



**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**

**December 2019**



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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 December 2019 (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: 10 January 2020

Monitoring Data Published: 28 January 2020



## 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 four High Volume Air Samplers (HVAS) measuring PM<sub>10</sub>. 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>	25 µg/m <sup>3</sup>
<b>Sampled:</b>	04/12/2019 – 28/12/2019

**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
04/12/2019	104	79	67	43
10/16/2019	172	119	168	157
16/12/2019	187	93	118	143
22/12/2019	152	84	158	113
28/12/2019	72	59	106	133



## 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>	04/12/2019 – 28/12/2019

**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)
04/12/2019	255	229	147	178	92
10/16/2019	249	297	211	234	353
16/12/2019	279	267	240	208	305
22/12/2019	203	283	173	176	258
28/12/2019	139	155	113	114	381



## 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>	15/11/2019 - 16/12/2019



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**Table 3. Depositional Dust Monitoring Summary**

Sampling point		Measured Value	Sampling Comments
D01	Queen Street, Muswellbrook	1.6	Insects
D02	King Street, Muswellbrook	1.9	Insects
D04A	Industrial Estate, Muswellbrook	2.7	Insects. Bird droppings
D05	Intersection Kayuga and Wybong Road, Muswellbrook	2.6	Insects, bird droppings
D06	Logues Lane, Muswellbrook	3.8	Insects, Vegetation
D07A	St James School, Muswellbrook	2.2	Insects
D08	Denman Road, Muswellbrook	2.1	Insects
D09	Wybong Road, Muswellbrook	3.7	Insects
D10	Racecourse Road, Muswellbrook	3.8	Insects
D20	Wyndams Arms R.O.W., Muswellbrook	4.4	Insects, bird droppings, vegetation
D23B	Logues Lane, Muswellbrook	2.0	Insects, bird droppings
D25	Roxburgh Road, Muswellbrook	3.1	Insects, bird dropping, vegetation
D26	Wybong Road, Muswellbrook	2.5	Insects, bird droppings, vegetation
DA	Roxburgh Road, Muswellbrook	2.5	Insects, bird droppings, vegetation

Operator, for and on behalf of Bengalla Joint Venture, an unincorporated joint venture between:  
Harcove Pty Ltd, Wesfarmers Bengalla Limited, Taipower Bengalla Pty Limited & Mitsui Bengalla Investment Pty Limited.

[www.bengalla.com.au](http://www.bengalla.com.au)



### 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**.

<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 December 2019

**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	21/12/2019	02:00 – 02:15	28
AN03	1312 Denman Road	21/12/2019	02:43 – 02:58	30
AN04	Opposite 9 Racecourse Road	21/12/2019	03:13 – 03:28	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.





## 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>	03/12/2019 – 30/12/2019



**Table 5. Blast Overpressure Monitoring Summary**

Date	Time	Ground Vibration (mm/s)			Overpressure (dBL)		
		BLK	MRE	SCH	BLK	MRE	SCH
03/12/19	7:04:16 AM	0.12	1.41	0.05	98.90	99.40	102.50
05/12/19	8:37:34 AM	0.06	0.31	0.05	82.90	97.70	89.50
06/12/19	10:54:30 AM	0.08	0.48	0.03	101.70	104.60	100.40
10/12/19	11:15:49 AM	0.08	0.35	0.09	89.10	102.50	94.80
10/12/19	11:18:08 AM	0.06	0.58	0.09	86.70	98.20	88.10
11/12/19	2:55:48 PM	0.24	1.05	0.20	91.40	105.40	99.20
12/12/19	3:22:17 PM	0.07	0.72	0.02	97.50	101.70	102.20
16/12/19	2:55:40 PM	0.12	0.71	0.15	112.60	110.00	105.00
17/12/19	10:57:39 AM	0.08	0.71	0.03	106.40	101.70	94.40
19/12/19	2:57:40 PM	0.05	0.21	0.05	91.00	98.40	95.10
21/12/19	10:54:33 AM	0.09	0.34	0.03	92.90	97.90	96.80
23/12/19	3:03:24 PM	0.08	0.27	0.03	102.00	106.40	98.50
28/12/19	10:50:46 AM	0.05	0.16	0.07	86.90	95.30	91.80
28/12/19	10:53:23 AM	0.10	0.94	0.08	85.90	84.00	80.50
30/12/19	2:52:29 PM	0.36	1.31	0.19	89.80	92.50	95.90
31/12/19	3:23:05 PM	0.16	1.07	0.11	104.00	99.50	92.20

