

TOMAGO ALUMINIUM CO. PTY. LTD.



ENVIRONMENT REPORT

THIRD QUARTER 2021

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INTRODUCTION:

This document details results from the environmental monitoring program conducted at the Tomago Aluminium Smelter for the third quarter of 2021. The document is prepared to comply with the Environmental reporting conditions set out in the development consents.

The report is forwarded to the following government departments and statutory authorities:

NSW Environment Protection Authority
Office of Environment and Heritage - National Parks and Wildlife Service
Department of Primary Industries (NSW Fisheries)
Port Stephens Council
Hunter Water Corporation
Department of Planning
Hunter Region Botanic Gardens

For procedures used in the sampling and/or analyses contained in this report, please refer to Appendix 7.

Any statements of conformity contained within this report are based purely on the result obtained, without consideration of any associated measurement uncertainties.

All enquiries should be directed to Ms Robyn Parker (robyn.parker@tomago.com.au) in the first instance.

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EMISSION MONITORING SUMMARY REPORT

JULY - SEPTEMBER

2021

1. FLUORIDE EMISSION MONITORING

All monitoring as required under the Protection of the Environment Operations Act Licence 6163 and Development Consent was carried out. No exceedances of licence conditions occurred during the reporting period. A map showing the location of site source monitoring points appears in Appendix 1.

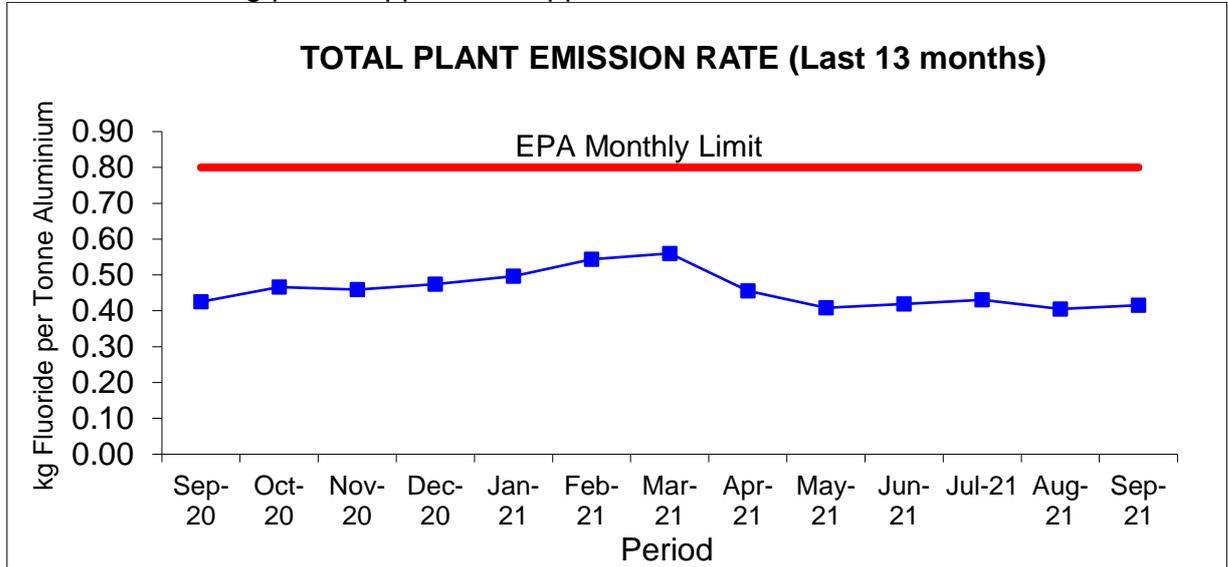


Figure 1: Total Plant Fluoride Emission Rate for last 13 months. This is defined as the sum of the average fluoride emissions for Potline Stacks, Bake Ovens Stacks and Potline Roof Vents.

1.1 STACK COMPLIANCE MONITORING

1.1.1 Potline Stacks

Detailed results of the Potline Stack compliance tests performed during the reporting period are presented in Appendix 2. There are no applicable limits for the potline stack concentrations as they are included in the Total Plant Emission Rate.

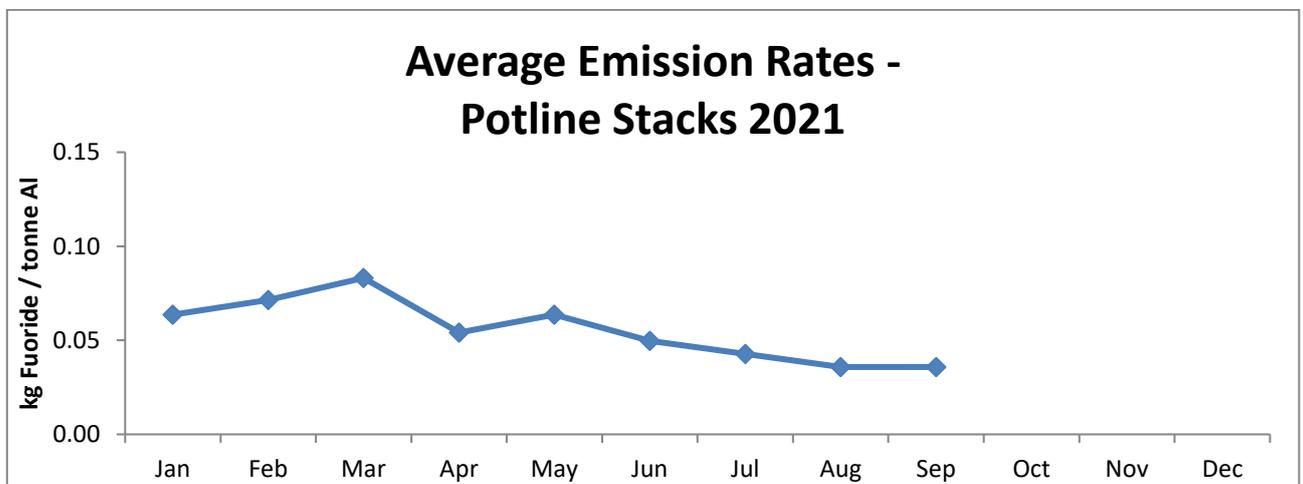


Figure 2: Average Potline Stack Fluoride Emission Rates – 2021

1.1.2 Carbon Bake Oven Stacks

Detailed results of the Bake Oven Stack compliance tests performed during the reporting period are presented in Appendix 2. There are no applicable limits for the Bake Ovens Stack concentrations as they are included in the Total Plant Emission Rate.

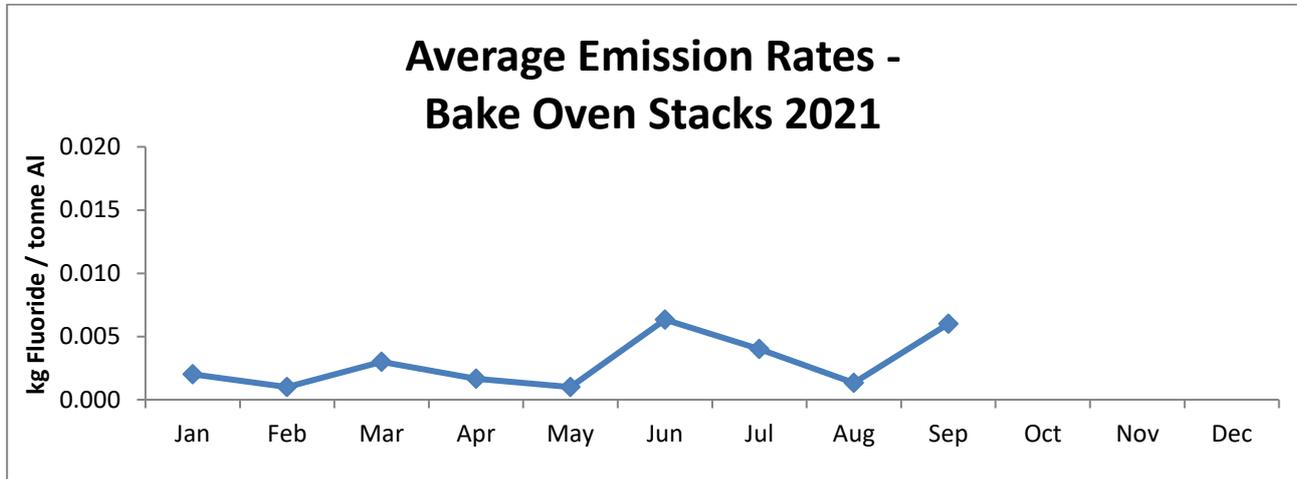


Figure 3: Average Bake Ovens Stack Fluoride Emission Rates – 2021

1.2 STACK CONTINUOUS GASEOUS FLUORIDE MONITORING

Detailed results on the continuous gaseous fluoride monitoring performed during the reporting period are presented in Appendix 2. The continuous monitoring of gaseous fluoride at the stacks is a condition of EPL 6163, however there are no applicable licence limits. The live monitoring data is used by plant operations to optimize emission control equipment.

Table 1: Average monthly stack gaseous fluoride emissions from continuous monitoring – 2021

	mg/m ³											
STACK	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
POTLINE 1 West	0.38	0.31	0.34	0.34	0.30	0.21	0.23	0.23	0.25			
POTLINE 1 East	0.37	0.32	0.39	0.38	0.31	0.30	0.27	0.32	0.21			
POTLINE 2 West	0.32	0.28	0.33	0.24	0.20	0.21	0.18	0.16	0.18			
POTLINE 2 East	0.53	0.46	0.41	0.31	0.21	0.17	0.21	0.16	0.17			
POTLINE 1 & 2 EXT	0.33	0.25	0.25	0.22	0.18	0.13	0.14	0.15	0.16			
POTLINE 3 West	0.46	0.34	0.37	0.29	0.28	0.23	0.22	0.22	0.22			
POTLINE 3 East	0.48	0.45	0.50	0.36	0.24	0.26	0.22	0.23	0.26			
CARBON BAKE OVEN No. 1	0.16	0.33	1.51	0.20	0.18	0.18	0.21	0.51	0.44			
CARBON BAKE OVEN No. 2&3	0.38	0.29	0.33	0.36	0.27	0.64	1.40	0.83	0.51			

1.3 POTLINE ROOF VENTS

The detailed results of the Roof Vent compliance tests performed during the reporting period are presented in Appendix 2. There are no applicable limits for the Potline Roof Vent concentrations as they are included in the Total Plant Emission Rate.

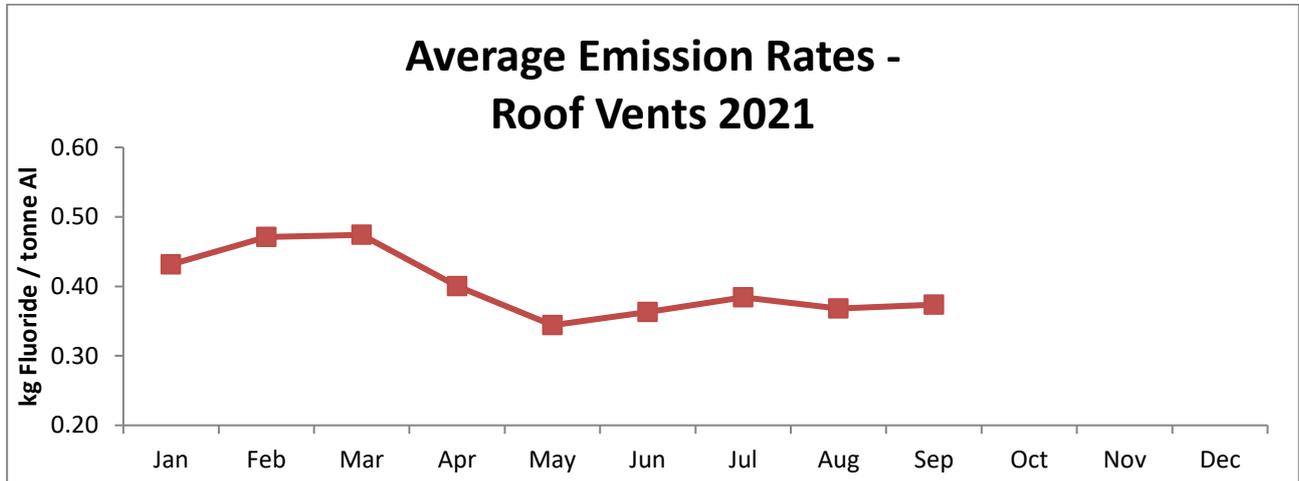


Figure 4: Average Potline Roof Vent Fluoride Emission Rates – 2021

2. SULFUR DIOXIDE EMISSION MONITORING

2.1 RAW MATERIALS

The sulfur content in the coke used for anode manufacture met the Environment Protection Licence limit of 3.5%. There is no applicable Environment Protection Licence limit for sulfur in pitch. Trends in sulfur levels in the coke and pitch are shown below.

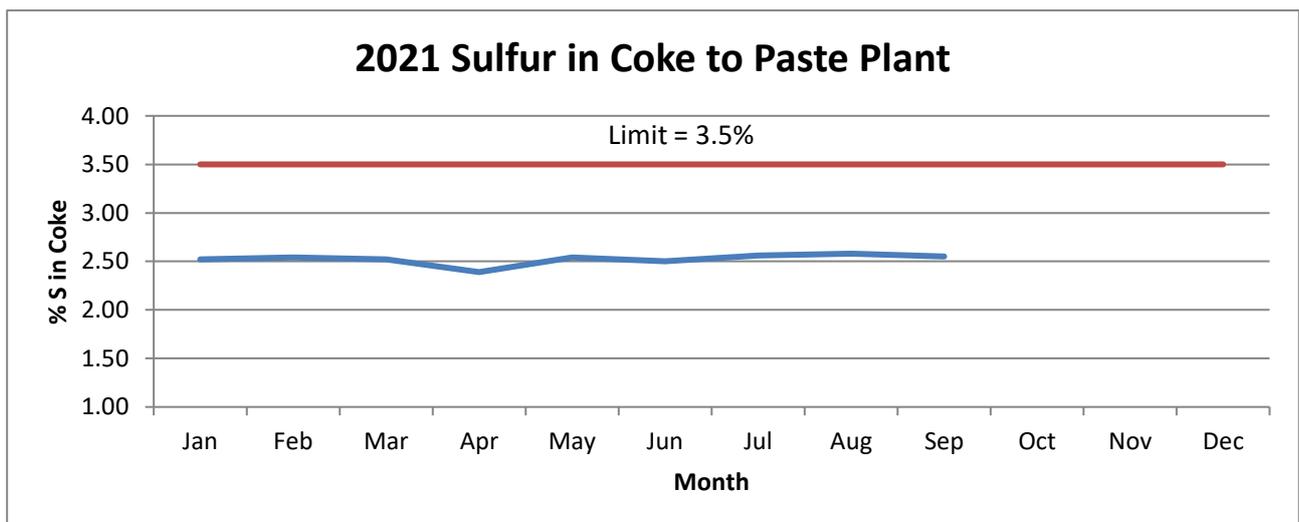


Figure 5: 2021 Year to date Sulfur in Coke to paste plant

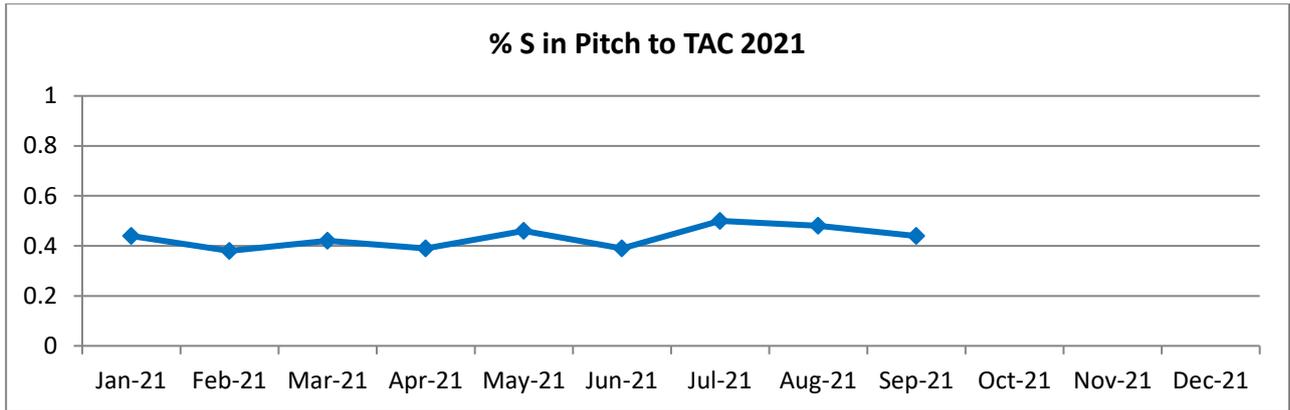


Figure 6: 2021 Sulfur in Pitch received

2.2 SULFUR DIOXIDE MONITORING

Sulfur dioxide emission rates measured for the 2020 - 2021 EPA licence year are consistent with meeting the annual sulfur dioxide load limit for the site, which is 11900 tonnes/annum.

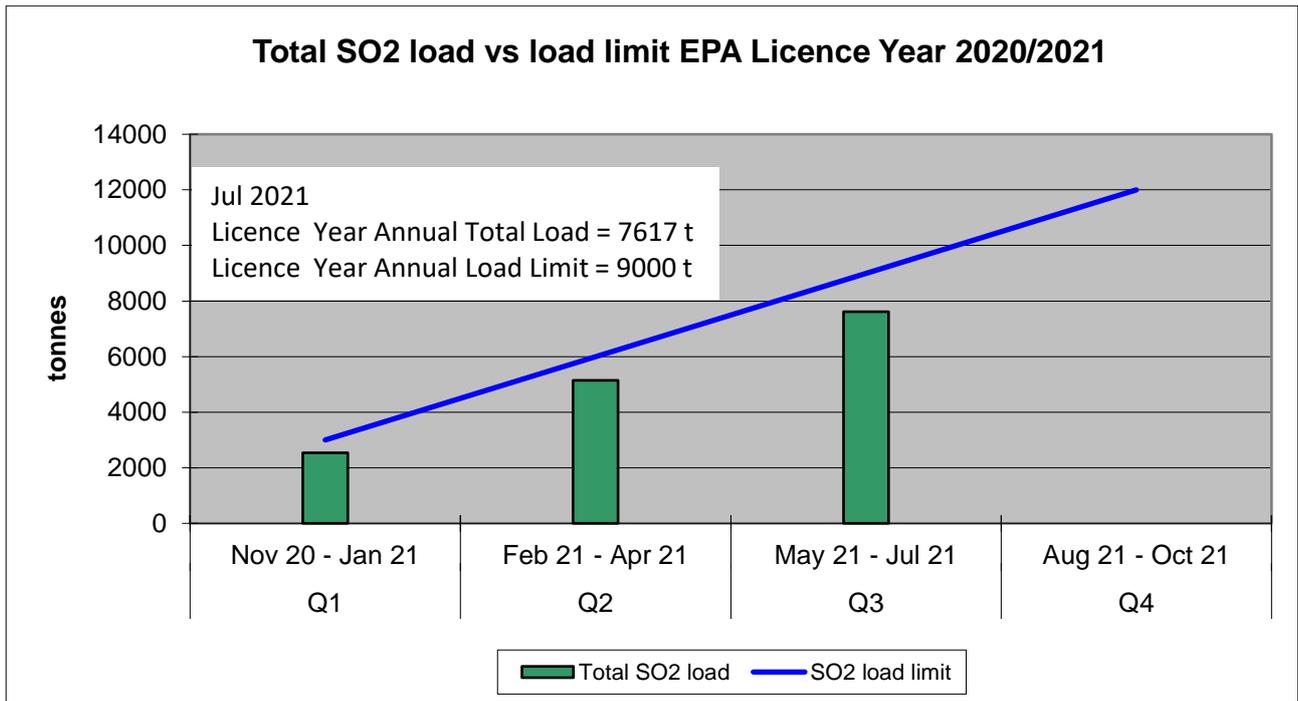


Figure 7: Sulfur Dioxide Load for the 2020– 2021 EPA Licence Year to date

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AMBIENT AIR REPORT

JULY - SEPTEMBER

2021

SECTION

- 1 AMBIENT AIR RESULTS (FLUORIDE)**

- 2 AMBIENT AIR RESULTS (SULFUR DIOXIDE)**

AMBIENT AIR QUALITY REPORT

THIRD QUARTER 2021

All monitoring as required under the Protection of the Environment Operations Act Licence 6163 and Development Consent was carried out. The monthly data summaries for ambient air sampled in the vicinity of Tomago Aluminium smelter appear below. The concentrations of fluoride in ambient air were determined in accordance with AS/NZS 3580.13. 2. The concentrations of sulfur dioxide were determined in accordance with AS 3580.4.1.

1. FLUORIDE CONCENTRATION IN AMBIENT AIR

The weekly average gaseous fluoride results are illustrated in this section where they are compared to 7 day National Goals established by the Australian and New Zealand Environment Conservation Council (ANZECC).

The ANZECC guidelines state (in part) that:

“...goals for ambient air fluoride are designed to protect against injury to plants and grazing animals rather than to protect human health. This is because fluoride can injure vegetation at one-thousandth the level of concern to human health.”

“The goals set for General Land Use (including residential) are designed to protect most of the sensitive species in the natural environment.

The goals set for Specialised Land Use apply when commercially valuable plants, which are demonstrated to be very sensitive to fluoride are being considered.”

“The ambient air goals for fluoride are intended for areas of commercial or conservation value and not intended for comparison with airborne or foliar fluoride levels within industrial areas or buffer zones associated with fluoride emitting industries.”

“Air quality objectives will generally be applied at the outer limits of an industrial buffer zone.” (ANZECC 1990).

The concentrations of gaseous fluoride in ambient air are compared to these guidelines, with sites within the designated buffer zone compared to the general land use goals while sites outside the buffer zone are compared to the specialised land use goals. **There were exceedances** of the general land use goal at Site 181 (Tomago Farm), Site 179 (Lot D, Tomago Rd) and Site 83 (Correctional Services Training Facility) during the third quarter. These sites are to the South and East of the smelter, inside the designated buffer zone, and this trend is typical for times of prevailing North to North-West winds.

Results in tabular form for each site are displayed in Appendix 3.

A map showing the location of the ambient air monitoring points appears in Appendix 1.

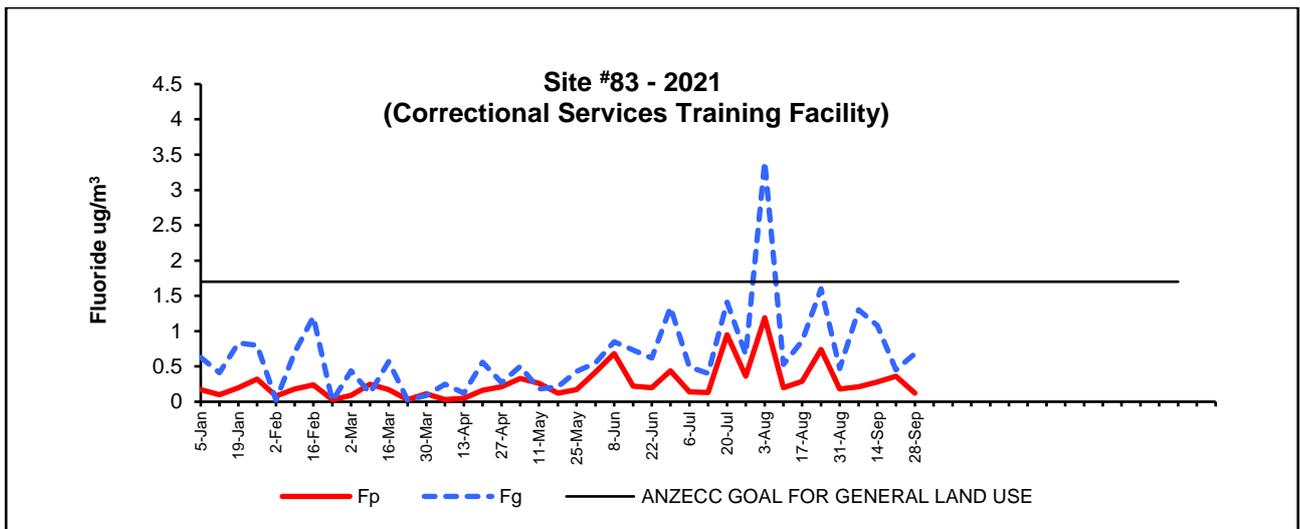
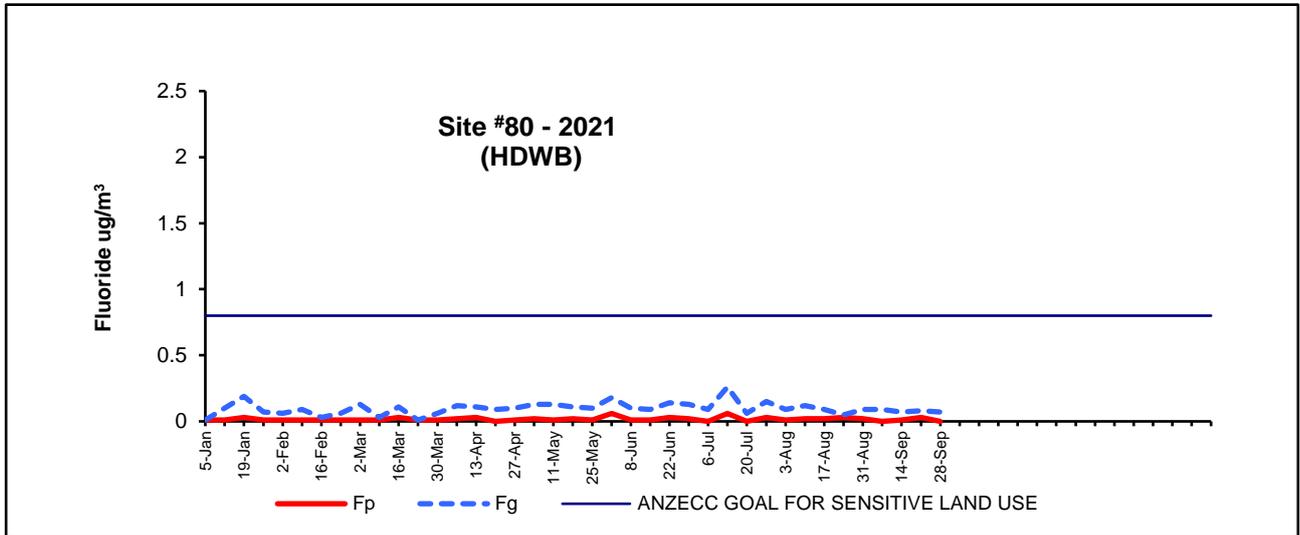


