



**Bengalla Mining Company Pty. Limited**

Bengalla Road, (Locked Mailbag 5)

Muswellbrook NSW 2333 Australia

A.B.N. 32 053 909 470

## **Bengalla Mine**

# **State Significant Development 5170 Monthly Monitoring Data Summary**

**June 2018**



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## **1. INTRODUCTION**

State Significant Development (SSD) 5170 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, 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 for June 2018 (Reporting Period). Monitoring data provided is as follows:

- Air quality, particulate matter less than 10 microns (PM<sub>10</sub>), total suspended particulate (TSP) matter and depositional dust;
- Noise; and
- Blast overpressure and ground vibration.

Monitoring Data Obtained: 24 July 2018

Monitoring Data Published: 4 September 2018



## 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 three High Volume Air Samplers (HVAS) measuring PM<sub>10</sub>. Additional, PM<sub>10</sub> data is sourced from Mt Arthur Coal through an information sharing agreement. The HVAS are run for 24 hours every six days.

PM<sub>10</sub> data for the Reporting Period is provided in **Table 1**.

<b>Pollutant:</b>	PM <sub>10</sub>
<b>Unit of measure:</b>	Micrograms per cubic metre (µg/m <sup>3</sup> )
<b>Monitoring location:</b>	See <b>Table 1</b> and <b>Appendix A</b> .
<b>Monitoring frequency:</b>	24 hours every 6 days
<b>24 Hour Average Criteria:</b>	50 µg/m <sup>3</sup>
<b>Annual Average Criteria:</b>	90 µg/m <sup>3</sup>
<b>Sampled:</b>	06/06/2018 – 30/06/2018

**Table 1. PM<sub>10</sub> Monitoring Summary**

Run Date	Run Date Reading (µg/m <sup>3</sup> )			
	PM10-1 Racecourse Road	PM10-2 St James School	PM10-3* Roxburgh Road	PM10-4 Wybong Road
06/06/2018	14	16	14	25
12/06/2018	20	16	3	6
18/06/2018	22	12	3	3
24/04/2018	22	21	22	48
30/06/2018	26	22	8	5

\* Data sourced from Mt Arthur Coal

For the Reporting Period, no elevated 24-hour average PM<sub>10</sub> readings were recorded.



## 2.2 Total Suspended Particle Matter

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

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

<b>Pollutant:</b>	TSP
<b>Unit of measure:</b>	µg/m <sup>3</sup>
<b>Monitoring location:</b>	See <b>Table 2</b> and <b>Appendix B</b> .
<b>Monitoring frequency:</b>	24 hours every 6 days
<b>Annual Average Criteria:</b>	90 µg/m <sup>3</sup>
<b>Sampled:</b>	06/06/2018 – 30/06/2018

**Table 2. TSP Monitoring Summary**

Run Date	Run Date Reading (µg/m <sup>3</sup> )				
	HV01 Wybong Road (East)	HV02 Racecourse Road	HV03 Logues Lane	HV04 St James School	HV06 Wybong Road (West)
06/06/2018	35	33	31	36	105
12/06/2018	61	70	39	54	16
18/06/2018	170	94	64	61	15
24/06/2018	37	37	36	37	137
30/06/2018	81	81	56	72	22



## 2.3 Depositional Dust

To evaluate the performance of Bengalla against the SSD-5170 criterion for depositional dust, BMC operates and maintains 14 depositional dust gauges surrounding the Bengalla operations.

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

<b>Pollutant:</b>	Depositional Dust
<b>Unit of measure:</b>	Grams per metre squared per month (g/m <sup>2</sup> /month)
<b>Monitoring location:</b>	See <b>Table 3</b> and <b>Appendix C</b> .
<b>Monitoring frequency:</b>	Monthly
<b>Maximum depositional dust increase criteria:</b>	2 g/m <sup>2</sup> /month
<b>Maximum total depositional dust criteria:</b>	4 g/m <sup>2</sup> /month
<b>Sampled:</b>	15/05/2018 – 14/06/2018



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**Table 3. Depositional Dust Monitoring Summary**

