

Hera Mine
MONTHLY ENVIRONMENTAL MONITORING SUMMARY
REPORT

EPL 20179
"The Peak"
Burthong Rd,Nymagee
NSW 2831

May 2021

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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 covered for May 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

3. DEFINITIONS

mm/s – the peak of the vibration in millimetres per second

Insoluble Solids – the insoluble portion of the dust deposition

Total Lead – Including dissolved lead in the liquid portion and the lead particulates in the filter paper following laboratory analysis

g/m²/month – grams per square meter per month

dB (L) – decibel (linear maximum)

dB LAeq (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

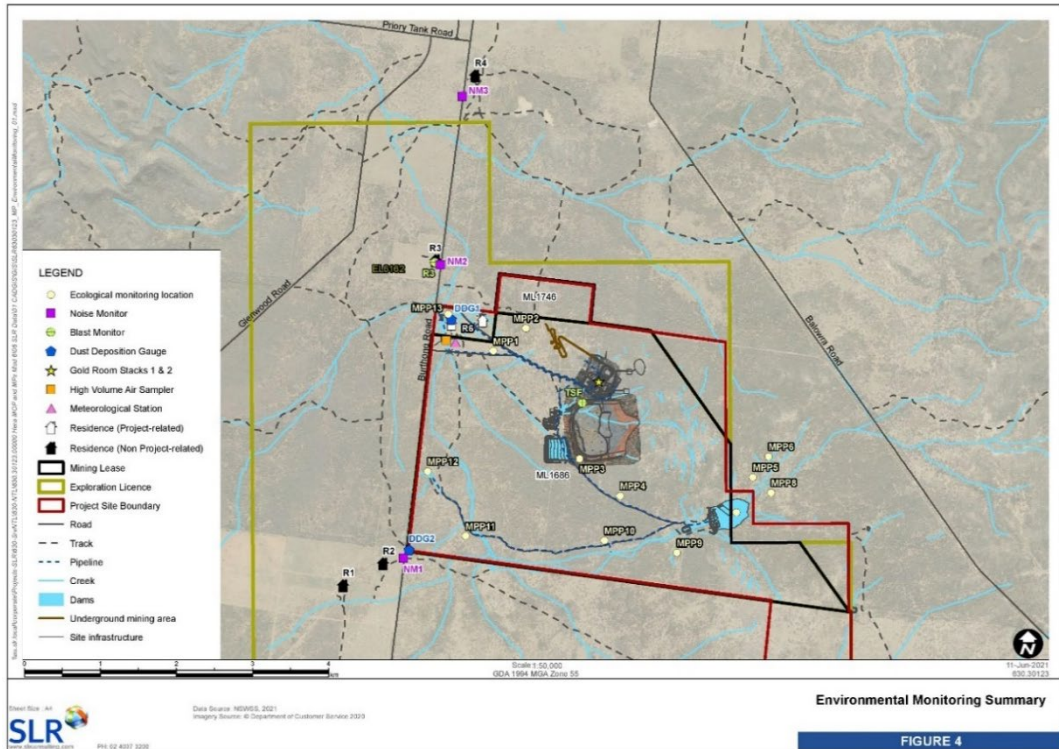


Figure 1 Hera Monitoring Locations

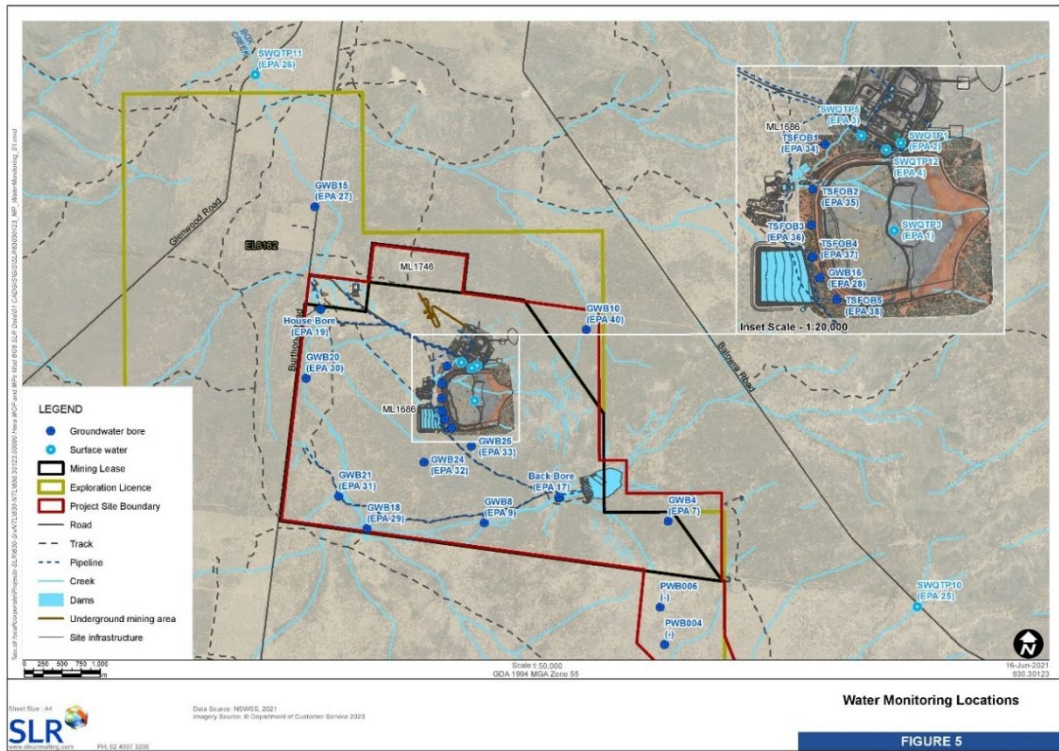


Figure 2 Hera Water Monitoring Locations

5. MONITORING RESULTS

5.1. WEATHER

The meteorology monitoring data is acquired through Hera’s weather station located on the Hera Mine site, approx. 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 May.

Table 1. Summary of meteorological data for the month.

Parameter	No. of measurements for month	Min. value	Mean value	Median value	Max. value	Total
Air Temperature (°C)	Continuous	-6.5	10.88	11.66	25.60	
