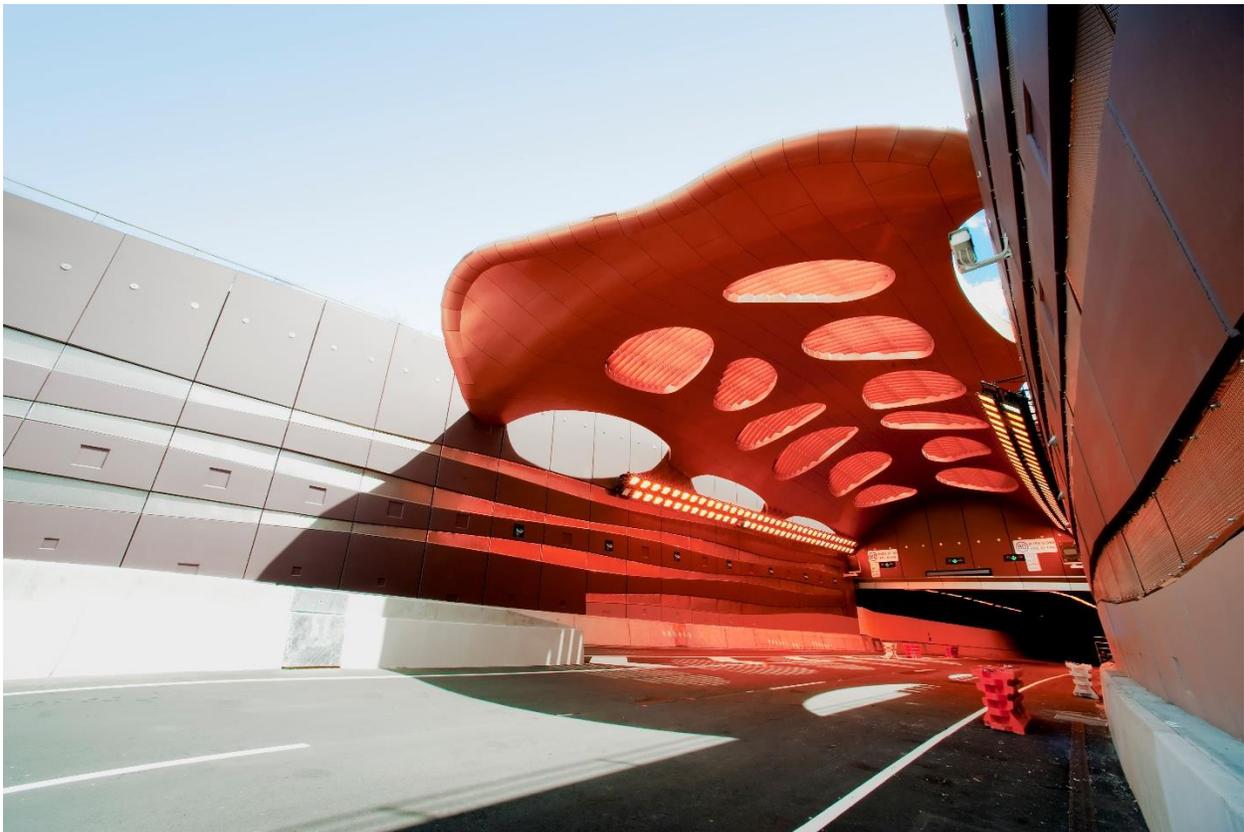


LAFARGE CANADA INC.

AMBIENT AIR QUALITY MONTHLY REPORT

JUNE 2019

JULY 24, 2019



wsp



AMBIENT AIR QUALITY MONTHLY REPORT

JUNE 2019

LAFARGE CANADA INC.

PROJECT NO.: 171-00556-00
DATE: JULY 24, 2019

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July 24, 2019

LAFARGE CANADA INC.
Highway 1A
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Attention: Janet Brygger

Dear Ms. Brygger

Subject: Ambient Air Quality Monthly Report - June 2019

The operational uptime for the meteorological systems and all analyzers at the Lagoon station was 100% in June. There were zero exceedances of the 24-hour TSP Alberta Ambient Air Quality Objectives (AAQOs), the 24-hour PM_{2.5} AAQOs, and the 1-hour PM_{2.5} AAQG in June at the Lagoon monitoring location.

The Windridge station was taken out of operation beginning April 8th as a result of construction work for flood mitigation along Exshaw Creek. The monitor at this station is expected to be re-installed sometime in 2020, after the completion of the construction work.

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; the GRIMM monitors are not Air Monitoring Directive (AMD) compliant. The operational uptime at all 3 monitors was 100% in June (outside of the annual factory calibration hours). The West GRIMM monitor recorded zero exceedances of the 24-hour TSP AAAQG and the 24-hour PM_{2.5} AAAQG. The Berm GRIMM had 10 exceedances of the TSP guideline and zero exceedances of the PM_{2.5} guideline. The Entrance GRIMM monitor recorded 6 and zero exceedances for the 24-hour TSP AAAQG and 24-hour PM_{2.5} AAAQG, respectively.

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.
Team Leader, Environmental
Management, Vancouver Office

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July 24, 2019

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APPROVED¹ BY *(must be reviewed for technical accuracy prior to approval)*



July 24, 2019

Tyler Abel, M.Sc.
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Date

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A DATA & CALIBRATION REPORTS

1 INTRODUCTION

This report summarizes the ambient air quality and meteorological data collected at the Lagoon, Windridge, and GRIMM monitors in Exshaw, AB. The station is operated by WSP on behalf of Lafarge Canada Inc. (Lafarge) and is a requirement of Lafarge's Approval 1702-02-04. This report contains data collected between June 1, 2019 and June 30, 2019.

This monthly report was prepared by Rowena Seto, Junior Air Quality Specialist with WSP, on behalf of Lafarge and was reviewed by Tyler Abel, Team Leader of Environmental Management in the Vancouver Region at WSP.

1.1 EXSHAW CREEK FLOOD MITIGATION

Due to flood mitigation construction at Exshaw creek (Figure 1-1), the Windridge monitor was taken out of operation and removed from the site on April 8, 2019. The monitoring station will be re-installed after the completion of construction in 2020.

Dust created from the flood mitigation work has the potential to impact particulate matter concentrations at the remaining stations.



Figure 1-1 Photo of Flood Mitigation Construction at Exshaw Creek

2 JUNE 2019 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_{2.5} are those above the 1-hour PM_{2.5} 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
NO₂ (ppb)	100.0	24.5	0	9.4	-
SO₂ (ppb)	100.0	8.1	0	1.6	0
PM_{2.5} (µg/m³)	100.0	17.1	0 ¹	10.8	0
PM₁₀ (µg/m³)	100.0	190.0	-	41.5	-
TSP (µg/m³)	100.0	338.3	-	73.8	0
Temperature (°C)	100.0	26.7	-	20.0	-
Wind Speed (km/hr) /Direction (Degrees)	100.0	36.2/W	-	21.8/WSW	-
Precipitation (mm)	100.0	4.5 ²	-	78.8 ³	-

¹ Any exceedances reported for 1-hour PM_{2.5} are over the guideline level (AAAQG) of 80 µg/m³.

² Maximum Daily Total Accumulation of Precipitation (mm)

³ Monthly Total Accumulation of Precipitation (mm)

Data Quality Notes:

- There were no exceedances of the 24-hour PM_{2.5} AAAQO.
- There were no exceedances of the 1-hour PM_{2.5} AAAQG.
- There were no exceedances of the 24-hour TSP AAAQO.

Calibration/Maintenance Notes:

- All analyzers and meteorological sensors had 100% uptime for the month of June.

2.2 WEST GRIMM

The GRIMM monitors are Industrial Ambient Monitors meant to aid Lafarge in assessing the performance of their Fugitive Dust Control Best Management Practices – Program (FDCBMP-P). The AAAQO are used as Guidelines to evaluate the performance of the FDCBMP-P; however, these Industrial monitors are not Alberta Air Monitoring Directive (AMD) compliant and not required to show compliance with the AAAQO.

Table 2-2 West station data summary

Parameter	Data Completeness (%)	1-Hour Average		24-hour Average	
		Maximum Concentration	Exceedances of Guidelines	Maximum Concentration	Exceedances of Guidelines
PM _{2.5} (µg/m ³)	100.0	19.9	0*	11.7	0
PM ₁₀ (µg/m ³)	100.0	64.8	-	14.9	-
TSP (µg/m ³)	100.0	128.1	-	23.9	0

* Any exceedances reported for 1-hour PM_{2.5} are over the guideline level (AAAQG) of 80 µg/m³.

Data Quality Notes:

- There were no exceedances of the 24-hour PM_{2.5} AAAQG.
- There were no exceedances of the 1-hour PM_{2.5} AAAQG.
- There were no exceedances of the 24-hour TSP AAAQG.

Calibration/Maintenance Notes:

- The analyzer had 100% uptime for the month of June.
- During June, the West GRIMM underwent required annual calibration. This requires they be shipped to GRIMM's office in Montreal for calibration, hence the extended calibration period once per year.

2.3 BERM GRIMM

The GRIMM monitors are Industrial Ambient Monitors meant to aid Lafarge in assessing the performance of their FDCBMP-P. The AAAQO are used as Guidelines to evaluate the performance of the FDCBMP-P; however, these Industrial monitors are not Alberta Air Monitoring Directive (AMD) compliant and not required to show compliance with the AAAQO.

Table 2-3 Berm station data summary

Parameter	Data Completeness (%)	1-Hour Average		24-hour Average	
		Maximum Concentration	Exceedances of Guidelines	Maximum Concentration	Exceedances of Guidelines
PM _{2.5} (µg/m ³)	100.0	68.2	0*	17.8	0
PM ₁₀ (µg/m ³)	100.0	481.8	-	119.1	-
TSP (µg/m ³)	100.0	1497.9	-	313.9	10

* Any exceedances reported for 1-hour PM_{2.5} are over the guideline level (AAAQG) of 80 µg/m³.

Data Quality Notes:

- There were no exceedances of the 24-hour PM_{2.5} AAAQG.
- There were no exceedances of the 1-hour PM_{2.5} AAAQG.
- There were 10 days exceeding the 24-hour TSP AAAQG.

Calibration/Maintenance Notes:

- The analyzer had 100% uptime for the month of June.
- During June, the Berm GRIMM underwent required annual calibration. This requires they be shipped to GRIMM's office in Montreal for calibration, hence the extended calibration period once per year.

2.4 ENTRANCE GRIMM

The GRIMM monitors are Industrial Ambient Monitors meant to aid Lafarge in assessing the performance of their FDCBMP-P. The AAAQO are used as Guidelines to evaluate the performance of the FDCBMP-P; however, these Industrial monitors are not Alberta Air Monitoring Directive (AMD) compliant and not required to show compliance with the AAAQO.

Table 2-4 Entrance station data summary

Parameter	Data Completeness (%)	1-Hour Average		24-hour Average	
		Maximum Concentration	Exceedances of Guidelines	Maximum Concentration	Exceedances of Guidelines
PM _{2.5} (µg/m ³)	100.0	68.9	0*	15.0	0
PM ₁₀ (µg/m ³)	100.0	563.8	-	96.1	-
TSP (µg/m ³)	100.0	730.5	-	243.1	6

* Any exceedances reported for 1-hour PM_{2.5} are over the guideline level (AAAQG) of 80 µg/m³.

Data Quality Notes:

- There were no exceedances of the 24-hour PM_{2.5} AAAQG
- There were no exceedances of the 1-hour PM_{2.5} AAAQG.
- There were 6 days exceeding the 24-hour TSP AAAQG.

Calibration/Maintenance Notes:

- The analyzer had 100% uptime for the month of June.
- During June, the Entrance GRIMM underwent required annual calibration. This requires they be shipped to GRIMM's office in Montreal for calibration, hence the extended calibration period once per year.

3 LAGOON STATION

The Lagoon trailer contains NO_x, SO₂, TSP, PM₁₀, and PM_{2.5} analyzers as well as meteorological sensors, and is shown in Figure 3-1. An ambient air quality station has been at this location since 2002, providing a long-term data record for air quality in the Exshaw area.

This section provides a summary of the monitoring activities for the Lagoon ambient air quality station, including: a table of instrumentation (Table 3-1), a data summary table (Table 3-2), site visit notes, a wind rose (Figure 3-2) and tables and graphs illustrating the monitoring results for June 2019.

