MACHEnergy

Mount Pleasant Operation

Monthly Environmental Monitoring Report

August 2026

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1. Introduction

The Mount Pleasant Operation (MPO) is located within the Upper Hunter Valley of New South Wales, approximately three kilometres (km) north-west of Muswellbrook and approximately 50 km north-west of Singleton. The villages of Aberdeen and Kayuga are located 12 km north-northeast and 3 km north of the operations, respectively.

The purpose of this report is to provide a monthly update of monitoring data in accordance with the requirements of NSW Environmental Protection Licence (EPL) 20850, Section 66(6) of the *Protection of the Environment Operations Act 1997* (*POEO Act*), the MPO Development Approval (DA 92/97) and the MPO Development Consent (SSD 10418).

Table 1-1 – Mount Pleasant Operation

Name of Operation	Mount Pleasant Operation
Name of Licensee	MACH Energy Australia Pty Ltd
Environmental Protection Licence	20850
Project Approval	DA 92/97 and SSD 10418
Reporting Period Start Date	1 August 2026
Reporting Period End Date	31 August 2026
Date All Data Received	18 September 2026

Links to three key regulatory documents are provided here:

- Mount Pleasant Operation Development Application Approval DA 92/97; and
- Mount Pleasant Operation Development Consent SSD 10418.
- Mount Pleasant Operation EPL 20850

2. Monitoring Requirements

The MPO EPL 20850 specifically requires the monitoring of:

- 2 x Continuous particulate monitors
- Noise monitoring.
- Blast monitoring; and
- Meteorological monitoring.

Monitoring of sites not required by the EPL are conducted in accordance with the respective Management Plans as required by Project Approval (DA 92/97) and Development Consent (SSD 10418).

All monitoring is undertaken by suitably qualified and experienced person(s). The MPO Environmental Monitoring Network is shown in Appendix A.

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3. Meteorological Monitoring

Weather data is measured continuously[1] at the Kayuga Road (M-WS4) and the Wybong Road (M-WS2) meteorological stations. In addition to air quality parameters (particulate matter less than 10µm and less than 2.5µm (PM_{10} and $PM_{2.5}$)), the weather stations measure wind speed and direction, temperature (at 2 metres (m) and 10m), temperature inversion (using the sigma theta method), solar radiation, relative humidity, rainfall, and atmospheric pressure.

Meteorological data was captured at M-WS2 and M-WS4 during the monitoring period. Throughout August 2026, there was 27.6mm at M-WS2 and 30.6mm at M-WS4.

4. Dust Depositional Monitoring

4.1 Methodology

The dust deposition monitoring network comprises of thirteen (13) dust deposition gauges (DDG) that are collected on a monthly basis. Details of the monitoring locations are shown in Figure 2-2.

4.2 Assessment Criteria

Dust Deposition were assessed as per the MPO Air Quality and Greenhouse Gas Management Plan (MACH Energy, 2024). Dust deposition was monitored according to the OEH's Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales (DECC 2007), which references Australian Standard (AS)/New Zealand Standard (NZS) 3580.10.1:2016 Methods for Sampling and Analysis of Ambient Air: Determination of particulate matter – Deposited matter – Gravimetric Method.

DDG samples can be contaminated by a variety of means, notably by the presence of insects and bird droppings. Results for contaminated gauges were not included in the calculation of the annual averages as this would result in skewed or misleading results for the purpose of dust deposition assessment. The Australian Standard does not provide criteria for the determination of contamination of a DDG. AECOM determines a gauge sample to be contaminated only after reference to field observation sheets, historical monitoring location data, laboratory notes and results, prevailing atmospheric conditions, and feedback from field technicians. For example, a gauge sample with a statistically abnormally high insoluble solids result, a low ash residue result (indicating an elevated level of organic matter) and field notation that bird droppings or insects were present is likely to be considered contaminated.

While the new SSD 10418 doesn't explicitly mention dust deposition gauges, there's a notable shift in regulations towards embracing high volume air sampler results and continuous air quality monitoring programs, with a specific focus on total particulate matter, PM10, and PM2.5. These modern monitoring techniques offer a more comprehensive approach to environmental surveillance, furnishing real-time data and insights into air quality conditions. By harnessing these advanced methods, MPO can ensure the implementation of robust monitoring practices. This transition from the previous development consent DA 92/97

[1] The EPA's Ambient air monitoring guidance note (Guidance Note) states that after allowing sufficient down time for routine maintenance and calibrations a continuous monitoring system should be able to achieve at least a 95% availability.

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(which is yet to be surrendered) to SSD 10418 signifies a proactive measure towards upholding environmental compliance. Therefore, Dust Depositional Monitoring will continue to be included in monthly reporting as per DA92/97 up until surrender where it will be discontinued.

Site D1 and D7b has now been mined through, therefore results from these sites will no longer continue.

4.3 Results

Dust Deposition Data was conducted by AECOM during the monitoring period. Sample analysis was performed by ALS, a National Accreditation and Testing Authority (NATA) accredited laboratory.

Results are summarised in **Table 4-1**. Annual rolling averages have been provided as an indication of performance in the 12 months leading up to the current monitoring period as per Schedule 3, Condition 20 of DA 92/97 and Schedule 2, Condition B28 of SSD 10418.

Table 4-1: Dust Depositional Results – August 2026

Location	Monthly Insoluble Solids (g/m^2.month)	Insoluble Solids Annual Rolling Average (g/m^2.month)
D3	2.1	2.0
D4	0.8	1.3
D5a	3.9	3.0
D6	3.6	3.0
D8	9.8	**9.3**
D9a	3.4	**4.2**
D10	1.1	2.4
D11	5.5	**4.3**
D12	1.6	2.1
D13	2.1	2.4
D14	3.7	**4.0**
Criterion	-	**4.0**

Notes:
*Results in **bold** indicate an elevated measurement of adopted assessment criteria.*
** Insufficient monthly results to calculate annual average*
*** Contaminated results*

Figure 4-1 compares the monthly insoluble solids results to the annual averages for each dust gauge and the assessment criterion.

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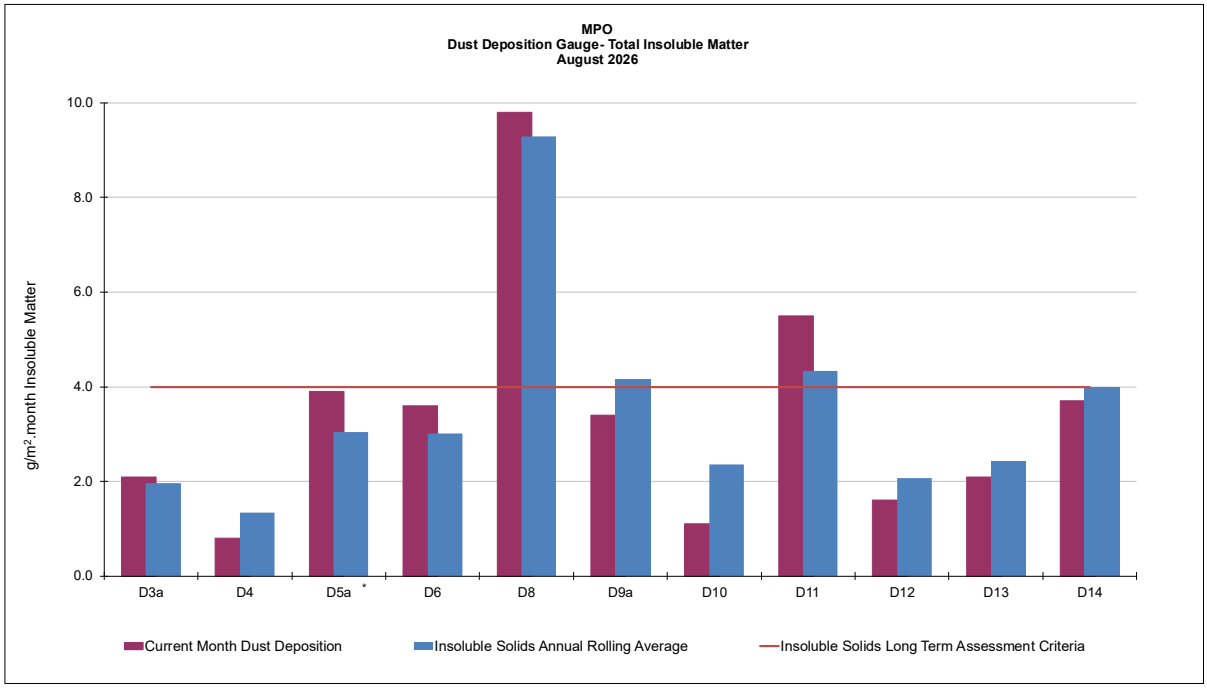


Figure 4-1: MPO Dust Deposition Monthly Results and Annual Rolling Average

5. Total Suspended Particulates

5.1 Methodology

Three Total Suspended Particulate Matter (TSP) High-Volume Air Samplers (HVAS) are run for 24 hours every six days. The locations are displayed in **Table 5-1** below.

