



**Bengalla Mining Company Pty Limited**

Bengalla Road (Locked Mailbag 5)  
Muswellbrook NSW 2333 Australia

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## **Bengalla Mine**

# **Environment Protection Licence 6538 Monthly Monitoring Data Summary**

## **December 2020**



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## 1. INTRODUCTION

Environmental Protection Licence (EPL) holders are required under the *Protection of the Environment Operations Act 1997* to make publicly available their monitoring results for those parameters specified in the EPL. This document has been prepared to satisfy this requirement.

Bengalla Mining Company Pty Limited's (BMC) operations are conducted in accordance with EPL 6538. The licence details are as follows:

License Holder:	Bengalla Mining Company Pty Limited
Licence Number:	6538
Premises:	Bengalla Mine Bengalla Road via Muswellbrook NSW 2333
Access to Licence:	<a href="http://www.epa.nsw.gov.au/prpoeoapp/Detail.aspx?instid=6538&amp;id=6538&amp;option=licence&amp;searchrange=licence&amp;range=POEOlicence&amp;prp=no&amp;status=Issued">http://www.epa.nsw.gov.au/prpoeoapp/Detail.aspx?instid=6538&amp;id=6538&amp;option=licence&amp;searchrange=licence&amp;range=POEOlicence&amp;prp=no&amp;status=Issued</a>
Monitoring Locations:	See main text and <b>Appendix A</b>

This document provides a summary of environmental monitoring data sampled as prescribed by EPL 6538 for December 2020 (Reporting Period). Monitoring data provided is as follows:

- Air quality, particulate matter less than 10 microns (PM<sub>10</sub>);
- Surface water, including discharge mine water and effluent water;
- Noise; and
- Blast vibration and overpressure.



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## 2. AIR QUALITY

Under EPL 6538 BMC is required to continuously record the average PM<sub>10</sub> concentration at EPA Monitoring Points 22, 23 and 24 at intervals of 10 minutes. As per Condition E1.1, BMC commenced monitoring at these EPA Monitoring Points on 31 August 2017.

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

### 2.1 Particulate Matter less than 10 Microns

<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 required by licence:</b>	10-minute intervals
<b>Sampled:</b>	01/12/2020 – 31/12/2020

**Table 1. PM10 Monitoring Summary**

Sampling point		No. of samples required by licence	No. of samples collected and analysed	Minimum sample value	Maximum sample value	Monthly mean of sample
EPA22	Lumeah Dairy, Bengalla Road, Muswellbrook	4464	4015 <sup>1</sup>	0	184.6	10.2
EPA23	Wybong Road (East), Muswellbrook	4464	4456	0	222.5	12.9
EPA24	Wybong Road (West), Muswellbrook	4464	4455	0	78.9	10.1

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

1. Due to a monitor programming error, EPA22 failed to record readings on the half hour commencing 15/12/2020 at 10:30am. This was rectified when discovered on 14/1/2021. All other 10 minute measurements were recorded.

## 3. SURFACE WATER

### 3.1 Discharge Monitoring

BMC participates in the Hunter River Salinity Trading Scheme (**HRSTS**). In accordance with EPL 6538, BMC maintains two monitoring locations to measure concentration, volume and mass of mine water discharges (see **Appendix B**).

#### 3.1.1 Volume

<b>Pollutant:</b>	Mine water
<b>Unit of measure:</b>	Mega litres per day ( <b>ML/day</b> )
<b>Monitoring location:</b>	EPA26 – Outlet pipe from 700 ML HRSTS storage dam.
<b>Monitoring frequency required by licence:</b>	Continuous during all discharge events.



**NEW HOPE  
GROUP**

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**Volume/mass limit:** 200 ML/day

**Sampled:** Not applicable. During the Reporting Period, Bengalla did not discharge any mine water under the HRSTS.

### 3.1.2 Conductivity

**Pollutant:** Conductivity

**Unit of measure:** Microsiemens per centimetre ( $\mu\text{S/cm}$ )

**Monitoring location:** EPA26 – Outlet pipe from 700 ML HRSTS storage dam.  
EPA2 – Tributary monitoring point in Dry Creek downstream of EPA26.

**Monitoring frequency required by licence:** Continuous during all discharge events (EPA26); Two times daily during discharge (EPA02).

