TECHNICAL REPORT

HERA MONTHLY ENVIRONMENTAL MONITORING SUMMARY JANUARY 2022

aurelia METALS

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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 December 2021. 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 disslved lead in the liqui portion and the lead particulates in the filter paper following laboratory analysis
g/m^2/month	Grams per square meter per month
dB (L)	Decibel (linear maximum)
dB LA_{eq} (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 (includees Cyanide species liberated at moderate pH of 4.5)
TSS	Total Suspended Solids

4. Maps

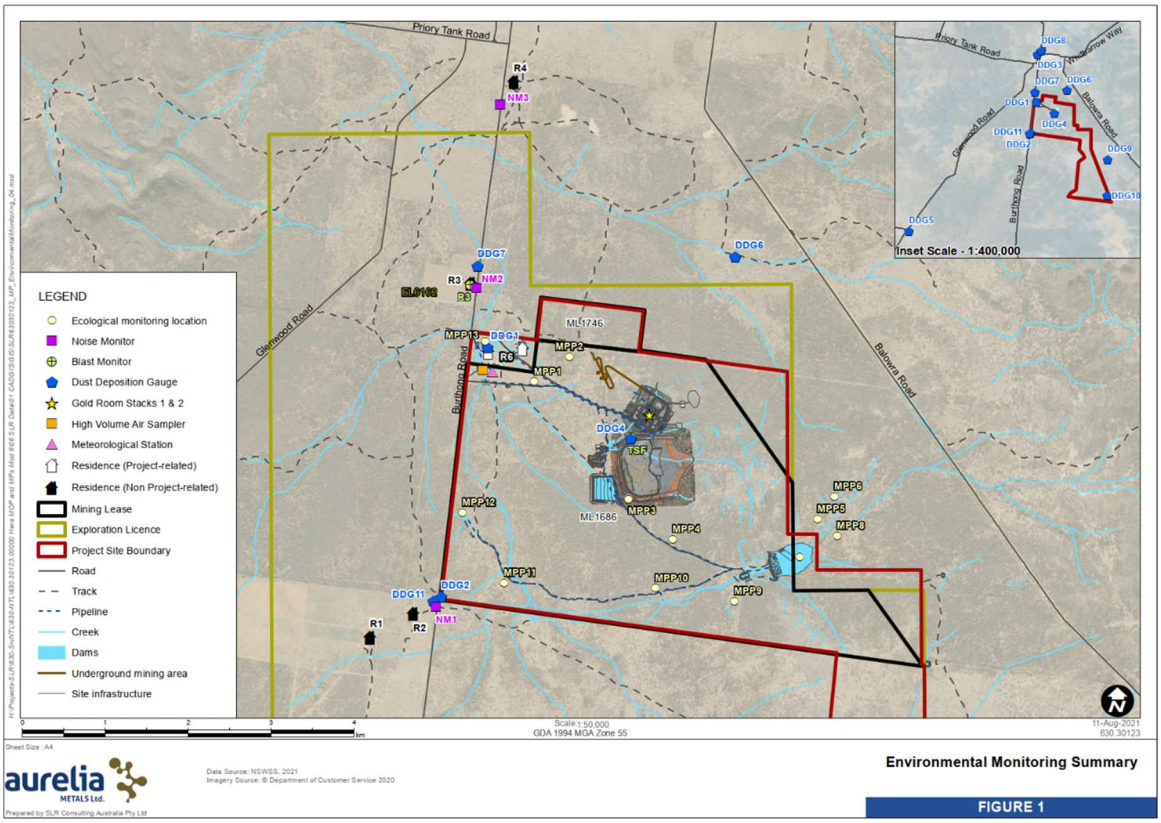