Table 5-1 Total Suspended Particulate Monitoring Sites

ID	Description
A-PF2	Reilly's
M-WS4	Kayuga Road Met Station
A-PF5	Athlone

5.2 Assessment Criteria

Total Suspended Particulates were assessed as per the MPO Air Quality and Greenhouse Gas Management Plan (MACH Energy, 2024) in accordance with AM-15 of Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales (DECC, 2007), referencing AS/NZS 3580.9.3:2015 Methods for sampling and analysis of ambient air – Determination of suspended particulate matter – Total suspended particulate matter (TSP) - High volume sampler gravimetric method, for the monitoring of TSP.

TSP is assessed against the guidelines defined in the EPA Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales (EPA 2016), Project Approval DA 92/97 and Development Consent SSD 10418. The DA 92/97 and SSD 10418 both specify an annual average project contribution plus background criterion of 90µg/m3.

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5.3 Results

Sample collection was undertaken by AECOM with sample analysis performed by ALS, a NATA accredited laboratory. TSP results for the monitoring period are provided in Table 5-2. Twelve month rolling averages to the current month are provided as an indication of performance as per Schedule 3, Condition 20 of DA 92/97 and Schedule 2, Condition B28 of SSD 10418.

The Northern Surface Water Infrastructure (NSWI) construction works are currently being undertaken near HVAS M-WS4. The NSWI works will have a permanent impact to HVAS M-WS4. A revised Air Quality and Greenhouse Gas Management Plan was submitted to the Department of Planning, Infrastructure and Housing in May 2025 to relocate A-PF4 to a more suitable location. DPHI have not completed their review of the management plan. When the Management Plan is approved, the monitoring station will be relocated. The station will continue to be impacted until it is able to be relocated. Results are no longer considered indicative of impacts to residential receivers from the operations.

Table 5-2 Total Suspended Particulate Monitoring Data – August 2026

Run Date	Assessment Criterion	TSP µg/m³		
		HVAS A-PF2	HVAS A-PF5	HVAS M-WS4
05/08/2026	-	59.2	9.4	20.7
11/08/2026	-	37.2	4.4	8.2
17/08/2026	-	22.3	68.3	51.4
23/08/2026	-	29.0	65.7	19.6
29/08/2026	-	36.0	65.0	50.2
Monthly Average	-	36.7	42.6	30.0
Annual Rolling Average	90	63	67	68

Notes:
Results have been rounded to one decimal place for reporting purposes where applicable.
*Results in **bold** indicate an elevated measurement of adopted assessment criteria.*

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6. Real Time Air Quality Monitoring

6.1 Methodology

Monitoring of continuous particulate matter less than 10µm (PM10) and particulate matter less than 2.5µm (PM2.5) was conducted continuously at three locations (one utilised for management only) at MPO during the monitoring period.

6.2 Assessment Criteria

The EPA identification numbers 1 and 2 refer to monitors installed on Wybong Road (A-PF2) and Dorset Road (A-PF5), respectively. In addition, a third monitor (A-PF4) is installed on Kayuga Road with data used for management purposes only. Project Approval Schedule 3, Condition 20 of DA 92/97 and Development Consent Schedule 2, Condition B28 of SSD 10418 specify a limit for:

- An incremental impact PM10 of 50 µg/m3 and PM2.5 of 25 µg/m3 in a 24-hour daily average i.e. incremental increase in concentrations due only to the development.
- The total annual average PM10 of 25 µg/m3 and PM2.5 of 8 µg/m3. i.e. incremental increase in concentrations due to the development plus background concentrations due to all other sources, excluding extraordinary events such as bushfires, prescribed burning, dust storms, fire incidents or any other activity agreed by the Planning Secretary.

The Northern Surface Water Infrastructure (NSWI) construction works are currently being undertaken near A-PF4. The NSWI works will have a permanent impact to A-PF4. The station will continue to be impacted until it is able to be relocated. Results are no longer considered indicative of impacts to residential receivers from the operations.

6.3 Results

Real time PM10 and PM2.5 annual rolling averages for the current month have been provided in **Figures 6.2 and 6.4**, respectively. **Figure 6.1 and Table 6.1** below show the real-time PM_{10} 24 hour daily average results at MPO air quality monitoring sites during the monitoring period. Real time $PM_{2.5}$ 24-hour average results during the reporting period are presented in **Figure 6.3** and **Table 6.2.**

There were no cumulative PM10 results greater then 50 µg/m3 and PM2.5 greater than 25 µg/m3 in a 24-hour daily average at A-PF2 and A-PF5. Criteria for A-PF4 does not apply as it is not representative of a residence on privately owned land. As such, an assessment of the incremental contribution from Mount Pleasant Operation is not triggered.

The total annual average cumulative level for PM10 and PM2.5 have not exceeded their respective levels of 25 µg/m3 and 8 µg/m3. As such, an assessment of the incremental contribution from Mount Pleasant Operation is not triggered.

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Table 6-1: MPO Continuous Particulate PM_{10} Data
Cumulative 24-hour Average August 2026

Date	A-PF2/ EPA ID 1	A-PF4	A-PF5/ EPA ID 2
	24-hour Cumulative Average		
01/08/2026	14.83	15.49	25.85
02/08/2026	21.84	23.48	16.54
03/08/2026	21.50	13.95	8.97
04/08/2026	23.36	12.25	6.93
05/08/2026	14.38	9.86	6.68
06/08/2026	26.09	12.16	6.92
07/08/2026	15.55	10.17	7.71
08/08/2026	-	16.41	14.69
09/08/2026	-	-	14.18
10/08/2026	17.89	7.98	8.27
11/08/2026	7.76	7.14	5.45
12/08/2026	7.40	6.85	5.22
13/08/2026	5.93	6.60	5.24
14/08/2026	4.33	26.46	25.92
15/08/2026	3.76	16.08	22.22
16/08/2026	3.75	13.79	18.47
17/08/2026	3.94	12.23	12.67
18/08/2026	3.97	12.39	12.79
19/08/2026	3.94	15.98	14.90
20/08/2026	14.64	12.77	7.28
21/08/2026	17.94	11.02	8.51
22/08/2026	18.96	6.96	5.65
23/08/2026	10.57	10.78	15.89
24/08/2026	17.69	12.46	11.51
25/08/2026	14.79	17.47	6.51
26/08/2026	8.68	7.89	8.80
27/08/2026	16.69	19.84	23.13
28/08/2026	15.97	14.22	13.46
29/08/2026	15.02	17.61	21.55
30/08/2026	20.85	15.13	14.69
31/08/2026	15.54	27.61	19.42

*Results in **bold** indicate an elevated measurement of adopted assessment criteria.*
Results with "- "indicate dates where data was affected by maintenance or servicing (scheduled and unscheduled
**Extraordinary event (e.g. bushfires, prescribed burning, dust storms, fire incidents or any other activity agreed by the Planning Secretary).*

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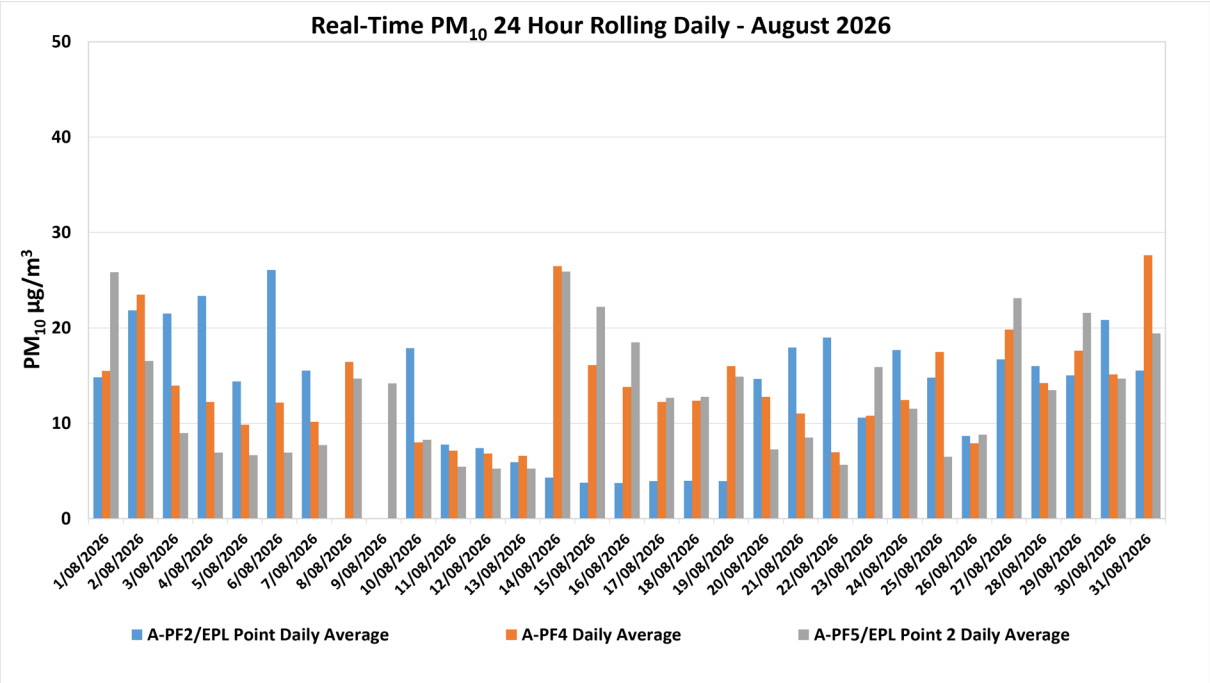


Figure 6-1: Real-time PM_{10} 24- hourly Daily Average Results for August 2026.

