

**Mount Pleasant Operation
Monthly Environmental Monitoring Report**

May 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 May 2026
Reporting Period End Date	31 May 2026
Date All Data Received	18 June 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.

3. Meteorological Monitoring

Weather data is measured continuously¹ 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 (PM₁₀ 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 May 2026, there was 100.6mm at M-WS2 and 96.6mm 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.

(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 is located within close proximity to the North Opencut Pit and isn't considered representative of residential receivers. D1 will continue to be monitored, however will not be used to assess compliance or to represent residential receivers in the area.

Site D7b has now been mined through, therefore results from this monitor 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 – May 2026

Location	Monthly Insoluble Solids (g/m ² .month)	Insoluble Solids Annual Rolling Average (g/m ² .month)
D1	6.5	6.2
D3	1.7	1.7
D4	1.2	1.3
D5a	2.0	2.9
D6	3.1**	2.6
D8	16.9	8.5
D9a	5.4	3.7
D10	2.0	2.3
D11	6.8	4.3
D12	2.0	1.4
D13	3.4	2.2
D14	5.2	3.9
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.

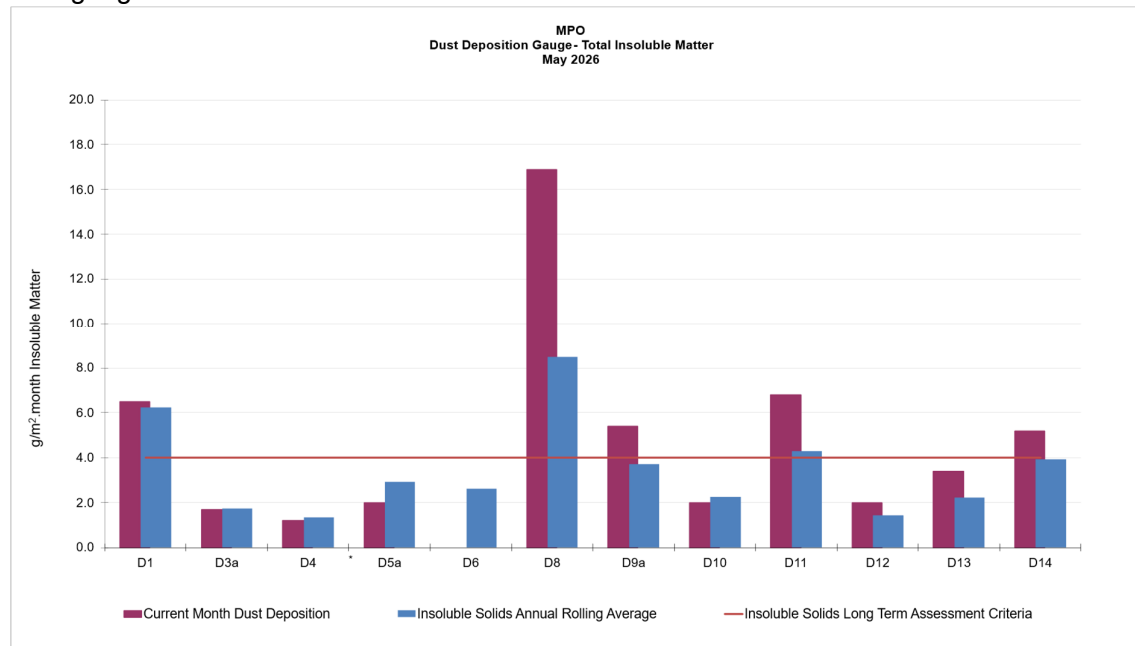


Figure 4-1: MPO Dust Deposition Monthly Results and Annual Rolling Average

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.

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 Link Road (NLR) and Northern Surface Water Infrastructure (NSWI) construction works are currently being undertaken near HVAS M-WS4 and HVAS A-PF5. The NLR project works are expected to continue until June 2026 and then cease to impact on HVAS A-PF5. 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 – May 2026

Run Date	Assessment Criterion	TSP $\mu\text{g}/\text{m}^3$		
		HVAS A-PF2	HVAS A-PF5	HVAS M-WS4
01/05/2026	-	43.4	108	122
07/05/2026	-	95.4	32.2	26.4
13/05/2026	-	13.9	41.5	27.7
19/05/2026	-	25.5	13.2	19.5
25/05/2026	-	28.4	58	29.3
31/05/2026	-	33.3	4.2	4.8
Monthly Average	-	40.0	42.9	38.3
Annual Rolling Average	90	66	62	65

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.

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 Link Road (NLR) and Northern Surface Water Infrastructure (NSWI) construction works are currently being undertaken near A-PF5 and A-PF4. The NLR project works are expected to continue until June 2026 and then cease to impact on A-PF5. 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 PM₁₀ 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 than 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.

**Table 6-1: MPO Continuous Particulate PM₁₀ Data
Cumulative 24-hour Average May 2026**

Date	A-PF2/ EPA ID 1	A-PF4	A-PF5/ EPA ID 2
	24-hour Cumulative Average		
01/05/2026	-	18.18	23.07
02/05/2026	-	21.47	30.62
03/05/2026	-	28.88	31.16
04/05/2026	-	31.39	10.82
05/05/2026	-	10.92	6.49
06/05/2026	-	21.32	16.35
07/05/2026	32.34	9.43	7.31
08/05/2026	21.59	9.31	7.00
09/05/2026	18.01	14.03	23.59
10/05/2026	18.25	17.35	23.70
11/05/2026	13.96	19.58	17.47
12/05/2026	11.14	13.57	14.36
13/05/2026	8.24	8.50	10.52
14/05/2026	9.47	13.05	11.62
15/05/2026	9.78	11.68	13.58
16/05/2026	10.85	11.07	14.71
17/05/2026	14.91	16.61	19.98
18/05/2026	15.60	17.15	15.58
19/05/2026	8.16	7.90	5.64
20/05/2026	11.12	12.52	8.26
21/05/2026	12.51	13.33	15.28
22/05/2026	9.88	12.79	11.64
23/05/2026	10.90	10.52	12.30
24/05/2026	13.72	14.04	16.52
25/05/2026	12.08	11.82	16.70
26/05/2026	14.86	19.26	18.50
27/05/2026	12.25	16.63	13.86
28/05/2026	8.34	11.80	8.25
29/05/2026	8.21	10.79	5.52
30/05/2026	10.24	6.47	5.63
31/05/2026	10.86	6.16	5.24

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).

