

Licensee	Hera Resources Pty Ltd
Address	'The Peak, Burthong Road, Nymagee, NSW 2831
Environmental Protection Licence	20179
Link to Licence	http://www.epa.nsw.gov.au/prpoeoapp/ViewPOEOLicence.aspx?DOCID=32372&SYSUID=1&LICID=20179
Project Approval	10_0191
Reporting Period	July 2016
Date Published	22 August 2016

Weather Monitoring

Hera Resources Pty Ltd (the Company), a wholly owned subsidiary of Aurelia Metals Limited, owns and operates the Hera Mine. The Company has one licenced weather station (licence point 23) associated with the mine (Figure 1). A summary of the licence conditions (Environmental Protection Licence (EPL) 20179) associated with this point is presented in Table 1.

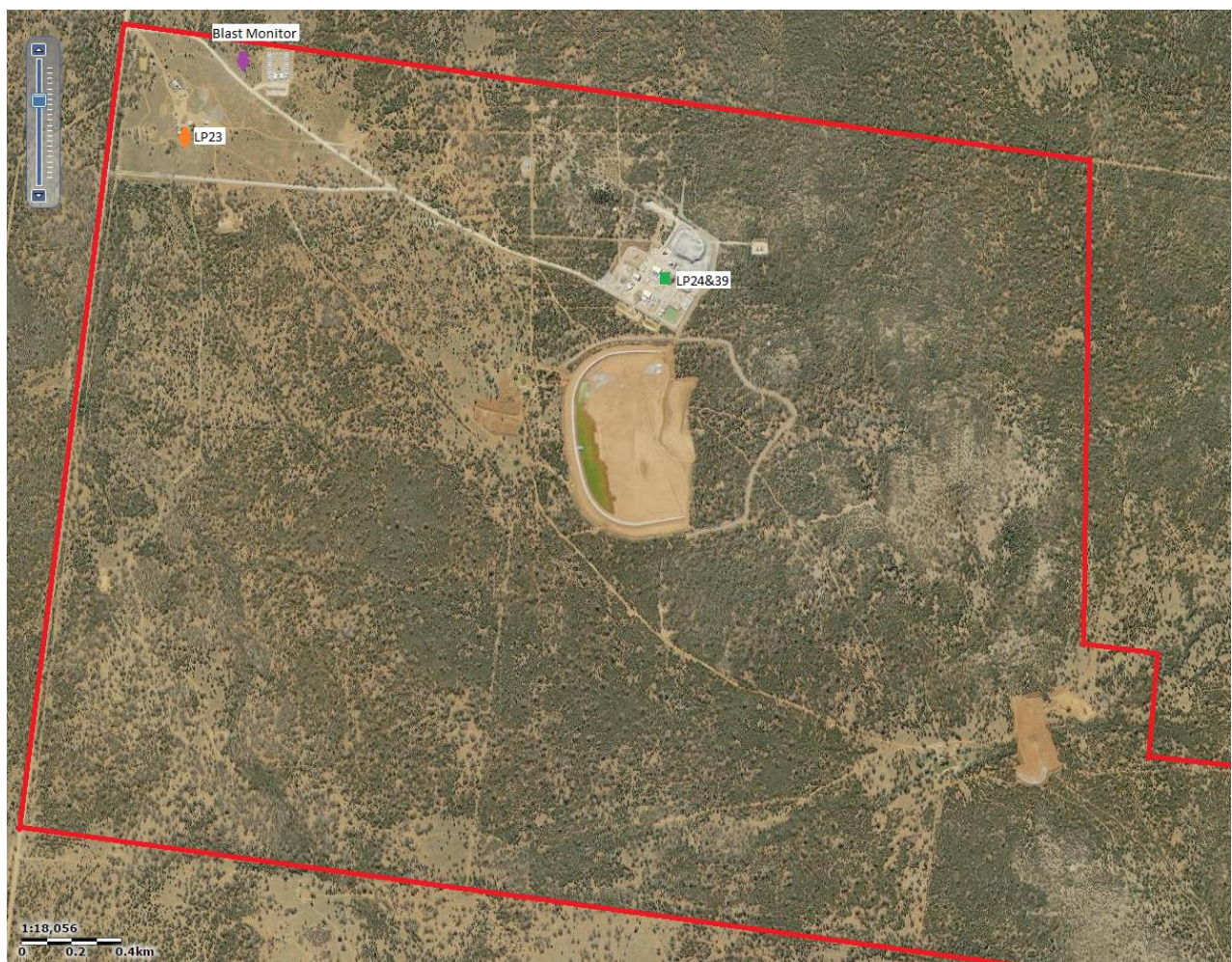


Figure 1. Location of the licence points associated with Gold Room Stack monitoring (Licence Point 24), Blast monitoring and meteorological monitoring (Licence Point 23).

Table 1. Summary of EPL 20179 conditions associated with the licensed weather station.

