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Bengalla Mine

State Significant Development 5170 Monthly Monitoring Data Summary

March 2025

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1. INTRODUCTION

State Significant Development (SSD) 5170 (as modified) requires the Bengalla Mining Company Pty Ltd (BMC) to make a comprehensive summary of the Bengalla Mine (Bengalla) monitoring results, reported in accordance with the specifications in any conditions of SSD-5170 (as modified), or any approved plans and programs, publicly available on its website. This document has been prepared in accordance with the Department of Planning and Environment (DPE) *Web-Based Reporting Guideline* (October 2015) to satisfy the above requirement.

This document provides a summary of environmental monitoring data sampled as prescribed by SSD-5170 (as modified) for March 2025 (Reporting Period). Monitoring data provided is as follows:

- Air quality, particulate matter less than 10 microns (PM_{10}), total suspended particulate (TSP) matter and depositional dust;
- Noise; and
- Blast overpressure and ground vibration.

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2. AIR QUALITY

The air quality monitoring program at Bengalla is undertaken in accordance with the requirements of SSD-5170 (as modified), EPL 6538 and the Bengalla Air Quality Management Plan (AQMP). Air quality monitoring results relevant to SSD-5170 are summarised in the following sections.

2.1 Particulate Matter less than 10 Microns

To evaluate the performance of Bengalla against the SSD-5170 criterion for particulate matter, BMC operates and maintains two High Volume Air Samplers (HVAS) measuring PM_{10}. The HVAS are run for 24 hours every six days.

PM_{10} data for the Reporting Period is provided in **Table 1**.

Pollutant:	PM_{10}
Unit of measure:	Micrograms per cubic metre (µg/m^3)
Monitoring location:	See **Table 1** and **Appendix A.**
Monitoring frequency:	24 hours every 6 days
24 Hour Average Criteria:	50 µg/m^3 (Project Alone)
Annual Average Criteria:	25 µg/m^3
Sampled:	01/03/2025 – 31/03/2025

Table 1. PM_{10} Monitoring Summary

Run Date	Run Date Reading (µg/m3)	
	PM10-1 Racecourse Road	PM10-3 Roxburgh Road
01/03/2025	40.2	53.5
07/03/2025	15.6	19.7
13/03/2025	13.4	35.4^
19/03/2025	22.5	49.8
25/03/2025	7.1	35.3
31/03/2025	9.3	6.3

(Table 1 represents total impact (ie incremental increase in concentration due to the development plus background concentrations due to other sources))

^Invalid sample result on 13/03/25 due to equipment fault, a makeup run was conducted on 17/03/2025 with a result of 35.4µg/m^3.

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2.2 Total Suspended Particle Matter

To evaluate the performance of Bengalla against the SSD-5170 criterion for particulate matter, BMC operates and maintains two HVAS measuring TSP. The HVAS are run for 24 hours every six days.

TSP data for the Reporting Period is provided in **Table 2**.

Pollutant:	TSP
Unit of measure:	µg/m^3
Monitoring location:	See **Table 2** and **Appendix A**
Monitoring frequency:	24 hours every 6 days
Annual Average Criteria:	90 µg/m^3
Sampled:	01/03/2025 – 31/03/2025

Table 2. TSP Monitoring Summary

Run Date	HV02 Racecourse Road	HV03 Logues Lane
01/03/2025	92.3	65.3
07/03/2025	52.5	36.8
13/03/2025	37.2	42.6
19/03/2025	61.3	48
25/03/2025	19.9	13.5
31/03/2025	21.6*	12.3

(Table 2 represents total impact (ie incremental increase in concentration due to the development plus background concentrations due to other sources))

*No data due to power outage on 31/3/25, makeup run completed 8/4/25 with a result of 21.6µg/m^3.

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2.3 Depositional Dust

To evaluate the performance of Bengalla against the SSD-5170 criterion for depositional dust, BMC operates and maintains 5 depositional dust gauges surrounding the Bengalla operations.