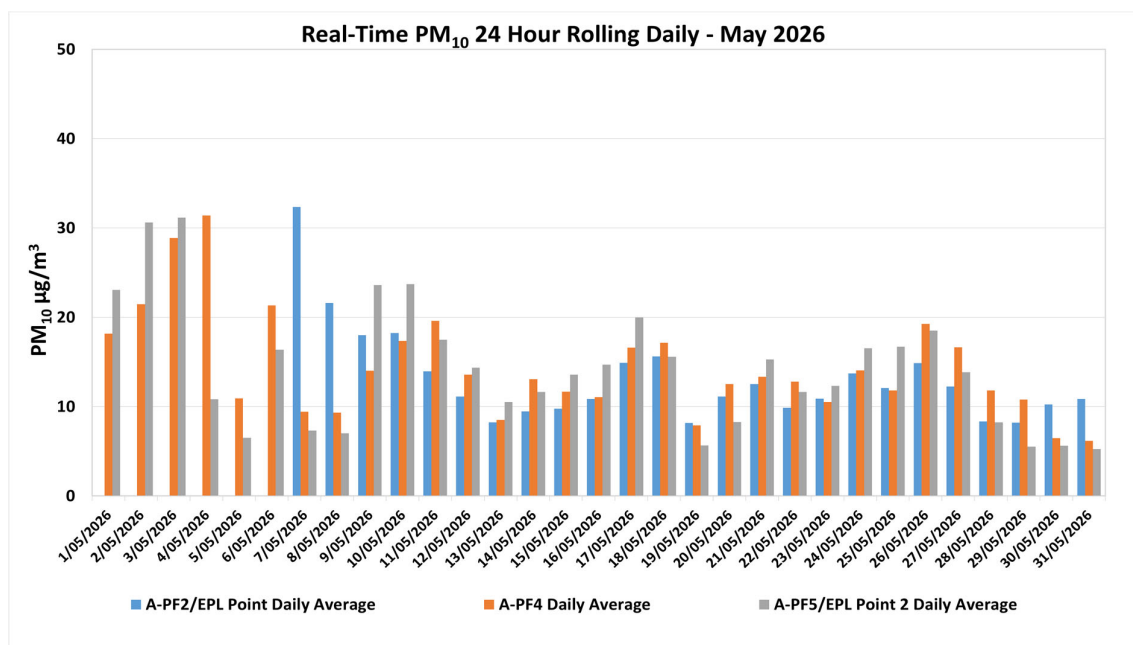


Figure 6-1: Real-time PM₁₀ 24- hourly Daily Average Results for May 2026.

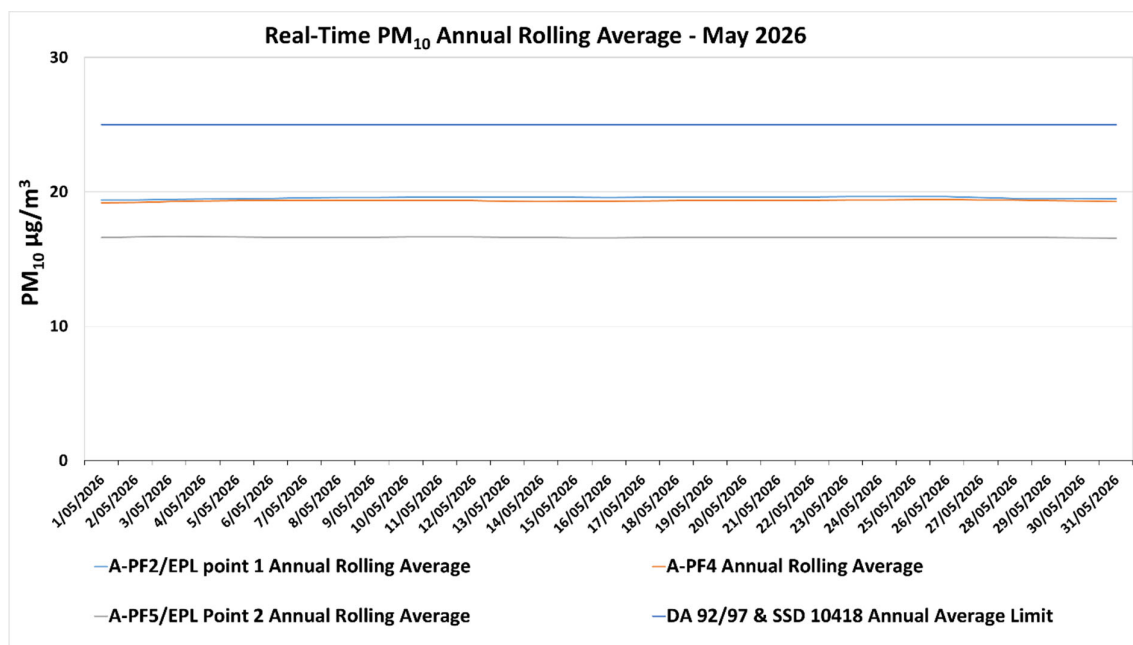


Figure 6-2: Real-time PM₁₀ Annual Rolling Average Results for May 2026.