Figure 1 - Hera Environmental Monitoring Locations

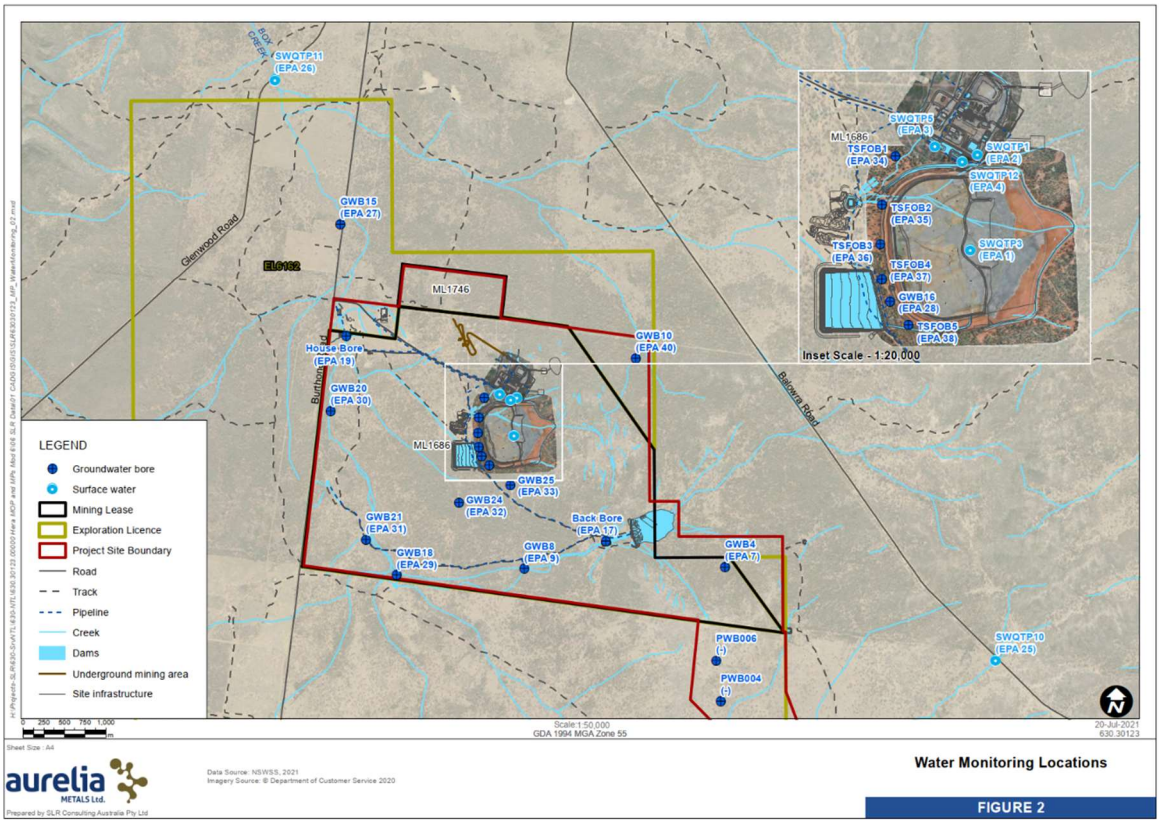

Figure 2 - Hera Water Monitoring Locations

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.

TABLE 1: Summary of meteorological data for January 2022

Parameter	No. of measurements for the month	Minimum Value	Mean Value	Median Value	Maximum value	Total
Air Temperature (^{0}C)	Continuous	0.00	10.30	10.00	47.60	-
Wind Speed (m/s)	Continuous	13.62	25.93	25.73	36.84	-
Sigma Theta (^{0})	Continuous	2.70	20.27	16.25	98.29	-
Rainfall (mm)	Continuous	0.00	0.03	0.00	4.20	109.2
Relative Humidity (%)	Continuous	16.66	58.34	58.26	99.90	-

