



Rasp Mine  
Monthly Environmental Monitoring Report  
January 2025

## **INTRODUCTION**

Broken Hill Operations Pty Ltd (BHOP) [a wholly owned subsidiary of Broken Hill Mines (BHM)] 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 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 Broken Hill Mines web pages at [www.coolabahmetals.com.au/sustainability-1](http://www.coolabahmetals.com.au/sustainability-1).

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## 1 Air Quality

Table 1 below shows the following pollutants as listed in the Project Approval DA 07\_0018 are required to be monitored in EPL 12559:

**Table 1: EPL 12559 monitoring criteria  
Long Term Criteria for Particulate Matter**

Pollutant	Averaging Period	Criterion
Total solid particles (TSP)	Annual	90 µg/m <sup>3</sup>
Particulate matter < 10 µm (PM <sub>10</sub> )	Annual	25 µg/m <sup>3</sup>

**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

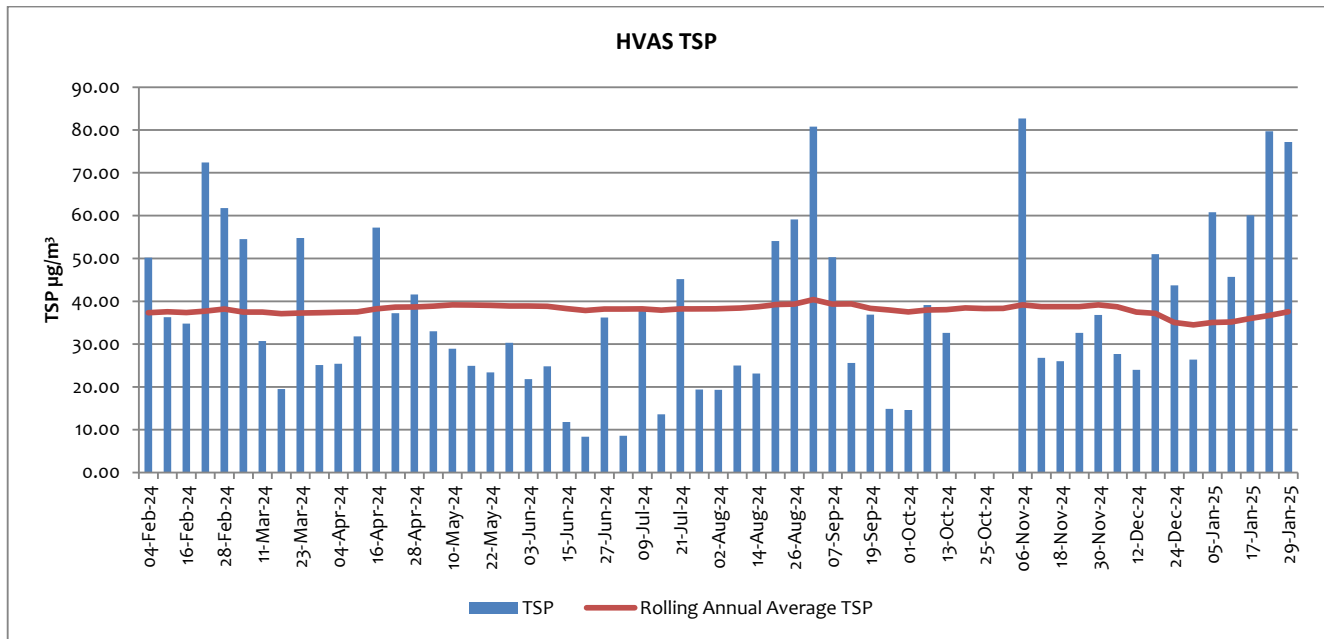
### 1.1 High Volume Air Samplers

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 in appendix 1. 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.

**TABLE 2: HVAS (EPL10) - Silver Tank (On Site) Results for January 2025**

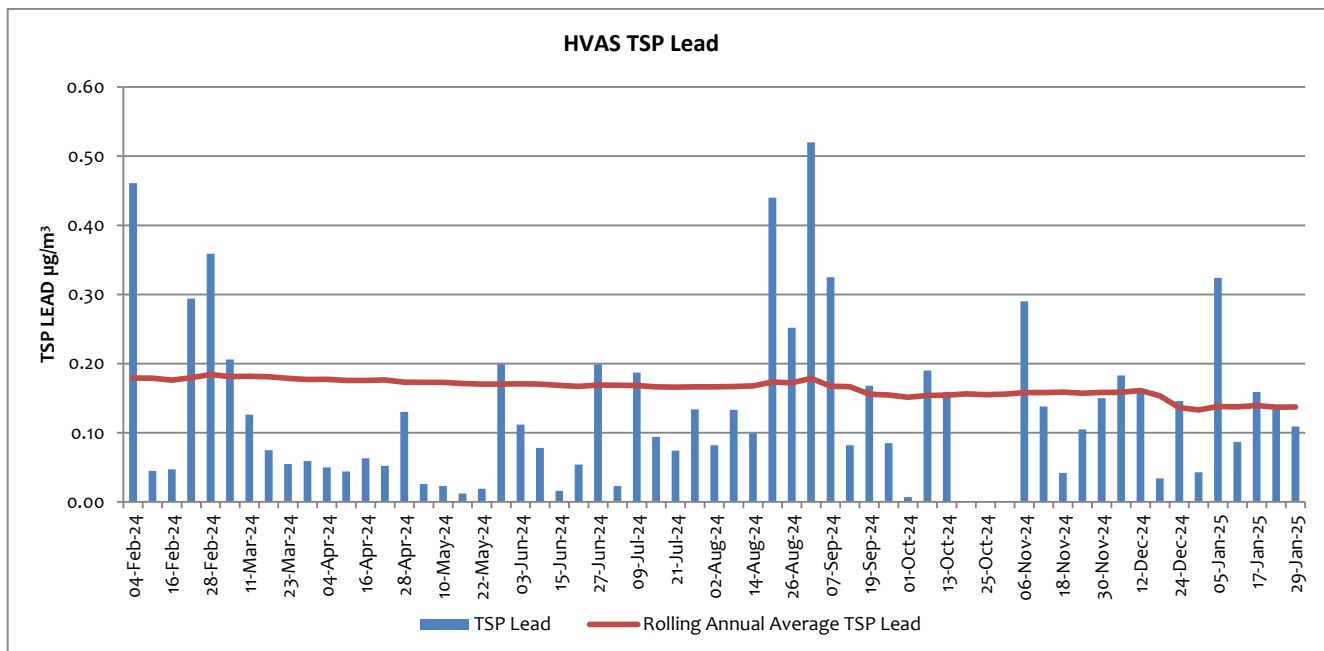
DATE	TSP (µg/m <sup>3</sup> )	Lead (µg/m <sup>3</sup> )
05-Jan-25	60.8	0.324
11-Jan-25	45.7	0.087
17-Jan-25	60.1	0.159
23-Jan-25	79.7	0.134
29-Jan-25	77.2	0.109

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.



TSP dust results at HVAS for the month of January were slightly higher than measurements from previous two months. The highest TSP result measured at HVAS (EPL10) for January was 79.7 µg/m³ on 23 January when winds were predominantly from the South-SSW. Water carts apply water to site roads daily and dust suppressant is applied to free areas and unsealed roads. The annual rolling average for TSP at this location is 37.56 µg/m³ at the end of January, lower than the average of 37.6 µg/m³ at the beginning of February 2024.

