

# Rasp Mine Monthly Environmental Monitoring Report February 2020



#### INTRODUCTION

Broken Hill Operations Pty Ltd (BHOP) [a wholly owned subsidiary of CBH Resources Limited (CBH)] owns and operates the Rasp Mine (the Mine), which is located centrally within the City of Broken Hill on Consolidated Mine Lease 7 (CML7).

Mining has been undertaken within CML7 since 1885. The existing operations at the Rasp Mine include underground mining operations, a processing plant producing zinc and lead concentrates and a rail siding for concentrate dispatch. These operations are undertaken in accordance with Project Approval 07\_0018 granted 31 January 2011, under Part3A of the Environmental Planning and Assessment Act 1979 (EP&A Act).

As the holder of an Environmental Protection Licence, 12559, BHOP is required, under Section 66(6) of the NSW *Protection of the Environment Operations Act 1997,* to publish pollution monitoring data. In addition BHOP is required to publish data in accordance with its Project Approval 07\_0018 Schedule 4 Condition 9. These documents can be found on the Rasp Mine web site.

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# 1 Air Quality

The following criteria as listed in the Project Approval (DA 07\_0018 MOD7 July 2019) apply to air quality monitoring:

#### **Long Term Criteria for Particulate Matter**

Pollutant	Averaging Period	Criterion
Total solid particles (TSP)	Annual	90 μg/m³
Particulate matter < 10 µm (PM <sub>10</sub> )	Annual	25 μg/m³

#### **Short Term Criterion for Particulate Matter**

Pollutant	Averaging Period	Criterion
Particulate matter < 10 µm (PM <sub>10</sub> )	24 hour	50 μg/m <sup>3</sup>

#### **Long Term Criteria for Deposited Dust**

Pollutant	Averaging Period	Maximum Project Contribution	Maximum Total Deposited Dust Level	
Deposited dust	Annual	2 g/m <sup>2</sup> /month	4 g/m <sup>2</sup> /month	

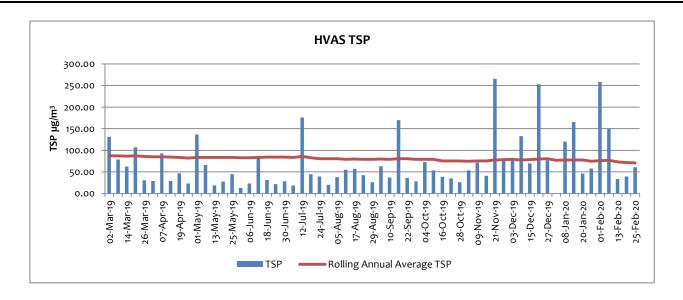
#### 1.1 High Volume Air Samplers

There are four high volume air samplers used to measure ambient air quality at the Rasp Mine – HVAS (EPL10) and HVAS1 (EPL11) are located at the Silver Tank, central and to the south of the mine lease, and HVAS2 (EPL12) and HVAS3 (EPL57) are located adjacent to and north of Blackwood Pit. A map indicating these locations can be found on the Rasp Mine web site. HVAS and HVAS3 sample for total suspended particulates (TSP) and lead dust, and HVAS1 and HVAS2 sample for particulate matter less than 10 microns (PM<sub>10</sub>) and lead dust.

#### HVAS (EPL10) - Silver Tank (On Site) Results for February

DATE	TSP (µg/m³)	Lead (μg/m³)
1-02-2020	258.00	0.14
7-02-2020	150.00	0.05
13-02-2020	33.10	0.05
19-02-2020	39.60	0.13
25-02-2020	60.90	0.18

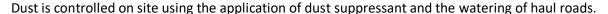


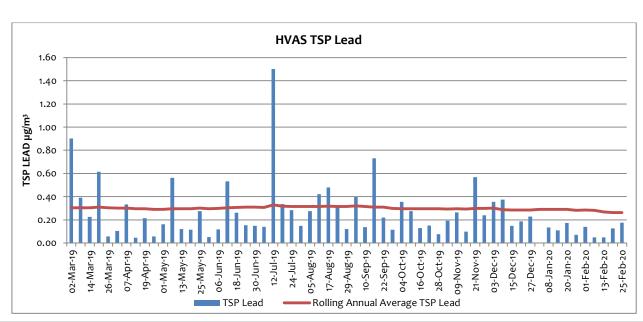


HVAS (EPL10) is located on the southern boundary of Rasp Mine and while limit criteria do not apply at this point, they do apply at the closest residential location.