Wind Speed (m/s)	Continuous	0.00	5.91	4.44	25.81	
Sigma Theta (°)	Continuous	0.00	186.80	214.83	359.84	
Rainfall (mm)	Continuous	0.00	0.00	0.00	1.80	15.60
Relative Humidity (%)	Continuous	26.31	72.38	76.33	99.76	

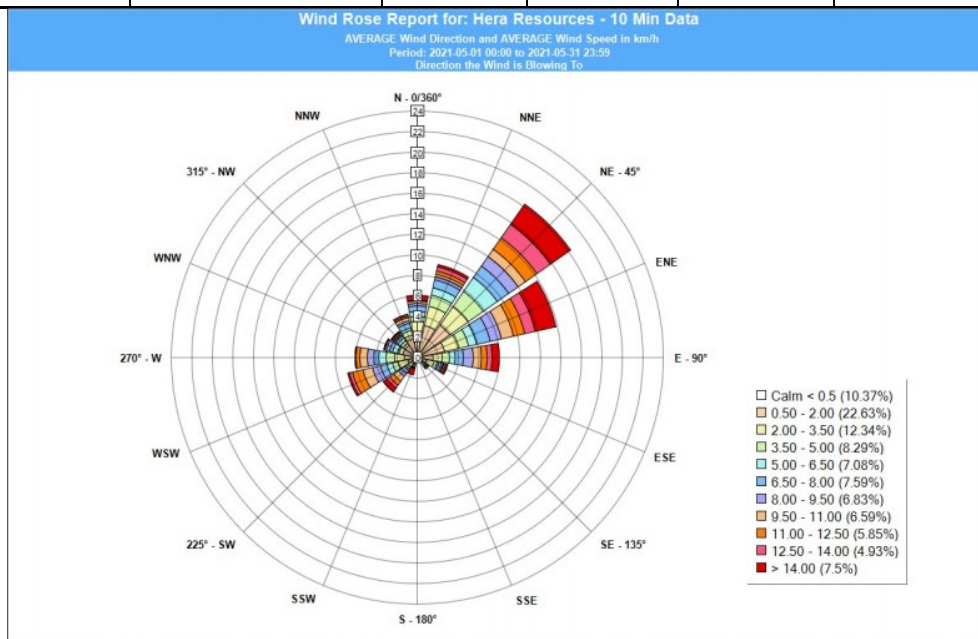


Figure 3 –Wind Rose Hera May 2021

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 Monitoring

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 May 2021. Licence points 3,4,25 and 26 did not discharge for the month. No exceedances were recorded for the month.

Table 2 Surface Water Monitoring Results

	WAD Cyanide				Al	As	B	Cd	Cu	EC (µS/cm)	Pb	Mn	Ni	N	Oil & Grease	pH	Ag	P	TSS	Zn	
	Min.	Mean	Median	Max.																	
Licence Limits	10				0.055	0.024	0.37	0.0002	0.0014	1000	0.0034	1.9	0.011	0.5	10	6.5-8.5	0.00005	0.025	50	0.008	
	20 (90 Percentile)																				
	30 (max.)																				
	0																				
Licence Points																					
1	0	0.00	0	0																	
2	0	0.00	0	0																	
3	No flow																				
4	No flow																				
25	No flow																				
26	No flow																				

Groundwater Monitoring

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, with the previous monitoring conducted in March 2021 and the next monitoring due in June 2021.

