

REPORT N° 171-00556-00

# AMBIENT AIR QUALITY MONTHLY REPORT

APRIL 2018

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## APRIL 2018

**Lafarge Canada Inc.**

Project no: 171-00556-00  
Date: April 2018

**WSP Canada Inc.**  
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Project Number: 171-00556-00

May 14, 2018

Janet Brygger  
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Dear Ms. Brygger,

**Subject: Ambient Air Quality Monthly Report – April 2018**

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The operational uptime for the meteorological systems and all analyzers at the Lagoon station was over 99% in April. There were no contraventions of the 24-hour TSP and PM<sub>2.5</sub> Alberta Ambient Air Quality Objectives (AAAQOs) in April at the Lagoon monitoring location.

All analyzers at the Windridge station had over 99% operational uptime in April. There were no 24-hour TSP AAAQO and PM<sub>2.5</sub> AAAQO exceedances in April.

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 100% operational time, Entrance monitor had 98.2% operational time due to 13 hours of instrument error. The Entrance GRIMM monitor exceeded the 24-hour TSP AAAQO for 13 days and did not exceed the 24-hour PM<sub>2.5</sub> AAAQO in April while the Berm GRIMM had 4 exceedances of the TSP Objective and 0 exceedance of the PM<sub>2.5</sub> Objective. The West GRIMM monitor did not record any exceedances of the 24-hour TSP and PM<sub>2.5</sub> Objective, as well as the 1-hour PM<sub>2.5</sub> AAAQG. Only the Entrance monitor recorded exceedances of the 1-hour PM<sub>2.5</sub> AAAQG.

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  
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## SIGNATURES

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---

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# 1

# INTRODUCTION

This report summarizes the ambient air quality and meteorological data collected at the Lagoon, Windridge, 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 April 1, 2018 and April 30, 2018.

This 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

# APRIL 2018 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. The exceedances reported for 1-hour PM<sub>2.5</sub> are those above the 1-hour PM<sub>2.5</sub> Alberta Ambient Air Quality Guidelines (AAAQG).

## 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 <sub>2</sub> (ppb)	100.0	32.6	0	9.6	-
SO <sub>2</sub> (ppb)	100.0	12.6	0	3.1	0
PM <sub>2.5</sub> (µg/m <sup>3</sup> )	100.0	36.0	0	11.9	0
PM <sub>10</sub> (µg/m <sup>3</sup> )	100.0	94.0	-	32.7	-
TSP (µg/m <sup>3</sup> )	99.6	138.4	-	49.6	0
Temperature (°C)	100.0	23.2	-	14.3	-
Wind Speed (km/hr) /Direction (Degrees)	100.0	52.1/W	-	28.4/WSW	-
Precipitation (mm) <sup>2</sup>	100.0	2.3	-	17.3*	-

\* Monthly Total Accumulation of Precipitation (mm)

**Data Quality Notes:**

- There was no exceedance of the 24-hour PM<sub>2.5</sub> AAAQO or the 1-hour PM<sub>2.5</sub> AAAQG.
- There was no exceedance of the 24-hour TSP AAAQO.

**Calibration/Maintenance Notes:**

- Removal and Installation audits were performed on the TSP analyzer on April 25<sup>th</sup>.
- A 72-hour zero sequence was performed on the TSP and PM<sub>10</sub> analyzers from April 28<sup>th</sup> to 30<sup>th</sup>.

**2.2****WINDRIDGE STATION****Table 2-2 Windridge station data summary**

Parameter	Data Completeness (%)	1-Hour Average		24-hour Average	
		Maximum Concentration	Exceedances of AAAQO or AAAQG	Maximum Concentration	Exceedances of AAAQO
PM <sub>2.5</sub> ( $\mu\text{g}/\text{m}^3$ )	99.6	34.8	0*	12.8	0
PM <sub>10</sub> ( $\mu\text{g}/\text{m}^3$ )	99.6	177.5	-	55.1	-
TSP ( $\mu\text{g}/\text{m}^3$ )	99.6	213.5	-	72.5	0

\* Any exceedances reported for 1-hour PM<sub>2.5</sub> are over the guideline level (AAAQG) of 80  $\mu\text{g}/\text{m}^3$ .

**Data Quality Notes:**

- There was no exceedance of the 24-hour PM<sub>2.5</sub> AAAQO or the 1-hour PM<sub>2.5</sub> AAAQG.
- There was no exceedance of the 24-hour TSP AAAQO.

**Calibration/Maintenance Notes:**

- Windridge analyzers experienced 3 hours of instrument error on April 25<sup>th</sup>.
- A 72-hour zero sequence was performed on the TSP and PM<sub>10</sub> analyzers from April 28<sup>th</sup> to 30<sup>th</sup>.

## 2.3

### 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 (FDCCBMP-P). The AAAQO are used as Guidelines to evaluate the performance of the FDCCBMP-P.

**Table 2-3 West station data summary**

Parameter	Data Completeness (%)	1-Hour Average		24-hour Average	
		Maximum Concentration	Exceedances of Guidelines	Maximum Concentration	Exceedances of Guidelines
PM <sub>2.5</sub> ( $\mu\text{g}/\text{m}^3$ )	100.0	43.6	0*	15.7	0
PM <sub>10</sub> ( $\mu\text{g}/\text{m}^3$ )	100.0	248.5	-	50.3	-
TSP ( $\mu\text{g}/\text{m}^3$ )	100.0	687.0	-	93.6	0

\* Any exceedances reported for 1-hour PM<sub>2.5</sub> are over the guideline level (AAAQG) of 80  $\mu\text{g}/\text{m}^3$ .

#### Data Quality Notes:

- There were no exceedances of the 24-hour PM<sub>2.5</sub> AAAQO or the 1-hour PM<sub>2.5</sub> AAAQG.
- There was no exceedance of the 24-hour TSP AAAQO.

#### Calibration/Maintenance Notes:

- The monitor had 100% uptime for the month of April.

## 2.4

### BERM GRIMM

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

**Table 2-4 Berm station data summary**

Parameter	Data Completeness (%)	1-Hour Average		24-hour Average	
		Maximum Concentration	Exceedances of Guidelines	Maximum Concentration	Exceedances of Guidelines
PM <sub>2.5</sub> ( $\mu\text{g}/\text{m}^3$ )	100.0	35.5	0*	9.2	0
PM <sub>10</sub> ( $\mu\text{g}/\text{m}^3$ )	100.0	186.2	-	43.1	-
TSP ( $\mu\text{g}/\text{m}^3$ )	100.0	543.2	-	134.4	4

\* Any exceedances reported for 1-hour PM<sub>2.5</sub> are over the guideline level (AAAQG) of 80  $\mu\text{g}/\text{m}^3$ .

**Data Quality Notes:**

- There were 0 and 4 exceedances of the 24-hour PM<sub>2.5</sub> and TSP AAAQO, respectively.
- There were 0 exceedances of the 1-hour PM<sub>2.5</sub> AAAQG.

**Calibration/Maintenance Notes:**

- The monitor had 100% uptime for the month of April.

**2.5****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 2-5    Entrance station data summary**

Parameter	Data Completeness (%)	1-Hour Average		24-hour Average	
		Maximum Concentration	Exceedances of Guidelines	Maximum Concentration	Exceedances of Guidelines
PM <sub>2.5</sub> ( $\mu\text{g}/\text{m}^3$ )	98.2	130.1	1*	24.5	0
PM <sub>10</sub> ( $\mu\text{g}/\text{m}^3$ )	98.2	835.9	-	154.8	-
TSP ( $\mu\text{g}/\text{m}^3$ )	98.2	1790.5	-	366.5	13

\* Any exceedances reported for 1-hour PM<sub>2.5</sub> are over the guideline level (AAAQG) of 80  $\mu\text{g}/\text{m}^3$ .

**Data Quality Notes:**

- There were 0 and 13 exceedances of the 24-hour PM<sub>2.5</sub> and TSP AAAQO, respectively.
- There was 1 exceedance of the 1-hour PM<sub>2.5</sub> AAAQG.

**Calibration/Maintenance Notes:**

- The monitor had 98.2% uptime for the month of April due to 13 hours of instrument error.

# 3 LAGOON STATION

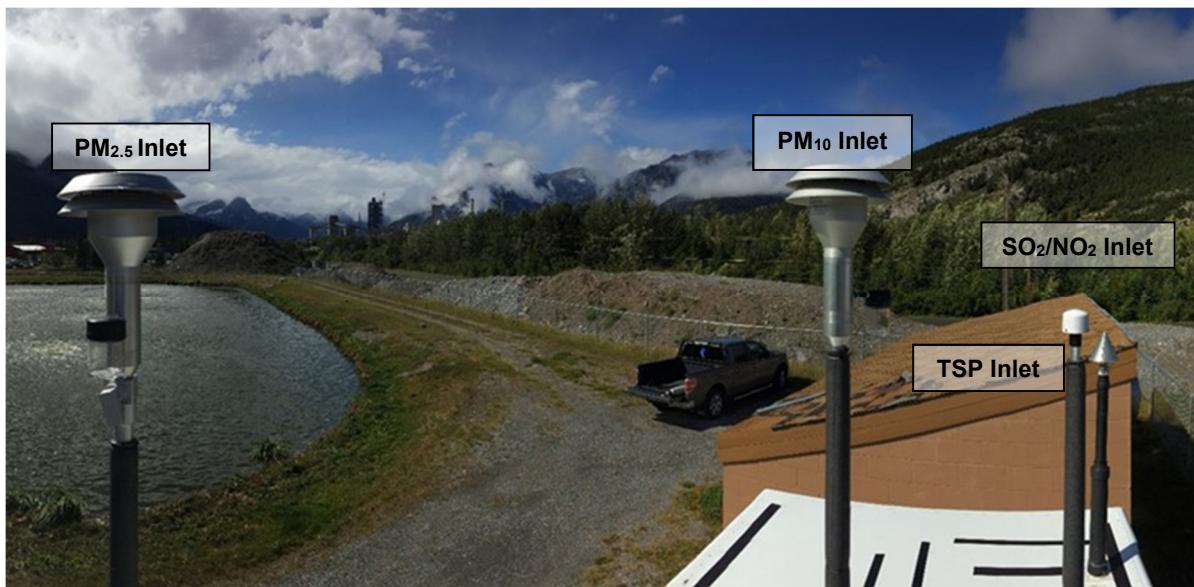
The Lagoon trailer contains NO<sub>x</sub>, SO<sub>2</sub>, TSP, PM<sub>10</sub>, and PM<sub>2.5</sub> analyzers as well as meteorological sensors, and is shown in Figure 3-1. An ambient air quality station has been at this location since 2002, providing a long-term data record for air quality in the 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, wind roses (Figure 3-3, 3-4, 3-5) and tables and graphs illustrating the monitoring results for April 2018.

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 <sub>2.5</sub> Concentrations
MetOne BAM-1020 Continuous Particulate Monitor	PM <sub>10</sub> 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<sub>x</sub> MONITORING

The NO<sub>x</sub> monitor was calibrated on April 23<sup>rd</sup>. The monitor had 100% uptime in April.

#### 3.1.2 SO<sub>2</sub> MONITORING

The SO<sub>2</sub> monitor was calibrated on April 23<sup>rd</sup>. The monitor had 100% uptime in April.

#### 3.1.3 PM MONITORING

All BAM monitors were calibrated on April 25<sup>th</sup>. On the same day, removal and installation calibrations were conducted on the TSP monitor, resulting in 99.6% operation time. Also, a 72-hour zero sequence was performed on the TSP and PM<sub>10</sub> analyzers from April 28<sup>th</sup> to 30<sup>th</sup>. The PM<sub>10</sub> and PM<sub>2.5</sub> analyzers had 100% operation time in April.

#### 3.1.4 METEOROLOGICAL MONITORING

All meteorological sensors had 100% uptime.

### 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 April 2018. Table 3-2 summarizes the hourly and daily concentrations recorded in April 2018. 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 April 2018 for the pollutants listed in Table 3-2.

There was no exceedance of both the 24-hour TSP ( $100 \mu\text{g}/\text{m}^3$ ) and PM<sub>2.5</sub> ( $30 \mu\text{g}/\text{m}^3$ ) AAQO. Historically in April, there were 2 exceedances of the 24-hour TSP AAQO in 2014 and no exceedances of the 24-hour PM<sub>2.5</sub> AAQO.

Since flooding in 2013, the Municipal District has built up stockpiles of dirt on the far western edge of the wastewater treatment facility. 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.



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

The wind rose (Figure 3-3) indicates that the winds predominantly came from the west, following the general orientation of the valley. As typical of the wind characteristics at the Lagoon site, the westerly winds were more intense (higher than 20 km/hr) than the easterly winds. It should be noted that the frequency of easterly winds increased as spring is approaching.

**Table 3-2 Summary of April 2018 data at Lagoon**

Parameter	Guideline / 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 <sub>2</sub> (ppb)	159	-	Lagoon	0	-	5.4	32.6	9	2	9.7	236.3	9.6	27	100.0
SO <sub>2</sub> (ppb)	172	48	Lagoon	0	0	1.9	12.6	19	8	18.2	277.4	3.1	19	100.0
PM <sub>2.5</sub> (µg/m <sup>3</sup> )	80	30	Lagoon	0	0	6.4	36.0	12	0	15.7	73.4	11.9	4	100.0
PM <sub>10</sub> (µg/m <sup>3</sup> )	-	-	Lagoon	-	-	21.7	94.0	26	8	16.6	276.7	32.7	4	100.0
TSP (µg/m <sup>3</sup> )	-	100	Lagoon	-	0	24.2	138.4	27	21	14.6	233.2	49.6	26	99.6
Temperature (°C)	-	-	Lagoon	-	-	2.3	23.2	27	16	14.3	260.1	14.3	28	100.0
Wind Speed (km/hr)/Direction (degrees)	-	-	Lagoon	-	-	15.5	52.1/W	13	20	52.1	250.4	28.4/WSW	13	100.0
Precipitation (mm)	-	-	Lagoon	-	-	0.0	2.3	29	2	5.4	219.9	17.3		100.0

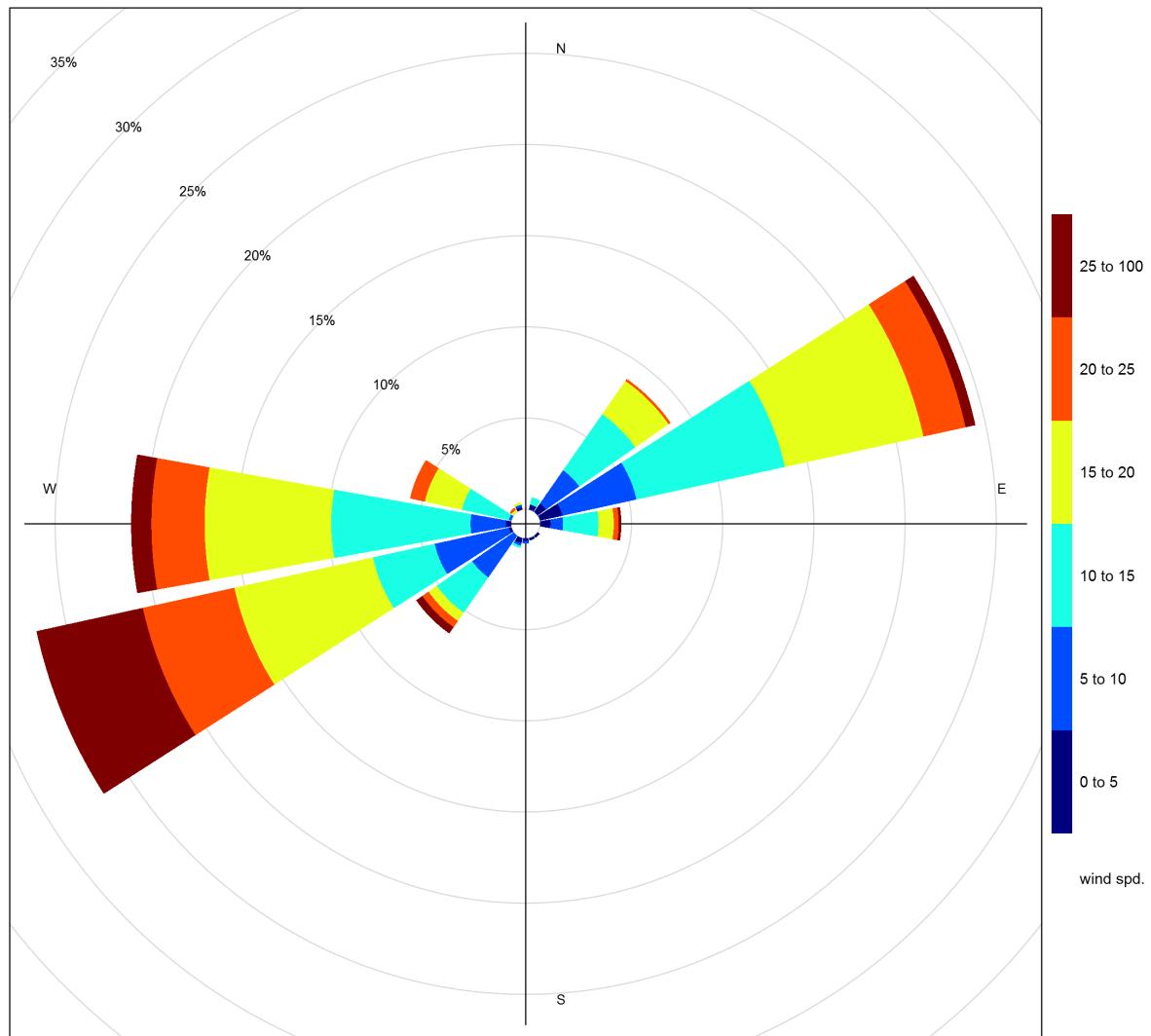
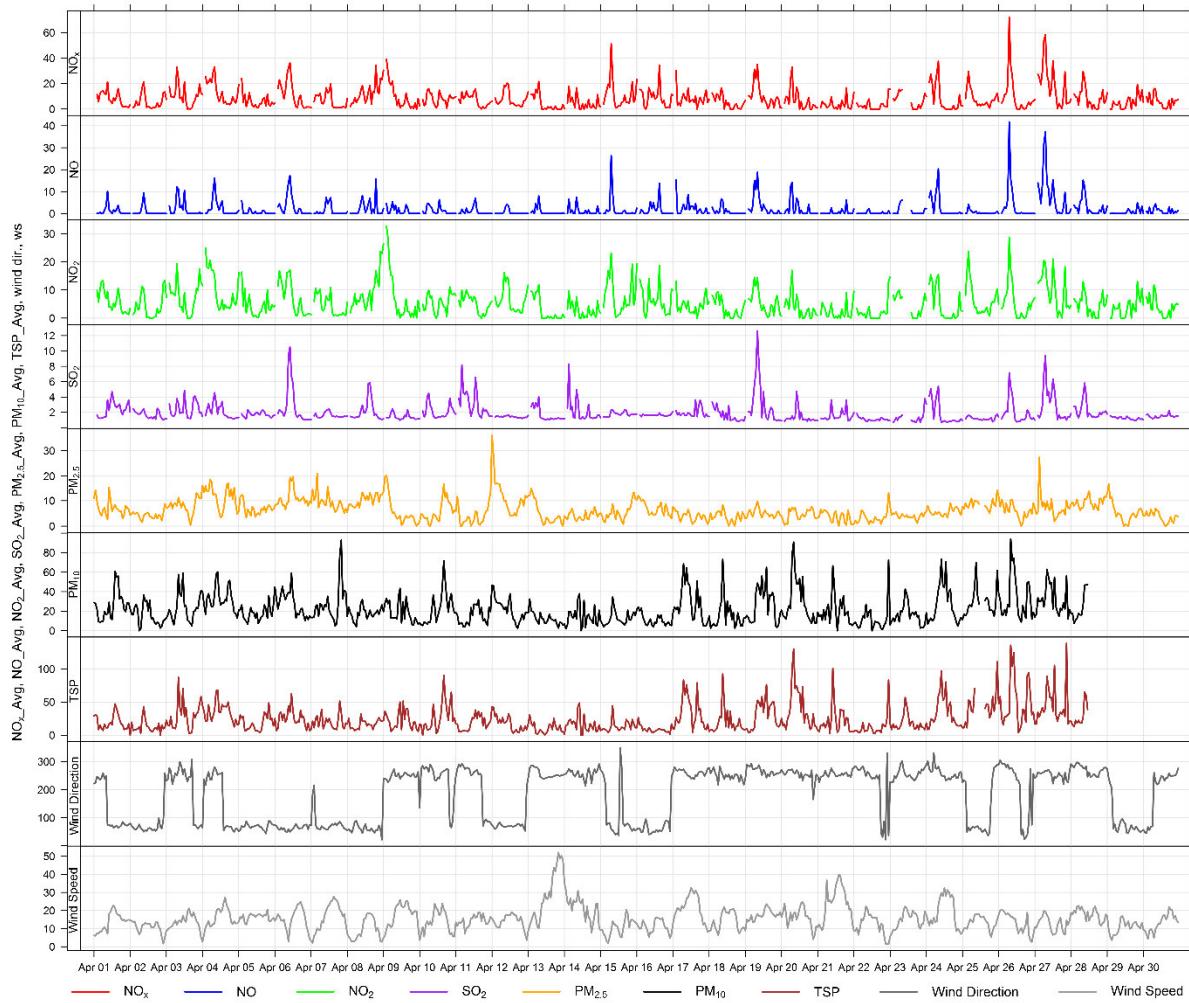
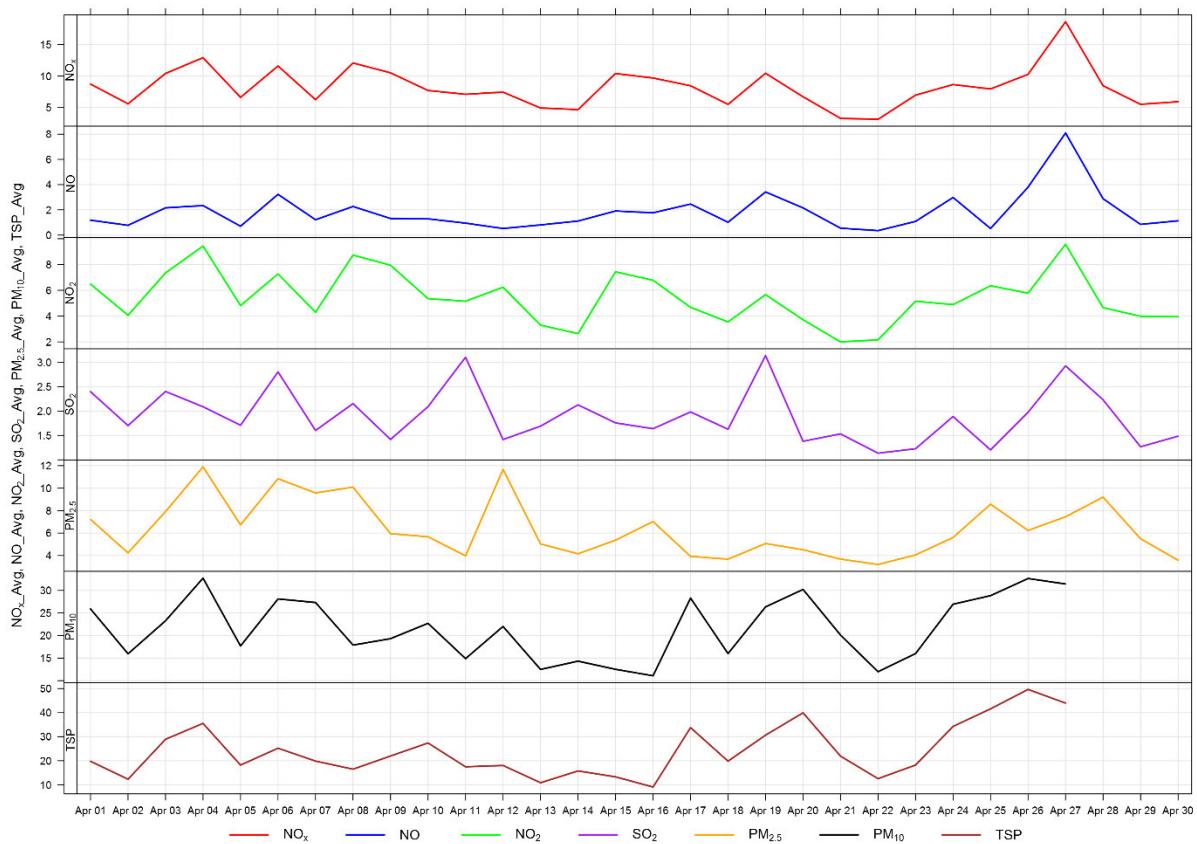


Figure 3-3 April 2018 wind rose from the Lagoon Station



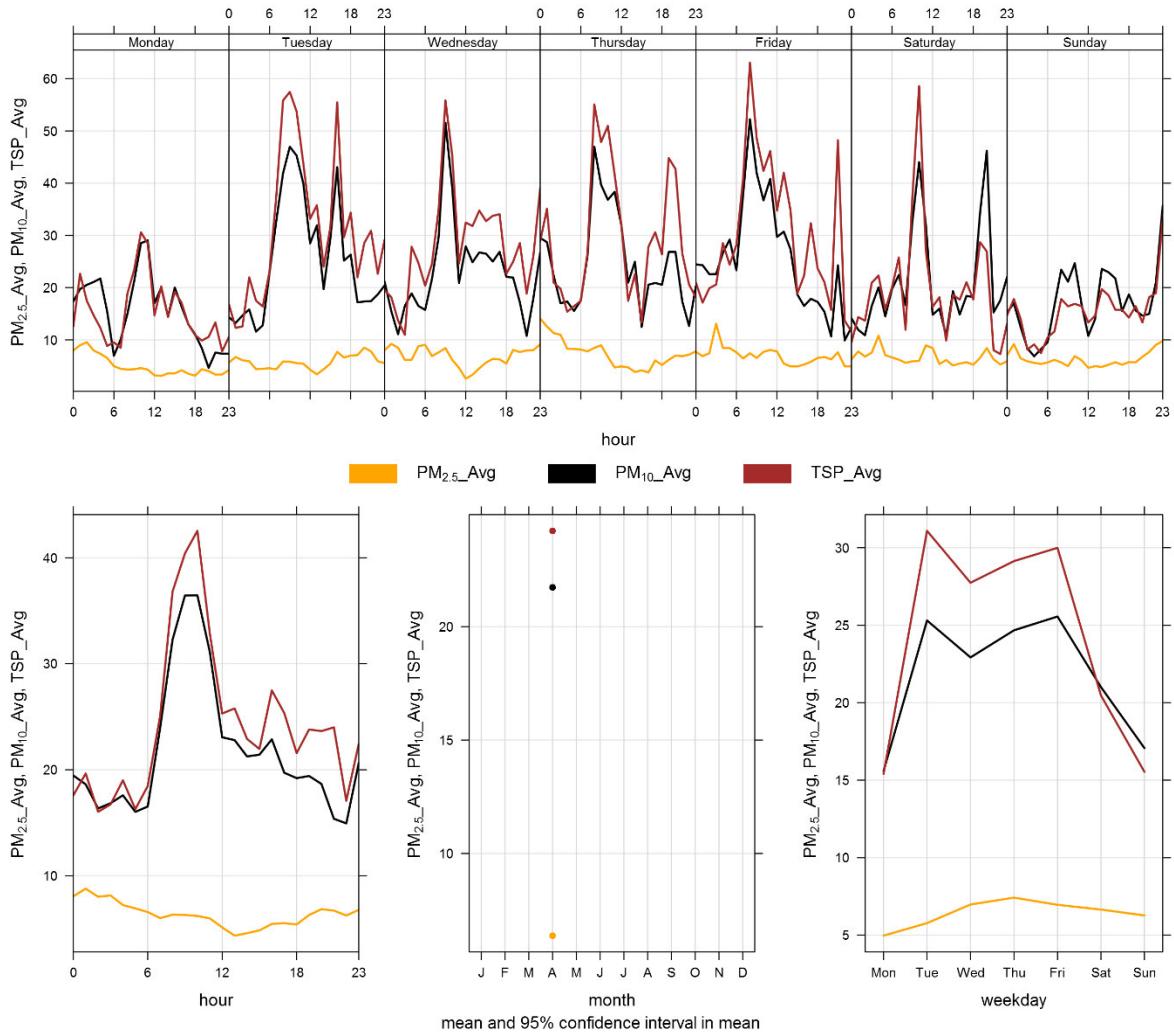
**Figure 3-4 1-hour concentrations of NO<sub>x</sub>, SO<sub>2</sub>, particulate matter, wind direction and wind speed at the Lagoon monitor**



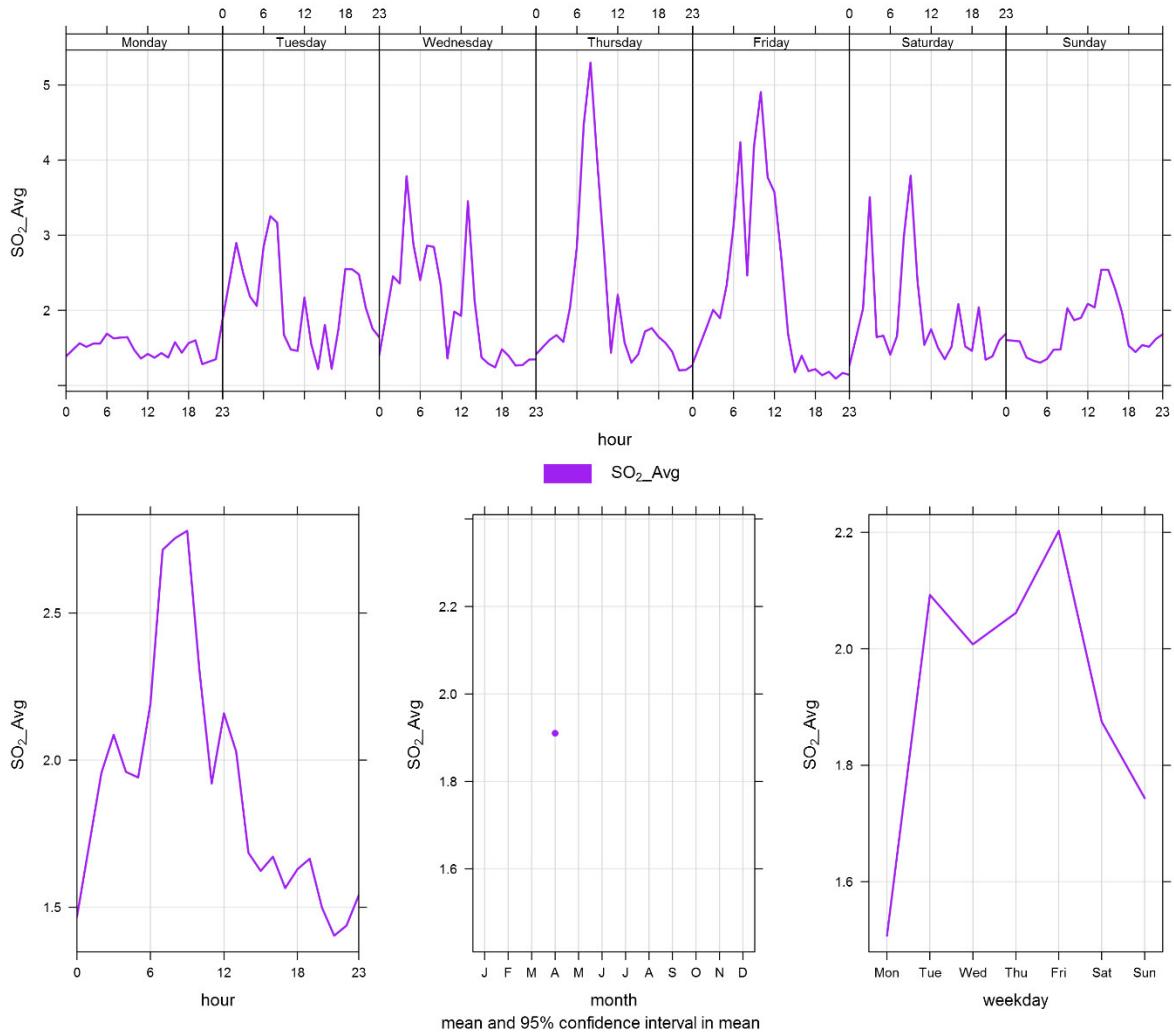
**Figure 3-5 24-hour concentrations of NO<sub>x</sub>, SO<sub>2</sub>, and particulate matter at the Lagoon monitor**

Figure 3-6 through Figure 3-8 show the variation in concentrations over various time averaging periods for PM, SO<sub>2</sub> and NO<sub>x</sub>. The particulate matter plot in Figure 3-6 shows that PM<sub>10</sub> and TSP concentrations tended to show less of a diurnal pattern as other months and may have been more impacted by the wind speed patterns during this month. PM<sub>10</sub> and TSP are generally associated with dust from fugitive sources.

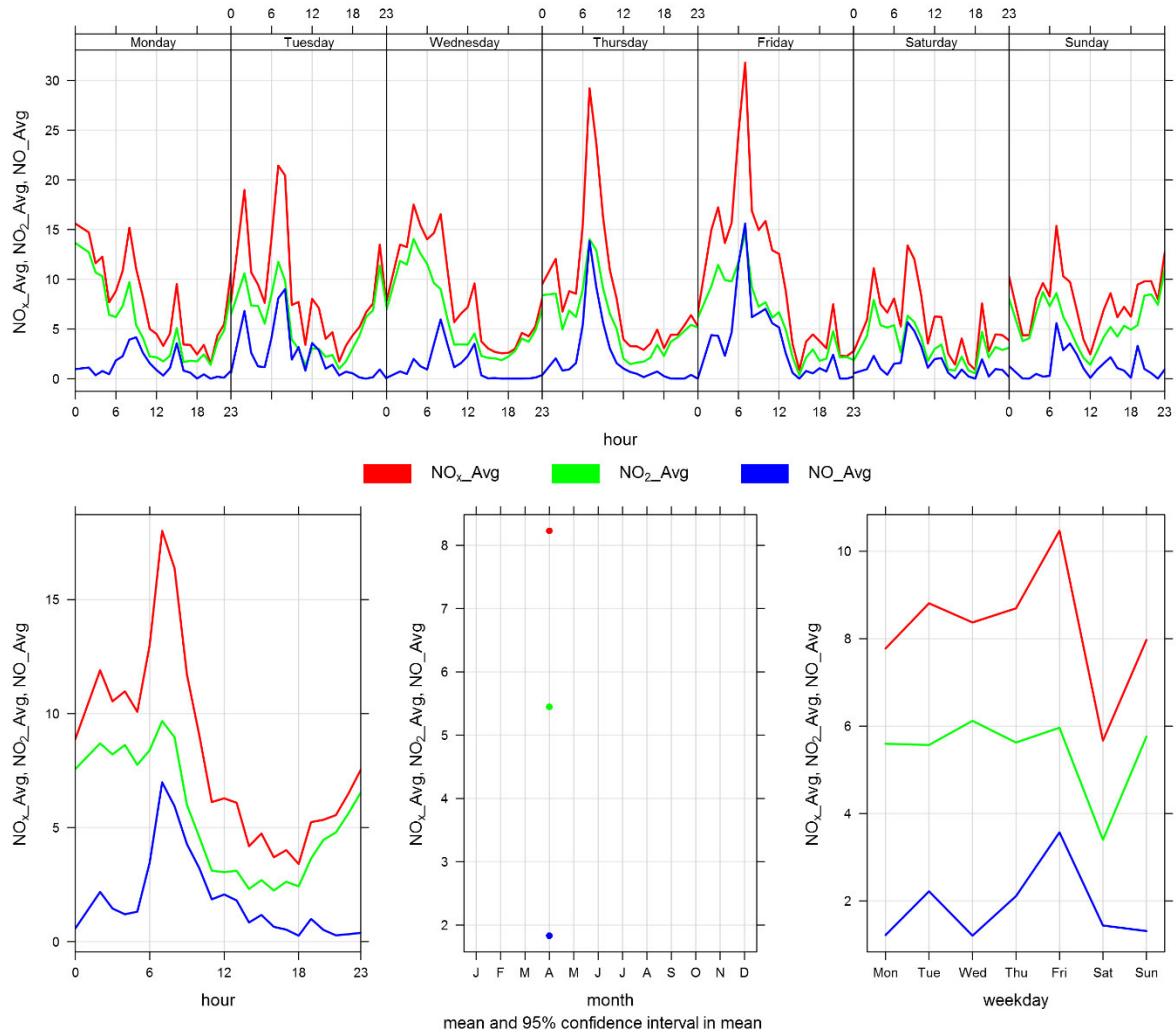
Figure 3-7 shows the variation of SO<sub>2</sub> over various time periods. SO<sub>2</sub> concentrations were very low in April. Figure 3-8 shows the variation of NO<sub>x</sub>, NO and NO<sub>2</sub>, with the peak of all three pollutants occurring in the morning between 6 am and noon. This may be indicative of a peak in traffic.



**Figure 3-6 Lagoon Monitor particulate matter time variation**



**Figure 3-7 Lagoon Monitor  $\text{SO}_2$  time variation**



**Figure 3-8 Lagoon Monitor NO<sub>x</sub> time variation**

# 4 WINDRIDGE STATION

## 4.1 SITE VISIT NOTES

The Windridge station contains TSP, PM<sub>10</sub>, and PM<sub>2.5</sub> analyzers only. This section provides a summary of the monitoring activities for the Windridge ambient air quality station, including: a table of instrumentation (Table 4-1), site visit notes, and graphs illustrating the monitoring results for April 2018.

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

**Table 4-1 Equipment at the Windridge monitoring location**

Equipment Description	Parameter Measured
MetOne BAM-1020 FRM Continuous Particulate Monitor	PM <sub>2.5</sub> Concentrations
MetOne BAM-1020 Continuous Particulate Monitor	PM <sub>10</sub> Concentrations
MetOne BAM-1020 Continuous Particulate Monitor	TSP Concentrations

## 4.2 SITE VISIT NOTES

All BAM monitors were calibrated on April 25<sup>th</sup>. On the same day, Windridge analyzers experienced 3 hours of instrument error which resulted in 99.6% operation time. Also, a 72-hour zero sequence was performed on the TSP and PM<sub>10</sub> analyzers from April 28<sup>th</sup> to 30<sup>th</sup>. The operation time for the TSP and PM<sub>10</sub> analyzers was 100%.

## 4.3 MONITORING RESULTS AND TRENDS

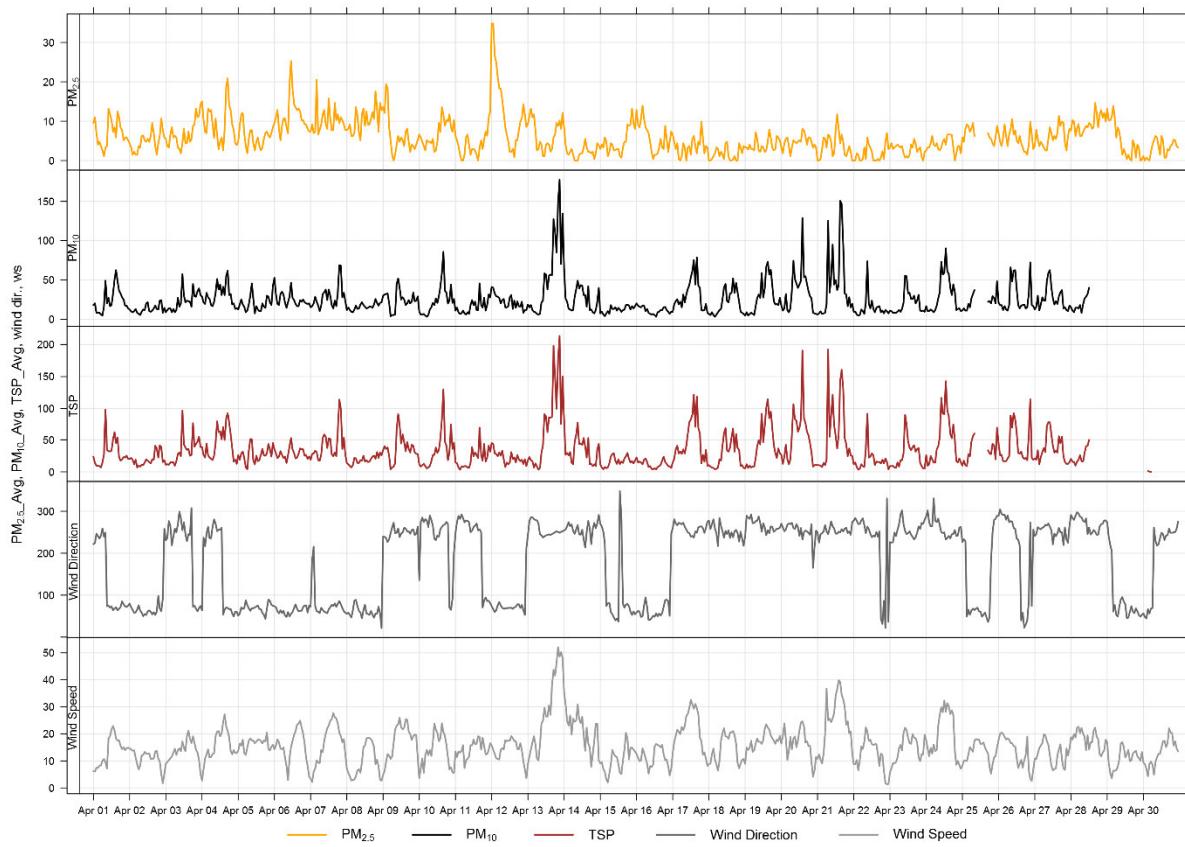
Table 4-2 summarizes the hourly and daily concentrations recorded in April 2018. Figure 4-3 illustrates the time series for hourly PM.

There was no exceedance of the 24-hour TSP (100 µg/m<sup>3</sup>) and 24-hour PM<sub>2.5</sub> (30 µg/m<sup>3</sup>) AAAQO.

