

HERA MONTHLY ENVIRONMENTAL MONITORING SUMMARY  
JANUARY 2023



## Table of Contents

1. INTENT ..... 3

2. SCOPE ..... 3

3. DEFINITIONS..... 3

4. MAPS.....4

5. MONITORING RESULTS ..... 5

    5.1. Weather..... 5

    5.2. Water ..... 6

        Surface Water ..... 6

        Groundwater ..... 6

    5.3. Noise.....7

    5.4. Blast Monitoring.....7

    5.5. Air Quality ..... 8

    5.6. Gold Room Stack Monitoring ..... 8

    5.7. Concentrate Transport ..... 8

    5.8. Complaints .....10

Author	Mark Williams
Version	1.0
Date Created	February 2023
Review Date	6 March 2023

## 1. Intent

This monthly environmental monitoring report is a requirement under section 66(6) of the NSW Protection of the Environment Operations Act 1997 (POEO Act), in which holders of an environment protection licence make their pollution monitoring data publicly available. This report is intended to keep the community, stakeholders, and regulators informed of the Hera mine's environmental performance and to maintain a transparent and accountable reporting system.

## 2. Scope

This report covers all of Hera's environmental monitoring conditions for January 2023. These conditions, where applicable, are measured against Hera's Environmental Protection Licence (EPL), development consent conditions and Australian Standards to determine Hera's compliance.

These conditions include;

- Weather Conditions
- Surface Water Monitoring results
- Ground Water Monitoring results
- Noise Monitoring results
- Blasting monitoring results
- Air Quality Monitoring results
- Gold Room Stack Monitoring
- Concentrate Transport
- Complaints

## 3. Definitions

Term	Definition
mm/s	The peak of the vibration in millimeters per second
Insoluble Solids	The insoluble portion of the dust deposited in dust deposition gauge
Total Lead	Including dissolved lead in the liquid portion and the lead particulates in the filter paper following laboratory analysis
g/m <sup>2</sup> /month	Grams per square meter per month
dB (L)	Decibel (linear maximum)
dB LA <sub>eq</sub> (15 minute)	Decibel (linear weighted average over 15 minutes)
CN Free	Free Cyanide (Hydrogen Cyanide and Cyanide ions in solution)
CN WAD	Weak Acid Dissociable Cyanide (includes Cyanide species liberated at moderate pH of 4.5)
TSS	Total Suspended Solids