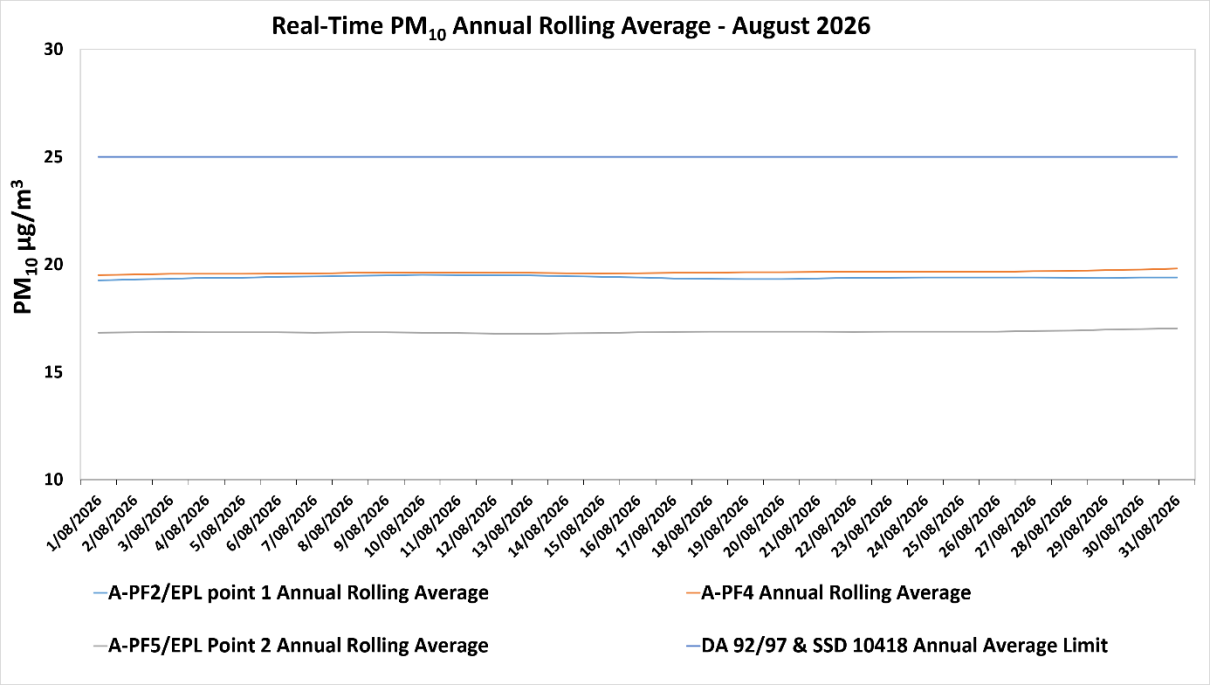


Figure 6-2: Real-time PM_{10} Annual Rolling Average Results for August 2026.

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Table 6-2: MPO Palas Fidas $PM_{2.5}$ Data – August 2026

Date	A-PF2/EPA ID 1	A-PF4	A-PF5/EPA ID 2
	24-hour Average Result		
01/08/2026	5.39	5.64	7.02
02/08/2026	7.65	7.61	5.89
03/08/2026	7.05	5.38	4.05
04/08/2026	5.09	4.17	3.06
05/08/2026	3.96	3.44	2.83
06/08/2026	4.95	4.00	3.07
07/08/2026	4.73	4.20	3.32
08/08/2026	-	5.75	4.73
09/08/2026	-	-	5.29
10/08/2026	3.60	2.74	3.44
11/08/2026	2.78	2.99	2.67
12/08/2026	2.65	3.08	2.63
13/08/2026	2.42	2.88	2.61
14/08/2026	2.17	5.78	6.09
15/08/2026	2.06	6.15	7.28
16/08/2026	2.06	5.62	6.26
17/08/2026	2.11	4.81	5.15
18/08/2026	2.13	4.05	4.40
19/08/2026	2.10	5.45	5.30
20/08/2026	3.74	4.16	3.14
21/08/2026	5.19	4.47	3.68
22/08/2026	4.80	3.28	2.81
23/08/2026	4.35	4.71	4.97
24/08/2026	6.04	4.99	4.83
25/08/2026	5.02	5.10	3.23
26/08/2026	4.00	3.88	3.99
27/08/2026	6.64	7.50	8.26
28/08/2026	7.51	7.04	6.15
29/08/2026	6.23	6.92	7.31
30/08/2026	7.59	6.64	5.53
31/08/2026	6.82	7.97	7.05

*Results in **bold** indicate an elevated measurement of adopted assessment criteria.*
Results with "- "indicate dates where data was affected by maintenance or servicing (scheduled and unscheduled)
**Extraordinary event (e.g. bushfires, prescribed burning, dust storms, fire incidents or any other activity agreed by the Planning Secretary).*

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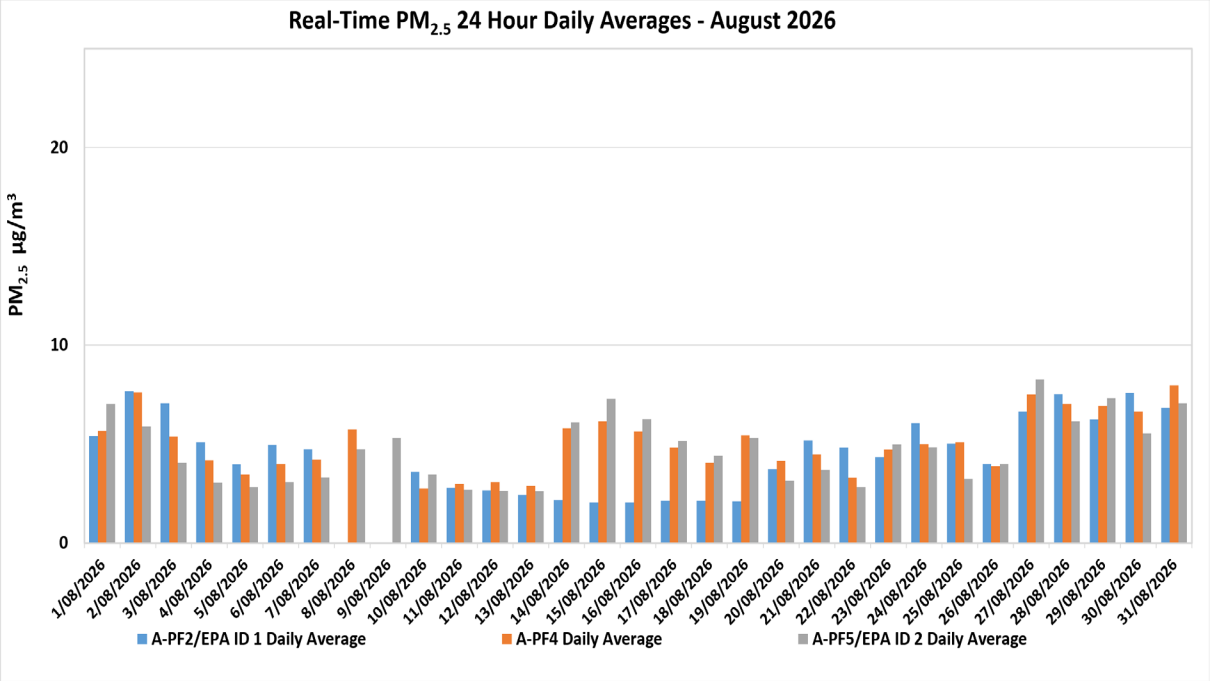


Figure 6-3: Real-time $PM_{2.5}$ 24 hour Daily Average Results for August 2026.