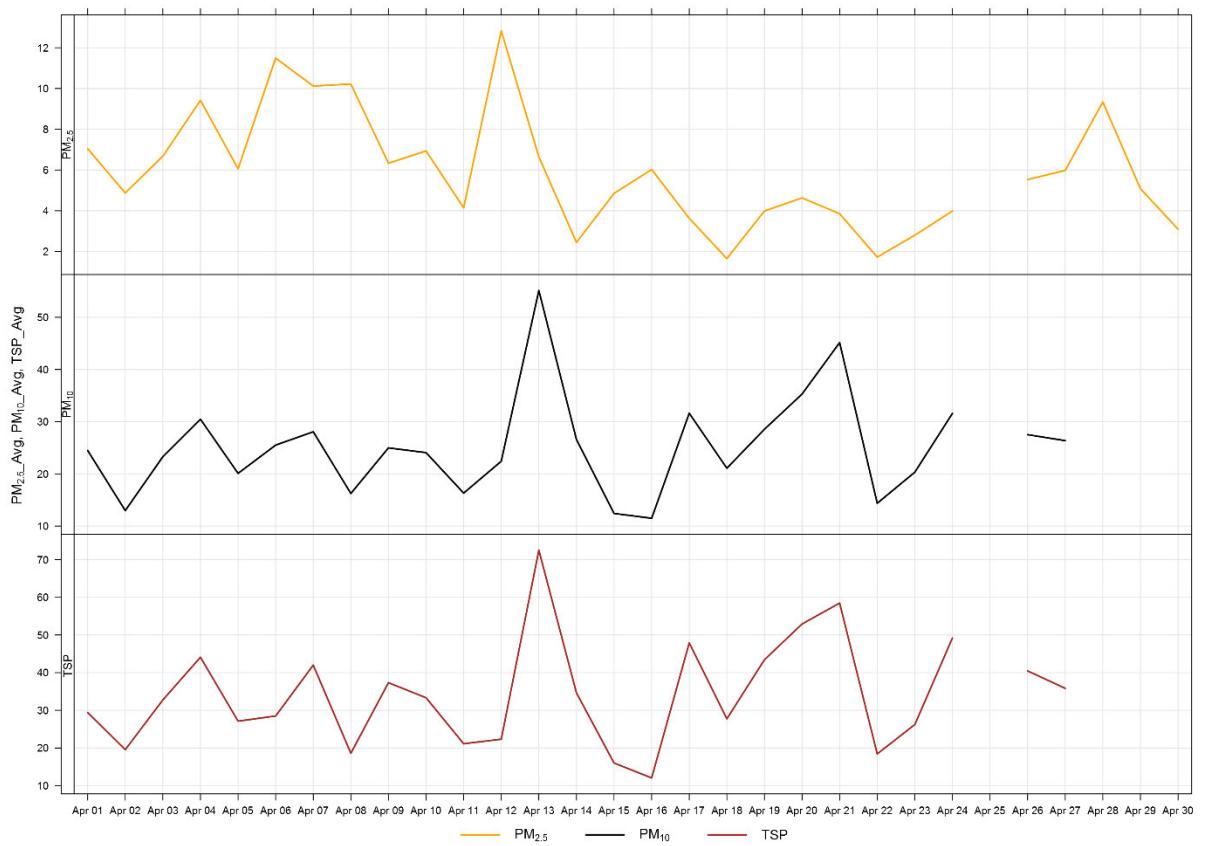
Based on the limited data record at this station, it appears that PM concentrations at this station are highest during high wind speed events from the WSW. Historically, April wind speeds tend to be amongst the highest wind speeds recorded over the year.

**Table 4-2 Summary of April 2018 data at the Windridge Station**

Parameter	Guideline / Objective		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 <sub>2.5</sub> ( $\mu\text{g}/\text{m}^3$ )	80	30	Windridge	0	0	5.9	34.8	12	1	14.2	66.7	12.8	12	99.6
PM <sub>10</sub> ( $\mu\text{g}/\text{m}^3$ )	-	-	Windridge	-	-	25.1	177.5	13	21	48.6	248.8	55.1	13	99.6
TSP ( $\mu\text{g}/\text{m}^3$ )	-	100	Windridge	-	0	34.1	213.5	13	21	48.6	248.8	72.5	13	99.6

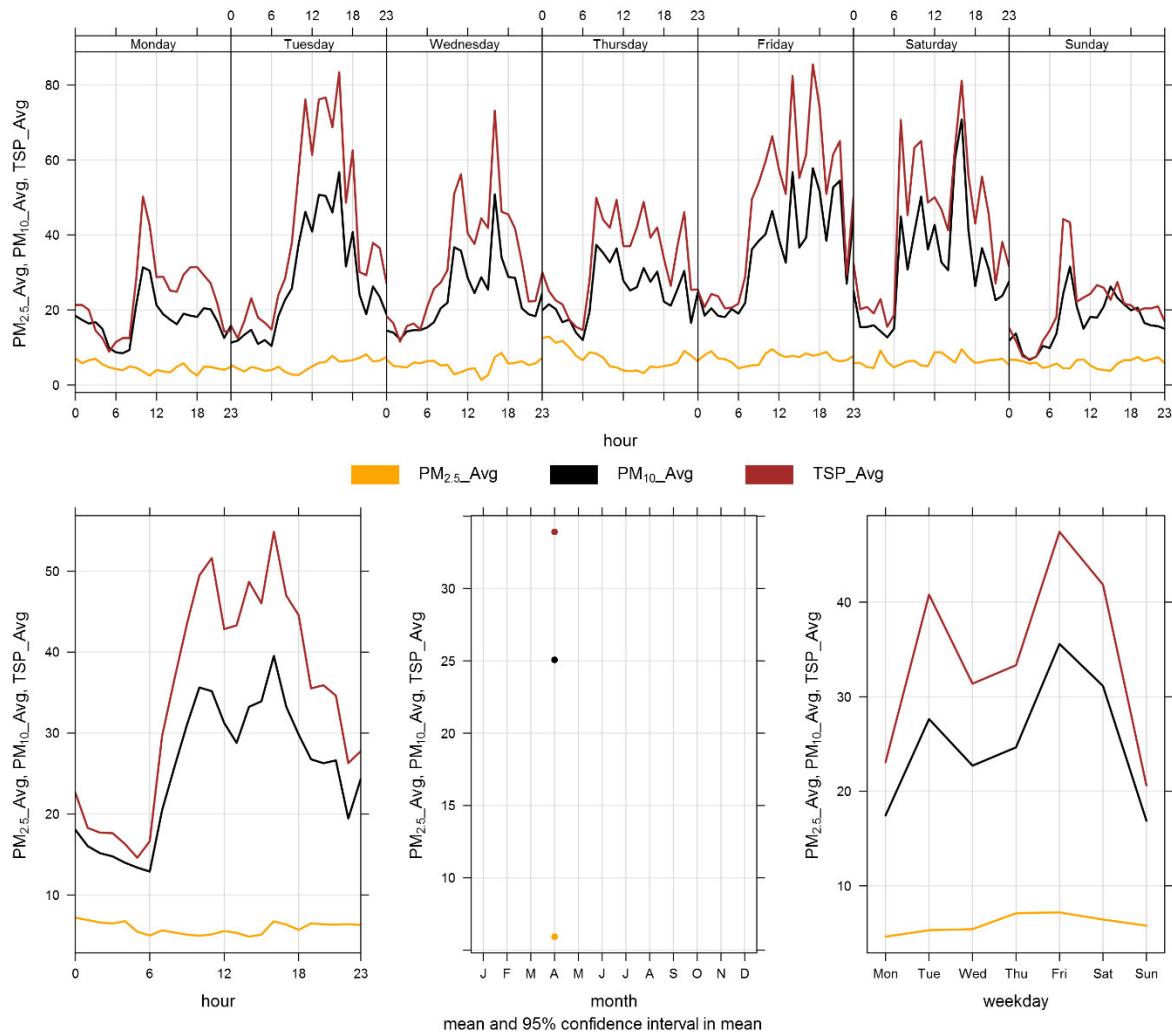


**Figure 4-1 1-hour particulate matter concentrations recorded at the Windridge monitor**



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

Figure 4-3 illustrates the hourly PM concentrations recorded at the Windridge 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 April 2018 and indicates a diurnal pattern that is similar to the Lagoon station and will be analyzed as the data record is added to at this station.



**Figure 4-3 Windridge particulate matter time variation**

# 5 WEST GRIMM

## 5.1 SITE VISIT NOTES

Table 5-1 indicates the equipment that is installed at the West monitoring location. During the month of April, the West GRIMM had 100% uptime.

**Table 5-1 Equipment at the West monitoring location**

Equipment Description	Parameter Measured
GRIMM 365 Continuous Particulate Monitor	PM <sub>2.5</sub> , PM <sub>10</sub> , TSP Concentrations

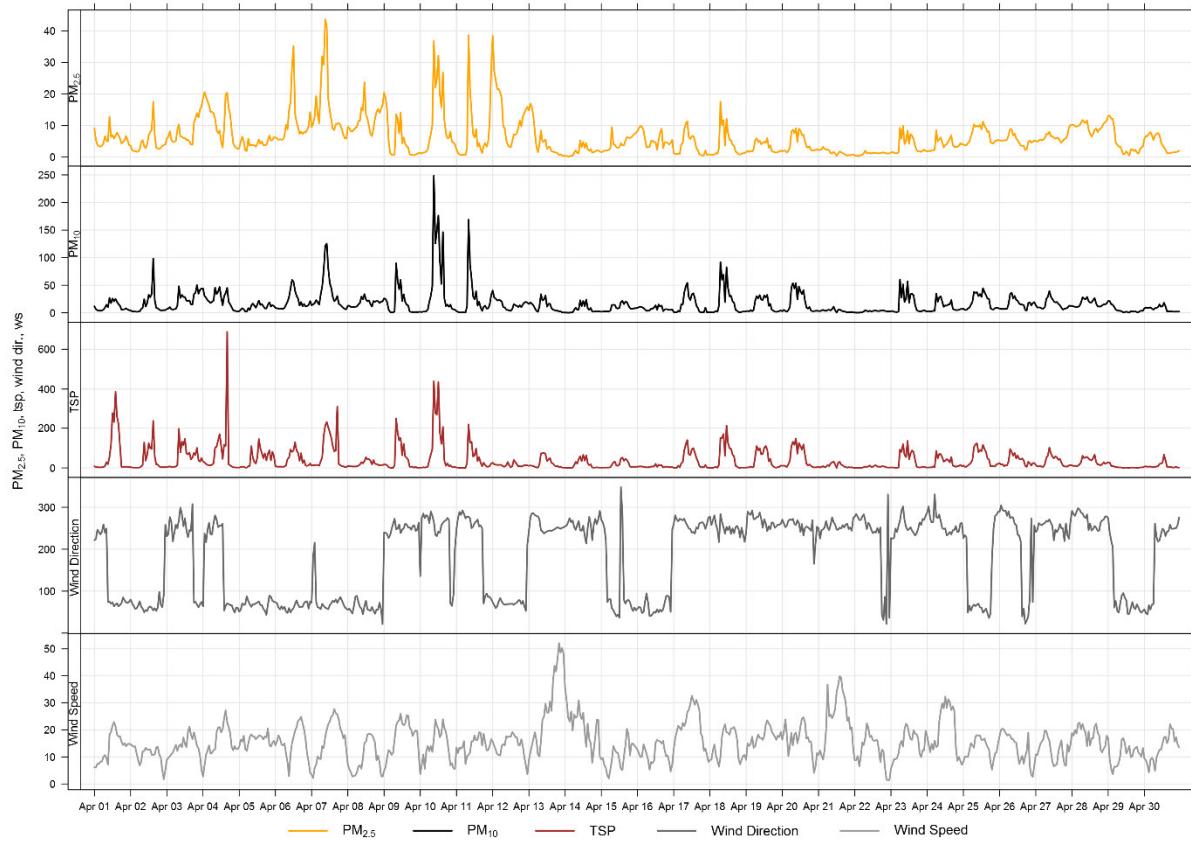
## 5.2 MONITORING RESULTS AND TRENDS

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 April. Table 5-2 summarizes the maximum 1-hour and 24-hour concentrations recorded over the course of the month.

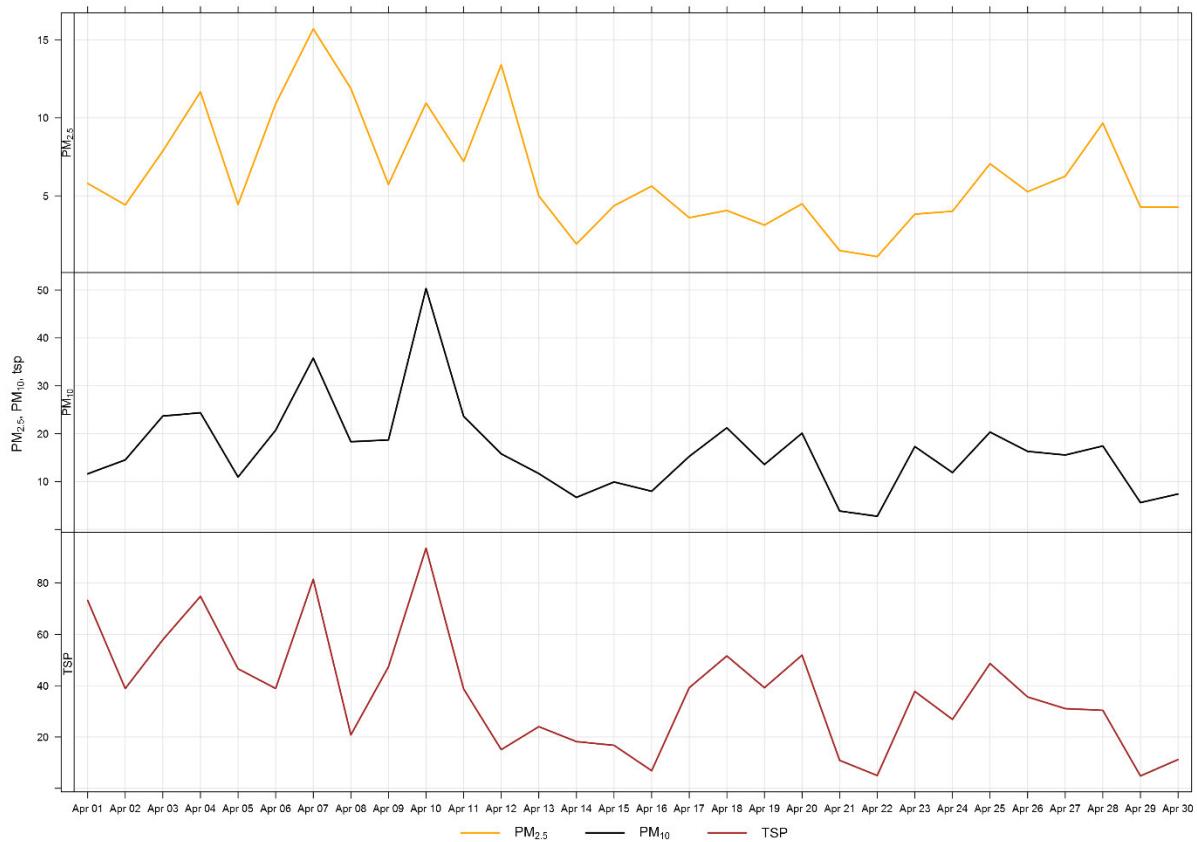
Figure 5-1 and Figure 5-2 show the hourly and daily PM<sub>2.5</sub>, PM<sub>10</sub> and TSP concentrations recorded over the month. There was no exceedance of both the 24-hour TSP (100 µg/m<sup>3</sup>) and PM<sub>2.5</sub> (30 µg/m<sup>3</sup>) guidelines. Exceedances of the TSP guideline at the West monitor in April are rare, with an average of 1 day exceeding the guideline. In 2012, a maximum of 5 TSP exceedance days and 1 PM<sub>2.5</sub> exceedance day were observed.

**Table 5-2 Summary of April 2018 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 <sub>2.5</sub> ( $\mu\text{g}/\text{m}^3$ )	80	30	West	0	0	6.3	43.6	7	9	17.4	60.6	15.7	7	100.0
PM <sub>10</sub> ( $\mu\text{g}/\text{m}^3$ )	-	-	West	-	-	16.4	248.5	10	9	16.8	265.7	50.3	10	100.0
TSP ( $\mu\text{g}/\text{m}^3$ )	-	100	West	-	0	37.2	687.0	4	16	22.8	70.7	93.6	10	100.0

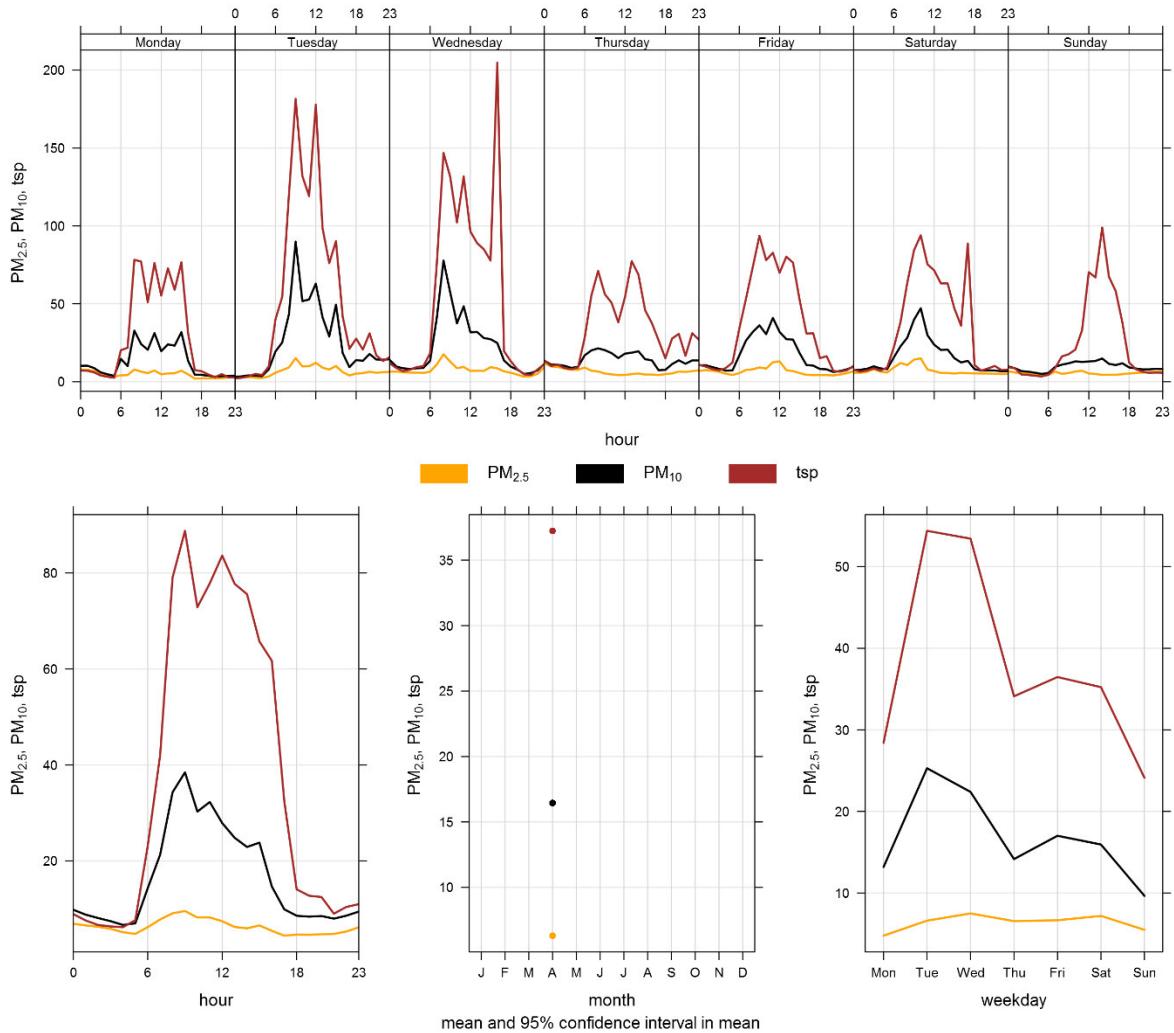


**Figure 5-1 1-hour particulate matter concentrations at the West monitor**



**Figure 5-2 24-hour particulate matter concentrations at the West monitor**

Figure 5-3 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 5-3 is based on data collected during April 2018 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 5-3 West particulate matter time variation**

# 6 BERM GRIMM

## 6.1 SITE VISIT NOTES

This station was found to be in good operating condition and no repairs were required during the month. During the month of April, the Berm GRIMM had 100% uptime.

**Table 6-1 Equipment at the Berm monitoring location**

Equipment Description	Parameter Measured
GRIMM 365 Continuous Particulate Monitor	PM <sub>2.5</sub> , PM <sub>10</sub> , TSP Concentrations

## 6.2 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. Figure 6-1 and Figure 6-2 show the hourly and daily PM<sub>2.5</sub>, PM<sub>10</sub> and TSP concentrations recorded over the month. Table 6-2 summarizes the maximum 1-hour and 24-hour PM concentrations recorded during the month, and Table 6-3 summarizes the recorded exceedances.

In April, there were 4 and 0 exceedances of the 24-hour TSP (30 µg/m<sup>3</sup>) and PM<sub>2.5</sub> (100 µg/m<sup>3</sup>) guidelines, respectively. Historically, the Berm monitor records an average of 10 and 0 exceedances of the 24-hour TSP and PM<sub>2.5</sub> guidelines respectively, during the month of April. The largest number of TSP exceedances recorded during April occurred in 2010, which had 22 days that exceeded the guideline. The fewest number of TSP exceedances was recorded during April 2011, which had 6 days that exceeded the guideline. There has never been any PM<sub>2.5</sub> exceedance recorded during April.

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

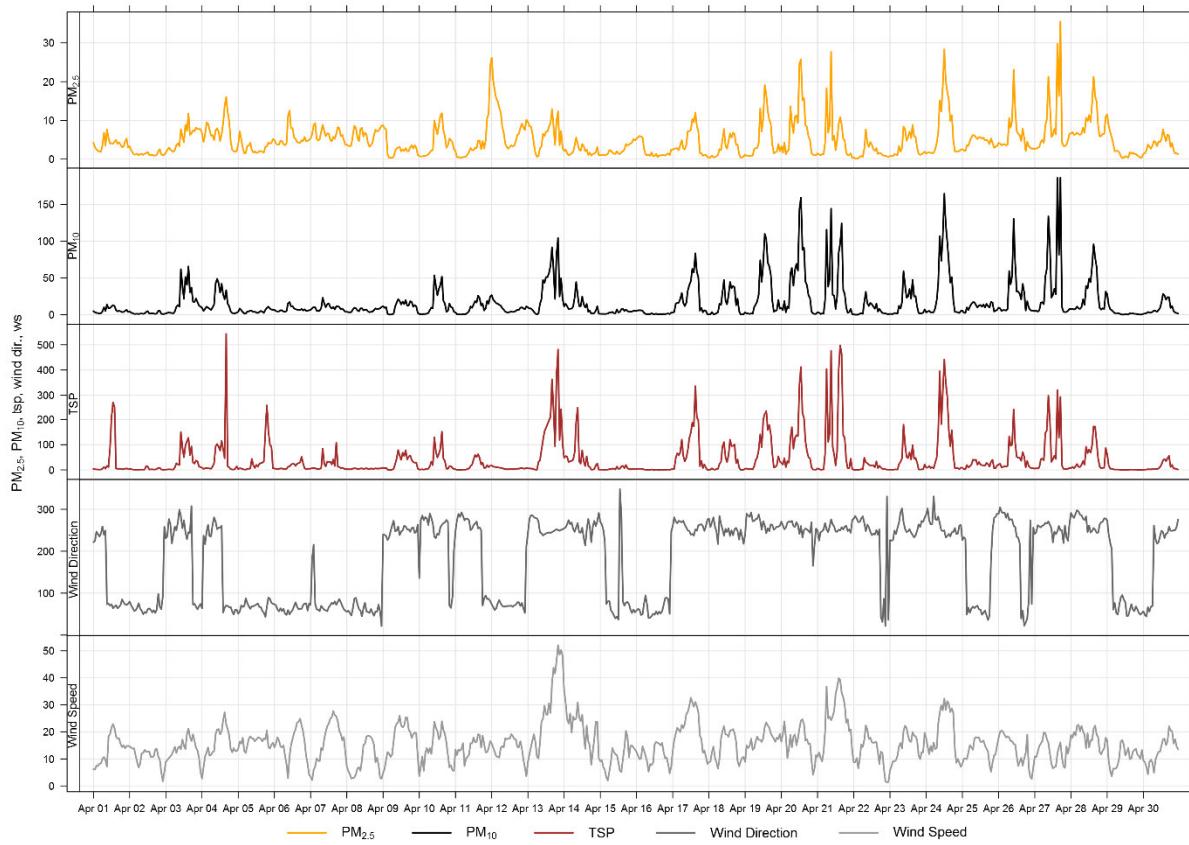
The Berm monitor is located along a ridge at the edge of the Lafarge property and is in an area where on-site trucks drive through site, which can create fugitive dust. Quarry blasting also has the potential to impact short term PM immediately following a blast. High TSP concentrations in the month generally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

**Table 6-2 Summary of April 2018 data at the Berm GRIMM**

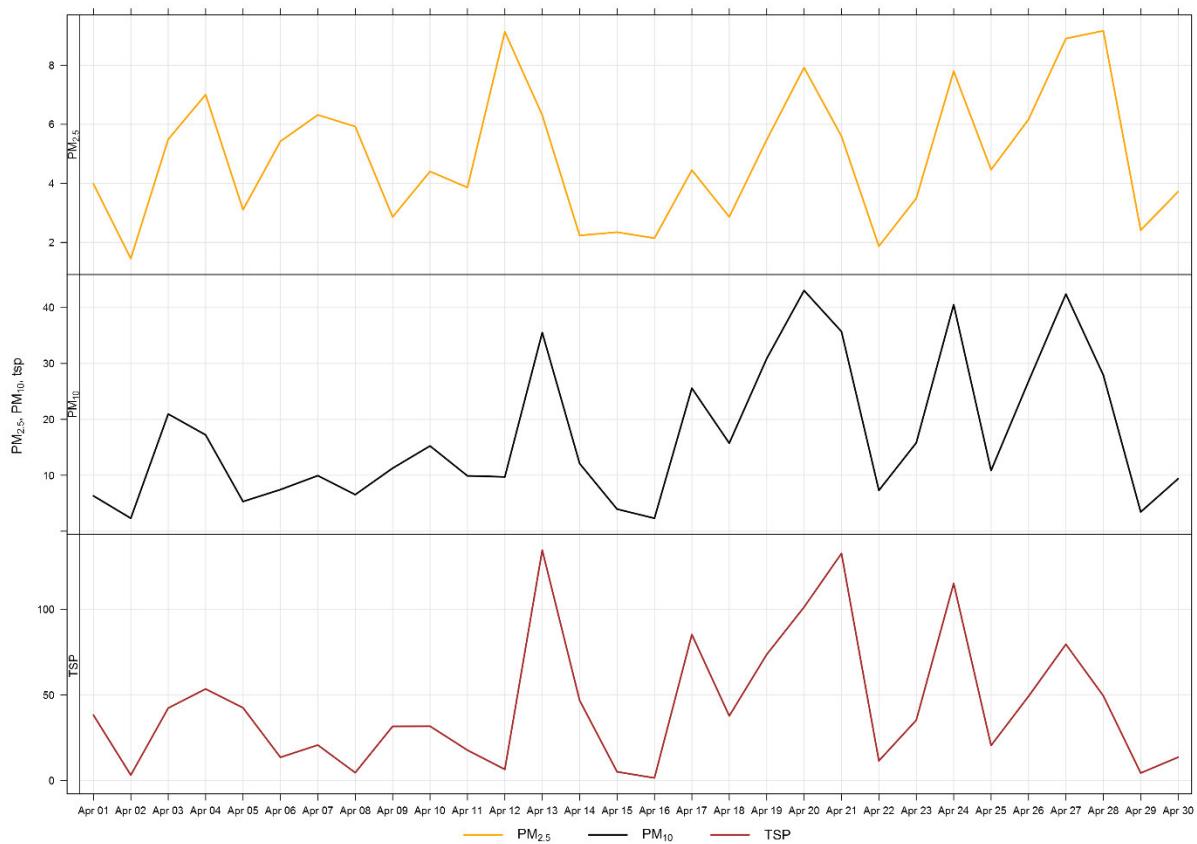
Parameter	Guideline		Station	Exceedances		Monthly Average	Maximum 1-hour				Maximum 24-hour		Operational Time (Percent)	
	1-hr	24-hr		1-hr	24-hr		Maximum Concentration	Day	Hour	Wind Speed (km/hr)	Wind Direction (degrees)	Maximum Concentration	Day	
PM <sub>2.5</sub> ( $\mu\text{g}/\text{m}^3$ )	80	30	Berm	0	0	4.9	35.5	27	17	16.1	250.0	9.2	28	100.0
PM <sub>10</sub> ( $\mu\text{g}/\text{m}^3$ )	-	-	Berm	-	-	17.0	186.2	27	17	16.1	250.0	43.1	20	100.0
TSP ( $\mu\text{g}/\text{m}^3$ )	-	100	Berm	-	4	43.4	543.2	4	16	22.8	70.7	134.4	13	100.0

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

Date	TSP (ug/m <sup>3</sup> )	PM <sub>2.5</sub> (ug/m <sup>3</sup> )	Average Wind Direction (degrees)	Average Wind Speed (km/hr)	Average RH (%)	Root Cause (Provided by Lafarge)
<b>Berm</b>						
4/13/2018	134.4	-	251.8	28.4	48.3	High wind event
4/20/2018	101.2	-	255.5	16.4	35.1	
4/21/2018	132.5	-	253.8	24.5	46.1	High wind event
4/24/2018	115.0	-	256.6	19.8	27.8	
<b>Total # of Exceedances</b>	<b>4</b>	<b>0</b>				
<b>Maximum # of Exceedances (April)</b>	<b>22 (2010)</b>	<b>0 (2010 ~ 2017)</b>				
<b>Average # of Exceedances (April)</b>	<b>10</b>	<b>0</b>				
<b>Minimum # of Exceedances (April)</b>	<b>6 (2011)</b>	<b>0 (2010 ~ 2017)</b>				



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



**Figure 6-2 24-hour particulate matter concentrations recorded at the Berm monitor**

Figure 6-3 shows the wind roses for the 4 days of TSP exceedances. The wind rose shows that the winds predominantly come from the WSW and over 25 km/kr.

Figure 6-4 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.

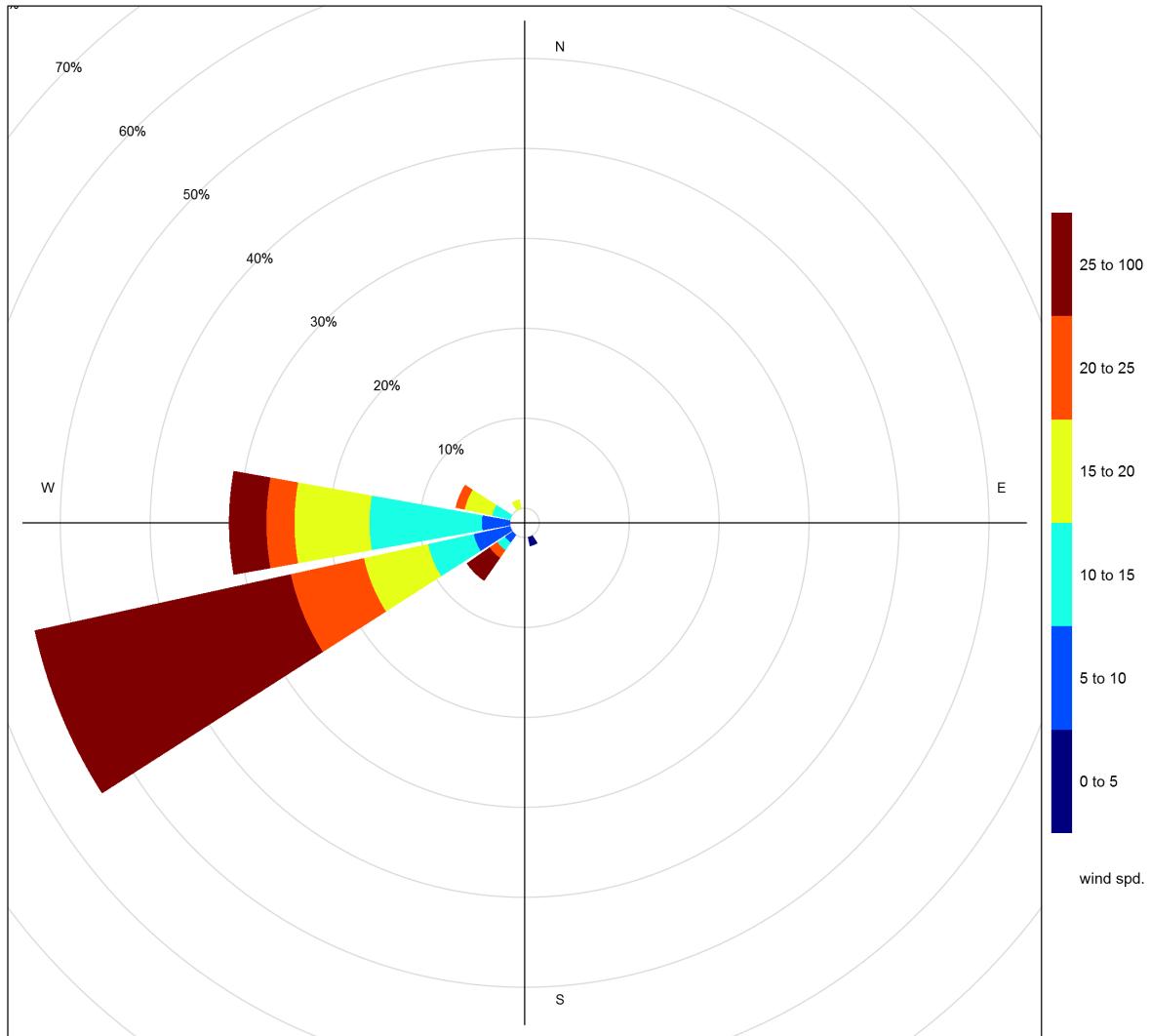
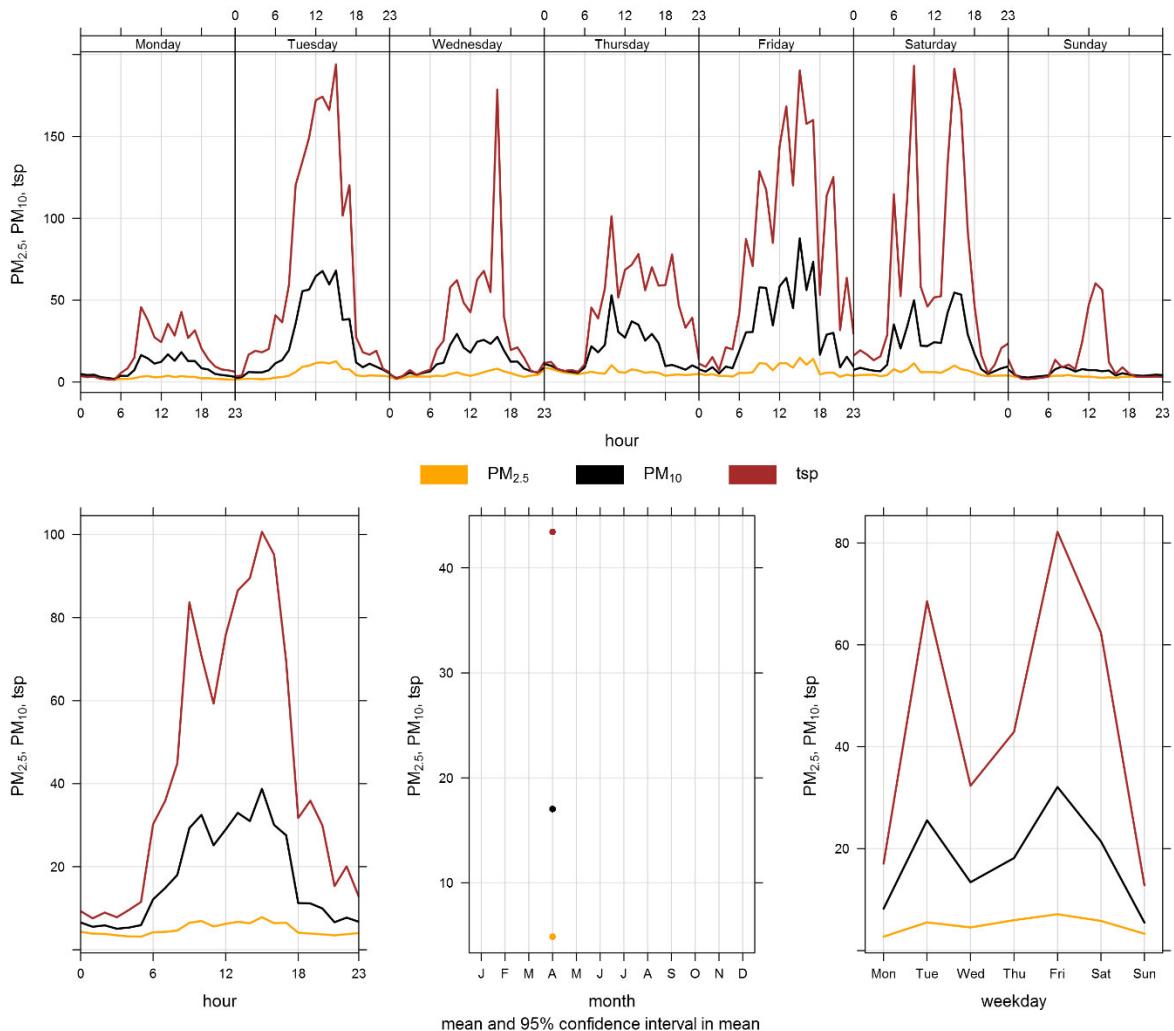


Figure 6-3 Wind rose for TSP exceedance days recorded at the Berm GRIMM



**Figure 6-4 Berm particulate matter time variation**

# 7

# ENTRANCE GRIMM

## 7.1

### SITE VISIT NOTES

This station was found to be in good operating condition and no repairs were required during the month. During the month of April, the Entrance GRIMM had 98.2% uptime due to 13 hours of instrument error.

**Table 7-1 Equipment at the Entrance monitoring location**

Equipment Description	Parameter Measured
GRIMM 365 Continuous Particulate Monitor	PM <sub>2.5</sub> , PM <sub>10</sub> , TSP Concentrations

## 7.2

### 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. Figure 7-1 and Figure 7-2 show the hourly and daily PM<sub>2.5</sub>, PM<sub>10</sub> and TSP concentrations recorded over the month. Table 7-2 summarizes the maximum 1-hour and 24-hour PM concentrations recorded during the month. Table 7-3 summarizes the recorded exceedances.

During April, there were 13 and 0 exceedances of the 24-hour TSP (100 µg/m<sup>3</sup>) and PM<sub>2.5</sub> (30 µg/m<sup>3</sup>) guidelines, respectively. Historically, the Entrance monitor records an average of 12 and 0 exceedances of the 24-hour TSP and PM<sub>2.5</sub> guidelines respectively, during the month of April. The largest number of TSP exceedances recorded during April occurred in 2010, which had 20 days that exceeded the guideline. The fewest number of TSP exceedances recorded during April occurred in 2017, which had 1 day that exceeded the guideline. There has never been any PM<sub>2.5</sub> exceedance recorded during April.

It should also be noted that the GRIMM monitors become more conservative in the reported PM concentrations as the size fraction increases. The PM<sub>2.5</sub> size fraction has been shown to match other regulatory approved PM<sub>2.5</sub> 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 pass near to the Entrance monitor as they enter the Lafarge facility for loading. 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.

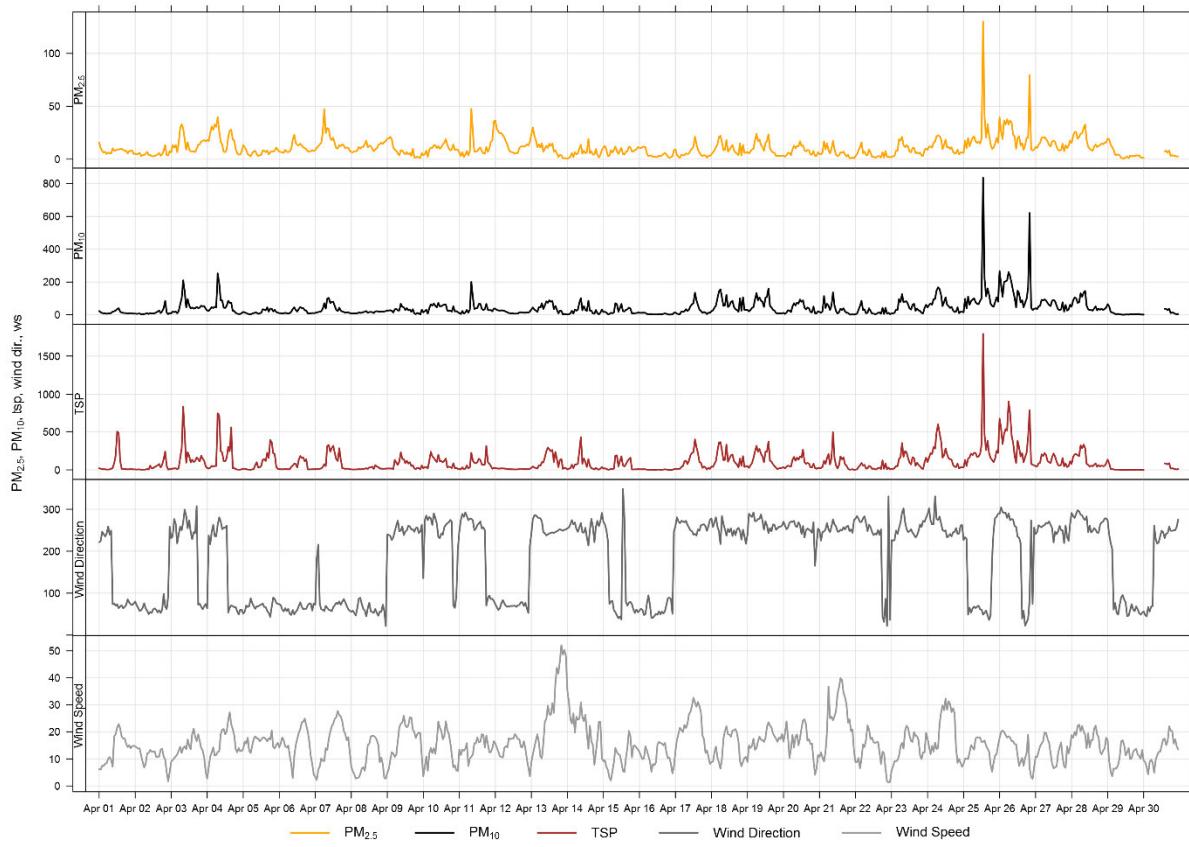
Figure 7-3 shows the wind roses for the days that exceeded the TSP Guideline at the Entrance GRIMM. During the 13 TSP exceedance days, winds were predominantly from the WSW and above 25 km/hr.