### 4. Maps

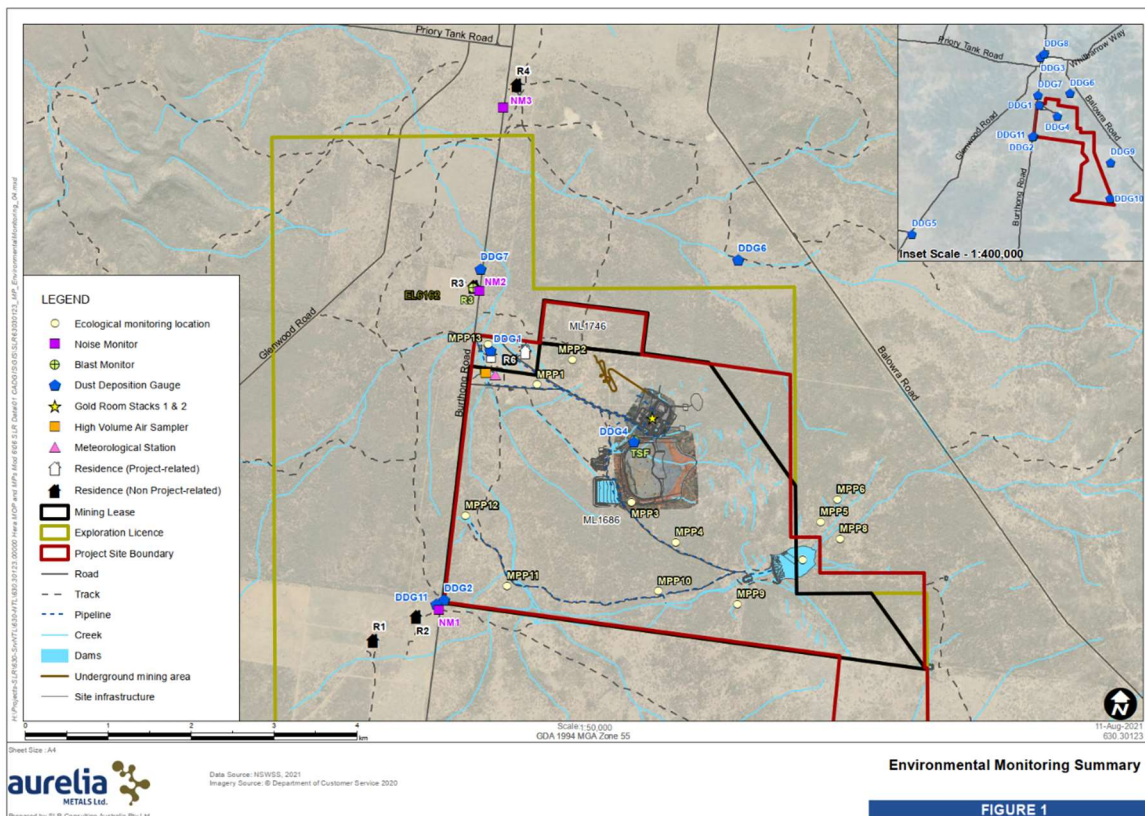


Figure 1 - Hera Environmental Monitoring Locations

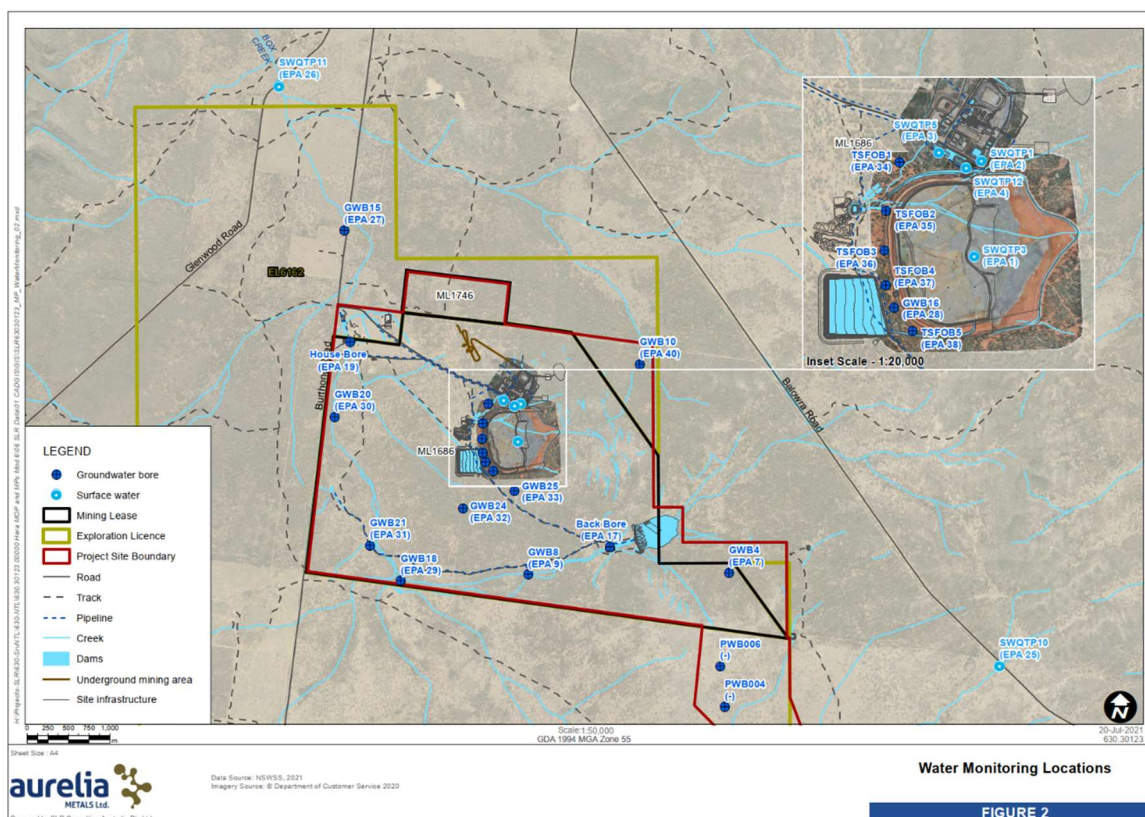


Figure 2 - Hera Water Monitoring Locations



## 5. Monitoring Results

### 5.1. Weather

The meteorology monitoring data is acquired through Hera’s weather station located on the Hera Mine site, approximately 4km south of the town of Nymagee, NSW, Refer **Figure 1**.

Meteorological monitoring is conducted on a continuous basis. **Table 1** shows a summary of the data collected by the weather station this month. **Figure 3** is the wind rose for the month of January 2023.

TABLE 1: Summary of meteorological data for January 2023

Parameter	No. of measurements for the month	Minimum Value	Mean Value	Median Value	Maximum value	Total
Air Temperature (°C)	Continuous	10.49	24.88	24.55	38.66	-
Wind Speed (m/s)	Continuous	0.00	8.07	7.94	27.05	-
Sigma Theta (°)	Continuous	2.23	22.85	18.15	100.92	-
Rainfall (mm)	Continuous	0.00	0.01	0.00	1.80	30.40
Relative Humidity (%)	Continuous	10.63	53.25	50.76	99.68	-