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

3.1 OPERATIONAL SUMMARY

A summary of the station operation for the month is provided in Table 3-1.

Table 3-1 Instrumentation List at the Lagoon Station

Parameter Measured	Equipment Description	Notes
PM_{2.5} Concentrations	MetOne BAM-1020 FRM Continuous Particulate Monitor	The PM _{2.5} monitor was calibrated on June 5 th . The monitor had 100% uptime in June.
PM₁₀ Concentrations	MetOne BAM-1020 Continuous Particulate Monitor	The PM ₁₀ monitor was calibrated on June 5 th . The monitor had 100% uptime in June.
TSP Concentrations	MetOne BAM-1020 Continuous Particulate Monitor	The TSP monitor was calibrated on June 5 th . The monitor had 100% uptime in June.
Oxides of Nitrogen	TEI 42C	Both monitors were calibrated on June 5 th . The monitors had 100% uptime in June.
Sulphur Dioxide	Teledyne API 102A	
Precipitation	MetOne 130 Rain/Snow Gauge	The monitor had 100% uptime in June.
Wind Speed	MetOne Wind Sensor	The monitors had 100% uptime in June.
Wind Direction		
Ambient Temperature	MetOne Ambient Temperature Sensor	The monitor had 100% uptime in June.



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

3.2 MONITORING RESULTS AND TRENDS

The following wind rose (Figure 3-2) illustrates the frequency of wind speed by wind direction for the month of June 2019. The wind rose indicates that the winds predominantly came from the west-southwest and east-northeast directions.

Table 3-2 summarizes the hourly, daily, and monthly concentrations recorded in June 2019.

Figure 3-3 graphically illustrates the time series for hourly concentrations as well as wind speed and direction, while Figure 3-9 shows daily average concentrations recorded during June 2019 for the pollutants listed in Table 3-2. Additionally, Figure 3-4 to Figure 3-8 show the histograms of the hourly concentrations of NO_2 , SO_2 , $\text{PM}_{2.5}$, PM_{10} , and TSP measured at the Lagoon station.

Dust created from the flood mitigation work (section 1.1) has the potential to impact the monitored particulate matter concentrations in the airshed, including at the Lagoon station. However, there were no exceedances of the 24-hour TSP ($100 \mu\text{g}/\text{m}^3$) AAAQO, the 24-hour $\text{PM}_{2.5}$ ($29 \mu\text{g}/\text{m}^3$) AAAQO, and the 1-hour $\text{PM}_{2.5}$ AAAQG.

Historically in June, the average number of 24-hour TSP AAQO exceedances and 24-hour $\text{PM}_{2.5}$ AAAQO exceedances are both zero. The maximum number of 24-hour TSP AAQO exceedances in June was 4 days in 2013. This station has never recorded an exceedance of the $\text{PM}_{2.5}$ AAAQO in June since monitoring began in 2010.

Table 3-2 Summary of June 2019 data at Lagoon

Parameter	Guideline / Objectives		Station	Exceedances		Monthly		1-hour					24-hour		Operational Time (Percent)
	1-hr	24-hr		1-hr	24-hr	Minimum	Average	Maximum Concentration/ Meteorological Variable	Day	Hour	Wind Speed (km/hr)	Wind Direction (degrees)	Maximum Concentration/ Meteorological Variable	Day	
NO₂ (ppb)	159	-	Lagoon	0	-	0.1	6.3	24.5	7	10	3.6	86.8	9.4	2	100.0
SO₂ (ppb)	172	48	Lagoon	0	0	0.0	0.5	8.1	13	11	5.3	187.5	1.6	13	100.0
PM_{2.5} (µg/m³)	80	29	Lagoon	0	0	0.0	4.5	17.1	22	4	9.7	261.0	10.8	1	100.0
PM₁₀ (µg/m³)	-	-	Lagoon	-	-	0.0	14.7	190.0	3	12	31.4	256.5	41.5	3	100.0
TSP (µg/m³)	-	100	Lagoon	-	0	0.0	24.9	338.3	3	12	31.4	256.5	73.8	3	100.0
Temperature (°C)	-	-	Lagoon	-	-	1.4	13.3	26.7	12	16	14.1	243.6	20.0	2	100.0
Wind Speed (km/hr)/Direction (degrees)	-	-	Lagoon	-	-	1.8	13.2	36.2/W	3	11	36.2	254.9	21.8/WSW	29	100.0
Precipitation (mm)	-	-	Lagoon	-	-	0.0	0.1	4.5	19	3	12.5	30.1	78.8		100.0

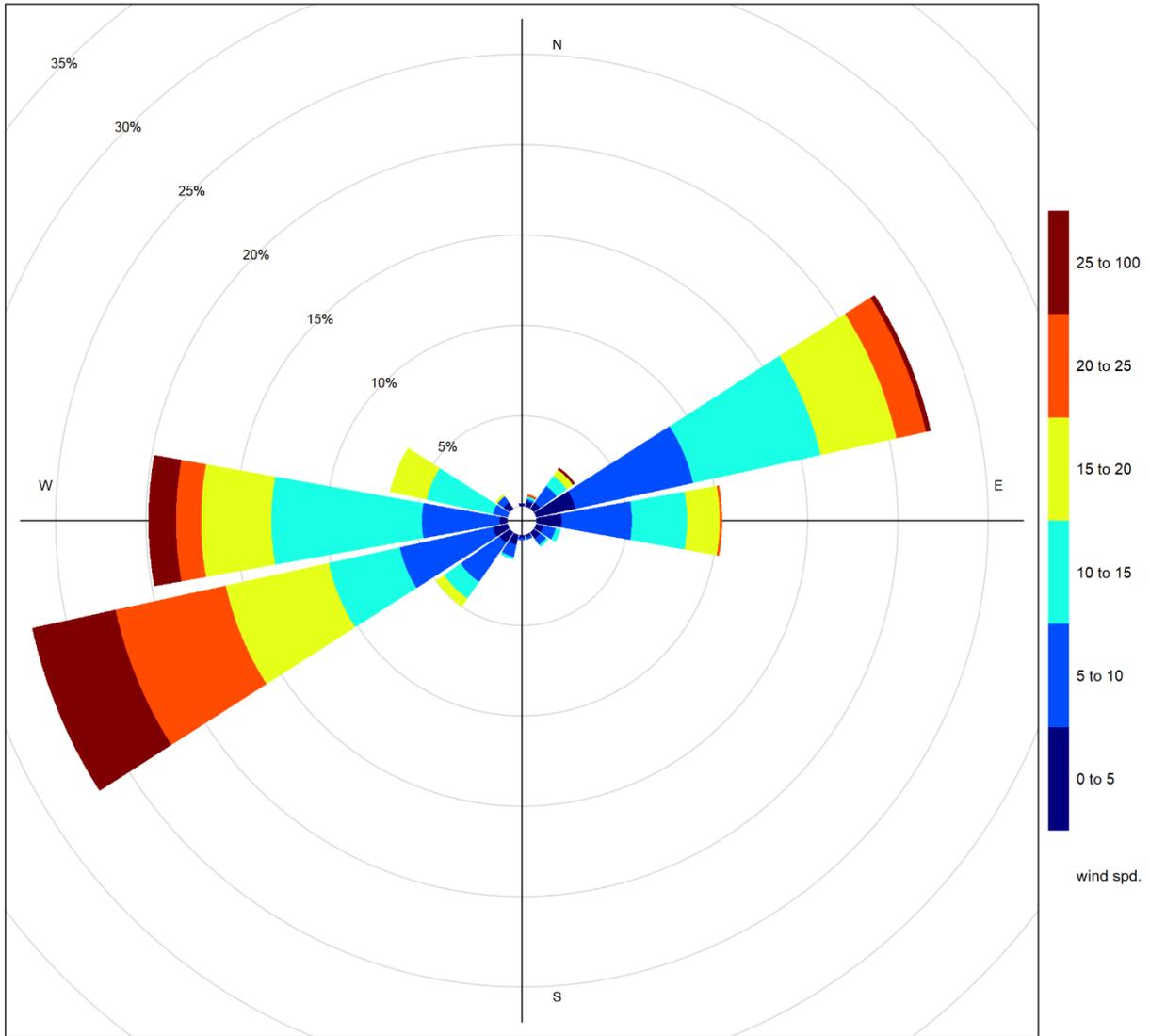


Figure 3-2 June 2019 wind rose from the Lagoon Station

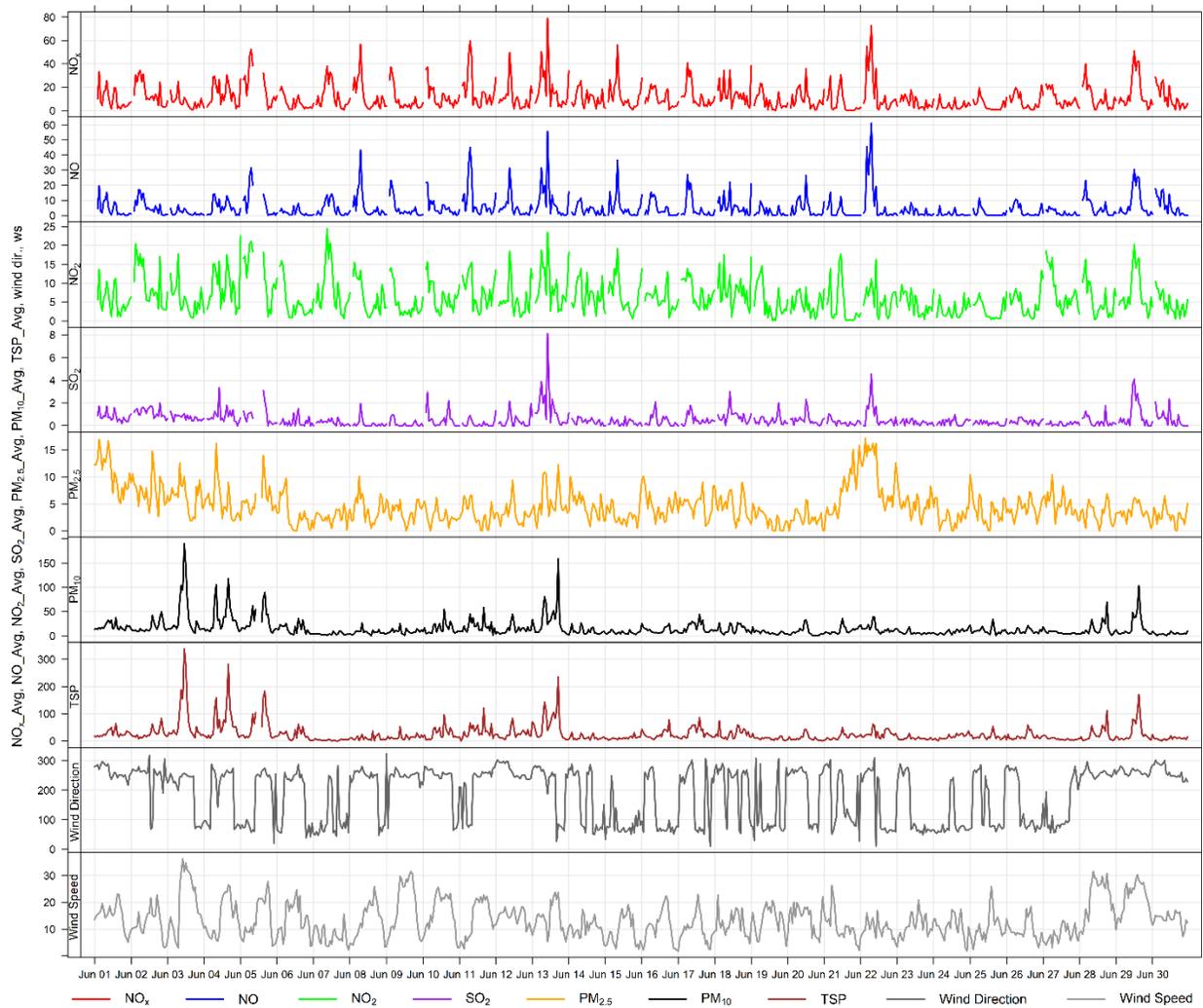


Figure 3-3 1-hour concentrations of NO_x, SO₂, particulate matter, wind direction and wind speed at the Lagoon station

