TOMINGLEY
GOLD OPERATIONS PTY LTD
(A wholly owned subsidiary of Alkane Resources Ltd)
ABN 53 149 040 371

TOMINGLEY GOLD PROJECT

Monthly Environmental Monitoring Report

January 2020

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Document History

DATE	VERSION	REASON FOR CHANGE	AUTHOR
	1	Submitted for Information	DP

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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 2020.

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

2. Weather for January 2020

A. Weather Station Data

TGO WEATHER DATA IS PRESENTED BELOW.

Figure 1. January 2020 wind rose

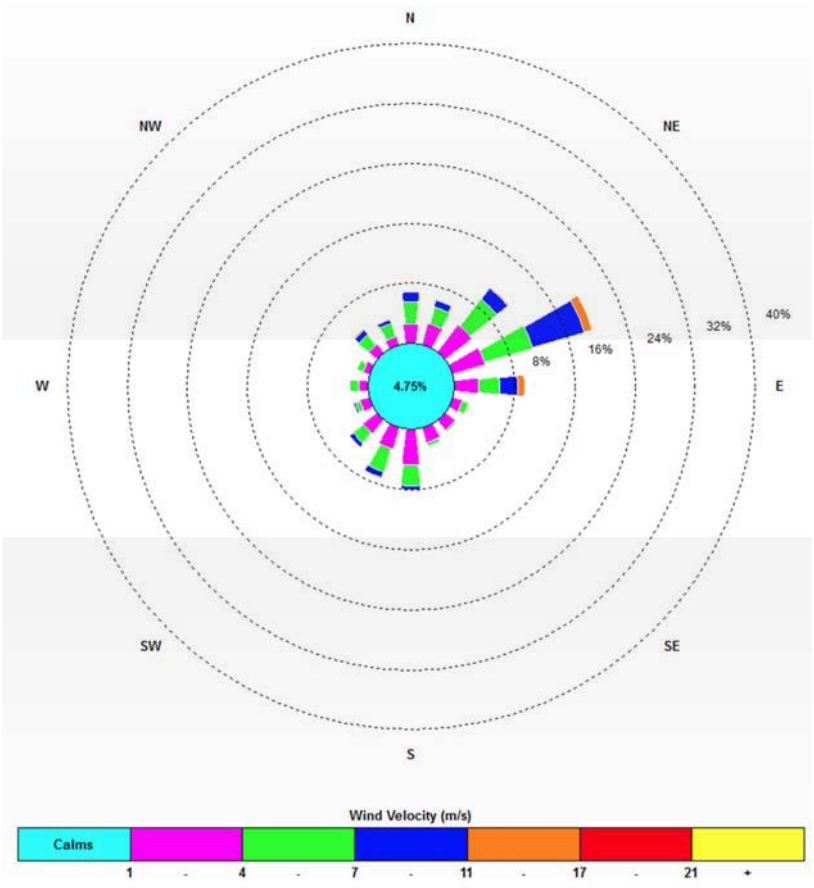


Figure 2. Rainfall January 2020

January 2020	Rainfall (mm)	Year to Date (mm)
Total Rainfall	8.2	8.2

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

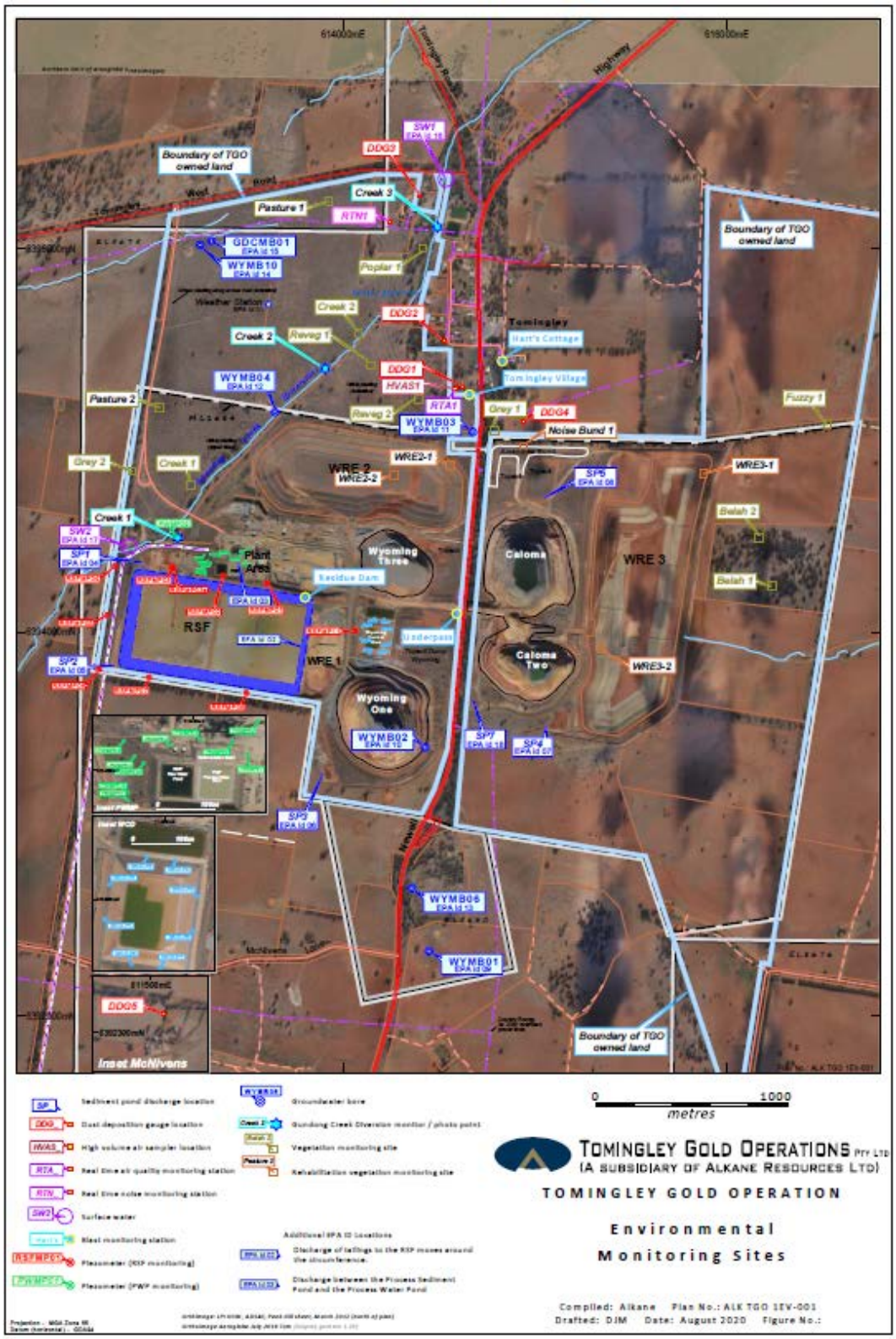
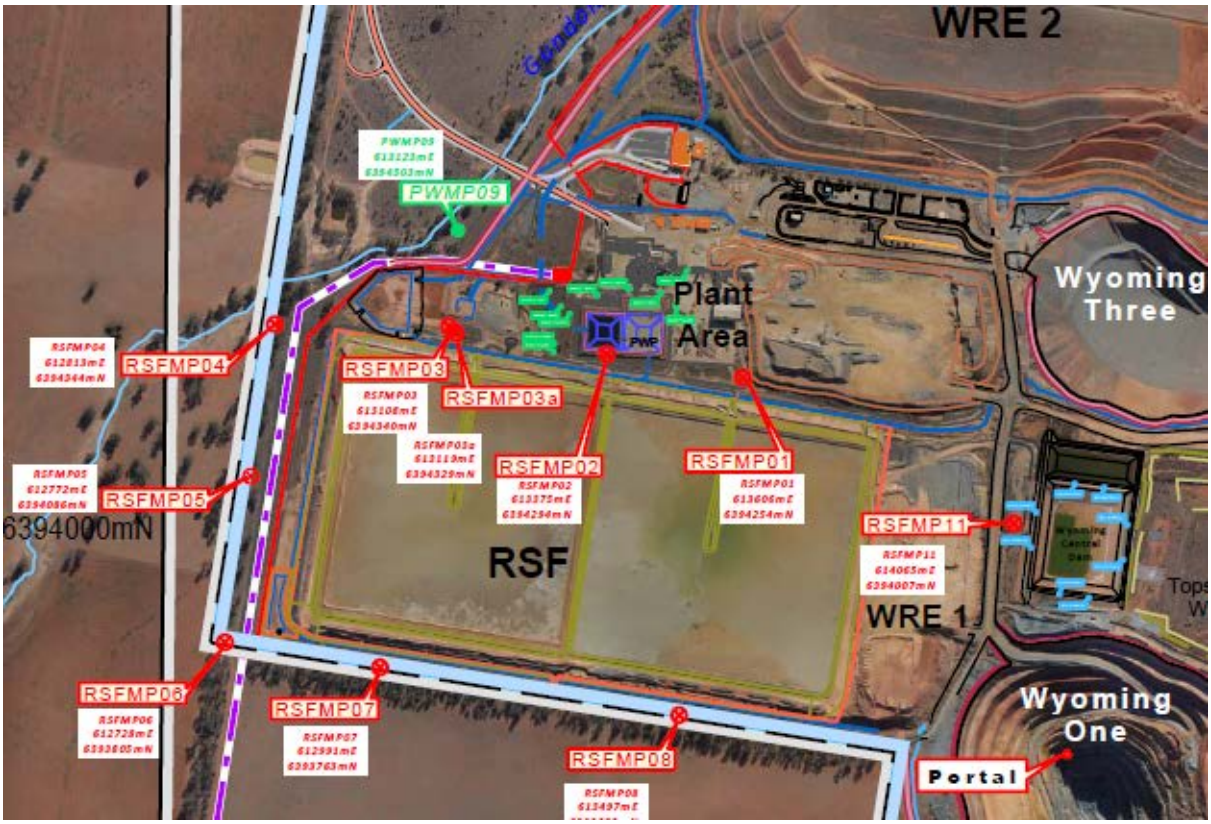