Parameter	Frequency
Air Temperature (°C)	Continuous
Wind Direction (°)	Continuous
Wind Speed (m/s)	Continuous
Sigma Theta (°)	Continuous
Rainfall (mm)	Continuous
Relative Humidity (%)	Continuous

Meteorological monitoring is conducted on a continuous basis. Table 2 is a summary of the data collected by the weather station in July 2016. Figure 2 is a wind rose for the month.

Table 2. Summary of meteorological data for July 2016.

Pollutant	No. of measurements for month	Min. value	Mean value	Median value	Max. value
Air Temperature (°C)	Continuous	-3.65	9.78	9.94	23.28
Wind Speed (m/s)	Continuous	0.00	1.96	1.66	8.29
Sigma Theta (°)	Continuous	1.26	20.69	16.42	98.45
Rainfall (mm)	Continuous	0.00	0.01	0.00	4.40
Relative Humidity (%)	Continuous	47.48	84.43	88.44	99.61

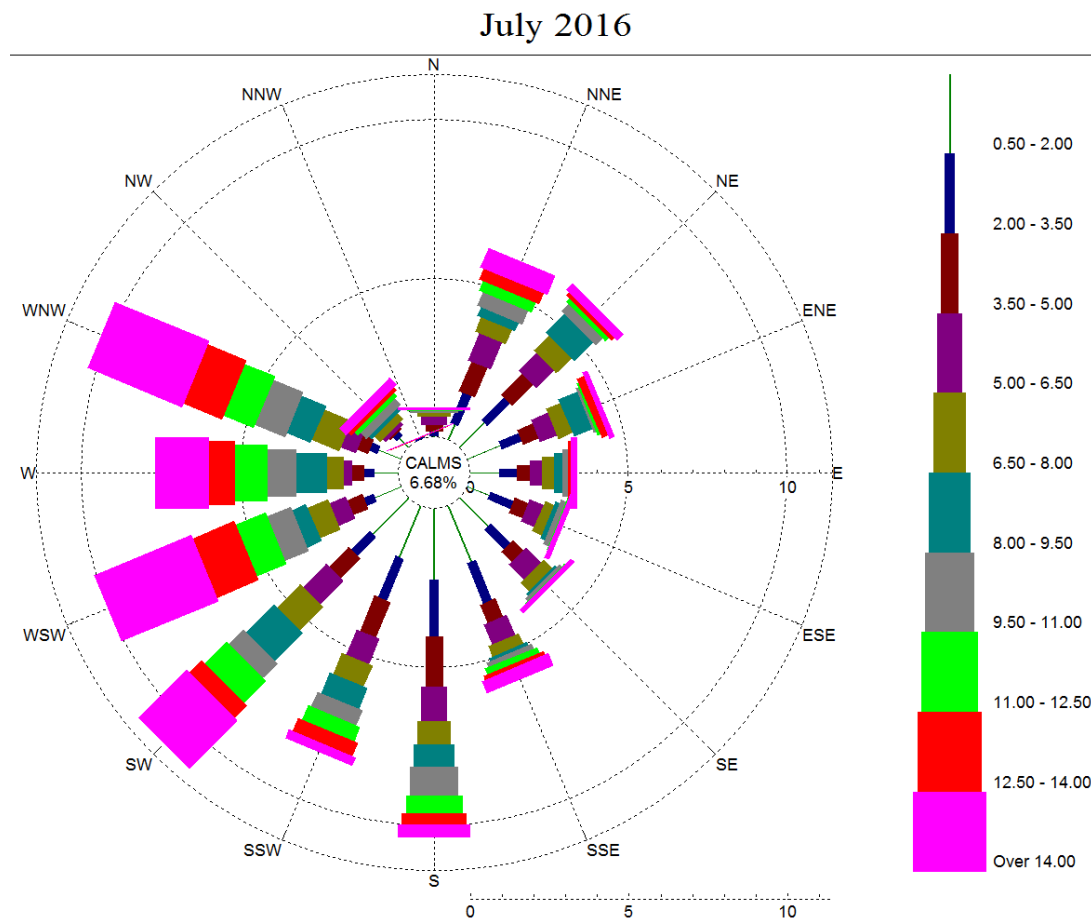


Figure 2. Wind rose July 2016.

Surface Water Monitoring

The Company has six licence points associated with surface waters. Four of these points are located within the Mining Lease (Figure 3) and two are located on Box creek, upstream and downstream of the mining lease (Figure 4). A summary of the licence conditions associated with these licence points is presented in Table 3.