Figure 8: Ambient Fluoride measured concentrations – 2021

Note: Fp = particulate fluoride
Fg = gaseous fluoride

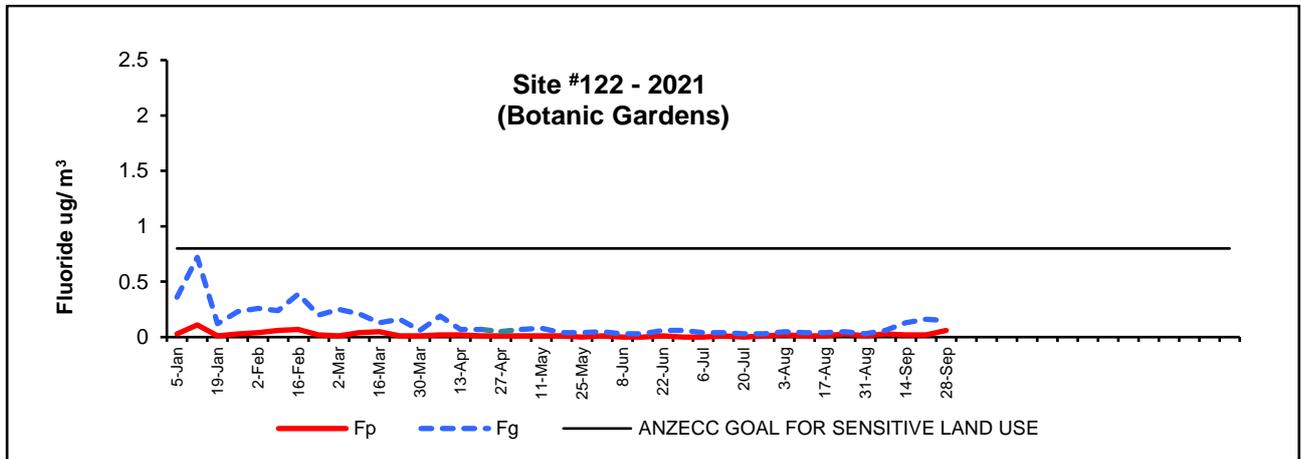
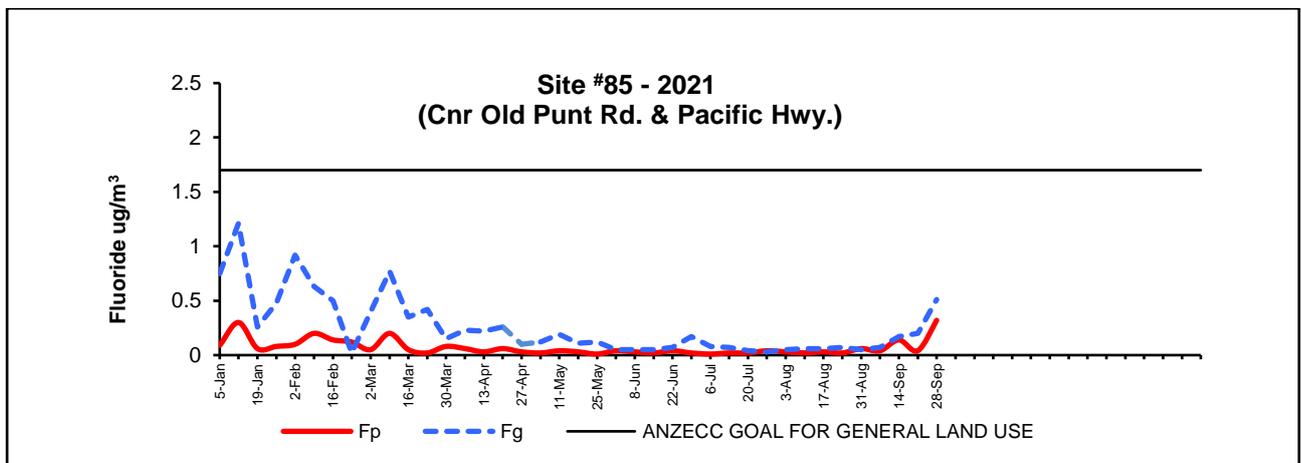
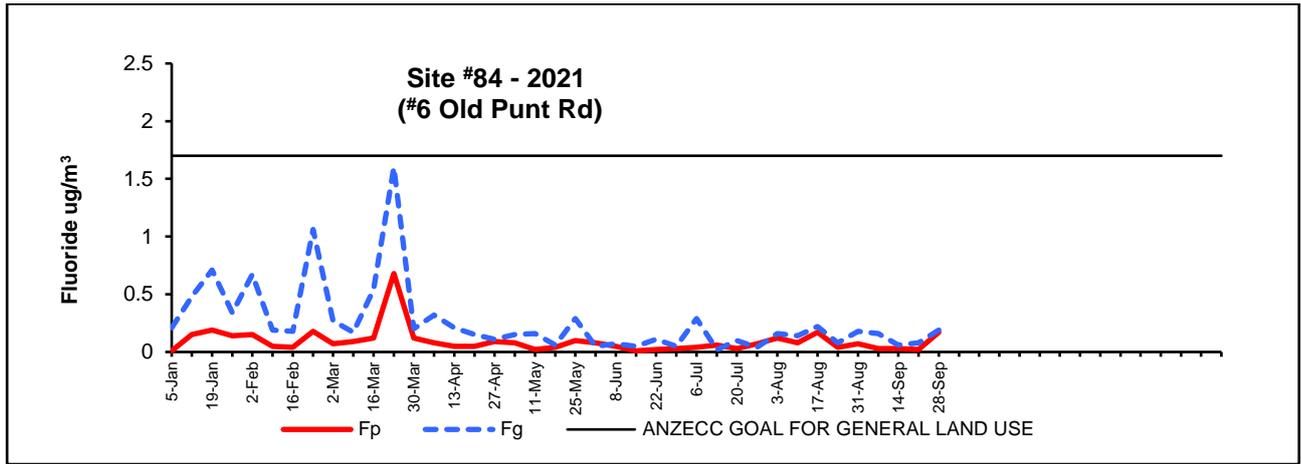


Figure 8: Ambient Fluoride measured concentrations – 2021

Note: Fp = particulate fluoride

Fg = gaseous fluoride

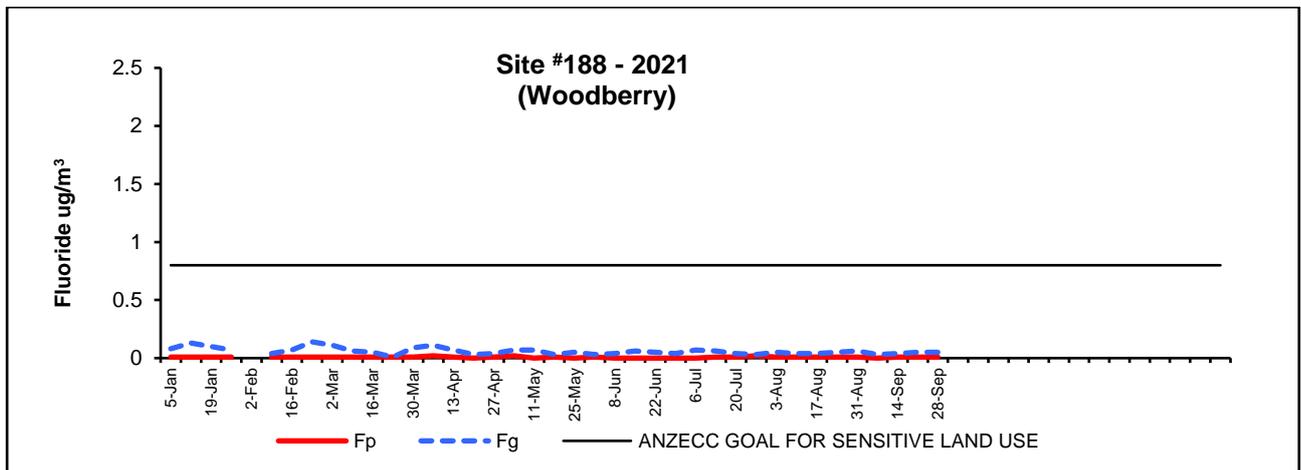
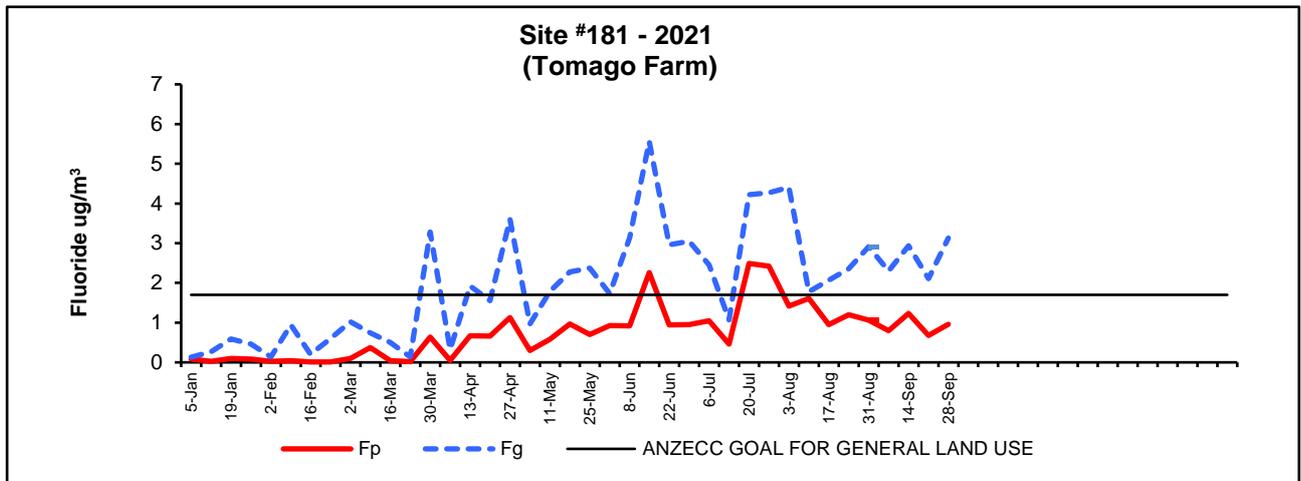
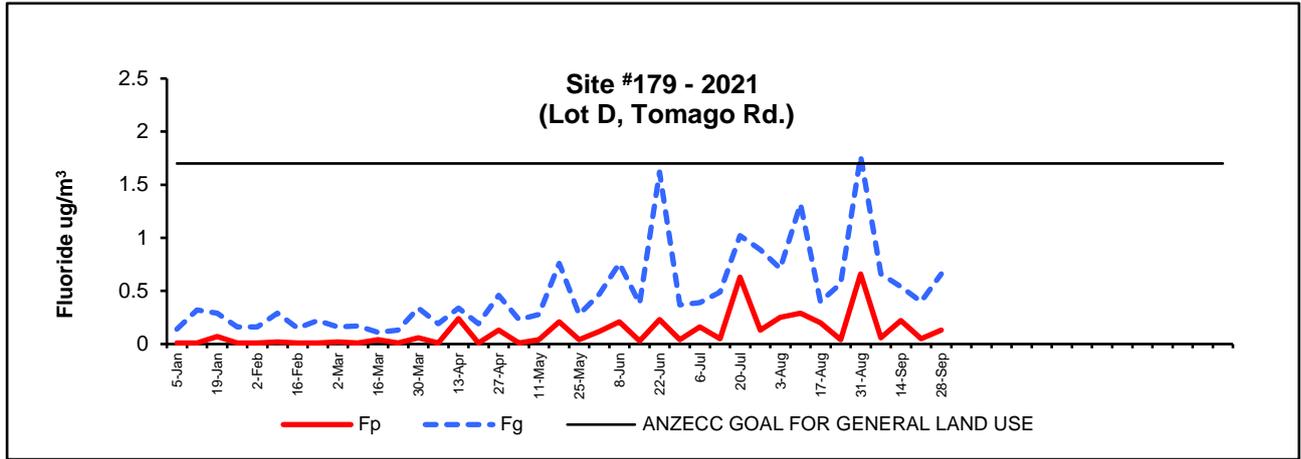


Figure 8: Ambient Fluoride measured concentrations – 2021

Note: Fp = particulate fluoride
Fg = gaseous fluoride

2. SULFUR DIOXIDE CONCENTRATIONS IN AMBIENT AIR

Tomago Aluminium operates five ambient Sulfur Dioxide monitoring stations in accordance with POEO Licence 6163. A map of the sites is located in Appendix 1.

The results for the year to date 2021 are presented in this section.

The NSW EPA's "Approved Methods for the Modelling and Assessment of Air Pollutants in NSW" contains impact assessment criteria for sulfur dioxide. The hourly, daily and annual criteria were adopted from the National Environment Protection Measure (NEPM) for Ambient Air Quality (AAQ) that was established originally in 1998 to be "a representative measure of the air quality likely to be experienced by the general population in the region or sub-region", based on an average population of 25,000. It should be noted that the assessment criteria are designed to be applied at the nearest off-site sensitive receptor, and all five monitoring stations are within the company buffer zone; however, the levels have been used as a point of reference here.

The impact assessment criteria for sulfur dioxide referenced here are:

Averaging Period

1 hour	20.0 pphm
1 day	8.0 pphm
1 year	2.0 pphm

There were no exceedances of these criteria during the third quarter 2021.

Sulfur Dioxide

Parts per Hundred Million (pphm)

Assessment Criteria

1-year average: 2.0 pphm

24-hour average: 8.0 pphm

1-hour average: 20.0 pphm

Meteorological Station (Grid Reference 812 681)												
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
% Sampling Time	99	99	99	98	99	99	97	99	99			
Monthly Average	0.2	0.4	0.4	0.2	0.7	0.6	0.5	0.2	0.5			
Maximum 24 Hour Value	0.9	1.4	1.3	0.7	5.1	5.5	3.8	0.7	3.4			
Maximum 1 Hour Value	6.7	8.7	5.8	3.9	10.8	8.7	8.3	5.6	7.8			
90 %ile Value (1 Hr)	0.4	0.5	0.5	0.4	2.0	0.7	0.7	0.4	1.2			
EXCEEDANCE OF ASSESSMENT CRITERIA												
24 Hour	0	0	0	0	0	0	0	0	0			
1 Hour	0	0	0	0	0	0	0	0	0			

Tomago Road Farm (Grid Reference 813 665)												
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
% Sampling Time	99	99	99	99	98	99	99	99	99			
Monthly Average	0.2	0.2	0.6	1.1	1.1	2.1	2.5	1.7	1.8			
Maximum 24 Hour Value	0.5	1.1	5.6	3.7	3.9	7.8	6.8	6.0	7.3			
Maximum 1 Hour Value	3.1	6.1	11.4	12.6	16.3	13.8	14.1	13.0	15.4			
90 Percentile Value (1 Hr)	0.3	0.2	0.7	4.2	3.8	7.6	8.0	6.3	7.0			
EXCEEDANCE OF ASSESSMENT CRITERIA												
24 Hour	0	0	0	0	0	0	0	0	0			
1 Hour	0	0	0	0	0	0	0	0	0			

Highway (Grid Reference 793 688)												
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
% Sampling Time	99	99	99	99	97	97	98	98	98			
Monthly Average	0.6	0.6	0.5	0.5	0.4	0.2	0.2	0.3	0.4			
Maximum 24 Hour Value	4.0	1.7	1.2	1.4	0.7	0.5	0.4	0.9	1.7			
Maximum 1 Hour Value	7.8	19.0	4.7	5.8	2.9	2.3	1.4	14.3	5.8			
90 % ile Value (1 Hr)	1.2	0.9	0.9	0.6	0.6	0.4	0.4	0.4	0.7			
EXCEEDANCE OF ASSESSMENT CRITERIA												
24 Hour	0	0	0	0	0	0	0	0	0			
1 Hour	0	0	0	0	0	0	0	0	0			

Laverick Ave (Grid Reference 784 667)												
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
% Sampling Time	99	99	95	99	98	95	99	99	99			
Monthly Average	0.4	0.4	1.0	0.2	0.1	0.2	0.1	0.2	0.3			
Maximum 24 Hour Value	1.5	2.3	6.7	1.0	0.8	0.6	0.3	0.7	1.8			
Maximum 1 Hour Value	6.4	7.7	16.6	10.0	3.4	2.1	1.0	5.2	9.2			
90 % ile Value (1 Hr)	0.8	0.7	3.1	0.3	0.3	0.4	0.3	0.3	0.4			
EXCEEDANCE OF ASSESSMENT CRITERIA												
24 Hour	0	0	0	0	0	0	0	0	0			
1 Hour	0	0	0	0	0	0	0	0	0			

Site 179 (Grid Reference 817 671)												
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
% Sampling Time	90	99	99	99	98	99	96	99	95			
Monthly Average	0.1	0.0	0.1	0.3	0.5	0.8	1.0	0.9	0.5			
Maximum 24 Hour Value	0.9	0.2	0.5	1.9	3.1	4.2	4.7	4.8	1.7			
Maximum 1 Hour Value	3.8	1.5	3.2	6.6	8.8	15.4	13.9	13.1	9.5			
90 Percentile Value (1 Hr)	0.1	0.0	0.2	1.1	1.6	2.3	3.0	3.2	1.5			
EXCEEDANCE OF ASSESSMENT CRITERIA												
24 Hour	0	0	0	0	0	0	0	0	0			
1 Hour	0	0	0	0	0	0	0	0	0			

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METEOROLOGICAL REPORT

JULY - SEPTEMBER

2021

METEOROLOGICAL REPORT

THIRD QUARTER 2021

- Detailed statistics can be found in Appendix 4.
- A summary of this data is found in Table 4 below.

		JULY		AUG		SEP	
Predominant Wind Directions, % (at 30m)		WNW	36.5	SSW	37.4	SSW	29.8
		NW	15.7	SW	16.7	SW	11.7
		W	11.1	S	15.6	NNE	11.1
Wind Speed (m/s) (at 30m)	Maximum		10.7		9.6		8.4
	Average		3.8		3.4		3.7
Rainfall (mm)							
	Total Monthly		22.5		54.5		72.0
	Maximum Daily		6.0		46.5		47.5
Temperature (°C)							
	Average Daily Max		16.2		18.3		20.9
	Average Daily Min		7.1		8.0		10.0

Table 4: Meteorological data summary – Quarter 3, 2021

VEGETATION MONITORING REPORT

JULY- SEPTEMBER

2021

VEGETATION MONITORING REPORT

THIRD QUARTER 2021

An extensive vegetation monitoring program is conducted around the smelter with sites that are situated at varying distances from the smelter sampled on a monthly or quarterly basis. To complement this program an annual visual inspection of the condition of vegetation is conducted. The inspection report for 2021 will appear in the Q4 2021 report.

Gaseous fluoride concentrations in the air can affect the condition of vegetation. Gaseous fluoride is absorbed by plants via the leaf stomata during normal respiration processes. The gaseous fluoride is preferentially absorbed instead of carbon dioxide and can reduce the capacity of the plant to photosynthesize. The extent to which fluoride accumulates in vegetation depends upon a number of variables including exposure regimes, meteorological conditions and plant species characteristics. Specific plant characteristics are an important variable as plants can vary in their sensitivity to fluoride. Sensitive species often display foliar damage at tissue concentrations of 50 µg/g. Intermediate species may be damaged at 200 µg/g and resistant species can tolerate tissue concentrations above 500 µg/g before exhibiting symptoms. Background concentrations are typically around 20 µg/g. Historical data shows that fluoride concentration and visible damage to vegetation decreases very rapidly with increasing distance from the smelter.

The monthly data from the Tomago Aluminium vegetation monitoring program for 2021 year to date is found in Appendix 5.

Vegetation data collected for April to June of 2021, including overstorey and cultivated vegetation, exhibits similar concentrations and trends to previous years on a monthly basis and from species to species.

The average year to date 2021 overstorey results for sites 111, 112, 113, 114, 115, 116, 117, 118 and 119 have a combined average of 375 ug/g fluoride. These sites are close to the smelter with most sites being within 0.5 km of the potlines.

The average year to date 2021 overstorey results for sites 120, 121, 123, 126, 168, 174, 182 and 194 have a combined average of 64 ug/g fluoride. These sites are within 3 km of the smelter.

Maps of the vegetation monitoring sites can be found in Appendix 1.

WATER MONITORING REPORT

FOR

JULY - SEPTEMBER

2021

WATER MONITORING SUMMARY

- 1 SEWERAGE TREATMENT OPERATIONS REPORT**
- 2 STORMWATER RETENTION ANALYSIS REPORT**
 - i. Controlled Discharge**
 - ii. Monitoring**
 - iii. Heavy Metal and Cyanide results**
- 3 SURFACE AND GROUNDWATER REPORT**



WATER MONITORING SUMMARY

1. SEWAGE TREATMENT

The sewage treatment system operated without down time and all treated effluent was used for site irrigation. The volume of sewage treated and the quantity and quality of effluent used for irrigation are presented in specific reports in Appendix 6.

2. STORMWATER SYSTEM

i. Controlled Discharge (EPA Licence Point 16)

To allow for the collection of ‘first flush’ stormwater originating from the site, stormwater pond capacity is maintained by discharging water from the stormwater pond to the Hunter River under controlled conditions. Water samples are taken daily during the discharge. Table 5 below shows the monitoring parameters and limits for stormwater discharged under controlled conditions from Licence Point 16. There were no controlled discharges during Quarter 3, 2021.

Date of discharge start	Total Volume Discharged (ML)	PAH (mg/L)	TRH (mg/L)	Maximum daily discharge volume (ML)	Ave pH	Ave Fluoride (mg/L)	Ave conductivity (uS/cm)	Ave Suspended Solids (mg/L)
No controlled discharges								
Applicable Limits	N/A	N/A	N/A	4.32	6.5-8.5	40	N/A	50

Table-5: Controlled stormwater discharge results and comparison to applicable limits.

ii. Continuous monitoring of weir overflow (EPA Licence Point 35)

On-site stormwater is collected in the sedimentation basin. This water then may overflow via a v-notch weir to the Hunter River once the capacity of the stormwater pond has been reached. Daily overflow results for this quarter can be found in Appendix 6, whilst the monthly averages are presented in Table 6 below. There are no applicable EPL limits to stormwater overflow.

Month – Averages during days of flow			Jul	Aug	Sep
Weir v-notch	pH		6.4	6.2	5.9
	Conductivity	uS/cm	363	270	263
	Soluble Fluoride*	mg/L	59	47	36
Flow to Hunter River		L/sec	8	116	106
		kL/day	545	10052	9183
Rainfall	Total monthly	mm.	22.0	54.5	72.0
Number of days with v-notch flow			15	3	4

NF= No Flow over weir
*Flow weighted average

Table 6: Average Monthly Stormwater Overflow Results for Third Quarter 2021

iii. Other monitoring of weir overflow (EPA Licence Point 35)

Samples from the v-notch sampling point above (EPA Licence Point 35) are taken once per discharge and dispatched to external testing facilities for total heavy metals, free cyanide, Polycyclic Aromatic Hydrocarbons (PAH) and Total Recoverable Hydrocarbons (TRH) determination.

The results of these analyses are found below in Table 7.

Table 7: *Stormwater Heavy Metals, Cyanide, PAH and TRH – Third Quarter 2021

Sample Date	mg/L																			
	Fe	Ag	Al	As	Be	Cd	Co	Cr	Cu	Mn	Ni	Pb	Sb	Se	TI	Zn	Hg	Free CN	PAH	TRH
5/07/2021	0.43	<0.005	18	0.003	0.003	0.0014	0.002	0.001	0.013	0.092	0.24	<0.001	0.007	0.001	<0.005	1.4	<0.0001	<0.005	<0.001	<0.1
9/07/2021	0.67	<0.005	27	0.004	0.005	0.0018	0.002	0.003	0.050	0.140	0.36	0.002	0.012	0.001	<0.005	1.6	<0.0001	0.026	<0.001	<0.1
24/08/2021 ¹	0.06	<0.005	17	0.001	0.003	0.0014	0.001	<0.001	0.005	0.095	0.24	<0.001	0.009	<0.001	<0.005	1.6	<0.0001	<0.005	<0.001	<0.1
14/09/2021 ¹	<0.05	<0.005	12	0.001	0.002	0.0011	<0.001	<0.001	0.005	0.064	0.15	<0.001	0.005	<0.001	<0.005	1.3	<0.0001	<0.005	<0.001	0.6

*Analysis performed by Eurofins I mgt, NATA accreditation No. 1261

¹ Filtered Heavy Metals

3. SURFACE AND GROUNDWATER MONITORING

Surface water and groundwater monitoring in the vicinity of the smelter was carried out during the quarter. The groundwater monitoring includes sites monitored by both the Hunter Water Corporation and Tomago Aluminium. Analysis of the fluoride levels for the quarter revealed no abnormalities to normal trends. A detailed analysis of the groundwater and surface water monitoring is provided in the Annual Report.

The results of surface water and groundwater monitoring in the vicinity of the smelter are presented in Appendix 6.

Sites are displayed in Appendix 1, Maps 5 and 6.

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INSTRUMENT AVAILABILITY REPORT

FOR

JULY - SEPTEMBER

2021

INSTRUMENT AVAILABILITY – THIRD QUARTER 2021

<u>AMBIENT FLUORIDE MONITORING</u>		% DATA RECOVERY		
		Apr	May	Jun
Site	80	100	100	100
	83	100	100	100
	84	100	100	100
	85	100	100	100
	122	100	100	100
	179	100	100	100
	181	100	100	100
	188	100	100	100

<u>STORMWATER MONITORING</u>		% DATA RECOVERY		
		Apr	May	Jun
<i>Stream 3</i> <i>(at V Notch)</i>	pH	100	100	100
	FLUORIDE	100	100	100
	PAH	100	100	100
	TRH	100	100	100

NF = No Flow

<u>CONTINUOUS STACK GASEOUS FLUORIDE MONITORING</u>		% DATA RECOVERY		
		Apr	May	Jun
	Stack 1 West	100	100	100
	1 East	100	100	100
	2 West	100	100	100
	2 East	100	100	100
	3 West	100	100	100
	3 East	100	100	100
	1 & 2 Ext.	100	100	100
	Bake Ovens 1	100	100	100
	Bake Ovens 2 & 3	100	100	100

APPENDICES

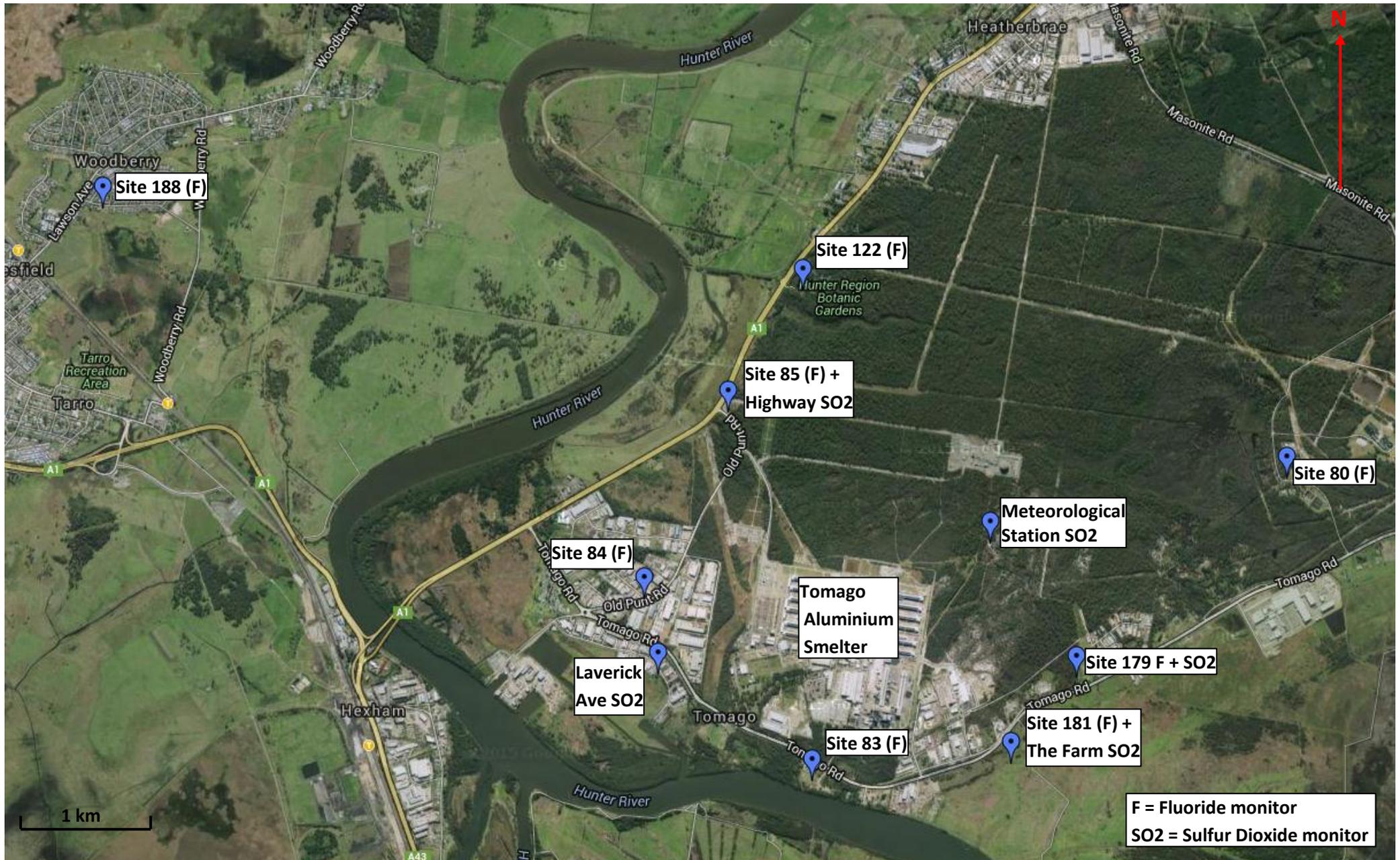
- APPENDIX 1 - SAMPLE SITES**
- APPENDIX 2 - EMISSION MONITORING DATA**
- APPENDIX 3 - FLUORIDE IN AMBIENT AIR DATA**
- APPENDIX 4 - METEOROLOGICAL DATA**
- APPENDIX 5 - VEGETATION MONITORING DATA**
- APPENDIX 6 - WATER MONITORING DATA**
- APPENDIX 7 - SAMPLING PROCEDURES**
- APPENDIX 8 - CUSTOMER FEEDBACK FORM**

APPENDIX 1 –

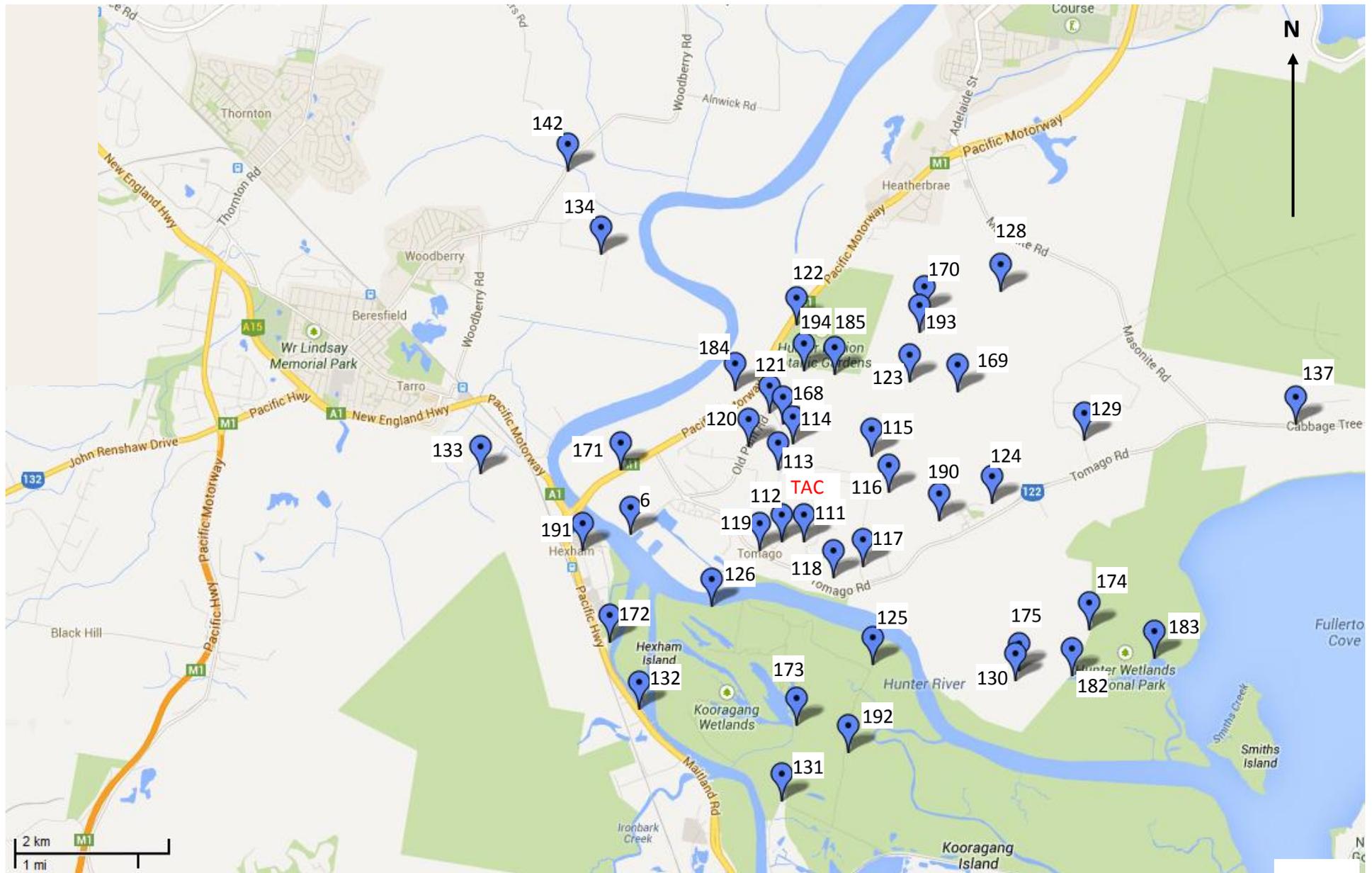
SAMPLE SITES

Map 1	Ambient Air monitoring sites.
Map 2	Overstorey monitoring sites.
Map 3	Forage monitoring sites.
Map 4	Surface Water monitoring sites.
Map 5	Groundwater sites monitored by HWC.
Map 6	Groundwater sites monitored by TAC.
Map 7	TAC Emission Source monitoring sites.

