REPORT N^{O} 171-00556-00

AMBIENT AIR QUALITY MONTHLY REPORT

JUNE 2017

JUNE 2017

WSP

AMBIENT AIR QUALITY MONTHLY REPORT

JUNE 2017

Lafarge Canada Inc.

Project no: 171-00556-00
Date: June 2017

WSP Canada Inc.
150-12791 Clarke Place
Richmond, BC V6V 2H9

Phone: +1 604 278 1411
Fax: +1 604 278 1042
www.wspgroup.com

Project Number: 171-00556-00

July 10, 2017

Janet Brygger
Lafarge Canada Inc.
Highway 1A
Exshaw, AB T0L 2C0

WSP Canada Inc.
150-12791 Clarke Place
Richmond, BC V6V 2H9

Phone: +1 604 278 1411
Fax: +1 604 278 1042

www.wspgroup.com
www.pbworld.com

Dear Ms. Brygger,

Subject: Ambient Air Quality Monthly Report – June 2017

The operational uptime for the meteorological systems and all analyzers was over 99% in June. There were no contraventions of the 24-hour TSP and $PM_{2.5}$ Alberta Ambient Air Quality Objectives (AAAQOs) in June at the Lagoon monitoring location.

Data collected at all of the GRIMM monitors are considered Industrial Ambient Monitors and are meant for assessing the performance of Lafarge Exshaw's Fugitive Dust Control Best Management Practices – Program. While West and Berm monitors had operational uptime greater than 99%, the operation uptime of Entrance monitor was 86.7% due to continuous instrument error from June 15th to June 19th. The Entrance and Berm GRIMM monitors exceeded the TSP AAAQO for 8 and 12 days, respectively, while the West GRIMM had no exceedances of the TSP objective.

I certify that I have reviewed and verified this report and that the information is complete, accurate and representative of the monitoring results, reporting timeframe and the specified analysis, summarization and reporting requirements.

Sincerely,

Tyler Abel, M.Sc.
Group Manager, Air Quality
Environment

SIGNATURES

PREPARED BY

Byeong Kim, B.Sc.
Air Quality Specialist, Environment

REVIEWED BY

Tyler Abel, M.Sc.
Project Manager, Air Quality Specialist, Environment

TABLE OF CONTENTS

TABLES

FIGURES

APPENDICES

1 INTRODUCTION

This report summarizes the ambient air quality and meteorological data collected at the Lagoon monitoring location and the GRIMM monitors in Exshaw, AB. The station is operated by WSP on behalf of Lafarge Canada Inc. (Lafarge) and is a requirement of Lafarge's Approval 1702-02-04. This report contains data collected between June 1, 2017 and June 30, 2017.

June's monthly report was prepared by Byeong Kim, an Air Quality Specialist with WSP, on behalf of Lafarge and was reviewed by Tyler Abel, Manager of Air Quality and Air Quality Specialist at WSP.

2 JUNE 2017 REPORT SUMMARY

This summary section provides the pertinent details on data collected and maintenance/calibration activities at each of the monitoring locations. The monitoring results for the stations are described in further detail in their corresponding sections. Maximum hourly concentrations are shown for all particulate matter size fractions, but there are no Alberta Ambient Air Quality Objectives (AAAQO) for 1-hour PM concentrations.

2.1 LAGOON STATION

Table 2-1 Lagoon station data summary

Parameter	Data Completeness (%)	1-Hour Average		24-hour Average	
		Maximum Concentration	Exceedances of AAAQO or AAAQG	Maximum Concentration	Exceedances of AAAQO
NO_2 (ppb)	100.0	17.6	0	7.2	-
SO_2 (ppb)	100.0	14.6	0	3.9	0
$PM_{2.5}$ (µg/m^3)	100.0	30.6	-	8.2	0
PM_{10} (µg/m^3)	100.0	238.0	-	60.4	-
TSP (µg/m^3)	100.0	367.7	-	88.1	0
Temperature (°C)	99.6	28.4	-	20.4	-
Wind Speed (km/hr) /Direction	99.6	38.7/W	-	29.6/WSW	-
Precipitation (mm)	100.0	9.0	-	13.0	-

Data Quality Notes:

→ There were no exceedances of any AAAQOs.

Calibration/Maintenance Notes:

→ The precipitation sensor had 100% uptime. The other meteorological instruments underwent 2 hours of maintenance work on June 15th and experienced one hour of instrument error on June 22nd, resulting in 99.6% uptime for the month of June.

2.2 WEST GRIMM

The GRIMM monitors are Industrial Ambient Monitors meant to aid Lafarge in assessing the performance of their Fugitive Dust Control Best Management Practices – Program (FDCBMP-P). The AAAQO are used as Guidelines to evaluate the performance of the FDCBMP-P.

Table 2-2 West station data summary

Parameter	Data Completeness (%)	1-Hour Average		24-hour Average	
		Maximum Concentration	Exceedances of Guidelines	Maximum Concentration	Exceedances of Guidelines
$PM_{2.5}$ (µg/m^3)	100.0	23.3	-	9.1	0
PM_{10} (µg/m^3)	100.0	195.4	-	26.7	-
TSP (µg/m^3)	100.0	252.6	-	55.2	0

Data Quality Notes:

→ There were no exceedances of any AAAQOs.

Calibration/Maintenance Notes:

→ The monitor had 100% uptime for the month of June.

2.3 BERM GRIMM

The GRIMM monitors are Industrial Ambient Monitors meant to aid Lafarge in assessing the performance of their FDCBMP-P. The AAAQO are used as Guidelines to evaluate the performance of the FDCBMP-P.

Table 2-3 Berm station data summary

Parameter	Data Completeness (%)	1-Hour Average		24-hour Average	
		Maximum Concentration	Exceedances of Guidelines	Maximum Concentration	Exceedances of Guidelines
$PM_{2.5}$ (µg/m^3)	99.9	62.0	-	16.9	0
PM_{10} (µg/m^3)	99.9	360.6	-	109.4	-
TSP (µg/m^3)	99.9	1213.2	-	446.7	12

Data Quality Notes:

→ There were 12 exceedances of the 24-hour TSP Guideline.

Calibration/Maintenance Notes:

→ The monitor had 99.9% uptime for the month due to one hour of instrument error on June 15th.

2.4 ENTRANCE GRIMM

The GRIMM monitors are Industrial Ambient Monitors meant to aid Lafarge in assessing the performance of their FDCBMP-P. The AAAQO are used as Guidelines to evaluate the performance of the FDCBMP-P.

Table 2-4 Entrance station data summary

Parameter	Data Completeness (%)	1-Hour Average		24-hour Average	
		Maximum Concentration	Exceedances of Guidelines	Maximum Concentration	Exceedances of Guidelines
$PM_{2.5}$ (µg/m^3)	86.7	41.0	-	16.1	0
PM_{10} (µg/m^3)	86.7	266.1	-	86.6	-
TSP (µg/m^3)	86.7	744.4	-	173.5	8

Data Quality Notes:

→ There was 8 exceedance of the 24-hour TSP Guideline.

Calibration/Maintenance Notes:

→ The monitor had 86.7% uptime for the month of June due to instrument error resulting in data loss from June 15th to 19th.

3 LAGOON STATION

The Lagoon trailer contains NO_x, SO_2, TSP, PM_{10}, and $PM_{2.5}$ analyzers as well as meteorological sensors, and is shown in Figure 3-1. An ambient air quality station has been at this location since 2002, providing a long-term data record for air quality in the Exshaw area.

This section provides a summary of the monitoring activities for the Lagoon ambient air quality station, including: a table of instrumentation (Table 3-1), site visit notes, a wind rose (Figure 3-3) and tables and graphs illustrating the monitoring results for June 2017.

All of the monitors comply with Alberta Environment and Parks Air Monitoring Directive (2016).

Table 3-1 Instrumentation List at the Lagoon Station

Equipment Description	Parameter Measured
MetOne BAM-1020 FRM Continuous Particulate Monitor	$PM_{2.5}$ Concentrations
MetOne BAM-1020 Continuous Particulate Monitor	PM_{10} Concentrations
MetOne BAM-1020 Continuous Particulate Monitor	TSP Concentrations
TEI 42C	Oxides of Nitrogen
Teledyne API 102A	Sulphur Dioxide
MetOne 130 Rain/Snow Gauge	Precipitation
MetOne Wind Sensor	Wind Speed
	Wind Direction
MetOne Ambient Temperature Sensor	Ambient Temperature

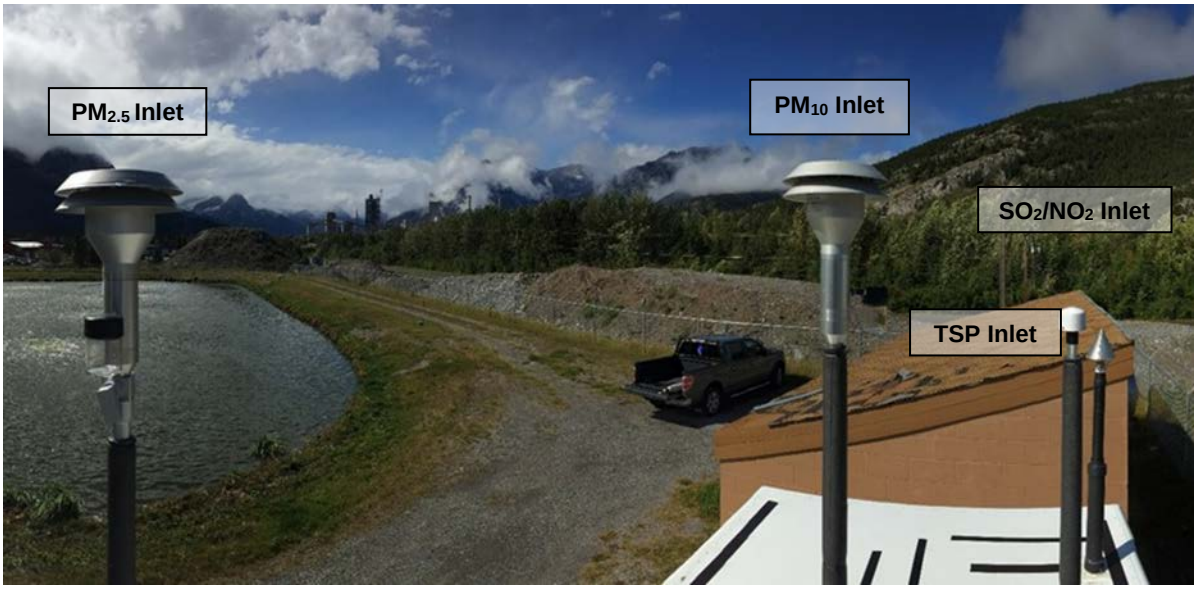


Figure 3-1 Inlets on the top of WSP's Lagoon monitor

3.1 SITE VISIT NOTES

A summary of site visit notes for each of the monitors is provided in this section.

3.1.1 NO_X MONITORING

The NO_x monitor underwent monthly calibration on June 15th and had 100% uptime.

3.1.2 SO_2 MONITORING

The SO_2 monitor underwent monthly calibration on June 15th and had 100% uptime.

3.1.3 PM MONITORING

All BAM monitors underwent monthly calibration on June 15th, 2017 and had 100% uptime for the month.

3.1.4 METEOROLOGICAL MONITORING

The precipitation sensor had 100% uptime. The other meteorological instruments underwent 2 hours of maintenance work and one hour of instrument error on June 22nd, resulting in 99.6% uptime for the month of June.

3.2 MONITORING RESULTS AND TRENDS

The following wind rose (Figure 3-3) illustrates the frequency of wind speed by wind direction for the month of June 2017. Table 3-2 summarizes the hourly and daily concentrations recorded in June 2017. Figure 3-4 graphically illustrates the time series for hourly concentrations as well as wind speed and direction, while Figure 3-5 shows daily average concentrations recorded during June 2017 for the pollutants listed in Table 3-2.

Since flooding in 2013, the Municipal District has built up stockpiles of dirt on the far western edge of the wastewater treatment facility as a berm. During the summer of 2016, the Municipal District has planted grass seed on these stockpiles in an effort to reduce the amount of fugitive dust generated. Figure 3-2 shows the extent of the grass planted by the MD. It is WSP's understanding that in June there was active work being performed by the Municipal District on this berm that likely impacted particulate matter readings during the month.

Figure 3-2 Grass planted on the stockpiles near the Lagoon monitor. Photo taken July 12, 2016.

The wind rose (Figure 3-3) indicates that the winds predominantly came from the west. The wind rose for June 2017 follows the general orientation of the valley. As typical of the wind characteristics at the Lagoon site, the westerly winds were much more intense than the easterly winds.

Table 3-2 Summary of June 2017 data at Lagoon

Parameter	Objectives		Station	Exceedances		Monthly Average	1-hour					24-hour		Operational Time (Percent)
	1-hr	24-hr		1-hr	24-hr		Maximum Concentration/ Meteorological Variable	Day	Hour	Wind Speed (km/hr)	Wind Direction (degrees)	Maximum Concentration/ Meteorological Variable	Day	
NO_2 (ppb)	159	-	Lagoon	0	-	4.9	17.6	26	2	10.4	227.7	7.2	26	100.0
SO_2 (ppb)	172	48	Lagoon	0	0	1.3	14.6	20	10	19.1	266.7	3.9	2	100.0
$PM_{2.5}$ (µg/m^3)	-	30	Lagoon	-	0	2.8	30.6	26	17	20.0	252.8	8.2	26	100.0
PM_{10} (µg/m^3)	-	-	Lagoon	-	-	26.1	238.0	26	17	20.0	252.8	60.4	26	100.0
TSP (µg/m^3)	-	100	Lagoon	-	0	39.7	367.7	26	17	20.0	252.8	88.1	26	100.0
Temperature (°C)	-	-	Lagoon	-	-	14.7	28.4	26	13	25.3	253.1	20.4	26	99.6
Wind Speed/Direction	-	-	Lagoon	-	-	15.9	38.7/W	2	17	38.7	261.7	29.6/WSW	2	99.6
Precipitation (mm)	-	-	Lagoon	-	-	0.1	9.0	8	17	18.1	274.0	13.0	14	100.0

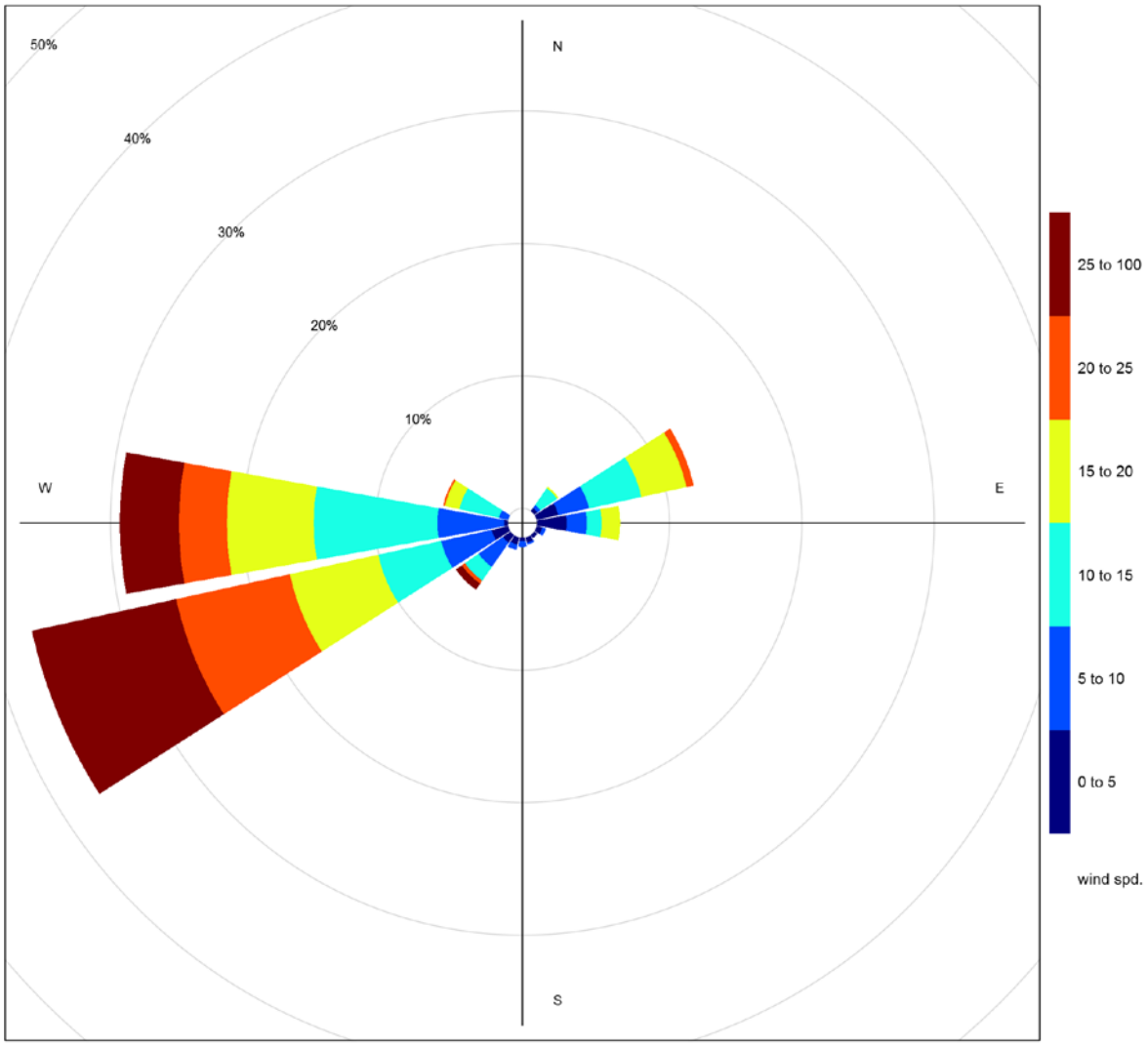


Figure 3-3 June 2017 wind rose from the Lagoon Station

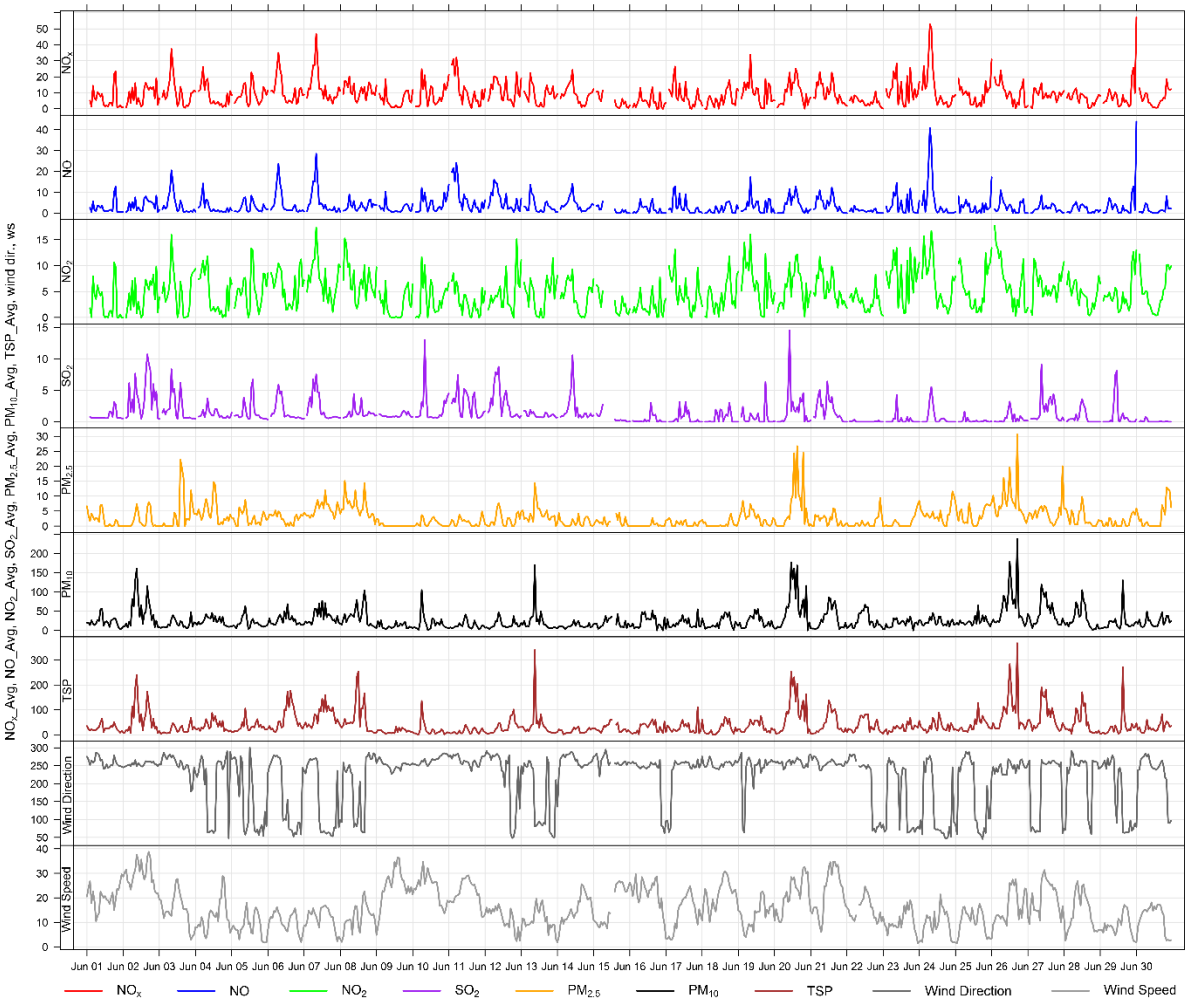


Figure 3-4 1-hour concentrations of NO_x, SO_2, particulate matter, wind direction and wind speed at the Lagoon monitor

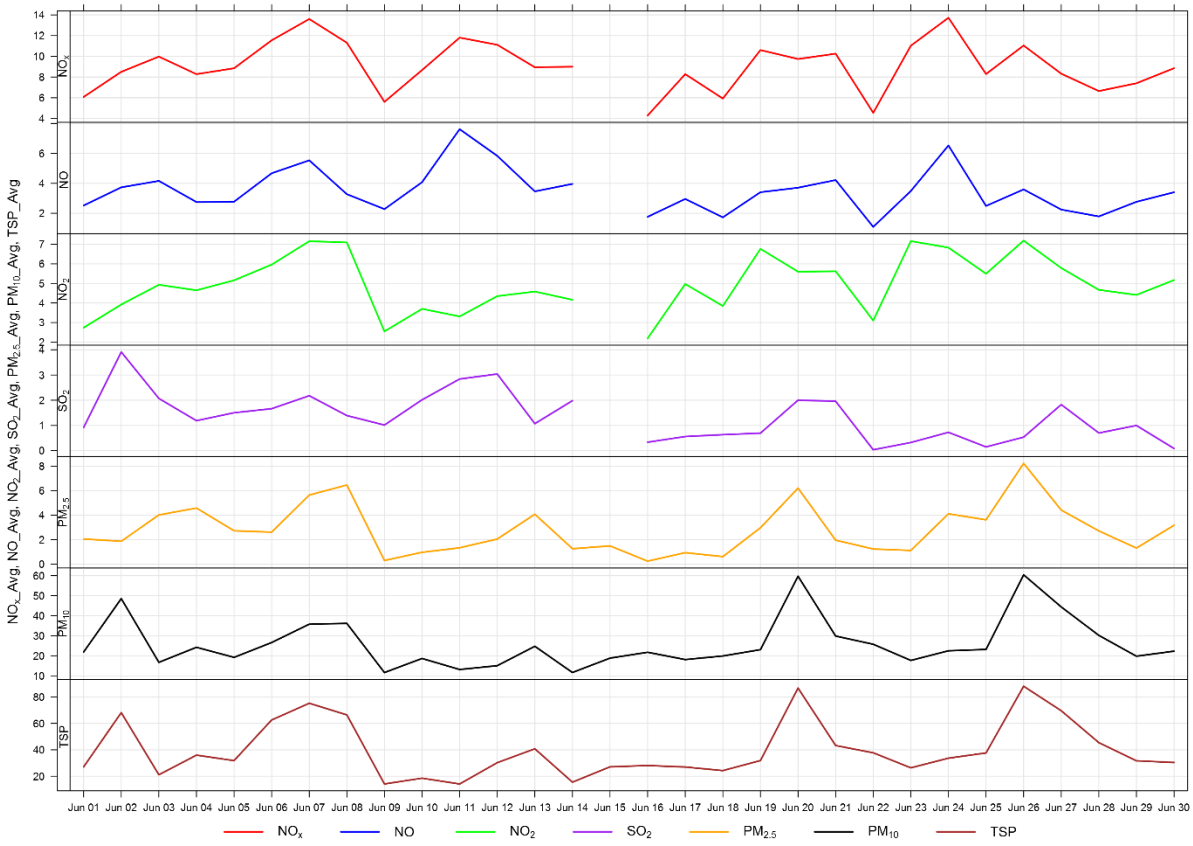


Figure 3-5 24-hour concentrations of NO_x, SO_2, and particulate matter at the Lagoon monitor

Figure 3-6 through Figure 3-8 show the variation in concentrations over various time averaging periods for PM, SO_2 and NO_x. The particulate matter plot in Figure 3-6 shows that PM_{10} and TSP concentrations tended to rise through the morning before peaking mid-day and decreasing during the evening. PM_{10} and TSP are generally associated with dust from fugitive sources.

Figure 3-7 shows the variation of SO_2 over various time periods. SO_2 concentrations were extremely low in June. Figure 3-8 shows the variation of NO_x, NO and NO_2, with the peak of all three pollutants occurring in the morning between 6 am and noon. This may be indicative of a peak in traffic.

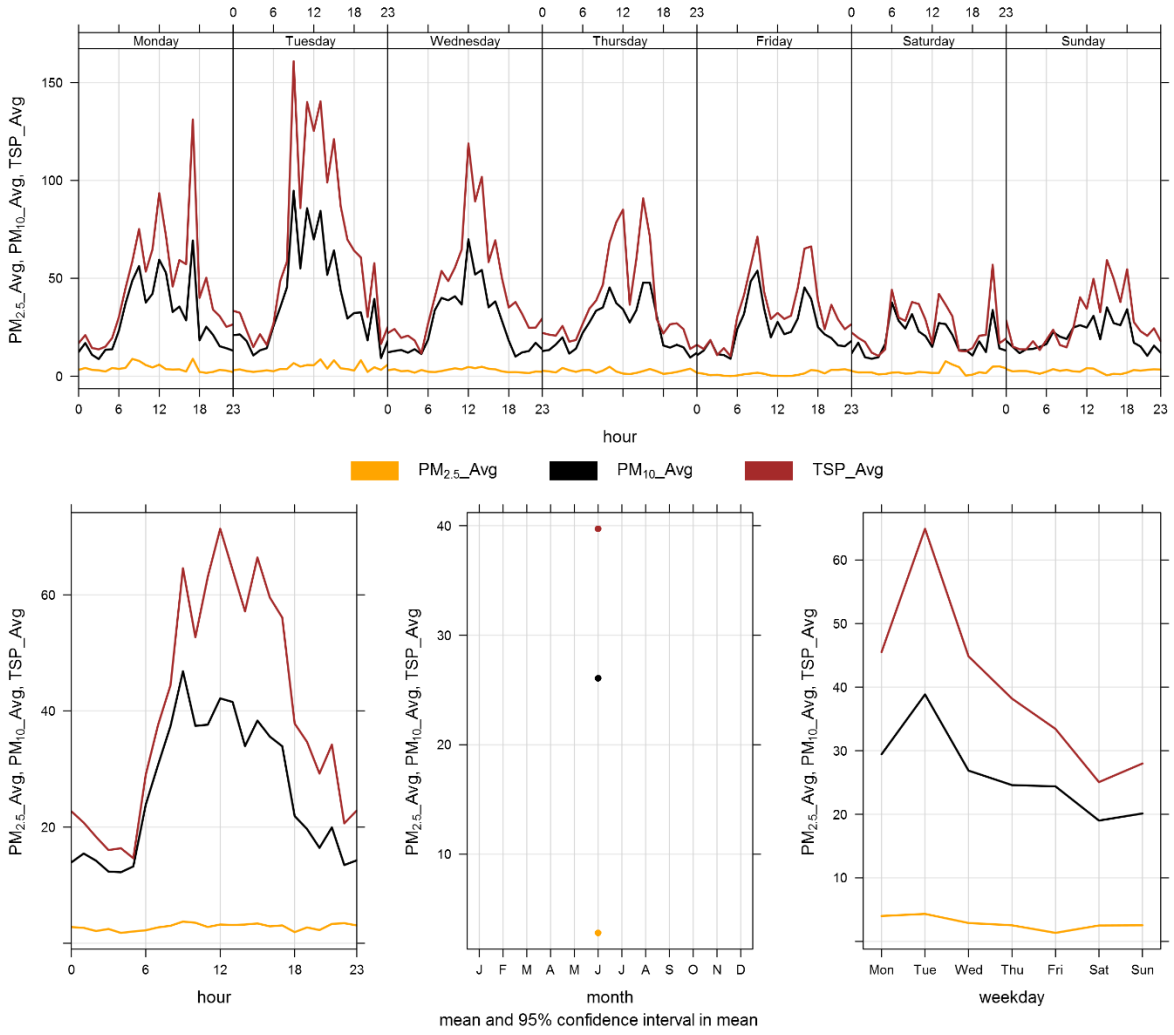


Figure 3-6 Lagoon Monitor particulate matter time variation

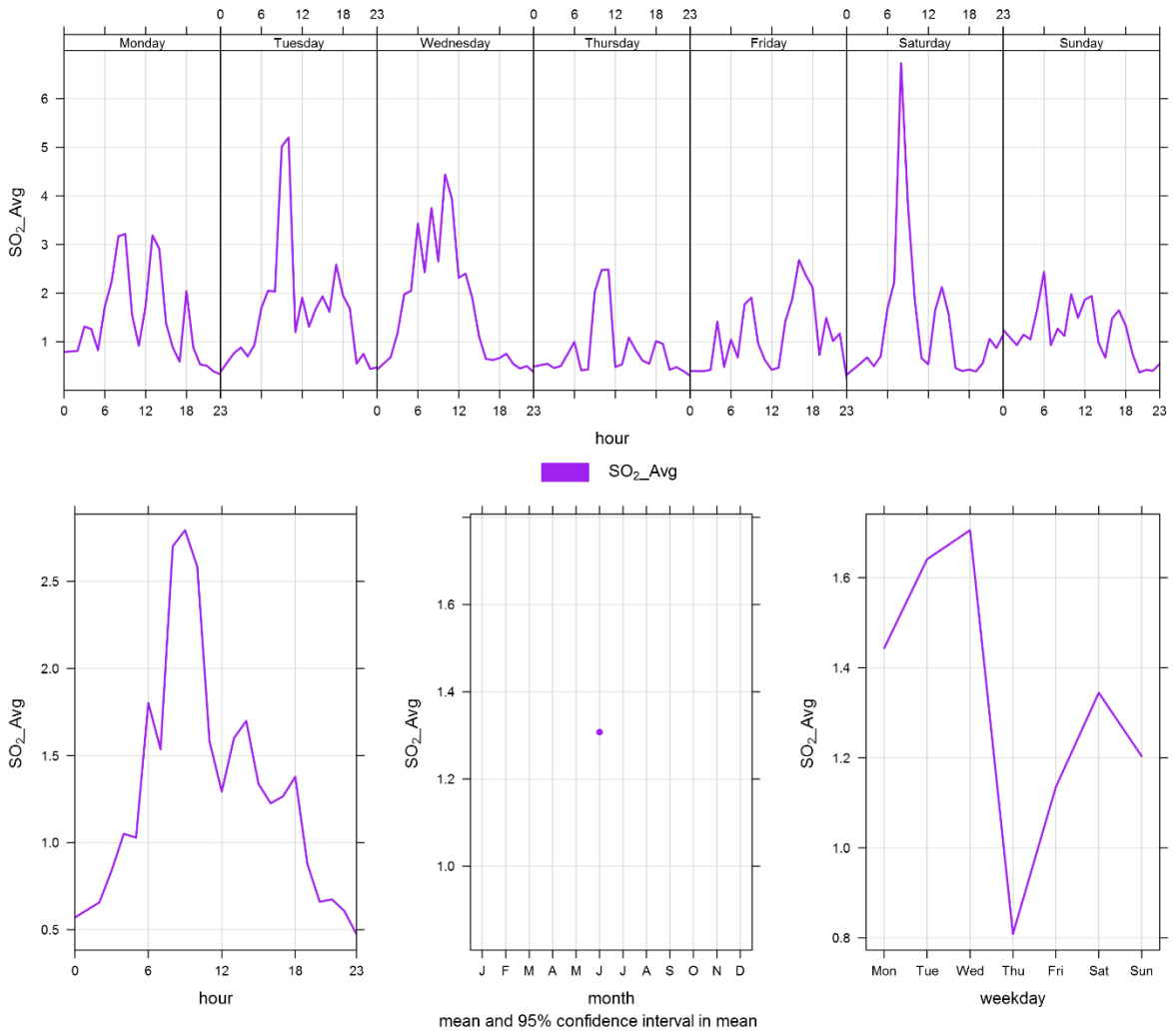


Figure 3-7 Lagoon Monitor SO_2 time variation

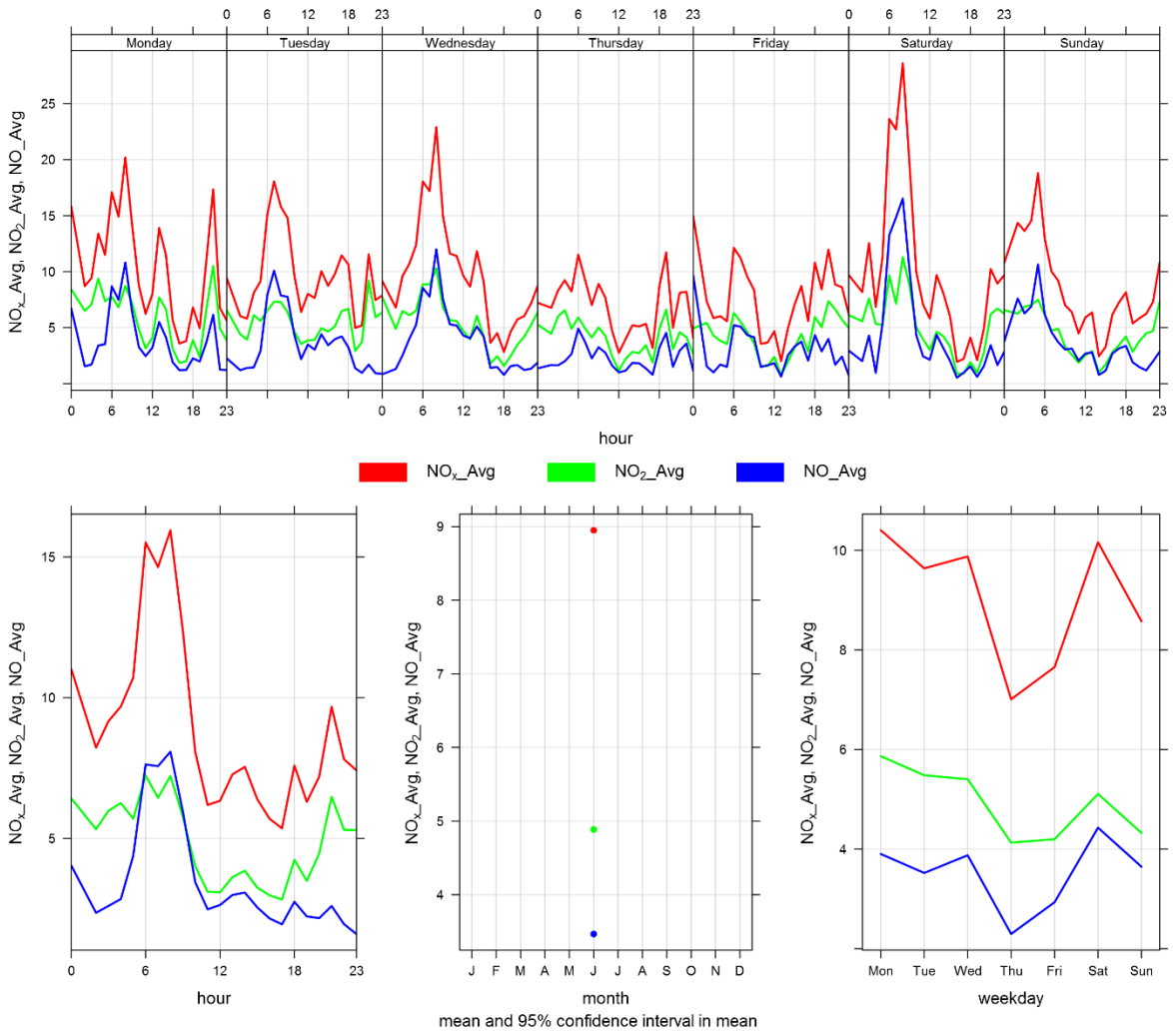


Figure 3-8 Lagoon Monitor NO_x time variation

4 WEST GRIMM

4.1 SITE VISIT NOTES

Table 4-1 indicates the equipment that is installed at the West monitoring location. During the month of June, the West GRIMM had 100% uptime.

Table 4-1 Equipment at the West monitoring location

Equipment Description	Parameter Measured
GRIMM 365 Continuous Particulate Monitor	$PM_{2.5}$, PM_{10}, TSP Concentrations

4.2 MONITORING RESULTS AND TRENDS

The West GRIMM was installed in its current location in order to monitor “background” PM concentrations since the predominant wind pattern is from west to east in the valley. As indicated in Figure 3-3, the majority of winds came from the west during June. Table 4-2 summarizes the maximum 1-hour and 24-hour concentrations recorded over the course of the month.

Figure 4-1 and Figure 4-2 show the hourly and daily $PM_{2.5}$, PM_{10} and TSP concentrations recorded over the month. There were no exceedances of the 24-hour $PM_{2.5}$ guideline (30 µg/m^3) or the 24-hour TSP guideline (100 µg/m^3).

