

Licensee	Aurelia Metals Limited
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	September 2015
Date Published	17/11/2015

Weather Monitoring

Aurelia Metals Limited (AMI) has one licenced weather station (licence point 23) associated with the site (**Figure 1**). A summary of the licence conditions (Environmental Protection Licence (EPL) 20179) associated with this point is presented in **Table 1**.

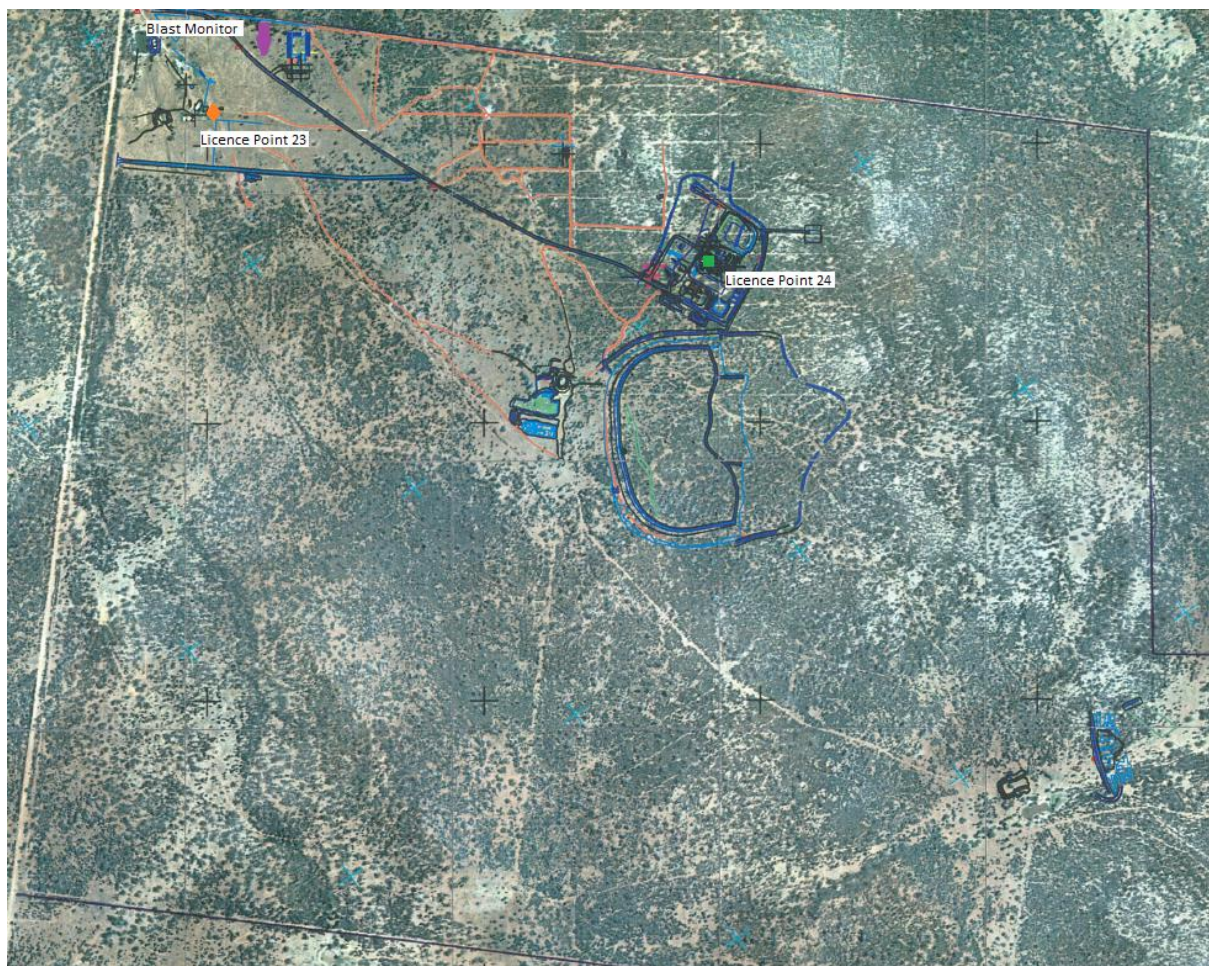


Figure 1. Location of the licence points associated with Gold Room Stack monitoring (Licence Point 24), Blast monitoring and meteorological monitoring (Licence Point 23).

