



TOMINGLEY
GOLD OPERATIONS PTY LTD
(A wholly owned subsidiary of Alkane Resources Ltd)

Tomingley Gold Project

Monthly Environmental Monitoring Report – January 2015



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Revision Number	Revision Date	Prepared By	Comments
Revision 1		Mark Williams	Submitted for Information

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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 January 2015.

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

2. WEATHER FOR JANUARY 2015

2.1 WEATHER STATION DATA

TGO weather data is presented below.

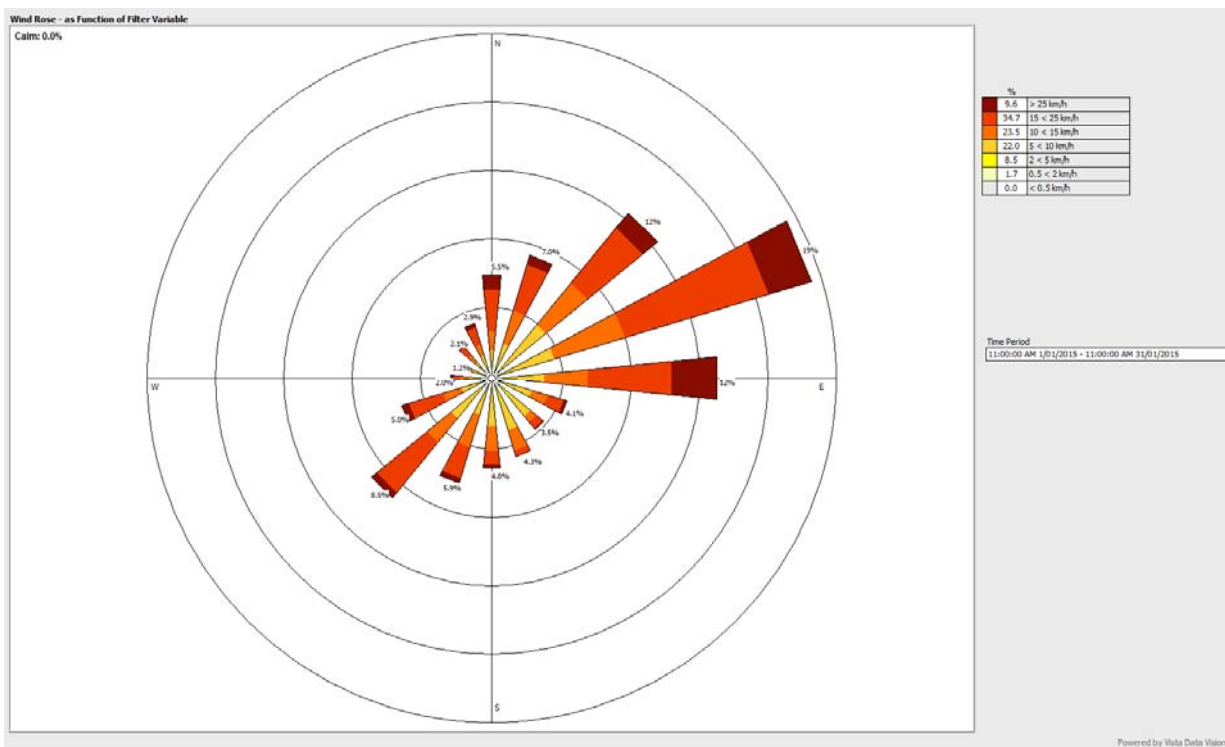


Figure 1. January 2015 wind monitoring station data

2.2 RAINFALL DATA

<i>January</i>	Amount (millimetres)
2/01/2015	0.4
4/01/2015	10.0
5/01/2015	37.4
8/01/2015	0.2
10/01/2015	4.6 +
11/01/2015	11.4
12/01/2015	9.2
13/01/2015	25.8 +
21/01/2015	0.2
24/01/2015	1.2
27/01/2015	5.4
28/01/2015	0.4
Total	Approximately 106.2 mm

Table 1. January 2015 rainfall data. Note that the weather station on site was off line from approximately 9:30pm on 10 January until approximately 2:30pm on 13 January.

The figures highlighted in blue are taken for Peak Hill by Elders Weather. Weather can vary from Peak Hill to Tomingley so these figures are not necessarily accurate.

The figures highlighted in orange are likely to be less than what actually fell given the system malfunction however this is higher than the figure for Peak Hill according to Elders Weather.