Table 4-2 Summary of June 2017 data at the West GRIMM

Parameter	Guideline		Station	Exceedances		Monthly Average	Maximum 1-hour					Maximum 24-hour		Operational Time (Percent)
	1-hr	24-hr		1-hr	24-hr		Maximum Concentration	Day	Hour	Wind Speed (km/hr)	Wind Direction (degrees)	Maximum Concentration	Day	
$PM_{2.5}$ ($\mu g/m^3$)	-	30	West	-	0	3.5	23.3	26	8	11.4	226.2	9.1	8	100.0
PM_{10} ($\mu g/m^3$)	-	-	West	-	-	9.9	195.4	26	8	11.4	226.2	26.7	26	100.0
TSP ($\mu g/m^3$)	-	100	West	-	0	20.7	252.6	26	8	11.4	226.2	55.2	8	100.0

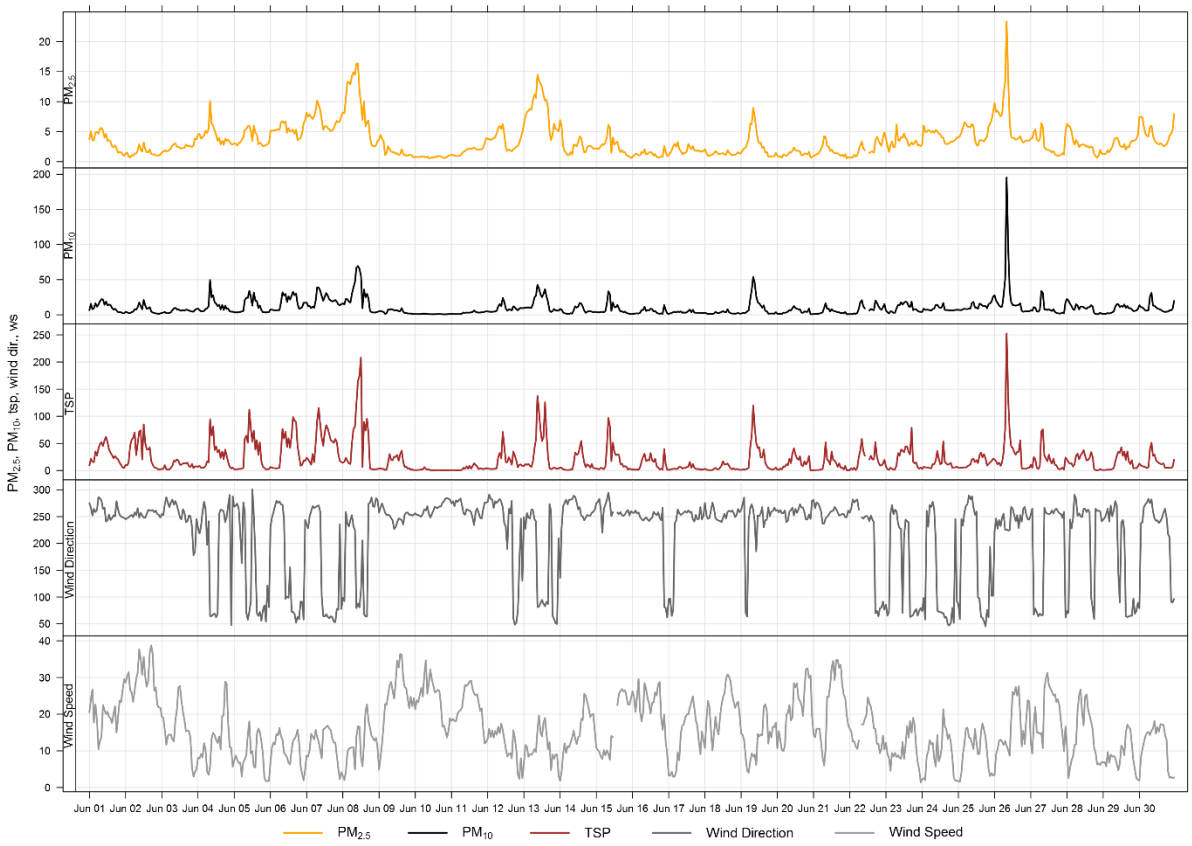


Figure 4-1 1-hour particulate matter concentrations at the West monitor

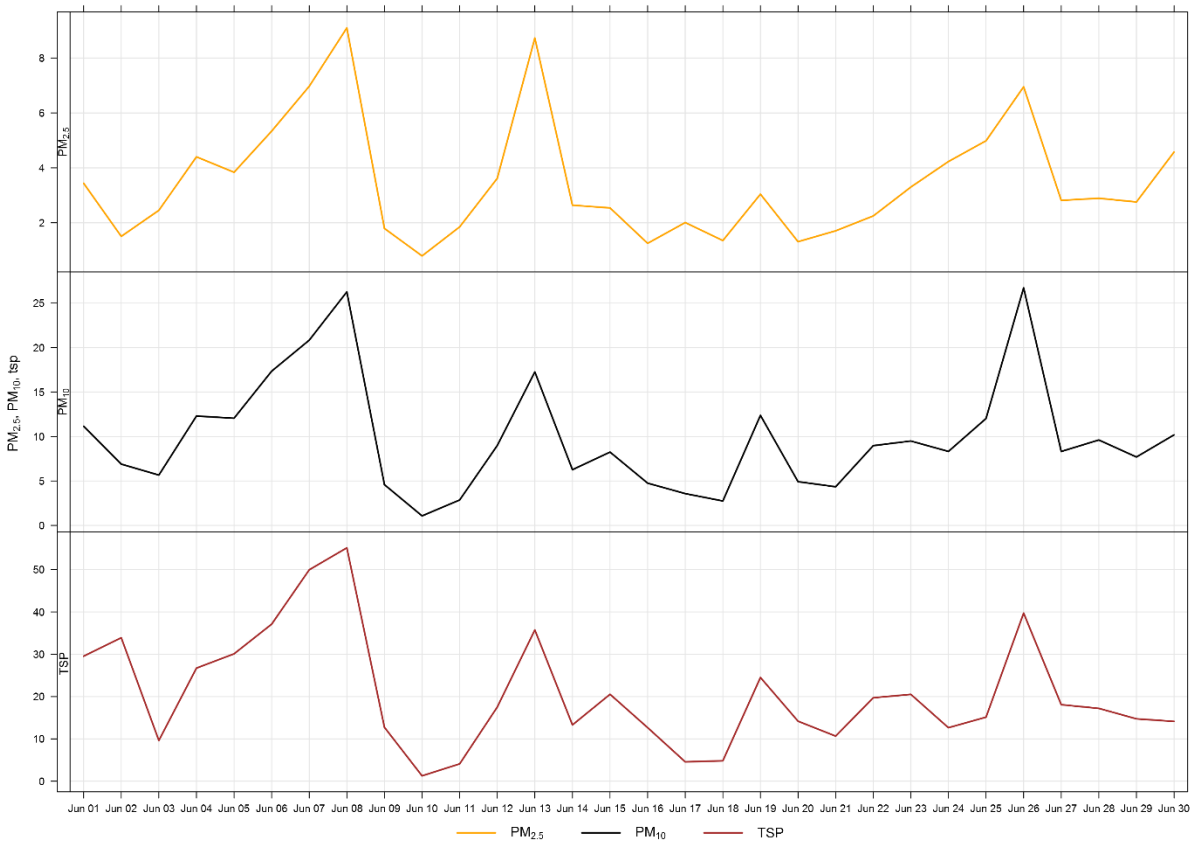


Figure 4-2 24-hour particulate matter concentrations at the West monitor

Figure 4-3 illustrates the hourly PM concentrations recorded at the West monitor, averaged over different time periods. The plot across the top shows the variation of PM over the course of a week, while the bottom three plots show the changes in PM over the course of a day, month and weekday, respectively. Figure 4-3 is based on data collected during June 2017 and indicates a strong relationship between TSP and hours which Lafarge is typically operational. Due to the proximity of the West monitor to the highway, the daily variations in PM may also be a result of higher traffic volume during daylight hours.

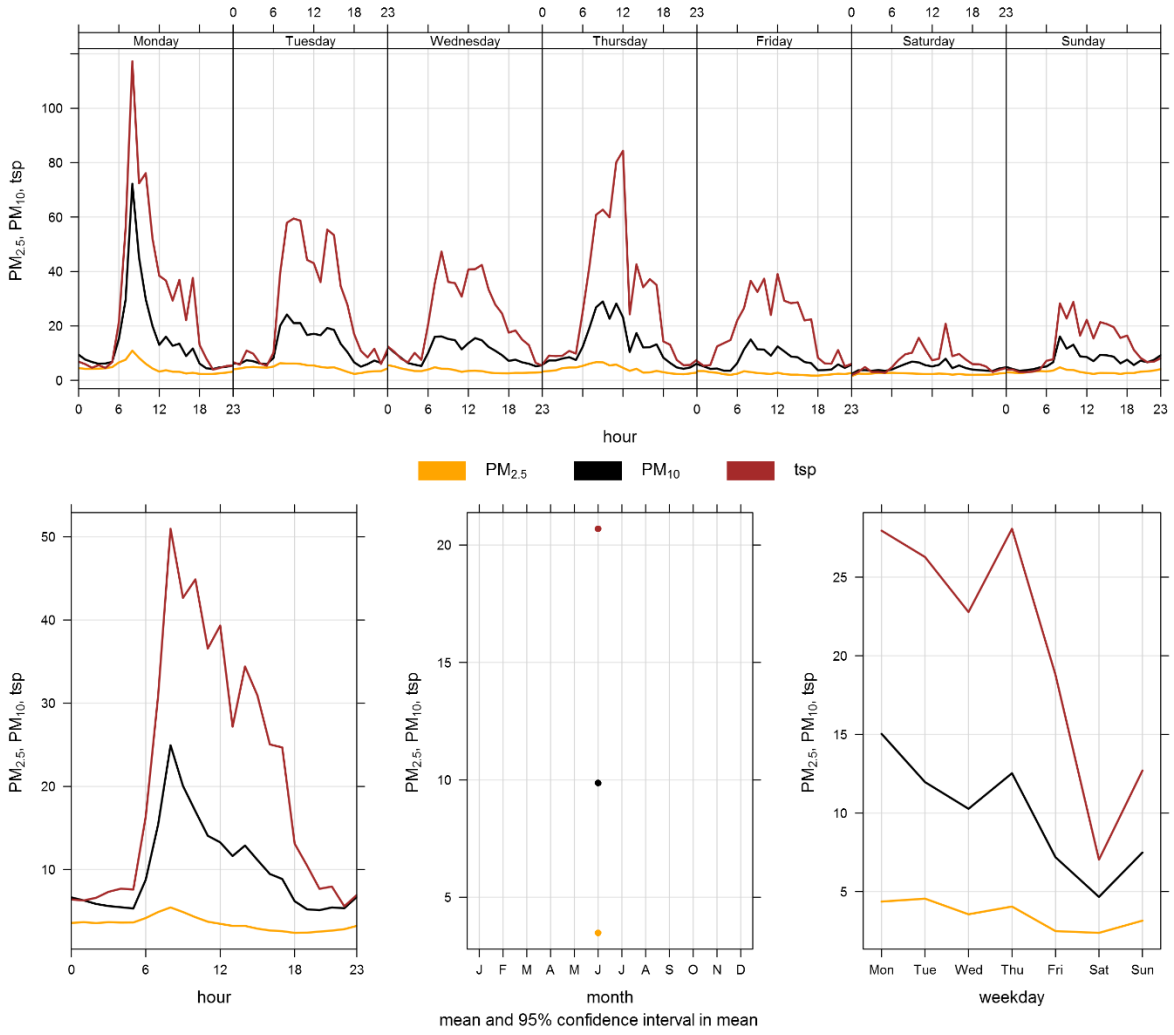


Figure 4-3 West particulate matter time variation

5 BERM GRIMM

5.1 SITE VISIT NOTES

This station was found to be in good operating condition. During the month of June, the Berm GRIMM had 99.9% uptime.

Table 5-1 Equipment at the Berm monitoring location

Equipment Description	Parameter Measured
GRIMM 365 Continuous Particulate Monitor	$PM_{2.5}$, PM_{10}, TSP Concentrations

5.2 MONITORING RESULTS AND TRENDS

The Berm monitor was placed at its current location as a result of the dispersion modelling conducted for the facility in 2009. Table 5-2 summarizes the maximum 1-hour and 24-hour PM concentrations recorded during the month. The monitor had 99.9% uptime during the month of June due to one hour of an instrument error resulting in data loss on June 15th.

Figure 5-1 and Figure 5-2 show the hourly and daily $PM_{2.5}$, PM_{10} and TSP concentrations recorded over the month. Table 5-3 summarizes the recorded exceedances.

During June, there were 12 exceedances of the 24-hour TSP Guideline (100 µg/m^3). Historically, the Berm monitor records an average of 9 and 0 exceedances of the 24-hour TSP and $PM_{2.5}$ Guidelines respectively, during the month of June. The largest number of TSP exceedances recorded during June occurred in 2016, which had 18 days that exceeded the Guideline. The fewest number of TSP exceedances was recorded in June 2013 and 2014, which had 0 day that exceeded the Guideline.

It should also be noted that the GRIMM monitors become more conservative in the reported PM concentrations as the size fraction increases. The $PM_{2.5}$ size fraction has been shown to match other regulatory approved $PM_{2.5}$ monitors, but the TSP concentrations recorded by the GRIMM tend to be higher than regulatory approved monitors (Levelton, 2015).

The Berm monitor is located along a ridge at the edge of the Lafarge property and is in an area where on-site trucks drive through site, which can create fugitive dust. Quarry blasting also has the potential to impact short term PM immediately following a blast. The highest TSP concentrations in the month correspond to the high wind speed events recorded in June.

Table 5-2 Summary of June 2017 data at the Berm GRIMM

Parameter	Guideline		Station	Exceedances		Monthly Average	Maximum 1-hour					Maximum 24-hour		Operational Time (Percent)
	1-hr	24-hr		1-hr	24-hr		Maximum Concentration	Day	Hour	Wind Speed (km/hr)	Wind Direction (degrees)	Maximum Concentration	Day	
$PM_{2.5}$ (µg/m^3)	-	30	Berm	-	0	6.4	62.0	27	15	25.1	255.9	16.9	27	99.9
PM_{10} (µg/m^3)	-	-	Berm	-	-	38.5	360.6	27	14	26.2	261.5	109.4	27	99.9
TSP (µg/m^3)	-	100	Berm	-	12	111.8	1213.2	2	9	37.7	248.2	446.7	2	99.9

Table 5-3 Days exceeding the Guideline for TSP at the Berm Monitor

Date	TSP (ug/m^3)	$PM_{2.5}$ (ug/m^3)	Average Wind Direction	Average Wind Speed	Average RH	Root Cause (Provided by Lafarge)
Berm						
6/1/2017	113.7	-	257.9	20.3	48.0	high wind event
6/2/2017	446.7	-	254.5	29.6	35.6	high wind event
6/9/2017	140.8	-	248.7	24.6	48.9	high wind event
6/16/2017	111.1	-	251.2	22.4	46.9	high wind event
6/17/2017	156.7	-	253.0	13.4	45.4	
6/18/2017	194.7	-	254.0	21.4	39.7	high wind event
6/20/2017	196.9	-	257.3	21.5	38.0	high wind event
6/21/2017	204.1	-	258.5	22.4	48.0	high wind event
6/22/2017	156.3	-	254.5	15.4	41.1	
6/26/2017	241.1	-	246.3	16.3	41.7	
6/27/2017	346.1	-	263.6	20.0	31.5	
6/30/2017	100.3	-	255.6	11.7	48.0	
Total # of Exceedances	**12**	**0**				
Maximum # of Exceedances (June)	**18 (2016)**	**0 (2010 ~ 2016)**				
Average # of Exceedances (June)	**9**	**0**				
Minimum # of Exceedances (June)	**0 (2013, 2014)**	**0 (2010 ~ 2016)**				

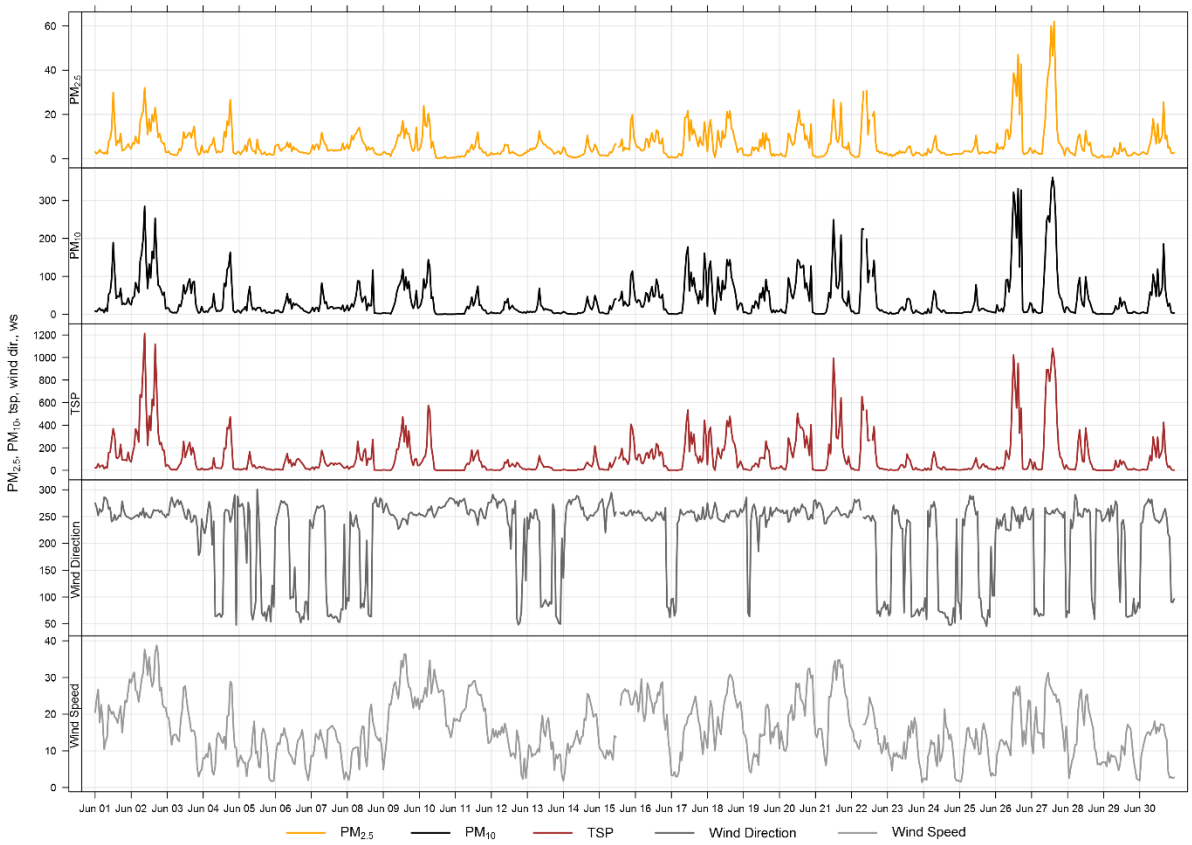


Figure 5-1 1-hour particulate matter concentrations recorded at the Berm monitor

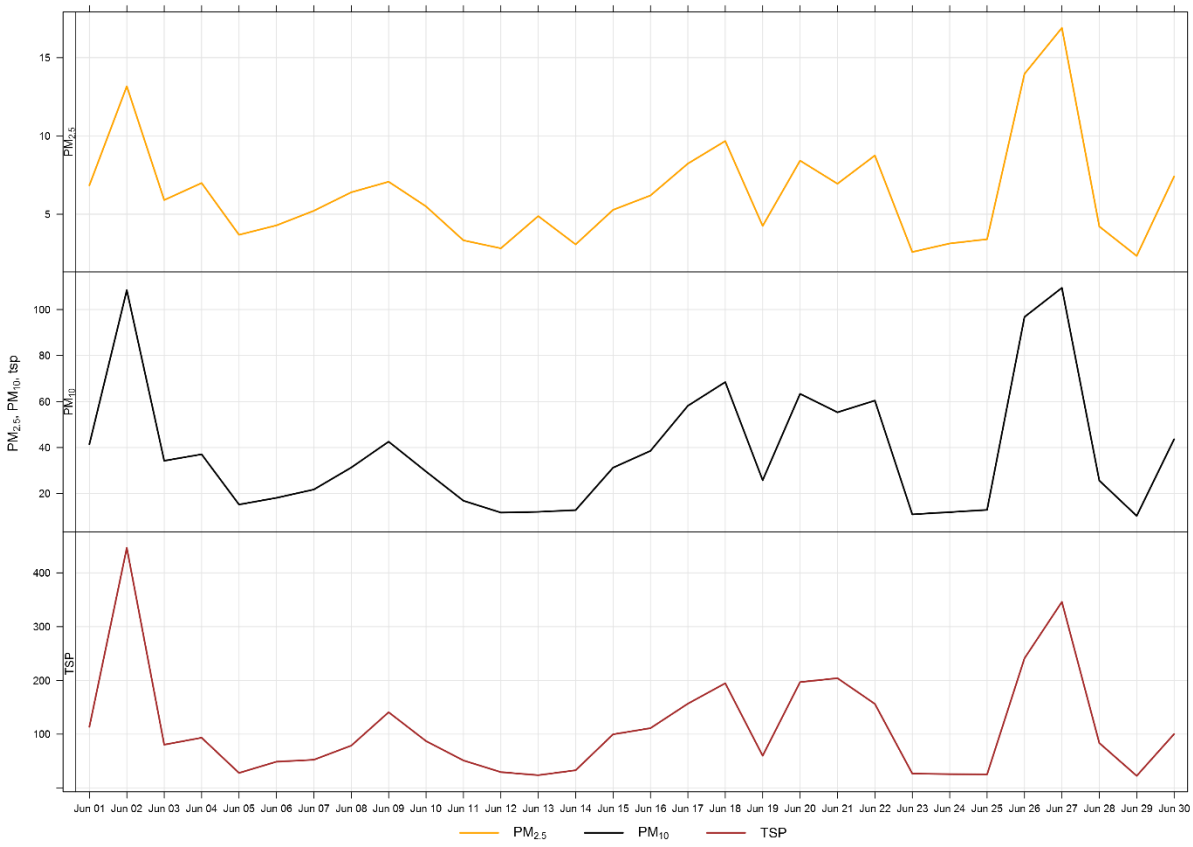


Figure 5-2 24-hour particulate matter concentrations recorded at the Berm monitor

Figure 5-3 shows the wind rose for the 12 days which recorded a TSP exceedance. This wind rose shows that the winds predominantly come from the west and over 25 km/hr.

Figure 5-4 shows the variation of PM recorded at the Berm monitor over various time averaging periods. Similar to the Entrance monitor, the Berm, on average, records elevated PM concentrations during standard operating hours of Lafarge.

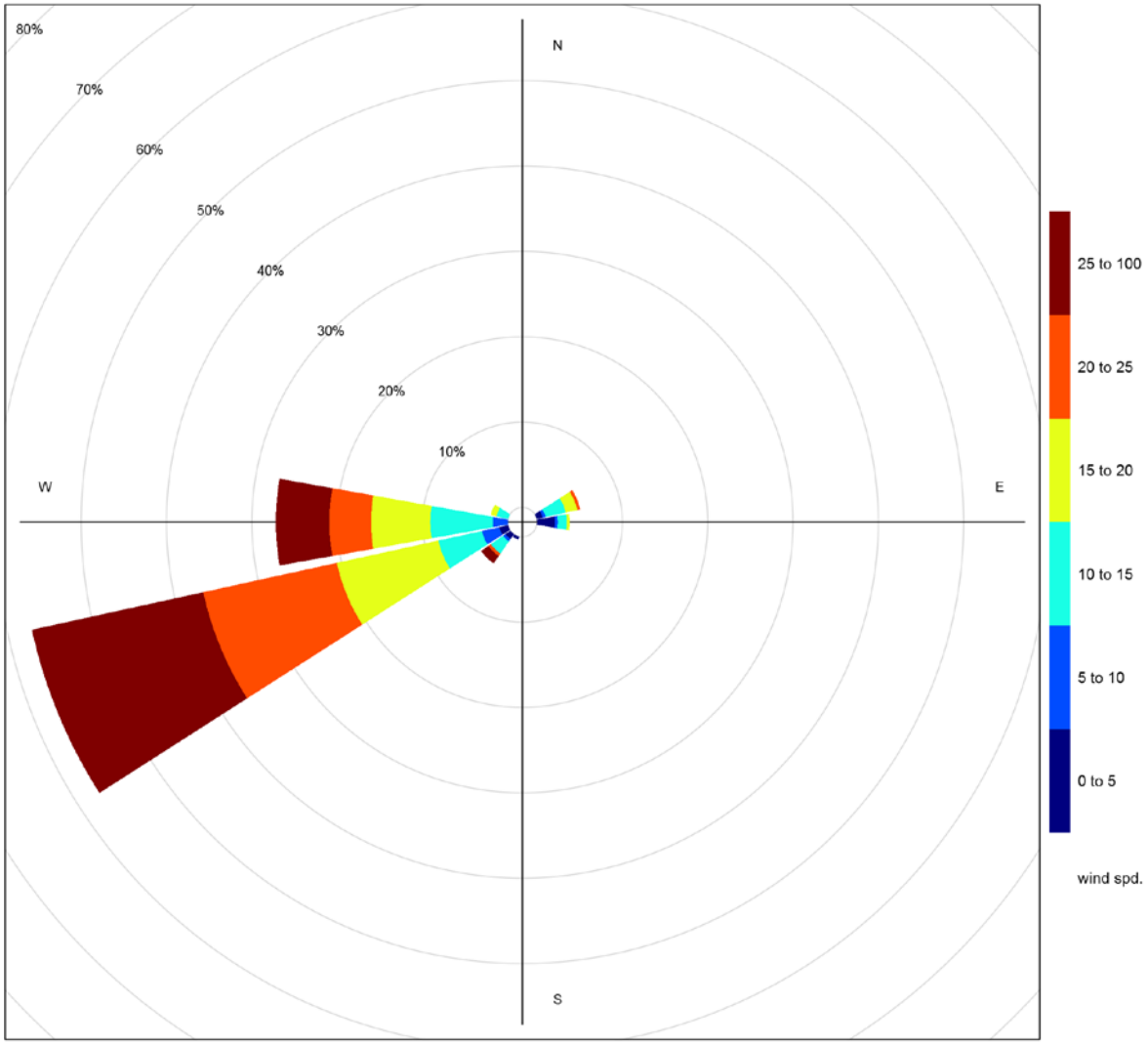


Figure 5-3 Wind rose for TSP exceedance days recorded at the Berm GRIMM

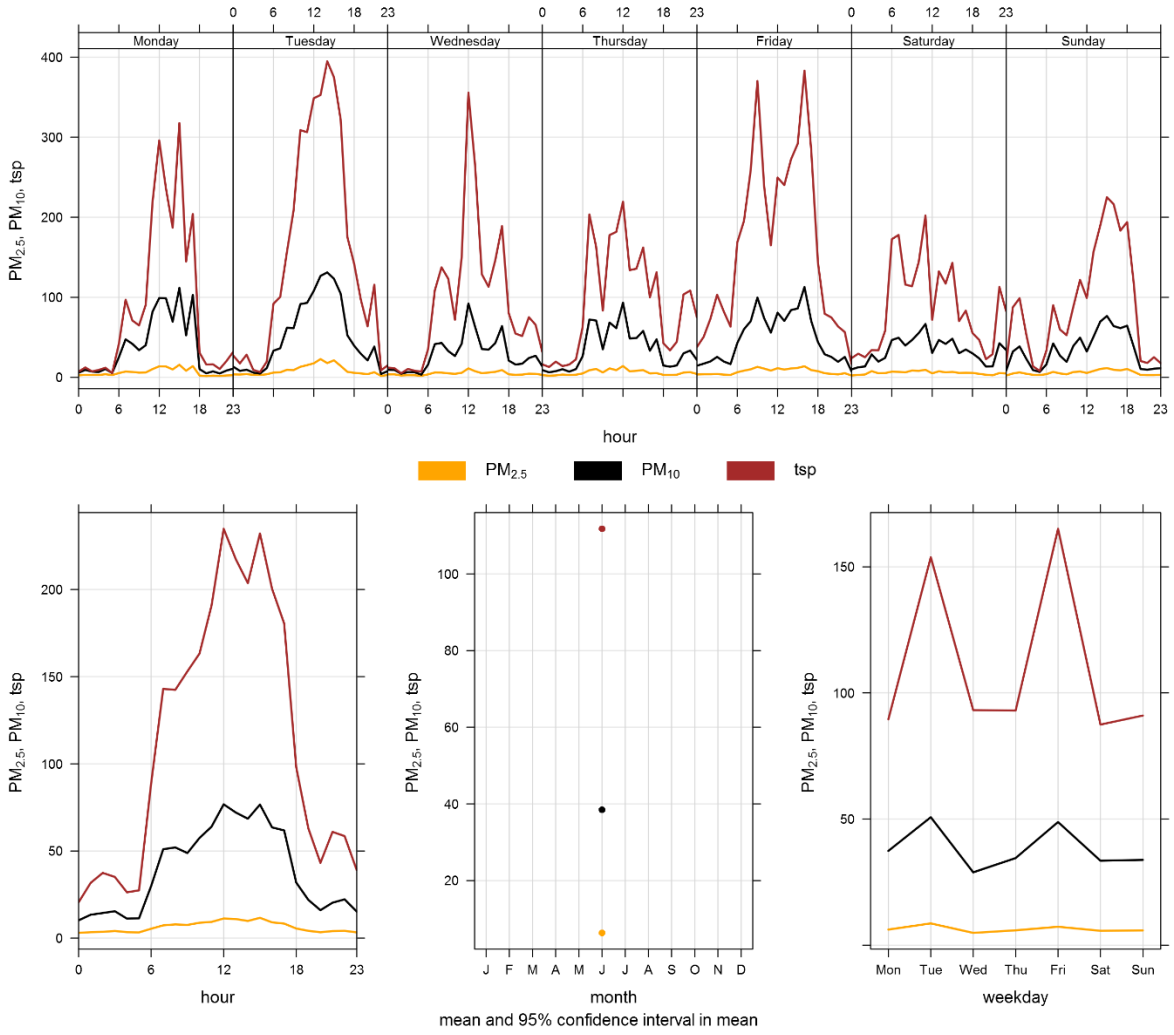


Figure 5-4 Berm particulate matter time variation

6 ENTRANCE GRIMM

6.1 SITE VISIT NOTES

During the month of June, the Entrance GRIMM had 86.7% uptime due to several days of instrument error.

Table 6-1 Equipment at the Entrance monitoring location

Equipment Description	Parameter Measured
GRIMM 365 Continuous Particulate Monitor	$PM_{2.5}$, PM_{10}, TSP Concentrations

6.2 MONITORING RESULTS AND TRENDS

The Entrance monitor was placed at its current location as a result of dispersion modelling conducted in 2009. This area was indicated as being the area where the maximum PM concentrations were expected. Table 6-2 summarizes the maximum 1-hour and 24-hour PM concentrations recorded during the month. The monitor had 86.7% uptime during the month of June due to instrument error resulting in data loss from June 15th to 19th.

Figure 6-1 and Figure 6-2 show the hourly and daily $PM_{2.5}$, PM_{10} and TSP concentrations recorded over the month. Table 6-3 summarizes the recorded exceedances.

During June, there were 8 exceedances of the 24-hour TSP Guideline (100 µg/m^3). Historically, the Entrance monitor records an average of 15 and 0 exceedances of the 24-hour TSP and $PM_{2.5}$ Guidelines respectively, during the month of June. The largest number of TSP exceedances recorded during June occurred in 2014, which had 20 days that exceeded the Guideline. The previous fewest number of TSP exceedances recorded during June occurred in 2011, which had 9 days that exceeded the Guideline.

It should also be noted that the GRIMM monitors become more conservative in the reported PM concentrations as the size fraction increases. The $PM_{2.5}$ size fraction has been shown to match other regulatory approved $PM_{2.5}$ monitors, but the TSP concentrations recorded by the GRIMM tend to be higher than regulatory approved monitors (Levelton, 2015).

The Entrance monitor is impacted by fugitive dust from plant activities, and the high wind events described under the Berm monitor section. Trucks also queue nearby the Entrance monitor while waiting to be loaded with material. Additionally, the monitor is closely located to Highway 1A. Traffic, particularly large trucks, can create dust while crossing over the railway tracks. This can all lead to the monitor recording high TSP concentrations, which are typically associated with fugitive dust sources.

Figure 6-3 shows the wind rose for the days which exceeded the TSP Guideline at the Entrance GRIMM. During the exceedance day, winds were predominantly from the west and above 25 km/hr.

Table 6-2 Summary of June 2017 data at the Entrance GRIMM

Parameter	Guideline		Station	Exceedances		Monthly Average	Maximum 1-hour					Maximum 24-hour		Operational Time (Percent)
	1-hr	24-hr		1-hr	24-hr		Maximum Concentration	Day	Hour	Wind Speed (km/hr)	Wind Direction (degrees)	Maximum Concentration	Day	
$PM_{2.5}$ (µg/m^3)	-	30	Entrance	-	0	8.7	41.0	8	3	9.6	237.1	16.1	8	86.7
PM_{10} (µg/m^3)	-	-	Entrance	-	-	41.7	266.1	7	7	13.8	269.6	86.6	26	86.7
TSP (µg/m^3)	-	100	Entrance	-	8	89.7	744.4	7	7	13.8	269.6	173.5	7	86.7

Table 6-3 Days exceeding the Guideline for TSP at the Entrance Monitor

Date	TSP (ug/m^3)	$PM_{2.5}$ (ug/m^3)	Average Wind Direction	Average Wind Speed	Average RH	Root Cause (Provided by Lafarge)
Entrance						
6/2/2017	144.1	-	254.5	29.6	35.6	high wind event
6/7/2017	173.5	-	29.9	11.8	45.0	
6/8/2017	135.7	-	271.7	11.8	67.0	
6/20/2017	138.3	-	257.3	21.5	38.0	high wind event
6/21/2017	126.9	-	258.5	22.4	48.0	high wind event
6/26/2017	170.9	-	246.3	16.3	41.7	
6/27/2017	111.4	-	263.6	20.0	31.5	
6/28/2017	153.1	-	257.7	14.2	52.8	
Total # of Exceedances	**8**	**0**				
Maximum # of Exceedances (June)	**20 (2014)**	**0 (2010 ~ 2016)**				
Average # of Exceedances (June)	**15**	**0**				
Minimum # of Exceedances (June)	**9 (2011)**	**0 (2010 ~ 2016)**				

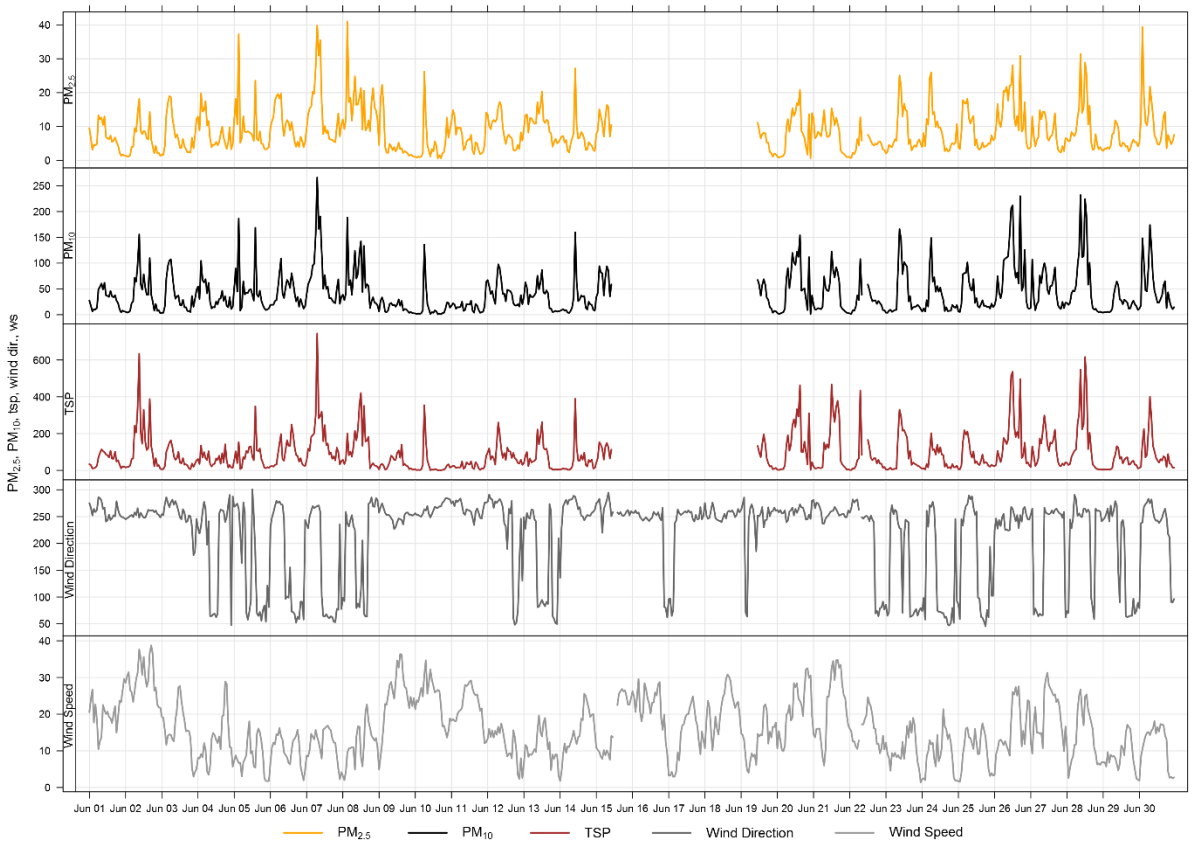


Figure 6-1 1-hour particulate matter concentrations recorded at the Entrance monitor

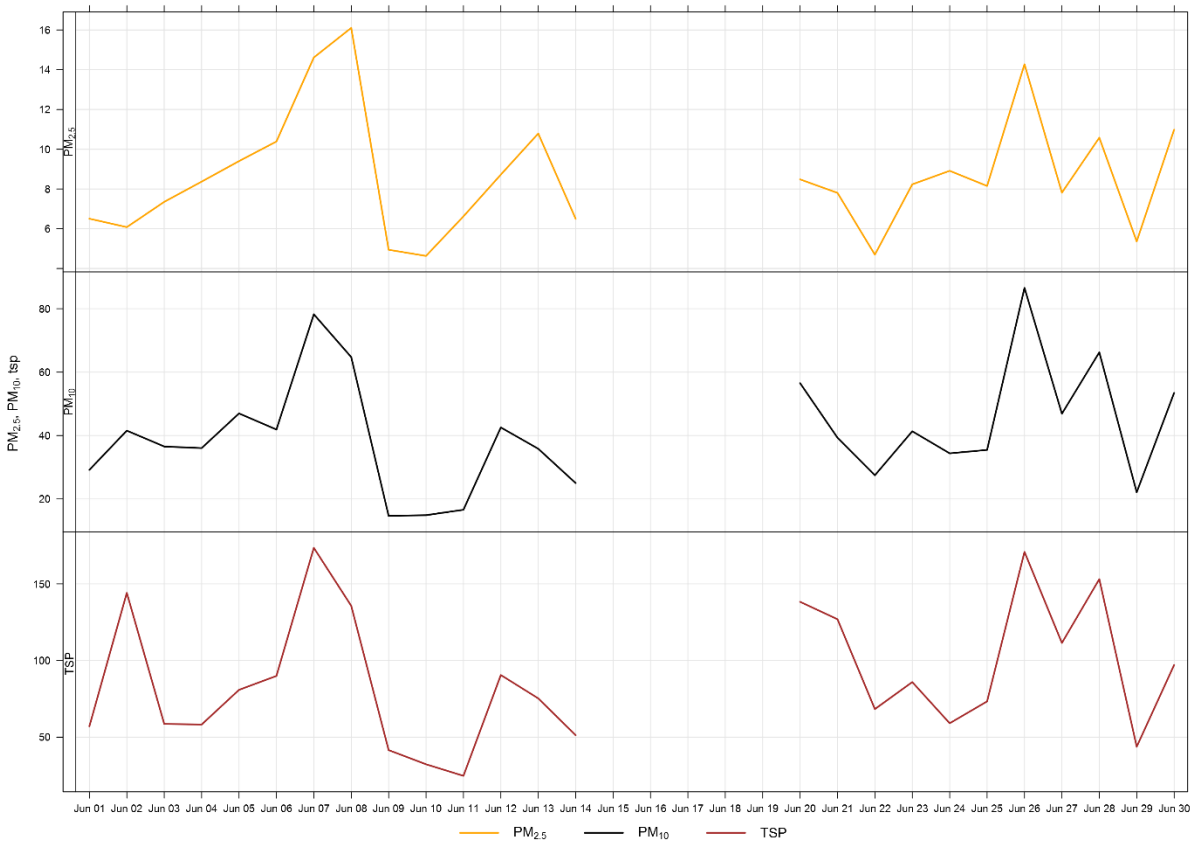


Figure 6-2 24-hour particulate matter concentrations at the Entrance monitor

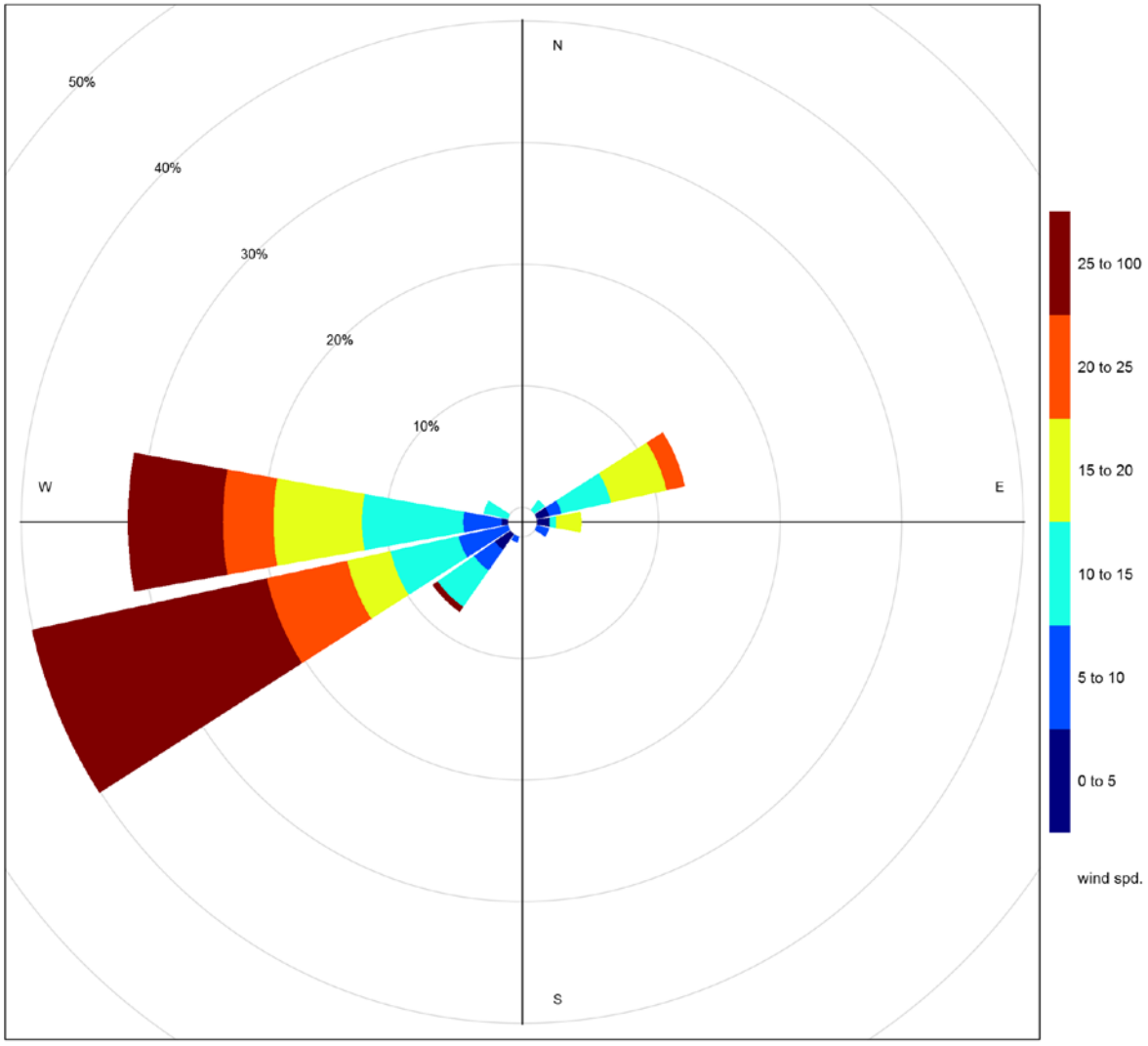


Figure 6-3 Wind rose for TSP exceedance days recorded at the Entrance GRIMM

Figure 6-4 illustrates the hourly PM concentrations recorded at the Entrance monitor, averaged over different time periods. The plot across the top shows the variation of PM over the course of a week, while the bottom three plots show the changes in PM over the course of a day, month and weekday, respectively. Figure 6-4 is based on data collected during June 2017 and indicates a strong weekday (Monday – Friday) diurnal pattern that is typical at this station.