There was an elevated TSP dust level of 258  $\mu g/m^3$  recorded on 1 February and an elevated result of 158  $\mu g/m^3$  recorded on 7 February. The predominant wind direction on 1 February was from the WNW and the low TSP Lead level of 0.14  $\mu g/m^3$  suggests the level of 258  $\mu g/m^3$  recorded was due to a regional dust event. TEOM1, situated to the South of the site, also recorded an elevated daily average PM10 reading of 200.3  $\mu g/m^3$  indicating the high dust level was likely the result of a regional dust storm. The TSP dust level of 158  $\mu g/m^3$  recorded on 7 February was not likely to be the result of site activities as the predominant wind direction was from the SE. Overall the trend for TSP at this location has fallen over the 12 months to 70.84  $\mu g/m^3$  in February after reaching a high of 86.97  $\mu g/m^3$  in March 2019.

The rolling annual average for TSP to February is 70.84  $\mu$ g/m<sup>3</sup> which is below the long term annual average criteria of 90  $\mu$ g/m<sup>3</sup>.







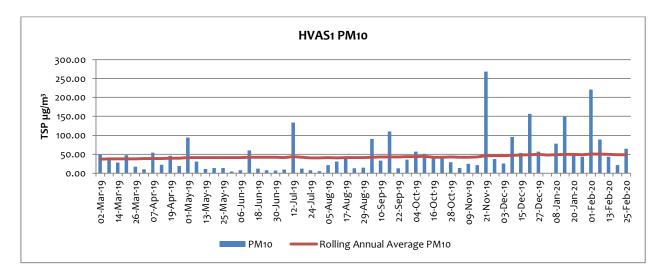
The rolling annual average for TSP Lead at 26 February was 0.26  $\mu g/m^3$ , down from the previous month's value of 0.28  $\mu g/m^3$ .

#### HVAS1 (EPL11) - Silver Tank (On Site) Results for February

DATE	PM10 (μg/m³)	PM10 Lead (μg/m³)
1-02-2020	221.00	0.15
7-02-2020	89.00	0.07
13-02-2020	43.70	0.12
19-02-2020	21.40	0.06
25-02-2020	64.30	0.18

HVAS1 (EPL11) is located on the southern boundary of Rasp Mine and while limit criteria do not apply at this point, they do apply at the closest residential location.

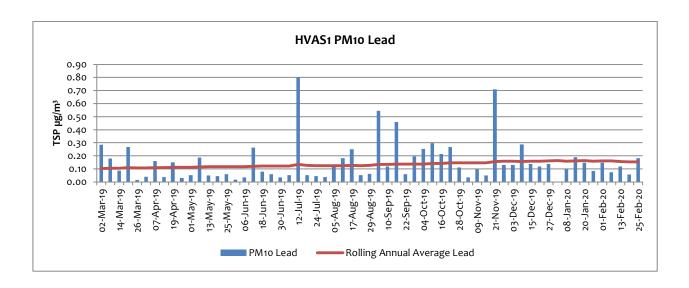
There was an elevated PM10 dust level of 221  $\mu g/m^3$  recorded on 1 February and an elevated result of 89  $\mu g/m^3$  recorded on 7 February. While the predominant wind direction on 1 January was from the WNW, the low PM10 Lead level record of 0.15  $\mu g/m^3$  suggests there was minimal impact from site activities. TEOM1 situated to the South of the site recorded an elevated daily average PM10 reading of 200.3  $\mu g/m^3$  indicating the high dust level was likely the result of a regional dust storm. The PM10 dust level of 89  $\mu g/m^3$  recorded on 7 February was not likely to be the result of site activities as the predominant wind direction was from the SE. Overall the trend in annual rolling average for PM10 at this location has risen over the 12 months from 37.3  $\mu g/m^3$  in March 2019 to 48.6  $\mu g/m^3$  on 25 February 2020.



There is no guideline for assessing  $PM_{10}$  lead dust; the trend for PM10 lead dust at this location has risen over the previous 12 months from 0.10  $\mu g/m^3$  to 0.15  $\mu g/m^3$  and is likely the result of drought conditions and windy weather



transporting lead contaminated dust from the Broken Hill environs. There was an elevated PM10 lead dust level of  $0.18~\mu g/m^3$  recorded on 25 February. As the wind was from the SW on this day the contribution from the site is likely to be minimal at this location.



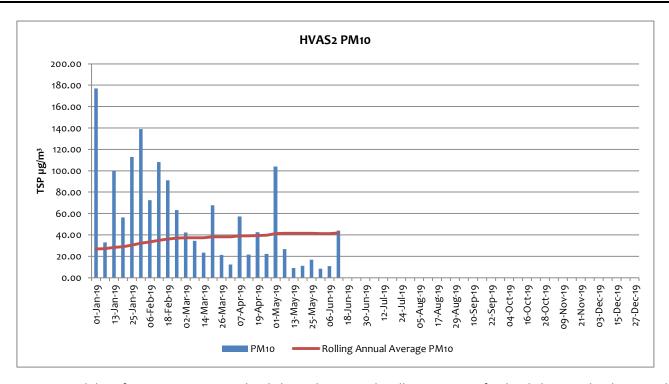
HVAS 2 (EPL12) - Blackwood Pit (On Site) Results for February