The annual rolling average for TSP is determined using data with extreme dust events included.



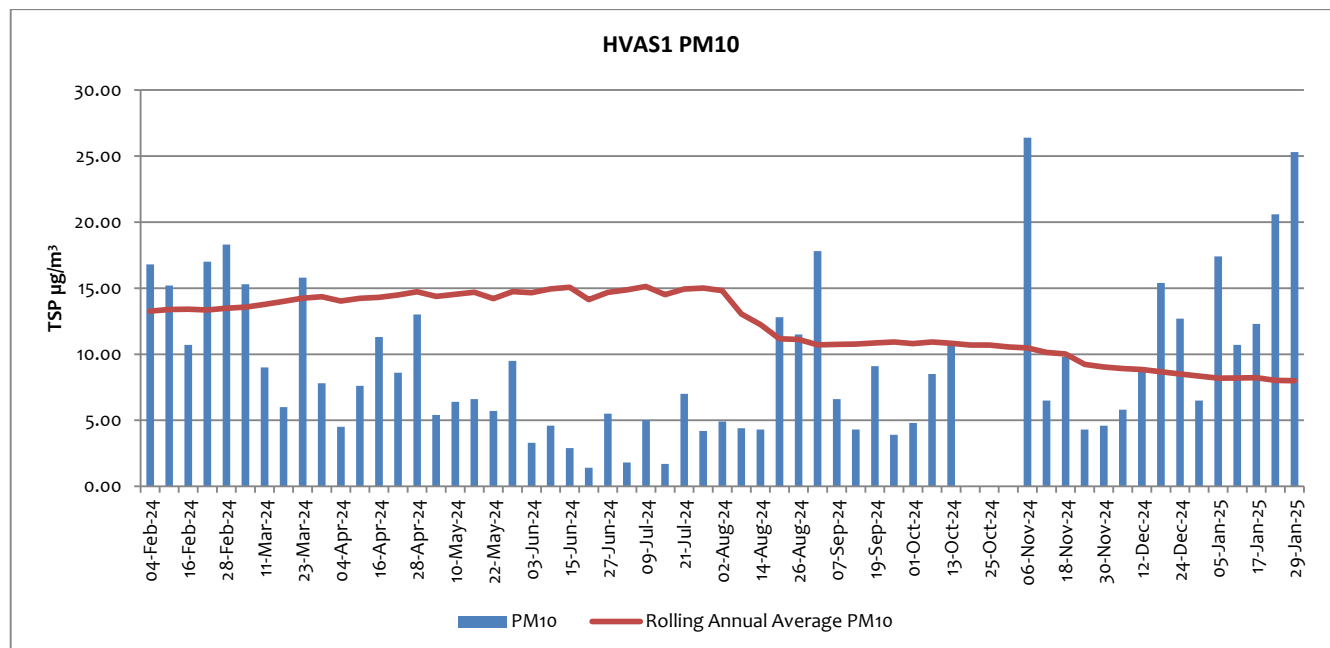
TSP Lead dust results at HVAS for the month of January were on average similar to previous months. The highest TSP Lead level for January was 0.32  $\mu\text{g}/\text{m}^3$  on 5 January when strong winds were predominately from the North. It is likely that the TSP Lead sampled on 5 January has originated from on-site. Water carts apply water to site roads daily and dust suppressant is applied to free areas and unsealed roads.

The rolling annual average for TSP Lead in January 2025 was 0.14  $\mu\text{g}/\text{m}^3$ , lower than the rolling annual average of 0.18  $\mu\text{g}/\text{m}^3$  for TSP Lead at the end of January 2024.

### ***HVAS1 (EPL11) - Silver Tank (On Site) Results for January 2025***

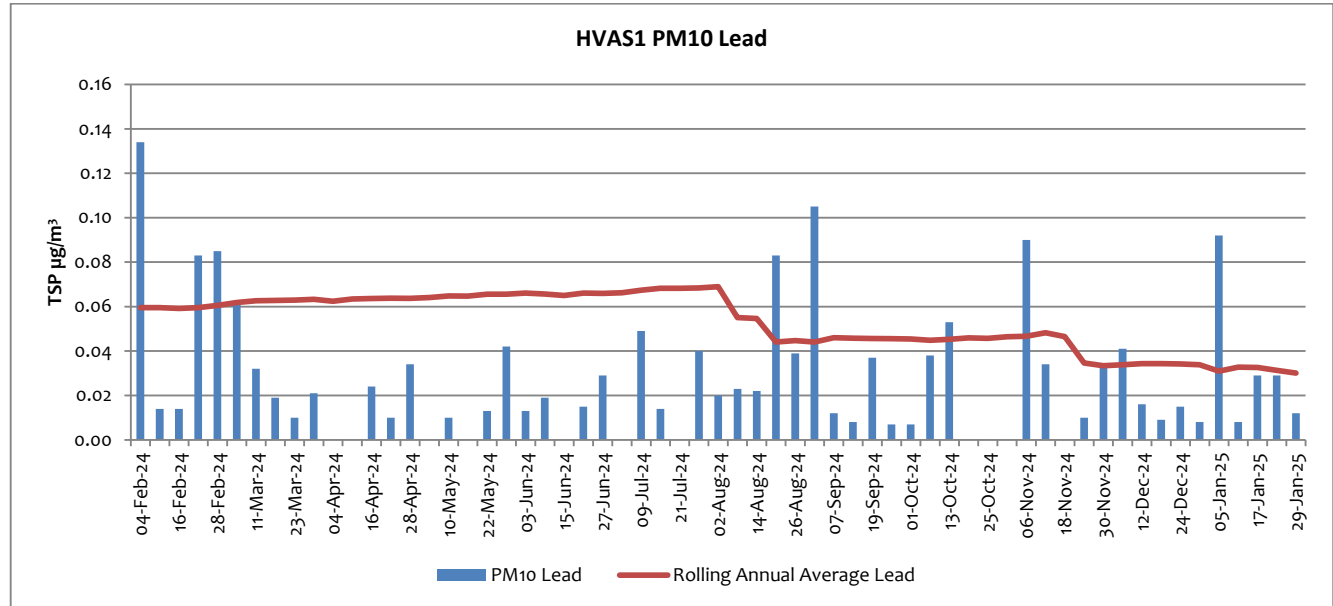
DATE	PM <sub>10</sub> ( $\mu\text{g}/\text{m}^3$ )	PM <sub>10</sub> Lead ( $\mu\text{g}/\text{m}^3$ )
05-Jan-25	17.4	0.092
11-Jan-25	10.7	0.008
17-Jan-25	12.3	0.029
23-Jan-25	20.6	0.029
29-Jan-25	25.3	0.012

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.