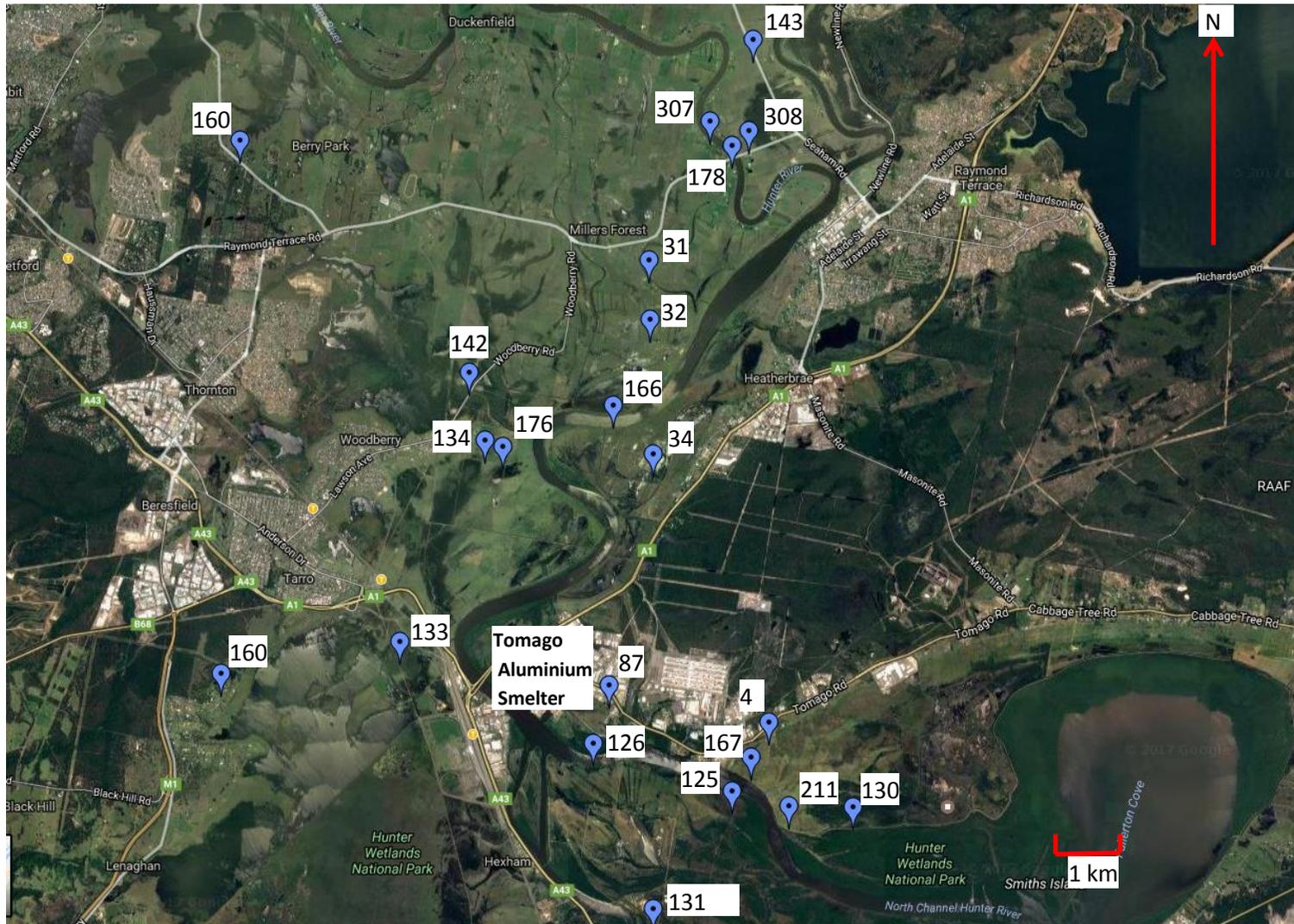
Map 1 Ambient Air Monitoring Sites



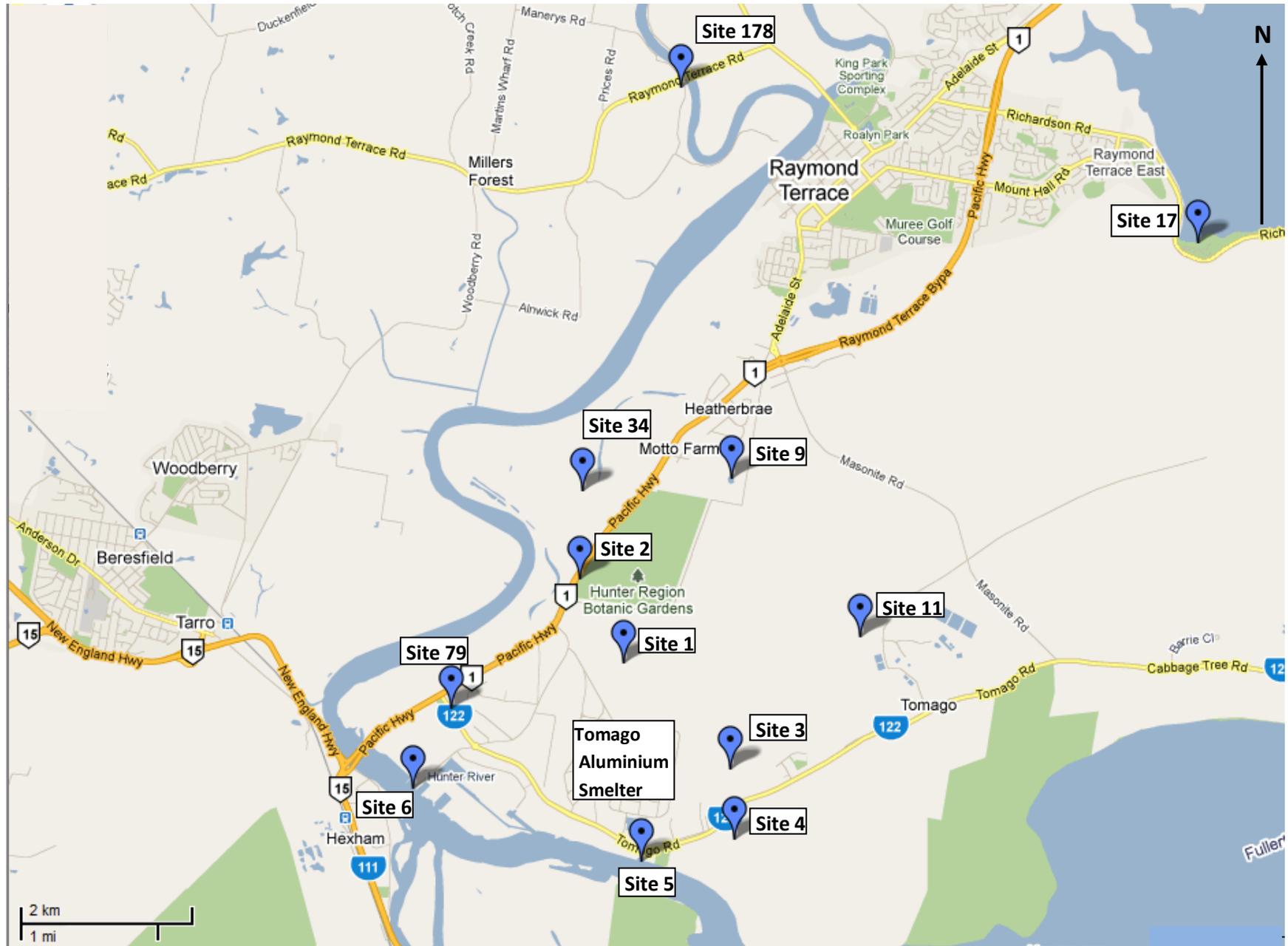
Map 2 Overstorey Sites



Map 3 Forage Sites



Map 4 Surface Water Sites



Map 5 Groundwater Sites Monitored by Hunter Water



Map 6 Plant Groundwater Sites



Map 7: TAC Source Monitoring Locations

EPA Point	Location
1	Potline Stack 1 West
2	Potline Stack 1 East
3	Potline Stack 2 West
4	Potline Stack 2 East
5	Potline Stack Bake Ovens 1
6	Potline Stack Bake Ovens 2&3
7	Potline Stack Line 3 West
8	Potline Stack Line 3 East
9	Potline Stack Lines 1&2 Extension
10	Potroom A Pots A074-A080
11	Potroom B Pots B018-B024
12	Potroom C Pots C074-C080
13	Potroom D Pots D018-D024
14	Potroom E Pots E074-E080
15	Potroom F Pots F020-F026
16	Stormwater controlled discharge point
17	Effluent to on site irrigation system
31 -34	Paste plants stacks
35	Overflow from 1 st flush stormwater system
38	Deline dedust filter



APPENDIX 2 -

EMISSION MONITORING DATA

**Tomago Aluminium Co. Pty Ltd
Fluoride Emissions Summary Report**

AVERAGE GASEOUS FLUORIDE - mg/m3 - 2021															
STACK				Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
POTLINE 1 West				0.38	0.31	0.34	0.34	0.30	0.21	0.23	0.23	0.25			
POTLINE 1 East				0.37	0.32	0.39	0.38	0.31	0.30	0.27	0.32	0.21			
POTLINE 2 West				0.32	0.28	0.33	0.24	0.20	0.21	0.18	0.16	0.18			
POTLINE 2 East				0.53	0.46	0.41	0.31	0.21	0.17	0.21	0.16	0.17			
POTLINE 1 & 2 EXT				0.33	0.25	0.25	0.22	0.18	0.13	0.14	0.15	0.16			
POTLINE 3 West				0.46	0.34	0.37	0.29	0.28	0.23	0.22	0.22	0.22			
POTLINE 3 East				0.48	0.45	0.50	0.36	0.24	0.26	0.22	0.23	0.26			
CARBON BAKE OVEN No. 1				0.16	0.33	1.51	0.20	0.18	0.18	0.21	0.51	0.44			
CARBON BAKE OVEN No. 2				0.38	0.29	0.33	0.36	0.27	0.64	1.40	0.83	0.51			

EMISSION RATE - Kg FLUORIDE / t ALUMINIUM - 2021															
SOURCE	ALY	Avg last 12 months	AYTD	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
POTROOM A, Roof Vent	0.44	0.42	0.40	0.40	0.38	0.48	0.42	0.36	0.41	0.42	0.41	0.31			
POTROOM B, Roof Vent	0.40	0.39	0.38	0.42	0.39	0.41	0.38	0.33	0.39	0.42	0.35	0.37			
POTROOM C, Roof Vent	0.44	0.48	0.48	0.51	0.59	0.63	0.47	0.42	0.39	0.52	0.38	0.44			
POTROOM D, Roof Vent	0.50	0.47	0.47	0.51	0.56	0.57	0.46	0.35	0.40	0.36	0.53	0.47			
POTROOM E, Roof Vent	0.35	0.34	0.35	0.35	0.43	0.39	0.34	0.32	0.33	0.32	0.26	0.39			
POTROOM F, Roof Vent	0.35	0.32	0.33	0.40	0.48	0.37	0.33	0.29	0.26	0.27	0.28	0.27			
AVERAGE ROOF VENT	0.41	0.40	0.40	0.43	0.47	0.47	0.40	0.34	0.36	0.38	0.37	0.37			
POTLINE 1, West Stack	0.05	0.06	0.06		0.09	0.09		0.06	0.06		0.06	0.04			
POTLINE 1, East Stack	0.05	0.06	0.06	0.08		0.13	0.06		0.04	0.05		0.03			
POTLINE 2, West Stack	0.05	0.05	0.05	0.05	0.07		0.05	0.05		0.04	0.03				
POTLINE 2, East Stack	0.05	0.05	0.05	0.06		0.05	0.06		0.05	0.05		0.03			
POTLINE 1 & 2 EXT	0.04	0.04	0.04		0.05	0.05		0.06	0.04		0.04	0.03			
POTLINE 3, West Stack	0.06	0.05	0.05	0.06	0.07		0.06	0.05		0.03	0.03				
POTLINE 3, East Stack	0.06	0.07	0.07		0.08	0.10		0.10	0.07		0.03	0.04			
AVERAGE STACK	0.05	0.05	0.06	0.06	0.07	0.08	0.05	0.06	0.05	0.04	0.04	0.04			
CARBON BAKE OVEN STACK No. 1	0.002	0.001	0.002	0.001	0.001		0.001	0.001		0.003	0.001				
CARBON BAKE OVEN STACK No. 2	0.002	0.004	0.004	0.003		0.003	0.002		0.006	0.005		0.006			
AVERAGE BAKE OVENS	0.002	0.003	0.003	0.002	0.001	0.003	0.002	0.001	0.006	0.004	0.001	0.006			
AVERAGE PLANT	0.46	0.46	0.46	0.50	0.54	0.56	0.46	0.41	0.42	0.43	0.41	0.42			



Continuous Gaseous Fluoride (mg/m³)

From 01/07/21 to 31/07/21

Date	1WF	1EF	2WF	2EF	3WF	3EF	12E	BO1	BO2
01/07/21	0.28	0.32	0.33	0.41	0.39	0.38	0.12	0.17	4.60
02/07/21	0.31	0.35	0.32	0.37	0.32	0.34	0.15	0.15	4.11
03/07/21	0.26	0.40	0.14	0.27	0.22	0.28	0.12	0.14	0.68
04/07/21	0.26	0.38	0.11	0.18	0.17	0.20	0.11	0.14	0.84
05/07/21	0.28	0.34	0.13	0.17	0.14	0.17	0.16	0.14	0.52
06/07/21	0.29	0.19	0.15	0.18	0.14	0.17	0.11	0.14	0.61
07/07/21	0.33	0.22	0.17	0.27	0.15	0.17	0.11	0.12	0.37
08/07/21	0.29	0.27	0.21	0.27	0.19	0.26	0.11	0.13	0.56
09/07/21	0.24	0.22	0.20	0.17	0.23	0.29	0.11	0.15	0.71
10/07/21	0.20	0.19	0.20	0.17	0.26	0.24	0.11	0.16	0.66
11/07/21	0.23	0.23	0.19	0.18	0.24	0.27	0.12	0.16	0.78
12/07/21	0.19	0.23	0.16	0.13	0.15	0.15	0.11	0.18	0.77
13/07/21	0.22	0.25	0.18	0.69	0.21	0.22	0.11	0.19	6.22
14/07/21	0.22	0.26	0.23	0.19	0.19	0.18	0.12	0.22	8.07
15/07/21	0.25	0.35	0.25	0.20	0.27	0.28	0.14	0.21	1.26
16/07/21	0.21	0.27	0.21	0.19	0.21	0.25	0.13	0.18	1.42
17/07/21	0.17	0.19	0.17	0.14	0.17	0.15	0.11	0.19	1.00
18/07/21	0.19	0.26	0.15	0.13	0.18	0.17	0.11	0.18	0.84
19/07/21	0.13	0.24	0.12	0.12	0.17	0.13	0.11	0.18	0.46
20/07/21	0.14	0.22	0.23	0.13	0.19	0.16	0.11	0.16	0.72
21/07/21	0.14	0.23	0.16	0.13	0.20	0.14	0.11	0.17	0.84
22/07/21	0.14	0.20	0.22	0.15	0.16	0.14	0.11	0.19	0.84
23/07/21	0.19	0.23	0.16	0.20	0.19	0.16	0.13	0.18	0.45
24/07/21	0.25	0.27	0.13	0.19	0.21	0.17	0.21	0.17	0.48
25/07/21	0.19	0.24	0.13	0.17	0.17	0.12	0.28	0.15	0.41
26/07/21	0.28	0.26	0.14	0.32	0.26	0.21	0.16	0.16	0.39
27/07/21	0.24	0.30	0.14	0.23	0.27	0.25	0.18	0.16	1.42
28/07/21	0.31	0.36	0.18	0.17	0.34	0.30	0.22	0.22	1.19
29/07/21	0.28	0.31	0.13	0.18	0.33	0.27	0.21	0.82	0.74
30/07/21	0.27	0.26	0.13	0.15	0.24	0.30	0.13	0.40	0.75
31/07/21	0.29	0.29	0.15	0.19	0.23	0.30	0.15	0.43	0.81
Average	0.23	0.27	0.18	0.21	0.22	0.22	0.14	0.21	1.40

ENVIRONMENT SYSTEM

EMISSION MONITORING PROGRAM
STACK EMISSION REPORT FOR JULY 2021

Stack	S A M P L E				Sample Vol m3 N.T.P. (Dry)	Gaseous			Exit Temp. deg.C	Exit Velocity m/Sec	Volumetric Flow Rate 1000 m3/hr	Al Prod	Emission Rate kg F/t Al
	Start Date	Time	End Date	Time		Fluoride (as F) mg/m3	Particulate (as F) mg/m3	Total (as F) mg/m3					
POTLINE 1, EAST	06/07/21	07:25	06/07/21	14:25	7.34	0.13	0.42	0.55	90	20.1	720	68.0	0.04
	07/07/21	07:15	07/07/21	14:15	7.57	0.15	0.43	0.58	88	20.5	735	68.0	0.04
	08/07/21	06:50	08/07/21	13:50	7.52	0.19	0.55	0.75	88	20.3	731	67.2	0.06
	Average				7.48	0.16	0.47	0.63	89	20.3	729	67.7	0.05
POTLINE 2, WEST	15/07/21	07:35	15/07/21	14:35	7.08	0.22	0.35	0.57	100	21.4	743	69.1	0.04
	16/07/21	07:20	16/07/21	14:20	7.91	0.22	0.31	0.53	96	21.7	766	69.1	0.04
	20/07/21	07:16	20/07/21	14:16	8.67	0.14	0.31	0.45	89	21.7	778	69.1	0.04
	Average				7.89	0.19	0.32	0.52	95	21.6	762	69.1	0.04
POTLINE 2,EAST S	15/07/21	07:42	15/07/21	14:42	6.99	0.30	0.34	0.64	101	21.0	731	69.1	0.05
	19/07/21	07:38	19/07/21	14:38	7.20	0.12	0.59	0.70	90	19.1	685	68.5	0.05
	20/07/21	07:31	20/07/21	14:31	6.90	0.14	0.78	0.92	92	18.9	672	68.5	0.06
	Average				7.03	0.19	0.57	0.75	94	19.7	696	68.7	0.05
BAKE OVEN NO.1 S	21/07/21	08:05	21/07/21	14:05	4.68	1.29	0.08	1.36	94	15.3	129	203.4	0.01
	22/07/21	07:32	22/07/21	13:32	4.90	1.00	0.02	1.02	95	15.4	129	203.4	<0.01
	23/07/21	05:40	23/07/21	11:40	4.80	0.35	0.01	0.37	95	15.0	126	203.4	<0.01
	Average				4.79	0.88	0.04	0.92	94	15.2	128	203.4	<0.01
BAKE OVEN NO.2 S	19/07/21	08:10	19/07/21	14:10	6.99	0.75	0.35	1.11	98	21.0	175	223.7	0.01
	20/07/21	07:45	20/07/21	13:45	6.32	0.51	0.56	1.07	90	20.6	175	223.7	<0.01
	23/07/21	06:20	23/07/21	12:20	6.54	0.33	0.51	0.84	91	20.8	177	223.7	<0.01
	Average				6.62	0.53	0.47	1.00	93	20.8	175	223.7	<0.01
POTLINE 3 WEST S	06/07/21	08:00	06/07/21	15:00	8.01	0.10	0.23	0.32	89	21.3	961	80.9	0.03
	07/07/21	07:25	07/07/21	14:25	8.03	0.11	0.28	0.38	90	21.6	974	80.9	0.03
	08/07/21	07:30	08/07/21	14:30	7.95	0.13	0.30	0.43	90	21.2	957	80.7	0.04
	Average				8.00	0.11	0.27	0.38	90	21.4	964	80.8	0.03

END OF REPORT

ENVIRONMENT SYSTEM

EMISSION MONITORING PROGRAM

ROOF VENT MONITORING REPORT FOR JULY 2021

POTLINE 1

Manifold Location	Start Date	Start Time	End Date	End Time	Sample Vol m3 N.T.P. (Dry)	Fluoride mg/m3 as F	Exit Temperatures degrees Celsius Avg	Exit Velocity metres/hour Avg	Volumetric Flow Rate 1000 m3/hr	Al Prod	Emission Rate kg F/t Al	Average Rate kgF/tAl
Cassette Location												
A074	02/07/21	07:45	05/07/21	07:45	8.61	0.36						}
A076	02/07/21	07:45	05/07/21	07:45	8.61	0.43						}
A078	02/07/21	07:45	05/07/21	07:45	8.61	0.47						}
A080	02/07/21	07:45	05/07/21	07:45	8.61	0.36						}
Total	02/07/21	07:45	05/07/21	07:45	34.44	0.40	28	4953	5952	462.1	0.37	}
A074	20/07/21	07:45	23/07/21	07:45	8.11	0.47						}
A076	20/07/21	07:45	23/07/21	07:45	8.11	0.43						}
A078	20/07/21	07:45	23/07/21	07:45	8.11	0.54						}
A080	20/07/21	07:45	23/07/21	07:45	8.11	0.60						}
Total	20/07/21	07:45	23/07/21	07:45	32.43	0.51	26	4757	5736	457.8	0.46	} 0.42
B018	09/07/21	07:20	12/07/21	07:20	8.45	0.40						}
B020	09/07/21	07:20	12/07/21	07:20	8.45	0.49						}
B022	09/07/21	07:20	12/07/21	07:20	8.45	0.51						}
B024	09/07/21	07:20	12/07/21	07:20	8.45	0.50						}
Total	09/07/21	07:20	12/07/21	07:20	33.82	0.48	28	4899	4314	355.6	0.42	}
B018	13/07/21	07:35	16/07/21	07:35	7.99	0.53						}
B020	13/07/21	07:35	16/07/21	07:35	7.99	0.65						}
B022	13/07/21	07:35	16/07/21	07:35	7.99	0.48						}
B024	13/07/21	07:35	16/07/21	07:35	7.99	0.44						}
Total	13/07/21	07:35	16/07/21	07:35	31.94	0.53	30	4575	3982	355.3	0.42	} 0.42

ENVIRONMENT SYSTEM

EMISSION MONITORING PROGRAM

ROOF VENT MONITORING REPORT FOR JULY 2021

POTLINE 2

Manifold Location	Start Date	Start Time	End Date	End Time	Sample Vol m3 N.T.P. (Dry)	Fluoride mg/m3 as F	Exit Temperatures degrees Celsius Avg	Exit Velocity metres/hour Avg	Volumetric Flow Rate 1000 m3/hr	Al Prod	Emission Rate kg F/t Al	Average Rate kgF/tAl
Cassette Location												
C074	09/07/21	07:50	12/07/21	07:50	9.24	0.40						}
C076	09/07/21	07:50	12/07/21	07:50	9.24	0.37						}
C078	09/07/21	07:50	12/07/21	07:50	9.24	0.38						}
C080	09/07/21	07:50	12/07/21	07:50	9.24	0.47						}
Total	09/07/21	07:50	12/07/21	07:50	36.94	0.40	26	5242	6281	467.8	0.39	}
C074	13/07/21	07:56	16/07/21	07:56	8.33	0.71						}
C076	13/07/21	07:56	16/07/21	07:56	8.33	0.88						}
C078	13/07/21	07:56	16/07/21	07:56	8.33	0.58						}
C080	13/07/21	07:56	16/07/21	07:56	8.33	0.68						}
Total	13/07/21	07:56	16/07/21	07:56	33.30	0.71	30	5090	5953	473.7	0.64	} 0.52
D018	02/07/21	08:20	05/07/21	08:20	8.28	0.32						}
D020	02/07/21	08:20	05/07/21	08:20	8.28	0.42						}
D022	02/07/21	08:20	05/07/21	08:20	8.28	0.46						}
D024	02/07/21	08:20	05/07/21	08:20	8.28	0.43						}
Total	02/07/21	08:20	05/07/21	08:20	33.13	0.41	29	4551	3988	355.7	0.33	}
D018	09/07/21	07:15	12/07/21	07:15	8.36	0.45						}
D020	09/07/21	07:15	12/07/21	07:15	8.36	0.43						}
D022	09/07/21	07:15	12/07/21	07:15	8.36	0.46						}
D024	09/07/21	07:15	12/07/21	07:15	8.36	0.44						}
Total	09/07/21	07:15	12/07/21	07:15	33.46	0.45	28	4869	4281	350.9	0.39	} 0.36