<http://www.eldersweather.com.au/dailysummary.jsp?lt=site&lc=50031&dt=1>

Figure 3 indicates the location of environmental and survey monitoring points on and around the Residue Storage Facility.

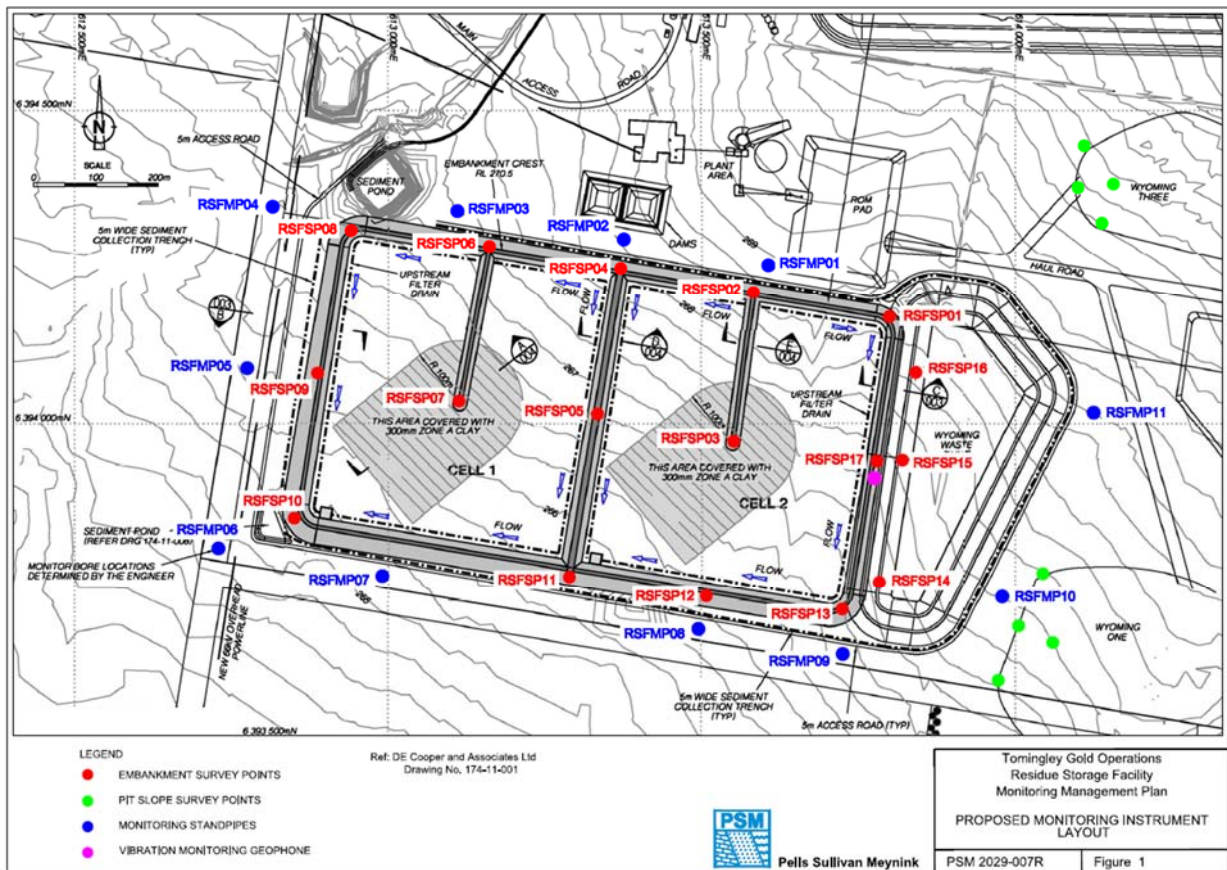


Figure 3. Residue Storage Facility monitoring points.

4. AIR QUALITY MONITORING

4.1 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 was not exceeded this month.

