

TOMINGLEY GOLD PROJECT

Monthly Environmental Monitoring Report

August 2016

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Document History

DATE	VERSION	REASON FOR CHANGE	AUTHOR
	Rev 1	Submitted for Information	CH

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1. Introduction and Scope

This Monthly Environmental Monitoring Report has been prepared to collate environmental monitoring data undertaken for the Tomingley Gold Project during the month of August 2016.

This report also compares data collected to targets and provides commentary on environmental issues during the month.

2. Weather for August 2016

A. Weather Station Data

TGO WEATHER DATA IS PRESENTED BELOW.

Figure 1. August 2016 wind rose

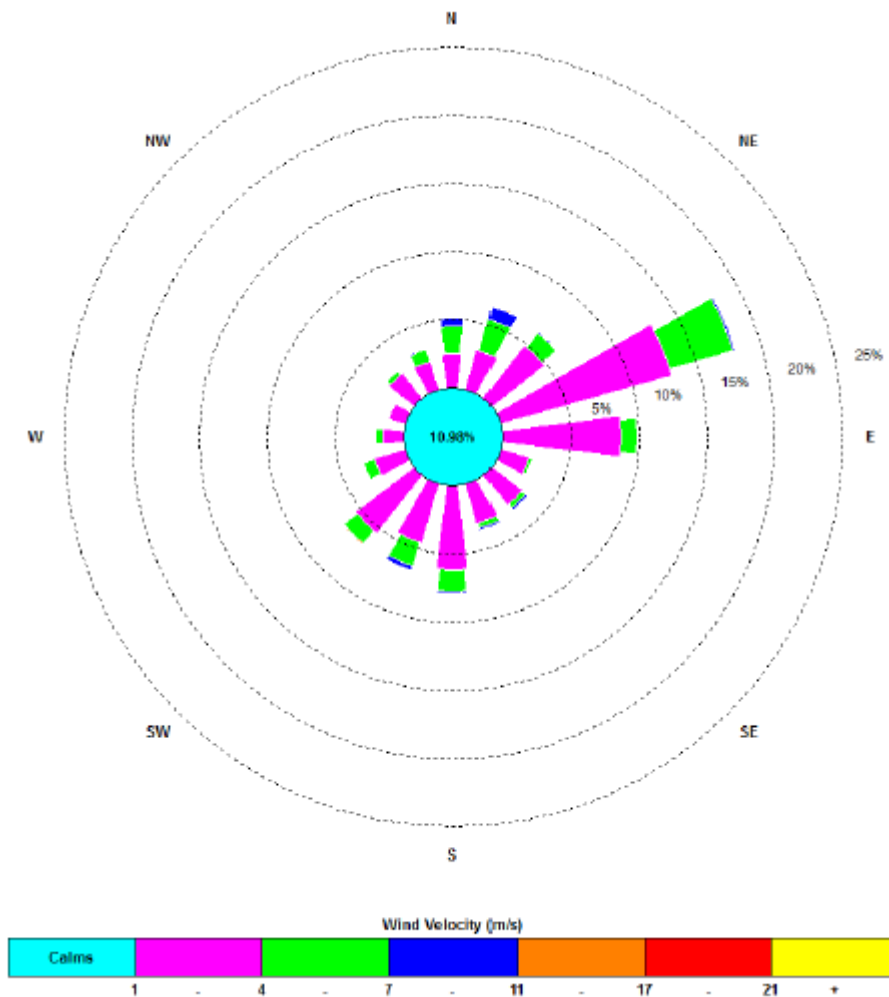


Figure 2. Rainfall August 2016

August 2016	Rainfall (mm)
August 1	0.2
August 2	27.6
August 3	4.6
August 10	0.6
August 19	20.4
August 21	0.2
August 22	4.2
August 23	0.4
August 24	15.8
August 31	21.2
Total Rainfall	95.2

3. Monitoring Locations

FIGURE 3 indicates the location of where monitoring is undertaken for the project. Any additional monitoring undertaken will be discussed within the body of this report.