ENVIRONMENT SYSTEM

EMISSION MONITORING PROGRAM

ROOF VENT MONITORING REPORT FOR JULY 2021

POTLINE 3

Manifold Location	Start Date	Start Time	End Date	End Time	Sample Vol m3 N.T.P. (Dry)	Fluoride mg/m3 as F	Exit Temperatures degrees Celsius Avg	Exit Velocity metres/hour Avg	Volumetric Flow Rate 1000 m3/hr	Al Prod	Emission Rate kg F/t Al	Average Rate kgF/tAl
Cassette Location												
E074	02/07/21	08:00	05/07/21	08:00	7.87	0.42						}
E076	02/07/21	08:00	05/07/21	08:00	7.87	0.35						}
E078	02/07/21	08:00	05/07/21	08:00	7.87	0.27						}
E080	02/07/21	08:00	05/07/21	08:00	7.87	0.32						}
Total	02/07/21	08:00	05/07/21	08:00	31.48	0.34	32	4448	5296	473.8	0.27	}
E074	09/07/21	07:35	12/07/21	07:35	7.88	0.37						}
E076	09/07/21	07:35	12/07/21	07:35	7.88	0.39						}
E078	09/07/21	07:35	12/07/21	07:35	7.88	0.41						}
E080	09/07/21	07:35	12/07/21	07:35	7.88	0.51						}
Total	09/07/21	07:35	12/07/21	07:35	31.51	0.42	31	4683	5569	468.1	0.36	} 0.32
F020	02/07/21	08:20	05/07/21	08:20	8.25	0.23						}
F022	02/07/21	08:20	05/07/21	08:20	8.25	0.24						}
F024	02/07/21	08:20	05/07/21	08:20	8.25	0.35						}
F026	02/07/21	08:20	05/07/21	08:20	8.25	0.30						}
Total	02/07/21	08:20	05/07/21	08:20	32.98	0.28	27	4454	3923	355.3	0.22	}
F020	13/07/21	07:40	16/07/21	07:40	8.06	0.29						}
F022	13/07/21	07:40	16/07/21	07:40	8.06	0.65						}
F024	13/07/21	07:40	16/07/21	07:40	8.06	0.42						}
F026	13/07/21	07:40	16/07/21	07:40	8.06	0.35						}
Total	13/07/21	07:40	16/07/21	07:40	32.22	0.43	28	4292	3732	355.8	0.32	} 0.27

 END OF REPORT

ENVIRONMENT SYSTEM

EMISSION MONITORING PROGRAM
STACK EMISSION REPORT FOR AUGUST 2021

Stack	----- S A M P L E -----				Sample Vol m3 N.T.P. (Dry)	Gaseous Particulate Total			Exit Temp. deg.C	Exit Velocity m/Sec	Volumetric Flow Rate 1000 m3/hr	Al Prod	Emission Rate kg F/t Al
	--- Start --- Date	Time	---- End ---- Date	Time		Fluoride (as F) mg/m3	Fluoride (as F) mg/m3	Fluoride (as F) mg/m3					
POTLINE 1 WEST S	03/08/21	07:35	03/08/21	14:35	7.21	0.36	0.33	0.69	96	22.3	786	68.6	0.06
	04/08/21	07:14	04/08/21	14:14	7.61	0.32	0.37	0.69	92	22.7	810	69.2	0.06
	05/08/21	07:14	05/08/21	14:14	8.52	0.25	0.38	0.63	94	24.6	872	68.6	0.06
	Average				7.78	0.31	0.36	0.67	94	23.2	823	68.8	0.06
POTLINE 2, WEST	11/08/21	07:35	11/08/21	14:35	7.60	0.13	0.27	0.40	98	22.2	779	69.3	0.03
	12/08/21	07:40	12/08/21	14:40	7.41	0.13	0.30	0.43	101	21.8	758	68.6	0.03
	13/08/21	06:54	13/08/21	13:54	7.78	0.12	0.21	0.34	95	21.9	772	69.3	0.03
	Average				7.60	0.13	0.26	0.39	98	22.0	770	69.1	0.03
BAKE OVEN NO.1 S	02/08/21	07:40	02/08/21	13:40	4.88	0.46	0.05	0.51	96	15.4	129	202.6	<0.01
	03/08/21	07:30	03/08/21	13:30	4.74	0.38	0.03	0.41	96	14.7	123	202.6	<0.01
	04/08/21	07:30	04/08/21	13:30	4.97	0.24	0.04	0.28	90	15.0	127	202.6	<0.01
	Average				4.86	0.36	0.04	0.40	94	15.0	127	202.6	<0.01
POTLINE 3 WEST S	11/08/21	07:30	11/08/21	14:30	7.40	0.21	0.21	0.42	96	20.2	893	80.8	0.03
	12/08/21	07:20	12/08/21	14:20	7.34	0.18	0.21	0.38	97	20.5	906	80.1	0.03
	13/08/21	06:40	13/08/21	13:40	7.53	0.17	0.25	0.41	93	19.8	883	81.0	0.03
	Average				7.42	0.18	0.22	0.41	96	20.2	894	80.6	0.03
POTLINE 3 EAST S	18/08/21	07:30	18/08/21	14:30	7.89	0.13	0.13	0.26	88	19.5	881	80.2	0.02
	19/08/21	07:30	19/08/21	14:30	7.73	0.26	0.12	0.38	93	19.1	853	80.2	0.03
	20/08/21	07:20	20/08/21	14:20	7.52	0.27	0.12	0.39	97	19.3	852	80.2	0.03
	Average				7.71	0.22	0.12	0.34	93	19.3	862	80.2	0.03
1+2 EXP STACK	18/08/21	07:36	18/08/21	14:36	5.97	0.12	0.32	0.45	89	16.1	495	45.1	0.03
	19/08/21	07:30	19/08/21	14:30	5.71	0.13	0.34	0.47	91	16.0	491	45.6	0.04
	20/08/21	06:54	20/08/21	13:54	5.40	0.13	0.34	0.48	92	16.1	493	45.6	0.04
	Average				5.69	0.13	0.33	0.46	90	16.1	493	45.4	0.04

END OF REPORT



Continuous Gaseous Fluoride (mg/m³)

From 01/08/21 to 31/08/21

Date	1WF	1EF	2WF	2EF	3WF	3EF	12E	BO1	BO2
01/08/21	0.36	0.32	0.17	0.18	0.27	0.32	0.21	0.43	0.44
02/08/21	0.32	0.25	0.16	0.18	0.17	0.18	0.18	0.62	0.42
03/08/21	0.28	0.27	0.16	0.19	0.21	0.19	0.15	0.49	0.35
04/08/21	0.25	0.30	0.12	0.13	0.18	0.16	0.11	0.23	0.54
05/08/21	0.18	2.09	0.13	0.14	0.17	0.15	0.11	0.66	0.53
06/08/21	0.17	0.25	0.13	0.14	0.19	0.15	0.12	0.44	0.76
07/08/21	0.14	0.24	0.13	0.13	0.24	0.15	0.11	0.33	0.58
08/08/21	0.15	0.25	0.20	0.13	0.25	0.15	0.10	0.31	0.47
09/08/21	0.19	0.29	0.19	0.13	0.20	0.16	0.10	0.30	0.45
10/08/21	0.35	0.26	0.15	0.14	0.19	0.15	0.12	0.32	0.59
11/08/21	0.25	0.26	0.14	0.15	0.24	0.20	0.13	1.61	0.56
12/08/21	0.17	0.24	0.13	0.14	0.20	0.21	0.13	0.74	0.58
13/08/21	0.14	0.22	0.13	0.14	0.23	0.21	0.12	0.49	0.55
14/08/21	0.18	0.33	0.13	0.14	0.26	0.33	0.11	0.50	0.25
15/08/21	0.17	0.30	0.15	0.15	0.21	0.16	0.11	0.49	0.46
16/08/21	0.12	0.21	0.12	0.14	0.17	0.15	0.11	1.61	0.41
17/08/21	0.12	0.21	0.12	0.13	0.19	0.14	0.12	0.75	0.66
18/08/21	0.16	0.23	0.13	0.13	0.16	0.15	0.12	0.63	0.52
19/08/21	0.19	0.20	0.16	0.18	0.23	0.24	0.14	0.43	0.71
20/08/21	0.19	0.22	0.15	0.17	0.29	0.28	0.20	0.44	0.58
21/08/21	0.22	0.27	0.17	0.18	0.36	0.33	0.22	0.38	0.71
22/08/21	0.36	0.28	0.17	0.18	0.29	0.29	0.24	0.33	0.69
23/08/21	0.40	0.35	0.19	0.18	0.23	0.26	0.20	0.45	0.63
24/08/21	0.26	0.25	0.23	0.26	0.19	0.89	0.17	0.37	3.91
25/08/21	0.29	0.22	0.16	0.17	0.29	0.39	0.20	0.31	2.42
26/08/21	0.24	0.24	0.15	0.17	0.30	0.23	0.18	0.32	0.76
27/08/21	0.25	0.27	0.15	0.16	0.25	0.20	0.13	0.41	2.10
28/08/21	0.28	0.25	0.16	0.17	0.21	0.22	0.13	0.40	1.20
29/08/21	0.25	0.27	0.15	0.16	0.19	0.20	0.20	0.39	1.08
30/08/21	0.24	0.27	0.17	0.17	0.21	0.19	0.21	0.37	0.80
31/08/21	0.26	0.23	0.21	0.17	0.21	0.24	0.17	0.36	0.87
Average	0.23	0.32	0.16	0.16	0.22	0.23	0.15	0.51	0.83

ENVIRONMENT SYSTEM

EMISSION MONITORING PROGRAM

ROOF VENT MONITORING REPORT FOR AUGUST 2021

POTLINE 1

Manifold Location	S A M P L E				Sample Vol m3 N.T.P. (Dry)	Fluoride mg/m3 as F	Exit Temperatures degrees Celsius Avg	Exit Velocity metres/hour Avg	Volumetric Flow Rate 1000 m3/hr	Al Prod	Emission Rate kg F/t Al	Average Rate kgF/tAl
	--- Start --- Date	Time	---- End ---- Date	Time								
Cassette Location												
A074	06/08/21	07:50	09/08/21	07:50	9.39	0.26						}
A076	06/08/21	07:50	09/08/21	07:50	9.39	0.30						}
A078	06/08/21	07:50	09/08/21	07:50	9.39	0.50						}
A080	06/08/21	07:50	09/08/21	07:50	9.39	0.37						}
Total	06/08/21	07:50	09/08/21	07:50	37.56	0.36	29	4878	5935	474.8	0.32	}
A074	13/08/21	07:50	16/08/21	07:50	8.99	0.45						}
A076	13/08/21	07:50	16/08/21	07:50	8.99	0.47						}
A078	13/08/21	07:50	16/08/21	07:50	8.99	0.52						}
A080	13/08/21	07:50	16/08/21	07:50	8.99	0.74						}
Total	13/08/21	07:50	16/08/21	07:50	35.95	0.55	29	4876	5861	474.9	0.49	} 0.41
B018	02/08/21	07:41	05/08/21	07:41	8.08	0.36						}
B020	02/08/21	07:41	05/08/21	07:41	8.08	0.57						}
B022	02/08/21	07:41	05/08/21	07:41	8.08	0.48						}
B024	02/08/21	07:41	05/08/21	07:41	8.08	0.53						}
Total	02/08/21	07:41	05/08/21	07:41	32.34	0.48	30	4676	4062	355.8	0.40	}
B018	06/08/21	07:30	09/08/21	07:30	8.58	0.31						}
B020	06/08/21	07:30	09/08/21	07:30	8.58	0.39						}
B022	06/08/21	07:30	09/08/21	07:30	8.58	0.40						}
B024	06/08/21	07:30	09/08/21	07:30	8.58	0.43						}
Total	06/08/21	07:30	09/08/21	07:30	34.32	0.38	30	4568	4033	356.1	0.31	} 0.35

ENVIRONMENT SYSTEM
EMISSION MONITORING PROGRAM

ROOF VENT MONITORING REPORT FOR AUGUST 2021

POTLINE 2

Manifold Location	Start Date	Start Time	End Date	End Time	Sample Vol m3 N.T.P. (Dry)	Fluoride mg/m3 as F	Exit Temperatures degrees Celsius Avg	Exit Velocity metres/hour Avg	Volumetric Flow Rate 1000 m3/hr	Al Prod	Emission Rate kg F/t Al	Average Rate kgF/tAl
Cassette Location												
C074	02/08/21	08:08	05/08/21	08:08	9.17	0.43						}
C076	02/08/21	08:08	05/08/21	08:08	9.17	0.44						}
C078	02/08/21	08:08	05/08/21	08:08	9.17	0.36						}
C080	02/08/21	08:08	05/08/21	08:08	9.17	0.44						}
Total	02/08/21	08:08	05/08/21	08:08	36.68	0.42	29	5143	6064	474.8	0.38	}
C074	06/08/21	08:15	09/08/21	08:15	9.21	0.47						}
C076	06/08/21	08:15	09/08/21	08:15	9.21	0.38						}
C078	06/08/21	08:15	09/08/21	08:15	9.21	0.42						}
C080	06/08/21	08:15	09/08/21	08:15	9.21	0.51						}
Total	06/08/21	08:15	09/08/21	08:15	36.83	0.45	28	4654	5614	475.0	0.38	} 0.38
D018	10/08/21	07:32	13/08/21	07:32	8.29	0.56						}
D020	10/08/21	07:32	13/08/21	07:32	8.29	0.64						}
D022	10/08/21	07:32	13/08/21	07:32	8.29	0.58						}
D024	10/08/21	07:32	13/08/21	07:32	8.29	0.66						}
Total	10/08/21	07:32	13/08/21	07:32	33.18	0.61	33	4800	4159	355.8	0.51	}
D018	13/08/21	08:05	16/08/21	08:05	8.99	0.64						}
D020	13/08/21	08:05	16/08/21	08:05	8.99	0.62						}
D022	13/08/21	08:05	16/08/21	08:05	8.99	0.58						}
D024	13/08/21	08:05	16/08/21	08:05	8.99	0.67						}
Total	13/08/21	08:05	16/08/21	08:05	35.96	0.63	31	4907	4298	356.5	0.54	} 0.53

ENVIRONMENT SYSTEM

EMISSION MONITORING PROGRAM

ROOF VENT MONITORING REPORT FOR AUGUST 2021

POTLINE 3

Manifold Location	S A M P L E				Sample Vol m3 N.T.P. (Dry)	Fluoride mg/m3 as F	Exit Temperatures degrees Celsius Avg	Exit Velocity metres/hour Avg	Volumetric Flow Rate 1000 m3/hr	Al Prod	Emission Rate kg F/t Al	Average Rate kgF/tAl
	--- Start --- Date	Time	---- End ---- Date	Time								
Cassette Location												
E074	02/08/21	08:34	05/08/21	08:34	8.22	0.31						}
E076	02/08/21	08:34	05/08/21	08:34	8.22	0.39						}
E078	02/08/21	08:34	05/08/21	08:34	8.22	0.28						}
E080	02/08/21	08:34	05/08/21	08:34	8.22	0.25						}
Total	02/08/21	08:34	05/08/21	08:34	32.86	0.31	32	4427	5254	473.1	0.25	}
E074	10/08/21	07:58	13/08/21	07:58	7.81	0.30						}
E076	10/08/21	07:58	13/08/21	07:58	7.81	0.47						}
E078	10/08/21	07:58	13/08/21	07:58	7.81	0.33						}
E080	10/08/21	07:58	13/08/21	07:58	7.81	0.34						}
Total	10/08/21	07:58	13/08/21	07:58	31.25	0.36	33	4179	4958	473.8	0.27	} 0.26
F020	06/08/21	07:50	09/08/21	07:50	8.34	0.30						}
F022	06/08/21	08:15	09/08/21	07:50	8.34	0.34						}
F024	06/08/21	07:50	09/08/21	07:50	8.34	0.33						}
F026	06/08/21	07:50	09/08/21	07:50	8.34	0.36						}
Total	06/08/21	07:50	09/08/21	07:50	33.36	0.33	28	4414	3912	350.1	0.27	}
F020	13/08/21	08:20	16/08/21	08:20	8.31	0.33						}
F022	13/08/21	08:20	16/08/21	08:20	8.31	0.29						}
F024	13/08/21	08:20	16/08/21	08:20	8.31	0.46						}
F026	13/08/21	08:20	16/08/21	08:20	8.31	0.38						}
Total	13/08/21	08:20	16/08/21	08:20	33.24	0.36	28	4471	3970	356.1	0.29	} 0.28

 END OF REPORT



Continuous Gaseous Fluoride (mg/m³)

From 01/09/21 to 30/09/21

Date	1WF	1EF	2WF	2EF	3WF	3EF	12E	BO1	BO2
01/09/21	0.22	0.24	0.20	0.16	0.24	0.21	0.19	0.38	0.66
02/09/21	0.36	0.26	0.26	0.18	0.19	0.17	0.16	0.37	0.49
03/09/21	0.35	0.25	0.22	0.17	0.21	0.27	0.14	0.33	1.26
04/09/21	0.37	0.26	0.22	0.18	0.27	0.35	0.14	0.38	0.67
05/09/21	0.24	0.23	0.18	0.15	0.24	0.30	0.16	0.31	0.72
06/09/21	0.19	0.18	0.13	0.12	0.21	0.31	0.19	0.36	1.00
07/09/21	0.21	0.22	0.15	0.17	0.19	0.20	0.14	0.34	0.44
08/09/21	0.29	0.23	0.17	0.30	0.21	0.18	0.13	0.35	0.51
09/09/21	0.28	0.20	0.15	0.30	0.31	0.20	0.12	0.33	0.77
10/09/21	0.19	0.21	0.16	0.17	0.25	0.20	0.13	0.33	0.54
11/09/21	0.20	0.23	0.16	0.16	0.24	0.28	0.14	0.41	0.41
12/09/21	0.19	0.22	0.14	0.17	0.25	0.25	0.14	0.47	0.46
13/09/21	0.26	0.18	0.14	0.15	0.19	0.19	0.12	0.35	0.24
14/09/21	0.23	0.17	0.15	0.38	0.17	0.34	0.11	0.30	0.28
15/09/21	0.25	0.14	0.17	0.17	0.24	0.36	0.12	0.39	1.10
16/09/21	0.31	0.15	0.15	0.16	0.27	0.28	0.16	1.55	0.34
17/09/21	0.33	0.30	0.17	0.17	0.21	0.25	0.20	0.53	0.42
18/09/21	0.42	0.23	0.23	0.19	0.24	0.37	0.32	0.49	0.50
19/09/21	0.38	0.23	0.17	0.16	0.21	0.34	0.23	0.49	0.31
20/09/21	0.19	0.20	0.16	0.15	0.19	0.25	0.17	0.47	1.89
21/09/21	0.15	0.16	0.13	0.12	0.17	0.27	0.12	0.40	0.45
22/09/21	0.15	0.17	0.16	0.13	0.25	0.21	0.12	0.40	0.29
23/09/21	0.23	0.26	0.18	0.14	0.20	0.33	0.14	0.33	0.24
24/09/21	0.17	0.23	0.23	0.15	0.24	0.39	0.13	0.44	0.20
25/09/21	0.18	0.23	0.20	0.13	0.22	0.25	0.13	0.42	0.17
26/09/21	0.20	0.18	0.16	0.11	0.14	0.15	0.12	0.35	0.15
27/09/21	0.20	0.17	0.15	0.11	0.17	0.16	0.19	0.39	0.18
28/09/21	0.23	0.19	0.18	0.14	0.21	0.32	0.21	0.44	0.17
29/09/21	0.21	0.20	0.19	0.15	0.22	0.27	0.23	0.63	0.18
30/09/21	0.24	0.20	0.22	0.16	0.25	0.28	0.26	0.56	0.18
Average	0.25	0.21	0.18	0.17	0.22	0.26	0.16	0.44	0.51

ENVIRONMENT SYSTEM

EMISSION MONITORING PROGRAM
STACK EMISSION REPORT FOR SEPTEMBER 2021

Stack	----- S A M P L E -----				Sample Vol m3 N.T.P. (Dry)	Gaseous Particulate Total			Exit Temp. deg.C	Exit Velocity m/Sec	Volumetric Flow Rate 1000 m3/hr	Al Prod	Emission Rate kg F/t Al
	--- Start --- Date	Time	---- End ---- Date	Time		Fluoride (as F) mg/m3	Fluoride (as F) mg/m3	Fluoride (as F) mg/m3					
POTLINE 1 WEST S	15/09/21	07:32	15/09/21	14:32	8.18	0.31	0.14	0.45	96	24.2	851	69.7	0.04
	17/09/21	07:19	17/09/21	14:19	8.36	0.47	0.17	0.64	95	24.5	866	69.7	0.06
	20/09/21	07:30	20/09/21	14:30	8.31	0.25	0.19	0.44	98	24.5	857	69.0	0.04
	Average				8.28	0.34	0.17	0.51	96	24.4	858	69.5	0.04
POTLINE 1, EAST	07/09/21	07:35	07/09/21	14:35	7.83	0.16	0.20	0.35	93	20.6	730	69.0	0.03
	08/09/21	07:05	08/09/21	14:05	7.69	0.17	0.24	0.41	95	20.6	729	68.2	0.03
	09/09/21	06:20	09/09/21	13:20	8.05	0.14	0.24	0.38	94	20.6	730	68.7	0.03
	Average				7.85	0.15	0.22	0.38	94	20.6	730	68.6	0.03
POTLINE 2, EAST S	01/09/21	07:45	01/09/21	14:45	7.35	0.22	0.22	0.43	97	20.7	725	68.7	0.03
	02/09/21	07:25	02/09/21	14:25	7.77	0.29	0.23	0.52	98	20.7	726	68.7	0.04
	03/09/21	07:25	03/09/21	14:25	7.95	0.29	0.16	0.45	101	20.7	718	68.7	0.03
	Average				7.69	0.27	0.20	0.47	99	20.7	723	68.7	0.03
BAKE OVEN NO.2 S	07/09/21	07:25	07/09/21	13:25	8.33	0.84	0.26	1.10	88	20.6	176	259.6	<0.01
	08/09/21	07:35	08/09/21	13:35	7.66	0.47	0.30	0.77	100	20.8	172	259.6	<0.01
	09/09/21	07:25	09/09/21	13:25	7.61	1.91	0.66	2.57	96	20.2	169	259.6	0.01
	Average				7.86	1.07	0.41	1.48	95	20.5	172	259.6	0.01
POTLINE 3 EAST S	02/09/21	07:42	02/09/21	14:42	7.44	0.23	0.29	0.52	96	21.3	941	79.7	0.04
	03/09/21	07:30	03/09/21	14:30	7.37	0.23	0.39	0.61	99	21.0	924	79.6	0.05
	06/09/21	07:09	06/09/21	14:09	7.10	0.22	0.18	0.40	93	20.9	935	79.6	0.03
	Average				7.30	0.23	0.29	0.51	96	21.1	934	79.6	0.04
1+2 EXP STACK	10/09/21	06:45	10/09/21	13:45	5.56	0.12	0.39	0.51	98	16.0	483	45.0	0.04
	13/09/21	06:55	13/09/21	13:55	5.64	0.11	0.19	0.30	93	16.2	495	46.2	0.02
	15/09/21	07:30	15/09/21	14:30	5.97	0.14	0.25	0.38	91	16.2	496	46.2	0.03
	Average				5.72	0.12	0.28	0.40	94	16.2	491	45.8	0.03

END OF REPORT

ENVIRONMENT SYSTEM

EMISSION MONITORING PROGRAM

ROOF VENT MONITORING REPORT FOR SEPTEMBER 2021

POTLINE 1

Manifold Location	S A M P L E				Sample Vol m3 N.T.P. (Dry)	Fluoride mg/m3 as F	Exit Temperatures degrees Celsius Avg	Exit Velocity metres/hour Avg	Volumetric Flow Rate 1000 m3/hr	Al Prod	Emission Rate kg F/t Al	Average Rate kgF/tAl
	--- Start --- Date	Time	---- End ---- Date	Time								
Cassette Location												
A074	03/09/21	07:30	06/09/21	07:30	8.54							}
A076	03/09/21	07:30	06/09/21	07:30	8.54							}
A078	03/09/21	07:30	06/09/21	07:30	8.54							}
A080	03/09/21	07:30	06/09/21	07:30	8.54							}
Total	03/09/21	07:30	06/09/21	07:30	34.18		33	4761	5605	474.8	0.30	}
A074	07/09/21	07:53	10/09/21	07:53	9.04							}
A076	07/09/21	07:53	10/09/21	07:53	9.04							}
A078	07/09/21	07:53	10/09/21	07:53	9.04							}
A080	07/09/21	07:53	10/09/21	07:53	9.04							}
Total	07/09/21	07:53	10/09/21	07:53	36.18		32	4739	5651	470.2	0.32	} 0.31
B018	07/09/21	07:33	10/09/21	07:33	8.33							}
B020	07/09/21	07:33	10/09/21	07:33	8.33							}
B022	07/09/21	07:33	10/09/21	07:33	8.33							}
B024	07/09/21	07:33	10/09/21	07:33	8.33							}
Total	07/09/21	07:33	10/09/21	07:33	33.30		33	4469	3914	354.9	0.39	}
B018	13/09/21	07:27	16/09/21	07:27	8.08							}
B020	13/09/21	07:27	16/09/21	07:27	8.08							}
B022	13/09/21	07:27	16/09/21	07:27	8.08							}
B024	13/09/21	07:27	16/09/21	07:27	8.08							}
Total	13/09/21	07:27	16/09/21	07:27	32.32		30	4896	4278	356.3	0.35	} 0.37

ENVIRONMENT SYSTEM

EMISSION MONITORING PROGRAM

ROOF VENT MONITORING REPORT FOR SEPTEMBER 2021

POTLINE 2

Manifold Location	Start Date	Start Time	End Date	End Time	Sample Vol m3 N.T.P. (Dry)	Fluoride mg/m3 as F	Exit Temperatures degrees Celsius Avg	Exit Velocity metres/hour Avg	Volumetric Flow Rate 1000 m3/hr	Al Prod	Emission Rate kg F/t Al	Average Rate kgF/tAl
Cassette Location												
C074	07/09/21	08:45	10/09/21	08:45	9.28	0.36						}
C076	07/09/21	08:45	10/09/21	08:45	9.28	0.49						}
C078	07/09/21	08:45	10/09/21	08:45	9.28	0.41						}
C080	07/09/21	08:45	10/09/21	08:45	9.28	0.43						}
Total	07/09/21	08:45	10/09/21	08:45	37.12	0.42	32	5083	5997	474.8	0.38	}
												}
C074	13/09/21	08:18	16/09/21	08:18	9.20	0.49						}
C076	13/09/21	08:18	16/09/21	08:18	9.20	0.52						}
C078	13/09/21	08:18	16/09/21	08:18	9.20	0.62						}
C080	13/09/21	08:18	16/09/21	08:18	9.20	0.38						}
Total	13/09/21	08:18	16/09/21	08:18	36.80	0.50	27	5461	6565	475.3	0.50	} 0.44
												}
D018	03/09/21	07:30	06/09/21	07:30	8.47	0.40						}
D020	03/09/21	07:30	06/09/21	07:30	8.47	0.54						}
D022	03/09/21	07:30	06/09/21	07:30	8.47	0.50						}
D024	03/09/21	07:30	06/09/21	07:30	8.47	0.45						}
Total	03/09/21	07:30	06/09/21	07:30	33.87	0.47	34	4768	4096	353.6	0.39	}
												}
D018	13/09/21	07:50	16/09/21	07:50	7.79	0.60						}
D020	13/09/21	07:50	16/09/21	07:50	7.79	0.64						}
D022	13/09/21	07:50	16/09/21	07:50	7.79	0.56						}
D024	13/09/21	07:50	16/09/21	07:50	7.79	0.50						}
Total	13/09/21	07:50	16/09/21	07:50	31.16	0.58	31	5303	4652	356.5	0.54	} 0.47

EMISSION MONITORING PROGRAM
 ROOF VENT MONITORING REPORT FOR SEPTEMBER 2021
 POUTLINE 3

Manifold Location	Start Date	Start Time	End Date	End Time	Sample Vol m3 N.T.P. (Dry)	Fluoride mg/m3 as F	Exit Temperatures degrees Celsius Avg	Exit Velocity metres/hour Avg	Volumetric Flow Rate 1000 m3/hr	Al Prod	Emission Rate kg F/t Al	Average Rate kgF/tAl
Cassette Location												
E074	03/09/21	07:15	06/09/21	07:15	7.80	0.34						}
E076	03/09/21	07:15	06/09/21	07:15	7.80	0.44						}
E078	03/09/21	07:15	06/09/21	07:15	7.80	0.49						}
E080	03/09/21	07:15	06/09/21	07:15	7.80	0.36						}
Total	03/09/21	07:30	06/09/21	07:30	31.20	0.41	34	4466	5268	474.8	0.33	}
E074	13/09/21	07:53	16/09/21	07:53	8.66	0.43						}
E076	13/09/21	07:53	16/09/21	07:53	8.66	0.56						}
E078	13/09/21	07:53	16/09/21	07:53	8.66	0.46						}
E080	13/09/21	07:53	16/09/21	07:53	8.66	0.44						}
Total	13/09/21	07:53	16/09/21	07:53	34.64	0.47	25	5146	6268	474.7	0.45	} 0.39
F020	07/09/21	08:25	10/09/21	08:25	8.66	0.25						}
F022	07/09/21	08:25	10/09/21	08:25	8.66	0.39						}
F024	07/09/21	08:25	10/09/21	08:25	8.66	0.32						}
F026	07/09/21	08:25	10/09/21	08:25	8.66	0.28						}
Total	07/09/21	08:25	10/09/21	08:25	34.63	0.31	31	4380	3825	348.1	0.25	}
F020	17/09/21	07:30	20/09/21	07:30	8.25	0.35						}
F022	17/09/21	07:30	20/09/21	07:30	8.25	0.41						}
F024	17/09/21	07:30	20/09/21	07:30	8.25	0.44						}
F026	17/09/21	07:30	20/09/21	07:30	8.25	0.35						}
Total	17/09/21	07:30	20/09/21	07:30	32.99	0.38	32	4351	3748	356.1	0.29	} 0.27