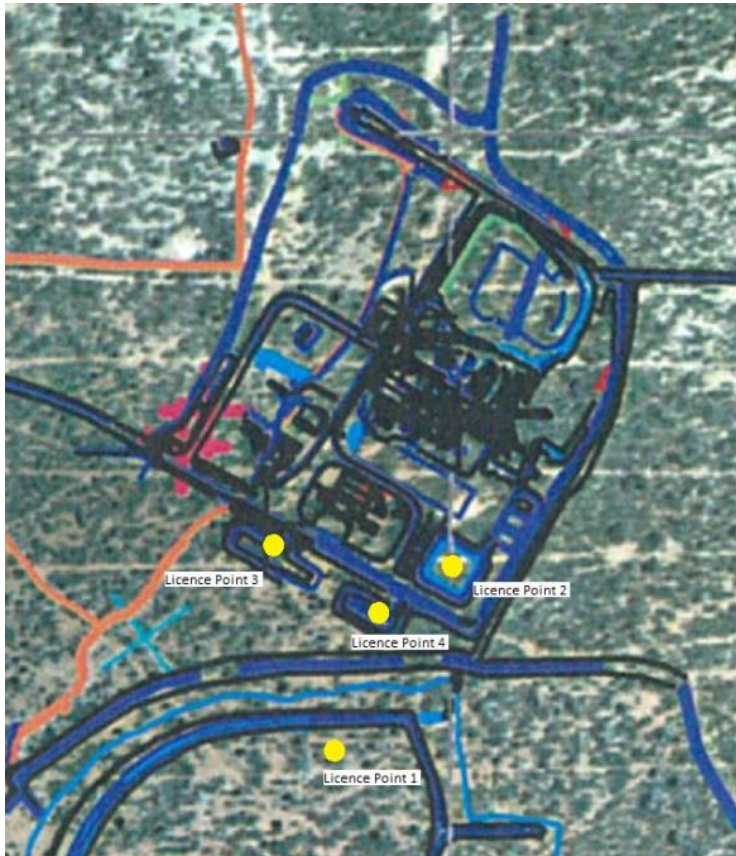


Figure 3. Licensed surface water monitoring points located onsite.

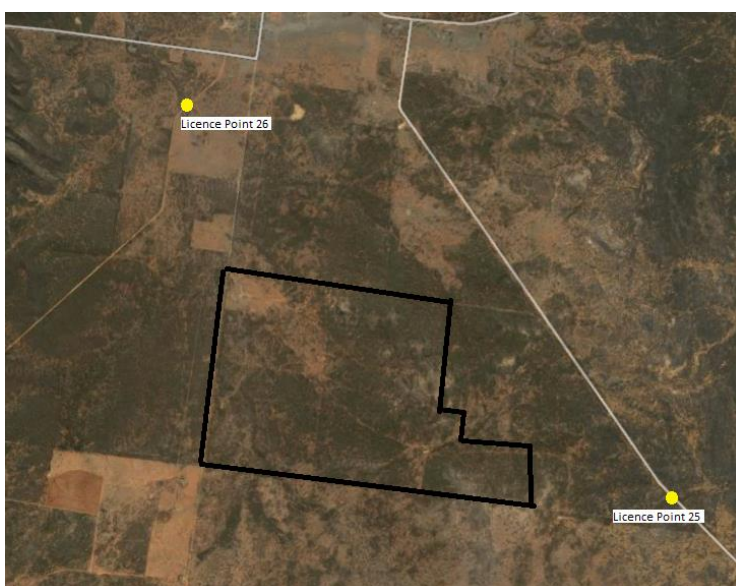


Figure 4. Licensed surface water monitoring points located offsite. The black outline represents the Project Area.

Table 3. Summary of EPL 20179 conditions associated with licensed surface water monitoring points.

EPA ID No.	Monitoring Frequency	Limit
1, 2	Daily during discharge	
3, 4, 25, 26	During discharge	
	Pollutant	
1	Cyanide (weak acid dissociable (WAD))	10 mg/L
2	Cyanide (WAD)	20 mg/L (90 percentile limit)
		30 mg/L (max. limit)
3, 4, 25, 26 (Please note: Limits apply only to Licence Points 3 and 4.)	Aluminium	0.055 mg/L
	Arsenic	0.024 mg/L
	Boron	0.370 mg/L
	Cadmium	0.0002 mg/L
	Copper	0.0014 mg/L
	Cyanide (WAD)	0.007 mg/L
	Electrical Conductivity	1000 (µS/cm)
	Lead	0.0034 mg/L
	Manganese	1.90 mg/L
	Nickel	0.011 mg/L
	Nitrogen (total)	0.5 mg/L
	Oil and Grease	10 mg/L
	pH	6.5-8.5
	Phosphorus (total)	0.025 mg/L
	Silver	0.00005 mg/L
Total suspended solids	50 mg/L	
Zinc	0.008 mg/L	

Table 4 a summary of the surface water quality results. The table has also been colour coordinated by the licence limit that applies to each licence point. Licence Point 4, 25 and 26 did not discharge for the month. On 20 July 2016 Licence Point 3 discharged following heavy rainfall (48.8 mm). The exceedances to licence conditions have been highlighted red in the table. The incident was reported to the Environment Protection Authority, Department of Industry, Division of Resources and Energy and the Department of Planning and Environment on 4 August 2016.

Table 4. Summary of surface water quality results for July 2016.

	Analytes (mg/L)																			
	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.)																			
	0.007																			
Licence Points																				
1	0	0	0	0																
2	0	0	0	0																
3	<0.004				1.64	0.002	0.06	0.0194	0.013	1628	0.375	0.797	0.039	9.6	<5	6.71	<0.001	0.03	25	4.72
4	No flow																			
25	No flow																			
26	No flow																			

Groundwater Monitoring

The Company has 17 licence points associated with groundwater. These points are located around the Project Area (Figure 5) and are a combination of observation bores, productions bores (red points) and piezometers (purple points). A summary of the licence conditions associated with these licence points is presented in Table 5.