Figure 3. TGO water and vegetation monitoring points

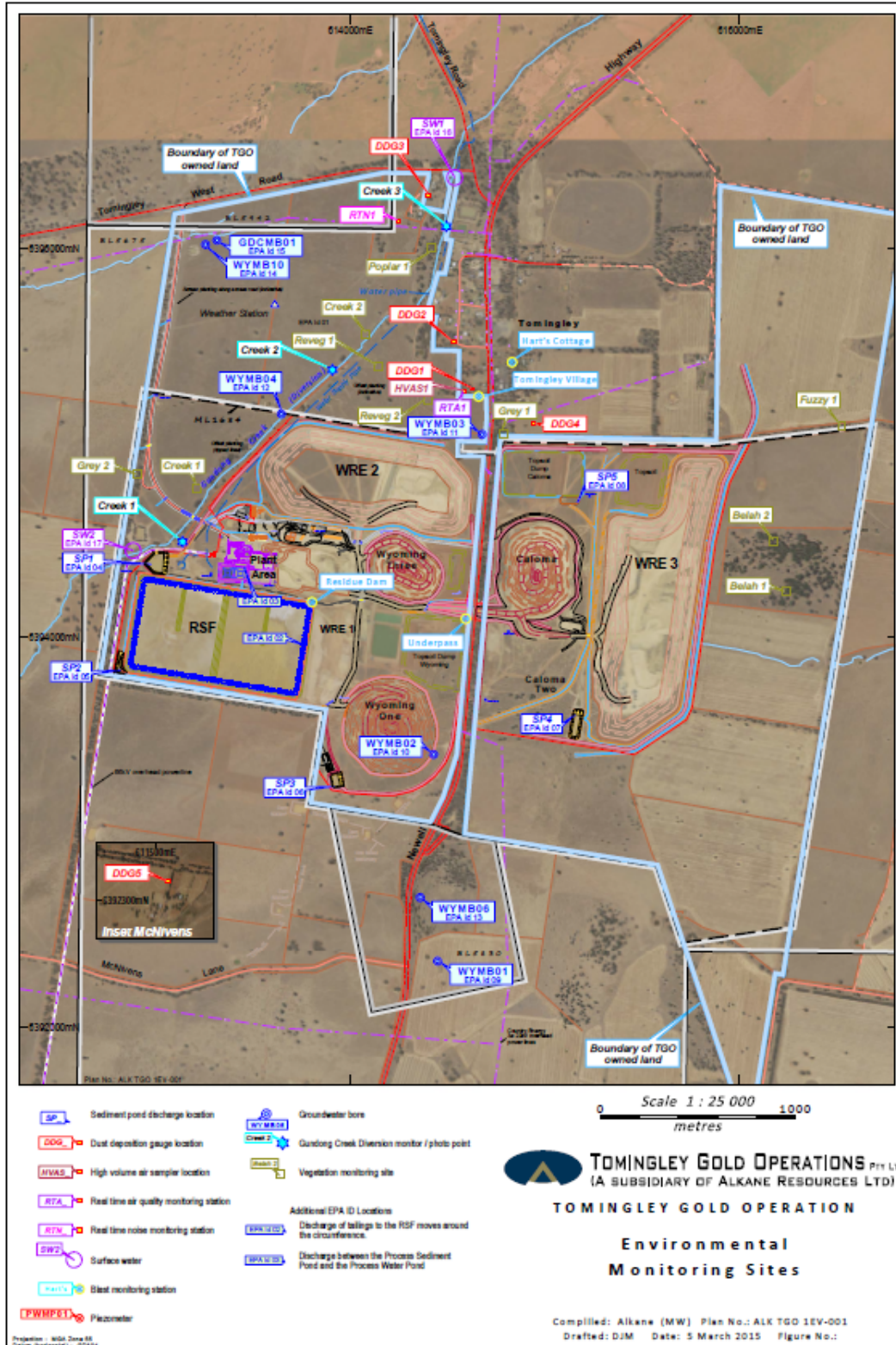
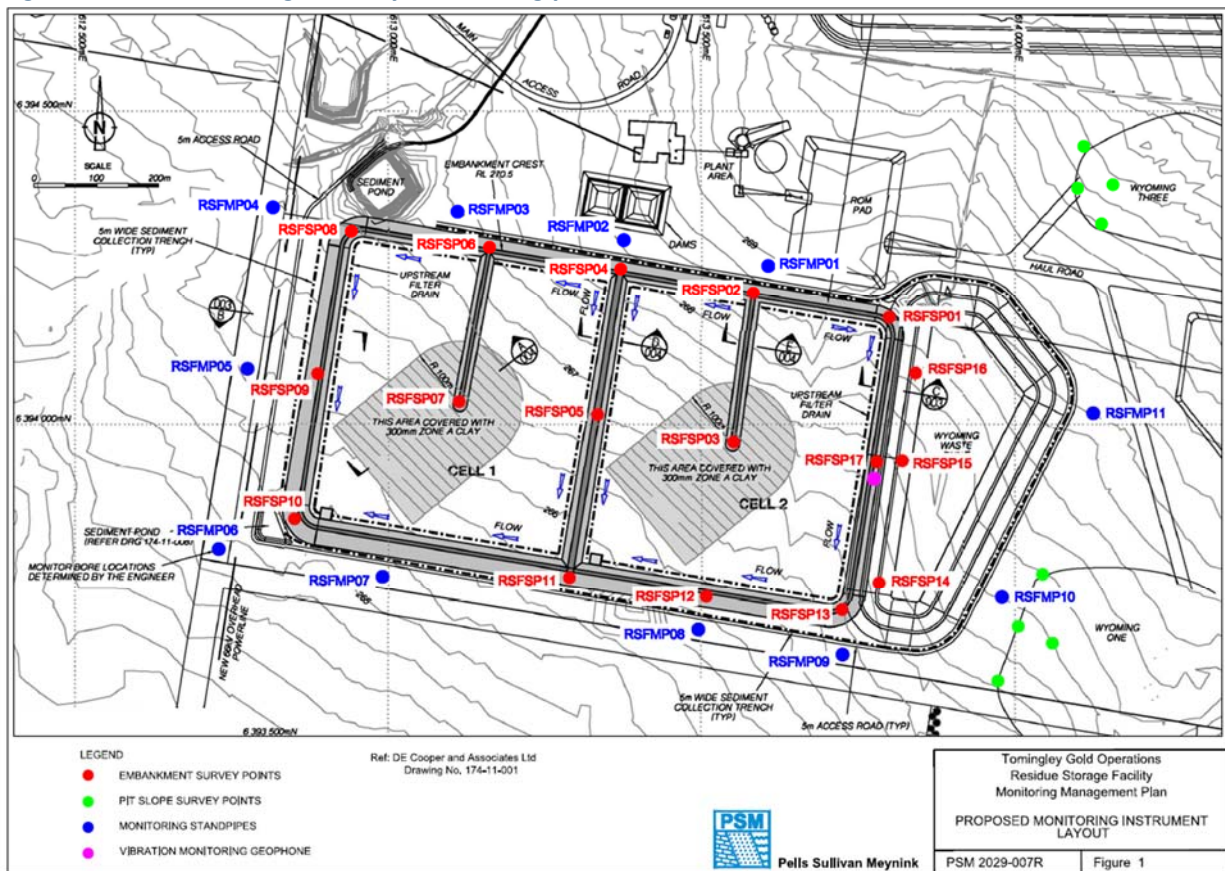


