

**TOMINGLEY GOLD PROJECT**

**Monthly Environmental  
Monitoring Report  
  
September 2016**

# TOMINGLEY GOLD PROJECT

## Monthly Environmental Monitoring Report

### September 2016

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#### Document History

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

## Table of Contents

<b>1. INTRODUCTION AND SCOPE .....</b>	<b>4</b>
<b>2. WEATHER FOR MONTH 2016 .....</b>	<b>4</b>
A. Weather Station Data .....	4
<b>3. MONITORING LOCATIONS .....</b>	<b>6</b>
<b>4. AIR QUALITY MONITORING .....</b>	<b>7</b>
A. PM10 Monitoring .....	7
B. Depositional Dust .....	9
C. High Volume Air Sampler - Total Suspended Particulates .....	9
<b>5. NOISE MONITORING .....</b>	<b>10</b>
A. Real-Time Noise Monitoring .....	10
<b>6. SURFACE WATER MONITORING .....</b>	<b>11</b>
A. Gundong Creek .....	11
B. Sedimentation Ponds .....	11
<b>7. GROUNDWATER MONITORING .....</b>	<b>11</b>
<b>8. BLAST MONITORING .....</b>	<b>11</b>
<b>9. RESIDUE STORAGE FACILITY .....</b>	<b>12</b>
<b>10. BIODIVERSITY MONITORING .....</b>	<b>12</b>

# 1. Introduction and Scope

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

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

# 2. Weather for September 2016

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## A. Weather Station Data

TGO WEATHER DATA IS PRESENTED BELOW.