Date	24 Hr Averages	Running Average	Comment
	(µg/m3)		
1/01/2015	25.5	19.9	
2/01/2015	25.6	19.9	
3/01/2015	10.4	19.9	
4/01/2015	18.3	19.9	
5/01/2015	8.8	19.8	
6/01/2015	14.3	19.8	
7/01/2015	12.2	19.8	
8/01/2015	13.5	19.8	
9/01/2015	18.1	19.8	
10/01/2015	19.4	19.8	
11/01/2015	9.3	19.7	1 hr average data used
12/01/2015	5.4	19.7	
13/01/2015	8.3	19.6	
14/01/2015	8.1	19.6	
15/01/2015	19.7	19.6	
16/01/2015	19.3	19.6	
17/01/2015	32.2	19.6	
18/01/2015	29.1	19.6	
19/01/2015	26.8	19.7	
20/01/2015	16.4	19.7	
21/01/2015	15.8	19.6	
22/01/2015	11.6	19.6	
23/01/2015	15.8	19.6	
24/01/2015	12.9	19.6	
25/01/2015	17.8	19.6	
26/01/2015	25.4	19.6	
27/01/2015	7.0	19.5	
28/01/2015	6.3	19.5	
29/01/2015	22.3	19.5	
30/01/2015	27.9	19.5	
31/01/2015	33.4	19.6	
Average	17.3		
	24 Hour criteria exceedance		

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

Table 2. Real time dust monitoring

4.2 DEPOSITIONAL DUST

Depositional Dust monitoring undertaken during December 2014 returned the results indicated in Table 3 below.

Location	Date Monitored	Insoluble solids (g/m ² /month)	Maximum increase in deposited dust level
DDG1	6/01/15 – 2/02/15	1.1	The greatest increase in deposited dust level was recorded at DDG4; an increase of 11.4 g/m ² /month.
DDG2	6/01/15 – 2/02/15	1.2	
DDG3	6/01/15 – 2/02/15	0.9	
DDG4	6/01/15 – 2/02/15	16.2	
DDG5	6/01/15 – 2/02/15	1.1	

Table 3. Deposited Dust results for January 2015. DDG4 recorded 16.2 g/m²/month. This exceeds the annual average threshold for deposited dust.

4.3 HIGH VOLUME AIR SAMPLER - TOTAL SUSPENDED PARTICULATES

High Volume Air Sampling (HVAS) for Total Suspended Particulates (TSP) was undertaken this month. Table 4 below provides the results.

The performance criteria for TSP is averaged over 12 months

Location	Sheet ID	Date On	Date Off	Results (TSP µg/m ³)	Performance Criteria (Annual Average)
HVAS1	8890497	2 January 2015	3 January 2015	84.8	90 µg/m ³
HVAS1	8890498	8 January 2015	9 January 2015	35.6	
HVAS1	8890499	14 January 2015	15 January 2015	26.6	
HVAS1	9027558	1 February 2015	2 February 2015	83.4	

Table 4. High Volume Air Sampler Data for January 2015

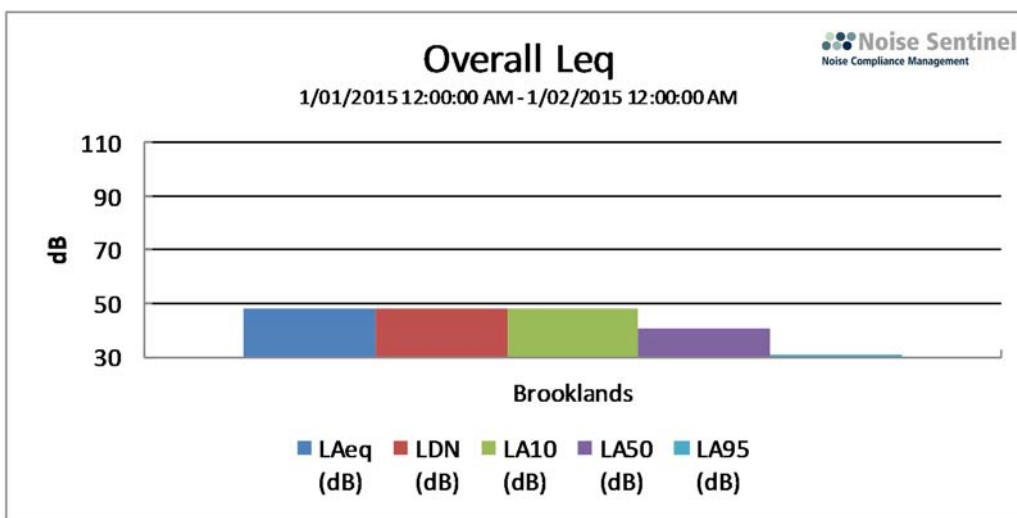
5. NOISE MONITORING

5.1 REAL-TIME NOISE MONITORING

See real-time noise monitoring data presented below.