PM<sub>10</sub> dust results at HVAS1 for the month of December were on average higher than in previous months. The highest PM<sub>10</sub> dust level for January was 25.3  $\mu\text{g}/\text{m}^3$  on 29 January when winds were predominantly from the South. Water carts apply water to site roads daily and dust suppressant is applied to free areas and unsealed roads. The annual rolling average for PM<sub>10</sub> dust at this location is 8.0  $\mu\text{g}/\text{m}^3$  at the end of January 2025, lower than the annual rolling

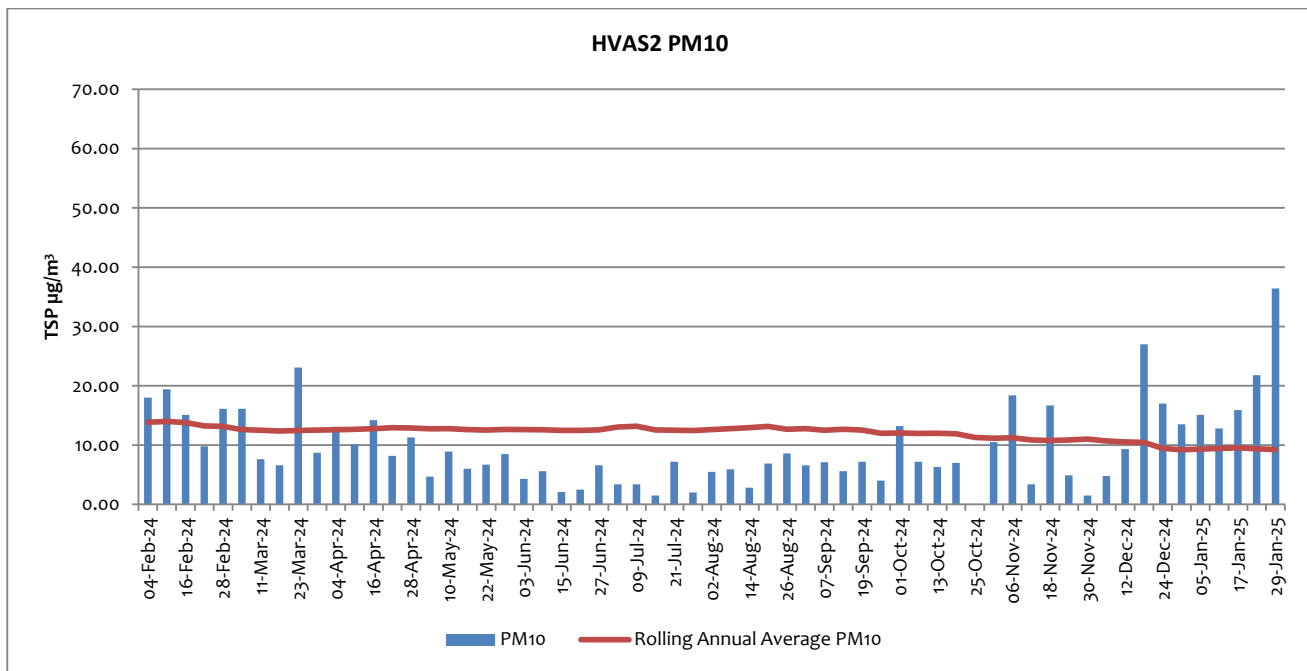
average at the beginning of January 2024 which was  $13.3 \mu\text{g}/\text{m}^3$ . External and extreme dust events are recorded in measurements.



PM<sub>10</sub> Lead dust results at HVAS1 in the month of January were similar to measurements from previous months. The highest Lead PM<sub>10</sub> result for January was  $0.09 \mu\text{g}/\text{m}^3$  on 5 January when winds were predominantly from the North suggesting contribution from site sources. Water carts apply water to site roads daily and dust suppressant is applied to free areas and unsealed roads. The rolling annual average for PM<sub>10</sub> Lead in January was  $0.03 \mu\text{g}/\text{m}^3$ , lower than the average of  $0.06 \mu\text{g}/\text{m}^3$  in January 2024.

#### ***HVAS 2 (EPL12) – Blackwood Pit (On Site) Results for January 2025***

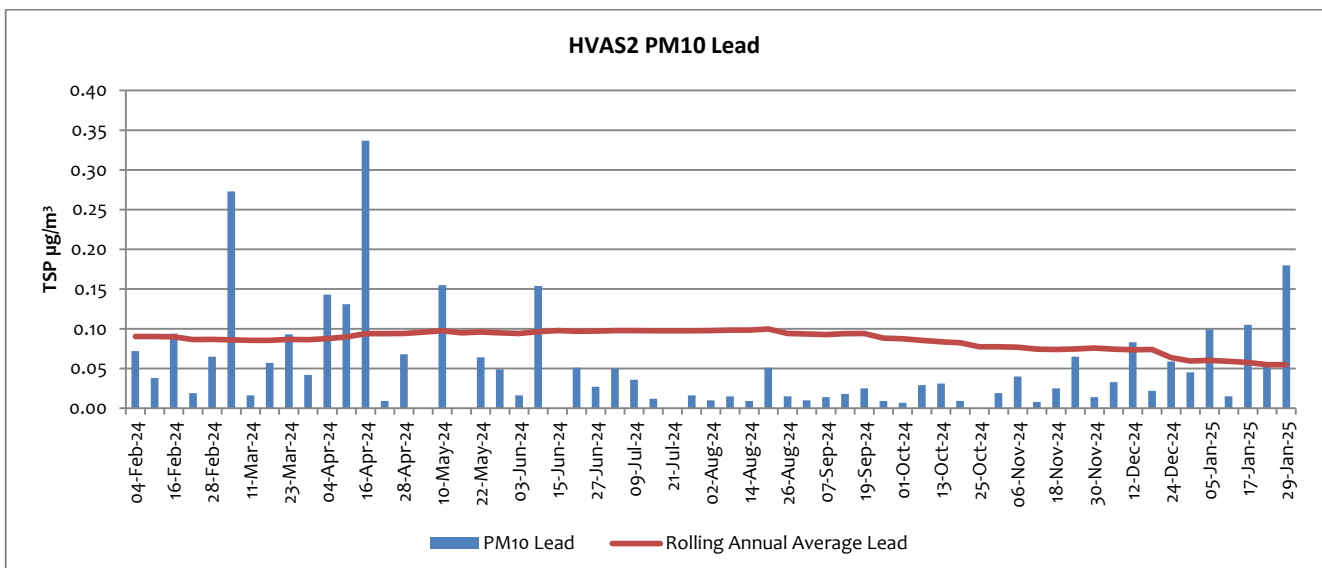
DATE	PM <sub>10</sub> ( $\mu\text{g}/\text{m}^3$ )	PM <sub>10</sub> Lead ( $\mu\text{g}/\text{m}^3$ )
05-Jan-25	15.1	0.099
11-Jan-25	12.8	0.015
17-Jan-25	15.9	0.105
23-Jan-25	21.8	0.056
29-Jan-25	36.4	0.180



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.

In December the PM<sub>10</sub> levels at HVAS2 showed similar measurements to December 2024 but significantly higher by comparison to previous months of 2024. The highest recorded PM<sub>10</sub> dust reading for January was 36.4 µg/m³ on 29 January when winds were from the South suggesting contribution from on-site sources, although dust from external events was documented and may have contributed to the levels. The surface of Blackwoods TSF2 to the south is treated with dust suppressant and the TSF spray system has been installed. The annual rolling average for PM<sub>10</sub> dust at this location is 9.2 µg/m³ at the end of January, down from 13.9 µg/m³ in January 2024.