DATE	PM10 (μg/m³)	Lead (μg/m³)
1-02-2020	NS	NS
7-02-2020	NS	NS
13-02-2020	NS	NS
19-02-2020	NS	NS
25-02-2020	NS	NS

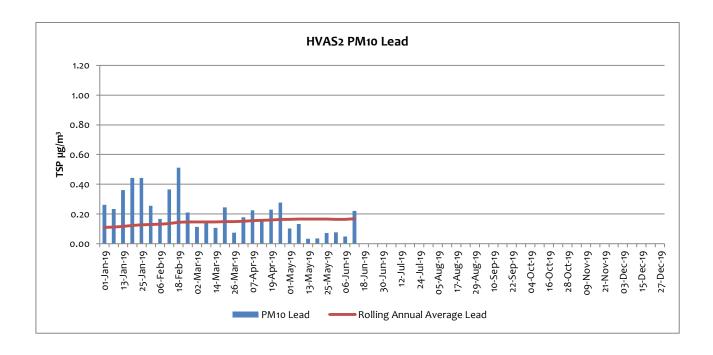
HVAS2 (EPL12) is located on the northern boundary of Rasp Mine and while limit criteria do not apply at this point, they do apply at the closest residential location. HVAS2 has been decommissioned while Embankment 2 TSF2 construction works are undertaken. A real-time PM10 monitor is in place adjacent to the HVAS2 location.

The rolling annual average  $PM_{10}$  to June 2019 is 41.74 µg/m<sup>3</sup> is above the  $PM_{10}$  annual average criterion 25 µg/m<sup>3</sup> required at the nearest residential location. Calculation of the rolling annual average includes results from days when there were dust storm events.





There is no guideline for assessing PM10 lead dust; the Annual Rolling Average for lead dust at this location has increased over the previous 12 months from  $0.07 \,\mu\text{g/m}^3$  to  $0.16 \,\mu\text{g/m}^3$  at the end of June 2019.



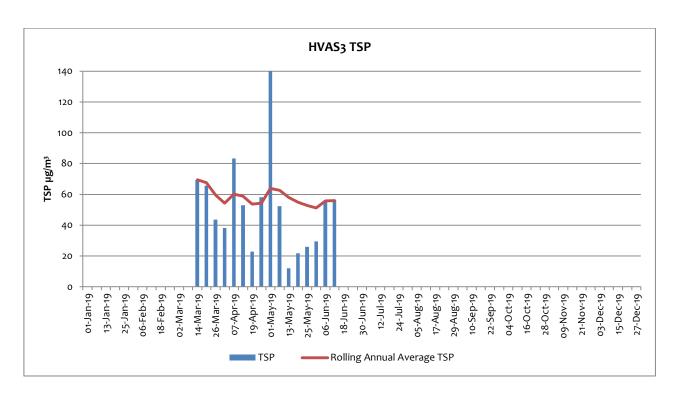
HVAS 3 (EPL57) - Blackwood Pit (On Site) Results for January

DATE	TSP (μg/m³)	PM10 Lead (μg/m³)
3-12-2019	NS	NS
9-12-2019	NS	NS

15-12-2019	NS	NS
21-12-2019	NS	NS
27-12-2019	NS	NS

HVAS3 (EPL57) is located on the northern boundary of Rasp Mine and while limit criteria do not apply at this point, they do apply at the closest residential location. HVAS3 (EPL57) was included in EPL 12559 on 14 March 2019 to provide for monitoring of TSP Dust on the northern boundary of the site at Blackwoods Pit TSF2. HVAS3 has been decommissioned while Embankment 2 TSF2 construction works are undertaken. A real-time PM10 monitor is in place adjacent to the HVAS2 location.

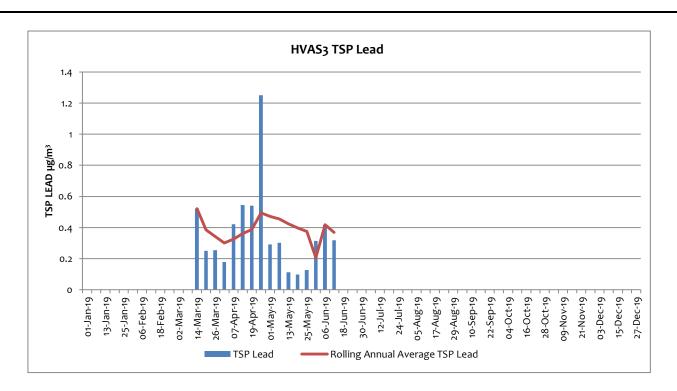
The rolling annual average for TSP to June is 56.05  $\mu$ g/m<sup>3</sup> which is below the long term annual average criteria of 90  $\mu$ g/m<sup>3</sup>.



The rolling annual average for TSP Lead to June 2019 is  $0.37 \mu g/m^3$ .