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 3 and 4 August 2020. The site was found to be fully compliant. The next annual noise monitoring is due to be undertaken in July 2021.

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 40 blasts this month with the blast schedule undertaken at the beginning and end of the shift change, which is 6:30am and 6:30pm. The characteristics of each blast are presented in **Table 3**. No exceedances were recorded for the month.

Hera holds a Noise and Blast agreement with the Landholder of R3.

Table 3. Summary of blast monitoring results for the month at R3.

Date	Time	Time period	Vibration (mm/s)	Overpressure (dB)
01/05/2021	06:42:15	NIGHT	0.11	96.6
01/05/2021	06:42:15	NIGHT	0.11	96.6
02/05/2021	06:57:00	Sunday	0.07	81.9
03/05/2021	06:32:00	NIGHT	0.06	74.8
03/05/2021	06:53:05	NIGHT	0.06	85.8
03/05/2021	06:55:57	NIGHT	0.09	86.4
03/05/2021	18:52:00	EVENING	0.26	104.3
04/05/2021	07:07:40	DAY	0.11	91.0
04/05/2021	07:07:40	DAY	0.11	91.0
04/05/2021	07:07:40	DAY	0.11	91.0
05/05/2021	02:30:00	NIGHT	0.11	75.6
05/05/2021	19:50:00	EVENING	0.14	74.8
05/05/2021	19:50:00	EVENING	0.14	74.8
06/05/2021	00:20:00	NIGHT	0.10	73.1
06/05/2021	18:55:35	EVENING	0.21	74.8
07/05/2021	18:51:00	EVENING	0.22	74.8
07/05/2021	18:51:00	EVENING	0.22	74.8
07/05/2021	18:51:00	EVENING	0.22	74.8
08/05/2021	18:57:13	EVENING	0.58	81.2
09/05/2021	07:00:00	Sunday	0.09	74.8
09/05/2021	13:00:00	Sunday	0.23	79.6

09/05/2021	13:00:00	Sunday	0.23	79.6
10/05/2021	18:45:00	EVENING	0.21	73.1
10/05/2021	18:45:00	EVENING	0.21	73.1
10/05/2021	18:45:00	EVENING	0.21	73.1
12/05/2021	06:31:20	NIGHT	0.06	74.8
13/05/2021	07:17:40	DAY	0.17	75.6
13/05/2021	07:28:40	DAY	0.18	98.1
13/05/2021	18:53:50	EVENING	0.27	75.6
13/05/2021	18:53:52	EVENING	0.22	75.6
14/05/2021	06:53:30	NIGHT	0.08	92.5
14/05/2021	07:01:47	DAY	0.07	92.5
15/05/2021	06:45:00	NIGHT	0.07	82.3
15/05/2021	06:45:00	NIGHT	0.07	82.3
16/05/2021	07:01:40	Sunday	0.25	75.6
16/05/2021	07:01:40	Sunday	0.25	75.6
16/05/2021	07:01:40	Sunday	0.25	75.6
16/05/2021	07:10:00	Sunday	0.24	75.6
16/05/2021	18:45:00	Sunday	0.06	75.6
17/05/2021	07:01:10	DAY	0.46	78.6
17/05/2021	07:01:10	DAY	0.46	78.6
17/05/2021	07:01:15	DAY	0.46	78.6
17/05/2021	18:46:10	EVENING	0.13	74.8
17/05/2021	18:46:10	EVENING	0.13	74.8
18/05/2021	06:49:45	NIGHT	0.13	75.6
19/05/2021	06:53:25	NIGHT	0.22	75.6
19/05/2021	06:55:30	NIGHT	0.22	76.9
19/05/2021	18:45:00	EVENING	0.13	74.8
20/05/2021	18:45:00	EVENING	0.14	75.6
20/05/2021	18:45:00	EVENING	0.14	75.6
21/05/2021	12:08:01	DAY	0.39	85.1
21/05/2021	18:45:10	EVENING	0.17	74.8
22/05/2021	18:45:00	EVENING	0.17	75.6

24/05/2021	07:00:48	DAY	0.34	76.9
24/05/2021	13:22:00	DAY	0.23	78.1
25/05/2021	00:30:00	NIGHT	0.05	74.8
25/05/2021	07:08:30	DAY	0.09	74.8
25/05/2021	14:23:15	DAY	0.26	87.4
25/05/2021	18:45:00	EVENING	0.24	74.8
26/05/2021	06:54:30	NIGHT	0.05	74.8
27/05/2021	18:31:22	EVENING	0.32	78.6
31/05/2021	07:05:20	DAY	0.23	75.6

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 this month have been summarised in **Table 4**. No exceedances were recorded.

Table 4. Summary of air quality monitoring results for the month.