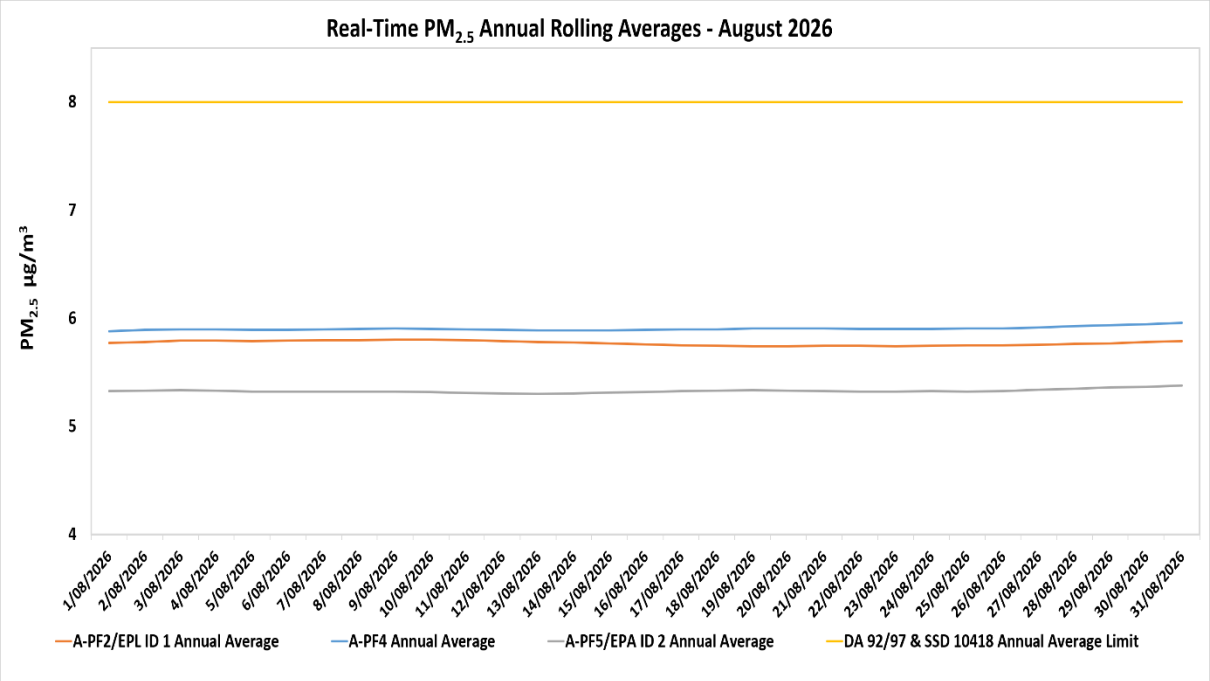


Figure 6-4: Real-time $PM_{2.5}$ Annual Rolling Average Results for August 2026.

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7. Dust Shutdowns

7.1 Methodology

PM_{10} dust levels and wind direction is continually monitored at the Muswellbrook NW Upper Hunter Air Quality Monitoring Network Station to assess any exceedances over a 24-hour period.

7.2 Assessment Criteria

Adverse conditions that lead to the shutdown of dust generating activities at Mount Pleasant are assessed as per EPL 20850 requirement O3. Adverse conditions are defined as the occurrence of both adverse wind conditions and adverse PM_{10} conditions measured at the Muswellbrook NW Air Quality Monitoring Station.

- Adverse wind conditions are the result of a one-hour average wind direction between 250 degrees and 340 degrees.
- Adverse PM_{10} conditions are the occurrence of the rolling 24- hour average PM_{10} concentration exceeding 44 $\mu g/m^3$.

When adverse conditions have passed and a minimum of one hour of no dust generating activities have been undertaken, activities may resume.

7.3 Results

There were no dust shutdowns during the monitoring period.

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8. Surface Water Monitoring

8.1 Methodology

Surface water quality is monitored at fourteen (14) sites on a monthly basis, with additional monitoring conducted if triggered by a rain event (>20mm in a 24- hour period). A more comprehensive suite of analysis is performed at these sites on a quarterly basis.

8.2 Assessment Criteria

Surface waters were assessed as per the *MPO Water Management Plan* (MACH Energy, 2025) in accordance with site specific trigger values that have been developed using the ANZECC (2000) guidelines for sites that contain a minimum of two years of monthly data. Sites with insufficient data are assessed on default trigger values adopted from ANZECC (2000) guidelines. In accordance with the MPO Water Management Plan (WMP) Table 26 (MACH Energy, 2024) if a water quality indicator at a potential impact monitoring location or at a downstream receiving water monitoring location is above (or outside the range) of the site-specific trigger value for three consecutive sampling events, and the same has not occurred at the relevant upstream reference site(s) an investigation is required.

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8.3 Results

Surface water monitoring was conducted by AECOM during the monitoring period. Laboratory analysis was performed by ALS NATA accredited laboratory. Monthly monitoring results for pH, EC, TSS and Total Dissolved Solids (TDS) are presented in **Table 8-1**.

Table 8-1 – MPO Monthly Surface Water Monitoring Results – August 2026

Station	pH	Electrical Conductivity (EC) (µs/cm)	Total Dissolved Solids (TDS) (mg/L)	Total Suspended Solids (TSS) (mg/L)
Hunter River				
W1 (Upstream Reference Site)	7.9	**745**	420	11
W2	^	^	^	^
W6A	8.0	746	415	13
W15	8.0	654	378	14
W17	7.6	1078	646	10
Sandy Creek				
W11 (Upstream Reference Site)	^	^	^	^
W12	8.1	5450	3040	5
Muscle Creek				
W4 (Upstream Reference Site)	7.7	**2490**	1620	**19**
Unnamed Tributaries				
W3	8.0	807	444	7
W5	*	*	*	*
W9	7.6	720	486	72
W13	8.1	3430	1920	97
W14	*	*	*	*
W16	^	^	^	^

*Note: Results in **bold** indicate exceedances of adopted assessment criteria for less than three consecutive events.*
*Results in **bold** and red indicate exceedances of adopted assessment criteria for more than three consecutive events.*
**Dry or insufficient water to sample.*
^Unsafe access

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9. Groundwater Monitoring

9.1 Methodology

Groundwater monitoring is conducted on a quarterly basis, in February, May, August and November.

9.2 Assessment Criteria

An investigation is triggered if elevated measurements occur for three consecutive sampling events in accordance MPO Water Management Plan (MACH Energy, 2022).

An investigation was previously triggered (AGE, 2023) examining the cause of elevated EC values in the alluvial zone, specifically MPBH2. The data suggests that the cause of the increase in EC is persistent above-average stage in the adjacent Hunter River, caused by above-average rainfall since 2020, which is causing a rise in groundwater levels in similar alluvial bores. Further Investigations have been undertaken during 2025, and in accordance with recommendations from Specialist Groundwater Consultants AGE, the *MPO Water Management Plan* (MACH Energy, 2025) has been revised to new recommended trigger levels for MPBH2. The revised MPO Water Management Plan was submitted to the Department of Planning Housing and Infrastructure in August 2025. Based on the previous assessment it is expected that EC levels of MPBH2 will continue to be above the older trigger level. This will not be reported each monitoring period as the investigation and recommendations have been completed as required.

9.3 Results

Water level results for the groundwater bores are presented in **Table 8-1**. The quarterly pH and EC results are presented in **Table 8-2** and **Table 8-3**, respectively.

Table 8-1 - MPO Quarterly Groundwater Water Level Results

Monitoring Location/ ID	Trigger	August 2026 Water Level (DTW)	May 2026 Water Level (DTW)	February 2026 Water Level (DTW)	Triggered (Yes/ No)
WRA1L	-	3.96	3.72	2.73	-
WRA1U	-	*	*	*	-
WRA3L-R	-	*	*	*	-
WRA3U-R	-	*	*	*	-
WRA5L-R	-	*	*	*	-
WRA5U-R	-	*	*	*	-
WRA6L	-	0.43	0.4	0.67	-
WRA6U	-	1.06	0.67	0.99	-
MPBH1	10.70	9.71	9.41	9.56	No
MPBH2	13.59	11.37	11.18	10.99	No
MPBH3b	13.04	11.7	11.66	11.08	No
MPBH4	-	12.06	11.97	11.73	-

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Monitoring Location/ ID	Trigger	August 2026 Water Level (DTW)	May 2026 Water Level (DTW)	February 2026 Water Level (DTW)	Triggered (Yes/ No)
MPBH5	-	*	*	*	-
MPBH1-C	-	9.613	9.323	9.49	-
MPBH1-HR	-	39.91	33.44	42.29	-
MPBH2-C	-	11.373	11.173	10.98	-
MPBH2-HR	-	30.226	11.226	11.24	-
MPBH4-C	-	10.723	10.683	10.40	-
MPBH4-HR	-	50.255	49.795	49.93	-
MPBH5-C	-	10.819	10.609	10.45	-
MPBH5-HR	-	10.99	10.81	10.50	-
MPBH6	-	9.251	10.091	10.37	-
MPBH6-C	-	10.298	10.548	8.99	-
MPBH6-HR	-	9.845	9.995	10.06	-
MPBH7	10.10	3.757	5.587	5.37	No
MPBH7-C	-	18.095	17.915	17.79	-
3500C500L	-	28.95	28.03	27.64	-
3500C500S	-	25.67	25.41	24.99	-
4500F000	-	21.88	21.88	21.58	-
5000D000-R	-	140.23	140.11	139.38	-
5000D000	-	149.5	147.7	142.93	-
6000C000L-R	-	*	*	*	-
6000C000U-R	-	*	*	*	-
6500F500L	-	51.93	51.33	49.72	-
6500F500M	-	52.53	51.93	50.34	-
6500F500U	-	28.36	28.04	27.76	-
6500F625	-	15.72	15.55	15.14	-
Melody	-	13.05	12.96	12.31	-
7500F000	-	^	^	36.34	-
NE Alluvium	-	*	*	*	-
East Alluvium	-	*	*	*	-

Results in **bold** indicate that the bore has exceeded the adopted assessment criterion for changes in standing water level from the previous measurement.
*Results in **bold** and red indicate exceedances of adopted assessment criteria for more than three consecutive events.*
* Dry/insufficient water to sample.