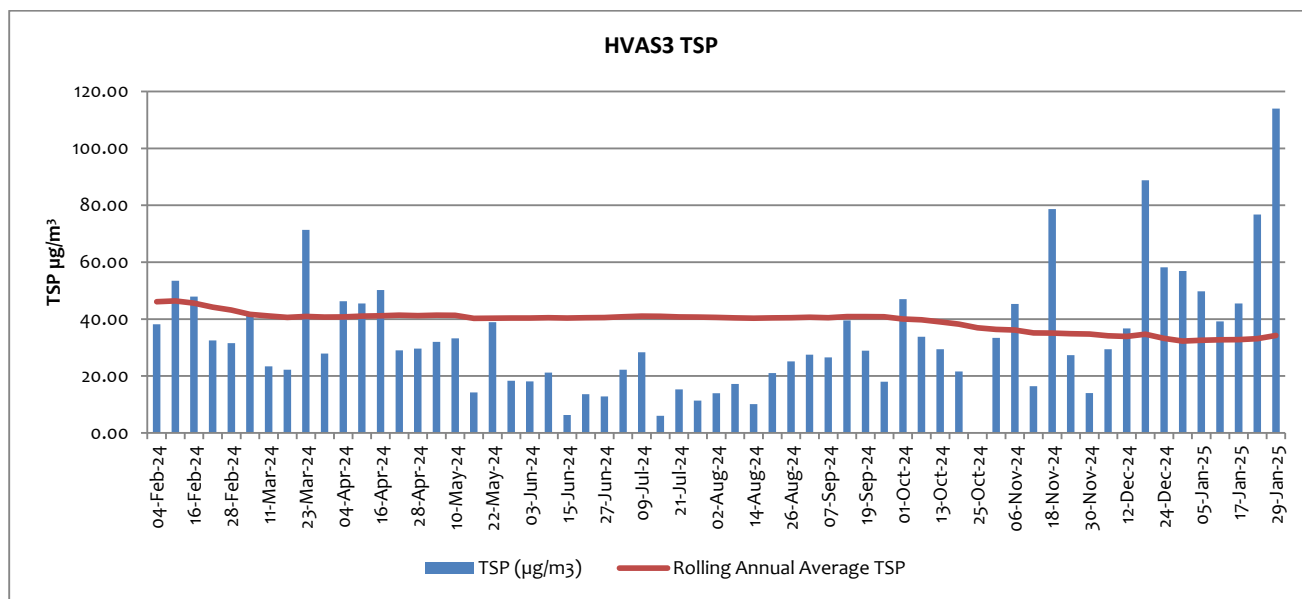
The annual rolling average for PM<sub>10</sub> dust is determined using data with extreme dust events included.



PM<sub>10</sub> lead levels in January were higher than the previous 6 months. The highest recorded PM<sub>10</sub> Lead dust reading for January was 0.18 µg/m<sup>3</sup> on 29 January when winds were from the South suggesting contribution from site activities. The surface of Blackwoods TSF2 is treated with dust suppressant and the TSF spray system has been installed and is operational. The rolling annual average for PM<sub>10</sub> Lead in January was 0.05 µg/m<sup>3</sup>, down from 0.09 µg/m<sup>3</sup> in January 2024.

### ***HVAS 3 (EPL57) – Blackwood Pit (On Site) Results for January 2025***

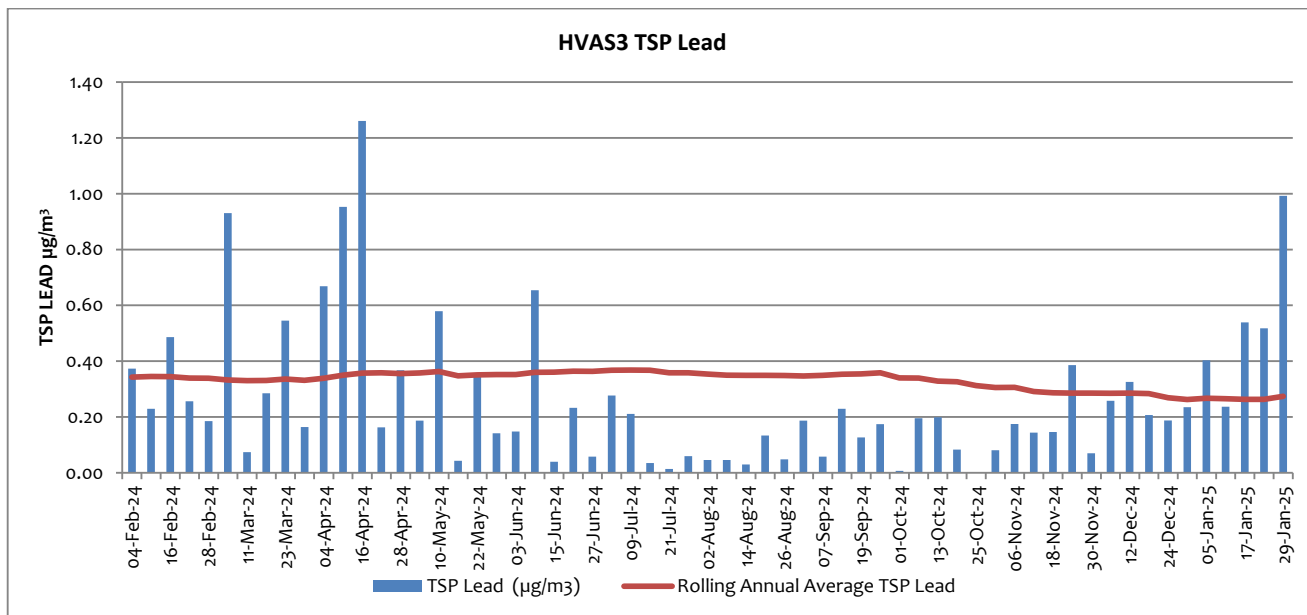
DATE	TSP (µg/m <sup>3</sup> )	Lead (µg/m <sup>3</sup> )
05-Jan-25	49.8	0.403
11-Jan-25	39.2	0.237
17-Jan-25	45.5	0.539
23-Jan-25	76.8	0.518
29-Jan-25	114	0.992



TSP levels at HVAS3 were highest on 29 January with a result of 114 µg/m<sup>3</sup>, when winds were blowing from the South. External events and dust storms were recorded at the end of January and likely contributed significantly to the elevated dust levels recorded. The surface of Blackwoods TSF2 is treated with dust suppressant and the TSF spray system has been installed and is operational. The annual rolling average for TSP dust at this location is 34.2 µg/m<sup>3</sup> at the end of January, down from 46.6 µg/m<sup>3</sup> in January 2024.

The annual rolling average for TSP is determined using data with extreme dust events included.





TSP Lead levels in January were higher than the previous 6 months, with the highest result of 0.99 µg/m³ recorded on 29 January when winds were from the South suggesting contribution from site activities. The rolling annual average for TSP Lead in January was 0.27 µg/m³, down from 0.34 µg/m³ in January 2024. The surface of Blackwoods TSF2 is treated with dust suppressant and the TSF spray system has been installed.

## 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 appendix 1. TEOM1 and TEOM2 are designed to operate continuously and sample for particulate matter less than 10 microns (PM<sub>10</sub>) in size.

Project Approval 07\_0018 criteria apply at TEOM1 and TEOM2, with two criteria listed for PM<sub>10</sub>, a 24 hour average criteria of 50 µg/m³ and an annual average criteria of 25 µg/m³. Both Project Approval and Environment Protection Licence criteria exclude dust storms and other extraordinary events.

TEOM data is validated by third party consultants using Australian Standards and internal procedures, and is used to populate the table of TEOM monthly data provided below.