Figure 1. September 2016 wind rose

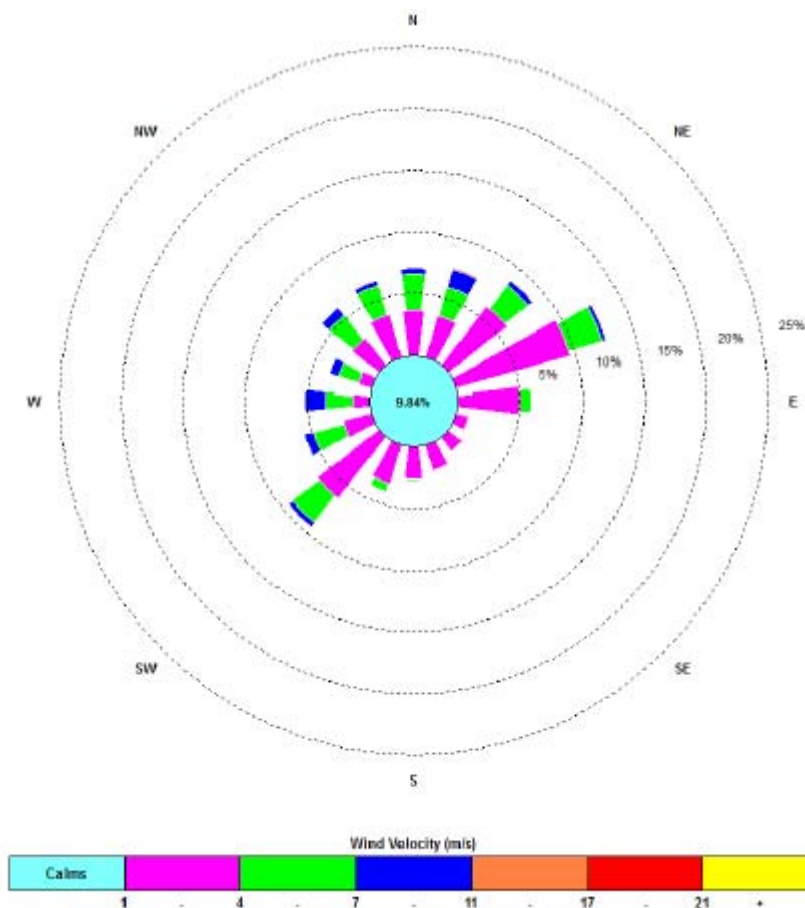


Figure 2.10: Tomingley Gold Operations Wind Rose – September 2016

**Figure 2. Rainfall September 2016**

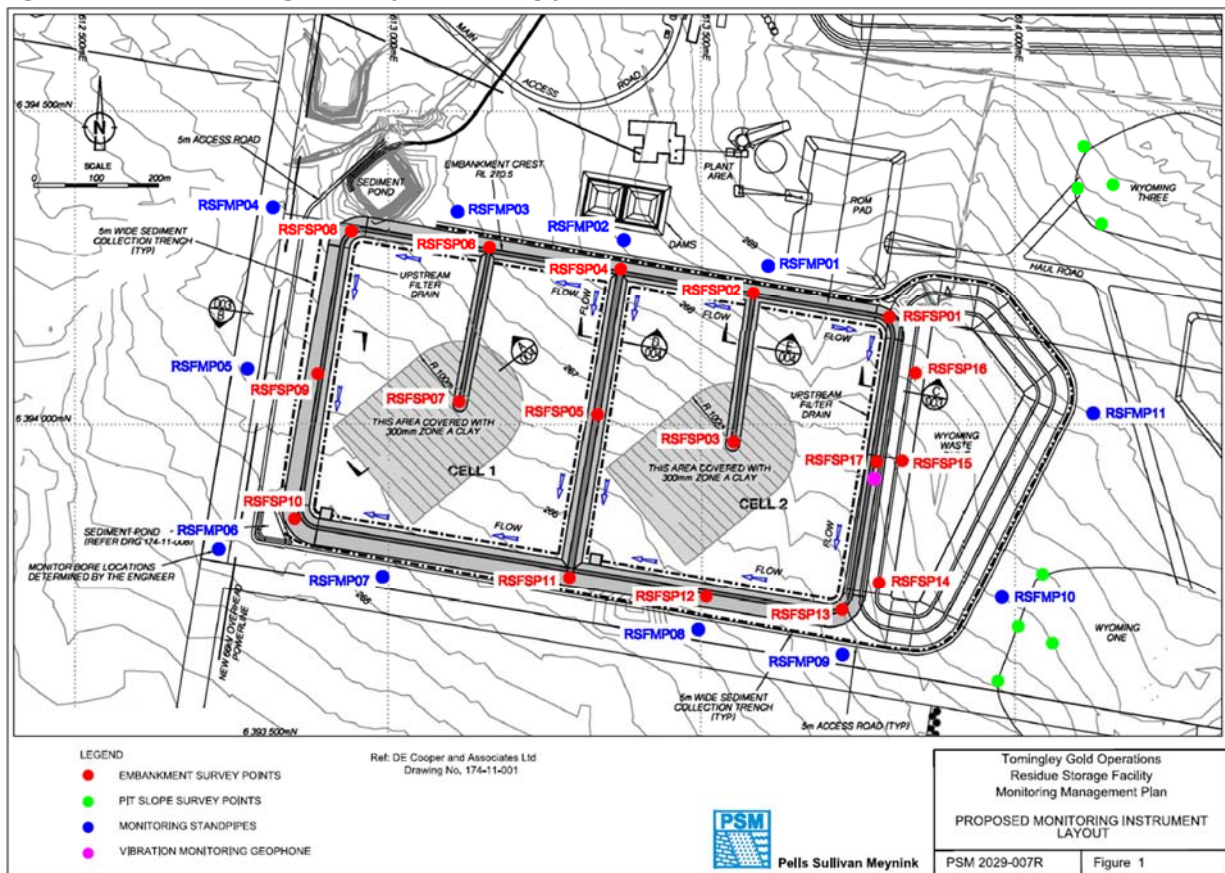
<b>September 2016</b>	<b>Rainfall (mm)</b>
<b>September 1</b>	7.8
<b>September 2</b>	39.2
<b>September 3</b>	1.6
<b>September 9</b>	24.8
<b>September 10</b>	0.2
<b>September 14</b>	3
<b>September 15</b>	0.2
<b>September 16</b>	1.4
<b>September 18</b>	36.8
<b>September 19</b>	0.2
<b>September 20</b>	0.2
<b>September 21</b>	23.4
<b>September 25</b>	18.2
<b>September 29</b>	26.4
<b>September 30</b>	5.4
<b>Total Rainfall</b>	188.8





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/m<sup>3</sup> and a 24-Hour Average of 50ug/m<sup>3</sup>.