#### 1.2 Tapered Element Oscillating Microbalance Sampling (TEOM)

There are two Tapered Element Oscillating Microbalance (TEOM) sampling units used to measure ambient air quality at the Rasp Mine – TEOM1 (EPL13) is located off-site within the perimeter fence of Essential Water south of the mine lease, and TEOM2 (EPL14) is located on-site adjacent to Blackwood Pit to the north of the mine lease. A map indicating these locations can be found on the Rasp Mine web site. TEOM1 and TEOM2 operate continuously and sample for particulate matter less than 10 microns (PM<sub>10</sub>) in size.

TEOM2 was decommissioned from 19 June due to Embankment 2 TSF2 construction works. The decommissioning is in accordance with dust management strategies agreed with the EPA which includes the operation of a real-time PM10 monitor north of the construction works. Both Project Approval and Environment Protection Licence criteria exclude dust storms and other extraordinary events.

Project Approval 07\_0018 apply at TEOM1 and 2, with two criteria listed for PM10, a 24 hour average criteria of 50 ug/m<sup>3</sup> and an annual average criteria of 25 ug/m<sup>3</sup>.

TEOM data is validated by third party consultants using Australian Standards and internal procedures.



#### TEOM1 (EPL13) (Off Site) and TEOM2 (EPL14) (On Site) Results for February - validated

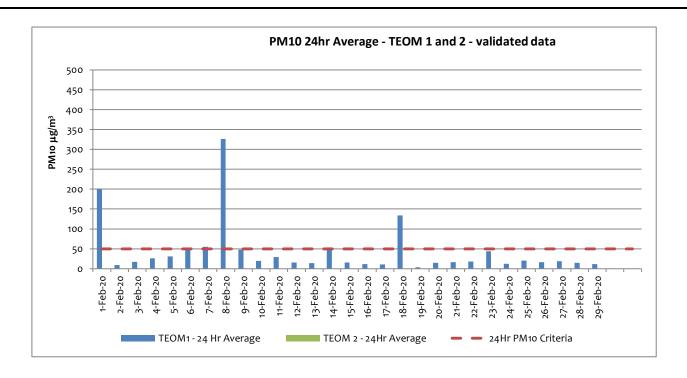
01-Feb-20		50μg/m³ 24hr average?	(μg/m³)	Compliant with 50µg/m³ 24hr average?
	200.3	Υ	NS	Υ
02-Feb-20	8.7	Υ	NS	Υ
03-Feb-20	17.3	Υ	NS	Υ
04-Feb-20	26.2	Υ	NS	Υ
05-Feb-20	30.4	Υ	NS	Υ
06-Feb-20	48.3	Υ	NS	Υ
07-Feb-20	55.2	Υ	NS	Υ
08-Feb-20	326.5	Υ	NS	Υ
09-Feb-20	47.5	Υ	NS	Υ
10-Feb-20	19.3	Υ	NS	Υ
11-Feb-20	29.2	Υ	NS	Υ
12-Feb-20	15.2	Υ	NS	Υ
13-Feb-20	13.6	Υ	NS	Υ
14-Feb-20	53.3	Υ	NS	Υ
15-Feb-20	15.7	Υ	NS	Υ
16-Feb-20	11.4	Υ	NS	Υ
17-Feb-20	10.3	Υ	NS	Υ
18-Feb-20	133.8	Υ	NS	Υ
19-Feb-20	3.8	Υ	NS	Υ
20-Feb-20	14.7	Υ	NS	Υ
21-Feb-20	16.7	Υ	NS	Υ
22-Feb-20	17.6	Υ	NS	Υ
23-Feb-20	43.9	Υ	NS	Υ
24-Feb-20	12.5	Υ	NS	Υ
25-Feb-20	20.4	Υ	NS	Υ
26-Feb-20	16.0	Υ	NS	Υ
27-Feb-20	18.9	Υ	NS	Υ
28-Feb-20	15.0	Υ	NS	Υ

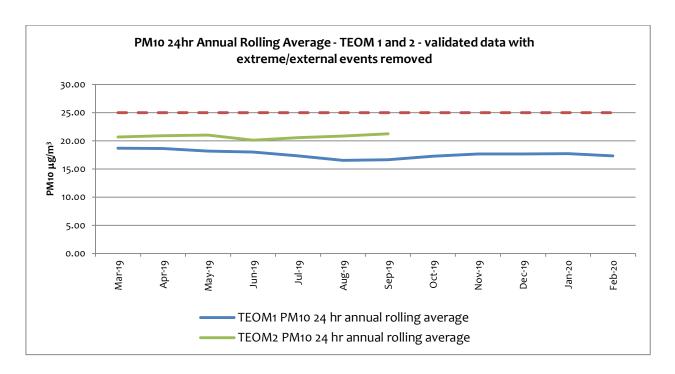
NS<sup>1</sup> – no sample collected due to temporary decommissioning of TEOM unit.