**Sampled:** Not applicable. During the Reporting Period, Bengalla did not discharge any mine water under the HRSTS.

### 3.1.3 Total suspended solids and pH

**Pollutants:** pH and Total Suspended Solids (**TSS**)

**Unit of measure:** pH and Milligrams per litre (**mg/L**)

**Monitoring location:** EPA26 – Outlet pipe from 700 ML HRSTS storage dam.

**Monitoring frequency required by licence:** Daily during all discharge events

**pH limit:** 6.5 – 9.5 (100<sup>th</sup> percentile) (Applies to EPA26 only)

**TSS limit:** 120 (100<sup>th</sup> percentile) (Applies to EPA26 only)

**Sampled:** Not applicable. During the Reporting Period, Bengalla did not discharge any mine water under the HRSTS.



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### 3.2 Effluent Quality Monitoring

Under EPL 6538 BMC is required to take quarterly grab samples from effluent quality monitoring point EPA25.

<b>Pollutants:</b>	Faecal Coliforms and pH
<b>Unit of measure:</b>	Colony Forming Units (CFU) per 100 millilitres (CFU/100mL) and pH
<b>Monitoring location:</b>	EPA25 – See <b>Appendix B</b> .
<b>Monitoring frequency required by licence:</b>	Quarterly
<b>Sampled:</b>	12 December 2020

Pollutant	Unit of measure	No. of samples required by licence	No. of samples taken and analysed	Sample Date	Sample Time	Measured value
Faecal Coliforms	CFU/100mL	1	1	01/12/2020	12:45 pm	<2
pH	pH	1	1	01/12/2020	12:45 pm	6.89



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## 4. NOISE

In accordance with EPL 6538, 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 5**.

<b>Pollutant:</b>	Noise – Bengalla Only
<b>Unit of measure:</b>	LAeq (15 minute)
<b>Monitoring locations:</b>	See <b>Table 2</b> and <b>Appendix C</b> .
<b>Monitoring frequency required by licence:</b>	Monthly
<b>EPA7/AN01 limit:</b>	35 dB(A)
<b>EPA9/AN04 limit:</b>	35 dB(A)
<b>EPA8/AN03 limit:</b>	40 dB(A)
<b>Sampled:</b>	24 December 2020





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**Table 2. Noise – Bengalla Only<sup>1</sup> LAeq (15 minute) Monitoring Summary**

Sampling point	No. of samples required by licence	No. of samples taken and analysed	Sample Date	Sample Time	Measured value
EPA07/AN01	1	1	24/12/2020	00:41 – 00:56	29
EPA08/AN03	1	1	24/12/2020	01:17 – 01:32	32
EPA09/AN04	1	1	24/12/2020	01:46 – 02:01	IA

Note:

1. LAeq,15minute 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.



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## 5. BLASTING

In accordance with EPL 6538, BMC maintains three blast monitors on private (non-mine owned) land to measure air-blast overpressure and ground vibration for all blast events undertaken at Bengalla.

Overpressure and ground vibration data for the Reporting Period is provided in **Tables 3 and 4**.

<b>Pollutant:</b>	Air blast overpressure & ground vibration peak particle velocity
<b>Unit of measure:</b>	dB (Lin Peak) and millimetres per second (mm/s)
<b>Monitoring locations:</b>	See <b>Table 3</b> , <b>Table 4</b> and <b>Appendix C</b> .
<b>Monitoring frequency required by licence:</b>	All blasts
<b>Overpressure limits:</b>	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
<b>Ground vibration limits:</b>	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
<b>Sampled:</b>	01/12/2020 – 31/12/2020



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**Table 3. Blast Overpressure Monitoring Summary**

Sampling point	Pollutant	Unit of measure	No. of samples required by licence	No. of samples collected and analysed	Minimum value	Maximum value	Mean of samples
BLK (EPA20)	Overpressure	dB(L)	All blast events	15	89.60	115.30	101.22
SCH (EPA19)	Overpressure	dB(L)	All blast events	15	80.40	99.30	92.33
MRE (EPA12)	Overpressure	dB(L)	All blast events	15	95.10	117.50	106.05

