 'MACH ENERGY AUSTRALIA, MT PLEASANT PROJECT, ENVIRONMENT PROTECTION LICENCE PREMISES MAP' DATED 08/02/2018 AND SHAPE FILES, AS CONTAINED IN EPA REFERENCE DOC18/74684. THIS LICENCE DOES NOT APPLY TO, OR INCLUDE, PUBLIC ROADS.</td> </tr> </tbody> </table>	Premises Details	MOUNT PLEASANT OPERATION 1100 WYBONG ROAD MUSWELLBROOK NSW 2333	AREA IDENTIFIED AS 'MACH ENERGY AUSTRALIA, MT PLEASANT PROJECT, ENVIRONMENT PROTECTION LICENCE PREMISES MAP' DATED 08/02/2018 AND SHAPE FILES, AS CONTAINED IN EPA REFERENCE DOC18/74684. THIS LICENCE DOES NOT APPLY TO, OR INCLUDE, PUBLIC ROADS.	Note															
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A3	Other activities																			
A3.1	This licence applies to all other activities carried on at the premises, including:																			
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Ancillary Activity																				
Coal Works																				
Land-based extractive activity																				
sewage treatment plant																				
A4	Information supplied to the EPA																			
A4.1	Works and activities must be carried out in accordance with the proposal contained in the licence application, except as expressly provided by a condition of this licence.  In this condition the reference to "the licence application" includes a reference to: a) the applications for any licences (including former pollution control approvals) which this licence replaces under the Protection of the Environment Operations (Savings and Transitional) Regulation 1998; and b) the licence information form provided by the licensee to the EPA to assist the EPA in connection with the issuing of this licence.	Note	No reason to determine non-compliance.																	
<b>2. Discharges to Air and Water and Applications to Land</b>																				
<b>P1 Location of monitoring/discharge points and areas</b>																				
P1.1	The following points referred to in the table below are identified in this licence for the purposes of monitoring and/or the setting of limits for the emission of pollutants to the air from the point.																			
	<table border="1"> <thead> <tr> <th colspan="4">Air</th> </tr> <tr> <th>EPA identification no.</th> <th>Type of Monitoring Point</th> <th>Type of Discharge Point</th> <th>Location Description</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Particulate Monitoring (PM10 network)</td> <td></td> <td>Air Quality - TEOM Particulate Monitor located in the South-Eastern of the premises and labelled 'A-PF2' on plan titled MACHEnergy - Environment Project Licence Premises Map, dated 08/02/2018 (EPA reference DOC18/74684), Easting 299575, Northing 8428744</td> </tr> <tr> <td>2</td> <td>Particulate Monitoring (PM10 network)</td> <td></td> <td>Air Quality - TEOM Particulate Monitor located in the North-Northwest corner of the premises and labelled 'A-PF5' on plan titled MACHEnergy Mount Pleasant Operations - Environmental Monitoring Sites, provided to the EPA on 8 November 2018 (DOC18/588131)</td> </tr> </tbody> </table>	Air				EPA identification no.	Type of Monitoring Point	Type of Discharge Point	Location Description	1	Particulate Monitoring (PM10 network)		Air Quality - TEOM Particulate Monitor located in the South-Eastern of the premises and labelled 'A-PF2' on plan titled MACHEnergy - Environment Project Licence Premises Map, dated 08/02/2018 (EPA reference DOC18/74684), Easting 299575, Northing 8428744	2	Particulate Monitoring (PM10 network)		Air Quality - TEOM Particulate Monitor located in the North-Northwest corner of the premises and labelled 'A-PF5' on plan titled MACHEnergy Mount Pleasant Operations - Environmental Monitoring Sites, provided to the EPA on 8 November 2018 (DOC18/588131)	Compliant	* Air quality monitoring sites (A-PF22 and A-PF5) are included on Figure 2 of the Air Quality Management Plan (AQMP). Evidence of monitoring results.	
Air																				
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P1.2	The following utilisation areas referred to in the table below are identified in this licence for the purposes of the monitoring and/or the setting of limits for any application of solids or liquids to the utilisation area.	Note	Noted																	
P1.3	The following points referred to in the table below are identified in this licence for the purposes of weather and/or noise monitoring and/or setting limits for the emission of noise from the premises.																			

# EPL 20850

Condition Number	Condition	Compliance Status	Evidence	Recommended Action																														
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3	Air blast overpressure & ground vibration peak particle velocity monitoring	Blast Monitor - location labelled "B-VOC" as shown on plan filed MACH Energy Mount Pleasant Operations. Environmental Sites, provided to the EPA on 8 November 2018. (DOC16588131)																																
4	Meteorological Station	Meteorological Monitoring - location labelled "M-WS4" as shown on plan filed MACH Energy Mount Pleasant Operations. Environmental Sites, provided to the EPA on 8 November 2018. (DOC16588131)																																
5	Noise monitoring	Attended noise monitoring - location labelled "N-AT1" on plan filed MACH Energy Mount Pleasant Operations. Environmental Monitoring Sites, provided to the EPA on 8 November 2018. (DOC16588131)																																
6	Noise monitoring	Attended noise monitoring - location labelled "N-AT2" on plan filed MACH Energy Mount Pleasant Operations. Environmental Monitoring Sites, provided to the EPA on 8 November 2018. (DOC16588131)																																
7	Noise monitoring	Attended noise monitoring - location labelled "N-AT3" on plan filed MACH Energy Mount Pleasant Operations. Environmental Monitoring Sites, provided to the EPA on 8 November 2018. (DOC16588131)																																
8	Noise monitoring	Attended noise monitoring - location labelled "N-AT4" on plan filed MACH Energy Mount Pleasant Operations. Environmental Monitoring Sites, provided to the EPA on 8 November 2018. (DOC16588131)																																
9	Noise monitoring	Attended noise monitoring - location labelled "N-AT5" on plan filed MACH Energy Mount Pleasant Operations. Environmental Monitoring Sites, provided to the EPA on 8 November 2018. (DOC16588131)																																
10	Noise monitoring	Attended noise monitoring - location labelled "N-AT6" on plan filed MACH Energy Mount Pleasant Operations. Environmental Monitoring Sites, provided to the EPA on 8 November 2018. (DOC16588131)																																
11	Meteorological Station	Meteorological Monitoring - location labelled "M-WS2" as shown on plan filed MACH Energy Mount Pleasant Operations. Air Quality and Meteorological Monitoring Sites, provided to the EPA on 4 January 2019. (Doc1652410). Easing 200705, Northing 8428784																																
<b>3.Limit Conditions</b>																																		
L1	Pollution of waters																																	
L1.1	Except as may be expressly provided in any other condition of this licence, the licensee must comply with section 120 of the Protection of the Environment Operations Act 1997.	Compliant	<p>According to the 2018 Annual Review: <i>Filling of Environmental Dam 3 caused seepage of clean water to neighbouring Bengalla Coal Mine. In May 2018, MPO were advised that seepage had been noted at Bengalla Coal Mine. MACH Energy and Bengalla Coal Mine are jointly undertaking engineering and hydrogeological reviews to determine the source of the seepage. No pollution or environmental harm.</i></p> <p>There was a detailed investigation and mitigation measures implemented. SLR has been provided no evidence of a prosecution or PIN regarding the issue. MACH Energy liaised with DPIE as part of this audit and DPIE responded to MACH Energy on 25 March 2020 stating 'there is no further action is required in regards to this matter from the development consent perspective'.</p>																															
L2	Noise Limits	--																																
L2.1	<p>Noise generated at the premises must not exceed the noise limits presented in the table below.</p> <p>Note:</p> <p>The noise limits in the table below do not apply if the licensee has a written agreement with the relevant landowner to exceed the noise limit and the licensee has advised the EPA in writing of the terms of the agreement.</p> <p>The noise limits in the table below do not apply to residences owned by the licensee or those residences that are subject to acquisition as Listed in Table 1 of the Development Consent DA 92/97 (MOD1) dated 19 September 2011.</p>		<p>Evidence of noise monitoring in Annual Reviews. Note the 2017 Annual Review states: 'Operator attended monitoring was undertaken monthly by Global Acoustics Pty Ltd from January – June 2017 and quarterly thereafter, in accordance with the NMP and EPL 20850'. The 2018 Annual Review states: 'Operator attended monitoring was undertaken quarterly by Global Acoustics Pty Ltd from January – September 2018 and monthly thereafter during day, evening and/or night periods, in accordance with the NMP and EPL 20850'.</p> <p>Also evidence of noise monitoring results on the website. Noise monitoring reports and Annual Review state there has been no exceedance of noise criteria. Monitoring at the representative noise locations (Noise Assessment Groups (NAG's). Based on site consultation, the acoustics consultancy does not inform the mine of the exact day and time of monitoring therefore this eliminates the risk of operations changing to reduce noise.</p>	<p><u>As per recommendation from Schedule 3 Condition 5 of the Development Consent.</u></p> <p>REC: The monthly reports on the website should report against how the site compared against the cumulative noise criteria.</p> <p>REC: It is recommended that an appendix is prepared to the Annual Review that summarises noise performance including:</p> <ul style="list-style-type: none"> <li>- date of monitoring;</li> <li>- compliance against NAG's noise criteria, including a table/tables that summarises actual noise levels during monitoring events; and</li> <li>- compliance against cumulative criteria.</li> </ul> <p><b>NOTE - these recommendation have been addressed in the 2020 Annual Review and Monthly Reports</b></p>																														

# EPL 20850

Condition Number	Condition	Compliance Status	Evidence	Recommended Action																																																																																																																																																																					
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L2.2	<p>For the purpose of this licence the following definitions apply.</p> <p>NAG is to be read as 'Noise Assessment Group'.</p> <p>The locations of the Noise Assessment Groups are defined in Appendix 6 of the Determination of Development Application for the Mount Pleasant Coal Mine DA92/97, as modified on 19 September 2011.</p> <p>Day is defined as the period from 7am to 6pm Monday to Saturday and 8am to 6pm Sundays and Public Holidays.</p> <p>Evening is defined as the period from 6pm to 10pm.</p> <p>Night is defined as the period from 10pm to 7am Monday to Saturday and 10pm to 8am Sundays and Public Holidays.</p>	Note	Noted. Monitoring completed by an independent noise specialist. Monitoring periods are identified in the noise monitoring reports.																																																																																																																																																																						
L2.3	<p>The noise limits set out in this licence apply under all meteorological conditions except for the following:</p> <p>a) Wind speeds greater than 3 metres/second at 10 metres above ground level; or</p> <p>b) Stability category F temperature inversion conditions and wind speeds greater than 2metres/second at 10 metres above ground level; or</p> <p>c) Stability category G temperature inversion conditions.</p> <p>For the purposes of this condition:</p> <p>i) Data recorded by the meteorological station within the licensed premises must be used to determine meteorological conditions; and</p> <p>ii) Temperature inversion conditions (stability category) are to be determined by the sigma-theta method referred to in Part E4 of Appendix E to the NSW Industrial Noise Policy.</p>	Note	Noted. Monitoring completed by an independent noise specialist. Meteorological conditions are reported in the noise monitoring reports.																																																																																																																																																																						
L2.4	<p>Determining Compliance</p> <p>To determine compliance:</p> <p>a) with the LAeq(15 minute) noise limits in this licence, the noise measurement equipment must be located:</p> <p>i) approximately on the property boundary, where any dwelling is situated 30 metres or less from the property boundary closest to the premises; or</p> <p>ii) within 30 metres of a dwelling façade, but not closer than 3m, where any dwelling on the property is situated more than 30 metres from the property boundary closest to the premises; or,</p> <p>where applicable</p> <p>iii) within approximately 50 metres of the boundary of a National Park or a Nature Reserve.</p> <p>b) with the LA1(1 minute) noise limits in this licence, the noise measurement equipment must be located within 1 metre of a dwelling façade.</p> <p>c) with the noise limits in this licence, the noise measurement equipment must be located:</p> <p>i) at the most affected point at a location where there is no dwelling at the location; or</p> <p>ii) at the most affected point within an area at a location prescribed by part (a) or part (b) of this condition.</p>	Compliant	<p>Section 1.2 of the quarterly noise monitoring reports states:</p> <p><i>Monitoring locations are selected to represent the most noise affected residence in each of the Noise Affected Groups (NAG). Suitable monitoring locations, where noise levels are likely to be higher than those measured at the residence, are chosen to take a conservative approach as the direct measurement of noise 1 metre from the dwelling facades or within 30 metres of the residence is often impractical due to access requirements, the presence of dogs, air conditioners and other noise sources at the residences.</i></p> <p>The selection of noise monitoring locations in this manner is considered an appropriate methodology to determine compliance and is in accordance with the approved NMP.</p>																																																																																																																																																																						
L2.5	Where it can be demonstrated that direct measurement of noise from the premises is impractical, the EPA may accept alternative means of determining compliance. See Chapter 11 of the NSW Industrial Noise Policy	Compliant																																																																																																																																																																							

# EPL 20850

Condition Number	Condition	Compliance Status	Evidence	Recommended Action
L2.6	A non-compliance with the noise limits specified in this licence will still occur where noise generated from the premises in excess of the appropriate limit is measured: i)at a location other than an area prescribed in part (a) and part (b) of condition L2.4; or ii)at a point other than the most affected point at a location.	Note	Noted. No noise non-compliances have been reported	
L2.7	For the purposes of determining the noise generated at the premises the modification factors in Section 4 of the NSW Industrial Noise Policy must be applied, as appropriate, to the noise levels measured by the noise monitoring equipment.	Compliant	The quarterly noise monitoring reports are prepared with consideration to appropriate modifying factors as specified in the EPA's 2017 Noise Policy for Industry (NPI). This document supersedes the INP and is considered appropriate for the assessment of modifying factors.	
L3	Blasting			
L3.1	Offensive blast fume must not be emitted from the premises.  Definition: <i>Offensive blast fume means post-blast gases from the detonation of explosives at the premises that by reason of their nature, duration, character or quality, or the time at which they are emitted, or any other circumstances:</i>  <i>1. are harmful to (or likely to be harmful to) a person that is outside the premises from which it is emitted, or</i> <i>2. interferes unreasonably with (or is likely to interfere unreasonably with) the comfort or repose of a person who is outside the premises from which it is emitted.</i>	Compliant	* Offensive blast fume not reported in 2017 or 2018 Annual Reviews. * According to the 2017, 2018 and 2019 Complaints Registers there have been blasting complaints received during the audit period (including blast fumes).  The Annual Review and complaints logs state that in regards to blast fume but follow-up investigations indicated that no blast fume left the mine during the times of complaints.  BMP states: The number of blasts classified as Level 3 or above generated annually will be used as an indicator of blasting performance at the MPO. Blast monitoring results summary sheets present the blast rating however, these are not reported in the Annual Review or the EPL monthly reports	REC: Blast fume performance should be reported in the Annual Review and EPL monthly reports
L3.2	Blasting in or on the premises must only be carried out between 0900 hours and 1700 hours, Monday to Saturday. Blasting in or on the premises must not take place on Sundays or Public Holidays without the prior approval of the EPA.	Compliant	* 2017 -2020 register indicates blasts compliant for these hours.	As per Schedule 3 Condition 11.  REC: The time of the blasts for overpressure and vibration is not recorded in the Annual Review. To be included in future Annual Reviews. NOTE - this has been addressed in the 2019 Annual Review  REC: The Annual Review and Monthly Environmental Reports should also record the day of the week that blasting occurred to verify no blasting is undertaken on a Sunday.
L3.3	The airblast overpressure level from blasting operations at the premises must not exceed 120dB (Lin Peak) at any time at any blast monitoring location specified in Condition P1.1.	Compliant	Potential blast exceedance notified within seven days. Following a study and detailed consultation with the DPIE concluded in a letter dated 7 February 2020 that the Department has determined that the blast did not cause exceedances of blasting criteria at any residence on privately owned land and therefore MACH Energy did not breach Schedule 3 Condition 10 of the Consent.  Based on site discussions and review of data there has been no non-compliances relating to criteria of this consent.	REC: Any elevated blasting levels (ie. Above 120 dBL) should be discussed in the monthly environmental reports and appropriate action detailed.
L3.4	The airblast overpressure level from blasting operations at the premises must not exceed 115dB(Lin Peak) for more than 5% of the total number of blasts during each reporting period at any blast monitoring location specified in Condition P1.1.	Compliant	As per blasting log and Annual Reviews, the site has been compliant with this condition. The 2019 period came close to the more than 5% exceedance with there being 3 blasts being over 115dBL at BV02, with these occurring across 67 blasts.	REC: Any elevated blasting levels (ie. Above 115 dBA) should be discussed in the monthly environmental reports. This does not have to be detailed but it needs to identify there could be a non-compliance based on the blast criteria.  REC: Include a cumulative assessment of the percentage of blasts >115dB year to date to ensure <5%
L3.5	Ground vibration peak particle velocity from the blasting operations at the premises must not exceed 5mm/second at any blast monitoring location specified in Condition P1.1 for more than 5% of the total number of blasts during each reporting period.	Compliant	As per blasting log and Annual Reviews, the site has been compliant with this condition.	
L3.6	Ground vibration peak particle velocity from the blasting operations at the premises must not exceed 10mm/second at any time at any blast monitoring location specified in Condition P1.1.	Compliant	As per blasting log and Annual Reviews, the site has been compliant with this condition.	
L3.7	Error margins associated with any equipment used to measure airblast overpressure and/or ground vibration peak particle velocity are not to be taken into account in determining if the airblast overpressure or ground vibration peak particle velocity limits specified in conditions L3.3 to L3.6 inclusive, have been exceeded.	Compliant	Blasting completed by experienced contractors who are registered. Evidence of calibration of monitoring equipment sighted.	
L3.8	Noise sensitive location includes any residence, hospital, school, childcare centre, theatre, place of worship, other similar building occupied by people, and any land within 30 metres of any afore-mentioned building.  A noise sensitive location excludes: a)any of the afore-mentioned buildings or land that is the subject of a private agreement between the owner of the noise sensitive site and the licensee as to an alternative airblast overpressure or ground vibration level; or b)any premises owned by the licensee.	Note	Noted	
L4	Potentially offensive odour	--		
L4.1	No condition of this licence identifies a potentially offensive odour for the purposes of Section 129 of the Protection of the Environment Operations Act 1997.	Compliant	Review of complaints log.  No odour incidents (offensive odour) according to the 2017, 2018, 2019 & 2020 incident registers.  One noise/ odour complaint from Collins Lane on 20 Feb 2020.  Preliminary assessment by the MACH Energy indicates the odour was not from MACH Energy. No reason to determine this as a non-compliance.	
Note:	Section 129 of the Protection of the Environment Operations Act 1997, provides that the licensee must not cause or permit the emission of any offensive odour from the premises but provides a defence if the emission is identified in the relevant environment protection licence as a potentially offensive odour and the odour was emitted in accordance with the conditions of a licence directed at minimising odour.	Compliant		
<b>4. Operating Conditions</b>				
O1	Activities must be carried out in a competent manner			

# EPL 20850

Condition Number	Condition	Compliance Status	Evidence	Recommended Action
O1.1	Licensed activities must be carried out in a competent manner. This includes: a)the processing, handling, movement and storage of materials and substances used to carry out the activity; and b)the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.	Non-Compliant (Low Risk)	<p>a) <u>Non-Compliant</u>: Dust issues (movement of material) identified with lack of water trucks along the haulage route on 25 March 2019 site inspection. See Section 5 of the main document for details.</p> <p>b) <u>Non-compliant</u>: Non - compliant for hydrocarbon and chemical storage.</p> <p><u>In-Pit Storage</u>:</p> <p>a) The general waste bins contained oily rags and cardboard.</p> <p>b) Oily rags were not stored in the oily rag bin. Instead, they were in bags on a pallet, with one bag open and oily rags spilling out on the ground.</p> <p>c) Small hydrocarbon spill.</p> <p><u>Workshop Area</u>:</p> <p>a) Unlabelled general waste bin.</p> <p>b) Oil drip from engine in storage area.</p> <p>c) Oil and flocculant were unbanded.</p> <p><u>Construction Offices</u>:</p> <p>a) Cardboard was in the general waste bin.</p> <p>b) Unbanded containers, oil drum and battery.</p> <p>c) Bagged contaminated soil from a diesel spill was in the storage area.</p>	<p>See Section 5.3 of the main report for dust recommendations.</p> <p>For waste as per Schedule 3 Condition 52 of the Development Consent.</p> <p><u>In - Pit Storage</u></p> <p>a) &amp; b) Ensure all waste is separated out and stored in the correct waste or recycle bin.</p> <p>c) Ensure all hydrocarbon spills are cleaned up.</p> <p><u>Workshop Area</u></p> <p>a) Ensure Remondis label all waste bins.</p> <p>b) Place oil pan under any engines/equipment stored in unbanded areas, that have the potential to drip any hydrocarbons/fluid etc.</p> <p>c) Ensure all chemicals/hydrocarbons are banded.</p> <p><u>Construction Offices</u></p> <p>a) Ensure all waste is separated out and stored in the correct waste or recycle bin.</p> <p>b) Ensure all chemicals/hydrocarbons are banded.</p> <p>c) Ensure all bagged contaminated soil is transported to the land farm.</p>
O2	Maintenance of plant and equipment			
O2.1	All plant and equipment installed at the premises or used in connection with the licensed activity: a)must be maintained in a proper and efficient condition; and b)must be operated in a proper and efficient manner.	Non-Compliant (Low Risk)	<p>a) Detailed JDE Plant Maintenance Schedule provided to SLR. This included evidence of past servicing and future servicing. This includes dozers, frana cranes and light vehicles.</p> <p>There was also evidence of the Thies Plant Maintenance Schedule.</p> <p>Evidence of realtime noise and air maintenance and calibration for PM10 monitors and noise monitors (Barr ows).</p> <p>b) <u>Non - Compliance for operating in a proper and efficient manner</u> - Based on the site inspection hauling of trucks was not being completed in an efficient manner. SLR witnessed hauling of trucks looking into the pit from around 11:30 - 12:10pm on 25 February 2020 and there was little use of watercarts for 90% of the haulage route. See Section 5.2 of the Audit Report for further details. Recommendations specifically relating to air quality are covered in other conditions.</p> <p>It should be noted however that the operations were within the pit and a significant distance from the site boundary and sensitive receptors. Light winds were present, generally from the south-west (i.e. not towards key closest receptors). As such, in-pit dust emissions would be considered unlikely to lead to off-site impacts. However despite this additional controls should have been installed. It is noted that no real time dust alarms were triggered at the time of the observations.</p>	See other conditions for specific recommendations.
O3	Dust			
O3.1	The premises must be maintained in a condition which minimises or prevents the emission of dust from the premises.	Non-Compliant (Low Risk)	<p>During the site inspection on 25 February 2020 noted that only a small section of the haul road to the BC pit was watered which means the site was not effectively minimising dust generation. Although no visible dust was seen leaving the site during the site inspection, effective mitigation measures were not implemented.</p> <p>By not using watertrucks the site was not maintaining roads to minimise dust.</p>	
O3.2	Activities occurring in or on the premises must be carried out in a manner that will minimise the generation, or emission from the premises, of wind-blown or traffic generated dust.	Non-Compliant (Low Risk)	<p>During the site inspection on 25 February 2020 noted that only a small section of the haul road to the BC pit was watered which means the site was not effectively minimising dust generation. Although no visible dust was seen leaving the site during the site inspection, effective mitigation measures were not implemented.</p>	<p><u>As per recommendations from Schedule 3 Condition 22 and 23 of the Development Consent.</u></p> <p>Recommend reviewing the way dust is visually assessed with this based on the EPAs new Dust Management Handbook 2019.</p>
O3.3	All trafficable areas, coal storage areas and vehicle manoeuvring areas in or on the premises must be maintained, at all times, in a condition that will minimise the generation, or emission from the premises, of wind-blown or traffic generated dust.	Non-Compliant (Low Risk)	<p>During the site inspection on 25 February 2020 noted that the haul road to the pit was not maintained in a condition (minimal use of the watercart) to effectively minimise dust. Although no visible dust was seen leaving the site during the site inspection, effective mitigation measures were not implemented.</p> <p>It is noted that the site has committed to progressive rehabilitation through the MOP.</p>	<p>Increased training in visual dust management at site. This should be regularly discussed and documented in toolbox talks.</p> <p>Ensuring water trucks are sent to areas of the site prior to there being a problem. If there is a delay in providing this water truck then operations need to change (eg. Reduction in speed) or operations are to cease until adequate dust controls are available.</p> <p>Update the MOP to include a defined timeframe to revegetate soil stockpiles.</p> <p>Cameras of the pits could be more widely distributed to key MACH Energy Staff. Investigate establishing a series of video cameras to enable monitoring of key areas at the site which</p>

# EPL 20850

Condition Number	Condition	Compliance Status	Evidence	Recommended Action
O3.4	The licensee must cease all dust generating activities during adverse conditions being the occurrence of both the adverse wind conditions set out in Condition O3.5 (b) and the adverse PM 10 concentrations set out in Condition O3.5(c).	Administrative Non-Compliance	<p>There were numerous shut down days at the site based on the condition of the EPL. Some of the shutdown days in November and December 2019 were the result of excessive smoke across the region, rather than dust.</p> <p>Based on information provided to SLR there was one non - compliance regarding MACH Energy not implementing a shutdown within the required timeframe. MACH Energy received an official caution on 17 December 2019 as a shutdown on 24 October 2019 had exceeded the allowable 1 hour timeframe by 20 minutes. Whilst operations ceased within the hour (12:30pm), one haul truck continued until 12:34pm and three other haul trucks were reported to have continued hauling operations up until 12:50pm. MACH Energy has since implemented a procedure to ensure the site meets the timing requirements of shutdown conditions.</p> <p>SLR has labelled this an <u>Admin Non - Compliance</u> as there was no evidence any impacts associated with the slight delay in shutting down all operations.</p>	<p>have high potential for dust and visual impacts. These would include the pits and higher areas of the site. All required personnel have access to cameras.</p> <p>It is recommended that the ambient air quality monitoring be undertaken in accordance with the Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales using a laboratory that is NATA accredited for the methods. If use of an approved method for the monitoring of ambient particulate levels is not possible, it is recommended that calibration of PM10 and PM2.5 be undertaken against a reference method (such as a TEOM) initially on a quarterly basis using a NATA accredited laboratory (noting that Carbon Based Environmental whose TEOM monitoring is the basis for the current calibration factors is not an accredited laboratory). If after 4 quarters of calibrations it is determined that no change to the calibration factor is required, then the frequency of calibration against the reference method could be reduced to 1 event per annum.</p> <p>It is recommended that an air quality expert be engaged to review exceedances of ambient air quality criteria where the exceedances are not due to exceptional events (as classified by the NSW DPIE) or invalid data.</p>
O3.5	<p>For the purpose of Condition O3.4 the following definitions apply.</p> <p>(a)'dust generating activities' means drilling, blasting, earthworks, construction activities, all hauling activities on unsealed haul roads, all overburden and coal extraction operations including loading and dumping activities and grader, loader, dozer and dragline operations.</p> <p>(b)'adverse wind conditions' means a rolling 1-hour average wind direction between 250 degrees and 340 degrees (inclusive) measured at the Muswellbrook NW Upper Hunter Air Quality Monitoring Network monitor.</p> <p>Australian Standard AS3580.14-2014 is to be used to calculate the rolling 1 hour average wind direction.</p> <p>(c) 'adverse PM10 concentrations' means a rolling 24-hour average PM10 concentration of equal to or greater than 44 micrograms per cubic metre measured at the Muswellbrook NW Upper Hunter Air Quality Monitoring Network monitoring station.</p> <p>(d)Operation of watercarts is permitted at all times.</p> <p>(e)Activities within the Coal Handling and Preparation Plant and Materials Handling Area, including run-of-mine (ROM) coal, product coal handling (including dozer/loader operations) and train loading operations as identified in blue on plan titled 'Mt Pleasant Coal Mine Materials Handling Area Dust Exclusion Zone General Arrangement' drawing number MP001-0000-GEN-DRG-0026 (EPA ref Doc19/282883) are not included as dust generating activities provided all automated dust suppression spray systems at the ROM hopper, conveyor transfer points and product stockpiles are in use, at least one water cart is in use on the ROM stockpile and an adjustable hood is lowered onto rail wagons loadings.</p>	Note	Noted.	
O3.6	Shutdown of dust generating activities required by Condition O3.4 must be completed within 1 hour of receiving data that triggers action required by Condition O3.4.	Administrative Non-Compliance	<p>There was a large amount of evidence provided for dust shutdown days. Evidence provided by Thiess illustrating changed operations and shutdowns.</p> <p>Based on information provided to SLR this only occurred once however this still makes this a non - compliance. MACH Energy received an official caution as on 24 October 2019 the shutdown exceeded the allowable 1 hour timeframe by 20 minutes. Whilst operations ceased within the hour (12:30pm), one haul truck continued until 12:34pm and three other haul trucks were reported to have continued hauling operations up until 12:50pm.</p> <p>Generally it appears to site is implementing the appropriate shutdowns with only evidence provided for the one incident on 24 October 2019. MACH Energy has since implemented a procedure to ensure the site meets the timing requirements of shutdown conditions.</p>	As per recommendations from Schedule 3 Condition 23 of the Development Consent.
O3.7	The licensee may resume dust generating activities at the premises when: (a)adverse wind conditions as defined in Condition O3.5(b); or (b)adverse PM10 concentrations as defined in Condition O3.5(c) are not measured for a minimum time period of 1 hour from the time that cessation of dust generation activities is completed.	Compliant	No reason to determine non - compliance. The shutdown dates were provided to SLR and it appears operations only recommence when these conditions have been met.	
O3.8	<p>At any time when there is no access to the meteorological data or PM 10 data from the Muswellbrook NW Upper Hunter Air Quality Monitoring Network monitoring station, definitions of 'adverse wind conditions' and 'adverse PM10 concentrations' in condition O3.5 are replaced with :</p> <p>-'adverse wind conditions' means a rolling 1-hour average wind direction between 245 and 345 degrees (inclusive) measured at Monitoring Point No. 11, identified in condition P1.3</p> <p>-'adverse PM10 concentrations' means a 24-hour average PM10 concentration of equal to or greater than 44 micrograms per cubic metre measured at the Monitoring Point No. 1, identified in condition P1.3</p>	Compliant	Noted. Evidence of links to the Muswellbrook NW Upper Hunter Air Quality Monitoring Network monitoring station. Evidence of notifications. Also evidence of onsite meteorological station.	
Note:	If at any time, there is no access to the Muswellbrook NW Upper Hunter Air Quality Monitoring Network monitoring station and to either 1-hour average wind direction data from monitoring point 11 or PM 10 data from monitoring point 1 the licensee must cease dust generating activities at the premises.	Note		
O3.9	For the purpose of condition O3.5 (e), dust suppression systems must be operated in a manner to ensure that there is no visible dust emissions emitted from the premises.	Compliant	The site inspection did not indicate any visible dust leaving the site despite water trucks not being used in the pit circuit during the time of the inspection. Therefore technically compliant.	
O4	Emergency response			

