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

February 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 February 2020.

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

2. Weather for February 2020

A. Weather Station Data

TGO WEATHER DATA IS PRESENTED BELOW.

Figure 1. February 2020 wind rose

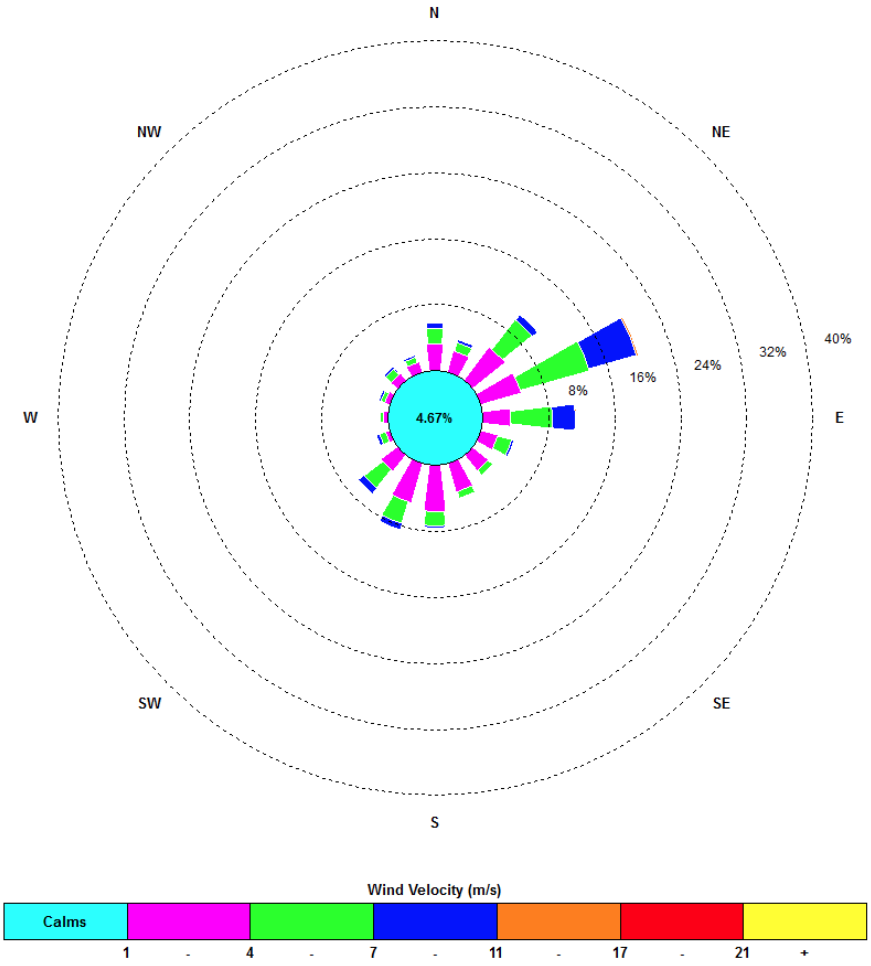


Figure 2. Rainfall February 2020