**Table 7-2 Summary of April 2018 data at the Entrance GRIMM**

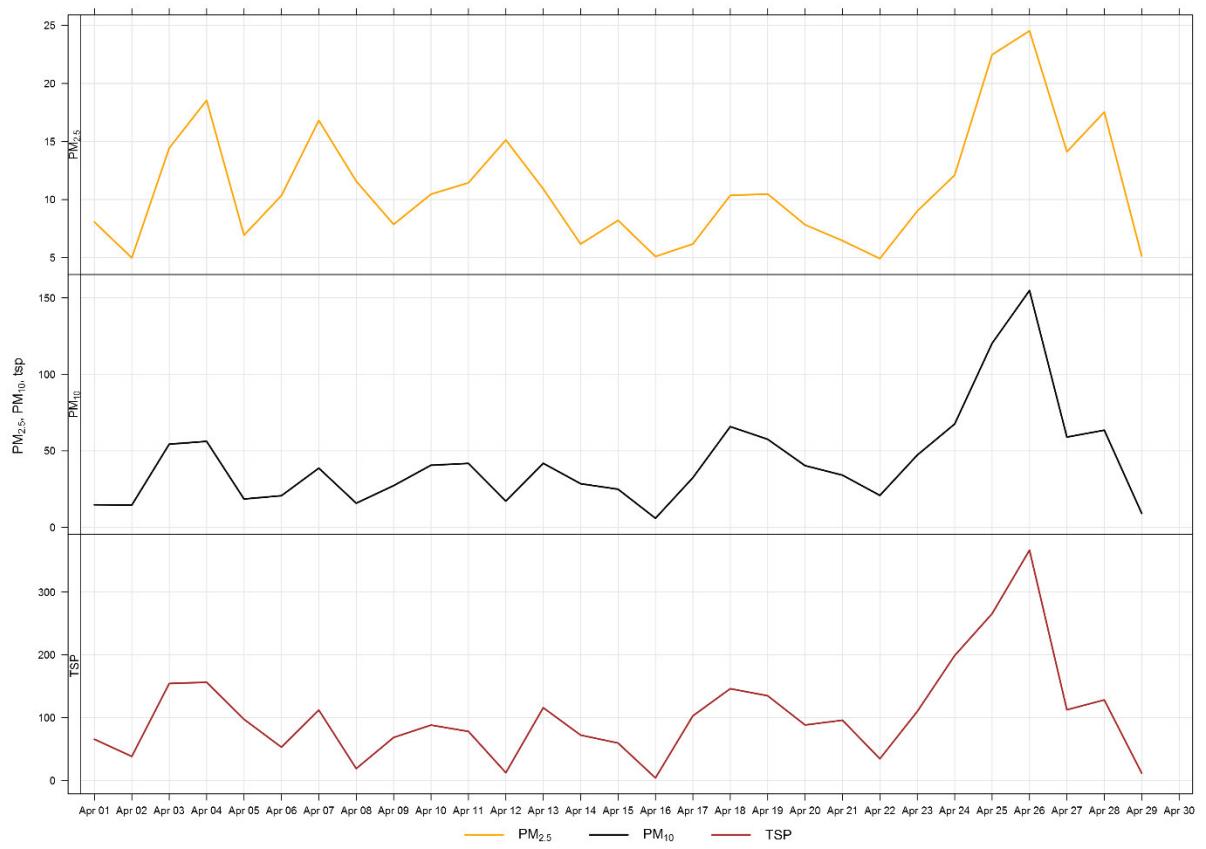
Parameter	Guideline		Station	Exceedances		Monthly Average	Maximum 1-hour					Maximum 24-hour		Operational Time (Percent)
	1-hr	24-hr		1-hr	24-hr		Maximum Concentration	Day	Hour	Wind Speed (km/hr)	Wind Direction (degrees)	Maximum Concentration	Day	
PM <sub>2.5</sub> ( $\mu\text{g}/\text{m}^3$ )	80	30	Entrance	1	0	10.9	130.1	25	13	16.3	48.8	24.5	26	98.2
PM <sub>10</sub> ( $\mu\text{g}/\text{m}^3$ )	-	-	Entrance	-	-	42.2	835.9	25	13	16.3	48.8	154.8	26	98.2
TSP ( $\mu\text{g}/\text{m}^3$ )	-	100	Entrance	-	13	102.3	1790.5	25	13	16.3	48.8	366.5	26	98.2

**Table 7-3 Days exceeding the Guideline for TSP at the Entrance Monitor**

Date	TSP (ug/m <sup>3</sup> )	PM <sub>2.5</sub> (ug/m <sup>3</sup> )	Average Wind Direction (degrees)	Average Wind Speed (km/hr)	Average RH (%)	Root Cause (Provided by Lafarge)
<b>Entrance</b>						
4/3/2018	154.4	-	260.8	13.8	59.1	
4/4/2018	156.5	-	331.6	15.6	69.1	
4/7/2018	112.2	-	70.8	16.6	75.9	
4/13/2018	115.9	-	251.8	28.4	48.3	High wind event
4/17/2018	103.0	-	257.5	21.8	47.3	High wind event
4/18/2018	146.2	-	250.6	14.2	40.5	
4/19/2018	135.0	-	265.4	17.3	42.3	
4/23/2018	110.0	-	255.4	14.6	38.7	
4/24/2018	198.9	-	256.6	19.8	27.8	
4/25/2018	265.5	-	51.1	13.1	34.6	
4/26/2018	366.5	-	291.8	13.4	34.4	
4/27/2018	112.7	-	254.2	12.6	39.3	
4/28/2018	128.4	-	271.4	18.0	33.7	
<b>Total # of Exceedances</b>	<b>13</b>	<b>0</b>				
<b>Maximum # of Exceedances (April)</b>	<b>20 (2010)</b>	<b>0 (2010 ~ 2017)</b>				
<b>Average # of Exceedances (April)</b>	<b>12</b>	<b>0</b>				
<b>Minimum # of Exceedances (April)</b>	<b>1 (2017)</b>	<b>0 (2010 ~ 2017)</b>				



**Figure 7-1 1-hour particulate matter concentrations recorded at the Entrance monitor**



**Figure 7-2 24-hour particulate matter concentrations at the Entrance monitor**

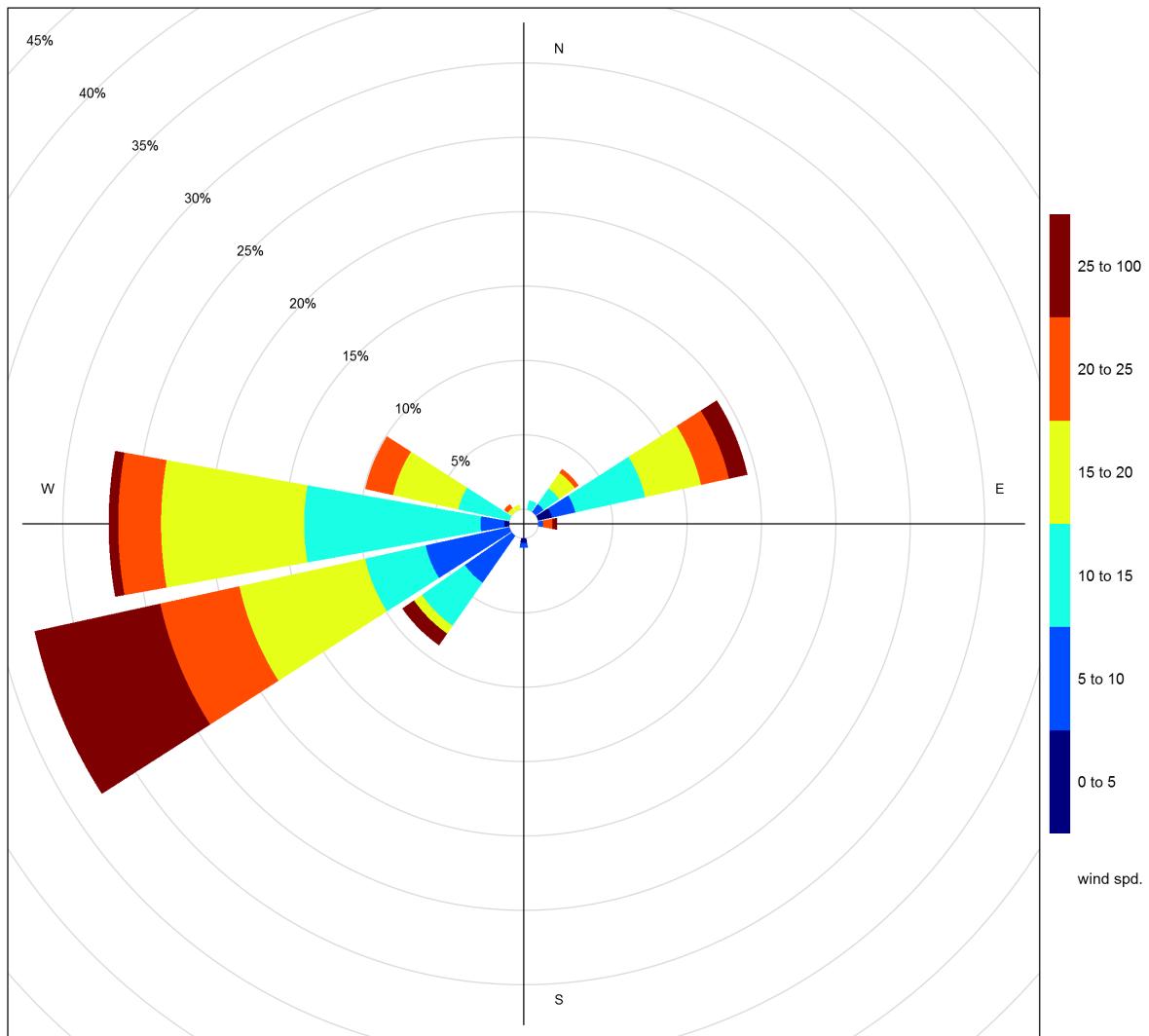
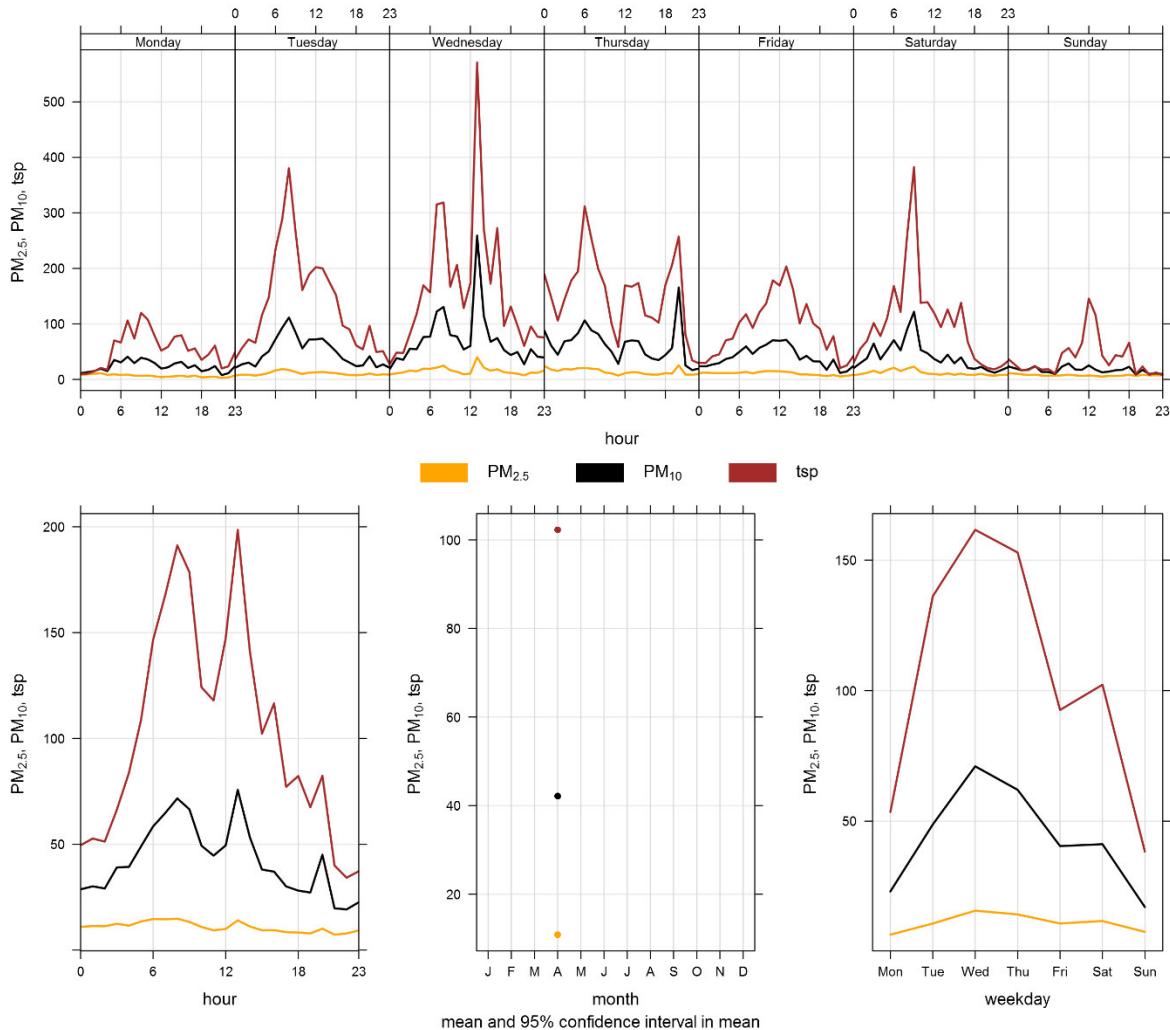


Figure 7-3 Wind rose for TSP exceedance days recorded at the Entrance GRIMM

Figure 7-4 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 7-4 is based on data collected during April 2018 and indicates a diurnal pattern at this station.



**Figure 7-4   Entrance particulate matter time variation**

## BIBLIOGRAPHY

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- Alberta Environment and Parks. (2016, April). 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

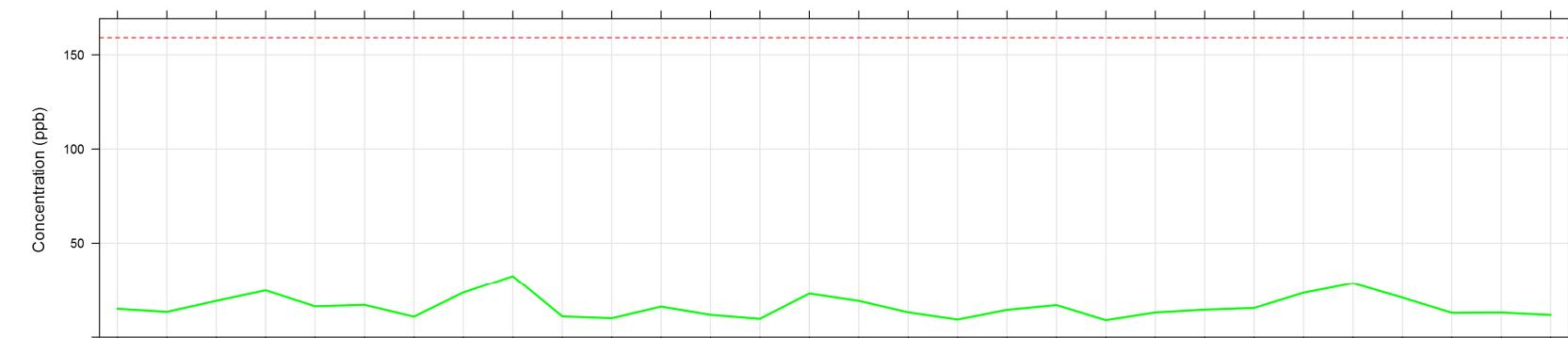
**DATA & CALIBRATION REPORTS**

## Lagoon NO<sub>2</sub> (ppb) – April 2018

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	15.0	S	9.9	5.7	10.2	13.1	13.3	8.8	7.0	9.5	3.9	4.1	2.8	5.3	4.0	6.7	10.6	7.4	3.1	1.6	2.0	2.2	1.5	1.3	15.0	6.5
2	3.5	S	1.3	2.1	5.6	3.1	3.2	7.9	11.3	10.4	4.9	0.1	0.4	0.0	0.0	0.4	0.5	3.4	1.8	2.3	5.3	12.4	13.4	13.4	4.1	
3	7.4	S	12.4	8.8	9.1	8.3	8.2	19.3	11.0	4.0	3.9	2.2	9.1	3.0	0.0	0.0	0.0	0.7	4.6	6.8	10.5	9.8	17.4	12.7	19.3	7.3
4	11.6	S	24.9	17.9	17.8	20.6	17.0	17.1	15.3	7.9	4.6	2.8	3.7	6.4	3.0	4.7	3.6	3.9	3.4	4.6	8.7	5.5	4.6	7.3	24.9	9.4
5	16.2	S	16.4	4.1	10.5	1.8	4.8	8.4	3.7	1.2	0.5	1.0	0.3	0.1	2.1	2.4	4.7	6.0	1.8	10.0	3.2	2.6	4.8	3.9	16.4	4.8
6	4.5	S	11.3	16.8	14.2	11.4	6.8	9.9	16.1	16.5	17.1	11.6	5.7	2.6	0.8	0.8	5.0	7.2	2.6	0.9	0.8	1.3	1.6	1.6	17.1	7.3
7	1.2	S	6.0	10.6	8.5	9.2	10.3	3.3	2.6	3.6	7.8	6.6	6.2	10.9	1.8	0.8	1.1	1.0	0.9	1.2	1.1	1.8	1.4	0.9	10.9	4.3
8	5.7	S	1.8	4.2	4.8	8.7	4.8	6.3	5.8	8.3	8.6	5.8	2.8	4.2	7.5	9.8	2.7	10.0	11.1	16.8	13.4	11.2	23.7	22.8	23.7	8.7
9	26.4	S	32.6	28.4	18.9	15.2	14.9	6.9	5.9	1.2	3.1	0.1	1.3	1.1	2.5	6.8	2.4	2.2	0.3	1.7	0.3	4.0	0.1	6.3	32.6	7.9
10	2.4	S	4.9	2.7	3.2	8.6	9.9	7.2	7.9	3.6	1.0	0.0	1.1	6.8	7.1	5.5	4.0	3.9	0.5	6.3	11.0	8.7	8.3	8.9	11.0	5.4
11	8.0	S	6.3	3.9	9.9	6.0	7.6	10.0	8.6	7.1	7.5	6.0	7.6	7.0	4.2	1.1	0.7	0.0	1.6	0.6	1.4	3.8	4.1	5.5	10.0	5.2
12	6.1	S	7.7	4.9	3.9	5.0	6.1	7.6	16.2	12.9	14.5	13.8	3.2	2.9	3.3	2.5	2.2	3.0	2.9	1.7	2.0	5.5	6.6	9.2	16.2	6.2
13	11.8	S	9.6	8.9	6.5	9.3	9.5	11.8	4.6	0.0	0.0	0.0	0.7	0.0	0.5	0.0	0.0	1.2	0.0	0.0	0.0	0.0	0.0	1.4	11.8	3.3
14	0.3	S	3.1	9.7	3.5	6.1	3.8	0.7	7.5	3.8	0.0	0.0	2.1	0.0	0.7	0.2	4.3	1.5	0.8	3.0	1.1	0.2	6.1	2.5	9.7	2.6
15	1.8	S	3.8	9.4	11.3	16.8	14.0	23.1	13.0	4.6	0.3	0.6	1.2	1.5	3.7	3.1	7.8	4.1	4.8	4.5	10.6	19.2	4.6	7.1	23.1	7.4
16	19.2	S	13.8	11.4	10.1	1.2	0.0	2.9	14.0	6.2	5.4	6.8	4.4	5.8	7.0	18.6	5.2	3.4	4.9	1.0	1.2	1.6	1.3	10.2	19.2	6.8
17	9.8	S	13.1	2.6	3.8	2.1	4.8	6.2	5.1	3.2	6.1	2.1	1.8	2.3	1.6	4.1	0.0	2.4	5.4	4.3	3.2	8.2	10.6	4.9	13.1	4.7
18	5.7	S	8.1	7.1	4.9	9.0	9.3	4.7	8.3	5.1	0.0	2.9	0.7	2.2	0.0	0.0	0.0	1.7	3.1	0.8	0.2	0.0	2.7	4.7	9.3	3.5
19	6.3	S	6.9	6.6	5.7	9.8	14.5	11.4	14.4	8.3	4.6	2.6	4.6	2.8	1.1	0.1	1.0	4.7	4.1	0.8	6.2	8.0	4.7	14.5	5.7	
20	0.8	S	4.0	6.7	5.6	3.2	10.1	17.0	3.8	2.9	8.4	5.8	0.0	2.7	0.0	0.0	1.0	3.0	3.4	0.0	0.0	3.5	2.7	1.1	17.0	3.7
21	1.0	S	1.1	5.5	4.3	3.1	0.6	0.4	2.4	5.3	1.4	0.0	0.5	0.0	1.1	0.0	3.2	0.9	0.4	9.0	0.7	0.6	0.0	4.4	9.0	2.0
22	9.6	S	3.4	1.0	2.0	1.8	1.0	1.5	0.0	2.3	4.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.3	1.8	2.6	1.6	1.7	13.1	2.2	13.1
23	14.6	S	8.2	6.2	7.9	9.3	10.0	6.9	7.5	C	C	C	C	2.0	0.0	0.0	0.0	0.0	2.6	0.6	2.9	5.3	8.7	14.6	5.2	
24	6.2	S	12.0	15.4	13.2	3.2	11.0	14.3	15.5	4.9	0.9	1.0	0.2	0.0	0.0	0.0	0.0	1.7	0.0	0.2	0.8	9.2	2.7	15.5	4.9	
25	2.4	S	8.2	16.9	23.6	14.7	12.2	6.6	3.8	3.8	1.6	2.1	1.7	2.5	2.0	2.6	3.8	1.8	0.7	5.1	5.9	5.5	8.0	23.6	6.4	
26	5.0	S	3.4	4.2	7.3	8.2	10.7	28.7	17.3	14.0	6.5	2.7	0.0	0.0	1.8	0.6	0.0	0.3	2.4	5.2	3.1	5.5	6.4	28.7	5.8	
27	7.3	S	12.3	13.2	13.4	15.3	20.5	19.8	12.1	9.6	5.3	7.2	21.0	13.7	8.0	0.1	2.5	1.6	0.0	7.2	18.3	3.8	4.4	21.0	9.6	
28	4.5	S	6.9	5.9	5.3	2.2	6.8	6.1	12.9	10.2	7.5	0.5	3.1	2.8	0.0	2.3	0.1	0.0	5.6	5.7	10.1	4.1	12.9	4.7		
29	8.2	S	0.0	0.0	4.8	3.2	3.3	3.3	5.4	0.0	0.0	0.0	0.1	2.9	5.9	6.4	0.0	5.2	3.2	2.3	13.1	8.3	5.7	10.6	13.1	4.0
30	4.5	S	7.6	5.2	9.1	3.3	2.9	11.8	9.9	3.6	3.1	1.9	2.4	0.0	0.0	0.4	2.9	0.0	5.1	2.6	4.6	5.2	5.0	11.8	4.0	
Hourly Max	26.4	-	32.6	28.4	23.6	20.6	20.5	28.7	17.3	16.5	17.1	13.8	21.0	13.7	8.0	18.6	10.6	10.0	11.1	16.8	18.3	19.2	23.7	22.8		
Hourly Average	7.6	-	8.7	8.2	8.6	7.8	8.4	9.7	9.0	6.0	4.6	3.1	3.0	3.1	2.3	2.7	2.2	2.6	2.4	3.6	4.5	4.8	5.6	6.5		

S = SPAN C = CALIBRATION

Daily 1-hour NO<sub>2</sub> Maximums (ppb) at Trailer

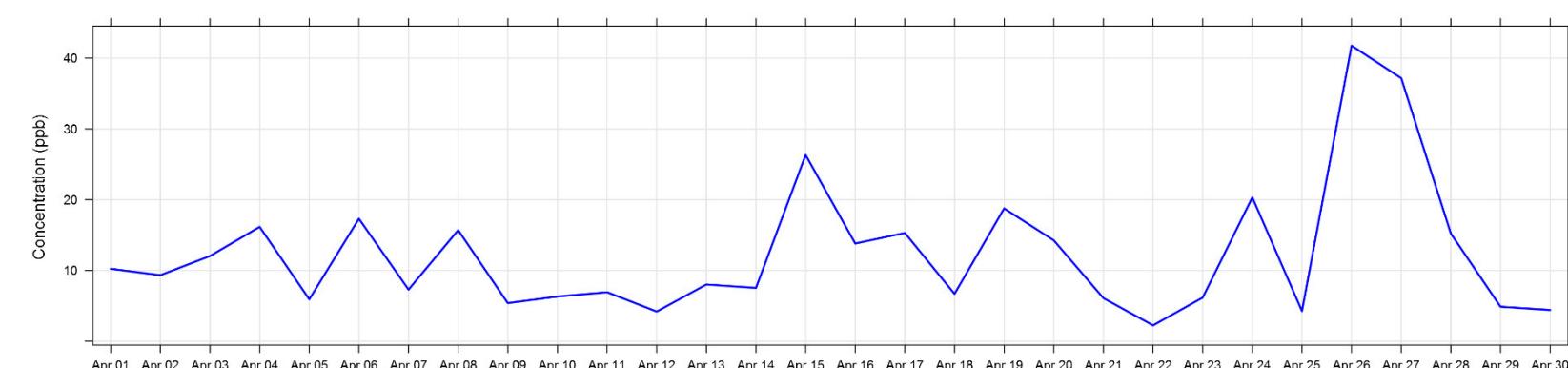


## Lagoon NO (ppb) – April 2018

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	0.0	S	0.1	0.0	0.6	0.0	0.0	1.6	3.1	10.2	1.8	0.8	0.0	1.7	0.9	1.7	3.7	0.8	0.0	0.0	0.0	0.0	0.0	10.2	1.2	
2	0.0	S	0.0	0.0	0.0	0.0	0.0	0.9	4.1	9.3	3.3	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.3	0.8	
3	0.0	S	3.5	0.0	0.0	0.0	2.3	12.0	11.1	2.7	3.6	1.5	10.5	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.0	2.2	
4	0.0	S	0.0	0.3	1.7	1.5	2.1	10.1	16.2	6.5	3.7	1.5	3.9	5.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.2	2.3	
5	1.4	S	5.9	0.0	0.0	0.0	0.0	2.7	1.8	0.2	0.0	0.9	0.0	0.0	0.3	0.1	1.5	1.2	0.0	0.0	0.0	0.0	0.0	5.9	0.7	
6	0.0	S	3.1	4.4	2.4	0.7	0.0	3.0	9.2	14.2	17.3	9.0	5.2	1.4	0.0	0.0	2.4	1.9	0.0	0.0	0.0	0.0	0.0	17.3	3.2	
7	0.0	S	0.0	0.0	0.9	0.0	0.5	0.0	0.0	1.7	7.3	4.4	5.9	7.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.3	1.2	
8	0.8	S	0.0	0.0	0.0	0.0	0.0	0.0	1.9	4.8	8.2	4.4	0.4	2.0	4.6	6.9	0.0	2.1	0.3	15.7	0.0	0.0	0.0	15.7	2.3	
9	2.3	S	4.5	0.0	0.0	2.2	5.4	1.7	3.8	0.0	2.6	0.0	0.0	0.7	4.0	2.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.4	1.3	
10	0.0	S	1.0	0.0	0.0	4.6	4.4	3.4	2.6	0.5	0.4	0.0	0.4	6.3	2.1	1.1	1.3	1.4	0.0	0.0	0.0	0.0	0.0	6.3	1.3	
11	0.1	S	0.0	0.0	2.0	0.6	0.1	2.4	0.4	0.5	0.9	2.1	4.5	6.9	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	0.9	
12	0.0	S	0.0	0.0	0.0	0.0	0.0	0.0	0.7	3.3	4.2	3.5	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.2	0.5	
13	0.0	S	0.5	1.3	0.0	4.5	1.9	8.0	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	8.0	0.8	
14	0.0	S	0.0	6.5	0.5	1.6	0.0	0.0	7.5	2.6	0.0	0.0	0.3	0.0	1.4	0.0	1.6	0.0	0.0	0.0	0.0	0.0	0.0	7.5	1.1	
15	0.0	S	0.0	0.0	1.7	1.1	1.4	26.3	9.3	1.1	0.0	0.0	0.0	0.0	0.0	1.0	1.6	0.0	0.0	0.0	0.0	0.0	0.0	26.3	1.9	
16	2.4	S	0.0	1.7	1.0	0.0	0.0	0.0	1.2	5.5	2.3	4.9	1.9	1.2	3.2	13.8	1.5	0.0	0.1	0.0	0.0	0.0	0.0	13.8	1.8	
17	0.0	S	15.3	0.0	0.0	0.0	2.1	4.3	1.9	2.0	8.7	1.7	3.5	3.4	1.9	4.5	0.0	1.4	2.1	0.5	0.0	0.6	2.6	0.0	15.3	2.5
18	0.2	S	2.9	1.3	0.0	1.3	0.2	0.9	6.7	5.8	0.0	2.2	0.7	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.7	1.0	
19	0.0	S	2.0	1.7	0.6	3.8	15.0	10.9	18.8	8.1	3.9	1.2	4.1	2.4	1.6	0.0	0.3	1.7	1.0	0.0	0.0	0.0	0.0	18.8	3.4	
20	0.0	S	0.0	1.6	2.2	0.0	12.3	14.2	0.1	0.6	7.0	5.5	0.0	1.6	0.0	0.0	0.0	0.2	4.2	0.0	0.0	0.0	0.0	14.2	2.2	
21	0.0	S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.6	0.0	0.0	0.0	0.9	0.0	2.1	0.9	0.0	6.1	0.0	0.0	0.0	0.0	6.1	0.5	
22	2.1	S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	2.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.8	0.0	0.0	0.0	2.2	0.4	
23	0.0	S	0.0	0.0	0.0	0.0	3.8	5.7	6.2	C	C	C	C	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.2	1.1
24	2.3	S	7.4	10.4	5.0	0.0	7.5	12.6	20.3	2.5	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	20.3	3.0	
25	0.0	S	0.0	0.3	4.3	1.6	1.2	0.4	0.5	1.1	0.0	0.4	0.0	0.3	0.0	0.1	0.3	0.0	0.0	0.0	0.0	0.1	0.4	4.3	0.5	
26	0.0	S	0.2	1.5	3.1	2.5	6.7	41.8	15.5	10.9	4.0	0.6	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	41.8	3.8	
27	0.0	S	13.9	10.0	4.6	13.3	31.9	37.2	13.5	11.5	3.7	7.8	15.4	7.2	2.4	0.0	0.7	0.0	0.0	2.9	9.6	0.0	0.0	37.2	8.1	
28	2.2	S	3.8	2.6	2.6	0.0	5.5	6.4	15.2	12.3	5.8	0.0	1.7	1.1	0.0	0.1	0.0	0.0	0.0	1.7	0.9	3.8	0.0	15.2	2.9	
29	3.4	S	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	2.2	1.2	0.0	1.1	0.0	0.0	4.9	2.4	0.0	3.3		
30	0.0	S	1.1	0.0	2.8	0.0	0.0	3.0	4.4	1.8	2.1	1.3	1.4	0.0	0.0	0.0	3.0	0.0	2.2	0.0	1.0	0.5	1.4	4.4	1.1	
Hourly Max	3.4	-	15.3	10.4	5.0	13.3	31.9	41.8	20.3	14.2	17.3	9.0	15.4	7.2	4.6	13.8	3.7	3.0	4.2	15.7	9.6	3.8	3.5	3.3		
Hourly Average	0.6	-	2.2	1.5	1.2	1.3	3.5	7.0	5.9	4.3	3.2	1.9	2.1	1.8	0.8	1.2	0.6	0.5	0.3	1.0	0.5	0.3	0.3	0.4		

S = SPAN C = CALIBRATION

Daily 1-hour NO Maximums (ppb) at Trailer



Number of 1HR Exceedances	n/a	Objective	n

## Lagoon NO<sub>x</sub> (ppb) – April 2018

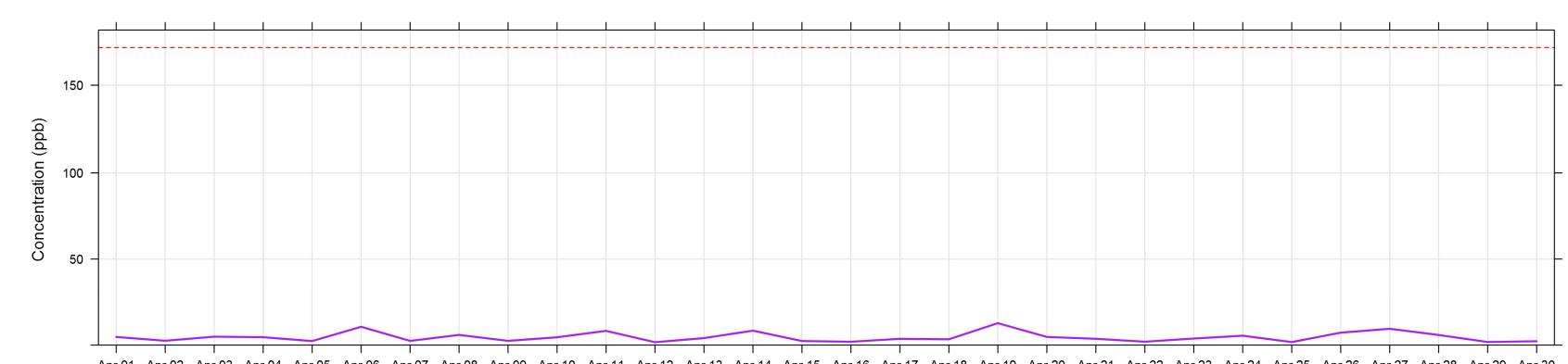
Day/Hour	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Daily Max	24-hour Average
1	15.5	S	11.5	5.7	12.4	13.8	14.4	12.0	11.7	21.4	7.4	6.5	4.3	8.5	6.5	10.1	16.0	9.9	4.3	1.6	2.0	2.3	1.7	1.4	21.4	8.7
2	3.4	S	1.3	2.3	6.4	3.2	3.4	10.4	17.1	21.3	9.8	1.3	2.2	1.2	0.5	0.9	1.3	1.6	4.9	1.9	2.4	5.5	12.9	13.4	21.3	5.6
3	7.6	S	17.4	9.8	9.6	9.1	12.0	33.0	23.7	8.4	9.2	5.3	21.3	6.3	0.0	0.3	0.0	1.0	4.9	7.0	11.4	10.0	19.6	12.7	33.0	10.4
4	11.5	S	25.6	19.8	21.1	23.7	20.7	28.8	33.1	15.9	10.0	6.0	9.2	13.8	4.6	6.0	4.1	4.2	3.5	5.0	9.6	6.5	4.8	9.5	33.1	12.9
5	19.3	S	23.9	5.3	11.8	2.0	5.7	12.8	7.2	2.9	1.5	3.5	1.3	1.4	4.0	4.1	7.8	8.8	2.3	11.7	3.3	2.5	5.3	3.9	23.9	6.6
6	4.6	S	16.0	22.8	18.3	13.8	8.0	14.5	27.0	32.4	36.2	22.1	12.5	5.7	1.6	1.4	8.9	10.7	3.4	1.0	0.8	1.7	1.6	1.6	36.2	11.6
7	1.2	S	5.8	10.9	10.9	10.3	12.4	4.4	4.2	6.9	16.7	12.6	13.8	19.7	2.7	1.0	1.3	1.1	0.9	1.2	1.1	1.8	1.7	0.9	19.7	6.2
8	8.1	S	2.0	4.5	4.9	8.7	5.1	7.7	9.3	14.7	18.4	11.8	4.8	7.8	13.7	18.4	3.8	13.7	13.0	34.2	14.1	12.0	24.0	23.0	34.2	12.1
9	30.4	S	38.9	29.1	20.5	19.0	21.9	10.1	11.3	2.9	7.4	1.0	2.8	2.7	4.8	12.5	6.6	3.6	0.6	2.1	0.4	4.8	0.0	8.3	38.9	10.5
10	2.3	S	7.5	2.7	3.7	14.9	16.0	12.3	12.2	5.6	3.0	0.9	3.2	14.8	10.9	8.1	6.9	6.9	0.7	7.4	11.2	8.7	8.3	9.0	16.0	7.7
11	9.7	S	7.5	4.5	13.5	8.3	9.3	14.1	10.6	9.2	10.0	9.7	13.8	15.6	7.2	2.2	1.4	0.1	1.8	0.5	1.3	3.7	4.0	5.5	15.6	7.1
12	6.1	S	9.0	4.9	3.9	5.2	6.4	8.3	18.5	17.8	20.4	18.9	4.1	4.8	4.7	3.4	2.5	3.0	3.0	1.7	1.9	6.3	6.9	9.5	20.4	7.4
13	13.5	S	11.7	11.8	7.7	15.4	12.9	21.5	8.2	0.0	0.0	0.4	0.0	1.7	0.9	1.8	0.0	0.0	2.3	0.0	0.0	0.0	0.0	3.4	21.5	4.9
14	0.7	S	4.6	17.9	5.6	9.3	5.2	1.3	16.7	8.0	0.0	0.0	4.0	0.0	3.8	1.0	7.6	1.7	0.9	3.9	1.1	0.2	11.3	2.8	17.9	4.7
15	1.7	S	3.8	9.8	14.6	19.5	17.1	51.3	24.0	7.4	0.9	1.4	2.6	2.3	5.3	5.8	11.0	5.0	5.6	4.5	11.0	21.3	5.6	7.9	51.3	10.4
16	23.3	S	15.4	14.8	12.7	1.1	0.0	3.4	16.8	13.3	9.3	13.3	8.0	8.7	11.9	34.2	8.3	4.8	6.6	1.0	1.3	1.6	1.3	11.5	34.2	9.7
17	10.9	S	30.1	2.9	5.1	2.7	8.5	12.1	8.6	6.9	16.4	5.4	6.9	7.3	5.1	10.3	0.0	5.4	9.1	6.4	4.1	10.4	14.8	5.1	30.1	8.5
18	7.6	S	12.6	10.0	6.1	11.9	11.1	7.2	16.6	12.6	0.1	6.8	3.1	5.0	0.0	0.1	0.0	3.1	4.3	0.8	0.3	0.0	2.6	4.7	16.6	5.5
19	6.8	S	10.5	9.9	7.9	15.2	31.1	23.9	34.9	18.1	10.2	5.4	10.3	6.9	4.3	0.5	2.8	8.0	6.7	1.1	7.1	9.6	7.9	1.3	34.9	10.4
20	0.9	S	4.7	9.9	9.3	3.8	24.0	32.9	5.4	5.1	17.0	13.0	0.0	5.8	0.0	0.0	1.6	4.7	9.1	0.0	0.0	3.4	2.6	1.0	32.9	6.7
21	1.0	S	1.3	5.9	4.3	3.8	1.2	1.7	3.3	9.4	2.5	0.4	1.3	0.0	3.6	0.0	6.9	3.4	1.7	16.7	1.1	0.7	0.0	5.2	16.7	3.3
22	13.3	S	4.7	1.9	2.3	2.3	1.3	2.6	0.2	5.3	7.9	0.0	0.0	0.0	0.0	0.0	0.0	4.0	4.3	2.6	1.6	1.7	16.0	16.0	3.1	
23	15.7	S	8.2	6.5	8.6	10.8	15.4	14.2	15.2	C	C	C	C	4.9	0.0	0.0	0.0	0.0	3.6	0.6	3.0	6.4	12.5	15.7	7.0	
24	9.9	S	20.9	27.3	19.6	3.8	20.1	28.4	37.4	8.8	2.2	2.0	0.8	0.0	0.0	0.0	0.0	2.7	0.0	0.1	1.1	11.2	2.7	37.4	8.7	
25	2.5	S	8.2	18.7	29.4	17.8	14.9	8.5	5.8	6.3	2.7	3.8	3.9	3.2	3.9	5.3	2.9	0.8	5.7	7.1	6.8	9.6	12.4	29.4	8.0	
26	5.8	S	4.8	6.9	11.6	11.9	18.6	71.9	34.1	26.1	11.7	4.4	0.1	0.0	3.5	1.1	0.1	0.3	3.2	5.3	3.0	5.5	6.4	71.9	10.3	
27	7.4	S	27.4	24.4	19.2	29.9	53.7	58.3	26.8	22.3	10.1	16.1	37.7	22.1	11.5	0.3	4.4	2.3	0.2	11.2	29.1	4.1	4.8	5.0	58.3	18.6
28	7.8	S	11.9	9.7	9.1	3.2	13.5	13.6	29.4	23.7	14.4	1.0	5.9	5.1	0.0	3.6	0.4	0.0	0.0	8.5	7.7	15.1	4.5	29.4	8.5	
29	12.7	S	0.0	0.0	6.1	3.8	3.5	3.3	6.3	0.0	0.0	0.5	4.9	9.3	8.8	0.0	7.6	4.3	2.7	19.2	11.8	6.9	15.1	19.2	5.5	
30	5.2	S	9.8	5.3	13.1	4.2	3.3	16.0	15.5	6.7	6.4	4.4	4.9	0.6	0.5	0.0	1.1	7.0	0.0	8.4	2.9	6.7	6.8	7.5	16.0	5.9
Hourly Max	30.4	-	38.9	29.1	29.4	29.9	53.7	71.9	37.4	32.4	36.2	22.1	37.7	22.1	13.7	34.2	16.0	13.7	13.0	34.2	29.1	21.3	24.0	23.0		
Hourly Average	8.9	-	11.9	10.5	11.0	10.1	13.0	18.0	16.4	11.7	9.0	6.1	6.3	6.1	4.2	4.7	3.7	4.0	3.4	5.2	5.3	5.5	6.5	7.5		