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Condition Number	Condition	Compliance Status	Evidence	Recommended Action								
O4.1	The licensee must prepare a Pollution Incident Response Management Plan (PIRMP) as per section 153A of the Protection of the Environment Operations Act 1997. The PIRMP must: 1.Include the information detailed in section 153A of the Protection of the Environment Operations Act 1997, and to be in the form required by clause 98B in the Protection of the Environment Operations (General) Regulation. 2.Be kept at the premises to which the licence relates; and 3.Be tested in accordance with clause 98E of the Protection of the Environment Operations (General) Regulation.	Compliant	1. Pollution Incident Response Management Plan (PIRMP) has been prepared for the site. It is in a written form and is separate to any other document. 2. The PIRMP is maintained on the site in an electronic version. 3. A record of testing in Table 5 of the PIRMP. The PIRMP has been tested at least every 12 months.  No evidence provided that implementation was required.									
<b>5. Monitoring and Recording Conditions</b>												
M1	Monitoring records											
M1.1	The results of any monitoring required to be conducted by this licence or a load calculation protocol must be recorded and retained as set out in this condition.	Note										
M1.2	All records required to be kept by this licence must be: a) in a legible form, or in a form that can readily be reduced to a legible form; b) kept for at least 4 years after the monitoring or event to which they relate took place; and c) produced in a legible form to any authorised officer of the EPA who asks to see them.	Compliant	a) Monthly environmental monitoring reports provides monthly monitoring data in a legible form. b) Environmental monitoring data going back to 2012 provided. c) According to site communications monitoring data was only provided to EPA in response complaints.									
M1.3	The following records must be kept in respect of any samples required to be collected for the purposes of this licence: a) the date(s) on which the sample was taken; b) the time(s) at which the sample was collected; c) the point at which the sample was taken; and d) the name of the person who collected the sample.	Compliant	A sample of monthly environmental monitoring reports and noise monitoring reports included: a) Dates of which the sample was taken; b) Time(s) at which the sample was collected; and c) Point at which the sample was taken.  * Ambient Air Quality Monitoring Report from December 2019 includes operators names.									
M2	Requirement to monitor concentration of pollutants discharged											
M2.1	For each monitoring/discharge point or utilisation area specified below (by a point number), the licensee must monitor (by sampling and obtaining results by analysis) the concentration of each pollutant specified in Column 1. The licensee must use the sampling method, units of measure, and sample at the frequency, specified opposite in the other columns:	Note	Noted									
M2.2	Air Monitoring Requirements											
	<table border="1"> <thead> <tr> <th>Pollutant</th> <th>Units of measure</th> <th>Frequency</th> <th>Sampling Method</th> </tr> </thead> <tbody> <tr> <td>PM10</td> <td>milligrams per cubic metre</td> <td>Continuous</td> <td>Special Method 1</td> </tr> </tbody> </table>	Pollutant	Units of measure	Frequency	Sampling Method	PM10	milligrams per cubic metre	Continuous	Special Method 1	Administrative Non-Compliance	According to the 2018 Annual Review: <i>PM10 was not monitored continuously at Point 1 during the reporting period, with capture rate being 99% or 362 days out of 365. Equipment malfunction and power outage were the primary cause of data loss. No pollution or environmental harm occurred as a result of the non-compliance.</i> The site had a high percentage for recorded data.  PM10 reported as µg/m3 in 2017 and 2018 Annual Reviews.	No further recommendations as the site had a high percentage of data recording during the Audit period.
Pollutant	Units of measure	Frequency	Sampling Method									
PM10	milligrams per cubic metre	Continuous	Special Method 1									
Note:	Special Method 1 requires the Licensee to undertake the monitoring of PM10 concentrations in strict accordance with the manufacturer's operating manual supplied with the continuous monitoring equipment, or any updated versions as published by the manufacturer.	Note										
M2.3	Monitoring of all parameters listed in condition M2.1 must commence prior to earthmoving activities being undertaken at the premises.	Not Triggered	Outside of audit period.  May 2018 Audit Report by ERM determined that this condition was compliant.									
M3	Testing methods - concentration limits											
M3.1	Monitoring for the concentration of a pollutant emitted to the air required to be conducted by this licence must be done in accordance with: a) any methodology which is required by or under the Act to be used for the testing of the concentration of the pollutant; or b) if no such requirement is imposed by or under the Act, any methodology which a condition of this licence requires to be used for that testing; or c) if no such requirement is imposed by or under the Act or by a condition of this licence, any methodology approved in writing by the EPA for the purposes of that testing prior to the testing taking place.	Observation	Evidence of air quality monitoring data.  EPL 20850 describes monitoring points 1 and 2 (A-PF2 and A-PF5 respectively) as TEOM particulate monitors. The equipment used on site are Palas Fidas dust monitors which are not TEOMs. Palas Fidas dust monitors: - Use optical light scattering technology for the determination of particulate concentrations rather than tapered element oscillating microbalance technology used by TEOMs; - Have no associated Australian Standard; and - Have not been mentioned as an approved method for sampling of ambient PM10 concentrations in the Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales document.	As per specific recommendation from Schedule 3 Condition 22.  It is recommended that the calibration factor used with the Palas Fidas particulate monitors be based on a dataset that covers seasonal variations (rather than the single month the current calibration factors are based on) as changes in particulate loads, temperature, humidity, etc. can affect the instrument's readings.  It is recommended that an air quality expert be engaged to review exceedances of ambient air quality criteria where the exceedances are not due to exceptional events (as classified by the NSW DPIE) or invalid data. A summary report would also be included in the Annual Review.								
Note:	The Protection of the Environment Operations (Clean Air) Regulation 2010 requires testing for certain purposes to be conducted in accordance with test methods contained in the publication "Approved Methods for the Sampling and Analysis of Air Pollutants in NSW".	Observation	Evidence of air quality monitoring data.  Evidence of air quality monitoring reports.  Evidence of standards being referenced in Section 2.3 of the Air Quality Monitoring Reports (including December 2019 report). Monitoring and analysis completed by independent specialists.  <u>However see comment above about Palas Fidas monitors.</u>									
M4	Weather monitoring											
M4.1	At the point(s) identified below, the licensee must monitor (by sampling and obtaining results by analysis) the parameters specified in Column 1 of the table below, using the corresponding sampling method, units of measure, averaging period and sampling frequency, specified opposite in the Columns 2, 3, 4 and 5 respectively.	--	--									



# EPL 20850

Condition Number	Condition	Compliance Status	Evidence	Recommended Action																																																							
	<p><b>POINT 11</b></p> <table border="1"> <thead> <tr> <th>Parameter</th> <th>Sampling method</th> <th>Units of measure</th> <th>Averaging period</th> <th>Frequency</th> </tr> </thead> <tbody> <tr> <td>Wind Speed at 10 metres</td> <td>AM-2 &amp; AM-4</td> <td>metres per second</td> <td>10 minutes</td> <td>Continuous</td> </tr> <tr> <td>Wind Direction at 10 metres</td> <td>AM-2 &amp; AM-4</td> <td>Degrees</td> <td>10 minutes</td> <td>Continuous</td> </tr> </tbody> </table> <p><b>POINT 4</b></p> <table border="1"> <thead> <tr> <th>Parameter</th> <th>Sampling method</th> <th>Units of measure</th> <th>Averaging period</th> <th>Frequency</th> </tr> </thead> <tbody> <tr> <td>Wind Speed at 10 metres</td> <td>AM-2 &amp; AM-4</td> <td>metres per second</td> <td>10 minutes</td> <td>Continuous</td> </tr> <tr> <td>Temperature at 2 metres</td> <td>AM-4</td> <td>degrees Celsius</td> <td>10 minutes</td> <td>Continuous</td> </tr> <tr> <td>Sigma Theta</td> <td>AM-2 &amp; AM-4</td> <td>degrees Celsius</td> <td>10 minutes</td> <td>Continuous</td> </tr> <tr> <td>Rainfall</td> <td>AM-4</td> <td>millimetres per hour</td> <td>1 hour</td> <td>Continuous</td> </tr> <tr> <td>Relative humidity Sling</td> <td>AM-1</td> <td>percent</td> <td>1 hour</td> <td>Continuous</td> </tr> <tr> <td>Temperature at 10 metres</td> <td>AM-4</td> <td>degrees Celsius</td> <td>10 minutes</td> <td>Continuous</td> </tr> <tr> <td>Total Solar Radiation</td> <td>AM-4</td> <td>Watts per square metre</td> <td>10 minutes</td> <td>Continuous</td> </tr> </tbody> </table>	Parameter	Sampling method	Units of measure	Averaging period	Frequency	Wind Speed at 10 metres	AM-2 & AM-4	metres per second	10 minutes	Continuous	Wind Direction at 10 metres	AM-2 & AM-4	Degrees	10 minutes	Continuous	Parameter	Sampling method	Units of measure	Averaging period	Frequency	Wind Speed at 10 metres	AM-2 & AM-4	metres per second	10 minutes	Continuous	Temperature at 2 metres	AM-4	degrees Celsius	10 minutes	Continuous	Sigma Theta	AM-2 & AM-4	degrees Celsius	10 minutes	Continuous	Rainfall	AM-4	millimetres per hour	1 hour	Continuous	Relative humidity Sling	AM-1	percent	1 hour	Continuous	Temperature at 10 metres	AM-4	degrees Celsius	10 minutes	Continuous	Total Solar Radiation	AM-4	Watts per square metre	10 minutes	Continuous	Administrative Non-Compliance	<p>* Annual Returns refer to monitoring points 11 and 4.</p> <p>January 2019 Monthly Environmental Monitoring Report states:  <i>Weather data is measured continuously at the Kayuga Road meteorological station (M-WS4) (Point 4). In addition to air quality parameters, the weather station also measures wind speed and direction, temperature (at 2 m and 10 m), solar radiation, relative humidity, rainfall, atmospheric pressure, and sigma theta. All data was captured during January 2019.</i></p> <p>The site did have some times during the audit period where there was no data due to power outages, however the site still had a high percentage of recorded data. As this was not continuous during the Audit period the site is non-compliant with this condition.</p>	No further recommendations as the site had a high percentage of data recording during the Audit period.
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M4.2	All methods specified in conditions M4.1 are specified in the Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales ('Approved Methods') and all monitoring must be conducted strictly in accordance with the requirements outlined the Approved Methods.	Note																																																									
M4.3	Monitoring of all parameters listed in M4.1 must commence prior to earthmoving activities being undertaken at the site.	Compliant	Earthworks commenced prior to this audit period.																																																								
M5	Recording of pollution complaints																																																										
M5.1	The licensee must keep a legible record of all complaints made to the licensee or any employee or agent of the licensee in relation to pollution arising from any activity to which this licence applies.	Compliant	Evidence of complaints log dating back past four years.																																																								
M5.2	The record must include details of the following: a)the date and time of the complaint; b)the method by which the complaint was made; c)any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect; d)the nature of the complaint; e)the action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant; and f)if no action was taken by the licensee, the reasons why no action was taken.	Compliant	Evidence of complaints log for the entire Audit period. Covers sub components a-f.																																																								
M5.3	The record of a complaint must be kept for at least 4 years after the complaint was made.	Compliant	Evidence of complaints log dating back past four years.																																																								
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M6	Telephone complaints line																																																										
M6.1	The licensee must operate during its operating hours a telephone complaints line for the purpose of receiving any complaints from members of the public in relation to activities conducted at the premises or by the vehicle or mobile plant, unless otherwise specified in the licence.	Compliant	Evidence of complaints line.																																																								
M6.2	The licensee must notify the public of the complaints line telephone number and the fact that it is a complaints line so that the impacted community knows how to make a complaint.	Compliant	Newsletter drops in the 2333 post code. Also evidence on website.																																																								
M6.3	The preceding two conditions do not apply until two weeks from the date of the issue of this licence.	Note	Noted																																																								
M7	Blasting																																																										
M7.1	To determine compliance with conditions L3.3, L3.4, L3.5 and L3.6: a)Airblast overpressure and ground vibration levels must be measured and electronically recorded for monitoring point 3 for the parameters specified in column 1 of the table below; and b)The licensee must use the units of measure, sampling method and sample at the frequency specified opposite in the other columns.	--	--																																																								
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3 (MACH ID B-VOC)	Airblast overpressure	Decibels (Linear Peak)	Every blast at the premises	Australian Standard 2187.2-2006 or as amended by Standards Australia																																																							
M8	Other monitoring and recording conditions																																																										
M8.1	The Licensee must record the average PM10 concentration at Monitoring Points 1 and 2 at intervals of 10 minutes. This data must be made available upon request by any authorised officer of the EPA who asks to see them.	Administrative Non-Compliance	<p>Evidence of PM10 results.</p> <p>According to the 2018 Annual Review:  <i>PM10 was not monitored continuously at Point 1 during the reporting period, with capture rate being 99% or 362 days out of 365. Equipment malfunction and power outage were the primary cause of data loss. No pollution or environmental harm occurred as a result of the non-compliance.</i> The site had a high percentage for recorded data.</p> <p>There were times during 2017 and 2019 where there was no data capture. It should be noted that this is a common issue for this equipment and the site has maintained a high data capture rate.</p>	No further recommendations as the site had a high percentage of data recording during the Audit period.																																																							
M9	Noise monitoring																																																										

# EPL 20850

Condition Number	Condition	Compliance Status	Evidence	Recommended Action
M9.1	To assess compliance with the noise limits specified in condition L2.1, the licensee must undertake attended noise monitoring in accordance with condition L2.4 and the following requirements: a) be undertaken during a period that is representative of typical operating conditions and not undertaken during a shutdown period; b) be undertaken at each one of the locations or at a location representative of the most-affected locations listed in condition L2.1; c) be undertaken monthly in a reporting period; and d) be undertaken for a minimum duration of 15 minutes within an assessment period.	Compliant	Evidence of noise monitoring reports. Evidence of monitoring in the Annual Review. Completed by independent experienced environmental consultant. Note the frequency of monitoring changed during the Audit period, however based on the information provided the site has met this requirement.	
Note:	Night time noise monitoring is not required to be undertaken until night operations commence at the premises.	Noted	Noise monitoring is completed at night.	
<b>6. Reporting Conditions</b>				
R1	Annual return documents			
R1.1	The licensee must complete and supply to the EPA an Annual Return in the approved form comprising: 1.a Statement of Compliance, 2.a Monitoring and Complaints Summary, 3.a Statement of Compliance - Licence Conditions, 4.a Statement of Compliance - Load based Fee, 5.a Statement of Compliance - Requirement to Prepare Pollution Incident Response Management Plan, 6.a Statement of Compliance - Requirement to Publish Pollution Monitoring Data; and 7.a Statement of Compliance - Environmental Management Systems and Practices.  At the end of each reporting period, the EPA will provide to the licensee a copy of the form that must be completed and returned to the EPA.	Compliant	Evidence of Annual Returns as per the EPA forms.	
R1.2	An Annual Return must be prepared in respect of each reporting period, except as provided below.	Compliant	Evidence of Annual Returns as per the EPA forms. Period is from 24 November - 23 November.	
Note:	The term "reporting period" is defined in the dictionary at the end of this licence. Do not complete the Annual Return until after the end of the reporting period.	--	--	
R1.3	Where this licence is transferred from the licensee to a new licensee: a) the transferring licensee must prepare an Annual Return for the period commencing on the first day of the reporting period and ending on the date the application for the transfer of the licence to the new licensee is granted; and b) the new licensee must prepare an Annual Return for the period commencing on the date the application for the transfer of the licence is granted and ending on the last day of the reporting period.	Not Triggered	Not triggered. No transfer during the audit period.	
Note:	An application to transfer a licence must be made in the approved form for this purpose.	--	--	
R1.4	Where this licence is surrendered by the licensee or revoked by the EPA or Minister, the licensee must prepare an Annual Return in respect of the period commencing on the first day of the reporting period and ending on: a) in relation to the surrender of a licence - the date when notice in writing of approval of the surrender is given; or b) in relation to the revocation of the licence - the date from which notice revoking the licence operates.	Not Triggered	Not triggered	
R1.5	The Annual Return for the reporting period must be supplied to the EPA via eConnect EPA or by registered post not later than 60 days after the end of each reporting period or in the case of a transferring licence not later than 60 days after the date the transfer was granted (the 'due date').	Compliant	Annual Returns meet the timing requirement.	
R1.6	The licensee must retain a copy of the Annual Return supplied to the EPA for a period of at least 4 years after the Annual Return was due to be supplied to the EPA.	Compliant	Evidence provided for 4 years of Annual Returns. Also noted submission on EPA website.	
R1.7	Within the Annual Return, the Statements of Compliance must be certified and the Monitoring and Complaints Summary must be signed by: a) the licence holder; or b) by a person approved in writing by the EPA to sign on behalf of the licence holder.	Compliant	Evidence of signed Annual Returns. Evidence of EPA accepting Annual Returns via website.	
R2	Notification of environmental harm			
R2.1	Notifications must be made by telephoning the Environment Line service on 131 555.	Not Triggered	Based on information provided this has not been triggered.	
Note:	The licensee or its employees must notify all relevant authorities of incidents causing or threatening material harm to the environment immediately after the person becomes aware of the incident in accordance with the requirements of Part 5.7 of the Act.	--	--	
R2.2	The licensee must provide written details of the notification to the EPA within 7 days of the date on which the incident occurred.	Not Triggered	Based on information provided this has not been triggered.	
R3	Written report			
R3.1	Where an authorised officer of the EPA suspects on reasonable grounds that: a) where this licence applies to premises, an event has occurred at the premises; or b) where this licence applies to vehicles or mobile plant, an event has occurred in connection with the carrying out of the activities authorised by this licence, and the event has caused, is causing or is likely to cause material harm to the environment (whether the harm occurs on or off premises to which the licence applies), the authorised officer may request a written report of the event.	Not Triggered	Based on information provided this has not been triggered.	
R3.2	The licensee must make all reasonable inquiries in relation to the event and supply the report to the EPA within such time as may be specified in the request.	Not Triggered	Based on information provided this has not been triggered.	
R3.3	The request may require a report which includes any or all of the following information: a) the cause, time and duration of the event; b) the type, volume and concentration of every pollutant discharged as a result of the event; c) the name, address and business hours telephone number of employees or agents of the licensee, or a specified class of them, who witnessed the event; d) the name, address and business hours telephone number of every other person (of whom the licensee is aware) who witnessed the event, unless the licensee has been unable to obtain that information after making reasonable effort; e) action taken by the licensee in relation to the event, including any follow-up contact with any complainants; f) details of any measure taken or proposed to be taken to prevent or mitigate against a recurrence of such an event; and g) any other relevant matters.	Not Triggered	Based on information provided this has not been triggered.	
R3.4	The EPA may make a written request for further details in relation to any of the above matters if it is not satisfied with the report provided by the licensee. The licensee must provide such further details to the EPA within the time specified in the request.	Not Triggered	Based on information provided this has not been triggered.	
R4	Other reporting conditions			
R4.1	Reporting of Blast Monitoring The licensee must report any exceedance of the licence blasting limits identified in condition L3.3, L3.4, L3.5 and L3.6 by calling the EPA's Environment Line on 131 555 as soon as practicable after the exceedance becomes known to the licensee or to one of the licensee's employees or agents.  If the exceedance is likely to cause material harm to the environment, the notification requirements of Part 5.7 of the Act apply.	Compliant	Overpressure for 1 blast was above 120 dBL, with this being recorded at 124.5 dBL on 21 October 2019 at the BV02 blast monitor. Following a study and detailed consultation with the DPIE, the DPIE concluded in a letter dated 7 February 2020 that 'the Department has determined that the blast did not cause exceedances of blasting criteria at any residence on privately owned land and therefore MACH Energy did not breach Schedule 3 Condition 10 of the Consent'.  Correspondence provided to the EPA.	
R4.2	The results of the blast monitoring required by condition M8.1 must be submitted to the EPA at the end of each reporting period.	Compliant	Blast monitoring results included in Annual Returns. Also in Annual Reviews.	

# EPL 20850

Condition Number	Condition	Compliance Status	Evidence	Recommended Action
R4.3	<p>Noise Monitoring Report</p> <p>A noise compliance assessment report must be submitted to the EPA within 3 months of the commencement of operations, and every 12 months thereafter and be submitted with the Annual Return. The report must:</p> <p>a) be prepared by an accredited acoustic consultant and determine compliance with noise limits presented in condition L2.1;</p> <p>b) include all routine attended monitoring undertaken throughout the year;</p> <p>c) include measurement and reporting of C-weighted noise levels; and</p> <p>d) outline of any management actions taken within the monitoring period to address any exceedances of the limits contained in condition L2.1.</p>	Compliant	Evidence sighted of the submission of these Noise Monitoring Reports.	
R4.4	The licensee must notify the EPA in writing of any exceedance of the noise criteria in this licence immediately after the licensee becomes aware of the exceedance.	Not Triggered	Based on the information provided this condition has not been triggered.	
R4.5	<p>Dust Monitoring Report</p> <p>The licensee must prepare a report containing the following information (as a minimum) for each reporting period:</p> <p>a) Details of times, wind speeds and wind direction during 'adverse conditions'.</p> <p>b) The date and time when dust generating activities were ceased in accordance with condition O3.4;</p> <p>c) Weather conditions monitored at Monitoring Point 4:</p> <p>i. during the period when dust generating activities were ceased;</p> <p>ii. for the 24 hour period immediately prior to dust generating activities being ceased; and</p> <p>iii. for the 24 hour period immediately after dust generating activities resumed.</p> <p>d) PM10 monitoring data measured at Monitoring Points 1 and 2:</p> <p>i. during the period when dust generating activities were ceased;</p> <p>ii. for the 24 hour period immediately prior to dust generating activities being ceased; and</p> <p>iii. for the 24 hour period immediately after dust generating activities resumed.</p> <p>e) The date and time dust generating activities were resumed;</p> <p>f) A list of days when average 24 hour PM10 at the Muswellbrook Upper Hunter Air Quality Monitoring Network monitor exceeded 50µg/m3.</p> <p>g) 10 minute wind speed and direction data at Monitoring Point 4 on days recorded under condition R4.4 f).</p> <p>h) 10 minute PM10 data from monitoring points 1 and 2 for days recorded under condition R4.4 f).</p>	Compliant	Evidence of the submission of dust monitoring data spreadsheet to meet these condition requirements. Submitted with the EPL Annual Returns.	
Note:	This information is necessary for the EPA to review whether conditions O3.4 to O3.8 are achieving the objective of ensuring that activities carried on at the premises do not increase the number of days when average PM10 concentrations in Muswellbrook exceed 50µg/m3. The EPA may review these conditions if this objective is not being achieved.	Note	Noted	
<b>7. General Conditions</b>				
G1	Copy of licence kept at the premises or plant	Compliant	An electronic copy at the licence is kept at the premises.	
G1.1	A copy of this licence must be kept at the premises to which the licence applies.	Compliant	An electronic copy at the licence is kept at the premises.	
G1.2	The licence must be produced to any authorised officer of the EPA who asks to see it.	Not Triggered	An authorised officer of the EPA has not asked for a copy of the EPL during the audit period.	
G1.3	The licence must be available for inspection by any employee or agent of the licensee working at the premises.	Compliant	An electronic copy at the licence is kept at the premises.	
G2	Contact number for incidents and responsible employees	Compliant	PIRMP includes number for incidents and responsible employees.	
G2.1	The licensee is to inform the EPA of the contact number within 3 months of this condition taking effect.	Compliant	Outside of the audit period.	

# Statement of Commitments

Condition Number	Condition	Compliance Status	Evidence	Recommended Action
<b>APPENDIX 3 - STATEMENT OF COMMITMENTS</b>				
<b>Environmental aspect</b>	<b>Commitment</b>			
Noise and vibration	<ul style="list-style-type: none"> <li>A NMP will be prepared in accordance with the development consent.</li> <li>The NMP will be extended to include management of potential noise emissions associated with the MOD 4 rail infrastructure. The plan will also consider pro-active and predictive modelling and management, and protocols for managing noise during adverse meteorological conditions.</li> <li>Noise monitoring will continue to be undertaken in accordance with the development consent.</li> <li>Implementation of the following feasible and reasonable mitigation measures:                             <ul style="list-style-type: none"> <li>plant will operate in less exposed areas during the more sensitive night period;</li> <li>procurement of new and best available technology plant;</li> <li>provision of noise suppression on all mobile plant. It anticipated that the noise suppression technology will require an outlay of capital expenditure of between \$15M and \$20M; and</li> <li>updating the comprehensive operational noise management plan to include real-time back to base noise monitoring using the best available technology.</li> </ul> </li> <li>The Applicant is committed to working with its communities and extend the opportunity for upfront acquisition upon request to the privately-owned properties listed in Table 1 of Schedule 3.</li> </ul>	Compliant	<p>The Noise Management Plan includes the requirements of MOD 4.</p> <p>Evidence of implementation of general noise management mitigation measures. Note, MOD 4 works have not yet been enacted.</p> <p>No evidence provided of specific spending regarding noise mitigation, however it is noted the site has met the Development Consent noise criteria. Evidence of noise suppression on mobile plant.</p>	
Ecology	<ul style="list-style-type: none"> <li>Details of the rehabilitation of the infrastructure area upon decommissioning will be provided in the REMP.</li> <li>Ecological management for the Mount Pleasant Project will be undertaken in accordance with the existing development consent</li> </ul>	Compliant	<p>There is a MOP, not a REMP.</p> <p>Decommissioning details included in the MOP.</p> <p>No evidence provided for ecological non-compliances. Ecological monitoring was provided.</p> <p>Non-compliance with the AQMP in terms of watering of haul roads. Section 9.2 of the AQMP states:</p> <p><i>'Watercarts will be utilised as necessary to minimise excessive visible dust'.</i></p> <p>Air quality issues identified during the site inspection component of the audit. See Section 5.3 of the report for further details. Issues relating to dust from haul roads in the pit circuit and dust from the Excavator dumping overburden into the haul truck. The lack of a watercart when viewing into BC pit on 25 February 2020 across the majority of the haulage route was not evidence of best practice. The dust was also above the visual assessment levels in the EPA Dust Assessment Handbook 2019 and additional mitigation measures should have been implemented.</p> <p>It should be noted however that the operations were within the pit and a significant distance from the site boundary and sensitive receptors. Light winds were present, generally from the south-west (i.e. not towards key closest receptors). As such, in-pit dust emissions would be considered unlikely to lead to off-site impacts. However despite this additional controls should have been installed. It is noted that no real time dust alarms were triggered at the time of the observations.</p> <p>It was noted during the site inspection that some areas of soil stockpiles have not yet been seeded. These should be seeded. It is noted that the current commitment in the AQMP does not designate a timeframe for seeding of stockpiles.</p> <p>Long-term stockpiles will be revegetated as soon as practicable following completion.</p>	
Air Quality	<ul style="list-style-type: none"> <li>Air quality management for the Mount Pleasant Project will be undertaken in accordance with the Air Quality Management Plan which is a requirement under the existing development consent.</li> </ul>	Non-Compliant (Low Risk)	<p>As per Schedule 3 Condition 22 and 23 recommendations.</p>	
Aboriginal cultural heritage	<ul style="list-style-type: none"> <li>Aboriginal cultural heritage management will continue to be undertaken in accordance with relevant Applicant procedures.</li> <li>Deleted</li> <li>Where site avoidance is impossible, cultural heritage management approaches that are set out in the CHMP for the Mount Pleasant Project area will be applied. This will include lodging an application for the relevant AHIPs under section 90 of the NPW Act.</li> <li>Deleted</li> <li>Aboriginal cultural heritage sites that cannot be avoided will be mitigated by standard salvage collection measures in accordance with the Aboriginal Heritage Management Plan, following the issue of an AHIP (section 90, NPW Act).</li> <li>The Aboriginal Heritage Management Plan will be revised to include the proposed modifications and any requirements specified by the regulator.</li> <li>Any mitigation salvage will be staged over time based upon mine operation plan requirements and the zoning regime of the CHMP.</li> <li>All cultural materials collected will be stored in a storage facility to be established at the Mount Pleasant Project or VCA under an approved Care and Control Permit.</li> <li>All cultural heritage sites not affected by the proposed development will be managed in situ in accordance with the Aboriginal Heritage Management Plan procedures for long-term protective management and to minimise future development disturbance.</li> <li>Sites that are assessed as vulnerable to damage due to the proximity to roads and tracks or other operational infrastructure will be appropriately buffered and barricaded in accordance with existing site protection protocols including monitoring protocols.</li> </ul>	Compliant	<p>No evidence of non-compliances associated with Aboriginal Cultural Heritage.</p> <p>Effective implementation of the Aboriginal Heritage Management Plan. Evidence of pre clearance permits and salvage requirements.</p>	
Visual amenity	<ul style="list-style-type: none"> <li>Visual amenity management will be undertaken in accordance with the development consent, which requires the preparation of a Visual Impact Management Plan.</li> <li>Lighting management will be undertaken in accordance with the development consent, including preparation of an engineering report regarding light emissions.</li> </ul>	Compliant	<p>Evidence of Visual Impact Management Plan.</p> <p>No major issues identified during the audit. Evidence of some complaints including investigations.</p>	
Removal of Mount Pleasant in Infrastructure South of Wybong Road	<ul style="list-style-type: none"> <li>MACH Energy Australia Pty Ltd (MACH Energy) or any person/s who rely on any development consent to carry out the Mount Pleasant development (as modified or replaced by a new development consent from time to time) will, by no later than 31 October 2022:                             <ol style="list-style-type: none"> <li>remove all infrastructure associated with the Development within Mining Lease No. 1645 (ML 1645) south of Wybong Road (other than infrastructure which the operator of the Bengalla Mine agrees with MACH Energy in writing can remain in situ);</li> <li>do all things available to transfer or cause the grant of a mining lease over that part of ML 1645 south of Wybong Road to the operator of Bengalla Mine or its nominee;</li> <li>transfer the freehold land owned by MACH Energy within ML 1645 south of Wybong Road to the operator of Bengalla Mine (or its nominee) at rural market value; and</li> <li>release the easements for pipeline and rail spur within or in the vicinity of ML 1645 south of Wybong Road which benefit land owned by MACH Energy.</li> </ol> </li> <li>Note: The obligations under this commitment are not subject to the grant of development consent or any other approvals or access arrangements for alternative coal transport infrastructure for the Development and must be satisfied irrespective of the existence of any such approvals or infrastructure.</li> </ul>	Not Triggered	Not triggered	

# Statement of Commitments

Condition Number	Condition	Compliance Status	Evidence	Recommended Action
Flooding	<ul style="list-style-type: none"> <li>MACH Energy will design the MOD 4 rail infrastructure (including associated hydraulic structures) to meet the following criteria for potential flooding impacts for a 1% Annual Exceedance Probability flood event:                             <ul style="list-style-type: none"> <li>no more than 0.1 m increase in flood levels on any privately-owned land;</li> <li>no more than 0.01 m increase in flood levels at any privately-owned dwellings or commercial spaces;</li> <li>no more than 0.01 m increase in flood levels at any public roads servicing privately-owned properties; and</li> <li>no more than 0.1 metres per second (m/s) increase in flood velocities at privately-owned dwellings or commercial spaces.</li> </ul> </li> </ul>	Not Triggered	Design is not yet finalised.	
Rail Noise	<ul style="list-style-type: none"> <li>MACH Energy will document in the Mount Pleasant Operation Noise Management Plan reasonable and feasible measures that can be undertaken to minimise rail brake squeal associated with the MOD 4 rail infrastructure.</li> <li>The MOD 4 rail infrastructure will be subject to best practice detailed design, including consideration of brake squeal and bunching potential.</li> <li>MACH Energy will work with rail freight providers and a noise specialist during the final commissioning of the MOD 4 rail infrastructure to undertake trials and implement operational noise controls. This may include, for example, optimising train speed to reduce observed excessive noise.</li> <li>In the event of recurring rail noise complaints, MACH Energy will consult with rail freight providers to investigate the cause of the noise and investigate reasonable and feasible mitigation options to address the issue. This may include, for example, further varying rail speeds, driver behaviour or stock maintenance. MACH Energy will consider the outcomes of any such investigation in the renewal or extension of Mount Pleasant Operation rail freight contracts.</li> </ul>	Not Triggered	Noise Management Plan has been prepared for MOD 4 but the final design has not yet been completed.	
Redundant Infrastructure Removal in Bengalla Mine Footprint	<ul style="list-style-type: none"> <li>MACH Energy will stabilise redundant rail infrastructure areas within the footprint of the Bengalla Mine such that they do not pose an ongoing material source of dust emissions (i.e. seeding to establish a cover crop and/or application of a dust suppressant) prior to management of these areas being transferred to Bengalla Mine.</li> <li>Existing Mount Pleasant Operation rail spur erosion and sediment control water management structures (e.g. sediment fences) within the footprint of Bengalla Mine will also be left in place, subject to agreement of Bengalla Mine.</li> </ul>	Not Triggered	Not triggered	
Visual Vegetation Screens	<ul style="list-style-type: none"> <li>MACH Energy will inspect the condition of the vegetation visual screens described in the Visual Impact Management Plan on a quarterly basis, and maintain these vegetation visual screens to the satisfaction of the Secretary.</li> </ul>	Compliant	<ul style="list-style-type: none"> <li>Evidence of visual vegetation screen inspections.</li> <li>Areas inspected once per month.</li> </ul>	
Construction Traffic	<ul style="list-style-type: none"> <li>MACH Energy will develop a Construction Traffic Management Plan for the MOD 4 construction works in consultation with Council and to the satisfaction of the Secretary.</li> </ul>	Compliant	<ul style="list-style-type: none"> <li>This is in the CEMP. Council and DPIE were consulted as part of the project.</li> <li>Implementation of the plan is not yet triggered however.</li> </ul>	
Management of Historic Heritage Items	<ul style="list-style-type: none"> <li>MACH Energy will implement historic heritage management associated with MOD 4 in consultation with Council and a copy of any resulting reports/documentation will be provided to Council for its records.</li> <li>MACH Energy will consult with Council on the content of the photographic record of Overton Orchard and Race Track.</li> <li>MACH Energy will limit movement of vehicles/machinery in the area of the Overton Orchard and Race Track to avoid potential damage outside of the MOD 4 disturbance footprint, in consultation with Council. This includes avoiding disturbance of the areas shown in blue on Figure 6 of the Statement of Heritage Impact (Extent, 2007) included as Appendix F of EA (MOD 4).</li> <li>MACH Energy will consult with Council on potential points of access and routes for heavy vehicles and machinery at the Blunt's Butter Factory. Points of access and routes will be demarcated and MACH Energy will ensure heavy vehicles remain within the demarcated areas.</li> <li>MACH Energy will consult with Council regarding appropriate demarcation to restrict movement of heavy vehicles near the two cuttings located east of Overton Orchard. If artefacts are exposed at the base of the well at MP13, works will cease until an archaeologist advises whether or not they constitute 'relics' under the NSW Heritage Act 1977 and whether works should proceed pursuant to an application for an 'exception', or an excavation permit.</li> </ul>	Not Triggered	<ul style="list-style-type: none"> <li>Not yet triggered.</li> <li>However this commitment has been completed. 6 February 2020 from MACH Energy to Council. Council accepted this on 12 February 2020.</li> <li>MACH Energy will consult with Council on the content of the photographic record of Overton Orchard and Race Track.</li> </ul>	