The graph below presenting validated data includes results impacted by dust storms and external events. Dust storms occurred throughout February and produced conditions where dust levels were elevated throughout each day. Elevated dust levels for a 24hr average (over  $50 \, \mu g/m^3$ ) were recorded on 1, 7, 8, 14, and 18 February. On these days the wind was blowing from the WNW, SE, SE, SSW, and SW respectively, which suggests the dust recorded was the result of regional dust storms.

The PM10 24-hour rolling average for data with external elevated dust events removed at January 2020 is 17.30  $\mu g/m^3$  for TEOM1 and has remained at 20.52  $\mu g/m^3$  for TEOM2 as the rolling average has not been calculated while the unit has been decommissioned.







#### 1.3 Dust Deposition Sampling

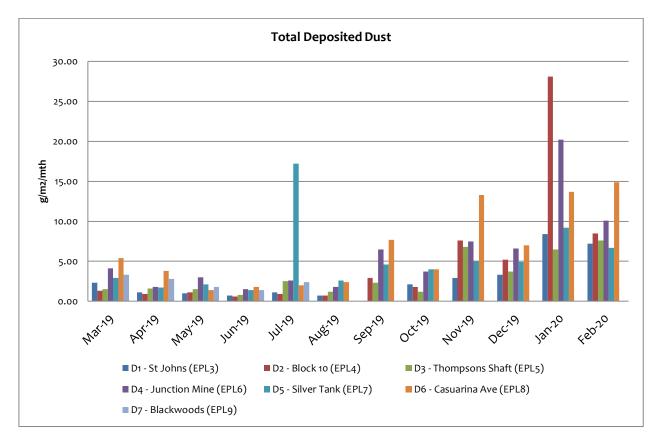
There are seven dust deposition gauges to measure ambient air quality at the Rasp Mine – D1 to D7. D1 and D6 are located off-site, D1 near the St Johns training facility north of the Rasp Mine and D6 in Casuarina Avenue south of the Rasp Mine. D2 to D5 and D7 are located on the mine lease in various locations. A map indicating these locations can be found on the Rasp Mine web site. Dust samples are collected monthly and analysed for total deposited dust and deposited lead dust. DDG7 has been decommissioned since June 2019 due to works on TSF Embankment 2.



### Dust Deposition Gauges (D1 (EPL3) to D7 (EPL9)) – Results for February

Total Deposited Dust (g/m <sup>2/</sup> Month)								
Date	D1 (off site)	D2 (on site)	D3 (on site)	D4 (on site)	D5 (on site)	D6 (off site)	D7 (on site)	
February 2020	7.2	8.5	7.6	10.10	6.7	14.9	NS	
Background (2010)	4.0	3.1	4.3	5.7	-1	5.8	-1	
Compliant?	Υ	N/A	N/A	N/A	N/A	Υ	N/A	

Note: "1"= background not available, N/A = not applicable as dust deposition unit is located on site, NS = No sample



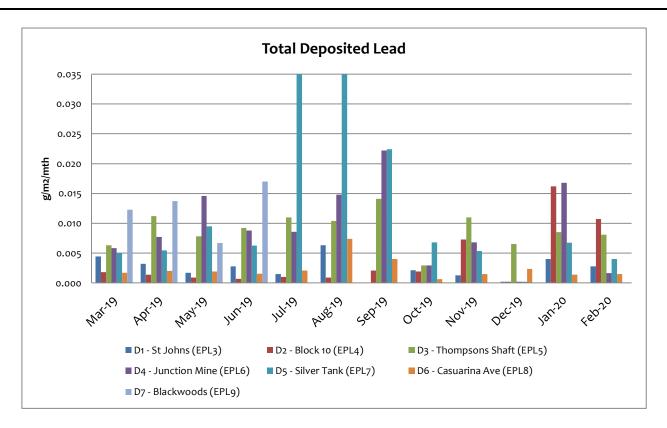
Dust results were elevated for all dust gauges in February, particularly at D6 Casuarina Avenue. Wind was predominantly from the South with dust storms throughout February. Construction works are being conducted on the Essential Water site where the D2 Dust Gauge is situated.

BHOP is not likely to have contributed significantly to the dust captured in these dust gauges.

Total Deposited Lead (g/m²/Month)								
Date	D1 (off Site)	D2 (on site)	D3 (on site)	D4 (on site)	D5 (on site)	D6 (off Site)	D7 (on site)	
February 2020	0.00279	0.0107	0.00808	0.002	0.004	0.00147	NS	
Background (2010)	0.0034	0.005	0.005	0.006	-1	0.004	-1	

**Note**: "1"= background not available, NS = No sample





There are no guidelines for deposited lead dust. Lead results in January were highest at D2 Block 10 and D3 Thompsons Shaft. The predominant wind direction for the month was from the South. Construction works are being conducted on the Essential Water site where the D2 Dust Gauge is situated.