## Lagoon SO<sub>2</sub> (ppb) – April 2018

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	1.5	S	1.7	1.3	1.2	1.2	1.3	1.4	1.4	3.6	2.3	3.5	4.7	3.6	2.9	2.7	2.8	3.1	2.1	1.7	2.3	2.3	3.0	3.6	4.7	2.4
2	2.0	S	2.5	2.1	2.0	1.8	1.8	1.9	2.2	2.4	1.8	1.4	1.2	1.3	1.4	1.2	1.4	1.1	2.5	2.3	1.5	1.2	1.0	1.1	2.5	1.7
3	1.2	S	3.1	1.8	1.6	1.5	1.8	3.8	3.1	1.9	2.0	1.9	4.8	2.5	1.3	1.2	1.2	1.9	3.9	4.1	3.5	3.2	1.9	2.0	4.8	2.4
4	1.5	S	1.6	2.4	3.1	2.2	1.8	3.4	4.6	3.3	1.8	2.7	2.7	3.4	1.7	1.6	1.5	1.3	1.3	1.1	1.2	1.3	1.3	1.3	4.6	2.1
5	1.4	S	1.8	1.5	1.3	1.1	2.3	2.0	1.8	1.6	1.6	1.8	2.0	1.8	1.7	2.1	2.3	2.1	1.6	1.6	1.6	1.3	1.3	1.6	2.3	1.7
6	1.7	S	1.9	2.3	2.1	2.0	1.5	2.1	3.2	9.4	10.5	6.7	5.8	2.7	1.6	1.3	1.6	1.6	1.2	1.1	1.0	1.1	1.1	1.1	10.5	2.8
7	1.1	S	1.5	1.9	1.3	1.3	1.3	1.4	1.6	2.0	2.2	2.3	2.4	1.9	1.5	1.5	1.4	1.5	1.4	1.4	1.4	1.4	1.5	1.5	2.4	1.6
8	1.5	S	1.5	1.4	1.3	1.3	1.4	1.4	1.5	2.2	2.9	1.9	2.0	2.6	5.8	5.9	4.2	2.6	1.6	1.8	1.4	1.2	1.1	1.1	5.9	2.2
9	1.2	S	1.3	1.3	1.3	2.0	2.4	2.0	1.3	1.2	1.2	1.0	1.2	1.1	1.6	1.4	2.3	1.5	1.3	1.3	1.3	1.1	1.1	1.1	2.4	1.4
10	1.2	S	2.2	1.4	1.8	4.1	4.5	2.9	2.5	1.6	1.3	1.3	1.4	1.4	1.4	1.6	1.4	1.5	1.7	2.1	3.8	2.8	2.4	1.9	4.5	2.1
11	1.8	S	3.8	2.8	8.2	4.6	4.3	4.8	4.3	2.8	1.5	2.2	2.9	6.6	4.6	1.8	1.5	1.3	2.5	2.1	2.3	2.0	1.6	1.5	8.2	3.1
12	1.5	S	1.4	1.5	1.5	1.4	1.5	1.3	1.5	1.6	1.6	1.7	1.4	1.5	1.5	1.4	1.4	1.3	1.3	1.3	1.2	1.3	1.4	1.3	1.7	1.4
13	1.6	S	2.7	3.3	2.5	3.3	2.8	4.0	1.4	1.2	1.2	1.1	1.1	1.1	1.0	1.2	1.1	1.1	1.2	1.3	1.2	1.2	1.2	1.2	4.0	1.7
14	1.2	S	2.5	8.3	2.4	2.7	1.4	1.3	4.9	3.7	1.2	1.2	1.4	1.2	1.2	1.7	3.0	1.4	1.3	1.2	1.3	1.2	1.6	1.7	8.3	2.1
15	1.3	S	1.4	1.4	1.4	1.3	1.5	2.3	2.3	2.0	1.9	1.8	1.7	1.6	1.8	2.0	2.4	2.2	1.6	1.5	1.7	1.7	1.7	1.7	2.4	1.8
16	1.8	S	1.7	1.4	1.7	1.7	1.7	1.6	1.6	1.6	1.6	1.7	1.6	1.6	1.7	1.9	1.6	1.7	1.5	1.5	1.6	1.6	1.8	1.9	1.6	2.0
17	2.1	S	2.2	1.7	1.9	1.6	1.8	1.9	1.6	1.6	1.9	1.9	1.6	1.5	1.5	3.6	1.4	2.8	3.6	3.0	1.8	1.4	1.8	1.5	3.6	2.0
18	1.4	S	3.3	2.7	2.2	3.2	2.2	2.1	1.4	2.2	1.1	1.9	1.0	2.9	1.0	1.0	1.1	1.3	0.9	0.8	0.8	1.0	1.0	0.9	3.3	1.6
19	1.4	S	2.0	2.1	1.6	3.4	5.5	7.3	12.6	8.3	5.3	1.3	4.7	2.2	1.3	1.1	2.1	2.6	2.4	1.1	1.0	0.9	1.0	0.9	1.26	3.1
20	0.9	S	0.9	1.1	1.2	1.2	1.1	1.5	1.1	1.4	4.7	3.2	1.1	2.0	1.1	1.1	0.9	1.2	1.0	1.0	1.1	1.0	1.0	1.0	4.7	1.4
21	1.0	S	1.2	1.1	1.2	1.3	1.1	1.1	1.2	3.6	1.8	1.2	1.3	1.2	1.3	1.4	2.5	1.8	1.7	3.6	0.9	0.9	1.3	1.5	3.6	1.5
22	2.0	S	1.8	1.4	1.3	1.2	1.3	1.1	0.8	0.8	1.1	0.9	0.9	0.9	0.9	1.0	1.1	0.9	1.3	1.2	1.1	1.0	1.1	0.9	2.0	1.1
23	0.9	S	0.7	0.9	1.3	1.0	1.4	1.4	1.6	C	C	C	C	C	1.0	0.9	0.9	0.7	1.0	1.4	0.7	1.2	1.5	3.8	3.8	1.2
24	3.1	S	4.1	5.1	3.5	1.1	3.3	4.4	5.4	1.6	0.7	0.8	0.9	0.8	0.7	0.8	0.8	0.9	0.9	0.8	0.8	0.9	0.9	5.4	1.9	
25	1.0	S	1.1	1.5	1.6	1.6	1.3	1.2	1.2	1.1	1.1	1.1	1.0	1.1	1.1	1.1	1.1	1.1	1.1	1.3	0.8	0.9	1.6	1.7	1.7	1.2
26	1.4	S	1.2	1.6	1.9	2.2	2.1	7.1	5.3	4.4	2.5	1.0	0.8	0.8	0.8	1.1	1.1	1.1	1.3	2.3	2.0	1.3	1.1	7.1	2.0	
27	1.0	S	1.6	1.3	1.7	2.9	7.1	9.4	4.2	4.7	3.3	4.1	6.4	5.0	3.0	1.1	1.7	1.2	1.3	1.3	1.4	1.0	1.4	9.4	2.9	
28	1.8	S	2.8	2.8	1.7	1.3	1.9	2.9	4.2	5.8	4.3	1.4	1.9	1.7	1.3	1.5	1.3	1.4	1.5	1.9	1.7	2.0	2.2	5.8	2.2	
29	1.8	S	1.6	1.4	1.4	1.5	1.3	1.2	1.4	1.4	1.2	1.2	1.5	1.3	1.4	1.7	1.5	1.6	1.0	1.0	1.2	1.3	1.1	1.2	1.8	1.3
30	1.0	S	1.7	1.7	1.5	1.3	1.2	1.2	1.5	1.3	1.3	1.4	1.7	1.5	1.6	1.5	1.6	2.2	1.5	1.5	1.4	1.5	1.5	1.5	2.2	1.5
Hourly Max			3.1	-	4.1	8.3	8.2	4.6	7.1	9.4	12.6	9.4	10.5	6.7	6.4	6.6	5.8	5.9	4.2	3.1	3.9	4.1	3.8	3.2	3.0	3.8
Hourly Average			1.5	-	2.0	2.1	2.0	1.9	2.2	2.7	2.8	2.8	2.3	1.9	2.2	1.7	1.6	1.6	1.7	1.6	1.7	1.5	1.4	1.4	1.5	

S = SPAN C = CALIBRATION

Daily 1-hour SO<sub>2</sub> Maximums (ppb) at Trailer



## Lagoon PM<sub>2.5</sub> ( $\mu\text{g}/\text{m}^3$ ) – April 2018

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	10.9	14.4	9.8	6.9	5.1	4.0	6.3	7.3	4.4	2.6	15.5	10.1	5.8	7.3	8.4	6.9	6.5	5.8	5.8	3.0	4.4	8.0	7.3	6.5	15.5	7.2
2	4.4	4.7	5.5	4.7	5.1	5.1	3.7	2.3	1.5	4.1	4.8	5.1	5.4	3.7	3.7	3.0	3.0	4.7	3.0	4.4	4.0	2.1	5.1	8.7	8.7	4.2
3	7.3	7.3	8.0	9.4	6.9	8.7	9.1	8.0	11.2	9.1	7.3	9.4	8.0	6.2	6.2	3.0	0.4	3.3	5.1	9.1	13.0	12.3	10.9	10.9	13.0	7.9
4	16.3	13.4	16.2	13.7	13.7	18.8	17.7	12.3	12.6	12.3	8.3	5.5	3.3	4.0	6.7	10.9	16.6	17.3	11.6	14.8	10.5	15.5	8.7	4.7	18.8	11.9
5	5.8	11.6	12.3	11.6	6.4	3.3	6.5	5.5	4.0	7.6	6.9	3.6	4.7	5.1	4.4	6.9	6.2	7.6	5.5	7.3	8.3	7.6	6.2	6.5	12.3	6.7
6	8.0	8.7	8.7	10.9	10.9	8.3	8.3	6.5	9.1	9.4	19.5	18.0	19.8	13.0	10.5	11.2	9.8	10.1	10.9	11.6	9.1	10.1	8.0	9.8	19.8	10.8
7	9.1	14.8	10.1	11.6	21.1	7.3	9.4	10.3	9.8	8.3	15.8	11.6	7.6	9.8	7.3	5.5	6.2	7.8	10.1	9.1	6.9	5.1	6.9	21.1	9.6	
8	5.5	8.3	8.7	8.0	7.6	7.3	7.8	9.4	7.3	10.1	13.4	11.9	10.1	11.9	10.1	13.0	11.6	8.3	10.9	13.4	9.4	12.3	12.3	13.4	10.1	
9	13.7	19.9	20.2	16.6	11.6	7.3	5.1	5.5	4.0	2.9	3.3	4.0	0.4	1.2	3.0	4.0	3.3	3.3	4.0	4.0	3.3	1.2	0.1	0.8	20.2	5.9
10	1.9	4.7	4.4	3.3	3.0	3.3	0.4	0.0	1.9	4.7	4.4	3.6	2.2	1.9	6.5	10.9	17.0	11.2	13.0	9.5	9.1	8.0	5.1	6.2	17.0	5.7
11	5.8	11.6	6.2	0.0	0.1	1.5	1.9	2.2	3.7	3.3	0.1	1.2	2.2	5.8	5.5	0.9	0.4	1.6	1.9	4.4	5.8	6.2	10.1	13.0	13.0	4.0
12	36.0	27.7	17.0	17.3	17.0	17.0	13.7	12.7	9.8	10.1	7.8	6.2	4.0	4.0	4.0	5.1	4.0	6.8	7.6	10.9	10.1	8.0	11.9	11.2	36.0	11.7
13	11.9	11.9	15.2	13.0	10.9	10.9	6.9	5.5	4.4	2.2	0.4	0.8	3.3	3.0	1.5	1.2	1.5	1.5	3.0	3.0	4.0	3.7	1.2	0.1	15.2	5.0
14	4.0	3.3	2.6	4.9	5.5	6.9	5.1	2.6	1.9	2.9	3.7	3.0	2.2	2.6	6.2	3.0	2.6	4.7	5.8	4.7	7.6	5.5	3.7	4.7	7.6	4.2
15	5.1	4.0	1.9	1.5	4.4	3.3	4.7	4.8	8.7	5.5	2.6	6.2	5.1	3.7	1.9	0.8	4.0	4.4	6.9	6.4	7.6	11.2	13.4	10.9	13.4	5.4
16	10.1	11.9	11.2	9.8	10.5	9.8	8.0	6.9	4.4	4.7	5.4	4.4	4.4	5.1	7.6	7.6	9.4	5.8	4.0	8.7	7.3	4.4	4.0	3.0	11.9	7.0
17	7.6	6.9	5.8	5.8	3.3	1.5	3.3	4.7	4.7	4.4	6.5	5.1	2.2	0.8	1.5	2.2	4.4	5.1	4.0	2.6	4.4	4.0	2.2	0.8	7.6	3.9
18	2.2	5.1	2.6	3.3	3.7	5.5	5.8	5.8	4.0	8.3	6.5	3.3	2.2	0.1	1.5	2.9	1.2	0.1	3.3	5.5	3.5	1.9	5.5	4.4	8.3	3.7
19	3.0	3.3	5.5	6.4	4.7	3.7	6.2	7.6	9.8	7.6	4.7	3.3	5.1	6.2	5.1	4.7	3.7	4.4	4.4	3.0	3.7	5.4	5.8	4.4	9.8	5.1
20	4.0	2.2	0.4	1.2	0.8	6.9	5.8	7.3	6.5	7.3	4.7	2.6	2.6	4.0	4.7	3.7	4.4	6.5	6.2	6.2	7.6	6.5	3.0	7.6	4.5	
21	3.3	3.6	6.5	5.1	6.2	6.2	5.8	4.8	3.5	1.5	5.1	5.8	2.2	0.0	3.7	5.1	4.7	1.2	0.4	6.2	4.1	0.8	6.5	3.7	13.0	3.2
22	0.8	2.2	1.2	1.5	3.0	6.2	5.8	4.4	3.3	2.2	0.8	2.2	1.5	1.5	3.7	2.6	2.5	2.6	0.8	2.6	3.7	3.3	5.5	13.0	7.6	4.1
23	7.6	4.3	5.1	4.7	5.5	4.0	3.0	3.7	4.7	4.0	3.7	4.4	3.3	3.7	3.3	3.3	4.4	2.2	1.2	3.0	4.4	5.1	3.7	5.1	7.6	4.1
24	5.8	8.0	6.2	5.1	4.4	4.4	5.5	4.7	5.6	5.1	4.0	3.7	4.7	4.7	3.3	5.8	9.1	6.9	5.8	7.3	7.6	6.9	5.5	4.4	9.1	5.6
25	7.6	6.9	9.1	7.6	7.3	9.4	10.9	7.3	10.1	9.8	9.8	8.7	C	C	8.0	7.3	6.2	5.1	7.6	10.9	8.3	7.9	14.4	14.4	8.6	
26	11.6	7.6	10.5	8.7	5.1	9.0	6.2	5.5	10.3	10.5	7.6	5.8	5.8	3.7	1.9	0.0	1.2	5.5	3.3	3.7	5.8	6.5	4.7	9.1	11.6	6.2
27	6.9	4.7	5.5	27.4	11.2	7.6	9.4	6.5	9.8	7.3	6.2	10.8	5.5	1.9	2.9	3.7	5.4	5.1	6.2	4.4	10.1	7.3	6.9	27.4	7.5	
28	8.7	9.4	8.0	8.7	10.5	8.0	6.2	7.1	7.3	10.9	10.5	11.9	14.1	9.1	8.6	6.5	8.7	7.3	6.2	10.8	10.8	8.7	11.6	11.2	14.1	9.2
29	13.0	16.9	10.8	11.6	8.0	6.2	3.7	5.1	4.8	4.4	2.2	0.0	0.7	0.4	0.0	3.0	4.0	5.1	4.4	3.3	4.7	6.5	6.9	6.2	16.9	5.5
30	4.0	4.0	5.8	4.1	4.0	6.5	5.1	4.0	6.9	6.2	5.8	3.7	2.6	1.9	0.4	0.0	0.8	1.5	3.6	1.9	1.2	4.0	4.0	3.7	6.9	3.6
Hourly Max	36.0	27.7	20.2	27.4	21.1	18.8	17.7	12.7	12.6	12.3	19.5	18.0	19.8	13.0	10.5	13.0	17.0	17.3	13.0	14.8	13.4	15.5	13.4	14.4		
Hourly Average	8.1	8.8	8.0	8.1	7.2	6.9	6.6	6.0	6.3	6.3	6.2	6.0	5.1	4.4	4.6	4.8	5.5	5.5	5.4	6.3	6.					

## Lagoon PM<sub>10</sub> ( $\mu\text{g}/\text{m}^3$ ) – April 2018

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	28.8	27.7	22.3	9.4	8.7	9.4	9.4	19.6	16.8	17.2	29.0	12.8	11.4	29.6	60.9	54.8	56.1	32.4	35.1	31.8	21.6	19.6	28.8	28.4	60.9	25.9
2	22.3	16.8	16.2	24.3	27.0	21.6	0.0	1.9	18.2	36.5	29.7	31.1	20.2	31.1	12.1	13.5	8.9	6.7	8.7	7.4	2.6	4.7	10.1	11.4	36.5	16.0
3	12.9	16.2	21.6	17.5	10.7	6.0	16.2	23.6	57.5	37.8	35.1	58.8	25.0	25.7	10.7	9.4	7.4	4.8	19.6	20.2	23.6	22.6	34.5	41.2	58.8	23.3
4	39.9	26.3	16.8	33.8	37.8	30.4	24.3	25.0	37.8	58.2	60.2	35.2	26.3	28.7	28.3	31.8	30.4	49.4	51.4	35.8	29.0	18.2	17.5	12.8	60.2	32.7
5	20.9	21.6	26.3	14.1	11.4	9.4	6.7	16.2	23.6	18.9	18.9	12.8	18.2	7.4	10.7	14.1	15.5	26.3	22.3	12.8	35.8	19.6	14.8	26.3	35.8	17.7
6	44.6	32.4	22.3	29.0	37.8	45.3	37.2	31.8	36.5	39.2	38.5	58.8	35.1	27.7	12.8	17.5	16.2	21.6	22.9	16.2	10.5	14.8	11.4	14.8	58.8	28.1
7	13.5	13.5	14.1	25.0	26.3	14.8	27.7	26.3	20.9	26.3	25.0	35.1	20.9	16.8	14.2	11.4	4.8	7.4	28.4	77.1	92.7	32.4	41.2	39.9	92.7	27.3
8	14.8	24.3	18.2	15.5	8.7	6.7	4.0	18.6	15.5	29.0	31.7	21.6	20.9	12.1	15.5	20.9	16.2	14.2	16.8	18.2	20.9	16.8	21.6	26.3	31.7	17.9
9	19.6	28.4	33.1	27.7	31.1	12.8	12.8	12.8	13.5	11.8	35.8	43.3	8.0	29.5	12.1	35.1	24.3	16.8	12.8	6.1	6.0	13.5	10.1	6.7	43.3	19.3
10	8.0	5.9	5.3	8.7	8.0	6.7	9.1	8.7	20.9	36.5	25.0	8.7	14.8	20.9	27.0	44.4	71.7	50.7	31.8	18.9	32.4	37.8	25.0	18.2	71.7	22.7
11	18.6	16.2	6.7	7.4	8.0	4.0	4.0	8.7	7.4	5.3	23.6	15.5	27.0	27.0	26.3	31.7	16.8	23.6	10.1	12.1	8.0	5.3	24.3	19.6	31.7	14.9
12	46.6	46.0	33.1	29.0	28.4	28.4	27.1	25.0	21.6	24.3	17.5	29.7	37.8	19.6	12.1	10.7	4.6	2.6	8.0	11.4	16.8	11.4	18.2	18.2	46.6	22.0
13	18.2	32.4	20.2	19.6	17.5	12.1	9.4	6.7	18.9	12.8	12.1	7.4	8.0	10.7	16.8	12.1	11.4	10.2	11.4	6.7	2.6	8.7	8.0	5.9	32.4	12.5
14	6.7	1.9	6.0	19.6	19.6	14.3	12.9	20.2	12.1	33.8	37.8	0.0	4.0	31.1	3.3	14.8	16.8	12.1	10.7	7.4	26.3	6.7	4.8	20.9	37.8	14.3
15	10.1	7.4	4.1	6.0	6.7	7.4	10.1	15.5	34.5	24.3	18.4	11.6	10.7	10.1	8.6	7.4	6.0	8.7	20.9	11.4	10.8	15.5	19.0	15.5	34.5	12.5
16	21.6	24.3	20.1	22.9	14.1	10.1	6.0	5.3	8.7	11.8	6.0	4.0	8.7	7.4	16.2	12.8	16.2	9.0	8.7	4.7	7.4	8.7	6.0	5.3	24.3	11.1
17	18.2	24.3	21.6	24.3	17.5	27.0	46.7	68.3	47.3	64.3	48.0	46.7	29.7	10.7	11.4	24.2	50.7	23.6	35.1	15.5	5.3	4.6	5.3	8.7	68.3	28.3
18	14.8	2.6	5.3	7.4	4.8	5.3	10.1	22.3	29.7	73.1	37.2	6.0	30.4	18.9	25.7	11.4	18.9	2.6	6.0	18.2	11.4	4.7	4.7	12.8	73.1	16.0
19	12.8	15.5	13.5	8.7	8.0	8.7	9.4	39.2	48.7	43.9	36.5	56.1	33.1	40.8	64.9	16.2	36.5	35.8	39.2	33.8	4.6	3.3	5.8	17.5	64.9	26.4
20	20.9	15.5	14.0	12.1	20.8	25.7	22.5	77.8	90.7	60.2	48.2	47.8	53.4	29.7	55.4	26.3	23.6	16.8	13.5	10.1	7.4	17.5	8.0	7.4	90.7	30.2
21	18.9	14.8	16.2	10.7	21.6	11.4	22.3	27.0	7.4	23.6	66.4	45.3	19.6	0.0	14.8	31.7	22.9	35.8	15.5	18.2	19.6	6.7	6.7	5.3	66.4	20.1
22	7.4	8.7	5.3	2.6	3.3	9.4	14.8	12.8	27.0	14.1	19.5	21.6	0.0	4.0	9.4	8.7	8.7	6.7	1.9	1.3	5.3	8.0	14.8	72.4	72.4	12.0
23	6.0	9.4	12.8	9.4	14.8	17.5	9.1	20.2	19.5	25.0	42.6	37.8	31.1	12.1	17.5	18.7	16.2	19.5	14.1	15.4	2.6	3.4	3.3	6.0	42.6	16.0
24	18.2	6.7	10.2	12.8	10.1	11.4	19.6	30.4	41.9	49.3	73.1	45.6	44.4	70.3	29.7	39.9	42.5	21.6	18.9	14.1	8.0	4.6	10.1	13.5	73.1	26.9
25	11.4	16.8	15.5	17.5	25.0	26.3	24.6	30.6	43.9	69.7	35.8	27.0	C	C	31.1	33.9	31.8	20.9	21.6	20.2	14.8	25.6	61.6	69.7	28.8	
26	37.9	31.8	16.2	16.2	21.6	15.7	27.0	24.3	94.0	71.7	74.4	54.8	38.5	16.2	12.1	8.9	25.6	18.9	12.8	49.3	50.0	35.1	11.8	94.0	32.6	
27	14.1	16.8	33.8	29.7	30.4	33.8	24.3	35.8	62.9	55.4	48.0	49.3	22.3	54.8	24.3	18.9	14.8	22.9	21.3	28.7	22.3	56.1	12.1	21.6	62.9	31.4
28	17.5	17.5	7.3	10.7	12.8	17.5	16.2	16.2	26.3	46.7	46.8	47.3	C	C	C	C	C	C	C	C	C	C	C	-	-	
29	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	-	-	
30	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	-	-	
Hourly Max	46.6	46.0	33.8	33.8	37.8	45.3	46.7	77.8	94.0	73.1	74.4	58.8	53.4	70.3	64.9	54.8	71.7	50.7	51.4	77.1</						

## Lagoon TSP ( $\mu\text{g}/\text{m}^3$ ) – April 2018

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	29.2	30.6	29.2	8.5	15.4	9.9	7.1	16.8	11.3	11.2	16.8	19.4	15.4	33.1	47.2	40.3	32.0	23.7	16.8	15.4	8.5	9.9	9.9	17.0	47.2	19.8
2	0.0	19.6	7.1	8.5	8.5	9.9	12.6	3.0	27.8	43.0	25.1	13.8	12.6	8.5	5.7	5.7	9.9	11.3	8.5	18.2	0.2	15.4	9.9	11.3	43.0	12.3
3	22.3	15.4	14.0	27.8	11.3	11.3	9.9	20.9	87.3	41.7	30.6	70.7	27.8	41.7	19.6	3.0	3.0	4.3	33.4	26.5	32.0	34.8	47.2	58.3	87.3	28.9
4	44.4	36.1	20.9	21.2	45.8	30.6	20.9	29.2	37.5	66.5	67.9	34.8	34.8	46.1	43.0	43.3	42.9	50.0	36.1	27.8	20.9	12.6	23.7	15.4	67.9	35.5
5	16.8	30.6	26.5	27.9	7.1	7.1	9.9	9.9	14.0	18.2	14.0	7.1	7.1	5.7	4.1	7.1	20.9	34.8	32.0	25.1	48.6	23.7	25.1	14.0	48.6	18.2
6	25.1	7.1	9.9	32.0	34.8	22.3	32.0	19.6	25.1	44.4	34.8	62.4	36.1	20.9	18.2	20.9	19.6	37.5	26.5	28.3	15.4	7.1	18.2	7.1	62.4	25.2
7	8.5	20.9	11.3	25.1	29.2	12.6	24.5	38.9	9.9	15.4	25.1	19.6	25.1	18.2	12.6	9.9	9.9	8.5	24.9	51.3	34.8	12.6	9.9	18.2	51.3	19.9
8	16.8	25.1	9.9	11.3	9.9	7.1	8.5	9.9	8.5	32.0	20.9	20.9	20.9	13.9	16.9	15.4	15.4	8.5	15.4	16.8	22.3	26.5	22.3	20.9	32.0	16.5
9	22.3	36.1	30.6	23.7	19.4	5.7	8.5	11.3	14.0	11.6	36.1	49.9	8.5	51.3	23.7	40.3	40.3	22.3	11.3	7.1	19.6	19.6	8.5	5.7	51.3	22.0
10	16.8	15.4	0.0	15.4	17.1	8.5	8.5	9.9	15.4	46.5	27.8	3.0	5.7	16.8	29.2	55.5	90.0	57.2	37.5	22.3	47.2	64.9	20.9	26.1	90.0	27.4
11	16.8	16.8	5.7	5.7	5.7	7.1	6.3	6.4	5.7	8.5	19.6	26.5	25.1	38.0	25.1	36.1	27.9	33.4	14.0	26.1	9.9	14.0	18.2	21.2	38.0	17.5
12	43.0	41.7	27.8	32.0	18.2	23.7	18.2	26.5	18.2	19.6	22.3	32.0	26.5	7.1	3.0	5.7	8.5	4.3	4.0	14.2	7.1	7.1	14.0	8.5	43.0	18.0
13	17.1	30.6	18.2	14.0	19.6	3.0	1.6	4.3	8.5	5.7	3.0	0.2	3.0	7.1	16.8	15.4	8.5	25.1	15.4	8.5	8.5	15.4	5.7	5.7	30.6	10.9
14	1.6	15.4	15.4	22.3	23.7	16.8	20.9	18.2	8.5	44.4	48.6	0.2	0.2	32.0	9.9	7.1	5.7	17.1	14.0	8.5	20.9	5.7	6.0	15.4	48.6	15.8
15	7.1	8.5	9.9	8.5	7.1	4.3	7.1	14.0	44.4	15.4	12.6	11.4	7.1	8.5	11.7	11.3	8.5	23.7	20.9	16.8	8.5	23.7	17.2	11.3	44.4	13.3
16	11.3	26.5	15.4	15.4	7.1	9.9	7.1	5.7	11.3	8.5	4.3	4.3	5.7	7.1	8.6	9.9	8.5	8.5	8.5	5.7	4.3	5.7	1.6	16.8	26.5	9.1
17	9.9	9.9	26.5	20.9	18.2	26.5	49.2	83.1	61.0	76.2	59.6	48.6	43.7	4.3	18.2	23.7	79.0	37.5	40.3	19.6	19.6	9.9	8.5	16.8	83.1	33.8
18	5.7	8.5	8.5	5.7	7.1	9.9	18.2	27.8	26.5	92.5	48.6	12.6	37.5	11.3	36.1	11.3	17.2	7.1	14.0	13.9	25.1	12.6	9.9	8.5	92.5	19.8
19	8.5	9.9	4.3	3.9	8.5	7.1	11.3	37.5	52.5	49.9	43.0	58.2	34.8	52.7	76.2	25.1	43.0	45.8	50.0	50.0	20.9	14.3	12.6	15.4	76.2	30.6
20	25.1	14.0	16.8	8.5	25.1	30.6	44.4	99.7	130.1	70.7	74.8	65.1	63.8	34.7	73.4	18.2	32.0	32.0	20.9	8.6	11.3	32.0	14.0	12.6	130.1	39.9
21	7.1	5.7	15.4	14.0	18.2	11.3	16.8	27.8	3.0	23.7	101.1	49.4	23.7	4.4	7.1	38.9	37.5	37.5	14.4	26.3	25.1	5.7	6.0	5.7	101.1	21.9
22	5.7	7.1	7.1	4.3	4.1	8.5	19.3	5.7	7.1	7.1	17.2	14.0	9.9	3.0	3.0	7.1	7.1	7.1	4.0	16.8	14.0	12.6	26.5	83.1	12.6	
23	16.7	8.5	16.8	11.3	14.3	9.9	9.9	14.0	22.3	30.6	56.9	45.8	32.0	14.0	19.5	20.9	9.9	9.9	15.4	8.5	18.2	12.6	11.3	8.5	56.9	18.2
24	18.2	8.5	9.9	23.7	23.6	19.4	24.9	36.1	59.6	65.6	96.9	52.7	55.5	80.3	29.2	44.4	49.9	19.5	26.3	19.5	15.4	14.0	14.0	15.4	96.9	34.3
25	11.2	11.3	19.6	11.2	52.7	51.3	36.1	34.8	70.7	R	R	I	C	C	C	40.3	47.2	45.8	26.5	32.0	58.3	36.1	52.7	110.8	110.8	41.6
26	47.2	58.3	25.1	15.4	27.8	27.8	30.6	33.0	135.6	103.8	124.5	69.3	59.6	4.3	7.1	15.4	38.9	37.5	19.5	90.0	94.2	61.0	30.6	34.8	135.6	49.6
27	16.8	16.8	34.8	27.9	34.7	41.7	34.8	40.5	88.6	73.4	56.9	56.9	36.1	105.2	30.6	20.9	29.2	34.7	32.0	38.9	27.8	138.4	16.8	20.9	138.4	44.0
28	20.9	15.4	12.6	22.3	18.2	22.3	18.2	18.2	26.5	65.1	59.6	38.9	C	C	C	C	C	C	C	C	C	C	C	-	-	
29	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	-	-	
30	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	-	-	
Hourly Max	47.2	58.3	34.8	32.0	52.7	51.3	49.2	99.7	135.6	103.8	124.5	70.7	63.8	105.2	76.2	55.5	90.0	57.2	50.0	90.0	94.2	138.4	52.7	110.8</		

## Lagoon Temperature (°C) – April 2018

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	-11.5	-10.8	-10.9	-11.6	-11.8	-11.5	-11.3	-11.1	-9.8	-6.5	-5.4	-5.5	-5.9	-6.4	-6.9	-7.5	-7.8	-8.4	-8.8	-9.5	-10.1	-10.4	-10.7	-11.1	-5.4	-9.2
2	-11.4	-11.5	-11.6	-11.9	-12.2	-13.0	-13.1	-12.8	-11.8	-10.0	-8.3	-6.6	-5.4	-4.4	-3.4	-3.7	-3.5	-4.0	-5.4	-7.5	-9.2	-11.3	-13.6	-14.1	-3.4	-9.2
3	-13.1	-13.2	-12.6	-12.8	-13.6	-13.1	-12.4	-12.3	-10.5	-6.8	-3.1	-0.8	-0.1	0.1	1.1	1.5	1.2	-0.2	-3.2	-4.5	-5.5	-6.4	-7.2	-7.7	1.5	-6.5
4	-9.3	-10.3	-9.7	-8.8	-7.9	-8.6	-8.7	-7.2	-4.4	-1.5	1.0	1.8	2.6	3.0	1.3	-1.6	-3.6	-5.6	-6.4	-6.9	-7.1	-7.3	-7.4	-7.7	3.0	-5.0
5	-8.3	-8.7	-9.1	-9.9	-10.6	-10.9	-11.2	-11.3	-11.0	-10.2	-9.2	-7.9	-7.1	-6.7	-6.4	-6.3	-6.4	-7.0	-8.1	-9.7	-10.7	-11.1	-11.7	-12.4	-6.3	-9.2
6	-12.9	-13.2	-13.6	-13.9	-14.1	-14.2	-14.2	-13.9	-13.0	-10.8	-10.1	-8.9	-6.8	-5.8	-5.1	-4.9	-5.6	-7.2	-9.0	-10.2	-11.0	-11.3	-11.4	-12.1	-4.9	-10.6
7	-12.8	-12.0	-11.4	-11.9	-13.1	-13.4	-14.1	-13.5	-11.9	-10.1	-8.3	-6.1	-4.6	-4.2	-5.0	-6.6	-7.9	-8.7	-9.8	-10.2	-10.3	-10.4	-10.4	-10.3	-4.2	-9.9
8	-10.3	-10.2	-10.2	-10.6	-11.1	-10.6	-9.5	-8.2	-6.3	-4.7	-3.4	-1.9	-1.1	-0.4	0.4	0.6	-0.2	-1.3	-2.4	-3.5	-4.4	-5.0	-5.2	0.6	-5.4	
9	-5.4	-5.0	-4.8	-3.4	-2.5	0.3	1.9	4.6	6.8	8.5	9.4	9.6	9.4	9.9	9.9	9.7	9.7	9.4	8.9	7.9	7.5	7.0	6.7	5.9	9.9	5.1
10	2.9	3.7	4.6	2.4	3.0	3.1	2.6	3.2	4.5	6.0	7.2	8.3	9.6	11.0	11.4	10.7	9.8	9.1	8.7	7.4	4.2	3.1	2.1	3.0	11.4	5.9
11	4.0	3.6	3.1	3.1	2.7	1.9	2.1	2.3	2.3	3.2	5.0	6.0	7.5	8.9	9.1	9.0	8.8	8.1	5.8	3.7	2.3	1.2	0.2	-1.1	9.1	4.3
12	-1.6	-1.9	-2.0	-2.0	-1.9	-1.8	-2.1	-2.3	-1.9	-1.7	-1.5	-1.5	-1.4	-1.0	-0.3	-0.2	-0.5	-1.2	-1.6	-2.2	-2.5	-2.7	-2.8	-2.7	-0.2	-1.7
13	-2.2	-1.6	-1.2	-0.5	0.2	0.7	1.1	2.3	4.3	5.0	5.3	6.0	6.7	7.0	6.7	7.0	7.1	6.6	6.2	6.0	5.8	5.8	5.4	5.3	7.1	4.0
14	5.3	5.2	5.0	5.3	3.5	4.2	6.1	6.3	6.9	6.0	4.0	6.1	6.9	4.0	5.9	5.5	5.3	4.3	3.6	3.7	3.6	3.9	3.6	2.8	6.9	4.9
15	2.4	1.9	1.2	0.9	0.7	0.3	0.0	1.5	4.2	5.3	6.2	7.1	8.4	8.3	9.0	9.4	9.0	6.8	4.2	2.5	1.9	1.7	1.3	1.1	9.4	4.0
16	1.0	1.2	0.9	0.3	-0.3	-0.6	-0.7	-0.6	-0.5	-0.1	0.5	1.5	1.5	1.3	1.5	1.6	1.6	1.6	1.3	0.7	0.4	0.4	-0.4	-0.9	1.6	0.5
17	0.2	1.1	1.8	2.2	1.9	1.7	2.0	2.1	2.9	3.7	4.6	5.4	5.6	6.3	6.7	6.8	6.3	6.2	5.4	4.6	3.4	2.8	2.4	1.7	6.8	3.7
18	1.3	0.6	0.5	0.6	0.6	0.3	0.3	2.3	3.8	4.9	5.3	6.1	6.3	6.9	7.3	7.5	7.5	7.6	7.0	5.1	2.8	1.4	0.7	-0.1	7.6	3.6
19	0.0	0.2	-0.4	-0.9	-1.5	-2.1	-2.4	-1.6	0.1	2.9	6.1	8.1	9.8	10.7	10.8	11.3	11.2	11.3	10.5	8.6	7.3	6.9	6.5	6.1	11.3	5.0
20	5.7	5.9	5.9	5.6	5.3	4.9	5.0	5.7	7.4	9.1	10.5	11.5	11.8	12.6	12.6	13.0	12.2	12.3	11.7	11.3	9.7	5.7	4.1	4.8	13.0	8.5
21	4.4	3.6	4.1	4.0	5.0	6.0	8.3	8.9	9.3	9.5	9.7	7.0	4.3	6.9	8.0	8.0	7.8	7.4	6.6	5.8	5.1	3.3	2.0	9.7	6.4	
22	1.4	1.3	1.4	1.2	0.6	0.4	0.5	2.0	3.3	4.6	5.2	6.1	6.8	7.5	8.1	8.9	9.2	8.1	6.7	5.7	3.9	1.8	0.4	9.2	4.3	
23	0.0	0.2	0.3	0.4	-0.2	-0.8	-0.5	0.1	2.0	4.9	7.4	9.2	10.5	11.7	12.6	13.3	13.6	13.5	12.8	10.7	8.2	7.9	7.0	6.0	13.6	6.3
24	4.7	3.8	2.8	2.1	1.7	1.4	1.5	2.8	6.0	9.8	12.0	14.1	15.5	16.5	16.9	17.0	16.9	16.8	16.2	14.4	11.4	10.7	10.1	8.6	17.0	9.7
25	7.3	6.9	7.0	6.1	6.9	6.5	6.3	6.8	7.6	7.6	8.0	8.4	9.9	11.5	12.9	14.2	15.1	15.3	14.7	10.6	10.6	10.3	9.5	9.3	15.3	9.6
26	8.2	7.0	5.6	4.4	3.5	3.0	3.0	3.9	6.8	10.3	13.5	16.1	17.8	19.9	21.2	22.0	22.4	22.0	20.2	17.2	14.0	9.7	6.3	6.1	22.4	11.8
27	6.5	5.6	4.9	4.1	3.4	3.0	3.4	4.6	7.1	10.9	14.8	17.6	20.3	21.6	22.6	23.1	23.2	22.5	20.2	14.8	11.4	11.1	10.1	9.9	23.2	12.4
28	8.8	7.8	6.6	5.9	5.2	5.1	4.7	6.2	9.0	12.9	17.3	19.8	22.0	22.9	22.7	22.2	21.1	20.3	18.3	16.6	15.7	14.9	14.4	22.9	14.3	
29	14.3	11.8	8.8	8.1	7.4	6.8	6.0	5.7	5.3	4.9	4.4	4.2	4.3	3.9	3.6	3.9	3.6	3.7	3.3	2.3	1.2	0.9	1.1	1.2	14.3	5.0
30	1.2	1.2	1.3	1.3	1.2	1.0	1.0	1.5	2.3	3.5	5.0	7.4	9.7	11.3	11.1	12.1	12.5	12.7	11.6	10.6	9.4	9.1	8.2	7.4	12.7	6.4
Hourly Max	14.3	11.8	8.8	8.1	7.4	6.8	8.3	8.9	9.3	12.9	17.3	19.8	22.0	22.9	22.9	23.1	23.2	22.5	20.3	18.3	16.6	15.7	14.9	14.4		
Hourly Average	-0.6	-0.9	-1.1	-1.3	-1.6	-1.7	-1.5	-0.8	0.6	2.3	3.7	4.9	5.8	6.5	6.9	6.9	6.7</td									

## Lagoon Wind Speed (km/hr) – April 2018

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	6.2	6.0	7.4	7.4	8.2	8.4	10.0	10.7	9.5	7.1	18.3	19.2	21.6	22.9	21.3	18.3	17.6	17.6	15.6	14.4	15.1	14.0	14.7	14.9	22.9	13.6
2	14.6	14.2	13.8	13.9	11.2	8.8	6.8	8.2	12.0	12.2	13.3	12.6	12.6	12.8	10.8	10.8	10.9	13.5	13.7	10.8	9.7	5.0	1.7	5.1	14.6	10.8
3	8.9	9.6	10.2	10.9	11.6	13.0	14.5	12.2	14.0	14.6	13.6	17.2	14.8	13.6	19.2	21.2	18.2	16.6	19.1	16.7	14.1	13.1	10.4	5.1	21.2	13.8
4	2.7	6.8	10.8	12.3	14.2	11.2	11.5	12.5	12.8	19.1	20.9	21.0	19.1	20.2	24.4	27.2	22.8	21.0	18.8	13.7	12.4	14.0	12.9	12.9	27.2	15.6
5	13.8	16.4	15.7	17.8	12.9	12.2	14.9	17.5	18.3	17.6	17.5	16.5	17.2	17.9	17.9	17.4	16.5	17.6	17.2	20.5	14.4	13.9	15.2	15.9	20.5	16.4
6	14.3	15.7	18.0	16.9	14.6	14.2	15.0	11.2	8.1	2.9	10.9	15.1	17.4	19.6	21.0	23.4	23.8	24.9	22.4	20.1	16.4	11.1	8.1	4.1	24.9	15.4
7	3.4	2.1	6.0	7.2	10.1	9.3	9.2	14.0	13.3	17.4	20.0	22.1	23.1	24.9	25.4	27.7	26.2	25.7	23.9	20.5	19.2	16.9	18.0	12.4	27.7	16.6
8	7.2	5.5	4.3	2.7	3.0	3.1	4.3	6.4	6.9	5.6	9.5	15.2	15.6	18.2	18.6	18.5	18.0	17.0	15.2	8.8	10.4	8.0	3.0	2.7	18.6	9.5
9	4.8	6.2	9.7	12.5	12.0	10.7	11.6	16.6	21.6	23.0	23.5	26.0	22.4	21.7	22.3	25.3	25.2	20.9	19.9	17.8	19.1	19.7	19.5	10.7	26.0	17.6
10	3.6	7.1	10.9	5.6	12.1	14.0	12.1	13.9	11.9	16.8	23.8	21.6	20.3	17.3	18.4	23.9	20.7	19.2	15.9	11.4	6.9	7.6	5.8	5.6	23.9	13.6
11	13.5	11.4	13.5	13.0	13.7	15.8	7.4	10.2	10.8	11.6	15.8	15.7	17.9	16.1	16.4	19.1	18.8	14.2	18.6	15.5	12.4	12.5	14.0	16.5	19.1	14.4
12	15.7	14.2	12.6	11.0	10.8	10.5	14.1	14.7	14.3	17.7	17.3	17.5	17.5	19.2	18.4	17.3	17.3	14.4	14.3	16.5	13.9	9.9	6.8	3.6	19.2	14.1
13	8.8	11.6	14.3	16.8	19.1	16.1	10.9	10.2	15.9	23.8	24.8	29.7	26.5	26.4	30.6	27.0	38.0	43.7	41.6	46.2	52.1	48.6	50.3	48.1	52.1	28.4
14	35.4	31.0	24.7	23.1	26.8	19.8	25.6	24.5	24.9	30.9	25.5	23.9	26.3	19.4	13.7	22.3	16.5	15.0	7.8	12.4	17.5	23.7	23.7	10.2	35.4	21.9
15	9.1	9.5	7.0	5.9	3.1	2.0	5.4	8.8	14.0	12.5	11.7	11.4	8.8	5.5	5.1	10.2	14.2	20.4	18.3	10.6	14.8	14.9	14.1	13.5	20.4	10.5
16	12.6	11.2	9.9	10.2	14.7	13.0	11.1	9.0	5.3	8.1	7.7	8.6	15.3	16.3	15.9	15.7	15.0	15.9	12.4	10.2	10.5	8.1	4.6	7.1	16.3	11.2
17	12.9	17.0	19.3	21.5	20.7	19.9	22.6	21.4	22.9	26.6	27.4	29.6	32.6	31.0	29.3	31.1	29.5	27.2	18.7	17.3	12.2	13.1	10.9	8.1	32.6	21.8
18	8.9	9.0	12.5	14.5	10.4	8.7	6.4	10.1	17.5	20.3	22.1	19.1	19.0	18.2	20.5	20.6	21.0	19.5	16.4	9.3	7.3	9.0	10.4	10.7	22.1	14.2
19	8.9	15.0	14.1	14.8	17.5	13.4	13.9	16.5	18.2	17.1	17.0	16.3	17.7	21.9	23.5	22.3	21.6	19.4	18.4	17.5	16.3	17.8	17.3	19.2	23.5	17.3
20	16.4	19.2	23.9	18.2	10.3	13.8	18.8	14.3	18.2	19.0	15.0	17.5	21.3	24.2	24.6	22.8	16.7	17.2	15.5	15.7	9.6	4.1	6.5	11.4	24.6	16.4
21	10.8	12.4	10.4	9.1	12.5	20.0	36.7	25.0	25.6	24.3	25.7	27.7	34.1	36.5	39.8	39.2	34.4	32.8	30.1	23.4	24.6	20.3	20.9	12.7	39.8	24.5
22	8.7	8.8	10.3	6.5	10.2	15.3	14.4	17.1	22.4	20.9	17.4	17.8	16.2	15.9	16.2	16.2	12.5	8.1	12.7	12.2	6.3	1.6	1.4	1.5	22.4	12.1
23	5.7	7.3	9.2	9.1	9.5	11.2	14.7	15.9	13.8	20.4	22.3	21.4	18.6	16.6	16.3	19.9	18.6	18.4	16.9	11.3	9.9	12.4	12.4	19.7	22.3	14.6
24	17.6	14.5	11.8	14.8	12.7	16.0	13.7	14.1	23.0	27.1	29.8	28.0	32.3	28.2	31.4	30.3	27.3	28.7	27.0	13.9	8.6	10.0	8.5	7.0	32.3	19.8
25	8.2	10.1	10.2	9.9	12.5	15.1	14.3	13.4	17.5	18.0	17.9	17.9	16.3	16.3	16.8	15.0	13.7	12.7	7.8	5.3	8.6	11.3	11.8	15.0	18.0	13.1
26	17.7	20.1	20.5	20.0	18.9	17.9	18.4	17.9	16.6	16.5	15.5	15.4	11.2	7.4	9.0	10.4	7.5	10.2	12.2	19.0	6.6	3.3	2.6	6.8	20.5	13.4
27	10.9	10.7	12.7	14.7	15.7	16.6	19.8	19.5	17.4	15.9	12.0	8.2	6.5	6.9	7.2	12.0	14.3	16.1	10.5	7.3	6.7	14.6	12.0	14.6	19.8	12.6
28	18.8	17.9	20.0	18.7	22.2	22.6	20.2	22.2	20.1	19.0	14.0	19.4	14.3	16.8	17.0	21.1	22.3	19.0	18.0	12.6	11.7	13.0	13.9	17.8	22.6	18.0
29	16.9	9.2	5.4	3.6	6.4	6.3	6.6	7.9	10.5	16.4	16.9	15.2	11.3	12.4	14.0	9.9	10.2	12.6	13.3	13.8	11.7	11.1	10.0	13.3	16.9	11.0
30	9.4	8.8	7.0	4.3	8.9	9.7	8.6	4.9	9.6	11.3	12.6	12.6	14.9	17.3	17.4	15										