# ML 1645 (Act 1992)

Condition Number	Condition	Compliance Status	Evidence	Recommended Action
<b>Mining Lease Conditions 2013</b>				
<b>1. Notice to Landholders</b>				
1 (a)	Within a period of three months from the date of grant/renewal of this mining lease, the lease holder must serve on each landholder a notice in writing indicating that this mining lease has been granted/renewed and whether the lease includes the surface. A plan identifying each landholder and individual land parcel subject to the lease area, and a description of the lease area must accompany the notice.	Compliant	Based on site correspondence there has been no lease renewal.	
1 (b)	If there are ten or more landholders, the lease holder may serve the notice by publication in a newspaper circulating in the region where the lease area is situated. The notice must indicate that this mining lease has been granted/renewed; state whether the lease includes the surface and must contain a plan and description of the lease area. If a notice is made under condition 1(b), compliance with condition 1(a) is not required.	Compliant	N/A	
<b>2. Rehabilitation</b>				
2	Any disturbance resulting from the activities carried out under this mining lease must be rehabilitated to the satisfaction of the Minister.	Compliant	<p>Rehabilitation status reported in the 2017 - 2019 Annual Reviews.</p> <p>According to site communications in August 2019 the Resource Regulator (RR) attended the site and reviewed rehabilitated areas. They were generally satisfied with the rehabilitation.</p> <p>According to site communications no notifications have been issued by RR in regards to improving rehabilitation.</p> <p>Only one notification (NTCE0004145) has been issued by RR, dated 1 November 2019 and this related to a rehabilitation risk assessment. According to site communications a risk assessment has been held and a Draft Mount Pleasant Operations Rehabilitation Risk Assessment Report is being prepared.</p> <p>Evidence of early phase of rehabilitation program during the site inspection. Evidence of some recent reshaping for failed rehabilitation area. Additional reshaping and new rehabilitation proposed for 2020.</p>	
<b>risk</b>				
3 (a)	The lease holder must comply with an approved Mining Operations Plan (MOP) in carrying out any significant surface disturbing activities, including mining operations, mining purposes and prospecting. The lease holder must apply to the Minister for approval of a MOP. An approved MOP must be in place prior to commencing any significant surface disturbing activities, including mining operations, mining purposes and prospecting.	Compliant	No evidence of non - compliances with the MOP regarding surface disturbance.	
3 (b)	The MOP must identify the post mining land use and set out a detailed rehabilitation strategy which: (i) identifies areas that will be disturbed; (ii) details the staging of specific mining operations, mining purposes and prospecting; (iii) identifies how the mine will be managed and rehabilitated to achieve the post mining land use; (iv) identifies how mining operations, mining purposes and prospecting will be carried out in order to prevent and or minimise harm to the environment; and (v) reflects the conditions of approval under: • the Environmental Planning and Assessment Act 1979; • the Protection of the Environment Operations Act 1997; and • any other approvals relevant to the development including the conditions of this mining lease.	Compliant	<p>Evidence of three MOPs from the period. Evidence of approval of these MOPs which cover a one year period.</p> <p>Based on site correspondence the MACH Energy the site will complete another 12 month MOP.</p> <p>Note there are some differences in figures between the MOP and Rehabilitation Strategy with recommendations outlined in Schedule 3 Condition 54.</p>	
3 (c)	The MOP must be prepared in accordance with the ESG3: Mining Operations Plan (MOP) Guidelines September 2013 published on the Department's website at <a href="http://www.resourcesandenergy.nsw.gov.au/miners-and-explorers/rules-and-forms/pgf/environmental-guidelines">www.resourcesandenergy.nsw.gov.au/miners-and-explorers/rules-and-forms/pgf/environmental-guidelines</a>	Compliant	Both MOP's have been prepared as per the guidelines.	
3 (d)	The lease holder may apply to the Minister to amend an approved MOP at any time.			
3 (e)	It is not a breach of this condition if: (i) the operations which, but for this condition 3(e) would be a breach of condition 3(a), were necessary to comply with a lawful order or direction given under the Environmental Planning and Assessment Act 1979, the Protection of the Environment Operations Act 1997, the Work Health and Safety (Mines and Petroleum Sites) Act 2013 and Work Health and Safety (Mines and Petroleum Sites) Regulation 2014 or the Work Health and Safety Act 2011; and Work Health and Safety Regulation 2011 (ii) the Minister had been notified in writing of the terms of the order or direction prior to the operations constituting the breach being carried out.	Noted		

# ML 1645 (Act 1992)

Condition Number	Condition	Compliance Status	Evidence	Recommended Action
3 (f)	The lease holder must prepare a Rehabilitation Report to the satisfaction of the Minister. The report must: (i) provide a detailed review of the progress of rehabilitation against the performance measures and criteria established in the approved MOP; (ii) be submitted annually on the grant anniversary date (or at such other times as agreed by the Minister); and (iii) be prepared in accordance with any relevant annual reporting guidelines published on the Department's website at <a href="http://www.resourcesandenergy.nsw.gov.au/miners-and-explorers/rules-and-forms/pgf/environmental-guidelines">www.resourcesandenergy.nsw.gov.au/miners-and-explorers/rules-and-forms/pgf/environmental-guidelines</a> Note: The Rehabilitation Report replaces the Annual Environmental Management Report.	Compliant	Included in the Annual Review with this provided to the RR.	
<b>4. Non-Compliance Reporting</b>				
4 (a)	The lease holder must notify the Department upon becoming aware of any breaches of the conditions of this mining lease or breaches of the Mining Act or Regulations;	Not Triggered	According to site communications there were no breaches of any conditions of this mining lease or breaches of the Mining Act or Regulations.	
4 (b)	Notifications under condition 4(a) must be provided in the form specified on the Department's website within seven (7) days of the mining lease holder becoming aware of the breach.	Not Triggered	No evidence of breaches provided to SLR.	
<b>5. Environmental Incident Report</b>				
	The lease holder must provide environmental incident notifications and reports to the Secretary no later than seven (7) days after those environmental incident notifications and reports are provided to the relevant authorities under the Protection of the Environment Operations Act 1997.	Not Triggered	No evidence of environmental incidents that causes material harm under the POEO Act.	
<b>6. Extraction Plan</b>				
6 (a)	In this condition:  (i) approved Extraction Plan means a plan, being:  A. an extraction plan or subsidence management plan approved in accordance with the conditions of a relevant development consent and provided to the Secretary; or B. a subsidence management plan relating to the mining operations subject to this lease: I. submitted to the Secretary on or before 31 December 2014; and  II. approved by the Secretary.  (ii) relevant development consent means a development consent or project approval issued under the Environmental Planning & Assessment Act 1979 relating to the mining operations subject to this lease.	Not Triggered	Open cut mine. Not Applicable.	
6 (b)	The lease holder must not undertake any underground mining operations that may cause subsidence except in accordance with an approved Extraction Plan.	Not Triggered	Open cut mine. Not Applicable.	
6 (c)	The lease holder must ensure that the approved Extraction Plan provides for the effective management of risks associated with any subsidence resulting from mining operations carried out under this lease.	Not Triggered	Open cut mine. Not Applicable.	
6 (d)	The lease holder must notify the Secretary within 48 hours of any:  (i) incident caused by subsidence which has a potential to expose any person to health and safety risks; (ii) significant deviation from the predicted nature, magnitude, distribution, timing and duration of subsidence effects, and of the potential impacts and consequences of those deviations on built features and the health and safety of any person; or (iii) significant failure or malfunction of a monitoring device or risk control measure set out in the approved Extraction Plan addressing: A. built features; B. public safety; or C. subsidence monitoring.	Not Triggered	Open cut mine. Not Applicable.	
	The lease holder must optimise recovery of the minerals that are the subject of this mining lease to the extent economically feasible.	Compliant	No reason to determine non compliance.	
<b>8. Group Security</b>				

# ML 1645 (Act 1992)

Condition Number	Condition	Compliance Status	Evidence	Recommended Action
	<p>The lease holder is required to provide and maintain a security deposit to secure funding for the fulfilment of obligations of all or any kind under the mining lease, including obligations of all or any kind under the mining lease that may arise in the future. The amount of the security deposit to be provided as a group security has been assessed by the Minister at \$17,956,000. The leases covered by the group security include:</p> <p><b>Mining Lease 1645 (Act 1992)</b></p> <p><b>Mining Lease 1708 (Act 1992)</b></p> <p><b>Mining Lease 1709 (Act 1992)</b></p> <p><b>Mining Lease 1713 (Act 1992)</b></p> <p><b>Mining Lease 1750 (Act 1992)</b></p>	Compliant	<p>* Letter from DPIE dated 29/7/2019 approving an increase in the security deposit to \$52,073,000.</p> <p>* "Details of Mining Lease 1645 (Act 1992)" states the securities held by DPIE.</p>	
<b>9. Cooperation Agreement</b>				
	<p>The lease holder must make every reasonable attempt, and be able to demonstrate its attempts, to enter into a cooperation agreement with the holder(s) of any overlapping title(s). The cooperation agreement should address but not be limited to issues such as:</p> <ul style="list-style-type: none"> <li>•access arrangements</li> <li>•operational interaction procedures</li> <li>•dispute resolution</li> <li>•information exchange</li> <li>•well location</li> <li>•timing of drilling</li> <li>•potential resource extraction conflicts; and</li> <li>•rehabilitation issues.</li> </ul>	Compliant	Overlapping title cooperation agreements in place Sighted agreement with Bengalla.	
<b>Exploration Reporting</b>				
Note:	<p><i>Exploration Reports (Geological and Geophysical)</i></p> <p>The lease holder must lodge reports to the satisfaction of the Minister in accordance with section 163C of the Mining Act 1992 and in accordance with clause 59 of the Mining Regulation 2016. Reports must be prepared in accordance with Exploration Reporting: A guide for reporting on exploration and prospecting in New South Wales.</p>	Compliant	Evidence of exploration reports across the period. Most recent report covers 17 December 2018 to 16 December 2019.	
<b>Special Conditions</b>				
Note:	The standard conditions apply to all mining leases. The Division of Resources and Geoscience (DRG) reserves the right to impose special conditions, based on individual circumstances, where appropriate.	Note	Noted	



# ML 1708 Licence Instrument

Condition Number	Condition	Compliance Status	Evidence	Recommended Action
<b>Mining Lease Conditions 2013</b>				
<b>1. Notice to Landholders</b>				
1 (a)	Within a period of three months from the date of grant/renewal of this mining lease, the lease holder must serve on each landholder a notice in writing indicating that this mining lease has been granted/renewed and whether the lease includes the surface. A plan identifying each landholder and individual land parcel subject to the lease area, and a description of the lease area must accompany the notice.	Compliant	Based on site correspondence there has been no lease renewal.	
1 (b)	If there are ten or more landholders, the lease holder may serve the notice by publication in a newspaper circulating in the region where the lease area is situated. The notice must indicate that this mining lease has been granted/renewed; state whether the lease includes the surface and must contain a plan and description of the lease area. If a notice is made under condition 1(b), compliance with condition 1(a) is not required.	Compliant	N/A	
<b>2. Rehabilitation</b>				
	Any disturbance resulting from the activities carried out under this mining lease must be rehabilitated to the satisfaction of the Minister.	Compliant	<p>Rehabilitation status reported in the 2017 - 2019 Annual Reviews.</p> <p>According to site communications in August 2019 the Resource Regulator (RR) attended the site and reviewed rehabilitated areas. They were generally satisfied with the rehabilitation.</p> <p>According to site communications no notifications have been issued by RR in regards to improving rehabilitation.</p> <p>Only one notification (NTCE0004145) has been issued by RR, dated 1 November 2019 and this related to a rehabilitation risk assessment. According to site communications a risk assessment has been held and a Draft Mount Pleasant Operations Rehabilitation Risk Assessment Report is being prepared.</p> <p>Evidence of early phase of rehabilitation program during the site inspection. Evidence of some recent reshaping for failed rehabilitation area. Additional reshaping and new rehabilitation proposed for 2020.</p>	
<b>3. Mining Operations Plan and Annual Rehabilitation Report</b>				
3 (a)	The lease holder must comply with an approved Mining Operations Plan (MOP) in carrying out any significant surface disturbing activities, including mining operations, mining purposes and prospecting. The lease holder must apply to the Minister for approval of a MOP. An approved MOP must be in place prior to commencing any significant surface disturbing activities, including mining operations, mining purposes and prospecting.	Compliant	No evidence of non-compliances with the MOP regarding surface disturbance.	
3 (b)	The MOP must identify the post mining land use and set out a detailed rehabilitation strategy which: <ul style="list-style-type: none"> <li>(i) identifies areas that will be disturbed;</li> <li>(ii) details the staging of specific mining operations, mining purposes and prospecting;</li> <li>(iii) identifies how the mine will be managed and rehabilitated to achieve the post mining land use;</li> <li>(iv) identifies how mining operations, mining purposes and prospecting will be carried out in order to prevent and or minimise harm to the environment; and</li> <li>(v) reflects the conditions of approval under:             <ul style="list-style-type: none"> <li>- the Environmental Planning and Assessment Act 1979;</li> <li>- the Protection of the Environment Operations Act 1997; and</li> <li>- any other approvals relevant to the development including the conditions of this mining lease.</li> </ul> </li> </ul>	Compliant	<p>Evidence of three MOPs from the period. Evidence of approval of these MOPs which cover a one year period.</p> <p>Based on site correspondence the MACH Energy the site will complete another 12 month MOP.</p>	
3 (c)	The MOP must be prepared in accordance with the ESG3: Mining Operations Plan (MOP) Guidelines September 2013 published on the Department's website at <a href="http://www.resourcesandenergy.nsw.gov.au/miners-and-explorers/rules-and-forms/pgf/environmental-guidelines">www.resourcesandenergy.nsw.gov.au/miners-and-explorers/rules-and-forms/pgf/environmental-guidelines</a>	Compliant	Both MOP's have been prepared as per the guidelines.	
3 (d)	The lease holder may apply to the Minister to amend an approved MOP at any time.			
3 (e)	It is not a breach of this condition if: <ul style="list-style-type: none"> <li>(i) the operations which, but for this condition 3(e) would be a breach of condition 3(a), were necessary to comply with a lawful order or direction given under the Environmental Planning and Assessment Act 1979, the Protection of the Environment Operations Act 1997, the Work Health and Safety (Mines and Petroleum Sites) Act 2013 and Work Health and Safety (Mines and Petroleum Sites) Regulation 2014 or the Work Health and Safety Act 2011; and Work Health and Safety Regulation 2011</li> <li>(ii) the Minister had been notified in writing of the terms of the order or direction prior to the operations constituting the breach being carried out.</li> </ul>	Noted		
3 (f)	The lease holder must prepare a Rehabilitation Report to the satisfaction of the Minister. The report must: <ul style="list-style-type: none"> <li>(i) provide a detailed review of the progress of rehabilitation against the performance measures and criteria established in the approved MOP;</li> <li>(ii) be submitted annually on the grant anniversary date (or at such other times as agreed by the Minister); and</li> <li>(iii) be prepared in accordance with any relevant annual reporting guidelines published on the Department's website at <a href="http://www.resourcesandenergy.nsw.gov.au/miners-and-explorers/rules-and-forms/pgf/environmental-guidelines">www.resourcesandenergy.nsw.gov.au/miners-and-explorers/rules-and-forms/pgf/environmental-guidelines</a></li> </ul> <p><i>Note: The Rehabilitation Report replaces the Annual Environmental Management Report.</i></p>	Compliant	Included in the Annual Review with this provided to the RR.	
<b>4. Non-Compliance Reporting</b>				
4 (a)	The lease holder must notify the Department upon becoming aware of any breaches of the conditions of this mining lease or breaches of the Mining Act or Regulations;	Not Triggered	According to site communications there were no breaches of any conditions of this mining lease or breaches of the Mining Act or Regulations.	
4 (b)	Notifications under condition 4(a) must be provided in the form specified on the Department's website within seven (7) days of the mining lease holder becoming aware of the breach.	Not Triggered	No evidence of breaches provided to SLR.	
<b>5. Environmental Incident Report</b>				
	The lease holder must provide environmental incident notifications and reports to the Secretary no later than seven (7) days after those environmental incident notifications and reports are provided to the relevant authorities under the Protection of the Environment Operations Act 1997.	Not Triggered	No evidence of environmental incidents that causes material harm under the POEO Act.	
<b>6. Extraction Plan</b>				
6 (a)	In this condition: <ul style="list-style-type: none"> <li>(i) approved Extraction Plan means a plan, being:             <ul style="list-style-type: none"> <li>A an extraction plan or subsidence management plan approved in accordance with the conditions of a relevant development consent and provided to the Secretary; or</li> <li>B a subsidence management plan relating to the mining operations subject to this lease; submitted to the Secretary on or before 31 December 2014; and</li> <li>II approved by the Secretary.</li> </ul> </li> <li>(ii) relevant development consent means a development consent or project approval issued under the Environmental Planning &amp; Assessment Act 1979 relating to the mining operations subject to this lease.</li> </ul>	Not Triggered	Open cut mine. Not Applicable.	
6 (b)	The lease holder must not undertake any underground mining operations that may cause subsidence except in accordance with an approved Extraction Plan.	Not Triggered	Open cut mine. Not Applicable.	
6 (c)	The lease holder must ensure that the approved Extraction Plan provides for the effective management of risks associated with any subsidence resulting from mining operations carried out under this lease.	Not Triggered	Open cut mine. Not Applicable.	

# ML 1708 Licence Instrument

Condition Number	Condition	Compliance Status	Evidence	Recommended Action
6 (d)	<p>The lease holder must notify the Secretary within 48 hours of any:</p> <p>(i) incident caused by subsidence which has a potential to expose any person to health and safety risks;</p> <p>(ii) significant deviation from the predicted nature, magnitude, distribution, timing and duration of subsidence effects, and of the potential impacts and consequences of those deviations on built features and the health and safety of any person; or</p> <p>(iii) significant failure or malfunction of a monitoring device or risk control measure set out in the approved Extraction Plan addressing:</p> <p>A. built features;</p> <p>B. public safety; or</p> <p>C. subsidence monitoring.</p>	Not Triggered	Open cut mine. Not Applicable.	
<b>7. Resource Recovery</b>				
	The lease holder must optimise recovery of the minerals that are the subject of this mining lease to the extent economically feasible.	Compliant	No reason to determine non compliance.	
<b>8. Group Security</b>				
	<p>The lease holder is required to provide and maintain a security deposit to secure funding for the fulfilment of obligations of all or any kind under the mining lease, including obligations of all or any kind under the mining lease that may arise in the future.</p> <p>The amount of the security deposit to be provided as a group security has been assessed by the Minister at \$17,956,000.</p> <p>The leases covered by the group security include:</p> <p><b>Mining Lease 1645 (Act 1992)</b></p> <p><b>Mining Lease 1708 (Act 1992)</b></p> <p><b>Mining Lease 1709 (Act 1992)</b></p> <p><b>Mining Lease 1713 (Act 1992)</b></p> <p><b>Mining Lease 1750 (Act 1992)</b></p>	Compliant	<p>* Letter from DPIE dated 29/7/2019 approving an increase in the security deposit to \$52,073,000.</p> <p>* "Details of Mining Lease 1645 (Act 1992)" states the securities held by DPIE.</p>	
<b>9. Cooperation Agreement</b>				
	<p>The lease holder must make every reasonable attempt, and be able to demonstrate its attempts, to enter into a cooperation agreement with the holder(s) of any overlapping title(s). The cooperation agreement should address but not be limited to issues such as:</p> <ul style="list-style-type: none"> <li>-access arrangements</li> <li>-operational interaction procedures</li> <li>-dispute resolution</li> <li>-information exchange</li> <li>-well location</li> <li>-timing of drilling</li> <li>-potential resource extraction conflicts; and</li> <li>-rehabilitation issues.</li> </ul>	Not Triggered	Not overlapping with any other MLs.	
<b>Exploration Reporting</b>				
Note:	<p><i>Exploration Reports (Geological and Geophysical)</i></p> <p>The lease holder must lodge reports to the satisfaction of the Minister in accordance with section 163C of the Mining Act 1992 and in accordance with clause 59 of the Mining Regulation 2016. Reports must be prepared in accordance with <i>Exploration Reporting: A guide for reporting on exploration and prospecting in New South Wales</i>.</p>	Compliant	Evidence of exploration reports across the period. Most recent report covers 17 December 2018 to 16 December 2019.	
<b>Special Conditions</b>				
Note:	The standard conditions apply to all mining leases. The Division of Resources and Geoscience (DRG) reserves the right to impose special conditions, based on individual circumstances, where appropriate.	Note	Noted	

# ML 1709 Licence Instrument

Condition Number	Condition	Compliance Status	Evidence	Recommended Action
<b>Mining Lease Conditions 2013</b>				
<b>1. Notice to Landholders</b>				
1 (a)	Within a period of three months from the date of grant/renewal of this mining lease, the lease holder must serve on each landholder a notice in writing indicating that this mining lease has been granted/renewed and whether the lease includes the surface. A plan identifying each landholder and individual land parcel subject to the lease area, and a description of the lease area must accompany the notice.	Compliant	Based on site discussions there has been no conditions triggered the lease renewal.	
1 (b)	If there are ten or more landholders, the lease holder may serve the notice by publication in a newspaper circulating in the region where the lease area is situated. The notice must indicate that this mining lease has been granted/renewed; state whether the lease includes the surface and must contain a plan and description of the lease area. If a notice is made under condition 1(b), compliance with condition 1(a) is not required.	Compliant	N/A	
<b>2. Rehabilitation</b>				
	Any disturbance resulting from the activities carried out under this mining lease must be rehabilitated to the satisfaction of the Minister.	Compliant	<p>Rehabilitation status reported in the 2017 - 2019 Annual Reviews.</p> <p>According to site communications in August 2019 the Resource Regulator (RR) attended the site and reviewed rehabilitated areas. They were generally satisfied with the rehabilitation.</p> <p>According to site communications no notifications have been issued by RR in regards to improving rehabilitation.</p> <p>Only one notification (NTCE0004145) has been issued by RR, dated 1 November 2019 and this related to a rehabilitation risk assessment. According to site communications a risk assessment has been held and a Draft Mount Pleasant Operations Rehabilitation Risk Assessment Report is being prepared.</p> <p>Evidence of early phase of rehabilitation program during the site inspection. Evidence of some recent reshaping for failed rehabilitation area. Additional reshaping and new rehabilitation proposed for 2020.</p>	
<b>3. Mining Operations Plan and Annual Rehabilitation Report</b>				
3 (a)	The lease holder must comply with an approved Mining Operations Plan (MOP) in carrying out any significant surface disturbing activities, including mining operations, mining purposes and prospecting. The lease holder must apply to the Minister for approval of a MOP. An approved MOP must be in place prior to commencing any significant surface disturbing activities, including mining operations, mining purposes and prospecting.	Compliant	No evidence of non compliances with the MOP regarding surface disturbance.	
3 (b)	The MOP must identify the post mining land use and set out a detailed rehabilitation strategy which: (i) identifies areas that will be disturbed; (ii) details the staging of specific mining operations, mining purposes and prospecting; (iii) identifies how the mine will be managed and rehabilitated to achieve the post mining land use; (iv) identifies how mining operations, mining purposes and prospecting will be carried out in order to prevent and or minimise harm to the environment; and (v) reflects the conditions of approval under: •the Environmental Planning and Assessment Act 1979; •the Protection of the Environment Operations Act 1997; and •any other approvals relevant to the development including the conditions of this mining lease.	Compliant	<p>Evidence of three MOPs from the period. Evidence of approval of these MOPs which cover a one year period.</p> <p>Based on site correspondence the MACH Energy the site will complete another 12 month MOP.</p>	
3 (c)	The MOP must be prepared in accordance with the ESG3: Mining Operations Plan (MOP) Guidelines September 2013 published on the Department's website at <a href="http://www.resourcesandenergy.nsw.gov.au/miners-and-explorers/rules-and-forms/pgf/environmental-guidelines">www.resourcesandenergy.nsw.gov.au/miners-and-explorers/rules-and-forms/pgf/environmental-guidelines</a>	Compliant	Both MOP's have been prepared as per the guidelines.	
3 (d)	The lease holder may apply to the Minister to amend an approved MOP at any time.			
3 (e)	It is not a breach of this condition if: (i) the operations which, but for this condition 3(e) would be a breach of condition 3(a), were necessary to comply with a lawful order or direction given under the Environmental Planning and Assessment Act 1979, the Protection of the Environment Operations Act 1997, the Work Health and Safety (Mines and Petroleum Sites) Act 2013 and Work Health and Safety (Mines and Petroleum Sites) Regulation 2014 or the Work Health and Safety Act 2011; and Work Health and Safety Regulation 2011 (ii) the Minister had been notified in writing of the terms of the order or direction prior to the operations constituting the breach being carried out.	Noted		
3 (f)	The lease holder must prepare a Rehabilitation Report to the satisfaction of the Minister. The report must: (i) provide a detailed review of the progress of rehabilitation against the performance measures and criteria established in the approved MOP; (ii) be submitted annually on the grant anniversary date (or at such other times as agreed by the Minister); and (iii) be prepared in accordance with any relevant annual reporting guidelines published on the Department's website at <a href="http://www.resourcesandenergy.nsw.gov.au/miners-and-explorers/rules-and-forms/pgf/environmental-guidelines">www.resourcesandenergy.nsw.gov.au/miners-and-explorers/rules-and-forms/pgf/environmental-guidelines</a>  <i>Note: The Rehabilitation Report replaces the Annual Environmental Management Report.</i>	Compliant	Included in the Annual Review with this provided to the RR.	
<b>4. Non-Compliance Reporting</b>				

# ML 1709 Licence Instrument

Condition Number	Condition	Compliance Status	Evidence	Recommended Action
4 (a)	The lease holder must notify the Department upon becoming aware of any breaches of the conditions of this mining lease or breaches of the Mining Act or Regulations;	Not Triggered	According to site communications there were no breaches of any conditions of this mining lease or breaches of the Mining Act or Regulations.	
4 (b)	Notifications under condition 4(a) must be provided in the form specified on the Department's website within seven (7) days of the mining lease holder becoming aware of the breach.	Not Triggered	No evidence of breaches provided to SLR.	
<b>5. Environmental Incident Report</b>				
	The lease holder must provide environmental incident notifications and reports to the Secretary no later than seven (7) days after those environmental incident notifications and reports are provided to the relevant authorities under the Protection of the Environment Operations Act 1997.	Not Triggered	No evidence of environmental incidents that causes material harm under the POEO Act.	
<b>6. Extraction Plan</b>				
6 (a)	<p>In this condition:</p> <p>(i) approved Extraction Plan means a plan, being:</p> <p>A. an extraction plan or subsidence management plan approved in accordance with the conditions of a relevant development consent and provided to the Secretary; or</p> <p>B. a subsidence management plan relating to the mining operations subject to this lease:</p> <p>I. submitted to the Secretary on or before 31 December 2014; and</p> <p>II. approved by the Secretary.</p> <p>(ii) relevant development consent means a development consent or project approval issued under the Environmental Planning &amp; Assessment Act 1979 relating to the mining operations subject to this lease.</p>	Not Triggered	Open cut mine. Not Applicable.	
6 (b)	The lease holder must not undertake any underground mining operations that may cause subsidence except in accordance with an approved Extraction Plan.	Not Triggered	Open cut mine. Not Applicable.	
6 (c)	The lease holder must ensure that the approved Extraction Plan provides for the effective management of risks associated with any subsidence resulting from mining operations carried out under this lease.	Not Triggered	Open cut mine. Not Applicable.	
6 (d)	<p>The lease holder must notify the Secretary within 48 hours of any:</p> <p>(i) incident caused by subsidence which has a potential to expose any person to health and safety risks;</p> <p>(ii) significant deviation from the predicted nature, magnitude, distribution, timing and duration of subsidence effects, and of the potential impacts and consequences of those deviations on built features and the health and safety of any person; or</p> <p>(iii) significant failure or malfunction of a monitoring device or risk control measure set out in the approved Extraction Plan addressing:</p> <p>A. built features;</p> <p>B. public safety; or</p> <p>C. subsidence monitoring.</p>	Not Triggered	Open cut mine. Not Applicable.	
<b>7. Resource Recovery</b>				
	The lease holder must optimise recovery of the minerals that are the subject of this mining lease to the extent economically feasible.	Compliant	No reason to determine non compliance.	
<b>8. Group Security</b>				
	<p>The lease holder is required to provide and maintain a security deposit to secure funding for the fulfilment of obligations of all or any kind under the mining lease, including obligations of all or any kind under the mining lease that may arise in the future.</p> <p>The amount of the security deposit to be provided as a group security has been assessed by the Minister at \$17,956,000.</p> <p>The leases covered by the group security include:</p> <p><b>Mining Lease 1645 (Act 1992)</b></p> <p><b>Mining Lease 1708 (Act 1992)</b></p> <p><b>Mining Lease 1709 (Act 1992)</b></p> <p><b>Mining Lease 1713 (Act 1992)</b></p> <p><b>Mining Lease 1750 (Act 1992)</b></p>	Compliant	<p>* Letter from DPIE dated 29/7/2019 approving an increase in the security deposit to \$52,073,000.</p> <p>* "Details of Mining Lease 1645 (Act 1992)" states the securities held by DPIE.</p>	
<b>9. Cooperation Agreement</b>				
	<p>The lease holder must make every reasonable attempt, and be able to demonstrate its attempts, to enter into a cooperation agreement with the holder(s) of any overlapping title(s). The cooperation agreement should address but not be limited to issues such as:</p> <ul style="list-style-type: none"> <li>•access arrangements</li> <li>•operational interaction procedures</li> <li>•dispute resolution</li> <li>•information exchange</li> <li>•well location</li> <li>•timing of drilling</li> <li>•potential resource extraction conflicts; and</li> <li>•rehabilitation issues.</li> </ul>	Not Triggered	Not overlapping with any other MLs.	
<b>Exploration Reporting</b>				

# ML 1709 Licence Instrument

Condition Number	Condition	Compliance Status	Evidence	Recommended Action
Note:	<p><i>Exploration Reports (Geological and Geophysical)</i></p> <p>The lease holder must lodge reports to the satisfaction of the Minister in accordance with section 163C of the Mining Act 1992 and in accordance with clause 59 of the Mining Regulation 2016. Reports must be prepared in accordance with <i>Exploration Reporting: A guide for reporting on exploration and prospecting in New South Wales</i>.</p>	Compliant	Evidence of exploration reports across the period. Most recent report covers 17 December 2018 to 16 December 2019.	
<b>Special Conditions</b>				
Note:	The standard conditions apply to all mining leases. The Division of Resources and Geoscience (DRG) reserves the right to impose special conditions, based on individual circumstances, where appropriate.	Note	Noted	

# ML 1713 Transfer Approval

Condition Number	Condition	Compliance Status	Evidence	Recommended Action
<b>Mining Lease Conditions 2013</b>				
<b>1. Notice to Landholders</b>				
1 (a)	Within a period of three months from the date of grant/renewal of this mining lease, the lease holder must serve on each landholder a notice in writing indicating that this mining lease has been granted/renewed and whether the lease includes the surface. A plan identifying each landholder and individual land parcel subject to the lease area, and a description of the lease area must accompany the notice.	Compliant	Based on site discussions there has been no conditions triggered the lease renewal.	
1 (b)	If there are ten or more landholders, the lease holder may serve the notice by publication in a newspaper circulating in the region where the lease area is situated. The notice must indicate that this mining lease has been granted/renewed; state whether the lease includes the surface and must contain a plan and description of the lease area. If a notice is made under condition 1(b), compliance with condition 1(a) is not required.	Compliant	N/A	
<b>2. Rehabilitation</b>				
	Any disturbance resulting from the activities carried out under this mining lease must be rehabilitated to the satisfaction of the Minister.	Compliant	<p>Rehabilitation status reported in the 2017 - 2019 Annual Reviews.</p> <p>According to site communications in August 2019 the Resource Regulator (RR) attended the site and reviewed rehabilitated areas. They were generally satisfied with the rehabilitation.</p> <p>According to site communications no notifications have been issued by RR in regards to improving rehabilitation.</p> <p>Only one notification (NTCE0004145) has been issued by RR, dated 1 November 2019 and this related to a rehabilitation risk assessment. According to site communications a risk assessment has been held and a Draft Mount Pleasant Operations Rehabilitation Risk Assessment Report is being prepared.</p> <p>Evidence of early phase of rehabilitation program during the site inspection. Evidence of some recent reshaping for failed rehabilitation area. Additional reshaping and new rehabilitation proposed for 2020.</p>	
<b>3. Mining Operations Plan and Annual Rehabilitation Report</b>				
3 (a)	The lease holder must comply with an approved Mining Operations Plan (MOP) in carrying out any significant surface disturbing activities, including mining operations, mining purposes and prospecting. The lease holder must apply to the Minister for approval of a MOP. An approved MOP must be in place prior to commencing any significant surface disturbing activities, including mining operations, mining purposes and prospecting.	Compliant	No evidence of non compliances with the MOP regarding surface disturbance.	