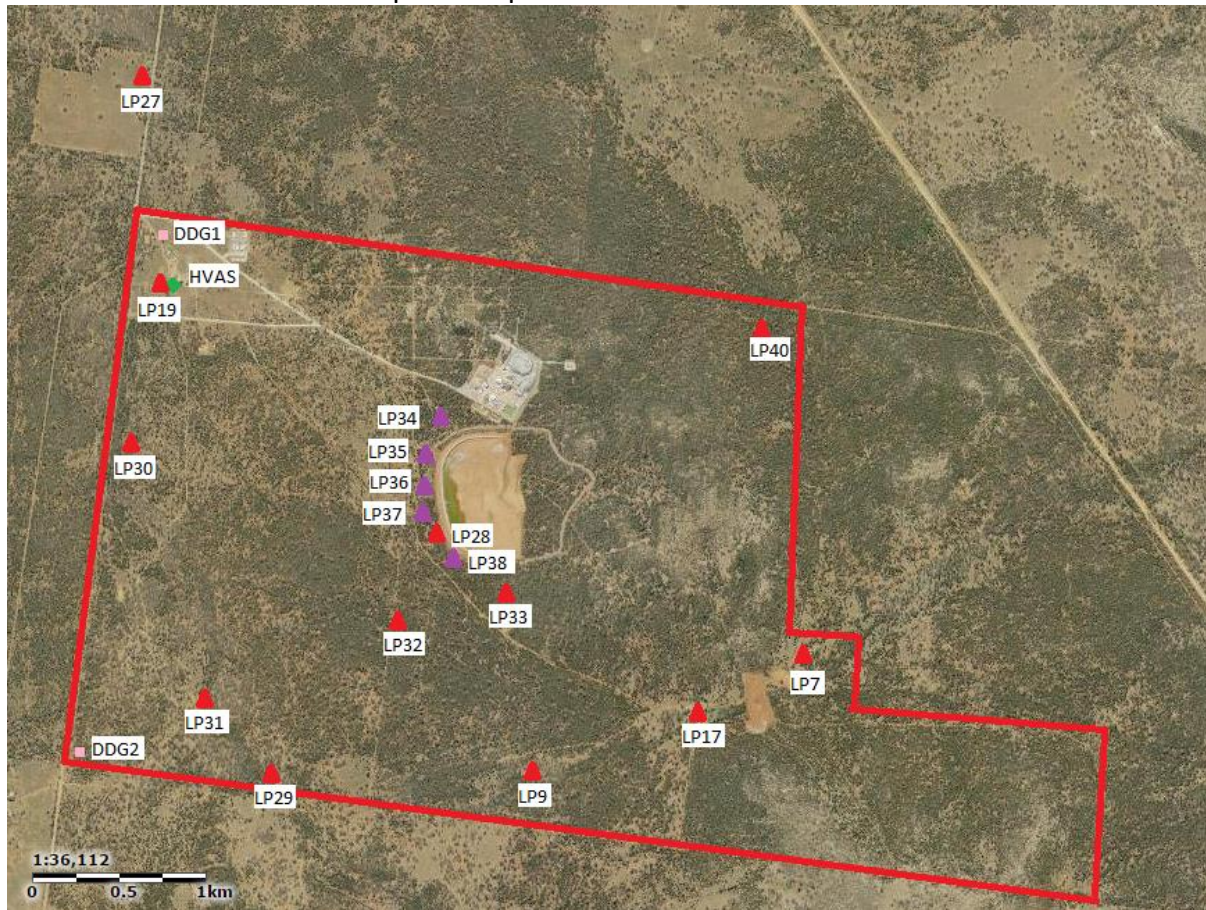


Figure 5. Licensed groundwater and air quality monitoring points.

Table 5. Summary of EPL 20179 conditions associated with licensed groundwater monitoring points.

EPA ID No.	Monitoring Frequency
	Quarterly
	Pollutant
7, 9, 17, 19, 27, 28, 29, 30, 31, 32, 33, 40	Antimony (mg/L)
	Arsenic (mg/L)
	Bicarbonate (mg/L)
	Boron (mg/L)
	Cadmium (mg/L)
	Calcium (mg/L)
	Carbonate (mg/L)
	Chloride (mg/L)
	Chromium (mg/L)
	Copper (mg/L)
	Cyanide (free) (mg/L)
	Cyanide (total) (mg/L)
	Cyanide (WAD) (mg/L)
	Electrical Conductivity ($\mu\text{S}/\text{cm}$)
	Iron (mg/L)
	Lead (mg/L)
	Magnesium (mg/L)
	Mercury (mg/L)
	Molybdenum (mg/L)
	Nickel (mg/L)
	pH
	Potassium (mg/L)
	Silver (mg/L)
	Sodium (mg/L)
	Tin (mg/L)
	Total dissolved solids (mg/L)
	Zinc (mg/L)
7, 27, 28, 29, 30, 34, 35, 36, 37, 38, 40	Standing Water Level (m)
EPA ID No.	Monitoring Frequency
	When water present
	Pollutant
34, 35, 36, 37, 38	Cyanide (free) (mg/L)
	Cyanide (total) (mg/L)
	Cyanide (WAD) (mg/L)
	Electrical Conductivity ($\mu\text{S}/\text{cm}$)
	pH

Quarterly groundwater results are summarised in Table 6.