 END OF REPORT

APPENDIX 3 -

FLUORIDE IN AMBIENT AIR DATA

ENVIRONMENT SYSTEM
 FLUORIDE IN AMBIENT AIR REPORT FOR JULY 2021

WEEKLY RESULTS :

SITE	WEEK ENDING	CORRECTED		FLUORIDE CONCENT. (ug/m3)		
		AIR VOLUME		Fp	Fg	Ft
----	-----	-----m3	-----	-----	-----	-----
080	06/07	374.3	<0.01	0.09	0.10	
	13/07	356.0	0.06	0.26	0.32	
	20/07	361.7	<0.01	0.06	0.07	
	27/07	362.2	0.03	0.15	0.18	
	MONTH AVG.	363.5	0.03	0.14	0.17	
083	06/07	331.5	0.14	0.49	0.63	
	13/07	353.0	0.13	0.40	0.53	
	20/07	322.5	0.95	1.41	2.36	
	27/07	323.6	0.36	0.67	1.03	
	MONTH AVG.	332.6	0.40	0.74	1.14	
084	06/07	367.6	0.04	0.29	0.33	
	13/07	361.3	0.06	0.02	0.08	
	20/07	384.7	0.03	0.10	0.13	
	27/07	358.1	0.07	0.04	0.11	
	MONTH AVG.	367.9	0.05	0.11	0.16	
085	06/07	354.7	0.01	0.08	0.09	
	13/07	339.9	0.02	0.07	0.09	
	20/07	343.7	0.02	0.04	0.06	
	27/07	353.4	0.04	0.03	0.07	
	MONTH AVG.	347.9	0.02	0.06	0.08	
122	06/07	335.0	<0.01	0.04	0.05	
	13/07	330.9	0.01	0.04	0.05	
	20/07	335.6	<0.01	0.03	0.04	
	27/07	323.9	0.01	0.03	0.04	
	MONTH AVG.	331.4	0.01	0.04	0.05	
179	06/07	352.5	0.16	0.39	0.55	
	13/07	399.4	0.05	0.49	0.54	
	20/07	340.6	0.63	1.02	1.65	
	27/07	398.4	0.13	0.89	1.02	
	MONTH AVG.	372.7	0.24	0.70	0.94	

WEEKLY RESULTS :

SITE	WEEK ENDING	CORRECTED		FLUORIDE CONCENT. (ug/m3)		
		AIR VOLUME		Fp	Fg	Ft
----	-----	----m3		-----	-----	-----
181	06/07	371.2		1.05	2.45	3.50
	13/07	360.2		0.46	1.07	1.53
	20/07	343.4		2.49	4.22	6.71
	27/07	351.0		2.42	4.27	6.69
	MONTH AVG.	356.5		1.61	3.00	4.61
188	06/07	410.4		<0.01	0.07	0.08
	13/07	389.5		0.01	0.06	0.07
	20/07	396.4		0.01	0.04	0.05
	27/07	366.3		0.02	0.03	0.05
	MONTH AVG.	390.7		0.01	0.05	0.06

Site	Grid	Ref.
080	834	687
083	799	664
084	788	676
085	794	689
122	798	697
179	818	671
181	813	665
188	748	703

nra = No Result Available
 Fp = Fluoride Particulate
 Fg = Fluoride Gas
 Ft = Fluoride Total
 Samples collected to A.S. 3580.13.2
 ReportComments

 END OF REPORT

ENVIRONMENT SYSTEM
 FLUORIDE IN AMBIENT AIR REPORT FOR AUGUST 2021

WEEKLY RESULTS :

SITE	WEEK ENDING	CORRECTED		FLUORIDE CONCENT. (ug/m3)		
		AIR VOLUME		Fp	Fg	Ft
----	-----	-----m3	-----	-----	-----	-----
080	03/08	354.6		0.01	0.09	0.10
	10/08	369.7		0.02	0.12	0.14
	17/08	359.0		0.02	0.09	0.11
	24/08	388.1		0.03	0.05	0.08
	31/08	378.6		0.02	0.09	0.11
	MONTH AVG.	370.0		0.02	0.09	0.11
083	03/08	320.8		1.19	3.40	4.59
	10/08	363.1		0.20	0.53	0.73
	17/08	347.1		0.29	0.86	1.15
	24/08	351.9		0.74	1.60	2.34
	31/08	350.3		0.18	0.47	0.65
	MONTH AVG.	346.6		0.52	1.37	1.89
084	03/08	350.6		0.12	0.16	0.28
	10/08	370.6		0.08	0.14	0.22
	17/08	354.1		0.17	0.22	0.39
	24/08	353.5		0.04	0.08	0.12
	31/08	362.5		0.07	0.18	0.25
	MONTH AVG.	358.3		0.10	0.16	0.25
085	03/08	339.9		0.03	0.05	0.08
	10/08	348.9		0.02	0.06	0.08
	17/08	351.2		0.03	0.06	0.09
	24/08	346.9		0.02	0.07	0.09
	31/08	343.0		0.06	0.05	0.11
	MONTH AVG.	346.0		0.03	0.06	0.09
122	03/08	319.4		0.02	0.05	0.07
	10/08	324.4		0.01	0.04	0.05
	17/08	321.3		0.01	0.04	0.05
	24/08	334.2		0.03	0.05	0.08
	31/08	336.6		0.01	0.03	0.04
	MONTH AVG.	327.2		0.02	0.04	0.06

WEEKLY RESULTS :

SITE	WEEK ENDING	CORRECTED		FLUORIDE CONCENT. (ug/m3)		
		AIR VOLUME		Fp	Fg	Ft
----	-----	-----m3	-----	-----	-----	-----
179	03/08	336.2	0.25	0.71	0.96	
	10/08	393.5	0.29	1.32	1.61	
	17/08	339.4	0.20	0.40	0.60	
	24/08	393.7	0.04	0.57	0.61	
	31/08	339.6	0.66	1.77	2.43	
	MONTH AVG.	360.5	0.29	0.95	1.24	
181	03/08	343.3	1.42	4.41	5.83	
	10/08	355.8	1.61	1.78	3.39	
	17/08	346.3	0.95	2.07	3.02	
	24/08	344.6	1.20	2.36	3.56	
	31/08	347.4	1.06	2.91	3.97	
	MONTH AVG.	347.5	1.25	2.71	3.95	
188	03/08	359.8	0.01	0.05	0.06	
	10/08	382.0	0.01	0.04	0.05	
	17/08	376.3	0.01	0.04	0.05	
	24/08	424.4	0.01	0.05	0.06	
	31/08	422.2	0.01	0.06	0.07	
	MONTH AVG.	392.9	0.01	0.05	0.06	

nra = No Result Available

Fp = Fluoride Particulate

Fg = Fluoride Gas

Ft = Fluoride Total

Samples collected to A.S. 3580.13.2

ReportComments

END OF REPORT

ENVIRONMENT SYSTEM
 FLUORIDE IN AMBIENT AIR REPORT FOR SEPTEMBER 2021

WEEKLY RESULTS :

SITE	WEEK ENDING	CORRECTED		FLUORIDE CONCENT. (ug/m3)		
		AIR VOLUME		Fp	Fg	Ft
----	-----	-----m3	-----	-----	-----	-----
080	07/09	440.7	<0.01	0.09	0.10	
	14/09	371.3	0.01	0.07	0.08	
	21/09	382.2	0.03	0.08	0.11	
	28/09	371.1	<0.01	0.07	0.08	
	MONTH AVG.	391.3	0.02	0.08	0.09	
083	07/09	392.5	0.21	1.30	1.51	
	14/09	350.3	0.28	1.08	1.36	
	21/09	374.2	0.36	0.45	0.81	
	28/09	353.4	0.12	0.68	0.80	
	MONTH AVG.	367.6	0.24	0.88	1.12	
084	07/09	406.5	0.03	0.16	0.19	
	14/09	355.7	0.03	0.06	0.09	
	21/09	303.6	0.02	0.08	0.10	
	28/09	430.8	0.17	0.19	0.36	
	MONTH AVG.	374.2	0.06	0.12	0.19	
085	07/09	359.9	0.04	0.07	0.11	
	14/09	344.7	0.14	0.17	0.31	
	21/09	363.4	0.04	0.20	0.24	
	28/09	353.9	0.32	0.51	0.83	
	MONTH AVG.	355.5	0.14	0.24	0.37	
122	07/09	344.4	0.03	0.06	0.09	
	14/09	372.6	0.02	0.13	0.15	
	21/09	334.6	0.02	0.16	0.18	
	28/09	324.3	0.06	0.15	0.21	
	MONTH AVG.	344.0	0.03	0.13	0.16	
179	07/09	410.1	0.06	0.66	0.72	
	14/09	337.1	0.22	0.54	0.76	
	21/09	392.3	0.05	0.40	0.45	
	28/09	359.6	0.13	0.66	0.79	
	MONTH AVG.	374.8	0.12	0.57	0.68	

WEEKLY RESULTS :

SITE	WEEK ENDING	CORRECTED		FLUORIDE CONCENT. (ug/m3)		
		AIR VOLUME		Fp	Fg	Ft
----	-----	----m3		-----	-----	-----
181	07/09	360.0		0.80	2.30	3.10
	14/09	339.8		1.23	2.94	4.17
	21/09	353.4		0.68	2.11	2.79
	28/09	324.8		0.96	3.13	4.09
	MONTH AVG.	344.5		0.92	2.62	3.54
188	07/09	408.4		<0.01	0.03	0.04
	14/09	408.2		0.01	0.04	0.05
	21/09	371.4		0.01	0.05	0.06
	28/09	371.2		0.01	0.05	0.06
	MONTH AVG.	389.8		0.01	0.04	0.05

Site	Grid	Ref.
080	834	687
083	799	664
084	788	676
085	794	689
122	798	697
179	818	671
181	813	665
188	748	703

nra = No Result Available
 Fp = Fluoride Particulate
 Fg = Fluoride Gas
 Ft = Fluoride Total

Samples collected to A.S. 3580.13.2

ReportComments

 END OF REPORT

APPENDIX 4 -

METEOROLOGICAL DATA

Wind Speed and Direction at 30 meters - Percent of Total Readings

Direction From	To	0.5 2.0	2.1 3.5	3.6 5.0	5.1 6.5	6.6 8.0	8.1 9.5	9.6 11.0	11.1 12.5	12.6 14.0	14.1 15.5	15.6 17.0	17.1 18.5	18.6 50.0	Total	Total Readings
N	S	1.1	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.8	21
NNE	SSW	0.4	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9	14
NE	SW	0.7	1.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	15
ENE	WSW	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6	12
E	W	0.3	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	5
ESE	WNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
SE	NW	0.5	0.5	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	9
SSE	NNW	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	4
S	N	0.1	0.4	1.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	15
SSW	NNE	0.1	2.3	3.8	1.1	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.6	56
SW	NE	0.4	2.7	0.1	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.6	34
WSW	ENE	0.9	0.4	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9	14
W	E	0.3	2.4	3.7	2.6	1.5	0.5	0.1	0.0	0.0	0.0	0.0	0.0	0.0	11.1	82
WNW	ESE	2.3	10.7	9.4	7.2	4.9	1.8	0.3	0.0	0.0	0.0	0.0	0.0	0.0	36.5	269
NW	SE	3.3	11.4	0.9	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.7	116
NNW	SSE	2.3	6.4	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.6	71
Total		13.8	43.3	20.8	12.8	6.6	2.3	0.4	0.0	0.0	0.0	0.0	0.0	0.0	100.0	737.0

Calm Readings (<0.5 mps): 0
 Calm Readings %: 0.0
 Tot. Readings Expected (ALL): 2976
 Tot. Readings Accepted (ALL): 2976
 Percent Accepted (ALL): 100.0
 Wind Direction Accepted: 737
 Wind Direction % Accepted: 99.1

WIND SPEED (m/sec)
 Average: 3.8
 Maximum: 10.7
 Not Validated: 7
 Accepted: 737
 % Accepted: 99.1

TEMPERATURE (°C)
 Ave Daily Max: 16.2
 Ave Daily Min: 7.1
 Not Validated: 7
 Accepted: 737
 % Accepted: 99.1

RAINFALL (mm)
 Total Month: 22.50
 Max. Daily: 6.00
 Not Validated: 7
 Accepted: 737
 % Accepted: 99.1

AVERAGE DAILY READINGS FROM DATA LOGGER (RAINFALL IS ACTUAL) - all times are EASTERN STANDARD TIME (EST)

Parameter:	Wind Speed	Wind Speed	Wind Direct'n	Wind Direct'n	Dry B Temp.	Delta T	Rainfall
Height:	10	30	10	30	5	5 - 30M	
Units:	Meters	Meters	Meters	Meters	Meters	Degrees	MM. /Day
1 AVE	0.53	1.40	238.05	288.81	11.34	-0.66	0.00
1 MIN	0.40	0.60	1.80	53.60	8.40	-1.60	0.00
1 MAX	0.70	2.10	359.40	338.60	13.40	0.10	0.50
2 AVE	0.61	2.35	248.83	313.46	10.16	-0.65	0.00
2 MIN	0.40	1.10	0.80	282.90	9.60	-1.20	0.00
2 MAX	1.20	3.60	347.30	346.20	10.70	-0.40	0.50
3 AVE	0.70	2.80	270.83	267.32	NRA	NRA	0.00
3 MIN	0.40	1.50	2.90	6.80	NRA	NRA	0.00
3 MAX	1.60	3.60	343.80	325.40	NRA	NRA	0.00
4 AVE	0.78	3.23	287.00	288.10	NRA	NRA	0.00
4 MIN	0.40	2.30	8.10	262.40	NRA	NRA	0.00
4 MAX	1.70	4.00	357.60	320.00	NRA	NRA	0.00
5 AVE	1.08	3.75	309.19	286.86	13.57	-0.67	0.00
5 MIN	0.40	2.50	32.00	275.30	12.10	-1.30	0.00
5 MAX	2.00	5.20	357.70	298.50	14.50	-0.30	0.00
6 AVE	0.93	3.18	298.11	286.21	12.32	-0.32	0.00
6 MIN	0.40	0.80	24.00	57.60	8.90	-0.50	0.00
6 MAX	2.20	5.00	351.20	327.90	14.50	0.00	0.00
7 AVE	0.81	2.60	270.13	249.28	14.13	-1.83	0.00
7 MIN	0.40	1.00	84.60	125.00	13.00	-2.00	0.00
7 MAX	1.80	3.30	338.30	317.90	14.80	-1.70	0.00
8 AVE	0.57	1.98	272.69	256.53	NRA	NRA	0.00
8 MIN	0.40	0.60	1.20	66.60	NRA	NRA	0.00
8 MAX	1.20	2.80	358.80	336.40	NRA	NRA	0.00
9 AVE	0.77	2.75	300.35	273.29	NRA	NRA	0.00
9 MIN	0.40	0.90	26.00	85.90	NRA	NRA	0.00
9 MAX	1.50	5.20	359.30	336.10	NRA	NRA	5.00

AVERAGE DAILY READINGS FROM DATA LOGGER (RAINFALL IS ACTUAL) - all times are EASTERN STANDARD TIME (EST)

Parameter:	Wind Speed	Wind Speed	Wind Direct'n	Wind Direct'n	Dry B Temp.	Delta T	Rainfall
Height:	10	30	10	30	5	5 - 30M	
Units:	Meters	Meters	Meters	Meters	Meters	Degrees	MM. /Day
10 AVE	1.95	4.93	245.10	233.08	NRA	NRA	0.00
10 MIN	0.80	3.00	197.50	198.20	NRA	NRA	0.00
10 MAX	3.10	6.40	312.20	280.90	NRA	NRA	5.50
11 AVE	1.24	2.80	242.37	221.13	NRA	NRA	0.00
11 MIN	0.50	1.20	129.90	61.80	NRA	NRA	0.00
11 MAX	2.50	4.60	340.50	343.40	NRA	NRA	6.00
12 AVE	0.65	2.61	253.97	253.30	NRA	NRA	0.00
12 MIN	0.40	1.70	14.50	15.60	NRA	NRA	0.00
12 MAX	1.20	4.70	352.10	356.10	NRA	NRA	0.00
13 AVE	0.78	3.11	281.83	312.90	17.85	-0.20	0.00
13 MIN	0.40	2.20	9.30	224.00	17.10	-0.80	0.00
13 MAX	1.70	4.80	346.60	350.00	18.40	0.20	0.50
14 AVE	0.51	2.48	249.91	273.34	NRA	NRA	0.00
14 MIN	0.40	1.40	10.90	23.40	NRA	NRA	0.00
14 MAX	0.70	3.60	347.50	349.10	NRA	NRA	0.00
15 AVE	0.52	2.26	175.93	232.51	17.68	0.02	0.00
15 MIN	0.40	1.30	2.00	0.90	16.60	-0.70	0.00
15 MAX	0.80	3.70	356.80	359.80	18.90	0.80	0.50
16 AVE	1.92	5.79	300.43	296.07	14.36	-0.08	0.00
16 MIN	0.40	2.20	4.20	272.00	7.90	-0.60	0.00
16 MAX	3.80	10.70	343.30	333.00	17.60	0.40	1.50
17 AVE	2.84	7.73	304.72	284.41	12.43	0.20	0.00
17 MIN	2.20	6.20	293.60	275.80	11.00	-0.20	0.00
17 MAX	3.80	9.50	316.50	295.00	14.30	0.60	0.50
18 AVE	1.83	5.25	310.55	285.41	12.37	-0.25	0.00
18 MIN	0.60	3.00	292.10	274.20	8.00	-2.20	0.00
18 MAX	2.80	7.70	340.30	302.20	17.30	1.00	0.00

AVERAGE DAILY READINGS FROM DATA LOGGER (RAINFALL IS ACTUAL) - all times are EASTERN STANDARD TIME (EST)

Parameter:	Wind Speed	Wind Speed	Wind Direct'n	Wind Direct'n	Dry B Temp.	Delta T	Rainfall
Height:	10	30	10	30	5	5 - 30M	
Units:	Meters	Meters	Meters	Meters	Meters	Degrees	MM. /Day
19 AVE	1.40	4.25	320.33	290.43	8.96	-0.61	0.00
19 MIN	0.40	2.50	306.70	277.50	3.20	-1.80	0.00
19 MAX	2.60	6.30	349.70	302.30	13.80	0.60	0.00
20 AVE	1.96	5.49	307.43	283.73	11.03	0.06	0.00
20 MIN	0.90	3.50	299.60	276.20	6.70	-1.10	0.00
20 MAX	3.20	8.90	318.60	295.60	14.30	0.70	0.00
21 AVE	2.06	4.95	256.65	239.39	10.96	0.03	0.00
21 MIN	0.50	2.50	195.70	196.60	3.50	-2.50	0.00
21 MAX	4.10	7.50	348.80	300.30	14.60	1.10	0.00
22 AVE	0.98	3.19	225.15	216.97	8.50	-0.22	0.00
22 MIN	0.40	1.60	2.30	27.90	3.20	-1.60	0.00
22 MAX	1.90	4.70	345.10	347.30	15.80	1.00	0.00
23 AVE	0.59	2.20	213.14	228.58	12.44	-1.71	0.00
23 MIN	0.40	1.00	10.80	5.30	6.90	-4.90	0.00
23 MAX	1.30	3.90	351.30	356.80	17.80	1.30	0.00
24 AVE	1.74	5.10	293.47	305.58	11.79	-0.19	0.00
24 MIN	0.40	2.00	0.10	283.20	5.60	-1.70	0.00
24 MAX	3.40	8.70	346.90	354.10	17.30	1.20	0.00
25 AVE	2.48	6.92	302.64	284.72	12.28	0.44	0.00
25 MIN	1.30	4.60	291.30	274.60	10.20	-0.50	0.00
25 MAX	3.50	9.60	320.00	298.10	15.00	1.40	0.00
26 AVE	2.16	5.95	307.14	291.14	13.41	0.24	0.00
26 MIN	1.10	3.90	296.80	280.20	10.10	-1.90	0.00
26 MAX	3.00	7.80	322.10	304.00	18.70	1.40	0.00
27 AVE	0.85	3.24	254.94	258.16	11.85	-1.41	0.00
27 MIN	0.40	2.00	7.90	6.90	5.90	-4.60	0.00
27 MAX	1.80	5.20	349.80	345.30	19.50	1.40	0.00

AVERAGE DAILY READINGS FROM DATA LOGGER (RAINFALL IS ACTUAL) - all times are EASTERN STANDARD TIME (EST)

Parameter:	Wind Speed	Wind Speed	Wind Direct'n	Wind Direct'n	Dry B Temp.	Delta T	Rainfall
Height:	10	30	10	30	5	5 - 30M	
Units:	Meters	Meters	Meters	Meters	Meters	Degrees	MM. /Day
28 AVE	1.12	3.98	307.77	286.58	13.80	-0.27	0.00
28 MIN	0.50	2.10	4.80	192.40	6.00	-2.20	0.00
28 MAX	2.30	6.30	354.50	350.80	24.70	1.00	2.00
29 AVE	1.15	4.01	298.15	191.59	10.90	-1.68	0.00
29 MIN	0.40	2.40	25.30	172.50	4.00	-6.50	0.00
29 MAX	1.80	5.30	356.00	211.90	17.50	1.30	0.00
30 AVE	0.88	3.22	272.56	189.05	7.84	-1.94	0.00
30 MIN	0.40	1.70	3.60	27.40	1.70	-5.40	0.00
30 MAX	1.80	4.30	342.90	349.60	18.00	1.40	0.00
31 AVE	0.60	2.56	253.97	188.45	9.97	-1.86	0.00
31 MIN	0.40	1.30	2.80	10.30	0.90	-6.60	0.00
31 MAX	1.10	3.30	348.50	316.90	21.20	1.40	0.00

Readings Not Validated: 217

END OF DATA LOGGER DAILY AVERAGES
 REPORT

Wind Speed and Direction at 30 meters - Percent of Total Readings

Direction From	To	0.5 2.0	2.1 3.5	3.6 5.0	5.1 6.5	6.6 8.0	8.1 9.5	9.6 11.0	11.1 12.5	12.6 14.0	14.1 15.5	15.6 17.0	17.1 18.5	18.6 50.0	Total	Total Readings
N	S	0.8	1.5	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.6	19
NNE	SSW	0.1	3.6	2.6	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.5	48
NE	SW	0.5	2.7	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.8	28
ENE	WSW	0.8	2.6	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.7	35
E	W	0.4	2.3	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.2	24
ESE	WNW	0.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	9
SE	NW	0.1	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	13
SSE	NNW	0.8	0.7	0.4	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.2	16
S	N	1.2	3.5	5.9	3.9	0.8	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.6	116
SSW	NNE	2.2	16.9	10.8	5.0	2.0	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	37.4	278
SW	NE	2.0	14.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.7	124
WSW	ENE	0.0	1.6	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	13
W	E	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	5
WNW	ESE	0.1	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	3
NW	SE	0.5	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	5
NNW	SSE	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	8
Total		10.3	52.6	23.9	9.5	2.8	0.7	0.1	0.0	0.0	0.0	0.0	0.0	0.0	100.0	744.0

Calm Readings (<0.5 mps): 0
 Calm Readings %: 0.0
 Tot. Readings Expected (ALL): 2976
 Tot. Readings Accepted (ALL): 2976
 Percent Accepted (ALL): 100.0
 Wind Direction Accepted: 744
 Wind Direction % Accepted: 100.0

WIND SPEED (m/sec)
 Average: 3.4
 Maximum: 9.6
 Not Validated: 0
 Accepted: 744
 % Accepted: 100.0

TEMPERATURE (°C)
 Ave Daily Max: 18.3
 Ave Daily Min: 8.0
 Not Validated: 0
 Accepted: 744
 % Accepted: 100.0

RAINFALL (mm)
 Total Month: 54.50
 Max. Daily: 46.50
 Not Validated: 0
 Accepted: 744
 % Accepted: 100.0

AVERAGE DAILY READINGS FROM DATA LOGGER (RAINFALL IS ACTUAL) - all times are EASTERN STANDARD TIME (EST)

Parameter:	Wind Speed	Wind Speed	Wind Direct'n	Wind Direct'n	Dry B Temp.	Delta T	Rainfall
Height:	10	30	10	30	5	5 - 30M	
Units:	Meters	Meters	Meters	Meters	Meters	Degrees	MM. /Day
1 AVE	0.93	3.12	268.10	195.22	14.31	-0.98	0.00
1 MIN	0.40	1.90	26.10	127.10	5.30	-3.30	0.00
1 MAX	2.20	4.80	357.10	236.70	24.40	1.10	0.50
2 AVE	1.44	3.19	162.22	100.95	13.89	-0.03	0.00
2 MIN	0.50	1.20	39.60	24.20	8.80	-2.20	0.00
2 MAX	3.10	5.40	358.00	213.50	18.70	1.40	0.00
3 AVE	1.42	4.13	233.39	200.36	14.18	-0.09	0.00
3 MIN	0.60	1.40	1.70	5.40	9.90	-2.20	0.00
3 MAX	3.10	7.70	348.00	353.90	19.60	1.20	1.50
4 AVE	2.36	6.66	298.74	192.02	11.87	0.39	0.00
4 MIN	1.30	4.20	265.60	176.70	9.60	-0.50	0.00
4 MAX	3.60	9.60	316.50	201.40	16.10	1.50	0.00
5 AVE	1.72	5.05	301.07	188.30	12.51	-0.09	0.00
5 MIN	0.60	3.50	270.70	171.80	7.20	-3.00	0.00
5 MAX	2.40	6.50	331.20	203.40	19.60	1.50	0.00
6 AVE	1.33	4.03	318.06	201.77	11.12	-1.02	0.00
6 MIN	0.40	2.60	292.10	185.70	6.60	-5.20	0.00
6 MAX	2.20	5.30	354.60	230.80	18.60	1.60	0.00
7 AVE	1.25	3.88	297.12	190.83	10.46	-1.13	0.00
7 MIN	0.40	2.10	41.50	158.40	6.20	-6.60	0.00
7 MAX	2.30	6.00	347.10	198.60	16.50	1.60	0.00
8 AVE	1.01	2.74	184.11	118.93	10.87	-0.38	0.00
8 MIN	0.40	1.50	45.10	4.20	6.20	-2.40	0.00
8 MAX	2.00	3.70	329.20	205.90	14.60	1.60	2.50
9 AVE	0.82	2.67	110.19	108.02	12.31	-0.73	0.00
9 MIN	0.40	1.00	3.40	7.10	8.70	-2.90	0.00
9 MAX	2.10	5.20	355.90	351.30	17.80	1.60	0.00

AVERAGE DAILY READINGS FROM DATA LOGGER (RAINFALL IS ACTUAL) - all times are EASTERN STANDARD TIME (EST)

Parameter:	Wind Speed	Wind Speed	Wind Direct'n	Wind Direct'n	Dry B Temp.	Delta T	Rainfall
Height:	10	30	10	30	5	5 - 30M	
Units:	Meters	Meters	Meters	Meters	Meters	Degrees	MM. /Day
10 AVE	0.83	2.77	256.38	159.34	12.38	-1.12	0.00
10 MIN	0.40	1.40	19.50	1.10	6.00	-5.00	0.00
10 MAX	1.60	3.70	359.10	356.90	21.10	1.40	0.00
11 AVE	0.82	2.98	305.96	228.83	12.99	-1.79	0.00
11 MIN	0.40	2.20	4.70	209.40	4.30	-5.10	0.00
11 MAX	1.40	4.10	359.30	293.00	22.30	1.50	0.00
12 AVE	0.91	2.69	248.13	182.13	12.43	-1.91	0.00
12 MIN	0.40	1.20	24.30	65.10	4.80	-7.10	0.00
12 MAX	2.20	4.10	351.80	355.30	20.50	1.30	0.50
13 AVE	0.93	2.13	252.44	141.19	9.05	-2.45	0.00
13 MIN	0.40	1.00	67.10	45.40	1.50	-7.10	0.00
13 MAX	2.10	3.10	354.40	221.30	17.80	1.60	0.00
14 AVE	0.98	2.60	230.45	152.37	10.21	-1.62	0.00
14 MIN	0.40	1.20	10.80	25.50	3.50	-5.10	0.00
14 MAX	2.90	4.50	356.10	354.70	19.50	1.50	0.00
15 AVE	0.93	2.63	232.58	163.83	10.89	-1.78	0.00
15 MIN	0.40	1.10	2.60	56.10	4.20	-5.90	0.00
15 MAX	1.90	4.20	341.80	225.00	21.00	1.60	0.00
16 AVE	1.49	4.66	276.42	194.11	12.45	-1.53	0.00
16 MIN	0.60	2.90	3.10	176.70	3.10	-7.10	0.00
16 MAX	2.70	6.70	353.40	204.40	20.80	1.60	0.00
17 AVE	1.17	3.28	249.54	155.19	10.59	-1.46	0.00
17 MIN	0.40	1.50	105.70	75.90	5.20	-6.80	0.00
17 MAX	2.50	4.20	352.80	208.30	17.90	1.60	0.00
18 AVE	0.95	2.70	241.82	160.52	9.63	-1.32	0.00
18 MIN	0.40	2.00	40.10	33.90	3.50	-5.30	0.00
18 MAX	2.40	3.60	352.30	226.90	17.70	1.60	0.00