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 September 2015.

Table 2. Summary of meteorological data for September 2015.

Pollutant	No. of measurements for month	Min. value	Mean value	Median value	Max. value
Air Temperature (°C)	Continuous	-2.29	12.50	12.42	26.12
Wind Direction (°)	Continuous	16.46	170.17	184.43	340.25
Wind Speed (m/s)	Continuous	0.00	1.64	1.37	7.07
Sigma Theta (°)	Continuous	1.72	22.21	17.52	100.48
Rainfall (mm)	Continuous	0.00	0.00	0.00	2.60
Relative Humidity (%)	Continuous	25.83	67.80	68.19	99.83

Surface Water Monitoring

AMI has six licence points associated with surface waters. Four of these points are located within the Mining Lease (**Figure 2**) and two are located on Box creek, upstream and downstream of the mining lease (**Figure 3**). A summary of the licence conditions associated with these licence points is presented in **Table 3**.

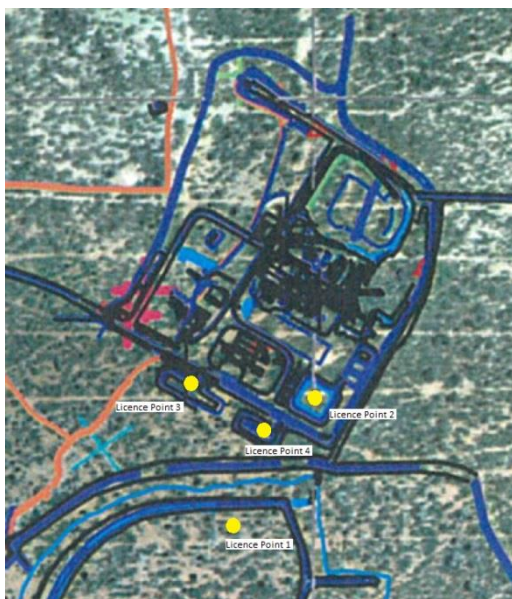


Figure 2. Licensed surface water monitoring points located onsite.

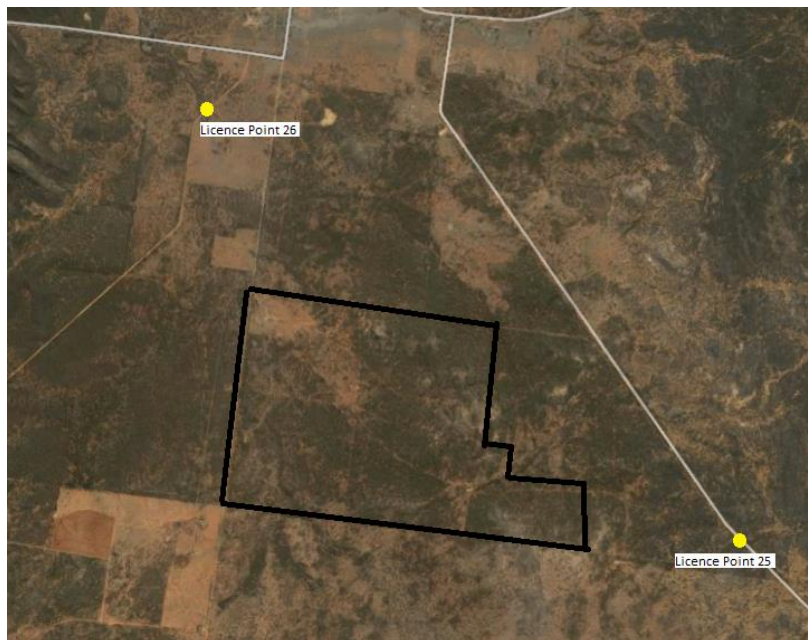


Figure 3. Licensed surface water monitoring points located offsite. The black outline represents the Mining Lease.