***TEOM1 (EPL13) (Off Site) and TEOM2 (EPL14) (On Site) Validated Results for January 2025***

Particulate Matter <10 Microns 24Hr Average				
Date	TEOM 1 ( $\mu\text{g}/\text{m}^3$ )	Compliant with 50 $\mu\text{g}/\text{m}^3$ 24hr average?	TEOM 2 ( $\mu\text{g}/\text{m}^3$ )	Compliant with 50 $\mu\text{g}/\text{m}^3$ 24hr average?
01-Jan-25	15.0	Y	19.0	Y
02-Jan-25	14.3	Y	23.2	Y
03-Jan-25	15.1	Y	14.9	Y
04-Jan-25	20.8	Y	26.1	Y
05-Jan-25	21.1	Y	21.0	Y
06-Jan-25	17.1	Y	26.5	Y
07-Jan-25	8.1	Y	7.0	Y
08-Jan-25	12.4	Y	11.0	Y
09-Jan-25	16.5	Y	11.4	Y
10-Jan-25	12.8	Y	12.2	Y
11-Jan-25	14.6	Y	11.2	Y
12-Jan-25	18.7	Y	23.6	Y
13-Jan-25	17.7	Y	24.1	Y
14-Jan-25	16.4	Y	21.8	Y
15-Jan-25	28.6	Y	45.4	Y
16-Jan-25	19.3	Y	34.7	Y
17-Jan-25	NA	Y	22.7	Y
18-Jan-25	NA	Y	14.8	Y
19-Jan-25	15.8	Y	15.8	Y
20-Jan-25	14.8	Y	13.3	Y
21-Jan-25	26.2	Y	38.5	Y
22-Jan-25	23.1	Y	35.1	Y
23-Jan-25	26.7	Y	30.5	Y
24-Jan-25	12.2	Y	18.4	Y
25-Jan-25	13.1	Y	19.2	Y
26-Jan-25	14.2	Y	32.5	Y
27-Jan-25	17.3	Y	17.9	Y
28-Jan-25	20.2	Y	56.8	N
29-Jan-25	0.0	Y	14.0	Y
30-Jan-25	0.0	Y	19.7	Y
31-Jan-25	18.9	Y	39.8	Y

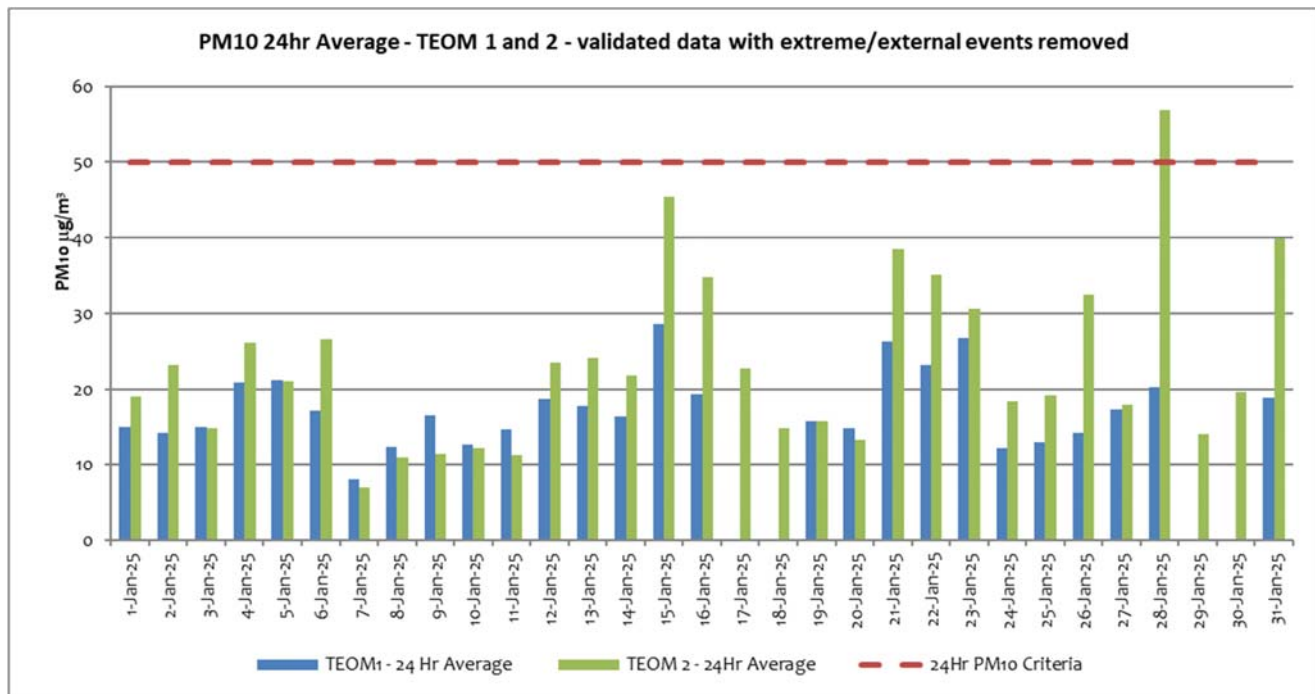
NA - sample collected but data invalid; NS – insufficient sample collected

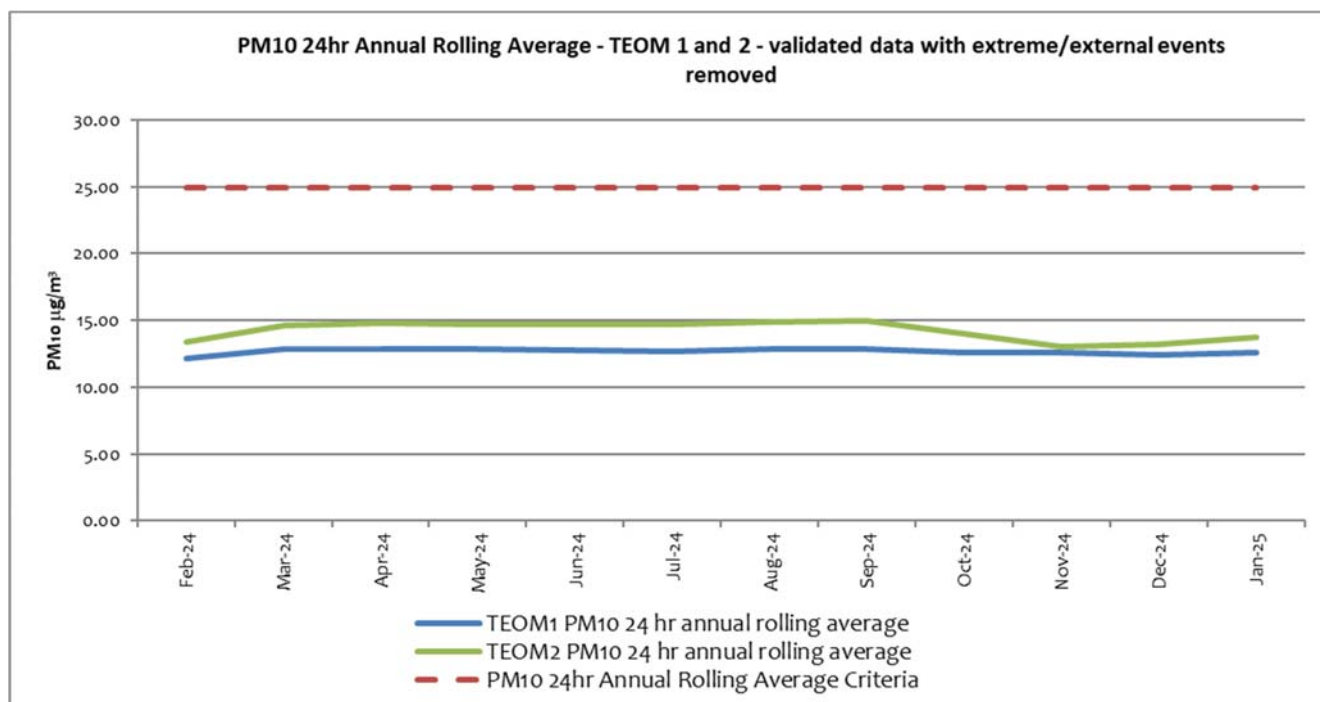
Servicing of TEOM1 was conducted across 17 and 18 January which interrupted monitoring and was compounded by repeated periods of unit stabilisation. The rolling annual average for PM10 at TEOM1 with external dust events and invalid data removed for the period January 2024 to January 2025 is 12.62  $\mu\text{g}/\text{m}^3$ , higher than the rolling annual average of 11.39  $\mu\text{g}/\text{m}^3$  at the beginning of the annual period.