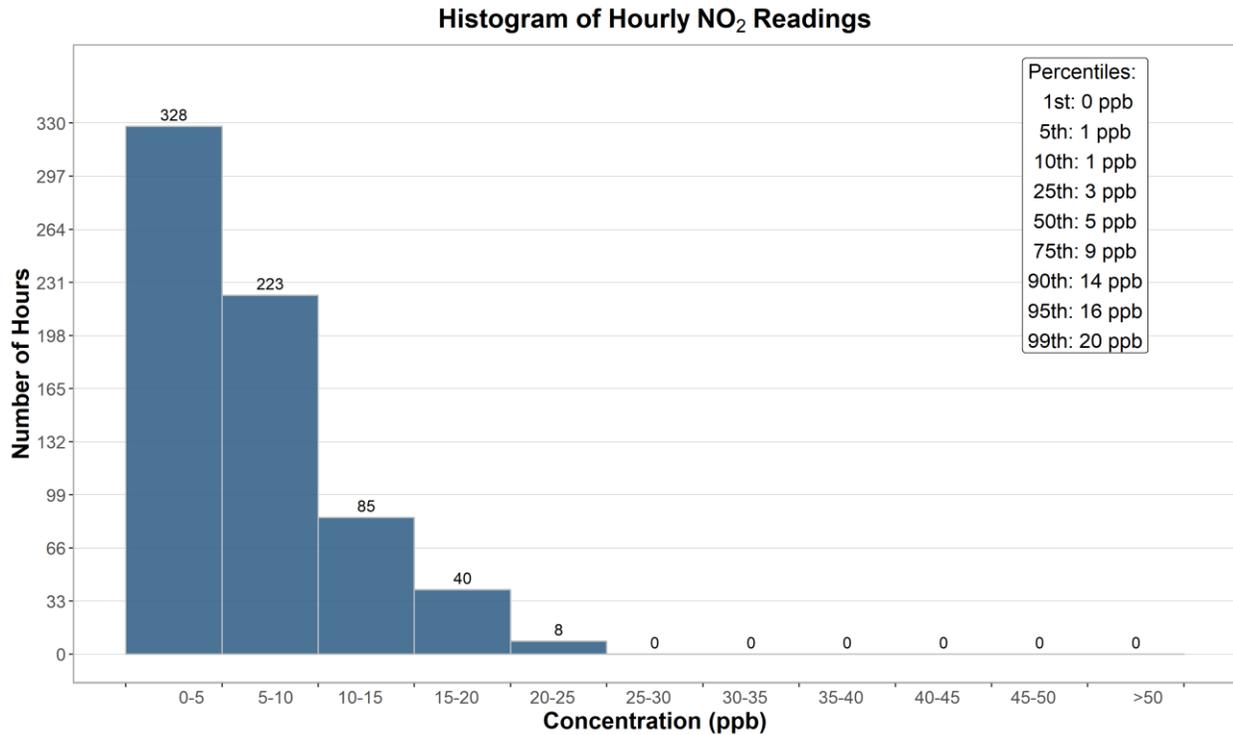


Figure 3-4 Histogram of hourly NO₂ concentrations at the Lagoon station

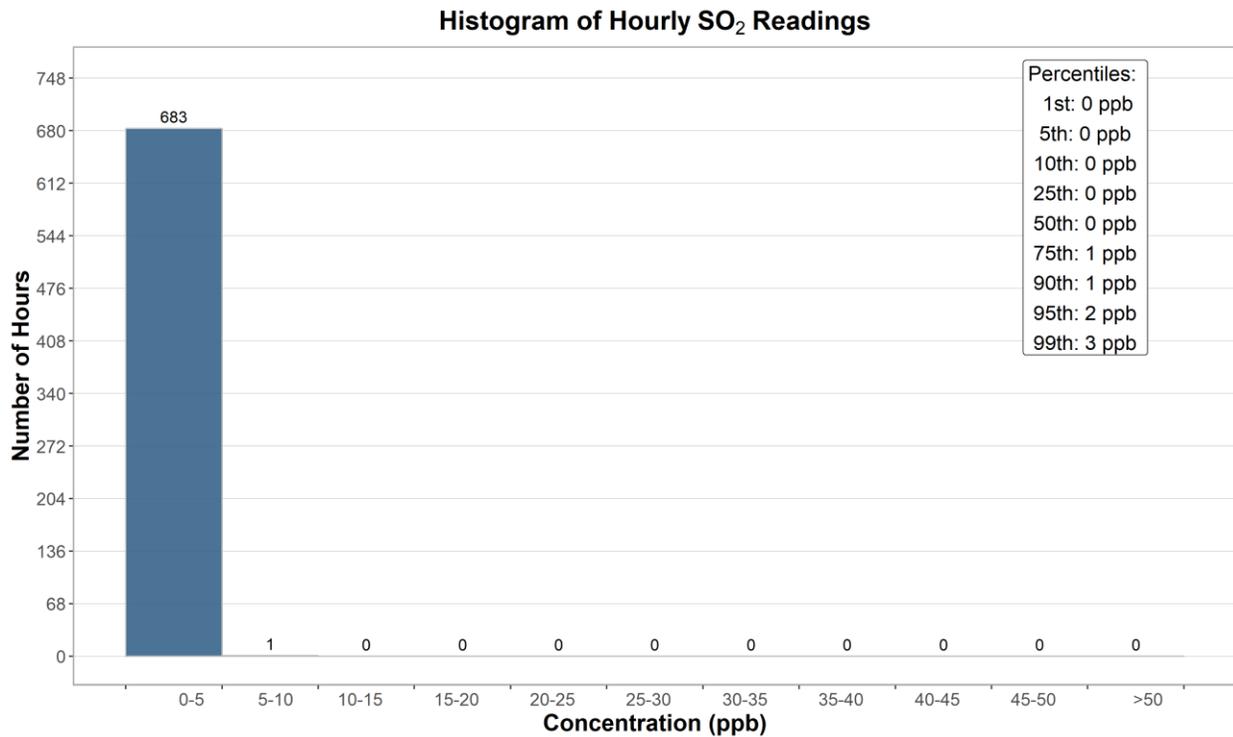


Figure 3-5 Histogram of hourly SO₂ concentrations at the Lagoon station

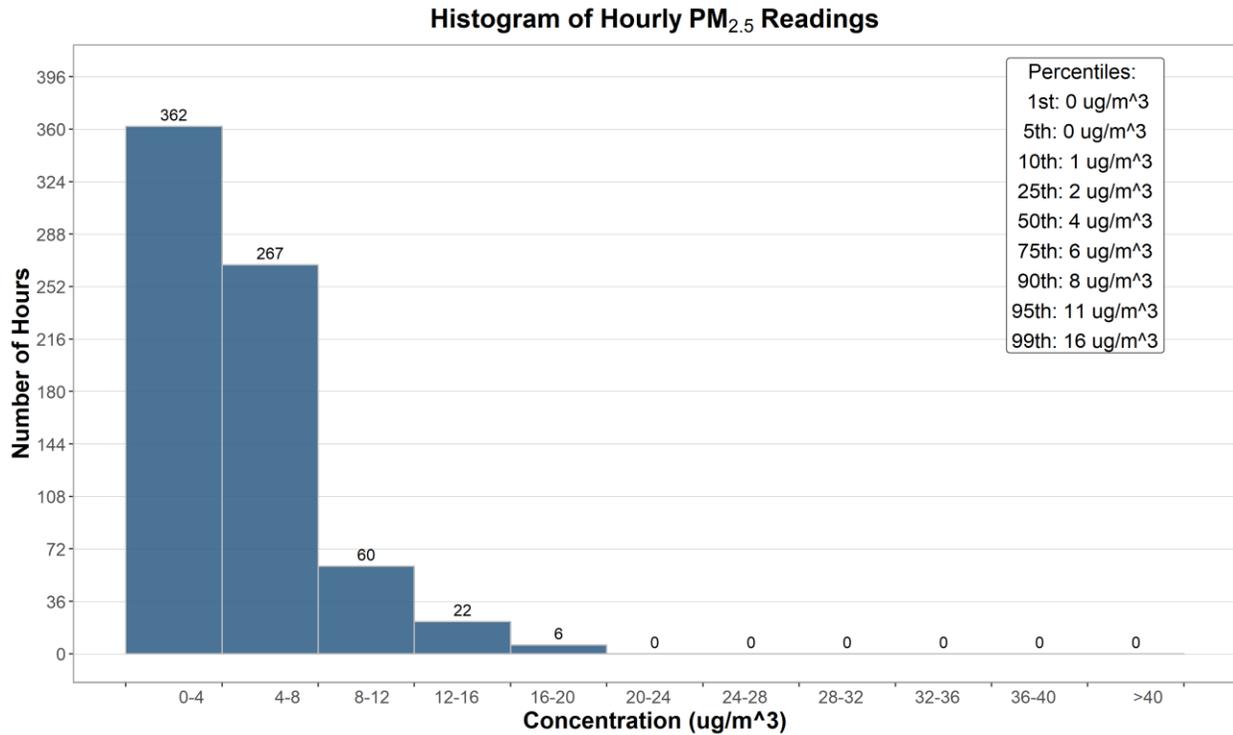


Figure 3-6 Histogram of hourly PM_{2.5} concentrations at the Lagoon station

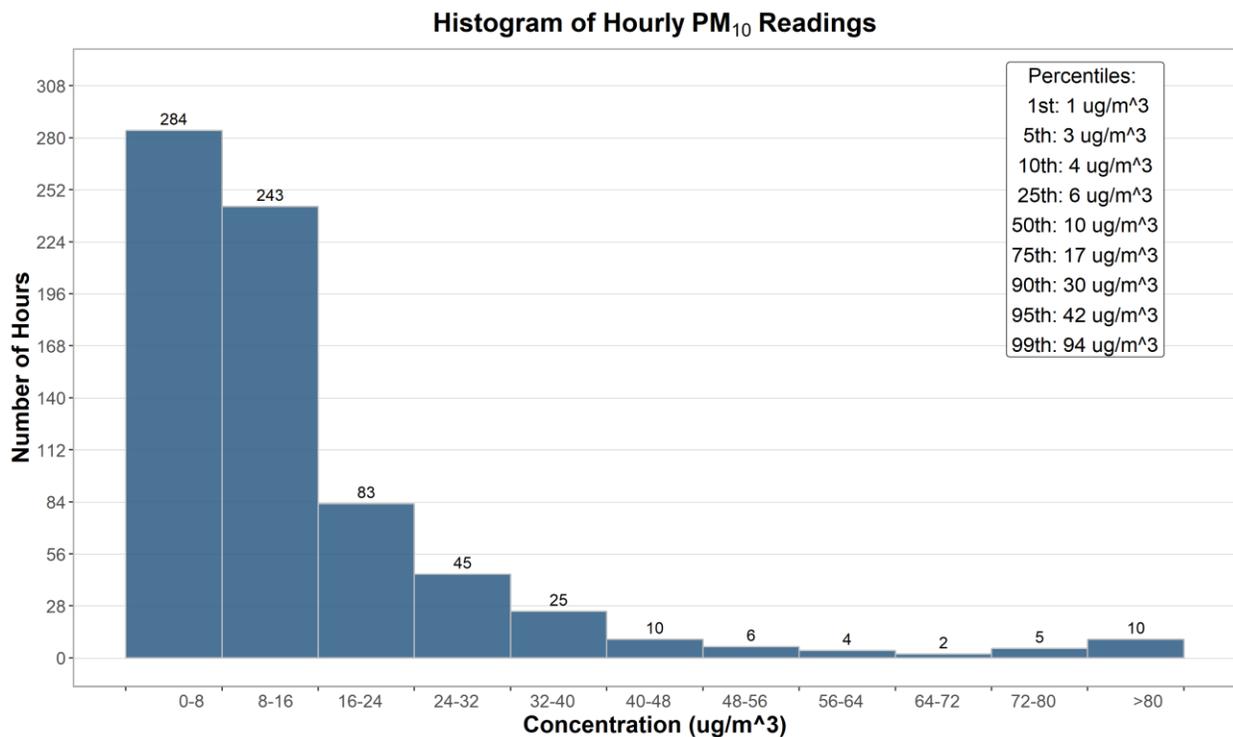


Figure 3-7 Histogram of hourly PM₁₀ concentrations at the Lagoon station

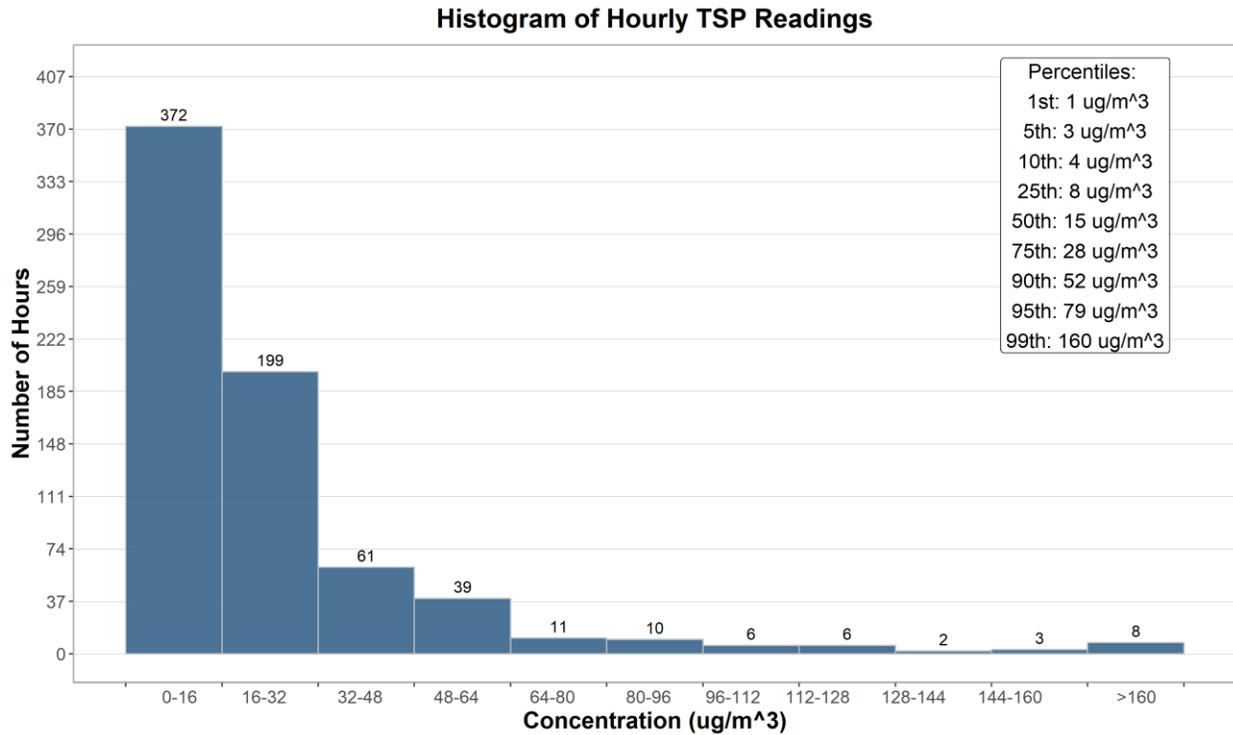


Figure 3-8 Histogram of hourly TSP concentrations at the Lagoon station

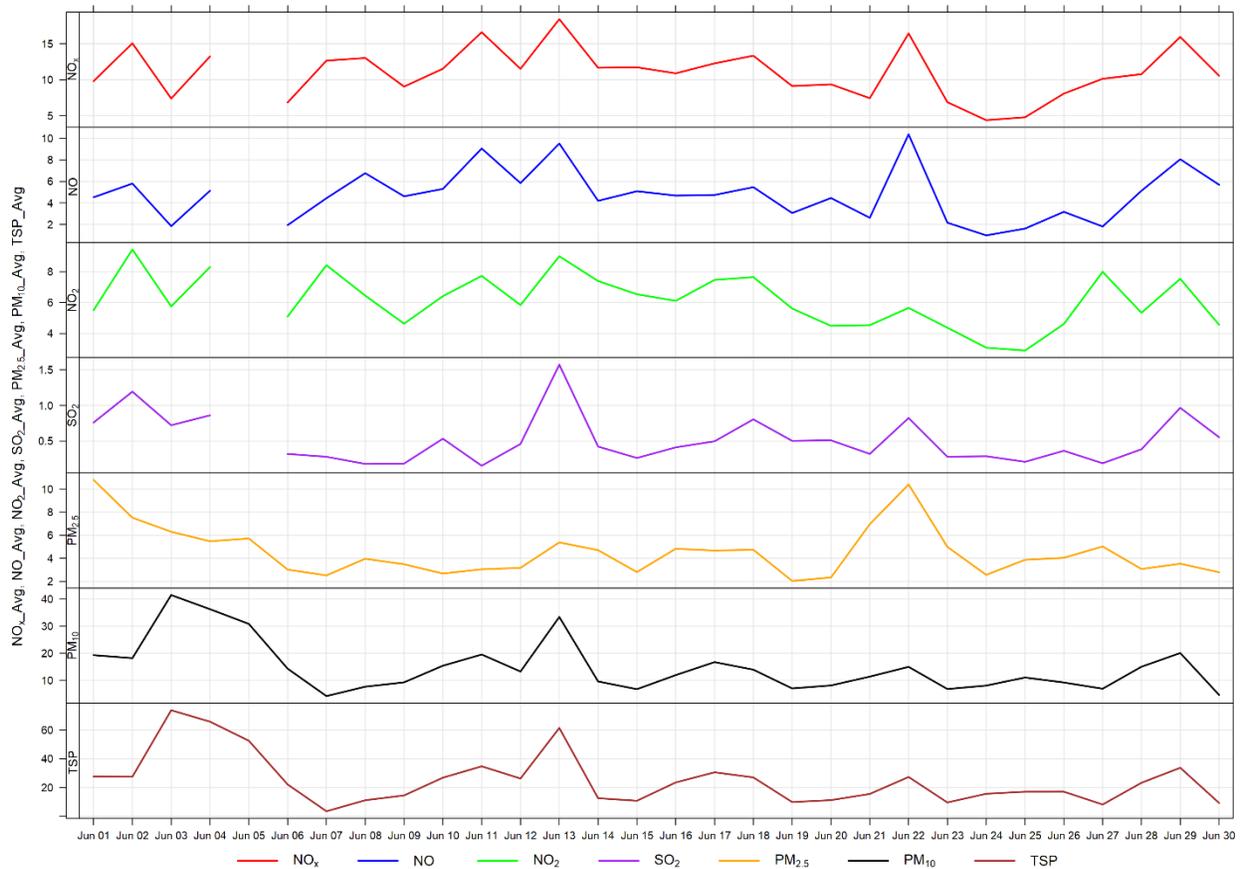


Figure 3-9 24-hour concentrations of NO_x, SO₂, and particulate matter at the Lagoon monitor

Figure 3-10 through Figure 3-12 show the variation in concentrations over various time averaging periods for PM, SO₂ and NO_x. The particulate matter plot in Figure 3-10 shows that PM₁₀ and TSP concentrations shows a diurnal pattern associated with Lafarge operations, daytime emissions from traffic and other activities. The diurnal patterns also follow the diurnal pattern of higher wind speeds during the daytime hours.

Figure 3-11 shows the variation of SO₂ over various time periods. SO₂ concentrations patterns are dependent on the timing of the highest SO₂ concentrations recorded in the month because in general SO₂ concentrations are very low. Figure 3-12 shows the variation of NO_x, NO and NO₂, with the peak of all three pollutants occurring in the early morning. This may be indicative of a peak in traffic.