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

Figure 5. TEOM Data September 2016

Date	24 Hr Averages	Running Average	Comment
	(µg/m3)		
1/09/2016	7.1	18.8	
2/09/2016	3.8	18.8	
3/09/2016	7.8	18.8	
4/09/2016	7.6	18.8	
5/09/2016	9.5	18.8	
6/09/2016	11.3	18.7	
7/09/2016	12.0	18.7	
8/09/2016	20.3	18.7	
9/09/2016	12.6	18.7	
10/09/2016	6.0	18.7	
11/09/2016	9.9	18.7	
12/09/2016	NA	18.7	Insufficient data
13/09/2016	NA	18.7	Insufficient data
14/09/2016	NA	18.7	Insufficient data
15/09/2016	NA	18.6	Nil data
16/09/2016	NA	18.6	Insufficient data
17/09/2016	7.3	18.5	
18/09/2016	1.9	18.5	1 hr average data used
19/09/2016	6.4	18.5	
20/09/2016	8.7	18.5	
21/09/2016	5.3	18.4	
22/09/2016	7.7	18.4	
23/09/2016	9.6	18.3	
24/09/2016	7.6	18.3	
25/09/2016	6.8	18.3	
26/09/2016	9.8	18.3	
27/09/2016	14.8	18.3	
28/09/2016	7.6	18.2	
29/09/2016	11.5	18.2	
30/09/2016	10.5	18.2	
<b>Average</b>	<b>8.9</b>		
	<b>24 Hour criteria exceedance</b>		

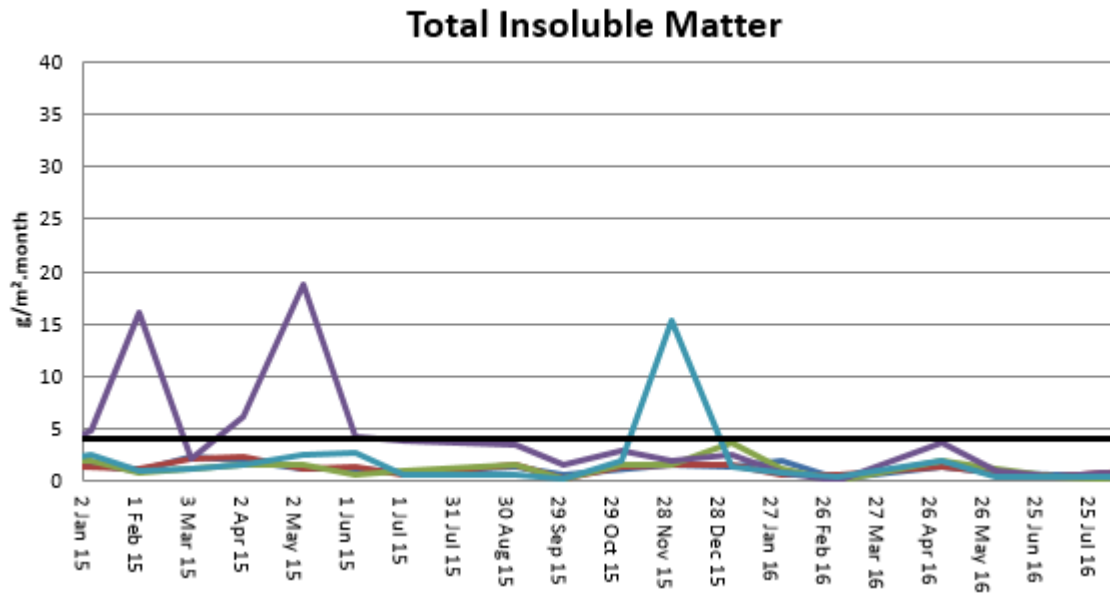
Note: For comparison purposes highlighted results indicate levels above the EPA and NEPM 24-hour maximum criteria for PM<sub>10</sub>