# ML 1713 Transfer Approval

Condition Number	Condition	Compliance Status	Evidence	Recommended Action
3 (b)	The MOP must identify the post mining land use and set out a detailed rehabilitation strategy which: (i) identifies areas that will be disturbed; (ii) details the staging of specific mining operations, mining purposes and prospecting; (iii) identifies how the mine will be managed and rehabilitated to achieve the post mining land use; (iv) identifies how mining operations, mining purposes and prospecting will be carried out in order to prevent and or minimise harm to the environment; and (v) reflects the conditions of approval under: •the Environmental Planning and Assessment Act 1979; •the Protection of the Environment Operations Act 1997; and •any other approvals relevant to the development including the conditions of this mining lease.	Compliant	Evidence of three MOPs from the period. Evidence of approval of these MOPs which cover a one year period.  Based on site correspondence the MACH Energy the site will complete another 12 month MOP.	
3 (c)	The MOP must be prepared in accordance with the ESG3: Mining Operations Plan (MOP) Guidelines September 2013 published on the Department's website at <a href="http://www.resourcesandenergy.nsw.gov.au/miners-and-explorers/rules-and-forms/pgf/environmental-guidelines">www.resourcesandenergy.nsw.gov.au/miners-and-explorers/rules-and-forms/pgf/environmental-guidelines</a>	Compliant	Both MOP's have been prepared as per the guidelines.	
3 (d)	The lease holder may apply to the Minister to amend an approved MOP at any time.			
3 (e)	It is not a breach of this condition if: (i) the operations which, but for this condition 3(e) would be a breach of condition 3(a), were necessary to comply with a lawful order or direction given under the Environmental Planning and Assessment Act 1979, the Protection of the Environment Operations Act 1997, the Work Health and Safety (Mines and Petroleum Sites) Act 2013 and Work Health and Safety (Mines and Petroleum Sites) Regulation 2014 or the Work Health and Safety Act 2011; and Work Health and Safety Regulation 2011 (ii) the Minister had been notified in writing of the terms of the order or direction prior to the operations constituting the breach being carried out.	Noted		
3 (f)	The lease holder must prepare a Rehabilitation Report to the satisfaction of the Minister. The report must:  (i) provide a detailed review of the progress of rehabilitation against the performance measures and criteria established in the approved MOP; (ii) be submitted annually on the grant anniversary date (or at such other times as agreed by the Minister); and (iii) be prepared in accordance with any relevant annual reporting guidelines published on the Department's website at <a href="http://www.resourcesandenergy.nsw.gov.au/miners-and-explorers/rules-and-forms/pgf/environmental-guidelines">www.resourcesandenergy.nsw.gov.au/miners-and-explorers/rules-and-forms/pgf/environmental-guidelines</a>	Compliant	Included in the Annual Review with this provided to the RR.	

## 4. Non-Compliance Reporting

# ML 1713 Transfer Approval

Condition Number	Condition	Compliance Status	Evidence	Recommended Action
4 (a)	The lease holder must notify the Department upon becoming aware of any breaches of the conditions of this mining lease or breaches of the Mining Act or Regulations;	Not Triggered	According to site communications there were no breaches of any conditions of this mining lease or breaches of the Mining Act or Regulations.	
4 (b)	Notifications under condition 4(a) must be provided in the form specified on the Department's website within seven (7) days of the mining lease holder becoming aware of the breach.	Not Triggered	No evidence of breaches provided to SLR.	
<b>5. Environmental Incident Report</b>				
	The lease holder must provide environmental incident notifications and reports to the Secretary no later than seven (7) days after those environmental incident notifications and reports are provided to the relevant authorities under the Protection of the Environment Operations Act 1997.	Not Triggered	No evidence of environmental incidents that causes material harm under the POEO Act.	
<b>6. Extraction Plan</b>				
6 (a)	<p>In this condition:</p> <p>(i) approved Extraction Plan means a plan, being:</p> <p>A. an extraction plan or subsidence management plan approved in accordance with the conditions of a relevant development consent and provided to the Secretary; or                      B. a subsidence management plan relating to the mining operations subject to this lease:</p> <p>I. submitted to the Secretary on or before 31 December 2014; and</p> <p>II. approved by the Secretary.</p> <p>(ii) relevant development consent means a development consent or project approval issued under the Environmental Planning &amp; Assessment Act 1979 relating to the mining operations subject to this lease.</p>	Not Triggered	Open cut mine. Not Applicable.	
6 (b)	The lease holder must not undertake any underground mining operations that may cause subsidence except in accordance with an approved Extraction Plan.	Not Triggered	Open cut mine. Not Applicable.	
6 (c)	The lease holder must ensure that the approved Extraction Plan provides for the effective management of risks associated with any subsidence resulting from mining operations carried out under this lease.	Not Triggered	Open cut mine. Not Applicable.	



# ML 1713 Transfer Approval

Condition Number	Condition	Compliance Status	Evidence	Recommended Action
6 (d)	<p>The lease holder must notify the Secretary within 48 hours of any:</p> <p>(i) incident caused by subsidence which has a potential to expose any person to health and safety risks;</p> <p>(ii) significant deviation from the predicted nature, magnitude, distribution, timing and duration of subsidence effects, and of the potential impacts and consequences of those deviations on built features and the health and safety of any person; or</p> <p>(iii) significant failure or malfunction of a monitoring device or risk control measure set out in the approved Extraction Plan addressing:</p> <p>A. built features;</p> <p>B. public safety; or</p> <p>C. subsidence monitoring.</p>	Not Triggered	Open cut mine. Not Applicable.	
<b>7. Resource Recovery</b>				
	<p>The lease holder must optimise recovery of the minerals that are the subject of this mining lease to the extent economically feasible.</p>	Compliant	No reason to determine non compliance.	
<b>8. Group Security</b>				
	<p>The lease holder is required to provide and maintain a security deposit to secure funding for the fulfilment of obligations of all or any kind under the mining lease, including obligations of all or any kind under the mining lease that may arise in the future.</p> <p>The amount of the security deposit to be provided as a group security has been assessed by the Minister at \$17,956,000.</p> <p>The leases covered by the group security include:</p> <p><b>Mining Lease 1645 (Act 1992)</b></p> <p><b>Mining Lease 1708 (Act 1992)</b></p> <p><b>Mining Lease 1709 (Act 1992)</b></p> <p><b>Mining Lease 1713 (Act 1992)</b></p> <p><b>Mining Lease 1750 (Act 1992)</b></p>	Compliant	<p>* Letter from DPIE dated 29/7/2019 approving an increase in the security deposit to \$52,073,000.</p> <p>* "Details of Mining Lease 1645 (Act 1992)" states the securities held by DPIE.</p>	
<b>9. Cooperation Agreement</b>				

# ML 1713 Transfer Approval

Condition Number	Condition	Compliance Status	Evidence	Recommended Action
	<p>The lease holder must make every reasonable attempt, and be able to demonstrate its attempts, to enter into a cooperation agreement with the holder(s) of any overlapping title(s). The cooperation agreement should address but not be limited to issues such as:</p> <ul style="list-style-type: none"> <li>•access arrangements</li> <li>•operational interaction procedures</li> <li>•dispute resolution</li> <li>•information exchange</li> <li>•well location</li> <li>•timing of drilling</li> <li>•potential resource extraction conflicts; and</li> <li>•rehabilitation issues.</li> </ul>	Not Triggered	Not overlapping with any other MLs.	
<b>Exploration Reporting</b>				
Note:	<p><i>Exploration Reports (Geological and Geophysical)</i></p> <p><i>The lease holder must lodge reports to the satisfaction of the Minister in accordance with section 163C of the Mining Act 1992 and in accordance with clause 59 of the Mining Regulation 2016.</i></p> <p><i>Reports must be prepared in accordance with Exploration Reporting: A guide for reporting on exploration and prospecting in New South Wales.</i></p>	Compliant	Evidence of exploration reports across the period. Most recent report covers 17 December 2018 to 16 December 2019.	
<b>Special Conditions</b>				
Note:	<p><i>The standard conditions apply to all mining leases. The Division of Resources and Geoscience (DRG) reserves the right to impose special conditions, based on individual circumstances, where appropriate.</i></p>	Note	Noted	

# ML 1750

Condition Number	Condition	Compliance Status	Evidence	Recommended Action
<b>Mining Lease Conditions 2013</b>				
<b>1. Notice to Landholders</b>				
1 (a)	Within a period of three months from the date of grant/renewal of this mining lease, the lease holder must serve on each landholder a notice in writing indicating that this mining lease has been granted/renewed and whether the lease includes the surface. A plan identifying each landholder and individual land parcel subject to the lease area, and a description of the lease area must accompany the notice.	Compliant	Based on site discussions there has been no conditions triggered the lease renewal.	
1 (b)	If there are ten or more landholders, the lease holder may serve the notice by publication in a newspaper circulating in the region where the lease area is situated. The notice must indicate that this mining lease has been granted/renewed; state whether the lease includes the surface and must contain a plan and description of the lease area. If a notice is made under condition 1(b), compliance with condition 1(a) is not required.	Compliant	N/A	
<b>2. Rehabilitation</b>				
	Any disturbance resulting from the activities carried out under this mining lease must be rehabilitated to the satisfaction of the Minister.	Compliant	<p>Rehabilitation status reported in the 2017 - 2019 Annual Reviews.</p> <p>According to site communications in August 2019 the Resource Regulator (RR) attended the site and reviewed rehabilitated areas. They were generally satisfied with the rehabilitation.</p> <p>According to site communications no notifications have been issued by RR in regards to improving rehabilitation.</p> <p>Only one notification (NTCE0004145) has been issued by RR, dated 1 November 2019 and this related to a rehabilitation risk assessment. According to site communications a risk assessment has been held and a Draft Mount Pleasant Operations Rehabilitation Risk Assessment Report is being prepared.</p> <p>Evidence of early phase of rehabilitation program during the site inspection. Evidence of some recent reshaping for failed rehabilitation area. Additional reshaping and new rehabilitation proposed for 2020.</p>	
<b>3. Mining Operations Plan and Annual Rehabilitation Report</b>				
3 (a)	The lease holder must comply with an approved Mining Operations Plan (MOP) in carrying out any significant surface disturbing activities, including mining operations, mining purposes and prospecting. The lease holder must apply to the Minister for approval of a MOP. An approved MOP must be in place prior to commencing any significant surface disturbing activities, including mining operations, mining purposes and prospecting.	Compliant	No evidence of non compliances with the MOP regarding surface disturbance.	
3 (b)	The MOP must identify the post mining land use and set out a detailed rehabilitation strategy which: (i) identifies areas that will be disturbed; (ii) details the staging of specific mining operations, mining purposes and prospecting; (iii) identifies how the mine will be managed and rehabilitated to achieve the post mining land use; (iv) identifies how mining operations, mining purposes and prospecting will be carried out in order to prevent and or minimise harm to the environment; and (v) reflects the conditions of approval under: • the Environmental Planning and Assessment Act 1979; • the Protection of the Environment Operations Act 1997; and • any other approvals relevant to the development including the conditions of this mining lease.	Compliant	<p>Evidence of three MOPs from the period. Evidence of approval of these MOPs which cover a one year period.</p> <p>Based on site correspondence the MACH Energy the site will complete another 12 month MOP.</p>	
3 (c)	The MOP must be prepared in accordance with the ESG3: Mining Operations Plan (MOP) Guidelines September 2013 published on the Department's website at <a href="http://www.resourcesandenergy.nsw.gov.au/miners-and-explorers/rules-and-forms/pgf/environmental-guidelines">www.resourcesandenergy.nsw.gov.au/miners-and-explorers/rules-and-forms/pgf/environmental-guidelines</a>	Compliant	Both MOP's have been prepared as per the guidelines.	
3 (d)	The lease holder may apply to the Minister to amend an approved MOP at any time.			
3 (e)	It is not a breach of this condition if: (i) the operations which, but for this condition 3(e) would be a breach of condition 3(a), were necessary to comply with a lawful order or direction given under the Environmental Planning and Assessment Act 1979, the Protection of the Environment Operations Act 1997, the Work Health and Safety (Mines and Petroleum Sites) Act 2013 and Work Health and Safety (Mines and Petroleum Sites) Regulation 2014 or the Work Health and Safety Act 2011; and Work Health and Safety Regulation 2011 (ii) the Minister had been notified in writing of the terms of the order or direction prior to the operations constituting the breach being carried out.	Noted		
3 (f)	The lease holder must prepare a Rehabilitation Report to the satisfaction of the Minister. The report must: (i) provide a detailed review of the progress of rehabilitation against the performance measures and criteria established in the approved MOP; (ii) be submitted annually on the grant anniversary date (or at such other times as agreed by the Minister); and (iii) be prepared in accordance with any relevant annual reporting guidelines published on the Department's website at <a href="http://www.resourcesandenergy.nsw.gov.au/miners-and-explorers/rules-and-forms/pgf/environmental-guidelines">www.resourcesandenergy.nsw.gov.au/miners-and-explorers/rules-and-forms/pgf/environmental-guidelines</a> <i>Note: The Rehabilitation Report replaces the Annual Environmental Management Report.</i>	Compliant	Included in the Annual Review with this provided to the RR.	
<b>4. Non-Compliance Reporting</b>				

# ML 1750


Condition Number	Condition	Compliance Status	Evidence	Recommended Action
4 (a)	The lease holder must notify the Department upon becoming aware of any breaches of the conditions of this mining lease or breaches of the Mining Act or Regulations;	Not Triggered	According to site communications there were no breaches of any conditions of this mining lease or breaches of the Mining Act or Regulations.  No evidence of breaches provided to SLR.	
4 (b)	Notifications under condition 4(a) must be provided in the form specified on the Department's website within seven (7) days of the mining lease holder becoming aware of the breach.	Not Triggered		
<b>5. Environmental Incident Report</b>				
	The lease holder must provide environmental incident notifications and reports to the Secretary no later than seven (7) days after those environmental incident notifications and reports are provided to the relevant authorities under the Protection of the Environment Operations Act 1997.	Not Triggered	No evidence of environmental incidents that causes material harm under the POEO Act.	
<b>6. Extraction Plan</b>				
6 (a)	In this condition: (i) approved Extraction Plan means a plan, being: A. an extraction plan or subsidence management plan approved in accordance with the conditions of a relevant development consent and provided to the Secretary; or B. a subsidence management plan relating to the mining operations subject to this lease: I. submitted to the Secretary on or before 31 December 2014; and II. approved by the Secretary. (ii) relevant development consent means a development consent or project approval issued under the Environmental Planning & Assessment Act 1979 relating to the mining operations subject to this lease.	Not Triggered	Open cut mine. Not Applicable.	
6 (b)	The lease holder must not undertake any underground mining operations that may cause subsidence except in accordance with an approved Extraction Plan.	Not Triggered	Open cut mine. Not Applicable.	
6 (c)	The lease holder must ensure that the approved Extraction Plan provides for the effective management of risks associated with any subsidence resulting from mining operations carried out under this lease.	Not Triggered	Open cut mine. Not Applicable.	
6 (d)	The lease holder must notify the Secretary within 48 hours of any: (i) incident caused by subsidence which has a potential to expose any person to health and safety risks; (ii) significant deviation from the predicted nature, magnitude, distribution, timing and duration of subsidence effects, and of the potential impacts and consequences of those deviations on built features and the health and safety of any person; or (iii) significant failure or malfunction of a monitoring device or risk control measure set out in the approved Extraction Plan addressing: A. built features; B. public safety; or C. subsidence monitoring.	Not Triggered	Open cut mine. Not Applicable.	
<b>7. Resource Recovery</b>				
	The lease holder must optimise recovery of the minerals that are the subject of this mining lease to the extent economically feasible.	Compliant	No reason to determine non compliance.	
<b>8. Group Security</b>				

# ML 1750

Condition Number	Condition	Compliance Status	Evidence	Recommended Action
	<p>The lease holder is required to provide and maintain a security deposit to secure funding for the fulfilment of obligations of all or any kind under the mining lease, including obligations of all or any kind under the mining lease that may arise in the future.</p> <p>The amount of the security deposit to be provided as a group security has been assessed by the Minister at \$17,956,000.</p> <p>The leases covered by the group security include:</p> <p><b>Mining Lease 1645 (Act 1992)</b></p> <p><b>Mining Lease 1708 (Act 1992)</b></p> <p><b>Mining Lease 1709 (Act 1992)</b></p> <p><b>Mining Lease 1713 (Act 1992)</b></p> <p><b>Mining Lease 1750 (Act 1992)</b></p>	Compliant	<p>* Letter from DPIE dated 29/7/2019 approving an increase in the security deposit to \$52,073,000.</p> <p>* "Details of Mining Lease 1645 (Act 1992)" states the securities held by DPIE.</p>	
<b>9. Cooperation Agreement</b>				
	<p>The lease holder must make every reasonable attempt, and be able to demonstrate its attempts, to enter into a cooperation agreement with the holder(s) of any overlapping title(s). The cooperation agreement should address but not be limited to issues such as:</p> <ul style="list-style-type: none"> <li>•access arrangements</li> <li>•operational interaction procedures</li> <li>•dispute resolution</li> <li>•information exchange</li> <li>•well location</li> <li>•timing of drilling</li> <li>•potential resource extraction conflicts; and</li> <li>•rehabilitation issues.</li> </ul>	Not Triggered	Not overlapping with any other MLs.	
<b>Exploration Reporting</b>				
Note:	<p><i>Exploration Reports (Geological and Geophysical)</i></p> <p>The lease holder must lodge reports to the satisfaction of the Minister in accordance with section 163C of the Mining Act 1992 and in accordance with clause 59 of the Mining Regulation 2016.</p> <p>Reports must be prepared in accordance with <i>Exploration Reporting: A guide for reporting on exploration and prospecting in New South Wales</i>.</p>	Compliant	Evidence of exploration reports across the period. Most recent report covers 17 December 2018 to 16 December 2019.	
<b>Special Conditions</b>				
Note:	The standard conditions apply to all mining leases. The Division of Resources and Geoscience (DRG) reserves the right to impose special conditions, based on individual circumstances, where appropriate.	Note	Noted	

# APPENDIX C

Audit Certification Form

Development Name	Mount Pleasant Operation
Development Consent No.	Development Consent DA 92/97
Description of Development	Open Cut Coal Mine
Development Address	Off Construction Road, Vales Point NSW 2259
Operator	Mach Energy Australia Pty Ltd
Operator Address	PO Box 351 Muswellbrook, NSW
Title of Audit	Mount Pleasant 2020 Independent Environmental Audit
Audit Period	26 November 2017 to 27 February 2020
<p><i>I certify that I have undertaken the independent Audit and prepared the contents of the attached independent Audit report and to the best of my knowledge:</i></p> <p><i>The Audit has been undertaken in accordance with relevant approval condition(s) and in accordance with the Auditing standard AS/NZS ISO 19011:2014 and Post Approval Guidelines – Independent Audits</i></p> <p><i>The findings of the Audit are reported truthfully, accurately and completely;</i></p> <p><i>I have exercised due diligence and professional judgement in conducting the Audit;</i></p> <p><i>I have acted professionally, in an unbiased manner and did not allow undue influence to limit or over-ride objectivity in conducting the Audit;</i></p> <p><i>I am not related to any owner or operator of the development as an employer, business partner, employee, sharing a common employer, having a contractual arrangement outside the Audit, spouse, partner, sibling, parent, or child;</i></p> <p><i>I do not have any pecuniary interest in the Audited development, including where there is a reasonable likelihood or expectation of financial gain or loss to me or to a person to whom I am closely related (i.e. immediate family);</i></p> <p><i>Neither I nor my employer have provided consultancy services for the Audited development that were subject to this Audit except as otherwise declared to the lead regulator prior to the Audit; and</i></p> <p><i>I have not accepted, nor intend to accept any inducement, commission, gift or any other benefit (apart from fair payment) from any owner or operator of the development, their employees or any interested party. I have not knowingly allowed, nor intend to allow my colleagues to do so.</i></p> <p><i>Note.</i></p> <p><i>The Independent Audit is an ‘environmental Audit’ for the purposes of section 122B(2) of the Environmental Planning and Assessment Act 1979. Section 122E provides that a person must not include false or misleading information (or provide information for inclusion in) an Audit report produced to the Minister in connection with an environmental Audit if the person knows that the information is false or misleading in a material respect. The maximum penalty is, in the case of a corporation, \$1 million and for an individual, \$250,000.</i></p> <p><i>The Crimes Act 1900 contains other offences relating to false and misleading information: section 192G (Intention to defraud by false or misleading statement—maximum penalty 5 years imprisonment); sections 307A, 307B and 307C (False or misleading applications/information/documents—maximum penalty 2 years imprisonment or \$22,000, or both).</i></p>	
Signature	
Name of Lead / Principal Auditor	Chris Jones
Address	10 Kings Road, New Lambton NSW 2305, Australia
Email Address	cjones@slrconsulting.com
Audit or Certification (if relevant)	Principal Environmental Auditor
Date:	11 June 2020

# APPENDIX D

Endorsement of SLR





Mr Andrew Reid  
Environmental Superintendent (Operations)  
MACH Energy Australia Pty Ltd  
1100 Wybong Road  
MUSWELLBROOK NSW 2333

Contact: Heidi Watters  
Phone: (02) 6575 3401  
Email: [heidi.watters@planning.nsw.gov.au](mailto:heidi.watters@planning.nsw.gov.au)  
[compliance@planning.nsw.gov.au](mailto:compliance@planning.nsw.gov.au)  
Our ref: DA92/97

Email: [andrew.reid@machenergyaustralia.com.au](mailto:andrew.reid@machenergyaustralia.com.au)

Dear Mr Reid

**MOUNT PLEASANT OPERATION (DA 92/97) – INDEPENDENT ENVIRONMENTAL AUDIT**

Reference is made to correspondence from MACH Energy Australia Pty Ltd (MACH Energy) requesting the Secretary of the Department of Planning, Industry and Environment (the Department) endorsement of a suitably qualified, experienced and independent team of experts, including wastewater management, for the upcoming Independent Environmental Audit (IEA) required by Schedule 5 condition 9 of DA 92/97 (the consent) for the Mount Pleasant Operation.

The Secretary nominee has considered the proposed audit team and subsequently endorses the following audit team:

- Chris Jones – Lead Environmental Auditor and Rehabilitation specialist
- Tracey Ball – Assistant Auditor
- Ali Naghizadeh – Air Quality specialist
- Nathan Archer – Noise, Blast and Vibration specialist

Please ensure this correspondence is appended to the IEA report.

As per Schedule 5 condition 10 of the consent, within 12 weeks of commencing this audit (i.e. from the date of the first day of the site inspection), or as otherwise agreed with the Secretary, the IEA report and the response to audit recommendations (RAR) are to be submitted to the Department.

Please submit the IEA report and RAR via the Major Project website  
(<https://www.planningportal.nsw.gov.au/majorprojects/services/lodge-post-approval-documents-0>)

Should you need to discuss the above, please contact me as per the details provided above.

Yours sincerely,

Heidi Watters  
Team Leader Northern  
Compliance, Planning & Assessments



Mr Andrew Reid  
Superintendent Environment  
Mount Pleasant Operation  
MACH Energy Australia Pty Ltd

By Email Only: [andrew.reid@machenergy.com.au](mailto:andrew.reid@machenergy.com.au)

14 May 2020

Dear Mr Reid

**Mt Pleasant Operation (DA 92/97)  
Extension of Time to 2020 Independent Environmental Audit**

I refer to your request (DA92/97-PA-10) for an extension of time to submit the 2020 Independent Environmental Audit (IEA) and the response to audit recommendations (RAR) as required under the conditions of Development Consent DA 92/97 (the consent) for the Mount Pleasant Operation (MPO).

The Department notes a one-month extension has been requested due to additional auditor site visits and changes to working arrangements due to COVID-19.

Accordingly, the Planning Secretary has granted an extension of time until **18 June 2020** for the IEA and RAR submission to the Department.

If you wish to discuss the matter further, please contact myself on (02) 6575 3401 or email to [compliance@planning.nsw.gov.au](mailto:compliance@planning.nsw.gov.au)

Yours sincerely

A handwritten signature in black ink that reads 'H Watters'.

Heidi Watters  
Team Leader Northern  
Compliance

As nominee of the Planning Secretary

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## Summary of Independent Environmental Audit Recommendations and MACH Energy Responses

Item No.	Audit Recommendation	MACH Energy Response	Forecast Completion
<b>Development Consent DA 92/97</b>			
S2 C 12	<p>See other conditions for specific recommendations regarding dust.</p> <p>General recommendation relating to bitumen track (light vehicle medium vehicle track). Develop remediation plan for the failed sections. Repair the section of the light vehicle track where the bitumen has failed. Until the repair is complete regular watercarts are required to reduce dust impacts.</p>	<p>Temporary repairs have been undertaken on the LVMV road.</p> <p>A detailed design to upgrade the road is currently being undertaken.</p>	<p>Complete December 2021</p>
S2 C 5	<p>REC: The monthly reports on the website should continue to report against how the site compared against the cumulative noise criteria.</p> <p>REC: It is recommended that an appendix is prepared to the Annual Review that summarises noise performance including:</p> <ul style="list-style-type: none"> <li>- date of monitoring;</li> <li>- compliance against NAG's noise criteria, including a table/tables that summarises actual noise levels during monitoring events; and</li> <li>- compliance against cumulative criteria.</li> </ul> <p>NOTE - these recommendation have been addressed int he 2019 Annual Review and Monthly Reports with this completed following the initial findings during the site inspection.</p>	<p>These recommendations have now been addressed, with information included in 2020 monthly reports and the 2019 Annual Review.</p>	<p>Complete</p>
S2 C 9	<p>REC: Record the specific noise level triggers for good (green), caution (orange) and exceeding (red) in the Thiess real time noise monitoring system (computer program). Update the Noise Management Plan if required.</p>	<p>The Thiess real time noise monitoring system will be updated to reflect trigger level colours.</p> <p>No update to the Noise Management Plan is required.</p>	<p>September 2020</p>
S2 C 10	<p>REC: Any elevated blasting levels (ie. Above 115 dBL and above 120 dBL) should be discussed in the monthly environmental reports. This does not have to be detailed but it needs to identify there could be a non - compliance based on the blast criteria.</p>	<p>These recommendations have now been addressed, with information included in 2020 monthly reports as required.</p>	<p>Complete</p>

	REC: Include a cumulative assessment of the percentage of blasts >115dB year to date to ensure <5%		
S2 C 11	<p>REC: The time of the blasts for overpressure and vibration is not recorded in the 2017 and 2018 Annual Review. To be included in future Annual Reviews. NOTE - this has been addressed in the 2019 Annual Review.</p> <p>REC: The Annual Review and Monthly Environmental Reports should also record the day of the week that blasting occurred to verify no blasting is undertaken on a Sunday.</p>	These recommendations have now been addressed, with information included in 2020 monthly reports and 2019 Annual Review.	Complete
S2 C 15	<p>REC: Ensure the Blast Scheduling information is available on the home page by a simple link ie. 'Upcoming Blasting'. It is not obvious to find the blast scheduling information on the current website.</p> <p>REC: Results of blast fume monitoring should be included in monthly reports and the Annual Review</p>	<p>The MACH Energy website now has a 'ticker' on the front page that includes blast notification information.</p> <p>Monthly reports will be updated to include blast fume data, and the 2020 Annual Review will include a summary of blast fume performance.</p>	<p>Complete</p> <p>June 2020</p>
S2 C 22 and 23	Recommend reviewing the way dust is visually assessed with this based on the EPA's new Dust Management Handbook 2019.	<p>At the time of the observation, wheel generated dust emissions were not considered excessive. However, the observed emissions were in the 'Dust emissions are increasing and operators should consider if further action to reduce dust is required' category, as per EPA's Dust Assessment Handbook.</p> <p>It is noted that the Dust Assessment Handbook includes a number of factors to consider when assessing if operational changes to haul roads are required, namely; weather conditions, location, proximity to site boundary, proximity to sensitive receptors, duration of emissions and occupational safety.</p> <p>The operations were within the pit and a significant distance from the site boundary and sensitive receptors. Light winds were present, generally from the south-west (i.e. not towards key closest receptors). As such, in-pit dust emissions would be considered unlikely to lead to off-site impacts.</p> <p>Further, no real time dust alarms were triggered at the time of the observations.</p> <p>Notwithstanding, the environmental team called for water carts to attend the pit area in question.</p>	Complete

Increased training in visual dust management at site. This should be regularly discussed and documented in toolbox talks.

The daily dust risk forecast is provided to the Open Cut Examiner via email each morning to assist with operational planning and to inform the operations team of the dust risk for the day. Supervisors, OCEs, and the environment team also conduct regular checks on dust levels throughout MPO, and operators are proactive in responding to and communicating elevating dust levels.

Complete

As an action from the audit inspection a toolbox was provided to the OCEs and Supervisors on 26 February 2020 to deliver during the daily pre-start meetings to reinforce the importance of dust management to each of the mining crews, including dust management during excavator loading.

Ensuring water trucks are sent to areas of the site prior to there being a problem. If there is a delay in providing this water truck then operations need to change (eg. Reduction in speed) or operations are to cease until adequate dust controls are available.

MACH Energy disagrees with the assertion that the haul trucks observed by the auditor were not being operated in a proper manner. All haul trucks were driven in a safe and efficient manner, the site speed limits (set for both safety and dust reduction purposes) were adhered to, and a number of water carts were in operation throughout the site.

Complete

The nature of dust emissions from mine sites is that even with the implementation of best practice emission controls, some dust will be emitted from some activities, and the nature and location of the emissions needs to be considered when prioritising dust controls.

At the time of the observation, wheel generated dust emissions were not considered excessive. However, the observed emissions were in the 'Dust emissions are increasing, and operators should consider if further action to reduce dust is required' category, as per EPA's Dust Assessment Handbook.

It is noted that the Dust Assessment Handbook includes a number of factors to consider when assessing if operational changes to haul roads are required, namely; weather conditions, location, proximity to site boundary, proximity to sensitive receptors, duration of emissions and occupational safety.