Table 6. Summary of July 2016 groundwater quality results.

Licence Point	Analyte (mg/L)														
	Sb	As	HCO3-	B	Cd	Ca	CO3-2	Cl	Cr	Cu	CN- (Free)	CN- (Total)	CN- (WAD)	EC (mS/cm)	
7	<0.001	<0.001	<1	0.42	<0.0001	199	<1	1000	<0.001	0.003	<0.004	<0.004	<0.004	3979	
9	<0.001	0.009	<1	0.66	<0.0001	204	<1	906	<0.001	<0.001	<0.004	<0.004	<0.004	4639	
17	<0.001	0.003	<1	0.32	<0.0001	46	<1	215	<0.001	0.002	<0.004	<0.004	<0.004	1194	
19	<0.001	0.001	<1	<0.05	<0.0001	<1	<1	<1	<0.001	0.076	<0.004	<0.004	<0.004	21.5	
27	<0.001	<0.001	<1	1.22	<0.0001	73	<1	1120	<0.001	0.003	<0.004	<0.004	<0.004	4458	
28	0.001	0.003	<1	0.66	<0.0001	206	<1	974	0.001	0.008	<0.004	<0.004	<0.004	4590	
29	0.012	<0.001	<1	0.46	<0.0001	47	<1	326	<0.001	<0.001	<0.004	<0.004	<0.004	1743	
30	0.002	0.002	<1	1.84	<0.0001	77	<1	1480	<0.001	<0.001	<0.004	<0.004	<0.004	5986	
31	<0.001	0.002	<1	0.9	<0.0001	101	<1	1270	<0.001	0.006	<0.004	<0.004	<0.004	5080	
32	<0.001	<0.001	<1	0.89	<0.0001	248	<1	901	<0.001	0.002	<0.004	<0.004	<0.004	5595	
33	<0.001	0.004	<1	0.37	<0.0001	156	<1	523	<0.001	<0.001	<0.004	<0.004	<0.004	3070	
34											DRY	DRY	DRY	DRY	
35											DRY	DRY	DRY	DRY	
36											DRY	DRY	DRY	DRY	
37											DRY	DRY	DRY	DRY	
38											DRY	DRY	DRY	DRY	
40	<0.001	<0.001	<1	0.47	<0.0001	196	<1	1100	<0.001	0.001	<0.004	<0.004	<0.004	4356	
	Analyte (mg/L)														
	Fe	Pb	Mg	Hg	Mo	Ni	pH	K	Ag	Na	Sn	TDS	Zn	SWL (m)	
7	0.16	<0.001	162	<0.0001	<0.001	0.001	6.41	15	<0.001	576	<0.001	2820	0.008	52.98	
9	1.82	<0.001	228	<0.0001	<0.001	<0.001	6.77	27	<0.001	707	<0.001	3590	<0.005		
17	<0.05	<0.001	46	<0.0001	<0.001	0.002	6.3	10	<0.001	167	<0.001	736	0.02		
19	<0.05	<0.001	<1	<0.0001	<0.001	0.001	6.54	<1	<0.001	2	<0.001	<10	0.138		
27	1.13	<0.001	134	<0.0001	0.001	<0.001	7.01	31	<0.001	914	<0.001	2870	0.009	54.1	
28	1.42	<0.001	219	<0.0001	<0.001	0.004	6.4	26	<0.001	675	<0.001	3420	0.071	80.42	
29	<0.05	<0.001	57	<0.0001	0.001	0.002	6.6	14	<0.001	320	<0.001	1240	<0.005	62.59	
30	0.14	<0.001	100	<0.0001	<0.001	<0.001	6.77	32	<0.001	1380	<0.001	3630	0.015	59.9	
31	0.16	0.002	130	<0.0001	<0.001	<0.001	6.91	30	<0.001	956	<0.001	3270	0.079		
32	0.06	<0.001	232	<0.0001	<0.001	0.046	6.35	30	<0.001	898	<0.001	4770	0.032		
33	5.83	<0.001	154	<0.0001	<0.001	0.013	6.18	19	<0.001	420	<0.001	2240	0.06		
34															DRY
35															DRY
36															DRY
37															DRY
38															DRY
40	<0.05	<0.001	182	<0.0001	<0.001	<0.001	6.77	15	<0.001	655	<0.001	2950	<0.005	53.73	

Noise Monitoring

The Company has four licenced monitoring points (R1, R2, R3 and R4) located along the Burthong Road (Figure 6). 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 located in very close proximity to each other. A summary of the EPL and Project Approval (PA) conditions associated with these licenced points is presented in Table 7.