Figure 4 indicates the location of environmental and survey monitoring points on and around the Residue Storage Facility.

Figure 4. Residue Storage Facility monitoring points



4. Air Quality Monitoring

A. PM10 Monitoring

PM10 is measured via a Tapered Element Oscillating Microbalance (TEOM) located at the southern edge of the Tomingley Village. This machine transmits real-time data via the internet to a computer located on site.

The Performance Criteria for PM10 has been set at an Annual Average of 30ug/m³ and a 24-Hour Average of 50ug/m³.

The 24 hour average limit not exceeded on any occasions during August.

Figure 5. TEOM Data August 2016

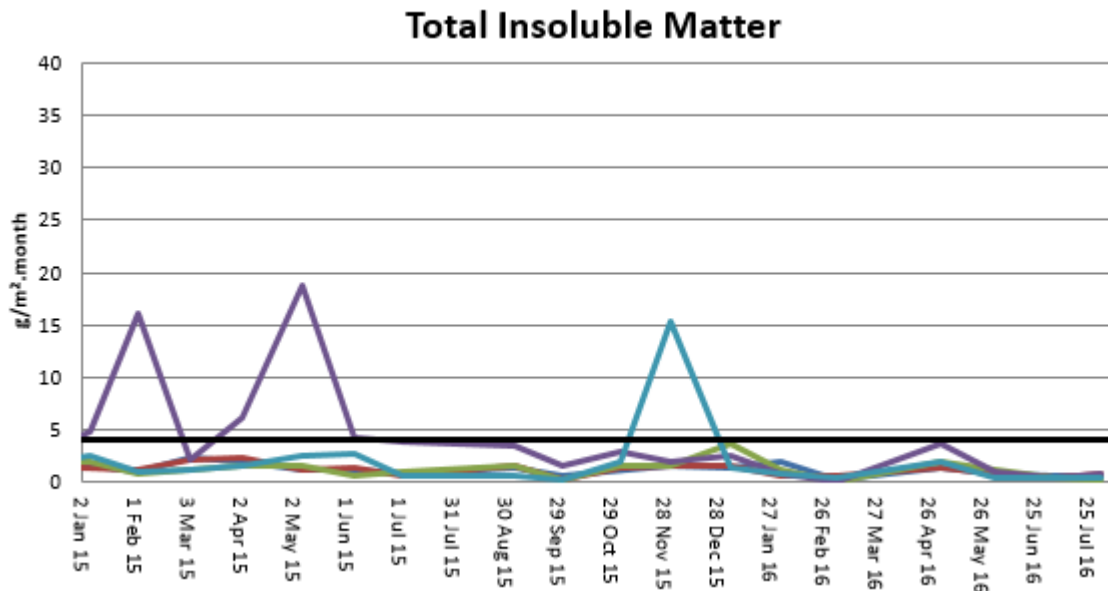
Date	24 Hr Averages	Running Average	Comment
	(µg/m3)		
1/08/2016	10.4	18.9	
2/08/2016	9.3	18.8	
3/08/2016	8.3	18.8	
4/08/2016	12.6	18.8	
5/08/2016	20.0	18.8	1 hr average data used
6/08/2016	10.3	18.8	
7/08/2016	8.0	18.8	
8/08/2016	10.3	18.7	1 hr average data used
9/08/2016	13.6	18.8	
10/08/2016	11.8	18.7	
11/08/2016	12.9	18.7	
12/08/2016	10.8	18.8	
13/08/2016	13.9	18.8	
14/08/2016	13.8	18.8	
15/08/2016	14.3	18.8	
16/08/2016	17.9	18.8	
17/08/2016	15.9	18.8	
18/08/2016	18.8	18.8	
19/08/2016	43.2	18.9	
20/08/2016	8.7	18.9	
21/08/2016	10.1	18.8	
22/08/2016	7.0	18.8	
23/08/2016	7.5	18.8	
24/08/2016	9.0	18.8	
25/08/2016	12.2	18.8	
26/08/2016	18.9	18.8	
27/08/2016	14.1	18.9	
28/08/2016	7.8	18.9	
29/08/2016	9.9	18.8	
30/08/2016	23.4	18.9	
31/08/2016	11.9	18.9	
Average	13.4		
			24 Hour criteria exceedance

Note: For comparison purposes highlighted results indicate levels above the EPA and NEPM 24-hour maximum criteria for PM₁₀

B. Depositional Dust

Depositional Dust monitoring undertaken during this month returned the results indicated in the table below. The performance criteria for deposited dust is averaged over 12 months.