The rolling annual average for PM<sub>10</sub> at TEOM2 with external dust events and invalid data removed for the period December 2023 to December 2024 is 13.73 µg/m<sup>3</sup>, higher than the rolling annual average of 11.96 µg/m<sup>3</sup> at the beginning of the reporting period. On 28 January there was an exceedance of the 24-hour average limit of 50 µg/m<sup>3</sup> as specified in the Project Approval. The non-compliance was reported to the DPHI. Data was collected on 12 December but it is not reported as for much of the day the unit was stabilising. Data collected for the dates of 1, 9, 14, and 27 to 31 January have been corrected due to the impact from dust storms, external events, and smoke haze from the Victorian bushfires.

Six-monthly servicing of TEOMs was conducted from 11 to 12 December. A portable PM<sub>10</sub> monitor is located adjacent to TEOM2 to provide real-time dust readings and dust level alerts whilst the TEOM was undergoing servicing and testing.

The PM<sub>10</sub> 24-hour rolling annual average for both TEOM sites remain below the annual average criteria of 25 µg/m<sup>3</sup>.





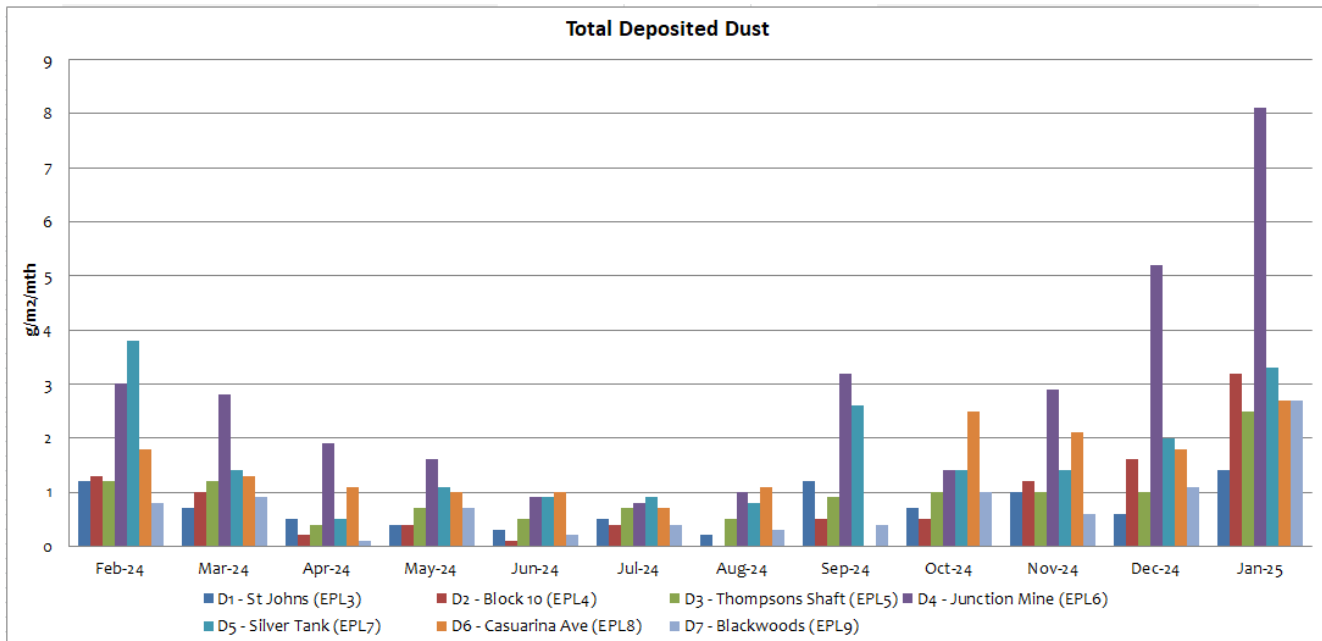
### 1.3 Dust Deposition Sampling

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.

#### *Dust Deposition Gauges D1 (EPL3) to D7 (EPL9) – Results for January 2025*

Total Deposited Dust (g/m <sup>2</sup> .Month)							
Sample Period	D1 (off site)	D2 (off site)	D3 (on site)	D4 (off site)	D5 (on site)	D6 (off site)	D7 (on site)
January 2025	1.4	3.2	2.5	8.1	3.3	2.7	2.7
Annual Rolling Average	0.73	0.95	0.97	2.73	1.68	1.55	0.77
Background (2010)	4.0	3.1	4.3	5.7	-1	5.8	-1

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



Most dust levels recorded in Dust Gauges in January 2025 followed a slight increasing trend started in November except for DG6. The highest dust levels in January were recorded in the D4 Junction Mine gauge. The predominant wind direction for January was from the South as shown in the Wind Rose in Section 4.