# **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

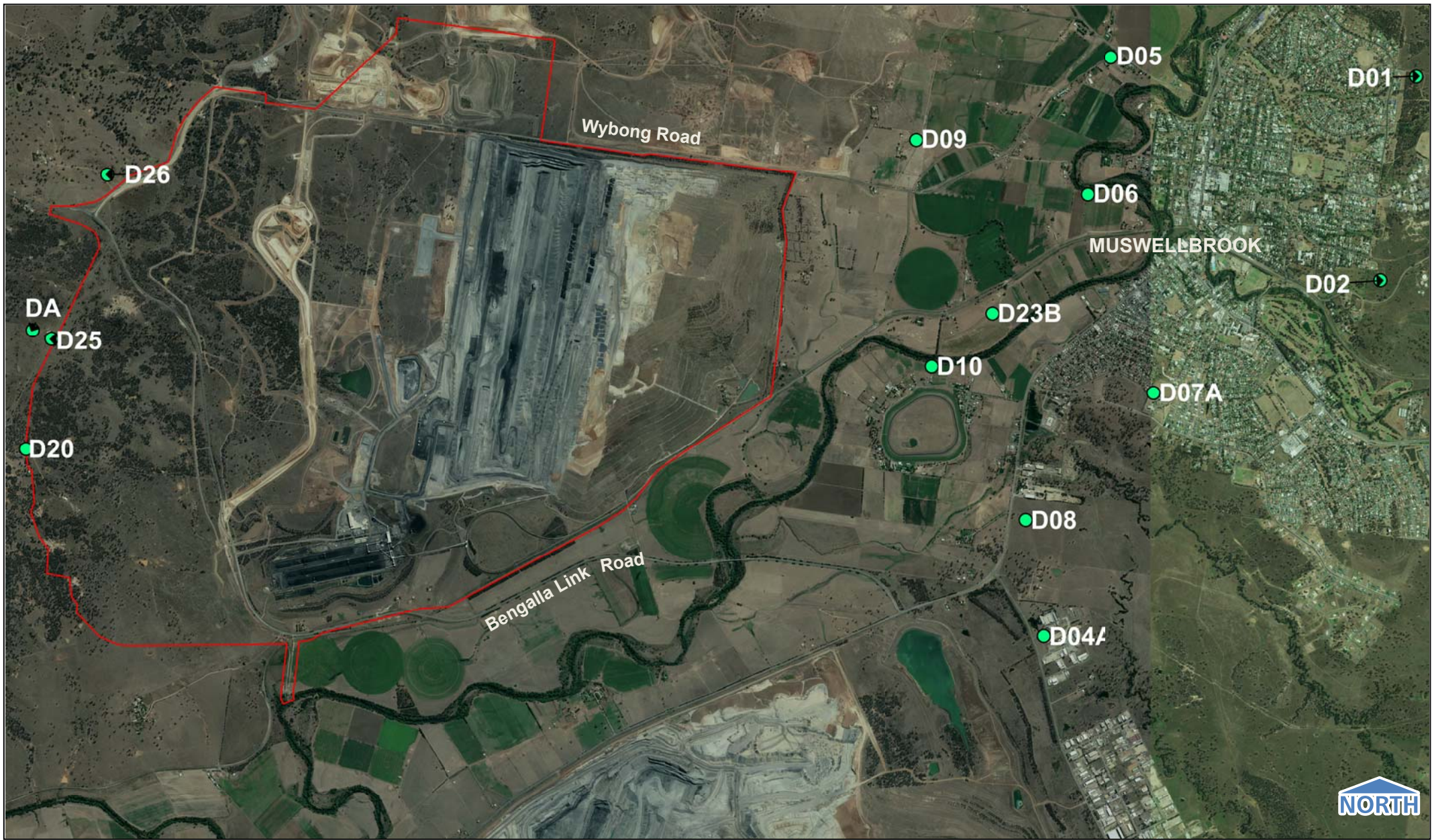


BENGALLA MINE  
TSP Monitoring Locations

# **Appendix C**

## **Depositional Dust Monitoring Locations**

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



BENGALLA MINE  
Depositional Dust Monitoring Locations

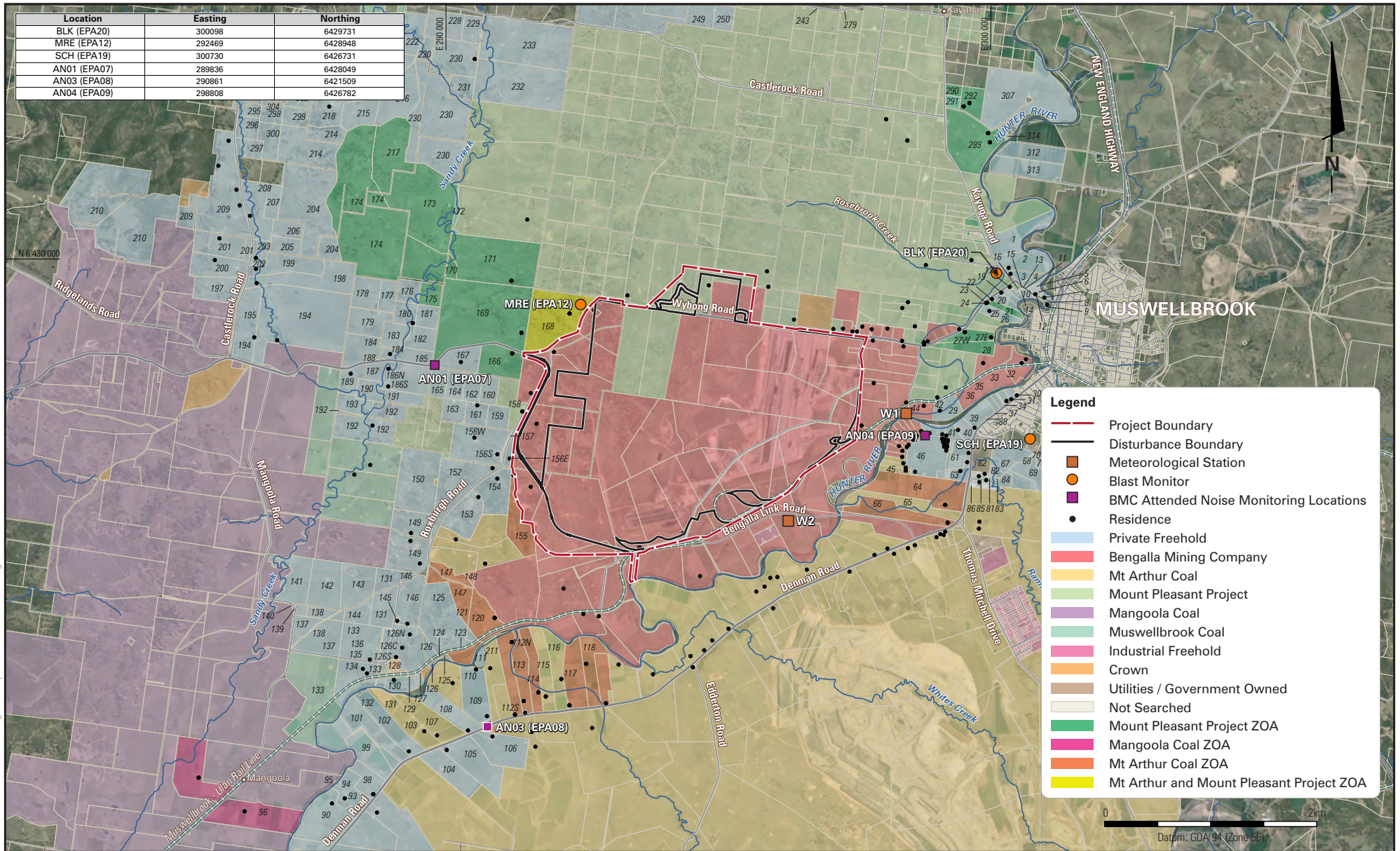


## **Appendix D**

### **Noise and Blast Monitoring Locations**

Location	Easting	Northing
BLK (EPA20)	300098	6429731
MRE (EPA12)	292469	6428948
SCH (EPA19)	300730	6426731
AN01 (EPA07)	289836	6428049
AN03 (EPA08)	290861	6421509
AN04 (EPA09)	298808	6426782

HB BENGALLA EPL 1428 F1 Bengalla Compliance Acoustic Monitoring Network - Aerial Version 09 09 2016



BENGALLA MINE



Bengalla Compliance Acoustic Monitoring Network

**FIGURE 1**