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^Unsafe access.
'-' indicates no trigger level

Table 8-2 - MPO Quarterly Groundwater pH Results

Monitoring Location/ ID	pH Trigger Range	August 2026 pH	May 2026 pH	February 2026 pH	Triggered (Yes/No)
WRA1L	6 - 8.5	7.2	7.1	7.0	No
WRA1U		*	*	*	No
WRA3L-R		7.6	7.8	7.5	No
WRA3U-R		*	*	*	No
WRA5L-R		7.1	7.2	7.1	No
WRA5U-R		7.6	7.7	7.5	No
WRA6L		7.1	7.0	6.9	No
WRA6U		6.9	6.9	6.8	No
MPBH1		6.8	7.0	6.8	No
MPBH2		6.9	7.0	6.9	No
MPBH3b		7.8	7.8	7.6	No
MPBH4		6.9	7.0	6.8	No
MPBH5		*	*	*	No
MPBH1-C	-	7.5	7.5	8.3	-
MPBH1-HR	-	7.6	7.6	7.6	-
MPBH2-C	-	8.9	8.4	10.3	-
MPBH2-HR	-	8.1	8.1	8.3	-
MPBH4-C	-	8.0	8.1	8.0	-
MPBH4-HR	-	7.4	7.4	7.2	-
MPBH5-C	-	10.2	10.3	10.6	-
MPBH5-HR	-	7.5	7.3	7.4	-
MPBH6	-	7.0	6.8	6.9	-
MPBH6-C	-	7.0	7.5	7.0	-
MPBH6-HR	-	7.0	7.3	7.1	-
MPBH7	-	7.0	7.0	6.9	-
MPBH7-C	-	7.1	7.1	7.0	-
3500C500L	6 - 8.5	7.3	7.5	7.5	No
3500C500S	-	7.1	7.2	7.3	-
4500F000	6 – 8.5	6.7	6.7	6.8	No

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Monitoring Location/ ID	pH Trigger Range	August 2026 pH	May 2026 pH	February 2026 pH	Triggered (Yes/No)
5000D000-R		7.4	7.5	7.5	No
6000C000L-R		8.4	8.3	8.4	No
6000C000U-R		7.5	7.4	7.5	No
6500F500L		7.2	7.2	7.2	No
6500F500M		7.2	7.3	7.1	No
6500F500U		6.8	6.8	6.8	No
6500F625		7.0	7.0	6.8	No
Melody		6.9	7.0	6.9	No
7500F000		^	^	7.7	No
NE Alluvium	-	*	*	*	-
East Alluvium	-	*	*	*	-

*Results in **bold** indicate that the pH values recorded are outside the baseline range (20th – 80th percentile).*
** Dry/insufficient water to sample.*
^Unsafe access.
'-' indicates no trigger level

Table 8-3 - MPO Quarterly Groundwater EC Results

Monitoring Location/ ID	Maximum Beneficial Use Trigger	August 2026 EC	May 2026 EC	February 2026 EC	Triggered (Yes/No)
WRA1L	7800	3090	3100	2920	No
WRA1U	-	*	*	*	-
WRA3L-R	22000	7780	7810	8320	No
WRA3U-R	22000	*	*	*	No
WRA5L-R	7800	5200	5330	5290	No
WRA5U-R	7800	5686	5870	5820	No
WRA6L	7800	5570	6730	5560	No
WRA6U	22000	7530	8240	8230	No
MPBH1	800	614	594	707	No
MPBH2	930	**1042**	**1000**	**1086**	**Yes[1]**
MPBH3b	7800	4450	4530	4540	No
MPBH4	7800	5390	5430	5700	No
MPBH5	-	*	*	*	-
MPBH1-C	-	642	643	1301	-
MPBH1-HR	-	1684	1754	1650	-
MPBH2-C	-	1333	1484	1549	-
MPBH2-HR	-	1705	1731	1788	-
MPBH4-C	-	4840	4950	4980	-
MPBH4-HR	-	5260	5050	5720	-
MPBH5-C	-	635	641	647	-

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Monitoring Location/ ID	Maximum Beneficial Use Trigger	August 2026 EC	May 2026 EC	February 2026 EC	Triggered (Yes/No)
MPBH5-HR	-	794	865	823	-
MPBH6	-	995	1093	1108	-
MPBH6-C	-	1315	4860	2450	-
MPBH6-HR	-	2600	5880	2750	-
MPBH7	-	10240	10100	11460	-
MPBH7-C	-	10450	11210	10780	-
3500C500L	7800	3700	3830	3900	No
3500C500S	-	5340	5480	5900	-
4500F000	22000	8460	9260	8510	No
5000D000-R	-	5340	5290	5460	No
6000C000L-R	7800	4630	4780	4900	No
6000C000U-R	7800	4430	4430	4400	No
6500F500L	7800	2590	2550	2540	No
6500F500M	7800	2600	2620	2520	No
6500F500U	7800	5430	6140	6000	No
6500F625	7800	3630	3790	3790	No
Melody	-	4800	4850	3140	-
7500F000	7800	^	^	6420	No
NE Alluvium	-	*	*	*	-
East Alluvium	-	*	*	*	-

Results in **bold** indicate that the bore has exceeded the adopted assessment for EC values
** Dry/insufficient water to sample*
^ Unsafe access
'-' indicates no trigger level
[1] No further investigation required. See assessment criteria section for further information

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10. Noise Monitoring

10.1 Methodology

Attended noise monitoring was undertaken during the monitoring period at eight (8) monitoring locations as per the *MPO Noise Management Plan* (MACH Energy, 2024) in accordance with DA 92/97, SSD 10418 and EPL 20850.

10.2 Results

The results for nighttime attended noise monitoring against noise criteria is shown in **Table 10-1**; **Table 10-2;** and **Table 10-3.**

Table 10-1 $L_{1,1min}$ Generated by MPO: Attended Night Monitoring 4 and 5 August 2026

Location	Time	MPO Only dB(A), L_1 (1min)	Criterion dB(A)	Wind Speed (m/s) Direction (°)	Criterion Applies	Stability Class	Exceedance
N-AT1	1:40am	IA	45	2.0 / 047	Yes	E	No
N-AT2	11:08pm	IA	45	2.2 / 312	Yes	E	No
N-AT3	11:46pm	43	45	2.3 / 308	Yes	E	No
N-AT4	12:31am	33	45	1.6 / 064	Yes	E	No
N-AT5	12:52am	34	45	1.8 / 058	Yes	E	No
N-AT6	2:05am	IA	45	2.3 / 048	Yes	E	No
N-AT7	10:08pm	37	45	4.4 / 259	Yes	E	NA
N-AT8	1:19am	37	49	2.0 / 052	Yes	E	No

Notes: As per Condition L2.3 of EPL 20850, noise emission limits do not apply during wind speeds greater than 3m/s at 10m above ground level, or stability category F temperature inversion conditions and wind speeds greater than 2m/s at 10m above ground level, or stability category G temperature inversion conditions.
IA = inaudible. NA in the exceedance column means atmospheric conditions outside those specified in the EPL, therefore criterion was not applicable.

Table 10-2 $L_{eq,15min}$ Generated by MPO: Attended Night Monitoring 4 and 5 August 2026

Location	Time	MPO Only dB(A), Leq (15min)	Criterion dB(A)	Wind Speed (m/s) Direction (°)	Criterion Applies	Stability Class	Exceedance
N-AT1	1:40am	IA	37	2.0 / 047	Yes	E	No
N-AT2	11:08pm	IA	35	2.2 / 312	Yes	E	No
N-AT3	11:46pm	33	40	2.3 / 308	Yes	E	No
N-AT4	12:31am	28	38	1.6 / 064	Yes	E	No
N-AT5	12:52am	31	37	1.8 / 058	Yes	E	No
N-AT6	2:05am	IA	35	2.3 / 048	Yes	E	No
N-AT7	10:08pm	32	37	4.4 / 259	Yes	E	NA
N-AT8	1:19am	29	43	2.0 / 052	Yes	E	No

Notes: As per Condition L2.3 of EPL 20850, noise emission limits do not apply during wind speeds greater than 3m/s at 10m above ground level, or stability category F temperature inversion conditions and wind speeds greater than 2m/s at 10m above ground level, or stability category G temperature inversion conditions.
IA = inaudible. NA in the exceedance column means atmospheric conditions outside those specified in the EPL, therefore criterion was not applicable.

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Table 10-3 $L_{Aeq, period}$ Cumulative Noise: Attended Night Monitoring 4 and 5 August 2026

Location	Time	Measured Mining Only dB(A), LAeq	Criterion dB(A)	Exceedance
N-AT1	1:40am	IA	40	No
N-AT2	11:08pm	IA	40	No
N-AT3	11:46pm	33	40	No
N-AT4	12:31am	32	40	No
N-AT5	12:52am	34	40	No
N-AT6	2:05am	24	40	No
N-AT7	10:08pm	32	40	NA
N-AT8	1:19am	33	NA[2]	NA[2]

Notes: These are the results for MPO and all other mining sources. 15-minute measurements have been assumed to apply across the entire night period as a conservative measure and to represent "worst case" results.
Cumulative noise refers to two or more noise sources. If only one other source of mining is audible the measured cumulative noise defined here is 'Nil'.
N-AT8 is under acquisition rights and has no cumulative dB criteria.
IA- inaudible.
NA[1]- in the exceedance column means atmospheric conditions outside those specified in the EPL, therefore criterion was not applicable.
NA[2]- This is not a compliance monitoring location under DA92/97, and cumulative noise criteria are only applicable under DA92/97.