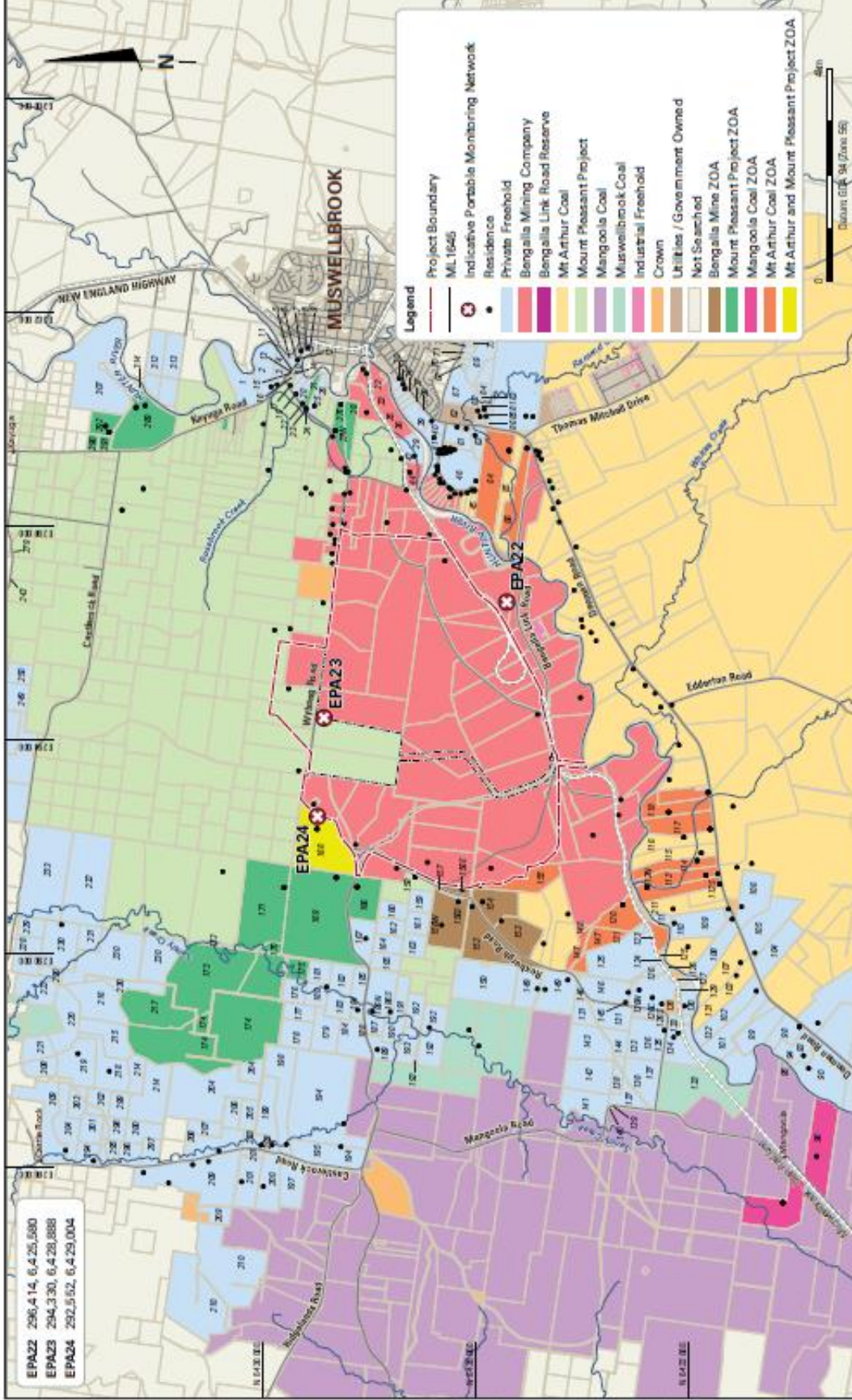
**Table 4. Blast Vibration Monitoring Summary**

Sampling point	Pollutant	Unit of measure	No. of samples required by licence	No. of samples collected and analysed	Minimum value	Maximum value	Mean of samples
BLK (EPA20)	Ground vibration	mm/s	All blast events	15	0.02	0.47	0.22
SCH (EPA19)	Ground vibration	mm/s	All blast events	15	0.02	0.17	0.08
MRE (EPA12)	Ground vibration	mm/s	All blast events	15	0.08	3.23	1.63

Operator, for and on behalf of Bengalla Joint Venture, an unincorporated joint venture between:  
New Hope Bengalla Pty Ltd, Taipower Bengalla Pty Limited.