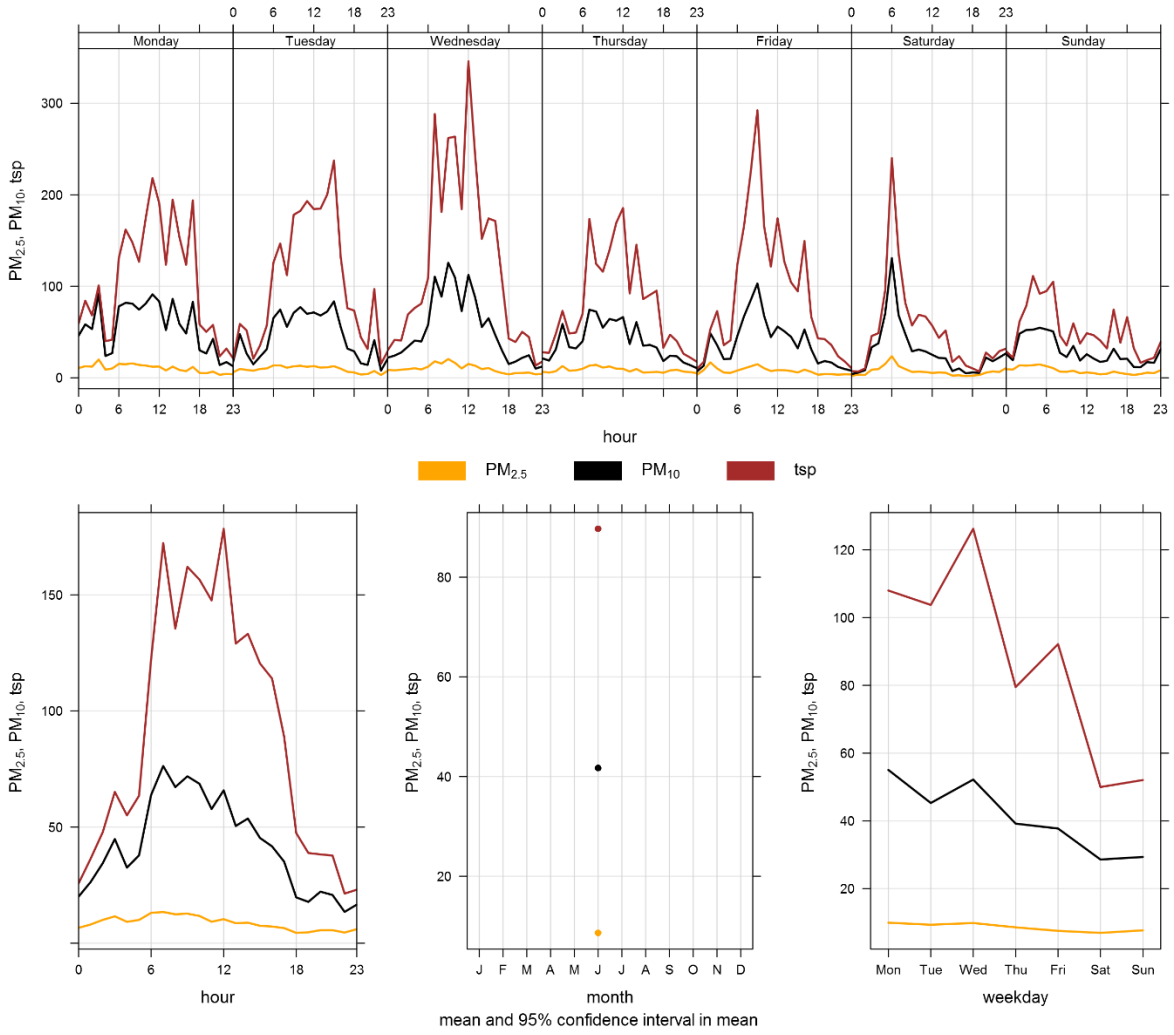


Figure 6-4 Entrance particulate matter time variation

BIBLIOGRAPHY

- Alberta Environment and Parks. (2016, June). Alberta Ambient Air Quality Objectives and Guidelines Summary. Alberta, Canada.
- Alberta Environment and Parks. (2016, July). Air Monitoring Directive. Alberta, Canada.
- Carslaw, D.C. and K. Ropkins, (2012). Openair — an R package for air quality data analysis. Environmental Modelling & Software. Volume 27–28, 52–61.
- Levelton Consultants Ltd. (2015, June 15). Comparison of GRIMM and E-BAM Data. Alberta, Canada.

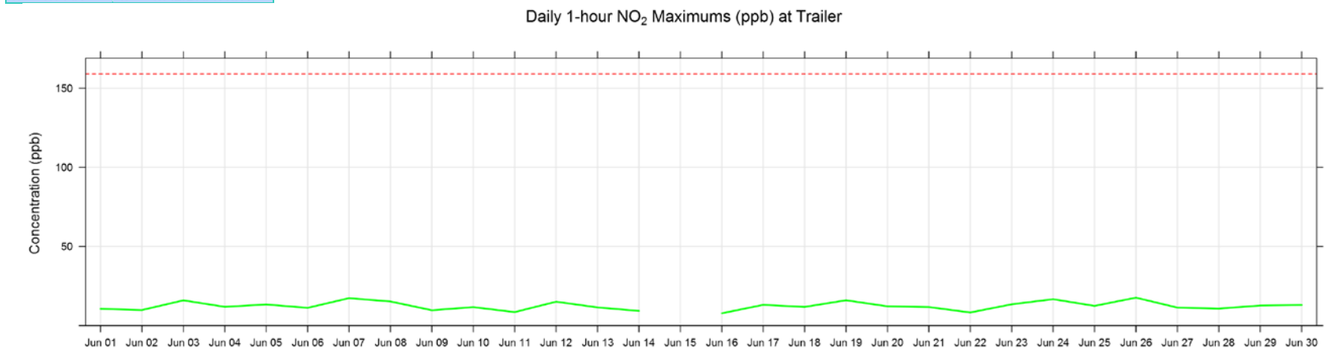
Appendix A

DATA & CALIBRATION REPORTS

Lagoon NO_2 (ppb) – June 2017

Day/Hour	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Daily Max	24-hour Average
1	0.8	**S**	1.8	0.0	8.0	4.4	3.5	6.2	4.9	4.2	4.9	0.5	0.0	0.2	0.0	1.2	1.3	0.1	10.6	9.7	0.0	0.0	0.6	0.0	10.6	2.7
2	0.0	**S**	0.0	2.2	4.7	1.4	7.1	2.1	7.6	0.8	3.0	1.4	0.0	0.5	4.8	7.3	6.3	5.3	7.0	6.3	8.2	3.5	9.8	1.0	9.8	3.9
3	3.9	**S**	4.7	6.8	3.0	3.7	4.8	7.0	15.9	10.9	7.4	4.7	0.0	1.2	6.9	4.9	0.0	0.0	0.1	0.2	1.9	7.7	8.6	8.9	15.9	4.9
4	9.4	**S**	7.4	7.5	9.2	11.0	8.1	10.0	11.8	4.9	1.4	1.4	2.0	1.2	1.7	2.0	0.7	1.3	0.0	0.4	0.2	6.1	1.3	7.7	11.8	4.6
5	6.4	**S**	1.8	3.7	5.6	5.6	4.2	5.0	7.5	7.7	2.2	0.0	1.0	13.3	12.9	5.6	4.7	2.5	0.6	2.0	3.7	8.5	8.3	6.0	13.3	5.2
6	8.5	**S**	8.6	7.7	5.6	6.9	8.7	10.4	9.7	9.0	3.9	5.4	1.5	1.5	2.7	2.3	1.6	3.4	8.0	1.2	2.9	10.2	11.2	6.0	11.2	6.0
7	7.2	**S**	4.9	8.2	6.7	9.3	11.0	11.3	17.3	12.6	7.6	7.0	6.0	3.1	9.4	4.1	2.8	5.8	3.5	1.1	3.4	5.2	6.9	10.3	17.3	7.2
8	9.7	**S**	7.2	15.2	14.2	9.7	10.4	5.5	5.3	9.1	2.6	1.7	2.7	6.5	7.3	5.6	10.1	3.2	6.2	9.6	7.1	5.5	4.8	3.8	15.2	7.1
9	9.7	**S**	5.1	2.8	3.4	0.7	7.1	1.8	0.8	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.4	3.9	5.3	6.0	6.8	2.5	2.0	9.7	2.5
10	6.4	**S**	0.0	0.2	0.0	0.7	11.7	5.7	10.1	4.4	0.0	2.8	7.3	6.2	1.8	1.0	1.2	1.2	3.2	1.9	3.7	4.8	5.6	5.2	11.7	3.7
11	6.8	**S**	7.0	8.5	4.5	7.0	5.9	2.2	2.6	0.4	4.3	4.4	3.2	2.1	0.1	0.0	1.8	3.5	1.4	1.7	0.0	0.4	5.7	2.8	8.5	3.3
12	5.0	**S**	1.4	2.3	4.3	2.8	3.5	4.2	4.0	5.0	6.0	2.0	1.9	5.9	9.9	2.7	2.4	2.0	0.7	0.0	6.5	15.1	6.5	5.8	15.1	4.3
13	11.1	**S**	6.7	5.1	4.5	2.0	7.6	6.3	5.5	1.8	0.2	0.2	0.0	1.7	0.0	0.0	5.2	8.1	6.3	4.8	6.9	11.5	3.6	6.1	11.5	4.6
14	8.0	**S**	3.6	4.8	3.7	5.0	7.1	8.1	7.2	7.1	9.3	2.9	3.2	2.7	0.8	0.4	0.0	0.2	0.0	1.0	4.4	5.8	5.7	4.8	9.3	4.2
15	7.4	**S**	6.2	5.9	3.7	2.0	5.1	**C**	**C**	**C**	**C**	**C**	**C**	**C**	3.3	0.9	0.7	0.3	1.3	4.1	2.2	2.6	0.9	0.6	-	-
16	1.6	**S**	0.9	2.0	0.9	2.1	3.3	5.8	1.9	1.5	1.7	1.2	1.2	0.4	3.7	6.1	1.7	2.5	0.1	0.1	7.8	1.0	0.1	3.0	7.8	2.2
17	3.6	**S**	10.0	7.8	6.9	8.3	13.1	4.2	2.4	6.1	4.5	3.5	3.0	7.6	3.7	3.9	0.3	0.0	2.4	1.2	3.7	9.6	4.7	3.8	13.1	5.0
18	2.1	**S**	0.2	0.0	4.9	6.0	5.1	2.5	0.6	2.8	2.6	0.1	3.1	4.8	1.4	3.7	6.8	8.0	11.8	6.2	2.6	3.2	1.9	8.3	11.8	3.8
19	8.8	**S**	5.1	8.3	14.4	9.6	10.6	9.0	16.0	9.0	6.5	5.1	7.0	6.4	2.8	0.4	0.1	0.1	12.3	1.8	8.6	7.2	3.8	2.6	16.0	6.8
20	4.7	**S**	0.9	2.4	2.9	2.9	1.7	6.5	5.9	7.5	10.6	3.9	7.9	8.1	11.8	12.2	8.6	8.3	6.5	2.7	0.2	6.6	1.9	3.9	12.2	5.6
21	5.0	**S**	4.7	4.1	8.2	7.5	11.7	8.9	9.4	3.7	3.6	7.0	4.8	5.6	9.8	8.5	3.8	3.4	1.9	5.0	4.4	2.5	3.3	2.4	11.7	5.6
22	1.8	**S**	3.9	4.6	3.0	4.3	5.7	4.3	3.1	2.7	3.8	2.4	1.0	1.0	1.6	1.0	2.5	2.2	3.9	8.3	3.6	4.2	1.8	0.6	8.3	3.1
23	0.4	**S**	8.9	7.1	5.7	9.0	9.1	13.0	10.0	13.4	1.9	4.7	10.2	2.4	0.8	1.0	11.0	2.7	13.4	7.9	4.8	11.7	6.9	9.0	13.4	7.2
24	10.6	**S**	7.5	15.7	11.5	8.3	9.1	11.6	16.7	13.6	8.1	4.9	1.7	3.6	4.5	3.4	2.0	2.3	1.9	0.7	1.8	2.7	7.8	7.1	16.7	6.8
25	7.9	**S**	10.4	11.4	9.4	5.9	5.4	4.3	4.5	5.1	2.1	1.6	1.8	3.6	0.9	1.1	2.0	1.0	3.7	3.0	12.4	8.2	9.9	10.6	12.4	5.5
26	13.4	**S**	17.6	14.0	13.3	11.4	12.7	9.0	7.4	7.1	4.8	5.5	6.4	5.2	1.1	3.7	0.3	3.4	2.0	5.8	7.9	11.2	1.0	1.1	17.6	7.2
27	1.9	**S**	1.3	0.5	11.4	10.6	8.0	6.0	8.1	7.2	4.0	4.6	6.1	4.3	5.3	4.2	5.1	6.2	5.8	2.9	5.0	8.4	7.0	9.4	11.4	5.8
28	10.7	**S**	6.3	8.9	5.9	4.2	5.8	7.1	7.3	3.7	2.3	5.5	4.7	4.4	4.1	3.9	0.6	0.4	1.0	2.8	1.7	3.3	5.0	8.0	10.7	4.7
29	6.6	**S**	3.2	4.2	4.0	4.1	4.9	3.7	3.1	4.0	5.7	5.1	0.9	1.2	1.9	4.8	2.7	3.6	2.4	1.3	2.4	10.6	12.7	8.3	12.7	4.4
30	13.0	**S**	12.2	7.5	4.5	4.5	5.0	5.0	2.5	2.4	1.4	0.6	0.6	0.4	0.4	1.8	3.3	3.4	5.4	5.6	10.1	10.2	9.3	9.9	13.0	5.2
Hourly Max	13.4	-	17.6	15.7	14.4	11.4	13.1	13.0	17.3	13.6	10.6	7.0	10.2	13.3	12.9	12.2	11.0	8.3	13.4	9.7	12.4	15.1	12.7	10.6		
Hourly Average	6.4	-	5.3	6.0	6.3	5.7	7.2	6.4	7.2	5.8	4.0	3.1	3.1	3.6	3.9	3.3	3.0	2.8	4.2	3.5	4.5	6.5	5.3	5.3		

S = Span C = Calibration

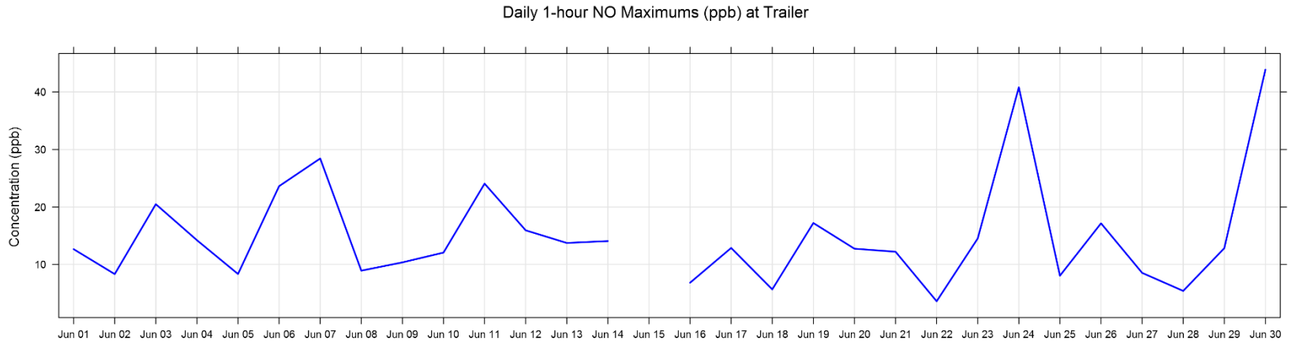


Number of 1HR Exceedances	0		Objective	159	PPB
Number of Non-Zero Readings	654				
Maximum 1-HR Average	17.6	PPB			
Maximum 24-HR Average	7.2	PPB			
IZS Calibration Time	30	HRS	Operational Time	720	HRS
Monthly Calibration Time	7	HRS	Operational Uptime	100	%
Standard Deviation	3.6		Monthly Average	4.9	PPB

Lagoon NO (ppb) – June 2017

Day/Hour	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Daily Max	24-hour Average
1	0.8	S	2.5	0.6	5.6	1.4	1.0	3.5	3.4	2.6	3.6	1.2	0.8	0.9	0.9	1.6	1.6	0.9	10.2	12.7	0.5	0.5	0.6	0.6	12.7	2.5
2	0.6	S	0.5	1.2	5.0	1.5	5.3	2.3	7.5	1.4	2.8	1.8	0.8	1.3	7.3	8.0	6.5	5.6	5.5	5.2	4.6	2.2	8.3	0.6	8.3	3.7
3	1.5	S	1.9	3.6	2.1	3.0	7.6	10.7	20.5	14.6	7.4	4.0	0.8	1.5	6.0	3.8	0.6	0.6	1.0	0.6	0.7	1.1	0.6	1.8	20.5	4.2
4	0.7	S	2.7	3.5	7.6	14.2	2.6	6.5	6.1	2.7	1.1	1.1	2.0	0.9	0.9	1.5	0.7	1.0	0.6	0.8	0.6	2.5	0.5	2.5	14.2	2.7
5	1.3	S	0.9	0.8	0.7	1.0	2.4	4.4	7.1	7.6	1.4	0.7	0.9	8.4	6.6	3.9	2.6	1.7	0.9	1.2	0.7	4.2	2.6	1.8	8.4	2.8
6	2.0	S	1.6	2.8	3.4	8.5	15.9	23.6	14.4	10.8	3.0	1.8	1.7	1.3	1.5	1.6	1.2	2.9	4.0	1.1	0.6	1.3	1.0	1.5	23.6	4.7
7	0.8	S	1.0	3.8	4.7	9.2	15.2	15.1	28.4	15.2	4.1	4.7	4.3	2.2	4.1	1.7	1.4	1.8	1.3	1.3	3.0	0.7	0.7	2.4	28.4	5.5
8	0.6	S	1.2	1.3	1.9	2.7	8.9	3.8	2.8	5.8	1.7	1.1	2.1	2.8	5.2	3.0	2.6	1.1	3.1	6.1	6.6	2.8	4.4	3.8	8.9	3.3
9	3.9	S	3.4	1.9	2.5	1.1	10.4	2.2	1.6	1.2	0.6	0.6	0.8	1.1	0.7	0.8	0.6	1.3	3.2	4.0	4.5	3.6	1.4	0.9	10.4	2.3
10	4.3	S	0.5	0.6	0.7	1.1	12.1	5.7	9.8	4.8	0.7	2.8	6.1	6.2	1.5	0.8	1.2	2.6	3.1	1.8	3.4	10.0	5.5	8.5	12.1	4.1
11	13.7	S	19.6	21.6	15.1	24.1	17.5	5.3	5.1	1.5	9.1	6.7	6.8	3.2	1.6	0.5	3.5	6.3	2.5	2.9	0.6	0.6	5.3	2.2	24.1	7.6
12	6.3	S	2.4	4.2	10.0	8.4	15.9	14.8	14.0	9.1	8.0	3.1	2.2	4.8	9.3	2.0	2.2	2.9	2.0	0.5	2.1	7.0	2.1	0.9	15.9	5.8
13	7.1	S	3.2	2.8	1.2	1.3	13.8	9.4	8.6	4.3	0.9	0.7	0.6	1.4	0.6	0.6	5.0	5.5	3.3	3.2	2.0	1.7	1.9	0.5	13.8	3.5
14	0.5	S	1.9	3.5	3.1	3.6	4.6	5.5	8.2	9.9	14.1	6.1	5.1	4.5	1.6	2.9	0.7	1.1	0.9	1.1	2.1	2.4	3.1	4.5	14.1	4.0
15	4.0	S	3.5	3.8	1.6	1.8	5.6	C	C	C	C	C	C	C	1.9	0.3	0.0	0.0	0.1	1.7	0.4	1.5	0.0	0.0	-	-
16	0.0	S	0.0	0.7	0.0	0.8	2.1	6.8	3.1	2.8	3.2	3.3	1.4	0.0	4.6	6.8	1.3	1.5	0.0	0.0	2.2	0.0	0.0	0.0	6.8	1.8
17	0.0	S	1.9	2.3	0.5	11.7	12.9	2.2	2.5	9.5	2.8	1.4	1.4	9.0	2.2	1.5	0.0	0.0	0.0	0.0	2.3	2.7	0.5	0.8	12.9	3.0
18	0.0	S	0.0	0.0	0.8	1.8	0.4	0.2	0.0	3.3	2.0	0.0	1.1	3.7	0.6	2.2	5.1	5.3	5.7	3.5	0.1	0.0	0.0	3.9	5.7	1.7
19	2.2	S	0.9	1.1	1.7	1.8	5.5	3.3	17.2	5.0	2.3	3.0	5.6	5.6	0.7	0.0	0.0	0.0	5.9	0.6	6.9	6.6	0.3	2.1	17.2	3.4
20	0.0	S	0.0	0.0	0.0	0.0	0.3	5.0	4.2	7.3	11.5	3.9	8.1	7.4	12.8	9.3	5.0	4.1	2.3	0.6	0.0	2.2	0.0	1.4	12.8	3.7
21	1.7	S	2.0	2.1	8.1	6.9	11.0	6.3	6.0	2.1	2.0	6.1	3.6	5.7	12.2	9.1	3.5	3.0	0.8	3.1	1.3	0.4	0.0	0.0	12.2	4.2
22	0.0	S	1.0	2.3	0.4	3.6	1.7	1.9	1.1	1.2	1.3	1.3	0.8	0.6	1.0	0.8	1.4	0.5	1.7	2.2	0.0	0.1	0.0	0.0	3.6	1.1
23	0.0	S	3.3	0.5	1.0	2.5	3.5	10.0	8.3	14.5	0.4	2.5	6.2	0.7	0.1	0.2	9.0	0.4	11.7	4.5	0.5	0.3	0.0	0.1	14.5	3.5
24	5.9	S	3.8	10.6	0.6	5.7	20.4	40.8	33.3	11.6	6.3	1.5	0.2	0.7	3.0	2.0	0.4	0.8	2.1	0.0	0.0	0.0	0.0	0.3	40.8	6.5
25	0.6	S	8.1	0.0	4.0	2.5	4.1	6.4	3.6	4.6	0.4	0.4	0.9	3.4	0.0	0.4	1.5	0.0	4.7	0.5	4.6	1.6	2.1	2.8	8.1	2.5
26	17.2	S	2.0	0.8	1.3	2.9	10.9	7.4	4.9	3.9	1.4	3.0	4.2	3.3	0.0	1.8	0.0	0.3	0.2	5.6	5.1	6.7	0.0	0.0	17.2	3.6
27	0.0	S	0.0	0.0	1.2	1.9	1.7	2.4	4.2	8.6	1.9	2.3	3.6	2.1	2.8	2.3	4.6	4.4	3.3	0.6	1.2	1.6	0.9	0.2	8.6	2.2
28	0.3	S	0.4	0.7	0.0	1.2	3.4	4.2	5.4	2.8	1.0	3.9	4.2	3.7	2.5	3.1	0.0	0.0	0.0	0.8	0.1	1.4	1.6	0.5	5.4	1.8
29	1.4	S	0.1	0.1	0.5	3.6	7.3	5.8	1.7	3.4	4.4	3.0	0.2	0.3	0.3	3.5	1.1	1.5	1.0	0.0	0.0	10.0	12.8	1.4	12.8	2.8
30	43.9	S	0.5	0.7	0.0	1.7	4.7	4.2	1.2	0.8	0.4	0.0	0.0	0.0	0.0	0.8	1.3	1.4	1.2	0.7	8.2	2.4	2.3	2.1	43.9	3.4
Hourly Max	43.9	-	19.6	21.6	15.1	24.1	20.4	40.8	33.3	15.2	14.1	6.7	8.1	9.0	12.8	9.3	9.0	6.3	11.7	12.7	8.2	10.0	12.8	8.5		
Hourly Average	4.0	-	2.4	2.6	2.8	4.4	7.6	7.6	8.1	6.0	3.4	2.5	2.6	3.0	3.1	2.6	2.2	1.9	2.7	2.2	2.2	2.6	2.0	1.6		

S = SPAN C = CALIBRATION

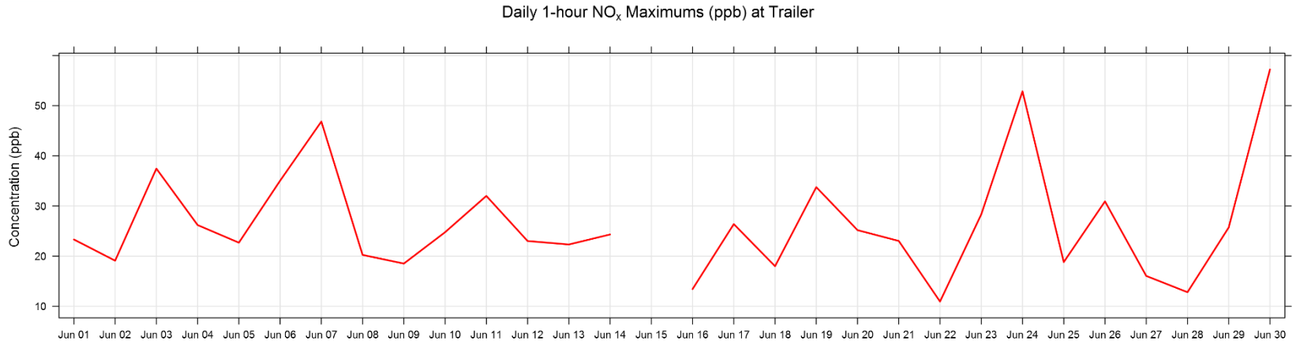


Number of 1HR Exceedances	n/a		Objective	n/a	PPB
Number of Non-Zero Readings	619				
Maximum 1-HR Average	43.9	PPB			
Maximum 24-HR Average	7.6	PPB			
IZS Calibration Time	30	HRS	Operational Time	720	HRS
Monthly Calibration Time	7	HRS	Operational Uptime	100.0	%
Standard Deviation	4.6		Monthly Average	3.5	PPB

Lagoon NO_x (ppb) – June 2017

Day/Hour	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Daily Max	24-hour Average
1	2.5	**S**	5.1	1.4	14.4	6.7	5.5	10.6	9.2	7.7	9.4	2.6	1.6	2.0	1.5	3.7	3.9	1.9	21.6	23.3	1.0	1.3	2.1	0.9	23.3	6.1
2	0.9	**S**	0.8	4.2	10.6	3.8	13.3	5.2	16.1	3.1	6.8	4.0	1.4	2.7	13.0	16.3	13.7	11.9	13.5	12.4	13.7	6.5	19.1	2.5	19.1	8.5
3	6.4	**S**	7.5	11.3	6.0	7.5	13.4	18.7	37.5	26.5	15.7	9.6	1.7	3.7	13.8	9.6	1.3	0.6	2.0	1.7	3.5	9.7	10.1	11.6	37.5	10.0
4	10.9	**S**	11.0	11.8	17.8	26.2	11.6	17.4	18.8	8.6	3.4	3.5	5.0	3.0	3.6	4.5	2.2	3.2	1.1	2.0	1.6	9.5	2.7	11.1	26.2	8.3
5	8.6	**S**	3.6	5.4	7.1	7.5	7.6	10.4	15.5	16.2	4.5	1.5	2.8	22.7	20.4	10.5	8.3	5.2	2.3	4.0	5.4	13.7	11.8	8.7	22.7	8.8
6	11.5	**S**	11.1	11.4	9.9	16.3	25.6	35.0	25.0	20.8	7.8	8.2	4.1	3.7	5.2	4.8	3.8	7.2	13.0	3.1	4.3	12.3	13.0	8.4	35.0	11.5
7	8.8	**S**	6.8	12.8	12.3	19.4	27.1	27.3	46.8	28.8	12.6	12.6	11.2	6.3	14.5	6.8	5.1	8.6	5.7	3.2	7.3	6.7	8.4	13.6	46.8	13.6
8	11.2	**S**	9.3	17.5	17.0	13.4	20.2	10.2	9.0	15.9	5.4	3.8	5.8	10.2	13.4	9.6	13.6	5.2	10.2	16.6	14.7	9.2	10.2	8.6	20.2	11.3
9	14.5	**S**	9.5	5.6	6.8	2.6	18.5	5.0	3.4	2.2	0.8	0.8	1.1	2.2	0.9	1.1	0.8	2.7	8.0	10.3	11.5	11.5	5.0	3.9	18.5	5.6
10	11.7	**S**	1.4	1.7	1.3	2.8	24.8	12.4	21.0	10.2	1.5	6.5	14.3	13.3	4.2	2.7	3.3	4.6	7.2	4.6	7.9	15.6	11.9	14.6	24.8	8.7
11	21.4	**S**	27.6	31.1	20.6	32.0	24.3	8.3	8.6	2.8	14.4	12.0	10.9	6.2	2.6	0.4	6.3	10.7	4.8	5.5	1.3	1.8	12.0	6.0	32.0	11.8
12	12.3	**S**	4.8	7.4	15.2	12.1	20.3	19.9	19.0	15.0	14.9	6.0	5.1	11.6	20.2	5.7	5.5	5.9	3.7	1.2	9.6	23.0	9.5	7.6	23.0	11.1
13	19.2	**S**	10.8	8.9	6.7	4.3	22.3	16.6	15.1	7.0	2.0	1.7	1.4	4.0	1.3	1.2	11.1	14.6	10.6	8.9	9.9	14.1	6.3	7.5	22.3	8.9
14	9.4	**S**	6.4	9.3	7.8	9.6	12.6	14.4	16.3	17.9	24.3	9.9	9.2	8.1	3.4	4.2	1.0	2.3	1.4	3.0	7.4	9.2	9.7	10.2	24.3	9.0
15	12.4	**S**	10.6	10.7	6.2	4.7	11.6	**C**	**C**	**C**	**C**	**C**	**C**	**C**	5.5	1.6	0.8	0.4	1.9	6.3	3.2	4.6	1.2	0.6	-	-
16	2.1	**S**	1.0	3.2	1.0	3.3	5.9	13.0	5.5	4.7	5.4	4.9	3.0	0.9	8.7	13.4	3.5	4.5	0.0	0.1	10.4	1.1	0.0	3.0	13.4	4.3
17	3.8	**S**	12.2	10.4	7.7	20.4	26.4	6.8	5.4	16.0	7.8	5.3	4.8	17.1	6.3	5.7	0.4	0.0	2.9	1.2	6.5	12.8	5.7	5.0	26.4	8.3
18	2.1	**S**	0.0	0.0	6.1	8.2	5.9	3.2	0.9	6.6	5.0	0.1	4.7	8.9	2.4	6.4	12.4	13.8	18.0	10.2	3.1	3.4	2.2	12.6	18.0	5.9
19	11.5	**S**	6.5	9.9	16.6	11.8	16.6	12.7	33.8	14.4	9.3	8.6	13.1	12.5	4.1	0.5	0.3	0.2	18.7	2.9	16.0	14.3	4.6	5.2	33.8	10.6
20	5.2	**S**	0.9	2.6	3.0	3.2	2.4	11.9	10.6	15.4	22.7	8.4	16.5	16.1	25.2	22.0	14.1	13.0	9.3	3.9	0.1	9.4	2.3	5.8	25.2	9.7
21	7.2	**S**	7.1	6.6	16.6	14.8	23.0	15.6	15.7	6.1	6.1	13.5	8.8	11.8	22.6	18.2	7.8	6.8	3.2	8.6	6.2	3.4	3.8	2.4	23.0	10.3
22	1.9	**S**	5.3	7.4	3.8	8.4	7.9	6.7	4.7	4.3	5.5	4.2	2.2	1.9	3.1	2.1	4.3	3.0	6.1	10.9	3.8	4.7	1.9	0.5	10.9	4.5
23	0.1	**S**	12.5	8.0	7.0	11.9	13.0	23.4	18.7	28.3	2.7	7.7	16.9	3.6	1.2	1.6	20.5	3.5	25.6	12.7	5.6	12.3	7.2	9.5	28.3	11.0
24	16.9	**S**	11.7	26.7	12.5	14.4	29.9	52.9	50.6	25.7	14.9	6.8	2.3	4.8	8.0	5.8	2.8	3.6	4.4	0.9	1.8	2.9	7.9	7.6	52.9	13.7
25	8.7	**S**	18.8	11.6	13.6	8.8	9.9	11.1	8.5	10.1	2.8	2.4	3.1	7.3	1.2	1.8	3.8	1.3	8.7	3.8	17.3	10.1	12.2	13.6	18.8	8.3
26	30.9	**S**	19.9	15.1	14.8	14.5	23.9	16.6	12.5	11.2	6.4	8.8	10.9	8.8	1.5	5.9	0.3	4.1	2.5	11.7	13.3	18.4	1.0	1.0	30.9	11.0
27	1.9	**S**	1.3	0.4	12.8	12.8	10.0	8.7	12.5	16.0	6.2	7.3	10.0	6.8	8.4	6.8	10.1	11.0	9.6	3.9	6.5	10.3	8.2	9.8	16.0	8.3
28	11.3	**S**	6.9	9.7	6.0	5.6	9.5	11.5	12.8	6.7	3.5	9.6	9.2	8.4	6.9	7.2	0.7	0.3	1.0	3.8	2.0	4.9	6.7	8.7	12.8	6.6
29	8.2	**S**	3.5	4.6	4.7	7.9	12.4	9.7	5.1	7.7	10.4	8.3	1.4	1.7	2.5	8.6	4.1	5.4	3.7	1.5	2.4	20.8	25.7	9.9	25.7	7.4
30	57.2	**S**	12.9	8.3	4.7	6.4	9.9	9.4	4.0	3.5	2.2	0.8	0.9	0.6	0.7	2.9	5.0	5.2	6.8	6.6	18.5	12.8	11.8	12.2	57.2	8.9
Hourly Max	57.2	-	27.6	31.1	20.6	32.0	29.9	52.9	50.6	28.8	24.3	13.5	16.9	22.7	25.2	22.0	20.5	14.6	25.6	23.3	18.5	23.0	25.7	14.6		
Hourly Average	11.0	-	8.2	9.2	9.7	10.7	15.5	14.6	15.9	12.4	8.1	6.2	6.3	7.3	7.5	6.4	5.7	5.4	7.6	6.3	7.2	9.7	7.8	7.4		

S = Span C = Calibration

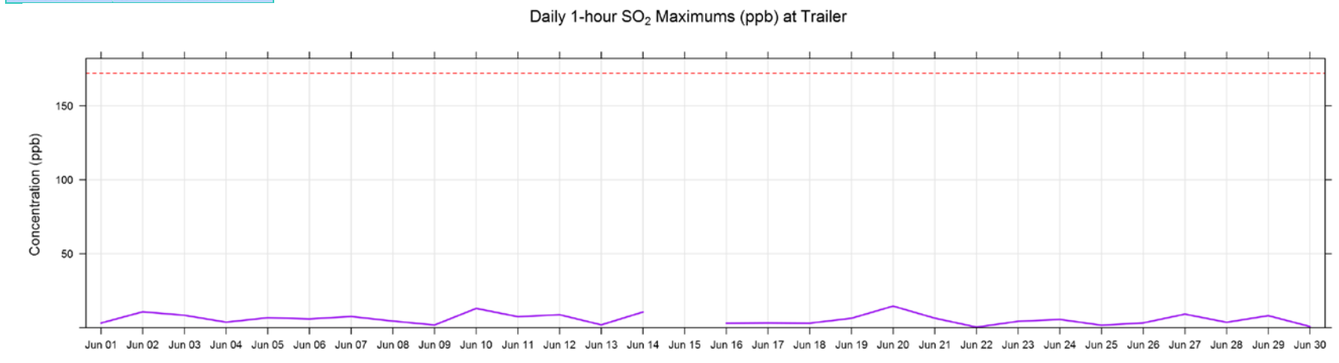


Number of 1HR Exceedances	n/a		Objective	n/a	PPB
Number of Non-Zero Readings	679				
Maximum 1-HR Average	57.2	PPB			
Maximum 24-HR Average	13.7	PPB			
IZS Calibration Time	30	HRS	Operational Time	720	HRS
Monthly Calibration Time	7	HRS	Operational Uptime	100.0	%
Standard Deviation	7.4		Monthly Average	9.0	PPB

Lagoon SO_2 (ppb) – June 2017

Day/Hour	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Daily Max	24-hour Average
1	0.8	**S**	0.8	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.7	0.6	0.6	0.6	0.6	1.6	1.6	0.8	3.1	2.7	0.6	0.6	0.6	0.5	3.1	0.9
2	0.5	**S**	0.6	0.8	6.2	1.5	3.5	1.4	7.7	4.5	3.6	2.1	0.5	1.3	3.3	7.5	10.7	9.3	8.2	1.9	6.0	3.4	4.8	0.5	10.7	3.9
3	0.5	**S**	1.5	2.0	1.2	1.8	2.0	2.1	8.4	4.7	5.2	1.1	0.5	2.7	6.2	3.2	0.6	0.6	0.6	0.6	0.7	0.6	0.5	0.5	8.4	2.1
4	0.5	**S**	0.8	0.9	1.1	1.9	0.7	1.6	3.7	1.7	1.3	1.0	1.0	2.1	2.0	1.3	0.7	1.0	0.6	0.6	0.6	0.9	0.6	0.7	3.7	1.2
5	1.4	**S**	0.9	1.0	1.1	0.7	0.7	0.9	3.9	2.5	0.9	0.5	0.5	5.5	6.7	1.5	1.1	1.0	1.0	0.7	0.6	0.5	0.5	0.5	6.7	1.5
6	0.4	**S**	0.9	1.4	1.3	2.2	4.5	5.9	4.5	4.8	2.7	0.8	0.9	1.0	1.0	0.7	0.8	0.8	0.7	0.6	0.7	0.7	0.6	0.5	5.9	1.7
7	0.5	**S**	1.1	2.8	4.0	2.3	6.8	4.9	7.5	4.7	4.6	1.3	1.2	1.5	0.8	0.6	0.5	0.6	0.7	0.7	0.8	0.8	0.7	0.7	7.5	2.2
8	0.7	**S**	0.6	0.7	0.8	1.2	1.7	0.8	1.1	4.4	1.8	1.2	1.2	1.6	3.8	1.0	0.8	1.1	1.1	1.6	1.3	1.4	1.4	1.0	4.4	1.4
9	1.0	**S**	1.2	1.1	0.9	0.8	1.0	0.8	0.7	0.7	0.8	0.8	0.8	0.9	0.8	0.8	0.9	1.4	1.8	1.6	1.1	1.7	1.1	0.8	1.8	1.0
10	0.8	**S**	0.7	0.7	0.8	1.0	3.2	2.5	13.0	4.3	0.7	0.7	0.8	0.7	0.7	0.7	0.6	0.7	1.1	0.9	1.5	3.3	3.0	4.0	13.0	2.0
11	4.5	**S**	2.9	3.7	3.1	4.5	7.4	2.1	0.8	0.7	5.2	5.0	4.5	3.8	1.7	0.7	4.0	4.7	1.7	0.7	0.6	0.7	1.0	1.5	7.4	2.8
12	1.7	**S**	1.5	1.9	3.8	2.6	6.0	7.9	7.5	8.7	4.2	0.9	2.8	4.2	5.0	2.7	2.4	0.9	0.7	0.9	1.0	1.2	0.9	0.6	8.7	3.0
13	1.0	**S**	1.7	1.7	0.9	0.9	1.9	1.3	1.5	1.1	0.7	0.7	0.7	0.7	0.7	0.7	1.4	1.4	0.8	0.9	1.0	1.2	1.0	0.7	1.9	1.1
14	0.7	**S**	0.8	0.9	0.9	1.3	1.4	2.1	3.6	5.2	10.6	5.4	0.9	2.3	0.7	1.1	0.7	0.8	1.3	1.3	0.7	0.9	1.3	0.9	10.6	2.0
15	1.0	**S**	1.3	0.9	0.9	1.6	2.7	**C**	**C**	**C**	**C**	**C**	**C**	**C**	0.4	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.0	0.0	-	-
16	0.0	**S**	0.2	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.4	0.0	0.2	0.1	3.0	1.1	1.0	1.1	0.0	0.0	0.3	0.0	0.0	0.0	3.0	0.3
17	0.0	**S**	0.0	0.0	0.0	0.0	0.3	0.5	0.0	3.1	0.5	0.8	0.9	3.2	1.2	1.8	0.0	0.0	0.0	0.0	0.1	0.3	0.0	0.0	3.2	0.6
18	0.0	**S**	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9	1.4	0.0	2.0	1.8	0.1	0.7	1.2	0.9	3.0	1.6	0.0	0.0	0.0	0.0	3.0	0.6
19	0.0	**S**	0.8	2.4	0.2	0.0	0.0	0.1	1.3	1.0	0.5	0.3	0.5	1.3	0.0	0.0	0.0	0.0	6.3	1.1	0.0	0.0	0.0	0.0	6.3	0.7
20	0.1	**S**	0.0	0.0	0.0	0.2	0.0	0.4	1.0	5.0	14.6	1.7	3.2	1.9	1.6	2.4	1.5	3.8	3.2	4.6	0.0	0.9	0.0	0.1	14.6	2.0
21	0.3	**S**	0.8	0.6	2.6	4.1	5.1	2.4	2.7	0.4	1.8	6.4	3.6	3.1	4.0	2.1	1.4	1.1	0.7	1.0	0.7	0.1	0.0	0.0	6.4	2.0
22	0.0	**S**	0.1	0.0	0.2	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.2	0.0	0.0	0.3	0.0
23	0.0	**S**	0.0	0.0	0.0	0.0	0.0	0.5	0.4	4.3	0.0	0.1	0.6	0.0	0.0	0.0	0.8	0.0	0.6	0.2	0.0	0.0	0.0	0.0	4.3	0.3
24	0.0	**S**	0.0	0.0	0.0	0.0	1.3	3.9	5.5	3.1	1.1	0.0	0.0	0.0	0.4	0.5	0.6	0.3	0.0	0.0	0.0	0.0	0.0	0.0	5.5	0.7
25	0.0	**S**	0.0	0.0	0.0	0.2	1.6	0.0	0.6	0.1	0.0	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.2	0.2	0.0	0.0	0.0	1.6	0.1
26	0.1	**S**	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.6	0.6	1.9	3.2	1.7	0.0	1.2	0.0	0.5	0.1	0.9	0.6	0.3	0.2	0.2	3.2	0.5
27	0.1	**S**	0.5	0.5	0.6	0.5	0.4	0.6	1.1	9.1	2.8	1.6	2.8	1.6	3.4	4.0	2.7	4.4	3.2	0.7	0.4	0.2	0.2	0.7	9.1	1.8
28	0.2	**S**	0.1	0.3	0.4	0.4	0.5	0.2	1.2	0.2	0.7	2.7	3.6	2.7	2.1	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.6	0.7
29	0.0	**S**	0.0	0.0	0.0	0.0	0.0	0.2	0.0	3.1	7.5	8.1	0.2	0.0	0.7	1.4	0.4	0.7	0.6	0.1	0.0	0.0	0.0	0.0	8.1	1.0
30	0.4	**S**	0.0	0.2	0.0	0.0	0.7	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.7	0.1
Hourly Max	4.5	-	2.9	3.7	6.2	4.5	7.4	7.9	13.0	9.1	14.6	8.1	4.5	5.5	6.7	7.5	10.7	9.3	8.2	4.6	6.0	3.4	4.8	4.0		
Hourly Average	0.6	-	0.7	0.8	1.1	1.0	1.8	1.5	2.7	2.8	2.6	1.6	1.3	1.6	1.7	1.3	1.2	1.3	1.4	0.9	0.7	0.7	0.6	0.5		