Depositional dust data for the Reporting Period is provided in **Table 3.**

Pollutant:	Depositional Dust
Unit of measure:	Grams per metre squared per month (g/m^2/month)
Monitoring location:	See **Table 3** and **Appendix A**
Monitoring frequency:	Monthly
Maximum depositional dust increase criteria:	2 g/m^2/month [(b)]
Maximum total depositional dust criteria:	4 g/m^2/month [(a)]
Sampled:	27/02/2025 – 27/03/2025

(a) Total impact (ie incremental increase in concentrations due to the development plus background concentrations due to other sources);

(b) Incremental impact (ie incremental increase in concentration due to the development on its own)

Table 3. Depositional Dust Monitoring Summary

Sampling point		Measured Value (March 2025) g/m²/month	Sampling Comments
D06	Logues Lane, Muswellbrook	1.2	Insects, Spider, Algae
D10	Racecourse Road, Muswellbrook	1.2	Insects
D26	Wybong Road, Muswellbrook	3.3	Insects
D27	Homestead	31.9^	Insects, Vegetation
D29	Wybong Road	4.2	Insects, Vegetation

(Table 3 represents total impact (ie incremental increase in concentration due to the development plus background concentrations due to other sources))

^D27 - "**Deemed contaminated, possible influence from immediate ground conditions**" – (AECOM Feb 2025)

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3. NOISE

The noise monitoring program at Bengalla is undertaken in accordance with the requirements of SSD-5170 (as modified), EPL 6538 and the Bengalla Noise Management Plan (NMP).

Compliance attended noise monitoring is undertaken for 15 minutes once per calendar month during the night period (10 pm to 7 am) at three locations representative of the nearest private receivers.

Noise monitoring data for the Reporting Period is provided in **Table 4**.

Pollutant:	Noise – Bengalla Only
Unit of measure:	L_{Aeq} (15 minute)
Monitoring location:	See **Table 4** and **Appendix B.**
Monitoring frequency:	Monthly
AN01 criteria:	35 dB(A)
AN04 criteria:	35 dB(A)
AN03 criteria:	40 dB(A)
Sampled:	26 March 2025

Table 4. Noise – Bengalla Only[1] LAeq (15 minute) Monitoring Summary

Sampling point		Sample Date	Sample Time	Measured value
AN01	1431 Wybong Road	26/03/2025	00:28 – 00:41	28
AN03	1312 Denman Road	26/03/2025	01:09 – 01:24	IA
AN04	Opposite 9 Racecourse Road	26/03/2025	01:38 – 01:51	IA

IA - Inaudible. When there was no noise from the source of interest (Bengalla Mine) audible at the monitoring location.

1 LAeq,15minute operational noise levels for Bengalla in the absence of all other noise sources.

2 IA – Inaudible

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4. BLASTING

BMC maintains three blast monitors to measure blast overpressure and ground vibration against the SSD-5170 criteria.

The blast overpressure and ground vibration data for the Reporting Period is provided in **Table 5**.

Pollutant:	Air blast overpressure & ground vibration peak particle velocity
Unit of measure:	dB (Lin Peak) and millimetres per second (**mm/s**)
Monitoring locations:	See **Tables 5** and **Appendix B.**
Monitoring frequency:	All blasts
Overpressure criteria:	a) 115 linear decibels (**dB(L)**) for more than 5% of the total number of blasts carried out on the premises within the 12 months annual reporting period; and b) 120 dB(L) at any time.
Ground vibration criteria:	a) exceed 5 millimetres/second (**mm/s**) for more than 5% of the total number of blasts carried out on the premises within the 12 months annual reporting period; and b) 10mm/s at any time.
Sampled:	01/03/2025 – 31/03/2025