## Lagoon Wind Direction (°) – April 2018

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	
b	221.5	224.4	246.6	241.0	235.1	242.1	259.2	239.5	249.2	73.8	75.3	70.2	73.5	64.1	68.2	71.2	64.1	67.2	71.9	85.2	78.2	73.5	71.7	75.3	259.2	135.1	
2	80.0	71.3	65.0	57.9	59.2	65.6	76.0	63.4	58.2	50.0	55.2	52.9	61.5	63.6	60.3	54.4	59.2	53.0	60.9	98.3	68.4	61.9	91.9	258.3	258.3	72.8	
3	230.9	236.3	276.7	265.4	218.7	240.1	258.7	250.1	269.2	299.2	283.4	254.8	273.7	245.8	228.7	245.4	243.8	307.5	72.6	74.9	67.7	61.5	69.0	74.2	307.5	210.3	
4	64.0	237.3	216.8	246.2	263.0	236.1	235.8	263.5	280.6	270.7	252.6	256.1	256.0	260.6	53.9	65.2	70.7	69.5	66.5	67.0	56.3	49.2	60.8	60.3	280.6	165.0	
5	51.1	55.8	70.7	67.1	69.2	87.8	76.4	68.7	62.8	68.6	68.7	71.0	72.9	75.4	67.2	66.8	57.5	53.4	43.5	68.0	89.5	86.3	77.1	74.5	89.5	68.7	
6	73.7	71.4	61.3	56.7	64.0	57.3	62.9	51.1	48.2	59.7	49.6	55.4	59.9	69.3	78.1	67.7	61.7	62.8	62.7	71.4	75.3	75.5	58.7	75.4	78.1	63.7	
7	72.2	183.2	215.6	74.2	61.7	60.5	57.3	69.8	65.0	60.6	59.1	56.9	66.6	71.2	77.1	74.3	80.3	72.1	79.7	86.0	78.3	69.4	61.7	58.5	215.6	79.6	
8	55.4	58.3	52.9	46.7	64.3	86.9	88.8	73.8	62.5	58.5	44.8	64.4	77.2	56.6	55.1	53.1	62.3	53.3	46.2	56.1	55.5	72.4	57.3	21.7	88.8	59.3	
9	239.5	239.0	236.3	226.7	233.2	247.8	261.2	272.9	248.0	249.0	259.2	238.4	246.7	249.7	260.6	259.0	252.0	252.0	246.4	255.2	256.7	243.4	246.9	263.4	272.9	249.3	
10	135.8	274.1	285.0	274.0	281.3	278.1	262.7	290.0	279.4	265.7	234.3	231.3	242.2	239.4	257.5	262.7	266.9	269.0	274.6	269.9	70.9	65.0	91.1	202.4	290.0	233.5	
11	247.8	274.2	288.9	281.9	292.5	284.2	273.8	277.8	277.5	273.8	250.2	253.8	262.3	266.2	270.7	254.5	256.7	250.0	70.6	87.7	94.3	86.0	86.7	81.3	292.5	222.6	
12	73.4	66.7	59.7	64.1	75.7	83.6	75.4	69.7	67.7	68.0	69.3	69.5	69.6	70.2	67.3	71.3	72.0	78.2	78.2	69.5	76.8	64.1	52.9	212.5	212.5	76.1	
13	242.4	276.7	285.5	285.7	281.5	279.0	278.4	271.2	245.1	242.7	237.6	240.1	242.5	243.7	244.9	243.6	245.8	247.5	250.1	252.4	250.4	248.8	251.2	252.0	285.7	255.8	
14	254.7	256.5	264.2	274.2	264.3	268.5	253.0	246.3	256.9	267.2	245.0	244.3	256.0	232.6	213.6	251.1	277.0	258.6	221.6	258.1	272.3	259.8	271.3	291.2	291.2	256.6	
15	270.2	263.9	250.9	224.4	74.2	80.4	81.3	59.4	54.5	46.9	40.1	44.3	37.1	348.3	279.2	79.3	70.3	77.6	79.2	73.8	60.8	52.9	61.1	54.5	348.3	115.2	
16	58.4	62.7	60.4	48.1	49.9	75.5	94.7	72.4	40.6	41.4	45.6	50.8	48.7	56.5	49.8	55.9	51.6	57.0	72.4	88.3	89.0	85.9	50.7	246.6	68.9		
17	260.0	280.8	270.9	266.8	272.6	270.8	269.1	272.6	263.1	256.4	249.5	248.2	239.6	241.5	237.3	251.9	248.9	261.9	263.3	264.2	259.7	248.6	260.1	275.3	280.8	259.7	
18	277.9	257.6	269.2	280.7	258.7	247.3	217.1	284.0	264.8	252.4	237.1	253.3	245.6	254.4	236.4	249.5	238.1	252.3	255.5	248.2	227.8	251.3	235.3	284.0	250.5		
19	240.2	289.5	285.0	281.9	292.4	271.7	272.2	276.6	277.4	287.6	272.1	251.4	271.4	261.5	242.9	255.0	247.8	263.9	263.0	251.2	254.4	258.8	258.7	260.8	292.4	266.1	
20	270.4	261.6	252.6	256.4	268.0	270.7	269.5	272.4	260.2	257.6	269.1	262.3	241.3	260.0	232.8	250.1	254.0	252.0	248.5	244.0	269.3	165.2	215.0	253.8	272.4	252.4	
21	249.6	225.5	245.5	247.3	251.9	267.1	252.0	245.5	259.0	275.9	264.2	259.1	247.0	246.7	251.4	249.6	257.3	251.9	258.7	260.6	248.1	252.0	244.0	274.5	275.9	253.5	
22	277.9	283.8	277.3	269.5	269.8	278.2	283.1	267.2	248.1	263.3	257.2	246.2	238.3	241.9	239.8	250.6	239.1	252.0	43.6	31.4	86.6	21.9	330.7	36.4	330.7	218.1	
23	226.4	225.6	226.4	249.3	241.0	255.8	268.7	292.3	301.8	269.7	253.3	245.7	247.6	252.5	244.2	239.1	232.8	238.0	248.6	263.8	257.9	272.2	270.0	280.0	301.8	254.3	
24	287.8	301.9	273.6	263.7	264.7	330.7	277.1	274.1	282.5	266.8	250.4	248.2	249.5	232.9	236.2	241.1	235.4	245.1	245.8	255.3	241.3	242.3	261.1	262.8	330.7	261.3	
25	226.5	233.1	229.5	49.0	65.4	53.5	63.4	67.8	64.7	67.9	70.1	61.6	60.8	48.8	53.2	58.4	47.2	36.1	47.1	181.7	249.3	279.2	282.1	289.3	120.2		
26	289.2	304.5	293.4	291.2	291.7	279.7	290.0	274.0	276.7	275.0	260.4	258.0	234.9	232.4	218.8	39.6	58.1	22.7	30.0	39.5	83.9	273.3	74.3	204.5	256.2		
27	241.1	246.0	262.0	259.3	257.1	260.9	262.1	267.8	266.1	271.0	263.1	255.0	221.3	246.7	240.7	247.7	260.1	250.0	249.5	219.5	261.3	233.2	224.9	266.2	271.0	251.4	

## Lagoon Pressure (mmHg) – April 2018

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	652.6	652.3	651.7	651.3	650.8	650.3	649.9	649.4	648.8	648.0	647.4	647.0	646.7	646.8	646.7	646.8	646.8	646.9	646.8	647.1	647.3	647.2	646.9	646.9	652.6	648.4
2	647.0	647.0	647.0	646.9	647.2	647.3	647.6	648.0	648.4	648.7	648.9	649.0	649.0	649.0	649.1	649.2	649.3	649.5	650.0	650.4	650.6	650.7	650.8	650.8	648.7	650.8
3	650.8	650.8	650.6	650.6	650.5	650.5	650.4	650.3	650.1	649.7	649.3	648.8	648.6	648.4	648.0	647.7	647.5	647.8	648.3	648.6	649.1	649.3	649.1	649.2	650.8	649.3
4	649.2	649.1	649.0	649.0	649.0	649.0	648.9	648.9	648.8	648.6	648.5	648.5	648.5	648.5	649.1	650.2	651.3	652.1	652.8	653.4	653.8	654.0	654.2	654.4	654.4	650.4
5	654.8	655.1	655.2	655.6	655.8	656.0	656.2	656.5	656.8	656.7	656.6	656.4	656.3	656.3	656.2	656.3	656.3	656.5	656.7	657.1	657.7	657.9	657.9	657.7	657.9	656.4
6	657.6	657.3	656.9	656.4	656.1	655.6	655.1	654.7	654.2	653.6	652.9	652.2	651.6	651.2	650.8	650.6	650.4	650.5	650.6	650.6	650.8	650.9	650.6	650.1	657.6	653.0
7	649.7	649.2	648.5	648.0	647.8	647.5	646.7	646.0	645.4	644.8	644.1	643.3	642.6	642.1	641.9	642.0	642.1	642.2	642.6	642.8	643.1	643.5	643.6	649.7	644.7	
8	643.5	643.5	643.5	643.6	643.9	644.4	644.8	645.1	645.3	645.5	645.6	646.0	646.4	646.8	647.2	647.6	648.0	648.5	649.0	649.4	650.1	650.8	651.2	651.2	651.2	646.7
9	651.4	651.6	651.6	651.7	651.9	652.3	652.2	652.1	652.1	652.1	652.2	652.2	652.2	652.1	651.8	651.8	651.8	651.8	651.8	651.8	652.2	652.6	652.6	652.6	652.6	652.0
10	652.8	652.6	652.4	652.1	651.9	651.6	651.3	650.8	650.2	649.5	649.1	648.2	647.3	646.5	645.9	645.5	645.0	644.8	644.6	644.7	644.9	644.8	644.7	644.6	652.8	648.2
11	644.7	645.2	644.5	644.4	644.9	645.1	645.8	646.1	645.9	645.9	646.0	645.8	645.3	644.8	644.5	644.5	644.3	644.1	644.4	644.6	644.8	644.6	644.6	644.6	644.6	645.0
12	644.4	644.0	643.7	643.5	643.5	643.4	643.6	643.6	643.7	643.7	644.0	644.1	644.1	644.3	644.5	644.8	645.2	645.8	646.4	646.8	647.2	647.6	647.8	648.0	648.0	644.9
13	648.2	648.3	648.5	649.0	649.4	650.1	650.6	651.0	651.1	651.4	651.6	651.6	651.7	651.7	651.5	650.7	650.6	650.8	650.1	649.9	650.6	650.6	650.5	651.7	650.5	
14	651.0	650.9	650.6	650.4	650.2	649.9	650.1	650.3	650.4	651.0	651.8	651.6	651.2	651.9	651.5	651.5	651.3	651.4	651.3	651.0	650.9	650.5	650.3	651.9	650.9	
15	650.0	649.5	649.1	649.0	648.8	648.6	648.3	648.2	648.0	647.5	647.2	646.9	646.6	646.4	646.0	645.8	646.1	646.8	647.7	648.1	648.5	648.7	648.6	648.4	650.0	647.9
16	648.1	647.9	647.3	646.9	646.7	646.3	646.1	645.7	645.2	644.4	643.7	643.2	642.8	642.5	642.4	642.0	641.9	642.1	641.9	642.0	642.1	642.2	642.0	641.8	648.1	644.1
17	641.6	641.5	641.6	641.5	641.6	641.8	641.9	642.1	642.3	642.7	642.9	643.2	643.6	644.2	644.8	645.9	646.9	647.6	648.2	648.9	649.8	650.4	650.8	651.2	644.9	
18	651.7	652.0	652.3	652.7	653.1	653.3	653.7	654.0	654.1	654.3	654.5	654.5	654.5	654.5	654.4	654.3	654.3	654.2	654.5	654.9	655.3	655.5	655.7	655.8	654.1	
19	656.1	656.1	656.0	656.0	656.1	656.0	656.1	656.0	656.0	655.6	655.1	654.5	654.0	653.5	653.0	652.6	652.4	652.3	652.2	652.3	652.6	652.8	652.8	656.1	654.1	
20	652.9	653.1	653.3	653.6	653.5	653.4	653.5	653.8	653.8	653.5	653.3	652.8	652.4	652.4	652.1	651.8	651.9	651.8	651.6	651.6	651.6	651.4	651.0	653.8	652.6	
21	650.6	650.0	649.4	648.9	648.5	648.1	647.4	647.1	646.4	645.8	645.6	646.3	647.3	647.5	647.5	648.1	649.2	649.9	650.5	651.1	652.3	653.0	653.4	653.5	649.1	
22	653.9	653.9	653.9	654.2	654.5	654.5	655.0	655.3	655.5	655.5	655.6	655.6	655.7	655.6	655.6	655.6	655.6	655.6	655.6	656.2	656.8	657.5	658.1	658.7	655.7	
23	659.0	659.5	659.9	660.4	660.6	660.9	661.0	661.2	661.1	660.5	660.4	660.3	659.9	659.6	659.3	659.1	659.0	659.1	659.1	659.6	659.8	660.1	660.2	661.2	659.9	
24	660.4	660.5	660.5	660.5	660.5	660.5	660.5	660.4	659.9	659.1	658.4	657.8	657.3	656.6	656.0	655.5	655.1	654.7	654.1	653.5	653.3	653.4	653.1	653.1	657.0	
25	653.4	653.5	653.4	654.0	654.5	654.8	655.2	655.6	655.7	655.8	655.8	655.7	655.5	655.5	654.8	654.7	654.5	654.5	654.4	654.4	654.3	654.7	655.1	655.5	655.6	
26	656.0	656.2	656.5	656.8	656.9	657.0	657.0	656.8	656.5	656.1	655.9	655.4	655.0	654.6	654.2	654.0	653.7	653.5	653.5	654.0	654.7	655.0	654.8	657.0	655.4	
27	655.1	655.1	654.9	654.8	654.5	654.4	654.2	653.7	653.1	652.3	651.7	651.1	650.4	649.7	649.1	648.6	648.2	648.0								

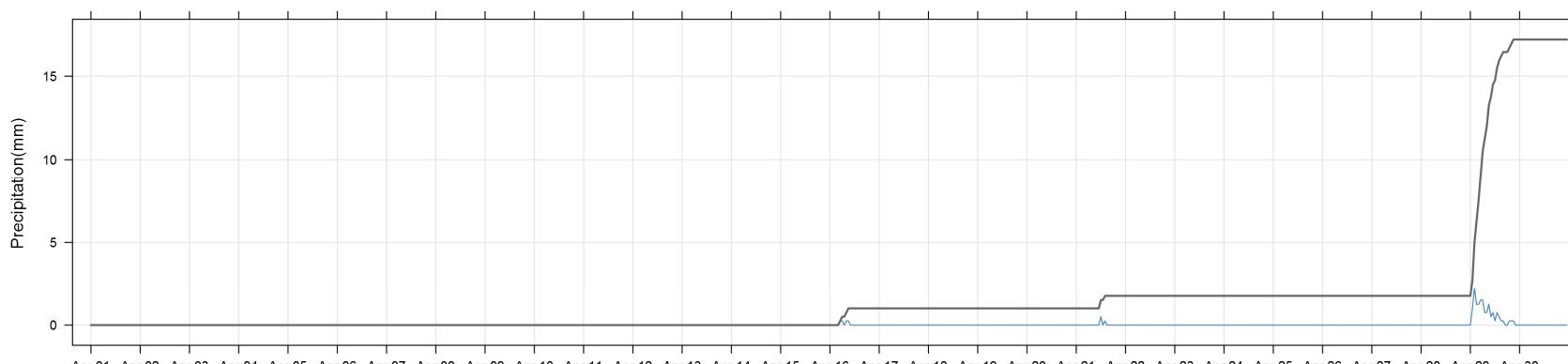
## Lagoon Relative Humidity (%) – April 2018

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	82.5	80.1	78.7	80.1	82.0	81.9	80.0	78.3	73.0	61.7	59.7	65.4	67.9	69.8	74.6	79.1	78.9	79.8	80.7	83.0	83.3	84.0	84.7	83.6	84.7	77.2
2	83.6	83.6	84.2	85.1	84.6	84.0	83.3	82.0	81.4	75.3	64.5	52.8	47.2	43.7	41.0	43.6	44.7	52.0	52.3	58.3	64.2	72.1	79.2	83.1	85.1	67.7
3	84.2	81.5	74.9	74.4	79.0	76.0	72.4	72.8	67.8	57.5	47.0	38.0	37.6	36.2	33.0	31.4	33.1	42.8	54.8	58.1	62.5	65.3	68.2	70.4	84.2	59.1
4	76.3	84.4	84.3	81.5	79.8	83.0	83.4	77.2	66.8	56.5	41.1	33.0	29.9	26.4	38.7	52.7	70.7	84.2	86.2	84.3	85.1	84.0	84.2	84.5	86.2	69.1
5	86.7	85.9	85.2	84.6	84.2	83.5	83.8	80.9	76.4	71.0	66.9	62.9	58.7	58.2	57.5	58.5	58.8	62.3	63.6	65.3	69.9	71.9	76.4	79.0	86.7	72.2
6	80.6	79.8	79.2	79.0	80.0	81.0	81.1	78.8	74.9	69.9	67.8	66.4	62.3	61.9	59.6	58.1	58.6	63.0	70.1	75.3	78.4	79.8	79.9	81.5	81.5	72.8
7	82.8	83.8	81.7	81.0	83.5	84.3	84.5	81.9	74.9	69.0	64.5	59.8	57.2	56.8	60.6	66.7	70.4	73.5	81.7	84.8	84.0	85.2	85.3	84.7	85.3	75.9
8	84.5	85.0	84.4	84.5	85.3	85.9	86.3	82.8	71.8	64.6	62.4	62.1	60.7	60.3	60.6	59.4	59.8	65.2	70.1	73.2	76.5	78.7	81.8	82.5	86.3	73.7
9	85.7	85.9	86.5	82.4	80.9	71.5	65.0	54.1	46.0	38.5	34.1	34.5	34.9	33.2	32.4	33.6	34.2	34.8	34.9	36.5	37.2	38.9	40.5	43.8	86.5	50.0
10	56.6	54.1	50.5	59.6	57.0	56.8	59.1	57.0	52.5	46.8	40.9	36.0	33.0	30.0	29.8	35.7	43.8	48.2	49.6	51.4	57.8	64.5	69.7	73.8	73.8	50.6
11	72.3	76.2	73.0	64.9	62.8	64.6	61.0	59.9	61.3	55.4	39.1	31.7	24.4	20.9	19.8	21.2	23.0	25.5	46.2	55.3	63.2	71.6	76.9	85.5	85.5	52.3
12	90.8	93.1	93.6	93.6	92.7	90.5	89.6	90.6	88.2	84.7	83.2	84.0	83.6	80.7	76.6	75.5	76.9	80.2	81.5	85.7	86.5	86.6	86.5	87.0	93.6	85.9
13	86.0	82.6	81.8	79.4	75.4	69.7	63.3	55.7	39.8	34.1	31.5	28.7	28.1	28.4	30.9	31.8	31.7	34.7	37.2	39.2	41.0	41.2	43.9	44.0	86.0	48.3
14	43.5	45.7	47.5	45.8	57.2	51.4	37.5	38.3	38.0	48.3	58.0	46.7	41.6	63.0	55.7	57.4	60.7	67.3	74.3	70.9	68.2	64.4	65.3	71.1	74.3	54.9
15	74.7	79.0	83.3	86.5	86.4	87.2	87.5	79.1	59.1	44.5	40.7	39.4	38.8	42.8	43.5	39.7	44.9	49.8	67.2	79.4	82.5	81.4	84.3	86.1	87.5	66.2
16	85.7	81.6	82.6	89.2	92.2	92.3	91.2	90.9	91.8	92.1	92.0	89.5	82.1	84.2	83.9	82.4	81.8	80.2	83.6	87.4	88.3	87.9	89.4	89.9	92.3	87.2
17	79.2	70.4	63.3	57.7	61.4	63.6	60.3	60.2	55.4	48.4	44.2	38.9	35.8	34.9	34.0	29.9	27.6	26.5	29.0	33.7	44.6	46.3	43.8	45.5	79.2	47.3
18	45.8	49.8	49.7	49.3	50.8	53.3	55.5	48.9	41.6	35.5	32.2	28.9	28.0	26.5	25.7	26.2	25.1	25.5	28.0	36.6	44.6	51.8	54.4	58.4	58.4	40.5
19	59.8	57.4	60.2	62.0	64.2	66.5	67.4	63.5	56.4	45.5	35.5	29.7	25.8	23.2	23.3	23.2	24.4	25.1	26.6	31.1	34.4	35.4	36.6	38.4	67.4	42.3
20	39.9	39.4	38.1	38.4	38.5	40.3	40.8	39.3	34.3	29.7	27.5	26.4	25.9	25.0	24.9	25.1	27.1	27.1	28.6	29.9	34.5	50.0	57.4	57.4	35.1	
21	56.0	60.1	58.1	59.5	55.0	52.6	48.1	45.0	41.5	40.1	38.7	59.9	71.6	42.7	29.8	24.9	26.2	26.9	26.9	29.3	34.5	41.7	61.8	75.7	75.7	46.1
22	80.0	77.6	71.5	64.5	63.6	60.3	56.5	47.4	38.9	31.4	29.8	28.0	26.6	24.6	23.5	21.9	20.6	19.6	28.6	35.0	39.8	48.5	59.6	65.5	80.0	44.3
23	67.8	66.5	65.5	60.0	61.0	62.7	59.0	55.6	48.1	38.7	31.8	26.6	23.3	20.8	19.6	18.2	17.4	17.8	18.9	23.1	29.5	29.4	31.8	35.0	67.8	38.7
24	39.7	43.1	47.5	50.2	51.2	51.0	50.9	45.8	35.2	25.7	20.9	17.1	13.5	11.8	11.2	11.0	11.4	11.8	12.4	15.2	20.8	21.2	22.2	26.0	51.2	27.8
25	29.9	32.6	32.4	36.3	31.8	34.0	39.2	42.8	43.1	48.0	48.8	47.0	40.9	36.0	32.0	28.8	26.6	25.6	26.5	35.2	27.8	27.5	29.4	29.1	48.8	34.6
26	31.9	34.7	40.2	45.0	48.7	51.4	51.1	49.0	40.0	31.9	24.7	20.8	17.9	15.5	13.9	14.5	14.8	16.6	20.8	27.6	36.5	50.3	62.3	64.7	64.7	34.4
27	58.5	60.0	60.4	62.6	64.5	65.5	63.6	58.8	51.1	40.3	30.9	23.9	18.7	17.0	15.2	13.8	13.4	14.2	19.0	29.7	39.8	38.7	42.0	42.2	65.5	39.3
28	44.9	48.0	51.7	54.2	56.2	56.1	58.1	53.1	45.6	35.0	26.2	18.5	13.4	11.6	12.1	14.2	16.1	18.7	21.1	25.2	28.8	31.0	32.5	35.6	58.1	33.7
29	42.6	62.4	85.6	89.4	87.5	85.1	88.4	87.2	85.2	83.0	82.6	82.9	83.4	86.4	88.6	88.6	87.6	87.3	87.3	91.0	92.7	93.5	93.5	93.5	93.5	93.5
30	9																									

## Lagoon Precipitation (mm) – April 2018

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	
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	
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	
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	
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	0.0	0.0	
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	
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	
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	0.0	0.0	0.0	0.0	0.0	0.0	
9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
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	
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	
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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
16	0.0	0.0	0.0	0.0	0.3	0.3	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	
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	
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	
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	
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	0.0	0.0	0.0	0.0	
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	0.5	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	
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	
23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
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	
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	
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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
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	
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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
29	0.0	1.0	2.3	1.3	1.3	1.5	1.5	0.8	0.8	1.3	0.5	0.8	0.3	0.8	0.5	0.3	0.3	0.0	0.0	0.0	0.0	0.3	0.3	0.3	0.0	
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	
Hourly Max	0.0	1.0	2.3	1.3	1.3	1.5	1.5	0.8	0.8	1.3	0.5	0.8	0.5	0.8	0.5	0.3	0.3	0.0	0.0	0.3	0.3	0.3	0.0	0.0	0.0	
Hourly Average	0.0	0.0	0.1	0.0	0.1	0.1	0.0	0.0	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	

1-hour Precipitation (mm) at Trailer

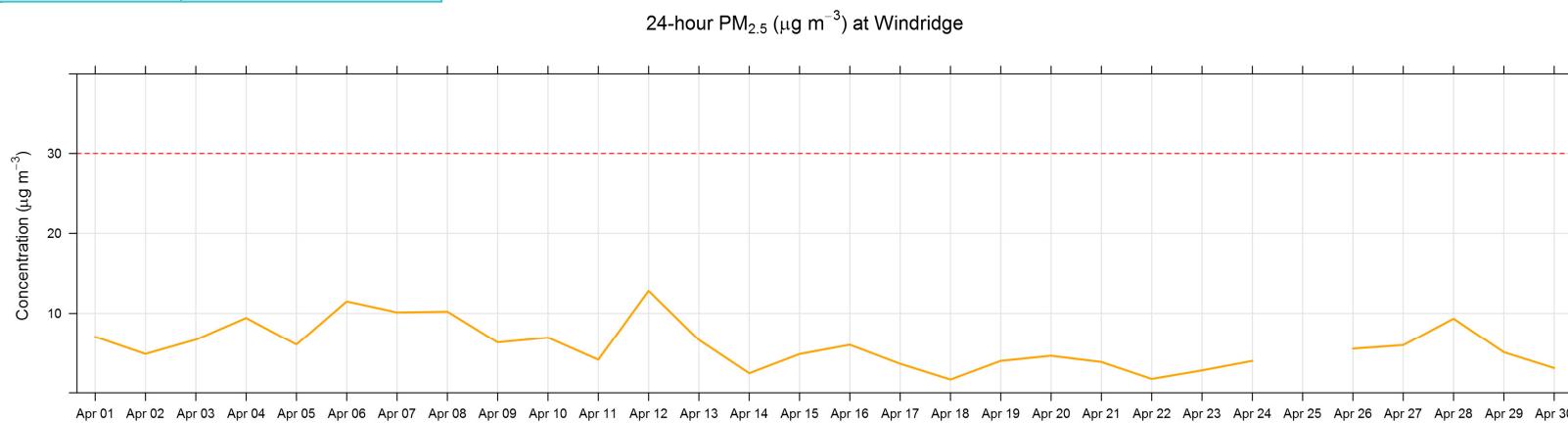


# Windridge PM<sub>2.5</sub> ( $\mu\text{g}/\text{m}^3$ ) – April 2018

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	11.0	7.0	4.0	4.8	3.7	2.6	1.1	3.3	3.7	13.2	11.7	10.3	7.3	8.4	5.9	12.5	11.0	8.4	7.7	5.1	5.9	5.1	13.2	7.0	
2	4.4	3.3	1.5	2.2	1.5	1.5	3.7	3.3	6.2	6.4	5.1	4.8	5.5	4.8	6.2	9.5	7.0	3.7	1.5	4.4	6.2	10.6	7.7	5.9	10.6	4.9
3	5.5	3.7	3.3	6.6	8.4	5.9	6.3	5.8	3.3	2.9	1.8	4.4	8.1	4.5	4.4	7.3	4.8	5.5	8.8	9.2	13.2	11.0	11.4	14.3	14.3	
4	15.0	10.4	7.3	7.0	13.2	12.5	12.8	9.2	5.8	10.6	6.6	2.9	4.8	5.8	2.6	8.0	18.7	20.9	13.9	12.8	9.2	7.8	4.4	3.9	20.9	9.4
5	4.8	8.8	11.7	12.1	7.0	3.7	1.8	5.5	7.7	7.7	4.4	2.6	4.8	5.9	3.7	2.6	3.3	5.5	7.0	7.3	6.3	5.9	7.0	8.4	12.1	6.1
6	9.5	11.0	12.8	8.1	5.1	8.8	10.6	10.6	8.4	7.0	19.4	25.3	18.3	14.3	13.6	12.8	13.2	12.5	10.3	10.3	9.2	9.2	8.1	7.4	25.3	11.5
7	7.3	9.2	7.0	7.3	20.5	6.6	7.8	9.2	11.7	12.8	9.3	8.1	15.8	10.6	7.7	7.7	14.7	10.3	11.7	9.5	11.0	10.3	9.2	7.7	20.5	10.1
8	7.7	8.1	9.2	6.2	6.2	7.0	13.6	11.4	7.2	5.1	11.7	13.2	8.8	12.5	9.2	9.2	10.6	12.3	10.6	17.6	13.2	7.3	14.7	12.8	17.6	10.2
9	13.6	12.1	19.4	18.3	8.4	5.1	1.5	0.0	1.5	4.0	6.2	4.8	5.9	5.1	3.7	7.3	8.1	4.8	2.2	4.0	3.7	2.9	4.0	5.3	19.4	6.3
10	6.6	5.8	4.8	3.7	2.6	5.1	4.8	4.8	4.4	5.5	2.2	2.6	4.8	9.5	7.3	13.6	11.7	8.8	10.3	9.9	11.7	8.5	7.3	10.3	13.6	6.9
11	6.2	5.1	3.7	1.5	0.0	0.0	1.5	5.8	6.6	4.0	1.5	2.9	2.9	2.6	1.5	0.0	3.3	5.1	2.9	5.3	7.3	6.3	10.9	12.5	12.5	4.1
12	34.8	34.8	26.7	24.9	21.3	18.3	18.3	15.5	12.1	8.6	6.6	4.8	2.2	2.2	2.9	0.9	5.1	5.1	7.7	9.9	10.7	14.3	11.7	8.6	34.8	12.8
13	9.2	11.4	13.2	11.0	11.7	7.7	2.6	2.9	4.8	4.0	1.1	1.1	4.0	4.4	4.0	2.3	2.9	5.9	6.6	9.5	8.8	10.1	8.1	12.1	13.2	6.6
14	8.4	4.0	1.8	1.5	2.2	2.9	1.5	0.0	0.0	0.0	1.5	1.8	1.8	3.3	5.5	3.3	2.2	2.2	1.8	2.2	0.4	1.8	4.4	3.8	8.4	2.4
15	2.9	4.0	3.3	5.9	4.8	1.1	2.2	4.4	4.0	2.6	2.7	2.9	2.9	1.1	0.7	3.3	4.8	4.8	9.2	8.8	9.2	13.2	9.5	8.1	13.2	4.9
16	12.8	9.2	8.4	10.6	13.9	10.6	8.4	7.7	7.0	4.8	2.2	0.4	1.5	1.5	1.8	3.3	5.5	3.3	2.9	8.8	5.5	2.2	4.8	7.3	13.9	6.0
17	6.6	4.8	2.9	4.4	0.4	0.0	1.1	4.4	3.3	0.0	3.3	3.7	1.5	5.5	6.2	3.7	1.8	4.8	4.0	9.9	5.9	1.8	3.7	3.3	9.9	3.6
18	0.0	0.0	0.4	1.1	1.8	3.3	2.9	1.1	2.2	1.5	0.4	4.4	4.8	1.0	0.0	0.0	0.3	1.1	0.0	0.0	4.4	3.3	1.8	3.7	4.8	1.7
19	3.3	3.3	2.8	4.0	2.9	2.9	2.6	7.2	5.5	2.6	2.2	3.7	3.3	2.2	2.6	4.8	7.9	5.9	3.3	2.6	2.9	6.2	5.9	5.1	7.9	4.0
20	3.3	1.8	4.4	5.5	5.9	3.7	1.1	3.3	5.1	4.8	4.4	4.8	5.1	4.8	8.1	7.6	6.2	4.0	5.9	5.9	4.8	3.3	4.0	3.3	8.1	4.6
21	0.0	0.0	0.4	2.9	5.9	5.5	3.3	6.6	6.2	4.8	1.1	1.8	7.6	11.7	8.1	4.4	6.6	4.8	1.5	1.1	2.2	3.7	2.2	0.0	11.7	3.9
22	0.0	0.0	1.8	1.5	0.0	0.0	0.4	3.3	0.4	5.9	4.0	3.3	2.2	0.0	0.0	0.0	0.4	0.0	0.7	2.4	0.4	4.8	7.0	2.9	7.0	1.7
23	3.3	4.4	2.9	3.3	3.7	4.0	3.7	3.3	3.7	1.8	0.7	1.1	0.7	1.5	4.0	3.3	5.5	4.4	2.2	2.9	3.3	0.9	0.0	2.2	5.5	2.8
24	2.6	3.3	3.3	4.4	6.2	4.0	3.7	4.4	2.9	2.6	3.3	4.8	5.5	4.0	6.6	6.6	6.6	6.5	3.3	0.0	1.8	3.7	3.7	1.8	6.6	4.0
25	5.9	4.8	8.1	9.2	8.8	7.3	8.1	9.5	6.2	C	C	C	C	8.4	E	E	E	7.0	5.9	5.5	4.4	3.7	5.9	8.8	-	-
26	7.0	4.8	3.7	5.9	9.2	6.2	3.7	6.6	8.1	10.5	6.6	7.7	5.1	4.4	6.2	4.4	3.3	2.2	2.2	1.5	4.0	9.9	6.6	2.9	10.5	5.5
27	3.7	7.8	5.5	3.7	4.8	4.0	3.3	2.6	2.6	5.5	8.4	7.0	5.1	6.2	5.5	7.0	11.4	8.8	9.9	9.5	4.4	2.6	6.2	8.1	11.4	6.0
28	7.6	10.3	9.9	6.2	8.1	9.3	6.2	6.2	7.2	8.1	8.8	8.4	9.5	9.2	8.1	8.4	14.7	12.1	8.4	11.7	12.8	10.9	12.1	9.9	14.7	9.3
29	13.2	10.3	10.3	11.0	13.9	11.0	5.9	8.4	7.3	4.8	1.5	2.9	1.8	0.4	1.5	0.4	0.0	5.1	4.0	0.7	4.0	3.3	0.0	0.2	13.9	5.1
30	1.1	0.0	0.7	0.4	0.0	2.2	4.0	5.1	6.2	5.9	3.7	1.5	6.2	5.1	0.7	0.7	2.9	2.6	3.7	4.0	5.3	5.1	3.7	3.3	6.2	3.1
Hourly Max	34.8	34.8	26.7	24.9	21.3	18.3	18.3	15.5	12.1	12.8	19.4	25.3	18.3	14.3	13.6	13.6	18.7	20.9	13.9	17.6	13.2	14.3	14.7	14.3		
Hourly Average	7.2	6.9	6.6	6.5	6.8	5.5	5.0	5.6	5.4	5.1	5.0	5.1	5.6	5.3	4.9	5.1	6.8	6.4	5.7	6.5	6.4	6.4	6.4	6.3		

C = CALIBRATION

E = INSTRUMENT ERROR



Number of 1HR Exceedances	0	Guideline	80	UG/M3	
Number of 24HR Exceedances	0	Objective	30	UG/M3	
Number of Non-Zero Readings	688				
Maximum 1-HR Average	34.8	UG/M3			
Maximum 24-HR Average	12.8	UG/M3			
IZS Calibration Time	0	HRS	Operational Time	717	HRS
Monthly Calibration Time	4	HRS	Operational Uptime	99.6	%
Standard Deviation	4.4		Monthly Average	5.9	UG/M3

# Windridge PM<sub>10</sub> ( $\mu\text{g}/\text{m}^3$ ) – April 2018

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	18.2	20.3	8.3	8.3	8.3	6.2	4.7	16.7	49.2	20.3	27.3	16.7	18.1	32.2	50.6	62.6	48.5	36.5	33.0	28.0	25.2	17.4	17.4	13.9	62.6	24.5
2	12.5	10.1	9.0	10.4	13.2	8.3	7.2	5.5	9.7	12.5	11.8	20.3	21.7	10.4	9.7	11.1	13.8	17.4	13.2	12.5	23.8	24.5	8.3	14.6	24.5	13.0
3	9.0	11.8	13.9	13.9	9.0	13.2	9.0	11.8	27.3	16.0	20.3	57.6	30.1	21.7	23.8	23.1	22.4	16.0	44.9	29.4	28.7	35.8	39.3	30.8	57.6	23.3
4	28.7	21.7	19.6	33.7	28.0	25.9	18.2	16.7	22.4	33.7	51.3	37.9	44.2	30.8	41.4	30.8	54.8	61.9	30.8	32.3	18.9	20.3	13.2	14.3	61.9	30.5
5	12.5	18.9	25.2	18.9	16.0	9.0	11.1	18.9	30.1	45.6	26.3	7.6	16.7	12.5	10.4	10.4	20.3	16.0	14.6	30.1	28.7	21.7	18.1	42.8	45.6	20.1
6	52.7	31.6	19.6	18.2	32.3	35.1	31.6	21.1	14.6	21.7	28.7	46.6	27.3	24.5	19.6	16.7	16.7	24.5	22.4	25.2	21.7	20.3	19.6	20.3	52.7	25.5
7	15.3	16.7	20.3	28.7	22.4	17.4	10.4	17.3	32.1	34.4	37.9	24.5	37.9	30.0	18.1	13.9	23.8	16.7	33.7	68.9	68.2	28.0	33.7	23.1	68.9	28.1
8	11.8	15.0	11.8	9.7	9.0	12.5	17.4	13.2	13.7	18.8	21.7	18.2	16.0	13.9	14.6	16.2	16.0	14.6	18.8	25.9	20.9	17.4	21.0	21.7	25.9	16.2
9	30.0	31.5	32.3	33.0	21.0	4.0	5.4	5.4	6.2	44.9	52.0	40.0	25.2	28.0	25.2	18.1	20.3	24.5	20.3	22.4	34.0	23.1	23.8	29.1	52.0	25.0
10	9.7	6.1	6.2	6.9	4.7	3.3	5.5	12.5	15.3	21.0	18.1	26.6	21.0	29.4	41.4	59.0	85.8	36.5	33.7	20.1	23.8	44.2	21.0	25.9	85.8	24.1
11	11.1	14.8	9.0	6.9	7.6	11.1	7.6	6.2	9.0	6.9	18.2	24.5	18.1	22.4	11.8	11.8	45.6	18.1	15.0	27.3	11.1	18.1	31.5	28.0	45.6	16.3
12	41.3	40.1	33.0	29.4	28.7	27.3	20.3	24.5	25.9	15.3	15.3	16.7	28.0	30.8	13.2	23.8	14.6	22.7	16.7	16.0	22.4	8.3	11.8	41.3	22.4	
13	18.9	15.3	18.1	11.8	9.7	9.0	6.9	6.1	7.1	21.7	23.8	58.3	56.9	37.9	55.5	56.9	56.2	127.4	111.2	85.1	147.2	177.5	70.3	134.5	177.5	55.1
14	64.0	26.4	22.4	13.4	12.5	11.1	12.0	28.7	37.9	49.2	39.3	43.5	42.8	30.8	30.8	16.0	42.1	11.8	12.5	9.0	7.6	11.8	22.4	40.0	64.0	26.6
15	7.6	9.7	6.2	4.0	7.6	10.4	6.9	18.0	13.2	13.2	15.3	11.1	14.6	12.5	9.6	11.6	12.5	18.1	18.8	17.4	12.5	16.7	13.9	16.7	18.8	12.4
16	20.3	17.3	16.0	15.3	17.4	17.4	10.4	13.2	8.3	7.0	6.2	6.8	5.4	3.3	9.0	9.7	11.8	11.8	15.3	15.8	11.8	9.7	6.9	9.7	20.3	11.5
17	9.7	19.0	23.1	25.5	19.0	22.4	15.3	31.5	21.4	31.5	38.6	43.5	53.4	61.4	75.3	44.2	78.7	42.8	40.0	11.8	11.1	11.8	19.6	8.3	78.7	31.6
18	6.9	5.5	9.0	5.4	3.3	6.2	9.0	11.8	13.2	25.2	40.7	44.9	23.2	21.7	33.0	33.7	52.0	33.7	46.3	34.4	22.4	9.7	8.3	6.9	52.0	21.1
19	4.7	9.0	4.7	6.9	8.3	7.0	5.5	16.7	27.3	31.5	27.3	58.8	27.7	39.3	66.8	73.1	56.9	63.3	43.5	23.1	18.9	19.3	18.1	27.3	73.1	28.5
20	17.4	11.1	13.9	32.3	11.6	9.0	13.9	36.5	74.6	51.3	45.6	40.0	44.3	49.2	128.8	53.4	54.8	44.9	35.8	29.4	26.6	8.3	7.6	6.9	128.8	35.3
21	6.2	7.6	10.2	6.9	7.6	8.3	19.6	125.3	34.1	52.7	95.0	44.2	49.9	37.2	42.8	150.7	146.5	95.0	33.0	31.5	16.7	28.0	15.3	19.6	150.7	45.2
22	9.6	9.9	6.2	4.6	5.4	12.5	10.4	6.9	21.3	73.8	19.6	13.9	23.8	13.2	9.0	14.6	16.0	16.7	9.0	11.1	7.6	11.8	10.4	7.6	73.8	14.4
23	11.1	10.4	8.3	8.3	8.3	9.7	11.8	9.7	13.2	21.0	55.5	54.8	33.0	33.7	25.9	25.9	30.1	20.3	23.8	31.1	11.1	10.4	11.1	9.7	55.5	20.3
24	16.7	10.4	10.4	12.5	11.0	9.0	11.8	17.4	26.6	34.4	73.1	56.9	59.0	90.3	61.2	57.6	40.0	31.0	44.5	35.1	11.8	13.2	13.9	10.4	90.3	31.6
25	11.3	13.9	11.1	11.1	19.6	15.3	26.6	32.1	37.2	C	C	C	23.1	E	E	E	22.4	23.1	20.3	29.4	27.3	20.3	48.5	-	-	
26	21.0	18.1	18.0	11.8	16.7	12.5	11.1	18.1	66.1	48.5	61.9	62.6	38.7	18.1	13.9	17.4	18.1	18.8	13.9	15.3	32.2	72.4	18.1	16.7	72.4	27.5
27	12.6	16.0	30.1	11.4	18.9	27.9	23.8	23.8	48.5	59.0	62.6	40.7	26.5	18.8	23.1	19.6	29.4	34.4	37.2	13.9	15.3	11.8	10.4	17.4	62.6	26.4
28	15.3	11.1	9.0	14.6	14.8	13.9	18.1	8.3	18.9	26.6	28.7	32.2	40.2	C	C	C	C	C	C	C	C	C	C	C	-	-
29	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	-	-	
30	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	-	-	
Hourly Max	64.0	40.1	33.0	33.7	32.3	35.1	31.6	125.3	74.6	73.8	95.0	62.6	59.0	90.3	128.8	15										