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 is 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 3, 4 and 26 did not discharge for the month.

Table 4. Summary of surface water quality results for September 2015.

	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	No discharge																				
4	No discharge																				
25	<0.004				28.9	0.004	<0.05	<0.0001	0.022	40.1	0.026	0.311	0.021	1.7	<5	8.79	<0.001	0.56	754	0.068	
26	No discharge																				

Groundwater Monitoring

AMI has 13 licence points associated with groundwater. These points are located within the Mining Lease (**Figure 4**) and are a combination of observation bores and productions bores. A summary of the licence conditions associated with these licence points is presented in **Table 5**.

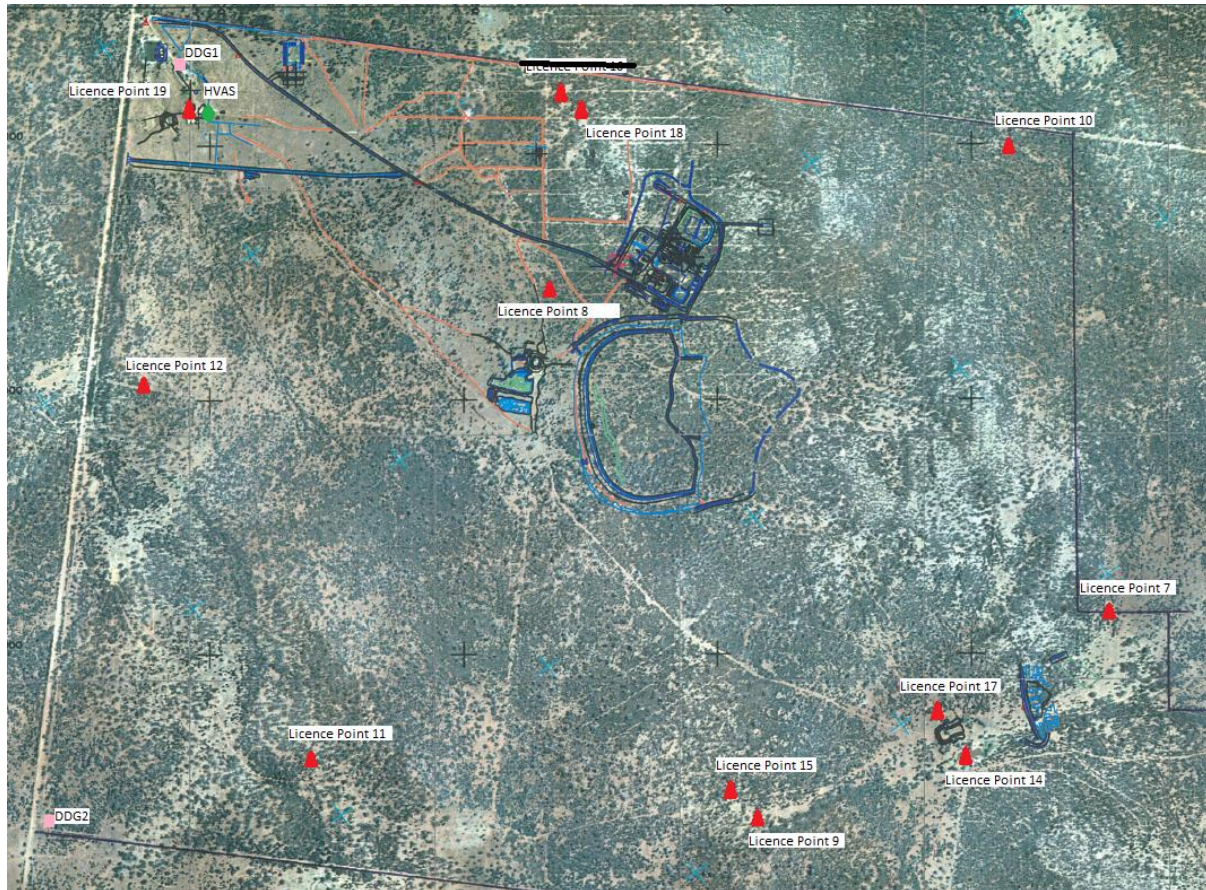


Figure 4. Licensed groundwater and air quality monitoring points.

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

EPA ID No.	Monitoring Frequency
	Quarterly
	Pollutant