S = SPAN C = CALIBRATION

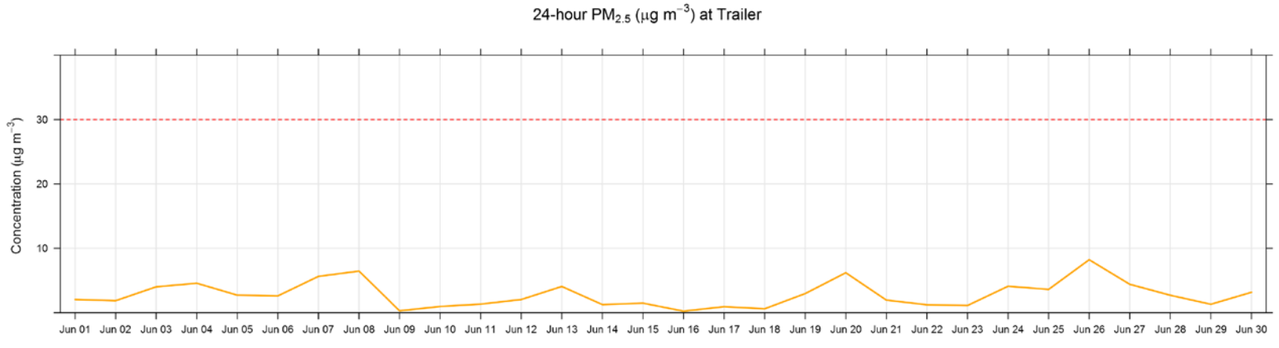


Number of 1HR Exceedances	0		Objective	172	PPB
Number of 24HR Exceedances	0		Objective	48	PPB
Number of Non-Zero Readings	538				
Maximum 1-HR Average	14.6	PPB			
Maximum 24-HR Average	3.9	PPB			
IZS Calibration Time	30	HRS	Operational Time	720	HRS
Monthly Calibration Time	7	HRS	Operational Uptime	100.0	%
Standard Deviation	1.9		Monthly Average	1.3	PPB

Lagoon $PM_{2.5}$ (µg/m^3) – June 2017

Day/Hour	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Daily Max	24-hour Average
1	6.6	3.5	1.7	4.2	3.1	2.0	2.8	2.4	1.3	7.0	7.0	3.1	0.0	0.0	0.0	0.6	0.0	0.0	0.3	2.0	1.7	0.0	0.0	0.0	7.0	2.1
2	0.0	0.0	0.0	0.0	0.0	0.0	0.6	1.9	4.2	7.3	4.9	1.3	1.0	0.3	0.0	0.3	6.3	8.0	7.0	1.4	0.0	0.3	0.0	0.0	8.0	1.9
3	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	4.5	3.5	0.0	0.0	22.1	19.3	16.1	0.0	2.4	2.4	2.0	11.9	7.0	4.2	22.1	4.0
4	4.2	3.8	5.5	3.8	2.0	3.5	6.6	9.1	7.0	3.5	2.7	6.3	14.7	13.7	7.3	0.6	0.6	1.3	0.6	2.4	2.0	3.1	1.7	3.8	14.7	4.6
5	2.8	2.8	1.3	0.0	0.0	6.3	5.2	4.2	5.2	8.7	4.5	0.3	1.0	0.6	2.5	3.5	0.6	1.0	1.3	0.3	2.8	4.9	3.7	2.0	8.7	2.7
6	2.4	3.8	3.8	3.5	3.8	5.2	3.1	4.9	4.5	2.4	2.4	1.3	0.0	1.0	0.0	1.3	0.3	0.0	3.1	3.8	2.0	2.8	3.8	3.5	5.2	2.6
7	4.5	3.8	3.5	3.5	2.8	3.8	3.1	4.9	7.0	8.7	5.9	7.3	8.0	5.9	11.9	7.3	7.3	5.9	4.9	4.5	2.4	4.2	8.0	6.3	11.9	5.6
8	4.2	5.6	5.6	15.1	9.8	7.4	8.4	7.0	5.9	6.7	11.9	6.6	5.2	3.5	5.2	5.6	14.4	8.1	4.5	2.8	3.1	4.2	3.8	0.6	15.1	6.5
9	2.4	2.4	0.3	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4	0.3
10	0.0	0.0	0.3	1.0	0.3	0.0	3.7	3.1	0.6	0.0	0.0	1.1	1.7	2.8	3.1	1.9	1.7	1.0	0.6	0.3	0.0	0.0	0.0	0.0	3.7	1.0
11	0.0	0.6	2.0	1.7	0.0	0.0	1.3	3.8	2.7	1.7	2.0	1.7	1.3	1.7	1.0	0.0	0.0	0.0	0.6	0.0	0.0	2.0	4.9	2.8	4.9	1.3
12	0.6	0.3	0.0	0.0	1.3	1.3	0.3	2.4	6.3	7.7	5.9	3.1	0.3	0.0	0.0	2.7	2.7	1.7	0.0	0.0	1.0	4.2	4.9	2.4	7.7	2.0
13	4.9	5.2	2.4	2.8	2.4	1.3	4.2	3.1	1.3	14.4	9.8	5.9	5.9	4.5	3.1	3.1	4.2	5.2	2.4	2.0	3.1	3.1	3.5	0.0	14.4	4.1
14	1.0	4.3	1.7	1.3	0.6	0.0	0.0	0.0	0.0	0.4	2.3	1.3	0.3	1.1	4.2	0.6	0.0	0.0	2.4	3.1	3.1	2.0	0.3	0.0	4.3	1.3
15	0.3	1.3	2.0	1.7	1.0	1.3	0.6	3.1	1.0	0.0	1.3	1.4	**C**	**C**	**C**	4.2	2.0	4.5	1.0	0.0	0.3	3.1	1.0	0.0	4.5	1.5
16	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	0.4	2.7	0.6	0.6	1.0	0.0	0.3	0.0	0.0	0.0	2.7	0.2
17	1.9	2.0	2.8	2.0	0.0	0.0	0.0	1.7	1.0	0.6	1.7	0.3	1.7	2.0	0.0	0.0	0.0	0.0	0.0	1.3	0.3	0.0	1.3	1.7	2.8	0.9
18	2.0	1.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.6	0.0	2.4	4.2	2.0	0.4	0.3	0.0	4.2	0.6
19	1.3	3.5	4.9	8.4	4.9	2.4	3.2	3.1	7.4	5.6	5.6	3.5	2.5	3.8	2.7	0.2	0.0	2.0	2.0	0.6	0.3	0.0	0.6	2.8	8.4	3.0
20	2.0	0.3	0.0	0.0	0.0	0.0	0.0	1.7	2.4	3.1	2.4	8.7	10.1	24.3	9.4	26.7	10.5	9.1	5.2	24.6	0.6	5.9	1.7	0.0	26.7	6.2
21	0.6	0.0	0.0	3.8	3.1	3.5	1.7	2.7	2.7	3.5	2.7	0.0	0.6	3.1	2.0	5.9	5.6	2.4	0.0	0.5	1.7	0.0	0.0	0.6	5.9	2.0
22	1.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.3	1.9	0.6	0.0	0.6	1.3	0.0	0.0	0.0	0.0	2.4	2.8	3.1	9.4	4.2	9.4	1.2
23	0.0	0.0	0.3	0.0	0.0	0.0	0.0	1.3	2.0	1.3	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	2.8	3.5	5.6	7.3	7.3	1.1
24	8.4	5.5	4.5	3.5	3.1	4.3	3.5	2.7	3.5	4.9	2.5	2.7	3.1	1.7	5.2	2.4	0.6	0.0	0.0	3.8	3.8	7.4	11.6	10.2	11.6	4.1
25	8.0	4.2	1.7	4.9	5.6	1.3	1.0	1.3	1.0	7.7	4.9	1.0	0.0	0.0	0.0	1.0	3.5	2.4	3.5	5.9	7.0	7.3	7.0	6.8	8.0	3.6
26	8.0	10.2	6.6	3.5	3.2	6.6	5.9	7.3	16.1	9.1	6.6	10.9	19.7	9.8	8.0	7.3	5.9	30.6	5.2	5.6	4.5	3.8	2.0	1.0	30.6	8.2
27	2.7	4.4	4.2	2.4	3.8	5.2	2.7	4.9	6.2	6.6	4.9	6.7	6.3	4.5	2.7	1.2	1.0	0.0	0.6	2.0	2.7	6.3	3.8	20.0	20.0	4.4
28	5.9	5.9	4.9	2.4	0.5	5.2	4.2	0.6	0.6	0.6	4.9	5.2	9.8	6.1	1.0	1.2	1.0	1.3	0.6	0.0	0.0	0.0	1.0	2.0	9.8	2.7
29	1.7	1.7	0.0	0.0	1.1	0.0	2.7	2.4	0.0	0.0	1.7	0.0	0.0	0.0	0.0	2.4	1.7	0.0	0.0	0.3	2.7	4.3	4.9	3.8	4.9	1.3
30	5.9	3.7	1.7	2.4	0.0	0.0	1.0	1.4	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.0	5.6	3.8	13.0	12.3	11.9	6.3	13.0	3.2
Hourly Max	8.4	10.2	6.6	15.1	9.8	7.4	8.4	9.1	16.1	14.4	11.9	10.9	19.7	24.3	22.1	26.7	16.1	30.6	7.0	24.6	13.0	12.3	11.9	20.0		
Hourly Average	2.8	2.7	2.1	2.5	1.8	2.0	2.2	2.7	3.0	3.7	3.5	2.8	3.2	3.1	3.2	3.4	2.9	3.1	1.9	2.7	2.3	3.3	3.4	3.1		

C = CALIBRATION

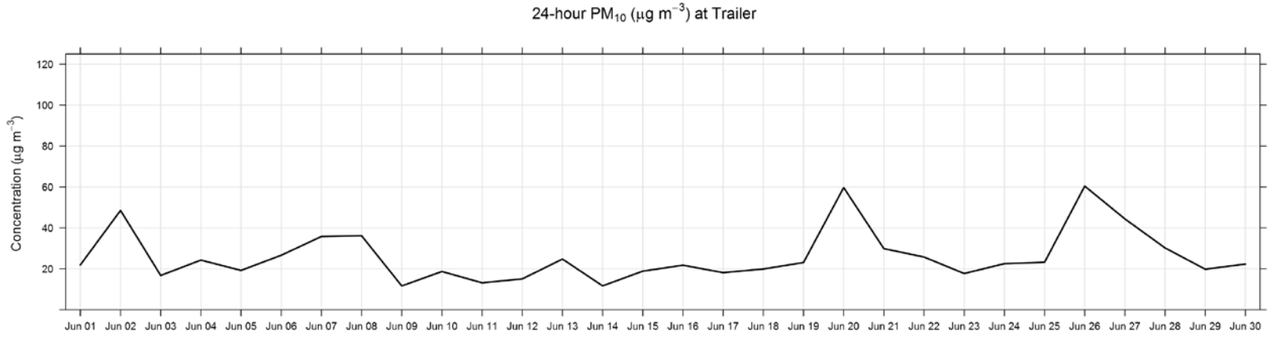


Number of 1HR Exceedances	0		Guideline	80	UG/M3
Number of 24HR Exceedances	0		Objective	30	UG/M3
Number of Non-Zero Readings	519				
Maximum 1-HR Average	30.6	UG/M3			
Maximum 24-HR Average	8.2	UG/M3			
IZS Calibration Time	0	HRS	Operational Time	720	HRS
Monthly Calibration Time	3	HRS	Operational Uptime	100.0	%
Standard Deviation	3.7		Monthly Average	2.8	UG/M3

Lagoon PM_{10} (µg/m^3) – June 2017

Day/Hour	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Daily Max	24-hour Average
1	20.2	19.5	13.9	25.9	17.4	13.9	17.4	26.8	24.5	54.7	56.9	11.8	20.9	23.7	19.5	9.0	26.6	28.0	32.2	30.1	18.1	6.8	3.3	4.7	56.9	21.9
2	10.3	9.7	18.1	7.5	22.3	12.5	81.9	61.8	130.8	160.9	84.2	35.0	65.3	16.7	43.5	48.4	114.6	76.6	56.1	26.6	39.9	8.3	25.2	8.7	160.9	48.5
3	8.9	6.1	8.9	9.2	8.3	7.5	16.0	11.8	30.1	39.2	32.9	24.4	14.6	11.9	23.7	21.6	9.0	10.4	6.1	6.8	16.7	47.0	9.7	20.9	47.0	16.7
4	19.5	13.9	22.3	16.0	18.1	22.3	29.4	42.6	35.0	32.2	31.5	45.6	23.8	37.1	20.9	25.2	35.0	20.2	35.0	14.6	12.5	10.4	9.2	9.7	45.6	24.2
5	10.4	12.5	11.1	5.4	16.3	16.0	19.5	36.9	43.5	63.2	32.8	4.0	6.8	23.7	30.1	18.1	18.8	20.9	15.3	13.5	10.4	9.2	11.1	11.8	63.2	19.2
6	16.7	30.9	18.1	18.1	14.6	14.6	23.0	33.6	41.4	30.8	19.4	49.8	30.1	68.4	29.5	28.0	37.1	24.4	29.6	15.3	17.4	19.5	14.6	13.9	68.4	26.6
7	16.7	23.0	18.8	22.3	21.1	14.6	28.0	56.9	56.1	36.4	69.4	35.7	77.3	28.7	71.1	34.1	42.8	39.9	35.0	25.9	28.0	19.4	37.5	20.1	77.3	35.8
8	16.7	15.3	29.4	42.8	20.9	31.5	36.4	42.8	38.5	35.0	57.6	79.6	39.2	22.3	37.1	70.2	103.3	73.8	15.3	11.8	17.4	12.5	11.1	7.5	103.3	36.2
9	6.1	24.5	10.3	25.9	6.8	6.1	2.6	5.4	10.3	9.0	6.1	7.5	10.4	24.7	10.4	11.8	18.1	13.2	18.1	22.4	5.4	6.0	9.7	8.3	25.9	11.6
10	6.2	8.3	6.8	4.7	1.9	22.3	104.8	47.7	25.2	16.0	1.2	2.6	6.1	31.5	29.3	11.8	20.9	18.8	13.9	28.7	14.6	10.4	7.5	6.8	104.8	18.7
11	6.1	7.5	6.1	6.8	9.7	10.4	11.0	18.8	13.9	11.1	27.3	41.3	31.5	10.4	6.8	4.6	9.7	25.7	15.3	9.0	2.6	6.1	12.5	11.8	41.3	13.2
12	6.8	7.5	6.1	3.3	7.5	9.7	11.1	23.7	23.0	47.0	36.4	16.0	9.7	11.1	7.8	7.4	10.4	10.4	12.5	37.1	17.4	19.1	9.7	11.1	47.0	15.1
13	19.5	14.6	25.2	10.4	11.8	9.7	30.8	35.0	36.7	170.2	23.0	29.7	15.9	49.7	30.1	15.3	15.6	10.7	6.8	6.1	5.4	6.8	8.3	6.8	170.2	24.7
14	5.4	9.7	10.4	11.1	8.3	3.5	6.2	9.7	9.7	11.8	16.0	27.3	11.8	19.5	24.4	11.1	10.4	9.0	8.2	9.7	9.7	19.5	7.5	10.3	27.3	11.7
15	16.2	17.4	18.1	4.0	6.9	10.4	12.5	22.3	37.6	21.0	30.1	32.2	36.3	**C**	**C**	15.3	42.1	16.7	9.0	9.7	7.5	25.2	6.1	18.2	42.1	18.8
16	11.1	11.1	18.1	4.7	9.0	8.3	6.1	10.4	47.7	41.2	48.4	28.0	30.8	28.7	28.0	51.2	30.1	38.5	0.0	16.0	13.9	7.5	0.0	33.6	51.2	21.8
17	4.0	28.7	9.0	8.3	9.7	16.2	10.4	18.8	15.3	25.9	24.4	40.2	22.3	29.4	17.4	32.2	10.4	8.3	9.7	10.4	8.3	54.8	11.5	9.7	54.8	18.1
18	30.8	18.8	4.0	6.1	9.0	7.5	9.7	12.5	10.9	9.0	18.8	5.4	25.2	37.1	30.1	46.3	45.6	34.3	47.2	21.0	8.3	1.2	23.1	16.1	47.2	19.9
19	11.8	19.5	5.4	5.4	5.4	8.3	23.8	30.1	37.8	35.3	30.1	54.0	42.8	55.4	24.4	35.8	26.6	7.9	11.8	13.2	22.3	11.1	25.2	10.4	55.4	23.1
20	4.7	4.7	9.7	7.5	8.3	16.7	28.0	35.0	61.8	58.3	76.6	177.3	133.6	161.1	82.9	168.8	50.5	34.3	61.8	80.1	34.3	116.1	0.0	20.7	177.3	59.7
21	5.4	4.7	4.7	4.0	4.7	8.3	16.0	28.2	21.0	42.8	42.1	44.9	85.7	82.9	54.0	66.7	77.3	53.3	23.5	3.2	7.5	9.0	6.8	19.5	85.7	29.8
22	6.1	9.0	12.5	18.1	5.4	6.8	20.2	20.2	44.2	43.5	51.9	50.5	66.7	59.7	59.7	14.4	23.2	22.3	7.1	11.1	26.6	14.6	14.6	9.7	66.7	25.8
23	3.3	2.6	16.7	7.5	6.8	7.8	9.7	31.8	28.0	32.2	18.1	16.7	22.3	25.2	20.2	12.5	30.1	21.5	36.4	20.2	0.0	18.7	20.9	15.3	36.4	17.7
24	27.3	25.2	13.9	13.2	18.8	19.5	19.5	35.0	26.6	45.6	32.8	14.5	16.7	35.7	35.7	18.7	12.5	16.0	12.5	25.2	9.7	23.1	28.0	14.6	45.6	22.5
25	16.0	19.3	14.5	25.9	18.8	19.5	15.3	16.2	20.9	23.7	21.6	11.8	18.8	38.5	17.4	64.6	18.1	23.7	39.2	23.7	37.1	23.7	17.4	10.4	64.6	23.2
26	20.2	28.0	20.9	20.6	24.5	20.9	38.6	58.3	90.7	79.4	51.2	94.2	178.7	121.1	68.8	80.8	58.3	238.0	33.5	37.1	34.3	21.6	11.1	18.8	238.0	60.4
27	42.8	35.0	18.8	6.1	18.1	16.0	20.2	36.6	41.4	119.5	101.2	86.4	99.8	58.5	64.6	44.9	71.6	48.3	30.8	28.5	16.0	15.3	13.9	30.8	119.5	44.4
28	20.9	13.9	19.5	10.4	20.9	18.8	24.5	39.9	73.1	63.9	35.7	38.5	104.7	76.6	67.4	28.7	22.3	10.4	5.9	1.2	3.3	3.3	16.0	4.7	104.7	30.2
29	4.7	5.4	6.8	8.3	6.8	7.5	23.7	25.2	22.3	20.9	30.1	12.5	7.5	4.0	18.8	130.1	43.5	15.3	14.7	10.2	10.4	14.5	12.5	19.5	130.1	19.8
30	22.3	17.4	28.0	10.4	8.8	9.7	19.5	49.1	25.2	25.9	15.3	11.8	9.7	11.8	11.1	23.0	33.6	47.0	14.6	21.6	37.8	37.8	20.5	23.8	49.1	22.3
Hourly Max	42.8	35.0	29.4	42.8	24.5	31.5	104.8	61.8	130.8	170.2	101.2	177.3	178.7	161.1	82.9	168.8	114.6	238.0	61.8	80.1	39.9	116.1	37.5	33.6		
Hourly Average	13.9	15.5	14.2	12.3	12.2	13.2	23.9	30.8	37.4	46.8	37.4	37.6	42.2	41.6	34.0	38.3	35.6	33.9	21.9	19.7	16.4	19.9	13.5	14.3		

C = CALIBRATION

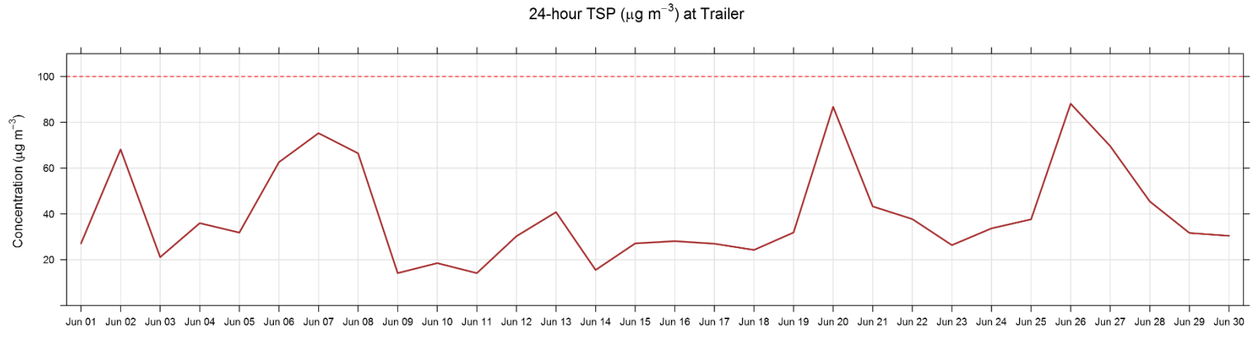


Number of 1HR Exceedances	n/a		Objective	n/a	UG/M3
Number of Non-Zero Readings	714				
Maximum 1-HR Average	238.0	UG/M3			
Maximum 24-HR Average	60.4	UG/M3			
IZS Calibration Time	0	HRS	Operational Time	720	HRS
Monthly Calibration Time	2	HRS	Operational Uptime	100.0	%
Standard Deviation	26.0		Monthly Average	26.1	UG/M3

Lagoon TSP (µg/m^3) – June 2017

Day/Hour	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Daily Max	24-hour Average
1	34.8	22.3	16.8	22.3	18.2	18.2	19.5	26.5	30.6	49.9	65.1	11.3	25.1	26.5	26.5	26.5	36.1	30.6	49.9	33.4	20.9	15.4	8.5	15.4	65.1	27.1
2	8.5	8.5	18.2	15.4	32.0	7.1	113.5	67.9	186.7	240.6	113.5	49.9	83.1	16.8	59.6	83.1	172.9	121.8	80.3	27.8	63.8	25.1	33.4	6.2	240.6	68.2
3	14.0	3.0	7.1	9.9	7.1	5.7	7.1	7.1	30.6	47.2	37.5	25.1	11.3	15.4	30.6	36.1	12.6	11.3	11.3	12.6	43.0	67.9	20.9	32.0	67.9	21.1
4	23.7	20.9	26.5	15.4	29.2	25.1	34.8	62.4	46.7	25.1	30.6	87.2	55.5	74.9	48.6	32.0	54.1	32.0	55.3	14.6	20.9	18.2	12.6	16.8	87.2	36.0
5	11.3	9.9	15.4	15.4	15.4	22.3	25.1	49.9	33.4	105.2	44.4	18.2	18.2	30.6	32.0	29.2	48.6	62.4	32.0	40.7	27.8	33.4	22.3	20.9	105.2	31.8
6	23.7	34.8	20.9	25.1	14.0	9.9	20.9	52.7	52.7	29.2	32.0	101.1	96.9	172.9	110.7	177.0	134.2	114.9	80.3	59.6	34.7	47.2	32.7	23.7	177.0	62.6
7	37.5	48.6	30.6	41.7	34.8	26.5	41.7	83.1	77.6	44.4	103.8	94.2	143.9	92.4	159.1	92.8	116.3	98.3	95.3	110.7	76.2	45.8	62.4	48.6	159.1	75.3
8	36.1	29.2	37.5	63.8	41.7	47.2	45.6	49.9	45.8	55.5	121.8	232.3	254.4	32.0	106.1	106.6	166.0	51.3	14.0	12.6	15.4	14.0	8.8	7.1	254.4	66.4
9	8.5	19.6	16.8	18.2	11.3	8.5	4.4	5.7	8.5	7.1	5.7	8.5	5.7	32.0	9.9	27.8	15.4	27.8	23.7	20.9	11.3	16.7	14.0	11.3	32.0	14.1
10	9.9	5.7	5.7	1.8	1.6	20.9	135.7	62.6	40.3	14.0	8.5	4.3	5.7	20.9	19.6	3.0	7.1	9.9	11.1	20.9	17.3	1.6	5.7	9.9	135.7	18.5
11	8.5	5.7	6.0	9.9	9.9	4.3	5.7	16.8	5.7	5.7	19.3	40.3	30.6	17.2	4.3	5.7	23.7	29.2	21.8	8.5	4.2	15.4	26.5	14.0	40.3	14.1
12	9.9	5.7	4.3	5.7	7.1	7.1	9.9	22.3	26.7	45.8	45.8	18.2	14.0	18.2	19.5	16.8	44.4	76.2	79.2	101.1	46.8	41.7	29.2	30.6	101.1	30.3
13	30.6	32.0	22.3	12.6	20.9	14.0	29.2	40.3	41.7	340.1	45.8	55.5	27.8	83.1	47.5	33.4	27.8	19.6	12.6	11.3	8.5	7.1	6.2	8.5	340.1	40.8
14	11.3	21.0	18.2	17.1	1.6	4.3	7.1	8.5	7.1	7.1	18.2	29.2	22.3	27.8	33.6	7.1	8.9	8.5	8.5	11.3	19.6	27.9	19.6	26.2	33.6	15.5
15	26.5	25.1	19.6	18.2	14.0	7.1	20.9	36.1	30.7	40.3	40.3	59.6	59.6	**C**	**C**	40.3	48.6	11.3	9.9	15.4	20.9	22.3	11.7	18.2	59.6	27.1
16	12.6	6.3	4.4	8.5	5.7	16.8	1.6	41.7	40.3	44.4	44.4	37.5	29.2	40.3	51.4	62.4	38.9	59.6	9.9	9.9	32.0	16.8	7.1	52.7	62.4	28.1
17	9.8	37.5	30.6	18.2	11.3	20.9	18.2	14.0	19.5	22.3	44.6	59.6	33.4	43.0	32.0	47.2	9.9	9.9	16.8	7.1	9.9	110.8	5.7	15.4	110.8	27.0
18	59.6	15.4	7.1	4.3	3.0	8.5	18.2	0.2	0.0	1.6	8.5	12.6	29.2	44.5	34.7	70.7	65.8	43.0	65.1	27.8	14.0	4.3	29.2	14.4	70.7	24.2
19	22.3	20.9	9.9	9.9	11.3	23.7	28.8	36.1	61.1	47.2	40.3	58.2	58.2	55.5	36.1	74.8	48.6	18.2	25.1	9.9	15.4	7.1	26.8	19.5	74.8	31.9
20	20.9	3.0	5.7	6.2	14.4	14.0	26.5	56.9	92.5	83.1	109.3	253.0	195.0	230.7	134.2	204.7	77.6	62.4	110.7	137.0	54.1	161.9	7.1	21.4	253.0	86.8
21	4.4	4.3	5.7	5.7	14.2	11.3	19.6	23.7	23.7	47.2	48.6	80.3	138.4	120.4	88.6	96.9	102.4	80.3	25.1	22.3	25.1	13.8	9.9	26.5	138.4	43.3
22	9.9	23.7	20.9	19.6	8.5	9.9	27.8	26.5	52.6	76.2	76.2	67.9	81.7	80.3	83.1	9.9	33.3	23.7	19.6	48.6	61.0	23.7	12.6	8.5	83.1	37.7
23	4.3	15.4	22.3	1.5	15.4	11.3	11.3	32.0	23.7	36.1	32.0	25.1	26.5	41.7	14.0	14.4	52.7	40.3	67.8	23.7	22.3	37.5	33.4	27.8	67.8	26.4
24	55.5	32.0	26.5	18.2	21.4	7.1	15.4	36.1	22.4	67.9	56.9	26.5	16.6	88.6	63.8	36.1	22.3	19.5	18.2	41.7	14.0	47.2	34.8	19.6	88.6	33.7
25	22.3	18.2	15.4	25.1	29.2	15.4	15.4	15.4	11.2	26.5	40.3	20.9	22.4	62.4	43.0	128.6	55.6	47.2	76.2	59.6	52.7	44.4	29.2	26.5	128.6	37.6
26	23.7	47.2	27.9	23.7	26.5	24.9	56.9	72.1	113.5	102.4	83.1	164.6	283.4	182.6	95.5	116.3	87.2	367.7	23.7	49.4	45.8	40.3	22.3	34.7	367.7	88.1
27	58.2	59.6	44.4	15.4	36.1	25.9	30.6	44.4	46.7	191.1	156.3	150.8	181.4	74.8	103.2	69.3	107.7	82.2	52.7	34.7	23.5	14.6	19.6	46.9	191.1	69.6
28	34.8	22.3	23.7	18.2	22.3	4.3	38.9	45.8	106.6	95.5	51.4	54.9	170.8	116.3	125.9	36.1	49.9	12.6	11.3	7.1	6.1	11.3	7.1	16.8	170.8	45.4
29	3.0	5.7	8.5	4.3	5.7	9.9	19.5	33.4	33.2	11.3	37.5	21.9	4.4	7.2	25.1	271.0	72.0	29.2	15.4	22.3	16.8	44.4	27.8	30.6	271.0	31.7
30	45.8	19.6	30.6	9.9	7.1	7.1	20.9	59.6	22.3	27.8	19.5	24.8	16.8	15.4	19.5	37.5	45.8	81.7	12.6	37.5	52.7	48.6	32.0	34.8	81.7	30.4
Hourly Max	59.6	59.6	44.4	63.8	41.7	47.2	135.7	83.1	186.7	340.1	156.3	253.0	283.4	230.7	159.1	271.0	172.9	367.7	110.7	137.0	76.2	161.9	62.4	52.7		
Hourly Average	22.7	20.8	18.3	16.0	16.4	14.6	29.0	37.6	44.5	64.6	52.7	63.1	71.4	64.3	57.2	66.4	59.5	56.1	37.8	34.7	29.2	34.2	20.6	22.8		

C = CALIBRATION

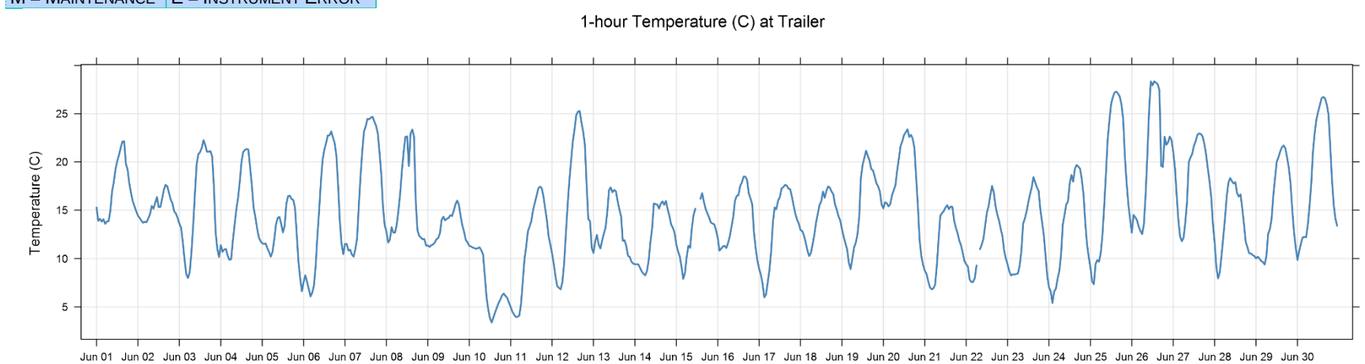


Number of 24HR Exceedances	0		Objective	100	UG/M3
Number of Non-Zero Readings	717				
Maximum 1-HR Average	367.7	UG/M3			
Maximum 24-HR Average	88.1	UG/M3			
IZS Calibration Time	0	HRS	Operational Time	720	HRS
Monthly Calibration Time	2	HRS	Operational Uptime	100.0	%
Standard Deviation	44.0		Monthly Average	39.7	UG/M3

Lagoon Temperature (°C) – June 2017

Day/Hour	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Daily Max	24-hour Average
1	15.3	13.9	14.1	13.8	14.1	13.6	13.8	13.9	14.9	17.0	17.9	19.3	20.1	20.7	21.5	22.1	22.1	19.8	19.2	17.8	16.8	15.9	15.4	14.9	22.1	17.0
2	14.4	14.2	13.9	13.7	13.8	13.8	14.2	14.6	15.4	15.2	15.8	16.4	15.3	15.3	16.2	17.1	17.6	17.5	16.8	16.1	15.7	14.9	14.7	14.2	17.6	15.3
3	13.6	13.2	11.7	9.9	8.4	8.0	8.6	10.7	13.4	16.7	19.7	20.8	21.0	21.5	22.3	21.8	21.1	21.1	21.1	20.6	17.5	12.7	11.0	10.2	22.3	15.7
4	11.4	10.7	10.9	11.0	10.3	9.9	9.9	11.8	13.5	15.1	16.3	17.9	20.0	21.0	21.2	21.4	21.3	19.4	17.6	15.3	14.3	13.2	12.2	11.8	21.4	14.9
5	11.6	11.5	11.6	11.1	10.7	10.2	10.7	12.0	13.5	14.2	14.3	13.6	12.7	13.4	15.7	16.5	16.5	16.2	16.1	15.3	12.6	9.7	8.0	6.6	16.5	12.7
6	7.5	8.3	7.6	6.8	6.1	6.5	7.2	9.3	12.4	14.9	17.9	20.2	21.3	21.9	22.7	22.8	23.2	22.6	22.0	20.7	17.6	13.8	11.5	10.4	23.2	14.8
7	11.5	11.5	10.8	10.9	10.4	10.2	11.0	12.1	15.5	18.5	21.1	23.2	23.7	24.5	24.4	24.6	24.7	24.2	23.7	23.0	21.0	18.7	15.4	13.4	24.7	17.8
8	12.8	11.7	11.9	13.2	12.7	12.7	13.5	15.0	16.8	19.1	21.1	22.6	22.6	19.6	22.9	23.4	22.6	15.9	12.9	12.3	12.2	12.0	12.0	11.3	23.4	16.0
9	11.4	11.2	11.4	11.5	11.6	12.0	12.1	12.6	14.0	14.3	14.0	14.1	14.2	14.5	14.4	14.9	15.6	16.0	15.6	14.4	13.4	12.8	11.9	11.7	16.0	13.3
10	11.3	11.2	11.1	11.1	11.0	11.1	11.2	10.8	10.4	8.2	6.1	4.7	3.8	3.4	3.9	4.4	4.9	5.4	5.7	6.2	6.4	6.1	5.9	5.4	11.3	7.5
11	5.0	4.5	4.2	3.9	4.0	4.1	5.3	7.5	9.9	11.2	12.8	13.3	13.9	15.0	15.8	16.5	17.3	17.4	17.3	16.4	15.2	14.0	12.3	11.4	17.4	11.2
12	10.5	9.4	8.1	7.1	7.0	6.8	7.6	9.5	12.6	15.5	18.0	20.1	22.1	23.3	24.8	25.2	25.3	24.1	23.2	21.8	17.8	14.1	13.9	11.1	25.3	15.8
13	10.6	11.8	12.4	11.5	11.0	11.8	12.6	13.2	14.8	17.1	17.4	16.9	17.1	17.0	15.9	15.1	14.4	11.8	11.9	11.3	10.3	10.2	9.7	9.5	17.4	13.1
14	9.4	9.4	9.4	9.0	8.7	8.4	8.3	8.7	9.8	11.7	13.1	15.7	15.6	15.6	15.2	15.7	15.9	15.6	16.0	15.1	14.4	13.5	13.2	12.7	16.0	12.5
15	11.5	10.7	10.2	9.2	7.9	8.5	10.1	11.3	11.1	13.1	14.5	15.1	**M**	**M**	16.2	16.8	15.9	15.1	14.7	14.3	13.7	13.6	13.5	12.9	16.8	12.7
16	12.2	10.8	11.0	11.3	11.3	11.1	11.6	12.3	13.3	14.3	16.0	16.5	16.6	17.5	17.9	18.5	18.5	18.2	16.8	16.2	15.6	12.7	11.1	9.8	18.5	14.2
17	8.9	8.3	7.4	6.0	6.3	7.5	8.8	10.8	13.7	15.3	15.1	16.0	16.4	17.3	17.4	17.6	17.6	17.2	17.2	16.4	15.5	14.6	14.0	13.6	17.6	13.3
18	12.9	12.9	12.4	11.7	10.8	10.3	10.6	11.5	12.5	13.7	14.6	15.5	15.9	16.9	16.3	17.0	17.5	17.3	16.9	16.7	15.6	15.1	14.4	13.9	17.5	14.3
19	13.0	12.3	11.6	11.0	9.6	8.9	9.9	11.1	11.6	12.5	14.3	18.4	19.7	20.4	21.2	20.6	20.1	19.3	19.1	18.5	17.8	17.5	16.9	15.6	21.2	15.5
20	15.2	15.8	15.7	15.4	15.6	16.5	17.1	17.6	19.1	20.3	21.7	22.1	22.8	23.1	23.4	22.6	22.8	22.4	21.4	18.4	15.5	11.9	10.3	9.4	23.4	18.2
21	8.8	8.4	7.7	7.0	6.8	6.9	7.3	9.3	12.0	14.4	14.7	14.9	15.3	15.5	15.1	15.4	15.4	14.0	13.2	12.6	11.9	11.4	10.6	9.7	15.5	11.6
22	9.4	9.2	7.8	7.6	7.6	8.0	9.3	**E**	11.0	11.4	12.0	13.4	14.8	15.4	16.6	17.5	16.9	15.5	14.6	14.0	13.1	12.3	10.8	10.0	17.5	12.1
23	9.4	8.7	8.2	8.4	8.3	8.4	8.4	9.3	10.8	13.6	14.1	14.9	15.8	16.6	17.4	18.4	17.9	17.4	17.0	15.1	13.8	12.4	10.3	8.2	18.4	12.6
24	7.0	6.6	5.4	6.6	6.9	7.9	8.7	10.4	13.5	14.5	15.6	15.9	17.8	18.7	18.0	19.3	19.7	19.5	19.3	18.2	16.7	13.8	11.5	10.2	19.7	13.4
25	9.1	7.6	7.3	9.4	9.8	9.7	10.6	12.5	15.4	18.8	22.3	24.3	26.0	26.7	27.2	27.3	27.1	26.8	26.0	24.4	20.6	17.8	15.6	14.1	27.3	18.2
26	12.7	14.5	14.3	14.0	13.3	12.9	12.5	13.6	16.6	20.6	25.3	28.3	27.9	28.4	28.2	28.1	27.4	19.6	19.5	22.6	21.8	22.0	22.6	22.3	28.4	20.4
27	21.1	19.4	16.5	13.9	12.3	11.8	12.2	13.7	15.9	20.0	20.5	20.8	21.7	22.1	22.8	23.0	22.9	22.7	21.9	20.8	19.4	18.0	16.4	13.6	23.0	18.5
28	11.7	9.1	7.9	8.6	10.3	12.2	14.2	16.4	17.9	18.3	18.0	17.8	17.9	16.8	16.4	16.6	15.2	13.6	11.7	11.2	10.5	10.5	10.4	10.3	18.3	13.5
29	10.0	10.2	10.0	9.7	9.6	9.4	10.2	12.6	13.0	14.1	16.5	18.3	20.0	20.5	21.1	21.5	21.7	21.4	20.5	19.4	17.7	15.0	12.7	11.1	21.7	15.3
30	9.9	10.8	11.5	12.2	12.2	12.2	13.5	15.4	17.8	21.1	23.0	24.4	25.2	25.9	26.6	26.7	26.6	25.9	24.9	21.6	18.2	15.6	14.1	13.4	26.7	18.7
Hourly Max	21.1	19.4	16.5	15.4	15.6	16.5	17.1	17.6	19.1	21.1	25.3	28.3	27.9	28.4	28.2	28.1	27.4	26.8	26.0	24.4	21.8	22.0	22.6	22.3		
Hourly Average	11.3	10.9	10.5	10.2	9.9	10.0	10.7	12.1	13.7	15.5	16.8	17.8	18.5	18.9	19.3	19.6	19.5	18.4	17.8	16.9	15.4	13.9	12.7	11.8		