Figure 4 indicates the location of environmental and survey monitoring points on and around the Residue Storage Facility.

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/m^3 and a 24-Hour Average of 50ug/m^3.

The current annual average of all PM10 data at the end of January was 63.2ug/m^3, above the Approval limit. This average has been calculated using all recorded data which includes each of the numerous recent dust storms and smoke from bushfires.

There were twenty-five (25) elevated readings recorded during January, recorded on the 1st -13th ,15th – 16th, 19th -20th ,23rd– 26th and 28th - 31st. Following internal investigations, which included visual inspections and an assessment of prevailing wind direction during elevated days, it was concluded that the anomalous readings were the result of numerous dust storms and smoke that have been impacting the district associated with the ongoing severe drought, high winds and the bushfires burning throughout NSW and were not generated by the project.

Figure 5. TEOM Data January 2020

Date	24-hour Average	Annual Rolling Average	Comment/s
1/01/2020	128.4	42.7	
2/01/2020	89.9	42.8	
3/01/2020	121.6	43.0	
4/01/2020	107.6	43.3	
5/01/2020	999.8	45.8	
6/01/2020	2149.4	51.7	
7/01/2020	110.7	51.9	
8/01/2020	70.8	52.0	
9/01/2020	151.1	52.4	
10/01/2020	792.3	54.5	Recalc using 1hr average data. 7.2 hrs machine outage data excluded
11/01/2020	1617.6	58.9	Recalc using 1hr average data. 1hr of high negative data excluded
12/01/2020	139.3	59.2	Recalc using 1hr average data. 1hr of high negative data excluded
13/01/2020	140.1	59.5	
14/01/2020	48.6	59.5	
15/01/2020	66.9	59.6	
16/01/2020	61.1	59.4	
17/01/2020	20.7	59.3	
18/01/2020	21.6	59.2	
19/01/2020	205.5	59.6	
20/01/2020	67.5	59.7	
21/01/2020	37.2	59.6	
22/01/2020	33.5	59.6	
23/01/2020	1002.6	62.2	
24/01/2020	144.1	62.6	
25/01/2020	70.1	62.7	
26/01/2020	124.4	62.9	
27/01/2020	37.1	62.9	Recalc using 1hr average data. 2hrs of high negative data excluded
28/01/2020	53.4	63.0	Recalc using 1hr average data. 1hr of high negative and 4hrs of machine outage data excluded
29/01/2020	50.1	63.0	Recalc using 1hr average data. 2hrs of high negative data excluded
30/01/2020	69.6	63.0	Recalc using 1hr average data. 2hrs of high negative data excluded
31/01/2020	80.8	63.2	
Average	**284.3**		
	Yellow shading indicates 24-hr criteria (50µg/m^3) exceedance		*Units = µg/m^3*

B. Depositional Dust

Depositional Dust monitoring undertaken during this month returned the results indicated in Table 1 below. This also provides the figures for the previous month for comparison. The above average January results coincided with the increase of regional wind blown dust and dust storms resulting from the ongoing drought conditions and were not generated by the project. The performance criteria for deposited dust is averaged over 12 months.

Table 1. Dust Deposition Results January 2019

Location	Date Monitored	Total Insoluble Matter (g/m2/month) Jan	Total Insoluble Matter (g/m2/month) Dec	Change in Total Insoluble Matter
DDG1	06/01/2020 – 03/02/2020	20.2	5.6	14.6
DDG2	06/01/2020 – 03/02/2020	11.8	1.4	10.4
DDG3	06/01/2020 – 03/02/2020	16.8	4	12.8
DDG4	06/01/2020 – 03/02/2020	25.9	12.8	13.1
DDG5	06/01/2020 – 03/02/2020	25.5	2.2	23

C. High Volume Air Sampler - Total Suspended Particulates

High Volume Air Sampling (HVAS) for Total Suspended Particulates (TSP) was undertaken this month. Table 2 below provides the results. The above average results during January coincided with the occurrence of severe regional dust storms due to ongoing drought conditions and smoke in the area generated from the NSW bushfires, and were not generated by the project.

The performance criteria for TSP is averaged over 12 months.

Table 2. Hi-Volume Air Sampler Data December 2019

Location	Sample Date	Results (TSP µg/m³)	Performance Criteria (Annual Average)
HVAS1	01/01/2020	445	90 µg/m3
HVAS1	07/01/2020	392	
HVAS1	13/01/2020	281	
HVAS1	19/01/2020	132	
HVAS1	25/01/2020	367	
HVAS1	31/01/2020	267	

5. Noise Monitoring

A. Real-Time Noise Monitoring

Real-time noise monitoring data showed no exceedances during the month of January. A full report is provided separately on the Alkane webpage.

6. Surface Water Monitoring

A. Gundong Creek

Gundong Creek did not flow during January and as such no samples were taken.

B. Sedimentation Ponds

No discharge was experienced from any of the sediment ponds during the month.

7. Groundwater Monitoring

Quarterly groundwater monitoring was undertaken during December in line with licence requirements.

Results from the monitoring fell within expected limits. The next round of monitoring is due in March.

8. Blast Monitoring

Blasting is no longer carried out in the TGO open cut pits and vibration and decibels are monitored from several locations. Underground blasting commenced during January and blasts for the month recorded vibrations below the trigger for the site monitoring equipment.

Blasts that trigger the monitoring equipment are recorded and the data is retained on site. There were no blast exceedances during January.

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.

During January there was no processing undertaken with the plant undergoing maintenance for the month. Accordingly, there were no discharges during this period.

10. Biodiversity Monitoring

Fauna deaths:

- No fauna deaths were recorded during January.