7, 8, 9, 10, 11, 14, 15, 17, 18, 19	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)
7, 8, 10, 12, 14, 15, 17, 18	Standing Water Level (m)

Quarterly groundwater results were last presented in the July 2015 report.

Noise Monitoring

AMI has four licenced monitoring points (R1, R2, R3 and R4) located along the Burthong Road (**Figure 5**). The locations are strategically placed near AMI’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 6**.

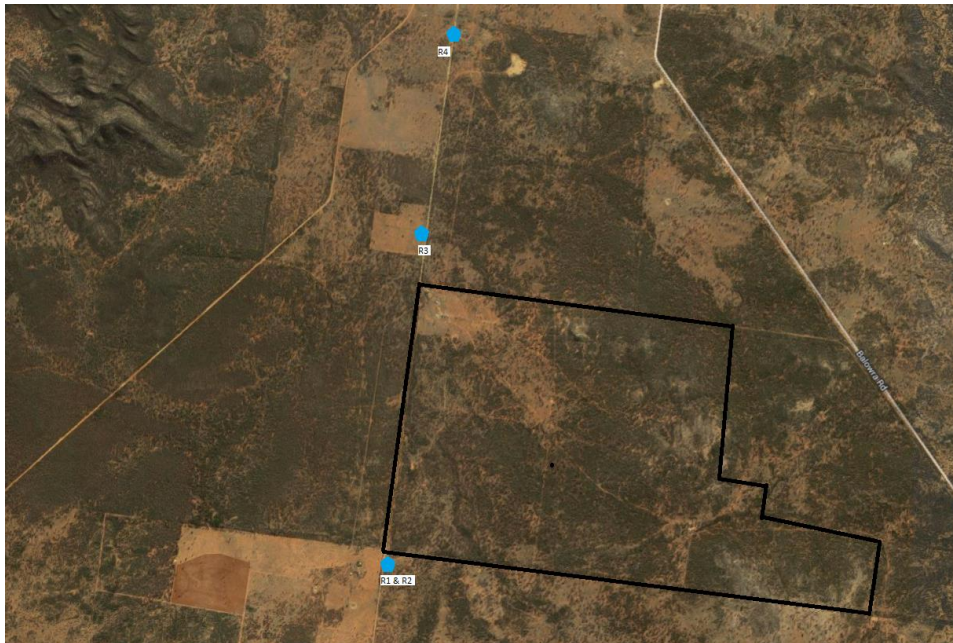


Figure 5. Licensed noise monitoring locations. The black outline represents the Mining Lease.

Table 6. 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

Table 7 is a summary of the noise results for the month. The LA1 result was elevated at all sites. This elevated noise was not related to the mining operation as the only noise reported at this time was the vent fan. The LA1 results most likely relate to the aeroplanes reported at all sites.

Table 7. Summary of noise monitoring results for September 2015.