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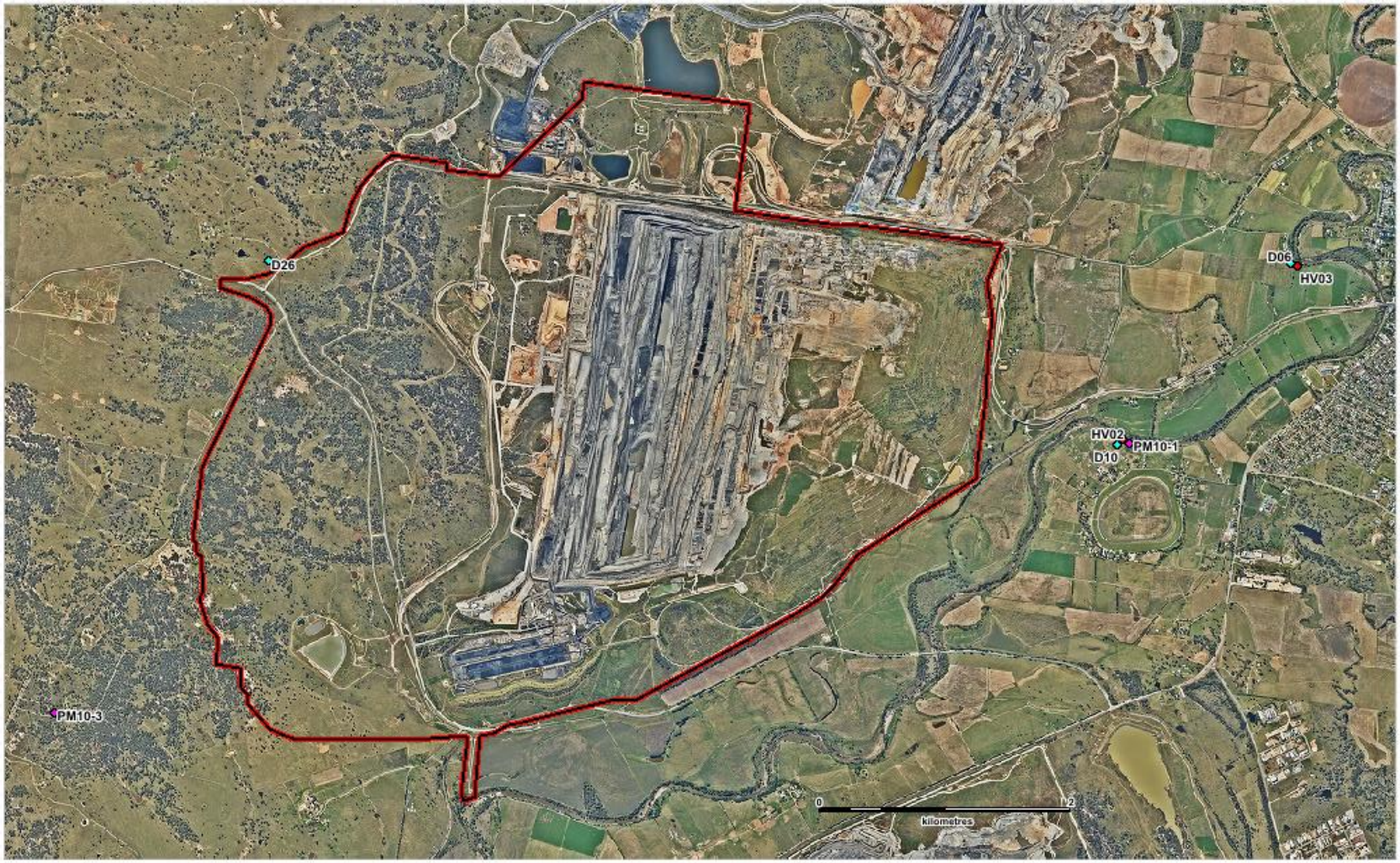
Table 5. Blast Monitoring Summary

Date	Time	Ground Vibration (mm/s)	Overpressure (dBL)
		MRE	MRE
1/03/2025	11:23:06 AM	0.78	104.70
6/03/2025	12:30:20 PM	2.18	114.80
8/03/2025	10:34:32 AM	1.62	112.10
11/03/2025	12:01:46 PM	3.21	104.30
13/03/2025	4:02:36 PM	1.62	96.80
19/03/2025	11:07:39 PM	1.21	98.30
22/03/2025	12:27:10 PM	2.82	110.50
22/03/2025	12:29:02 PM	4.57	109.90
28/03/2025	11:09:45 AM	0.62	95.70
28/03/2025	11:11:09 AM	2.53	114.20

Appendix A

Air Quality Monitoring Network



Legend

- Project Boundary
- Total Suspended Particulate Monitor
- Dust Deposition Gauge
- PM10 Monitor