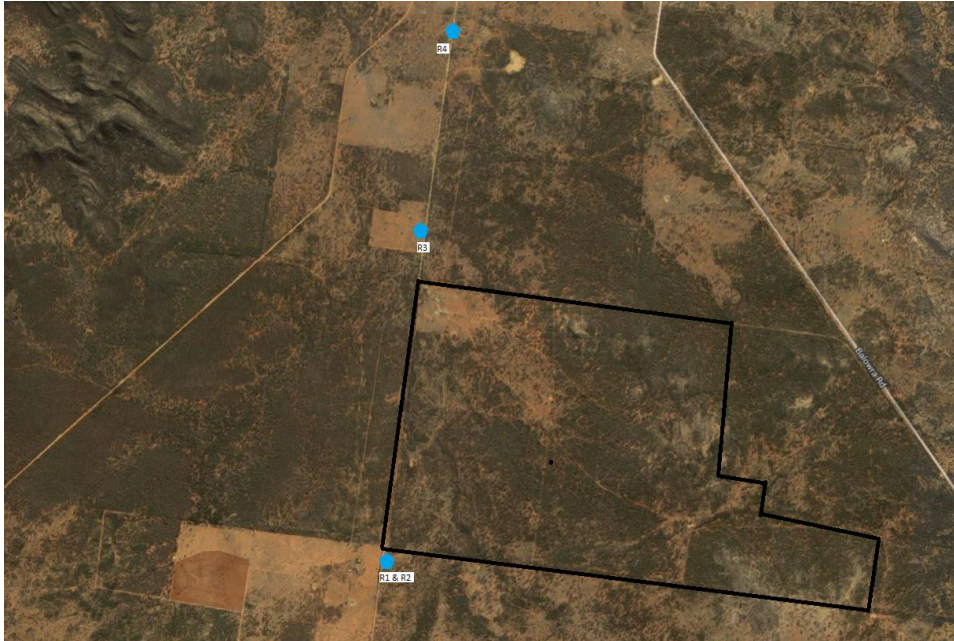


Figure 6. Licenced noise monitoring locations. The black outline represents the approximate project area.

Table 7. Summary of EPL 20179 conditions associated with noise monitoring.

Location	Pollutant - Noise	Limits
R1, R2, R3, R4	Monday to Friday - 0700 hours (hrs) to 1800 hrs	LAeq (15 minute) 35 decibels (dB)
	Monday to Friday - 1800 hrs to 2200 hrs	LAeq (15 minute) 35 dB
	All other times	LAeq (15 minute) 35 dB
		LA1 (1 minute) 45 dB

No monitoring was conducted this month as the noise monitor was sent away for repairs.

Blast Monitoring

The blast monitor is located to the east of the personnel accommodation (Figure 1). A summary of the EPL and PA conditions associated with this licenced point are presented in Table 8

Table 8. Summary of EPL 20179 and PA 10_0191 conditions associated with blast monitoring.

Location	Pollutant	Time Period	Limits
Blast monitoring	Ground vibration	All times	10 mm/s (max.)
	<i>(monitor for every blast)</i>	Day	5 mm/s (95% of total blasts)
		Evening	2 mm/s (95% of total blasts)
		Night and all day on Sundays and Public Holidays	1 mm/s (max.)
Airblast overpressure	All times	120 dB (max.)	
	<i>(monitor for every blast)</i>	All times	115 dB (95% of total blasts)

The Company conducted a total of 77 blasts in July 2016. The characteristics of each blast are presented in Table 9. No exceedances were recorded for the month.

Table 9. Summary of blast monitoring results for July 2016.