# **Appendix A**

## **EPL 6538 Particulate Matter Monitoring Locations**



BENGALLA MINE

EPL 6538 PM10 Monitoring Locations

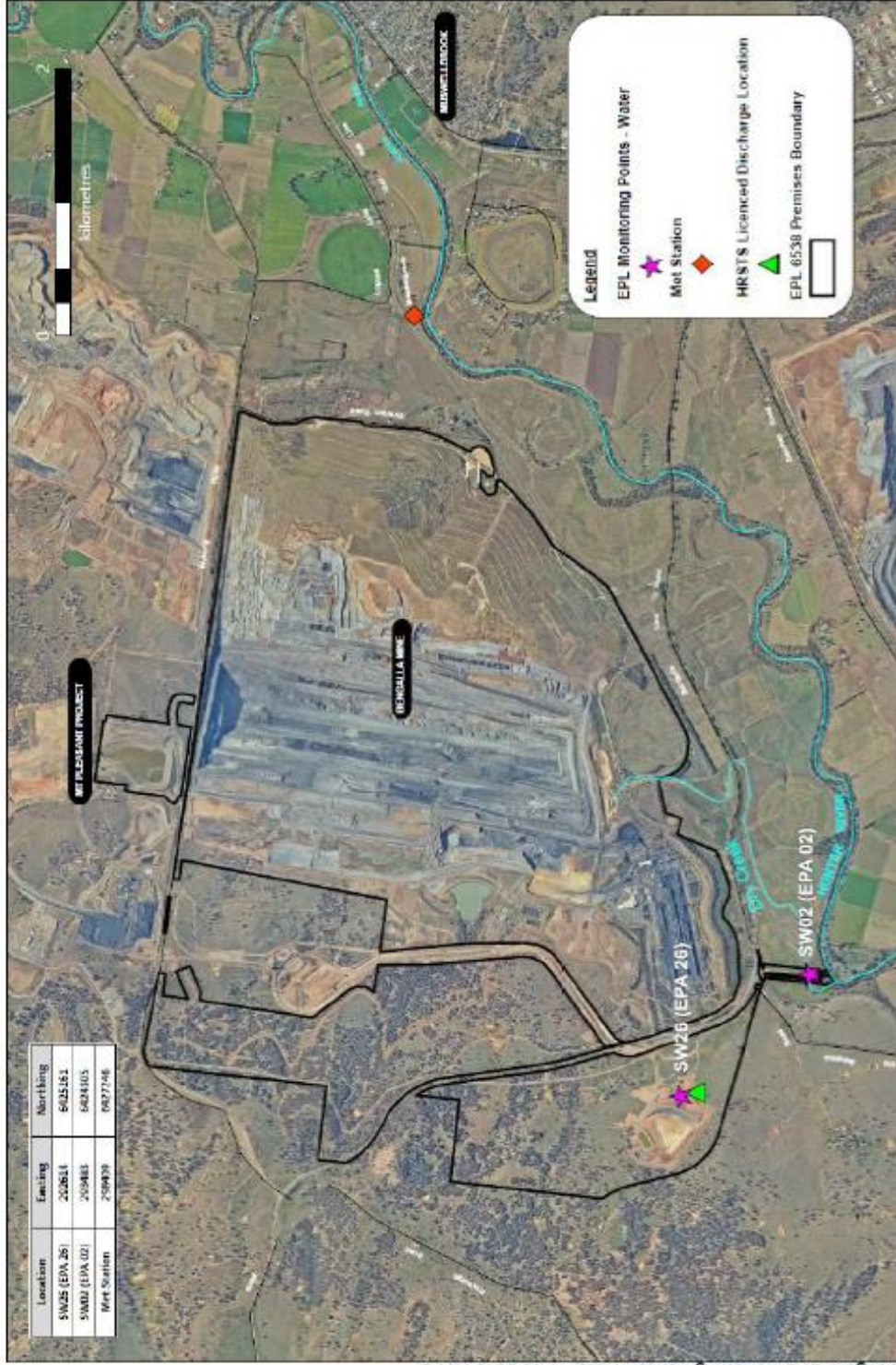
EPA22 296,414, 6,425,580  
 EPA23 294,330, 6,428,888  
 EPA24 292,952, 6,429,004