AVERAGE DAILY READINGS FROM DATA LOGGER (RAINFALL IS ACTUAL) - all times are EASTERN STANDARD TIME (EST)

Parameter:	Wind Speed	Wind Speed	Wind Direct'n	Wind Direct'n	Dry B Temp.	Delta T	Rainfall
Height:	10	30	10	30	5	5 - 30M	
Units:	Meters	Meters	Meters	Meters	Meters	Degrees	MM. /Day
19 AVE	0.80	2.69	233.34	182.31	11.35	-1.16	0.00
19 MIN	0.40	1.50	8.60	9.80	1.70	-5.20	0.00
19 MAX	1.60	3.80	357.80	342.90	21.40	1.60	0.00
20 AVE	1.00	3.34	263.93	201.82	13.65	-1.00	0.00
20 MIN	0.40	1.90	1.30	20.70	6.70	-4.10	0.00
20 MAX	2.20	5.70	347.90	344.80	23.30	1.60	0.00
21 AVE	0.65	2.69	202.30	215.18	12.13	-1.80	0.00
21 MIN	0.40	1.70	2.20	2.60	7.20	-5.10	0.00
21 MAX	1.20	4.30	359.00	342.40	18.80	1.00	0.50
22 AVE	0.89	3.25	198.38	153.00	15.23	-0.76	0.00
22 MIN	0.50	2.00	6.90	0.40	6.60	-4.00	0.00
22 MAX	1.60	4.10	348.30	345.40	26.00	1.60	0.00
23 AVE	0.83	3.13	193.16	189.84	17.15	-0.41	0.00
23 MIN	0.40	2.30	4.10	6.80	11.20	-3.80	0.00
23 MAX	1.40	4.10	359.90	357.10	23.90	1.50	2.00
24 AVE	1.85	5.33	265.61	186.99	10.79	0.87	0.00
24 MIN	0.50	1.40	35.30	85.80	8.20	0.30	0.00
24 MAX	3.30	8.90	336.00	340.00	14.40	1.70	46.50
25 AVE	1.55	4.98	295.07	183.22	12.12	0.00	0.00
25 MIN	0.60	2.90	249.40	165.30	8.70	-1.50	0.00
25 MAX	2.20	6.70	323.00	192.60	16.10	1.20	0.50
26 AVE	1.15	3.38	256.54	164.81	11.00	-0.52	0.00
26 MIN	0.40	1.70	12.80	85.40	6.70	-5.00	0.00
26 MAX	1.90	4.50	341.70	216.70	16.30	1.50	0.00
27 AVE	1.22	3.89	289.12	199.82	10.94	-0.26	0.00
27 MIN	0.40	2.40	6.40	175.50	4.40	-2.50	0.00
27 MAX	2.20	5.90	357.40	220.30	18.20	1.60	0.00

AVERAGE DAILY READINGS FROM DATA LOGGER (RAINFALL IS ACTUAL) - all times are EASTERN STANDARD TIME (EST)

Parameter:	Wind Speed	Wind Speed	Wind Direct'n	Wind Direct'n	Dry B Temp.	Delta T	Rainfall
Height:	10	30	10	30	5	5 - 30M	
Units:	Meters	Meters	Meters	Meters	Meters	Degrees	MM. /Day
28 AVE	1.27	3.64	265.48	172.56	10.80	-0.75	0.00
28 MIN	0.40	1.40	26.00	98.40	4.40	-5.30	0.00
28 MAX	2.10	5.60	347.40	226.10	17.30	1.40	0.00
29 AVE	0.97	2.91	198.00	166.11	10.44	-0.79	0.00
29 MIN	0.40	2.00	4.80	28.20	1.40	-3.70	0.00
29 MAX	2.00	4.00	345.50	254.80	19.00	1.70	0.00
30 AVE	0.98	2.90	260.35	172.76	11.15	-1.63	0.00
30 MIN	0.40	1.30	1.30	16.70	4.80	-4.70	0.00
30 MAX	2.30	4.10	359.70	335.00	18.90	1.40	0.00
31 AVE	0.80	2.70	230.91	178.22	12.36	-1.26	0.00
31 MIN	0.40	1.80	14.50	15.30	3.90	-5.10	0.00
31 MAX	1.60	4.20	354.20	350.90	22.50	1.60	0.00

Readings Not Validated: 0

END OF DATA LOGGER DAILY AVERAGES
 REPORT

Wind Speed and Direction at 30 meters - Percent of Total Readings

Direction From	To	0.5 2.0	2.1 3.5	3.6 5.0	5.1 6.5	6.6 8.0	8.1 9.5	9.6 11.0	11.1 12.5	12.6 14.0	14.1 15.5	15.6 17.0	17.1 18.5	18.6 50.0	Total	Total Readings
N	S	0.4	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	9
NNE	SSW	1.7	5.0	3.7	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.1	77
NE	SW	0.7	3.0	1.9	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	48
ENE	WSW	0.7	1.3	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.6	18
E	W	0.1	2.6	1.6	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.2	36
ESE	WNW	0.1	1.2	1.7	2.2	1.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.8	47
SE	NW	0.3	3.3	3.3	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.5	59
SSE	NNW	0.6	1.2	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.3	16
S	N	0.6	1.4	3.6	2.0	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.1	56
SSW	NNE	2.0	10.2	8.5	6.2	2.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	29.8	207
SW	NE	2.6	8.2	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.7	81
WSW	ENE	1.4	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.9	20
W	E	0.1	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	7
WNW	ESE	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	2
NW	SE	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	6
NNW	SSE	0.6	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	6
Total		12.5	41.6	26.3	14.7	4.6	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	695.0

Calm Readings (<0.5 mps): 0
 Calm Readings %: 0.0
 Tot. Readings Expected (ALL): 2880
 Tot. Readings Accepted (ALL): 2878
 Percent Accepted (ALL): 99.9
 Wind Direction Accepted: 695
 Wind Direction % Accepted: 96.5

WIND SPEED (m/sec)
 Average: 3.7
 Maximum: 8.4
 Not Validated: 25
 Accepted: 695
 % Accepted: 96.5

TEMPERATURE (°C)
 Ave Daily Max: 20.9
 Ave Daily Min: 10.0
 Not Validated: 25
 Accepted: 695
 % Accepted: 96.5

RAINFALL (mm)
 Total Month: 72.00
 Max. Daily: 47.50
 Not Validated: 25
 Accepted: 695
 % Accepted: 96.5

AVERAGE DAILY READINGS FROM DATA LOGGER (RAINFALL IS ACTUAL) - all times are EASTERN STANDARD TIME (EST)

Parameter:	Wind Speed	Wind Speed	Wind Direct'n	Wind Direct'n	Dry B Temp.	Delta T	Rainfall
Height:	10	30	10	30	5	5 - 30M	
Units:	Meters	Meters	Meters	Meters	Meters	Degrees	MM. /Day
1 AVE	1.10	3.05	231.59	181.09	12.71	-0.76	0.00
1 MIN	0.40	1.80	5.30	25.90	5.20	-4.60	0.00
1 MAX	2.50	4.50	347.30	238.60	24.60	1.70	0.00
2 AVE	2.11	4.92	55.11	33.18	19.65	0.86	0.00
2 MIN	1.20	3.70	42.80	23.30	15.30	-0.10	0.00
2 MAX	3.20	6.00	67.70	43.10	23.90	2.00	0.00
3 AVE	1.09	3.30	115.03	106.45	16.71	-0.48	0.00
3 MIN	0.50	1.80	0.80	13.40	8.20	-5.10	0.00
3 MAX	2.40	5.40	342.90	355.40	24.70	1.60	0.00
4 AVE	0.79	2.45	244.90	181.96	14.63	-3.88	0.00
4 MIN	0.40	1.00	1.20	15.00	5.40	-13.60	0.00
4 MAX	2.10	3.70	350.40	354.60	21.20	-1.20	1.50
5 AVE	1.65	4.78	295.94	208.81	11.59	-2.25	0.00
5 MIN	0.50	1.80	3.90	170.40	8.80	-3.50	0.00
5 MAX	3.20	7.90	355.20	334.20	15.70	-1.30	2.00
6 AVE	2.10	5.03	248.30	157.77	12.23	-0.41	0.00
6 MIN	0.50	2.00	161.60	105.00	7.30	-1.90	0.00
6 MAX	3.60	7.20	335.90	205.20	18.00	0.90	0.00
7 AVE	1.22	3.88	272.19	167.90	12.12	-1.73	0.00
7 MIN	0.50	1.40	94.60	79.20	3.80	-5.90	0.00
7 MAX	2.50	6.10	345.20	205.60	22.40	1.20	0.00
8 AVE	1.00	2.82	209.00	149.24	12.03	-1.22	0.00
8 MIN	0.50	1.70	4.50	10.70	4.40	-4.30	0.00
8 MAX	2.20	4.20	342.70	295.30	20.00	0.90	0.00
9 AVE	1.72	4.97	312.83	201.52	16.53	-0.87	0.00
9 MIN	0.50	2.80	288.80	187.10	7.20	-2.80	0.00
9 MAX	2.80	7.20	351.20	219.70	25.70	1.20	0.00

AVERAGE DAILY READINGS FROM DATA LOGGER (RAINFALL IS ACTUAL) - all times are EASTERN STANDARD TIME (EST)

Parameter:	Wind Speed	Wind Speed	Wind Direct'n	Wind Direct'n	Dry B Temp.	Delta T	Rainfall
Height:	10	30	10	30	5	5 - 30M	
Units:	Meters	Meters	Meters	Meters	Meters	Degrees	MM. /Day
10 AVE	1.60	4.21	250.00	149.62	18.48	-0.30	0.00
10 MIN	0.40	1.30	92.90	33.70	11.00	-4.70	0.00
10 MAX	2.90	7.70	325.20	209.70	27.50	1.40	0.00
11 AVE	0.99	3.23	300.54	202.98	17.17	-1.30	0.00
11 MIN	0.40	1.70	3.40	18.60	10.00	-7.90	0.00
11 MAX	2.10	5.10	358.00	295.40	28.10	1.40	0.00
12 AVE	1.28	4.04	262.87	211.47	17.81	-2.83	0.00
12 MIN	0.40	2.40	3.50	108.60	7.00	-7.80	0.00
12 MAX	3.30	6.80	347.60	310.00	29.60	1.50	0.00
13 AVE	2.16	4.28	176.21	118.44	15.07	0.47	0.00
13 MIN	1.10	2.30	129.30	88.60	10.70	-0.10	0.00
13 MAX	3.30	6.50	195.90	136.20	18.00	1.20	1.00
14 AVE	2.17	4.35	199.63	137.36	10.91	0.87	0.00
14 MIN	0.90	2.00	179.30	121.80	9.30	0.40	0.00
14 MAX	3.10	5.70	213.10	146.30	13.20	1.90	47.50
15 AVE	2.15	4.44	202.73	134.39	12.70	0.34	0.00
15 MIN	0.80	2.60	168.80	112.90	8.80	-0.80	0.00
15 MAX	3.90	7.90	304.60	163.50	17.20	1.60	1.00
16 AVE	1.07	2.43	198.05	140.47	11.19	-0.46	0.00
16 MIN	0.40	1.40	8.50	72.90	5.80	-4.20	0.00
16 MAX	2.10	3.60	358.50	237.90	15.50	1.30	2.00
17 AVE	1.05	2.71	156.73	129.17	12.68	-0.21	0.00
17 MIN	0.40	1.30	13.00	4.00	3.30	-3.30	0.00
17 MAX	2.30	4.70	351.10	333.30	21.60	2.10	0.00
18 AVE	1.31	4.00	267.19	201.82	17.77	0.15	0.00
18 MIN	0.40	1.60	2.90	40.60	12.30	-1.10	0.00
18 MAX	3.00	8.20	356.80	343.60	26.40	1.40	0.00

AVERAGE DAILY READINGS FROM DATA LOGGER (RAINFALL IS ACTUAL) - all times are EASTERN STANDARD TIME (EST)

Parameter:	Wind Speed	Wind Speed	Wind Direct'n	Wind Direct'n	Dry B Temp.	Delta T	Rainfall
Height:	10	30	10	30	5	5 - 30M	
Units:	Meters	Meters	Meters	Meters	Meters	Degrees	MM. /Day
19 AVE	1.13	3.47	256.98	205.86	14.55	-1.88	0.00
19 MIN	0.40	1.30	4.10	191.80	6.70	-7.80	0.00
19 MAX	2.20	5.50	356.70	242.20	23.20	2.00	0.50
20 AVE	1.42	4.03	228.56	186.34	15.13	-1.58	0.00
20 MIN	0.40	0.70	4.40	21.80	2.90	-7.40	0.00
20 MAX	3.20	8.00	358.90	238.30	26.30	1.70	0.00
21 AVE	1.85	4.48	250.63	158.43	11.48	0.24	0.00
21 MIN	0.50	2.00	162.10	103.90	7.80	-2.90	0.00
21 MAX	4.10	8.40	328.00	228.70	15.10	1.60	7.00
22 AVE	0.98	2.98	244.10	160.02	11.15	-0.66	0.00
22 MIN	0.40	1.60	28.40	60.70	5.30	-4.80	0.00
22 MAX	2.10	4.40	356.00	228.50	18.00	1.40	0.00
23 AVE	1.04	3.67	291.97	193.22	14.70	-0.96	0.00
23 MIN	0.40	2.40	1.90	17.80	5.50	-6.10	0.00
23 MAX	2.10	5.10	357.10	276.60	25.80	1.80	0.00
24 AVE	1.32	4.47	316.95	199.20	17.26	-1.91	0.00
24 MIN	0.40	2.60	289.10	182.80	9.40	-7.00	0.00
24 MAX	2.90	7.10	359.80	227.20	27.00	1.90	0.00
25 AVE	1.76	4.03	254.56	166.15	15.74	-0.90	0.00
25 MIN	0.40	3.00	136.70	83.70	9.20	-4.60	0.00
25 MAX	3.83	6.40	344.80	226.90	23.40	2.00	0.00
26 AVE	1.79	3.67	143.29	104.27	13.05	-0.08	0.00
26 MIN	0.40	1.90	37.30	21.00	9.50	-2.90	0.00
26 MAX	3.30	6.10	302.90	356.70	16.40	2.00	5.50
27 AVE	1.38	3.28	148.17	70.73	12.95	0.34	0.00
27 MIN	0.40	1.40	15.80	19.70	6.00	-4.30	0.00
27 MAX	3.20	5.20	337.90	253.20	18.90	2.00	0.00

AVERAGE DAILY READINGS FROM DATA LOGGER (RAINFALL IS ACTUAL) - all times are EASTERN STANDARD TIME (EST)

Parameter:	Wind Speed	Wind Speed	Wind Direct'n	Wind Direct'n	Dry B Temp.	Delta T	Rainfall
Height:	10	30	10	30	5	5 - 30M	
Units:	Meters	Meters	Meters	Meters	Meters	Degrees	MM. /Day
28 AVE	1.20	3.15	128.48	95.10	14.95	-0.75	0.00
28 MIN	0.40	1.10	0.40	17.80	5.50	-5.30	0.00
28 MAX	3.30	5.60	352.90	345.30	24.00	2.00	0.00
29 AVE	0.65	2.14	176.80	142.79	15.57	-0.39	0.00
29 MIN	0.40	1.30	1.70	0.70	8.50	-3.50	0.00
29 MAX	1.20	3.40	358.20	357.50	22.30	1.40	2.50
30 AVE	0.85	2.27	117.20	108.25	16.92	-0.03	0.00
30 MIN	0.40	1.40	2.00	8.90	10.90	-2.80	0.00
30 MAX	2.70	4.30	349.00	348.80	24.10	1.70	1.50

Readings Not Validated: 750

END OF DATA LOGGER DAILY AVERAGES
 REPORT

APPENDIX 5 -

VEGETATION MONITORING DATA

ENVIRONMENT SYSTEM
 WATER AND VEGETATION MONITORING FOR SEPTEMBER 2021

RESULTS BY SAMPLING GROUP

100 - OVERSTOREY

#	SITE	SPECIES	TEST	ALY	AYTD	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	006	AVICENNIA MARINA	FLUORIDE (ug/g)	12	12	10	10	25	20	10	10	10	10	5			
2	111	ANGOPHORA COSTATA	FLUORIDE (ug/g)	806	1083	1085	675	1135	1025	630	1955	1580	1210	455			
3	112	ANGOPHORA COSTATA	FLUORIDE (ug/g)	278	494	320	375	330	365	440	450	545	650	975			
4	113	EUCALYPTUS MACULATA	FLUORIDE (ug/g)	121	108	180	80	185	105	105	30	230	20	35			
5	114	MELALEUCA QUINQUENERVIA	FLUORIDE (ug/g)	940	680	350	620	nra	675	780	485	1620	735	175			
6	115	EUCALYPTUS PARRAMATENSI	FLUORIDE (ug/g)	164	96	30	55	5	80	185	175	140	45	145			
7	116	ANGOPHORA COSTATA	FLUORIDE (ug/g)	98	89	65	20	30	85	125	170	130	140	35			
8	117	ANGOPHORA COSTATA	FLUORIDE (ug/g)	289	424	215	25	65	340	180	180	180	1570	1065			
9	118	MELALEUCA QUINQUENERVIA	FLUORIDE (ug/g)	303	239	245	110	280	160	125	265	450	245	275			
10	119	ANGOPHORA FLORIBUNDA	FLUORIDE (ug/g)	129	160	85	75	95	65	235	125	205	365	190			
11	120	EUCALYPTUS MACULATA	FLUORIDE (ug/g)	42	64	75	35	35	60	65	140	50	50	65			
12	121	EUCALYPTUS PILULARIS	FLUORIDE (ug/g)	38	48	40	40	25	50	25	15	70	90	75			
13	122	ANGOPHORA FLORIBUNDA	FLUORIDE (ug/g)	20	28	25	15	5	20	15	15	40	20	100			
14	123	EUCALYPTUS HAEMASTOMA	FLUORIDE (ug/g)	27	21	25	5	20	20	10	20	25	30	30			
15	124	ANGOPHORA COSTATA	FLUORIDE (ug/g)	23	31	10	15	5	35	20	15	25	55	95			
16	125	AVICENNIA MARINA	FLUORIDE (ug/g)	8	nra	nra	nra	nra	nra	nra	nra	nra	nra	nra			
17	126	CASUARINA GLAUCA	FLUORIDE (ug/g)	44	51	70	75	5	40	35	100	105	20	10			
18	128	EUCALYPTUS ROBUSTA	FLUORIDE (ug/g)	17	22	20	5	5	15	25	10	25	45	45			
19	129	ANGOPHORA COSTATA	FLUORIDE (ug/g)	14	13	10	5	5	10	5	10	15	10	50			
20	130	AVICENNIA MARINA	FLUORIDE (ug/g)	22	26	20	5	40	15	20	40	30	45	15			
21	131	AVICENNIA MARINA	FLUORIDE (ug/g)	9	11	5	40	10	5	5	5	10	15	5			
22	132	AVICENNIA MARINA	FLUORIDE (ug/g)	13	7	5	5	10	5	5	10	10	10	5			
23	133	CASUARINA GLAUCA	FLUORIDE (ug/g)	13	10	15	15	5	10	5	10	15	5	10			
24	134	CASUARINA GLAUCA	FLUORIDE (ug/g)	10	13	20	10	nra	15	10	10	10	5	20			
25	136	EUCALYPTUS HAEMASTOMA	FLUORIDE (ug/g)	14	12	q	5	q	q	5	q	q	25	q			
26	137	ANGOPHORA COSTATA	FLUORIDE (ug/g)	11	16	5	5	5	10	5	10	25	15	65			
27	138	AVICENNIA MARINA	FLUORIDE (ug/g)	6	5	q	5	q	q	5	q	q	5	q			
28	139	EUCALYPTUS MACULATA	FLUORIDE (ug/g)	9	5	q	5	q	q	5	q	q	5	q			
29	141	EUCALYPTUS MACULATA	FLUORIDE (ug/g)	10	5	q	5	q	q	5	q	q	5	q			
30	142	CASUARINA GLAUCA	FLUORIDE (ug/g)	9	10	q	5	q	q	15	q	q	10	q			
31	144	EUCALYPTUS HAEMASTOMA	FLUORIDE (ug/g)	9	13	q	10	q	q	5	q	q	25	q			
32	147	AVICENNIA MARINA	FLUORIDE (ug/g)	8	5	q	5	q	q	5	q	q	5	q			
33	149	EUCALYPTUS MACULATA	FLUORIDE (ug/g)	6	5	q	5	q	q	5	q	q	5	q			
34	151	EUCALYPTUS PILULARIS	FLUORIDE (ug/g)	13	5	q	5	q	q	5	q	q	5	q			
35	168	EUCALYPTUS ROBUSTA	FLUORIDE (ug/g)	162	180	115	175	80	40	175	485	290	200	60			
36	169	EUCALYPTUS GLOBOIDEA	FLUORIDE (ug/g)	18	24	5	5	5	10	25	60	30	45	30			
37	170	EUCALYPTUS PILULARIS	FLUORIDE (ug/g)	14	14	5	5	5	10	5	10	15	50	25			
38	171	CASUARINA GLAUCA	FLUORIDE (ug/g)	15	16	15	5	5	35	25	15	30	5	5			
39	172	CASUARINA GLAUCA	FLUORIDE (ug/g)	12	11	10	5	5	10	15	15	15	10	15			
40	173	CASUARINA GLAUCA	FLUORIDE (ug/g)	9	8	5	5	5	10	5	5	15	15	10			
41	174	CASUARINA GLAUCA	FLUORIDE (ug/g)	51	44	60	5	5	15	15	40	70	90	100			
42	175	CASUARINA GLAUCA	FLUORIDE (ug/g)	48	59	85	40	20	45	35	45	100	130	35			

43	190	ANGOPHORA COSTATA	FLUORIDE (ug/g)	28	29	5	5	5	10	15	25	110	45	40
44	191	CASUARINA GLAUCA	FLUORIDE (ug/g)	16	21	60	5	5	25	25	20	30	10	10
45	192	CASUARINA GLAUCA	FLUORIDE (ug/g)	6	nra									

nra = No Result Available
tba = To Be Analysed
c = Result Being Checked
q = Samples collected quarterly
ALY = Average Last Year
AYTD = Average Year To Date

WATER AND VEGETATION MONITORING FOR SEPTEMBER 2021
-----RESULTS BY SAMPLING GROUP
-----130 - POTLINE 3 VEGETATION

#	SITE	SPECIES	TEST	ALY	AYTD	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	182	CASUARINA GLAUCA	FLUORIDE (ug/g)	54	47	15	30	10	35	20	85	50	85	95			
2	183	CASUARINA GLAUCA	FLUORIDE (ug/g)	44	44	10	10	5	30	25	35	60	135	85			
3	184	CASUARINA GLAUCA	FLUORIDE (ug/g)	35	32	30	30	15	15	30	20	30	25	95			
4	185	ANGOPHORA COSTATA	FLUORIDE (ug/g)	23	23	10	5	5	15	15	30	65	35	25			
5	193	ANGOPHORA COSTATA	FLUORIDE (ug/g)	23	21	20	25	5	15	15	10	40	10	45			
6	194	ROUGH BARK APPLE	FLUORIDE (ug/g)	41	53	125	30	100	35	25	40	25	45	55			

nra = No Result Available

tba = To Be Analysed

c = Result Being Checked

q = Samples collected quarterly

ALY = Average Last Year

AYTD = Average Year To Date

WATER AND VEGETATION MONITORING FOR SEPTEMBER 2021

RESULTS BY SAMPLING GROUP

350 - FORAGE

#	SITE	SPECIES	TEST	ALY	AYTD	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	004	FORAGE	FLUORIDE (ug/g)	201	228	10	10	20	120	65	105	745	710	265			
2	031	FORAGE	FLUORIDE (ug/g)	13	5	q	5	q	q	5	q	q	5	q			
3	032	FORAGE	FLUORIDE (ug/g)	10	11	10	5	nra	5	5	5	35	5	15			
4	034	FORAGE	FLUORIDE (ug/g)	11	7	10	5	nra	5	5	5	10	5	10			
		FODDER FEED MIX	FLUORIDE (ug/g)	12	7	5	5	nra	5	15	5	5	10	5			
5	087	FORAGE	FLUORIDE (ug/g)	40	64	10	5	170	5	65	100	45	160	20			
6	125	FORAGE	FLUORIDE (ug/g)	25	nra	q	nra	q	q	nra	q	q	nra	q			
7	126	FORAGE	FLUORIDE (ug/g)	23	13	q	5	q	q	5	q	q	30	q			
8	130	FORAGE	FLUORIDE (ug/g)	27	55	5	5	10	175	30	10	35	210	15			
9	131	FORAGE	FLUORIDE (ug/g)	20	12	q	5	q	q	10	q	q	20	q			
10	133	FORAGE	FLUORIDE (ug/g)	16	5	q	5	q	q	5	q	q	5	q			
11	134	FORAGE	FLUORIDE (ug/g)	8	6	5	5	nra	5	5	5	5	5	10			
12	141	FORAGE	FLUORIDE (ug/g)	5	5	q	5	q	q	5	q	q	5	q			
13	142	FORAGE	FLUORIDE (ug/g)	7	8	5	20	nra	5	5	5	5	5	15			
14	143	FORAGE	FLUORIDE (ug/g)	5	5	q	5	q	q	5	q	q	5	q			
15	160	FORAGE	FLUORIDE (ug/g)	5	37	q	100	q	q	5	q	q	5	q			
16	166	FORAGE	FLUORIDE (ug/g)	8	8	15	5	nra	nra	5	nra	5	5	10			
17	167	FORAGE	FLUORIDE (ug/g)	36	37	5	5	5	40	20	5	55	165	35			
18	176	FORAGE	FLUORIDE (ug/g)	8	6	5	5	nra	5	5	5	5	5	10			
19	178	FORAGE	FLUORIDE (ug/g)	5	8	5	20	nra	5	5	5	5	10	5			
20	211	FORAGE	FLUORIDE (ug/g)	21	16	5	5	5	15	5	5	10	75	15			
21	307	FORAGE	FLUORIDE (ug/g)	9	6	5	10	nra	5	5	5	5	5	10			
22	308	FORAGE	FLUORIDE (ug/g)	5	6	5	10	nra	5	5	5	5	5	10			

nra = No Result Available
 tba = To Be Analysed
 c = Result Being Checked
 q = Samples collected quarterly
 ALY = Average Last Year
 AYTD = Average Year To Date

 *** END OF WATER AND VEGETATION BY GROUP REPORT ***

APPENDIX 6 –

WATER MONITORING DATA

- 1. Sewer Treatment Works and Irrigation System Report**
- 2. Stormwater Drain Monitor Report**
- 3. Surface Water and Groundwater Reports**

TOMAGO ALUMINIUM COMPANY PTY. LIMITED (A.C.N. 001 862 228)
 ENVIRONMENT SYSTEM 11:06:56 03-11-21 Page 1
 SEWAGE TREATMENT WORKS MONITORING RESULTS
 FOR JULY 2021

Day	S.P Hours	Settleable Solids ml .5hr 1hr	Pasveer pH	Effl. pH	MLSS Wkly. mg/l	Ammonia Wkly. mg/l	Nitrate Wkly. mg/l	Volat SS mg/l	D.O Effl.	BOD Effl. mg/l	Colour	Condition
1	0.07	280 210	6.0	6.2					5.2		BROWN	CLEAR
2												
3												
4												
5	0.00	220 170	6.8	7.0	2680	0.51	50	1910	6.7		BROWN	CLEAR
6												
7	0.50	260 200	6.0	6.1					6.5		BROWN	CLEAR
8												
9	0.00	260 210	6.0	6.2					6.5		BROWN	CLEAR
10												
11												
12	0.44	270 210	6.2	6.7	2955	0.16	50		8.0		BROWN	CLEAR
13												
14	0.17	260 210	6.2	6.3					6.2		BROWN	CLEAR
15												
16	0.18	260 220	6.0	6.3					6.4		BROWN	CLEAR
17												
18												
19	0.23	300 220	6.2	6.4	3035	0.22	50		7.4		BROWN	CLEAR
20												
21	0.17	270 210	6.3	6.5					5.8		BROWN	CLEAR
22												
23	0.16	270 210	6.4	6.5					7.8		BROWN	CLEAR
24												
25												
26	0.25	300 260	6.2	6.2	3895	0.28	50		4.3		BROWN	SCUM
27												
28	0.14	280 220	6.2	6.3					5.6		BROWN	CLEAR
29												
30	0.18	300 240	6.2	6.2					6.5		BROWN	CLEAR
31												