The operations were within the pit and a significant distance from the site boundary and sensitive receptors. Light winds were present, generally from the south-west (i.e. not towards key

	<p>Update the MOP to include a defined timeframe to revegetate soil stockpiles.</p> <p>Cameras of the pits could be more widely distributed to key MACH Energy Staff. Investigate establishing a series of video cameras to enable monitoring of key areas at the site which have high potential for dust and visual impacts. These would include the pits and higher areas of the site. All required personnel have access to cameras.</p> <p>It is recommended that the calibration factor used with the Palas Fidas particulate monitors be based on a dataset that covers seasonal variations (rather than the single month the current calibration factors are based on) as changes in particulate loads, temperature, humidity, etc. can affect the instrument's readings.</p> <p>It is recommended that an air quality expert be engaged to review exceedances of ambient air quality criteria where the exceedances are not due to exceptional events (as classified by the NSW DPIE) or invalid data. A summary report would also be included in the Annual Review.</p>	<p>closest receptors). As such, in-pit dust emissions would be considered unlikely to lead to off-site impacts.</p> <p>Further, no real time dust alarms were triggered at the time of the observations.</p> <p>Notwithstanding, the environmental team called for water carts to attend the pit area in question.</p> <p>MACH Energy notes that during the observation, water carts continued to operate in areas considered more likely to lead to offsite impacts.</p> <p>In addition, changes in operations, including reduction in speed and reducing or ceasing operations, occur as required during periods of elevated air quality levels or dust emissions.</p> <p>The 1 July 2020 – 30 June 2021 MOP has been updated to include timeframes for topsoil stockpile shaping and seeding and is currently with DPIE for approval.</p> <p>Mount Pleasant Operation has multiple cameras within site, including those that cover the mining area.</p> <p>MACH Energy is currently investigating the installation of additional cameras, and access to existing cameras.</p> <p>Palas Fidas calibration was previously undertaken in January and February 2020. MACH Energy will engage a specialist air quality consultancy to determine if the calibration is required to be updated with seasonal data.</p> <p>MACH Energy did engage a specialist air quality consultancy (Todoroski Air Sciences) to review monitoring data in 2019 to determine if any exceedances occurred that were not due to exceptional events. The outcome of the review informed the preparation of the 2019 Annual Review &amp; Annual Rehabilitation Report.</p> <p>An air quality expert will be engaged for future Annual Reviews to review any exceedances of criteria, and to provide a summary for inclusion in the Annual Review.</p>	<p>1 July 2020</p> <p>March 2021</p> <p>June 2021</p> <p>Complete</p>
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<p>S2 C 26</p>	<p>REC: There are a selection of proposed water management and erosion and sediment upgrades with these outlined in Section 5.4.</p> <p>Issue ID1</p> <p>Engaging an independent specialist to complete an erosion and sediment control/water management audit to identify all the erosion and sediment control/water management issues at site. Develop an action plan for erosion and sediment control/water management.</p> <p>Issue ID2</p> <p>The internal powerline pole that is located within the drainage line near the highwall dam is to be monitored for integrity. Additional erosion and sediment control work is likely required to ensure the power line is not compromised by failure or movement.</p> <p>Issue ID3</p> <p>Review sediment fencing at the site and replace sections as required.</p> <p>Recommend adding a series of haybales or corr logs in the drainage line near the current rehabilitation area as we understand the drainage in that area will change within a year. When constructed as per the Blue Book, haybales or corr logs will be a far more effective erosion and sediment control for channelized flow than sediment fences.</p> <p>Issue ID4</p> <p>Repair larger rill and gully erosion (including Fines Emplacement Area). This includes the area where the culvert in the Mine Water Dam has created a drainage cutting into the Mine Water Dam. Review erosion and sediment control in this area. Consider extending the pipeline closer into the dam to prevent erosion.</p> <p>Develop a strategy to minimise erosion of the dam walls.</p> <p>Issue ID5</p> <p>Include all dams in the Water Management Plan.</p>	<p>MACH Energy will engage a specialist to complete an internal erosion and sediment control audit.</p> <p>Issue ID2 will be reviewed with the internal erosion and sediment control audit to be undertaken. In the interim, it will be regularly monitored to ensure integrity.</p> <p>Sediment fencing will be reviewed with the internal erosion and sediment control audit to be undertaken.</p> <p>Once construction areas are complete and rehabilitated, sediment fencing is removed as part of the Ground Disturbance Permit close out process. This will continue to progress.</p> <p>The area near the current rehabilitation is being monitored and will be remediated with hay bales if required. This area will be reworked, and permanent mine water management systems put in place as part of the MOD4 construction works.</p> <p>Rill and gully erosion at the Mine Water Dam and Environment Dam 3 have been remediated.</p> <p>Rill and gully erosion at the Fines Emplacement Area has been remediated, with additional erosion measures put in place including geofabric in higher risk areas.</p> <p>The Water Management Plan will be updated to include all dams used in the mine water management system.</p>	<p>December 2020</p> <p>December 2020</p> <p>December 2020</p> <p>October 2022</p> <p>Complete</p> <p>September 2020</p>
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<p>Issue ID6</p> <p>Complete a review of the impacts of the proposed water allocations on the site based on the water allocation limits. From an environmental management and mining perspective it is important that water for the use of dust management is maintained.</p>	<p>MACH Energy has been involved in the WaterNSW updates and has undertaken extensive modelling on the expected water allocations for 2020-21 water year.</p> <p>MACH Energy has sufficient water resources to run the Mount Pleasant Operation.</p>	<p>Complete</p>
<p>Issue ID7</p> <p>Complete an erosion and sediment control design of the entrance road bund (borrow pit) to reduce the likelihood of erosion and sediment controls issues. Other features such as horizontal ripping or geofabric matting may be required to reduce the likelihood of erosion.</p>	<p>Remediation of the borrow pit area has undergone detailed design and scoping, with works to commence shortly.</p>	<p>December 2020</p>
<p>Issue ID8</p> <p>There is an area where a drainage structure has failed near the MIA/workshop areas. This area flows into the mine water management system and does not go off site. This requires replacement and engineering advice.</p>	<p>Remediation of the MIA drainage structures will be scoped with suitable engineering design and then remediated.</p>	<p>June 2021</p>
<p>Issue ID9</p> <p>The CHPP requires erosion and sediment control review. SLR understand a significant amount of money has been set aside for this work and engineering designs are progressing. This area flows into the mine water management system and does not go off site.</p> <p>Implement the actions of the engineering review.</p> <p>Ensure the designs also include a review of the drains that fall just outside the CHPP area (near the Rejects Road). These are older degraded drainage lines.</p> <p>Note, since the Audit inspection some of these areas have been remediated. However additional work is still required in this area.</p>	<p>There is currently significant engineering design being undertaken to update the mine water management and erosion and sediment control systems at the CHPP and preliminary budgets are approved. Once the review and design are finalised, works will commence.</p> <p>In the interim, temporary works have commenced in the area and include remediation of higher risk areas such as roads, banded areas, drainage pipelines, and ensuring areas within the CHPP and TLO are safe for access.</p>	<p>December 2021</p>
<p>Issue ID10</p> <p>Undertake regular monitoring of the area.</p>	<p>The area downstream of the MPO Construction Offices will be remediated as part of proposed construction works in the area. In the interim, all water flows into the existing MPO mine water management system.</p>	<p>June 2021</p>

	<p>Install temporary erosion and sediment controls to ensure that the area remains stable until the area is re-constructed during MOD 4 works.</p> <p>Issue ID11</p> <p>Undertake regular monitoring of the area.</p> <p>Use a grader to push eroded material back into gullies.</p> <p>It should be noted that evidence of remediation of erosion areas along this roadway was provided since the Audit site inspection.</p> <p>Issue ID12</p> <p>Continue to maintain the light vehicle and medium vehicle road.</p> <p>Completion of seeding in bare areas which form part of the cleanwater catchment. Note, there has been evidence of some tree planting in this area since the Audit site inspection was completed.</p> <p>Review the need for sediment fencing some areas until grass cover is established.</p> <p>Issue ID13</p> <p>Review engineering controls to reduce the likelihood of any tailings spill going into the cleanwater dam. Possible use of sleeve to contain tailings pipeline.</p> <p>Note, evidence provided since the Audit inspection of the installation of end of line burst protection flow meters.</p>	<p>Erosion and sediment control works have been completed in this area, including filling in and strengthening gullied areas.</p> <p>The LVMV road will continue to be maintained.</p> <p>Seeding and/or tree planting within areas requiring remediation will be undertaken as required. A tree planting campaign was undertaken in this area in May 2020.</p> <p>Once construction areas are complete and rehabilitated (including adequate vegetation cover), sediment fencing is removed as part of the Ground Disturbance Permit close out process. This will continue to progress.</p> <p>The fines emplacement pipeline has end of line burst protection flow meters will alarm in the case of a spill.</p> <p>In addition, a review into additional controls will be undertaken for the section of the fines emplacement pipeline that goes over the clean water diversion drain.</p>	<p>Complete</p> <p>Complete</p> <p>Complete</p> <p>December 2020</p>
S2 C 32	<p>REC: Continue to implement additional weed management activities onsite.</p>	<p>MACH Energy has engaged Enright Land Management to undertake weed and pest management at MPO. The scope includes a site weed map and action plan, completed in 2019, and a quarterly weed management program. Quarters 1 and 2 have been completed, with quarters 3 and 4 planned and budgeted.</p>	<p>Complete</p>

S2 C 33	REC: Continue the process of progressing the covenant for the Aboriginal Conservation Area.	MACH Energy is attempting to progress the covenant and is currently awaiting a response from DPIE.	Complete
S2 C 47	REC: It would be beneficial to have a camera in town pointing at the site for use of MACH Energy and contractors. This would assist in determining the impacts such as visual and dust.	Mount Pleasant Operation has multiple cameras within site, including those that cover the mining area. MACH Energy is currently investigating the installation of additional cameras, including to the east of MPO looking west.	March 2021
S2 C 52	See Section 5.3 of the main report for dust recommendations. For waste as per Schedule 3 Condition 52 of the Development Consent. In - Pit Storage a) & b) Ensure all waste is separated out and stored in the correct waste or recycle bin. c) Ensure all hydrocarbon spills are cleaned up. Workshop Area a) Ensure Remondis label all waste bins. b) Place oil pan under any engines/equipment stored in unbunded areas, that have the potential to drip any hydrocarbons/fluid etc. c) Ensure all chemicals/hydrocarbons are banded.  Construction Offices a) Ensure all waste is separated out and stored in the correct waste or recycle bin. b) Ensure all chemicals/hydrocarbons are banded. c) Ensure all bagged contaminated soil is transported to the land farm.	Waste management will be re-toolboxed as required following regular environmental inspections. Areas of waste storage have been tidied up, including cleaning up of spills.  Remondis have updated bin labels as required. Waste management will be re-toolboxed as required following regular environmental inspections. Areas of waste storage have been tidied up, including cleaning up of spills. Bunding is being reviewed and will be updated as required for storage areas.  Waste management was re-toolboxed to teams and will be re-toolboxed as required following regular environmental inspections.  Bunding is being reviewed and will be updated as required for storage areas. Waste was removed.	Complete  Complete  September 2020 Complete  Complete December 2020  Complete  December 2020 Complete
S2 C 54	REC: Reshape, rip, topsoil and seed areas of rehabilitation which have been noted by Thiess as areas where improvement is required. MACH Energy have since provided evidence that this has been completed.	Rehabilitation areas requiring improvement, as outlined in the recommendation, have been remediated.	Complete

	<p>REC: Some seeding should be completed in the area above ED2 which is showing signs of erosion.</p> <p>REC: Adding a defined timeframe to the MOP for how long topsoil stockpiles are stored until a cover crop is required. MACH Energy have since provided evidence that this has been completed.</p> <p>REC: Update the relevant document (MOP/RMP or Rehabilitation Strategy) to ensure there are no inconsistencies with the documents.</p>	<p>Remediation works are currently being undertaken within this area, including remediation of the access road and areas surrounding water monitoring infrastructure. Areas will be seeded as required.</p> <p>The MPO MOP has been updated to include defined timeframes to shape and seed topsoil stockpiles. The updated MOP is currently with the DPIE for approval and will be available on the MACH Energy website once approved.</p> <p>The Rehabilitation Strategy shows an overarching conceptual plan for rehabilitation at MPO, whereas the MOP provides detail and is updated on a more regular basis. As such, there are some inconsistencies between the two. These inconsistencies will be addressed when each of the plans are updated.</p>	<p>December 2020</p> <p>Complete</p> <p>July 2021</p>
S5 C 2	<p>REC: When management plan updates are required in the future consider creating a table system for mitigation measures with separate columns for:</p> <ul style="list-style-type: none"> <li>• Mitigation ID;</li> <li>• Mitigation Measure;</li> <li>• Reference document;</li> <li>• When required;</li> <li>• Responsibility.</li> </ul> <p>Based on discussions with site a staged approach is recommended.</p>	<p>Management plans will be updated as per the recommendation in a staged approach, at the time when each management plan requires update.</p>	<p>December 2021</p>
S5 C 3	<p>As per Schedule 3 Condition 5 recommendation.</p> <p>REC: It is recommended that an appendix is prepared to the Annual Review that summarises noise performance including:</p> <ul style="list-style-type: none"> <li>- date of monitoring;</li> <li>- compliance against NAG's noise criteria, including a table/tables that summarises actual noise levels during monitoring events; and</li> <li>- compliance against cumulative criteria.</li> </ul> <p>As per Schedule 3 Condition 22 and 23 recommendation.</p>	<p>The 2020 Annual Review will include a summary of noise performance.</p>	<p>March 2021</p>

	REC: It is recommended that an air quality expert be engaged to review exceedances of ambient air quality criteria where the exceedances are not due to exceptional events (as classified by the NSW DPIE) or invalid data. A summary report would also be included in the Annual Review.	An air quality expert will be engaged for future Annual Reviews to review any exceedances of criteria, and to provide a summary for inclusion in the Annual Review.	March 2021
S5 C 4	REC: Update wording in the Annual Review to outline which management plans require updating and which management plans do not require updating.	The 2020 Annual Review will include this information.	March 2021
<b>Environmental Protection Licence EPL 20850</b>			
L 2.1	As per recommendation from Schedule 3 Condition 5 of the Development Consent. REC: The monthly reports on the website should report against how the site compared against the cumulative noise criteria. REC: It is recommended that an appendix is prepared to the Annual Review that summarises noise performance including: - date of monitoring; - compliance against NAG's noise criteria, including a table/tables that summarises actual noise levels during monitoring events; and - compliance against cumulative criteria. NOTE - these recommendation have been addressed in the 2020 Annual Review and Monthly Reports	These recommendations have now been addressed, with information included in 2020 monthly reports and the 2019 Annual Review.	Complete
L 3.1	REC: Blast fume performance should be reported in the Annual Review and EPL monthly reports	Monthly reports will be updated to include blast fume data, and the 2020 Annual Review will include a summary of blast fume performance.	June 2020
L 3.2	As per Schedule 3 Condition 11. REC: The time of the blasts for overpressure and vibration is not recorded in the Annual Review. To be included in future Annual Reviews. NOTE - this has been addressed in the 2019 Annual Review REC: The Annual Review and Monthly Environmental Reports should also record the day of the week that blasting occurred to verify no blasting is undertaken on a Sunday.	These recommendations have now been addressed, with information included in 2020 monthly reports and the 2019 Annual Review.	Complete

L 3.3	REC: Any elevated blasting levels (ie. Above 120 dBL) should be discussed in the monthly environmental reports and appropriate action detailed.	These recommendations have now been addressed, with information included in 2020 monthly reports as required.	Complete
L 3.4	REC: Any elevated blasting levels (ie. Above 115 dBA) should be discussed in the monthly environmental reports. This does not have to be detailed but it needs to identify there could be a non - compliance based on the blast criteria. REC: Include a cumulative assessment of the percentage of blasts >115dB year to date to ensure <5%	These recommendations have now been addressed, with information included in 2020 monthly reports as required.	Complete
O 1.1	See Section 5.3 of the main report for dust recommendations. For waste as per Schedule 3 Condition 52 of the Development Consent. In - Pit Storage a) & b) Ensure all waste is separated out and stored in the correct waste or recycle bin. c) Ensure all hydrocarbon spills are cleaned up. Workshop Area a) Ensure Remondis label all waste bins. b) Place oil pan under any engines/equipment stored in unbunded areas, that have the potential to drip any hydrocarbons/fluid etc. c) Ensure all chemicals/hydrocarbons are banded. Construction Offices a) Ensure all waste is separated out and stored in the correct waste or recycle bin. b) Ensure all chemicals/hydrocarbons are banded. c) Ensure all bagged contaminated soil is transported to the land farm.	Waste management will be re-toolboxed as required following regular environmental inspections. Areas of waste storage have been tidied up, including cleaning up of spills.  Remondis have updated bin labels as required. Waste management will be re-toolboxed as required following regular environmental inspections. Areas of waste storage have been tidied up, including cleaning up of spills. Bunding is being reviewed and will be updated as required for storage areas.  Waste management was re-toolboxed to teams and will be re-toolboxed as required following regular environmental inspections.  Bunding is being reviewed and will be updated as required for storage areas. Waste was removed.	Complete  Complete  September 2020 Complete  Complete  December 2020  Complete  December 2020  Complete
O 3.1 – O 3.4	As per recommendations from Schedule 3 Condition 22 and 23 of the Development Consent.		

Recommend reviewing the way dust is visually assessed with this based on the EPAs new Dust Management Handbook 2019.

At the time of the observation, wheel generated dust emissions were not considered excessive. However, the observed emissions were in the 'Dust emissions are increasing, and operators should consider if further action to reduce dust is required' category, as per EPA's Dust Assessment Handbook.

Complete

It is noted that the Dust Assessment Handbook includes a number of factors to consider when assessing if operational changes to haul roads are required, namely; weather conditions, location, proximity to site boundary, proximity to sensitive receptors, duration of emissions and occupational safety.

The operations were within the pit and a significant distance from the site boundary and sensitive receptors. Light winds were present, generally from the south-west (i.e. not towards key closest receptors). As such, in-pit dust emissions would be considered unlikely to lead to off-site impacts.

Further, no real time dust alarms were triggered at the time of the observations.

Notwithstanding, the environmental team called for water carts to attend the pit area in question.

Increased training in visual dust management at site. This should be regularly discussed and documented in toolbox talks.

The daily dust risk forecast is provided to the Open Cut Examiner via email each morning to assist with operational planning and to inform the operations team of the dust risk for the day. Supervisors, OCEs, and the environment team also conduct regular checks on dust levels throughout MPO, and operators are proactive in responding to and communicating elevating dust levels.

Complete

As an action from the audit inspection a toolbox was provided to the OCEs and Supervisors on 26 February 2020 to deliver during the daily pre-start meetings to reinforce the importance of dust management to each of the mining crews, including dust management during excavator loading.

Ensuring water trucks are sent to areas of the site prior to there being a problem. If there is a delay in providing this water truck then operations need to change (eg. Reduction in speed) or operations are to cease until adequate dust controls are available.

MACH Energy disagrees with the assertion that the haul trucks observed by the auditor were not being operated in a proper manner. All haul trucks were driven in a safe and efficient manner, the site speed limits (set for both safety and dust

Complete

Update the MOP to include a defined timeframe to revegetate soil stockpiles.

reduction purposes) were adhered to, and a number of water carts were in operation throughout the site.

The nature of dust emissions from mine sites is that even with the implementation of best practice emission controls, some dust will be emitted from some activities, and the nature and location of the emissions needs to be considered when prioritising dust controls.

At the time of the observation, wheel generated dust emissions were not considered excessive. However, the observed emissions were in the 'Dust emissions are increasing, and operators should consider if further action to reduce dust is required' category, as per EPA's Dust Assessment Handbook.

It is noted that the Dust Assessment Handbook includes a number of factors to consider when assessing if operational changes to haul roads are required, namely; weather conditions, location, proximity to site boundary, proximity to sensitive receptors, duration of emissions and occupational safety.

The operations were within the pit and a significant distance from the site boundary and sensitive receptors. Light winds were present, generally from the south-west (i.e. not towards key closest receptors). As such, in-pit dust emissions would be considered unlikely to lead to off-site impacts.

Further, no real time dust alarms were triggered at the time of the observations.

Notwithstanding, the environmental team called for water carts to attend the pit area in question.

MACH Energy notes that during the observation, water carts continued to operate in areas considered more likely to lead to offsite impacts.

In addition, changes in operations, including reduction in speed and reducing or ceasing operations, occurs as required during periods of elevated air quality levels or dust emissions.

The 1 July 2020 – 30 June 2021 MOP has been updated to include timeframes for topsoil stockpile shaping and seeding and is currently with DPIE for approval.

1 July 2020



	<p>Cameras of the pits could be more widely distributed to key MACH Energy Staff. Investigate establishing a series of video cameras to enable monitoring of key areas at the site which have high potential for dust and visual impacts. These would include the pits and higher areas of the site. All required personnel have access to cameras.</p> <p>It is recommended that the ambient air quality monitoring be undertaken in accordance with the Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales using a laboratory that is NATA accredited for the methods. If use of an approved method for the monitoring of ambient particulate levels is not possible, it is recommended that calibration of PM10 and PM2.5 be undertaken against a reference method (such as a TEOM) initially on a quarterly basis using a NATA accredited laboratory (noting that Carbon Based Environmental whose TEOM monitoring is the basis for the current calibration factors is not an accredited laboratory). If after 4 quarters of calibrations it is determined that no change to the calibration factor is required, then the frequency of calibration against the reference method could be reduced to 1 event per annum.</p> <p>It is recommended that an air quality expert be engaged to review exceedances of ambient air quality criteria where the exceedances are not due to exceptional events (as classified by the NSW DPIE) or invalid data.</p>	<p>Mount Pleasant Operation has multiple cameras within site, including those that cover the mining area.</p> <p>MACH Energy is currently investigating the installation of additional cameras, and access to existing cameras.</p> <p>MACH Energy disagrees with the assertion that a NATA accredited laboratory would be required for a calibration – laboratories are typically required when a sample must be analysed (e.g. filter paper from a High-Volume Air Sampler [HVAS] weighed, or material collected in a dust deposition gauge characterised). In this instance the calibration is completed by co locating two monitors that measure ambient particulate matter levels continuously through light scattering methods (Palas Fidas) and oscillating microbalance methods (TEOM) and comparing the data. As these monitors measure particulate matter continuously (without collecting samples to be analysed later), a laboratory is not required.</p> <p>Palas Fidas calibration was previously undertaken in January and February 2020. MACH Energy will engage a specialist air quality consultancy to determine if the calibration is required to be updated with seasonal data.</p> <p>MACH Energy did engage a specialist air quality consultancy (Todoroski Air Sciences) to review monitoring data in 2019 to determine if any exceedances occurred that were not due to exceptional events. The outcome of the review informed the preparation of the 2019 Annual Review &amp; Annual Rehabilitation Report.</p> <p>An air quality expert will be engaged for future Annual Reviews to review any exceedances of criteria, and to provide a summary for inclusion in the Annual Review.</p>	<p>March 2021</p> <p>Complete</p> <p>June 2021</p> <p>Complete</p>
O 3.6	As per recommendations from Schedule 3 Condition 23 of the Development Consent.	MACH Energy acknowledges that on one occasion (24 October 2019), all dust generating activities were not shutdown within the timeframe specified by Condition O3.6, and due to a miscommunication issue, four haul trucks continued their operations for a short period of time.	Complete

		<p>Due to the nature of the event (i.e. only a small number of equipment items continued to operate past the allowed timeframe, and no elevated dust levels were recorded during the event), no environmental harm is considered to have occurred as a result of the event.</p> <p>As an outcome of the event, site procedures were amended to minimise the potential for such an event to reoccur. MACH Energy self-reported this event to the EPA and an official caution was received in response from the EPA.</p>	
M 3.1	<p>As per specific recommendation from Schedule 3 Condition 22.</p> <p>It is recommended that the calibration factor used with the Palas Fidas particulate monitors be based on a dataset that covers seasonal variations (rather than the single month the current calibration factors are based on) as changes in particulate loads, temperature, humidity, etc. can affect the instrument's readings.</p> <p>It is recommended that an air quality expert be engaged to review exceedances of ambient air quality criteria where the exceedances are not due to exceptional events (as classified by the NSW DPIE) or invalid data. A summary report would also be included in the Annual Review. .</p>	<p>Palas Fidas calibration was previously undertaken in January and February 2020. MACH Energy will engage a specialist air quality consultancy to determine if the calibration is required to be updated with seasonal data.</p> <p>MACH Energy did engage a specialist air quality consultancy (Todoroski Air Sciences) to review monitoring data in 2019 to determine if any exceedances occurred that were not due to exceptional events. The outcome of the review informed the preparation of the 2019 Annual Review &amp; Annual Rehabilitation Report.</p> <p>An air quality expert will be engaged for future Annual Reviews to review any exceedances of criteria, and to provide a summary for inclusion in the Annual Review.</p>	<p>June 2021</p> <p>Complete</p>

**APPENDIX E**  
**RESPONSE TO INDEPENDENT ENVIRONMENTAL AUDIT RECOMMENDATIONS**

**Table E1**  
**Summary of Independent Environmental Audit Recommendations and MACH Energy Responses**

Item No.	Audit Recommendation	MACH Energy Response
<b>Development Consent DA 92/97</b>		
S2 C 12	<p>See other conditions for specific recommendations regarding dust.</p> <p>General recommendation relating to bitumen track (light vehicle medium vehicle track). Develop remediation plan for the failed sections. Repair the section of the light vehicle track where the bitumen has failed. Until the repair is complete regular watercarts are required to reduce dust impacts.</p>	<p>Temporary repairs have been undertaken on the LVMV road.</p> <p>A detailed design to upgrade the road is currently being undertaken.</p>
S3 C 5	<p>REC: The monthly reports on the website should continue to report against how the site compared against the cumulative noise criteria.</p> <p>REC: It is recommended that an appendix is prepared to the Annual Review that summarises noise performance including:</p> <ul style="list-style-type: none"> <li>- date of monitoring;</li> <li>- compliance against NAG's noise criteria, including a table/tables that summarises actual noise levels during monitoring events; and</li> <li>- compliance against cumulative criteria.</li> </ul> <p>NOTE - these recommendations have been addressed in the 2019 Annual Review and Monthly Reports with this completed following the initial findings during the site inspection.</p>	<p>These recommendations have now been addressed, with information included in 2020 monthly reports and the 2020 Annual Review.</p>
S3 C 9	<p>REC: Record the specific noise level triggers for good (green), caution (orange) and exceeding (red) in the Thiess real time noise monitoring system (computer program). Update the Noise Management Plan if required.</p>	<p>The Thiess real time noise monitoring system will be updated to reflect trigger level colours.</p> <p>No update to the Noise Management Plan is required.</p>
S3 C 10	<p>REC: Any elevated blasting levels (ie. Above 115 dBL and above 120 dBL) should be discussed in the monthly environmental reports. This does not have to be detailed but it needs to identify there could be a non - compliance based on the blast criteria.</p> <p>REC: Include a cumulative assessment of the percentage of blasts &gt;115dBL year to date to ensure &lt;5%</p>	<p>These recommendations have now been addressed, with information included in 2020 monthly reports as required.</p>
S3 C 11	<p>REC: The time of the blasts for overpressure and vibration is not recorded in the 2017 and 2018 Annual Review. To be included in future Annual Reviews. NOTE - this has been addressed in the 2019 Annual Review.</p> <p>REC: The Annual Review and Monthly Environmental Reports should also record the day of the week that blasting occurred to verify no blasting is undertaken on a Sunday.</p>	<p>These recommendations have now been addressed, with information included in 2020 monthly reports and 2020 Annual Review.</p>

Item No.	Audit Recommendation	MACH Energy Response
S3 C 15	<p>REC: Ensure the Blast Scheduling information is available on the home page by a simple link ie. 'Upcoming Blasting'. It is not obvious to find the blast scheduling information on the current website.</p> <p>REC: Results of blast fume monitoring should be included in monthly reports and the Annual Review</p>	<p>The MACH Energy website now has a 'ticker' on the front page that includes blast notification information.</p> <p>Monthly reports will be updated to include blast fume data, and the 2020 Annual Review will include a summary of blast fume performance.</p>
S3 C 22 and 23	<p>Recommend reviewing the way dust is visually assessed with this based on the EPA's new Dust Management Handbook 2019.</p> <p>Increased training in visual dust management at site. This should be regularly discussed and documented in toolbox talks.</p>	<p>At the time of the observation, wheel generated dust emissions were not considered excessive. However, the observed emissions were in the 'Dust emissions are increasing and operators should consider if further action to reduce dust is required' category, as per EPA's Dust Assessment Handbook.</p> <p>It is noted that the Dust Assessment Handbook includes a number of factors to consider when assessing if operational changes to haul roads are required, namely; weather conditions, location, proximity to site boundary, proximity to sensitive receptors, duration of emissions and occupational safety.</p> <p>The operations were within the pit and a significant distance from the site boundary and sensitive receptors. Light winds were present, generally from the south-west (i.e. not towards key closest receptors). As such, in-pit dust emissions would be considered unlikely to lead to off-site impacts.</p> <p>Further, no real time dust alarms were triggered at the time of the observations.</p> <p>Notwithstanding, the environmental team called for water carts to attend the pit area in question.</p> <p>The daily dust risk forecast is provided to the Open Cut Examiner via email each morning to assist with operational planning and to inform the operations team of the dust risk for the day. Supervisors, OCEs, and the environment team also conduct regular checks on dust levels throughout MPO, and operators are proactive in responding to and communicating elevating dust levels.</p> <p>As an action from the audit inspection a toolbox was provided to the OCEs and Supervisors on 26 February 2020 to deliver during the daily pre-start meetings to reinforce the importance of dust management to each of the mining crews, including dust management during excavator loading.</p>

Item No.	Audit Recommendation	MACH Energy Response
<p>S3 C 22 and 23 (Continued)</p>	<p>Ensuring water trucks are sent to areas of the site prior to there being a problem. If there is a delay in providing this water truck then operations need to change (eg. Reduction in speed) or operations are to cease until adequate dust controls are available.</p> <p>Update the MOP to include a defined timeframe to revegetate soil stockpiles.</p> <p>Cameras of the pits could be more widely distributed to key MACH Energy Staff. Investigate establishing a series of video cameras to enable monitoring of key areas at the site which have high potential for dust and visual impacts. These would include the pits and higher areas of the site. All required personnel have access to cameras.</p>	<p>MACH Energy disagrees with the assertion that the haul trucks observed by the auditor were not being operated in a proper manner. All haul trucks were driven in a safe and efficient manner, the site speed limits (set for both safety and dust reduction purposes) were adhered to, and a number of water carts were in operation throughout the site.</p> <p>The nature of dust emissions from mine sites is that even with the implementation of best practice emission controls, some dust will be emitted from some activities, and the nature and location of the emissions needs to be considered when prioritising dust controls.</p> <p>At the time of the observation, wheel generated dust emissions were not considered excessive. However, the observed emissions were in the 'Dust emissions are increasing, and operators should consider if further action to reduce dust is required' category, as per EPA's Dust Assessment Handbook.</p> <p>It is noted that the Dust Assessment Handbook includes a number of factors to consider when assessing if operational changes to haul roads are required, namely; weather conditions, location, proximity to site boundary, proximity to sensitive receptors, duration of emissions and occupational safety.</p> <p>The operations were within the pit and a significant distance from the site boundary and sensitive receptors. Light winds were present, generally from the south-west (i.e. not towards key closest receptors). As such, in-pit dust emissions would be considered unlikely to lead to off-site impacts.</p> <p>Further, no real time dust alarms were triggered at the time of the observations.</p> <p>Notwithstanding, the environmental team called for water carts to attend the pit area in question.</p> <p>MACH Energy notes that during the observation, water carts continued to operate in areas considered more likely to lead to offsite impacts.</p> <p>In addition, changes in operations, including reduction in speed and reducing or ceasing operations, occur as required during periods of elevated air quality levels or dust emissions.</p> <p>The 1 July 2020 – 30 June 2021 MOP has been updated to include timeframes for topsoil stockpile shaping and seeding and is currently with DPIE for approval.</p> <p>Mount Pleasant Operation has multiple cameras within site, including those that cover the mining area.</p> <p>MACH Energy is currently investigating the installation of additional cameras, and access to existing cameras.</p>

Item No.	Audit Recommendation	MACH Energy Response
<p>S3 C 22 and 23 (Continued)</p>	<p>It is recommended that the calibration factor used with the Palas Fidas particulate monitors be based on a dataset that covers seasonal variations (rather than the single month the current calibration factors are based on) as changes in particulate loads, temperature, humidity, etc. can affect the instrument's readings.</p> <p>It is recommended that an air quality expert be engaged to review exceedances of ambient air quality criteria where the exceedances are not due to exceptional events (as classified by the NSW DPIE) or invalid data. A summary report would also be included in the Annual Review.</p>	<p>Palas Fidas calibration was previously undertaken in January and February 2020. MACH Energy will engage a specialist air quality consultancy to determine if the calibration is required to be updated with seasonal data.</p> <p>MACH Energy did engage a specialist air quality consultancy (Todoroski Air Sciences) to review monitoring data in 2019 to determine if any exceedances occurred that were not due to exceptional events. The outcome of the review informed the preparation of the 2019 Annual Review &amp; Annual Rehabilitation Report.</p> <p>An air quality expert will be engaged for future Annual Reviews to review any exceedances of criteria, and to provide a summary for inclusion in the Annual Review.</p>
<p>S3 C 26</p>	<p>REC: There are a selection of proposed water management and erosion and sediment upgrades with these outlined in Section 5.4.</p> <p>Issue ID1</p> <p>Engaging an independent specialist to complete an erosion and sediment control/water management audit to identify all the erosion and sediment control/water management issues at site. Develop an action plan for erosion and sediment control/water management.</p> <p>Issue ID2</p> <p>The internal powerline pole that is located within the drainage line near the highwall dam is to be monitored for integrity. Additional erosion and sediment control work is likely required to ensure the power line is not compromised by failure or movement.</p> <p>Issue ID3</p> <p>Review sediment fencing at the site and replace sections as required.</p> <p>Recommend adding a series of haybales or corr logs in the drainage line near the current rehabilitation area as we understand the drainage in that area will change within a year. When constructed as per the Blue Book, haybales or corr logs will be a far more effective erosion and sediment control for channelized flow than sediment fences.</p>	<p>MACH Energy will engage a specialist to complete an internal erosion and sediment control audit.</p> <p>Issue ID2 will be reviewed with the internal erosion and sediment control audit to be undertaken. In the interim, it will be regularly monitored to ensure integrity.</p> <p>Sediment fencing will be reviewed with the internal erosion and sediment control audit to be undertaken.</p> <p>Once construction areas are complete and rehabilitated, sediment fencing is removed as part of the Ground Disturbance Permit close out process. This will continue to progress.</p> <p>The area near the current rehabilitation is being monitored and will be remediated with hay bales if required. This area will be reworked, and permanent mine water management systems put in place as part of the MOD4 construction works.</p>

Item No.	Audit Recommendation	MACH Energy Response
<p>S3 C 26 (Continued)</p>	<p>Issue ID4 Repair larger rill and gully erosion (including Fines Emplacement Area). This includes the area where the culvert in the Mine Water Dam has created a drainage cutting into the Mine Water Dam. Review erosion and sediment control in this area. Consider extending the pipeline closer into the dam to prevent erosion.</p> <p>Develop a strategy to minimise erosion of the dam walls.</p> <p>Issue ID5 Include all dams in the Water Management Plan.</p> <p>Issue ID6 Complete a review of the impacts of the proposed water allocations on the site based on the water allocation limits. From an environmental management and mining perspective it is important that water for the use of dust management is maintained.</p> <p>Issue ID7 Complete an erosion and sediment control design of the entrance road bund (borrow pit) to reduce the likelihood of erosion and sediment controls issues. Other features such as horizontal ripping or geofabric matting may be required to reduce the likelihood of erosion.</p> <p>Issue ID8 There is an area where a drainage structure has failed near the MIA/workshop areas. This area flows into the mine water management system and does not go off site. This requires replacement and engineering advice.</p> <p>Issue ID9 The CHPP requires erosion and sediment control review. SLR understand a significant amount of money has been set aside for this work and engineering designs are progressing. This area flows into the mine water management system and does not go off site.</p> <p>Implement the actions of the engineering review.</p> <p>Ensure the designs also include a review of the drains that fall just outside the CHPP area (near the Rejects Road). These are older degraded drainage lines.</p> <p>Note, since the Audit inspection some of these areas have been remediated. However additional work is still required in this area.</p>	<p>Rill and gully erosion at the Mine Water Dam and Environment Dam 3 have been remediated.</p> <p>Rill and gully erosion at the Fines Emplacement Area has been remediated, with additional erosion measures put in place including geofabric in higher risk areas.</p> <p>The Water Management Plan will be updated to include all dams used in the mine water management system.</p> <p>MACH Energy has been involved in the WaterNSW updates and has undertaken extensive modelling on the expected water allocations for 2020-21 water year. MACH Energy has sufficient water resources to run the Mount Pleasant Operation.</p> <p>Remediation of the borrow pit area has undergone detailed design and scoping, with works to commence shortly.</p> <p>Remediation of the MIA drainage structures will be scoped with suitable engineering design and then remediated.</p> <p>There is currently significant engineering design being undertaken to update the mine water management and erosion and sediment control systems at the CHPP and preliminary budgets are approved. Once the review and design are finalised, works will commence.</p> <p>In the interim, temporary works have commenced in the area and include remediation of higher risk areas such as roads, bunded areas, drainage pipelines, and ensuring areas within the CHPP and TLO are safe for access.</p>