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11. Blast Monitoring

There were twelve (12) blast events (a total of 83 blasts YTD). Results are presented in **Table 11-3**. All blast results during this monitoring period were below the criteria stated in Schedule 3, Condition 10 of DA 92/97, Schedule 2; Condition B12 of SSD 10418; and L5 of EPL 20850 as shown in **Table 11-1** and **Table 11-2**.

Table 11-1 Development Consent DA 92/97 Blasting Criteria

Location	Airblast Overpressure (dB[Lin Peak])	Ground Vibration (mm/s [Peak Particle Velocity])	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[1]	-	10	0%
All public infrastructure	-	50	0%

Source: Development Consent DA 92/97
dB = decibels, mm/s = millimetres per second.
[1] The blasting criteria in relation to historic heritage sites applies to each historic heritage site until such a time as the relevant management requirements for the sites have been fulfilled. Refer to Section 7.4.2 for further detail.

Table 11-2 Development Consent DA 92/97 Blasting Criteria

Location	Airblast Overpressure (dB[Lin Peak])	Ground Vibration (mm/s [Peak Particle Velocity])	Allowable Exceedance
Residence on privately owned land[a]	120	10	0%
	115	5	5% of the total number of blasts over a period of 12 months
Mine-owned residences	-	10	
Historic heritage sites[b]	-	10	0%
Other public infrastructure	-	50 (or a limit determined by the structural design methodology in AS 2187.2 - 2006, or its latest version)	0%

Source: Development Consent SSD 10418
[a]The locations referred to in Table 2 are shown in Appendix 3 of Development Consent SSD 10418.
[b]These limits do not apply to historic heritage sites located within the approved disturbance area. Refer to Section 7.4.2 for further detail

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Table 11-3 – MPO Blast Monitoring Results – August 2026

Date Fired	Time Fired	BVOC Vibration (mm/s)	BVOC Overpressure (dBL)	BVO2 Vibration (mm/s)	BVO2 Overpressure (dBL)	Blast Fume Compliant
1/08/2026	13:59	1.44 mm/s	102.5 DBL	0.21 mm/s	95.6 DBL	Y
3/08/26	14:02	0.15 mm/s	96.3 DBL	0.45 mm/s	100.4 DBL	Y
8/08/26	15:10	0.88 mm/s	98.8 DBL	0.43 mm/s	102.1 DBL	Y
12/08/26	9:26	0.5 mm/s	104.1 DBL	0.57 mm/s	101.8 DBL	Y
13/08/26	10:18	0.23 mm/s	103.3 DBL	0.14 mm/s	97 DBL	Y
15/08/26	11:01	0.99 mm/s	97.3 DBL	0.54 mm/s	92.6 DBL	Y
17/08/26	14:29	0.37 mm/s	94.5 DBL	0.51 mm/s	109.4 DBL	Y
18/08/26	12:56	0.23 mm/s	98 DBL	0.22 mm/s	103.7 DBL	Y
21/08/26	10:58	0.21 mm/s	97.5 DBL	0.52 mm/s	103.1 DBL	Y
24/08/26	14:09	0.09 mm/s	90.2 DBL	0.14 mm/s	97.4 DBL	Y
25/08/26	10:04	0.52 mm/s	98.2 DBL	0.3 mm/s	103.8 DBL	Y
28/08/26	11:22	0.04 mm/s	91.2 DBL	0.09 mm/s	100.5 DBL	Y

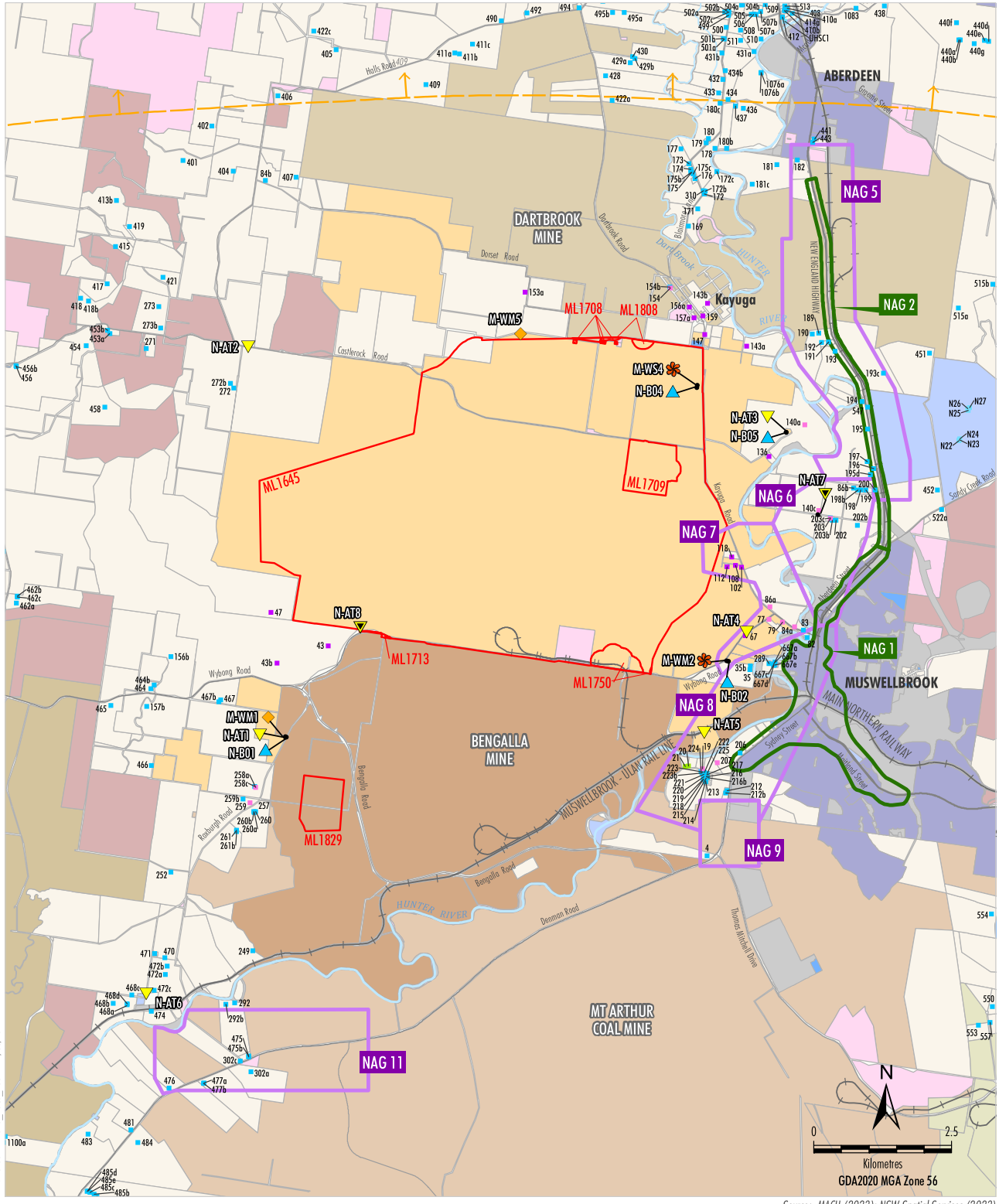
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APPENDIX A

MPO Environmental Monitoring Network.

Figure numbers referred to in respective management plans.

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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
- Railway

- Privately-owned - Acquisition on Request
- Privately-owned - Mitigation on Request
- Privately-owned - Mitigation/Acquisition on Request*
- Other Privately-owned
- Specific Receivers not modelled
- DA 92/97 Noise Assessment Group (NAG)
- SSD 10418 Noise Assessment Group (NAG)

Monitoring Sites

- Attended Noise
- Proposed Attended Noise [1]
- Real-time Noise Monitoring Site
- Weather Mast
- Weather Station

[1] Proposed Site to be Implemented

Source: MACH (2023); NSW Spatial Services (2023)