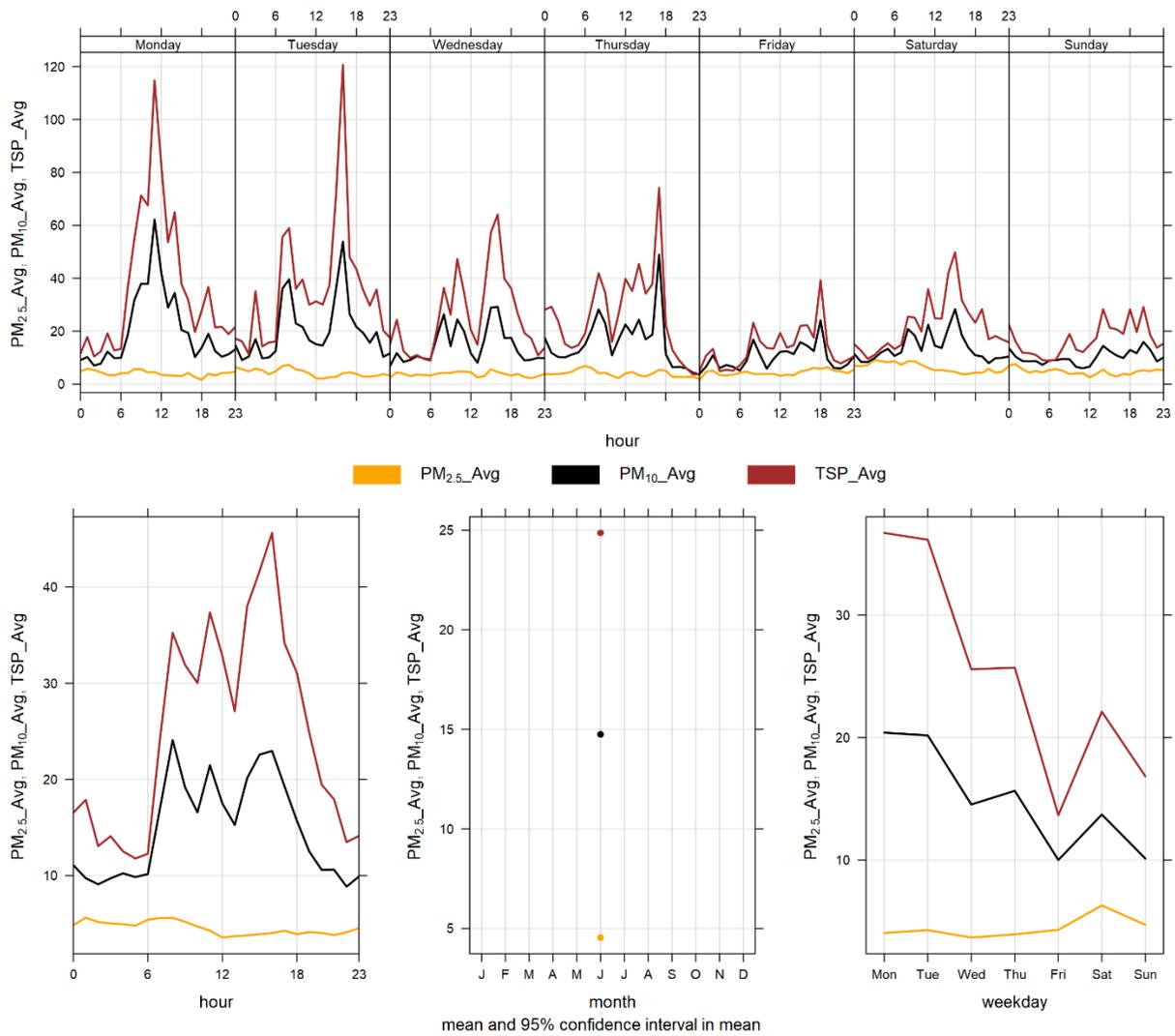


Figure 3-10 Lagoon monitor particulate matter time variation

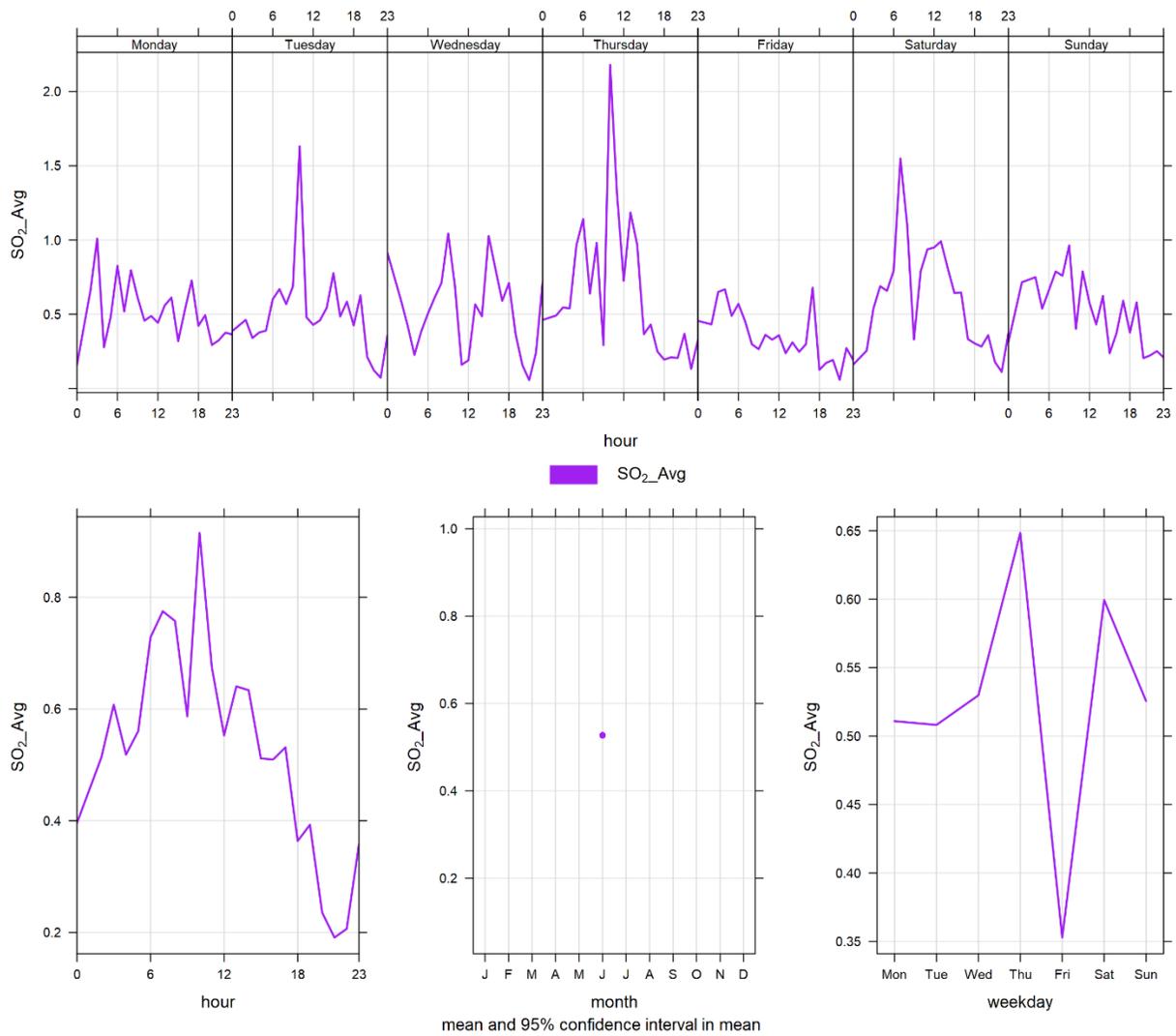


Figure 3-11 Lagoon monitor SO₂ time variation

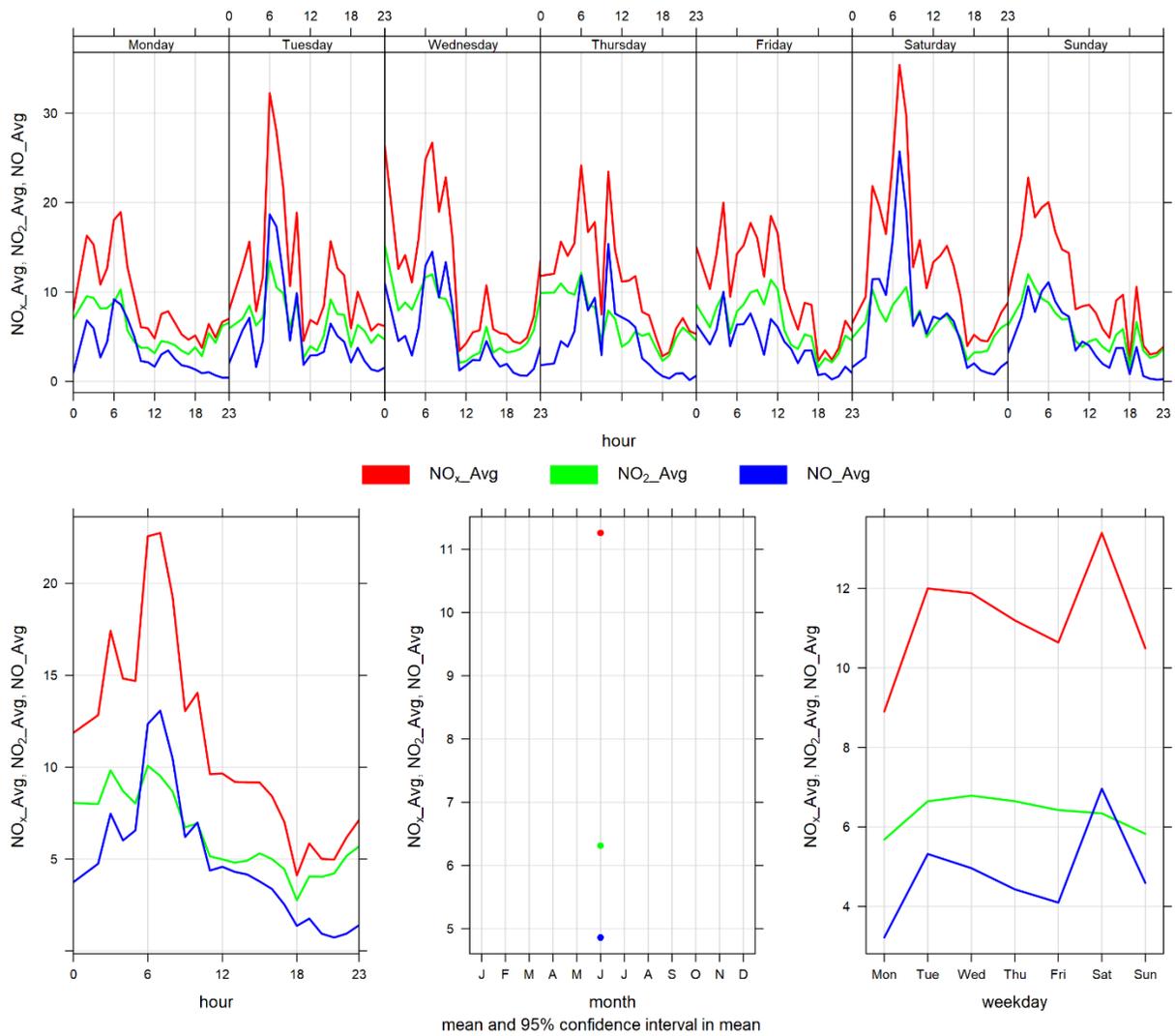


Figure 3-12 Lagoon monitor NO_x time variation

4 WEST INDUSTRIAL GRIMM

4.1 OPERATIONAL SUMMARY

A summary of the station operation for the month is provided in Table 4-1.

Table 4-1 Instrumentation List at the West monitoring location

Parameter Measured	Equipment Description	Notes
PM _{2.5} , PM ₁₀ , TSP Concentrations	GRIMM 365 Continuous Particulate Monitor	The West GRIMM underwent required annual calibration between June 4 th at 09:00 and June 10 th at 09:00. The monitors had 100% uptime in June.

4.2 MONITORING RESULTS AND TRENDS

The West GRIMM was installed in its current location in order to monitor “background” PM concentrations since the predominant wind pattern is from west to east in the valley. Table 4-2 summarizes the monthly concentrations, and the maximum 1-hour and 24-hour concentrations recorded over the course of the month. This is an industrial monitor that is not Alberta Air Monitoring Directive (AMD) compliant and is not required to show compliance with the AAAQO.

Figure 4-1 and Figure 4-2 show the hourly and daily PM_{2.5}, PM₁₀ and TSP concentrations recorded over the month. There were no exceedances of the 24-hour TSP guideline (100 µg/m³) nor the 24-hour PM_{2.5} guideline (29µg/m³).

Historically in June, the average number of 24-hour TSP AAAQG exceedances and 24-hour PM_{2.5} AAAQG exceedances are both zero. The station has not recorded an exceedance of the TSP AAAQG nor the PM_{2.5} AAAQG in June since monitoring began in 2010.

Table 4-2 Summary of June 2019 data at the West GRIMM

Parameter	Guideline		Station	Exceedances		Monthly		Maximum 1-hour				Maximum 24-hour		Operational Time (Percent)	
	1-hr	24-hr		1-hr	24-hr	Minimum	Average	Maximum Concentration	Day	Hour	Wind Speed (km/hr)	Wind Direction (degrees)	Maximum Concentration		Day
PM_{2.5} (µg/m ³)	80	29	West	0	0	0.2	3.9	19.9	22	3	9.3	248.9	11.7	22	100.0
PM₁₀ (µg/m ³)	-	-	West	-	-	0.3	6.3	64.8	15	9	7.5	67.7	14.9	22	100.0
TSP (µg/m ³)	-	100	West	-	0	0.2	8.6	128.1	17	11	13.7	258.5	23.9	15	100.0