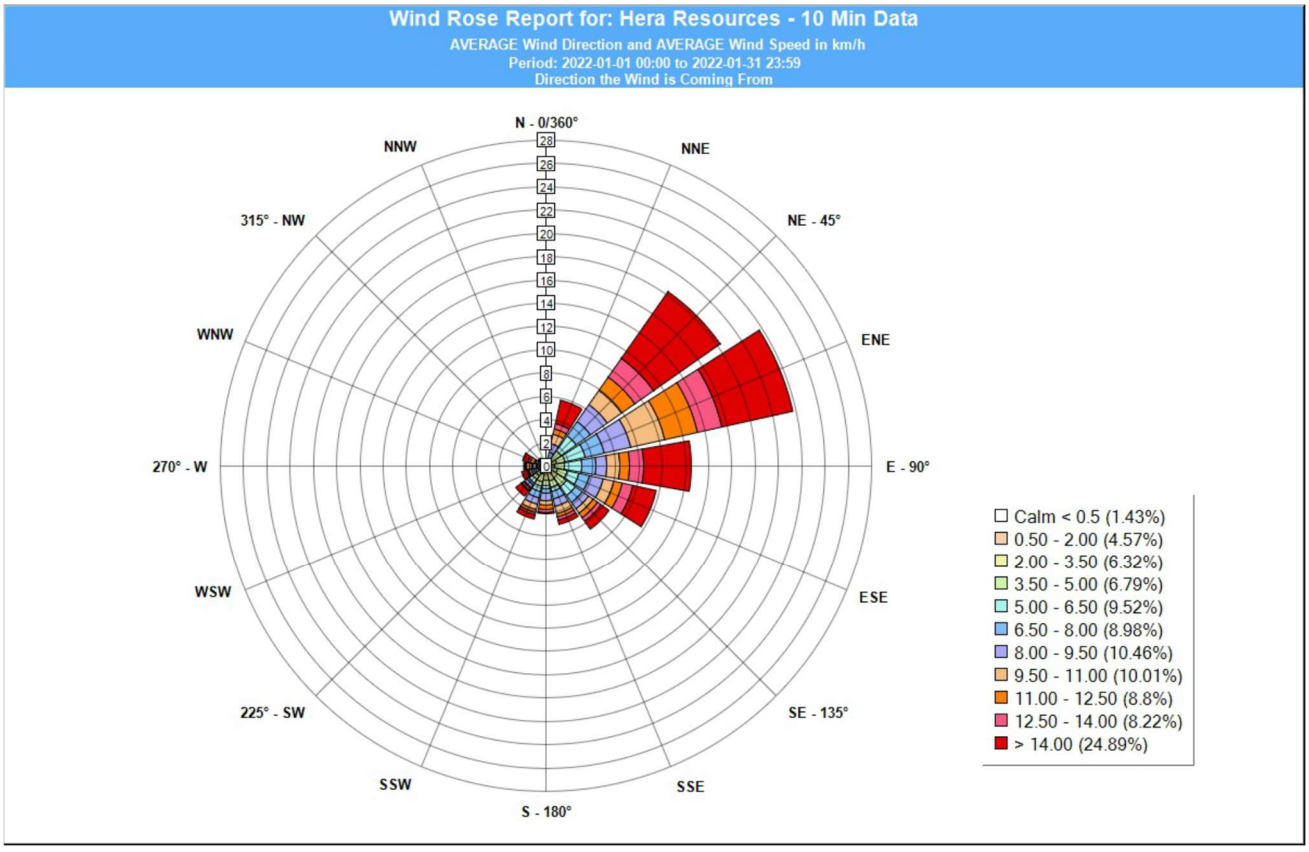

Figure 3 - Wind Rose for January

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 2022 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

	WAD Cyanide (mg/L)			
Monitoring Point	Minimum	Average	Maximum	EPL 90th percentile concentration criteria
TSF Thickener Discharge (EPA Point 1)	0.0	0.0	0	20
Proces Water Dam (EPA Point 2)	0.0	0.0	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 2021. Results were presented in the December 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 the 11th and 12th of May 2021. Results were reported in the June Monthly report. The next annual noise monitoring is due to be undertaken in May 2022. 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, Industry and Environment (DPIE).