Note: Compliance Monitors shown

N

Compliance Air Quality Monitoring Network

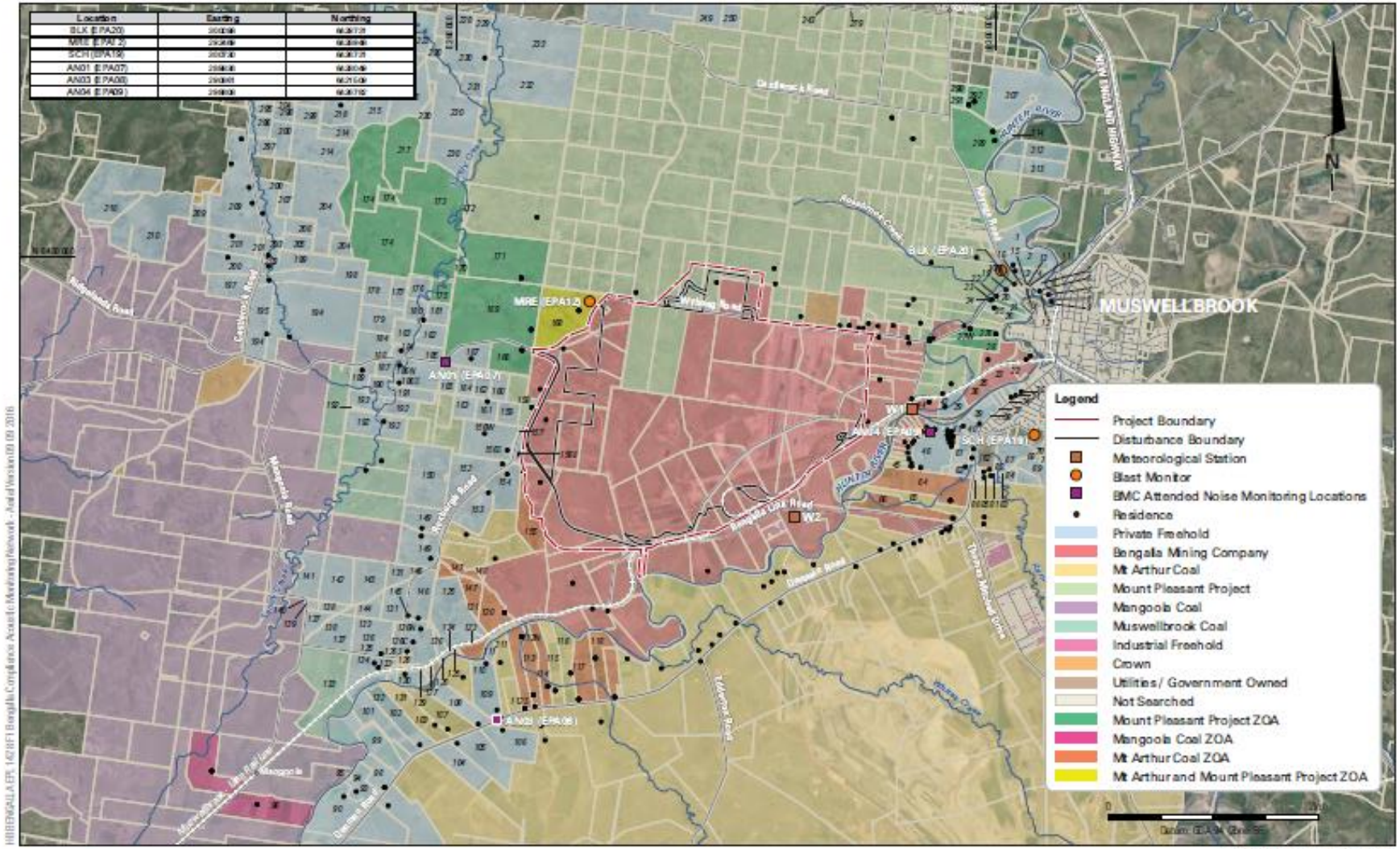
Date: 17/04/2023

BENGALLA

Projection: MGA2020 Zone 56

Appendix B

Noise and Blast Monitoring Locations



BENGALLA MINE

Bengalla Compliance Acoustic Monitoring Network

FIGURE 1