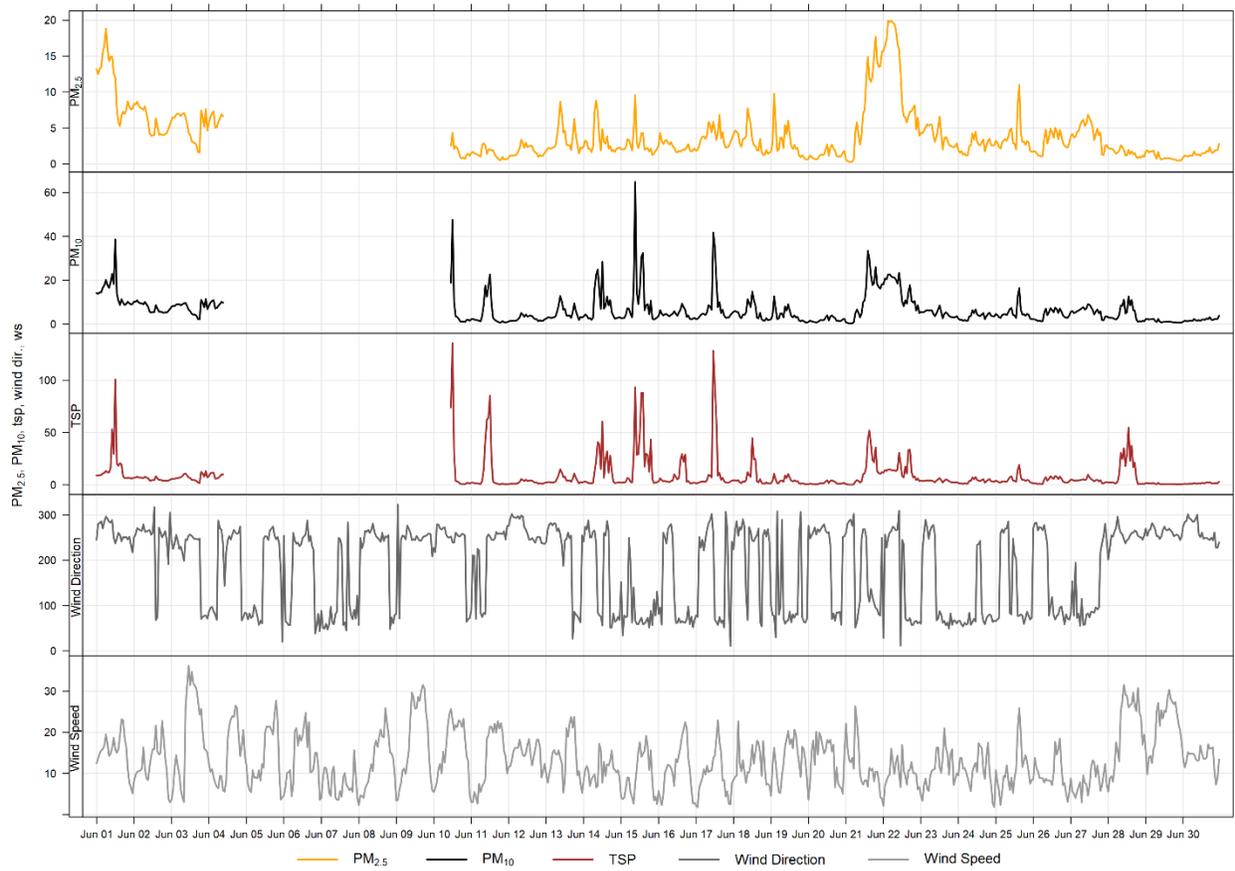


Figure 4-1 1-hour particulate matter concentrations at the West monitor

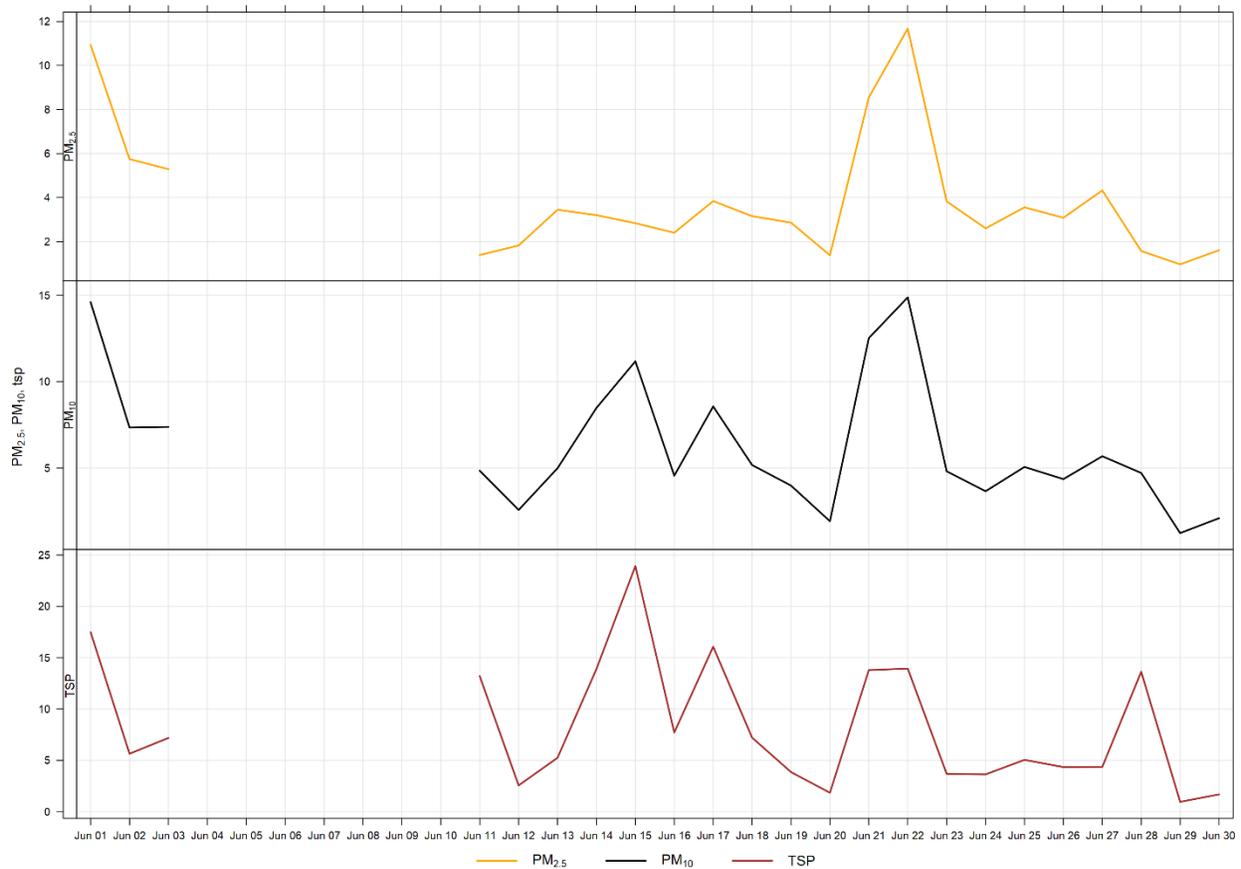


Figure 4-2 24-hour particulate matter concentrations at the West monitor

Figure 4-3 illustrates the hourly PM concentrations recorded at the West monitor, averaged over different time periods. The plot across the top shows the variation of PM over the course of a week, while the bottom three plots show the changes in PM over the course of a day, month and weekday, respectively. Figure 4-3 is based on data collected during June 2019 and indicates a diurnal relationship that could be due to the proximity of the West monitor to the highway. As the monitor is generally ‘up-wind’ of the facility, the daily variations in PM are more likely a result of higher traffic volume during daylight hours than specific Lafarge operations.

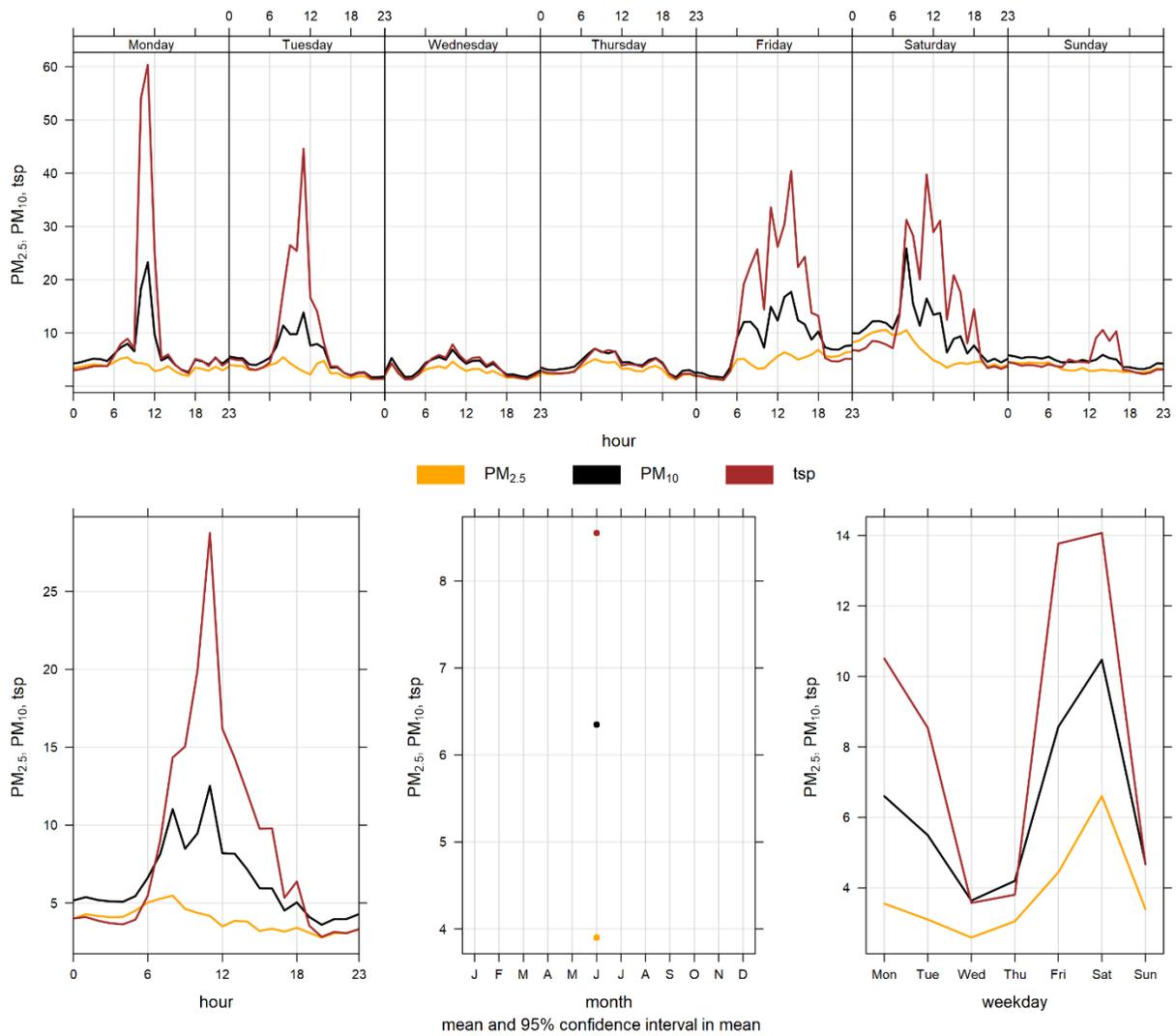


Figure 4-3 West particulate matter time variation

5 BERM INDUSTRIAL GRIMM

5.1 OPERATIONAL SUMMARY

A summary of the station operation for the month is provided in Table 5-1.

Table 5-1 Instrumentation List at the Berm monitoring location

Parameter Measured	Equipment Description	Notes
PM _{2.5} , PM ₁₀ , TSP Concentrations	GRIMM 365 Continuous Particulate Monitor	The Berm GRIMM underwent required annual calibration between June 12 th at 07:00 and June 14 th at 11:00. The monitors had 100% uptime in June.

5.2 MONITORING RESULTS AND TRENDS

The Berm monitor was placed at its current location as a result of the dispersion modelling conducted for the facility in 2009. Figure 5-1 and Figure 5-2 show the hourly and daily PM_{2.5}, PM₁₀ and TSP concentrations recorded over the month. Table 5-2 summarizes the monthly concentrations, and the maximum 1-hour and 24-hour PM concentrations recorded during the month, and Table 5-3 summarizes the recorded exceedances. This is an industrial monitor that is not Alberta Air Monitoring Directive (AMD) compliant and is not required to show compliance with the AAAQO.

There were 10 and zero exceedances of the 24-hour TSP (100 µg/m³) and PM_{2.5} (29 µg/m³) guidelines, respectively. Elevated TSP concentrations this month could be associated with Exshaw Creek flood mitigation construction activities.

Historically during the month of June, the Berm monitor records an average of 10 and zero exceedances of the 24-hour TSP and PM_{2.5} guidelines, respectively. The maximum number of TSP exceedances recorded during June occurred in 2016 where there were 18 days that exceeded the guideline. On the other hand, the maximum number of PM_{2.5} exceedances in June occurred in 2011, where there were 3 days that exceeded the guideline.

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

The 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.

Table 5-2 Summary of June 2019 data at the Berm GRIMM

Parameter	Guideline		Station	Exceedances		Monthly		Maximum 1-hour					Maximum 24-hour		Operational Time (Percent)
	1-hr	24-hr		1-hr	24-hr	Minimum	Average	Maximum Concentration	Day	Hour	Wind Speed (km/hr)	Wind Direction (degrees)	Maximum Concentration	Day	
PM_{2.5} (µg/m ³)	80	29	Berm	0	0	0.1	6.6	68.2	4	15	23.9	257.6	17.8	4	100.0
PM₁₀ (µg/m ³)	-	-	Berm	-	-	0.1	32.6	481.8	4	15	23.9	257.6	119.1	4	100.0
TSP (µg/m ³)	-	100	Berm	-	10	0.1	89.0	1497.9	4	16	23.7	267.2	313.9	4	100.0

Table 5-3 Days exceeding the Guideline for TSP or PM_{2.5} at the Berm Monitor

Date	TSP (ug/m ³)	PM _{2.5} (ug/m ³)	Average Wind Direction (degrees)	Average Wind Speed (km/hr)	Average RH (%)	Root Cause (Provided by Lafarge)
Berm						
2019-06-03	248.2	-	243.7	19.9	39.7	Dust; likely influenced by flood mitigation work at this location
2019-06-04	313.9	-	252.0	14.5	45.6	Dust; likely influenced by flood mitigation work at this location
2019-06-05	274.2	-	254.9	13.4	46.5	Dust; likely influenced by flood mitigation work at this location
2019-06-06	152.9	-	248.4	13.8	55.3	Dust; likely influenced by flood mitigation work at this location
2019-06-10	123.6	-	256.3	16.4	45.3	Dust; likely influenced by flood mitigation work at this location
2019-06-11	124.5	-	252.7	13.8	52.0	Dust; likely influenced by flood mitigation work at this location
2019-06-17	143.6	-	331.2	10.0	59.3	Dust; likely influenced by flood mitigation work at this location
2019-06-18	142.7	-	263.1	12.0	51.5	Dust; likely influenced by flood mitigation work at this location

2019-06-28	161.6	-	255.9	21.5	50.4	High wind event; likely also influenced by flood mitigation work at this location
2019-06-29	153.6	-	261.1	21.8	44.7	High wind event; likely also influenced by flood mitigation work at this location
Total # of Exceedances	10	0				
Maximum # of Exceedances (June)	18 (2016)	3 (2011)				
Average # of Exceedances (June)	10	0				
Minimum # of Exceedances (June)	0 (2013, 2014)	0 (2010, 2012 ~ 2018)				