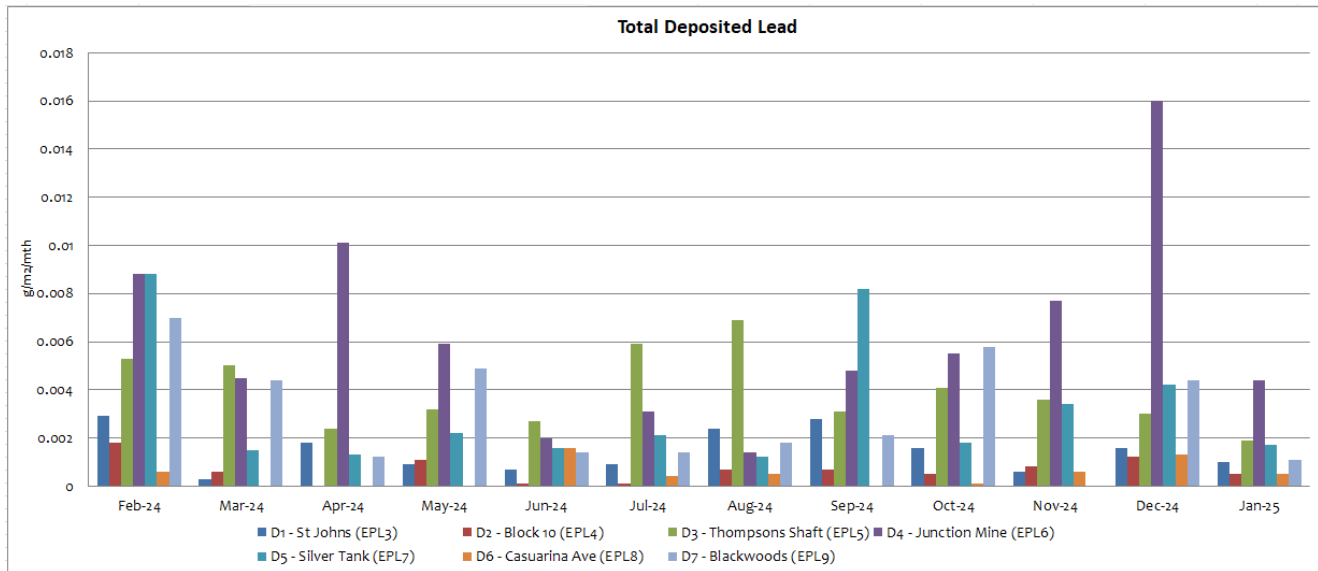
Dust Deposition Gauges that are located off-site must adhere to criteria for annually averaged deposited dust of 4 g/m<sup>2</sup>.month.

Dust suppressant is applied to unsealed areas of the site and roads are frequently watered using water carts in an attempt to control dust emissions. The waste dump adjacent to the rail loadout is treated with dust suppressant to capture any loose dust accumulating on the lower batters and on the upper surface.

### Total Deposited Lead (g/m<sup>2</sup>.Month)

Sample Period	D1 (off Site)	D2 (on site)	D3 (on site)	D4 (on site)	D5 (on site)	D6 (off Site)	D7 (on site)
January 2025	0.0010	0.0005	0.0019	0.0044	0.0017	0.0005	0.0011
Background (2010)	0.0034	0.005	0.005	0.006	- <sup>1</sup>	0.004	- <sup>1</sup>

Note: "<sup>1</sup>"= background not available, NS = No sample



There are no guidelines for deposited lead dust. Lead results in January 2025 were highest in the D4 Junction Mine gauge. The predominant wind direction for January was from the South as shown in the Wind Rose in Section 4. Site activities may have contributed to the elevated Lead levels although the area around the gauge was subject to historical mining activity.

Dust suppressant is applied to unsealed areas of the site and roads are frequently watered using water carts in an attempt to control dust emissions. The waste dump adjacent to the rail loadout is treated with dust suppressant to capture any loose dust accumulating on the lower batters and on the upper surface.

## 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 June 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
<b>Nitrogen Oxides</b>	mg/m <sup>3</sup>	350
<b>Volatile Organic Compounds</b>	mg/m <sup>3</sup>	40

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

	Unit	Criteria
<b>Total Suspended particles (TSP)</b>	mg/m <sup>3</sup>	20
<b>Type 1 and Type 2<sup>1</sup></b>	mg/m <sup>3</sup>	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.

"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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***Primary Vent Shaft (EPL1) and Crusher Baghouse (EPL2) Results for January 2025***

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The latest round of emissions monitoring was conducted at the Primary Vent Shaft (EPL1) and the Crusher Baghouse (EPL2) between 26 and 27 November 2024. Results were within limits and are provided below.

Parameter	Unit	Primary Vent Shaft (EPL1)	Crusher Baghouse (EPL2)
Dry Gas Density	kg/m <sup>3</sup>	1.29	1.29
Moisture	%	1.80	2.3
Molecular weight of stack gases	g/m <sup>3</sup>	1,288	1,288
Temperature	°C	26.0	23.0
Nitrogen Oxides	mg/m <sup>3</sup>	2.05	NA
Volatile Organic Compounds	mg/m <sup>3</sup>	0.51	NA
Total Suspended particles	mg/Nm <sup>3</sup>	5.48	11.20
Type 1 and Type 2	mg/Nm <sup>3</sup>	0.050	0.14
Velocity	m/sec	11.1	22.9
Volumetric Flowrate	Nm <sup>3</sup> /sec	172	8.9



## 2 Noise

### 2.1 Blasting (Vibration and Overpressure)

There are five compliance vibration monitors at various locations measuring for vibration and overpressure from blast firings. These include V1 to V5 which are located on-site and off-site. A map indicating these locations can be found on the Rasp Mine web site. In addition, there are a number of roving monitors which may be used to monitor vibration and overpressure at particular locations as required. Monitors operate continuously and are automatically triggered to record 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 owned land (7am-7pm)	115	5	5% of the total number of blasts over a 12-month 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 (7am-7pm)	115	3 (interim)	5% of the total number of blasts over a 12-month period <sup>1</sup>
(7am-7pm)	120	10	0%
(7pm-10pm)	105	-	-
(10pm-7am)	95	-	-
Broken Hill Bowling Club, Italio (Bocce) Club, Heritage Items within CML7	-	50	0%
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

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***Blasting Data Summary Results for January 2025 (annual period)***

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**Total Blasts:**

- 0 production blasts occurred before 6.45 am or after 7.15 pm
- The number of Production blasts averaged 1.40 per week over the previous calendar year
- The number of Development blasts averaged 2.65 per week over the previous calendar year

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

- 0 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 for the annual period = 0%
- Percentage of production blasts over 5 mm/sec for the annual period = 0%

**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 for the annual period = 0%
- Percentage of production blasts over 3mm/sec for the annual period =100%

There have been no production blasts in the Western Mineralisation and Main Lodes producing vibration at monitors over 5 mm/sec for the 12-month period.

There have been no production blasts in Block 7 for the 12-month period.

## **2.2 Noise**

Noise monitoring is undertaken as per the NSW Noise Policy for Industry at a frequency of once per annum. Attended environmental noise monitoring was done during the night period of 20 and 21 December 2024 at 14 monitoring locations. Noise levels from site complied with relevant limits at all monitoring locations during the December 2024 survey.

### 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 December. No limits are applied in the EPL to the results from groundwater monitoring. Levels for all parameters are stable.

#### Ground and Mine Water 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), magnesium (Mg), manganese (Mn), pH, sodium (Na), sulphate (SO <sub>4</sub> ), total dissolved solids (TDS) and zinc (Zn)
Kintore Pit (U/G dewatering) EPL54	Monthly	
Piezometers EPL37 (GW01) to EPL52 (GW16)	Quarterly	

#### *Shaft 7 (EPL53) and Kintore Pit (EPL54) Results for January 2025*

Sample Point	pH	EC (µS/cm <sup>2</sup> )	TDS (mg/l)	Alkalinity (CaCO <sub>3</sub> ) (mg/l)	SO <sub>4</sub> (mg/l)	Cl (mg/l)	Ca (mg/l)	Mg (mg/l)	Na (mg/l)	Cd (mg/l)	Pb (mg/l)	Mn (mg/l)	Zn (mg/l)	Fe (mg/l)
Shaft 7 (EPL53)	No pumping													
Kintore Pit (EPL54)	5.09	15500	24800	<1	7770	1970	515	402	2070	4.40	4.07	449	2380	2.44

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***Groundwater Bores (EPL37 - EPL52) Results for January 2025***

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Groundwater monitoring not scheduled in January.