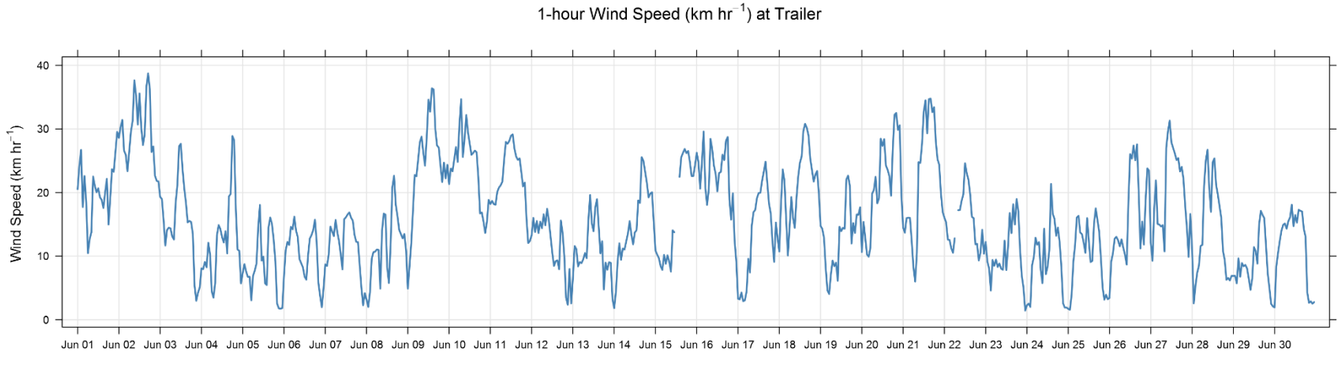
M = Maintenance | E = Instrument Error



Lagoon Wind Speed (km/hr) – June 2017

Day/Hour	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Daily Max	24-hour Average
1	20.5	24.1	26.7	17.7	22.6	18.5	10.5	12.7	13.8	22.5	21.1	20.0	20.7	19.3	18.9	17.6	20.1	22.2	15.0	19.2	23.7	23.3	26.4	29.6	29.6	20.3
2	28.6	30.3	31.4	26.6	26.0	23.4	26.4	29.6	31.3	37.7	35.2	30.7	35.6	30.2	27.5	29.1	36.7	38.7	36.2	26.4	27.3	22.6	21.8	21.8	38.7	29.6
3	19.3	19.0	15.6	11.7	14.1	14.5	14.4	13.1	12.6	18.4	21.2	27.3	27.7	23.8	20.7	18.4	15.3	15.5	15.4	13.5	5.3	3.0	4.2	5.1	27.7	15.4
4	8.1	8.0	9.1	8.3	12.1	10.3	4.4	3.5	5.8	13.3	14.9	14.3	13.0	12.1	13.9	10.4	19.4	19.8	28.9	28.2	17.4	11.0	10.9	5.7	28.9	12.6
5	7.3	8.7	7.6	6.7	6.8	3.1	6.9	7.7	8.8	14.5	18.1	9.3	9.9	5.7	5.5	14.5	16.1	15.1	12.6	9.2	2.5	1.8	1.7	1.8	18.1	8.4
6	6.9	10.9	12.2	11.8	14.6	14.2	16.2	14.0	13.0	9.6	8.9	8.2	6.8	6.3	10.1	12.8	13.3	14.1	15.7	12.3	5.8	3.7	2.0	4.9	16.2	10.3
7	8.7	8.4	10.2	14.7	13.9	13.2	15.7	13.8	12.4	10.3	7.9	15.8	16.1	16.6	16.9	16.1	15.6	13.4	12.3	12.2	8.7	5.1	2.3	4.2	16.9	11.8
8	3.2	2.0	4.3	9.6	10.6	10.7	11.1	11.0	4.9	13.9	16.7	16.5	8.3	5.8	11.8	20.8	22.6	18.1	16.3	14.1	13.5	12.8	13.5	10.8	22.6	11.8
9	4.9	8.4	12.0	17.1	22.8	22.6	25.2	27.9	28.8	26.3	24.2	28.6	34.6	32.7	36.4	36.2	30.0	27.4	27.1	24.3	21.7	24.7	22.2	24.4	36.4	24.6
10	21.3	23.8	23.3	25.2	27.2	24.8	30.6	34.7	25.6	28.5	32.2	29.5	27.7	25.9	26.2	26.6	26.3	22.4	16.7	16.9	15.5	13.6	15.4	18.9	34.7	24.1
11	18.2	18.7	18.2	18.1	20.1	20.8	21.1	21.7	25.1	28.0	27.7	28.1	28.9	29.1	26.9	25.7	25.1	25.4	23.2	21.0	21.6	16.0	12.1	12.4	29.1	22.2
12	13.3	16.0	13.8	15.5	13.6	15.4	14.4	16.6	14.9	17.5	15.6	13.1	10.5	8.5	9.2	9.3	7.9	15.6	13.7	10.0	3.5	2.3	8.0	2.6	17.5	11.7
13	6.5	11.6	11.1	8.4	9.1	8.9	9.5	10.5	9.7	15.6	19.6	15.2	13.9	17.7	19.0	14.7	10.4	12.3	4.7	9.0	7.9	9.0	8.9	3.3	19.6	11.1
14	1.8	4.3	9.2	12.0	9.4	11.2	11.0	12.3	13.6	15.5	13.4	11.9	13.7	14.1	18.8	18.4	25.6	25.0	23.3	21.5	19.2	19.9	20.0	15.4	25.6	15.0
15	10.9	10.2	9.7	8.4	7.8	10.2	8.8	10.1	9.2	7.6	14.1	13.7	**M**	**M**	22.5	25.6	26.2	26.9	26.2	26.5	24.9	22.6	22.6	24.3	26.9	16.8
16	26.3	24.8	20.6	24.6	29.6	20.8	18.1	20.4	28.5	26.8	24.2	22.9	20.2	23.1	23.2	26.0	25.1	28.2	28.7	18.9	15.7	19.9	12.5	9.1	29.6	22.4
17	3.3	3.2	4.3	2.9	3.1	4.5	9.6	7.4	14.8	16.9	17.3	19.1	19.9	20.0	21.9	23.3	24.9	21.6	18.3	16.8	12.4	9.1	15.3	12.9	24.9	13.4
18	10.7	18.3	23.6	21.9	15.7	10.1	14.5	19.3	16.0	14.4	19.1	22.5	24.7	25.7	29.7	30.8	30.2	29.0	25.4	23.5	21.7	22.8	23.4	19.9	30.8	21.4
19	14.8	14.3	12.9	8.1	4.6	4.0	7.1	9.3	8.4	9.0	6.1	14.6	13.9	14.5	14.3	22.1	22.7	21.1	12.0	15.2	13.6	16.5	16.5	17.7	22.7	13.1
20	10.7	15.4	12.8	10.3	9.9	11.3	19.9	20.4	22.5	18.3	19.1	28.5	27.3	28.4	24.3	23.6	22.6	19.5	26.9	32.2	32.5	29.9	30.6	19.6	32.5	21.5
21	14.5	13.7	16.0	16.0	16.0	12.3	8.2	6.0	10.5	24.8	24.7	27.7	32.7	34.5	29.3	34.7	34.8	32.6	33.4	28.1	25.3	24.4	19.8	17.0	34.8	22.4
22	16.1	15.3	12.6	12.5	11.2	10.5	12.8	**E**	17.2	17.2	18.7	19.7	24.6	23.1	22.0	19.7	16.2	16.0	11.9	11.9	9.3	10.6	14.1	10.4	24.6	15.4
23	12.2	9.1	8.0	4.6	9.4	8.5	9.5	8.3	8.8	8.0	7.9	12.4	7.8	11.4	16.8	13.6	18.2	15.0	19.0	17.0	11.0	6.9	5.0	1.4	19.0	10.4
24	2.3	2.5	2.0	8.6	9.9	12.9	11.8	12.2	7.9	5.7	14.3	7.2	8.3	10.9	21.4	16.7	15.9	13.2	14.5	12.2	8.3	2.6	1.9	1.9	21.4	9.4
25	1.7	1.6	4.0	9.1	11.8	16.1	16.3	13.7	13.4	12.1	10.5	16.0	12.3	9.1	9.3	15.1	17.5	15.7	13.8	9.7	5.1	3.2	3.9	3.2	17.5	10.2
26	3.4	9.1	10.4	12.7	13.0	12.5	11.6	12.6	11.4	10.2	8.7	18.4	26.1	25.3	27.4	25.1	27.6	20.0	11.2	15.4	11.8	18.8	23.8	23.4	27.6	16.3
27	12.2	9.3	17.5	21.9	15.1	15.0	14.7	14.9	10.7	27.0	29.6	31.3	27.9	27.0	26.2	25.1	25.4	23.3	24.0	22.2	18.0	14.5	9.9	16.6	31.3	20.0
28	11.4	2.6	5.3	7.4	8.5	11.6	11.8	21.0	25.0	26.7	20.7	17.0	24.8	25.4	21.2	19.7	17.9	16.0	10.8	9.4	6.3	6.6	6.2	6.9	26.7	14.2
29	6.9	6.9	5.7	9.7	6.8	8.9	8.4	8.6	8.1	6.5	4.7	6.5	11.4	10.8	8.8	15.0	17.1	16.5	16.0	11.7	7.3	5.0	2.5	2.1	17.1	8.8
30	1.9	8.4	10.5	12.4	14.0	14.9	15.1	14.3	15.5	16.1	18.1	14.7	16.5	15.3	17.3	17.1	17.0	14.3	13.1	4.3	2.7	2.9	2.5	2.8	18.1	11.7
Hourly Max	28.6	30.3	31.4	26.6	29.6	24.8	30.6	34.7	31.3	37.7	35.2	31.3	35.6	34.5	36.4	36.2	36.7	38.7	36.2	32.2	32.5	29.9	30.6	29.6		
Hourly Average	10.9	12.0	12.7	13.1	13.6	13.2	13.9	14.8	14.9	17.3	17.8	18.7	19.5	19.0	19.9	20.8	21.5	20.5	18.9	17.1	14.0	12.8	12.7	11.7		

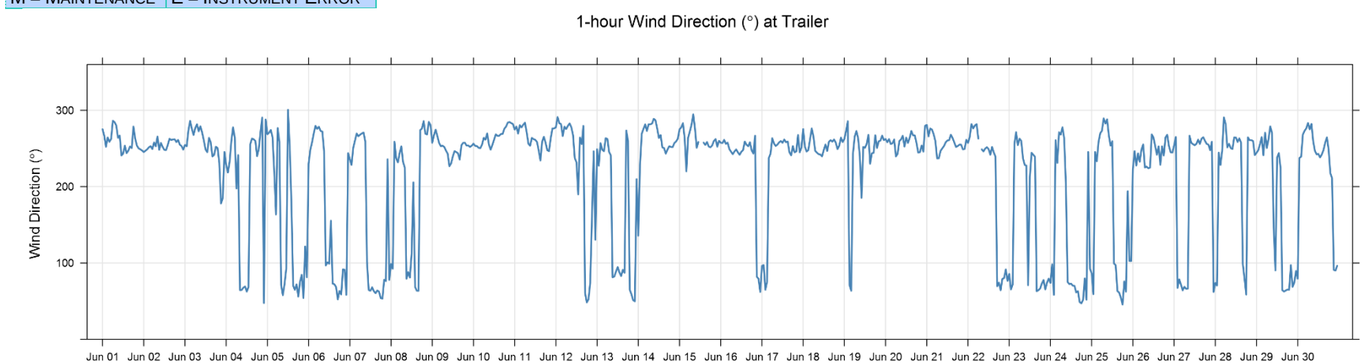
M = Maintenance | E = Instrument Error



Lagoon Wind Direction (°) – June 2017

Day/Hour	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Daily Max	24-hour Average
1	275.2	266.6	252.2	264.4	258.7	262.5	286.3	284.5	280.1	264.0	266.8	240.8	243.2	253.6	243.8	247.0	252.5	250.5	278.7	263.1	253.8	250.1	248.8	247.4	286.3	259.8
2	245.2	247.0	248.8	251.5	253.0	249.2	257.8	252.9	265.6	248.2	257.2	252.1	248.1	247.9	254.7	262.7	261.1	261.7	262.1	258.3	261.2	255.0	253.2	248.5	265.6	254.3
3	254.6	252.8	273.4	286.1	275.8	267.6	276.8	281.6	272.4	279.0	270.9	260.4	248.6	245.2	263.9	258.0	239.5	241.6	252.3	250.5	231.0	178.0	184.8	245.5	286.1	253.8
4	228.8	218.4	232.4	259.1	277.7	264.6	197.6	241.3	64.5	64.6	67.7	69.2	62.5	68.6	255.3	262.9	262.1	259.9	239.9	249.4	272.1	290.4	47.5	287.9	290.4	197.7
5	268.6	270.7	274.2	264.7	219.3	163.6	276.7	258.6	71.4	57.8	72.6	92.8	300.7	252.1	178.3	70.3	64.8	72.1	56.0	75.5	84.5	54.2	121.7	81.3	300.7	154.3
6	230.0	248.3	257.9	269.6	279.6	275.7	278.4	272.9	272.1	246.6	96.7	100.9	98.9	155.4	73.0	72.2	68.6	52.3	63.4	58.8	91.5	91.1	58.2	243.9	279.6	164.8
7	235.8	228.4	250.9	260.3	269.5	266.0	268.1	269.6	270.9	259.2	101.6	64.6	63.6	68.2	63.1	60.4	64.0	62.5	54.0	53.4	78.0	76.3	235.9	77.8	270.9	154.3
8	98.7	92.5	258.8	237.1	231.7	243.7	252.7	232.3	225.1	79.4	88.0	80.9	112.5	205.6	68.7	63.6	63.5	274.0	276.1	285.8	269.3	268.3	284.7	280.6	285.8	190.6
9	257.4	267.4	274.6	266.0	257.2	253.0	253.7	251.9	247.2	243.0	226.7	230.5	239.7	246.6	245.2	243.7	235.5	254.2	257.3	257.5	253.7	253.9	252.0	253.6	274.6	250.9
10	256.3	253.4	253.2	250.9	250.3	255.1	263.9	261.4	269.7	255.1	248.4	254.5	261.4	268.5	266.5	266.6	268.9	269.0	275.9	278.7	283.9	284.6	283.2	282.0	284.6	265.1
11	274.8	278.7	269.5	280.4	277.6	281.1	283.7	271.0	256.2	253.5	263.8	262.2	261.3	258.5	247.4	234.3	258.9	265.3	257.5	247.7	246.4	263.5	276.1	276.3	283.7	264.4
12	277.6	291.1	283.0	282.0	266.3	278.5	275.5	279.6	282.8	277.7	267.4	237.3	231.9	189.8	264.2	255.7	279.6	60.6	48.3	52.5	74.0	159.5	246.2	130.5	291.1	220.5
13	249.0	227.4	256.9	248.4	246.3	263.4	262.4	245.3	241.0	81.2	82.3	88.7	94.7	87.5	82.9	91.1	87.1	273.5	259.9	65.0	59.0	51.2	49.9	209.8	273.5	162.7
14	135.8	228.5	269.2	275.6	281.4	273.0	281.6	281.7	282.5	288.8	286.9	276.1	263.6	267.5	251.4	250.6	243.2	248.5	252.9	252.0	251.8	257.1	259.1	262.9	288.8	259.2
15	275.0	277.6	283.1	263.1	220.0	264.0	272.3	281.1	294.7	276.0	250.8	258.5	**M**	**M**	257.7	254.6	258.5	252.6	251.5	253.9	259.8	262.3	252.3	260.0	294.7	262.7
16	257.5	257.0	261.3	256.0	257.7	249.3	245.8	242.5	246.1	248.7	244.9	241.7	245.6	247.9	259.0	254.9	252.9	258.1	247.6	243.3	266.7	82.0	79.3	62.1	266.7	229.5
17	96.2	97.3	64.9	75.6	237.5	243.3	263.5	256.6	253.2	255.0	258.0	259.7	257.4	261.7	258.1	259.1	245.0	241.0	253.1	244.9	246.1	267.7	244.9	251.3	267.7	224.6
18	275.5	252.5	245.9	247.9	261.9	276.1	265.4	246.9	244.5	242.5	242.1	239.6	248.0	255.2	246.7	258.7	260.9	258.9	261.7	257.5	249.1	253.5	264.2	258.4	276.1	254.7
19	262.4	273.3	285.7	71.2	63.6	242.9	265.5	272.9	263.4	240.0	185.3	252.1	250.8	256.0	267.8	229.9	243.6	244.2	267.3	250.6	259.3	260.3	266.8	261.0	285.7	239.0
20	262.4	258.1	262.3	255.8	256.7	261.7	239.6	242.9	259.5	261.9	266.7	252.4	264.2	257.2	263.6	272.9	267.1	267.0	257.2	244.5	245.1	253.8	245.8	279.7	279.7	258.3
21	280.9	265.8	276.1	274.8	268.5	259.5	237.0	237.1	246.8	250.1	253.1	258.1	260.4	260.8	268.0	263.7	257.9	252.0	253.2	254.9	254.9	248.9	249.2	261.4	280.9	258.0
22	257.2	265.0	282.0	276.2	280.1	281.9	263.0	**E**	248.8	246.1	249.9	251.6	249.1	241.7	252.0	244.8	239.3	69.6	74.3	64.3	79.2	80.2	91.5	76.6	282.0	202.8
23	85.7	65.4	71.8	255.7	271.3	254.3	262.8	260.0	237.4	228.5	227.5	70.9	212.3	244.3	241.7	239.1	63.1	64.4	66.6	73.2	77.7	65.4	74.3	79.6	271.3	158.0
24	73.9	98.2	58.2	260.9	231.1	271.2	268.1	277.7	263.1	202.9	75.1	72.3	73.0	70.3	70.1	61.4	63.1	48.9	47.1	51.7	79.8	51.9	245.5	92.4	277.7	129.5
25	86.8	59.1	245.5	233.3	258.3	270.0	273.1	289.4	282.6	288.1	267.3	253.6	259.5	99.3	97.2	63.2	61.3	54.6	45.6	75.9	62.4	194.0	102.6	102.5	289.4	167.7
26	223.1	246.5	227.7	243.5	232.5	248.5	255.2	225.1	226.2	224.1	224.9	268.4	264.3	253.1	241.7	252.7	228.7	252.8	240.8	264.5	267.9	253.3	245.0	244.6	268.4	244.0
27	253.9	265.0	67.3	78.6	71.7	64.2	68.8	66.2	66.4	266.7	257.4	255.7	254.2	256.0	261.5	255.9	262.8	264.7	259.9	256.0	255.1	247.8	258.8	62.1	266.7	194.8
28	73.9	70.5	244.6	228.3	246.7	290.7	282.2	251.4	256.0	250.4	249.2	264.5	264.3	258.5	263.2	257.6	99.4	79.7	58.7	264.5	260.9	261.0	259.7	241.3	290.7	219.9
29	244.2	247.6	255.3	264.8	241.1	270.6	250.6	262.0	278.9	270.7	146.7	90.3	238.2	243.9	224.5	64.4	62.6	63.9	65.2	64.9	97.2	68.8	74.2	89.6	278.9	174.2
30	79.4	237.5	239.3	268.3	273.1	276.5	283.3	275.0	282.1	259.5	246.9	242.3	242.9	238.2	242.0	247.9	257.6	264.6	248.2	217.5	211.1	91.0	90.0	96.5	283.3	225.5
Hourly Max	280.9	291.1	285.7	286.1	281.4	290.7	286.3	289.4	294.7	288.8	286.9	276.1	300.7	268.5	268.0	272.9	279.6	274.0	278.7	285.8	283.9	290.4	284.7	287.9		
Hourly Average	212.5	220.2	234.2	241.7	243.9	254.0	257.0	254.2	241.7	230.3	208.1	201.4	217.8	215.8	215.8	204.0	192.4	192.8	191.1	191.0	196.1	189.2	194.8	194.9		

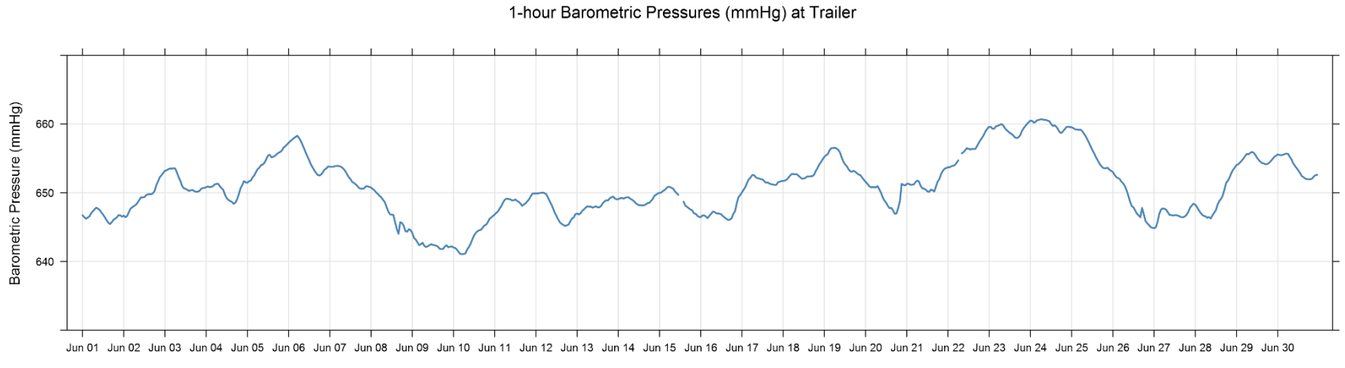
M = MAINTENANCE E = INSTRUMENT ERROR



Lagoon Pressure (mmHg) – June 2017

Day/Hour	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Daily Max	24-hour Average
1	646.7	646.4	646.2	646.4	646.5	647.0	647.3	647.6	647.8	647.7	647.5	647.1	646.8	646.4	646.0	645.7	645.4	645.7	646.1	646.2	646.4	646.8	646.7	646.5	647.8	646.6
2	646.7	646.4	646.6	647.2	647.7	647.9	648.1	648.2	648.5	648.9	649.3	649.3	649.4	649.6	649.8	649.8	649.8	649.9	650.3	651.1	651.7	652.3	652.6	652.9	652.9	649.3
3	653.2	653.3	653.4	653.5	653.5	653.6	653.5	652.9	652.3	651.7	651.0	650.7	650.6	650.4	650.3	650.4	650.4	650.2	650.1	650.2	650.2	650.6	650.7	650.7	653.6	651.6
4	650.8	650.9	650.8	650.8	651.0	651.2	651.3	651.3	650.9	650.7	650.4	649.7	649.2	648.9	648.8	648.7	648.4	648.6	649.0	649.8	650.6	651.1	651.7	651.5	651.7	650.3
5	651.5	651.7	651.8	652.2	652.5	653.0	653.4	653.7	654.0	654.1	654.4	654.9	655.4	655.5	655.2	655.2	655.3	655.6	655.8	655.9	656.1	656.6	656.8	657.0	657.0	654.5
6	657.3	657.5	657.7	657.9	658.1	658.3	658.0	657.6	657.0	656.4	655.8	655.3	654.7	654.1	653.7	653.3	652.9	652.6	652.5	652.7	653.0	653.4	653.5	653.8	658.3	655.3
7	653.8	653.8	653.8	653.9	653.9	653.9	653.8	653.7	653.5	653.1	652.7	652.3	652.0	651.6	651.4	651.2	651.0	650.7	650.6	650.6	650.7	650.9	650.9	650.8	653.9	652.3
8	650.8	650.5	650.3	650.0	649.8	649.5	649.3	649.0	648.7	648.0	647.3	646.9	646.8	646.8	645.7	644.7	644.0	645.7	645.6	645.2	644.4	644.3	644.7	644.6	650.8	647.2
9	644.2	643.4	643.2	642.8	642.4	642.5	642.7	642.3	642.1	642.2	642.4	642.5	642.4	642.3	642.3	642.2	641.8	641.8	641.8	642.2	642.4	642.1	642.2	642.2	644.2	642.4
10	642.0	642.0	641.7	641.4	641.1	641.1	641.1	641.2	641.7	642.1	642.6	643.2	643.8	644.2	644.4	644.5	644.6	644.9	645.2	645.4	645.7	646.2	646.4	646.6	646.6	643.5
11	646.8	647.1	647.3	647.7	648.1	648.6	649.0	649.1	649.1	649.1	648.9	648.9	649.0	648.8	648.7	648.4	648.1	648.3	648.5	648.7	649.0	649.5	649.9	649.9	649.9	648.6
12	649.9	649.9	650.0	650.0	650.0	649.9	649.8	649.3	648.8	648.3	647.7	647.1	646.6	646.1	645.7	645.5	645.3	645.2	645.3	645.4	645.8	646.2	646.4	646.9	650.0	647.5
13	647.0	646.8	647.0	647.4	647.6	647.8	648.0	648.0	648.0	647.8	647.9	648.0	647.9	647.9	648.1	648.5	648.7	648.9	648.9	649.2	649.3	649.4	649.2	649.0	649.4	648.2
14	649.1	649.2	649.2	649.2	649.2	649.4	649.3	649.1	649.0	648.8	648.5	648.3	648.2	648.2	648.2	648.2	648.3	648.5	648.5	648.8	649.1	649.5	649.7	649.9	649.9	648.9
15	650.0	650.0	650.3	650.4	650.7	650.9	650.8	650.7	650.6	650.2	649.9	649.7	**M**	**M**	648.7	648.1	648.0	647.8	647.6	647.4	647.0	647.0	646.7	646.5	650.9	649.0
16	646.5	646.7	646.7	646.5	646.3	646.6	646.9	647.2	647.2	647.0	647.0	647.0	646.8	646.6	646.4	646.2	646.0	646.1	646.3	646.9	647.3	648.5	649.4	649.7	649.7	647.0
17	650.1	650.5	650.9	651.5	651.9	652.2	652.6	652.6	652.3	652.1	652.1	652.0	651.9	651.7	651.5	651.5	651.3	651.3	651.2	651.1	651.2	651.5	651.6	651.7	652.6	651.6
18	651.7	651.8	651.9	652.2	652.5	652.7	652.7	652.7	652.7	652.5	652.2	652.0	652.1	652.2	652.4	652.4	652.4	652.4	652.6	653.2	653.6	654.1	654.5	654.9	654.9	652.7
19	655.2	655.5	655.6	656.2	656.5	656.5	656.6	656.4	656.3	655.9	655.2	654.6	654.1	653.9	653.5	653.1	653.1	653.2	653.1	652.8	652.6	652.6	652.2	651.9	656.6	654.4
20	651.6	651.3	651.0	650.8	650.8	650.8	650.8	651.0	650.5	650.0	649.3	648.9	648.5	648.1	647.7	647.8	647.4	646.9	647.0	647.8	648.8	651.3	651.1	651.1	651.6	649.6
21	651.3	651.3	651.2	651.2	651.2	651.5	651.8	651.7	651.0	650.6	650.6	650.5	650.2	650.1	650.4	650.4	650.2	650.9	651.6	652.0	652.7	653.2	653.5	653.6	653.6	651.4
22	653.7	653.7	653.9	653.9	654.0	654.4	654.7	**E**	655.7	655.9	656.2	656.5	656.4	656.3	656.4	656.4	656.4	656.8	657.3	657.7	658.1	658.5	659.0	659.4	659.4	656.1
23	659.6	659.6	659.3	659.4	659.7	659.7	659.9	660.0	659.8	659.4	659.2	658.9	658.7	658.5	658.3	658.1	658.0	658.1	658.4	659.0	659.4	659.7	660.0	660.3	660.3	659.2
24	660.5	660.5	660.2	660.3	660.6	660.6	660.7	660.7	660.6	660.6	660.5	660.4	660.0	659.7	659.8	659.6	659.3	658.8	658.7	659.0	659.3	659.6	659.6	659.5	660.7	660.0
25	659.5	659.4	659.2	659.2	659.2	659.2	659.0	658.6	658.3	657.8	657.3	656.8	656.2	655.8	655.3	654.8	654.3	654.0	653.7	653.5	653.6	653.6	653.3	653.2	659.5	656.5
26	653.0	652.6	652.3	652.1	652.0	651.6	651.4	651.0	650.4	649.6	648.7	648.1	647.9	647.4	647.0	646.7	646.4	647.8	646.9	645.9	645.6	645.3	645.0	644.9	653.0	648.7
27	644.9	644.9	645.8	646.9	647.5	647.7	647.7	647.5	647.2	646.8	646.8	646.7	646.7	646.7	646.7	646.5	646.4	646.4	646.6	646.8	647.3	647.9	648.2	648.4	648.4	646.9
28	648.3	647.9	647.5	647.1	646.8	646.6	646.6	646.4	646.5	646.3	646.7	647.1	647.5	648.3	648.8	649.1	649.6	650.5	651.5	651.7	652.2	652.9	653.3	653.7	653.7	648.9
29	654.0	654.2	654.4	654.7	655.0	655.3	655.7	655.6	655.8	655.9	655.8	655.5	655.1	654.7	654.5	654.3	654.2	654.1	654.2	654.4	654.6	654.9	655.2	655.4	655.9	654.9
30	655.6	655.5	655.5	655.5	655.6	655.7	655.7	655.2	654.9	654.3	653.9	653.6	653.2	652.9	652.4	652.3	652.1	652.0	652.0	652.0	652.0	652.4	652.6	652.6	655.7	653.7
Hourly Max	660.5	660.5	660.2	660.3	660.6	660.6	660.7	660.7	660.6	660.6	660.5	660.4	660.0	659.7	659.8	659.6	659.3	658.8	658.7	659.0	659.4	659.7	660.0	660.3		
Hourly Average	651.2	651.1	651.2	651.3	651.4	651.5	651.6	651.4	651.4	651.1	650.9	650.7	650.6	650.5	650.3	650.1	650.0	650.1	650.2	650.4	650.7	651.1	651.2	651.3		

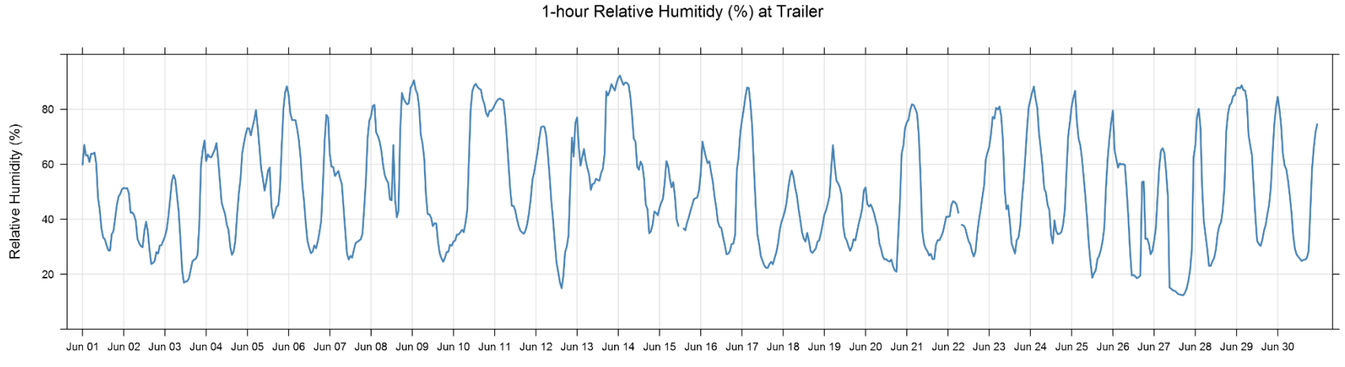
M = MAINTENANCE E = INSTRUMENT ERROR



Lagoon Relative Humidity (%) – June 2017

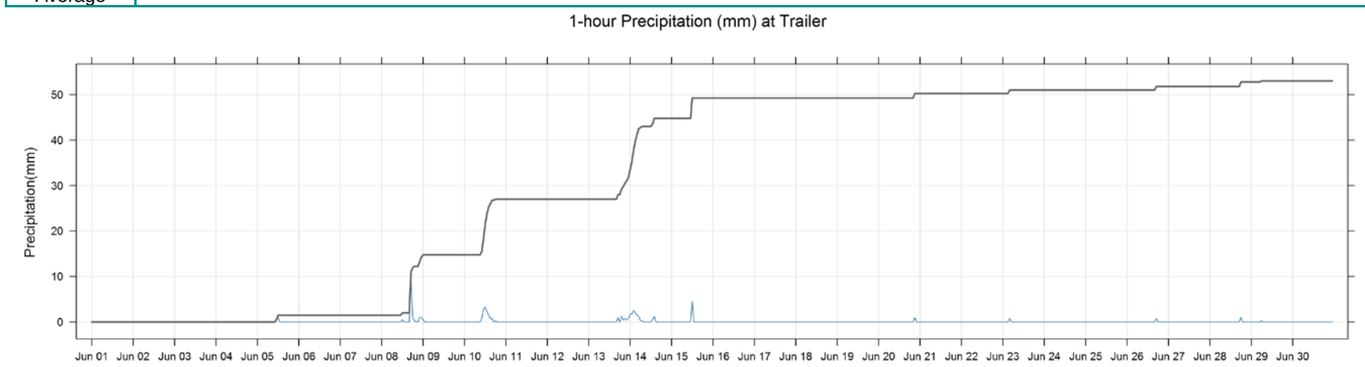
Day/Hour	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Daily Max	24-hour Average
1	59.8	67.0	63.2	63.3	60.8	63.8	63.7	64.3	60.1	47.9	43.5	36.7	33.4	32.7	30.6	28.7	28.6	34.5	35.7	40.3	45.3	48.2	49.3	51.0	67.0	48.0
2	51.4	51.2	51.4	49.4	42.4	42.5	41.5	39.4	32.8	31.3	30.2	29.8	35.7	39.1	35.7	29.0	23.7	24.1	24.8	28.0	27.5	30.4	30.6	32.2	51.4	35.6
3	33.8	36.3	41.0	47.3	53.7	56.1	54.5	48.6	42.8	32.6	21.5	16.9	17.3	17.4	18.6	21.7	24.7	25.3	25.6	27.2	38.2	59.7	65.1	68.6	68.6	37.3
4	61.2	63.6	62.7	62.5	63.9	65.4	67.7	61.6	53.7	46.0	43.9	41.9	38.0	36.2	30.0	27.0	28.2	32.3	41.6	49.2	54.7	64.1	67.7	70.9	70.9	51.4
5	73.1	73.0	70.5	73.5	76.2	79.7	73.5	66.3	58.7	54.8	50.4	53.6	57.7	58.8	44.8	40.4	42.3	44.5	45.0	51.7	66.6	80.3	86.2	88.4	88.4	62.9
6	85.3	78.7	76.1	76.1	76.0	72.8	68.7	62.3	52.6	46.5	38.4	32.1	29.6	27.7	28.2	30.5	29.4	31.9	35.4	39.5	52.8	68.8	78.0	77.0	85.3	53.9
7	63.6	59.1	59.0	55.7	56.7	57.5	54.8	52.8	44.2	35.8	27.5	25.4	26.6	26.0	28.8	31.3	31.8	32.2	32.7	34.7	43.8	54.1	69.4	75.8	75.8	45.0
8	77.5	81.2	81.6	71.6	70.3	68.3	65.0	59.7	56.1	54.3	53.3	47.2	46.9	67.0	47.6	40.7	43.1	72.2	85.9	83.8	82.7	81.8	82.2	87.8	87.8	67.0
9	88.9	90.5	87.1	85.6	80.8	70.7	67.5	61.9	48.8	41.9	41.8	40.6	37.5	38.5	38.4	31.9	27.6	25.8	24.5	25.9	28.0	28.2	30.7	30.4	90.5	48.9
10	31.9	32.2	34.4	34.5	35.2	36.1	35.3	38.6	43.1	61.7	79.7	86.6	88.5	89.3	88.1	87.5	87.1	83.7	81.9	78.6	77.4	79.4	79.4	80.3	89.3	64.6
11	81.5	82.8	83.6	83.9	83.5	83.3	78.2	70.1	60.8	51.2	44.9	44.9	43.2	40.0	37.5	35.8	35.2	34.7	35.9	38.4	42.4	47.3	54.4	57.1	83.9	56.3
12	60.8	64.5	69.4	73.5	73.8	73.6	70.5	63.7	55.6	46.6	39.8	31.8	24.4	20.8	17.1	14.9	19.4	28.0	30.0	34.1	52.1	69.7	62.8	75.0	75.0	48.8
13	77.0	66.3	59.5	62.8	65.5	61.4	58.6	56.2	50.7	52.8	53.0	54.7	54.3	54.0	56.9	58.4	63.7	86.5	85.0	86.7	89.2	87.9	86.8	89.6	89.6	67.4
14	91.4	92.2	90.4	88.8	89.7	89.6	88.9	84.7	77.9	69.4	68.2	59.2	58.0	61.0	59.6	54.7	45.3	43.6	34.9	35.6	38.1	42.8	42.3	41.4	92.2	64.5
15	44.1	46.0	47.5	53.3	61.1	59.4	54.8	51.6	53.5	48.1	39.9	37.5	**M**	**M**	36.7	36.0	38.7	40.6	43.0	45.1	47.3	47.7	47.9	50.6	61.1	46.8
16	56.7	68.3	65.4	62.5	60.4	61.1	57.2	53.8	48.4	44.4	39.1	37.2	36.8	33.5	30.6	27.3	27.5	28.4	31.0	31.1	34.3	57.8	62.4	71.3	71.3	46.9
17	76.0	79.8	84.5	87.9	87.7	81.7	73.2	58.5	45.0	34.4	31.0	26.5	24.8	23.1	22.3	22.3	23.7	24.5	23.6	25.9	27.9	31.1	36.0	38.9	87.9	45.4
18	40.8	42.9	46.2	51.5	55.4	57.7	55.5	51.5	48.6	43.7	39.6	35.2	33.0	31.9	35.1	32.2	28.4	27.7	28.5	29.3	31.8	32.4	35.0	38.2	57.7	39.7
19	41.7	43.2	45.7	48.5	58.6	67.0	59.6	54.1	53.1	51.6	48.7	37.4	33.5	32.3	30.2	28.5	29.9	32.7	32.3	35.3	38.4	40.8	43.9	50.5	67.0	43.2
20	51.6	45.6	44.6	45.4	43.9	42.0	39.3	37.0	31.3	29.2	26.5	25.4	25.5	24.8	24.6	25.3	22.8	21.4	20.9	34.2	46.3	63.8	66.8	73.2	73.2	38.0
21	75.2	76.1	79.8	81.8	81.5	80.1	78.4	70.4	55.3	35.8	31.2	29.3	28.4	26.8	27.4	25.5	25.5	30.8	32.4	32.4	33.7	35.2	38.1	40.9	81.8	48.0
22	40.9	41.1	45.3	46.6	46.1	45.3	42.4	**E**	38.0	37.7	36.9	34.3	32.1	30.9	28.2	26.5	28.2	34.8	39.6	43.6	48.1	52.2	61.8	64.3	64.3	41.1
23	66.3	70.8	77.2	76.6	80.5	79.9	81.0	77.3	68.4	50.7	43.6	45.0	39.1	31.3	29.4	27.5	32.4	33.3	37.4	46.6	53.5	62.8	72.7	80.9	81.0	56.9
24	83.5	86.2	88.3	83.8	80.5	71.2	65.7	59.5	51.2	49.7	45.2	43.4	34.3	31.2	39.6	35.8	34.5	34.8	35.3	37.9	43.2	57.2	70.4	75.5	88.3	55.7
25	81.1	84.2	86.7	75.9	69.4	67.0	62.1	55.3	48.2	40.2	30.9	24.1	18.7	20.3	21.3	25.4	26.7	28.9	32.0	36.8	51.7	62.3	69.4	75.2	86.7	49.7
26	79.6	65.1	61.9	58.8	60.3	59.9	60.1	59.7	51.0	40.8	28.6	19.6	19.8	19.2	18.5	18.9	19.4	53.5	53.7	32.9	32.9	31.0	27.3	28.4	79.6	41.7
27	32.1	36.6	47.9	58.9	65.0	65.8	64.1	57.3	48.6	15.2	14.7	14.1	14.0	13.5	12.8	12.6	12.4	12.4	13.3	14.9	17.6	21.7	29.0	62.6	65.8	31.5
28	66.7	76.9	80.2	73.5	51.4	38.9	34.1	29.0	23.0	23.1	24.7	25.9	29.0	34.7	37.6	38.9	43.4	51.8	71.7	78.2	81.5	82.2	84.8	85.1	85.1	52.8
29	87.5	87.9	87.6	88.7	87.0	86.9	83.2	70.7	66.8	63.2	52.0	40.9	32.1	31.0	30.3	32.4	35.8	38.0	41.9	45.3	51.8	63.8	74.4	80.8	88.7	60.8
30	84.6	80.1	74.0	63.9	59.6	58.2	54.1	48.8	42.6	34.2	29.3	27.1	26.4	25.5	24.8	25.3	25.3	25.9	28.6	43.1	58.5	66.0	71.7	74.6	84.6	48.0
Hourly Max	91.4	92.2	90.4	88.8	89.7	89.6	88.9	84.7	77.9	69.4	79.7	86.6	88.5	89.3	88.1	87.5	87.1	86.5	85.9	86.7	89.2	87.9	86.8	89.6		
Hourly Average	64.8	65.7	66.4	66.2	65.9	64.8	61.8	57.4	50.4	43.8	39.9	36.8	35.1	35.1	33.7	32.4	32.8	37.3	39.5	42.2	47.9	55.0	59.2	63.9		