## 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**

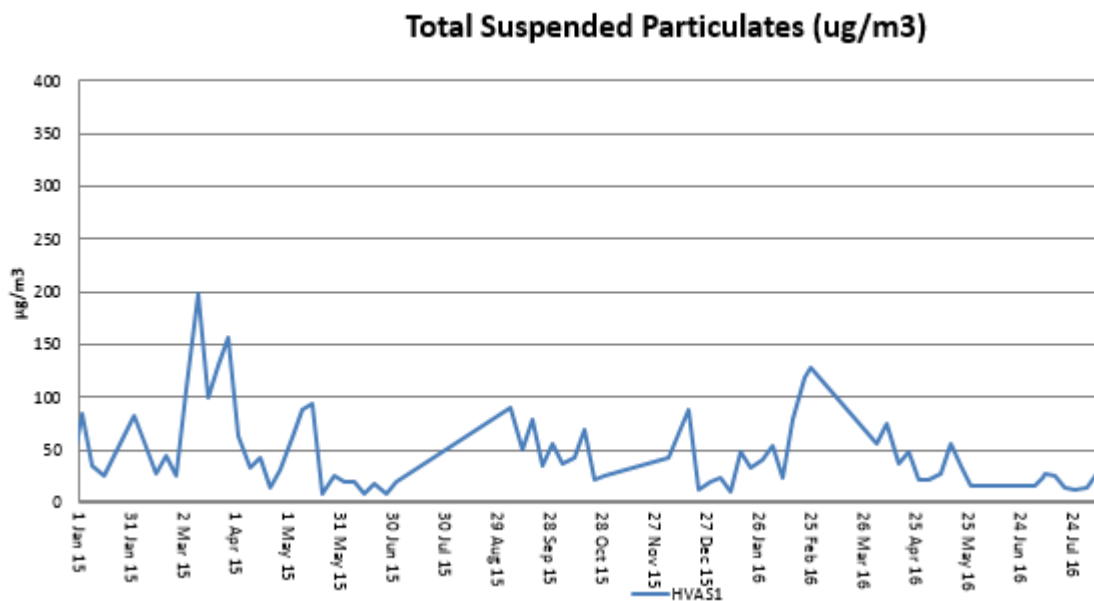


## C. High Volume Air Sampler - Total Suspended Particulates

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**

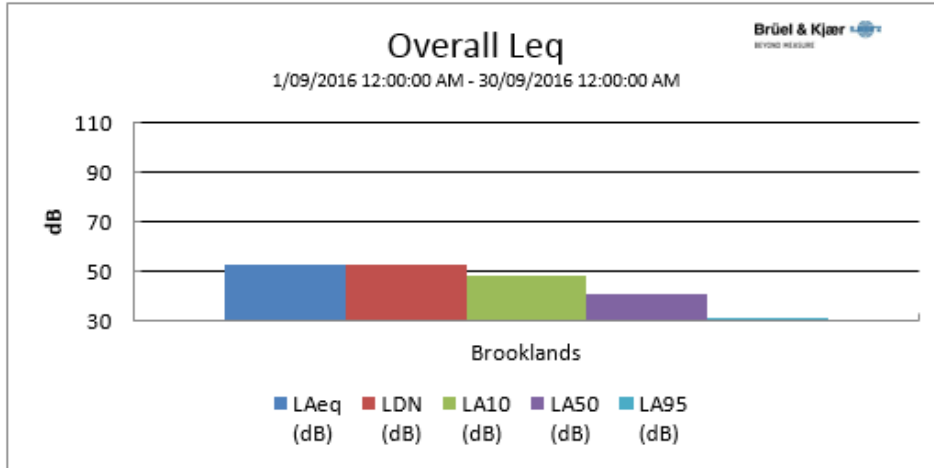


## 5. Noise Monitoring

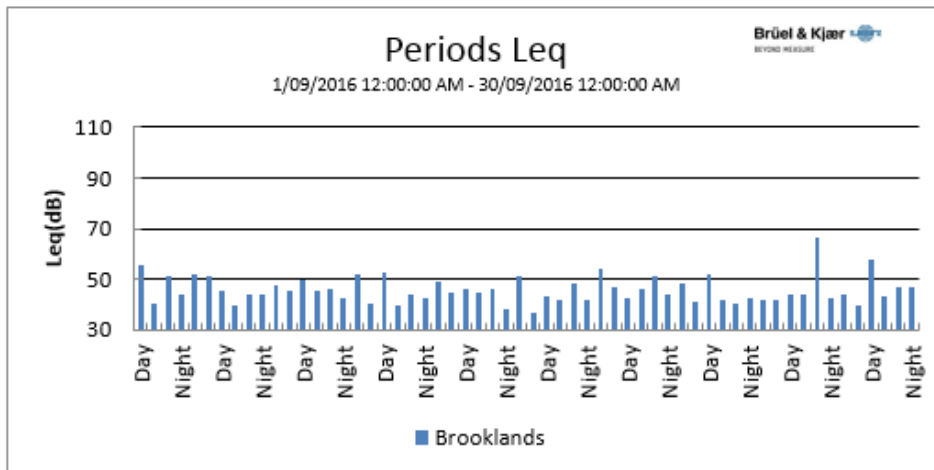
### A. Real-Time Noise Monitoring

See real-time noise monitoring data presented below.

Figure 8. TGO Noise Monitoring 1/9/2016 - 30/9/2016



Location	Start Time	End Time	Activity	LDN (dB)	L <sub>Aeq</sub> (dB)	L <sub>AF</sub> (dB)	L <sub>AMin</sub> (dB)	L <sub>A10</sub> (dB)	L <sub>A50</sub> (dB)	L <sub>A95</sub> (dB)
Brooklands	1/09 12:00:00 AM	30/09 12:00:00 AM	100%	52.5	52.5		24.4	48.4	40.5	31.2



## 6. Surface Water Monitoring

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### 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 September with results showing no cause for concern.

## 7. Groundwater Monitoring

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Groundwater monitoring was undertaken during September in line with statutory requirements.

Results showed all samples fell within the expected parameters.

## 8. Blast Monitoring

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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
72328	3/09/2016 13:28	0.45	Harts Cottage
72328	3/09/2016 13:28	0.8	Tomingley Village
72405	6/09/2016 13:02	0.3	Harts Cottage
72405	6/09/2016 13:02	0.33	Tomingley Village
72448	7/09/2016 13:02	0.22	Harts Cottage
72448	7/09/2016 13:02	0.34	Tomingley Village
72492	8/09/2016 22:14	0	Harts Cottage
72492	8/09/2016 22:14	0	Tomingley Village
72542	9/09/2016 14:15	0.01	Harts Cottage
72542	9/09/2016 14:15	0	Tomingley Village
72539	10/09/2016 14:01	0.34	Harts Cottage
72539	10/09/2016 14:01	0.46	Tomingley Village