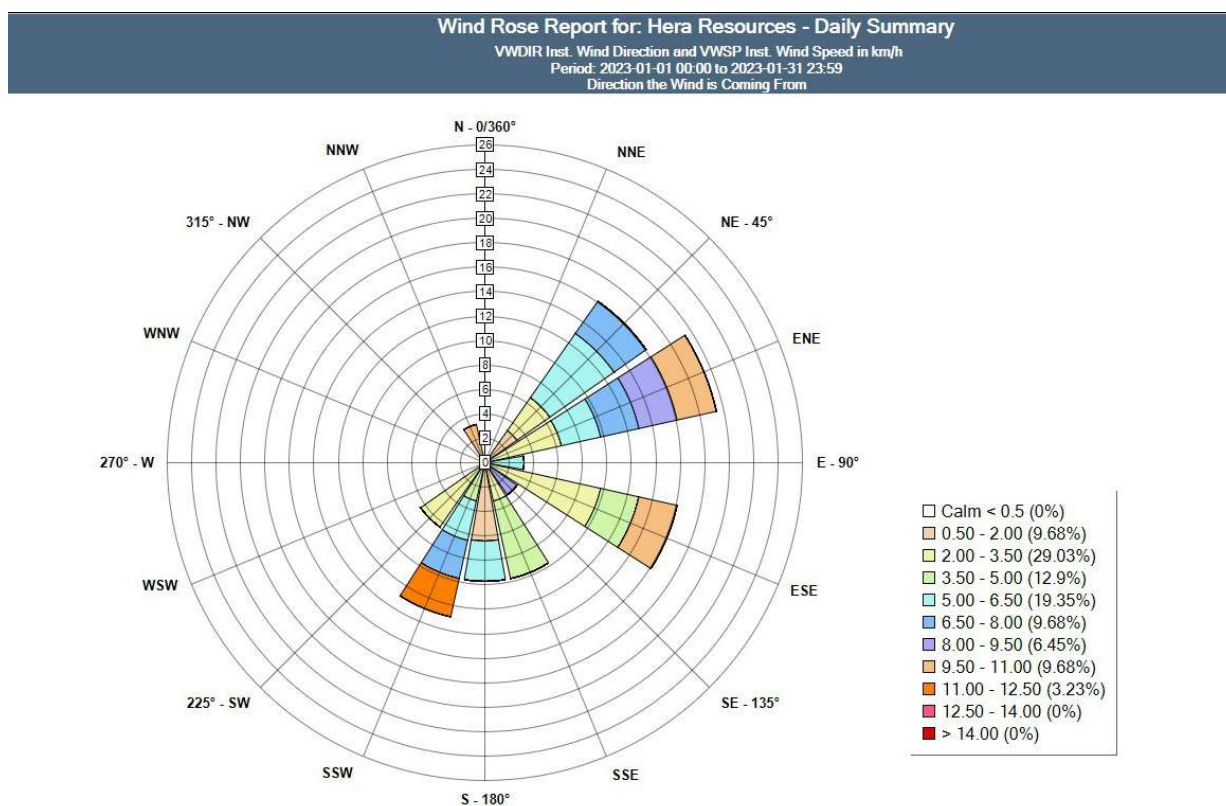


Figure 3 - Wind Rose for January 2023

## 5.2. Water

Water monitoring involves collecting water samples from several locations around site. The water samples are submitted to a NATA accredited laboratory for physical and chemical analysis. Analysis of pH and electrical conductivity are obtained in the field using a handheld monitor.

### Surface Water

Hera has 6 licence points associated with surface water. Four of these points are located within the mining lease and two are located off the mining lease, with one upstream and another downstream of the lease, refer **Figure 2**.

**Table 2** shows a summary of the surface water quality results for January 2023 for licence points 1 and 2. Licence points 3, 4, 25 and 26 did not discharge during January. No exceedances were recorded for the month.

TABLE 2: Surface Water monitoring results for January 2023

Monitoring Point	WAD Cyanide (mg/L)			EPL 90 <sup>th</sup> percentile concentration criteria
	Minimum	Average	Maximum	
TSF Thickener Discharge (EPA Point 1)	0	0.00	0	20
Proces Water Dam (EPA Point 2)	0	0.00	0	20

### Groundwater

Hera has 17 licence points associated with groundwater. These points are located around the Project Area, (refer **Figure 2**) and are a combination of observation bores, productions bores and piezometers. Monitoring is conducted quarterly and was completed in December 2022. Results are presented in the December 2022 website monthly report.

### 5.3. Noise

The Company has four licenced monitoring points (R1, R2, R3 and R4) located along the Burthong Road (**Figure 1**). The locations are strategically placed near the Hera Mine's nearest neighbours. R1 and R2 are measured from the same point as both neighbours are in very close proximity to each other.

A noise assessment was carried out on 20th September 2022 and results reported in the September website report. The next annual noise monitoring is due to be undertaken in August/September 2023. Hera holds a Noise and Blast agreement with the Landholder of R3. The agreement has been provided to the EPA and the Department of Planning and Environment (DPIE).

### 5.4. Blast Monitoring

The blast monitor is located adjacent to the dwelling on the nearest neighbour's property (**Figure 1**).

During November 2021 a new blast monitoring system was implemented which does not trigger monitoring for every blast. There were 28 blasts during January, of which 26 triggered monitoring at R3 (Refer to **Table 3**). No exceedances were recorded for the month.

Hera holds a Noise and Blast agreement with the Landholder of R3. The agreement has been provided to the EPA and DPE.

TABLE 3: Summary of blast monitoring results for January 2023 at R3

Date	Time	Time Period	Vibration (mm/s)	Overpressure (dB)
4/01/2023	6:45	Night	0.02	86.8
4/01/2023	18:45	Evening	0.3	100.6
7/01/2023	6:45	Night	0.12	73.3
8/01/2023	6:45	Sunday	0.09	82.8
10/1/2023	18:45	Evening	0.12	88.6
12/01/2023	18:45	Evening	0.22	81.1
13/01/2023	18:45	Evening	0.21	75.1
14/01/2023	18:45	Evening	0.19	79.3
15/01/2023	18:45	Evening	0.22	84.4
16/01/2023	18:45	Evening	0.18	86.6
17/01/2023	4:00	Day	0.03	92.1
17/01/2023	6:45	Night	0.26	92.6
18/01/2023	18:45	Evening	0.03	95.4
20/01/2023	6:45	Night	0.03	73.9
21/01/2023	6:45	Night	0.03	98.9
21/01/2023	18:45	Evening	0.07	86.6
22/01/2023	6:45	Sunday	0.21	78.2
22/01/2023	18:45	Sunday	0.04	82.6
23/01/2023	18:45	Evening	0.06	91.2
25/01/2023	6:30	Night	1.42	71.8
26/01/2023	18:45	Evening	0.11	102.1
27/01/2023	18:45	Evening	0.15	85