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

Date	A-PF2/EPA ID 1	A-PF4	A-PF5/EPA ID 2
	24-hour Average Result		
01/05/2026	-	4.62	5.34
02/05/2026	-	5.72	6.68
03/05/2026	-	6.94	7.24
04/05/2026	-	6.36	3.76
05/05/2026	-	4.01	2.95
06/05/2026	-	4.81	4.32
07/05/2026	5.16	3.61	3.19
08/05/2026	4.46	3.32	2.95
09/05/2026	4.96	4.17	5.43
10/05/2026	8.15	7.09	8.55
11/05/2026	6.00	7.34	6.71
12/05/2026	4.52	5.07	5.45
13/05/2026	3.64	3.56	4.22
14/05/2026	4.37	4.55	4.94
15/05/2026	4.39	4.64	5.11
16/05/2026	4.78	4.84	5.51
17/05/2026	6.31	6.56	7.22
18/05/2026	6.56	7.03	6.78
19/05/2026	3.22	3.69	2.73
20/05/2026	4.59	4.36	3.49
21/05/2026	4.77	4.68	4.87
22/05/2026	3.91	4.77	4.22
23/05/2026	4.43	4.52	5.25
24/05/2026	6.04	6.29	7.02
25/05/2026	5.54	5.61	6.73
26/05/2026	5.90	7.03	7.17
27/05/2026	5.44	5.63	5.46
28/05/2026	3.62	4.77	3.97
29/05/2026	3.08	4.30	2.53
30/05/2026	3.67	3.18	2.87
31/05/2026	3.70	3.10	2.70

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).

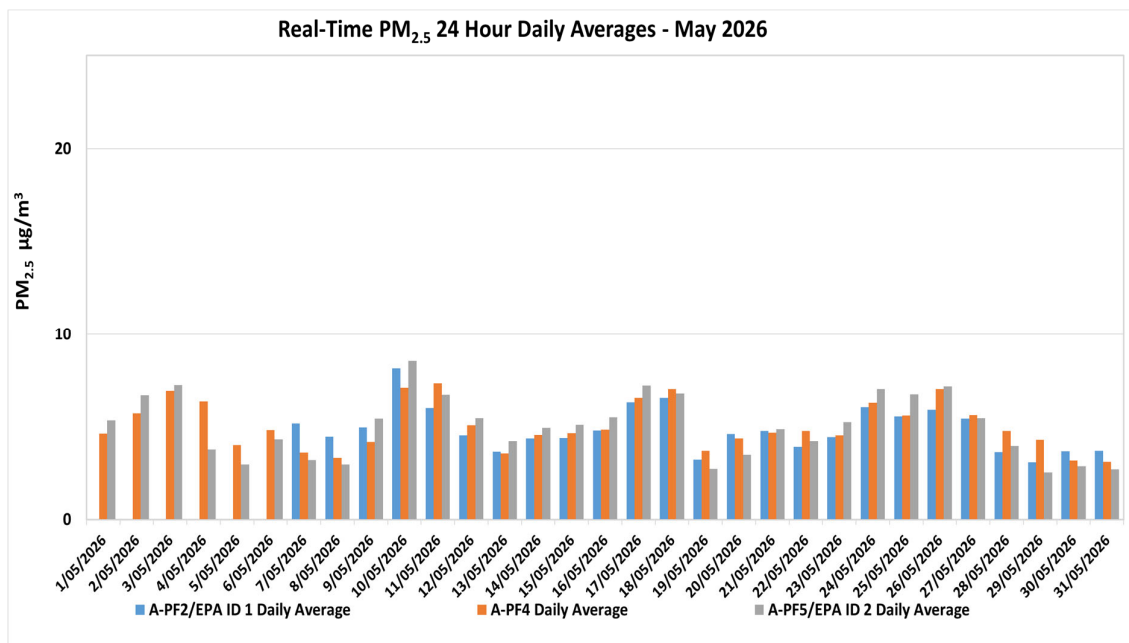


Figure 6-3: Real-time PM_{2.5} 24 hour Daily Average Results for May 2026.

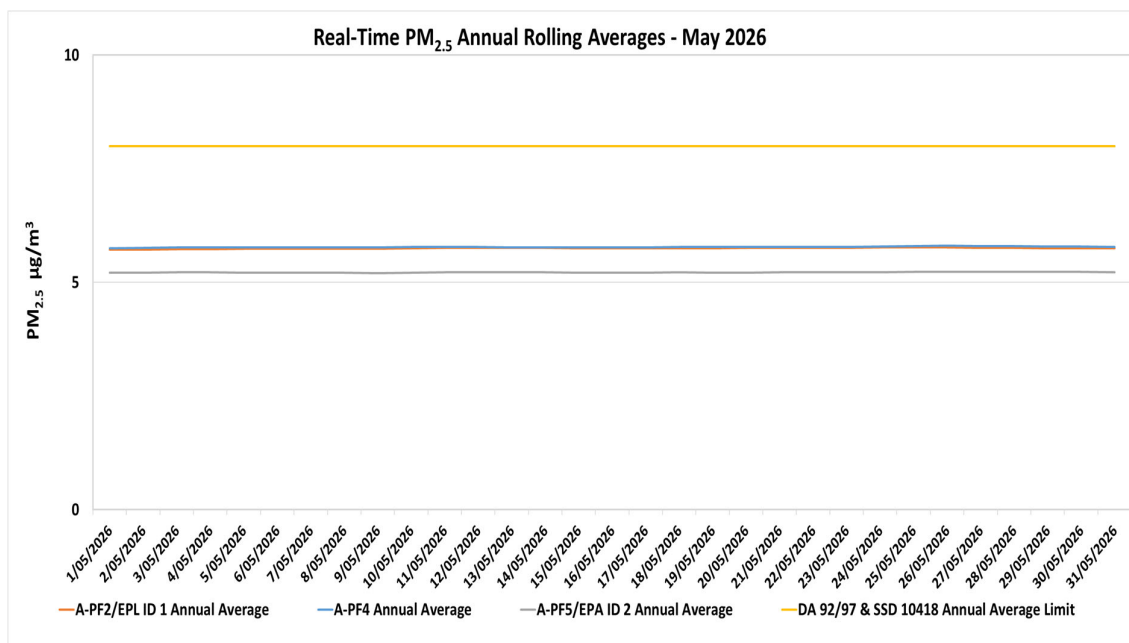


Figure 6-4: Real-time PM_{2.5} Annual Rolling Average Results for May 2026.