Dust suppressant is applied to unsealed areas of the site.

#### 1.4 Ventilation Outlets and Bag House Monitoring

There are two locations to measure pollutants from exhausts or stacks; these include the Primary Ventilation Shaft, measuring pollutants from underground firings, and the Baghouse Stack at the crusher measuring dust. Each are located on site; the Primary Ventilation Shaft is located centrally and to the north of the mine lease and the Primary Crusher Baghouse Stack is located within the area of the processing plant to the east of the lease. Shaft 6 (EPL56) was removed as a monitoring location with the variation of EPL12559 in March 2019 as it became an intake rather than an exhaust in April 2018. A map indicating these locations can be found on the Rasp Mine web site. Samples are collected quarterly and analysed for a number parameters listed in below. Reference to the item required in the Rasp Mine Environment Protection Licence (EPL) is provided below. Emissions monitoring is conducted quarterly.

The following criteria apply:

#### **Primary Ventilation Shaft (EPL1)**

	Unit	Criteria
Nitrogen Oxides	mg/m³	350
Volatile Organic Compounds	mg/m <sup>3</sup>	40



#### Primary Ventilation Shaft (EPL1) and Crusher Baghouse (EPL2)

	Unit	Criteria
Total Suspended particles	mg/m³	20
Type 1 and Type 2 <sup>1</sup>	mg/m³	1

**Note 1:** "Type 1 substance" means the elements antimony, arsenic, cadmium, lead or mercury or any compound containing one or more of those elements.

#### Primary Vent Shaft (EPL1) and Crusher Baghouse (EPL2) Results for February 2020

No monitoring was scheduled in February as the last round was conducted in December. The next round of monitoring is scheduled for March.

#### 2 Noise

#### 2.1 Blasting (Vibration and Overpressure)

There are 6 vibration monitors at various locations to measure for vibration and overpressure from blast firings. These include V1 to V5 which are located off-site and V6 which is located on-site near Shaft 4. A map indicating these locations can be found on the Rasp Mine web site. In addition there are 2 roving monitors, which may be used to monitor vibration and overpressure at particular locations as required. Monitors operate continuously and are automatically triggered when a blast occurs. The following conditions apply as listed in the PA 07\_0018 and EPL 12559:-

#### Blasting Criteria (Western Mineralisation and Main Lodes excluding Block 7)

Location	Airblast Overpressure (dB(Lin Peak))	Ground Vibration (mm/s)	Allowable Exceedance (for production and development blasts)
Residence on privately		5	5% of the total number
owned land	115		of blasts over a 12-month
(7am-7pm)			period <sup>1</sup>
(7am-7pm)	120	10	0%
(7pm-10pm)	105	=	-
(10pm-7am)	95	=	-
Public Infrastructure	-	100	0%

**Note 1**: Does not apply until completion of Pollution Reduction Program on the EPL at the end of 2018. Applies to EPL criteria in the period for the Annual Return 3 Nov to 2 Nov the following year and to DPE criteria in the reporting period 1 Jul to 30 Jun each year.

#### **Blasting Criteria (Block 7)**

Location	Airblast Overpressure (dB(Lin Peak)	Ground Vibration (mm/s)	Allowable Exceedance (for production and development blasts)
Residence on privately owned land	115	3 (interim)	5% of the total number of blasts over a 12-month period <sup>1</sup>
(7am-7pm)			
(7am-7pm)	120	10	0%

<sup>&</sup>quot;Type 2 substance" means the elements beryllium, chromium, cobalt, manganese, nickel, selenium, tin or vanadium or any compound containing one or more of those elements.



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(7pm-10pm)	105	-	-
(10pm-7am)	95	-	-
Broken Hill Bowling			
Club, Italio (Bocce)	-		
Club, Heritage Items		50	0%
within CML7			
Perilya Southern	-		
Operations		100	0%
Public Infrastructure	-	100	0%

**Note 1**: Applies to EPL criteria in the period for the Annual Return 3 Nov to 2 Nov the following year and to DPE criteria in the reporting period 1 Jul to 30 Jun each year.

In addition the following conditions also apply:-

- Production blasts may occur between 6.45 am and 7.15 pm on any day
- 1 production blast per day, with 6 per week averaged over a calendar year
- 6 development blasts per day, with 42 per week averaged over a calendar year

#### **Blasting Data Summary Results for February**

#### **Total Blasts:**

- 0 production blasts occurred before 6.45 am or after 7.15 pm
- The number of Production blasts averaged 4.00 per week over the previous calendar year
- The number of Development blasts averaged 36.44 per week over the previous calendar year