## Windridge TSP ( $\mu\text{g}/\text{m}^3$ ) – April 2018

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	23.8	13.9	9.7	9.7	9.0	6.9	14.6	27.3	98.5	34.4	32.2	31.8	33.0	50.6	61.9	44.9	53.4	23.1	17.4	19.6	23.1	22.4	25.2	20.3	98.5	29.4
2	20.3	21.7	18.9	11.8	18.9	6.9	9.6	8.3	11.1	10.4	14.6	19.6	17.4	15.3	13.2	19.6	18.8	40.7	36.5	22.4	41.4	38.6	15.3	18.2	41.4	19.6
3	11.1	11.8	11.1	14.6	14.6	14.9	9.7	16.7	28.0	30.1	24.5	97.1	42.8	37.9	34.4	35.8	25.2	26.6	76.0	39.3	43.5	47.1	54.8	38.6	97.1	32.8
4	38.6	26.6	22.4	44.2	25.9	22.4	20.3	18.6	25.1	44.9	78.8	61.8	63.0	50.8	69.6	49.8	83.0	92.9	76.7	58.3	37.2	16.0	18.9	12.5	92.9	44.1
5	25.9	18.9	28.7	31.5	21.7	6.9	4.0	32.3	51.3	50.6	17.4	11.8	25.2	16.7	18.1	26.6	35.8	25.9	25.2	28.7	43.5	35.6	23.8	45.0	51.3	27.1
6	35.1	28.7	21.5	23.8	32.3	26.6	21.7	23.8	13.9	25.9	40.0	52.7	35.1	29.4	21.0	22.4	28.0	36.5	35.1	35.1	25.2	25.9	20.3	24.0	52.7	28.5
7	18.7	28.0	28.7	33.0	30.8	18.2	17.4	26.6	52.7	58.3	54.8	37.2	52.0	51.3	27.3	24.5	30.1	24.5	64.0	114.1	100.0	35.8	53.4	26.6	114.1	42.0
8	13.5	11.8	9.0	6.9	10.4	21.7	21.0	13.9	13.9	18.1	17.4	25.1	16.0	18.1	15.3	16.0	20.3	23.8	25.2	20.3	30.8	21.7	30.1	25.9	30.8	18.6
9	33.7	40.0	35.8	37.9	25.1	4.0	6.9	8.2	13.2	64.7	91.5	72.7	44.2	58.3	46.3	32.2	46.3	35.8	30.1	42.1	40.7	30.1	28.0	27.8	91.5	37.3
10	11.8	8.3	10.4	12.5	9.0	5.4	6.9	9.0	16.7	26.2	26.6	37.9	29.5	34.4	52.0	82.3	130.2	47.1	40.7	18.1	30.1	73.8	35.8	45.5	130.2	33.3
11	14.6	13.6	6.9	3.3	8.3	7.6	9.0	9.0	6.9	6.2	13.9	38.6	24.5	30.1	25.9	21.7	68.9	26.6	17.4	43.5	16.1	22.4	40.7	31.5	68.9	21.1
12	44.9	43.5	28.7	27.8	24.5	30.1	25.2	33.0	19.6	7.6	14.5	11.8	14.6	30.8	20.1	22.4	14.6	26.1	19.6	16.7	18.9	12.3	19.6	9.0	44.9	22.3
13	18.1	23.1	18.1	16.7	6.9	13.2	8.3	3.3	6.2	30.1	41.4	91.7	86.0	61.9	85.1	84.4	85.9	197.9	149.3	99.9	175.1	213.5	74.6	150.0	213.5	72.5
14	80.9	26.6	29.5	25.9	30.8	14.6	11.8	47.1	57.6	76.7	43.5	44.2	42.1	52.7	39.4	22.4	52.7	11.8	12.5	9.0	11.8	9.0	35.1	43.6	80.9	34.6
15	11.8	6.6	4.0	7.6	5.8	6.9	13.4	23.8	28.0	28.7	16.7	12.5	19.5	12.0	16.0	13.9	20.8	24.5	29.4	20.3	14.6	16.7	13.2	17.4	29.4	16.0
16	22.4	14.6	16.0	14.6	11.8	18.9	21.0	15.3	7.6	9.0	4.7	3.7	5.7	3.8	7.6	9.0	10.9	17.4	23.8	15.3	12.5	9.0	8.3	6.2	23.8	12.0
17	14.5	20.3	35.1	40.7	28.7	31.5	28.0	35.1	28.7	40.7	59.0	77.4	81.6	89.4	121.8	70.3	119.0	68.2	59.7	13.2	26.6	16.0	34.4	9.7	121.8	47.9
18	10.4	8.3	6.6	6.2	4.0	4.7	6.9	19.6	17.4	40.7	60.3	68.2	33.7	31.5	37.8	54.1	67.5	31.5	59.0	37.2	34.4	9.3	10.4	6.2	68.2	27.7
19	5.5	11.8	6.2	9.7	6.9	8.3	8.3	21.7	40.0	49.2	42.8	92.2	46.4	71.0	101.3	114.7	83.7	95.7	68.2	42.1	29.4	21.7	36.5	29.0	114.7	43.4
20	26.6	12.5	23.8	42.2	19.6	11.8	19.6	57.6	107.0	82.3	79.5	62.6	68.2	82.3	190.6	83.7	76.0	62.6	56.9	44.9	30.3	8.3	10.8	190.6	52.9	
21	10.4	10.4	9.7	7.6	13.9	10.4	19.6	192.3	54.8	88.6	121.8	72.4	56.2	36.5	56.9	142.9	160.6	131.0	52.7	43.5	24.5	36.5	25.9	24.5	192.3	58.5
22	11.8	14.6	7.6	3.3	4.7	11.8	9.0	7.6	36.5	92.2	22.4	23.8	28.7	25.9	10.4	16.0	15.3	15.3	13.0	18.8	13.2	20.9	15.3	4.0	92.2	18.4
23	9.0	9.0	9.4	6.9	6.2	14.6	8.3	18.2	18.1	28.7	90.1	73.8	47.7	37.9	33.7	38.6	41.4	31.5	35.4	37.2	13.9	9.0	5.5	5.5	90.1	26.2
24	26.0	9.7	11.9	24.7	19.6	14.5	14.6	35.1	40.0	54.1	116.9	92.2	91.5	142.9	98.5	86.5	59.0	52.5	73.8	49.9	16.7	14.6	21.0	14.6	142.9	49.2
25	9.7	17.4	10.4	9.0	27.3	24.5	47.1	55.5	59.7	C	C	C	C	37.9	E	E	E	33.7	28.7	27.5	43.5	41.4	19.6	68.9	-	-
26	44.2	25.9	26.6	16.7	16.7	16.7	21.0	24.5	88.7	68.9	92.9	81.6	61.9	29.4	28.4	31.5	23.1	20.3	21.7	18.1	56.9	114.7	21.7	18.9	114.7	40.5
27	21.0	18.9	33.7	11.8	23.1	30.8	37.2	30.8	71.3	77.4	58.3	40.5	30.1	33.0	30.2	55.5	44.9	54.8	23.8	15.3	12.5	12.5	15.3	77.4	35.8	
28	20.3	15.7	15.3	9.9	16.0	18.9	25.9	16.7	16.0	29.4	40.0	40.7	49.9	C	C	C	C	C	C	C	C	C	C	C	-	-
29	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	-	-
30	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	-	-
Hourly Max	80.9	43.5	35.8	44.2	32.3	31.5	47.1	192.3	107.0	92.2	121.8															

## West PM<sub>2.5</sub> ( $\mu\text{g}/\text{m}^3$ ) – April 2018

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	c	5.4	3.8	3.5	3.3	3.6	4.4	6.6	5.1	5.0	12.8	6.4	7.0	5.8	6.8	7.7	6.9	5.8	4.3	4.8	5.3	6.7	5.4	3.7	12.8	5.8
2	3.6	2.1	1.9	1.9	1.6	1.8	2.2	4.7	5.3	3.5	2.8	4.1	6.9	8.0	8.7	17.5	6.9	2.9	2.7	2.5	2.9	3.5	3.8	4.0	17.5	4.4
3	5.9	6.4	8.1	5.4	4.8	4.8	5.2	8.7	10.3	6.4	6.5	6.0	6.0	5.4	5.5	4.9	4.0	4.0	10.9	12.3	13.9	12.6	15.1	16.1	16.1	7.9
4	18.7	20.6	19.0	17.7	16.3	14.3	14.3	13.9	12.2	8.6	7.6	8.4	4.9	3.0	9.4	20.0	20.4	15.5	13.4	8.6	4.4	3.4	2.9	2.6	20.6	11.7
5	2.8	5.0	6.4	4.8	2.1	1.9	5.8	3.6	3.8	3.8	3.7	3.3	4.2	5.5	4.3	4.9	3.8	3.8	3.9	5.3	6.8	5.2	5.4	6.3	6.8	4.4
6	6.2	6.0	5.5	5.6	5.5	5.6	6.7	10.2	8.8	14.8	17.4	28.9	35.2	13.8	11.0	9.5	7.4	8.0	7.3	7.9	7.8	8.6	9.8	14.2	35.2	10.9
7	9.5	10.6	12.8	19.4	13.4	10.7	22.2	32.0	29.3	43.6	41.6	18.5	14.7	11.9	8.9	8.6	10.4	10.5	10.8	10.1	8.8	7.1	6.0	5.9	43.6	15.7
8	9.6	9.1	8.1	8.1	8.6	9.3	9.5	11.4	11.5	15.6	14.9	23.7	13.4	12.2	9.7	7.3	6.7	9.1	12.3	14.3	15.3	14.0	15.3	16.4	23.7	11.9
9	20.4	18.9	14.9	5.4	1.4	0.7	0.6	0.9	13.5	12.2	7.5	14.1	4.4	6.2	4.2	3.3	3.0	0.9	0.7	0.7	0.6	0.8	1.0	1.3	20.4	5.7
10	1.3	1.1	1.4	1.5	1.7	2.4	5.1	7.3	10.2	36.8	22.0	24.9	32.2	19.8	15.7	26.9	11.7	7.5	6.0	6.1	8.0	4.8	4.6	4.0	36.8	11.0
11	2.4	1.3	0.8	0.6	0.8	0.7	0.7	2.7	38.6	21.4	13.9	7.2	6.3	8.8	3.3	4.4	2.6	1.3	3.5	4.4	3.3	4.9	11.1	27.8	38.6	7.2
12	38.5	27.3	24.5	21.6	21.5	20.6	18.4	9.8	9.1	5.3	3.8	3.3	3.1	5.1	7.1	7.0	7.6	9.3	11.6	9.7	12.8	14.0	15.1	15.9	38.5	13.4
13	14.8	17.0	15.8	13.0	7.7	3.3	1.6	4.1	8.4	4.8	5.0	5.6	2.6	3.2	3.1	1.8	1.7	1.6	1.4	1.2	0.7	0.8	0.5	0.3	17.0	5.0
14	0.3	0.3	0.2	0.2	0.4	0.4	1.4	2.1	1.3	1.2	5.2	3.1	4.8	2.9	4.4	2.4	2.0	2.5	1.4	1.5	1.8	2.1	2.0	1.7	5.2	1.9
15	1.6	1.7	2.1	2.0	2.1	2.3	2.7	9.5	4.0	3.9	3.1	3.0	3.2	4.4	3.7	3.6	5.2	6.3	6.1	6.0	6.3	6.8	7.3	7.7	9.5	4.4
16	8.3	9.2	9.8	9.6	8.5	5.6	3.0	3.1	3.2	5.1	5.1	4.7	4.7	2.2	5.4	7.7	9.0	2.8	4.7	4.7	4.4	4.0	4.5	5.4	9.8	5.6
17	1.2	1.0	0.9	1.1	0.9	4.0	4.5	8.9	10.6	11.3	6.4	5.7	6.6	6.7	5.2	2.9	2.2	0.9	0.6	0.5	0.5	2.1	0.7	0.8	11.3	3.6
18	0.8	0.8	0.7	0.8	1.2	1.0	2.8	17.5	10.1	11.7	3.6	12.2	7.6	5.4	5.3	3.9	3.5	1.7	1.4	0.9	0.8	1.0	1.2	1.3	17.5	4.1
19	1.6	1.9	1.6	2.0	1.7	2.5	5.4	5.9	4.7	5.1	4.0	4.5	4.8	4.5	6.0	3.0	3.7	1.9	1.7	1.5	1.4	1.5	1.8	2.1	6.0	3.1
20	1.8	2.0	2.0	1.4	2.0	3.1	8.0	8.6	7.6	9.2	4.7	9.0	8.3	6.9	7.1	5.0	3.4	3.0	3.3	2.2	2.1	2.1	2.3	2.5	9.2	4.5
21	2.3	2.2	2.5	3.2	2.6	2.4	2.4	2.1	1.2	1.1	1.6	1.1	0.4	1.2	1.8	1.5	1.3	1.0	0.7	0.4	0.7	0.5	0.7	0.7	3.2	1.5
22	0.5	0.3	0.4	0.4	0.6	0.7	1.2	2.0	1.3	1.2	1.4	1.1	1.4	1.4	1.4	1.2	1.2	1.3	1.4	1.5	1.3	1.2	1.1	1.2	2.0	1.1
23	1.4	1.6	1.3	1.2	1.2	1.5	9.3	5.8	9.9	4.1	5.1	8.3	4.2	7.3	6.7	5.7	3.6	2.1	1.8	1.8	1.6	2.0	2.3	2.0	9.9	3.8
24	1.8	2.0	1.9	2.1	2.2	2.3	8.5	4.9	5.6	6.2	4.6	3.0	3.8	4.1	5.0	5.8	6.9	3.9	3.2	3.3	3.2	3.5	4.3	4.1	8.5	4.0
25	4.0	3.7	3.7	4.4	4.9	6.6	8.0	10.4	9.6	9.9	9.7	10.2	8.9	11.2	9.9	9.1	8.0	8.2	4.7	4.3	4.4	5.1	5.2	5.5	11.2	7.1
26	5.2	5.2	5.3	5.2	5.3	5.6	7.0	8.9	8.8	6.8	7.4	5.9	5.3	4.4	3.6	3.6	3.5	2.2	2.5	4.7	5.2	4.6	4.8	5.2	8.9	5.3
27	5.1	4.8	5.3	5.6	5.3	5.6	6.0	7.3	7.2	8.0	6.6	6.6	6.1	5.8	6.0	5.9	5.2	4.5	5.2	5.7	5.9	6.9	9.5	10.1	10.1	6.3
28	10.2	10.3	9.7	9.7	9.8	10.2	10.9	11.8	11.1	10.9	11.5	8.7	7.4	6.4	7.3	8.7	9.0	7.9	8.8	9.0	9.7	10.7	11.0	11.6	11.8	9.7
29	13.1	13.1	12.2	12.1	9.4	4.6	3.8	3.3	3.3	2.2	0.8	1.1	1.8	1.1	0.5	2.4	2.4	1.9	2.3	1.5	1.1	2.4	3.0	3.3	13.1	4.3
30	5.7	6.7	6.6	7.4	7.9	6.9	5.4	6.8	7.3	7.6	7.0	4.8	3.6	3.1	2.2	1.3	1.3	1.2	1.4	1.5	1.4	1.6	1.7	2.0	7.9	4.3
Hourly Max	38.5	27.3	24.5	21.6	21.5	20.6	22.2	32.0	38.6	43.6	41.6	28.9	35.2	19.8	15.7	26.9	20.4	15.5	13.4	14.3	15.3	14.0	15.3	27.8		
Hourly Average	6.9	6.6	6.3	5.9	5.2	4.8	6.2	7.8	9.1	9.6	8.2	8.2	7.5	6.3	6.0</td											

## West PM<sub>10</sub> ( $\mu\text{g}/\text{m}^3$ ) – April 2018

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	11.8	6.6	4.6	4.1	3.8	4.3	5.8	9.5	14.8	10.3	27.2	17.6	26.1	20.9	25.4	19.8	15.9	12.6	5.6	6.3	6.6	8.1	6.3	4.9	27.2	11.6
2	4.7	2.6	2.4	2.3	1.9	2.2	2.8	6.9	9.3	24.7	11.4	18.1	32.8	28.4	34.5	98.4	22.8	9.1	8.2	5.9	4.5	4.7	5.0	5.0	98.4	14.5
3	6.9	7.9	10.5	6.6	6.1	6.7	7.3	13.0	48.2	27.0	32.4	28.9	28.7	22.2	21.7	22.6	15.5	15.3	33.9	36.5	50.2	34.7	41.8	44.1	50.2	23.7
4	44.0	30.8	27.4	22.8	20.5	17.9	20.0	22.4	45.7	34.1	38.4	46.8	28.2	14.0	30.5	36.1	45.2	19.9	15.6	10.1	4.9	3.7	3.2	2.8	46.8	24.4
5	3.0	5.6	8.3	6.4	2.6	2.1	8.5	5.2	13.3	16.9	13.4	9.4	15.2	22.4	14.5	16.0	12.0	8.2	8.0	14.8	19.2	11.4	14.0	12.4	22.4	11.0
6	9.0	8.4	7.5	7.9	7.5	7.3	9.0	14.6	20.2	28.7	44.2	59.7	56.4	40.1	30.9	25.9	13.4	19.6	12.0	16.1	11.6	12.4	14.3	21.3	59.7	20.7
7	13.7	15.4	17.5	23.1	18.7	15.0	33.2	47.9	76.9	121.5	125.6	81.4	54.3	45.0	29.1	21.0	23.8	30.6	16.5	14.4	11.7	9.0	6.8	6.5	125.6	35.8
8	13.1	12.8	10.7	10.4	10.6	11.0	11.6	15.6	17.9	29.5	24.7	34.0	24.0	21.0	22.6	15.6	11.5	21.3	20.2	21.5	21.2	17.7	20.3	20.9	34.0	18.3
9	26.2	25.3	19.6	6.2	1.7	0.8	0.7	3.0	89.7	58.7	42.7	59.8	21.4	33.6	19.9	14.7	13.2	2.2	1.7	1.6	1.0	1.8	1.4	1.9	89.7	18.7
10	1.9	1.7	2.2	2.2	2.9	6.1	20.1	30.7	48.6	248.5	125.8	148.1	176.4	94.9	52.5	146.3	26.1	12.3	15.0	11.2	14.9	7.4	6.5	5.6	248.5	50.3
11	3.2	1.7	1.0	0.7	1.1	0.8	0.9	11.8	168.8	88.1	61.4	30.2	24.8	39.0	13.1	20.1	10.1	3.6	10.8	13.0	7.7	8.3	14.4	32.2	168.8	23.6
12	40.4	28.0	25.7	22.4	23.0	22.8	20.6	10.5	9.8	6.0	5.1	4.5	3.7	7.1	15.9	14.1	12.5	10.5	13.7	10.2	15.1	18.8	19.8	18.6	40.4	15.8
13	16.2	18.7	16.6	13.5	8.2	3.7	1.9	11.7	33.9	22.5	24.2	31.3	11.3	16.3	16.4	8.2	5.8	5.0	4.0	4.1	2.4	2.7	1.0	0.7	33.9	11.7
14	0.6	0.5	0.4	0.3	0.9	0.8	5.5	9.4	5.8	6.1	22.9	12.3	21.5	12.1	24.0	8.3	5.4	8.9	2.4	2.0	2.6	3.2	2.8	2.3	24.0	6.7
15	2.0	2.2	2.7	2.5	2.8	2.8	3.8	14.2	14.7	14.2	8.6	7.9	9.1	19.6	21.7	15.9	20.1	19.4	13.3	8.6	7.1	7.7	8.3	8.5	21.7	9.9
16	9.2	10.5	11.2	10.3	8.7	6.1	3.6	4.1	4.3	7.4	7.5	10.0	13.7	5.5	15.1	11.5	13.2	3.2	6.4	6.8	6.4	5.4	5.4	6.4	15.1	8.0
17	1.4	1.1	1.0	3.7	2.0	15.2	15.5	37.0	48.3	54.4	28.7	23.2	33.3	35.5	26.7	13.3	9.0	2.2	1.1	0.9	1.0	9.5	1.1	1.2	54.4	15.3
18	1.1	1.0	0.8	1.7	3.6	1.9	13.1	91.8	60.1	69.0	19.6	82.6	45.0	30.0	30.8	20.9	18.5	5.5	3.9	1.4	1.1	1.8	2.3	2.2	91.8	21.2
19	3.0	3.5	2.6	5.1	3.0	5.5	22.1	30.5	26.1	32.2	24.2	23.2	31.5	28.0	32.7	12.9	16.0	5.6	4.1	2.2	1.9	2.3	3.4	4.3	32.7	13.6
20	2.9	5.4	3.6	2.0	5.1	10.6	45.8	53.9	44.4	54.0	24.4	47.7	39.5	34.0	41.1	22.4	9.7	7.8	10.7	4.2	3.0	3.2	3.6	3.8	54.0	20.1
21	3.4	3.1	4.5	5.4	3.9	3.6	5.2	5.6	4.5	7.0	11.3	4.7	0.5	5.4	6.4	4.4	3.1	2.5	1.9	0.7	1.5	1.1	1.8	1.0	11.3	3.9
22	0.7	0.4	0.4	0.4	0.8	1.2	2.4	4.7	3.6	2.7	3.8	2.7	3.4	4.0	4.2	3.3	3.2	3.9	4.3	4.6	3.5	3.0	2.5	2.5	4.7	2.8
23	3.0	3.5	2.1	1.8	1.6	2.2	60.3	27.8	51.5	19.7	25.8	57.1	18.3	33.9	34.7	31.7	14.6	5.3	3.4	2.8	2.5	4.0	4.8	3.3	60.3	17.3
24	2.7	3.2	2.7	2.9	3.7	3.6	34.8	20.0	27.9	29.9	20.0	10.9	13.4	13.1	15.2	15.6	23.1	7.6	5.7	5.1	5.1	5.4	6.9	6.8	34.8	11.9
25	7.4	5.4	5.3	7.9	9.4	14.8	19.7	37.9	36.4	37.4	30.4	34.0	28.9	44.6	37.7	32.1	25.7	25.6	8.5	6.5	6.3	8.5	9.2	8.7	44.6	20.3
26	7.7	7.0	7.1	6.9	7.1	7.6	16.5	34.4	36.5	26.1	30.8	23.6	21.8	17.0	15.1	14.8	14.4	5.1	4.6	17.9	18.9	13.6	17.6	19.5	36.5	16.3
27	14.1	9.8	9.9	9.6	7.8	7.7	10.5	25.4	29.1	39.6	29.3	25.1	20.7	19.0	19.7	16.2	13.9	9.1	6.1	7.5	8.1	9.2	12.9	12.8	39.6	15.5
28	12.5	11.8	10.9	10.7	10.9	12.8	18.6	28.2	25.9	24.7	28.9	21.1	18.8	19.0	23.2	26.8	17.2	11.7	11.5	11.5	13.5	15.6	17.4	28.9	17.4	
29	21.5	21.4	15.7	14.7	10.9	5.8	4.6	3.8	3.7	2.5	1.0	1.4	2.3	1.3	0.5	2.9	2.8	2.1	2.5	1.5	1.2	3.1	3.8	3.9	21.5	5.6
30	8.2	9.7	8.8	9.4	10.0	7.7	5.9	8.4	9.2	10.5	15.2	11.2	11.9	18.3	11.6	2.7	2.8	2.7	2.4	2.2	2.0	2.4	2.0	2.5	18.3	7.4
Hourly Max	44.0	30.8	27.4	23.1	23.0	22.8	60.3	91.8																		

## West TSP ( $\mu\text{g}/\text{m}^3$ ) – April 2018

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	8.2	4.4	3.2	2.8	2.5	3.0	4.7	9.2	28.8	19.1	55.7	115.6	274.5	230.1	386.6	256.3	219.0	104.8	4.7	5.1	5.0	6.1	4.5	4.0	386.6	73.2
2	3.7	1.8	1.8	1.6	1.3	1.5	2.1	7.0	15.1	127.7	36.4	66.1	123.7	99.2	96.3	235.6	56.9	17.6	16.7	7.6	3.1	3.2	3.7	3.5	235.6	38.9
3	4.7	5.4	7.7	4.6	4.9	5.8	6.7	14.1	196.0	77.8	131.4	114.2	145.2	73.1	68.0	76.9	42.7	52.5	75.6	64.2	100.2	37.6	31.6	49.4	196.0	57.9
4	32.3	27.4	19.9	15.0	13.7	12.3	16.2	23.5	101.2	106.8	138.2	169.2	113.8	45.2	116.4	110.5	687.0	17.6	12.6	7.0	3.3	2.5	2.1	1.8	687.0	74.8
5	1.9	3.9	6.2	5.2	1.8	1.4	8.3	10.4	109.1	51.8	30.1	22.1	52.8	144.8	98.7	74.0	48.6	72.8	37.6	70.7	87.7	37.9	81.0	59.1	144.8	46.6
6	7.7	6.6	5.9	6.5	6.0	5.4	7.3	12.9	44.1	51.2	91.7	80.3	88.1	128.5	86.8	75.7	35.8	73.8	24.0	38.7	11.6	10.4	12.8	21.9	128.5	38.9
7	11.3	13.2	13.1	15.2	14.0	11.1	32.8	53.6	161.3	212.2	230.3	203.9	179.4	151.6	110.0	82.8	87.6	312.9	19.2	13.1	9.5	7.5	4.7	4.3	312.9	81.4
8	9.4	9.4	7.7	7.3	7.0	7.2	7.8	11.4	17.3	28.5	22.7	33.7	52.8	43.9	43.6	36.0	17.9	38.9	20.5	19.6	15.7	11.9	15.1	14.0	52.8	20.8
9	17.3	16.6	13.4	4.0	1.2	0.5	0.5	13.3	247.6	176.6	138.1	149.9	63.2	120.7	57.3	51.0	40.0	5.2	5.7	5.8	0.9	5.1	0.9	1.4	247.6	47.3
10	1.5	1.6	3.1	1.8	3.0	6.5	38.6	67.1	95.3	440.1	275.5	267.1	436.0	178.4	120.5	205.5	36.9	10.5	22.4	8.4	12.7	5.2	4.6	4.0	440.1	93.6
11	2.2	1.3	0.6	1.0	0.8	0.6	0.6	24.2	217.8	126.0	130.6	57.6	62.6	96.8	33.8	53.7	26.6	8.3	25.6	14.5	6.8	5.9	9.6	21.7	217.8	38.7
12	26.2	18.1	16.6	14.7	15.0	15.3	13.9	7.1	6.6	12.7	29.8	12.4	2.8	9.4	40.1	29.3	19.2	7.1	9.6	6.7	10.0	13.2	13.6	12.4	40.1	15.1
13	10.5	12.2	10.8	8.8	5.4	2.6	1.4	18.4	71.7	74.3	76.0	69.6	33.8	43.0	49.0	25.3	21.5	12.1	7.5	9.6	4.0	6.2	1.7	1.6	76.0	24.0
14	1.4	0.3	0.4	0.5	0.8	1.6	14.1	29.9	21.4	44.0	58.2	33.5	65.3	36.7	62.7	22.5	14.0	17.7	1.9	1.5	2.0	2.5	2.1	1.7	65.3	18.2
15	1.4	1.5	1.8	1.7	2.0	1.9	3.4	14.7	27.8	31.1	11.9	10.5	17.3	48.3	51.5	35.7	45.8	39.7	26.1	6.8	4.7	5.3	5.5	5.5	51.5	16.8
16	6.1	7.1	7.5	6.7	5.7	4.0	2.4	3.2	3.3	6.7	6.8	20.3	5.4	16.0	11.5	13.4	2.2	5.3	5.9	5.7	3.9	3.6	4.1	20.3	6.9	
17	0.9	0.7	0.7	11.4	2.4	23.4	29.7	88.9	118.6	139.5	68.6	64.2	93.7	99.2	77.1	50.7	33.0	10.5	2.5	4.1	3.2	15.1	1.9	0.9	139.5	39.2
18	0.7	0.7	0.5	2.9	4.4	1.3	16.2	150.9	150.3	169.6	61.0	212.2	125.1	98.4	95.4	67.0	58.2	10.5	6.3	0.9	0.9	1.6	1.6	1.4	212.2	51.6
19	2.0	2.3	2.7	6.7	2.3	5.9	56.8	109.3	88.5	98.5	68.0	69.9	100.1	109.9	92.1	32.8	44.8	15.8	7.4	2.7	1.3	3.8	5.8	11.8	109.9	39.2
20	10.6	11.9	8.7	4.6	18.1	35.6	108.3	130.7	116.2	147.4	71.3	124.5	109.4	91.6	117.3	66.2	21.2	11.8	17.4	9.6	4.9	2.3	2.8	3.1	147.4	51.9
21	5.8	2.1	5.0	9.0	3.2	5.6	13.8	9.5	22.0	27.7	31.9	17.3	0.5	26.1	30.5	16.5	12.7	6.3	5.2	1.3	3.5	2.0	3.2	0.9	31.9	10.9
22	0.5	0.2	0.3	0.3	0.6	1.2	3.8	6.3	4.8	7.9	12.0	4.5	5.5	11.5	12.8	6.7	6.5	5.1	8.8	7.8	6.2	2.6	1.8	2.0	12.8	5.0
23	2.0	2.4	1.6	1.2	1.0	1.7	92.3	80.0	118.7	65.6	54.3	135.1	43.0	72.4	87.4	79.2	40.2	7.1	2.6	2.3	2.6	6.2	4.4	2.8	135.1	37.8
24	1.8	2.4	2.7	2.2	7.1	3.4	85.1	47.7	69.1	68.8	52.4	31.1	36.6	43.9	38.7	27.8	54.6	11.1	10.1	5.9	8.1	9.8	15.1	9.0	85.1	26.9
25	12.0	5.6	5.9	11.9	18.7	25.9	39.9	104.0	118.1	123.2	79.3	87.9	84.2	115.3	94.4	79.7	47.3	42.0	8.3	9.5	8.1	7.6	18.3	20.4	123.2	48.6
26	24.0	16.4	18.0	8.7	13.4	13.4	33.8	94.7	80.4	61.7	75.0	48.1	61.7	45.4	44.0	47.1	37.8	10.5	5.6	30.5	23.9	11.6	24.2	94.7	35.6	
27	14.7	8.1	7.4	9.6	5.6	5.8	18.7	51.3	61.4	101.7	73.2	56.7	48.3	57.9	52.5	40.9	45.4	26.9	11.8	7.6	7.1	7.0	12.2	13.9	101.7	31.1
28	12.6	9.9	10.7	9.7	10.7	18.0	28.2	60.8	49.6	53.7	55.5	46.7	40.6	37.8	49.1	66.5	29.6	17.7	16.8	12.6	19.1	28.4	20.3	24.6	66.5	30.4
29	27.6	27.2	10.3	9.6	7.1	3.8	3.1	2.5	2.4	1.7	0.7	1.0	1.6	0.9	0.4	1.9	1.9	1.4	1.6	1.0	0.8	2.2	2.5	2.6	27.6	4.8
30	7.1	7.4	5.9	6.3	6.8	5.0	3.9	5.6	6.5	8.9	19.3	22.1	26.3	66.3	38.1	6.0	4.7	5.2	3.5	1.8	2.3	6.0	1.8	2.1</		

## Berm PM<sub>2.5</sub> ( $\mu\text{g}/\text{m}^3$ ) – April 2018

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	4.2	3.1	2.5	2.2	1.9	2.0	3.5	6.8	3.5	7.6	5.5	4.0	4.1	4.0	4.5	4.9	4.0	4.3	3.7	3.1	3.3	4.6	5.3	3.0	7.6	4.0
2	3.3	2.3	1.7	1.2	1.2	1.4	1.0	1.3	1.4	1.1	1.4	1.5	1.9	1.1	1.1	1.1	0.9	0.9	1.1	2.1	2.5	1.2	1.1	1.2	3.3	1.5
3	1.7	2.3	3.0	2.5	2.2	1.9	2.4	3.7	4.0	3.4	7.7	5.9	4.3	8.8	7.3	11.8	6.3	6.6	7.4	7.2	8.1	7.8	7.8	7.7	11.8	5.5
4	6.6	4.4	6.3	9.4	9.2	7.6	6.1	6.2	4.9	7.4	8.0	7.0	4.7	6.4	9.2	13.7	16.0	12.1	9.9	4.5	2.4	2.1	1.9	2.1	16.0	7.0
5	3.9	7.1	5.1	2.9	1.5	1.6	3.5	3.4	4.2	2.4	1.7	2.0	1.6	1.7	2.1	2.1	1.9	1.7	3.2	3.3	4.3	4.0	4.2	5.1	7.1	3.1
6	5.0	4.0	3.8	3.8	4.7	4.7	3.9	3.6	4.0	11.0	12.5	7.9	8.0	5.6	5.2	4.4	4.3	4.3	4.8	4.6	5.7	4.6	4.7	5.0	12.5	5.4
7	5.3	6.4	8.8	9.3	5.2	4.8	5.2	7.1	8.9	7.3	5.9	6.6	6.6	5.1	4.6	5.8	5.2	6.6	8.2	8.0	5.9	6.3	4.9	3.7	9.3	6.3
8	3.7	3.5	3.3	3.6	6.3	8.6	8.1	5.6	4.6	7.7	8.1	5.8	6.8	6.4	4.1	3.2	3.7	4.2	6.2	7.6	7.2	7.3	7.9	8.6	8.6	5.9
9	8.7	7.9	7.6	1.2	0.3	0.4	0.4	0.6	2.1	2.8	3.0	3.2	2.0	2.5	2.1	2.8	2.1	2.1	3.1	3.6	2.7	3.6	3.0	1.1	8.7	2.9
10	0.8	0.7	0.7	0.8	0.8	1.0	1.2	1.7	2.3	2.3	10.0	8.1	6.4	8.7	11.3	11.8	7.4	5.9	2.9	3.6	5.3	4.9	4.4	2.6	11.8	4.4
11	2.1	0.5	0.5	0.4	0.4	0.5	0.6	0.7	1.2	1.9	2.9	2.4	2.3	3.0	2.8	4.8	4.8	2.6	4.6	2.8	4.8	10.6	11.7	23.8	23.8	3.9
12	26.2	20.3	17.7	15.7	14.9	13.3	12.1	8.4	6.8	4.0	3.2	2.7	3.1	3.6	3.3	3.5	4.6	6.3	6.5	8.0	9.2	8.2	7.5	10.2	26.2	9.1
13	9.6	8.5	8.4	6.7	3.9	1.5	0.6	0.8	2.8	3.3	6.5	5.9	7.1	7.1	8.4	9.2	12.9	8.5	3.7	9.9	12.3	3.6	7.3	2.8	12.9	6.3
14	2.1	2.5	1.6	1.0	1.2	1.5	1.9	3.6	5.6	4.0	2.5	2.2	3.9	3.4	2.1	2.5	1.1	1.7	0.9	1.3	1.5	1.7	3.1	1.0	5.6	2.2
15	1.1	1.1	1.1	1.0	1.2	1.4	2.3	2.2	1.7	1.4	1.3	2.0	1.4	1.3	1.8	2.0	2.6	3.9	3.5	3.8	4.0	4.3	5.2	4.8	5.2	2.3
16	5.3	5.7	6.0	5.8	5.6	2.7	1.2	1.0	1.1	0.8	1.7	0.8	0.8	1.3	0.6	0.9	1.0	1.0	1.1	0.9	1.3	1.5	1.0	2.4	6.0	2.1
17	2.4	2.7	2.7	2.8	2.3	3.6	4.9	2.8	2.5	3.7	7.2	7.3	7.5	10.4	9.6	12.0	8.5	7.2	1.6	1.5	0.9	1.1	1.1	0.5	12.0	4.5
18	0.4	0.5	0.9	0.5	0.5	0.8	1.1	2.6	2.3	5.0	7.8	3.4	2.7	4.6	6.7	5.6	6.8	6.4	3.7	3.8	1.3	0.4	0.5	0.6	7.8	2.9
19	1.2	0.9	0.9	0.8	0.9	0.9	2.6	2.8	2.8	4.2	13.1	7.1	10.6	19.1	16.7	12.4	10.2	9.1	3.7	1.5	1.8	1.9	3.9	2.1	19.1	5.5
20	3.3	1.7	4.3	1.3	2.1	2.4	13.6	9.3	6.7	10.9	11.3	9.3	24.6	25.7	15.2	15.8	8.8	8.2	5.8	5.0	1.6	1.2	1.0	1.0	25.7	7.9
21	1.5	1.2	1.0	1.3	1.2	4.2	18.3	6.8	8.7	27.7	4.9	6.0	2.3	4.9	9.1	10.9	8.8	5.3	4.8	1.7	1.0	1.0	1.5	0.3	27.7	5.6
22	0.4	0.2	0.2	0.2	0.6	0.8	0.6	2.7	7.6	4.1	3.2	4.4	3.7	2.5	2.2	2.8	1.3	1.6	1.5	1.0	0.9	0.9	0.7	0.6	7.6	1.9
23	0.8	0.8	0.7	1.3	1.1	1.1	3.4	1.9	2.9	8.4	7.7	4.7	5.8	7.1	5.4	8.8	5.9	5.7	3.0	1.4	1.1	1.2	1.6	1.9	8.8	3.5
24	1.4	1.7	1.7	1.6	1.6	1.6	2.6	4.2	6.9	15.1	12.3	18.6	28.3	20.1	17.4	15.3	9.8	11.3	4.9	2.0	2.0	2.0	2.1	2.5	28.3	7.8
25	2.6	2.3	2.1	3.6	3.4	4.7	5.6	6.2	6.1	5.6	5.2	5.7	5.6	5.3	5.5	4.9	5.0	4.7	3.9	5.3	4.2	2.9	3.2	3.4	6.2	4.5
26	4.2	4.0	3.6	3.9	3.8	3.6	3.8	10.6	8.1	10.0	23.1	13.1	7.3	6.5	6.2	4.7	7.8	5.4	2.0	4.5	3.4	2.9	2.7	2.8	23.1	6.2
27	2.6	2.8	2.9	3.1	4.5	4.9	4.2	8.7	10.3	21.2	14.3	5.7	6.3	7.8	6.4	29.7	16.3	35.5	4.4	3.4	3.4	3.7	4.9	6.5	35.5	8.9
28	6.6	7.0	6.3	6.4	6.8	6.5	6.3	6.6	8.1	6.8	10.6	9.8	11.4	9.6	14.5	21.2	16.2	14.9	8.5	5.9	6.0	6.5	6.5	10.9	21.2	9.2
29	11.5	8.6	6.9	5.7	3.9	2.0	2.2	2.1	1.8	0.8	0.3	0.4	0.8	0.6	0.4	1.8	1.4	1.7	1.3	1.3	1.0	0.7	0.4	0.5	11.5	2.4
30	1.4	1.5	2.2	3.8	3.2	2.7	3.5	4.7	4.4	3.4	4.5	4.4	5.2	7.6	6.1	4.6	6.4	6.0	3.2	4.2	2.3	1.5	1.5	1.3	7.6	3.7
Hourly Max	26.2	20.3	17.7	15.7	14.9	13.3	18.3	10.6	10.3	27.7	23.1	18.6	28.3	25.7	17.4	29.7	16.3	35.5	9.9	9.9	12.3	10.6	11.7	23.8		
Hourly Average	4.3	3.9	3.8	3.5	3.2	3.1	4.2	4.3	4.6	6.5	6.9	5.6	6.2	6.7	6.4	7.8	6.4	6.5	4.1	3.9	3.7	3.5	3.8	4		