7. Dust Shutdowns

7.1 Methodology

PM₁₀ 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 PM₁₀ 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 PM₁₀ conditions are the occurrence of the rolling 24- hour average PM₁₀ concentration exceeding 44 µg/m³.

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.

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.

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** and **Table 8-2**.

Table 8-1 – MPO Monthly Surface Water Monitoring Results – 19 May 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)	7.7	380	232	<5
W2	^	^	^	^
W6A	7.8	376	202	<5
W15	8.0	438	239	15
W17	7.2	468	251	10
Sandy Creek				
W11 (Upstream Reference Site)	^	^	^	^
W12	8.3	4820	2860	9
Muscle Creek				
W4 (Upstream Reference Site)	7.7	1918	1360	23
Unnamed Tributaries				
W3	8.0	391	234	12
W5	6.9	315	1630	2280
W9	^	^	^	*
W13	*	*	*	*
W14	*	*	*	*
W16	8.1	2820	1570	22

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

Table 8-2 – MPO Monthly Surface Water Monitoring Results – 29 May 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)	7.5	412	235	7
W2	^	^	^	^
W6A	8.0	421	296	<5
W15	7.6	498	319	8
W17	8.0	512	307	8
Sandy Creek				
W11 (Upstream Reference Site)	^	^	^	^
W12	8.4	4390	2360	6
Muscle Creek				
W4 (Upstream Reference Site)	7.7	1648	1020	12
Unnamed Tributaries				
W3	8.0	480	280	<5
W5	7.7	381	520	136
W9	^	^	^	^
W13	7.9	2570	1320	231
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.

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	May 2026 Water Level (DTW)	February 2026 Water Level (DTW)	November 2025 Water Level (DTW)	Triggered (Yes/ No)
WRA1L	-	3.72	2.73	1.02	-
WRA1U	-	*	*	*	-
WRA3L-R	-	*	*	*	-
WRA3U-R	-	*	*	*	-
WRA5L-R	-	*	*	*	-
WRA5U-R	-	*	*	*	-
WRA6L	-	0.4	0.67	0.52	-
WRA6U	-	0.67	0.99	1.14	-
MPBH1	10.70	9.41	9.56	9.52	No
MPBH2	13.59	11.18	10.99	10.74	No
MPBH3b	13.04	11.66	11.08	10.89	No
MPBH4	-	11.97	11.73	11.21	-
MPBH5	-	*	*	*	-
MPBH1-C	-	9.323	9.49	9.383	-
MPBH1-HR	-	33.44	42.29	45.69	-
MPBH2-C	-	11.173	10.98	10.733	-
MPBH2-HR	-	11.226	11.24	14.246	-
MPBH4-C	-	10.683	10.40	9.923	-
MPBH4-HR	-	49.795	49.93	50.045	-
MPBH5-C	-	10.609	10.45	10.659	-
MPBH5-HR	-	10.81	10.50	10.3	-

Monitoring Location/ ID	Trigger	May 2026 Water Level (DTW)	February 2026 Water Level (DTW)	November 2025 Water Level (DTW)	Triggered (Yes/ No)
MPBH6	-	10.091	10.37	8.601	-
MPBH6-C	-	10.548	8.99	9.998	-
MPBH6-HR	-	9.995	10.06	9.795	-
MPBH7	10.10	5.587	5.37	4.827	No
MPBH7-C	-	17.915	17.79	17.045	-
3500C500L	-	28.03	27.64	27.54	-
3500C500S	-	25.41	24.99	24.51	-
4500F000	-	21.88	21.58	22.10	-
5000D000-R	-	140.11	139.38	139.14	-
5000D000	-	147.7	142.93	139.60	-
6000C000L-R	-	*	*	*	-
6000C000U-R	-	*	*	*	-
6500F500L	-	51.33	49.72	50.73	-
6500F500M	-	51.93	50.34	51.21	-
6500F500U	-	28.04	27.76	28.03	-
6500F625	-	15.55	15.14	14.04	-
Melody	-	12.96	12.31	10.13	-
7500F000	-	^	36.34	36.18	-
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.

^Unsafe access.

'-' indicates no trigger level

Table 8-2 - MPO Quarterly Groundwater pH Results

Monitoring Location/ ID	pH Trigger Range	May 2026 pH	February 2026 pH	November 2025 pH	Triggered (Yes/No)
WRA1L		7.1	7.0	7.2	No
WRA1U		*	*	*	No
WRA3L-R		7.8	7.5	7.4	No
WRA3U-R		*	*	*	No
WRA5L-R		7.2	7.1	7.2	No