Date	Time	Site	Period of day	Wind speed (m/s)	LA1 (dB)	LAeq (dB)	Mine Audible?	Noise heard
20/09/2015	6:55	R1/R2	Night	1.74	49.2	36.05	Yes	Birds, vent fan, aeroplane
20/09/2015	6:25	R3	Night	1.66	57.3	33.92	Yes	Birds, vent fan, aeroplane, mine truck
20/09/2015	6:02	R4	Night	0.86	55.4	21.74	Yes	Birds, vent fan, aeroplane, wind
19/09/2015	14:16	R1/R2	Day	2.42	n/a	23.61	No	Wind, birds, aeroplane
19/09/2015	13:50	R3	Day	1.30	n/a	30.10	Yes	Wind, birds, vent fan, mine truck
19/09/2015	13:27	R4	Day	2.50	n/a	19.61	Yes	Wind, birds, vent fan
19/09/2015	19:23	R1/R2	Evening	0.15	n/a	24.48	Yes	Mine truck
19/09/2015	18:59	R3	Evening	0.23	n/a	23.33	Yes	Vent fan, crickets, bats
19/09/2015	18:34	R4	Evening	1.15	n/a	26.51	No	Crickets, aeroplane

Blast Monitoring

AMI is required to monitor blasting. The 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 <i>(monitor for every blast)</i>	All times	10 mm/s (max.)
		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 <i>(monitor for every blast)</i>	All times	120 dB (max.)
		All times	115 dB (95% of total blasts)

AMI conducted a total of 15 blasts in September 2015. The characteristics of each blast are presented in **Table 9**.

Table 9. Summary of blast monitoring results for September 2015.

Date	Time	Vibration (mm/s)	Overpressure (dB)	Comments
2/09/2015	15:15	Day	<0.350	
3/09/2015	19:00	Evening	<0.350	
4/09/2015	12:35	Day	2.875	93.98
4/09/2015	18:45	Evening	<0.350	
5/09/2015	14:45	Day	<0.350	
10/09/2015	18:45	Evening	<0.350	
13/09/2015	18:45	Evening	<0.350	
14/09/2015	18:35	Evening	<0.350	
17/09/2015	15:15	Day	<0.350	
18/09/2015	13:30	Day	<0.350	
19/09/2015	18:45	Evening	<0.350	
20/09/2015	18:45	Evening	<0.350	
24/09/2015	16:20	Day	<0.350	
26/09/2015	15:20	Day	<0.350	
30/09/2015	18:30	Evening	<0.350	

Air Quality Monitoring

AMI has two High Volume Air Samplers (HVAS), each designed to sampled either Particulate matter < 10 µm (PM₁₀) or Total Suspended Particulate (TSP) matter. AMI has two Dust Deposition Gauges (DDG). Refer to **Figure 4** for location of the sampling points. A summary of the Project Approval 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 µg/m ³
PM ₁₀	Annual	30 µg/m ³
PM ₁₀	24 Hour	50 µg/m ³
Deposited Dust	Annual	2 g/m ² /month (Max. increase)
	Annual	4 g/m ² /month (Max. total)

Results for air quality monitoring conducted in September 2015 have been summarised in **Table 11**. No exceedances have been recorded this month.

Table 11. Summary of air quality monitoring results for September 2015.

Pollutant	Unit	Limit	Averaging Period	Result
TSP	µg/m ³	90	Annual	26.91
PM-10 (µg/m ³)	µg/m ³	30	Annual	9.48
	µg/m ³	50	2/09/2015	15.00
	µg/m ³	50	8/09/2015	3.00
	µg/m ³	50	14/09/2015	31.00
	µg/m ³	50	20/09/2015	27.00
	µg/m ³	50	26/09/2015	41.00
Deposited Dust (DDG1)	g/m ² /month	4	Annual	2.80
Deposited Dust (DDG2)	g/m ² /month	4	Annual	1.89

Gold Room Stack Monitoring

AMI 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 November 2014.

Complaints

No complaints were received in September 2015.