M = MAINTENANCE E = INSTRUMENT ERROR



Lagoon Precipitation (mm) – June 2017

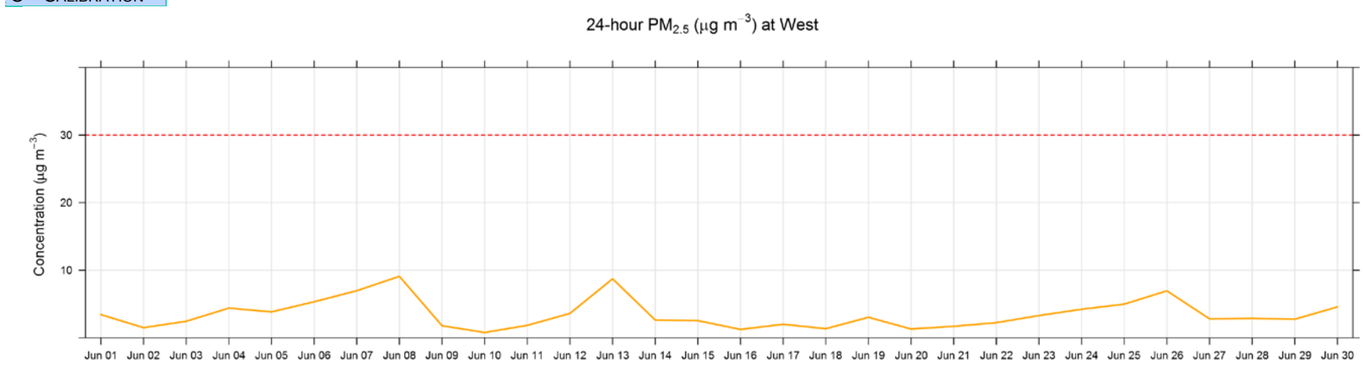
Day/Hour	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Daily Max	24-hour Total
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	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
4	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.5
6	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	9.0	1.0	0.3	0.0	0.0	1.0	1.0	9.0	12.8
9	0.5	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5
10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	2.8	3.3	2.3	1.5	0.8	0.8	0.0	0.3	0.0	0.0	0.0	0.0	0.0	3.3	12.3
11	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	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	0.0	0.0	0.0	1.0	0.0	1.3	0.5	0.8	0.5	0.8	1.3	4.8
14	1.8	1.8	2.5	2.0	1.5	1.3	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.5	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.5	13.0
15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.5	4.5
16	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	1.0
21	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23	0.0	0.0	0.0	0.0	0.8	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	0.0	0.0	0.0	0.0	0.0	0.8	0.8
24	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26	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	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.8
27	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28	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	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0
29	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.3
30	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Hourly Max	1.8	1.8	2.5	2.0	1.5	1.3	0.3	0.3	0.0	0.0	0.8	2.8	4.5	2.3	1.5	0.8	0.8	9.0	1.0	1.3	0.5	1.0	1.0	1.0		
Hourly Average	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.1	0.1	0.0	0.0	0.4	0.1	0.1	0.0	0.1	0.1	0.1		



West $PM_{2.5}$ (µg/m^3) – June 2017

Day/Hour	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Daily Max	24-hour Average
1	3.8	5.1	3.6	3.5	4.9	4.9	4.7	5.5	5.6	5.2	4.0	4.6	3.5	3.6	3.4	2.5	2.4	2.7	2.2	1.5	1.6	1.6	1.2	1.0	5.6	3.4
2	1.3	1.5	0.9	0.7	1.1	1.0	1.4	1.3	1.8	2.9	2.0	1.7	3.2	2.1	1.5	1.6	2.0	1.3	1.2	1.3	1.0	1.1	1.0	1.2	3.2	1.5
3	1.5	1.7	1.9	1.7	1.8	2.0	2.2	2.7	2.9	3.0	2.5	2.5	2.3	2.2	2.3	2.3	2.9	2.6	2.6	2.6	2.4	2.7	3.8	3.7	3.8	2.5
4	4.6	4.6	3.8	4.1	4.3	5.2	4.8	5.4	10.1	6.3	6.0	5.2	4.5	3.5	4.0	2.9	3.4	2.8	3.8	3.5	3.7	3.3	2.9	2.9	10.1	4.4
5	3.0	3.0	2.7	3.1	3.2	3.6	4.0	5.3	5.4	5.9	6.0	5.1	3.5	6.0	4.8	4.5	2.9	3.1	2.9	2.6	2.6	2.8	2.9	3.1	6.0	3.8
6	5.1	5.1	5.2	5.2	5.3	5.3	5.3	6.5	6.8	6.4	6.7	4.8	5.6	5.1	5.0	5.3	4.6	5.3	3.6	3.8	4.0	4.7	6.4	6.9	6.9	5.3
7	8.2	7.5	7.8	7.4	7.1	7.6	8.5	10.2	9.4	8.7	7.0	5.3	5.9	5.9	5.6	5.4	5.1	5.2	5.6	6.3	6.8	6.5	6.7	7.6	10.2	7.0
8	8.2	8.1	10.5	13.3	13.3	12.9	14.2	14.9	14.5	16.3	16.4	11.7	9.7	6.9	10.0	5.9	6.6	6.9	4.1	2.8	2.6	2.5	2.7	3.4	16.4	9.1
9	3.7	4.5	3.8	3.4	1.1	1.4	2.6	2.1	1.7	1.6	1.6	1.3	1.4	1.1	1.2	2.1	1.4	1.0	1.1	1.0	1.2	1.1	0.9	0.7	4.5	1.8
10	0.8	0.8	0.8	0.8	0.9	0.8	0.8	0.7	0.9	0.6	0.6	0.7	0.7	0.9	0.7	1.0	0.9	0.9	0.7	0.6	0.6	0.8	1.0	1.1	1.1	0.8
11	1.1	1.2	1.0	1.0	0.9	1.0	1.0	1.4	1.7	1.8	2.0	2.1	2.1	2.1	2.2	2.4	2.1	2.0	2.0	2.0	2.1	2.3	3.1	3.9	3.9	1.9
12	3.8	3.8	3.6	3.7	3.9	4.0	4.8	5.6	5.9	5.4	6.3	4.6	2.4	1.8	2.0	1.9	1.7	2.1	2.2	2.5	2.6	3.2	4.0	4.9	6.3	3.6
13	6.2	7.6	8.2	8.5	8.8	8.7	10.3	11.2	10.6	14.5	13.5	13.1	12.4	11.1	10.2	10.3	9.0	5.0	3.6	4.5	6.3	5.5	5.3	5.1	14.5	8.7
14	6.9	5.9	2.6	1.7	1.4	1.1	1.1	1.6	1.2	2.8	2.8	2.6	3.3	4.2	3.9	2.6	1.5	1.6	2.4	2.6	2.6	2.5	2.2	2.2	6.9	2.6
15	2.2	2.1	2.2	2.6	2.9	2.8	3.2	4.1	6.1	5.7	1.5	4.0	2.8	3.1	3.3	2.2	1.6	1.9	1.5	1.6	1.1	0.9	0.9	0.6	6.1	2.5
16	0.8	1.0	1.3	1.3	1.0	1.1	1.6	1.4	2.1	1.2	1.3	1.5	1.6	1.4	1.0	1.3	0.8	0.7	0.8	0.9	0.8	2.6	1.6	0.9	2.6	1.3
17	1.1	1.4	1.9	2.6	3.0	2.5	3.3	2.1	1.8	1.2	1.5	1.5	1.8	3.0	2.5	2.1	2.6	1.9	1.8	1.8	1.9	1.7	1.7	1.8	3.3	2.0
18	2.1	1.5	1.0	1.0	1.1	1.2	1.4	1.8	1.6	1.2	1.3	1.4	1.4	1.2	1.2	1.9	1.5	1.2	1.1	1.2	1.1	1.3	1.6	1.3	2.1	1.4
19	1.5	1.9	2.2	2.3	3.1	3.8	6.3	6.2	9.0	7.6	5.5	3.7	3.1	3.1	2.3	2.4	1.5	1.6	0.8	0.9	0.9	0.9	0.9	1.5	9.0	3.0
20	1.1	0.8	0.9	0.7	1.2	1.1	1.0	1.2	1.6	1.5	1.8	2.4	1.9	1.8	1.8	1.7	1.0	1.1	1.4	1.3	1.2	1.7	0.7	0.7	2.4	1.3
21	1.0	1.0	1.2	1.3	1.7	2.1	2.7	4.2	4.1	2.6	2.5	1.8	2.1	1.6	1.5	1.4	1.4	1.2	1.0	1.2	0.9	1.2	0.6	0.8	4.2	1.7
22	0.7	0.7	0.7	1.1	0.9	1.1	2.0	2.8	3.4	2.2	1.9	**C**	**C**	1.4	1.7	1.7	1.5	3.5	4.1	3.6	3.0	2.7	4.0	4.9	4.9	2.2
23	3.9	2.7	1.6	2.8	3.4	2.4	2.5	6.2	3.6	3.5	4.1	4.0	4.7	3.9	3.7	2.7	2.8	3.2	2.8	3.2	3.5	2.8	2.7	2.6	6.2	3.3
24	2.9	6.0	5.0	4.9	5.3	5.2	4.9	5.1	4.8	5.3	5.1	4.6	4.6	4.0	4.0	3.1	2.9	3.0	3.0	3.4	3.3	3.5	3.6	4.0	6.0	4.2
25	4.0	4.2	4.8	5.7	6.6	6.3	5.8	5.8	5.7	6.3	5.9	3.6	2.8	2.7	3.5	3.6	3.5	3.4	3.8	4.1	5.9	6.3	6.9	8.3	8.3	5.0
26	9.8	8.3	8.5	8.0	7.6	7.9	11.2	13.3	23.3	14.1	6.6	4.1	3.9	4.0	3.7	3.8	3.9	4.3	3.5	3.2	3.4	3.5	3.5	3.5	23.3	7.0
27	3.9	3.9	4.9	5.4	3.7	3.4	3.7	6.4	5.7	2.3	2.1	2.0	1.9	1.8	1.6	1.8	1.3	1.1	0.9	1.0	1.1	1.4	1.2	5.0	6.4	2.8
28	6.3	5.9	5.8	5.1	3.5	2.8	3.6	3.2	2.4	2.8	2.8	2.9	2.7	2.5	2.6	2.3	2.5	2.4	1.3	1.0	0.6	1.0	2.0	1.3	6.3	2.9
29	1.2	1.3	1.4	1.9	1.6	2.0	2.5	3.3	4.0	4.0	3.7	2.7	2.5	2.4	2.9	2.0	2.5	2.4	3.1	3.5	3.5	3.5	3.8	4.5	4.5	2.8
30	7.4	7.5	7.3	5.8	4.7	4.3	4.2	5.7	6.0	4.3	3.6	3.2	3.0	2.9	3.1	2.9	2.6	2.7	2.9	3.5	4.4	4.6	5.3	8.0	8.0	4.6
Hourly Max	9.8	8.3	10.5	13.3	13.3	12.9	14.2	14.9	23.3	16.3	16.4	13.1	12.4	11.1	10.2	10.3	9.0	6.9	5.6	6.3	6.8	6.5	6.9	8.3		
Hourly Average	3.6	3.7	3.6	3.7	3.6	3.7	4.2	4.9	5.5	4.9	4.3	3.7	3.5	3.2	3.2	2.9	2.7	2.6	2.4	2.4	2.6	2.7	2.8	3.2		

C = CALIBRATION

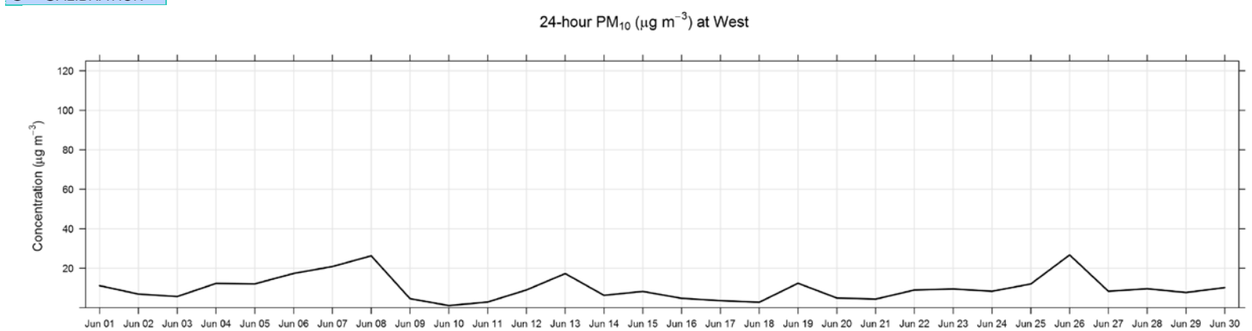


Number of 1HR Exceedances	0		Guideline	80	UG/M3
Number of 24HR Exceedances	0		Guideline	30	UG/M3
Number of Non-Zero Readings	718				
Maximum 1-HR Average	23.3	UG/M3			
Maximum 24-HR Average	9.1	UG/M3			
IZS Calibration Time	0	HRS	Operational Time	720	HRS
Monthly Calibration Time	2	HRS	Operational Uptime	100.0	%
Standard Deviation	2.7		Monthly Average	3.5	UG/M3

West PM_{10} (µg/m^3) – June 2017

Day/Hour	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Daily Max	24-hour Average
1	6.6	15.7	7.9	9.4	16.4	11.5	14.6	19.3	22.2	21.7	14.3	18.9	13.6	14.6	13.8	9.7	7.5	8.5	6.2	3.9	3.7	3.6	2.1	2.1	22.2	11.2
2	4.3	3.6	2.3	2.3	3.9	4.5	8.0	7.5	10.6	17.4	12.6	7.9	21.1	13.5	8.5	9.3	10.8	4.6	3.3	2.5	2.0	1.8	1.5	1.9	21.1	6.9
3	2.7	3.1	4.0	2.3	2.3	2.5	3.5	6.6	9.0	9.9	7.8	7.7	6.3	5.7	6.7	5.9	7.2	7.0	6.0	5.2	4.6	4.4	7.1	8.3	9.9	5.7
4	8.8	6.5	5.0	5.1	5.4	8.4	9.2	12.1	49.5	25.0	27.8	17.9	15.9	12.3	14.1	7.8	14.0	6.8	13.0	8.3	8.7	5.0	4.4	4.5	49.5	12.3
5	3.5	3.4	3.3	3.9	4.1	4.8	5.5	20.8	24.4	24.0	34.1	25.4	13.0	31.7	20.4	19.5	9.7	13.2	6.8	3.6	3.7	3.3	3.6	3.9	34.1	12.1
6	7.5	7.2	6.7	6.4	6.4	6.6	6.7	17.5	32.0	27.6	29.6	18.1	26.2	21.7	27.0	32.8	27.9	30.1	15.5	8.6	9.3	10.7	17.1	17.0	32.8	17.3
7	17.3	12.2	12.5	9.6	11.5	10.1	20.4	39.1	38.8	34.3	26.7	19.9	25.7	31.0	27.1	21.9	20.3	19.0	20.0	20.9	18.5	14.7	13.6	15.1	39.1	20.8
8	16.2	14.7	22.7	22.1	18.8	17.2	29.7	38.8	46.5	67.0	69.3	65.4	55.6	9.3	36.0	24.8	29.8	23.2	5.5	3.7	3.3	3.1	3.4	4.3	69.3	26.3
9	4.9	5.7	4.6	4.1	1.4	2.0	7.4	7.5	8.1	7.4	6.5	6.2	6.6	4.9	5.3	9.5	4.5	2.3	2.8	1.8	2.0	1.7	1.6	1.1	9.5	4.6
10	1.1	1.1	1.1	1.0	1.5	1.4	1.8	1.3	1.4	0.9	1.0	0.8	0.8	1.0	0.9	1.2	1.1	1.1	0.8	0.7	0.7	0.8	1.1	1.2	1.8	1.1
11	1.2	1.3	1.1	1.1	1.0	1.1	1.2	1.8	3.2	2.7	3.2	2.9	3.1	3.4	4.0	6.1	4.3	3.4	3.1	3.2	3.7	3.7	4.4	4.9	6.1	2.9
12	4.7	4.5	4.2	4.3	4.5	4.6	5.8	12.0	15.4	12.2	24.0	18.5	9.0	5.8	7.5	7.5	6.1	12.1	10.5	7.9	6.5	9.0	9.7	9.4	24.0	9.0
13	9.6	10.1	10.4	10.4	10.3	9.9	15.5	24.7	27.1	42.7	37.4	29.3	25.1	29.5	36.6	25.7	18.5	5.9	4.0	5.3	8.3	6.2	5.9	5.8	42.7	17.3
14	8.4	7.4	3.3	2.2	1.8	1.4	1.5	2.2	1.7	6.3	12.1	10.3	11.6	16.9	15.9	11.8	5.9	2.8	4.2	5.2	5.2	4.4	3.7	4.3	16.9	6.3
15	3.8	3.5	3.4	4.0	4.3	3.6	5.1	15.5	33.4	29.1	5.6	17.4	10.8	10.8	14.1	8.8	4.6	5.0	3.5	4.6	2.6	2.0	1.6	1.0	33.4	8.2
16	1.2	1.7	1.9	2.1	1.8	2.8	6.7	6.8	11.4	5.4	6.6	6.4	8.6	8.0	4.7	5.5	2.8	2.0	1.5	2.1	1.6	13.8	6.9	1.9	13.8	4.8
17	1.5	2.0	2.8	3.7	4.2	3.5	4.6	4.0	4.8	2.7	3.4	2.7	3.7	5.4	7.4	3.7	7.1	3.2	2.8	2.8	2.9	2.2	2.5	2.5	7.4	3.6
18	2.8	2.0	1.2	1.1	1.3	1.4	1.8	4.1	2.8	2.1	3.2	4.1	5.2	3.9	3.6	8.0	3.7	2.3	1.8	1.8	1.6	2.0	2.5	1.7	8.0	2.7
19	1.8	2.3	2.7	2.8	5.0	6.0	21.7	35.0	53.9	45.5	26.5	17.8	16.2	13.3	10.0	13.4	5.6	5.2	1.7	1.9	1.7	2.0	1.6	3.6	53.9	12.4
20	1.6	1.2	1.7	1.2	3.1	2.8	3.4	4.6	6.7	6.0	9.3	12.5	9.6	8.6	7.9	7.9	3.2	2.8	4.9	4.4	4.3	8.8	0.8	0.8	12.5	4.9
21	1.1	1.2	1.4	1.5	1.9	2.5	3.4	9.7	16.4	8.5	8.5	4.6	8.1	5.7	5.2	4.5	3.6	3.6	2.0	3.0	2.0	4.0	0.7	1.0	16.4	4.3
22	0.8	1.2	0.9	2.1	1.3	2.7	8.7	17.9	20.8	12.0	9.0	**C**	**C**	6.1	8.3	7.3	6.5	20.3	17.1	12.3	8.9	7.0	10.5	15.4	20.8	9.0
23	5.8	3.7	1.9	4.8	4.6	2.7	2.9	9.1	13.9	13.7	17.9	14.3	17.1	18.6	17.8	12.3	11.0	18.5	6.6	8.1	7.9	5.6	4.4	4.3	18.6	9.5
24	4.0	8.6	7.2	7.1	7.2	6.5	6.0	8.2	8.8	14.0	14.2	11.0	9.7	10.7	16.8	7.1	6.6	6.9	6.2	6.5	6.0	6.4	6.9	7.1	16.8	8.3
25	7.0	6.8	6.7	7.8	8.6	8.1	8.2	8.6	9.0	16.9	18.3	10.5	10.1	8.6	15.8	15.0	12.9	12.5	12.4	9.3	15.0	16.1	18.9	25.8	25.8	12.0
26	27.8	20.3	16.7	13.3	11.3	11.7	28.1	50.6	195.4	98.8	34.5	18.2	13.9	13.5	13.0	13.5	14.3	16.3	5.7	4.3	4.8	4.9	5.2	5.1	195.4	26.7
27	6.2	5.6	10.8	10.1	5.0	4.4	7.3	33.7	31.0	7.8	7.8	6.8	7.7	6.6	5.5	7.7	4.2	2.7	2.1	1.8	2.0	3.3	1.9	17.7	33.7	8.3
28	22.5	20.0	15.8	12.3	8.0	7.1	15.0	13.1	7.8	11.7	11.7	10.8	9.3	8.5	10.7	11.0	13.7	11.6	2.5	1.2	0.8	1.3	2.8	1.7	22.5	9.6
29	1.5	1.5	1.6	2.4	1.8	2.5	3.4	4.8	11.4	15.2	15.1	11.2	12.5	11.4	14.7	9.9	12.6	9.2	9.5	7.6	5.3	5.5	6.1	8.2	15.2	7.7
30	13.6	11.0	10.5	8.4	6.2	5.7	6.7	25.9	31.1	13.2	12.8	10.6	8.9	8.1	7.5	5.7	4.6	4.1	4.4	4.6	6.4	6.4	8.5	19.8	31.1	10.2
Hourly Max	27.8	20.3	22.7	22.1	18.8	17.2	29.7	50.6	195.4	98.8	69.3	65.4	55.6	31.7	36.6	32.8	29.8	30.1	20.0	20.9	18.5	16.1	18.9	25.8		
Hourly Average	6.7	6.3	5.9	5.6	5.5	5.3	8.8	15.4	24.9	20.1	17.0	14.1	13.3	11.6	12.9	11.2	9.5	8.9	6.2	5.2	5.1	5.5	5.4	6.7		

C = CALIBRATION

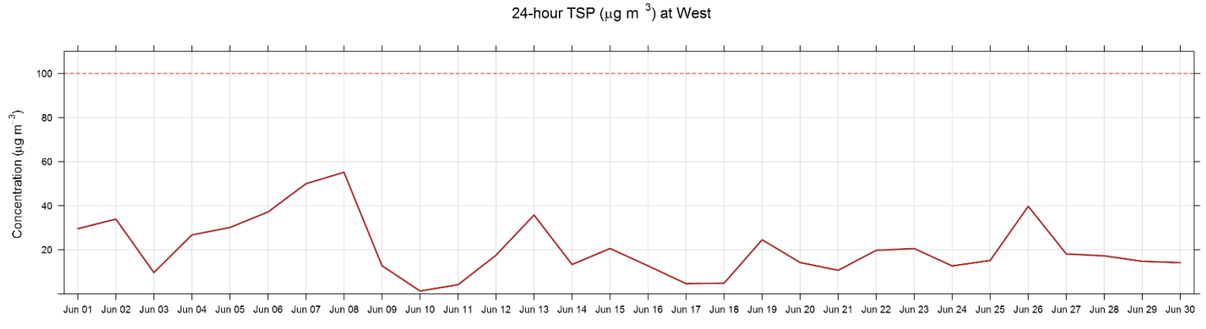


Number of 1HR Exceedances	n/a		Guideline	n/a	UG/M3
Number of Non-Zero Readings	718				
Maximum 1-HR Average	195.4	UG/M3			
Maximum 24-HR Average	26.7	UG/M3			
IZS Calibration Time	0	HRS	Operational Time	720	HRS
Monthly Calibration Time	2	HRS	Operational Uptime	100.0	%
Standard Deviation	12.2		Monthly Average	9.9	UG/M3

West TSP (µg/m^3) – June 2017

Day/Hour	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Daily Max	24-hour Average
1	9.4	21.5	15.9	15.6	34.9	27.6	40.2	48.8	52.1	45.2	55.5	62.2	52.2	38.6	32.7	28.5	22.8	26.7	22.9	20.6	14.6	10.3	5.6	4.7	62.2	29.5
2	10.3	9.4	14.8	45.3	56.6	60.3	70.1	28.3	49.2	71.9	74.0	20.3	85.0	51.2	39.3	38.6	42.7	17.2	10.8	5.7	5.3	3.3	1.6	2.4	85.0	33.9
3	2.7	3.1	9.8	2.4	1.7	2.1	5.2	8.5	18.1	16.7	20.6	18.3	10.8	10.7	13.0	13.4	13.2	14.3	8.0	6.6	12.1	4.5	7.3	8.0	20.6	9.6
4	6.9	8.8	5.1	5.0	5.6	8.5	16.6	15.3	94.4	64.7	80.8	37.8	44.4	33.4	38.0	23.4	34.7	20.9	38.5	27.5	15.1	6.7	4.0	5.3	94.4	26.7
5	2.4	2.3	2.3	3.0	2.9	3.5	4.7	58.3	64.3	51.4	112.2	77.4	53.3	73.7	39.1	55.7	28.7	51.8	16.2	7.2	4.6	2.3	2.5	2.7	112.2	30.1
6	6.3	5.3	4.5	4.3	4.2	4.4	4.8	35.6	76.8	59.1	71.4	43.5	59.3	41.7	63.0	98.3	91.9	89.5	44.5	26.8	8.8	10.5	18.0	18.1	98.3	37.1
7	23.6	20.5	16.1	10.8	30.6	15.5	50.7	92.9	115.4	84.4	60.2	45.7	70.4	83.4	77.2	67.0	55.8	53.8	51.1	58.0	52.2	30.3	18.0	15.5	115.4	50.0
8	14.6	16.1	23.4	17.9	13.2	12.1	49.9	75.9	80.8	123.7	164.9	174.6	208.4	6.8	89.5	73.6	95.4	66.7	3.9	2.6	2.2	2.1	2.3	3.0	208.4	55.2
9	3.5	4.0	3.0	2.7	1.0	1.8	14.9	30.4	19.6	19.0	25.5	25.1	28.7	18.1	29.8	36.8	16.2	6.1	7.5	3.4	4.2	1.5	2.0	0.8	36.8	12.7
10	1.1	0.8	1.3	1.1	2.1	2.0	6.3	2.9	1.8	1.9	0.8	0.6	0.6	0.7	0.6	0.9	0.8	0.7	0.6	0.4	0.5	0.5	0.7	0.8	6.3	1.3
11	0.8	0.8	0.7	0.7	0.7	0.7	0.8	1.4	5.0	3.3	7.8	3.3	8.7	3.5	8.2	13.3	10.4	7.6	2.6	3.9	3.7	2.6	3.4	4.5	13.3	4.1
12	3.4	3.3	2.7	2.8	3.0	3.1	4.2	25.0	32.4	22.4	71.1	45.1	15.6	15.4	24.5	19.1	10.7	34.9	27.3	18.4	6.0	10.6	11.2	8.4	71.1	17.5
13	8.6	11.7	10.6	12.1	8.5	6.7	16.6	40.4	57.1	137.8	109.5	75.6	54.2	62.0	125.6	67.3	25.8	3.9	2.6	3.5	5.8	4.1	3.9	3.8	137.8	35.7
14	5.5	5.0	2.3	1.5	1.2	1.0	1.1	1.7	1.4	12.2	33.3	28.9	30.6	41.8	54.5	29.8	14.7	6.2	11.3	9.3	5.2	12.1	4.6	4.3	54.5	13.3
15	3.6	2.8	2.4	5.2	3.9	2.5	7.3	42.9	96.8	81.9	17.3	51.2	34.0	28.4	29.2	28.8	12.0	12.7	7.1	8.1	7.0	1.6	3.5	2.6	96.8	20.5
16	1.7	1.6	1.4	1.7	1.2	5.9	16.7	25.3	30.8	17.5	19.4	18.6	32.1	18.9	15.9	21.7	8.4	5.2	2.1	3.3	1.4	39.6	11.9	1.5	39.6	12.7
17	1.1	1.7	2.5	3.1	3.4	2.6	3.7	6.8	6.5	3.5	5.1	4.4	6.5	7.1	15.8	5.0	12.0	5.0	3.2	2.6	2.9	1.5	1.8	2.1	15.8	4.6
18	3.2	1.4	1.1	0.8	0.8	0.9	3.2	5.0	2.3	2.4	5.1	9.1	17.1	11.0	11.5	13.0	8.6	4.0	2.3	4.3	2.2	2.8	2.7	1.1	17.1	4.8
19	1.2	1.5	1.8	2.1	3.6	4.8	42.3	64.5	119.9	80.8	51.3	41.5	42.9	24.0	24.4	38.6	14.3	8.5	4.6	3.3	2.0	2.1	2.7	5.6	119.9	24.5
20	1.5	1.0	3.9	2.0	7.4	7.3	11.4	9.9	21.8	13.5	31.4	41.0	29.5	22.6	20.0	26.2	10.3	8.0	17.1	11.0	15.9	26.6	0.6	0.6	41.0	14.2
21	0.8	0.8	1.0	1.0	1.3	1.9	2.8	17.0	51.9	20.1	18.0	10.8	34.8	19.6	18.3	13.6	6.9	13.0	5.2	5.1	2.0	8.5	0.6	0.7	51.9	10.7
22	0.6	4.2	1.7	5.1	0.9	5.1	25.3	37.1	58.1	35.6	27.3	**C**	**C**	20.4	27.1	20.5	20.6	52.2	25.7	15.3	9.5	9.2	12.8	19.7	58.1	19.7
23	7.3	2.5	1.3	5.1	3.4	1.8	2.1	9.5	32.1	27.1	38.5	36.9	33.6	44.4	44.5	34.3	29.8	78.9	16.2	13.4	14.9	6.3	3.2	5.6	78.9	20.5
24	2.9	6.7	6.0	5.7	5.2	4.4	4.1	11.8	11.8	18.5	36.0	21.8	11.7	13.3	53.7	16.2	12.9	10.7	12.2	14.0	5.0	5.8	5.7	7.3	53.7	12.6
25	4.8	4.8	5.1	5.5	5.9	5.5	8.1	9.4	11.5	20.5	21.5	15.6	18.9	13.7	27.8	33.0	24.5	29.9	22.4	9.1	11.9	14.7	17.6	21.6	33.0	15.1
26	20.5	16.7	11.7	14.4	8.8	15.4	34.2	76.0	252.6	135.0	70.0	44.6	42.0	33.7	29.4	34.4	34.7	55.5	4.2	3.4	3.2	3.3	4.8	4.9	252.6	39.7
27	10.3	5.0	24.8	20.6	5.0	3.1	7.9	72.3	75.9	27.5	22.5	17.0	29.1	18.0	13.0	21.7	10.6	9.6	3.8	2.2	3.3	5.2	1.6	24.0	75.9	18.1
28	20.0	15.5	12.4	13.2	7.4	11.7	27.2	31.0	20.6	28.0	31.5	37.7	27.4	18.6	19.6	23.2	33.9	25.4	2.5	0.9	0.5	0.9	2.6	1.2	37.7	17.2
29	1.0	1.0	1.2	1.7	1.3	1.8	2.7	4.3	16.4	27.2	34.6	32.6	42.8	27.1	34.7	19.7	35.1	16.9	12.0	19.0	4.1	4.6	4.2	7.7	42.8	14.7
30	12.8	9.2	7.8	7.5	6.1	4.4	6.4	39.1	51.2	27.1	29.4	19.4	16.0	13.7	12.3	12.1	13.1	4.6	5.2	5.4	4.6	4.9	6.8	20.0	51.2	14.1
Hourly Max	23.6	21.5	24.8	45.3	56.6	60.3	70.1	92.9	252.6	137.8	164.9	174.6	208.4	83.4	125.6	98.3	95.4	89.5	51.1	58.0	52.2	39.6	18.0	24.0		
Hourly Average	6.4	6.3	6.6	7.3	7.7	7.6	16.4	30.9	51.0	42.7	44.9	36.6	39.3	27.2	34.4	30.9	25.0	24.7	13.1	10.5	7.7	8.0	5.6	6.9		

C = CALIBRATION

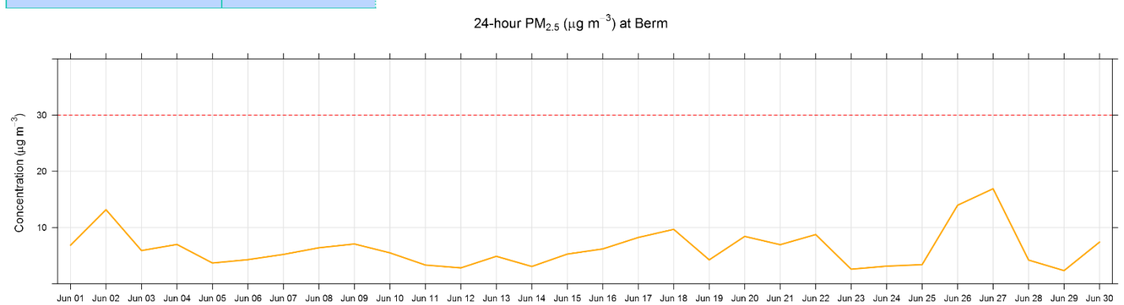


Number of 24HR Exceedances	0		Guideline	100	UG/M3
Number of Non-Zero Readings	718				
Maximum 1-HR Average	252.6	UG/M3			
Maximum 24-HR Average	55.2	UG/M3			
IZS Calibration Time	0	HRS	Operational Time	720	HRS
Monthly Calibration Time	0	HRS	Operational Uptime	100.0	%
Standard Deviation	27.0		Monthly Average	20.7	UG/M3

Berm $PM_{2.5}$ (µg/m^3) – June 2017

Day/Hour	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Daily Max	24-hour Average
1	3.1	2.3	2.8	4.1	3.0	2.8	2.2	3.0	2.2	7.8	9.0	13.3	29.9	17.2	5.9	8.1	7.2	11.4	3.6	4.0	4.4	5.4	6.7	5.2	29.9	6.9
2	4.5	7.1	6.6	10.1	7.4	6.9	16.8	19.5	21.6	32.0	20.3	11.0	17.9	12.3	19.8	16.7	23.1	16.7	9.6	11.4	8.0	7.0	6.9	2.9	32.0	13.2
3	2.9	3.3	2.2	2.1	1.7	1.9	1.5	2.0	4.5	3.7	6.2	12.1	9.3	9.8	11.3	11.9	9.4	12.1	14.7	5.5	3.6	1.7	2.3	6.0	14.7	5.9
4	3.4	2.7	3.7	2.7	5.1	6.2	6.6	9.5	4.9	2.6	3.4	3.0	3.1	3.5	12.2	9.8	16.9	15.2	26.7	16.0	3.0	2.3	2.1	3.2	26.7	7.0
5	3.0	1.9	3.4	3.8	6.1	3.3	7.9	9.1	5.2	3.6	3.5	2.3	8.7	4.4	3.7	2.0	2.2	3.0	1.8	1.8	2.4	2.0	1.7	1.8	9.1	3.7
6	5.8	6.1	6.5	4.5	3.5	4.5	4.9	5.5	7.4	5.1	7.0	3.2	5.5	4.3	4.4	3.5	3.2	2.8	3.0	2.5	2.7	2.4	2.2	2.5	7.4	4.3
7	3.9	6.2	4.1	6.3	6.5	4.1	6.8	11.8	8.6	6.7	6.0	3.5	3.8	3.9	4.1	3.5	3.9	3.7	3.9	3.9	3.9	7.0	4.2	5.0	11.8	5.2
8	6.6	4.4	6.3	10.4	8.5	10.9	11.5	13.2	14.1	10.8	8.2	6.9	6.3	3.7	5.3	4.2	4.5	5.1	2.7	2.3	1.9	2.0	1.7	2.1	14.1	6.4
9	2.9	3.1	2.2	2.2	2.2	1.1	3.5	4.3	5.7	7.9	10.8	10.3	12.6	17.1	9.2	13.8	11.2	11.5	7.5	4.5	3.3	4.8	14.1	3.8	17.1	7.1
10	4.1	5.6	10.0	23.8	15.1	14.5	20.5	16.1	4.9	7.6	4.0	0.7	0.3	0.2	0.3	0.5	0.3	1.1	0.4	0.3	0.3	0.4	0.4	0.5	23.8	5.5
11	0.7	0.7	1.2	0.8	1.2	1.2	0.9	2.0	3.7	3.0	4.6	6.5	4.2	5.3	8.8	12.0	4.6	4.8	3.5	2.7	3.0	1.5	1.5	1.9	12.0	3.3
12	2.8	1.9	2.2	2.0	2.5	2.2	2.2	3.3	3.6	6.4	6.1	6.3	2.4	2.7	3.2	2.5	2.5	1.8	1.6	1.3	1.7	1.6	2.6	2.4	6.4	2.8
13	3.7	3.4	4.6	3.9	4.8	4.6	5.5	7.2	12.5	8.5	7.4	6.5	6.3	5.3	4.9	4.6	4.2	3.1	2.1	2.7	3.0	3.4	2.1	2.9	12.5	4.9
14	5.2	4.4	2.1	1.3	1.0	1.2	0.6	0.5	0.5	0.6	1.1	1.0	1.6	1.7	2.4	5.7	10.5	6.0	4.1	3.1	4.0	6.5	5.2	3.1	10.5	3.1
15	1.8	1.4	1.6	1.5	1.5	1.2	1.5	3.1	2.7	3.9	5.9	6.7	**E**	5.3	5.9	8.9	3.5	5.1	4.4	4.5	4.1	17.5	19.8	9.6	19.8	5.3
16	7.1	5.3	5.2	4.6	3.6	3.7	4.2	9.1	8.8	5.1	8.8	11.7	8.0	7.8	13.0	12.3	6.9	7.0	9.2	2.5	2.4	1.5	0.7	0.5	13.0	6.2
17	0.9	0.6	0.5	0.6	0.8	2.2	2.0	1.2	5.3	18.6	18.7	21.7	8.2	17.6	11.0	13.2	10.8	8.1	5.5	9.8	7.0	6.0	16.6	10.8	21.7	8.2
18	3.2	13.9	17.5	11.1	3.1	0.7	4.9	12.8	8.1	5.3	12.6	9.3	10.2	21.2	18.4	21.6	13.7	12.6	9.1	6.7	2.9	4.2	4.7	4.8	21.6	9.7
19	1.8	1.6	1.7	1.4	1.7	1.5	5.2	3.7	5.1	4.8	3.4	8.7	5.4	11.7	4.4	11.5	8.4	8.9	2.7	1.2	2.3	1.3	1.9	1.6	11.7	4.3
20	1.6	2.4	1.3	1.2	0.9	4.2	11.4	10.2	7.3	6.1	7.2	13.0	16.6	21.8	15.5	15.0	15.8	8.6	10.4	7.8	4.8	15.8	1.6	1.5	21.8	8.4
21	0.8	0.8	0.7	0.9	1.1	1.1	1.5	2.2	3.7	6.7	6.6	14.9	26.8	17.3	8.5	7.4	10.5	25.3	5.5	5.0	5.3	4.2	7.2	2.8	26.8	6.9
22	1.6	1.6	0.8	0.7	0.9	0.9	7.8	20.3	30.4	**C**	30.7	10.8	17.5	**C**	19.3	21.3	8.2	3.4	3.5	2.5	3.2	2.4	2.1	2.6	30.7	8.8
23	1.9	1.4	2.1	1.0	1.8	1.5	2.8	2.1	3.6	2.6	3.2	2.7	3.0	4.5	5.3	5.7	2.6	1.3	1.8	2.9	2.4	2.6	1.7	1.5	5.7	2.6
24	1.5	2.5	1.6	4.5	2.8	2.7	4.7	8.2	10.4	4.2	3.7	3.3	2.3	2.8	2.5	1.7	1.7	1.8	1.8	1.8	2.3	2.3	2.0	2.1	10.4	3.1
25	2.0	2.1	2.5	3.4	3.5	3.4	3.5	3.0	3.1	4.2	5.8	10.6	4.5	2.0	2.6	2.9	2.8	2.6	2.5	2.6	3.3	3.1	2.8	2.6	10.6	3.4
26	2.5	6.9	4.4	4.6	5.3	4.3	6.1	13.0	13.1	8.8	11.4	24.0	38.7	35.7	28.3	47.0	19.9	42.7	3.3	1.9	2.4	2.4	3.4	5.0	47.0	14.0
27	3.7	2.4	3.9	3.0	2.7	2.1	2.1	2.2	10.6	16.8	31.0	38.4	41.8	59.9	46.4	62.0	33.9	13.1	7.2	6.7	5.4	4.1	1.4	4.6	62.0	16.9
28	4.9	3.6	2.7	2.5	1.9	1.4	6.1	9.8	11.1	6.1	3.9	3.4	12.7	7.7	6.0	7.3	2.7	1.4	1.5	0.9	0.5	0.7	0.9	1.6	12.7	4.2
29	0.7	0.8	0.8	1.0	0.8	0.9	1.6	4.9	3.2	2.1	2.3	7.3	3.2	3.8	4.7	2.8	1.2	1.3	1.6	1.9	2.8	2.6	2.0	1.9	7.3	2.3
30	1.9	2.4	3.1	2.8	2.3	2.0	4.7	7.0	10.6	18.1	11.6	6.7	15.9	7.1	8.4	10.6	25.6	9.0	10.4	4.8	5.3	2.5	2.5	2.7	25.6	7.4
Hourly Max	7.1	13.9	17.5	23.8	15.1	14.5	20.5	20.3	30.4	32.0	31.0	38.4	41.8	59.9	46.4	62.0	33.9	42.7	26.7	16.0	8.0	17.5	19.8	10.8		
Hourly Average	3.0	3.4	3.6	4.1	3.4	3.3	5.4	7.3	7.9	7.6	8.8	9.3	11.3	10.9	9.9	11.7	9.1	8.3	5.5	4.2	3.4	4.0	4.2	3.3		