Pollutant	Unit	Limit	Averaging Period	Result
TSP	µg/m ³	90	Annual	37.81
PM-10 (µg/m ³)	µg/m ³	25	Annual	15.33
3/04/2021	µg/m ³	50	24 hour	46.9
9/04/2021	µg/m ³	50	24 hour	3.60
15/04/2021	µg/m ³	50	24 hour	7
21/04/2021	µg/m ³	50	24 hour	21.3
27/04/2021	µg/m ³	50	24 hour	8.2
Deposited Dust (DDG1)	g/m ² /month	4	Annual	3.2
Deposited Dust (DDG2)	g/m ² /month	4	Annual	1.4

5.6. GOLD ROOM STACK MONITORING

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

Gold Room stack monitoring is conducted on an annual basis. **Table 5** shows a summary of the annual monitoring which was conducted on 1 September 2020. On 1 September 2020 the EPA ID 24 – Gold Room Scrubber Stack recorded a Mercury result of 0.26 mg/m³, which is in exceedance of the Group 6 standard of concentration limit of 0.2 mg/m³.

The Mercury exceedance is believed to be a water droplet caught by monitoring equipment during sampling. No impacts on neighbouring properties were observed. The next annual monitoring is due to be undertaken in July 2021.

Table 5. Summary of gold room stack monitoring conducted in September 2020.

EPA ID No.	Nitric Oxide (mg/m ³)
24	4.7
39	4.6

5.7. CONCENTRATE TRANSPORT

The Company is licenced to transport 60,000 tonnes of lead/zinc concentrate from site averaged over a calendar year and during daylight hours only. Hera is limited to eight truck movements per day averaged over a calendar month (two truck movements is defined as entering and leaving the site). A summary of concentrate haulage operations is presented in **Table 6**.

Table 6. Summary of the concentrate truck movements from the Hera Mine to Hermidale rail siding for the

Date	Load Time	Truck Dry Tonnes
01-May-20	07:30:00	48.6
02-May-20	15:00:00	48.636
03-May-20	07:30:00	48.6
03-May-20	10:35:00	48.672
03-May-20	13:30:00	48.618
04-May-20	07:15:00	48.618
04-May-20	10:30:00	48.618
04-May-20	13:30:00	48.708

05-May-20	12:30:00	48.672
05-May-20	12:50:00	48.636
05-May-20	14:30:00	48.618
05-May-20	15:50:00	48.6
06-May-20	07:30:00	48.636
06-May-20	08:30:00	48.636
06-May-20	10:35:00	48.6
06-May-20	11:40:00	53.1
06-May-20	13:40:00	48.69
06-May-20	16:35:00	48.654
07-May-20	07:15:00	48.906
07-May-20	07:20:00	48.78
07-May-20	12:00:00	48.69
07-May-20	13:25:00	48.6
07-May-20	14:55:00	48.636
07-May-20	15:20:00	48.708
07-May-20	16:40:00	48.438
14-May-20	07:15:00	48.816
14-May-20	08:30:00	48.834
14-May-20	09:00:00	48.618
14-May-20	10:30:00	48.618
14-May-20	12:00:00	48.196648
14-May-20	13:50:00	48.69
14-May-20	14:40:00	48.555
16-May-20	07:30:00	48.6
16-May-20	11:00:00	48.618
16-May-20	14:00:00	48.618
17-May-20	07:15:00	48.744
19-May-20	11:30:00	48.636
19-May-20	12:50:00	48.708
20-May-20	07:15:00	48.6
20-May-20	10:30:00	48.618
20-May-20	13:20:00	48.708

20-May-20	16:20:00	48.654
21-May-20	07:10:00	48.636
21-May-20	10:40:00	48.708
21-May-20	13:50:00	48.636
21-May-20	16:30:00	48.708
22-May-20	07:10:00	48.69
22-May-20	10:15:00	48.6
22-May-20	13:00:00	48.546
22-May-20	16:00:00	48.6
24-May-20	07:15:00	48.618
24-May-20	07:45:00	48.618
27-May-20	07:30:00	48.636
27-May-20	10:35:00	48.78
27-May-20	11:00:00	48.708
27-May-20	14:00:00	48.654
27-May-20	14:20:00	48.744
29-May-20	07:30:00	48.618
29-May-20	11:45:00	48.654
29-May-20	15:00:00	48.636
30-May-20	07:30:00	48.708
30-May-20	10:30:00	48.636
30-May-20	13:30:00	48.708
30-May-20	16:00:00	48.717
31-May-20	07:00:00	48.6
31-May-20	11:30:00	48.852
31-May-20	14:15:00	48.618
Total Tonnes		3264.13
Average Truck Movements per day		2.16

5.8. COMPLAINTS

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

Table 7. Summary of the complaints received this month

Date	Complaint category
	Nil