#### Western Mineralisation and Main Lodes (excluding Block 7):

- 1 Blast recorded >5 mm/s
- 0 Blasts recorded >10 mm/s
- 0 development blasts recorded an over pressure level over 95 dBL (10pm to 7am)
- 0 development blasts recorded an over pressure level over 105 dBL (7pm to 10pm)
- 0 Blasts recorded an over pressure level over 115dBL (7am to 7pm)
- 0 Blasts recorded an over pressure level over or 120 dBL at any time
- Percentage of development blasts over 5 mm/sec = 0%
- Percentage of production blasts over 5 mm/sec = 4.8%

#### Block 7:

- 0 Blasts recorded >3 mm/s
- 0 Blasts recorded >10 mm/s
- 0 Blasts recorded >50 mm/s at V6
- 0 development blasts recorded an over pressure level over 95 dBL (10pm to 7am)
- 0 development blasts recorded an over pressure level over 105 dBL (7pm to 10pm)
- 0 Blasts recorded an over pressure level over 115 dBL (7am to 7pm)
- 0 Blasts recorded an over pressure level over or 120 dBL at any time
- Percentage of development blasts over 3mm/sec = 0%
- Percentage of production blasts over 3mm/sec = 40.0%

#### 2.2 Noise

Noise monitoring is undertaken as per the NSW Noise Policy for Industry at a frequency of once per annum. Annual noise monitoring was conducted in October 2019.

The monitoring assessment found that site LAeq, 15min noise contributions satisfied the relevant limits during the measurements at all assessment locations



#### 3 Water

#### 3.1 Groundwater

There are eighteen sampling locations for groundwater. GW01 (EPL37) to GW16 (EPL52) are piezometers installed at various locations around the mine site and are sampled quarterly. There are also two sampling locations for water pumped from underground mining, Shaft 7 (EPL53) and Kintore Pit (EPL54), which are sampled monthly. A map indicating these locations can be found on the Rasp Mine web site. Groundwater monitoring is scheduled for completion in March, June, September and January. No limits are applied in the EPL to the results from groundwater monitoring.

#### **Groundwater Monitoring Requirements**

EPA Identification Number	Frequency	Parameters to be analysed
Shaft 7 EPL53	Monthly	alkalinity (calcium carbonate (CaCO <sub>3</sub> )), cadmium (Cd), calcium (Ca), chloride (Cl), electrical conductivity (EC), iron (Fe), lead Pb),
Kintore Pit (U/G dewatering) EPL54	Monthly	magnesium (Mg), manganese (Mn), pH, sodium (Na), sulphate
Piezometers EPL37 (GW01) to EPL52 (GW16)	Quarterly	(SO4), total dissolved solids (TDS) and zinc (Zn)

#### Shaft 7 (EPL53) and Kintore Pit (EPL54) Results for February

Sample Point	рН	EC (μS/cm²)	TDS (mg/l)	Alkalinity (CaCO <sub>3</sub> ) (mg/l)	SO4 (mg/l)	CI (mg/I)	Ca (mg/I)	Mg (mg/l)	Na (mg/l)	Cd (mg/l)	Pb (mg/l)	Mn (mg/l)	Zn (mg/l)	Fe (mg/l)
Shaft 7 (EPL53)	6.27	13100	14500	20	6040	1750	490	253	1620	2.43	1.24	334	1070	0.74
Kintore Pit (EPL54)	5.95	12700	18500	7	5890	1690	493	246	1580	2.62	1.04	366	1150	2.59

#### Groundwater Bores (EPL37 - EPL52) Results for February

No monitoring was scheduled in February.

#### 3.2 Surface Water Sample Record

There are seven sampling locations for surface water, these include surface water basins located on the mine lease to capture and retain rainfall and two locations up and down stream of an ephemeral creek located south of the mine lease boundary. A map indicating these locations can be found on the Rasp Mine web site. Sampling is undertaken in October (highest rainfall month as recorded by Bureau of Meteorology) and April.

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#### **Surface Water Monitoring Requirements**

Description	Frequency	Parameters to be Analysed	
Federation Way Culvert EPL29/S31-1	2 x per year, six months apart		
Ryan Street Dam EPL31/S49	2 x per year, six months apart	cadmium (Cd), chloride (Cl), electrical	
Adjacent Olive Grove EPL32/S1A	2 x per year, six months apart	conductivity (EC), lead Pb), manganese (Mn), pH, sodium (Na), sulphate (SO4),	
Adjacent Bowls Club EPL33 /S9-B2	2 x per year, six months apart	total dissolved solids (TDS) and zinc (Zn)	
Horwood Dam EPL34/S34	2 x per year, six months apart		
Upstream Bonanza St EPL35	2 x per year, six months apart		
Downstream Sydney Rd EPL36	2 x per year, six months apart		

#### **Surface Water Monitoring Results**

No monitoring required in February.

#### 4 Weather Data

The weather station continuously monitors the following parameters as per Point 55 of the Environmental Protection Licence.