E = Instrument Error | C = Calibration

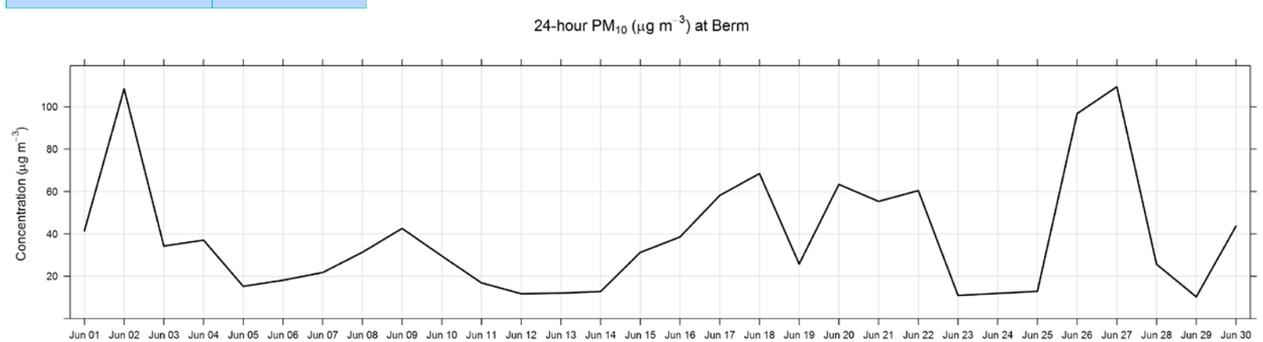


Number of 1HR Exceedances	0		Guideline	80	UG/M3
Number of 24HR Exceedances	0		Guideline	30	UG/M3
Number of Non-Zero Readings	717				
Maximum 1-HR Average	62.0	UG/M3			
Maximum 24-HR Average	16.9	UG/M3			
IZS Calibration Time	0	HRS	Operational Time	719	HRS
Monthly Calibration Time	2	HRS	Operational Uptime	99.9	%
Standard Deviation	7.1		Monthly Average	6.4	UG/M3

Berm PM_{10} (µg/m^3) – June 2017

Day/Hour	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Daily Max	24-hour Average
1	8.8	7.3	12.4	16.6	10.0	12.4	4.9	16.2	8.0	52.8	58.3	95.3	189.0	114.8	42.0	48.7	46.0	68.0	25.9	29.0	26.1	29.8	42.9	29.3	189.0	41.4
2	25.3	43.9	46.8	83.7	69.9	57.6	140.8	160.6	199.9	284.9	140.3	68.4	132.3	96.1	165.9	147.5	253.1	147.6	77.6	73.4	62.9	50.9	58.1	14.9	284.9	108.4
3	17.0	16.3	7.5	5.8	3.9	5.3	3.6	8.7	25.6	20.8	39.1	77.5	54.5	64.4	82.9	93.4	55.3	83.9	86.8	28.2	11.7	3.5	5.6	20.8	93.4	34.2
4	8.2	5.3	9.0	5.9	13.8	18.5	19.4	54.3	19.1	7.8	10.0	8.7	10.4	17.2	81.6	73.6	118.7	126.4	163.8	85.0	10.6	5.5	5.5	10.8	163.8	37.1
5	8.2	3.7	11.2	13.2	20.2	9.4	50.2	73.1	28.5	13.0	16.4	10.9	17.1	17.9	17.7	7.2	9.7	11.6	4.1	4.5	7.0	4.8	2.8	2.8	73.1	15.2
6	10.9	9.0	10.7	6.3	4.7	6.5	21.5	33.8	54.4	29.8	40.8	14.0	30.0	24.5	27.8	23.7	21.7	15.9	16.1	9.6	8.2	6.2	4.1	4.5	54.4	18.1
7	10.7	18.3	7.8	17.2	18.0	7.6	29.2	82.6	54.4	29.4	32.7	15.1	16.4	20.5	20.3	14.6	16.6	16.6	17.8	16.9	13.2	24.1	8.5	12.9	82.6	21.7
8	23.8	9.8	17.4	27.8	19.8	33.3	51.7	88.4	87.5	50.4	32.3	42.6	47.5	10.7	28.8	22.2	23.4	116.5	3.8	3.2	2.5	2.7	2.2	2.7	116.5	31.3
9	4.0	4.3	2.8	2.9	2.9	1.5	10.7	21.8	34.5	58.3	72.7	80.2	91.4	119.3	64.3	98.6	67.9	86.6	47.2	26.3	15.8	28.3	62.7	16.3	119.3	42.6
10	19.2	26.4	43.5	93.5	69.4	84.7	144.2	123.3	42.8	46.0	9.7	0.9	0.3	0.2	0.3	0.5	0.4	1.6	0.5	0.4	0.4	0.5	0.5	0.6	144.2	29.6
11	0.8	0.9	1.6	1.0	1.7	1.6	1.3	11.7	21.2	14.4	25.7	45.8	22.8	32.3	55.2	74.1	24.0	24.3	14.6	11.0	11.3	2.4	2.1	2.9	74.1	16.9
12	6.1	2.6	3.7	2.4	3.8	2.7	2.7	9.4	11.8	33.6	30.4	41.8	13.5	18.7	23.6	16.5	13.3	11.5	8.3	6.1	5.3	4.1	6.3	3.3	41.8	11.7
13	7.9	5.4	7.7	5.7	7.3	6.6	11.1	28.8	68.4	23.8	20.1	11.5	14.9	13.1	12.6	10.6	10.6	4.3	2.5	3.2	3.2	3.7	2.2	3.8	68.4	12.0
14	7.3	5.9	2.9	1.8	1.3	1.7	0.8	0.7	0.7	1.4	4.6	2.5	4.6	4.8	8.5	24.7	46.9	26.0	17.1	12.6	23.5	49.5	37.3	20.3	49.5	12.8
15	4.9	4.0	5.3	2.9	2.3	2.2	2.5	23.2	12.8	23.5	38.5	41.0	**E**	36.2	41.5	60.7	23.0	33.3	26.3	21.9	26.5	103.5	114.0	68.5	114.0	31.2
16	38.4	31.4	38.6	35.1	20.3	19.1	29.4	56.6	53.9	33.0	56.2	72.9	46.2	48.3	92.5	77.3	44.6	43.5	52.4	12.1	14.2	7.1	1.3	0.8	92.5	38.5
17	1.9	1.1	0.9	0.8	1.0	3.3	4.6	3.5	37.3	103.0	158.4	177.6	61.8	111.2	74.3	95.9	61.4	49.8	28.5	61.9	37.8	46.6	161.2	111.6	177.6	58.1
18	21.2	119.7	140.1	79.9	14.8	1.0	37.7	98.2	62.0	37.6	89.1	65.6	69.6	144.0	128.6	143.8	98.4	83.5	68.9	47.2	12.5	23.1	30.1	26.5	144.0	68.5
19	4.9	5.8	4.7	2.0	2.6	2.6	23.1	17.1	35.2	29.6	15.6	55.5	43.6	70.3	35.4	92.0	62.1	61.5	16.3	4.6	11.7	4.8	10.8	6.9	92.0	25.8
20	8.4	13.5	6.1	5.2	2.7	30.7	96.5	76.5	50.5	41.4	58.8	87.3	144.0	139.8	123.4	123.8	129.3	69.1	82.1	59.5	34.8	127.3	5.6	4.2	144.0	63.4
21	1.0	1.1	0.8	1.1	1.5	1.4	2.1	5.5	20.3	57.4	43.4	130.0	249.3	160.8	73.6	68.3	90.8	209.0	43.8	33.5	30.6	22.0	61.0	19.3	249.3	55.3
22	7.1	9.4	2.8	2.4	2.9	2.8	71.2	225.5	224.3	**C**	198.6	83.9	115.8	**C**	100.1	142.6	69.5	16.8	14.6	9.0	11.8	7.7	4.9	5.4	225.5	60.4
23	2.8	1.7	5.4	1.4	2.3	1.8	3.9	2.9	12.0	16.7	19.6	10.3	14.5	40.4	42.0	36.4	13.1	3.4	4.6	11.4	6.1	5.4	2.6	2.1	42.0	10.9
24	1.9	6.4	2.4	14.8	4.3	4.3	34.2	62.4	53.2	16.7	14.1	10.6	5.5	10.9	9.4	3.4	3.5	4.0	3.9	4.2	4.2	4.2	3.4	3.6	62.4	11.9
25	3.0	3.0	3.9	6.0	6.1	6.1	6.8	5.4	6.7	17.6	32.2	78.4	26.1	9.2	12.9	15.1	15.0	11.6	10.6	8.0	7.6	7.1	5.6	5.5	78.4	12.9
26	4.0	25.1	9.4	9.1	15.2	7.0	24.7	90.3	92.1	59.4	98.2	219.2	322.0	288.2	201.5	331.5	124.7	327.3	12.4	5.0	5.9	5.9	14.0	30.3	331.5	96.8
27	26.4	4.6	13.8	6.7	4.4	2.6	4.0	6.1	74.6	150.8	246.4	259.5	243.5	329.5	360.6	334.5	256.2	120.5	57.5	45.2	38.7	16.5	5.0	18.8	360.6	109.4
28	18.9	11.8	6.9	6.4	4.7	3.0	31.9	77.0	96.8	43.3	25.9	20.5	99.1	65.9	39.3	30.6	16.9	4.8	5.2	1.3	0.7	0.9	1.2	2.3	99.1	25.6
29	0.8	1.0	0.9	1.2	0.9	1.0	2.1	7.6	22.4	13.5	14.7	44.4	20.8	32.7	32.9	16.1	4.3	3.1	3.3	3.4	7.4	6.2	3.3	2.5	44.4	10.3
30	2.4	4.2	5.8	4.9	3.4	2.9	28.7	58.9	50.3	105.5	80.6	47.6	119.5	48.1	55.5	70.7	185.7	71.6	38.8	21.0	28.5	5.5	2.9	3.5	185.7	43.6
Hourly Max	38.4	119.7	140.1	93.5	69.9	84.7	144.2	225.5	224.3	284.9	246.4	259.5	322.0	329.5	360.6	334.5	256.2	327.3	163.8	85.0	62.9	127.3	161.2	111.6		
Hourly Average	10.2	13.4	14.4	15.4	11.2	11.4	29.8	51.0	52.0	48.8	57.4	64.0	76.8	72.1	68.5	76.6	63.5	61.8	31.8	22.0	16.0	20.3	22.3	15.3		

E = Instrument Error | C = Calibration

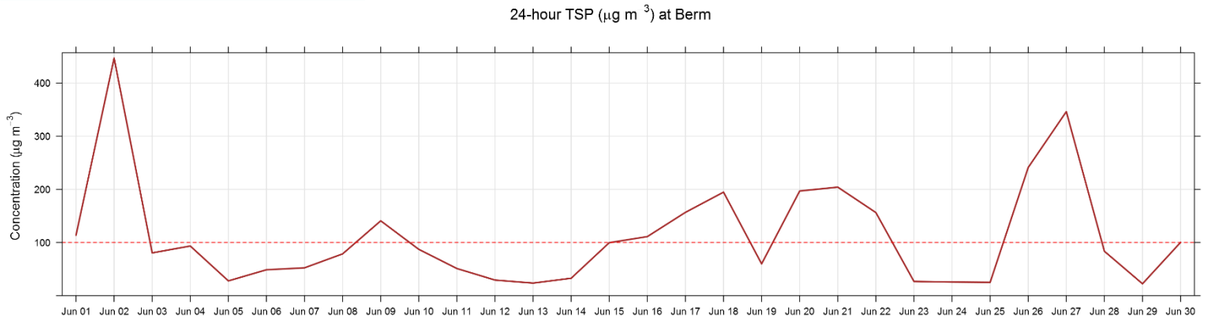


Number of 1HR Exceedances	n/a		Guideline	n/a	UG/M3
Number of Non-Zero Readings	717				
Maximum 1-HR Average	360.6	UG/M3			
Maximum 24-HR Average	109.4	UG/M3			
IZS Calibration Time	0	HRS	Operational Time	719	HRS
Monthly Calibration Time	0	HRS	Operational Uptime	99.9	%
Standard Deviation	54.6		Monthly Average	38.5	UG/M3

Berm TSP (µg/m^3) – June 2017

Day/Hour	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Daily Max	24-hour Average
1	21.9	24.4	58.3	27.0	40.9	44.4	14.2	30.4	19.4	156.1	160.2	269.1	368.9	307.4	112.6	105.9	126.3	229.7	93.0	91.4	91.6	85.7	159.8	90.4	368.9	113.7
2	73.4	152.3	209.0	366.9	335.7	250.3	668.4	648.5	923.7	1213.2	580.5	220.9	481.8	353.3	626.6	575.2	1118.3	717.9	336.4	231.5	245.0	180.4	175.8	35.2	1213.2	446.7
3	47.6	39.8	14.3	5.1	5.6	7.7	3.0	18.3	44.4	61.0	112.3	255.9	115.2	160.9	209.5	247.5	137.1	201.1	150.0	53.6	10.8	5.3	4.6	19.6	255.9	80.4
4	7.5	4.8	9.4	6.7	12.8	20.8	14.3	110.3	27.8	18.9	21.0	19.0	17.9	46.7	197.7	194.0	378.2	367.6	473.9	239.2	19.3	11.8	8.3	12.6	473.9	93.4
5	7.0	5.1	7.8	13.8	15.5	6.5	82.4	163.8	68.3	32.6	46.2	22.7	18.1	28.8	33.2	19.8	29.2	22.0	11.0	11.0	10.5	6.2	3.7	2.9	163.8	27.8
6	10.3	9.3	10.7	5.9	4.1	6.0	58.9	99.5	147.9	64.4	96.4	33.8	66.8	43.0	85.3	104.0	95.2	76.7	61.1	42.5	17.3	13.4	12.5	4.0	147.9	48.7
7	18.2	28.1	8.5	30.6	23.0	21.8	75.5	176.1	134.5	71.9	50.2	35.6	46.3	62.9	63.4	46.7	63.8	54.0	59.6	62.1	49.1	32.4	18.9	23.2	176.1	52.4
8	37.7	11.9	24.5	33.6	32.2	60.4	106.1	255.4	150.3	95.2	84.1	166.5	190.9	45.0	107.0	95.3	103.4	273.3	3.0	2.8	2.0	2.4	1.8	2.1	273.3	78.6
9	3.7	3.7	2.1	2.3	2.5	1.3	16.4	48.7	102.1	186.5	186.7	273.0	342.4	474.9	252.1	393.9	204.8	348.4	165.7	83.2	42.4	97.9	100.7	42.2	474.9	140.8
10	43.5	60.1	81.3	111.0	125.4	216.9	575.8	522.7	209.7	126.0	13.4	0.7	0.2	0.1	0.2	0.4	0.2	1.3	0.4	0.3	0.3	0.3	0.3	0.4	575.8	87.1
11	0.6	0.7	1.5	0.8	1.5	1.4	1.0	40.3	61.1	54.0	79.4	180.3	83.8	123.2	152.9	178.2	85.8	76.9	26.3	38.7	26.7	3.4	3.7	3.0	180.3	51.0
12	6.0	2.6	2.5	1.7	3.5	1.9	2.0	12.8	21.4	73.3	64.0	94.2	31.3	40.3	59.7	42.6	30.1	68.0	58.4	32.8	25.0	11.6	13.7	5.6	94.2	29.4
13	9.8	11.9	10.5	5.5	6.6	5.4	15.6	54.8	129.2	75.8	53.8	27.0	32.9	29.0	33.8	23.7	25.5	3.9	1.7	2.3	2.1	2.4	1.4	2.8	129.2	23.7
14	5.6	4.7	2.3	1.4	1.0	1.4	0.5	0.5	0.5	2.1	10.6	3.3	8.5	6.9	19.6	52.3	71.6	50.4	42.4	32.1	80.1	215.3	119.8	54.7	215.3	32.8
15	10.0	10.2	12.0	4.4	4.0	4.1	3.0	67.8	24.6	49.3	80.1	118.3	**E**	104.6	128.5	193.8	91.8	105.2	85.3	53.1	94.5	408.2	368.6	270.7	408.2	99.7
16	107.2	91.9	139.3	137.5	66.7	59.4	90.0	146.6	156.6	106.4	167.9	189.5	97.2	118.3	236.9	217.9	127.5	163.2	146.5	32.7	41.8	23.2	1.2	0.6	236.9	111.1
17	3.2	1.3	3.2	0.7	0.8	3.3	4.4	7.8	104.5	235.1	428.2	534.9	165.9	338.7	232.2	318.9	137.0	123.4	64.0	125.8	72.6	104.3	443.3	306.9	534.9	156.7
18	51.4	340.7	380.1	199.1	29.9	1.4	102.9	200.1	137.7	104.3	184.4	176.6	252.2	439.2	386.6	478.5	344.5	258.2	236.9	170.8	22.8	43.9	81.9	47.6	478.5	194.7
19	9.1	11.9	7.5	3.5	2.5	2.5	35.9	35.5	62.6	54.7	27.2	110.9	111.4	112.7	101.5	259.0	190.1	176.9	37.2	11.0	19.8	11.4	22.1	19.3	259.0	59.8
20	20.9	39.6	20.3	10.4	5.1	62.8	287.6	234.7	155.6	111.9	194.4	271.6	506.3	417.7	378.3	377.2	350.6	201.3	304.1	224.3	132.3	403.4	9.2	5.0	506.3	196.9
21	0.8	0.9	0.6	0.8	1.1	1.0	1.8	7.9	56.0	231.6	145.8	486.1	992.2	726.0	290.2	280.7	402.4	642.7	208.6	123.6	76.7	52.1	122.5	45.6	992.2	204.1
22	10.9	17.5	2.8	4.2	2.1	2.7	190.4	653.9	534.6	**C**	533.2	263.5	267.8	**C**	267.7	388.1	169.1	42.0	25.6	14.7	17.1	13.1	7.8	9.0	653.9	156.3
23	3.4	1.2	6.7	2.9	2.4	1.2	3.9	2.9	26.9	47.7	49.8	23.9	31.6	144.0	107.1	88.6	40.0	6.6	9.1	23.4	7.4	6.3	2.9	1.9	144.0	26.7
24	1.7	17.1	1.8	19.8	3.5	4.9	107.2	162.8	105.1	33.1	22.7	17.1	6.3	29.9	26.6	5.4	6.7	7.4	6.9	7.3	7.2	6.5	3.6	4.2	162.8	25.6
25	2.4	4.0	4.4	7.6	10.9	8.3	16.5	9.9	12.9	33.3	68.3	111.1	42.8	17.7	20.9	49.6	56.4	30.3	38.4	17.0	13.0	12.8	6.8	7.4	111.1	25.1
26	6.4	29.9	12.2	18.1	26.6	10.8	47.3	175.9	132.0	99.2	225.8	646.0	1022.6	762.7	553.7	949.2	329.4	549.4	16.5	9.7	10.2	12.6	41.7	99.1	1022.6	241.1
27	68.7	9.0	71.9	15.4	10.7	4.3	5.9	12.8	193.9	583.8	890.5	892.7	788.8	920.9	1082.0	994.0	816.1	418.2	200.9	118.7	103.4	43.4	12.0	48.3	1082.0	346.1
28	23.8	12.0	9.0	9.3	7.9	4.4	62.7	249.6	358.9	187.0	81.2	74.8	375.8	261.1	141.9	72.7	47.4	8.6	10.0	1.1	0.5	0.7	1.1	2.2	375.8	83.5
29	0.5	0.8	0.6	0.8	0.6	0.7	1.9	10.0	87.0	32.7	31.0	91.2	50.2	78.8	62.9	28.0	8.9	6.2	6.4	6.8	16.5	8.3	4.0	2.8	91.2	22.4
30	1.7	3.7	7.9	6.5	3.6	4.6	63.1	130.5	84.3	297.0	207.9	117.4	294.7	110.3	139.0	184.0	425.2	184.9	61.2	26.5	37.4	10.1	2.1	2.5	425.2	100.3
Hourly Max	107.2	340.7	380.1	366.9	335.7	250.3	668.4	653.9	923.7	1213.2	890.5	892.7	1022.6	920.9	1082.0	994.0	1118.3	717.9	473.9	239.2	245.0	408.2	443.3	306.9		
Hourly Average	20.5	31.7	37.4	35.1	26.3	27.4	88.6	143.0	142.4	153.0	163.2	190.9	234.9	217.4	203.7	232.2	200.4	180.5	98.0	63.0	43.2	61.0	58.5	39.1		

E = Instrument Error | C = Calibration

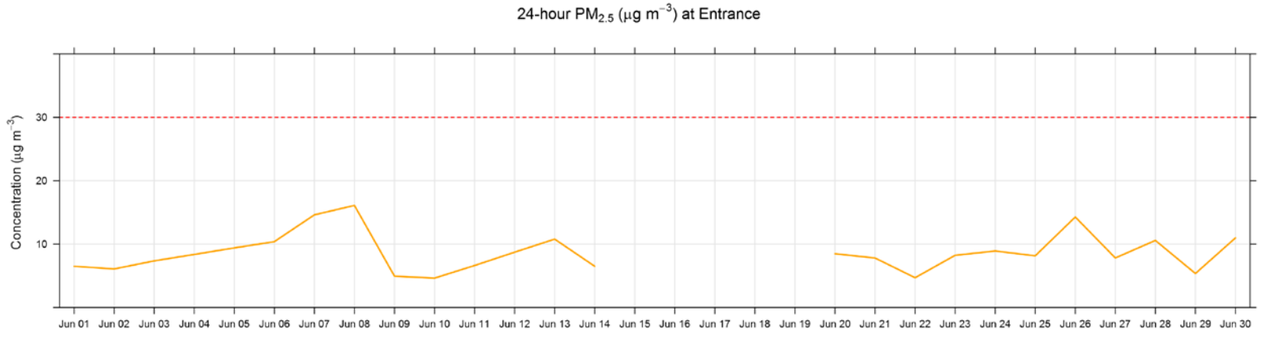


Number of 24HR Exceedances	12		Guideline	100	UG/M3
Number of Non-Zero Readings	717				
Maximum 1-HR Average	1213.2	UG/M3			
Maximum 24-HR Average	446.7	UG/M3			
IZS Calibration Time	0	HRS	Operational Time	719	HRS
Monthly Calibration Time	0	HRS	Operational Uptime	99.9	%
Standard Deviation	178.8		Monthly Average	111.8	UG/M3

Entrance $PM_{2.5}$ (µg/m^3) – June 2017

Day/Hour	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Daily Max	24-hour Average
1	9.5	6.3	3.1	4.7	4.4	4.9	13.3	12.1	12.6	10.5	12.9	6.9	6.5	6.3	7.3	5.5	5.8	6.8	5.4	4.4	2.4	1.4	1.7	1.4	13.3	6.5
2	1.4	1.1	1.2	1.5	3.9	4.0	9.5	8.5	13.9	18.1	8.7	7.7	8.7	8.4	6.5	6.2	14.3	6.2	4.0	2.1	4.3	2.2	2.2	1.3	18.1	6.1
3	1.7	1.6	4.2	13.4	16.9	19.0	18.7	12.6	9.9	6.7	7.7	6.1	3.8	3.7	6.3	4.1	3.3	2.3	2.5	2.3	6.7	3.6	7.3	12.2	19.0	7.4
4	12.9	8.8	19.8	14.4	14.8	17.5	10.3	11.6	6.4	3.9	4.6	4.6	5.4	4.5	5.4	7.7	10.0	6.7	5.0	3.4	5.3	9.8	3.3	4.8	19.8	8.4
5	12.1	18.1	10.6	37.3	5.2	6.6	13.1	8.5	8.3	8.6	8.3	8.0	7.3	5.7	23.5	6.4	5.8	8.5	4.9	4.8	3.4	3.2	3.5	4.0	37.3	9.4
6	9.6	11.5	12.8	17.6	18.9	19.6	18.3	19.7	10.5	7.2	10.6	11.9	11.2	8.9	11.3	8.6	5.6	4.0	5.4	4.0	7.0	5.7	3.9	5.4	19.7	10.4
7	9.5	13.6	15.4	15.8	20.2	19.7	27.7	39.8	30.9	35.5	17.2	7.7	10.1	8.1	8.8	6.3	6.2	6.0	5.6	5.4	9.9	13.9	7.1	10.4	39.8	14.6
8	12.0	9.3	12.1	41.0	17.2	18.5	11.7	17.3	24.8	16.4	16.6	18.5	21.4	9.1	20.5	8.8	9.7	11.8	8.6	17.2	21.4	15.7	14.7	12.0	41.0	16.1
9	4.6	18.1	22.3	16.2	4.0	2.3	2.2	4.8	4.1	3.0	3.9	2.6	3.5	5.2	3.3	3.6	2.2	2.7	2.4	2.0	1.4	1.7	1.4	1.0	22.3	4.9
10	1.1	0.8	1.1	0.9	1.2	2.1	26.2	12.5	4.6	2.8	1.2	3.3	2.6	5.6	4.3	0.6	1.5	0.6	2.1	2.4	5.1	12.6	6.7	9.1	26.2	4.6
11	11.5	14.8	13.3	7.6	9.8	9.5	9.7	7.7	3.0	3.6	5.5	6.1	6.2	7.5	2.8	1.8	5.3	5.0	3.1	1.9	2.0	2.5	4.7	14.2	14.8	6.6
12	13.5	10.2	9.2	11.4	11.9	11.4	12.1	15.8	17.2	16.1	9.8	6.9	4.8	6.9	7.5	6.8	6.6	3.1	2.8	3.2	4.5	3.4	8.2	5.9	17.2	8.7
13	9.4	13.3	13.6	8.2	12.4	12.4	11.6	10.8	10.9	17.2	13.7	16.3	20.3	11.8	11.1	12.0	11.7	8.3	8.0	4.1	5.3	6.4	5.0	5.4	20.3	10.8
14	6.2	7.1	7.2	5.3	6.0	2.8	2.4	4.9	6.4	8.1	27.2	10.2	6.4	6.8	8.4	7.7	6.4	3.1	3.2	5.4	4.8	4.3	3.1	2.8	27.2	6.5
15	7.7	8.8	15.1	12.9	11.0	7.0	12.5	16.3	15.8	7.0	10.5	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	-	-
16	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	-	-
17	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	-	-
18	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	-	-
19	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	11.1	8.8	6.5	7.7	8.2	7.9	5.3	5.2	2.5	2.1	1.1	2.0	1.8	-	-
20	1.2	0.8	1.1	1.1	1.4	2.2	9.7	12.2	8.5	11.7	15.4	13.1	14.2	16.9	16.3	20.8	8.7	7.8	6.6	3.9	1.7	13.6	0.6	14.0	20.8	8.5
21	12.5	6.5	7.1	8.5	7.8	7.1	10.3	14.9	9.4	6.9	7.0	7.6	15.4	13.2	10.4	12.6	10.9	8.8	2.9	2.2	2.0	1.4	1.0	1.1	15.4	7.8
22	0.9	0.7	2.2	1.9	2.8	6.3	4.5	12.7	5.8	**C**	**C**	**C**	7.6	6.8	5.7	4.8	4.4	4.9	4.7	5.4	5.6	4.8	3.2	3.0	12.7	4.7
23	2.0	2.5	4.6	4.2	3.8	5.1	6.2	5.8	14.5	25.1	21.8	13.0	16.8	15.0	14.5	4.8	6.2	2.9	3.8	4.4	4.0	5.4	6.2	5.0	25.1	8.2
24	3.9	8.1	4.2	12.2	10.5	24.2	25.9	13.6	14.3	9.9	11.5	9.6	9.7	8.3	6.0	2.7	3.5	2.7	2.8	4.4	5.1	4.7	5.3	10.7	25.9	8.9
25	3.8	3.4	8.3	17.8	17.0	16.7	18.2	12.4	10.9	12.3	13.1	4.4	6.2	3.6	3.1	3.8	5.3	3.8	4.2	4.3	5.0	4.8	7.4	5.9	18.2	8.2
26	6.3	9.8	16.6	11.4	9.8	12.6	20.5	20.3	21.7	17.6	22.0	22.3	28.1	13.1	10.2	13.1	8.9	30.9	8.5	9.4	17.2	5.5	3.5	3.5	30.9	14.3
27	4.0	12.9	7.2	4.1	5.9	6.8	14.8	12.1	14.3	14.4	12.8	6.6	5.8	7.1	7.3	9.5	13.9	6.4	3.2	2.6	2.3	4.2	2.7	6.5	14.8	7.8
28	6.4	5.6	5.8	8.3	7.7	7.2	8.4	12.5	15.5	31.5	14.0	15.4	28.9	25.0	10.6	16.2	5.6	3.1	3.3	7.7	4.8	3.3	3.9	3.1	31.5	10.6
29	2.8	3.4	3.4	3.9	3.4	4.4	7.7	8.1	11.8	11.0	9.6	4.5	4.1	5.3	4.9	4.0	4.2	2.6	3.4	5.2	6.1	5.4	5.3	4.1	11.8	5.4
30	5.3	12.0	39.4	19.0	11.2	10.3	13.7	21.8	17.6	13.3	7.5	6.4	4.8	4.6	5.6	8.6	13.1	14.2	3.6	7.5	6.2	4.8	5.6	7.5	39.4	11.0
Hourly Max	13.5	18.1	39.4	41.0	20.2	24.2	27.7	39.8	30.9	35.5	27.2	22.3	28.9	25.0	23.5	20.8	14.3	30.9	8.6	17.2	21.4	15.7	14.7	14.2		
Hourly Average	6.6	8.0	10.0	11.6	9.2	10.0	13.0	13.4	12.4	12.7	11.7	9.2	10.3	8.6	8.8	7.5	7.2	6.5	4.4	4.7	5.6	5.6	4.6	6.0		

E = Instrumental Error C = Calibration

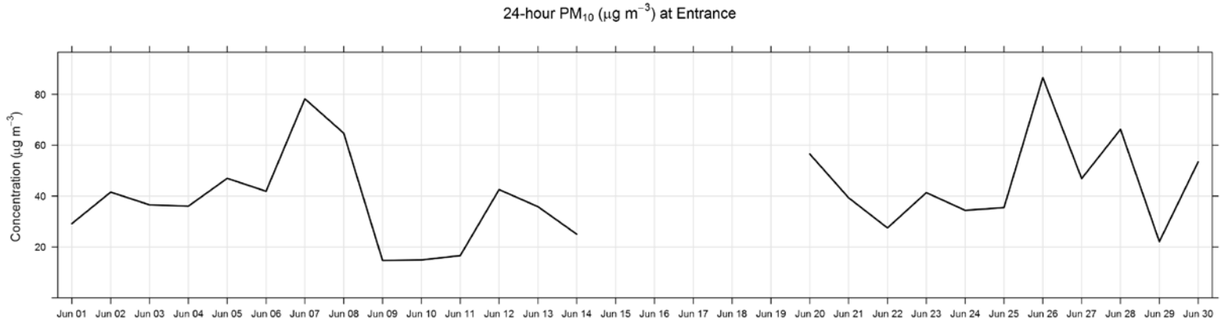


Number of1HR Exceedances	0		Guideline	80	UG/M3
Number of 24HR Exceedances	0		Guideline	30	UG/M3
Number of Non-Zero Readings	621				
Maximum 1-HR Average	41.0	UG/M3			
Maximum 24-HR Average	16.1	UG/M3			
IZS Calibration Time	0	HRS	Operational Time	624	HRS
Monthly Calibration Time	3	HRS	Operational Uptime	86.7	%
Standard Deviation	6.3		Monthly Average	8.7	UG/M3

Entrance PM_{10} (µg/m^3) – June 2017

Day/Hour	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Daily Max	24-hour Average
1	27.4	17.0	6.5	10.6	10.0	13.3	49.2	54.3	60.5	49.2	61.9	37.5	36.4	34.6	46.1	35.6	33.8	37.7	27.0	22.4	10.5	4.5	8.0	6.3	61.9	29.2
2	5.7	4.1	4.8	7.5	22.6	25.8	71.6	64.4	98.0	155.6	59.0	48.4	78.3	52.9	39.0	38.7	109.8	38.6	25.2	7.8	20.9	7.4	8.4	2.8	155.6	41.6
3	3.6	3.7	16.2	70.6	94.4	104.8	107.5	78.5	50.0	31.0	35.7	36.9	19.1	17.8	28.9	14.4	14.3	7.2	7.1	5.1	36.3	15.5	30.6	47.9	107.5	36.5
4	54.7	30.3	104.5	67.2	62.5	68.8	41.4	61.8	24.3	12.2	14.8	14.2	25.4	20.3	30.3	31.6	46.4	26.9	35.7	17.2	14.3	33.7	10.9	15.4	104.5	36.0
5	52.3	89.6	44.8	186.7	8.1	14.5	64.8	39.4	42.6	42.2	48.0	49.7	38.5	27.3	168.6	39.7	34.5	46.5	27.2	18.6	12.2	9.1	10.1	12.3	186.7	47.0
6	19.1	19.3	19.3	26.5	28.4	52.9	81.2	108.7	40.9	32.4	52.2	67.5	62.7	51.9	80.5	64.0	42.3	25.9	34.4	15.5	30.6	20.6	11.7	16.9	108.7	41.9
7	39.4	59.0	66.2	74.2	95.2	99.0	156.0	266.1	166.5	190.6	120.8	50.2	76.7	49.7	54.4	32.2	32.5	28.0	23.7	22.5	51.1	68.5	21.2	34.1	266.1	78.2
8	38.7	28.3	41.3	188.4	57.1	67.0	38.5	77.3	123.9	70.2	79.9	120.1	142.8	44.1	133.3	52.1	59.1	55.5	12.8	25.9	33.7	23.5	22.0	17.9	188.4	64.7
9	6.3	27.1	33.4	24.2	5.8	4.9	8.4	20.5	22.8	18.2	19.5	15.5	19.9	29.6	17.5	26.8	8.1	11.1	10.4	7.2	3.5	5.2	3.3	2.7	33.4	14.7
10	2.5	1.5	2.4	1.6	2.9	8.6	136.0	63.1	21.3	11.1	1.5	4.9	3.7	8.2	6.4	0.7	2.0	0.8	3.0	3.7	11.3	23.6	22.9	13.7	136.0	14.9
11	17.2	22.2	19.9	11.4	14.7	14.2	15.6	25.2	7.3	9.2	20.7	19.5	19.9	27.1	7.8	3.9	20.9	17.4	9.4	3.7	4.9	6.0	16.7	63.6	63.6	16.6
12	67.1	55.5	40.3	45.8	31.5	20.9	64.2	97.6	89.9	67.8	40.0	40.8	25.9	48.2	46.9	45.9	40.5	22.5	18.0	17.8	20.1	15.8	37.9	20.4	97.6	42.6
13	34.6	62.8	52.5	20.3	38.7	34.6	34.1	37.8	43.0	75.6	49.4	61.9	86.7	43.1	40.8	47.1	41.5	12.4	11.9	5.3	5.9	7.6	5.9	6.7	86.7	35.8
14	7.3	9.1	10.7	7.9	9.0	4.2	3.3	7.3	14.4	33.6	159.8	64.2	26.3	29.7	37.2	35.0	36.2	13.5	10.0	25.0	20.4	18.9	9.5	7.8	159.8	25.0
15	33.7	42.6	94.1	82.0	80.2	37.2	72.5	93.9	85.6	35.2	58.7	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	-	-
16	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	-	-
17	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	-	-
18	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	-	-
19	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	67.4	57.4	36.7	57.8	68.7	58.2	33.0	28.7	14.5	12.0	3.9	7.5	6.6	-	-
20	3.3	1.5	2.3	3.7	4.9	11.7	70.2	90.4	51.6	75.9	119.9	101.5	96.6	122.0	112.3	154.4	46.5	49.3	50.8	29.4	9.0	111.7	1.0	37.2	154.4	56.5
21	18.8	9.8	10.6	12.7	11.7	10.7	15.5	74.2	52.3	46.7	46.0	64.3	122.6	86.1	72.1	92.3	82.6	64.5	16.6	11.7	8.8	6.3	3.8	3.1	122.6	39.3
22	2.4	1.6	8.1	7.7	15.3	37.2	28.3	107.9	38.7	**C**	**C**	**C**	58.6	48.5	35.0	26.2	27.7	27.7	21.0	26.5	22.6	18.5	8.9	8.6	107.9	27.5
23	3.9	3.6	7.9	9.5	5.6	7.5	9.1	9.5	89.8	166.1	145.3	78.6	102.2	97.3	92.8	25.9	35.8	10.3	14.4	15.0	16.1	19.0	15.9	11.2	166.1	41.3
24	6.1	12.1	6.1	28.2	15.7	97.0	148.9	63.8	72.8	44.6	55.4	44.7	52.7	39.1	28.7	7.1	14.2	6.9	7.6	7.6	18.8	15.3	13.4	18.7	148.9	34.4
25	6.3	5.4	20.4	78.3	80.7	81.1	101.5	65.1	50.4	46.7	69.1	22.8	32.0	16.0	14.0	20.4	28.0	16.9	17.6	14.8	15.8	11.9	21.4	14.7	101.5	35.5
26	18.5	30.3	74.8	43.7	32.0	45.3	105.4	108.8	110.8	113.5	155.6	206.9	211.8	96.8	71.8	81.6	60.5	229.9	46.4	55.4	126.0	27.4	13.3	11.1	229.9	86.6
27	13.7	107.0	32.0	8.6	20.4	25.8	76.1	61.4	87.2	100.1	87.6	48.8	39.8	55.2	56.5	68.7	92.0	40.1	18.7	13.3	11.0	24.8	12.8	23.3	107.0	46.9
28	22.6	19.2	23.1	41.4	46.8	45.2	56.4	94.3	121.7	232.0	111.7	113.2	224.3	186.2	58.2	100.9	35.7	13.2	9.9	11.5	7.1	4.9	5.7	4.5	232.0	66.2
29	4.0	5.0	4.9	5.6	4.8	6.3	11.5	38.5	53.4	64.4	56.8	29.7	27.6	20.4	29.2	26.6	23.3	11.5	12.5	21.9	27.3	20.2	16.5	9.2	64.4	22.1
30	11.7	17.9	148.3	101.7	47.6	45.0	92.3	174.0	128.7	72.5	46.6	35.3	23.3	23.6	30.1	37.7	57.4	65.1	12.7	43.3	26.3	16.1	10.8	14.6	174.0	53.4
Hourly Max	67.1	107.0	148.3	188.4	95.2	104.8	156.0	266.1	166.5	232.0	159.8	206.9	224.3	186.2	168.6	154.4	109.8	229.9	50.8	55.4	126.0	111.7	37.9	63.6		
Hourly Average	20.0	26.4	34.4	44.8	32.6	37.8	63.8	76.3	67.2	71.9	68.6	57.8	65.8	50.5	53.7	45.3	41.7	35.1	19.7	17.8	22.2	20.8	13.5	16.6		

E = Instrumental Error C = Calibration

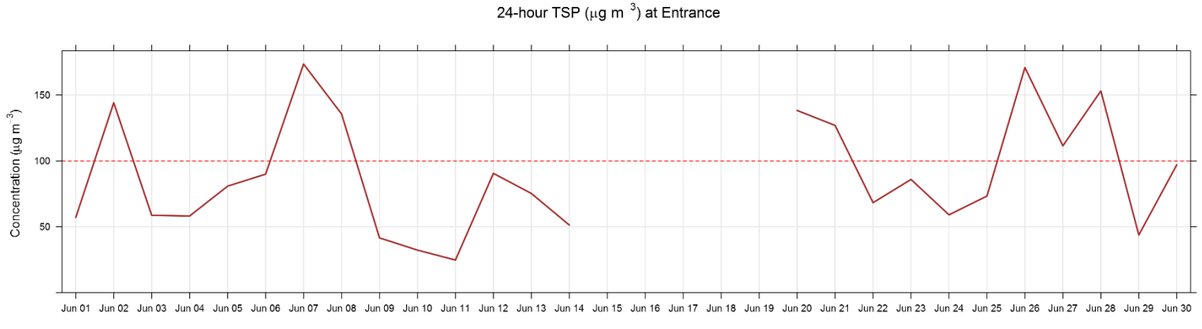


Number of 1HR Exceedances	n/a		Guideline	n/a	UG/M3
Number of Non-Zero Readings	621				
Maximum 1-HR Average	266.1	UG/M3			
Maximum 24-HR Average	86.6	UG/M3			
IZS Calibration Time	0	HRS	Operational Time	624	HRS
Monthly Calibration Time	3	HRS	Operational Uptime	86.7	%
Standard Deviation	40.8		Monthly Average	41.7	UG/M3