Item No.	Audit Recommendation	MACH Energy Response
<p>S3 C 26 (Continued)</p>	<p>Issue ID10 Undertake regular monitoring of the area.</p> <p>Install temporary erosion and sediment controls to ensure that the area remains stable until the area is re-constructed during MOD 4 works.</p> <p>Issue ID11 Undertake regular monitoring of the area.</p> <p>Use a grader to push eroded material back into gullies.</p> <p>It should be noted that evidence of remediation of erosion areas along this roadway was provided since the Audit site inspection.</p> <p>Issue ID12 Continue to maintain the light vehicle and medium vehicle road.</p> <p>Completion of seeding in bare areas which form part of the cleanwater catchment. Note, there has been evidence of some tree planting in this area since the Audit site inspection was completed.</p> <p>Review the need for sediment fencing some areas until grass cover is established.</p> <p>Issue ID13 Review engineering controls to reduce the likelihood of any tailings spill going into the cleanwater dam. Possible use of sleeve to contain tailings pipeline.</p> <p>Note, evidence provided since the Audit inspection of the installation of end of line burst protection flow meters.</p>	<p>The area downstream of the MPO Construction Offices will be remediated as part of proposed construction works in the area. In the interim, all water flows into the existing MPO mine water management system.</p> <p>Erosion and sediment control works have been completed in this area, including filling in and strengthening gullied areas.</p> <p>The LVMV road will continue to be maintained.</p> <p>Seeding and/or tree planting within areas requiring remediation will be undertaken as required. A tree planting campaign was undertaken in this area in May 2020.</p> <p>Once construction areas are complete and rehabilitated (including adequate vegetation cover), sediment fencing is removed as part of the Ground Disturbance Permit close out process. This will continue to progress.</p> <p>The fines emplacement pipeline has end of line burst protection flow meters will alarm in the case of a spill.</p> <p>In addition, a review into additional controls will be undertaken for the section of the fines emplacement pipeline that goes over the clean water diversion drain.</p>
<p>S2 C 32</p>	<p>REC: Continue to implement additional weed management activities onsite.</p>	<p>MACH Energy has engaged Enright Land Management to undertake weed and pest management at MPO. The scope includes a site weed map and action plan, completed in 2019, and a quarterly weed management program. Quarters 1 and 2 have been completed, with quarters 3 and 4 planned and budgeted.</p>
<p>S2 C 33</p>	<p>REC: Continue the process of progressing the covenant for the Aboriginal Conservation Area.</p>	<p>MACH Energy is attempting to progress the covenant and is currently awaiting a response from DPIE.</p>
<p>S3 C 47</p>	<p>REC: It would be beneficial to have a camera in town pointing at the site for use of MACH Energy and contractors. This would assist in determining the impacts such as visual and dust.</p>	<p>Mount Pleasant Operation has multiple cameras within site, including those that cover the mining area.</p> <p>MACH Energy is currently investigating the installation of additional cameras, including to the east of MPO looking west.</p>

Item No.	Audit Recommendation	MACH Energy Response
S3 C 52	<p>See Section 5.3 of the main report for dust recommendations. For waste as per Schedule 3 Condition 52 of the Development Consent.</p> <p>In - Pit Storage</p> <p>a) &amp; b) Ensure all waste is separated out and stored in the correct waste or recycle bin. c) Ensure all hydrocarbon spills are cleaned up.</p> <p>Workshop Area</p> <p>a) Ensure Remondis label all waste bins. b) Place oil pan under any engines/equipment stored in unbunded areas, that have the potential to drip any hydrocarbons/fluid etc. c) Ensure all chemicals/hydrocarbons are banded.</p> <p>Construction Offices</p> <p>a) Ensure all waste is separated out and stored in the correct waste or recycle bin. b) Ensure all chemicals/hydrocarbons are banded. c) Ensure all bagged contaminated soil is transported to the land farm.</p>	<p>Waste management will be re-toolboxed as required following regular environmental inspections. Areas of waste storage have been tidied up, including cleaning up of spills.</p> <p>Remondis have updated bin labels as required. Waste management will be re-toolboxed as required following regular environmental inspections. Areas of waste storage have been tidied up, including cleaning up of spills. Bunding is being reviewed and will be updated as required for storage areas.</p> <p>Waste management was re-toolboxed to teams and will be re-toolboxed as required following regular environmental inspections.</p> <p>Bunding is being reviewed and will be updated as required for storage areas. Waste was removed.</p>
S3 C 54	<p>REC: Reshape, rip, topsoil and seed areas of rehabilitation which have been noted by Thiess as areas where improvement is required. MACH Energy have since provided evidence that this has been completed.</p> <p>REC: Some seeding should be completed in the area above ED2 which is showing signs of erosion.</p> <p>REC: Adding a defined timeframe to the MOP for how long topsoil stockpiles are stored until a cover crop is required. MACH Energy have since provided evidence that this has been completed.</p> <p>REC: Update the relevant document (MOP/RMP or Rehabilitation Strategy) to ensure there are no inconsistencies with the documents.</p>	<p>Rehabilitation areas requiring improvement, as outlined in the recommendation, have been remediated.</p> <p>Remediation works are currently being undertaken within this area, including remediation of the access road and areas surrounding water monitoring infrastructure. Areas will be seeded as required.</p> <p>The MPO MOP has been updated to include defined timeframes to shape and seed topsoil stockpiles. The updated MOP is currently with the DPIE for approval and will be available on the MACH Energy website once approved.</p> <p>The Rehabilitation Strategy shows an overarching conceptual plan for rehabilitation at MPO, whereas the MOP provides detail and is updated on a more regular basis. As such, there are some inconsistencies between the two. These inconsistencies will be addressed when each of the plans are updated.</p>

Item No.	Audit Recommendation	MACH Energy Response
S5 C 2	<p>REC: When management plan updates are required in the future consider creating a table system for mitigation measures with separate columns for:</p> <ul style="list-style-type: none"> <li>• Mitigation ID;</li> <li>• Mitigation Measure;</li> <li>• Reference document;</li> <li>• When required;</li> <li>• Responsibility.</li> </ul> <p>Based on discussions with site a staged approach is recommended.</p>	<p>Management plans will be updated as per the recommendation in a staged approach, at the time when each management plan requires update.</p>
S5 C 3	<p>As per Schedule 3 Condition 5 recommendation.</p> <p>REC: It is recommended that an appendix is prepared to the Annual Review that summarises noise performance including:</p> <ul style="list-style-type: none"> <li>- date of monitoring;</li> <li>- compliance against NAG's noise criteria, including a table/tables that summarises actual noise levels during monitoring events; and</li> <li>- compliance against cumulative criteria.</li> </ul> <p>As per Schedule 3 Condition 22 and 23 recommendation.</p> <p>REC: It is recommended that an air quality expert be engaged to review exceedances of ambient air quality criteria where the exceedances are not due to exceptional events (as classified by the NSW DPIE) or invalid data. A summary report would also be included in the Annual Review.</p>	<p>The 2020 Annual Review will include a summary of noise performance.</p> <p>An air quality expert will be engaged for future Annual Reviews to review any exceedances of criteria, and to provide a summary for inclusion in the Annual Review.</p>
S5 C 4	<p>REC: Update wording in the Annual Review to outline which management plans require updating and which management plans do not require updating.</p>	<p>The 2020 Annual Review will include this information.</p>

Item No.	Audit Recommendation	MACH Energy Response
<b>Environmental Protection Licence EPL 20850</b>		
L 2.1	<p>As per recommendation from Schedule 3 Condition 5 of the Development Consent.</p> <p>REC: The monthly reports on the website should report against how the site compared against the cumulative noise criteria.</p> <p>REC: It is recommended that an appendix is prepared to the Annual Review that summarises noise performance including:</p> <ul style="list-style-type: none"> <li>- date of monitoring;</li> <li>- compliance against NAG's noise criteria, including a table/tables that summarises actual noise levels during monitoring events; and</li> <li>- compliance against cumulative criteria.</li> </ul> <p>NOTE - these recommendation have been addressed in the 2020 Annual Review and Monthly Reports</p>	<p>These recommendations have now been addressed, with information included in 2020 monthly reports and the 2020 Annual Review.</p>
L 3.1	<p>REC: Blast fume performance should be reported in the Annual Review and EPL monthly reports</p>	<p>Monthly reports will be updated to include blast fume data, and the 2020 Annual Review will include a summary of blast fume performance.</p>
L 3.2	<p>As per Schedule 3 Condition 11.</p> <p>REC: The time of the blasts for overpressure and vibration is not recorded in the Annual Review. To be included in future Annual Reviews. NOTE - this has been addressed in the 2019 Annual Review</p> <p>REC: The Annual Review and Monthly Environmental Reports should also record the day of the week that blasting occurred to verify no blasting is undertaken on a Sunday.</p>	<p>These recommendations have now been addressed, with information included in 2020 monthly reports and the 2020 Annual Review.</p>
L 3.3	<p>REC: Any elevated blasting levels (ie. Above 120 dBL) should be discussed in the monthly environmental reports and appropriate action detailed.</p>	<p>These recommendations have now been addressed, with information included in 2020 monthly reports as required.</p>
L 3.4	<p>REC: Any elevated blasting levels (ie. Above 115 dBA) should be discussed in the monthly environmental reports. This does not have to be detailed but it needs to identify there could be a non - compliance based on the blast criteria.</p> <p>REC: Include a cumulative assessment of the percentage of blasts &gt;115dB year to date to ensure &lt;5%</p>	<p>These recommendations have now been addressed, with information included in 2020 monthly reports as required.</p>
O 1.1	<p>See Section 5.3 of the main report for dust recommendations.</p> <p>For waste as per Schedule 3 Condition 52 of the Development Consent.</p> <p>In - Pit Storage</p> <p>a) &amp; b) Ensure all waste is separated out and stored in the correct waste or recycle bin.</p> <p>c) Ensure all hydrocarbon spills are cleaned up.</p>	<p>Waste management will be re-toolboxed as required following regular environmental inspections.</p> <p>Areas of waste storage have been tidied up, including cleaning up of spills.</p>

Item No.	Audit Recommendation	MACH Energy Response
O 1.1 (Continued)	<p>Workshop Area</p> <ul style="list-style-type: none"> <li>a) Ensure Remondis label all waste bins.</li> <li>b) Place oil pan under any engines/equipment stored in unbunded areas, that have the potential to drip any hydrocarbons/fluid etc.</li> <li>c) Ensure all chemicals/hydrocarbons are banded.</li> </ul> <p>Construction Offices</p> <ul style="list-style-type: none"> <li>a) Ensure all waste is separated out and stored in the correct waste or recycle bin.</li> <li>b) Ensure all chemicals/hydrocarbons are banded.</li> <li>c) Ensure all bagged contaminated soil is transported to the land farm.</li> </ul>	<p>Remondis have updated bin labels as required.</p> <p>Waste management will be re-toolboxed as required following regular environmental inspections.</p> <p>Areas of waste storage have been tidied up, including cleaning up of spills.</p> <p>Bunding is being reviewed and will be updated as required for storage areas.</p> <p>Waste management was re-toolboxed to teams and will be re-toolboxed as required following regular environmental inspections.</p> <p>Bunding is being reviewed and will be updated as required for storage areas.</p> <p>Waste was removed.</p>
O 3.1 – O 3.4	<p>As per recommendations from Schedule 3 Condition 22 and 23 of the Development Consent.</p> <p>Recommend reviewing the way dust is visually assessed with this based on the EPA's new Dust Management Handbook 2019.</p>	<p>At the time of the observation, wheel generated dust emissions were not considered excessive. However, the observed emissions were in the 'Dust emissions are increasing, and operators should consider if further action to reduce dust is required' category, as per EPA's Dust Assessment Handbook.</p> <p>It is noted that the Dust Assessment Handbook includes a number of factors to consider when assessing if operational changes to haul roads are required, namely; weather conditions, location, proximity to site boundary, proximity to sensitive receptors, duration of emissions and occupational safety.</p> <p>The operations were within the pit and a significant distance from the site boundary and sensitive receptors. Light winds were present, generally from the south-west (i.e. not towards key closest receptors). As such, in-pit dust emissions would be considered unlikely to lead to off-site impacts.</p> <p>Further, no real time dust alarms were triggered at the time of the observations.</p> <p>Notwithstanding, the environmental team called for water carts to attend the pit area in question.</p>

Item No.	Audit Recommendation	MACH Energy Response
<p>O 3.1 – O 3.4 (Continued)</p>	<p>Increased training in visual dust management at site. This should be regularly discussed and documented in toolbox talks.</p> <p>Ensuring water trucks are sent to areas of the site prior to there being a problem. If there is a delay in providing this water truck then operations need to change (eg. Reduction in speed) or operations are to cease until adequate dust controls are available.</p> <p>Update the MOP to include a defined timeframe to revegetate soil stockpiles.</p>	<p>The daily dust risk forecast is provided to the Open Cut Examiner via email each morning to assist with operational planning and to inform the operations team of the dust risk for the day. Supervisors, OCEs, and the environment team also conduct regular checks on dust levels throughout MPO, and operators are proactive in responding to and communicating elevating dust levels.</p> <p>As an action from the audit inspection a toolbox was provided to the OCEs and Supervisors on 26 February 2020 to deliver during the daily pre-start meetings to reinforce the importance of dust management to each of the mining crews, including dust management during excavator loading.</p> <p>The nature of dust emissions from mine sites is that even with the implementation of best practice emission controls, some dust will be emitted from some activities, and the nature and location of the emissions needs to be considered when prioritising dust controls.</p> <p>At the time of the observation, wheel generated dust emissions were not considered excessive. However, the observed emissions were in the ‘Dust emissions are increasing, and operators should consider if further action to reduce dust is required’ category, as per EPA’s Dust Assessment Handbook.</p> <p>It is noted that the Dust Assessment Handbook includes a number of factors to consider when assessing if operational changes to haul roads are required, namely; weather conditions, location, proximity to site boundary, proximity to sensitive receptors, duration of emissions and occupational safety.</p> <p>The operations were within the pit and a significant distance from the site boundary and sensitive receptors. Light winds were present, generally from the south-west (i.e. not towards key closest receptors). As such, in-pit dust emissions would be considered unlikely to lead to off-site impacts.</p> <p>Further, no real time dust alarms were triggered at the time of the observations.</p> <p>Notwithstanding, the environmental team called for water carts to attend the pit area in question.</p> <p>MACH Energy notes that during the observation, water carts continued to operate in areas considered more likely to lead to offsite impacts.</p> <p>In addition, changes in operations, including reduction in speed and reducing or ceasing operations, occurs as required during periods of elevated air quality levels or dust emissions.</p> <p>The 1 July 2020 – 30 June 2021 MOP has been updated to include timeframes for topsoil stockpile shaping and seeding and is currently with DPIE for approval.</p>

Item No.	Audit Recommendation	MACH Energy Response
<p>O 3.1 – O 3.4 (Continued)</p>	<p>Cameras of the pits could be more widely distributed to key MACH Energy Staff. Investigate establishing a series of video cameras to enable monitoring of key areas at the site which have high potential for dust and visual impacts. These would include the pits and higher areas of the site. All required personnel have access to cameras.</p> <p>It is recommended that the ambient air quality monitoring be undertaken in accordance with the Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales using a laboratory that is NATA accredited for the methods. If use of an approved method for the monitoring of ambient particulate levels is not possible, it is recommended that calibration of PM10 and PM2.5 be undertaken against a reference method (such as a TEOM) initially on a quarterly basis using a NATA accredited laboratory (noting that Carbon Based Environmental whose TEOM monitoring is the basis for the current calibration factors is not an accredited laboratory). If after 4 quarters of calibrations it is determined that no change to the calibration factor is required, then the frequency of calibration against the reference method could be reduced to 1 event per annum.</p> <p>It is recommended that an air quality expert be engaged to review exceedances of ambient air quality criteria where the exceedances are not due to exceptional events (as classified by the NSW DPIE) or invalid data.</p>	<p>Mount Pleasant Operation has multiple cameras within site, including those that cover the mining area.</p> <p>MACH Energy is currently investigating the installation of additional cameras, and access to existing cameras.</p> <p>MACH Energy disagrees with the assertion that a National Association of Testing Authorities (NATA) accredited laboratory would be required for a calibration – laboratories are typically required when a sample must be analysed (e.g. filter paper from a High-Volume Air Sampler [HVAS] weighed, or material collected in a dust deposition gauge characterised). In this instance the calibration is completed by co locating two monitors that measure ambient particulate matter levels continuously through light scattering methods (Palas Fidas) and oscillating microbalance methods (TEOM) and comparing the data. As these monitors measure particulate matter continuously (without collecting samples to be analysed later), a laboratory is not required.</p> <p>Palas Fidas calibration was previously undertaken in January and February 2020. MACH Energy will engage a specialist air quality consultancy to determine if the calibration is required to be updated with seasonal data.</p> <p>MACH Energy did engage a specialist air quality consultancy (Todoroski Air Sciences) to review monitoring data in 2019 to determine if any exceedances occurred that were not due to exceptional events. The outcome of the review informed the preparation of the 2019 Annual Review &amp; Annual Rehabilitation Report.</p> <p>An air quality expert will be engaged for future Annual Reviews to review any exceedances of criteria, and to provide a summary for inclusion in the Annual Review.</p>
<p>O 3.6</p>	<p>As per recommendations from Schedule 3 Condition 23 of the Development Consent.</p>	<p>MACH Energy acknowledges that on one occasion (24 October 2019), all dust generating activities were not shutdown within the timeframe specified by Condition O3.6, and due to a miscommunication issue, four haul trucks continued their operations for a short period of time.</p> <p>Due to the nature of the event (i.e. only a small number of equipment items continued to operate past the allowed timeframe, and no elevated dust levels were recorded during the event), no environmental harm is considered to have occurred as a result of the event.</p> <p>As an outcome of the event, site procedures were amended to minimise the potential for such an event to reoccur. MACH Energy self-reported this event to the EPA and an official caution was received in response from the EPA.</p>

Item No.	Audit Recommendation	MACH Energy Response
M 3.1	<p>As per specific recommendation from Schedule 3 Condition 22.</p> <p>It is recommended that the calibration factor used with the Palas Fidas particulate monitors be based on a dataset that covers seasonal variations (rather than the single month the current calibration factors are based on) as changes in particulate loads, temperature, humidity, etc. can affect the instrument's readings.</p> <p>It is recommended that an air quality expert be engaged to review exceedances of ambient air quality criteria where the exceedances are not due to exceptional events (as classified by the NSW DPIE) or invalid data. A summary report would also be included in the Annual Review. .</p>	<p>Palas Fidas calibration was previously undertaken in January and February 2020. MACH Energy will engage a specialist air quality consultancy to determine if the calibration is required to be updated with seasonal data.</p> <p>MACH Energy did engage a specialist air quality consultancy (Todoroski Air Sciences) to review monitoring data in 2019 to determine if any exceedances occurred that were not due to exceptional events. The outcome of the review informed the preparation of the 2019 Annual Review &amp; Annual Rehabilitation Report.</p> <p>An air quality expert will be engaged for future Annual Reviews to review any exceedances of criteria, and to provide a summary for inclusion in the Annual Review.</p>



**APPENDIX F**  
**RAIL MOVEMENT SUMMARY 2020**

Train Movement - Time in	Train Movement - Time Out
Wed, 1 Jan 2020, 06:26	Wed, 1 Jan 2020, 08:06
Thu, 2 Jan 2020, 04:31	Thu, 2 Jan 2020, 07:41
Thu, 2 Jan 2020, 14:06	Thu, 2 Jan 2020, 15:46
Thu, 2 Jan 2020, 19:11	Thu, 2 Jan 2020, 22:21
Fri, 3 Jan 2020, 06:01	Fri, 3 Jan 2020, 09:23
Sun, 5 Jan 2020, 10:19	Sun, 5 Jan 2020, 11:59
Sun, 5 Jan 2020, 23:07	Mon, 6 Jan 2020, 00:47
Mon, 6 Jan 2020, 12:31	Mon, 6 Jan 2020, 14:11
Tue, 7 Jan 2020, 02:14	Tue, 7 Jan 2020, 03:54
Tue, 7 Jan 2020, 03:33	Tue, 7 Jan 2020, 08:06
Tue, 7 Jan 2020, 07:51	Tue, 7 Jan 2020, 12:06
Tue, 7 Jan 2020, 15:06	Tue, 7 Jan 2020, 16:46
Tue, 7 Jan 2020, 20:51	Wed, 8 Jan 2020, 00:13
Wed, 8 Jan 2020, 03:46	Wed, 8 Jan 2020, 05:26
Wed, 8 Jan 2020, 05:51	Wed, 8 Jan 2020, 09:26
Wed, 8 Jan 2020, 12:31	Wed, 8 Jan 2020, 15:41
Wed, 8 Jan 2020, 19:01	Wed, 8 Jan 2020, 20:41
Wed, 8 Jan 2020, 20:21	Thu, 9 Jan 2020, 00:41
Thu, 9 Jan 2020, 07:21	Thu, 9 Jan 2020, 09:54
Thu, 9 Jan 2020, 23:03	Fri, 10 Jan 2020, 00:43
Sun, 12 Jan 2020, 05:01	Sun, 12 Jan 2020, 08:13
Sun, 12 Jan 2020, 07:11	Sun, 12 Jan 2020, 12:13
Sun, 12 Jan 2020, 11:51	Sun, 12 Jan 2020, 16:13
Sun, 12 Jan 2020, 23:35	Mon, 13 Jan 2020, 02:45
Mon, 13 Jan 2020, 04:51	Mon, 13 Jan 2020, 08:01
Mon, 13 Jan 2020, 08:51	Mon, 13 Jan 2020, 12:01
Mon, 13 Jan 2020, 14:31	Mon, 13 Jan 2020, 17:41
Mon, 13 Jan 2020, 19:11	Mon, 13 Jan 2020, 22:21
Tue, 14 Jan 2020, 12:11	Wed, 15 Jan 2020, 00:12
Tue, 14 Jan 2020, 23:03	Wed, 15 Jan 2020, 04:12
Wed, 15 Jan 2020, 08:06	Wed, 15 Jan 2020, 15:18
Thu, 16 Jan 2020, 03:31	Thu, 16 Jan 2020, 06:53
Fri, 17 Jan 2020, 17:21	Fri, 17 Jan 2020, 20:43
Sat, 18 Jan 2020, 17:31	Sat, 18 Jan 2020, 20:41
Sun, 19 Jan 2020, 19:01	Sun, 19 Jan 2020, 22:23
Mon, 20 Jan 2020, 08:51	Mon, 20 Jan 2020, 12:01
Tue, 21 Jan 2020, 12:31	Tue, 21 Jan 2020, 15:53
Tue, 21 Jan 2020, 20:41	Tue, 21 Jan 2020, 23:51
Wed, 22 Jan 2020, 06:11	Wed, 22 Jan 2020, 09:33
Thu, 23 Jan 2020, 01:32	Thu, 23 Jan 2020, 03:12
Thu, 23 Jan 2020, 04:14	Thu, 23 Jan 2020, 07:36
Thu, 23 Jan 2020, 14:31	Thu, 23 Jan 2020, 16:11
Fri, 24 Jan 2020, 04:12	Fri, 24 Jan 2020, 05:52
Fri, 24 Jan 2020, 13:01	Fri, 24 Jan 2020, 16:11
Fri, 24 Jan 2020, 16:40	Fri, 24 Jan 2020, 19:35
Fri, 24 Jan 2020, 23:35	Sat, 25 Jan 2020, 02:57
Sat, 25 Jan 2020, 06:26	Sat, 25 Jan 2020, 08:06
Sat, 25 Jan 2020, 15:59	Sat, 25 Jan 2020, 19:09
Sat, 25 Jan 2020, 21:25	Sat, 25 Jan 2020, 23:05
Sun, 26 Jan 2020, 03:11	Sun, 26 Jan 2020, 06:33
Sun, 26 Jan 2020, 08:31	Sun, 26 Jan 2020, 10:11
Sun, 26 Jan 2020, 21:56	Sun, 26 Jan 2020, 23:36
Mon, 27 Jan 2020, 04:12	Mon, 27 Jan 2020, 07:22
Tue, 28 Jan 2020, 06:01	Tue, 28 Jan 2020, 13:01
Tue, 28 Jan 2020, 18:16	Tue, 28 Jan 2020, 21:26
Wed, 29 Jan 2020, 02:24	Wed, 29 Jan 2020, 05:46
Wed, 29 Jan 2020, 05:51	Wed, 29 Jan 2020, 14:06
Wed, 29 Jan 2020, 17:11	Wed, 29 Jan 2020, 20:21
Wed, 29 Jan 2020, 23:03	Thu, 30 Jan 2020, 02:13
Thu, 30 Jan 2020, 03:31	Thu, 30 Jan 2020, 06:41
Thu, 30 Jan 2020, 05:51	Thu, 30 Jan 2020, 10:41

Month End	Total Tonnage Transported from MPO (t)
<b>2020</b>	<b>6,151,910</b>
January	459,260
February	399,033
March	416,202
April	474,531
May	460,073
June	538,911
July	431,732
August	496,911
September	571,719
October	673,608
November	642,596
December	587,334

Thu, 30 Jan 2020, 18:16	Thu, 30 Jan 2020, 21:31
Fri, 31 Jan 2020, 02:24	Fri, 31 Jan 2020, 05:34
Fri, 31 Jan 2020, 18:00	Fri, 31 Jan 2020, 21:10
Sat, 1 Feb 2020, 04:12	Sat, 1 Feb 2020, 07:22
Sat, 1 Feb 2020, 12:11	Sat, 1 Feb 2020, 15:33
Sat, 1 Feb 2020, 19:03	Sat, 1 Feb 2020, 22:13
Mon, 3 Feb 2020, 06:01	Mon, 3 Feb 2020, 09:23
Mon, 3 Feb 2020, 20:51	Tue, 4 Feb 2020, 00:01
Tue, 4 Feb 2020, 19:11	Tue, 4 Feb 2020, 22:21
Tue, 4 Feb 2020, 23:03	Wed, 5 Feb 2020, 02:33
Wed, 5 Feb 2020, 06:01	Wed, 5 Feb 2020, 09:11
Wed, 5 Feb 2020, 11:51	Wed, 5 Feb 2020, 15:18
Thu, 6 Feb 2020, 05:51	Thu, 6 Feb 2020, 09:01
Thu, 6 Feb 2020, 12:31	Thu, 6 Feb 2020, 15:41
Thu, 6 Feb 2020, 18:31	Thu, 6 Feb 2020, 21:41
Thu, 6 Feb 2020, 20:41	Fri, 7 Feb 2020, 01:41
Fri, 7 Feb 2020, 08:51	Fri, 7 Feb 2020, 12:01
Fri, 7 Feb 2020, 22:17	Sat, 8 Feb 2020, 02:23
Sat, 8 Feb 2020, 00:03	Sat, 8 Feb 2020, 06:23
Sat, 8 Feb 2020, 09:41	Sat, 8 Feb 2020, 12:51
Sat, 8 Feb 2020, 20:11	Sun, 9 Feb 2020, 00:15
Sat, 8 Feb 2020, 23:35	Sun, 9 Feb 2020, 04:15
Sun, 9 Feb 2020, 16:05	Sun, 9 Feb 2020, 19:15
Mon, 10 Feb 2020, 11:13	Mon, 10 Feb 2020, 14:23
Fri, 14 Feb 2020, 02:45	Fri, 14 Feb 2020, 05:55
Fri, 14 Feb 2020, 16:05	Fri, 14 Feb 2020, 19:27
Sat, 15 Feb 2020, 08:21	Sat, 15 Feb 2020, 11:43
Sat, 15 Feb 2020, 17:31	Sat, 15 Feb 2020, 20:41
Sun, 16 Feb 2020, 05:21	Sun, 16 Feb 2020, 08:31
Sun, 16 Feb 2020, 12:31	Sun, 16 Feb 2020, 15:41
Mon, 17 Feb 2020, 02:42	Mon, 17 Feb 2020, 05:52
Mon, 17 Feb 2020, 08:51	Mon, 17 Feb 2020, 12:01
Tue, 18 Feb 2020, 12:31	Tue, 18 Feb 2020, 16:41
Wed, 19 Feb 2020, 05:26	Wed, 19 Feb 2020, 08:36
Wed, 19 Feb 2020, 12:31	Wed, 19 Feb 2020, 15:41
Thu, 20 Feb 2020, 06:01	Thu, 20 Feb 2020, 09:23
Fri, 21 Feb 2020, 08:51	Fri, 21 Feb 2020, 12:13
Sat, 22 Feb 2020, 14:31	Sat, 22 Feb 2020, 21:17
Sun, 23 Feb 2020, 14:51	Sun, 23 Feb 2020, 18:01
Mon, 24 Feb 2020, 06:01	Mon, 24 Feb 2020, 09:11
Mon, 24 Feb 2020, 11:51	Mon, 24 Feb 2020, 15:13
Tue, 25 Feb 2020, 04:41	Tue, 25 Feb 2020, 22:00
Tue, 25 Feb 2020, 22:17	Wed, 26 Feb 2020, 02:12
Thu, 27 Feb 2020, 01:32	Thu, 27 Feb 2020, 04:42
Thu, 27 Feb 2020, 09:11	Thu, 27 Feb 2020, 12:33
Thu, 27 Feb 2020, 14:31	Thu, 27 Feb 2020, 17:41
Thu, 27 Feb 2020, 19:11	Thu, 27 Feb 2020, 22:21
Fri, 28 Feb 2020, 08:34	Fri, 28 Feb 2020, 11:44
Fri, 28 Feb 2020, 18:37	Fri, 28 Feb 2020, 21:47
Sat, 29 Feb 2020, 00:03	Sat, 29 Feb 2020, 09:03
Sat, 29 Feb 2020, 20:41	Sun, 1 Mar 2020, 00:03
Wed, 4 Mar 2020, 15:31	Wed, 4 Mar 2020, 18:41
Thu, 5 Mar 2020, 11:06	Thu, 5 Mar 2020, 14:28
Thu, 5 Mar 2020, 14:35	Thu, 5 Mar 2020, 18:40
Fri, 6 Mar 2020, 09:11	Fri, 6 Mar 2020, 12:33
Fri, 6 Mar 2020, 19:11	Fri, 6 Mar 2020, 22:21
Sat, 7 Mar 2020, 12:31	Sat, 7 Mar 2020, 15:41
Sat, 7 Mar 2020, 20:11	Sat, 7 Mar 2020, 23:21
Sun, 8 Mar 2020, 01:07	Sun, 8 Mar 2020, 04:29
Sun, 8 Mar 2020, 16:25	Sun, 8 Mar 2020, 19:35
Mon, 9 Mar 2020, 06:23	Mon, 9 Mar 2020, 09:33
Tue, 10 Mar 2020, 01:30	Tue, 10 Mar 2020, 04:40
Thu, 12 Mar 2020, 07:51	Thu, 12 Mar 2020, 11:01

Fri, 13 Mar 2020, 03:11	Fri, 13 Mar 2020, 06:21
Fri, 13 Mar 2020, 13:35	Fri, 13 Mar 2020, 16:45
Fri, 13 Mar 2020, 17:21	Fri, 13 Mar 2020, 20:45
Fri, 13 Mar 2020, 19:21	Sat, 14 Mar 2020, 02:12
Sat, 14 Mar 2020, 03:11	Sat, 14 Mar 2020, 06:21
Sat, 14 Mar 2020, 08:51	Sat, 14 Mar 2020, 12:01
Sat, 14 Mar 2020, 19:51	Sat, 14 Mar 2020, 23:01
Sun, 15 Mar 2020, 05:21	Sun, 15 Mar 2020, 08:31
Sun, 15 Mar 2020, 23:07	Mon, 16 Mar 2020, 02:17
Mon, 16 Mar 2020, 21:00	Wed, 18 Mar 2020, 04:13
Wed, 18 Mar 2020, 04:12	Wed, 18 Mar 2020, 09:58
Thu, 19 Mar 2020, 12:31	Thu, 19 Mar 2020, 15:53
Fri, 20 Mar 2020, 09:01	Fri, 20 Mar 2020, 12:11
Sat, 21 Mar 2020, 00:03	Sat, 21 Mar 2020, 03:13
Sat, 21 Mar 2020, 08:21	Sat, 21 Mar 2020, 11:43
Sat, 21 Mar 2020, 14:21	Sat, 21 Mar 2020, 17:31
Sat, 21 Mar 2020, 23:35	Sun, 22 Mar 2020, 02:45
Sun, 22 Mar 2020, 08:21	Sun, 22 Mar 2020, 11:31
Sun, 22 Mar 2020, 20:41	Sun, 22 Mar 2020, 23:51
Mon, 23 Mar 2020, 11:51	Mon, 23 Mar 2020, 15:01
Tue, 24 Mar 2020, 14:31	Tue, 24 Mar 2020, 17:41
Tue, 24 Mar 2020, 17:31	Tue, 24 Mar 2020, 21:41
Wed, 25 Mar 2020, 17:21	Wed, 25 Mar 2020, 20:31
Thu, 26 Mar 2020, 04:02	Thu, 26 Mar 2020, 08:04
Thu, 26 Mar 2020, 19:11	Thu, 26 Mar 2020, 23:01
Fri, 27 Mar 2020, 01:41	Fri, 27 Mar 2020, 05:31
Fri, 27 Mar 2020, 09:11	Fri, 27 Mar 2020, 13:01
Fri, 27 Mar 2020, 16:05	Fri, 27 Mar 2020, 19:55
Fri, 27 Mar 2020, 23:03	Sat, 28 Mar 2020, 02:53
Sat, 28 Mar 2020, 00:21	Sat, 28 Mar 2020, 07:43
Sat, 28 Mar 2020, 11:13	Sat, 28 Mar 2020, 15:15
Sat, 28 Mar 2020, 17:31	Sat, 28 Mar 2020, 21:21
Sun, 29 Mar 2020, 00:51	Sun, 29 Mar 2020, 04:41
Sun, 29 Mar 2020, 05:21	Sun, 29 Mar 2020, 09:53
Sun, 29 Mar 2020, 11:51	Sun, 29 Mar 2020, 15:41
Mon, 30 Mar 2020, 09:31	Mon, 30 Mar 2020, 13:33
Mon, 30 Mar 2020, 23:30	
Tue, 31 Mar 2020, 23:30	Thu, 2 Apr 2020, 22:07
Sat, 4 Apr 2020, 07:11	Sat, 4 Apr 2020, 11:01
Sun, 5 Apr 2020, 09:41	Sun, 5 Apr 2020, 13:31
Sun, 5 Apr 2020, 18:20	Sun, 5 Apr 2020, 22:10
Mon, 6 Apr 2020, 09:11	Mon, 6 Apr 2020, 13:01
Tue, 7 Apr 2020, 12:31	Tue, 7 Apr 2020, 18:40
Wed, 8 Apr 2020, 11:13	Wed, 8 Apr 2020, 15:15
Wed, 8 Apr 2020, 22:01	Thu, 9 Apr 2020, 01:51
Thu, 9 Apr 2020, 02:55	Thu, 9 Apr 2020, 06:45
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Thu, 9 Apr 2020, 20:41	Fri, 10 Apr 2020, 00:41
Fri, 10 Apr 2020, 14:31	Fri, 10 Apr 2020, 16:51
Fri, 10 Apr 2020, 17:57	Fri, 10 Apr 2020, 21:47
Sat, 11 Apr 2020, 04:12	Sat, 11 Apr 2020, 06:32
Sat, 11 Apr 2020, 14:00	Sat, 11 Apr 2020, 17:50
Sat, 11 Apr 2020, 22:31	Sun, 12 Apr 2020, 02:21
Sun, 12 Apr 2020, 07:31	Sun, 12 Apr 2020, 09:51
Sun, 12 Apr 2020, 11:51	Sun, 12 Apr 2020, 15:41
Sun, 12 Apr 2020, 21:43	Mon, 13 Apr 2020, 00:03
Mon, 13 Apr 2020, 11:51	Mon, 13 Apr 2020, 14:11
Mon, 13 Apr 2020, 14:31	Mon, 13 Apr 2020, 18:51
Tue, 14 Apr 2020, 00:51	Tue, 14 Apr 2020, 03:36
Tue, 14 Apr 2020, 09:21	Tue, 14 Apr 2020, 13:11
Tue, 14 Apr 2020, 16:36	Tue, 14 Apr 2020, 18:56
Wed, 15 Apr 2020, 14:21	Wed, 15 Apr 2020, 16:41
Thu, 16 Apr 2020, 04:14	Thu, 16 Apr 2020, 06:34