Date	Time	Time Period	Vibration (mm/s)	Overpressure (dB)
28/01/2023	12:00	Day	0.31	103.6
29/01/2023	6:45	Sunday	0.07	70.1
29/01/2023	18:45	Sunday	0.02	88.1
31/01/2023	6:45	Night	0.12	74.5

## 5.5. Air Quality

The Company has two High Volume Air Samplers (HVAS), designed to sample Particulate matter less than 10 µm (PM10) or Total Suspended Particulate (TSP) matter and two Dust Deposition Gauges (DDG). Refer to **Figure 1** for location of the sampling points.

Results for air quality monitoring conducted in January have been summarised in **Table 4**. No exceedances were recorded.

TABLE 4: Summary of Air Quality monitoring results for January 2023

Pollutant	Unit	Limit	Averaging Period	Result
TSP	µg/m <sup>3</sup>	90	Annual	33.74
PM-10	µg/m <sup>3</sup>	25	Annual	10.89
<b>High Volume Air Samplers (PM<sub>10</sub>)</b>				
5/01/2023	µg/m <sup>3</sup>	50	24 Hour	11.6
11/01/2023	µg/m <sup>3</sup>	50	24 Hour	21.6
17/01/2023	µg/m <sup>3</sup>	50	24 Hour	27.4
23/01/2023	µg/m <sup>3</sup>	50	24 Hour	7.1
29/01/2023	µg/m <sup>3</sup>	50	24 Hour	9.2
<b>Dust Deposition Gauges</b>				
Deposited Dust (DDG 1)	g/m <sup>2</sup> /month	4	Annual	1.62
Deposited Dust (DDG2)	g/m <sup>2</sup> /month	4	Annual	2.49

## 5.6. Gold Room Stack Monitoring

Hera has two licenced gold room stack monitoring points (Refer to Figure 1).

Gold Room stack monitoring is conducted on an annual basis. Annual monitoring was conducted and reported on in January 2022.

## 5.7. Concentrate Transport

The Company is licenced to transport 60,000 tonnes of lead/zinc concentrate from the Hera site to Hermidale rail siding during daylight hours only. Hera is limited to eight truck movements per day averaged over a calendar month (two truck movements to Hermidale rail is defined as entering and leaving the site). A summary of concentrate haulage operations is presented in **Table 5**.



TABLE 5: Summary of concentrate truck movements for January 2023

Date	Load Time	Truck Dry Tonnes
2/01/2023	9:00 AM	44.45
4/01/2023	10:00 AM	45.47
4/01/2023	2:00 PM	44.96
5/01/2023	2:30 PM	45.96
11/01/2023	7:20 AM	44.37
11/01/2023	8:30 AM	45.37
11/01/2023	9:11 AM	42.78
11/01/2023	10:15 AM	44.93
11/01/2023	1:20 PM	45.71
17/01/2023	4:40 PM	49.37
18/01/2023	11:40 AM	49.62
18/01/2023	3:40 PM	48.27
18/01/2023	4:15 PM	49.67
20/01/2023	2:00 PM	50.08
20/01/2023	2:30 PM	49.37
20/01/2023	5:30 PM	49.26
21/01/2023	12:00 PM	49.59
21/01/2023	1:00 PM	47.81
26/01/2023	9:00 AM	49.86
26/01/2023	1:00 PM	49.15
26/01/2023	1:30 PM	50.42
26/01/2023	5:00 PM	49.58
27/01/2023	2:30 PM	49.52
27/01/2023	5:30 PM	49.94
28/01/2023	6:00 AM	49.37
28/01/2023	7:00 AM	47.56
28/01/2023	10:00 AM	49.58
29/01/2023	6:40 AM	50.46
29/01/2023	7:15 AM	50.76
<b>Total Tonnes</b>		<b>1393.23</b>
<b>Average truck movements per day</b>		<b>1.87</b>

## 5.8. Complaints

Nil complaints were received this month as presented in **Table 6**.

TABLE 6: Summary of complaints received in January 2023

Date	Complaint Category
-	-