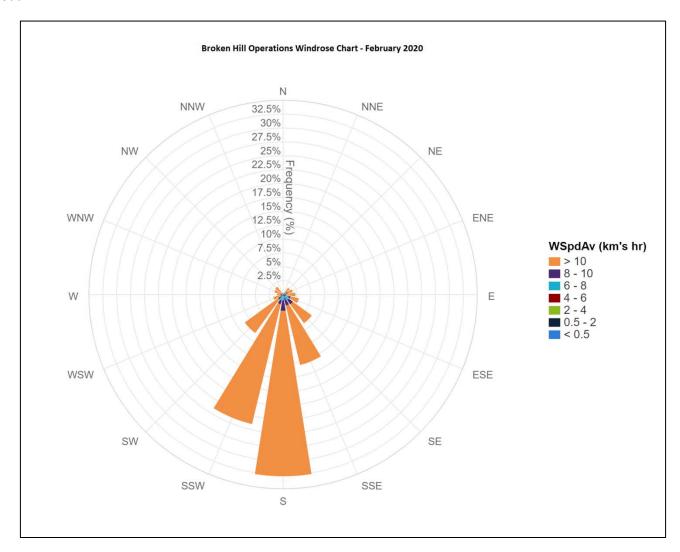
The following parameters are required to be recorded each month as listed in the EPL 12559:-

#### Rasp Mine Weather Station (EPL55) Monitoring Requirements

Parameter	Sampling method	Units of measure	Averaging period	Frequency
Temperature at 10 metres	AM-4	degrees Celsius	15 minutes	Continuous
Wind Direction at 10 metres	AM-4	degrees in a clockwise direction from True North	15 minutes	Continuous
Wind Speed at 10 metres	AM-4	metres per second	15 minutes	Continuous
Rainfall	AM-4	millimetres	1 hour	Continuous
Sigma theta	AM-2 & AM-4	degrees	15 minutes	Continuous



The windrose provided below indicates the predominant wind direction for the month of February was from the South.





# Weather Data Summary for February

Date	Tempe @ 10r	erature m (°C)	Wind Speed @ 10m (km/hr)		Predomina Direction		Rainfall (mm)
	Min	Max	Min	Max	Cardinal	Degree	Total
01-Feb-20	19.2	34.6	9.3	34.9	WNW	291	0.00
02-Feb-20	15.3	21.0	4.9	42.3	South	179	0.10
03-Feb-20	14.8	23.2	9.5	30.8	South	178	0.00
04-Feb-20	14.2	24.7	7.9	34.3	SSE	157	0.00
05-Feb-20	14.7	29.3	7.1	26.2	South	179	0.00
06-Feb-20	18.8	30.9	4.0	30.6	South	185	0.10
07-Feb-20	19.9	29.7	6.4	40.0	SE	136	1.70
08-Feb-20	19.0	30.3	8.5	38.1	SE	134	0.00
09-Feb-20	16.2	21.4	5.2	39.1	SE	137	0.00
10-Feb-20	15.4	28.8	4.0	31.7	SSW	204	0.00
11-Feb-20	17.7	30.5	9.6	31.9	SSW	203	0.00
12-Feb-20	15.9	28.6	9.5	34.2	South	181	0.00
13-Feb-20	19.7	34.1	3.4	23.5	SSW	202	0.00
14-Feb-20	20.5	35.6	2.3	39.2	SSW	203	0.00
15-Feb-20	17.3	28.0	9.4	38.9	South	182	0.00
16-Feb-20	16.7	30.5	6.2	29.9	South	180	0.00
17-Feb-20	18.7	32.7	2.0	24.3	South	179	0.00
18-Feb-20	15.6	29.1	4.5	43.6	SW	220	0.00
19-Feb-20	13.9	23.0	8.9	36.3	South	180	0.00
20-Feb-20	13.0	23.5	8.4	26.6	South	180	0.00
21-Feb-20	14.4	25.1	8.0	27.1	South	177	0.00
22-Feb-20	14.5	27.3	8.4	35.3	SSE	155	0.00
23-Feb-20	19.2	30.6	2.1	33.4	NE	46	0.00
24-Feb-20	20.0	29.8	4.5	25.9	NE	42	0.00
25-Feb-20	22.6	33.3	3.7	28.3	SW	225	0.00
26-Feb-20	18.0	27.6	7.7	33.2	South	180	0.00
27-Feb-20	12.9	23.2	8.2	26.2	South	181	0.00
28-Feb-20	12.4	24.2	6.5	28.9	SSE	157	0.00
29-Feb-20	15.7	29.0	3.6	14.4	SE	135	0.00



# 5 Data Log

Sample	Result Received
Hi Volume Samples	12-03-2020
ТЕОМ	27-03-2020
Dust Deposition	25-03-2020
Vents & Bag House	NA
Water	20-02-2020
Blast vibration and overpressure	27-03-2020
Weather	4-03-2020
Date posted to web site	20-04-2020

# **6 Correction Log**

Nil corrections.