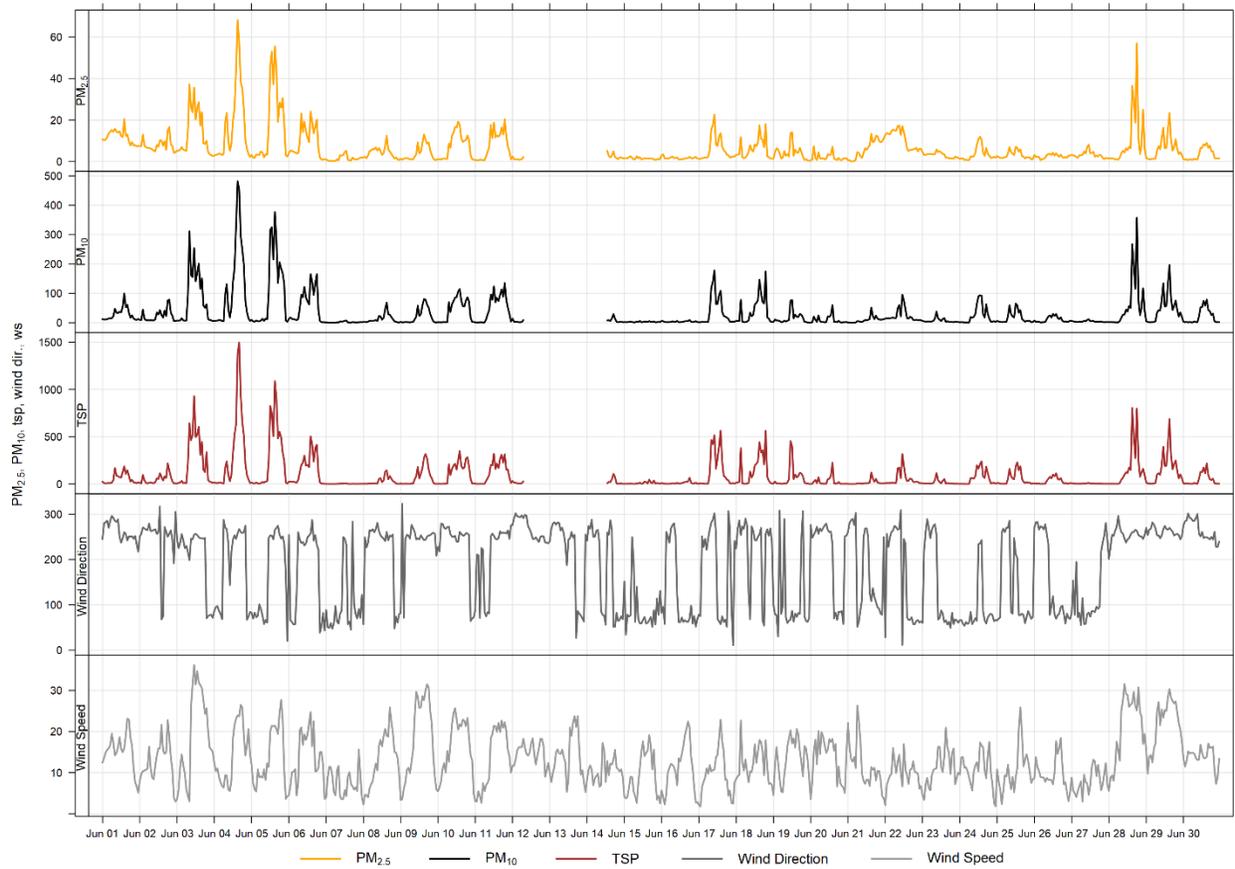


Figure 5-1 1-hour particulate matter concentrations recorded at the Berm monitor



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

Figure 5-3 shows the wind rose for the 10 days of TSP exceedances recorded this month. The wind rose shows that the winds predominantly came from the west-southwest direction.

Figure 5-4 shows the variation of PM recorded at the Berm monitor over various time averaging periods. The Berm monitor diurnal pattern, similar to the Windridge and Lagoon stations, is associated with Lafarge operations, but also daytime emissions from traffic and other activities in Exshaw, such as the flood mitigation work that is currently underway.

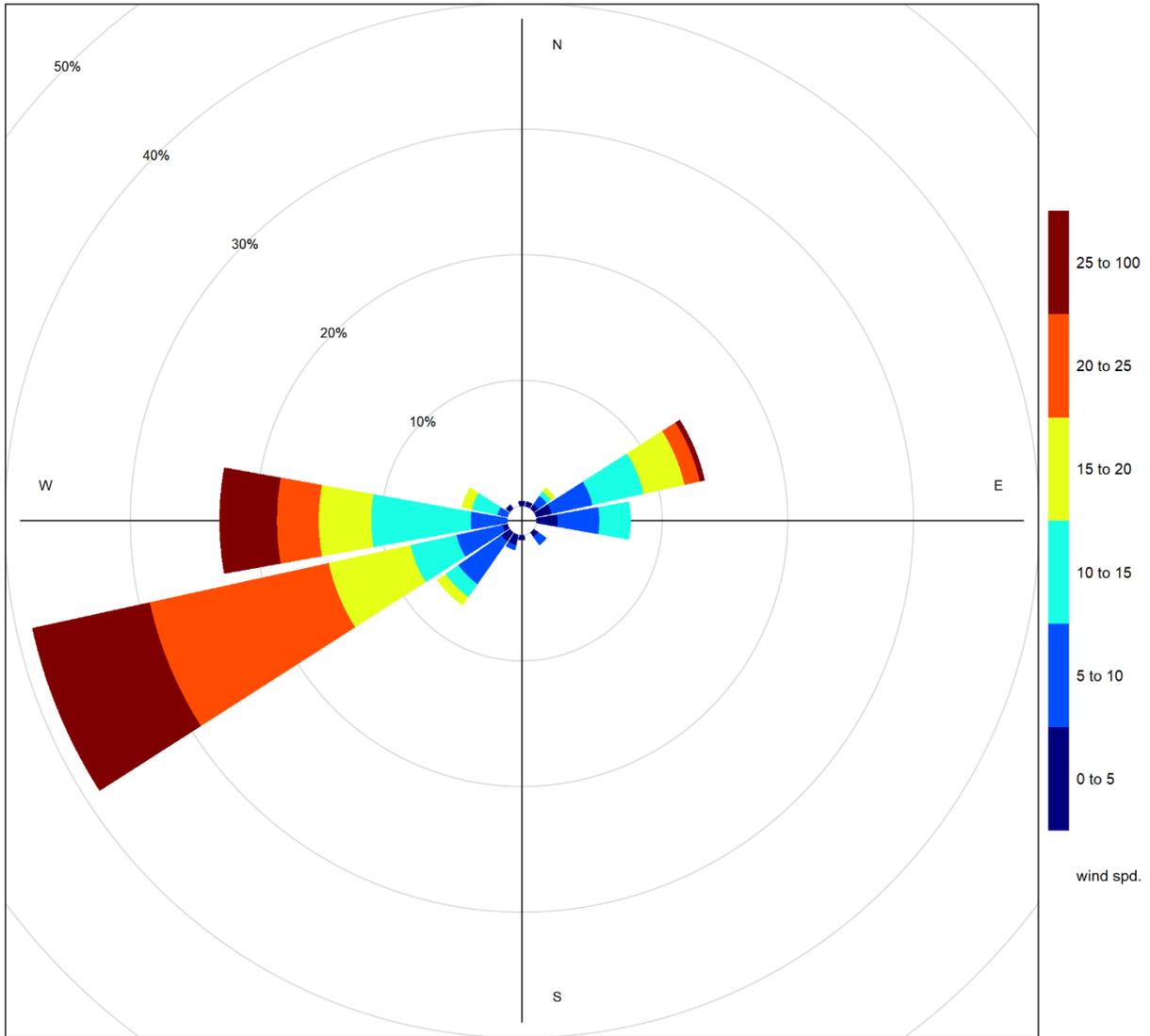


Figure 5-3 Wind rose for TSP exceedance days recorded at the Berm GRIMM

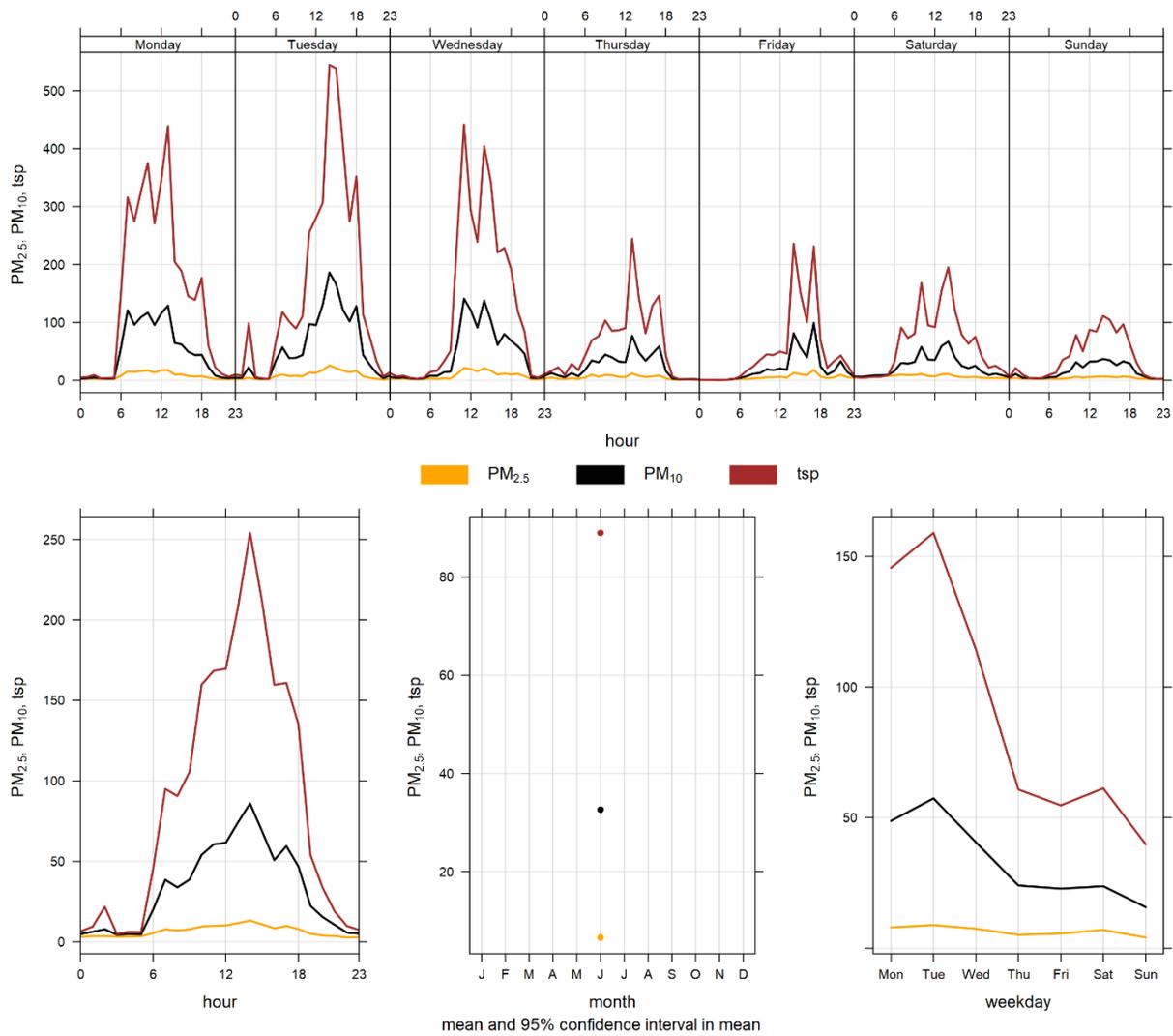


Figure 5-4 Berm particulate matter time variation

6 ENTRANCE INDUSTRIAL GRIMM

6.1 OPERATIONAL SUMMARY

A summary of the station operation for the month is provided in Table 6-1.

Table 6-1 Instrumentation List at the Entrance monitoring location

Parameter Measured	Equipment Description	Notes
PM _{2.5} , PM ₁₀ , TSP Concentrations	GRIMM 365 Continuous Particulate Monitor	The Entrance GRIMM underwent required annual calibration between June 10 th at 09:00 and June 12 th at 09:00. The monitors had 100% uptime in June.