Long Period

Tomingley Gold Site (1/01/2015 12:00 AM - 1/02/2015 12:00 AM)



Overall Data

Location	Start Time	End Time	Activity	LDN (dB)	L _{Aeq} (dB)	L _{AMin} (dB)	L _{A10} (dB)	L _{A50} (dB)	L _{A95} (dB)
Brooklands	1/01 12:00:00 AM	1/02 12:00:00 AM	100%	48.4	48.4	22.9	48.0	40.4	31.2

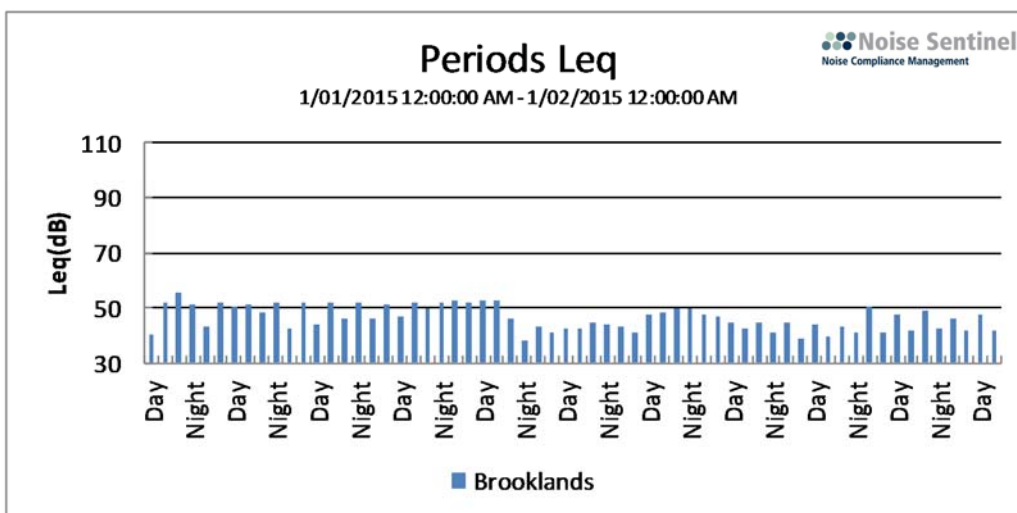


Figure 4. Fixed, real time noise monitoring data.

6. SURFACE WATER MONITORING

6.1 GUNDONG CREEK

Gundong Creek did not run the reporting period and hence water sampling did not occur.

6.2 SEDIMENTATION PONDS

No discharge or water testing occurred this month.

7. GROUNDWATER MONITORING

Groundwater monitoring is carried out quarterly and was completed in December. Results are presented below.

Parameter	WYMB01	WYMB02	WYMB03	WYMB04	WYMB06	WYMB10	GDCMB01
Total suspended solids	<5	<5	80	<5	<5	<5	42
Total dissolved solids	6920	14300	12800	18400	8720	18000	402
Ionic balance	0.81	2.56	1.64	0.12	1.32	0.16	0.79
pH	7.42	7.47	7.97	7.41	7.95	7.41	7.09
Electrical conductivity	12100	22800	20500	27500	13000	28700	502
Ammonia	0.19	<0.01	2.04	0.02	0.15	0.01	0.04
Alkalinity	382	970	1130	929	1060	882	54
Arsenic (mg/L)	0.003	0.003	0.003	<0.01	0.028	<0.01	0.002
Bicarbonate (mg/L)	382	970	1130	929	1060	882	54
Cadmium (mg/L)	0.0002	<0.0001	<0.0001	<0.001	<0.0001	<0.001	<0.0001
Calcium (dissolved)	232	112	120	208	84	181	<1
Carbonate	<1	<1	<1	<1	<1	<1	<1
Chromium	0.013	0.002	0.021	<0.01	0.001	<0.01	0.008
Chloride (mg/L)	3630	6740	5950	8350	2880	8660	60

Parameter	WYMB01	WYMB02	WYMB03	WYMB04	WYMB06	WYMB10	GDCMB01
Copper	0.005	0.006	0.047	<0.01	0.006	<0.01	0.007
Cyanide (free)	<0.004	<0.004	<0.004	<0.004	0.018	<0.004	<0.004
Cyanide (total)	0.013	<0.004	<0.004	<0.004	0.079	<0.004	<0.004
WAD Cyanide	<0.004	<0.004	<0.004	<0.004	0.01	<0.004	<0.004
Hardness	1580	2030	2190	3140	1400	2850	4
Iron (total)	0.4	0.44	2.69	<0.5	0.3	<0.5	8.61
Lead	0.008	0.025	0.162	<0.01	0.002	<0.01	0.004
Magnesium (mg/L)	242	426	460	637	290	583	1
Mercury (mg/L)	<0.0001	0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Nickel (mg/L)	0.012	0.002	0.026	<0.01	0.026	<0.01	0.004
Nitrate (mg/L)	0.03	0.68	0.28	0.18	0.01	0.65	15.9
Phosphate (mg/L)	0.12	0.31	<0.03	0.03	0.09	0.40	0.12
Potassium	8	11	20	24	8	26	1
Sodium (dissolved)	2220	5140	4160	5600	2690	6230	92
Sulphates (mg/L)	975	2000	2030	2500	2240	3150	22
Zinc (mg/L)	0.113	0.027	0.176	<0.05	0.012	<0.05	0.019