# **Appendix B**

## **EPL 6538 Surface Water Monitoring Locations**





Location	Easting	Northing
SW25 (EPA 26)	202614	6425151
SW02 (EPA 02)	205483	6424105
Met Station	208939	6427748

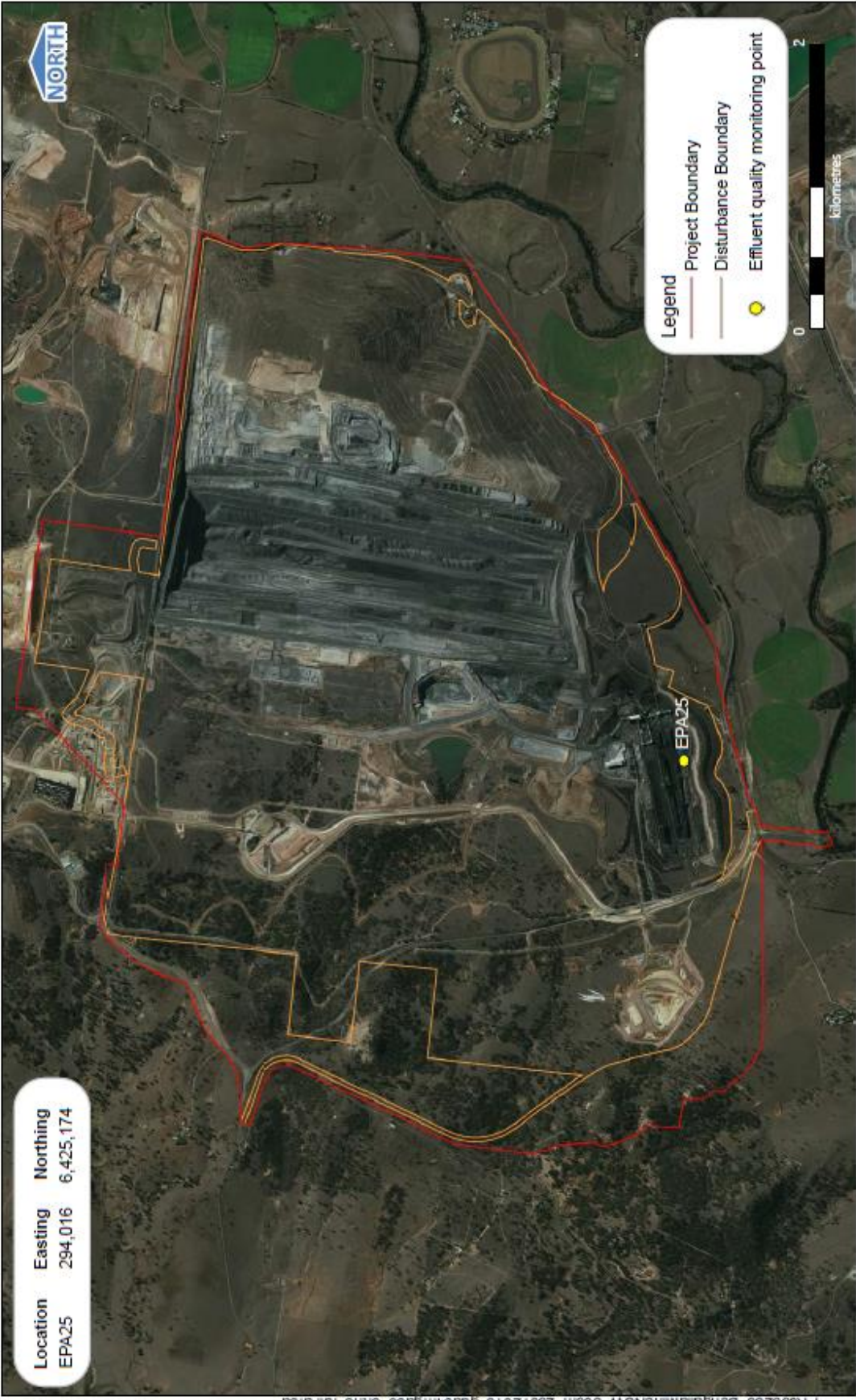
Bengalla EPL Monitoring Points - Water 17 09 2019 Rev B