Date	Time	Time period	Vibration (mm/s)	Overpressure (dB)
Friday, 1 July 2016	7:00	Day	1.393	93.98
Friday, 1 July 2016	7:00	Day	<0.350	
Friday, 1 July 2016	18:30	Evening	<0.350	
Sunday, 3 July 2016	6:20	Sunday	<0.350	
Sunday, 3 July 2016	6:20	Sunday	<0.350	
Monday, 4 July 2016	6:30	Night	<0.350	
Monday, 4 July 2016	6:30	Night	<0.350	
Tuesday, 5 July 2016	6:30	Night	<0.350	
Tuesday, 5 July 2016	6:30	Night	<0.350	
Tuesday, 5 July 2016	6:30	Night	<0.350	
Wednesday, 6 July 2016	6:45	Night	<0.350	
Wednesday, 6 July 2016	6:45	Night	<0.350	
Thursday, 7 July 2016	6:45	Night	<0.350	
Thursday, 7 July 2016	6:45	Night	<0.350	
Thursday, 7 July 2016	18:50	Evening	<0.350	
Friday, 8 July 2016	6:35	Night	0.519	<88
Friday, 8 July 2016	6:35	Night	<0.350	
Saturday, 9 July 2016	6:45	Night	<0.350	
Saturday, 9 July 2016	6:45	Night	<0.350	
Saturday, 9 July 2016	18:50	Evening	<0.350	
Sunday, 10 July 2016	6:45	Sunday	<0.350	
Sunday, 10 July 2016	6:45	Sunday	<0.350	
Sunday, 10 July 2016	18:30	Sunday	<0.350	
Monday, 11 July 2016	6:45	Night	<0.350	
Monday, 11 July 2016	6:45	Night	<0.350	
Monday, 11 July 2016	18:30	Evening	1.577	91.48
Monday, 11 July 2016	18:30	Evening	1.577	91.48
Tuesday, 12 July 2016	6:10	Night	<0.350	
Tuesday, 12 July 2016	6:10	Night	<0.350	
Tuesday, 12 July 2016	6:10	Night	<0.350	
Tuesday, 12 July 2016	7:00	Day	<0.350	
Tuesday, 12 July 2016	7:00	Day	<0.350	
Wednesday, 13 July 2016	7:00	Day	<0.350	
Wednesday, 13 July 2016	7:00	Day	<0.350	
Thursday, 14 July 2016	7:00	Day	<0.350	
Thursday, 14 July 2016	7:00	Day	<0.350	
Friday, 15 July 2016	7:00	Day	<0.350	
Friday, 15 July 2016	19:00	Evening	<0.350	
Saturday, 16 July 2016	7:00	Day	<0.350	
Saturday, 16 July 2016	7:00	Day	<0.350	
Saturday, 16 July 2016	19:00	Evening	<0.350	
Sunday, 17 July 2016	7:00	Sunday	<0.350	
Sunday, 17 July 2016	7:00	Sunday	<0.350	
Sunday, 17 July 2016	7:00	Sunday	<0.350	

Sunday, 17 July 2016	18:33	Sunday	<0.350	<88
Monday, 18 July 2016	7:00	Day	<0.350	
Monday, 18 July 2016	7:00	Day	<0.350	
Monday, 18 July 2016	18:30	Evening	0.745	<88
Tuesday, 19 July 2016	7:00	Day	<0.350	
Wednesday, 20 July 2016	7:00	Day	<0.350	
Wednesday, 20 July 2016	7:00	Day	<0.350	
Thursday, 21 July 2016	7:00	Day	<0.350	
Thursday, 21 July 2016	18:35	Evening	1.364	91.48
Friday, 22 July 2016	7:00	Day	<0.350	
Friday, 22 July 2016	7:00	Day	<0.350	
Friday, 22 July 2016	12:30	Day	<0.350	
Saturday, 23 July 2016	7:00	Day	<0.350	
Saturday, 23 July 2016	18:26	Evening	0.844	<88
Sunday, 24 July 2016	7:00	Sunday	<0.350	
Sunday, 24 July 2016	7:00	Sunday	<0.350	
Sunday, 24 July 2016	19:00	Sunday	<0.350	
Tuesday, 26 July 2016	18:39	Evening	0.982	91.48
Tuesday, 26 July 2016	6:30	Night	<0.350	
Monday, 25 July 2016	14:00	Day	<0.350	
Tuesday, 26 July 2016	18:40	Evening	<0.350	
Thursday, 28 July 2016	7:30	Day	<0.350	
Thursday, 28 July 2016	7:30	Day	<0.350	
Thursday, 28 July 2016	18:35	Evening	<0.350	
Friday, 29 July 2016	2:20	Night	<0.350	
Friday, 29 July 2016	7:35	Day	<0.350	
Friday, 29 July 2016	7:35	Day	<0.350	
Friday, 29 July 2016	18:34	Evening	0.828	<88
Saturday, 30 July 2016	8:15	Day	<0.350	
Saturday, 30 July 2016	8:15	Day	<0.350	
Sunday, 31 July 2016	8:25	Sunday	<0.350	
Sunday, 31 July 2016	8:25	Sunday	<0.350	
Sunday, 31 July 2016	19:25	Sunday	0.889	<88

Air Quality Monitoring

The Company has two High Volume Air Samplers (HVAS), either designed to sample Particulate matter less than 10 μm (PM_{10}) or Total Suspended Particulate (TSP) matter and two Dust Deposition Gauges (DDG). Refer to Figure 5 for location of the sampling points. A summary of the PA conditions associated with these monitoring points is presented in Table 10.

Table 10. Summary of Project Approval conditions associated with dust monitoring.

Pollutant	Averaging Period	Limits
TSP	Annual	90 $\mu\text{g}/\text{m}^3$
PM ₁₀	Annual	30 $\mu\text{g}/\text{m}^3$
PM ₁₀	24 Hour	50 $\mu\text{g}/\text{m}^3$
Deposited Dust	Annual	2 $\text{g}/\text{m}^2/\text{month}$ (Max. increase)
	Annual	4 $\text{g}/\text{m}^2/\text{month}$ (Max. total)

Results for air quality monitoring conducted in July 2016 have been summarised in Table 11. No exceedances have been recorded this month.

Table 11. Summary of air quality monitoring results for July 2016.