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 Harts Cottage and Tomingley Village.

EventKey	Event	Date/Time	Max R (mm/s)	Max AB (Pa)	Max AB (dBL)	Name ()
59472	TMG04H	29/01/2015 13:05	0.31	6.75	110.6	Harts Cottage
59443	TMG04G	27/01/2015 13:35	0.11	0.95	93.6	Harts Cottage
59442	TMG04F	27/01/2015 13:19	0.17	8.12	112.2	Harts Cottage
59398	TMG04E	23/01/2015 13:34	0.24	1.64	98.3	Harts Cottage
59352	TMG04D	21/01/2015 13:01	0.08	1.12	95	Harts Cottage
59264	TMG04C	19/01/2015 13:07	0.18	1.92	99.7	Harts Cottage
59231	TMG04B	17/01/2015 12:59	0.22	2.01	100.1	Harts Cottage
59186	TMG04A	15/01/2015 14:59	0.13	2.35	101.4	Harts Cottage
59124	TMG049	14/01/2015 12:52	0.01	1.14	95.1	Harts Cottage
59089	TMG048	10/01/2015 13:28	0.1	1.51	97.6	Harts Cottage
59088	TMG047	13/01/2015 10:58	0.34	9.25	113.3	Harts Cottage
59087	TMG046	13/01/2015 11:23	0	0.6	84.1	Harts Cottage
59004	TMG045	8/01/2015 12:55	0.12	0.92	93.3	Harts Cottage
58931	TMG044	6/01/2015 13:01	0.15	0.98	93.8	Harts Cottage
58904	TMG043	3/01/2015 15:02	0.2	1.09	94.7	Harts Cottage
59472	TMG04H	29/01/2015 13:05	0.3	6.48	110.2	Tomingley Village
59443	TMG04G	27/01/2015 13:35	0.14	1.26	96	Tomingley Village
59442	TMG04F	27/01/2015 13:19	0.17	9.65	113.7	Tomingley Village
59398	TMG04E	23/01/2015 13:34	0.23	1.95	99.8	Tomingley Village
59352	TMG04D	21/01/2015 13:01	0.08	1.51	97.6	Tomingley Village
59264	TMG04C	19/01/2015 13:07	0.2	1.57	97.9	Tomingley Village
59231	TMG04B	17/01/2015 12:59	0.21	3.72	105.4	Tomingley Village
59186	TMG04A	15/01/2015 14:59	0.1	2.47	101.8	Tomingley Village
59124	TMG049	14/01/2015 12:52	0	2.24	101	Tomingley Village
59089	TMG048	10/01/2015 13:28	0.11	1.81	99.1	Tomingley Village
59088	TMG047	13/01/2015 10:58	0.3	14.74	117.3	Tomingley Village
59087	TMG046	13/01/2015 11:23	0	0.27	82.8	Tomingley Village
59004	TMG045	8/01/2015 12:55	0.13	1.26	96	Tomingley Village
58931	TMG044	6/01/2015 13:01	0.14	1.25	95.9	Tomingley Village
58904	TMG043	3/01/2015 15:02	0.22	1.23	95.8	Tomingley Village

Table 5. Blast monitoring

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 this month are:

- Monthly average: 5.601 ppm
- Daily maximum: 26.285 ppm on 13 January. This exceeds the 90 percentile limit.
- Daily minimum: 0.235 ppm on 6 January.
- Number of exceedances: one

10. BIODIVERSITY MONITORING

- Native fauna sightings:
 - Yellow Spoonbill, *Platalea flavipes* in dam beside front entrance road.
 - Seven Superb Parrots, *Polytelis swainsonii* in biodiversity offset area.
- Native animal rescue:
 - No native animals were recued.
- Vertebrate pests:
 - A foxes and hares observed frequently across the site during the days and nights.