Fri, 17 Apr 2020, 08:34	Fri, 17 Apr 2020, 12:24
Fri, 17 Apr 2020, 12:31	Fri, 17 Apr 2020, 17:04
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Sat, 18 Apr 2020, 22:31	Sun, 19 Apr 2020, 02:21
Sun, 19 Apr 2020, 08:51	Sun, 19 Apr 2020, 12:41
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Mon, 20 Apr 2020, 11:51	Mon, 20 Apr 2020, 15:41
Tue, 21 Apr 2020, 04:12	Tue, 21 Apr 2020, 08:02
Tue, 21 Apr 2020, 12:31	Tue, 21 Apr 2020, 16:33
Wed, 22 Apr 2020, 03:39	Wed, 22 Apr 2020, 07:41
Wed, 22 Apr 2020, 08:51	Wed, 22 Apr 2020, 12:41
Wed, 22 Apr 2020, 16:02	Wed, 22 Apr 2020, 19:52
Thu, 23 Apr 2020, 01:32	Thu, 23 Apr 2020, 05:22
Thu, 23 Apr 2020, 09:11	Thu, 23 Apr 2020, 13:13
Thu, 23 Apr 2020, 14:31	Thu, 23 Apr 2020, 18:21
Thu, 23 Apr 2020, 19:11	Thu, 23 Apr 2020, 23:01
Fri, 24 Apr 2020, 00:31	Fri, 24 Apr 2020, 04:21
Fri, 24 Apr 2020, 05:10	Fri, 24 Apr 2020, 09:13
Fri, 24 Apr 2020, 09:11	Fri, 24 Apr 2020, 13:53
Fri, 24 Apr 2020, 15:26	Fri, 24 Apr 2020, 19:16
Fri, 24 Apr 2020, 19:11	Sat, 25 Apr 2020, 01:53
Sat, 25 Apr 2020, 05:31	Sat, 25 Apr 2020, 09:21
Sat, 25 Apr 2020, 09:41	Sat, 25 Apr 2020, 14:13
Sat, 25 Apr 2020, 19:05	Sat, 25 Apr 2020, 22:55
Sun, 26 Apr 2020, 05:21	Sun, 26 Apr 2020, 09:11
Mon, 27 Apr 2020, 06:01	Mon, 27 Apr 2020, 09:51
Mon, 27 Apr 2020, 09:31	Mon, 27 Apr 2020, 14:31
Mon, 27 Apr 2020, 14:07	Mon, 27 Apr 2020, 19:23
Tue, 28 Apr 2020, 17:21	Tue, 28 Apr 2020, 22:52
Tue, 28 Apr 2020, 23:03	Wed, 29 Apr 2020, 03:32
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Thu, 30 Apr 2020, 03:31	Thu, 30 Apr 2020, 07:33
Thu, 30 Apr 2020, 10:46	Thu, 30 Apr 2020, 14:36
Thu, 30 Apr 2020, 21:43	Fri, 1 May 2020, 01:33
Fri, 1 May 2020, 04:31	Fri, 1 May 2020, 08:33
Fri, 1 May 2020, 12:31	Fri, 1 May 2020, 16:21
Sat, 2 May 2020, 06:07	Sat, 2 May 2020, 10:09
Sat, 2 May 2020, 22:31	Sun, 3 May 2020, 02:21
Mon, 4 May 2020, 14:21	Mon, 4 May 2020, 18:11
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Wed, 6 May 2020, 13:01	Wed, 6 May 2020, 18:21
Thu, 7 May 2020, 06:01	Thu, 7 May 2020, 10:03
Thu, 7 May 2020, 12:31	Thu, 7 May 2020, 16:21
Fri, 8 May 2020, 00:31	Fri, 8 May 2020, 04:21
Fri, 8 May 2020, 12:31	Fri, 8 May 2020, 16:05
Fri, 8 May 2020, 20:51	Sat, 9 May 2020, 00:41
Sat, 9 May 2020, 01:06	Sat, 9 May 2020, 05:33
Sat, 9 May 2020, 07:58	Sat, 9 May 2020, 11:48
Sat, 9 May 2020, 14:31	Sat, 9 May 2020, 18:21
Sat, 9 May 2020, 19:35	Sat, 9 May 2020, 23:25
Sat, 9 May 2020, 23:05	Sun, 10 May 2020, 04:05
Sun, 10 May 2020, 04:31	Sun, 10 May 2020, 08:57
Sun, 10 May 2020, 09:50	Sun, 10 May 2020, 13:40
Sun, 10 May 2020, 22:17	Mon, 11 May 2020, 01:20
Sun, 10 May 2020, 23:07	Mon, 11 May 2020, 06:00
Mon, 11 May 2020, 06:01	Mon, 11 May 2020, 10:40
Mon, 11 May 2020, 14:31	Mon, 11 May 2020, 16:51
Mon, 11 May 2020, 16:25	Mon, 11 May 2020, 21:31
Tue, 12 May 2020, 06:01	Tue, 12 May 2020, 12:10

Tue, 12 May 2020, 19:11	Tue, 12 May 2020, 23:13
Tue, 12 May 2020, 23:41	Wed, 13 May 2020, 02:31
Wed, 13 May 2020, 05:51	Wed, 13 May 2020, 09:41
Wed, 13 May 2020, 12:52	Wed, 13 May 2020, 15:12
Wed, 13 May 2020, 15:31	Wed, 13 May 2020, 20:52
Thu, 14 May 2020, 03:02	Thu, 14 May 2020, 06:52
Thu, 14 May 2020, 09:11	Thu, 14 May 2020, 11:31
Thu, 14 May 2020, 19:01	Thu, 14 May 2020, 23:01
Fri, 15 May 2020, 00:02	Fri, 15 May 2020, 02:52
Fri, 15 May 2020, 06:01	Fri, 15 May 2020, 09:51
Fri, 15 May 2020, 14:31	Sat, 16 May 2020, 00:10
Sat, 16 May 2020, 01:32	Sat, 16 May 2020, 05:22
Sat, 16 May 2020, 08:51	Sat, 16 May 2020, 12:41
Sat, 16 May 2020, 13:01	Sat, 16 May 2020, 15:51
Sat, 16 May 2020, 20:11	Sun, 17 May 2020, 00:01
Sun, 17 May 2020, 02:14	Sun, 17 May 2020, 04:34
Sun, 17 May 2020, 16:05	Sun, 17 May 2020, 18:25
Sun, 17 May 2020, 20:11	Mon, 18 May 2020, 01:23
Mon, 18 May 2020, 12:30	Fri, 22 May 2020, 12:48
Fri, 22 May 2020, 14:31	Fri, 22 May 2020, 16:51
Sat, 23 May 2020, 20:11	Sat, 23 May 2020, 22:31
Sun, 24 May 2020, 06:07	Sun, 24 May 2020, 09:57
Sun, 24 May 2020, 14:31	Sun, 24 May 2020, 16:51
Sun, 24 May 2020, 17:21	Sun, 24 May 2020, 21:31
Mon, 25 May 2020, 05:51	Mon, 25 May 2020, 08:11
Tue, 26 May 2020, 00:51	Tue, 26 May 2020, 03:11
Tue, 26 May 2020, 16:25	Tue, 26 May 2020, 20:15
Tue, 26 May 2020, 23:03	Wed, 27 May 2020, 01:23
Wed, 27 May 2020, 22:01	Thu, 28 May 2020, 00:21
Thu, 28 May 2020, 23:01	Fri, 29 May 2020, 01:21
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Fri, 29 May 2020, 07:11	Fri, 29 May 2020, 11:01
Fri, 29 May 2020, 14:51	Fri, 29 May 2020, 17:11
Fri, 29 May 2020, 16:25	Fri, 29 May 2020, 21:51
Sat, 30 May 2020, 08:41	Sat, 30 May 2020, 11:01
Sat, 30 May 2020, 11:51	Sat, 30 May 2020, 15:53
Sun, 31 May 2020, 09:11	Sun, 31 May 2020, 11:36
Sun, 31 May 2020, 12:31	Sun, 31 May 2020, 16:21
Sun, 31 May 2020, 16:05	Sun, 31 May 2020, 21:01
Mon, 1 Jun 2020, 03:11	Mon, 1 Jun 2020, 05:31
Mon, 1 Jun 2020, 14:31	Mon, 1 Jun 2020, 18:33
Mon, 1 Jun 2020, 20:51	Tue, 2 Jun 2020, 00:41
Tue, 2 Jun 2020, 12:31	Tue, 2 Jun 2020, 16:33
Tue, 2 Jun 2020, 19:11	Tue, 2 Jun 2020, 23:01
Tue, 2 Jun 2020, 23:03	Wed, 3 Jun 2020, 03:41
Wed, 3 Jun 2020, 04:12	Wed, 3 Jun 2020, 08:37
Wed, 3 Jun 2020, 11:28	Wed, 3 Jun 2020, 15:18
Wed, 3 Jun 2020, 18:16	Wed, 3 Jun 2020, 22:18
Wed, 3 Jun 2020, 20:51	Thu, 4 Jun 2020, 02:58
Thu, 4 Jun 2020, 07:21	Thu, 4 Jun 2020, 13:13
Thu, 4 Jun 2020, 23:03	Fri, 5 Jun 2020, 03:05
Fri, 5 Jun 2020, 04:31	Fri, 5 Jun 2020, 08:21
Fri, 5 Jun 2020, 11:51	Fri, 5 Jun 2020, 15:41
Fri, 5 Jun 2020, 21:43	Sat, 6 Jun 2020, 01:33
Sun, 7 Jun 2020, 04:31	Sun, 7 Jun 2020, 08:33
Sun, 7 Jun 2020, 11:51	Mon, 8 Jun 2020, 06:27
Mon, 8 Jun 2020, 07:11	Mon, 8 Jun 2020, 11:19
Mon, 8 Jun 2020, 11:31	Mon, 8 Jun 2020, 15:59
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Wed, 10 Jun 2020, 06:11	Wed, 10 Jun 2020, 19:11
Thu, 11 Jun 2020, 02:08	Thu, 11 Jun 2020, 05:58
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Thu, 11 Jun 2020, 11:51	Thu, 11 Jun 2020, 16:00

Thu, 11 Jun 2020, 17:21	Thu, 11 Jun 2020, 21:11
Thu, 11 Jun 2020, 23:03	Fri, 12 Jun 2020, 02:53
Fri, 12 Jun 2020, 06:01	Fri, 12 Jun 2020, 09:51
Fri, 12 Jun 2020, 12:41	Fri, 12 Jun 2020, 16:31
Fri, 12 Jun 2020, 16:05	Fri, 12 Jun 2020, 21:11
Sat, 13 Jun 2020, 03:50	Sat, 13 Jun 2020, 07:40
Sat, 13 Jun 2020, 07:11	Sat, 13 Jun 2020, 12:20
Sat, 13 Jun 2020, 17:21	Sat, 13 Jun 2020, 21:52
Sat, 13 Jun 2020, 22:31	Sun, 14 Jun 2020, 02:44
Sun, 14 Jun 2020, 02:23	Sun, 14 Jun 2020, 07:24
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Sun, 14 Jun 2020, 11:51	Sun, 14 Jun 2020, 16:56
Mon, 15 Jun 2020, 02:42	Mon, 15 Jun 2020, 19:52
Mon, 15 Jun 2020, 23:35	Tue, 16 Jun 2020, 03:25
Tue, 16 Jun 2020, 06:23	Tue, 16 Jun 2020, 10:13
Tue, 16 Jun 2020, 11:13	Tue, 16 Jun 2020, 15:03
Tue, 16 Jun 2020, 16:03	Tue, 16 Jun 2020, 19:53
Wed, 17 Jun 2020, 04:12	Wed, 17 Jun 2020, 08:02
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Sat, 20 Jun 2020, 00:21	Sat, 20 Jun 2020, 04:11
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Tue, 23 Jun 2020, 09:31	Tue, 23 Jun 2020, 14:21
Tue, 23 Jun 2020, 16:25	Wed, 24 Jun 2020, 18:15
Wed, 24 Jun 2020, 19:21	Wed, 24 Jun 2020, 23:23
Wed, 24 Jun 2020, 23:35	Thu, 25 Jun 2020, 04:03
Thu, 25 Jun 2020, 14:31	Thu, 25 Jun 2020, 18:21
Thu, 25 Jun 2020, 20:21	Fri, 26 Jun 2020, 00:11
Fri, 26 Jun 2020, 04:31	Fri, 26 Jun 2020, 08:21
Fri, 26 Jun 2020, 09:41	Fri, 26 Jun 2020, 13:31
Fri, 26 Jun 2020, 14:21	Fri, 26 Jun 2020, 19:38
Sat, 27 Jun 2020, 05:31	Sat, 27 Jun 2020, 09:21
Sat, 27 Jun 2020, 09:32	Sat, 27 Jun 2020, 14:13
Sun, 28 Jun 2020, 04:31	Sun, 28 Jun 2020, 08:21
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Mon, 29 Jun 2020, 02:42	Mon, 29 Jun 2020, 06:32
Fri, 3 Jul 2020, 05:30	Fri, 3 Jul 2020, 09:10
Fri, 3 Jul 2020, 19:11	Fri, 3 Jul 2020, 23:01
Sun, 5 Jul 2020, 04:20	Sun, 5 Jul 2020, 08:47
Mon, 6 Jul 2020, 06:01	Mon, 6 Jul 2020, 10:03
Mon, 6 Jul 2020, 23:03	Tue, 7 Jul 2020, 03:05
Tue, 7 Jul 2020, 06:01	Tue, 7 Jul 2020, 09:51
Tue, 7 Jul 2020, 10:15	Tue, 7 Jul 2020, 14:31
Wed, 8 Jul 2020, 04:51	Wed, 8 Jul 2020, 08:53
Wed, 8 Jul 2020, 08:01	Wed, 8 Jul 2020, 13:45
Wed, 8 Jul 2020, 14:21	Wed, 8 Jul 2020, 18:25
Wed, 8 Jul 2020, 19:01	Wed, 8 Jul 2020, 23:05
Thu, 9 Jul 2020, 02:24	Thu, 9 Jul 2020, 06:14
Thu, 9 Jul 2020, 06:15	Thu, 9 Jul 2020, 10:54
Thu, 9 Jul 2020, 14:31	Thu, 9 Jul 2020, 18:21
Fri, 10 Jul 2020, 17:21	Fri, 10 Jul 2020, 21:11
Fri, 10 Jul 2020, 20:51	Sat, 11 Jul 2020, 01:51
Sat, 11 Jul 2020, 01:32	Sat, 11 Jul 2020, 06:59
Sat, 11 Jul 2020, 06:47	Sat, 11 Jul 2020, 11:39
Sat, 11 Jul 2020, 12:31	Sat, 11 Jul 2020, 16:21
Sun, 12 Jul 2020, 12:31	Mon, 13 Jul 2020, 03:56
Mon, 13 Jul 2020, 04:51	Mon, 13 Jul 2020, 08:53
Mon, 13 Jul 2020, 08:51	Mon, 13 Jul 2020, 13:33
Tue, 14 Jul 2020, 09:21	Tue, 14 Jul 2020, 13:11

Wed, 15 Jul 2020, 20:41	Thu, 16 Jul 2020, 00:31
Thu, 16 Jul 2020, 06:01	Thu, 16 Jul 2020, 09:51
Thu, 16 Jul 2020, 20:51	Fri, 17 Jul 2020, 00:53
Fri, 17 Jul 2020, 04:31	Fri, 17 Jul 2020, 08:21
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Sun, 19 Jul 2020, 07:31	Sun, 19 Jul 2020, 11:05
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Mon, 20 Jul 2020, 07:11	Mon, 20 Jul 2020, 11:01
Mon, 20 Jul 2020, 12:31	Mon, 20 Jul 2020, 16:33
Mon, 20 Jul 2020, 19:11	Mon, 20 Jul 2020, 23:01
Wed, 22 Jul 2020, 00:31	Wed, 22 Jul 2020, 02:51
Wed, 22 Jul 2020, 02:14	Wed, 22 Jul 2020, 07:31
Wed, 22 Jul 2020, 06:51	Wed, 22 Jul 2020, 15:23
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Wed, 22 Jul 2020, 23:03	Thu, 23 Jul 2020, 01:23
Thu, 23 Jul 2020, 11:30	Thu, 23 Jul 2020, 14:17
Fri, 24 Jul 2020, 00:31	Fri, 24 Jul 2020, 02:51
Fri, 24 Jul 2020, 15:11	Fri, 24 Jul 2020, 17:31
Fri, 24 Jul 2020, 18:16	Fri, 24 Jul 2020, 22:11
Fri, 24 Jul 2020, 23:03	Sat, 25 Jul 2020, 02:53
Sat, 25 Jul 2020, 03:11	Sat, 25 Jul 2020, 07:33
Sat, 25 Jul 2020, 08:22	Sat, 25 Jul 2020, 12:13
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Wed, 30 Dec 2020, 19:21	Wed, 30 Dec 2020, 23:25
Wed, 30 Dec 2020, 23:03	Thu, 31 Dec 2020, 04:17
Thu, 31 Dec 2020, 02:08	Thu, 31 Dec 2020, 08:57
Thu, 31 Dec 2020, 09:11	Thu, 31 Dec 2020, 13:37
Thu, 31 Dec 2020, 14:31	Thu, 31 Dec 2020, 18:33
Thu, 31 Dec 2020, 20:21	Fri, 1 Jan 2021, 00:11

**APPENDIX G**  
**MOUNT PLEASANT OPERATION – 2020 ANNUAL AIR QUALITY REVIEW**

5 March 2021

Chris Masters  
MACH Energy Australia  
Via email: [chris.masters@machenergy.com.au](mailto:chris.masters@machenergy.com.au)

## RE: Mount Pleasant Operation – 2020 Annual Air Quality Review

Dear Chris,

Todoroski Air Sciences have conducted a review and analysis of the annual average deposited dust, TSP, PM<sub>10</sub> and PM<sub>2.5</sub> levels recorded at Mount Pleasant Operation (MPO) in 2020.

### Annual air quality criteria

As per consent DA 92/97 Schedule 3 Condition 20 "Except for the air-affected land referred to in Table 1, the Applicant must ensure that all reasonable and feasible avoidance and mitigation measures are employed so that the 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." The criteria from Tables 8 to 10 are set out below:

**Table 8: Long term criteria for particulate matter**

Pollutant	Averaging period	<sup>a</sup> Criterion
Total suspended particulate (TSP) matter	Annual	<sup>a</sup> 90 µg/m <sup>3</sup>
Particulate matter < 10 µm (PM <sub>10</sub> )	Annual	<sup>a</sup> 25 µg/m <sup>3</sup>
Particulate matter < 2.5 µm (PM <sub>2.5</sub> )	Annual	<sup>a</sup> 8 µg/m <sup>3</sup>

<sup>a</sup> Total impact (i.e. incremental increase in concentrations due to the development plus background concentrations due to all other sources)

<sup>d</sup> Excludes extraordinary events such as bushfires, prescribed burning, dust storms, sea fog, fire incidents or any other activity agreed to by the Secretary.

**Table 9: Short term criteria for particulate matter**

Pollutant	Averaging period	<sup>d</sup> Criterion
Particulate matter < 10 µm (PM <sub>10</sub> )	24 hour	<sup>b</sup> 50 µg/m <sup>3</sup>
Particulate matter < 2.5 µm (PM <sub>2.5</sub> )	24 hour	<sup>b</sup> 25 µg/m <sup>3</sup>

<sup>b</sup> Incremental impact (i.e. incremental increase in concentrations due to the development on its own)

<sup>d</sup> Excludes extraordinary events such as bushfires, prescribed burning, dust storms, sea fog, fire incidents or any other activity agreed to by the Secretary.

**Table 10: Long term criteria for deposited dust**

Pollutant	Averaging period	Maximum increase in deposited dust level	Maximum total deposited dust level
<sup>c</sup> Deposited dust	Annual	<sup>b</sup> 2 g/m <sup>2</sup> /month	<sup>a</sup> 4 g/m <sup>2</sup> /month

<sup>a</sup> Total impact (i.e. incremental increase in concentrations due to the development plus background concentrations due to other sources)

<sup>b</sup> Incremental impact (i.e. incremental increase in concentrations due to the development on its own)

<sup>c</sup> 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



When the measured cumulative annual average deposited dust level at compliance monitors is below the criterion of  $4\text{g}/\text{m}^2/\text{month}$  in Table 10 it is inferred that compliance is achieved. If this criterion is exceeded, the applicant must demonstrate compliance with the maximum increase in the deposited dust level of  $2\text{g}/\text{m}^2/\text{month}$ .

### Extraordinary event days

The criteria set out in Table 8 and Table 9 excludes “extraordinary events” as per Condition 20 Schedule 3. In 2020 there were 24 days considered to be “extraordinary events” for MPO. The predominant cause of these “extraordinary events” was smoke associated with the 2019/2020 NSW bushfires. This assessment presents the annual averages calculated both including and excluding these “extraordinary event” days.

The following days are considered to be affected by “extraordinary events” in 2020 for the purposes of this review:

✦ 1/01/2020	✦ 9/01/2020	✦ 24/01/2020
✦ 2/01/2020	✦ 10/01/2020	✦ 25/01/2020
✦ 3/01/2020	✦ 11/01/2020	✦ 1/02/2020
✦ 4/01/2020	✦ 12/01/2020	✦ 2/02/2020
✦ 5/01/2020	✦ 15/01/2020	✦ 4/02/2020
✦ 6/01/2020	✦ 20/01/2020	✦ 19/02/2020
✦ 7/01/2020	✦ 21/01/2020	✦ 19/08/2020
✦ 8/01/2020	✦ 23/01/2020	✦ 29/11/2020

In addition, the NSW DPI Combined Drought Indicator (**NSW DPI, 2021**) indicates that MPO experienced extreme drought conditions in January 2020 followed by drought or drought affected conditions until approximately mid-year in 2020. This would have contributed to the dust levels in the vicinity of MPO with higher background levels and an increased frequency of dust storms.

### Dust Deposition

This review has analysed dust deposition data recorded at the MPO monitors for the 2020 year.

**Figure 1** presents a plan of the dust gauge monitoring locations for both compliance and non-compliance monitors in the area around MPO and the annual average deposited dust levels. The figure includes annual windrose plots of the meteorological data collected at the M-WM1, M-WM2, M-WS4 and M-WM5 stations during 2020. In general, winds were predominately from the southeast and northwest quadrants.

**Table 1** summarises the MPO dust deposition monitoring data for the 2020 period. It is noted that the D7 and D9 monitors were each moved approximately 15 to 20 metres during 2020. This assessment considers the annual averages calculated from the data recorded at both the initial and the updated locations for D7 and D9 in 2020.

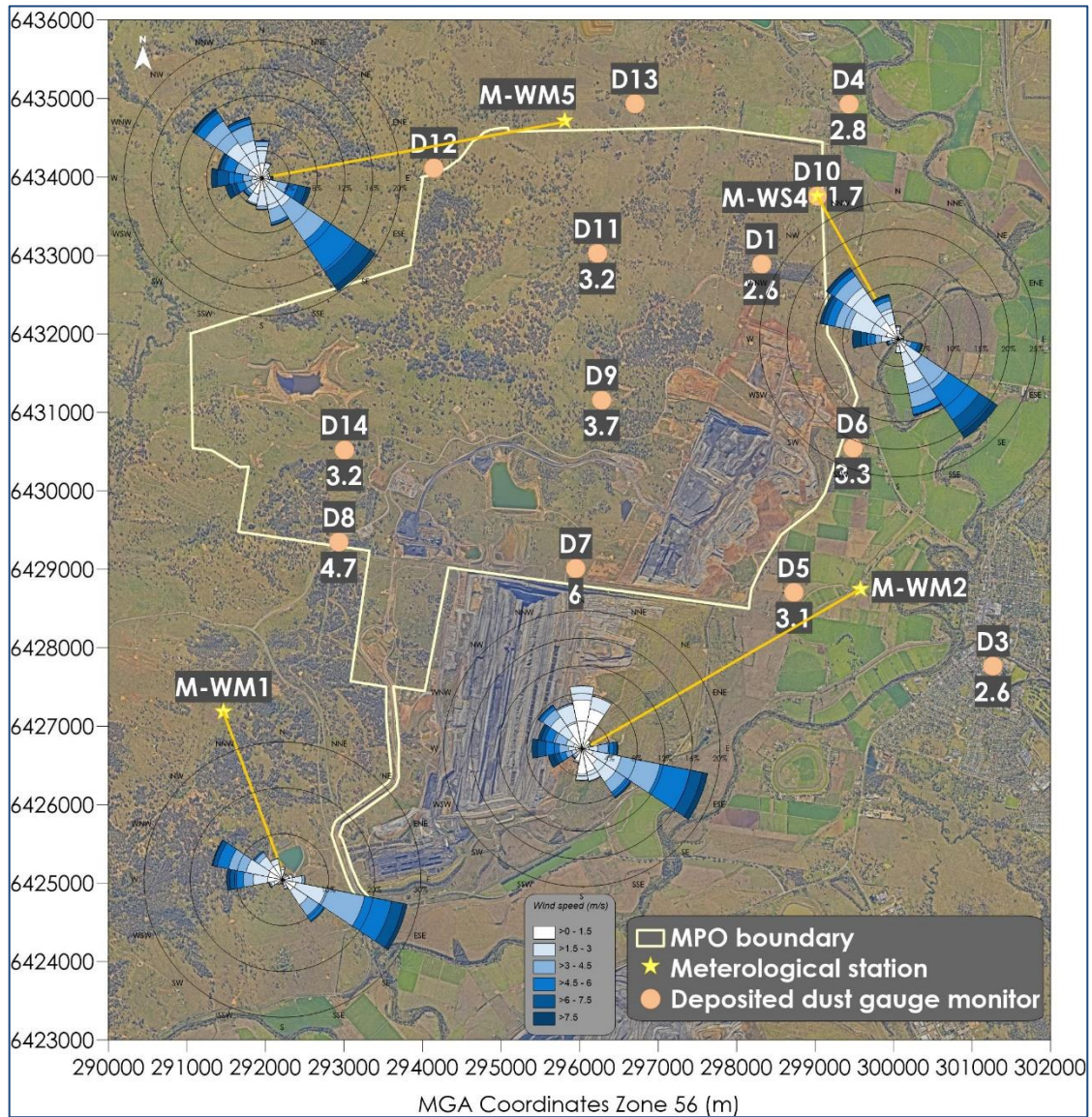


Figure 1: Annual average deposited dust results for 2020

Table 1: Deposited dust monthly average compliance monitoring data for 2020 (g/m<sup>2</sup>/month)

Date	D1	D3	D4	D5	D6	D7	D8	D9	D10	D11	D12	D13	D14
Jan	4.9	-	2.4	3.1	7.2	6.1	5.3	2.8	3.0	3.6	3.2	4.7	3.5
Feb	3.8	5.7	3.4	4.8	37.4c	8.5	9.6	6.1	3.5	4.0	7.7c	7.5	5.9
Mar	2.5	2.3	3.4	2.8	2.9	11.8c	4.9	5.4	1.9	4.2	17.5c	15.4c	4.2
Apr	1.7	1.7	2.5	2.6	2.4	6.5	3.9	3.8	1.1	2.7	12.6c	3.1	2.5
May	2.0	2.1	1.7	4.4	1.8	6.1	4.1	4.2	1.3	4.9	11.0c	5.4c	3.1
Jun	2.4	1.7	2.7	2.3	3.3	5.3	5.0	4.0	1.1	4.3c	2.0	5.2c	3.7
Jul	2.3	2.0	4.4c	2.2	3.3	6.7	4.5	4.2	0.8	3.7c	1.9	2.9	2.9
Aug	1.7	1.3	2.7	1.9	4.1	7.1	3.0	8.0c	0.8	1.6	14.3c	5.5c	1.9
Sep	2.4	64.2c	2.8	2.8	2.0	3.8	2.7	1.2	0.7	2.9	9.4c	4.4c	1.1
Oct	3.3	17.3c	2.5	3.6	3.7	6.2	4.6	2.7	1.4	2.9	2.1	2.8	3.2
Nov	1.6	1.9	4.5	1.9	2.5	5.9	4.4	3.6	1.1	2.6	1.8	1.7	3.8
Dec	3.0	4.3	2.6	5.2	2.8	3.4	3.9	2.6	3.4	3.0	1.9	2.3	2.2
Annual average	2.6	2.6	2.8	3.1	3.3	6.0	4.7	3.7	1.7	3.2	N/A	N/A	3.2

- not available

c – contaminated

N/A – insufficient valid data (<75%) for an annual average calculation

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As per the MPO Air Quality and Greenhouse Gas Management Plan (**MACH Energy, 2019**) D7 is not used to assess compliance against the deposited dust criteria as the monitor is located in close proximity to the northern boundary of a neighbouring mining operation open cut pit and there are no privately-owned receivers in the vicinity of this monitoring location.

With the exception of D8, the data indicate that the annual average deposited dust levels measured at the MPO monitors representative of residences on privately-owned land, were below the cumulative criterion of  $4\text{g}/\text{m}^2/\text{month}$  in 2020.

The results measured at the D8 monitor are taken to be representative of conditions at the nearest residence(s). It is noted that the criterion is not directly applicable at the nearest residences to D8, property ID 43, 43b, which are listed for acquisition upon request on a noise and air basis in DA 92/97 Schedule 3 Condition 1 Table 1. As per DA 92/97 Schedule 3 Condition 20 the "air-affected land referred to in Table 1" are not subject to the air quality criteria. The next nearest residence not subject to acquisition upon request due to air quality impacts (as per DA 92/97 Schedule 3 Condition 1), is property ID 47, which is located approximately 1.7km west of D8. Deposited dust generally settles quickly from the atmosphere and the majority only travels a relatively short distance from the source (10's to 100's of metres), even under relatively high wind speed conditions. As such the impact from MPO at property ID 47 is anticipated to be significantly lower than at the D8 monitor.

The windrose data indicate that D8 would have been downwind of the MPO rail loop in 2020. It is not possible to distinguish the dust impact from the MPO rail loop from dust sources located to the southeast of D8, however it is considered that dust impacts from the rail loop would be minor compared with impacts from neighbouring mining activities. Based on the available weather data, the D8 monitor would have been downwind of MPO for approximately 50% of the time including the rail loop or 8% of the time excluding the rail loop during the review period.

The potential contribution to the annual average dust level recorded at D8 due to activities at MPO is presented in **Table 2**. MPO's contribution to the annual average deposited dust level recorded at D8 was approximated as the monthly level recorded at D8 minus the underlying monthly background level (taken to be the average of the levels recorded by the D4 and D10 monitors, which are considered to be the least potentially impacted by MPO based on the windrose plots in **Figure 1**) multiplied by the fraction of time in each month that the monitor was downwind of the mine. It is noted that this is only an approximate calculation as the downwind angle includes other mining sources to the southeast of the D8 monitor and assumes uniform dust in all directions.