Pollutant	Unit	Limit	Averaging Period	Result
TSP	$\mu\text{g}/\text{m}^3$	90	Annual	37.34
PM-10 ($\mu\text{g}/\text{m}^3$)	$\mu\text{g}/\text{m}^3$	30	Annual	17.59
	$\mu\text{g}/\text{m}^3$	50	4/07/2016	<1
	$\mu\text{g}/\text{m}^3$	50	10/07/2016	<1
	$\mu\text{g}/\text{m}^3$	50	16/07/2016	<1
	$\mu\text{g}/\text{m}^3$	50	22/07/2016	1.00
	$\mu\text{g}/\text{m}^3$	50	28/07/2016	3.00
Deposited Dust (DDG1)	$\text{g}/\text{m}^2/\text{month}$	4	Annual	2.45
Deposited Dust (DDG2)	$\text{g}/\text{m}^2/\text{month}$	4	Annual	1.59

Gold Room Stack Monitoring

The Company has one licenced gold room stack monitoring (Figure 1). A summary of the licence conditions associated with this Licence Point is presented in Table 12.

Table 12. Summary of EPL 20179 conditions associated with gold room stack monitoring monitoring.

EPA ID No.	Monitoring Frequency
24	Yearly
	Pollutant
	Nitric Oxide (mg/m^3)

Gold Room stack monitoring is conducted on an annual basis. The last sample was taken in January 2016.

Concentrate Transport

The Company is licenced to transport 50,000 tpa of lead/zinc concentrate during daylight hours. The company is limited to two truck movements per day (entering and leaving the site) averaged over a calendar month. This month, a total of 2,935 tonnes of concentrate was transported to the Hermidale rail siding with an average of 1.97 truck movements per day (

Table 13). During the month two trucks left the Hera Mine after daylight hours. The exceedances to PA conditions have been highlighted in red. The incidents were reported to the Department of Planning and Environment and Roads and Maritime Services on 20 August 2016.

Table 13. Summary of the concentrate truck movements from the Hera Mine to Hermidale rail siding for the month.

Date	Time	Company ID	Truck Dry Tonnes
1/07/2016	07:10:00	1000	48.11
1/07/2016	07:50:00	1001	48.04
1/07/2016	10:35:00	1002	47.56
1/07/2016	12:00:00	1003	47.54
4/07/2016	11:00:00	1004	47.83
4/07/2016	13:20:00	1005	48.07
5/07/2016	11:00:00	1006	48.10
5/07/2016	11:45:00	1007	48.00
6/07/2016	09:00:00	1008	47.89
6/07/2016	09:50:00	1009	47.91
6/07/2016	13:05:00	1010	48.41
6/07/2016	15:50:00	1011	48.32
6/07/2016	16:30:00	1012	47.81
6/07/2016	17:10:00	1013	48.28
7/07/2016	08:30:00	1014	48.49
7/07/2016	09:15:00	1015	48.13
7/07/2016	10:00:00	1016	47.90
7/07/2016	10:45:00	1017	48.78
7/07/2016	14:30:00	1018	48.38
7/07/2016	16:00:00	1019	47.95
7/07/2016	16:40:00	1020	48.29
8/07/2016	08:00:00	1021	48.19
11/07/2016	12:50:00	1022	48.38
11/07/2016	15:50:00	1023	48.82
12/07/2016	09:30:00	1024	48.48
12/07/2016	12:50:00	1025	48.22
13/07/2016	09:30:00	1026	48.68
13/07/2016	13:20:00	1027	49.30
14/07/2016	10:30:00	1028	48.94
14/07/2016	17:00:00	1029	48.68
15/07/2016	11:00:00	1030	48.57
15/07/2016	15:20:00	1031	48.55
16/07/2016	08:40:00	1032	48.41
16/07/2016	12:15:00	1033	43.44
16/07/2016	13:15:00	1034	48.20
16/07/2016	16:20:00	1035	43.93
16/07/2016	17:00:00	1036	48.70
17/07/2016	08:45:00	1037	47.61
17/07/2016	09:30:00	1038	47.75
17/07/2016	12:50:00	1039	48.04
17/07/2016	16:15:00	1040	48.64
18/07/2016	09:00:00	1041	47.76

18/07/2016	09:30:00	1042	47.79
18/07/2016	09:55:00	1043	47.94
18/07/2016	12:30:00	1044	48.37
18/07/2016	13:30:00	1045	48.32
19/07/2016	07:20:00	1046	47.54
19/07/2016	08:30:00	1047	47.63
25/07/2016	13:30:00	1048	48.40
26/07/2016	10:00:00	1049	48.30
26/07/2016	16:00:00	1050	48.60
27/07/2016	11:00:00	1051	48.63
27/07/2016	16:30:00	1052	48.61
28/07/2016	11:00:00	1053	48.36
29/07/2016	17:30:00	1054	48.57
30/07/2016	10:10:00	1055	48.36
30/07/2016	10:40:00	1056	48.65
31/07/2016	10:20:00	1057	48.82
31/07/2016	10:45:00	1058	48.79
31/07/2016	11:15:00	1059	48.06
31/07/2016	16:05:00	1060	48.15
Average Truck Movements per day June 2016		1.97	
Total Tonnes			2,934.99

Complaints

No complaints were received in July 2016.