Comments

End of report

MATURATION POND AND IRRIGATION SYSTEM REPORT
FOR JULY 2021

EPA point 17

	Maturation Pond						Irrigation System		
	pH	Cond uS/cm	Fluoride mg/L	BOD Effl. mg/L	Suspend. Solids mg/L	E-Coli Count/ 100mL	Avg kL/day to sewer	Total kL Irrigated	mm/week Irrigated
1								434.000	
2								0.000	
3								0.000	
4								0.000	
5	7.3	860	4.80			0		1876.000	
6								0.000	
7							6	356.000	18.1
8								0.000	
9								645.000	
10								0.000	
11								0.000	
12	6.8	770	4.50			0		1015.000	
13								0.000	
14							6	987.000	18.0
15								0.000	
16								943.000	
17								0.000	
18								0.000	
19	6.8	820	4.68			0		1828.000	
20								0.000	
21							6	482.000	22.1
22								0.000	
23								970.000	
24								0.000	
25								0.000	
26	7.1	800	4.96			58		1089.000	
27								0.000	
28							6	683.000	18.7
29								0.000	
30								705.000	
31								0.000	
Total								12013.00	

BOD = Biological Oxygen Demand
nra = No result available

End of report

TOMAGO ALUMINIUM COMPANY PTY. LIMITED (A.C.N. 001 862 228)
 ENVIRONMENT SYSTEM 11:07:06 03-11-21 Page 1
 SEWAGE TREATMENT WORKS MONITORING RESULTS
 FOR AUGUST 2021

Day	S.P Hours	Settleable Solids ml .5hr 1hr	Pasveer pH	Effl. pH	MLSS Wkly. mg/l	Ammonia Wkly. mg/l	Nitrate Wkly. mg/l	Volat SS mg/l	D.O Effl.	BOD Effl. mg/l	Colour	Condition
1												
2	0.22	210 190	6.3	6.2	1850	0.44	50	570	5.6		BROWN	CLEAR
3												
4	0.16	230 190	6.1	6.2					7.6		BROWN	CLEAR
5	0.07	260 220	6.1	5.9					5.2		BROWN	CLEAR
6												
7												
8												
9	0.26	220 170	6.2	6.2	860	0.22	50		5.8		BROWN	CLEAR
10												
11	0.14	240 200	6.1	6.2					6.8		BROWN	CLEAR
12												
13	0.14	360 280	6.2	6.1					5.5		BROWN	CLEAR
14												
15												
16	0.20	240 190	6.4	6.3	2645	0.74	50		5.9		BROWN	CLOUDY
17												
18	0.12	240 200	6.4	6.3					5.8		BROWN	FOAM
19												
20	0.17	260 230	5.8	6.4					5.6	7	BROWN	FOAM
21												
22												
23	0.20	230 190	6.9	6.8	2165	0.24	25		7.9		BROWN	FOAM
24												
25	0.00	240 200	6.2	6.4					6.9		BROWN	CLEAR
26												
27	0.31	200 130	6.7	6.6					5.9		BROWN	CLEAR
28												
29												
30	0.19	250 200	6.8	6.6	2680	0.08	50		6.5		BROWN	CLEAR
31												

Comments

End of report

TOMAGO ALUMINIUM COMPANY PTY. LIMITED (A.C.N. 001 862 228)
 ENVIRONMENT SYSTEM
 MATURATION POND AND IRRIGATION SYSTEM REPORT
 FOR AUGUST 2021

EVR860

08:53:33 03-11-21 Page 1

EPA point 17

	Maturation Pond						Irrigation System		
	pH	Cond uS/cm	Fluoride mg/L	BOD Effl. mg/L	Suspend. Solids mg/L	E-Coli Count/ 100mL	Avg kL/day to sewer	Total kL Irrigated	mm/week Irrigated
1								0.000	
2	6.3	820	4.69			5		1243.000	
3								0.000	
4							6	502.000	16.7
5								473.000	
6								0.000	
7								0.000	
8								0.000	
9	6.8	860	4.67			10		695.000	
10								0.000	
11							5	1138.000	15.7
12								0.000	
13								712.000	
14								0.000	
15								0.000	
16	6.5	1100	5.47			580		701.000	
17								0.000	
18							5	805.000	15.1
19								0.000	
20				4	<5			645.000	
21								0.000	
22								0.000	
23	6.8	1000	5.15			0		731.000	
24								0.000	
25							4	842.000	15.1
26								0.000	
27								750.000	
28								0.000	
29								0.000	
30	7.0	1000	5.15			3		1008.000	
31								0.000	
Total								10245.00	

BOD = Biological Oxygen Demand
 nra = No result available

End of report

TOMAGO ALUMINIUM COMPANY PTY. LIMITED (A.C.N. 001 862 228)
 ENVIRONMENT SYSTEM 11:07:12 03-11-21 Page 1
 SEWAGE TREATMENT WORKS MONITORING RESULTS
 FOR SEPTEMBER 2021

Day	S.P Hours	Settleable Solids ml .5hr 1hr	Pasveer pH	Effl. pH	MLSS Wkly. mg/l	Ammonia Wkly. mg/l	Nitrate Wkly. mg/l	Volat SS mg/l	D.O Effl.	BOD Effl. mg/l	Colour	Condition
1	0.14	240 200	6.6	6.6					6.0		BROWN	CLEAR
2												
3	0.15	240 200	6.3	6.4					5.8		BROWN	CLEAR
4												
5												
6	0.21	190 170	5.7	5.8	2420	0.36	25	1785	4.8		BROWN	CLEAR
7												
8	0.16	170 150	5.3	5.4					3.6		BROWN	CLEAR
9												
10	0.17	180 150	5.4	5.4					3.8		BROWN	CLEAR
11												
12												
13	0.23	160 130	6.0	6.2	1845	0.22	25		4.2		BROWN	CLEAR
14												
15	0.16	170 150	6.2	6.3					4.6		BROWN	CLEAR
16												
17	0.14	170 150	6.2	6.4					3.6		BROWN	CLEAR
18												
19												
20	0.22	180 150	6.2	6.3	2095	0.24	25		5.2		BROWN	CLEAR
21												
22	0.16	180 150	6.0	6.2					4.4		BROWN	CLEAR
23												
24	0.16	170 150	6.1	6.2					4.6		BROWN	CLEAR
25												
26												
27	0.21	50 50	6.4	6.5	835	0.16	25		6.2		BROWN	CLEAR
28												
29	0.17	200 160	5.5	5.7					4.5		BROWN	CLEAR
30												

Comments

End of report

TOMAGO ALUMINIUM COMPANY PTY. LIMITED (A.C.N. 001 862 228)
 ENVIRONMENT SYSTEM
 MATURATION POND AND IRRIGATION SYSTEM REPORT
 FOR SEPTEMBER 2021

EPA point 17

	Maturation Pond						Irrigation System		
	pH	Cond uS/cm	Fluoride mg/L	BOD Efl. mg/L	Suspend. Solids mg/L	E-Coli Count/ 100mL	Avg kL/day to sewer	Total kL Irrigated	mm/week Irrigated
1							7	582.000	15.9
2								0.000	
3								865.000	
4								0.000	
5								0.000	
6	6.0	980	5.13			0		1090.000	
7								0.000	
8							5	380.000	15.9
9								0.000	
10								1083.000	
11								0.000	
12								0.000	
13	6.7	1200	5.54			0		908.000	
14								0.000	
15							6	736.000	18.6
16								0.000	
17								903.000	
18								0.000	
19								0.000	
20	6.8	970	5.12			0		888.000	
21								0.000	
22							5	813.000	17.7
23								0.000	
24								796.000	
25								0.000	
26								0.000	
27	7.1	790	4.88			140		732.000	
28								0.000	
29							6	424.000	13.3
30								0.000	
Total								10200.00	

BOD = Biological Oxygen Demand
 nra = No result available

End of report

TOMAGO ALUMINIUM COMPANY PTY. LTD.
DRAIN TO HUNTER RIVER
MONITORING REPORT
Jul 2021 (Point 35)

DATE	pH Ave	Cond uS/cm Av.	SoL F mg/L Av.	PAH mg/L	TRH mg/L	FLOW (to Hunter River)		Rainfall mm
						L/sec Av.	kL/day Av.	
1-Jul	6.2	NR	54	NR	NR	13	1087	0.5
2-Jul	6.3	NR	55	NR	NR	8	681	0.5
3-Jul	6.4	NR	54	NR	NR	5	392	0.0
4-Jul	6.4	NR	52	NR	NR	3	238	0.0
5-Jul	6.5	NR	49	0.0005	0.05	2	131	0.0
6-Jul	6.6	NR	47	NR	NR	0	26	0.0
7-Jul	6.5	NR	45	NR	NR	0	1	0.0
8-Jul	NF	NF	NF	NF	NF	0	0	0.0
9-Jul	6.4	NR	60	0.0005	0.05	0	24	5.0
10-Jul	6.4	NR	61	NR	NR	3	269	5.5
11-Jul	6.2	NR	61	NR	NR	25	2159	6.0
12-Jul	6.3	NR	59	NR	NR	17	1500	0.0
13-Jul	6.4	NR	62	NR	NR	9	797	0.5
14-Jul	6.4	NR	64	NR	NR	5	449	0.0
15-Jul	6.4	NR	70	NR	NR	4	321	0.5
16-Jul	6.4	NR	71	NR	NR	1	102	1.5
17-Jul	NF	NF	NF	NF	NF	0	0	0.0
18-Jul	NF	NF	NF	NF	NF	0	0	0.0
19-Jul	NF	NF	NF	NF	NF	0	0	0.0
20-Jul	NF	NF	NF	NF	NF	0	0	0.0
21-Jul	NF	NF	NF	NF	NF	0	0	0.0
22-Jul	NF	NF	NF	NF	NF	0	0	0.0
23-Jul	NF	NF	NF	NF	NF	0	0	0.0
24-Jul	NF	NF	NF	NF	NF	0	0	0.0
25-Jul	NF	NF	NF	NF	NF	0	0	0.0
26-Jul	NF	363	NF	NF	NF	0	0	0.0
27-Jul	NF	NF	NF	NF	NF	0	0	0.0
28-Jul	NF	NF	NF	NF	NF	0	0	2.0
29-Jul	NF	NF	NF	NF	NF	0	0	0.0
30-Jul	NF	NF	NF	NF	NF	0	0	0.0
31-Jul	NF	NF	NF	NF	NF	0	0	0.0
Monthly Av.	6.4	363	59	<0.001	<0.1	8	545	22.0 (total)

NF = No Flow Over Weir
 NRA = No Result Available
 NR = Not Required

Indicates 1/2 LOR used
 Volume weighted average

Days of overflow 15

TOMAGO ALUMINIUM COMPANY PTY. LTD.
DRAIN TO HUNTER RIVER
MONITORING REPORT
Aug 2021 (Point 35)

DATE	pH Ave	Cond uS/cm Av.	SoL F mg/L Av.	PAH mg/L	TRH mg/L	FLOW (to Hunter River)		Rainfall mm
						L/sec Av.	kL/day Av.	
1-Aug	NF	NF	NF	NF	NF	0	0	0.5
2-Aug	NF	NF	NF	NF	NF	0	0	0.0
3-Aug	NF	NF	NF	NF	NF	0	0	1.5
4-Aug	NF	NF	NF	NF	NF	0	0	0.0
5-Aug	NF	NF	NF	NF	NF	0	0	0.0
6-Aug	NF	NF	NF	NF	NF	0	0	0.0
7-Aug	NF	NF	NF	NF	NF	0	0	0.0
8-Aug	NF	NF	NF	NF	NF	0	0	2.5
9-Aug	NF	NF	NF	NF	NF	0	0	0.0
10-Aug	NF	NF	NF	NF	NF	0	0	0.0
11-Aug	NF	NF	NF	NF	NF	0	0	0.0
12-Aug	NF	NF	NF	NF	NF	0	0	0.5
13-Aug	NF	NF	NF	NF	NF	0	0	0.0
14-Aug	NF	NF	NF	NF	NF	0	0	0.0
15-Aug	NF	NF	NF	NF	NF	0	0	0.0
16-Aug	NF	NF	NF	NF	NF	0	0	0.0
17-Aug	NF	NF	NF	NF	NF	0	0	0.0
18-Aug	NF	NF	NF	NF	NF	0	0	0.0
19-Aug	NF	NF	NF	NF	NF	0	0	0.0
20-Aug	NF	NF	NF	NF	NF	0	0	0.0
21-Aug	NF	NF	NF	NF	NF	0	0	0.5
22-Aug	NF	NF	NF	NF	NF	0	0	0.0
23-Aug	NF	NF	NF	NF	NF	0	0	2.0
24-Aug	6.0	270	57	0.0005	0.05	306	26427	46.5
25-Aug	6.2	NR	NR	NR	NR	38	3244	0.5
26-Aug	6.3	NR	NR	NR	NR	6	485	0.0
27-Aug	NF	NF	NF	NF	NF	0	0	0.0
28-Aug	NF	NF	NF	NF	NF	0	0	0.0
29-Aug	NF	NF	NF	NF	NF	0	0	0.0
30-Aug	NF	NF	NF	NF	NF	0	0	0.0
31-Aug	NF	NF	NF	NF	NF	0	0	0.0
Monthly Av.	6.2	270	47	<0.001	<0.1	116	10052	54.5 (total)

NF = No Flow Over Weir
 NRA = No Result Available
 NR = Not Required

Indicates 1/2 LOR used
 Volume weighted average

Days of overflow

3

TOMAGO ALUMINIUM COMPANY PTY. LTD.
DRAIN TO HUNTER RIVER
MONITORING REPORT
Sep 2021 (Point 35)

DATE	pH Ave	Cond uS/cm Av.	SoL F mg/L Av.	PAH mg/L	TRH mg/L	FLOW (to Hunter River)		Rainfall mm
						L/sec Av.	kL/day Av.	
1-Sep	NF	NF	NF	NF	NF	0	0	0.0
2-Sep	NF	NF	NF	NF	NF	0	0	0.0
3-Sep	NF	NF	NF	NF	NF	0	0	0.0
4-Sep	NF	NF	NF	NF	NF	0	0	1.5
5-Sep	NF	NF	NF	NF	NF	0	0	2.0
6-Sep	NF	NF	NF	NF	NF	0	0	0.0
7-Sep	NF	NF	NF	NF	NF	0	0	0.0
8-Sep	NF	NF	NF	NF	NF	0	0	0.0
9-Sep	NF	NF	NF	NF	NF	0	0	0.0
10-Sep	NF	NF	NF	NF	NF	0	0	0.0
11-Sep	NF	NF	NF	NF	NF	0	0	0.0
12-Sep	NF	NF	NF	NF	NF	0	0	0.0
13-Sep	NF	NF	NF	NF	NF	0	0	1.0
14-Sep	5.8	350	34	0.0005	0.6	355	30683	47.5
15-Sep	6.1	350	40	NR	NR	49	4264	1.0
16-Sep	6.0	350	49	NR	NR	13	1132	2.0
17-Sep	NF	NF	NF	NF	NF	0	0	0.0
18-Sep	NF	NF	NF	NF	NF	0	0	0.0
19-Sep	NF	NF	NF	NF	NF	0	0	0.5
20-Sep	NF	NF	NF	NF	NF	0	0	0.0
21-Sep	NF	NF	NF	NF	NF	0	0	7.0
22-Sep	NF	NF	NF	NF	NF	0	0	0.0
23-Sep	NF	NF	NF	NF	NF	0	0	0.0
24-Sep	NF	NF	NF	NF	NF	0	0	0.0
25-Sep	NF	NF	NF	NF	NF	0	0	0.0
26-Sep	NF	NF	NF	NF	NF	0	0	5.5
27-Sep	NF	NF	NF	NF	NF	0	0	0.0
28-Sep	NF	NF	NF	NF	NF	0	0	0.0
29-Sep	NF	NF	NF	NF	NF	0	0	2.5
30-Sep	5.9	420	82	0.0005	0.05	8	654	1.5
Monthly Av.	5.9	368	36	<0.001	0.3	106	9183	72.0 (total)

NF = No Flow Over Weir
 NRA = No Result Available
 NR = Not Required

 Indicates 1/2 LOR used
 Volume weighted average

Days of overflow 4

Q3 2021 Stormwater Discharge Data (EPA Point 16)

Discharge Date	pH	F (mg/L)	Cond. (uS/cm)	Suspended Solids (mg/L)	kL	PAH (mg/L)	TRH (mg/L)
<i>There was no stormwater discharged from Point 16 in Quarter 3, 2021.</i>							

NR = Not Required

ENVIRONMENT SYSTEM
 WATER AND VEGETATION MONITORING FOR SEPTEMBER 2021

RESULTS BY SAMPLING GROUP

500 - SURFACE WATER

#	SITE	SPECIES	TEST	ALY	AYTD	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	001	Surface Water	PH	5.5	6.2	nra	5.1	5.4	6.5	6.3	6.5	6.5	7.2	6.1			
		Surface Water	SOL F mg/L	4.01	4.23	nra	6.38	1.72	3.59	4.19	3.79	4.48	4.59	5.13			
		Surface Water	COND uS/cm	203	281	nra	460	60	250	250	250	290	440	250			
2	002	Surface Water	PH	6.2	6.2	nra	nra	5.9	6.3	6.7	6.4	5.5	6.3	6.4			
		Surface Water	SOL F mg/L	0.79	0.82	nra	nra	0.63	1.09	1.02	0.69	0.74	0.59	1.01			
		Surface Water	COND uS/cm	220	307	nra	nra	220	320	390	400	270	300	250			
3	003	Surface Water	PH	5.2	5.1	nra	5.3	5.7	4.6	5.0	5.5	5.4	nra	4.5			
		Surface Water	SOL F mg/L	5.73	2.73	nra	3.79	3.14	1.40	1.52	1.31	2.25	nra	5.68			
		Surface Water	COND uS/cm	320	127	nra	130	140	110	130	120	120	nra	140			
4	004	Surface Water	PH	5.9	6.1	6.0	6.0	6.4	5.7	6.0	6.3	6.3	5.9	6.1			
		Surface Water	SOL F mg/L	2.44	2.28	2.74	2.25	2.75	2.91	1.58	2.11	1.62	2.35	2.21			
		Surface Water	COND uS/cm	249	251	200	210	440	260	250	230	210	280	180			
5	005	Surface Water	PH	7.5	7.5	7.4	7.3	6.8	7.7	7.8	8.0	7.3	8.0	7.6			
		Surface Water	SOL F mg/L	0.66	0.58	0.59	0.29	0.54	0.76	0.49	0.27	0.74	0.69	0.81			
		Surface Water	COND uS/cm	21050	14112	20000	530	180	15800	16800	2700	23000	20000	28000			
6	006	Surface Water	PH	7.5	7.7	7.4	7.3	6.6	7.7	8.0	8.2	7.7	8.7	7.6			
		Surface Water	SOL F mg/L	0.58	0.49	0.58	0.29	0.40	0.76	0.39	0.19	0.47	0.39	0.92			
		Surface Water	COND uS/cm	17883	11901	20000	530	240	15800	12200	940	16000	13400	28000			
7	007	Surface Water	PH	7.1	6.8	6.9	6.4	6.2	6.8	7.2	6.8	7.1	7.2	6.2			
		Surface Water	SOL F mg/L	0.95	0.94	1.18	0.56	1.44	0.93	0.75	0.75	0.91	1.04	0.94			
		Surface Water	COND uS/cm	634	576	740	220	300	720	500	530	790	840	540			
8	009	Surface Water	PH	4.1	3.9	3.5	3.8	3.7	4.3	4.3	3.9	3.5	3.8	4.7			
		Surface Water	SOL F mg/L	0.29	0.27	0.33	0.19	0.48	0.42	0.17	0.12	0.23	0.14	0.36			
		Surface Water	COND uS/cm	222	206	230	200	200	200	200	200	200	210	210			
9	011	Surface Water	PH	nra	5.7	nra	5.1	5.1	6.0	6.0	5.2	5.3	7.2	5.7			
		Surface Water	SOL F mg/L	nra	0.31	nra	0.17	0.50	0.51	0.17	0.16	0.32	0.18	0.45			
		Surface Water	COND uS/cm	nra	208	nra	210	160	250	220	210	210	210	190			
10	017	Surface Water	PH	7.4	7.3	q	6.7	q	q	6.9	q	q	8.4	q			
		Surface Water	SOL F mg/L	0.17	0.24	q	0.33	q	q	0.19	q	q	0.20	q			
		Surface Water	COND uS/cm	263	227	q	240	q	q	210	q	q	230	q			
11	034	Surface Water	PH	7.8	8.0	9.4	6.7	nra	7.4	8.2	9.2	7.7	8.2	7.4			
		Surface Water	SOL F mg/L	0.17	0.34	0.45	0.22	nra	0.46	0.10	0.12	0.58	0.12	0.65			
		Surface Water	COND uS/cm	341	341	340	340	nra	320	300	290	340	380	420			
12	178	Surface Water	PH	8.9	8.1	7.0	7.1	nra	9.6	8.6	nra	nra	8.1	8.4			
		Surface Water	SOL F mg/L	0.67	0.89	0.94	0.97	nra	0.89	0.60	nra	nra	0.75	1.18			
		Surface Water	COND uS/cm	157	160	180	170	nra	150	140	nra	nra	150	170			

nra = No Result Available
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 ALY = Average Last Year
 AYTD = Average Year To Date

ENVIRONMENT SYSTEM
BORE WATER REPORTING FOR 2021

#	SITE	SPECIES	TEST	ALY	AYTD	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
1	053	DEPTH 5M	PH	5.2	nra	s	s	s	s	s	s	s	s	s				
		DEPTH 5M	COND US/CM	138.5	nra	s	s	s	s	s	s	s	s	s	s			
		DEPTH 5M	SOL F MG/L	0.05	nra	s	s	s	s	s	s	s	s	s	s			
		DEPTH 9M	PH	5.2	nra	s	s	s	s	s	s	s	s	s	s			
		DEPTH 9M	COND US/CM	147.0	nra	s	s	s	s	s	s	s	s	s	s			
		DEPTH 9M	SOL F MG/L	0.05	nra	s	s	s	s	s	s	s	s	s	s			
		DEPTH 13.5M	PH	5.2	nra	s	s	s	s	s	s	s	s	s	s			
		DEPTH 13.5M	COND US/CM	142.0	nra	s	s	s	s	s	s	s	s	s	s			
		DEPTH 13.5M	SOL F MG/L	0.05	nra	s	s	s	s	s	s	s	s	s	s			
2	054	DEPTH 6M	PH	5.1	6.8	s	s	s	6.8	s	s	s	s	s				
		DEPTH 6M	COND US/CM	190.0	67.0	s	s	s	67.0	s	s	s	s	s	s			
		DEPTH 6M	SOL F MG/L	0.05	0.05	s	s	s	0.05	s	s	s	s	s	s			
		DEPTH 10M	PH	5.1	5.1	s	s	s	5.1	s	s	s	s	s	s			
		DEPTH 10M	COND US/CM	166.0	239.0	s	s	s	239.0	s	s	s	s	s	s			
		DEPTH 10M	SOL F MG/L	0.05	0.05	s	s	s	0.05	s	s	s	s	s	s			
		DEPTH 14M	PH	5.2	5.1	s	s	s	5.1	s	s	s	s	s	s			
		DEPTH 14M	COND US/CM	156.0	236.0	s	s	s	236.0	s	s	s	s	s	s			
3	055	DEPTH 7M	PH	5.8	5.8	s	s	s	5.8	s	s	s	s	s				
		DEPTH 7M	COND US/CM	625.5	686.0	s	s	s	686.0	s	s	s	s	s	s			
		DEPTH 7M	SOL F MG/L	0.05	0.05	s	s	s	0.05	s	s	s	s	s	s			
4	056	DEPTH 6M	PH	6.0	6.2	s	s	s	6.2	s	s	s	s	s				
		DEPTH 6M	COND US/CM	307.5	337.0	s	s	s	337.0	s	s	s	s	s	s			
		DEPTH 6M	SOL F MG/L	0.05	0.05	s	s	s	0.05	s	s	s	s	s	s			
5	057	DEPTH 7M	PH	5.6	nra	s	s	s	s	s	s	s	s	s				
		DEPTH 7M	COND US/CM	261.5	nra	s	s	s	s	s	s	s	s	s	s			
		DEPTH 7M	SOL F MG/L	0.05	nra	s	s	s	s	s	s	s	s	s	s			
6	058	DEPTH 7M	PH	6.1	nra	s	s	s	s	s	s	s	s	s				
		DEPTH 7M	COND US/CM	320.5	nra	s	s	s	s	s	s	s	s	s	s			
		DEPTH 7M	SOL F MG/L	0.08	nra	s	s	s	s	s	s	s	s	s	s			
7	062	DEPTH 6M	PH	5.9	5.9	5.9	5.9	5.9	5.9	5.8	5.8	5.9	5.9	5.9				
		DEPTH 6M	COND US/CM	353.7	370.6	368.0	404.0	417.0	406.0	369.0	367.0	350.0	329.0	325.0				
		DEPTH 6M	SOL F MG/L	0.09	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05			
8	063	DEPTH 5M	PH	4.9	4.8	5.0	4.8	5.2	4.4	4.7	4.7	4.7	5.1	4.8				
		DEPTH 5M	COND US/CM	154.8	186.3	217.0	171.0	163.0	204.0	201.0	185.0	193.0	174.0	169.0				
		DEPTH 5M	SOL F MG/L	0.55	0.92	0.80	1.10	0.30	0.90	1.10	1.10	1.20	0.70	1.10				
		DEPTH 10M	PH	5.0	4.8	5.0	4.9	4.9	4.4	4.9	5.0	4.7	4.9	4.8				
		DEPTH 10M	COND US/CM	159.1	179.2	151.0	162.0	163.0	209.0	188.0	168.0	194.0	200.0	178.0				
		DEPTH 10M	SOL F MG/L	0.53	0.97	0.70	1.00	0.90	1.00	1.00	0.80	1.00	1.10	1.20				

#	SITE	SPECIES	TEST	ALY	AYTD	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	254	REDUCED LEVEL TOP OF PIPE 7.29m															
		REDUCED LVL GROUNDWATER m		3.6	4.21	3.94	4.07	4.94	4.49	4.30	4.18	4.02	3.97	3.99			
		DEPTH TOP	PH	4.9	5.0	4.9	5.0	5.0	5.5	4.4	5.1	5.0	5.1	4.9			
		DEPTH TOP	COND US/CM	134.6	123.2	152	137	125	105	123	115	117	114	121			
		DEPTH TOP	SOL F mg/L	8.70	10.15	10.6	10.2	9.92	9.27	11.0	9.77	10.9	10.2	9.52			
2	255	REDUCED LEVEL TOP OF PIPE 7.36m															
		REDUCED LVL GROUNDWATER m		3.4	3.97	3.81	3.88	4.41	4.22	4.06	3.95	3.86	3.80	3.71			
		DEPTH TOP	PH	5.3	5.2	5.3	5.6	5.5	5.2	5.3	5.0	5.1	5.0	5.2			
		DEPTH TOP	COND US/CM	374.8	374.4	417	446	357	363	319	346	370	364	388			
		DEPTH TOP	SOL F mg/L	5.54	4.80	5.08	4.78	4.83	5.68	5.08	4.19	4.93	4.73	3.94			
3	256	REDUCED LEVEL TOP OF PIPE 5.82m															
		REDUCED LVL GROUNDWATER m		3.2	3.68	3.52	3.63	4.07	3.88	3.77	3.66	3.59	3.49	3.52			
		DEPTH TOP	PH	6.3	6.1	6.2	6.3	6.2	5.9	6.1	6.0	6.0	5.8	6.0			
		DEPTH TOP	COND US/CM	726.3	523.3	676	670	530	502	440	458	496	476	462			
		DEPTH TOP	SOL F mg/L	2.87	3.84	3.64	3.74	5.48	4.09	3.99	3.79	3.64	3.19	2.99			
4	258	REDUCED LEVEL TOP OF PIPE 4.04m															
		REDUCED LVL GROUNDWATER m		2.3	2.44	2.39	2.48	2.86	2.46	2.39	2.38	2.32	2.29	2.37			
		DEPTH TOP	PH	5.5	5.6	5.4	5.6	5.4	5.6	5.7	5.7	5.6	5.7	5.5			
		DEPTH TOP	COND US/CM	519.3	434.3	645	660	373	310	258	312	430	415	506			
		DEPTH TOP	SOL F mg/L	4.03	3.40	3.09	3.44	5.08	3.14	3.69	3.24	3.09	2.99	2.84			
5	259	REDUCED LEVEL TOP OF PIPE 4.44m															
		REDUCED LVL GROUNDWATER m		2.2	2.31	2.27	2.34	2.61	2.33	2.27	2.27	2.21	2.19	2.26			
		DEPTH TOP	PH	5.3	5.2	5.2	5.3	5.5	5.2	5.1	5.3	5.2	5.2	5.2			
		DEPTH TOP	COND US/CM	325.3	399.0	356	342	326	367	388	450	435	452	475			
		DEPTH TOP	SOL F mg/L	0.13	0.11	0.15	0.10	<0.10	<0.10	<0.10	0.10	<0.10	<0.10	<0.10			
6	260	REDUCED LEVEL TOP OF PIPE 4.25m															
		REDUCED LVL GROUNDWATER m		2.1	2.18	2.21	2.21	2.40	2.19	2.15	2.15	2.10	2.08	2.15			
		DEPTH TOP	PH	5.9	5.8	5.8	5.9	6.0	5.7	5.7	5.9	5.8	5.8	5.7			
		DEPTH TOP	COND US/CM	251.2	330.3	270	294	328	330	311	333	337	355	415			
		DEPTH TOP	SOL F mg/L	14.43	16.29	13.2	20.1	19.4	16.8	16.8	15.1	14.6	14.8	15.8			
7	261	REDUCED LEVEL TOP OF PIPE 5.22m															
		REDUCED LVL GROUNDWATER m		2.6	2.78	2.68	2.80	3.17	2.83	2.75	2.74	2.67	2.63	2.71			
		DEPTH TOP	PH	5.5	5.6	5.4	5.8	6.0	5.7	5.4	5.6	5.5	5.6	5.6			
		DEPTH TOP	COND US/CM	561.4	613.8	715	777	724	596	607	548	469	515	573			
		DEPTH TOP	SOL F mg/L	3.28	1.36	1.71	1.37	1.83	1.28	1.42	1.01	1.19	1.07	1.33			
8	262	REDUCED LEVEL TOP OF PIPE 3.20m															
		REDUCED LVL GROUNDWATER m		2.4	2.39	2.43	2.45	2.58	2.42	2.33	2.38	2.30	2.29	2.37			
		DEPTH TOP	PH	6.3	6.3	6.0	6.4	6.4	6.2	6.2	6.4	6.3	6.4	6.3			
		DEPTH TOP	COND US/CM	367.8	297.6	320	358	336	303	291	283	256	260	271			
		DEPTH TOP	SOL F mg/L	53.28	52.62	56.4	52.7	50.1	48.9	52.9	50.9	54.3	54.1	53.3			