Entrance TSP (µg/m^3) – June 2017

Day/ Hour	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Daily Max	24-hour Average
1	33.8	28.0	10.9	11.9	15.7	25.5	70.5	94.5	114.1	104.2	99.3	86.1	82.5	70.1	106.6	63.9	63.1	101.0	48.0	54.9	32.3	11.2	20.8	21.1	114.1	57.1
2	15.4	18.3	19.4	26.6	61.2	65.7	242.3	206.7	342.7	634.2	207.7	144.9	329.2	157.6	110.7	121.2	387.9	132.7	86.0	22.1	66.3	24.2	28.1	8.5	634.2	144.1
3	6.2	7.3	22.4	101.4	124.4	150.6	163.5	127.3	75.7	57.9	66.4	101.1	42.6	38.2	66.3	31.6	33.1	26.3	10.5	6.7	37.0	19.7	37.1	54.5	163.5	58.7
4	61.7	35.0	135.1	70.0	99.2	66.0	56.3	104.2	34.2	21.3	32.6	36.6	64.6	56.7	79.6	36.0	93.2	43.1	142.0	54.6	15.6	28.6	16.1	14.4	142.0	58.2
5	56.5	103.1	39.6	154.0	7.7	13.6	72.9	62.3	105.3	96.5	128.5	130.1	73.8	55.1	348.4	108.8	105.0	118.9	62.0	40.0	14.5	11.8	17.3	14.1	348.4	80.8
6	22.3	23.6	20.9	29.7	32.5	91.3	145.7	197.2	62.2	52.4	109.9	164.0	134.6	131.9	249.8	198.9	128.7	83.8	78.0	47.8	65.9	35.8	26.5	24.3	249.8	89.9
7	54.3	117.9	106.3	181.2	191.6	201.7	300.5	744.4	283.0	295.0	319.5	159.0	246.1	136.4	146.2	86.6	97.5	63.3	75.9	54.4	123.6	99.1	32.2	49.2	744.4	173.5
8	57.6	34.8	59.7	200.1	82.5	102.0	74.2	129.0	214.6	163.6	224.5	357.7	420.9	133.6	350.5	157.1	162.8	182.2	10.7	28.3	38.9	26.6	24.8	19.3	420.9	135.7
9	5.6	29.1	36.1	25.8	5.1	7.3	23.9	45.6	79.9	72.3	57.7	57.1	95.2	108.1	68.7	139.8	27.2	34.7	25.9	22.6	6.8	11.7	5.9	4.5	139.8	41.5
10	6.5	1.3	3.1	1.4	5.6	29.9	354.7	172.1	54.9	28.0	1.1	4.2	2.8	7.0	5.5	0.5	1.6	0.6	2.9	3.6	11.8	27.1	33.0	15.2	354.7	32.3
11	19.5	25.5	22.9	12.7	16.7	15.7	17.0	48.3	9.6	15.2	43.6	35.7	32.1	49.2	13.5	7.7	44.5	32.8	11.5	2.8	10.0	8.8	19.5	78.4	78.4	24.7
12	97.9	119.9	58.9	76.8	67.1	31.9	144.7	260.6	196.0	115.1	68.0	93.9	56.4	123.7	104.9	102.5	67.9	95.0	65.9	59.1	40.9	37.2	57.8	30.3	260.6	90.5
13	38.4	79.0	99.8	22.8	64.6	43.5	48.8	51.8	61.9	222.5	141.8	191.0	262.6	123.0	113.6	118.2	78.4	11.6	12.3	3.9	3.9	4.9	3.9	4.5	262.6	75.3
14	4.8	7.1	10.5	7.6	9.1	3.8	2.9	6.9	20.3	63.8	389.6	123.5	53.8	52.0	82.6	58.7	96.5	30.1	21.4	56.7	46.2	58.8	10.9	12.8	389.6	51.3
15	41.6	67.2	153.5	138.9	116.2	58.7	129.4	149.0	125.9	64.6	112.8	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	-	-
16	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	-	-
17	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	-	-
18	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	-	-
19	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	132.9	96.4	72.3	144.1	196.2	144.1	65.0	38.0	21.4	24.9	6.6	9.2	13.3	-	-
20	4.2	1.9	5.3	7.1	7.5	27.1	136.0	191.3	107.1	138.9	245.2	277.7	234.9	332.5	292.6	463.6	100.4	100.0	156.0	99.3	33.1	310.2	2.6	44.4	463.6	138.3
21	21.1	11.1	11.8	14.3	12.9	11.8	17.5	150.8	115.1	141.9	122.0	206.5	467.0	321.3	263.0	345.9	378.6	301.6	51.0	32.8	23.3	15.2	4.5	5.0	467.0	126.9
22	2.5	1.8	10.8	9.6	23.1	55.0	65.1	434.4	83.7	**C**	**C**	**C**	165.9	127.1	67.5	55.4	65.4	66.3	38.0	57.2	36.9	36.2	14.1	18.4	434.4	68.3
23	4.8	2.8	8.4	14.0	5.6	6.9	9.0	9.7	195.1	330.1	292.3	215.7	219.0	199.5	177.1	63.4	106.7	29.9	42.4	36.0	31.9	25.2	21.9	14.3	330.1	85.9
24	9.1	12.1	5.0	34.5	16.3	105.4	202.1	110.2	115.4	85.8	139.1	95.7	125.5	85.7	83.3	20.0	36.2	13.0	17.5	10.7	34.0	16.9	17.3	26.0	202.1	59.0
25	6.1	5.8	26.8	153.1	217.9	194.0	211.1	162.4	95.0	69.5	102.6	40.1	49.4	34.1	29.1	52.6	86.0	39.4	45.4	39.3	23.7	20.8	30.2	24.8	217.9	73.3
26	23.1	29.9	106.1	71.9	45.3	79.3	176.0	163.0	143.0	168.8	327.9	516.2	536.5	243.2	181.3	208.4	176.9	496.6	67.3	80.5	150.8	38.4	43.4	27.1	536.5	170.9
27	17.9	131.0	81.2	24.2	36.9	66.6	173.8	146.7	217.5	298.5	232.9	139.7	105.3	152.0	145.3	168.8	221.3	108.8	47.7	26.4	23.2	37.2	28.3	43.6	298.5	111.4
28	40.1	29.4	34.8	73.8	91.3	107.1	114.0	250.9	306.5	547.5	223.2	248.2	616.8	464.3	115.8	205.5	113.1	33.1	23.2	12.7	7.8	5.1	6.0	4.3	616.8	153.1
29	3.8	4.9	4.7	5.4	4.6	6.3	12.2	61.2	84.5	131.5	122.4	64.4	72.6	37.9	57.1	67.7	71.1	31.1	34.6	48.0	52.5	31.1	28.7	11.1	131.5	43.7
30	13.3	19.3	148.6	225.6	71.0	84.1	216.6	400.2	279.7	132.9	103.8	68.6	53.9	42.9	61.0	53.8	76.2	70.1	18.3	88.4	38.4	32.9	15.2	14.8	400.2	97.1
Hourly Max	97.9	131.0	153.5	225.6	217.9	201.7	354.7	744.4	342.7	634.2	389.6	516.2	616.8	464.3	350.5	463.6	387.9	496.6	156.0	99.3	150.8	310.2	57.8	78.4		
Hourly Average	25.7	36.4	47.8	65.2	55.1	63.5	122.3	172.3	135.5	162.1	156.6	147.6	178.5	129.1	133.2	120.5	114.0	88.9	47.4	38.8	38.2	37.8	21.4	23.0		

E = INSTRUMENTAL ERROR C = CALIBRATION



Number of 24HR Exceedances	8		Guideline	100	UG/M3
Number of Non-Zero Readings	621				
Maximum 1-HR Average	744.4	UG/M3			
Maximum 24-HR Average	173.5	UG/M3			
IZS Calibration Time	0	HRS	Operational Time	624	HRS
Monthly Calibration Time	3	HRS	Operational Uptime	86.7	%
Standard Deviation	101.9		Monthly Average	89.7	UG/M3

MetOne BAM PM_{10} Calibration

WSP AIR QUALITY MONITORING

STATION:	Lafarge	OPERATOR:	Darrin Pike
LOCATION:	Exshaw - Lagoon	DATE:	June 15, 2017
START TIME (MST):	12:55	END TIME (MST):	15:05

MONITOR INFO / PARAMETER VALUES:

Make/Model	MetOne BAM	Audit Device Model	Delta Cal
Configuration	PM2.5	Audit Device S/N	624
Serial Number	T19087	Certification Date	02-Dec-16

AUDIT / CALIBRATION RESULTS:

		Ambient Temp. ($^{\circ}$C)	Ambient Pres. (mmHg)	Leak Check (L/min)	Flow Rate (lpm)	Time settings (hh:mm)
	Audit values (I)	15.3	647	0.00	16.7	14:34
As Found Data	MEASURED (AF)	15.3	647	0.30	16.77	14:33
	AF Difference (AF-I)	0.0	0	0.30	0.07	0:01
Adjusted Data	MEASURED (M)	15.3	647	0.30	16.80	14:34
	Adj Difference (M-I)	0.0	0	0.30	0.10	0:00
	LIMITS	± 4.0 ^{0}C	5 mm Hg	1.0 L/min	± 1.0 L/min	±2 min

Sample Head Inspect/Cleaning: Cleaned.

Status of sampling tape: 1/2 roll left

Nozzle Inspection / cleanliness: Inspected and cleaned.

COMMENTS:

Performed self-test, all passed.

MetOne BAM PM_{10} Calibration

WSP
AIR QUALITY MONITORING

STATION:	Lafarge	OPERATOR:	Darrin Pike
LOCATION:	Exshaw - Lagoon	DATE:	June 15, 2017
START TIME (MST):	12:55	END TIME (MST):	15:05

MONITOR INFO / PARAMETER VALUES:

Make/Model	MetOne BAM	Audit Device Model	Delta Cal
Configuration	PM10	Audit Device S/N	624
Serial Number	A3315	Certification Date	02-Dec-16

AUDIT / CALIBRATION RESULTS:

		Ambient Temp. ($^{\circ}$C)	Ambient Pres. (mmHg)	Leak Check (L/min)	Flow Rate (lpm)	Time settings (hh:mm)
	Audit values (I)	16.3	647	0.00	16.7	13:47
As Found Data	MEASURED (AF)	16.4	647	0.30	16.76	13:47
	AF Difference (AF-I)	0.5	0	0.30	0.06	0:00
Adjusted Data	MEASURED (M)	12.2	647	0.30	16.76	13:47
	Adj Difference (M-I)	-4.1	0	0.30	0.06	0:00
	LIMITS	± 4.0 ^{0}C	5 mm Hg	1.0 L/min	± 1.0 L/min	±2 min

Sample Head Inspect/Cleaning: Cleaned

Status of sampling tape: Full roll left

Nozzle Inspection / cleanliness: Inspected and cleaned

COMMENTS:

Performed self test, all passed.

MetOne BAM PM_{10} Calibration

AIR QUALITY MONITORING

STATION:	Lafarge	OPERATOR:	Darrin Pike
LOCATION:	Exshaw - Lagoon	DATE:	June 15, 2017
START TIME (MST):	12:55	END TIME (MST):	15:05

MONITOR INFO / PARAMETER VALUES:

Make/Model	MetOne BAM	Audit Device Model	Delta Cal
Configuration	TSP	Audit Device S/N	624
Serial Number	A3589	Certification Date	02-Dec-16

AUDIT / CALIBRATION RESULTS:

		Ambient Temp. ($^{\circ}$C)	Ambient Pres. (mmHg)	Leak Check (L/min)	Flow Rate (lpm)	Time settings (hh:mm)
	Audit values (I)	15.0	647	0.00	16.7	
As Found Data	MEASURED (AF)	15.2	647	0.40	16.99	
	AF Difference (AF-I)	0.5	0	0.40	0.29	0:00
Adjusted Data	MEASURED (M)	15.2	647	0.40	16.64	
	Adj Difference (M-I)	0.2	0	0.40	-0.06	0:00
	LIMITS	± 4.0 ^{0}C	5 mm Hg	1.0 L/min	± 1.0 L/min	±2 min

Sample Head Inspect/Cleaning: Cleaned

Status of sampling tape: 1/2 roll left

Nozzle Inspection / cleanliness: Inspected and cleaned.

COMMENTS:

Performed self test, all passed.

Calibration Report

Parameter **NO_X-NO-NO_2**

Air Monitoring Network **Lafarge - Exshaw**

WSP AIR QUALITY MONITORING

Station Information

Calibration Date	June 15, 2017	Previous Calibration	May 26, 2017
Station Number	N/A	Station Location	Exshaw - Lagoon

Reason: Routine | Installation | Removal | Other:

Start Time (MST)	07:50		End Time (MST)	13:20	
Barometric Pressure	651	mmHg	Station Temperature	23.0	Deg C
Calibrator	SABIO 2010		Serial Number	103951108	
NO Cal Gas Conc	51.4	ppm	Cal Gas Expiry Date	July 26, 2019	
NOx Cal Gas Conc	51.5	ppm	Cal Gas Serial #	EY667	

DACS Information

DACS make: Campbell Scientific CR1000 | DACS serial No.: 67802

Parameter		NO2	NOx	NO
Before	Data Slope	0.998796	1.000550	1.002375
	Data Offset	-0.623434	0.323167	0.006392
After	Data Slope	1.005517	0.993257	0.993657
	Data Offset	-1.415798	0.759357	0.890109
Channel #		3	1	2
Voltage Range		0 - 5 VDC	0 - 5 VDC	0 - 5 VDC

Analyzer Information

Analyzer make/model: T200 | Analyzer serial #: 642

Test Point	before		after	
Concentration range	0 - 500	ppb	0 - 500	ppb
NO Slope	0.999		1.035	
NO Offset	-3.1	mV	-0.1	mV
NOX Slope	1.002		1.034	
NOX Offset	-2.0	mV	0.2	mV
HVPS	771	V	771	V
Moly Temp	317.0	degC	315.2	degC
O3 Flow	81	ccm	80	ccm
RxCell Press	5.6	inHg	5.7	inHg
Sample press	24.0	inHg	24.0	inHg
Sample flow	441	ccm	436	ccm

Notes:

Calibration Report

Parameter **NOx-NO-NO_2**

Air Monitoring Network **Lafarge - Exshaw**

WSP AIR QUALITY MONITORING

Station Information

Calibration Date: June 15, 2017 Station Location: Exshaw - Lagoon

Calibration Data

	Dilution flow rate (ccm)	Source gas flow rate (ccm)	Calculated NOx conc (ppb)	Calculated NO conc (ppb)	Calculated NO2 conc (ppb)	Indicated NOx conc (ppb)	Indicated NO conc (ppb)	Indicated NO2 conc (ppb)	NOx Correction factor	NO Correction factor
zero	5000	0.00	0.0	0.0	0.0	-0.1	-0.2	-0.4	N/A	N/A
1	5000	40.00	408.7	407.9	0.8	411.4	410.0	1.1	0.9936	0.9951
2	5000	25.00	256.2	255.7	0.5	256.4	256.3	-0.1	0.9993	0.9978
3	7000	14.00	102.8	102.6	0.2	102.3	101.5	0.3	1.0048	1.0106
AFZ	5000	0.00	0.0	0.0	0.0	0.7	0.8	-0.7	0.0000	0.0000
AFS	5000	40.00	408.7	407.9	0.8	395.0	392.6	2.1	1.0348	1.0390
							Average Correction Factor		0.9993	1.0012

As Found Concentrations: NO_X= 394.6 NO= 391.9 As Found Percent Change NO_X= -3.4% NO= -3.9%

GPT Calibration Data

Dilution Flow 5000 ccm Source Gas Flow 40.00 ccm

O3 Setpoint (V)	Indicated NO high point (ppb)	Indicated NO drop conc (ppb)	Calculated NO2 conc (ppb)	Indicated NOx conc (ppb)	Indicated NO conc (ppb)	Indicated NO2 conc (ppb)	NOx Correction factor	NO Correction factor	NO2 Correction factor	Converter Efficiency
0	-0.2	-0.2	0.0	-0.1	-0.2	-0.4	N/A	N/A	N/A	N/A
NO point	410.3	410.3	0.0	410.7	410.3	0.1	0.9989	1.0000	N/A	N/A
0.96V	410.3	22.2	388.1	408.9	22.2	386.2	1.0036	1.0000	1.0049	99.5%
0.52V	410.3	221.7	188.6	412.5	221.7	190.4	0.9946	1.0000	0.9904	101.0%
0.36V	410.3	297.1	113.2	413.1	297.1	115.5	0.9932	1.0000	0.9799	102.1%
					Average Correction Factor		0.9971	1.0000	0.9917	100.8%

AIC Data

	Previous calibration				Current calibration			
Parameter	NOx	NO2	NO		NOx	NO2	NO	
Auto zero	1.0	-1.5	0.7	ppb	0.2	-1.8	0.3	ppb
Auto span	379.1	0.2	378.1	ppb	397.3	-1.7	397.8	ppb

Calibration Performed By: Darrin Pike

Calibration Summary

Parameter **NO_2**

Air Monitoring Network **Lafarge - Exshaw**

WSP AIR QUALITY MONITORING

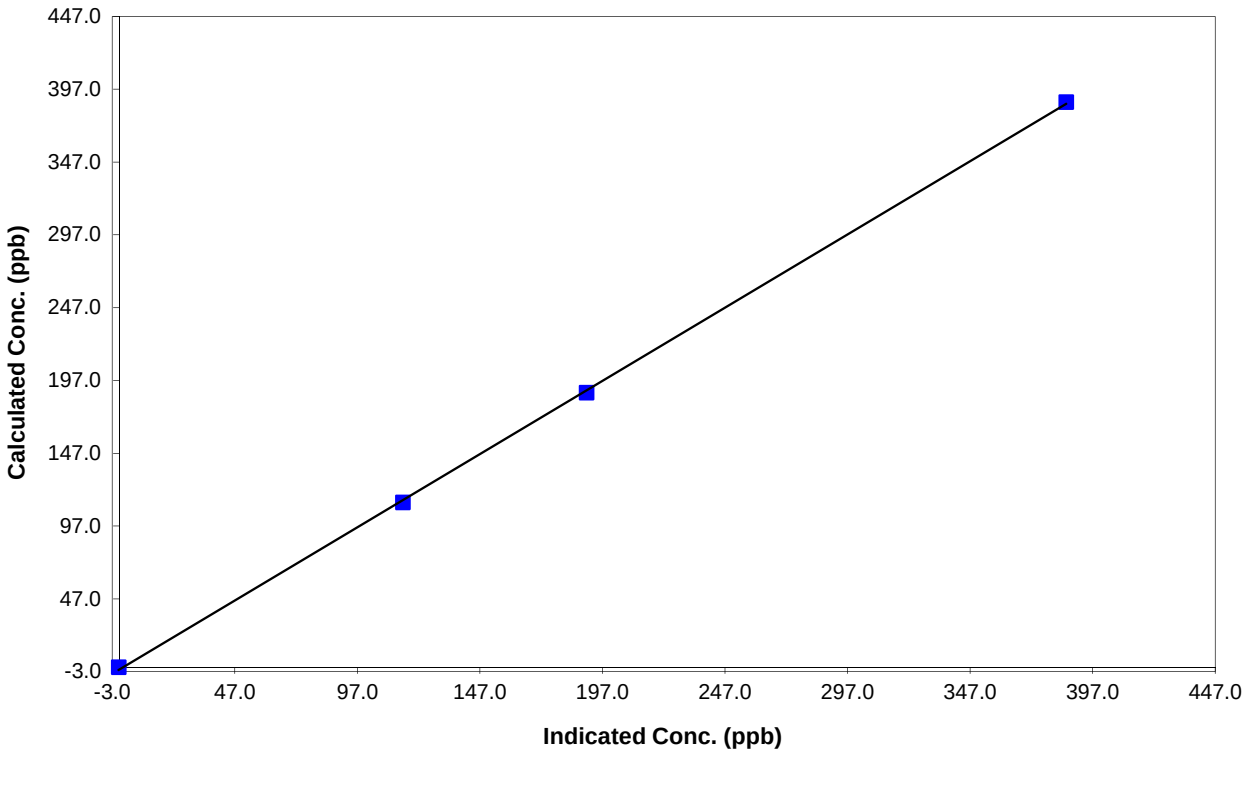
Station Information

Calibration Date	June 15, 2017	Previous Calibration	May 26, 2017
Station Number	N/A	Station Location	Exshaw - Lagoon
Start Time (MST)	07:50	End Time (MST)	13:20
Analyzer make	T200	Analyzer serial #	642

Calibration Data

Calculated conc (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	-0.4	N/A		
388.1	386.2	1.0049	Correlation Coefficient	0.999884
188.6	190.4	0.9904		
113.2	115.5	0.9799	Slope	1.005517
			Intercept	-1.415798

NO_2 Calibration Curve



Calibration Summary

Parameter **NO_x**

Air Monitoring Network **Lafarge - Exshaw**

WSP AIR QUALITY MONITORING

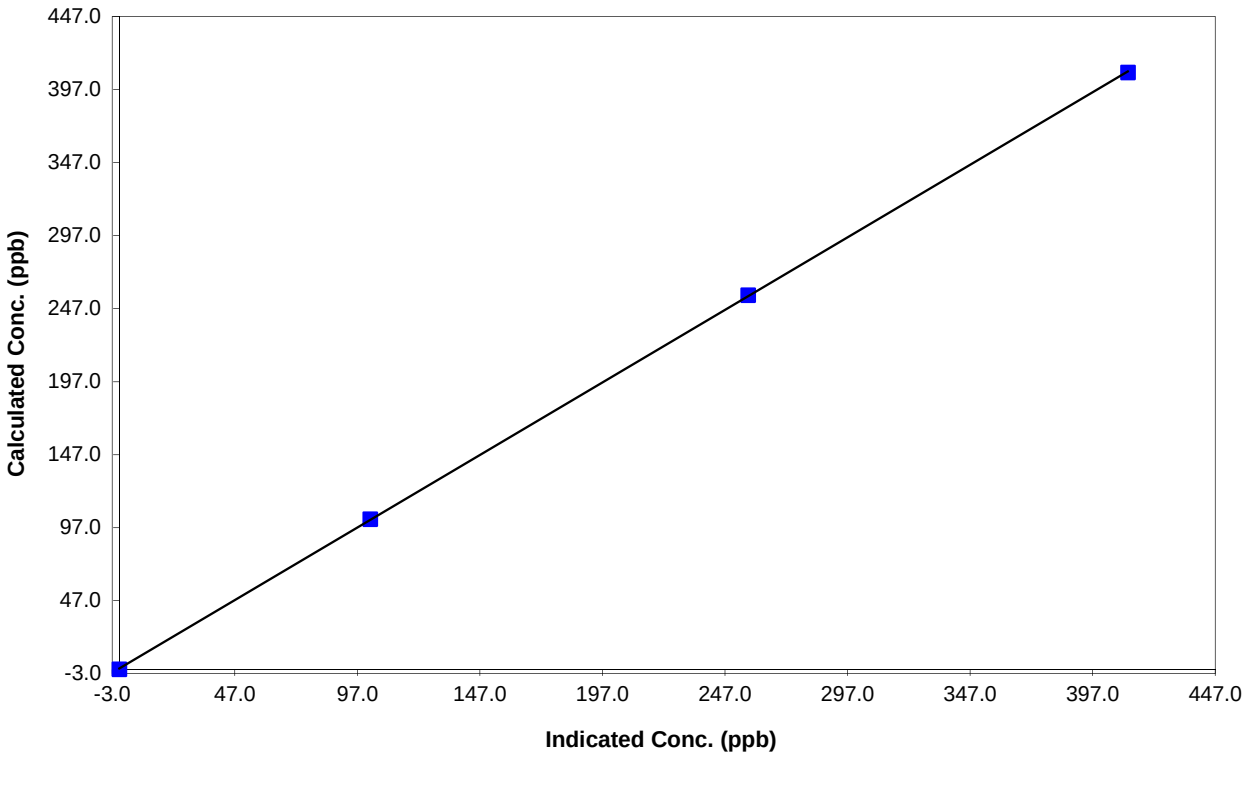
Station Information

Calibration Date	June 15, 2017	Previous Calibration	May 26, 2017
Station Number	N/A	Station Location	Exshaw - Lagoon
Start Time (MST)	07:50	End Time (MST)	13:20
Analyzer make	T200	Analyzer serial #	642

Calibration Data

Calculated conc (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	-0.1	N/A		
408.7	411.4	0.9936	Correlation Coefficient	0.999984
256.2	256.4	0.9993		
102.8	102.3	1.0048	Slope	0.993257
			Intercept	0.759357

NOx Calibration Curve



Calibration Summary

Parameter **NO**

Air Monitoring Network **Lafarge - Exshaw**

WSP AIR QUALITY MONITORING

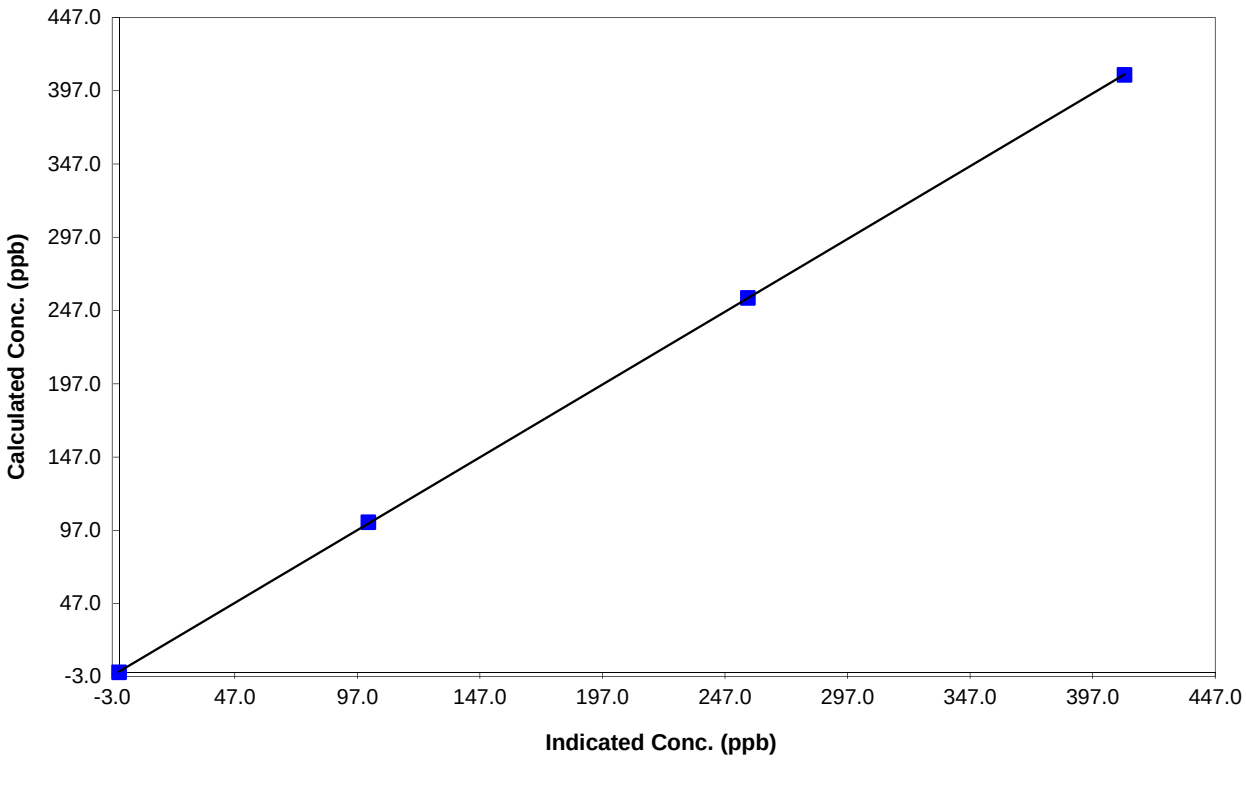
Station Information

Calibration Date	June 15, 2017	Previous Calibration	May 26, 2017
Station Number	N/A	Station Location	Exshaw - Lagoon
Start Time (MST)	07:50	End Time (MST)	13:20
Analyzer make	T200	Analyzer serial #	642

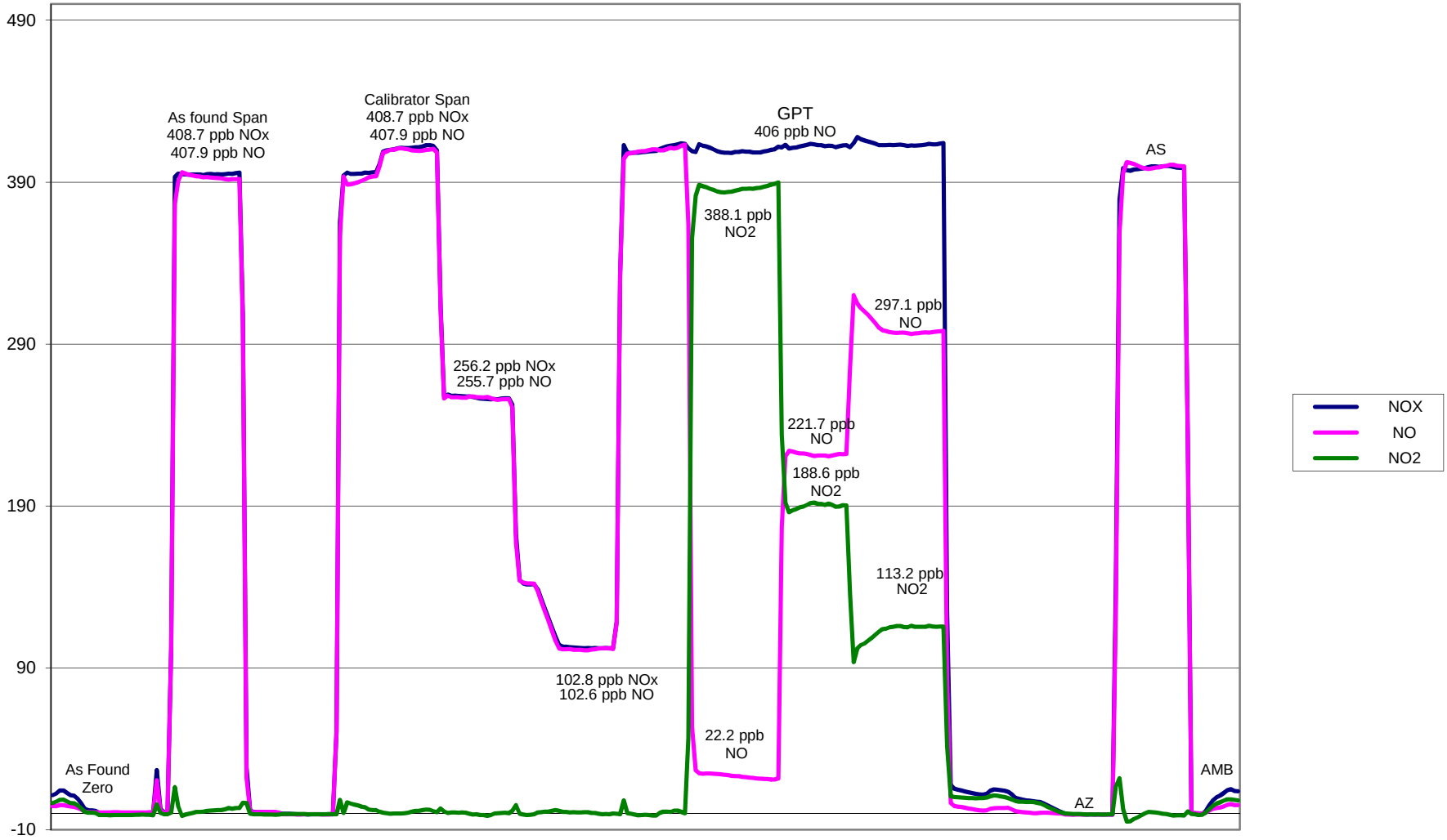
Calibration Data

Calculated conc (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	-0.2	N/A		
407.9	410.0	0.9951	Correlation Coefficient	0.999986
255.7	256.3	0.9978		
102.6	101.5	1.0106	Slope	0.993657
			Intercept	0.890109

NO Calibration Curve



NOX Calibration



Calibration Report

Parameter **SO2**

Air Monitoring Network **Lafarge - Exshaw**

WSP AIR QUALITY MONITORING

Station Information

Calibration Date	June 15, 2017	Previous Calibration	May 26, 2017
Station Number	N/A	Station Location	Exshaw - Lagoon
Reason: Routine	Install	Removal	Other:
Start Time (MST)	07:50	End Time (MST)	13:20
Barometric Pressure	651 mmHg	Station Temperature	23.0 Deg C
Calibrator	SABIO 2010	Serial Number	103951108
Cal Gas Concentration	50.8 ppm	Cal Gas Expiry Date	July 14, 2020
Gas Cert Reference	EY643		
DACS make	Campbell Scientific CR1000	DACS serial No.	67802
DACS voltage range	0 - 5 VDC	DACS channel #	4
	Before		After
DACS Scale High	500	DACS slope	500
DACS Scale Low	0	DACS intercept	0
Calculated slope	0.999652	Calculated slope	0.995061
Calculated intercept	0.230934	Calculated intercept	0.431012
Analyzer make	API Model 102A	Analyzer serial #	393

	before		after	
Concentration range	0-500	ppb	0-500	ppb
Slope	0.951		0.943	
Offset	44.8	mV	46.4	mV
Pressure	23.6	in Hg	23.5	in Hg
Sample Flow	493	ccm	488	ccm
UV Lamp	2901.8	mV	2900	mV
HVPS	691	V	690	V
PMT Temp	7.5	degC	7.5	degC

Calibration Data

Dilution air flow rate (cc/min)	Source gas flow rate (cc/min)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)
5000	0.00	0.0	0.0	N/A
5000	40.00	403.2	404.9	0.9958
5000	25.00	252.7	253.5	0.9969
7000	14.00	101.4	101.0	1.0043
5000	0.00	0.0	0.5	As found zero
5000	40.00	403.2	406.9	As found span
			Average Correction Factor	0.9990

Calculated value of As Found Response: 406.5 ppm Percent Change of As Found: -0.8%

	before calibration		after calibration	
Auto zero	0.0	ppm	0.3	ppm
Auto span	394.7	ppm	394.0	ppm

Notes: Span and Zero adjustment made.

Calibration Performed By: Darrin Pike

Calibration Summary

Parameter **SO2**

Air Monitoring Network **Lafarge - Exshaw**

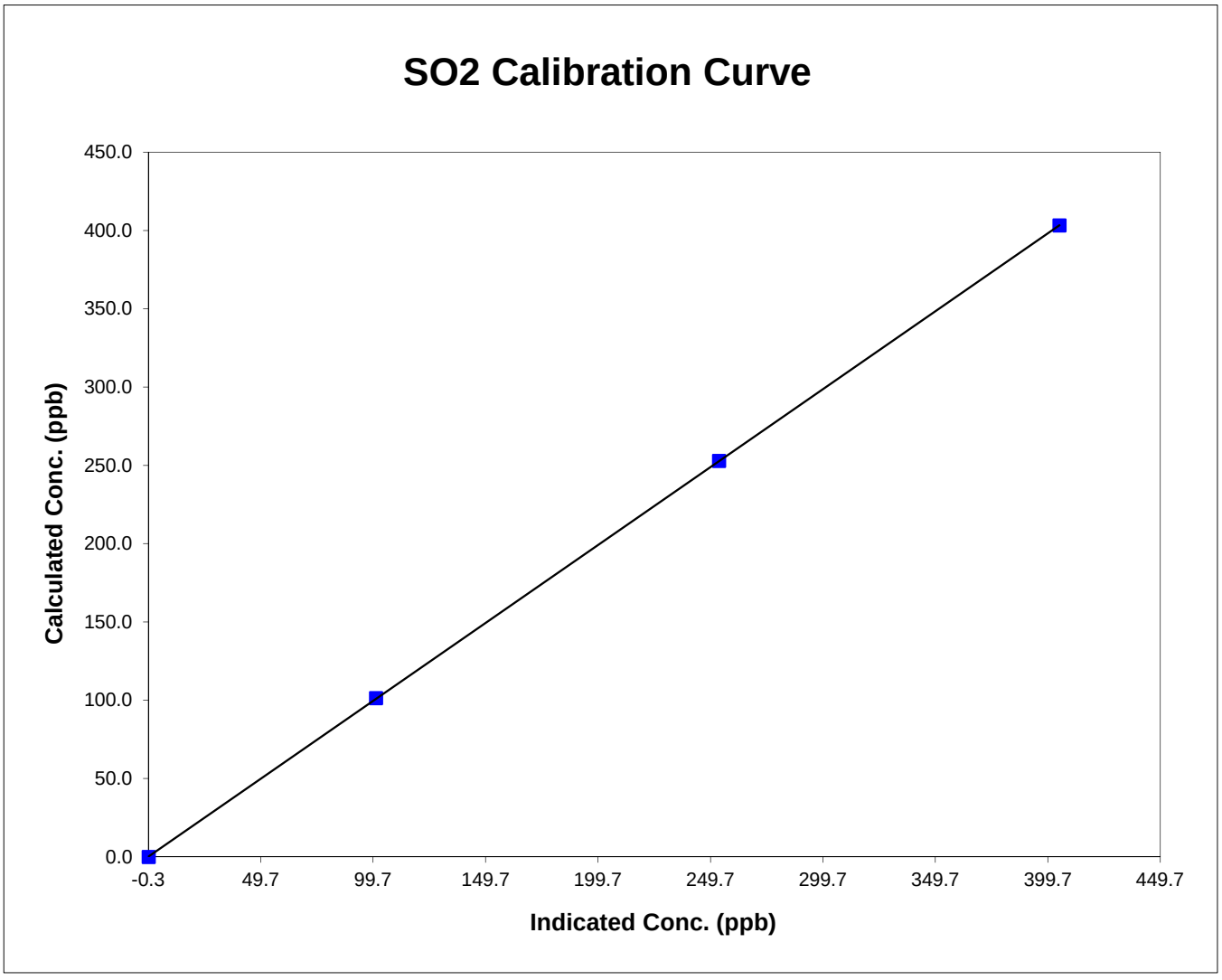
WSP AIR QUALITY MONITORING

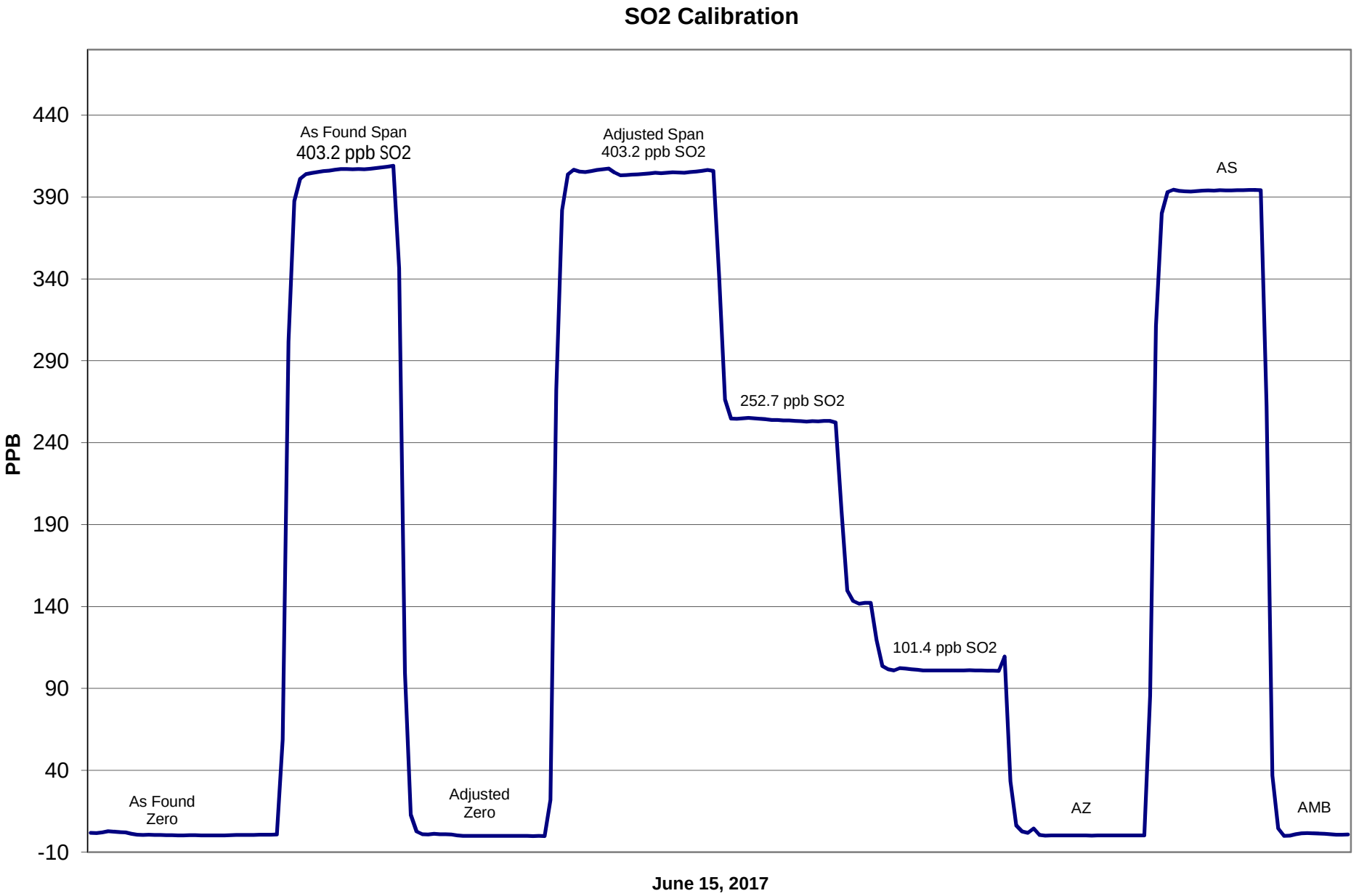
Station Information

Calibration Date	June 15, 2017	Previous Calibration	May 26, 2017
Station Number	N/A	Station Location	Exshaw - Lagoon
Start Time (MST)	07:50	End Time (MST)	13:20
Analyzer make/model	API Model 102A	Analyzer serial #	393

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.0	N/A		
403.2	404.9	0.9958	Correlation Coefficient	0.999996
252.7	253.5	0.9969		
101.4	101.0	1.0043	Slope	0.995061
			Intercept	0.431012




SO2 Calibration
440
390
340
290
240
190
140
90
40
-10
PPB
As Found Span
403.2 ppb SO2
Adjusted Span
403.2 ppb SO2
AS
252.7 ppb SO2
101.4 ppb SO2
As Found
Zero
Adjusted
Zero
AZ
AMB
June 15, 2017