Monitoring Location/ ID	pH Trigger Range	May 2026 pH	February 2026 pH	November 2025 pH	Triggered (Yes/No)
WRA5U-R	6 - 8.5	7.7	7.5	7.5	No
WRA6L		7.0	6.9	7.0	No
WRA6U		6.9	6.8	6.8	No
MPBH1		7.0	6.8	7.1	No
MPBH2		7.0	6.9	6.8	No
MPBH3b		7.8	7.6	7.7	No
MPBH4		7.0	6.8	6.9	No
MPBH5		*	*	*	No
MPBH1-C	-	7.5	8.3	8.7	-
MPBH1-HR	-	7.6	7.6	7.7	-
MPBH2-C	-	8.4	10.3	7.9	-
MPBH2-HR	-	8.1	8.3	7.0	-
MPBH4-C	-	8.1	8.0	8.0	-
MPBH4-HR	-	7.4	7.2	7.4	-
MPBH5-C	-	10.3	10.6	11.0	-
MPBH5-HR	-	7.3	7.4	7.5	-
MPBH6	-	6.8	6.9	7.0	-
MPBH6-C	-	7.5	7.0	7.1	-
MPBH6-HR	-	7.3	7.1	7.1	-
MPBH7	-	7.0	6.9	7.0	-
MPBH7-C	-	7.1	7.0		-
3500C500L	6 - 8.5	7.5	7.5	7.4	No
3500C500S	-	7.2	7.3	7.2	-
4500F000	6 – 8.5	6.7	6.8	6.8	No
5000D000-R		7.5	7.5	7.4	No
6000C000L-R		8.3	8.4	8.4	No
6000C000U-R		7.4	7.5	*	No
6500F500L		7.2	7.2	7.2	No
6500F500M		7.3	7.1	7.2	No
6500F500U		6.8	6.8	6.8	No
6500F625		7.0	6.8	7.0	No
Melody		7.0	6.9	7.1	No
7500F000		^	7.7	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	May 2026 EC	February 2026 EC	November 2025 EC	Triggered (Yes/No)
WRA1L	7800	3100	2920	2940	No
WRA1U	-	*	*	*	-
WRA3L-R	22000	7810	8320	8110	No
WRA3U-R	22000	*	*	*	No
WRA5L-R	7800	5330	5290	5290	No
WRA5U-R	7800	5870	5820	6220	No
WRA6L	7800	6730	5560	5580	No
WRA6U	22000	8240	8230	7770	No
MPBH1	800	594	707	658	No
MPBH2	930	1000	1086	1038	Yes¹
MPBH3b	7800	4530	4540	4500	No
MPBH4	7800	5430	5700	5510	No
MPBH5	-	*	*	*	-
MPBH1-C	-	643	1301	1596	-
MPBH1-HR	-	1754	1650	1715	-
MPBH2-C	-	1484	1549	1198	-
MPBH2-HR	-	1731	1788	1159	-
MPBH4-C	-	4950	4980	5570	-
MPBH4-HR	-	5050	5720	5570	-
MPBH5-C	-	641	647	728	-
MPBH5-HR	-	865	823	827	-
MPBH6	-	1093	1108	873	-
MPBH6-C	-	4860	2450	2500	-
MPBH6-HR	-	5880	2750	1418	-
MPBH7	-	10100	11460	9940	-
MPBH7-C	-	11210	10780	10430	-
3500C500L	7800	3830	3900	3820	No
3500C500S	-	5480	5900	5710	-
4500F000	22000	9260	8510	7900	No
5000D000-R	-	5290	5460	5210	No
6000C000L-R	7800	4780	4900	4790	No
6000C000U-R	7800	4430	4400	*	No
6500F500L	7800	2550	2540	2540	No
6500F500M	7800	2620	2520	2520	No
6500F500U	7800	6140	6000	6180	No
6500F625	7800	3790	3790	3040	No

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Monitoring Location/ ID	Maximum Beneficial Use Trigger	May 2026 EC	February 2026 EC	November 2025 EC	Triggered (Yes/No)
Melody	-	4850	3140	2340	-
7500F000	7800	^	6420	6330	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

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 25 and 26 May 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	1:26am	IA	45	1.1 / 209	Yes	F	No
N-AT2	10:41pm	30	45	3.2 / 160	Yes	E	NA
N-AT3	11:20pm	IA	45	2.5 / 162	Yes	E	No
N-AT4	11:47pm	IA	45	1.0 / 183	Yes	D	No
N-AT5	12:08am	IA	45	0.9 / 215	Yes	D	No
N-AT6	1:02am	IA	45	1.5 / 186	Yes	D	No
N-AT7	10:00pm	IA	45	2.3 / 172	Yes	D	No
N-AT8	12:35am	43	49	0.7 / 222	Yes	F	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 25 and 26 May 2026

Location	Time	MPO Only dB(A), Leq (15min)	Criterion dB(A)	Wind Speed (m/s) Direction (°)	Criterion Applies	Stability Class	Exceedance
N-AT1	1:26am	IA	37	1.1 / 209	Yes	F	No
N-AT2	10:41pm	25	35	3.2 / 160	Yes	E	NA
N-AT3	11:20pm	IA	40	2.5 / 162	Yes	E	No
N-AT4	11:47pm	IA	38	1.0 / 183	Yes	D	No
N-AT5	12:08am	IA	37	0.9 / 215	Yes	D	No
N-AT6	1:02am	IA	35	1.5 / 186	Yes	D	No
N-AT7	10:00pm	IA	37	2.3 / 172	Yes	D	No
N-AT8	12:35am	38	43	0.7 / 222	Yes	F	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 10-3 $L_{Aeq, period}$ Cumulative Noise: Attended Night Monitoring 25 and 26 May 2026

Location	Time	Measured Mining Only dB(A), L_{Aeq}	Criterion dB(A)	Exceedance
N-AT1	1:26am	36	40	No
N-AT2	10:41pm	25	40	NA
N-AT3	11:20pm	IA	40	No
N-AT4	11:47pm	IA	40	No
N-AT5	12:08am	IA	40	No
N-AT6	1:02am	27	40	No
N-AT7	10:00pm	IA	40	No
N-AT8	12:35am	40	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.

NA¹- in the exceedance column means atmospheric conditions outside those specified in the EPL, therefore criterion was not applicable.

NA²- This is not a compliance monitoring location under DA92/97, and cumulative noise criteria are only applicable under DA92/97.

11. Blast Monitoring

There were ten (10) blast events (a total of 53 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

^aThe locations referred to in Table 2 are shown in Appendix 3 of Development Consent SSD 10418.