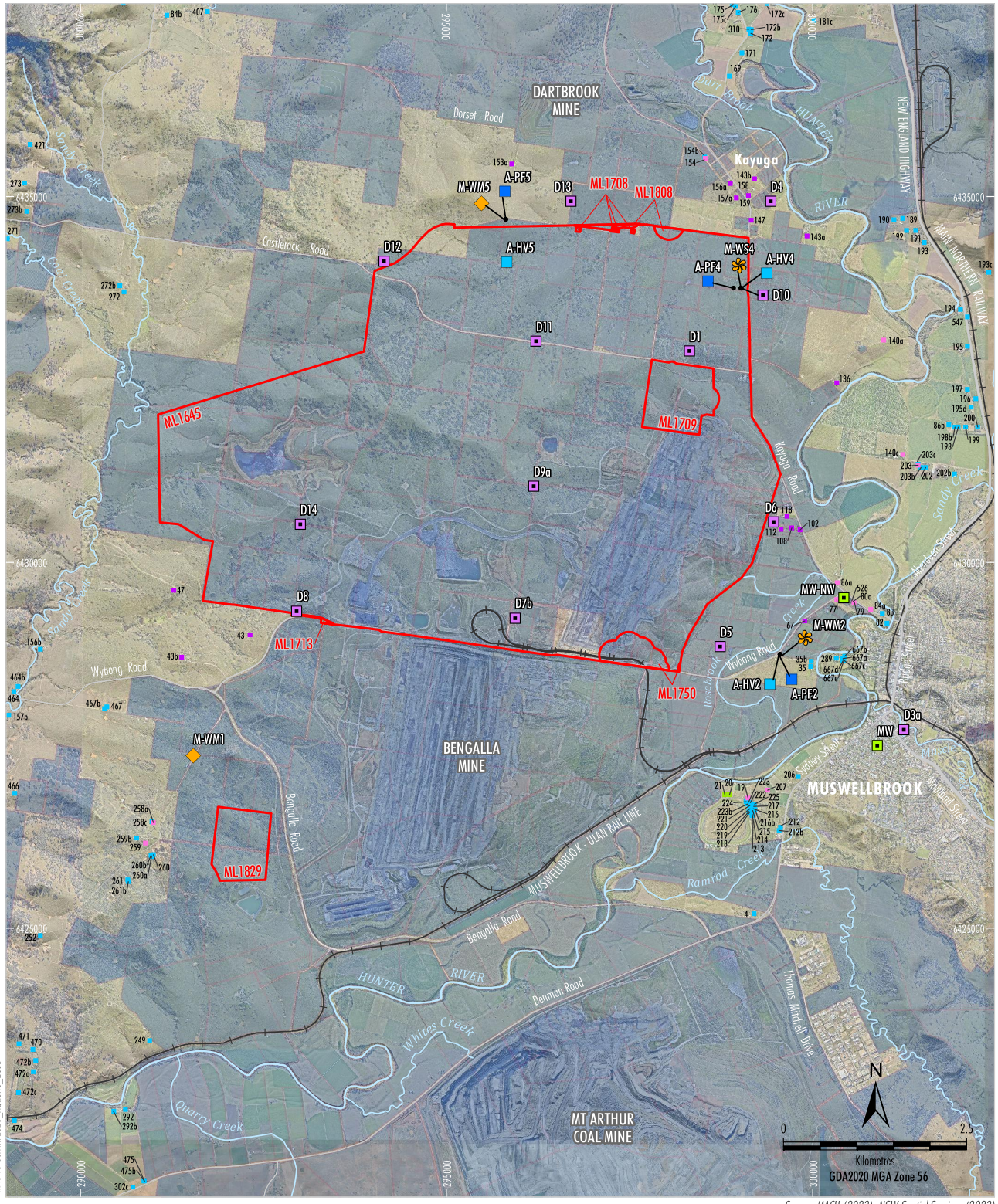
* Mitigation on Request - rail noise/Aquisition on Request - air quality. MACH is only required to acquire and/or install air quality mitigation measures at this property if not reasonably achievable under a separate approval for the Bengalla Mine.

MACHEnergy

MOUNT PLEASANT OPERATION

Nominal Noise and Meterological Monitoring Sites

Figure 8



MAC-18-03A MP2023_A0&GHG_203B

Source: MACH (2023); NSW Spatial Services (2023)
Orthophoto: MACH (Dec 2022)

LEGEND

- Mining Lease Boundary (Mount Pleasant Operation)
- Mine-owned Land
- Railway

Monitoring Sites

- Air Quality - High Volume Sampler
- Air Quality - Palas Fidas
- Dust Deposition Gauge
- Upper Hunter Air Quality Monitoring Network
- Weather Mast
- Weather Station

Category of Rural Residence under DA92/97

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

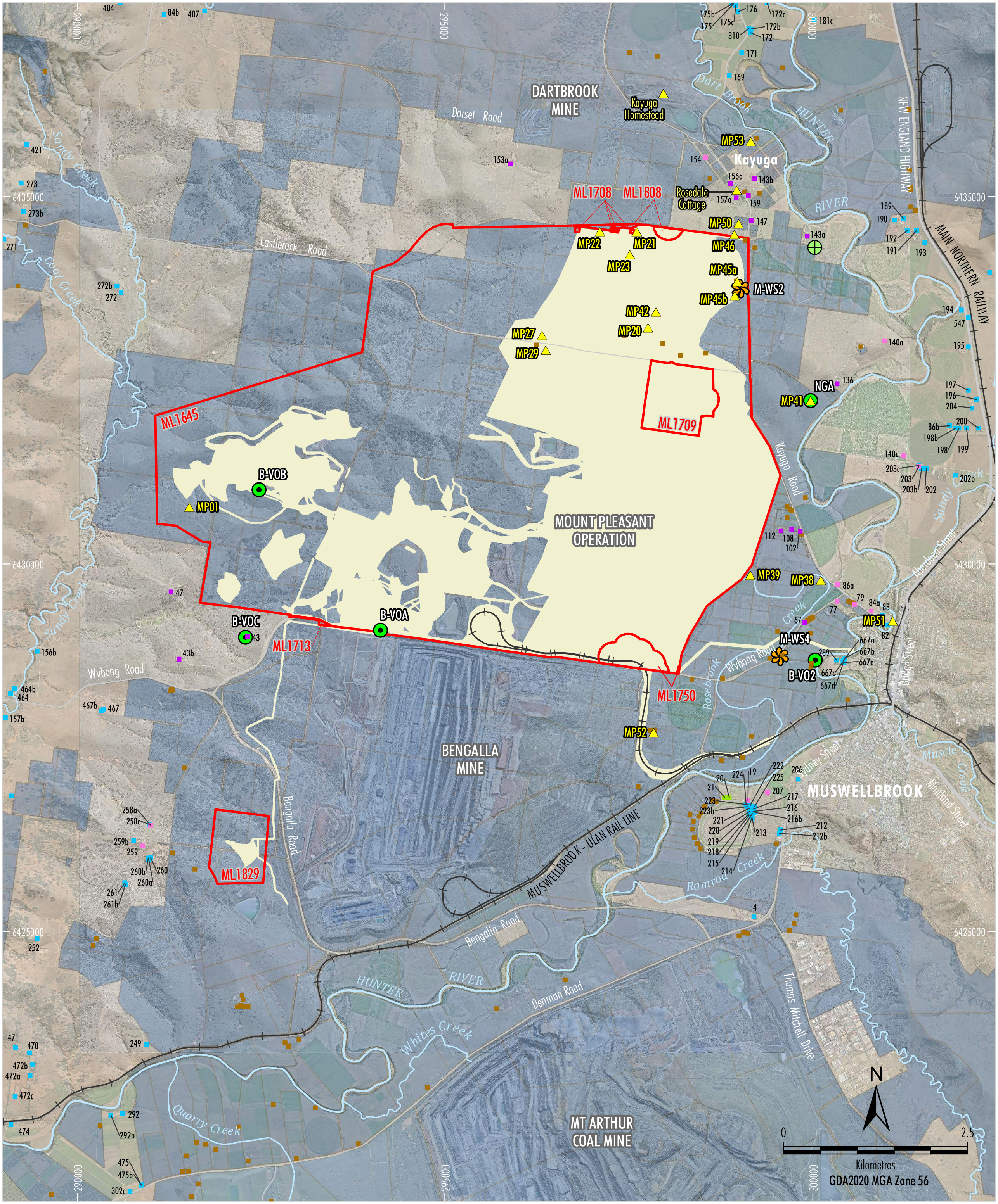
* Mitigation on Request - rail noise/Aquisition on Request - air quality. MACH is only required to acquire and/or install air quality mitigation measures at this property if not reasonably achievable under a separate approval for the Bengalla Mine.

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MOUNT PLEASANT OPERATION

Air Quality and Meteorological Monitoring Sites

Figure 3



Source: MACH (2024); NSW Spatial Services (2024)
Orthophoto: MACH (Dec 2023)

LEGEND

- Mine-owned Land
- Mining Lease Boundary (Mount Pleasant Operation)
- Project Continuation of Existing/Approved Surface Development (DA 927/97)[1]
- Weather Station
- Blast Monitoring Site (Vibration/Overpressure)
- Proposed Blast Monitoring Site (Vibration/Overpressure)
- Relevant Historic Heritage Sites # ^

Category of Rural Residence under DA 92/97

- Mine-owned

Category of Rural Residence under DA 92/97

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

[1] Excludes some incidental Project components such as water management infrastructure, access tracks, topsoil stockpiles, power supply, temporary offices, other ancillary works and construction disturbance.

Blast criteria only apply until the heritage site is excavated, salvaged or demolished in accordance with the Historic Heritage Management Plan.

^ Blast criteria do not apply to historic heritage sites located within the approved disturbance area.