The analysis indicates that MPO's contribution to the 2020 annual average deposited dust level at the D8 monitor would have been less than or equal to  $1.3\text{g}/\text{m}^2/\text{month}$ . This estimation conservatively includes potential impacts from other mining activity and localised sources. As noted above, the contribution from MPO to property ID 47 would be significantly lower than that at the D8 monitor.

On the basis of this review we conclude that MPO did not contribute more than the  $2\text{g}/\text{m}^2/\text{month}$  incremental deposited dust criterion per DA 92/97 Schedule 3 Condition 20 to the annual average deposited dust level recorded at D8 in 2020.

Table 2: Estimated maximum potential contribution of MPO to D8 (2020)

Month	Measured monthly average deposited dust level (g/m <sup>2</sup> /month)	Percentage of time downwind	Estimated monthly average background deposited dust level (g/m <sup>2</sup> /month)	Estimated maximum potential contribution to the monthly average deposited dust (MPO and local sources)
January	5.3	78%	2.7	2.0
February	9.6	72%	3.5	4.4
March	4.9	72%	2.7	1.6
April	3.9	44%	1.8	0.9
May	4.1	34%	1.5	0.9
June	5.0	39%	1.9	1.2
July	4.5	33%	0.8	1.2
August	3.0	30%	1.8	0.4
September	2.7	33%	1.8	0.3
October	4.6	38%	2.0	1.0
November	4.4	67%	2.8	1.1
December	3.9	65%	3.0	0.6
<b>Annual</b>	<b>4.7</b>	<b>50%</b>	<b>2.2</b>	<b>1.3</b>

### Annual Average TSP

This review has analysed the TSP monitoring data recorded at the MPO High Volume Air Sampler (HVAS) monitors in 2020.

**Figure 2** presents the 24-hour average TSP levels for 2020. The figure shows elevated TSP levels at the start of the year due to smoke associated with the 2019/2020 NSW bushfires.

**Table 3** presents a summary of the annual average TSP monitoring data for the area around MPO in 2020. Two sets of annual average levels are presented, the levels calculated for all HVAS run days and the levels calculated excluding "extraordinary events". There were five HVAS run days in the 2020 year that were considered to be "extraordinary events". The data show that there is approximately a 5 to 8µg/m<sup>3</sup> difference between the annual average TSP levels for all HVAS run days and excluding "extraordinary events".

**Figure 3** presents a plan of the HVAS monitoring locations in the area around MPO and the annual average TSP levels excluding "extraordinary events". The figure includes annual windrose plots of the meteorological data collected at the M-WM1, M-WM2, M-WS4 and M-WM5 stations during 2020.

The annual average TSP levels for all HVAS run days and excluding "extraordinary events" at the MPO HVAS monitors are below the relevant criterion of 90µg/m<sup>3</sup>. As such, it is considered that compliance with the relevant criterion in Table 8 of DA 92/97 Schedule 3 Condition 20 is achieved.

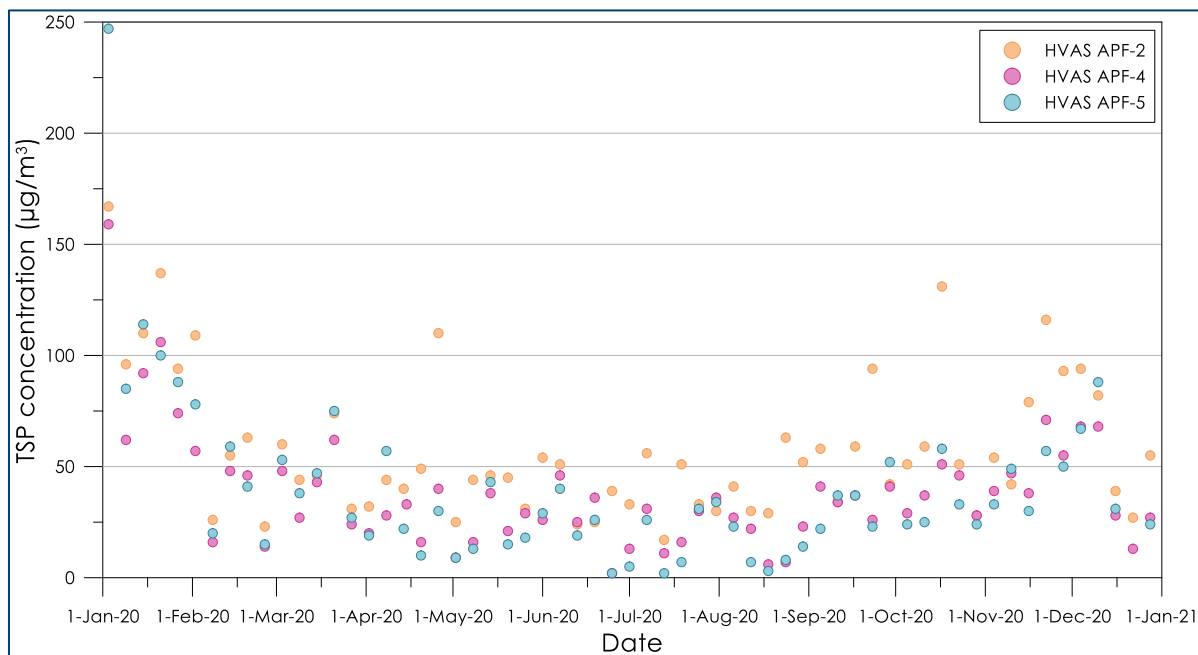


Figure 2: 24-hour average TSP HVAS records for 2020

Table 3: Annual average TSP monitoring data for 2020

Location	Annual average TSP level - all days ( $\mu\text{g}/\text{m}^3$ )	Annual average TSP level - excluding "extraordinary events" ( $\mu\text{g}/\text{m}^3$ )	Criteria
HVAS APF-2	57.7	51.8	90
HVAS APF-4	37.9	32.7	90
HVAS APF-5	39.4	31.6	90

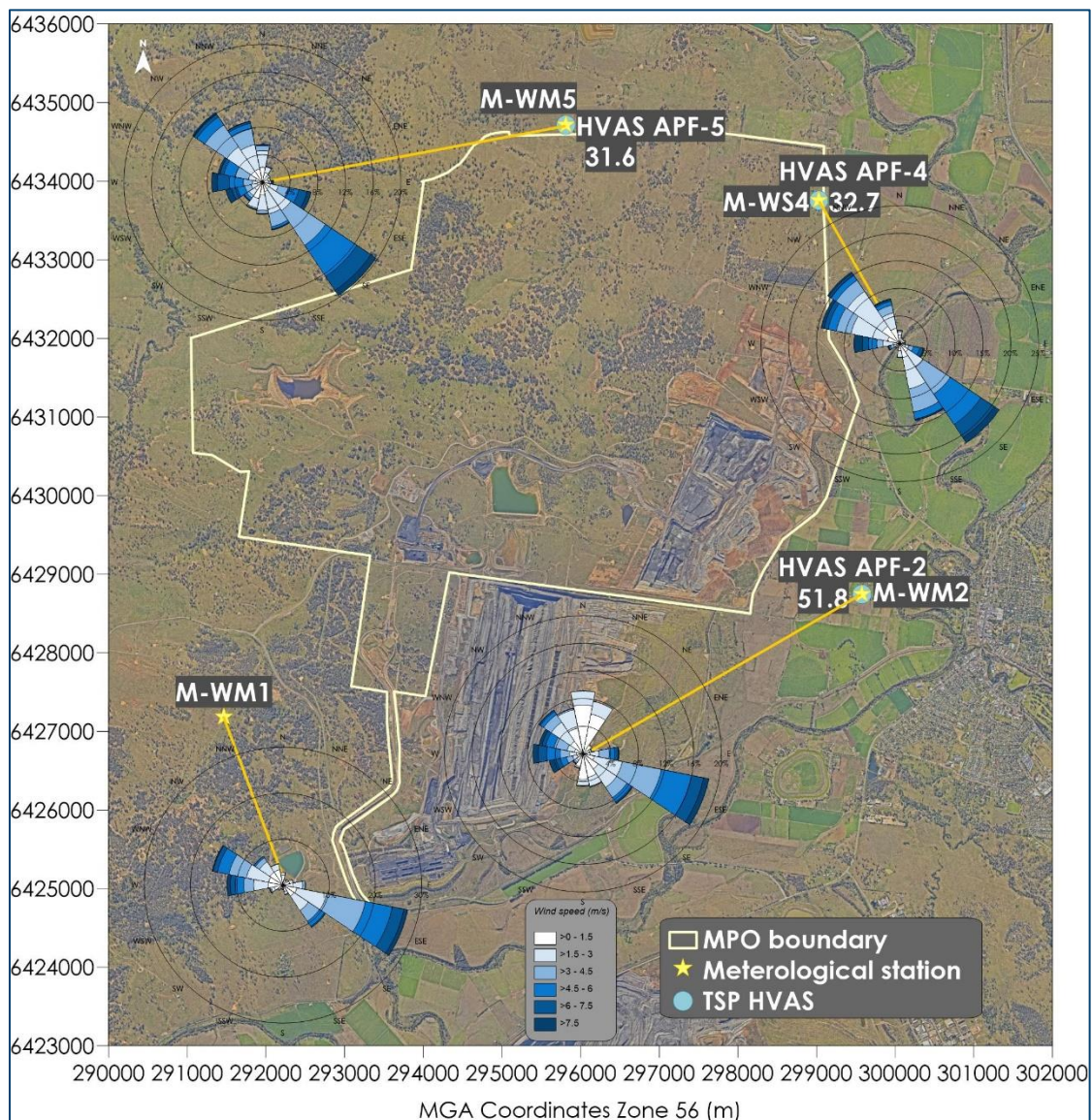


Figure 3: Annual average TSP results for 2020 – excluding “extraordinary events”

### Annual Average PM<sub>10</sub>

This review has analysed the annual average PM<sub>10</sub> monitoring data recorded at the MPO Palas Fidas monitors in 2020.

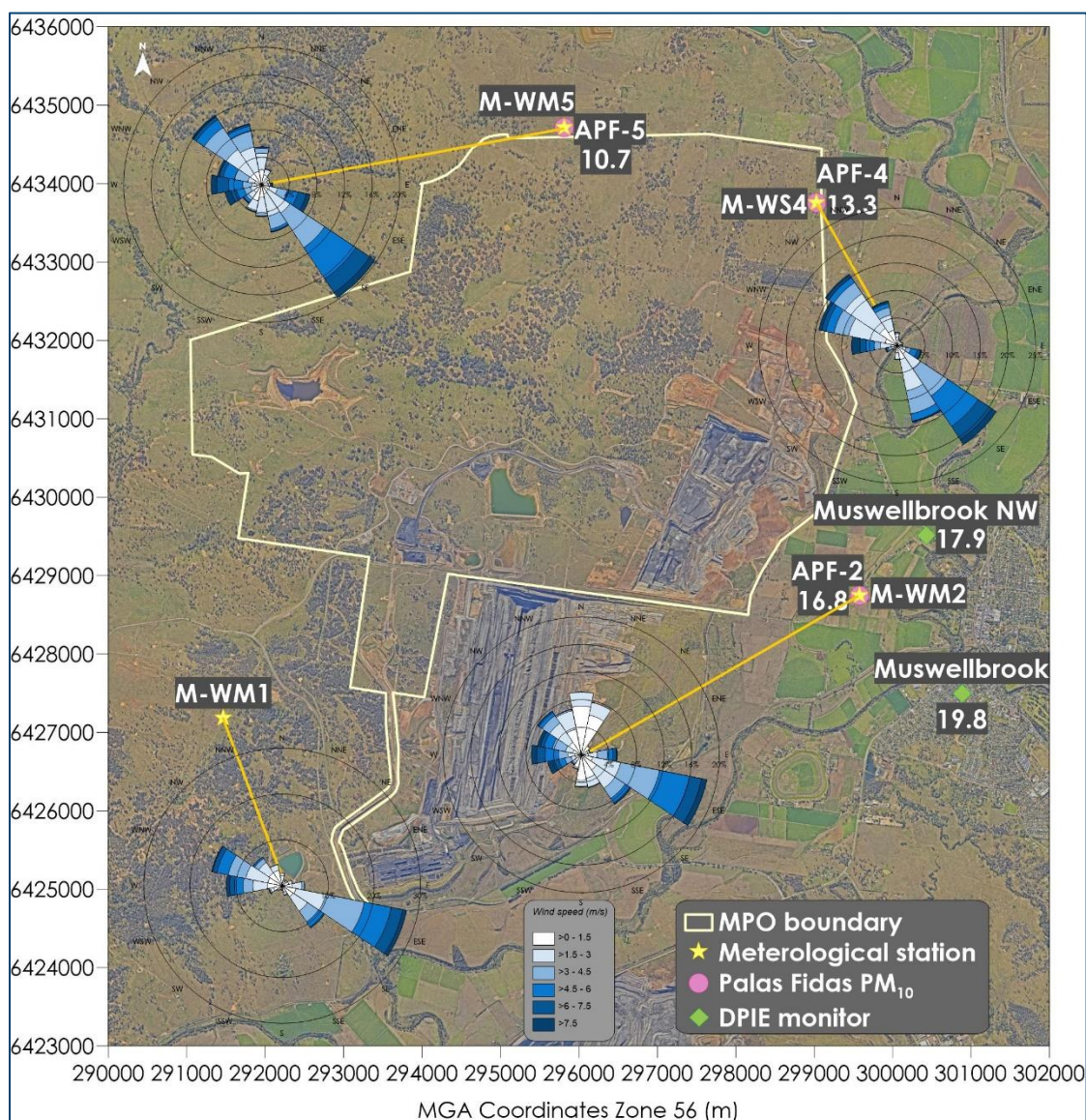
**Table 4** includes a summary of the annual average PM<sub>10</sub> monitoring data for the area around MPO in 2020. Two sets of annual average levels are presented, the levels calculated for all days and the levels calculated excluding “extraordinary events”. There were 24 days in the 2020 year which were considered to be “extraordinary events”. The data show that there is approximately a 2 to 3µg/m<sup>3</sup> difference in annual average PM<sub>10</sub> levels between all days in 2020 and all days excluding “extraordinary events” in 2020.

**Figure 4** presents a plan of the monitoring locations in the area around MPO and the measured annual average PM<sub>10</sub> levels excluding “extraordinary events”.

The annual average PM<sub>10</sub> levels for all days and excluding “extraordinary events” at the MPO Palas Fidas and DPIE monitors were below the relevant criterion of 25µg/m<sup>3</sup> in 2020 and as such, it is considered that compliance with the relevant criterion in Table 8 of DA 92/97 Schedule 3 Condition 20 has been achieved.

**Table 4: Annual average PM<sub>10</sub> monitoring data for 2020**

Location	Annual average PM <sub>10</sub> (µg/m <sup>3</sup> )	
	All days	Excluding “extraordinary events”
APF -2	19.9	16.8
APF -4	16.0	13.3
APF-5	12.8	10.7
Muswellbrook	22.5	19.8
Muswellbrook NW	21.0	17.9



**Figure 4: Annual average PM<sub>10</sub> results for 2020 – excluding “extraordinary events”**

## 24-hour Average PM<sub>10</sub>

This review has analysed the 24-hour average PM<sub>10</sub> monitoring data recorded at the MPO Palas Fidas monitors in 2020.

**Figure 5** presents the 24-hour average PM<sub>10</sub> levels around MPO for 2020. The figure shows elevated PM<sub>10</sub> levels at the start of the year due to smoke associated with the 2019/2020 NSW bushfires.

**Table 5** includes a summary of the 24-hour average PM<sub>10</sub> monitoring data for the area around MPO in 2020. The maximum 24-hour average PM<sub>10</sub> concentrations at the MPO monitors were above 50µg/m<sup>3</sup> for a number of days in 2020. All of these elevated levels occurred on days that are considered to have been “extraordinary events” and thus it is considered that compliance with the relevant criterion in Table 9 of DA 92/97 Schedule 3 Condition 20 is achieved.

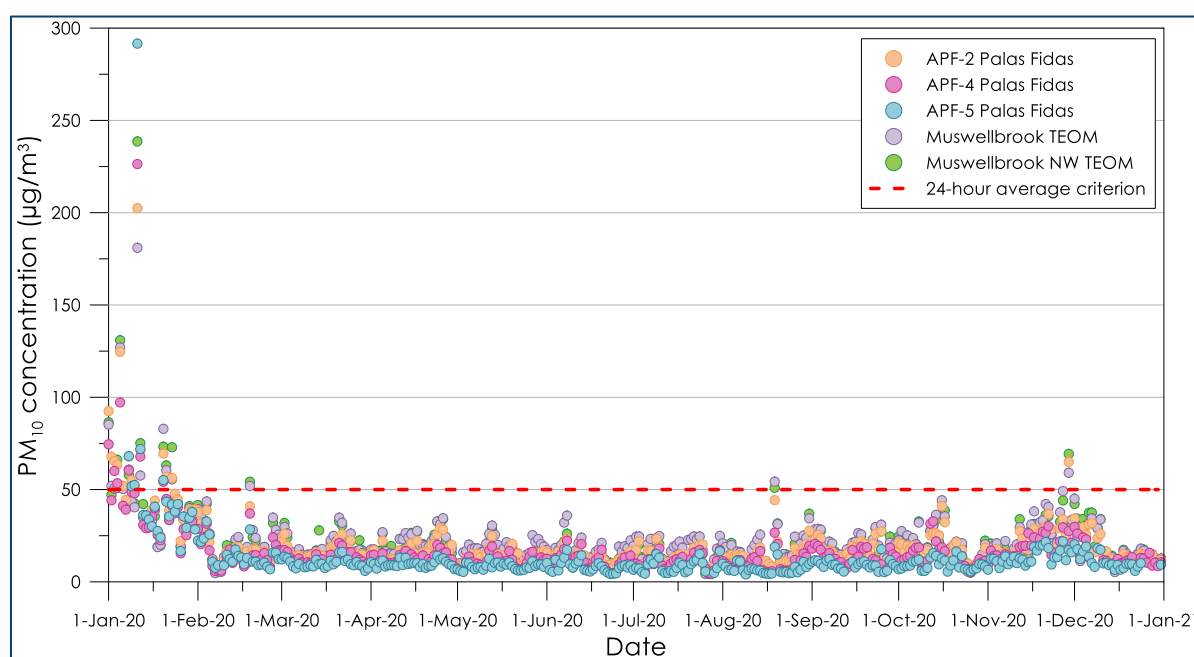


Figure 5: 24-hour average PM<sub>10</sub> records for 2020

Table 5: 24-hour average PM<sub>10</sub> monitoring data for 2020

Location	Maximum 24-hour PM <sub>10</sub> (µg/m <sup>3</sup> )		Number of 24-hour PM <sub>10</sub> levels above criterion (50µg/m <sup>3</sup> )	
	All days	Excluding “extraordinary events”	All days	Excluding “extraordinary events”
APF -2	202.5	44.0	15	0
APF -4	226.3	39.9	8	0
APF-5	291.6	40.7	6	0
Muswellbrook	181	49.2	15	0
Muswellbrook NW	238.6	44.1	14	0

## Annual Average PM<sub>2.5</sub>

This review has analysed the annual average PM<sub>2.5</sub> monitoring data recorded at the MPO Palas Fidas monitors in 2020.



**Table 6** includes a summary of the annual average PM<sub>2.5</sub> monitoring data for the area around MPO in 2020. Two sets of annual average levels are presented, the levels calculated for all days and the levels calculated excluding “extraordinary events”. There were 24 days in the 2020 reporting period which were considered to be “extraordinary events”.

The data show that there is approximately a 1 to 1.5µg/m<sup>3</sup> difference in annual average PM<sub>2.5</sub> levels between all days in 2020 and all days excluding “extraordinary events” in 2020.

**Figure 6** presents a plan of the monitoring locations in the area around MPO and the measured annual average PM<sub>2.5</sub> levels excluding “extraordinary events”.

The annual average PM<sub>2.5</sub> levels for all days and excluding “extraordinary events” at the MPO Palas Fidas monitors were below the relevant criterion of 8µg/m<sup>3</sup> in 2020 and as such it is considered that compliance with the relevant criterion in Table 8 of DA 92/97 Schedule 3 Condition 20 has been achieved.

The annual average PM<sub>2.5</sub> levels calculated for all days and excluding “extraordinary events” at the DPIE Muswellbrook monitor were above 8µg/m<sup>3</sup> in 2020. It is noted that APF-2 which is situated between MPO and the Muswellbrook monitor recorded significantly lower results. This indicates the elevated annual PM<sub>2.5</sub> level in 2020 at Muswellbrook is not due to MPO and is considered to be predominately impacted by other sources. As outlined in the following review of the 24-hour average data, it is considered that PM<sub>2.5</sub> levels at the DPIE Muswellbrook monitor are significantly impacted by smoke from domestic wood heaters near the monitor.

**Table 6: Annual average PM<sub>2.5</sub> monitoring data for 2020**

Location	Annual average PM <sub>2.5</sub> (µg/m <sup>3</sup> )	
	All days	Excluding “extraordinary events”
APF-2	7.5	5.8
APF-4	6.8	5.3
APF-5	5.5	4.6
Muswellbrook	9.3	8.6

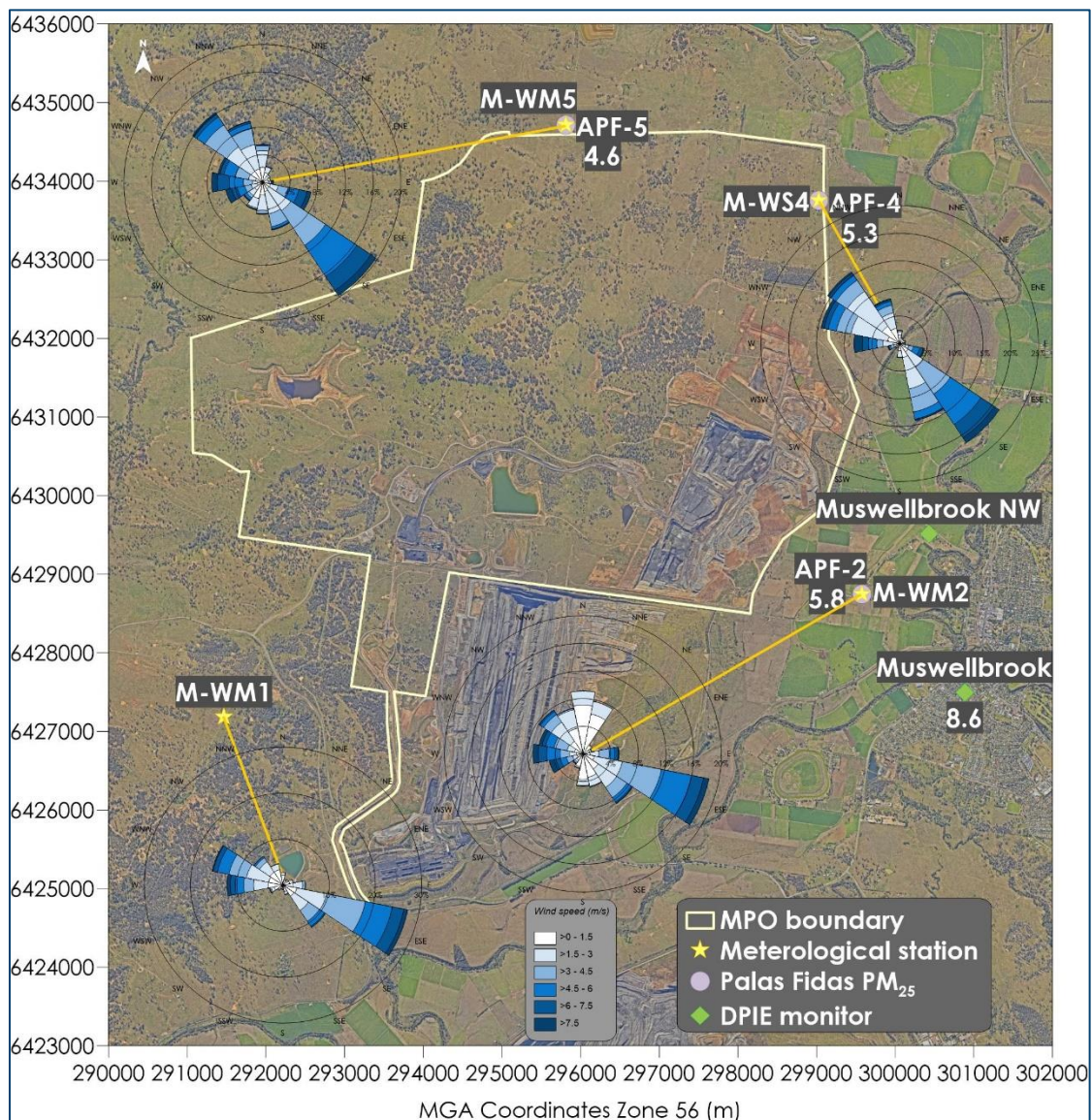


Figure 6: Annual average PM<sub>2.5</sub> results for 2020 – excluding “extraordinary events”

### 24-hour Average PM<sub>2.5</sub>

This review has analysed the 24-hour average PM<sub>2.5</sub> monitoring data recorded at the MPO Palas Fidas monitors in 2020.

**Figure 7** presents the 24-hour average PM<sub>2.5</sub> levels around MPO for 2020. The figure shows elevated PM<sub>2.5</sub> levels at the start of the year due to smoke associated with the 2019/2020 NSW bushfires. The DPIE Muswellbrook monitor recorded significantly higher levels than the Palas Fidas monitors in winter, likely due to domestic wood heater smoke near the monitor.

**Table 7** includes a summary of the 24-hour average PM<sub>2.5</sub> monitoring data for the area around MPO in 2020. The maximum 24-hour average PM<sub>2.5</sub> concentrations at the MPO monitors were above 25µg/m<sup>3</sup> for a number of days in 2020. The majority of these days were considered to be “extraordinary event” days (affected by

bushfires and regional dust events/ dust storms). There were only two days (17 and 29 January 2020) with PM<sub>2.5</sub> levels above 25µg/m<sup>3</sup> on non “extraordinary event” days recorded at the Palas Fidas monitors in 2020.

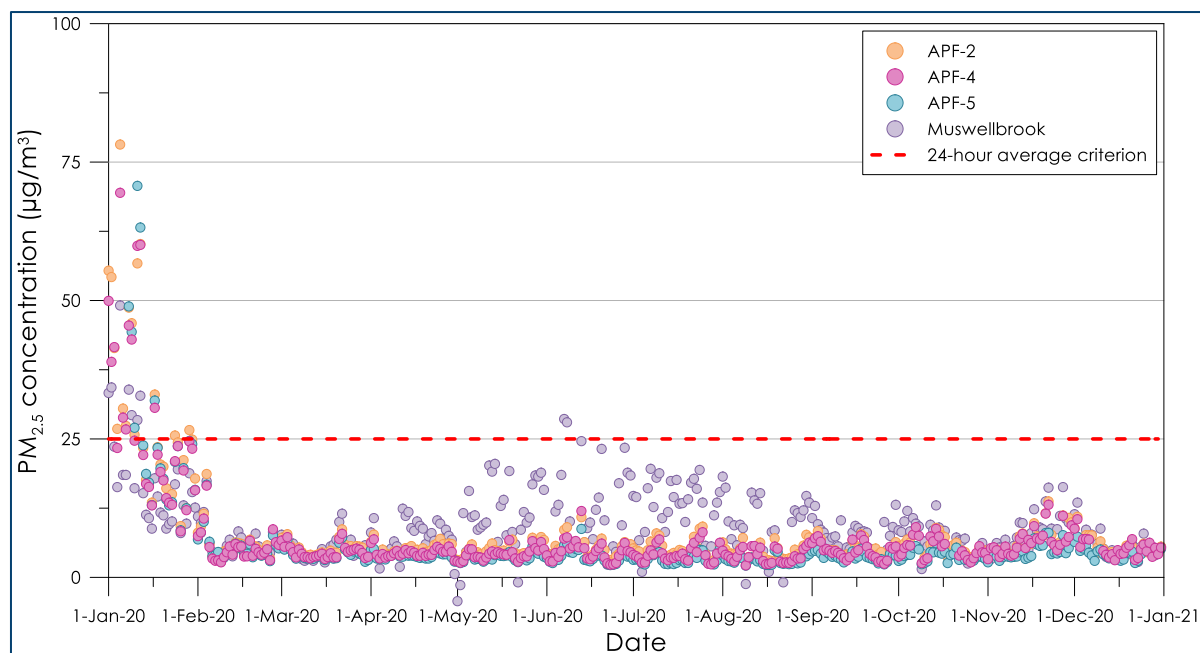


Figure 7: 24-hour average PM<sub>2.5</sub> records for 2020

Table 7: 24-hour average PM<sub>2.5</sub> monitoring data for 2020

Location	Maximum 24-hour PM <sub>2.5</sub> (µg/m <sup>3</sup> )		Number of 24-hour PM <sub>2.5</sub> levels above criterion (25µg/m <sup>3</sup> )	
	All days	Excluding “extraordinary events”	All days	Excluding “extraordinary events”
APF-2	78.2	33.0	15	2
APF-4	69.5	30.6	11	1
APF-5	70.7	31.9	6	1
Muswellbrook	49.1	28.6	9	2

MPO’s estimated maximum contributions to the 24-hour averages recorded at the Palas Fidas monitors on 17 January and 29 January 2020 are presented in **Table 8**.

#### 17 January 2020

On 17 January 2020, monitors, APF-2, APF-4 and APF-5 recorded levels of 33.0µg/m<sup>3</sup>, 30.6µg/m<sup>3</sup> and 31.9µg/m<sup>3</sup> respectively. The APF-2, APF-4 and APF-5 monitors were downwind approximately 0%, 8% and 96% of the time respectively on 17 January 2020.

As the APF-2 monitor was not downwind of MPO on this day, MPO could therefore not have contributed to the recorded elevated level.

The contributions from MPO to the downwind APF-4 and APF-5 monitors were determined to be the total level recorded at the respective monitors minus the background concentration (taken to be the level at APF-2

which was not downwind this day) at the times in which the monitors would have been downwind of the mine (i.e. contribution = downwind level – upwind level).

MPO's potential contribution to the APF-4 monitor was calculated to be zero as the upwind levels (taken from APF-2) were higher than the levels measured at APF-4 at the times when it may have been downwind of MPO on 17 January 2020.

Based on this analysis the estimated contribution from MPO at APF-5 was less than  $1\mu\text{g}/\text{m}^3$  on 17 January 2020.

#### 29 January 2020

The APF-2 monitor recorded a level of  $26.6\mu\text{g}/\text{m}^3$  on 29 January 2020. APF-2 was not downwind (i.e. downwind 0% of the time) of MPO on this day and therefore MPO could not have contributed to the elevated level recorded on 29 January 2020.

**Table 8: Estimated maximum potential contribution of MPO to the Palas Fidas monitors**

Date	Monitor	Recorded 24-hour average $\text{PM}_{2.5}$ level ( $\mu\text{g}/\text{m}^3$ )	Percentage of time downwind	Estimated maximum contribution to 24-hour average $\text{PM}_{2.5}$ level ( $\mu\text{g}/\text{m}^3$ )
17 January 2020	APF-2	33.0	0%	0.0
17 January 2020	APF-4	30.6	8%	0.0
17 January 2020	APF-5	31.9	96%	0.6
29 January 2020	APF-2	26.6	0%	0.0

For each of the four elevated 24-hour average levels at the Palas Fidas monitors in 2020, the estimated incremental contribution from MPO was less than  $25\mu\text{g}/\text{m}^3$ . MPO is therefore considered compliant with DA 92/97 Schedule 3 Condition 20 Table 9.

### **Discussion and Conclusions**

The elevated annual average dust levels recorded in 2020 around MPO have been investigated. The data indicate that compliance with the relevant annual criteria for TSP,  $\text{PM}_{10}$  and  $\text{PM}_{2.5}$  was achieved as per Table 8 in DA 92/97 Schedule 3 Condition 20 in 2020.

There were a number of elevated 24-hour average  $\text{PM}_{10}$  and  $\text{PM}_{2.5}$  levels recorded across the MPO monitoring network in 2020 predominantly due to smoke associated with the 2019/2020 NSW bushfires. Elevated 24-hour average  $\text{PM}_{2.5}$  levels were recorded on two days not considered to be "extraordinary events" in 2020. The estimated contribution from MPO on these occasions was found to be less than  $25\mu\text{g}/\text{m}^3$  and therefore compliance with the 24-hour average criterion for  $\text{PM}_{2.5}$  was achieved as per Table 9 in DA 92/97 Schedule 3 Condition 20 in 2020.

The data indicate that compliance with the relevant annual average criteria for deposited dust was achieved in 2020 at the MPO monitors representative of residences on privately-owned land per Table 10 in DA 92/97 Schedule 3 Condition 20.

MPO is therefore considered compliant with the air quality criteria per DA 92/97 Schedule 3 Condition 20 in 2020.

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Please feel free to contact us in relation to any aspect of this analysis.

Yours faithfully,  
Todoroski Air Sciences



Katie Trahair



Dan Kjellberg

### References

MACH Energy (2019)

"Mount Pleasant Operation Air Quality and Greenhouse Gas Management Plan", MACH Energy Australia Pty Ltd, May 2019.

NSW DPI (2021)

"NSW State Seasonal Update" January 2020 to December 2020 reports, NSW Department of Primary Industries, available at <https://www.dpi.nsw.gov.au/climate-and-emergencies/seasonal-conditions>, accessed February 2021.