^bThese limits do not apply to historic heritage sites located within the approved disturbance area. Refer to Section 7.4.2 for further detail

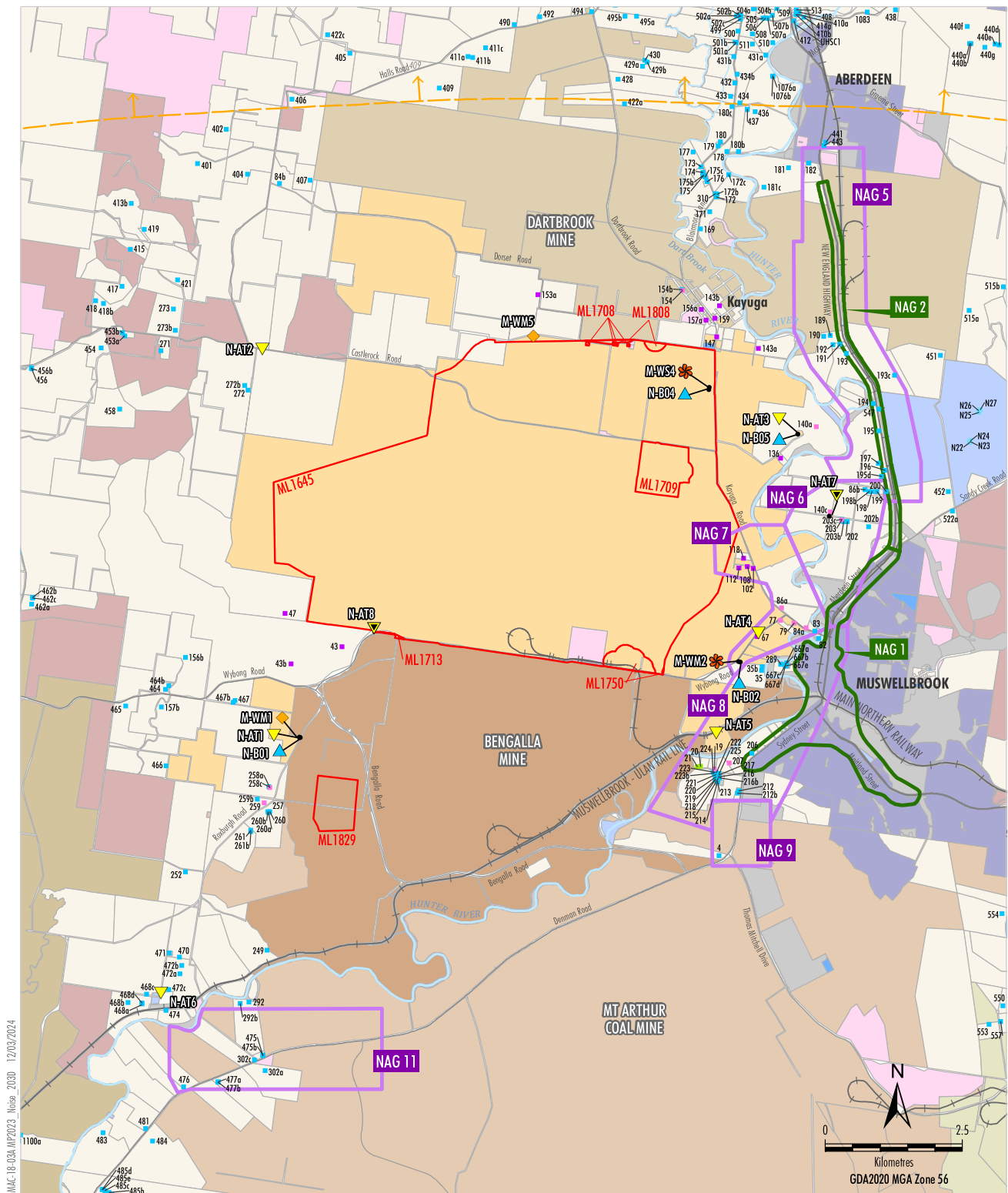
Table 11-3 – MPO Blast Monitoring Results – May 2026

Date Fired	Time Fired	BVOC Vibration (mm/s)	BVOC Overpressure (dBL)	BVO2 Vibration (mm/s)	BVO2 Overpressure (dBL)	Blast Fume Compliant
01/05/2026	10:38	0.37 mm/s	103 DBL	0.50 mm/s	97.7 DBL	Y
02/05/2026	10:03	0.54 mm/s	90.2 DBL	0.19 mm/s	94 DBL	Y
07/05/2026	11:48	0.85 mm/s	107.6 DBL	0.61 mm/s	109.4 DBL	Y
11/05/2026	15:24	0.25 mm/s	96.8 DBL	0.57 mm/s	93.3 DBL	Y
13/05/2026	14:48	0.10 mm/s	97.5 DBL	0.13 mm/s	97.7 DBL	Y
14/05/2026	14:00	0.28 mm/s	102.6 DBL	0.49 mm/s	110.4 DBL	Y
18/05/2026	10:18	1.01 mm/s	111.1 DBL	0.82 mm/s	103 DBL	Y
21/05/2026	11:00	0.19 mm/s	89.4 DBL	0.23 mm/s	95.1 DBL	Y
27/05/2026	10:07	0.48 mm/s	91.6 DBL	0.51 mm/s	96.8 DBL	Y
28/05/2026	11:18	0.05 mm/s	99.3 DBL	0.08 mm/s	94.6 DBL	Y

APPENDIX A

MPO Environmental Monitoring Network.

Figure numbers referred to in respective management plans.



MAC-18-GSA NP2023 Noise 2030 12/03/2024

- 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/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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MOUNT PLEASANT OPERATION
Nominal Noise and Meteorological
Monitoring Sites