February 2020	Rainfall (mm)	Year to Date Total
Total Rainfall	70.6	78.8 mm

3. Monitoring Locations

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

Figure 3: TGO water and vegetation monitoring points

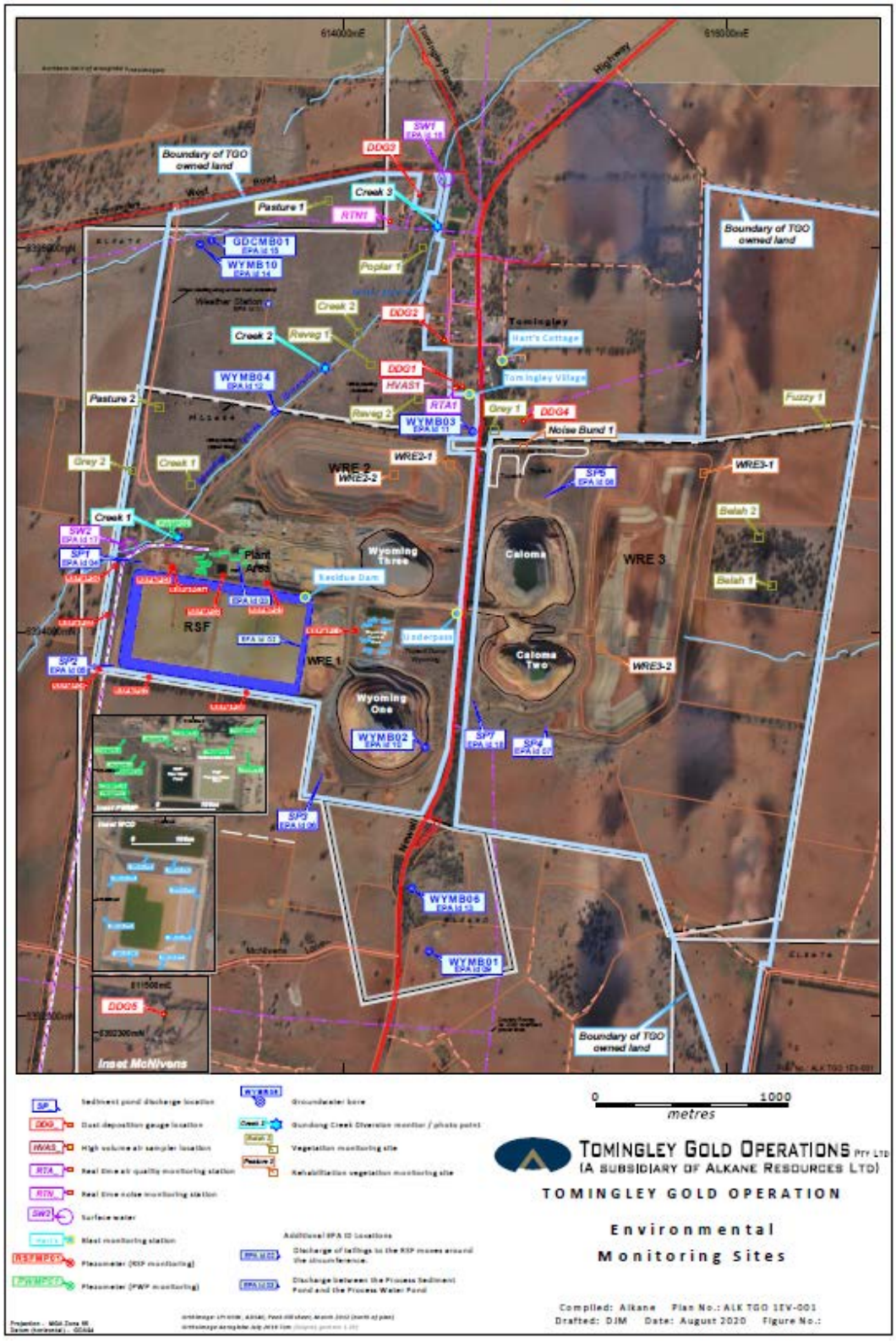
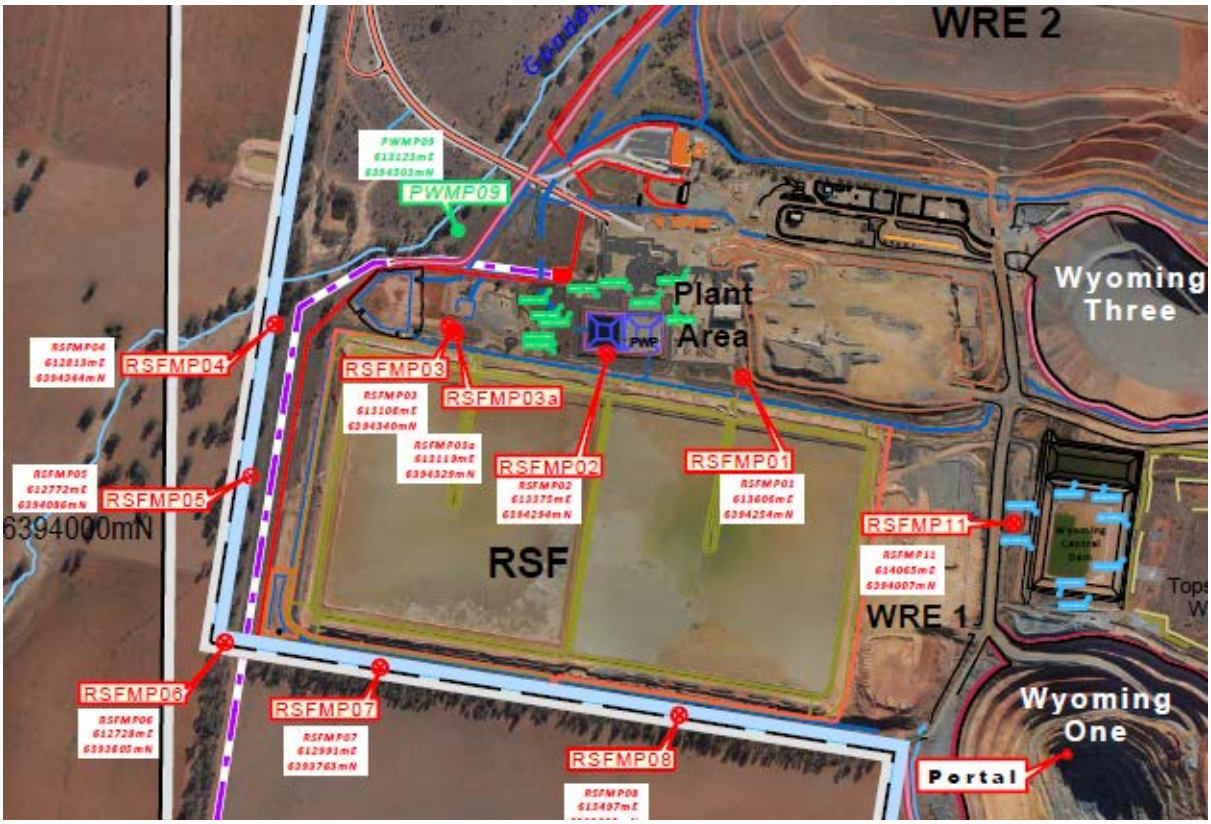


Figure 4 indicates the location of environmental and survey monitoring points on and around the Residue Storage Facility.