Figure 6. Dust Deposition Results 2015 - 2016

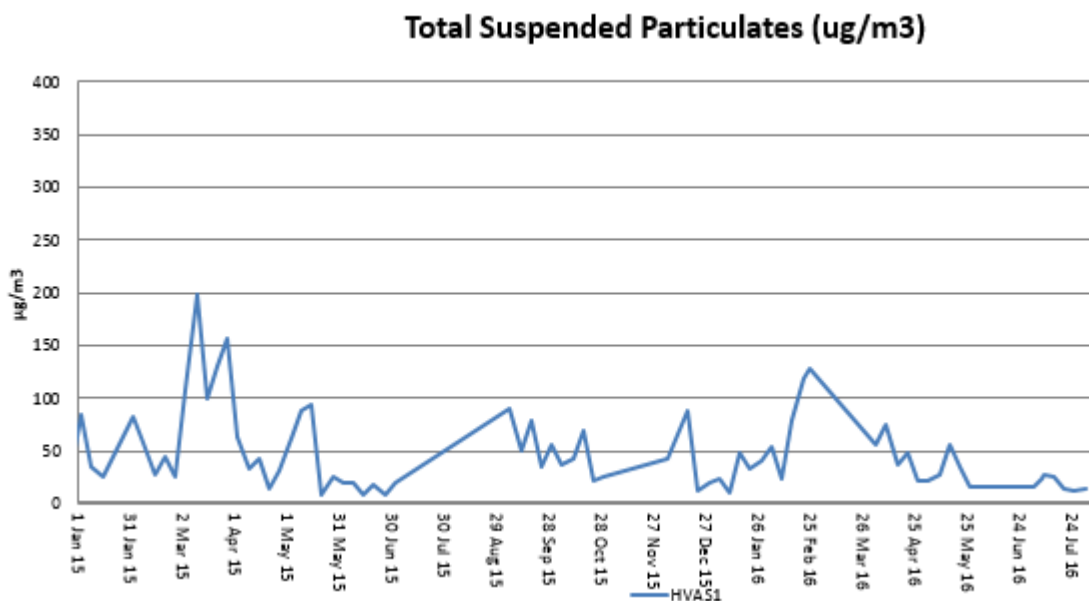


C. High Volume Air Sampler - Total Suspended Particulates

High Volume Air Sampling (HVAS) for Total Suspended Particulates (TSP) was undertaken this month. Figure 7 below provides the results.

The performance criteria for TSP is averaged over 12 months

Figure 7. Hi-Volume Air Sampler Data 2015 - 2016

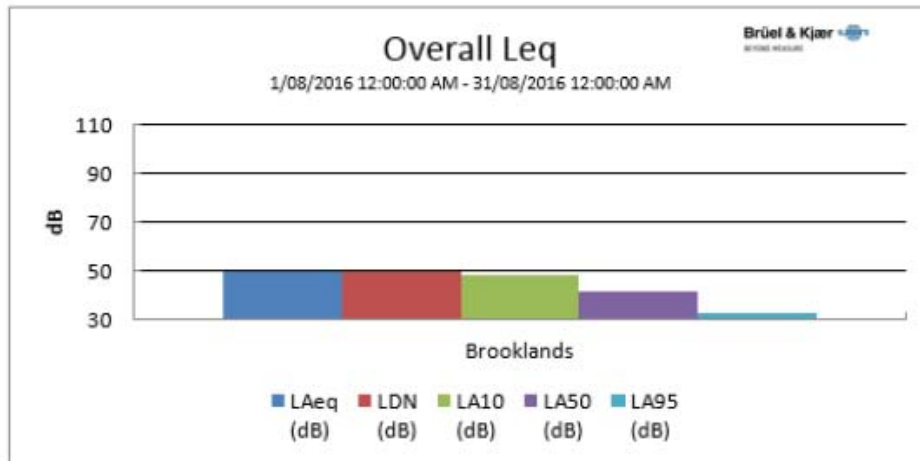


5. Noise Monitoring

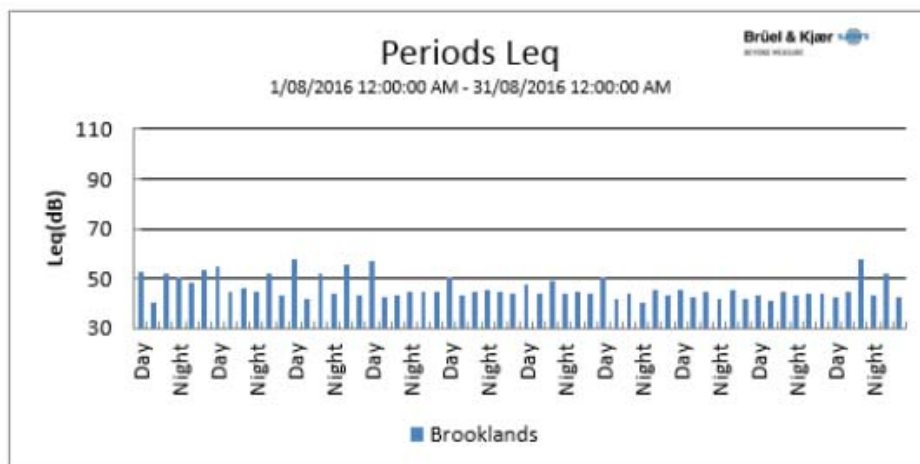
A. Real-Time Noise Monitoring

See real-time noise monitoring data presented below.