Note: Coordinates are approximate only  
Coordinate system GDA94 (zone 56)

**BENGALLA MINE**  
**EPL Monitoring Points - Water**



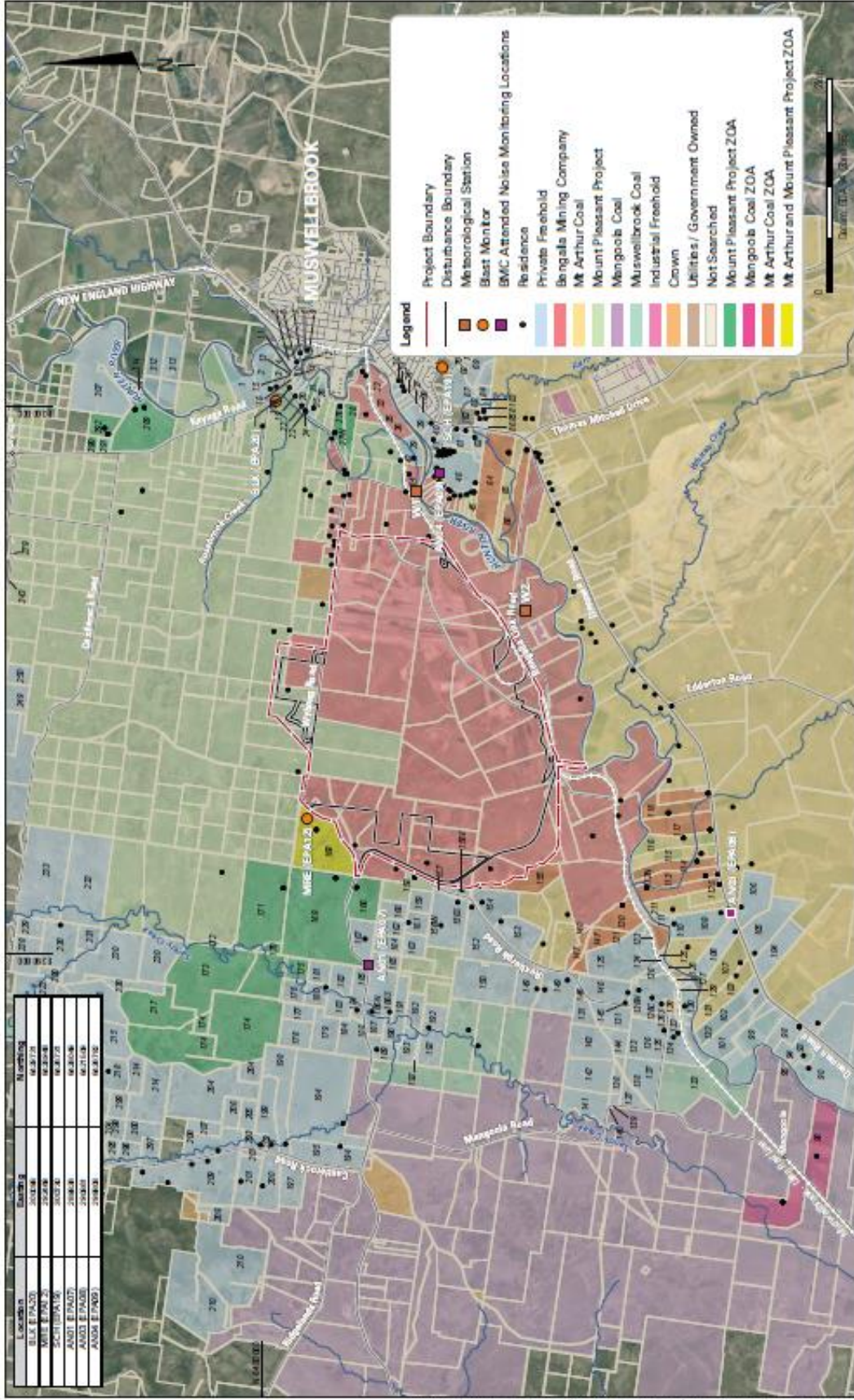






# **Appendix C**

## **EPL 6538 Noise and Blast Monitoring Locations**



H010301A EPL 142071 Bengalla Coal Mine - Acoustic Modelling - Final Version 03 2018



BENGALLA MINE

EPL 6538 Noise & Blast Monitoring Locations