Sampling point		Measured Value	Sampling Comments
D01	Queen Street, Muswellbrook	0.9	Insects
D02	King Street, Muswellbrook	1.6	Insects
D04A	Industrial Estate, Muswellbrook	2.8	Insects
D05	Intersection Kayuga and Wybong Road, Muswellbrook	2.6	Insects
D06	Logues Lane, Muswellbrook	3.7c	Insects, vegetation
D07A	St James School, Muswellbrook	2.8	Insects
D08	Denman Road, Muswellbrook	2.2	Insects
D09	Wybong Road, Muswellbrook	2.9	Insects
D10	Racecourse Road, Muswellbrook	3.8	Insects
D20	Wyndams Arms R.O.W., Muswellbrook	3.6	Insects
D23B	Logues Lane, Muswellbrook	2.4	Insects
D25	Roxburgh Road, Muswellbrook	2.5	Insects, bird droppings
D26	Wybong Road, Muswellbrook	2.6	Insects
DA	Roxburgh Road, Muswellbrook	2.3	Insects



### 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).

BMC undertakes compliance attended noise monitoring 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**.

<b>Pollutant:</b>	Noise – Bengalla Only
<b>Unit of measure:</b>	L <sub>Aeq</sub> (15 minute)
<b>Monitoring location:</b>	See <b>Table 4</b> and <b>Appendix D</b> .
<b>Monitoring frequency:</b>	Monthly
<b>AN01 criteria:</b>	35 dB(A)
<b>AN04 criteria:</b>	35 dB(A)
<b>AN03 criteria:</b>	40 dB(A)
<b>Sampled:</b>	21-22 June 2018

**Table 4. Noise – Bengalla Only<sup>1</sup> LAeq (15 minute) Monitoring Summary**

Sampling point		Sample Date	Sample Time	Measured value
AN01	1431 Wybong Road	21/06/18	22:58	28
AN03	1312 Denman Road	21/06/18	23:37	IA
AN04	Opposite 9 Racecourse Road	22/06/18	00:08	IA

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

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

For the Reporting Period noise data were below the SSD-5170 criteria.





## 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**.

<b>Pollutant:</b>	Air blast overpressure & ground vibration peak particle velocity
<b>Unit of measure:</b>	dB (Lin Peak) and millimetres per second ( <b>mm/s</b> )
<b>Monitoring locations:</b>	See <b>Tables 5</b> and <b>Appendix D</b> .
<b>Monitoring frequency:</b>	All blasts
<b>Overpressure criteria:</b>	a) 115 linear decibels ( <b>dB(L)</b> ) 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.
<b>Ground vibration criteria:</b>	a) exceed 5 millimetres/second ( <b>mm/s</b> ) 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.
<b>Sampled:</b>	01/06/2018 – 30/06/2018



**Table 5. Blast Overpressure Monitoring Summary**

Date	Time of Blast	Ground Vibration (mm/s)			Overpressure (dBL)		
		BLK	MRE	SCH	BLK	MRE	SCH
02/06/18	2:58:57 PM	0.14	0.77	0.06	91	99	90
05/06/18	10:54:41 AM	0.19	1.51	0.09	94	104	98
07/06/18	11:53:09 AM	0.52	1.58	0.12	96	99	87
07/06/18	11:55:39 AM	0.13	0.77	0.06	98	99	91
12/06/18	4:47:14 PM	0.33	1.32	0.14	93	94	93
15/06/18	9:03:36 AM	0.15	0.93	0.04	108	97	105
18/06/18	2:57:01 PM	0.50	2.37	0.12	96	93	91
20/06/18	4:03:03 PM	0.30	1.45	0.08	87	97	91
23/06/18	3:48:22 PM	0.26	2.20	0.12	99	95	94
27/06/18	11:37:00 AM	0.35	1.51	0.24	89	94	87
27/06/18	11:37:17 AM	0.35	1.51	0.24	89	96	92
29/06/18	11:44:03 AM	0.17	1.49	0.11	88	100	92

For the Reporting Period, overpressure and ground vibration data were below the maximum criteria and within the 5% allowance limit.