Figure 8

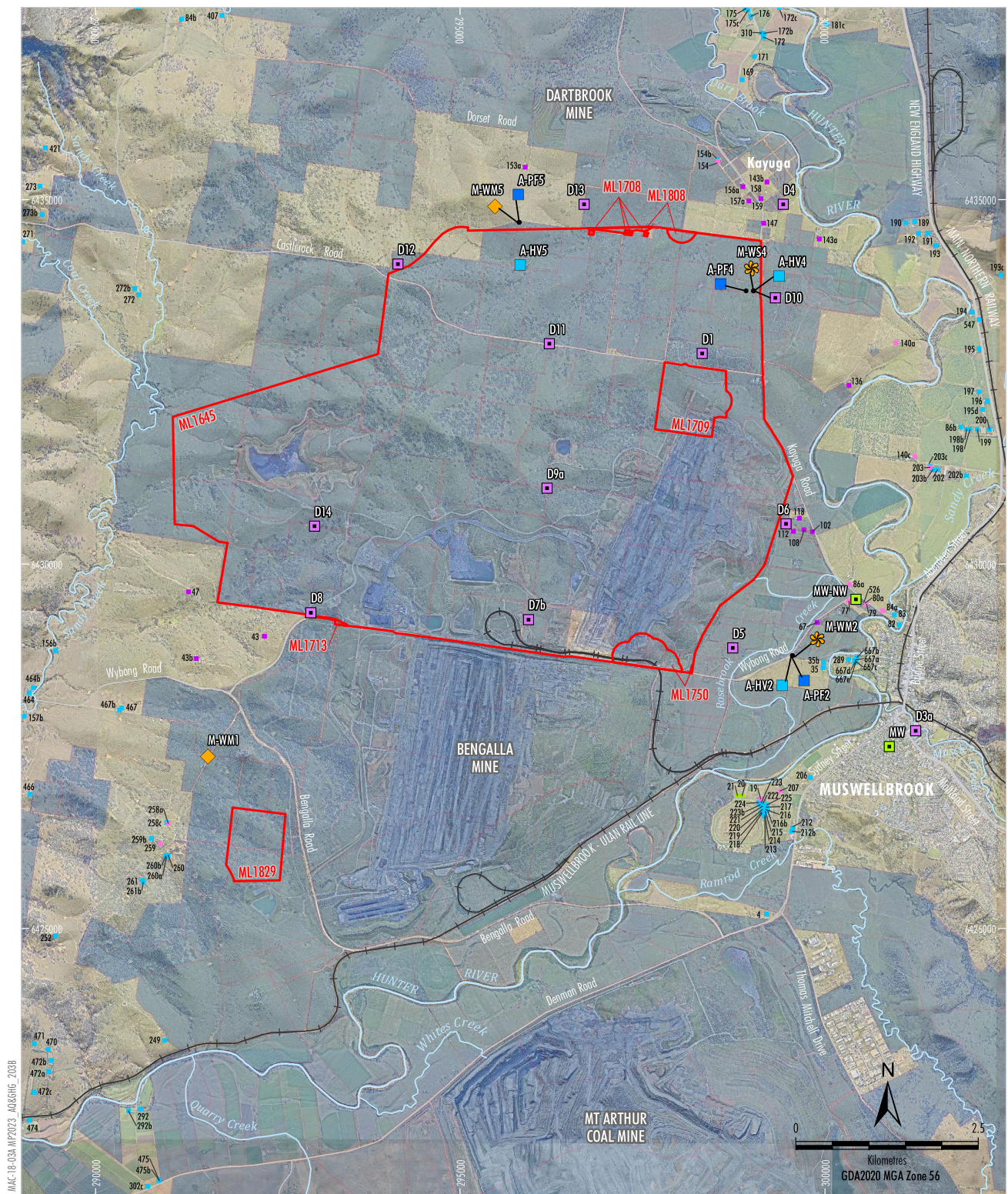
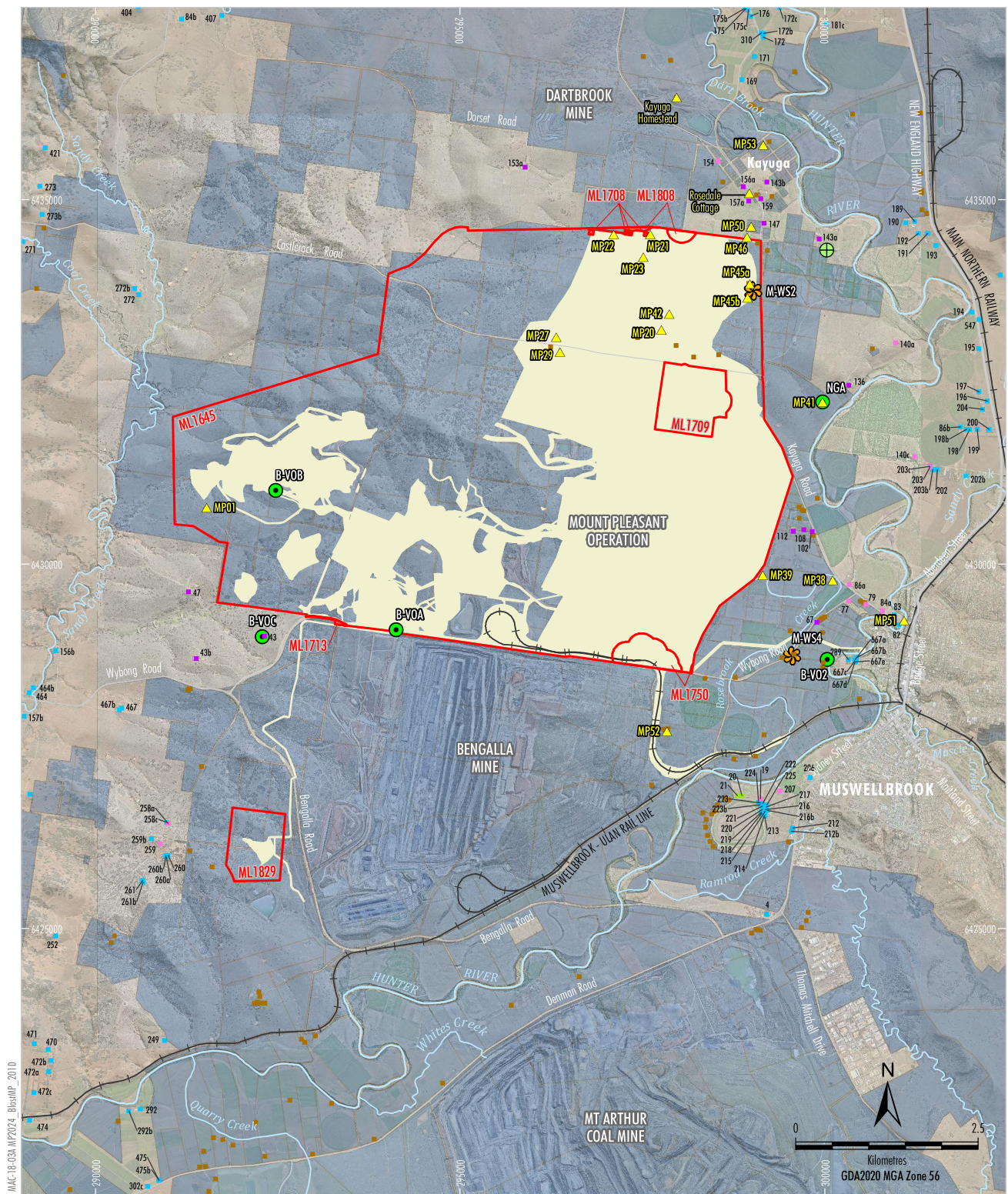