5.4. Blast Monitoring

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

Hera conducted a total of 5 blasts during January. During November a new blast monitoring system was implemented which does not trigger monitoring for every blast. Four blast events triggered monitoring at R3 during January (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 DPIE.

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

Date	Time	Time Period	Vibration (mm/s)	Overpressure (dB)
12/01/2022	12:05	Day	0.52	81.4
16/01/2022	6:51	Sunday	0.24	75.1
22/01/2022	22:07	Night	0.34	80.2
30/01/2022	7:09	Night	0.05	73.3

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

Pollutant	Unit	Limit	Averaging Period	Result
TSP	µg/m^3	90	Annual	36.89
PM-10	µg/m^3	25	Annual	13.40
High Volume Air Samplers (PM_{10})				
4/1/2022	µg/m^3	50	24 Hour	23.6
10/1/2022	µg/m^3	50	24 Hour	20.0
16/1/2022	µg/m^3	50	24 Hour	28.7
22/1/2022	µg/m^3	50	24 Hour	14.9
28/1/2022	µg/m^3	50	24 Hour	11.8
Dust Deposition Gauges				
Deposited Dust (DDG 1)	g/m^2/month	4	24 Hour	2.14
Deposited Dust (DDG2)	g/m^2/month	4	24 Hour	2.30

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 on 30th January 2022. Results of gold room stack monitoring are presented in **Table 5**.

TABLE 5: Summary of blast monitoring results for January at R3

Location	Parameter	Units	Detected Value
EPA ID 24 Gold Room Scrubber Stack	Nitric Oxide	mg/m^3	7.8
EPA ID39 New Gold Room Baghouse Stack	Nitric Oxide	mg/m^3	<4

5.7. Concentate 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 6**.

TABLE 6: Summary of concentrate truck movements for January

Date	Load Time	Truck Dry Tonnes
01-Jan-22	10:40:00	49.47
01-Jan-22	11:30:00	48.73
01-Jan-22	12:10:00	49.10
01-Jan-22	14:30:00	48.78
01-Jan-22	15:10:00	49.08
01-Jan-22	16:00:00	48.71
02-Jan-22	07:30:00	48.96
02-Jan-22	11:00:00	48.55
02-Jan-22	11:30:00	48.85
02-Jan-22	13:45:00	48.89
02-Jan-22	14:15:00	49.00
02-Jan-22	15:30:00	48.82
02-Jan-22	17:25:00	48.78
03-Jan-22	07:00:00	49.01
03-Jan-22	10:30:00	48.82
03-Jan-22	12:40:00	48.96
03-Jan-22	15:50:00	48.93
03-Jan-22	16:30:00	49.01
04-Jan-22	06:20:00	49.01

Date	Load Time	Truck Dry Tonnes
04-Jan-22	06:50:00	48.87
04-Jan-22	09:40:00	49.39
04-Jan-22	10:10:00	48.85
04-Jan-22	11:00:00	48.73
04-Jan-22	12:45:00	49.18
04-Jan-22	13:30:00	48.81
12-Jan-22	07:45:00	49.01
12-Jan-22	09:15:00	48.60
12-Jan-22	11:00:00	48.80
12-Jan-22	12:25:00	48.60
12-Jan-22	13:30:00	48.69
12-Jan-22	14:05:00	49.32
12-Jan-22	18:01:00	48.87
13-Jan-22	08:25:00	48.67
13-Jan-22	09:29:00	48.60
13-Jan-22	11:20:00	49.27
13-Jan-22	11:40:00	48.60
13-Jan-22	12:40:00	48.67
13-Jan-22	14:15:00	48.94
13-Jan-22	17:30:00	48.69
14-Jan-22	08:00:00	48.80
14-Jan-22	09:00:00	48.60
14-Jan-22	11:25:00	48.73
15-Jan-22	09:00:00	48.60
15-Jan-22	09:30:00	48.96
15-Jan-22	12:00:00	48.64
15-Jan-22	13:45:00	48.76
15-Jan-22	16:00:00	48.73
16-Jan-22	07:00:00	48.80