# **Appendix A**

## **PM10 Monitoring Locations**

PRJ31060\_BengallaMineNSW\_50cm\_19102017\_gda94mga56\_ortho\_full-area



BENGALLA MINE  
PM10 Monitoring Locations

# **Appendix B**

## **TSP Monitoring Locations**

PRJ31060\_BengallaMineNSW\_50cm\_19102017\_gda94mga56\_ortho\_full-area



BENGALLA MINE  
TSP Monitoring Locations

# **Appendix C**

## **Depositional Dust Monitoring Locations**

PRJ31060\_BengallaMineNSW\_50cm\_19102017\_gda94mga56\_ortho\_full-area

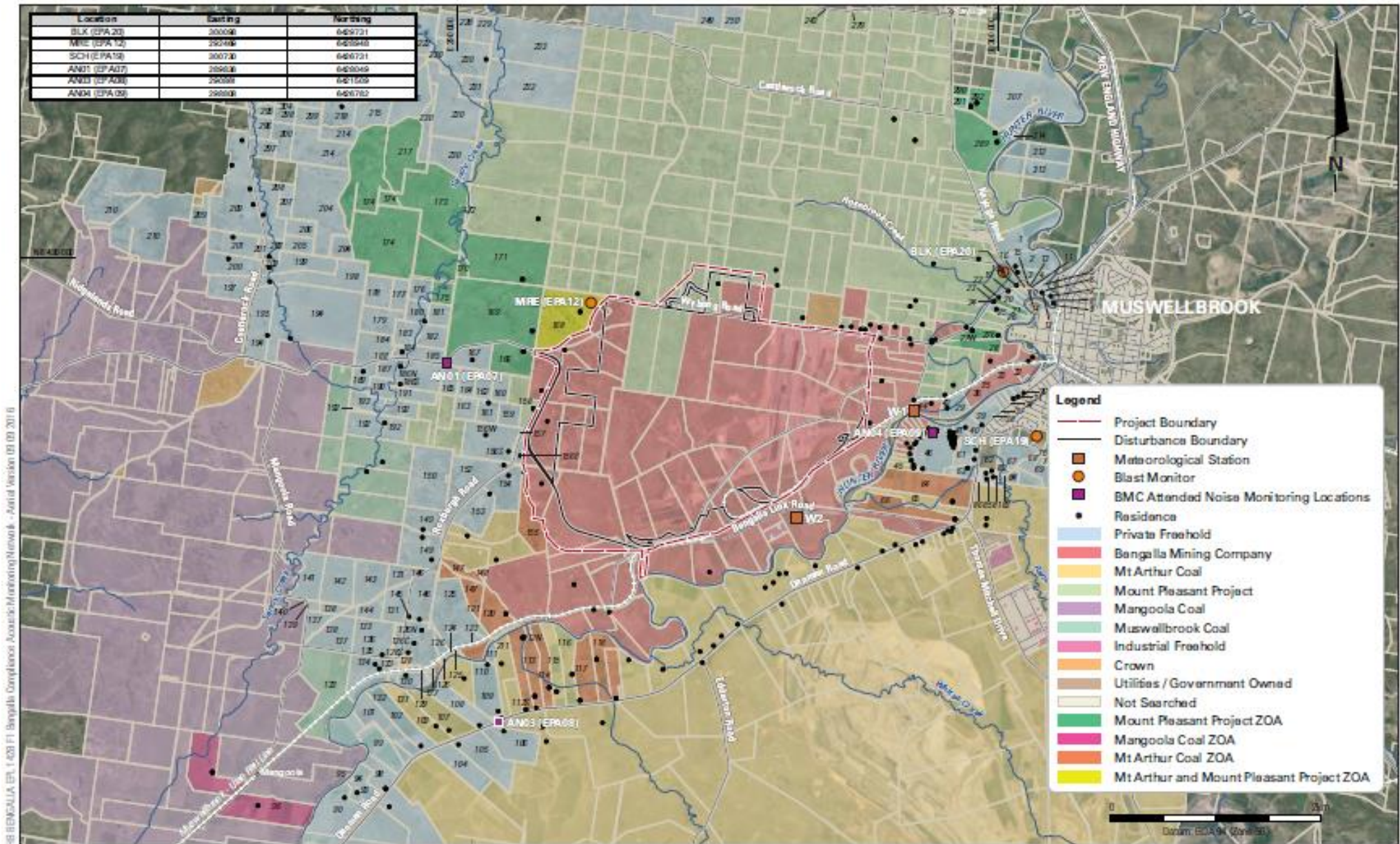


BENGALLA MINE  
Depositional Dust Monitoring Locations



# **Appendix D**

## **Noise and Blast Monitoring Locations**



BENGALLA MINE



Hansen Bailey

Bengalla Compliance Acoustic Monitoring Network

FIGURE 1