#	SITE	SPECIES	TEST	ALY	AYTD	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
9	263	REDUCED LEVEL TOP OF PIPE 4.08m															
		REDUCED LVL GROUNDWATER m		2.1	2.19	2.21	2.23	2.55	2.25	2.18	2.14	2.06	2.01	2.11			
		DEPTH TOP	PH	6.4	6.4	6.3	6.5	6.5	6.3	6.2	6.4	6.4	6.3	6.5			
		DEPTH TOP	COND US/CM	341.3	296.6	299	303	320	284	286	279	297	281	320			
		DEPTH TOP	SOL F mg/L	55.51	53.60	56.8	55.5	56.9	50.9	53.7	51.3	52.3	53.3	51.7			
10	264	REDUCED LEVEL TOP OF PIPE 6.40m															
		REDUCED LVL GROUNDWATER m		3.0	3.14	2.97	3.12	3.57	3.21	3.15	3.11	3.05	2.98	3.06			
		DEPTH TOP	PH	5.7	5.6	5.5	5.7	5.9	5.6	5.4	5.5	5.6	5.6	5.6			
		DEPTH TOP	COND US/CM	338.9	282.3	281	266	352	264	262	282	281	273	280			
		DEPTH TOP	SOL F mg/L	0.26	0.33	0.42	0.30	0.91	0.40	0.21	0.23	0.16	0.18	0.16			
11	266	REDUCED LEVEL TOP OF PIPE 6.85m															
		REDUCED LVL GROUNDWATER m		3.8	4.22	q	4.11	q	q	4.37	q	q	4.19	q			
		DEPTH TOP	PH	5.8	5.6	q	5.7	q	q	5.5	q	q	5.6	q			
		DEPTH TOP	COND US/CM	270.5	235.7	q	243	q	q	242	q	q	222	q			
		DEPTH TOP	SOL F mg/L	0.15	0.13	q	0.18	q	q	<0.10	q	q	<0.10	q			
12	268	REDUCED LEVEL TOP OF PIPE 7.44m															
		REDUCED LVL GROUNDWATER m		4.7	5.24	5.14	5.36	5.84	5.57	5.37	5.13	4.97	4.91	4.86			
		DEPTH TOP	PH	6.5	6.5	6.5	6.5	6.4	6.5	6.4	6.7	6.4	6.6	6.5			
		DEPTH TOP	COND US/CM	559.8	443.0	440	461	442	448	480	438	439	408	431			
		DEPTH TOP	SOL F mg/L	3.45	6.06	5.88	5.88	5.68	5.93	6.53	0.33	7.27	8.52	8.52			

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Pipe = P.V.C. Pipe in Borehole

ALY = Average Last Year AYTD = Average Year To Date

N.B. Reduced Level Groundwater correct to 0.1 prior to June 1985

#	SITE	SPECIES	TEST	ALY	AYTD	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2	218	REDUCED LEVEL TOP OF PIPE 6.57m															
		REDUCED LVL GROUNDWATER m		3.2	3.80	3.45	4.39	4.01	3.92	3.84	3.76	3.65	3.59	3.60			
		PH		5.8	5.7	5.7	5.7	5.8	5.7	5.6	5.6	5.5	5.7	5.7			
		COND US/CM		365.1	364.1	412.0	391.0	402.0	354.0	373.0	347.0	343.0	319.0	336.0			
		SOL F mg/L		0.26	0.12	0.13	0.25	0.10	0.10	0.13	0.10	0.11	0.10	0.10			
3	219	REDUCED LEVEL TOP OF PIPE 6.75m															
		REDUCED LVL GROUNDWATER m		4.5	5.36	4.77	5.01	6.06	5.67	5.46	5.46	5.33	5.24	5.23			
		PH		4.4	4.3	4.3	4.4	4.4	4.3	4.1	4.2	4.3	4.1	4.4			
		COND US/CM		177.3	173.4	169.0	173.0	180.0	180.0	171.0	175.0	171.0	166.0	176.0			
		SOL F mg/L		0.21	0.17	0.22	0.22	0.16	0.16	0.16	0.15	0.16	0.15	0.14			
4	220	REDUCED LEVEL TOP OF PIPE 7.03m															
		REDUCED LVL GROUNDWATER m		4.5	5.07	3.43	4.92	5.73	5.46	5.39	5.40	5.19	5.11	4.99			
		PH		5.3	5.2	5.2	5.4	5.5	5.1	4.9	5.1	5.3	4.9	5.4			
		COND US/CM		175.4	174.9	155.0	166.0	145.0	193.0	176.0	181.0	180.0	188.0	190.0			
		SOL F mg/L		3.81	4.84	4.68	4.83	4.53	1.99	3.59	4.63	5.73	7.33	6.23			
5	221	REDUCED LEVEL TOP OF PIPE 8.73m															
		REDUCED LVL GROUNDWATER m		5.2	5.82	5.39	5.57	6.28	6.03	5.96	5.90	5.79	5.73	5.73			
		PH		5.1	5.5	5.3	5.5	5.5	5.5	5.5	5.5	5.9	5.3	5.7			
		COND US/CM		167.3	229.1	149.0	162.0	192.0	164.0	178.0	252.0	327.0	330.0	308.0			
		SOL F mg/L		5.95	8.59	4.78	4.93	5.03	7.52	7.47	7.82	13.00	15.20	11.60			
6	224	REDUCED LEVEL TOP OF PIPE 9.54m															
		REDUCED LVL GROUNDWATER m		4.1	4.74	q	4.48	q	q	4.99	q	q	4.75	q			
		PH		5.8	5.5	q	5.5	q	q	5.5	q	q	5.5	q			
		COND US/CM		260.3	298.3	q	305.0	q	q	355.0	q	q	235.0	q			
		SOL F mg/L		1.54	10.74	q	1.22	q	q	17.30	q	q	13.70	q			
7	227	REDUCED LEVEL TOP OF PIPE 9.88m															
		REDUCED LVL GROUNDWATER m		4.4	5.03	q	4.84	q	q	5.19	q	q	5.05	q			
		PH		5.8	5.6	q	5.6	q	q	5.6	q	q	5.5	q			
		COND US/CM		420.0	481.3	q	464.0	q	q	455.0	q	q	525.0	q			
		SOL F mg/L		1.17	0.68	q	1.49	q	q	0.23	q	q	0.31	q			
8	228	REDUCED LEVEL TOP OF PIPE 10.09m															
		REDUCED LVL GROUNDWATER m		4.1	4.69	q	4.46	q	q	4.89	q	q	4.71	q			
		PH		5.7	5.6	q	5.6	q	q	5.6	q	q	5.6	q			
		COND US/CM		296.8	305.7	q	292.0	q	q	310.0	q	q	315.0	q			
		SOL F mg/L		10.50	12.91	q	17.70	q	q	11.80	q	q	9.22	q			

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#	SITE	SPECIES	TEST	ALY	AYTD	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
9	230	REDUCED LEVEL TOP OF PIPE 10.14m															
		REDUCED LVL GROUNDWATER m		4.3	4.87	q	4.61	q	q	5.07	q	q	4.92	q			
		PH		6.1	5.8	q	5.8	q	q	5.8	q	q	5.8	q			
		COND US/CM		335.0	339.0	q	359.0	q	q	316.0	q	q	342.0	q			
		SOL F mg/L		2.88	2.60	q	2.16	q	q	1.95	q	q	3.69	q			
10	231	REDUCED LEVEL TOP OF PIPE 9.53m															
		REDUCED LVL GROUNDWATER m		3.8	4.32	q	4.11	q	q	4.53	q	q	4.33	q			
		PH		6.0	5.8	q	5.8	q	q	5.7	q	q	5.9	q			
		COND US/CM		310.3	331.0	q	317.0	q	q	322.0	q	q	354.0	q			
		SOL F mg/L		6.87	9.22	q	6.43	q	q	8.02	q	q	13.20	q			
11	233	REDUCED LEVEL TOP OF PIPE 9.22m															
		REDUCED LVL GROUNDWATER m		3.7	4.25	q	4.06	q	q	4.45	q	q	4.25	q			
		PH		5.9	5.8	q	5.8	q	q	5.9	q	q	5.8	q			
		COND US/CM		380.0	356.0	q	378.0	q	q	345.0	q	q	345.0	q			
		SOL F mg/L		31.08	43.40	q	58.40	q	q	48.50	q	q	23.30	q			
12	234	REDUCED LEVEL TOP OF PIPE 7.60m															
		REDUCED LVL GROUNDWATER m		3.7	4.20	q	4.02	q	q	4.37	q	q	4.20	q			
		PH		5.6	5.7	q	5.7	q	q	5.6	q	q	5.7	q			
		COND US/CM		308.3	357.0	q	392.0	q	q	352.0	q	q	327.0	q			
		SOL F mg/L		0.24	1.44	q	1.80	q	q	1.79	q	q	0.73	q			
13	236	REDUCED LEVEL TOP OF PIPE 9.05m															
		REDUCED LVL GROUNDWATER m		4.6	5.25	4.95	5.12	5.62	5.52	5.43	5.30	5.19	5.08	5.03			
		PH		5.6	5.5	4.9	5.4	5.6	5.7	5.6	5.6	5.5	5.7	5.6			
		COND US/CM		166.8	160.3	140.0	159.0	145.0	112.0	159.0	194.0	185.0	174.0	175.0			
		SOL F mg/L		6.24	6.83	7.02	6.88	7.08	6.48	7.77	7.92	6.88	6.33	5.13			
14	237	REDUCED LEVEL TOP OF PIPE 7.94m															
		REDUCED LVL GROUNDWATER m		3.7	4.66	4.07	4.16	5.17	5.15	4.97	4.82	4.64	4.55	4.44			
		PH		5.6	5.6	5.6	5.7	5.6	5.7	5.1	5.6	5.6	5.6	5.5			
		COND US/CM		233.8	226.5	261.0	2.5	273.0	274.0	270.0	239.0	213.0	246.0	260.0			
		SOL F mg/L		0.26	0.26	0.24	0.19	0.22	0.23	0.30	0.41	0.30	0.22	0.20			
15	238	REDUCED LEVEL TOP OF PIPE 6.54m															
		REDUCED LVL GROUNDWATER m		3.8	4.60	4.19	4.29	5.19	4.97	4.79	4.65	4.50	4.42	4.37			
		PH		5.0	5.1	4.9	5.3	5.2	5.0	4.6	5.0	5.2	5.5	5.4			
		COND US/CM		579.9	505.0	506.0	325.0	331.0	643.0	613.0	616.0	486.0	525.0	500.0			
		SOL F mg/L		8.97	6.46	14.00	13.50	12.40	2.79	1.97	3.44	3.49	3.94	2.59			

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#	SITE	SPECIES	TEST	ALY	AYTD	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
16	239	REDUCED LEVEL TOP OF PIPE 7.36m															
		REDUCED LVL GROUNDWATER m		3.4	3.93	3.69	3.77	4.12	4.15	4.08	3.99	3.89	3.82	3.89			
		PH		6.1	6.1	5.8	6.0	6.3	6.3	6.2	6.2	6.1	6.1	6.2			
		COND US/CM		639.7	689.3	530.0	644.0	471.0	750.0	670.0	642.0	889.0	877.0	731.0			
		SOL F mg/L		32.60	29.11	22.30	13.10	61.40	25.70	32.70	32.90	25.50	27.10	21.30			
17	241	REDUCED LEVEL TOP OF PIPE 4.48m															
		REDUCED LVL GROUNDWATER m		2.5	2.67	2.68	2.72	3.07	2.73	2.65	2.60	2.52	2.48	2.58			
		PH		5.6	5.4	5.6	5.5	5.5	5.4	5.5	5.2	5.4	5.2	5.3			
		COND US/CM		235.8	262.6	255.0	293.0	248.0	245.0	256.0	218.0	275.0	296.0	277.0			
		SOL F mg/L		1.16	1.20	0.91	1.16	1.24	1.26	1.18	1.10	1.22	1.44	1.28			
18	242	REDUCED LEVEL TOP OF PIPE 6.63m															
		REDUCED LVL GROUNDWATER m		4.1	4.70	4.59	4.87	5.35	5.04	4.86	4.59	4.41	4.32	4.29			
		PH		6.3	6.1	6.0	6.2	6.1	6.1	6.1	6.1	6.1	6.2	6.0			
		COND US/CM		667.6	372.0	825.0	472.0	372.0	381.0	261.0	197.0	203.0	261.0	376.0			
		SOL F mg/L		0.66	0.67	0.58	0.64	0.99	0.67	0.88	0.57	0.62	0.59	0.52			
19	243	REDUCED LEVEL TOP OF PIPE 7.41m															
		REDUCED LVL GROUNDWATER m		4.6	5.22	5.18	5.56	5.76	5.50	5.29	5.06	4.89	4.79	4.93			
		PH		5.9	5.9	6.0	6.0	5.8	6.0	5.8	5.9	5.7	6.0	5.8			
		COND US/CM		242.1	205.2	242.0	210.0	162.0	172.0	211.0	215.0	213.0	222.0	200.0			
		SOL F mg/L		7.15	6.57	6.77	6.73	5.93	4.93	6.08	7.57	7.37	7.58	6.13			
20	245	REDUCED LEVEL TOP OF PIPE 9.92m															
		REDUCED LVL GROUNDWATER m		4.4	4.92	q	4.67	q	q	5.11	q	q	4.97	q			
		PH		5.6	5.5	q	5.6	q	q	5.4	q	q	5.5	q			
		COND US/CM		293.5	287.3	q	289.0	q	q	295.0	q	q	278.0	q			
		SOL F mg/L		0.36	0.55	q	0.55	q	q	0.74	q	q	0.37	q			
21	247	REDUCED LEVEL TOP OF PIPE 9.29m															
		REDUCED LVL GROUNDWATER m		3.9	4.61	q	4.35	q	q	4.86	q	q	4.62	q			
		PH		5.7	5.5	q	5.6	q	q	5.5	q	q	5.5	q			
		COND US/CM		288.5	254.0	q	229.0	q	q	264.0	q	q	269.0	q			
		SOL F mg/L		5.32	0.55	q	0.80	q	q	0.76	q	q	0.10	q			
22	249	REDUCED LEVEL TOP OF PIPE 10.04m															
		REDUCED LVL GROUNDWATER m		4.2	4.78	q	4.54	q	q	4.98	q	q	4.83	q			
		PH		6.0	5.8	q	5.7	q	q	5.8	q	q	5.8	q			
		COND US/CM		324.0	348.7	q	360.0	q	q	329.0	q	q	357.0	q			
		SOL F mg/L		1.64	2.78	q	2.54	q	q	2.31	q	q	3.49	q			
23	250	REDUCED LEVEL TOP OF PIPE 10.10m															
		REDUCED LVL GROUNDWATER m		4.2	4.69	q	4.49	q	q	4.86	q	q	4.71	q			
		PH		5.7	5.7	q	5.7	q	q	5.6	q	q	5.7	q			
		COND US/CM		368.0	331.7	q	403.0	q	q	305.0	q	q	287.0	q			
		SOL F mg/L		7.51	9.96	q	8.72	q	q	9.17	q	q	12.00	q			

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#	SITE	SPECIES	TEST	ALY	AYTD	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
24	269	REDUCED LEVEL TOP OF PIPE 7.285m															
		REDUCED LVL GROUNDWATER	m	4.5	5.05	4.98	4.80	5.68	5.41	5.23	4.99	4.85	4.75	4.75			
			PH	6.1	6.1	5.9	6.1	6.3	6.1	6.2	6.1	5.9	6.0	6.0			
			COND US/CM	460.8	456.3	371.0	355.0	328.0	396.0	451.0	515.0	550.0	530.0	611.0			
			SOL F mg/L	5.20	4.77	5.38	4.88	4.83	4.33	5.33	4.88	4.93	4.59	3.74			
25	272	REDUCED LEVEL TOP OF PIPE 6.910m															
		REDUCED LVL GROUNDWATER	m	4.6	5.14	5.05	5.31	5.69	5.38	5.21	5.03	4.89	4.78	4.92			
			PH	4.9	5.0	4.2	4.5	5.8	5.3	5.1	4.8	4.8	5.2	5.3			
			COND US/CM	320.9	413.6	317.0	324.0	384.0	294.0	340.0	379.0	536.0	608.0	540.0			
			SOL F mg/L	2.77	6.91	3.04	2.84	17.30	4.38	5.43	6.68	7.17	10.60	4.78			
26	274	REDUCED LEVEL TOP OF PIPE 6.785m															
		REDUCED LVL GROUNDWATER	m	4.1	4.74	4.59	4.77	5.46	5.06	4.89	4.63	4.49	4.39	4.37			
			PH	6.4	6.1	6.1	6.2	6.2	6.0	5.9	6.1	6.2	6.3	6.2			
			COND US/CM	707.7	626.0	948.0	794.0	629.0	611.0	636.0	543.0	499.0	517.0	457.0			
			SOL F mg/L	1.00	1.04	0.86	0.99	1.16	0.84	1.03	0.98	1.30	1.04	1.12			
27	276	REDUCED LEVEL TOP OF PIPE 6.272m															
		REDUCED LVL GROUNDWATER	m	3.6	4.25	4.08	4.22	4.98	4.56	4.37	4.16	4.02	3.94	3.90			
			PH	6.2	6.1	6.1	6.5	6.2	5.9	6.1	5.7	6.1	6.2	6.0			
			COND US/CM	757.7	676.8	920.0	876.0	781.0	764.0	800.0	590.0	447.0	442.0	471.0			
			SOL F mg/L	1.17	1.10	1.10	0.92	0.87	0.94	1.11	1.01	1.54	1.28	1.13			
28	279	REDUCED LEVEL TOP OF PIPE 8.46m															
		REDUCED LVL GROUNDWATER	m	4.5	5.12	4.80	4.97	5.47	5.44	5.31	5.20	5.06	4.96	4.90			
			PH	6.8	6.8	6.8	6.7	6.9	6.7	6.8	6.7	6.7	6.8	6.9			
			COND US/CM	1151	1160	1087	1111	1076	999.0	1015	1124	1306	1373	1348			
			SOL F mg/L	48.71	57.38	57.20	55.70	48.70	45.30	51.50	69.30	64.30	67.80	56.60			
29	280	REDUCED LEVEL TOP OF PIPE 7.89m															
		REDUCED LVL GROUNDWATER	m	4.4	5.08	4.69	4.95	5.51	5.35	5.21	5.08	5.05	4.85	5.04			
			PH	6.0	6.3	6.2	6.3	6.3	6.4	6.4	6.2	6.2	6.3	6.7			
			COND US/CM	736.8	398.6	443.0	400.0	366.0	332.0	313.0	360.0	441.0	472.0	460.0			
			SOL F mg/L	4.60	10.78	7.42	10.40	10.00	9.12	10.00	12.90	10.60	14.50	12.10			
30	305	REDUCED LEVEL TOP OF PIPE 8.94m															
		REDUCED LVL GROUNDWATER	m	4.3	4.92	q	4.67	q	q	5.18	q	q	4.91	q			
			PH	5.5	5.3	q	5.3	q	q	5.2	q	q	5.4	q			
			COND US/CM	227.0	213.0	q	227.0	q	q	205.0	q	q	207.0	q			
			SOL F mg/L	3.02	2.62	q	2.64	q	q	2.21	q	q	3.01	q			

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31	306	REDUCED LEVEL TOP OF PIPE 9.27m															
		REDUCED LVL GROUNDWATER m		4.4	5.01	q	4.80	q	q	5.21	q	q	5.01	q			
		PH		5.7	5.4	q	5.4	q	q	5.3	q	q	5.5	q			
		COND US/CM		234.8	268.3	q	214.0	q	q	405.0	q	q	186.0	q			
		SOL F mg/L		5.33	13.13	q	14.50	q	q	14.30	q	q	10.60	q			
32	309	REDUCED LEVEL TOP OF PIPE 5.07m															
		REDUCED LVL GROUNDWATER m		2.3	2.36	2.52	2.51	2.87	2.49	2.46	2.37	1.33	2.27	2.38			
		PH		5.4	5.3	5.6	5.4	5.3	5.0	5.1	4.8	5.3	5.4	5.6			
		COND US/CM		131.5	176.8	100.0	115.0	143.0	127.0	174.0	115.0	703.0	57.0	57.0			
		SOL F mg/L		6.00	5.43	5.48	6.23	5.48	6.68	5.28	5.93	4.93	4.63	4.19			
33	310	REDUCED LEVEL TOP OF PIPE 7.42m															
		REDUCED LVL GROUNDWATER m		4.6	4.82	3.92	5.35	5.29	4.98	4.89	4.83	4.86	4.56	4.72			
		PH		4.4	4.5	4.3	4.8	4.5	4.4	4.4	4.3	5.3	4.2	4.4			
		COND US/CM		4650	4915	7510	4420	585.0	7980	924.0	10430	866.0	10450	1071			
		SOL F mg/L		0.52	0.82	0.37	3.39	0.29	0.37	0.68	0.40	0.63	0.43	0.86			
34	311	REDUCED LEVEL TOP OF PIPE 7.69m															
		REDUCED LVL GROUNDWATER m		3.7	4.41	4.06	4.17	4.94	4.72	4.59	4.45	4.31	4.25	4.22			
		PH		5.5	5.5	5.6	5.5	5.5	5.8	5.1	5.4	5.4	5.5	5.5			
		COND US/CM		361.3	302.4	285.0	267.0	146.0	74.0	910.0	315.0	284.0	253.0	188.0			
		SOL F mg/L		17.61	16.58	17.60	15.60	13.00	5.53	7.87	24.40	21.40	22.90	20.90			
35	312	REDUCED LEVEL TOP OF PIPE 4.42m															
		REDUCED LVL GROUNDWATER m		2.8	2.99	3.21	3.13	2.62	3.17	3.09	3.00	2.91	2.82	2.92			
		PH		5.9	5.8	6.2	6.0	6.0	5.8	5.9	5.5	5.6	5.5	5.5			
		COND US/CM		183.0	116.2	98.0	74.0	105.0	129.0	125.0	122.0	110.0	118.0	165.0			
		SOL F mg/L		8.18	5.52	5.18	4.28	6.93	1.64	1.32	8.57	6.58	6.93	8.22			
36	313	REDUCED LEVEL TOP OF PIPE 3.29m															
		REDUCED LVL GROUNDWATER m		1.4	1.43	1.64	1.52	1.52	1.36	1.35	1.34	1.37	1.32	1.44			
		PH		5.7	5.5	5.8	5.7	5.6	5.5	5.6	5.2	5.5	5.4	5.6			
		COND US/CM		280.8	305.1	298.0	300.0	353.0	316.0	304.0	278.0	300.0	308.0	289.0			
		SOL F mg/L		0.26	0.18	0.35	0.14	0.10	0.15	0.10	0.10	0.46	0.11	0.10			
37	314	REDUCED LEVEL TOP OF PIPE 3.18m															
		REDUCED LVL GROUNDWATER m		1.0	1.11	1.19	1.19	1.48	1.14	1.04	1.03	0.94	0.95	1.06			
		PH		6.4	6.2	6.4	6.5	6.4	6.3	6.2	5.9	6.1	5.9	6.3			
		COND US/CM		242.8	244.9	209.0	228.0	275.0	137.0	211.0	204.0	273.0	294.0	373.0			
		SOL F mg/L		0.60	0.64	0.86	0.64	0.64	0.73	0.64	0.62	0.76	0.43	0.40			
38	315	REDUCED LEVEL TOP OF PIPE 4.98m															
		REDUCED LVL GROUNDWATER m		1.3	1.42	1.38	1.47	1.86	1.49	1.38	1.34	1.30	1.24	1.33			
		PH		5.4	5.3	5.5	5.6	5.6	5.3	5.1	4.8	5.4	5.0	5.4			
		COND US/CM		194.1	173.9	159.0	142.0	145.0	141.0	127.0	151.0	206.0	238.0	256.0			
		SOL F mg/L		0.14	0.16	0.22	0.16	0.10	0.10	0.17	0.10	0.36	0.10	0.10			

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39	316	REDUCED LEVEL TOP OF PIPE 7.64m															
		REDUCED LVL GROUNDWATER m		4.6	5.24	4.64	5.15	5.78	5.52	5.49	5.34	5.20	5.01	5.07			
		PH		5.2	5.2	5.1	5.1	4.9	5.2	5.2	5.1	5.0	5.4	5.6			
		COND US/CM		930.8	922.3	1163	1118	1026	924.0	918.0	892.0	828.0	750.0	682.0			
		SOL F mg/L		0.14	0.15	0.19	0.14	0.10	0.10	0.10	0.10	0.45	0.10	0.10			

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*** END OF WATER AND VEGETATION BY GROUP REPORT ***

APPENDIX 7 –

SAMPLING PROCEDURES

The following procedures have been used by Tomago Aluminium for the sampling and/or analysis data contained in this report:

Stack Fluoride	ES.ESM.0001 LMM0006, LMM0026
Roof Vent Fluoride	ES.ESM.0002 LMM0034, LMM0026
Stack Sulfur Dioxide	ES.ESM.0011 LMM0105
Continuous stack gaseous fluoride	ES.ESM.0003, ES.ESM.0024
Ambient Fluoride	ES.ESM.0004 LMM0033
Stormwater monitoring	ES.ESM.0009, ES.ESM.0019 LMM0124, LMM0116, LMM0043, LMM0121
**Sewerage	ES.ESM.0021 LMM0132, LMM0043, LMM0116, LMM0124
Vegetation	ES.ESM.0010 LMM0010
Groundwater	ES.ESM.0014 LMM0116, LMM0096
Surface Water	ES.ESM.0008 LMM0116, LMM0096
***Meteorological monitoring	ES.ESM.0023
Ambient Sulfur Dioxide	ES.ESM.0031

NATA Accreditation No. 1904

**NATA accreditation does not cover the performance of the following services contained in this method:

- Ammonia
- Nitrate
- Dissolved Oxygen
- E.coli

*** NATA accreditation does not cover the performance of this service

APPENDIX 8 -

CUSTOMER FEEDBACK FORM

Customer Feedback Survey

Receiving regular feedback from our customers is important to us. It helps us understand if our environmental reporting is presented in a meaningful and clear manner.

Name.....

Organistaion.....

Report this feedback relates to.....

Does this report contain all the information required?

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.....

Is the report format logical and easy to follow?

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Any other comments and / or suggestions?

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Please complete the form and either fax to Environment Services Department on 0249 669100 or email robyn.parker@tomago.com.au

End of Report

Tomago Aluminium Company