72566	12/09/2016 12:59	0.47	Harts Cottage
72566	12/09/2016 12:59	0.78	Tomingley Village
72606	13/09/2016 12:59	0.01	Harts Cottage
72606	13/09/2016 12:59	0	Tomingley Village
72617	14/09/2016 13:01	0.39	Harts Cottage
72617	14/09/2016 13:01	0.71	Tomingley Village
72811	23/09/2016 13:00	0.69	Harts Cottage
72811	23/09/2016 13:00	1.11	Tomingley Village
72885	27/09/2016 13:40	0.01	Harts Cottage
72885	27/09/2016 13:40	0	Tomingley Village
72942	30/09/2016 10:29	0	Harts Cottage
72942	30/09/2016 10:29	0	Tomingley Village
72943	30/09/2016 10:33	0.01	Harts Cottage
72943	30/09/2016 10:33	0.01	Tomingley Village
72944	30/09/2016 10:39	0.01	Harts Cottage
72944	30/09/2016 10:39	0.01	Tomingley Village
72945	30/09/2016 10:41	0.02	Harts Cottage
72945	30/09/2016 10:41	0.01	Tomingley Village

## 9. Residue Storage Facility

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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 September 2016 are:

- Monthly average: 1.35 ppm
- Daily maximum: 2.83 ppm on 1<sup>st</sup> September
- Daily minimum: 0.22 ppm on 30<sup>th</sup> September
- Number of exceedances: zero

## 10. Biodiversity Monitoring

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### Fauna deaths:

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

### Site Fauna

- On site fauna sightings for September included:
  - 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 July Grey Crowned Babblers, *Pomatostomus temporalis*, were seen in the tree corridor to the South of the RSF.
  - 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 number of White Faced Herons, *Egretta novaehollandiae*, was spotted at the water point on the site access road.

### Vertebrate pests

- A program of trapping feral cats and foxes has continued with no animals being captured throughout September.