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 February was 63.5ug/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 elevated readings recorded during February, recorded on the 1st – 5th and the 22nd February 2020. 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 has been impacting the district associated with the ongoing severe drought, high winds and multiple bushfires burning throughout NSW and were not generated by the project.

Figure 5: TEOM Data February 2020

Date	24-hour Average	Annual Rolling Average	Comment/s
1/02/2020	92.3	63.2	
2/02/2020	252.6	63.9	
3/02/2020	86.5	64.0	Recalc using 1hr average data. 3hrs of high negative data excluded
4/02/2020	81.9	64.2	
5/02/2020	171.3	64.5	
6/02/2020	10.5	64.5	Recalc using 1hr average data. 3hrs of high negative data excluded
7/02/2020	9.0	64.5	Recalc using 1hr average data. 3hrs of high negative data excluded
8/02/2020	15.8	64.5	Recalc using 1hr average data. 4hrs of high negative data excluded
9/02/2020	10.1	64.4	Recalc using 1hr average data. 2hrs of high negative data excluded
10/02/2020	9.8	64.3	Recalc using 1hr average data. 2hrs of high negative data excluded
11/02/2020	15.4	64.3	Recalc using 1hr average data. 2hrs of high negative data excluded
12/02/2020	14.9	64.1	Recalc using 1hr average data. 2hrs of high negative data excluded
13/02/2020	16.5	63.8	Recalc using 1hr average data. 1hr of high negative data excluded
14/02/2020	20.1	63.7	Recalc using 1hr average data. 6hrs of high negative data excluded
15/02/2020	37.5	63.7	
16/02/2020	24.5	63.7	Recalc using 1hr average data. 2hrs of high negative data excluded
17/02/2020	17.7	63.7	
18/02/2020	32.4	63.6	
19/02/2020	No Data	63.6	Insufficient data for 24 hour averaging purposes - Annual calibration. 16hrs of valid data available
20/02/2020	No Data	63.7	Insufficient data for 24 hour averaging purposes - Annual calibration. 14hrs of valid data available
21/02/2020	28.7	63.6	
22/02/2020	73.1	63.8	
23/02/2020	15.1	63.8	
24/02/2020	13.4	63.8	
25/02/2020	10.8	63.7	
26/02/2020	37.7	63.7	
27/02/2020	31.7	63.7	
28/02/2020	42.0	63.6	
29/02/2020	28.4	63.5	
Average	**44.4**		
	Yellow shading indicates 24-hr criteria (50µg/m3) exceedance		*Units = µg/m3*

B. Depositional Dust

Depositional Dust monitoring undertaken during this month returned the results indicated in the table below. This also provides the figures for the previous month for comparison. The above average February 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. The performance criteria for deposited dust is averaged over 12 months.

Table 1. Dust Deposition Results February 2019

Location	Date Monitored	Total Insoluble Matter (g/m2/month) Feb	Total Insoluble Matter (g/m2/month) Jan	Change in Total Insoluble Matter
DDG1	03/02/2020 – 03/03/2020	4.4	5.6	-1.2
DDG2	03/02/2020 – 03/03/2020	1.9	1.4	0.5
DDG3	03/02/2020 – 03/03/2020	2.5	4	-1.5
DDG4	03/02/2020 – 03/03/2020	4.5	12.8	-8.3
DDG5	03/02/2020 – 03/03/2020	2.8	2.2	0.6

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 February 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 February 2019

Location	Sample Date	Results (TSP µg/m³)	Performance Criteria (Annual Average)
HVAS1	06/02/2020	39.3	90 µg/m3.
HVAS1	12/02/2020	46.2	
HVAS1	18/02/2020	306	
HVAS1	24/02/2020	58	

5. Noise Monitoring

A. Real-Time Noise Monitoring

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

6. Surface Water Monitoring

A. Gundong Creek

Gundong Creek did not flow during February 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 however since then the blasts 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 February.

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.

WAD cyanide discharge levels are shown below with the maximum reading below the 100th percentile limit of 30ppm.

- Monthly average: 2.38ppm

- Daily maximum: 5.58ppm
- Daily minimum: 0.22ppm
- Number of exceedances: 0

10. Biodiversity Monitoring

Fauna deaths:

- No fauna deaths were recorded during February.