## Berm PM<sub>10</sub> ( $\mu\text{g}/\text{m}^3$ ) – April 2018

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	5.0	3.5	2.7	2.3	2.0	2.2	4.7	10.2	5.2	14.0	9.0	9.3	11.2	13.2	11.9	6.4	4.7	5.3	4.8	3.7	3.9	5.5	6.8	3.9	14.0	6.3
2	4.5	3.1	2.1	1.4	1.3	1.5	1.1	1.6	1.7	1.3	1.8	3.9	5.0	1.8	1.7	2.0	1.6	1.3	1.8	5.4	5.6	1.4	1.2	1.3	5.6	2.3
3	1.9	2.6	3.2	2.7	2.5	2.0	4.7	11.1	13.3	11.2	62.0	40.1	21.7	51.3	40.7	65.8	30.7	37.0	17.8	17.4	22.2	17.3	12.6	11.1	65.8	21.0
4	9.5	5.3	8.0	11.1	9.8	8.2	6.7	10.1	14.2	42.3	49.0	43.0	30.2	42.2	27.7	21.3	33.5	15.3	11.6	4.6	2.5	2.2	2.1	3.1	49.0	17.2
5	4.2	8.6	6.4	3.7	1.8	1.8	4.6	4.7	5.9	5.3	3.9	4.2	3.1	2.5	3.9	5.3	4.4	2.8	6.7	9.5	11.1	8.5	7.2	7.0	11.1	5.3
6	6.6	5.1	4.7	4.7	6.2	6.0	4.6	4.1	5.0	15.4	17.3	11.6	11.9	8.7	7.6	7.1	6.5	6.6	8.0	6.0	7.5	5.3	5.7	6.2	17.3	7.4
7	6.8	8.8	10.6	10.2	5.5	5.1	5.7	9.3	23.1	15.5	10.3	14.4	15.5	10.7	8.7	10.9	7.3	11.6	11.5	10.7	7.4	8.5	6.2	4.0	23.1	9.9
8	4.1	3.7	3.5	3.8	7.4	9.6	8.9	6.0	4.8	8.7	8.8	6.1	7.1	7.1	4.8	3.5	4.1	4.4	6.5	8.7	7.7	8.0	8.8	10.6	10.6	6.5
9	11.8	9.5	10.6	1.4	0.4	0.4	0.6	1.6	11.3	16.5	21.2	18.9	14.2	17.9	14.7	20.0	12.5	12.8	18.5	17.3	10.9	13.2	11.7	2.5	21.2	11.3
10	1.1	1.1	0.9	1.2	1.2	1.5	2.5	6.4	9.9	8.8	53.5	39.6	26.6	35.2	40.7	51.9	19.1	15.1	4.2	5.6	15.2	10.7	9.6	4.1	53.5	15.2
11	3.3	0.9	0.6	0.6	0.5	0.9	0.9	1.3	2.7	5.0	11.4	9.6	14.0	18.6	16.8	26.0	22.8	12.6	15.1	6.0	8.7	19.1	15.2	24.9	26.0	9.9
12	26.9	20.7	18.2	15.8	15.1	13.5	12.6	9.1	7.0	4.4	3.5	3.1	4.0	4.3	3.9	4.1	5.4	6.9	6.8	9.5	10.3	8.6	7.6	11.5	26.9	9.7
13	10.1	8.7	8.6	6.8	4.0	1.6	0.7	1.7	14.9	21.2	47.2	43.5	51.3	51.2	56.8	66.7	91.7	60.6	21.6	82.8	104.3	24.9	49.6	22.1	104.3	35.5
14	11.4	15.0	11.8	7.8	8.3	8.4	11.1	23.8	44.5	26.5	11.8	11.7	24.7	14.2	10.0	14.8	4.1	5.6	1.7	1.8	2.4	5.5	11.6	1.5	44.5	12.1
15	1.4	1.3	1.3	1.2	1.4	1.7	3.2	3.0	4.0	2.3	2.2	7.4	3.2	4.0	7.7	8.3	5.1	7.2	5.1	4.2	4.2	4.5	5.6	5.1	8.3	3.9
16	5.6	6.0	6.3	6.1	5.6	2.7	1.3	1.0	1.2	0.9	2.2	0.9	0.8	1.6	0.6	1.0	1.0	1.1	1.2	1.1	1.4	1.8	1.1	2.9	6.3	2.3
17	3.2	4.0	15.0	16.3	16.6	21.7	29.7	16.3	12.0	16.3	33.0	40.5	45.7	62.7	57.6	83.5	58.4	50.8	5.7	9.3	3.6	6.1	5.4	0.7	83.5	25.6
18	0.6	0.7	3.7	1.1	1.0	2.2	3.4	14.9	13.3	30.5	47.2	19.1	14.3	26.5	44.6	36.1	39.1	37.3	13.0	21.9	5.1	0.5	0.6	0.9	47.2	15.7
19	3.3	1.8	1.8	1.2	1.8	1.4	10.5	14.1	18.3	27.6	74.1	44.9	69.8	110.0	103.3	70.9	65.9	55.1	19.7	4.5	5.2	6.3	20.3	8.5	110.0	30.9
20	9.6	6.3	18.7	3.4	11.2	9.1	56.5	63.6	39.6	60.6	69.3	60.0	143.4	159.1	88.3	91.1	45.2	40.1	26.5	22.7	4.6	1.8	1.2	1.3	159.1	43.1
21	3.5	2.9	1.1	1.8	1.5	20.1	115.6	38.3	47.7	144.2	27.2	26.0	8.0	25.9	84.2	96.9	124.1	33.9	28.6	9.8	2.7	3.9	8.1	1.0	144.2	35.7
22	0.6	0.2	0.2	0.3	1.5	2.4	1.3	17.7	31.3	15.8	12.0	16.2	14.4	11.3	8.3	15.2	4.6	8.1	5.1	2.5	2.3	1.8	1.2	1.0	31.3	7.3
23	1.3	1.2	1.2	2.5	2.1	1.8	12.2	8.7	17.1	59.4	40.7	23.4	24.9	35.0	21.9	47.6	25.0	25.3	11.1	2.5	1.8	2.2	2.9	7.4	59.4	15.8
24	3.3	4.6	5.3	3.5	3.4	3.7	9.0	20.1	42.6	106.9	73.4	105.6	164.5	122.1	99.3	71.0	43.8	51.0	20.2	4.0	4.0	3.4	2.6	5.3	164.5	40.5
25	5.6	2.9	2.6	10.1	6.5	11.2	14.9	17.1	17.0	13.2	10.1	12.6	13.4	11.1	13.9	10.1	14.9	11.8	10.0	17.5	16.6	4.6	5.5	6.8	17.5	10.8
26	9.8	8.7	5.3	6.5	6.5	5.9	8.1	59.5	41.4	53.4	130.3	70.2	31.7	31.5	28.6	20.9	42.0	30.3	5.8	18.5	9.8	6.6	5.6	5.9	130.3	26.8
27	5.0	5.6	4.4	6.2	16.5	17.1	14.5	52.0	62.9	133.8	96.2	23.4	27.1	35.4	27.9	186.0	81.4	186.2	10.8	4.2	3.7	4.0	5.5	8.1	186.2	42.4
28	7.8	8.2	7.3	8.1	11.2	8.7	8.1	10.7	21.1	13.5	39.2	36.0	49.2	44.5	66.8	95.9	78.0	64.8	26.7	9.5	7.1	8.9	7.9	31.5	95.9	27.9
29	28.1	13.4	7.7	6.3	4.2	2.2	2.4	2.2	1.9	0.8	0.3	0.4	0.8	0.7	0.4	2.1	1.5	1.9	1.4	1.3	1.0	0.7	0.4	0.5	28.1	3.4
30	1.4	1.6	2.3	3.9	3.2	3.1	4.0	5.8	5.4	4.3	6.4	9.2	17.0	28.5	26.2	20.6	24.1	23.8	9.5	12.1	5.2	3.1	2.5	1.7	28.5	9.4
Hourly Max	28.1	20.7	18.7	16.3	16.6	21.7	115.6	63.6	62.9	144.2	130.3	105.6	164.5	159.1	1											

## Berm TSP ( $\mu\text{g}/\text{m}^3$ ) – April 2018

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	4.0	2.6	1.9	1.5	1.3	1.6	4.4	11.6	4.9	16.1	11.0	86.6	208.1	271.3	253.0	6.2	3.8	4.4	4.3	2.9	3.1	4.5	5.8	3.4	271.3	38.3
2	4.2	2.6	1.6	1.0	0.8	1.0	0.8	1.2	1.3	1.0	1.6	15.5	13.3	1.6	1.8	2.3	1.4	1.5	3.4	7.7	8.6	1.5	0.8	0.8	15.5	3.2
3	1.2	1.8	2.2	1.8	1.7	1.3	9.7	26.2	22.1	19.5	150.0	89.2	49.9	96.9	113.7	127.4	58.6	92.7	29.2	25.2	37.1	33.9	13.4	10.8	150.0	42.3
4	8.6	3.7	6.4	7.8	6.4	5.6	4.7	13.3	26.5	92.7	102.9	92.0	76.8	115.0	82.4	46.2	543.2	14.6	9.8	3.0	1.6	1.4	4.1	14.1	543.2	53.5
5	2.8	6.6	5.3	2.9	1.4	1.2	3.9	4.5	5.7	43.9	18.2	7.8	19.9	12.9	23.9	27.3	28.7	34.3	155.9	259.8	153.9	100.2	91.8	6.8	259.8	42.5
6	5.5	3.8	3.7	4.0	5.9	5.5	3.8	3.1	3.9	12.2	13.8	20.9	24.0	23.8	15.5	24.4	26.6	29.8	51.9	25.5	5.9	3.7	4.1	4.4	51.9	13.6
7	4.9	7.1	7.3	6.7	3.6	3.3	3.8	7.8	84.2	24.9	13.7	32.5	31.3	32.2	21.6	41.4	15.3	108.0	12.8	11.6	6.6	8.7	5.4	2.8	108.0	20.7
8	2.9	2.4	2.3	2.5	5.1	6.4	5.8	4.0	3.2	5.7	5.8	3.9	4.6	6.9	3.4	2.9	6.1	3.5	4.3	6.2	5.1	5.3	5.8	7.1	7.1	4.6
9	8.7	6.4	8.3	1.0	0.3	0.3	0.8	4.5	22.7	44.7	78.6	57.1	39.9	68.3	55.2	77.9	41.6	53.0	57.1	39.5	31.3	28.3	29.2	5.0	78.6	31.6
10	1.2	1.6	2.3	1.0	2.5	3.3	4.6	14.1	32.8	18.6	129.0	73.2	49.0	63.4	83.8	151.6	45.1	34.9	4.9	4.7	14.5	14.6	7.7	3.1	151.6	31.7
11	2.4	0.6	0.4	0.5	0.3	1.3	0.7	1.5	3.6	5.7	14.9	20.6	41.6	59.0	51.0	62.2	47.6	21.3	28.6	7.8	8.4	18.9	11.1	16.2	62.2	17.8
12	17.4	13.4	11.8	10.2	9.8	8.8	8.3	6.5	4.7	3.0	2.3	2.4	3.2	3.5	3.0	3.0	4.0	4.7	4.6	6.9	7.3	5.6	5.0	7.8	17.4	6.5
13	6.6	5.6	5.6	4.4	2.6	1.0	0.6	30.9	38.2	78.1	117.3	152.4	166.6	181.6	196.1	210.6	363.0	243.1	93.4	379.7	481.0	118.8	244.7	104.3	481.0	134.4
14	47.7	54.8	52.5	31.4	34.0	35.9	40.0	70.1	189.6	250.7	33.6	25.1	77.3	34.0	15.2	53.7	15.4	11.9	1.1	1.3	3.2	17.7	25.1	1.0	250.7	46.8
15	1.0	1.0	0.9	0.8	0.9	1.2	2.9	2.6	5.1	4.5	1.7	12.9	4.0	5.4	14.0	16.1	6.9	19.5	6.8	2.8	2.7	3.0	3.7	3.3	19.5	5.2
16	3.6	4.0	4.2	4.1	3.6	1.7	0.8	0.7	0.8	0.6	1.7	0.6	0.5	1.1	0.4	0.6	0.6	0.7	0.8	0.7	1.0	1.2	0.7	2.3	4.2	1.6
17	2.9	3.9	47.1	65.9	57.7	70.0	120.3	56.0	33.3	48.1	77.6	125.6	147.9	187.6	172.6	336.0	208.8	195.7	14.9	35.7	7.2	21.3	8.5	0.4	336.0	85.2
18	0.9	1.0	6.1	1.8	0.8	3.5	4.0	23.9	31.9	93.0	110.0	49.8	31.1	57.6	119.9	94.5	95.5	100.8	26.9	41.5	9.3	0.4	0.4	0.9	119.9	37.7
19	4.9	4.9	3.8	2.3	3.4	2.1	14.5	38.4	49.4	79.6	141.1	90.4	198.6	221.8	237.4	157.8	177.3	144.6	66.3	9.8	11.4	17.7	53.9	33.4	237.4	73.5
20	28.1	21.3	46.2	10.9	34.3	28.7	125.1	169.4	84.3	126.3	137.6	134.4	342.7	411.6	225.4	205.7	113.2	73.8	50.5	45.4	10.3	1.4	1.3	0.9	411.6	101.2
21	5.6	3.8	0.7	1.2	2.2	63.0	403.7	111.4	142.9	475.8	93.6	60.3	17.6	75.3	398.7	497.6	461.9	137.3	127.9	39.2	5.9	7.0	44.4	3.6	497.6	132.5
22	0.4	0.1	0.1	0.2	1.1	2.9	2.1	48.3	30.6	26.4	20.6	17.4	18.9	17.4	10.7	33.7	7.4	16.2	9.6	3.9	4.0	2.6	1.3	1.0	48.3	11.5
23	1.0	1.0	0.7	1.8	1.7	1.5	22.6	31.7	46.1	179.4	101.5	51.9	46.7	69.3	41.4	98.4	44.6	47.2	29.0	2.1	1.2	2.0	2.5	21.3	179.4	35.3
24	8.6	8.9	15.4	7.6	10.8	6.3	28.6	49.6	148.4	395.2	181.4	308.8	441.4	349.1	294.1	160.6	94.1	157.5	60.1	7.2	8.2	3.0	9.0	441.4	115.0	
25	8.7	2.5	2.9	19.2	9.9	14.4	21.0	40.5	38.7	40.2	20.9	31.1	21.1	18.7	18.3	16.9	27.9	22.5	13.1	32.4	39.7	6.9	6.9	17.5	40.5	20.5
26	21.2	24.4	10.1	11.6	15.1	12.9	16.4	132.4	95.3	101.3	243.3	105.8	52.1	48.2	48.2	36.1	70.6	51.8	10.3	35.3	14.8	9.3	6.4	6.5	243.3	49.1
27	5.0	6.6	5.4	9.9	42.3	44.6	37.9	146.0	157.0	298.2	201.0	32.0	42.1	56.2	43.2	320.2	127.5	293.2	17.2	4.3	3.1	2.9	4.2	8.5	320.2	79.5
28	6.3	12.0	6.6	13.9	23.1	12.1	11.2	20.4	35.1	20.9	91.6	66.5	80.4	68.0	97.9	172.4	171.5	109.6	44.6	13.9	5.9	8.5	8.2	86.5	172.4	49.5
29	62.0	17.6	5.0	4.1	2.7	1.4	1.5	1.4	1.2	0.5	0.2	0.3	0.5	0.4	0.3	1.4	1.0	1.3	0.9	0.9	0.6	0.4	0.2	0.3	62.0	4.4
30	0.9	1.1	1.5	2.5	2.1	2.2	2.7	4.0	3.6	3.2	5.6	11.4	21.5	37.7	43.1	34.5	46.4	55.5	11.8	20.0	5.6	5.4	2.8	1.8	55.5	13.

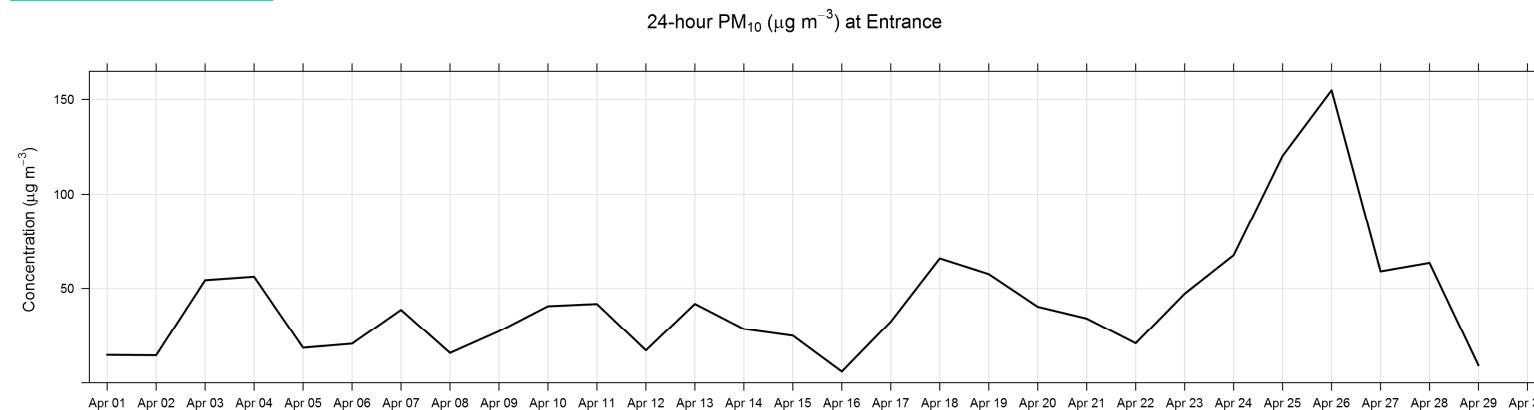
## Entrance PM<sub>2.5</sub> ( $\mu\text{g}/\text{m}^3$ ) – April 2018

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	15.7	10.7	7.8	6.3	7.1	5.0	6.3	5.5	5.5	10.3	8.2	8.4	9.3	9.2	9.5	9.8	9.0	7.8	8.0	5.6	7.7	7.9	8.1	5.0	15.7	8.1	
2	5.4	4.4	5.2	6.1	2.9	4.1	3.8	5.3	7.0	4.0	4.1	2.9	2.7	3.0	3.8	4.4	6.0	3.2	4.7	8.0	13.5	3.9	3.6	7.6	13.5	5.0	
3	6.4	13.2	11.2	13.4	6.7	15.2	29.5	33.0	28.9	18.7	9.1	16.0	9.2	7.6	7.3	7.5	6.7	10.0	13.5	14.1	16.7	17.5	18.0	16.9	33.0	14.4	
4	18.3	17.2	24.7	30.9	27.8	32.8	30.7	39.7	26.4	16.2	13.8	7.0	6.7	9.0	21.1	27.0	27.8	18.7	17.6	9.6	5.6	4.4	4.4	7.5	39.7	18.5	
5	13.3	11.3	8.7	4.8	3.9	2.7	5.8	7.4	7.9	4.7	3.0	3.8	4.2	8.1	8.0	6.7	8.1	4.6	6.5	7.5	7.3	8.2	11.0	9.0	13.3	6.9	
6	7.2	6.8	6.6	6.0	8.8	7.0	6.7	7.5	9.9	18.5	23.0	15.4	13.5	13.1	14.7	13.0	11.3	10.5	9.6	7.4	7.5	7.5	8.6	23.0	10.3		
7	8.6	10.7	12.3	14.2	15.3	25.5	47.2	24.8	29.5	28.5	20.1	18.0	20.2	14.9	10.5	10.1	13.4	12.3	14.1	13.0	10.4	11.1	11.0	8.0	47.2	16.8	
8	6.9	6.6	7.5	7.5	8.1	11.5	10.0	11.5	11.9	14.3	17.4	11.3	12.8	12.5	9.8	7.5	9.3	10.2	13.5	14.3	15.6	14.4	16.4	17.1	17.4	11.6	
9	19.5	19.6	21.2	18.9	10.8	8.9	8.0	5.6	3.7	8.5	8.2	6.0	4.8	6.7	4.5	5.8	3.3	9.9	1.8	1.6	2.5	1.8	1.4	5.9	21.2	7.9	
10	3.8	4.8	8.1	2.3	9.0	10.9	10.8	13.1	13.0	10.6	12.2	9.9	11.4	14.1	15.6	18.9	13.6	10.2	8.3	9.4	13.9	8.8	9.4	8.9	18.9	10.5	
11	6.4	3.1	6.7	2.2	4.3	7.7	3.6	7.9	47.6	25.5	6.9	7.6	7.5	9.8	11.1	7.5	5.7	5.4	11.6	6.9	10.0	16.5	17.8	35.5	47.6	11.4	
12	36.7	28.6	26.2	24.6	24.6	22.7	20.6	16.8	13.6	8.9	7.1	6.8	6.0	5.4	5.9	6.0	10.6	12.0	12.3	12.0	12.4	13.9	13.1	16.4	36.7	15.1	
13	23.6	30.0	22.2	18.0	11.4	14.2	11.0	15.1	6.9	9.9	12.7	10.7	14.7	12.6	14.8	7.3	8.5	5.5	2.2	4.1	3.6	0.9	1.1	1.0	30.0	10.9	
14	0.7	1.2	2.4	5.9	2.0	6.6	4.5	5.6	10.0	13.6	5.3	8.1	5.7	6.7	19.2	5.8	7.5	4.4	4.4	9.6	3.9	1.7	4.2	9.1	19.2	6.2	
15	11.0	12.6	9.0	3.1	3.3	8.6	6.4	8.7	12.0	7.6	5.0	8.2	10.7	5.0	4.4	7.0	7.5	12.0	11.0	7.3	7.3	8.8	9.2	11.5	12.6	8.2	
16	10.8	10.4	11.4	11.9	11.3	5.5	2.8	3.4	3.6	2.2	2.5	2.1	2.0	3.4	2.7	3.5	4.8	6.1	4.6	2.2	1.5	2.0	2.8	8.5	11.9	5.1	
17	9.4	4.1	2.3	1.3	4.3	3.7	3.9	5.4	5.0	5.4	8.2	9.9	11.8	21.3	14.4	9.2	6.3	4.1	3.0	3.8	3.5	1.5	3.2	3.1	21.3	6.2	
18	4.6	6.4	8.4	11.3	14.0	21.0	22.1	16.1	8.4	8.8	18.2	7.2	8.9	11.5	13.5	8.6	6.2	5.4	3.8	15.0	3.5	13.5	6.1	22.1	10.4		
19	6.9	5.4	7.2	9.3	9.8	17.9	23.9	17.0	18.7	13.3	11.9	7.9	15.1	17.2	23.5	10.4	8.0	6.3	6.2	3.2	3.0	3.5	2.9	3.1	23.9	10.5	
20	3.5	2.5	3.7	5.9	6.0	3.9	9.4	12.8	10.3	12.6	12.1	17.1	12.6	13.1	8.5	7.4	8.7	8.4	4.3	4.4	7.8	3.2	3.1	6.6	17.1	7.8	
21	5.0	4.5	6.5	16.9	9.3	15.0	8.7	5.5	9.9	17.2	9.6	4.3	2.8	3.8	6.4	6.1	7.2	4.5	2.6	4.4	1.2	0.9	1.6	1.0	17.2	6.5	
22	2.8	4.7	8.4	11.6	15.9	5.9	7.1	4.1	4.1	9.2	6.3	2.1	2.3	1.7	1.8	3.0	2.8	1.8	6.5	1.7	7.8	2.2	2.4	1.8	15.9	4.9	
23	2.3	2.7	3.2	8.1	8.1	18.8	17.6	21.1	13.2	11.5	13.1	11.9	7.3	6.6	10.6	10.8	5.7	6.4	5.4	6.3	3.4	3.2	8.8	21.1	9.0		
24	8.9	11.8	12.1	10.9	15.7	16.7	21.6	22.5	21.7	19.1	9.6	13.4	18.4	11.3	11.5	9.7	11.2	7.1	5.4	5.7	8.9	4.6	6.3	6.4	22.5	12.1	
25	6.0	17.5	10.5	20.0	12.3	16.5	20.3	21.6	17.0	15.4	16.5	14.8	19.5	130.1	39.6	20.5	33.3	22.7	14.3	9.9	10.8	14.7	19.9	15.7	130.1	22.5	
26	39.5	26.0	19.1	36.7	33.0	37.7	32.8	36.6	34.6	23.4	21.5	9.9	19.6	21.8	13.2	15.2	8.9	12.9	20.2	20.1	79.4	9.4	8.1	79.4	24.5		
27	11.4	10.6	13.8	15.3	20.5	20.2	21.0	18.9	16.8	13.3	12.2	16.8	17.6	16.4	11.8	8.7	8.3	8.8	14.6	7.6	13.0	10.5	13.0	17.7	21.0	14.1	
28	15.2	22.1	25.8	25.8	19.3	21.1	24.2	24.5	29.5	32.8	18.2	11.8	9.9	8.7	8.1	11.8	13.9	11.4	12.8	13.3	14.8	14.1	15.9	32.8	17.5		
29	19.5	18.8	13.8	11.4	8.7	4.2	4.2	4.6	3.6	1.6	0.6	0.8	1.7	2.5	1.1	3.3	2.6	3.3	2.8	3.8	3.3	3.7	1.8	1.6	19.5	5.1	
30	1.2	E	E	E	E	E	E	E	E	E	E	E	E	E	7.5	8.1	6.1	8.2	3.1	3.8	3.3	3.1	2.6	2.8	-	-	-
Hourly Max	39.5	30.0	26.2	36.7	33.0	37.7	47.2	39.7	47.6	32.8	23.0	18.0	20.2	130.1	39.6	27.0	33.3	22.7	20.2	20.1	79.4	17.5	19.9	35.5			

## **Entrance PM<sub>10</sub> ( $\mu\text{g}/\text{m}^3$ ) – April 2018**

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	23.3	15.8	11.2	8.8	9.8	6.2	8.0	7.4	11.4	19.1	22.0	25.8	35.0	40.0	19.7	13.4	11.9	10.4	10.8	7.0	9.8	9.7	10.3	6.6	40.0	14.7	
2	7.3	6.0	6.8	8.1	3.6	5.0	4.7	6.9	10.2	5.4	10.6	7.9	7.6	9.7	14.9	19.5	26.4	10.9	21.7	41.0	85.0	14.0	4.5	11.2	85.0	14.5	
3	8.8	19.6	16.6	20.0	9.5	22.7	64.1	101.3	210.3	140.6	44.8	95.5	57.5	39.1	44.5	38.2	40.0	48.4	41.0	43.8	55.2	52.3	53.5	37.2	210.3	54.4	
4	26.5	24.0	35.2	46.4	41.6	49.1	45.9	252.6	190.3	88.4	87.7	43.7	42.2	55.5	85.6	73.2	73.9	24.3	23.1	11.8	6.8	5.2	5.2	10.4	252.6	56.2	
5	17.9	14.3	11.0	6.0	4.9	3.1	7.6	10.4	13.9	12.5	5.8	9.5	12.2	33.8	32.6	27.6	45.5	19.6	37.8	36.9	20.8	30.2	17.1	13.1	45.5	18.5	
6	10.4	9.6	9.4	8.3	12.5	9.5	9.0	9.9	19.2	34.8	45.7	29.7	20.0	35.3	47.6	41.5	40.8	27.8	26.5	9.2	9.1	8.8	11.2	10.0	47.6	20.7	
7	11.7	14.5	17.1	18.8	21.6	37.3	70.6	38.1	98.6	103.3	71.2	79.1	79.6	53.2	29.7	23.1	43.2	25.8	19.9	17.6	13.2	15.0	15.4	10.8	103.3	38.7	
8	8.5	7.4	9.0	8.8	9.5	14.2	11.2	13.3	16.4	18.7	23.0	12.6	16.7	18.0	16.2	10.5	20.7	22.6	19.6	19.2	20.3	18.2	21.1	22.5	23.0	15.8	
9	26.6	25.9	28.0	24.5	14.8	33.3	36.8	26.7	26.5	67.3	48.9	45.6	29.2	41.1	28.0	31.6	18.2	34.3	8.5	4.5	11.4	8.4	2.4	31.5	67.3	27.2	
10	15.4	22.6	30.8	6.8	41.1	64.4	55.8	69.1	55.1	45.7	72.6	51.8	53.0	58.2	63.1	62.4	25.9	23.1	25.4	19.9	52.3	20.7	22.9	16.6	72.6	40.6	
11	10.0	5.1	23.4	7.4	13.9	29.7	13.1	30.4	200.4	106.4	35.4	39.5	41.6	66.5	66.4	36.3	28.8	35.3	66.2	30.7	28.0	29.4	21.2	37.7	200.4	41.8	
12	37.9	29.5	27.2	25.5	27.3	26.5	24.0	19.8	15.4	11.1	9.4	9.1	7.9	6.5	7.4	14.5	15.4	14.8	13.1	12.8	15.4	13.3	19.5	37.9	17.1		
13	32.5	44.8	32.7	25.9	17.4	46.6	44.6	70.2	35.6	57.8	82.0	73.4	88.3	80.1	83.5	35.0	54.2	30.8	9.2	24.4	23.5	2.8	5.1	4.0	88.3	41.9	
14	2.2	3.5	8.7	23.9	7.6	31.6	25.3	31.8	74.3	102.1	27.7	53.0	30.1	23.7	85.6	25.3	25.0	8.2	6.4	29.4	10.3	2.7	13.4	32.5	102.1	28.5	
15	16.6	18.8	13.4	4.2	4.7	12.6	9.4	14.3	70.7	64.8	19.3	40.9	66.2	22.7	20.8	30.3	33.8	43.9	38.7	8.9	8.5	10.5	10.5	13.6	70.7	24.9	
16	12.5	11.7	12.5	12.6	11.7	5.6	3.0	4.1	4.2	2.5	3.1	2.4	2.6	4.4	3.0	4.3	5.9	8.2	6.3	2.6	1.6	2.1	3.1	11.9	12.6	5.9	
17	14.0	6.9	5.0	4.7	19.7	18.2	21.7	34.2	23.5	31.0	52.3	63.2	71.8	134.9	88.8	59.0	32.3	23.7	12.6	17.3	13.9	4.5	13.0	12.1	134.9	32.4	
18	22.3	27.2	43.1	57.1	100.5	142.5	155.7	105.3	54.4	58.1	121.4	47.6	57.0	78.4	84.8	48.7	34.6	29.4	18.4	100.5	25.3	106.8	30.1	30.3	155.7	65.8	
19	29.5	20.9	29.2	42.5	46.9	93.3	133.0	88.6	106.0	86.1	79.4	48.1	104.3	110.5	160.2	55.1	44.4	31.1	25.4	11.8	7.3	10.9	7.5	9.5	160.2	57.6	
20	12.0	5.5	13.8	27.7	25.4	16.8	50.8	70.5	57.4	75.0	69.0	92.7	79.4	88.0	44.1	32.7	44.7	39.5	17.0	15.8	49.9	9.5	8.9	21.8	92.7	40.3	
21	17.9	12.2	21.2	114.3	42.2	66.9	56.7	28.9	56.8	136.5	57.0	23.3	8.0	15.4	37.5	29.7	39.4	20.7	12.9	11.8	2.7	1.4	3.2	1.4	136.5	34.1	
22	4.2	6.9	30.4	54.2	85.6	29.0	33.4	9.6	12.7	39.7	24.1	7.1	7.0	4.6	5.8	12.7	13.4	6.3	42.1	5.4	42.9	7.1	12.2	4.3	85.6	20.9	
23	8.2	9.1	12.6	32.1	30.3	96.4	78.6	126.1	76.8	80.9	82.1	63.1	39.4	31.9	61.3	67.1	24.8	38.1	27.3	24.2	11.6	8.4	42.2	61.1	126.1	47.2	
24	45.7	59.7	68.8	61.4	95.1	97.3	147.9	167.7	156.9	120.9	53.8	77.3	106.5	62.1	53.0	42.2	48.8	26.7	17.1	19.6	45.7	9.9	19.1	18.1	167.7	67.5	
25	16.0	97.5	39.8	110.7	61.8	83.9	93.3	101.2	77.3	66.8	64.9	85.1	101.0	835.9	219.1	112.6	160.9	122.8	68.3	54.8	49.2	76.6	106.5	80.1	835.9	120.3	
26	267.1	180.1	111.0	201.0	204.4	210.0	260.7	235.2	192.9	145.7	105.5	45.5	147.0	130.6	75.6	90.2	46.5	73.4	98.0	164.1	621.2	44.4	29.3	36.3	621.2	154.8	
27	39.8	34.4	51.6	55.6	91.8	87.1	94.0	87.1	71.7	60.2	53.4	86.9	90.6	82.0	55.8	33.0	30.0	33.1	76.5	20.0	60.5	26.3	32.1	62.2	94.0	59.0	
28	49.6	88.0	105.7	101.6	73.2	76.4	130.7	110.9	135.0	145.5	56.4	33.4	30.0	29.4	25.5	38.5	51.4	27.5	37.6	31.2	37.3	29.5	35.6	43.9	145.5	63.5	
29	65.0	51.8	18.7	13.8	10.6	5.1	5.0	5.4	4.1	1.7	0.7	0.9	1.9	2.7	1.2	4.1	3.1	4.0	2.9	4.4	4.0	4.7	1.8	1.7	65.0	9.1	
30	1.2	E	E	E	E	E	E	E	E	E	E	E	E	E	E	36.9	36.1	28.4	36.8	10.5	14.7	11.3	6.0	4.4	5.0	-	-
Hourly Max	267.1	180.1	111.0	201.0	204.4	210.0	260.7	252.6	210.3	145.7	121.4	95.5	147.0	835.9	219.1	112.6	160.9	122.8	98.0	164.1	621.2	106.8	106.5	80.1			
Hourly Average	28.7	30.1	29.1	39.1	39.3	49.0	58.4	64.7	71.7	66.5	49.3	44.6	49.4	75.7	53.3	38.0	37.1	30.1	28.1	27.2	45.0	19.7	19.2	22.6			

## E = INSTRUMENT ERROR



Number of 1HR Exceedances	n/a	Guideline	n/a	UG/M3	
Number of Non-Zero Readings	707				
Maximum 1-HR Average	835.9	UG/M3			
Maximum 24-HR Average	154.8	UG/M3			
I2S Calibration Time	0	HRS	Operational Time	707	HRS
Monthly Calibration Time	0	HRS	Operational Uptime	98.2	%
Standard Deviation	55.3		Monthly Average	42.2	UG/M3

## Entrance TSP ( $\mu\text{g}/\text{m}^3$ ) – April 2018

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	22.7	15.1	10.6	7.6	8.7	4.3	5.8	6.3	15.0	25.3	87.1	187.2	500.9	483.0	118.7	14.0	10.6	9.1	10.2	6.1	8.2	8.6	9.7	5.7	500.9	65.9
2	6.9	5.0	6.0	6.8	2.7	3.6	3.3	5.5	10.9	5.0	55.5	19.7	23.8	38.2	49.3	59.8	76.2	31.9	67.9	140.7	238.5	52.2	3.6	11.3	238.5	38.5
3	7.0	19.5	17.4	21.4	8.5	24.3	158.1	280.7	840.1	459.5	93.4	230.8	181.6	98.4	133.0	102.6	118.7	161.1	141.1	110.9	185.6	148.2	117.6	46.9	840.1	154.4
4	23.3	17.6	28.0	52.9	43.4	52.0	51.2	751.3	703.1	247.7	224.9	112.7	111.6	156.5	301.5	244.0	555.1	24.4	23.8	9.8	5.1	3.8	3.8	8.6	751.3	156.5
5	14.9	11.9	9.2	4.7	3.9	2.2	7.1	10.8	63.5	99.9	29.4	34.8	52.7	132.8	139.7	116.9	224.8	154.9	391.0	358.3	217.7	206.5	40.5	13.1	391.0	97.6
6	9.4	7.8	8.2	7.6	12.7	9.2	8.0	8.4	39.2	57.3	81.2	77.5	31.4	131.9	180.6	157.0	162.0	111.1	140.5	7.2	6.9	6.1	8.6	7.9	180.6	53.2
7	9.0	10.8	12.6	13.7	19.6	37.6	74.3	50.5	312.0	325.8	237.4	283.9	315.7	219.1	139.8	116.6	283.4	138.1	22.8	19.7	12.5	15.7	14.4	8.6	325.8	112.2
8	6.7	5.2	6.2	6.0	6.6	9.8	7.4	9.2	13.4	15.0	21.5	13.4	32.5	29.5	42.2	13.4	63.0	43.6	36.1	18.8	16.2	13.3	15.0	16.3	63.0	19.2
9	19.2	17.5	18.7	16.9	11.8	130.5	95.4	65.8	110.0	228.5	143.7	140.8	86.7	120.7	82.7	100.0	50.4	60.3	20.5	10.7	28.3	24.1	8.4	57.1	228.5	68.7
10	22.1	34.7	38.6	19.5	120.8	237.0	178.4	157.0	126.3	103.1	197.6	114.5	116.0	100.4	119.5	147.5	33.5	41.3	36.3	24.9	86.7	23.7	25.4	14.9	237.0	88.3
11	11.7	6.3	32.6	9.5	16.7	57.6	19.9	33.7	222.8	120.2	93.9	85.7	99.6	145.9	128.8	69.8	64.7	71.6	314.0	102.8	80.5	49.8	15.4	25.3	314.0	78.3
12	24.6	19.1	17.6	17.0	20.2	20.5	18.0	14.5	11.1	9.2	8.0	8.0	7.2	5.7	7.0	6.1	13.4	13.2	12.3	9.6	8.9	10.2	8.6	13.5	24.6	12.6
13	27.2	44.3	30.8	24.2	18.4	58.3	53.0	100.4	97.5	165.1	244.0	292.8	269.3	244.2	260.5	104.1	235.1	141.9	36.5	129.6	141.4	14.3	27.5	22.1	292.8	115.9
14	5.5	14.8	23.4	66.8	23.9	68.6	71.2	81.6	251.0	428.5	80.2	148.8	101.1	38.6	141.0	54.5	22.3	15.4	6.4	26.4	9.4	3.5	17.6	38.1	428.5	72.4
15	17.7	19.9	13.3	3.0	4.1	13.7	9.5	16.4	186.0	189.0	46.6	112.8	177.1	60.4	45.0	73.2	113.2	139.7	159.4	6.3	5.7	7.2	6.9	9.2	189.0	59.8
16	8.3	7.7	8.3	8.3	7.7	3.6	1.9	2.8	2.9	1.7	2.2	1.7	4.0	4.2	2.0	3.1	4.5	7.3	5.6	1.8	1.0	1.4	2.1	9.5	9.5	4.3
17	12.8	11.8	14.3	15.3	38.7	49.4	111.7	120.7	74.7	119.2	190.8	221.4	231.0	398.4	298.4	219.7	102.2	92.6	26.3	44.2	31.9	6.0	27.7	13.6	398.4	103.0
18	43.5	39.4	78.2	118.2	246.1	356.2	362.6	252.1	127.0	131.8	329.6	108.0	147.9	190.7	200.6	117.6	89.7	71.0	32.4	147.3	54.3	179.5	38.9	46.2	362.6	146.2
19	48.6	26.6	60.0	86.8	154.8	239.5	315.2	238.6	274.1	211.1	177.0	100.6	237.4	236.1	371.7	119.9	107.6	74.5	50.3	27.7	10.4	20.7	23.4	27.9	371.7	135.0
20	34.0	20.7	42.4	56.0	46.9	44.9	129.6	169.8	119.9	159.8	133.8	174.9	161.5	264.2	100.8	80.1	90.9	82.4	31.8	32.0	80.8	24.6	15.1	27.3	264.2	88.5
21	25.8	25.0	39.7	119.5	78.3	154.3	207.6	70.7	155.4	492.5	153.9	59.5	19.0	62.6	176.0	139.7	161.6	74.2	55.0	16.8	3.4	4.8	8.8	1.4	492.5	96.1
22	4.1	7.7	38.9	59.1	89.9	57.5	65.7	17.6	19.9	52.7	43.1	15.1	16.2	6.8	8.5	24.1	29.6	11.1	122.9	15.1	83.9	9.2	30.4	6.6	122.9	34.8
23	13.8	12.0	24.6	50.7	48.3	143.2	165.6	350.7	170.8	244.3	229.7	154.4	93.5	71.3	166.1	151.7	53.9	92.6	65.2	47.0	21.3	11.9	98.2	159.9	350.7	110.0
24	102.8	158.8	218.0	207.6	296.7	279.5	488.6	594.6	480.6	376.9	162.3	189.2	280.3	203.4	152.4	138.6	133.3	65.7	41.4	36.9	82.0	19.8	33.0	31.9	594.6	198.9
25	31.8	129.9	51.3	147.0	165.1	212.5	193.4	223.7	221.3	167.7	176.8	208.1	335.5	1790.5	452.2	258.3	381.8	218.5	155.2	128.9	101.8	148.9	248.8	222.7	1790.5	265.5
26	670.4	537.2	337.2	468.3	533.0	516.2	907.8	751.3	840.1	492.5	329.6	292.8	500.9	1790.5	452.2	258.3	555.1	218.5	391.0	429.0	792.3	83.8	65.1	61.7	907.8	366.5
27	49.0	45.9	85.1	92.8	203.5	181.3	219.2	190.9	114.2	101.4	88.1	168.7	213.9	173.8	107.4	62.0	56.2	68.5	154.8	45.8	82.6	37.3	49.8	112.9	219.2	112.7
28	77.9	170.3	201.9	206.1	190.6	181.2	319.4	284.2	329.9	283.4	79.8	64.8	42.6	56.3	47.1	66.8	84.6	40.8	63.6	45.6	55.6	49.7	53.3	85.0	329.9	128.4
29	133.7	85.6	13.0</																							



## AIR QUALITY MONITORING

# MetOne BAM PM<sub>10</sub> Calibration

STATION: Lafarge  
 LOCATION: Exshaw - Lagoon  
 START TIME (MST): 11:20

OPERATOR: Gagandeep Singh/Darrin Pike  
 DATE: April 25, 2017  
 END TIME (MST): 15:00

### MONITOR INFO / PARAMETER VALUES:

Make/Model	<u>MetOne BAM</u>	Audit Device Model	<u>Delta Cal</u>
Configuration	<u>PM10</u>	Audit Device S/N	<u>624</u>
Serial Number	<u>F4643</u>	Certification Date	<u>30-Nov-17</u>

### AUDIT / CALIBRATION RESULTS:

	Ambient Temp. ( ° C )	Ambient Pres. (mmHg)	Leak Check (L/min)	Flow Rate (lpm)	Time settings (hh:mm)
<b>As Found Data</b>	Audit values (I)	8.0	655	0.00	16.7
	MEASURED ( AF )	9.0	654	0.40	17.60
<b>Adjusted Data</b>	AF Difference (AF-I)	0.5	-1	0.40	0.90
	MEASURED ( M )	8.0	655	0.40	16.68
	Adj Difference (M-I)	0.0	0	0.40	-0.02
	<b>LIMITS</b>	<b>± 4.0 °C</b>	<b>5 mm Hg</b>	<b>1.0 L/min</b>	<b>± 1.0 L/min</b>
					<b>±2 min</b>

Sample Head Inspect/Cleaning: \_\_\_\_\_ cleaned

Status of sampling tape: \_\_\_\_\_ half roll

Nozzle Inspection / cleanliness: \_\_\_\_\_ clean

**COMMENTS:** Test flows 15LPM and 18.4 LPM - OK

Had to stop the sampling again to check the DAC values which resulted in one more hour for BAM to off scale.



# MetOne BAM TSP Calibration

## AIR QUALITY MONITORING

STATION: Lafarge  
 LOCATION: Exshaw - Lagoon  
 START TIME (MST): 9:00

OPERATOR: Gagandeep Singh  
 DATE: April 25, 2018  
 END TIME (MST): 10:19

### MONITOR INFO / PARAMETER VALUES:

Make/Model	<u>MetOne BAM</u>	Audit Device Model	<u>Delta Cal</u>
Configuration	<u>TSP</u>	Audit Device S/N	<u>624</u>
Serial Number	<u>A3589</u>	Certification Date	<u>30-Nov-17</u>

### AUDIT / CALIBRATION RESULTS:

	Ambient Temp. ( ° C )	Ambient Pres. (mmHg)	Leak Check (L/min)	Flow Rate (lpm)	Time settings (hh:mm)
As Found Data	Audit values (l)	7.5	655	0.00	16.7
	MEASURED ( AF )	8.5	654	0.60	16.71
Adjusted Data	AF Difference (AF-l)	1.0	-1	0.60	0.01
	MEASURED ( M )	8.5	654	0.60	16.71
	Adj Difference (M-l)	1.0	-1	0.60	0.01
	<b>LIMITS</b>	<b>± 4.0 °C</b>	<b>5 mm Hg</b>	<b>1.0 L/min</b>	<b>± 1.0 L/min</b>
					<b>±2 min</b>

Sample Head Inspect/Cleaning: Cleaned

Status of sampling tape: 3/4 used

Nozzle Inspection / cleanliness: Some debris noted.