Figure 8. TGO Noise Monitoring 1/8/2016 - 31/8/2016



Location	Start Time	End Time	Activity	LDN (dB)	L _{Aeq} (dB)	L _{AF} (dB)	L _{AMin} (dB)	L _{A10} (dB)	L _{A50} (dB)	L _{A95} (dB)
Brooklands	1/08 12:00:00 AM	31/08 12:00:00 AM	100%	50.0	50.0		23.2	48.2	41.8	32.6



6. Surface Water Monitoring

A. Gundong Creek

Gundong Creek flowed strongly over the course of the month.

Results of this sampling fell within the expected range.

Weekly sampling will be undertaken while the creek continues to flow.

B. Sedimentation Ponds

Sediment basins were sampled following rain events in August with results showing no cause for concern.

7. Groundwater Monitoring

The next round of groundwater monitoring will be undertaken during September in line with license requirements.

8. Blast Monitoring

Blasts are carried out in all open cut pits and vibration and decibels are monitored from several locations.

Below are the vibration results recorded from the monitors at Hart's Cottage and Tomingley Village.

Figure 9. Blast Monitoring

EventKey	Date/Time	Max R (mm/s)	Location
71661	2/08/2016 13:57	0.01	Harts Cottage
71661	2/08/2016 13:57	0.03	Tomingley Village
71708	4/08/2016 13:00	0.37	Harts Cottage
71708	4/08/2016 13:00	0.65	Tomingley Village
71798	9/08/2016 14:07	0.3	Harts Cottage
71798	9/08/2016 14:07	0.46	Tomingley Village
71998	17/08/2016 14:29	0.41	Harts Cottage
71998	17/08/2016 14:29	0.55	Tomingley Village
72012	18/08/2016 12:58	0.24	Harts Cottage
72012	18/08/2016 12:58	0.53	Tomingley Village
72048	19/08/2016 13:29	0.27	Harts Cottage
72048	19/08/2016 13:29	0.63	Tomingley Village
72069	20/08/2016 13:59	0.29	Harts Cottage
72069	20/08/2016 13:59	0.43	Tomingley Village
72085	22/08/2016 13:20	0.33	Harts Cottage
72085	22/08/2016 13:20	0.79	Tomingley Village
72110	23/08/2016 13:02	0.28	Harts Cottage
72110	23/08/2016 13:02	0.35	Tomingley Village
72140	24/08/2016 13:30	0.27	Harts Cottage
72140	24/08/2016 13:30	0.49	Tomingley Village
72154	25/08/2016 13:10	0.29	Harts Cottage
72154	25/08/2016 13:10	0.35	Tomingley Village
72187	27/08/2016 12:59	0.29	Harts Cottage
72187	27/08/2016 12:59	0.49	Tomingley Village
72206	29/08/2016 13:00	0.13	Harts Cottage
72206	29/08/2016 13:00	0.17	Tomingley Village
72225	30/08/2016 13:00	0.55	Harts Cottage
72225	30/08/2016 13:00	0.87	Tomingley Village

9. Residue Storage Facility

Residue from the processing plant is discharged into the Residue Storage Facility or RSF. The Environmental Protection Licences dictates that the Weak Acid Dissociable (WAD) Cyanide found in this residue must be less than 20 milligrams per litre for 90% of the time and less than 30 milligrams per litre for 100% of the time.

The WAD results for August 2016 are:

- Monthly average: 2.41 ppm
- Daily maximum: 10.37 ppm on 2nd August
- Daily minimum: 0.006 ppm on 20th August
- Number of exceedances: zero

10. Biodiversity Monitoring

Fauna deaths:

- There were no fauna deaths in the RSF for the month.

Site Fauna

- On site fauna sightings for August included:
- 2 Tawny Frogmouth owls, *Podargus strigoides*, remain in residence adjacent to administration building.
- A number of Eastern Grey Kangaroos, *Macropus giganteus*, have been visible grazing in the Caloma 2 footprint.
- Australian Wood Ducks, *Chenonetta jubata*, have been regularly spotted on sediment dams and farm dams around the site throughout August.
- A Spotted Harrier, *Circus assimilis*, was sighted hovering in the updraughts above the southern wall of WY1.
- A single Wedge Tailed Eagle, *Aquila audax*, was noted in a tree along the site access road.
- Regularly throughout August Grey Crowned Babblers, *Pomatostomus temporalis*, were seen in the tree corridor to the South of the RSF.
- A number of White Faced Herons, *Egretta novaehollandiae*, were spotted at the water point on the site access road.

Vertebrate pests

- A program of trapping feral cats and foxes has continued with one juvenile fox captured and euthenased during August.