Figure 3



- 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 * ^

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.

- 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

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

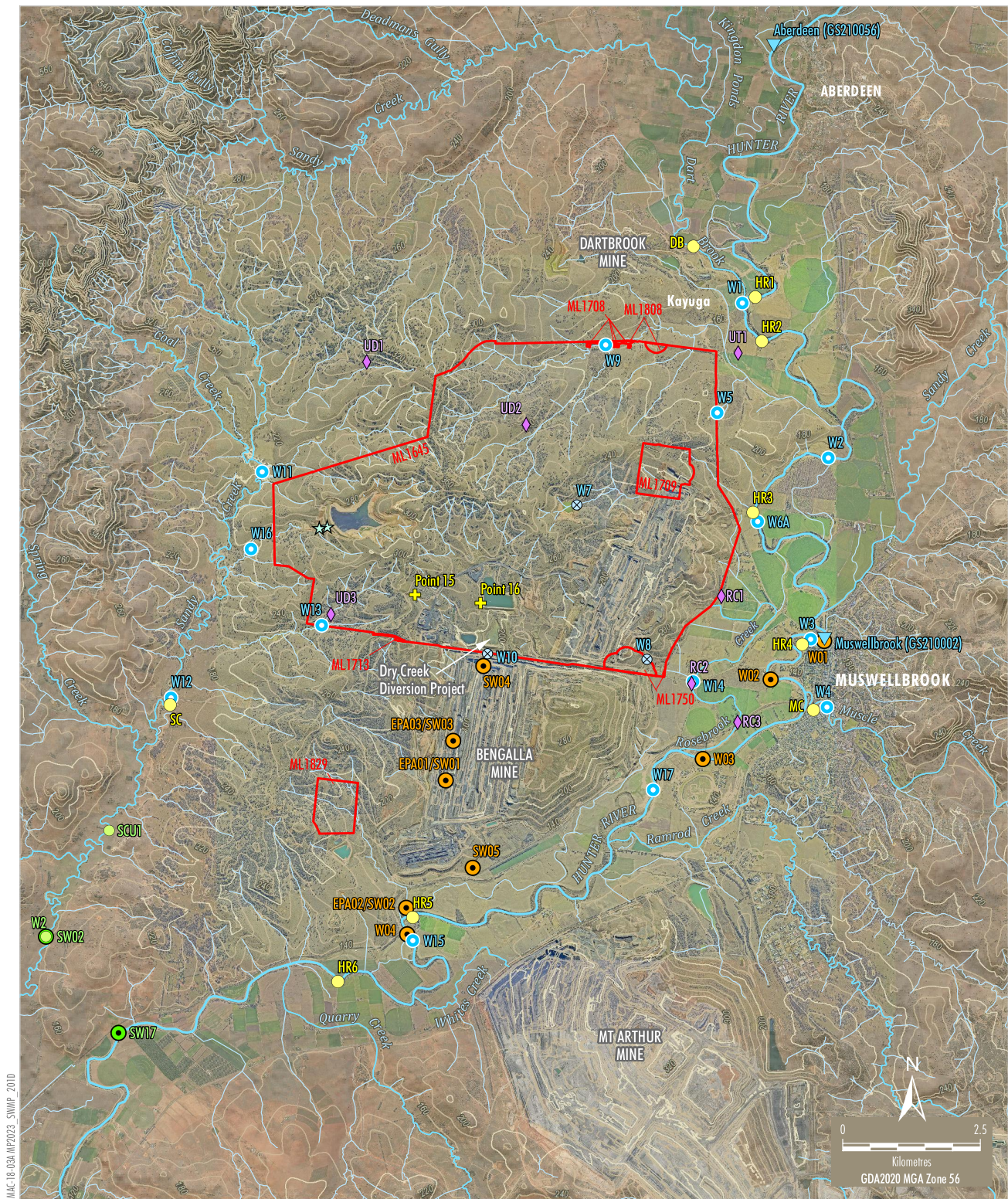
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MOUNT PLEASANT OPERATION
Blast Monitoring Locations

Figure 3



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

Figure 5



AMC-18-03A-WP2023-SWMP-2010

- | | |
|--|---|
| Mining Lease Boundary (Mount Pleasant Operation) | ● Mangoola Monitoring |
| — Contour (20 m Interval) | ● Surface Water Monitoring Site |
| ▲ DPI Water Gauging Station | ● Stream Health Monitoring Site |
| ◆ Mount Pleasant Monitoring | ● Bengalla Monitoring |
| ◆ Aquatic Ecology Habitat Assessment Site | ● Surface Water Monitoring Site |
| ● Surface Water Monitoring Site | |
| ⊗ Historical Surface Water Monitoring Site | |
| ● Stream Health Monitoring Site | |
| ★ V-notch Weir | |
| + Water Discharge/Monitoring Point (EPL 20850) | |

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)

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MOUNT PLEASANT OPERATION
Surface Water and Stream Health
Monitoring Sites

Figure 4