**COMMENTS:** Removal calibration

Test flows 15LPM and 18.4 LPM - OK



# MetOne BAM TSP Calibration

## AIR QUALITY MONITORING

STATION: Lafarge  
 LOCATION: Exshaw - Lagoon  
 START TIME (MST): 11:09

OPERATOR: Gagandeep Singh  
 DATE: April 25, 2018  
 END TIME (MST): 11:54

### MONITOR INFO / PARAMETER VALUES:

Make/Model	<u>MetOne BAM</u>	Audit Device Model	<u>Delta Cal</u>
Configuration	<u>TSP</u>	Audit Device S/N	<u>624</u>
Serial Number	<u>A3589</u>	Certification Date	<u>30-Nov-17</u>

### AUDIT / CALIBRATION RESULTS:

	Ambient Temp. ( ° C )	Ambient Pres. (mmHg)	Leak Check (L/min)	Flow Rate (lpm)	Time settings (hh:mm)
<b>As Found Data</b>	Audit values (I)	7.6	655	0.00	16.7
	MEASURED ( AF )	8.5	654	0.40	16.93
<b>Adjusted Data</b>	AF Difference (AF-I)	0.9	-1	0.40	0.23
	MEASURED ( M )	7.6	655	0.40	16.71
	Adj Difference (M-I)	0.0	0	0.40	0.01
	<b>LIMITS</b>	<b>± 4.0 °C</b>	<b>5 mm Hg</b>	<b>1.0 L/min</b>	<b>± 1.0 L/min</b>
					<b>±2 min</b>

Sample Head Inspect/Cleaning: Cleaned

Status of sampling tape: New tape installed

Nozzle Inspection / cleanliness: Dirty - Cleaned with cotton swab and methanol

**COMMENTS:** Test flows 15LPM and 18.4 LPM - OK

Updated the firmware from V3.4.2 to V3.7.1

# Calibration Report



Parameter

**NO<sub>x</sub>-NO-NO<sub>2</sub>**

Air Monitoring Network

**Lafarge - Exshaw**

**AIR QUALITY MONITORING**

## Station Information

Calibration Date	April 23, 2018		Previous Calibration	March 1, 2018
Station Number	N/A		Station Location	Exshaw - Lagoon
Reason:	Routine	Installation	Removal	Other:
Start Time (MST)	9:55		End Time (MST)	14:05
Barometric Pressure	652	mmHg	Station Temperature	22.1 Deg C
Calibrator	SABIO 2010		Serial Number	103951108
NO Cal Gas Conc	51.4	ppm	Cal Gas Expiry Date	February 14, 2020
NOx Cal Gas Conc	51.5	ppm	Cal Gas Serial #	cc27839

## DACS Information

DACS make	Campbell Scientific CR1000	DACS serial No.	67802
Parameter	NO2	NOx	NO
Before	Data Slope 1.002831	0.997506	0.996470
	Data Offset 1.279423	2.096216	2.383206
After	Data Slope 0.996061	1.000008	0.994490
	Data Offset 1.645716	2.355678	2.818515
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	1.037		1.045	
NO Offset	0.0	mV	0.0	mV
NOX Slope	1.037		1.043	
NOX Offset	0.6	mV	0.6	mV
HVPS	771	V	771	V
Moly Temp	316.5	degC	314.6	degC
O3 Flow	81	ccm	82	ccm
RxCell Press	6.5	inHg	6.7	inHg
Sample press	23.6	inHg	24.4	inHg
Sample flow	438	ccm	448	ccm

Notes: Slight Span adjustment made.

# Calibration Report



Parameter **NOx-NO-NO<sub>2</sub>**  
 Air Monitoring Network **Lafarge - Exshaw**

## Station Information

Calibration Date: April 23, 2018 Station Location: Exshaw - Lagoon

## Calibration Data

	Dilution flow rate (ccm)	Source gas flow rate (ccm)	Calculated NOx conc (ppb)	Calculated NO conc (ppb)	Calculated NO <sub>2</sub> conc (ppb)	Indicated NOx conc (ppb)	Indicated NO conc (ppb)	Indicated NO <sub>2</sub> conc (ppb)	NOx Correction factor	NO Correction factor
zero	5000	0.00	0.0	0.0	0.0	-1.6	-1.5	-1.6	N/A	N/A
1	5000	39.00	398.6	397.8	0.8	396.8	398.0	-2.2	1.0046	0.9996
2	5000	20.00	205.2	204.8	0.4	202.0	202.1	-1.0	1.0158	1.0134
3	7000	14.00	102.8	102.6	0.2	100.0	99.2	-0.5	1.0278	1.0341
AFZ	5000	0.00	0.0	0.0	0.0	-1.6	-1.5	-1.6	0.0000	0.0000
AFS	5000	40.00	408.7	407.9	0.8	392.6	392.3	-0.7	1.0411	1.0400
								Average Correction Factor	1.0161	1.0157

As Found Concentrations: NO<sub>x</sub>= 396.3 NO= 396.1 As Found Percent Change NO<sub>x</sub>= -3.0% NO= -2.9%

## GPT Calibration Data

Dilution Flow	5000	ccm	Source Gas Flow	39.00	ccm							
O <sub>3</sub> Setpoint (V)	Indicated NO high point (ppb)	Indicated NO drop conc (ppb)	Calculated NO <sub>2</sub> conc (ppb)	Indicated NOx conc (ppb)	Indicated NO conc (ppb)	Indicated NO <sub>2</sub> conc (ppb)	NOx Correction factor	NO Correction factor	NO <sub>2</sub> Correction factor	Converter Efficiency		
0	-1.5	-1.5	0.0	-1.6	-1.5	-1.6	N/A	N/A	N/A	N/A		
NO point	397.7	397.7	0.0	397.5	397.7	-1.2	1.0004	1.0000	N/A	N/A		
0.755V	397.7	120.4	277.3	398.3	120.4	276.8	0.9985	1.0000	1.0019	99.8%		
0.5V	397.7	228.0	169.7	398.0	228.0	168.7	0.9991	1.0000	1.0056	99.4%		
0.3V	397.7	320.3	77.4	397.5	320.3	75.9	1.0005	1.0000	1.0194	98.1%		
								Average Correction Factor	0.9994	1.0000	1.0090	99.1%

## AIC Data

	Previous calibration				Current calibration			
Parameter	NOx	NO <sub>2</sub>	NO	ppb	NOx	NO <sub>2</sub>	NO	ppb
Auto zero	1.0	0.2	1.4	ppb	0.9	0.2	1.5	ppb
Auto span	386.0	1.3	385.3	ppb	389.9	0.5	388.4	ppb

Calibration Performed By: Darrin Pike

## Calibration Summary



Parameter NO<sub>2</sub>  
Air Monitoring Network Lafarge - Exshaw

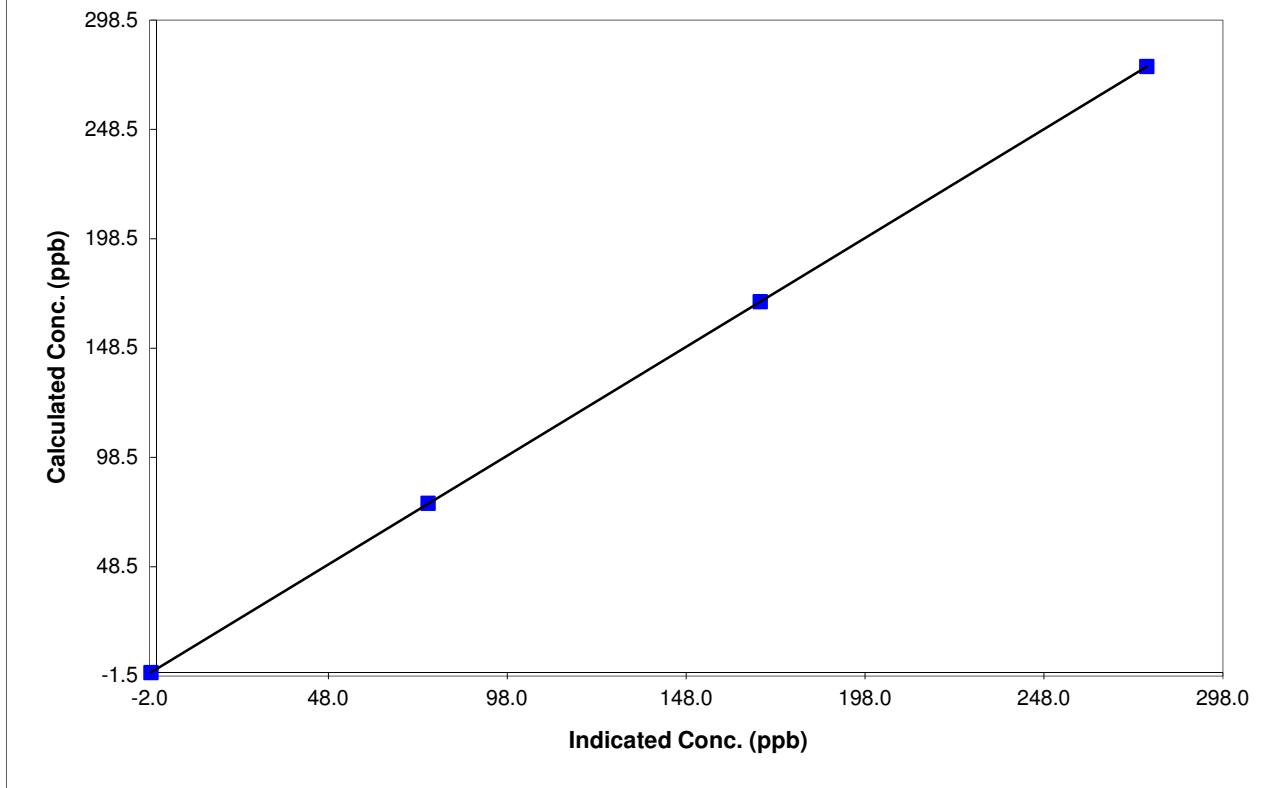
### Station Information

Calibration Date	April 23, 2018	Previous Calibration	March 1, 2018
Station Number	N/A	Station Location	Exshaw - Lagoon
Start Time (MST)	9:55	End Time (MST)	14:05
Analyzer make	T200	Analyzer serial #	642

### Calibration Data

Calculated conc (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	-1.6	N/A	Correlation Coefficient	0.999999
277.3	276.8	1.0019		
169.7	168.7	1.0056		
77.4	75.9	1.0194		
			Slope	0.996061
			Intercept	1.645716

### NO<sub>2</sub> Calibration Curve



## Calibration Summary



Parameter **NO<sub>x</sub>**  
 Air Monitoring Network **Lafarge - Exshaw**

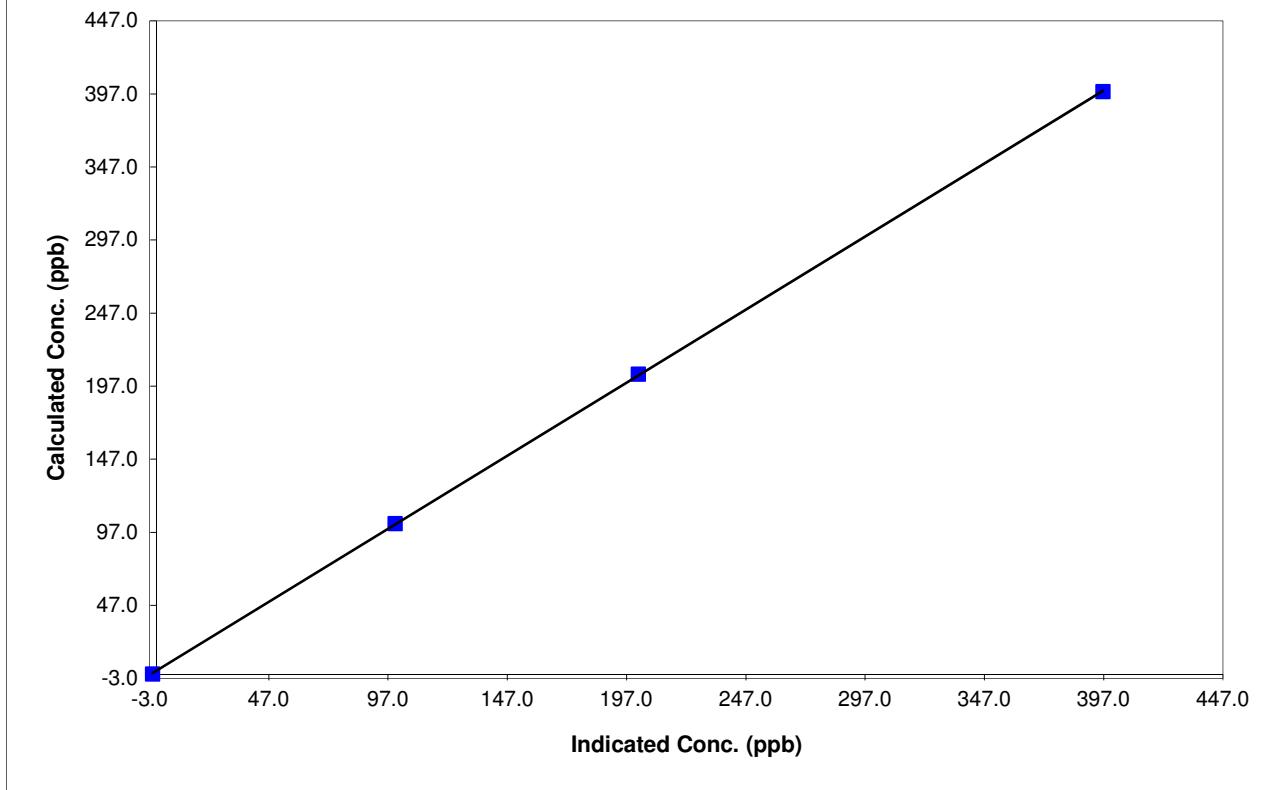
### Station Information

Calibration Date	April 23, 2018	Previous Calibration	March 1, 2018
Station Number	N/A	Station Location	Exshaw - Lagoon
Start Time (MST)	9:55	End Time (MST)	14:05
Analyzer make	T200	Analyzer serial #	642

### Calibration Data

Calculated conc (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	-1.6	N/A	Correlation Coefficient	0.999981
398.6	396.8	1.0046		
205.2	202.0	1.0158		
102.8	100.0	1.0278		
			Slope	1.000008
			Intercept	2.355678

### NOx Calibration Curve



## Calibration Summary

Parameter NO  
 Air Monitoring Network Lafarge - Exshaw

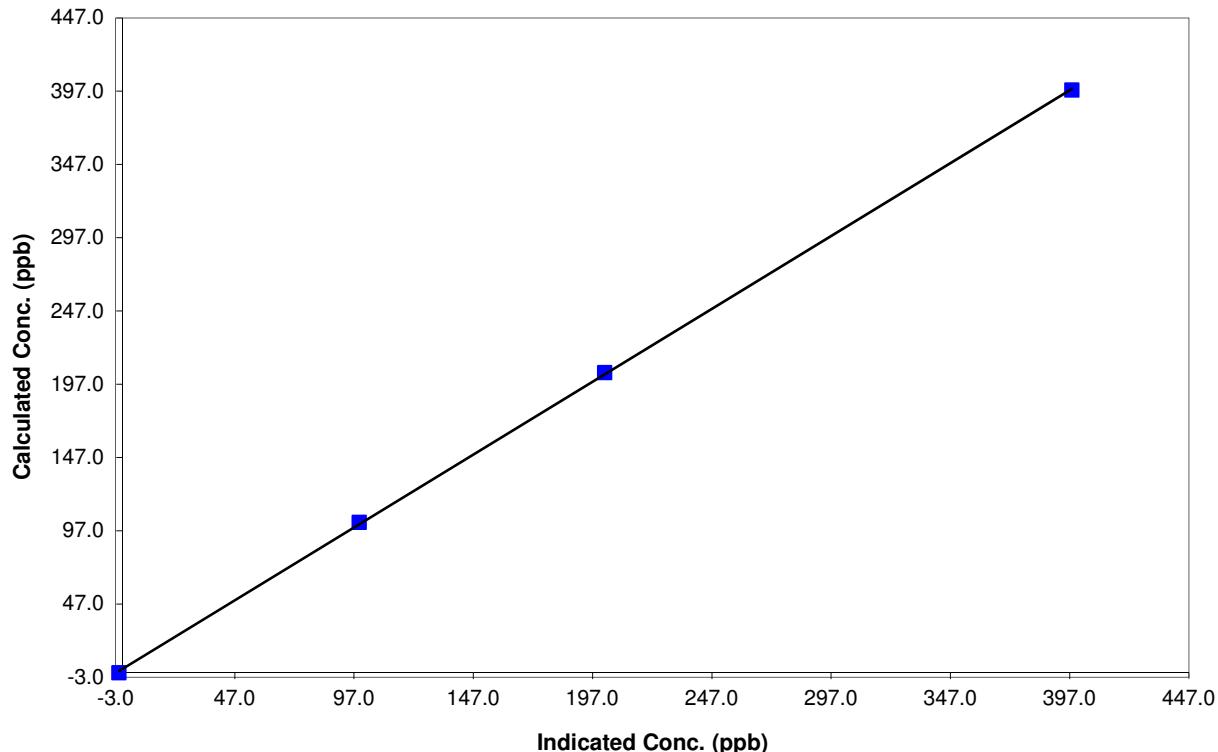


Station Information			
Calibration Date	April 23, 2018	Previous Calibration	March 1, 2018
Station Number	N/A	Station Location	Exshaw - Lagoon
Start Time (MST)	9:55	End Time (MST)	14:05
Analyzer make	T200	Analyzer serial #	642

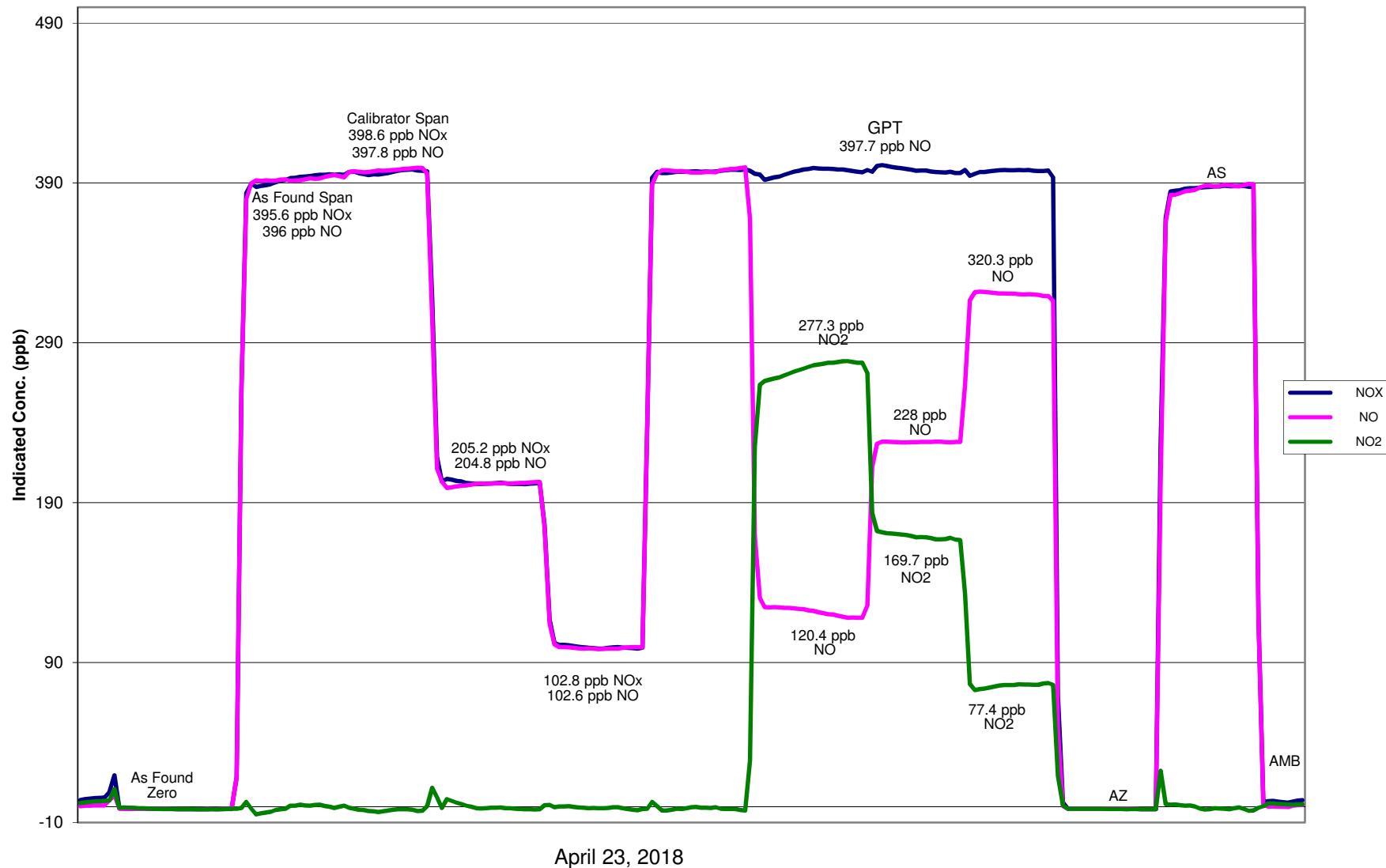
### Calibration Data

Calculated conc (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
			Correlation Coefficient	Slope
0.0	-1.5	N/A		
397.8	398.0	0.9996		
204.8	202.1	1.0134		
102.6	99.2	1.0341		
			0.999947	0.994490
				2.818515

### NO Calibration Curve



## NOX Calibration



# Calibration Report



Parameter **SO<sub>2</sub>**  
Air Monitoring Network **Lafarge - Exshaw**

AIR QUALITY MONITORING

## Station Information

Calibration Date	April 23, 2018	Previous Calibration	March 1, 2018
Station Number	N/A	Station Location	Exshaw - Lagoon
Reason:	Routine	Install	Removal
			Other:
Start Time (MST)	9:56	End Time (MST)	14:05
Barometric Pressure	652 mmHg	Station Temperature	22.1 Deg C
Calibrator	SABIO 2010	Serial Number	103951108
Cal Gas Concentration	50.8 ppm	Cal Gas Expiry Date	July 14, 2020
Gas Cert Reference	CC27839	DACS serial No.	67802
DACS make	Campbell Scientific CR1000	DACS channel #	4
DACS voltage range	0 - 5 VDC		
	Before		After
DACS Scale High	500	DACS slope	500
DACS Scale Low	0	DACS intercept	0
Calculated slope	0.999226	Calculated slope	0.998021
Calculated intercept	-0.411304	Calculated intercept	0.458463

Analyzer make	API Model 102A	Analyzer serial #	393
before		after	
Concentration range	0-500 ppb	0-500	ppb
Slope	0.911	0.912	
Offset	44.4 mV	44.4	mV
Pressure	23.5 in Hg	24.0	in Hg
Sample Flow	463 ccm	495	ccm
UV Lamp	2637 mV	2594	mV
HVPS	690 V	690	V
PMT Temp	7.3 degC	7.3	degC

## Calibration Data

Dilution air flow rate (cc/min)	Source gas flow rate (cc/min)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
5000	0.00	0.0	0.6	N/A
5000	39.00	393.2	394.0	0.9978
5000	20.00	202.4	201.8	1.0029
7000	14.00	101.4	100.0	1.0137
5000	0.00	0.0	0.6	As found zero
5000	39.00	393.2	391.8	As found span
Average Correction Factor				1.0048

Calculated value of As Found Response: 390.5 ppb Percent Change of As Found: 0.7%

Auto zero	before calibration		after calibration	
	1.4 ppb		1.1	ppb
	386.0 ppb		386.5	ppb

Notes: Slight Span adjustment made.

Calibration Performed By: Darrin Pike

## Calibration Summary

Parameter SO<sub>2</sub>  
Air Monitoring Network Lafarge - Exshaw



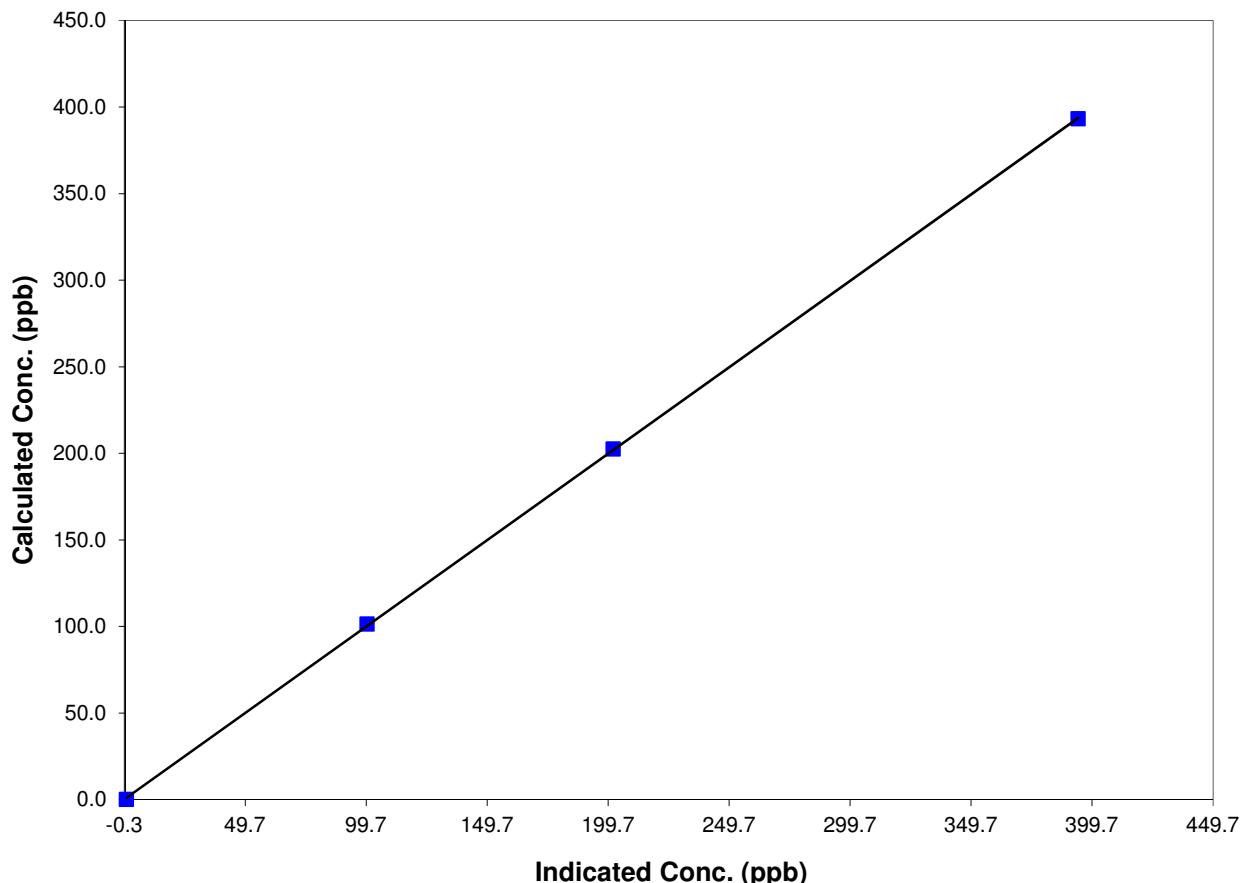
### Station Information

Calibration Date	April 23, 2018	Previous Calibration	March 1, 2018
Station Number	N/A	Station Location	Exshaw - Lagoon
Start Time (MST)	9:56	End Time (MST)	14:05
Analyzer make/model	API Model 102A	Analyzer serial #	393

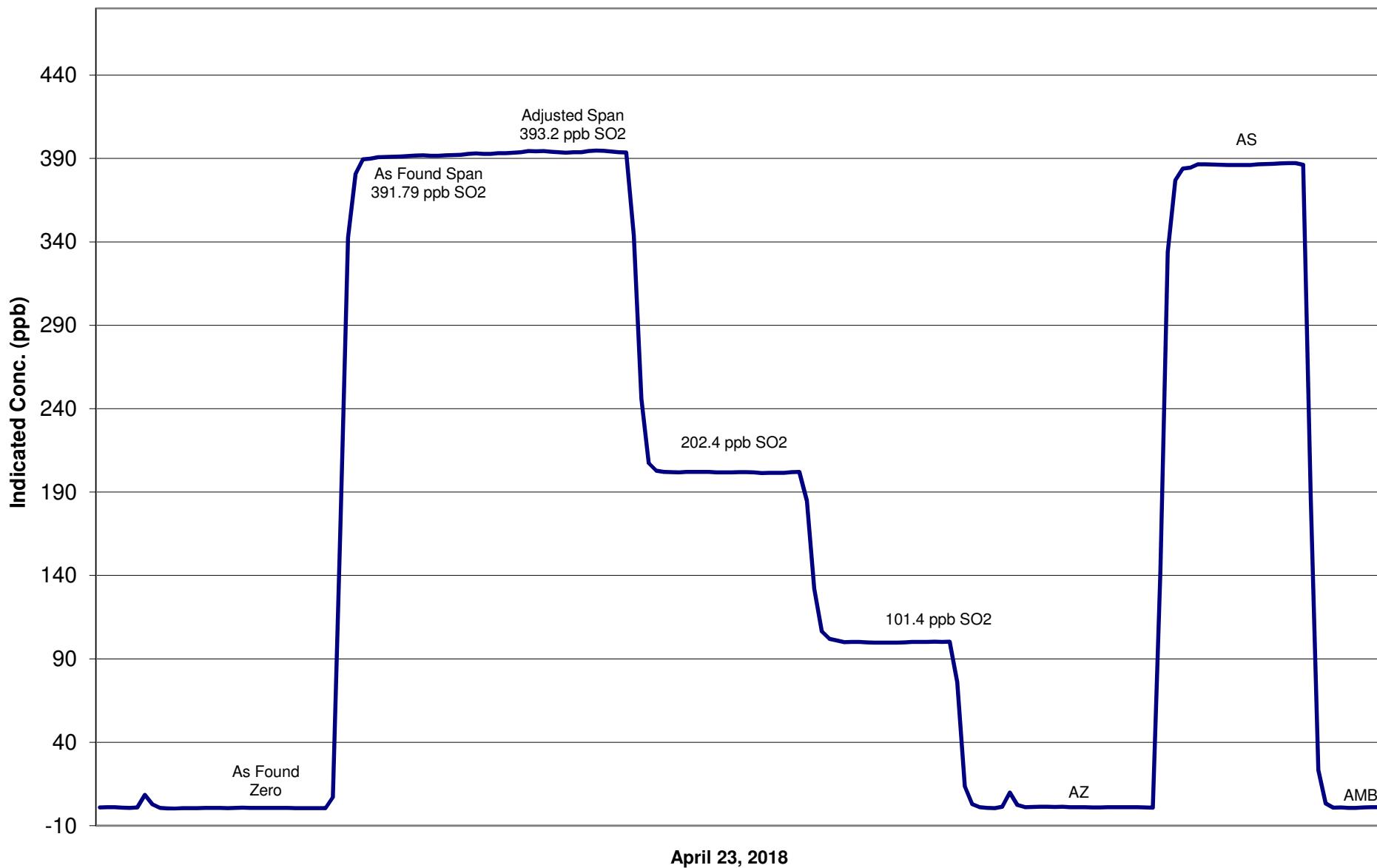
### Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.6	N/A		
393.2	394.0	0.9978	Correlation Coefficient	0.999965
202.4	201.8	1.0029	Slope	0.998021
101.4	100.0	1.0137	Intercept	0.458463

### SO<sub>2</sub> Calibration Curve



## SO2 Calibration



**WSP**  
**AIR QUALITY MONITORING**  
**Field Service Report**

Air Monitoring Network / Client: Lafarge – Exshaw

**Station Information**

Visit Date: April 23, 2018 Project Number: 151-09626-00  
Station Location: Exshaw – Lagoon Station Name: Lafarge – Exshaw  
Reason for Visit: Routine monthly calibrations  
Arrival Time: 09:30 MST Departure Time: 14:30 MST  
Weather Conditions: sunny and 6 degC.

**Record of Hours**

**Parts Used**

Employee	Category	Hours	Qty	Parts Description
DP	TRA	3	2	47mm filters
DP	CAL	5		

**Station Information**

Time (MST)	Comments
09:30	Signed in at Lafarge Plant
09:45	- Arrived at station. Started unloading and setting up gear
09:55	- Started AF calibrator Zero on NOx and SO2.
10:28	- AF Zero was good. Started AF calibrator Span.
10:50	- NOx/SO2 spans adjusted
11:50	- SO2 calibration completed, no issues noted. NOx GPT reference point started, no issues noted in the first portion of the calibration.
12:12	- Started introducing O3 for GPT portion of calibration.
13:15	- GPT portion of calibration went well, no issues noted. Started AIC on NOx and SO2.
14:05	- Calibrations complete.
14:30	Left plant after signing out.

**NOTES:**

- All analyzers in sample mode → OK
- Confirmed operation of manifold intake fan → OK
- All sample lines connected properly → OK

Technicians – Darrin Pike



# Field Service Report

Air Monitoring Network / Client: Lafarge

## ***Station Information***

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Visit Date: April 25, 2018

Project Number: 171-00556-00

Station Location: Exshaw

Station Name: Lagoon

Reason for Visit: Firmware update on TSP and monthly calibrations.

Arrival Time: 09:00

Departure Time: 15:00

Weather Conditions: Sunny, 8.0 °C

## ***Record of Hours***

## ***Parts Used***

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Employee	Category	Hours	Qty	Parts Description
GS	TR	3.0	2	BAM filter Tapes
GS	CAL	6.0		

## ***Station Information***

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Time (MST)      Comments

09:00 – Arrived at the station for firmware update of TSP as PM10 and TSP read close to each other.

09:00 – Flagged TSP and started the removal calibration, started the firmware update after the full data recovery from the analyzer. Process took bit more time as it communicates with RS232.

11:00 – Started the install calibration for TSP after the update. Response from TSP is much better after the update. Flagged PM 10 and PM2.5 for monthly calibrations.

13:00 – Finished all three calibrations and put the analyzers in normal mode. Had to stop the sampling at Lagoon and Windridge stations again as the DAC or analog output readings were needed to compensate any offset. Analyzers went off scale for another hour.

15:00 – Left site after making sure the analyzers started reading as it takes an hour of sampling time before giving out the actual reading.

NOTES:

- All analyzers in sample mode.
- Confirmed operation of manifold intake pump.
- All sample lines connected properly.

Technician: Gagandeep Singh

Ref #: 00270



# Field Service Report

Air Monitoring Network / Client: Lafarge

## ***Station Information***

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Visit Date: April 28, 2018 Project Number: 171-00556-00  
Station Location: Exshaw Station Name: Lagoon  
Reason for Visit: 72 hours zeroing initiated for PM10 and TSP  
Arrival Time: 11:30 Departure Time: 14:00  
Weather Conditions: Sunny, 22.0 °C

## ***Record of Hours***

## ***Parts Used***

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Employee	Category	Hours	Qty	Parts Description
GS	TR	3.0		
GS	CAL	2.5		

## ***Station Information***

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Time (MST)      Comments

11:30 – Arrived at the station to initiate the 72 hours zero test for TSP and PM10 at both Lagoon and Windridge stations.  
12:00 – Flagged PM10 and TSP for setting up the HEPA filters plus leak test. Leak tests passed and zeroed the background zero value on both the analyzers after initiating self-test. Both passed, analyzers will be left flagged for next 72 hours.  
13:00 – 72 hours sampling started for TSP and PM10.  
14:00 – Left site after making sure the analyzers started reading as it takes an hour of sampling time before giving out the actual reading.

**NOTES:**

- All analyzers in sample mode.
- Confirmed operation of manifold intake pump.
- All sample lines connected properly.

Technician: Gagandeep Singh

Ref #: 00268

**WSP**  
**AIR QUALITY MONITORING**  
**Field Service Report**

Air Monitoring Network / Client: Lafarge – Exshaw

**Station Information**

Visit Date: April 30, 2018  
Station Location: Exshaw  
Reason for Visit: Trouble call for entrance Grimm  
Arrival Time: 09:00 MST  
Weather Conditions: sunny and 12 degC.

Project Number: 151-09626-00  
Station Name: Lafarge – Exshaw  
Departure Time: 11:30 MST

**Record of Hours**

**Parts Used**

Employee	Category	Hours	Qty	Parts Description
DP	TRA	3	1	Grimm sample pump rebuild kit
DP	Site work	2.5		

**Station Information**

Time (MST)	Comments
09:00	Signed in at Lafarge Plant
09:45	proceeded to Grimm. Issue was with the sample pump. - Waited for access to Lagoon site to get parts - Rebuilt pump
11:00	Verified operation. Issue was resolved
11:30	Left plant after signing out.

**NOTES:**

- All analyzers in sample mode → OK
- Confirmed operation of manifold intake fan → OK
- All sample lines connected properly → OK

Technicians – Darrin Pike

# MetOne BAM PM<sub>2.5</sub> Calibration



AIR QUALITY MONITORING

STATION: Lafarge  
 LOCATION: Exshaw - Windridge  
 START TIME (MST): 9:00

OPERATOR: Darrin Pike  
 DATE: April 25, 2018  
 END TIME (MST): 9:50

MONITOR INFO / PARAMETER VALUES:

Make/Model	MetOne BAM	Audit Device Model	Delta Cal
Configuration	PM2.5	Audit Device S/N	620
Serial Number	U21074	Certification Date	14-Jun-17

AUDIT / CALIBRATION RESULTS:

	Ambient Temp. ( ° C )	Ambient Pres. (mmHg)	Leak Check (L/min)	Flow Rate (lpm)	Time settings (hh:mm)
<b>As Found Data</b>	Audit values (l)	7.0	654	0.00	16.7
	MEASURED ( AF )	7.6	651	0.40	17.14
<b>Adjusted Data</b>	AF Difference (AF-l)	0.6	-3	0.40	0.44
	MEASURED ( M )	7.0	654	0.40	16.64
	Adj Difference (M-l)	0.0	0	0.40	-0.06
	<b>LIMITS</b>	<b>± 4.0 °C</b>	<b>5 mm Hg</b>	<b>1.0 L/min</b>	<b>± 1.0 L/min</b>
					<b>±2 min</b>

Sample Head Inspect/Cleaning: cleaned

Status of sampling tape: new roll

Nozzle Inspection / cleanliness: clean

COMMENTS:

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## AIR QUALITY MONITORING

# MetOne BAM PM<sub>10</sub> Calibration

STATION: Lafarge  
LOCATION: Exshaw - Windridge  
START TIME (MST): 9:45

OPERATOR: Darrin Pike  
DATE: April 25, 2018  
END TIME (MST): 10:15

### MONITOR INFO / PARAMETER VALUES:

Make/Model	<u>MetOne BAM</u>	Audit Device Model	<u>Delta Cal</u>
	<u>PM10</u>	Audit Device S/N	<u>620</u>
Serial Number	<u>U21075</u>	Certification Date	<u>14-Jun-17</u>

### AUDIT / CALIBRATION RESULTS:

	Ambient Temp. (° C)	Ambient Pres. (mmHg)	Leak Check (L/min)	Flow Rate (lpm)	Time settings (hh:mm)
<b>As Found Data</b>	Audit values (l)	7.6	654	0.00	16.7
	MEASURED ( AF )	<u>7.6</u>	<u>653</u>	<u>0.50</u>	<u>17.00</u>
<b>Adjusted Data</b>	AF Difference (AF-l)	0.0	-1	0.50	0.30
	MEASURED ( M )	<u>7.6</u>	<u>654</u>	<u>0.50</u>	<u>16.66</u>
	Adj Difference (M-l)	0.0	0	0.50	-0.04
	<b>LIMITS</b>	<b>± 4.0 °C</b>	<b>5 mm Hg</b>	<b>1.0 L/min</b>	<b>± 1.0 L/min</b>
					<b>±2 min</b>

Sample Head Inspect/Cleaning: \_\_\_\_\_ cleaned

Status of sampling tape: \_\_\_\_\_ new roll

Nozzle Inspection / cleanliness: \_\_\_\_\_ clean

**COMMENTS:** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



## AIR QUALITY MONITORING

# MetOne BAM TSP Calibration

STATION: Lafarge  
LOCATION: Exshaw - Windridge  
START TIME (MST): 10:15

OPERATOR: Darrin Pike  
DATE: April 25, 2018  
END TIME (MST): 10:50

### MONITOR INFO / PARAMETER VALUES:

Make/Model	<u>MetOne BAM</u>	Audit Device Model	<u>Delta Cal</u>
Configuration	<u>TSP</u>	Audit Device S/N	<u>620</u>
Serial Number	<u>U21073</u>	Certification Date	<u>14-Jun-17</u>

### AUDIT / CALIBRATION RESULTS:

	Ambient Temp. (° C)	Ambient Pres. (mmHg)	Leak Check (L/min)	Flow Rate (lpm)	Time settings (hh:mm)
<b>As Found Data</b>	Audit values (l)	7.8	653	0.00	16.7
	MEASURED ( AF )	<u>7.9</u>	<u>653</u>	<u>0.30</u>	<u>17.30</u>
<b>Adjusted Data</b>	AF Difference (AF-l)	0.1	0	0.30	0.60
	MEASURED ( M )	<u>7.8</u>	<u>653</u>	<u>0.30</u>	<u>16.63</u>
	Adj Difference (M-l)	0.0	0	0.30	-0.07
	<b>LIMITS</b>	<b>± 4.0 °C</b>	<b>5 mm Hg</b>	<b>1.0 L/min</b>	<b>± 1.0 L/min</b>
					<b>±2 min</b>

Sample Head Inspect/Cleaning: \_\_\_\_\_ cleaned

Status of sampling tape: \_\_\_\_\_ new roll

Nozzle Inspection / cleanliness: \_\_\_\_\_ clean

**COMMENTS:**

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**WSP**  
**AIR QUALITY MONITORING**  
**Field Service Report**

Air Monitoring Network / Client: Lafarge – Exshaw

**Station Information**

Visit Date: April 25, 2018 Project Number: 151-09626-00  
Station Location: Exshaw – Windridge Station Name: Lafarge – Windridge  
Reason for Visit: Routine monthly calibrations  
Arrival Time: 8:30 MST Departure Time: 13:00 MST  
Weather Conditions: clear and 12 degC.

**Record of Hours**

**Parts Used**

Employee	Category	Hours	Qty	Parts Description
DP	CAL	4.5		
	TRV	3		

**Station Information**

Time (MST)      Comments

8:30 – Arrived at LaFarge plant, signed in at the Plant  
8:50 – Arrived at the Windridge  
8:55 - Flagged all PM channels at Windridge site  
9:50 - BAM PM2.5 calibration completed with no issues.  
10:15 - BAM PM10 calibration completed with no issues. .  
10:50 - BAM TSP calibration completed with no issues.  
11:00 – left Windridge to assist at lagoon site and audit Grimm's  
  
West Grimm:  
Measured Sample flow = 1.18 LPM  
Grimm AmbT = 12 degC  
Audit AmbT = 12 degC  
  
Berm Grimm:  
No access – wildlife in vicinity prevented us from entering general site.  
  
Entrance Grimm:  
Measured Sample flow = 1.12 LPM  
Grimm AmbT = 11.6 degC  
Audit AmbT = 12 degC  
  
13:00 - Left site after signing out of control room.

  
**AIR QUALITY MONITORING**  
**Field Service Report**

**NOTES:**

- All analyzers in sample mode → OK
- Confirmed operation of manifold intake fan → OK
- All sample lines connected properly → OK

Technician: Darrin Pike