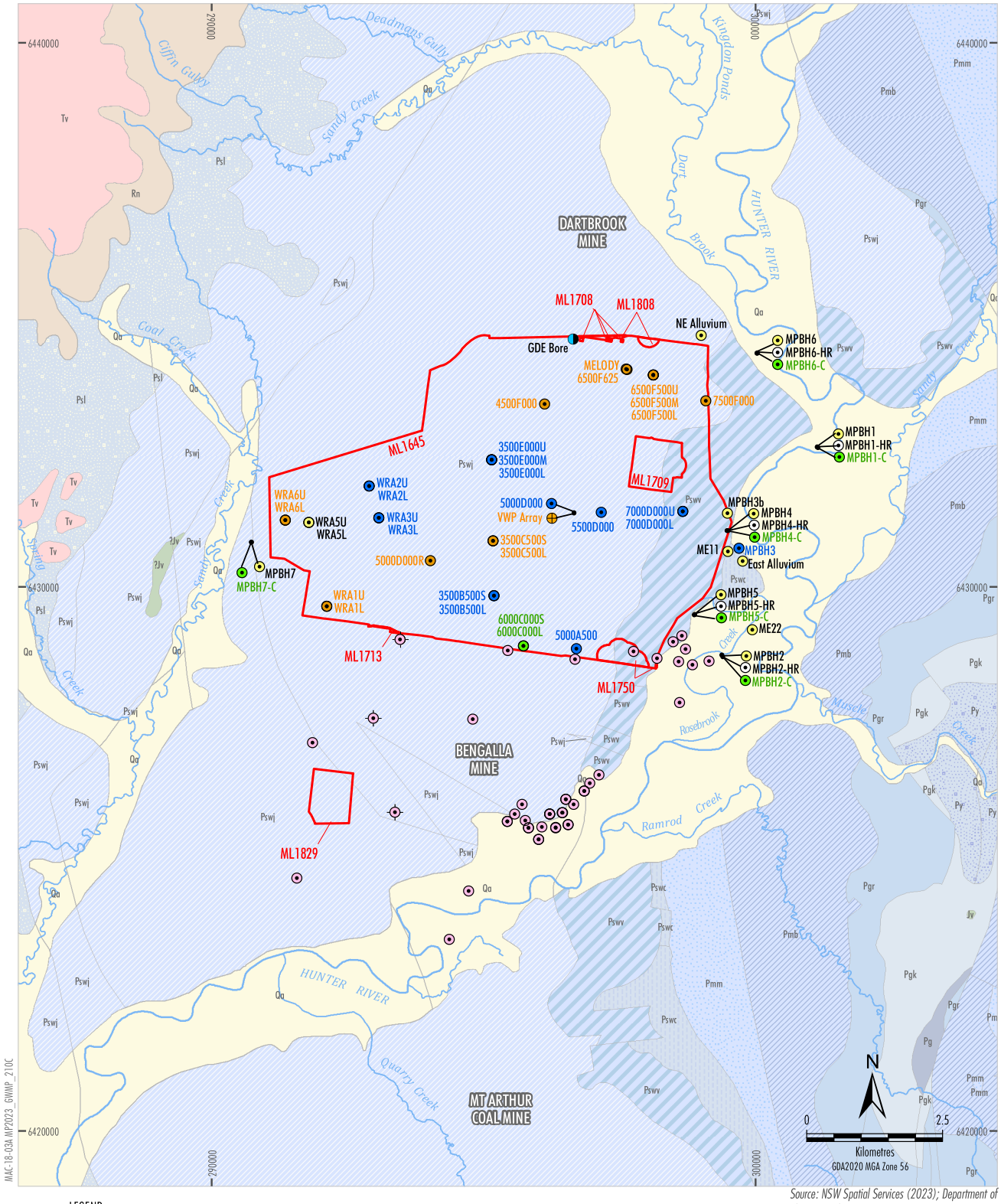
* Mitigation on Request - rail noise/Aquisition on Request - air quality. MACH is only required to acquire and/or install air quality mitigation measures at this property if not reasonably achievable under a separate approval for the Bengalla Mine.

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MOUNT PLEASANT OPERATION

Blast Monitoring Locations

Figure 3



MAC-18-03A MP2023_GWMP_210C

Source: NSW Spatial Services (2023); Department of Planning and Environment (2019)

LEGEND

- Mining Lease Boundary (Mount Pleasant Operation)

Mount Pleasant Monitoring

- GDE Bore
- Vibrating Wire Piezometer
- Standpipe
- Standpipe - Alluvium
- Standpipe - Coal Seam
- Standpipe - Interburden
- Standpipe - Historical

Bengalla Monitoring

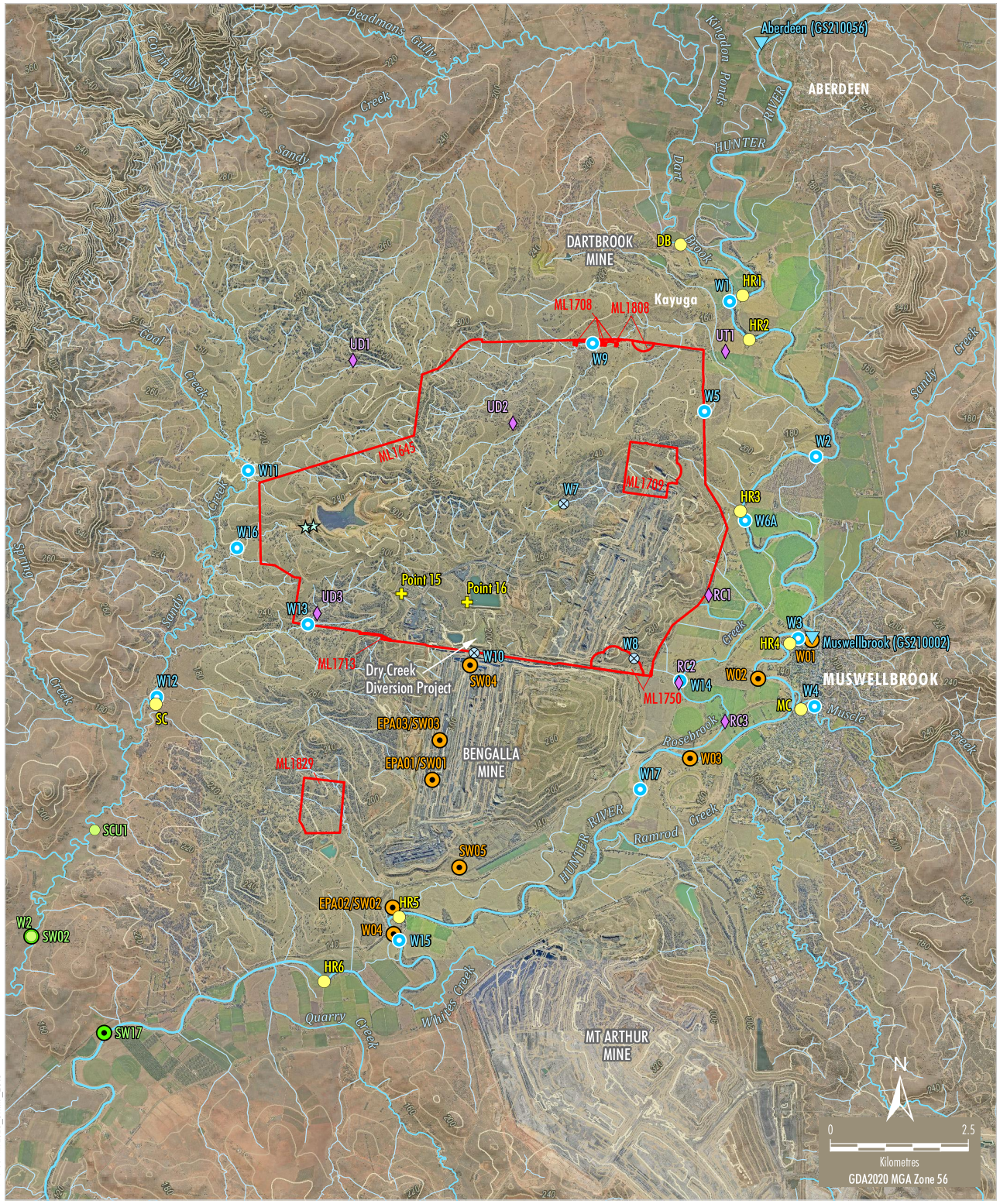
- Bengalla Standpipe
- Bengalla Vibrating Wire Piezometer

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MOUNT PLEASANT OPERATION

Groundwater Monitoring Network

Figure 5



MAC-18-03A MP2023_SWMP_2010

Source: MACH (2023); NSW Spatial Services (2023); NSW Department of Primary Industries - Water (2016); Bengalla Mining Company (2015); Mangool Coal Operations Pty Ltd (2014)
Orthophoto: MACH (Jun 2023, 2020)

LEGEND

- Mining Lease Boundary (Mount Pleasant Operation)
- Contour (20 m Interval)
- DPI Water Gauging Station

Mount Pleasant Monitoring

- Aquatic Ecology Habitat Assessment Site
- Surface Water Monitoring Site
- Historical Surface Water Monitoring Site
- Stream Health Monitoring Site
- V-notch Weir
- Water Discharge/Monitoring Point (EPL 20850)

Mangoola Monitoring

- Surface Water Monitoring Site
- Stream Health Monitoring Site

Bengalla Monitoring

- Surface Water Monitoring Site

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MOUNT PLEASANT OPERATION

Surface Water and Stream Health Monitoring Sites

Figure 4