### 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 in Appendix 1. Based on historical data, sampling is most likely to be undertaken in October (highest rainfall month as recorded by Bureau of Meteorology) and April.

#### Surface Water Monitoring Requirements

Description	Frequency	Parameters to be Analysed
Federation Way Culvert EPL29/S31-1	2 x per year, six months apart	cadmium (Cd), chloride (Cl), electrical conductivity (EC), lead Pb), manganese (Mn), pH, sodium (Na), sulphate (SO <sub>4</sub> ), total dissolved solids (TDS) and zinc (Zn)
Ryan Street Dam EPL31/S49	2 x per year, six months apart	
Adjacent Olive Grove EPL32/S1A	2 x per year, six months apart	
Adjacent Bowls Club EPL33 /S9-B2	2 x per year, six months apart	
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 Results for January 2025*

No surface water samples were collected in January.

## 4 Weather Data

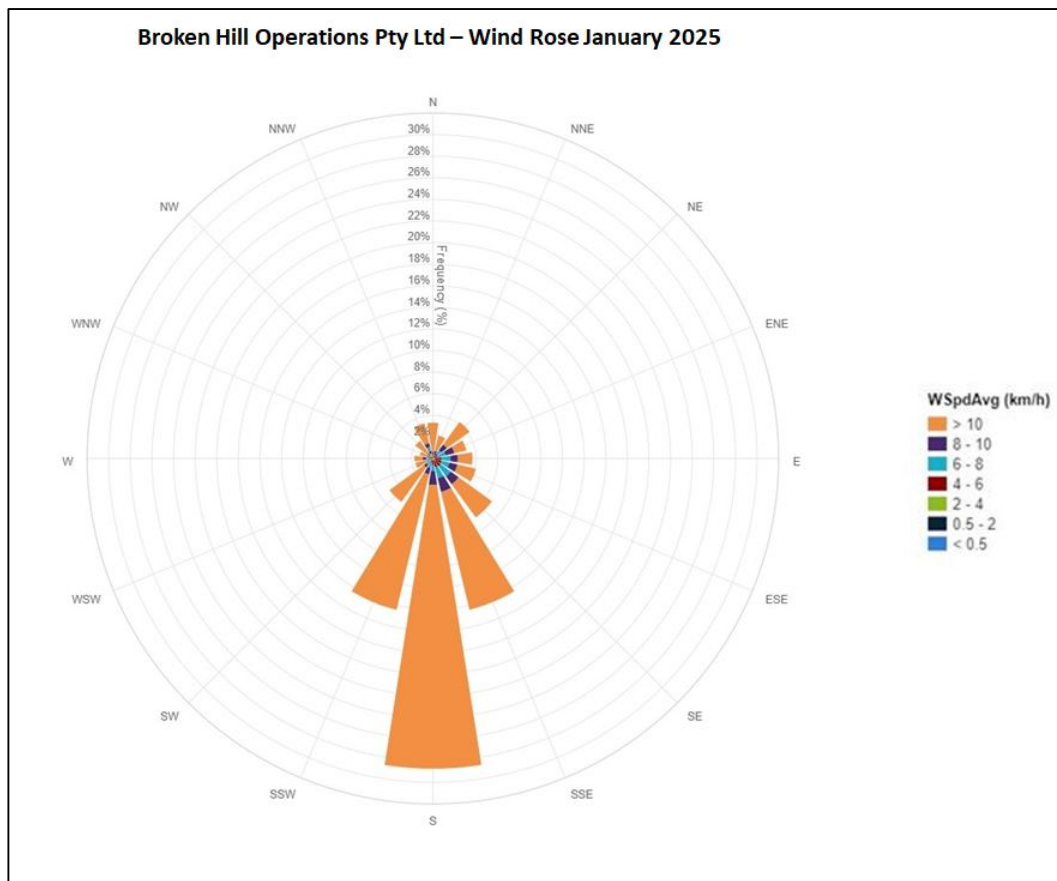
The weather station continuously monitors the following parameters as per Point 55 of the Environmental Protection Licence.

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 wind rose provided below indicates that the prominent wind direction for the month of January was from the South.



***Weather Data Summary for January 2025***

Date	Temperature @ 10m (°C)		Wind Speed @ 10m (km/hr)		Predominant Wind Direction @ 10m		Rainfall (mm)
	Min	Max	Min	Max	Cardinal	Degree	Total
01-Jan-25	19.9	30.4	5.6	45.9	South	180	0.00
02-Jan-25	16.2	29.0	3.0	37.4	South	179	0.00
03-Jan-25	19.8	34.6	0.1	23.0	SSE	156	0.00
04-Jan-25	26.0	36.9	0.3	65.2	North	7	0.14
05-Jan-25	29.7	37.6	0.7	50.4	North	354	0.00
06-Jan-25	19.4	32.3	2.0	44.0	South	179	0.12
07-Jan-25	18.1	27.6	2.1	36.6	SSE	158	0.00
08-Jan-25	19.2	33.5	0.2	25.8	South	179	0.00
09-Jan-25	25.2	34.4	0.8	46.5	NNE	27	0.32
10-Jan-25	22.7	34.8	0.3	28.0	ESE	113	0.00
11-Jan-25	26.0	35.8	0.7	26.4	ENE	67	0.00
12-Jan-25	24.5	38.4	0.3	46.2	NE	45	0.00
13-Jan-25	24.8	38.2	0.2	25.2	South	178	0.00
14-Jan-25	23.3	39.8	0.4	33.3	South	181	0.00
15-Jan-25	20.2	32.4	3.9	48.3	SSW	203	0.04
16-Jan-25	13.3	25.3	7.2	40.8	South	179	0.00
17-Jan-25	16.9	28.9	1.2	42.1	SSE	157	0.00
18-Jan-25	20.0	31.9	1.1	33.6	SE	134	0.07
19-Jan-25	23.1	35.3	0.3	33.3	SE	134	0.02
20-Jan-25	27.0	38.1	0.5	22.8	NNE	26	0.00
21-Jan-25	26.1	38.9	0.8	35.7	South	182	0.00
22-Jan-25	18.0	31.4	2.9	39.0	South	180	0.00
23-Jan-25	19.3	31.3	4.4	41.4	South	178	0.00
24-Jan-25	13.6	27.1	1.9	43.3	South	179	0.00
25-Jan-25	17.1	32.3	0.9	38.9	South	178	0.00
26-Jan-25	20.4	35.0	0.5	22.1	ESE	114	0.00
27-Jan-25	27.9	41.8	0.9	32.8	NE	45	0.00
28-Jan-25	18.3	33.3	3.1	45.2	South	180	0.07
29-Jan-25	16.1	29.9	5.0	38.1	South	178	0.00
30-Jan-25	14.9	26.6	3.1	41.9	South	180	0.00
31-Jan-25	15.1	31.0	0.8	41.8	SSE	159	0.00

There was a total rainfall of 0.78 mm in January 2025.

## 5 Data Log

Sample	Result Received
Hi Volume Samples	13-02-2025
TEOM	28-02-2025
Dust Deposition	02-03-2025
Vents & Bag House	09-10-2024
Noise	05-12-2024
Water	10-02-2025
Blast vibration and overpressure	01-02-2025
Weather	01-02-2025
Date posted to web site	20-03-2025

## 6 Correction Log

No corrections.



## 7 Appendix 1 – Monitoring Locations