Date	Load Time	Truck Dry Tonnes
16-Jan-22	10:00:00	48.16
16-Jan-22	13:00:00	48.73
16-Jan-22	15:05:00	49.73
16-Jan-22	18:15:00	48.91
19-Jan-22	09:15:00	48.78
19-Jan-22	13:40:00	48.60
19-Jan-22	14:15:00	48.71
19-Jan-22	17:10:00	48.74
20-Jan-22	08:20:00	48.62
20-Jan-22	09:00:00	48.69
20-Jan-22	11:20:00	48.87
20-Jan-22	11:20:00	48.64
20-Jan-22	12:10:00	48.55
20-Jan-22	13:10:00	48.94
20-Jan-22	14:20:00	48.73
20-Jan-22	16:00:00	48.82
21-Jan-22	07:15:00	48.60
21-Jan-22	07:30:00	48.87
21-Jan-22	10:25:00	48.62
21-Jan-22	10:45:00	48.67
21-Jan-22	13:27:00	48.64
21-Jan-22	15:30:00	48.69
22-Jan-22	15:30:00	48.65
23-Jan-22	06:30:00	48.67
23-Jan-22	09:20:00	48.67
23-Jan-22	12:20:00	48.71
23-Jan-22	14:00:00	49.18
23-Jan-22	15:15:00	48.64
23-Jan-22	17:15:00	48.73

Date	Load Time	Truck Dry Tonnes
24-Jan-22	11:15:00	48.69
24-Jan-22	12:50:00	48.83
24-Jan-22	15:50:00	48.80
25-Jan-22	06:35:00	48.73
25-Jan-22	06:45:00	48.97
25-Jan-22	09:30:00	48.67
25-Jan-22	09:50:00	48.71
25-Jan-22	12:15:00	48.64
25-Jan-22	12:45:00	48.71
25-Jan-22	13:50:00	49.34
25-Jan-22	15:40:00	49.70
25-Jan-22	15:55:00	48.91
25-Jan-22	16:20:00	48.96
25-Jan-22	16:50:00	48.83
26-Jan-22	06:00:00	48.69
26-Jan-22	06:10:00	49.23
26-Jan-22	07:15:00	48.96
26-Jan-22	09:00:00	48.96
26-Jan-22	09:50:00	48.82
26-Jan-22	10:35:00	48.60
26-Jan-22	11:50:00	48.87
26-Jan-22	13:40:00	49.11
26-Jan-22	15:30:00	48.80
27-Jan-22	08:15:00	48.73
27-Jan-22	08:25:00	49.20
27-Jan-22	08:50:00	48.64
27-Jan-22	11:00:00	49.21
27-Jan-22	11:30:00	48.62
27-Jan-22	11:45:00	48.83

Date	Load Time	Truck Dry Tonnes
27-Jan-22	12:00:00	48.62
27-Jan-22	14:30:00	48.62
27-Jan-22	14:45:00	48.71
27-Jan-22	03:25:00	49.33
27-Jan-22	03:45:00	49.34
28-Jan-22	07:10:00	49.67
28-Jan-22	08:45:00	49.24
28-Jan-22	13:30:00	48.82
28-Jan-22	15:10:00	49.51
31-Jan-22	14:05:00	48.74
27-Jan-22	08:15:00	48.73
	Total Tonnes	**5764.79**
	Average truck movements per day	**7.87**

5.8. Complaints

No complaints were received this month as presented in **Table 7**.

TABLE 7: Summary of complaints received In January.

Date	Complaint Category
-	-