6.2 MONITORING RESULTS AND TRENDS

The Entrance monitor was placed at its current location as a result of dispersion modelling conducted in 2009. This area was indicated as being the area where the maximum PM concentrations were expected. Figure 6-1 and Figure 6-2 show the hourly and daily PM_{2.5}, PM₁₀ and TSP concentrations recorded over the month. Table 6-2 summarizes the monthly concentrations, and the maximum 1-hour and 24-hour PM concentrations recorded during the month. Table 6-3 summarizes the recorded exceedances. This is an industrial monitor that is not Alberta Air Monitoring Directive (AMD) compliant and is not required to show compliance with the AAAQO.

During June, there were 6 and zero exceedances of the 24-hour TSP (100 µg/m³) and PM_{2.5} (29 µg/m³) guidelines, respectively. Dust created from the flood mitigation work (section 1.1) has the potential to impact particulate matter concentrations and may have contributed to particulate at the Entrance monitor.

Historically, the Entrance monitor records an average of 14 and zero exceedances of the 24-hour TSP and PM_{2.5} guidelines respectively, during the month of June. The maximum number of TSP exceedances recorded during June occurred in 2014 (20 days), while the minimum number of TSP exceedances recorded during June occurred in 2017 (8 days). On the other hand, the maximum number of PM_{2.5} exceedances in June was 2 days, occurring in 2011.

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

The Entrance monitor is impacted by fugitive dust from plant activities, and high wind events. Trucks also pass near to the Entrance monitor as they enter and exit the Lafarge facility for loading and deliveries. 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. The CPR rail crossing is in disrepair and may be contributing to PM concentrations at the Entrance monitor. Lafarge has been informed the crossing is scheduled to be repaired in the summer of 2019.

Figure 6-3 shows the wind rose for the 6 days that exceeded the TSP guideline. The wind rose indicates that the winds predominantly came from the west-southwest and east-northeast directions. High wind speeds were not a primary factor for the TSP exceedances in June at the Entrance station. It is likely that the flood mitigation work

impacts particulate concentrations at the Entrance monitor. Other sources, such as industry, traffic and rail may have contributed to these exceedances.

Table 6-2 Summary of June 2019 data at the Entrance GRIMM

Parameter	Guideline		Station	Exceedances		Monthly		Maximum 1-hour					Maximum 24-hour		Operational Time (Percent)
	1-hr	24-hr		1-hr	24-hr	Minimum	Average	Maximum Concentration	Day	Hour	Wind Speed (km/hr)	Wind Direction (degrees)	Maximum Concentration	Day	
PM_{2.5} (µg/m ³)	80	29	Entrance	0	0	0.4	7.5	68.9	6	19	11.2	222.2	15.0	1	100.0
PM₁₀ (µg/m ³)	-	-	Entrance	-	-	0.6	34.6	563.8	6	19	11.2	222.2	96.1	13	100.0
TSP (µg/m ³)	-	100	Entrance	-	6	0.4	82.5	730.5	3	11	36.2	254.9	243.1	13	100.0

Table 6-3 Days exceeding the Guideline for TSP or PM_{2.5} at the Entrance Monitor

Date	TSP (ug/m³)	PM_{2.5} (ug/m³)	Average Wind Direction (degrees)	Average Wind Speed (km/hr)	Average RH (%)	Root Cause (Provided by Lafarge)
Entrance						
2019-06-03	222.2	-	243.7	19.9	39.7	Dust; potential traffic influences and possibly influenced by flood mitigation work at this location
2019-06-04	133.3	-	252.0	14.5	45.6	Dust; potential traffic influences and possibly influenced by flood mitigation work at this location
2019-06-05	132.7	-	254.9	13.4	46.5	Dust; potential traffic influences and possibly influenced by flood mitigation work at this location
2019-06-13	243.1	-	266.8	13.8	49.4	Dust; potential traffic influences and possibly influenced by flood mitigation work at this location
2019-06-17	111.3	-	331.2	10.0	59.3	Dust; potential traffic influences and possibly influenced by flood mitigation work at this location
2019-06-25	118.8	-	77.5	10.6	61.3	Dust; potential traffic influences and possibly influenced by flood

						mitigation work at this location
Total # of Exceedances	6	0				
Maximum # of Exceedances (June)	20 (2014)	2 (2011)				
Average # of Exceedances (June)	14	0				
Minimum # of Exceedances (June)	8 (2017)	0 (2010, 2012 ~ 2018)				

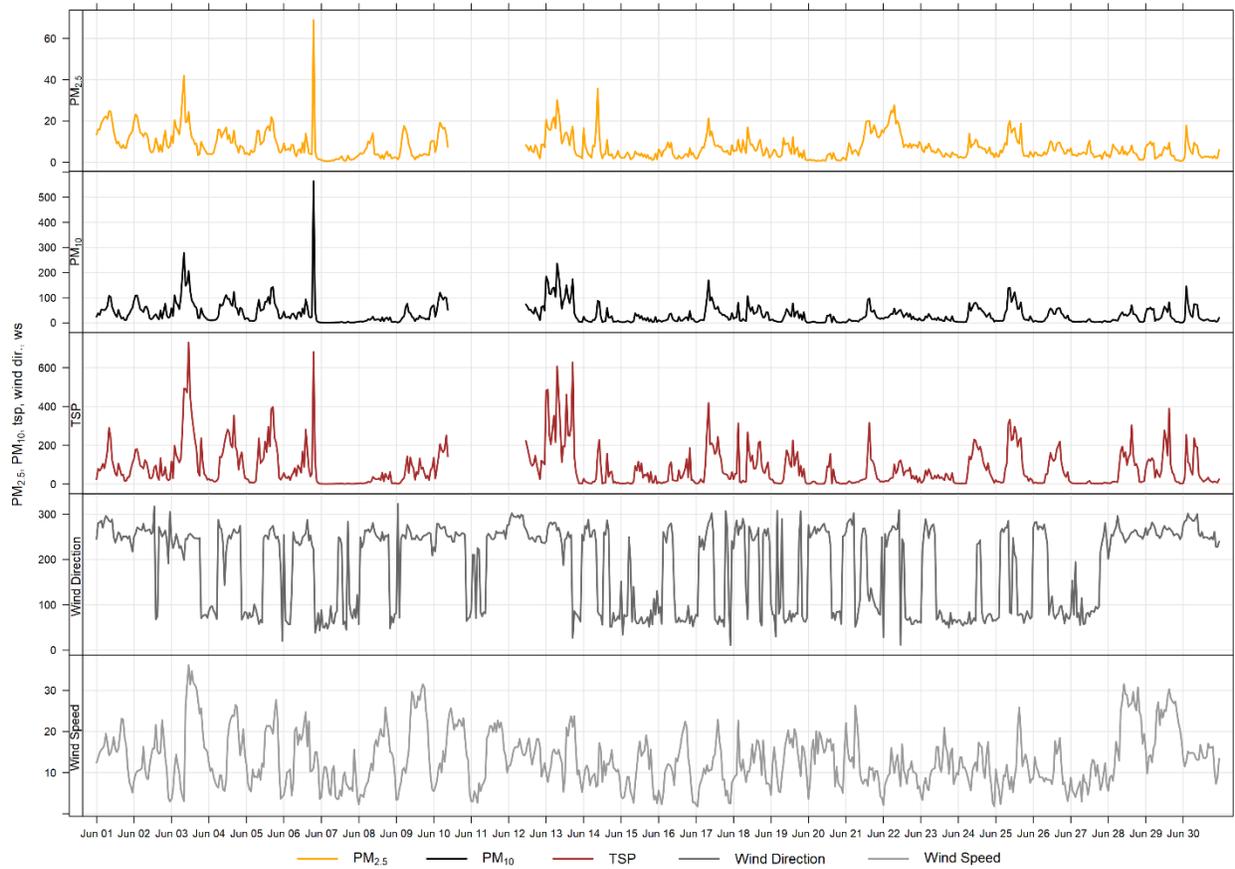


Figure 6-1 1-hour particulate matter concentrations recorded at the Entrance monitor



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

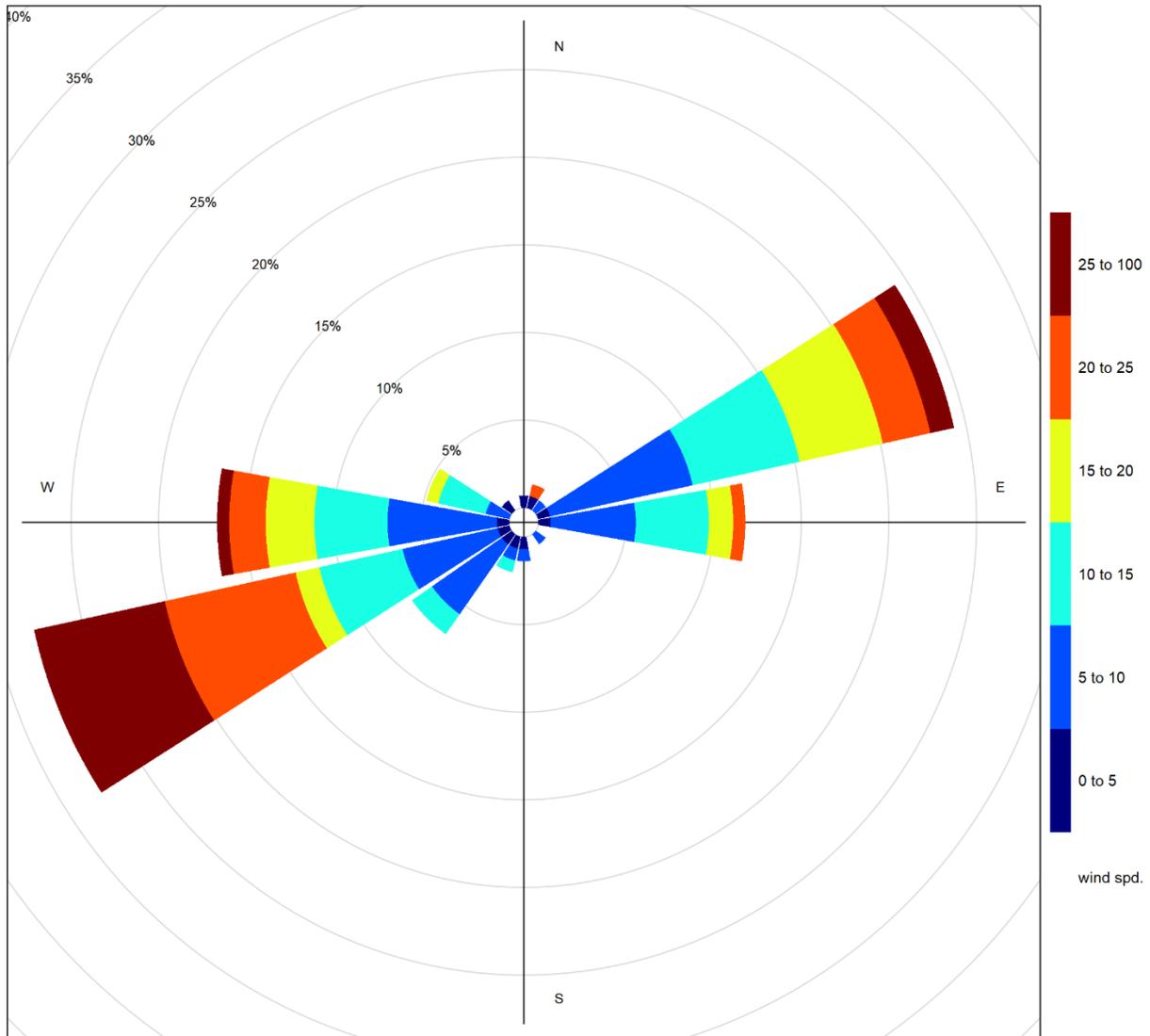


Figure 6-3 Wind rose for TSP exceedance days recorded at the Entrance GRIMM

Figure 6-4 illustrates the hourly PM concentrations recorded at the Entrance monitor, averaged over different time periods. The plot across the top shows the variation of PM over the course of a week, while the bottom three plots show the changes in PM over the course of a day, month and weekday, respectively. Figure 6-4 is based on data collected during June 2019. The diurnal pattern is likely more influenced by daytime traffic emission (from vehicles serving Lafarge as well as regular highway traffic) given its location near the highway entrance to Lafarge, but can also be influenced by the flood mitigation work currently underway, as well as industry and rail sources.

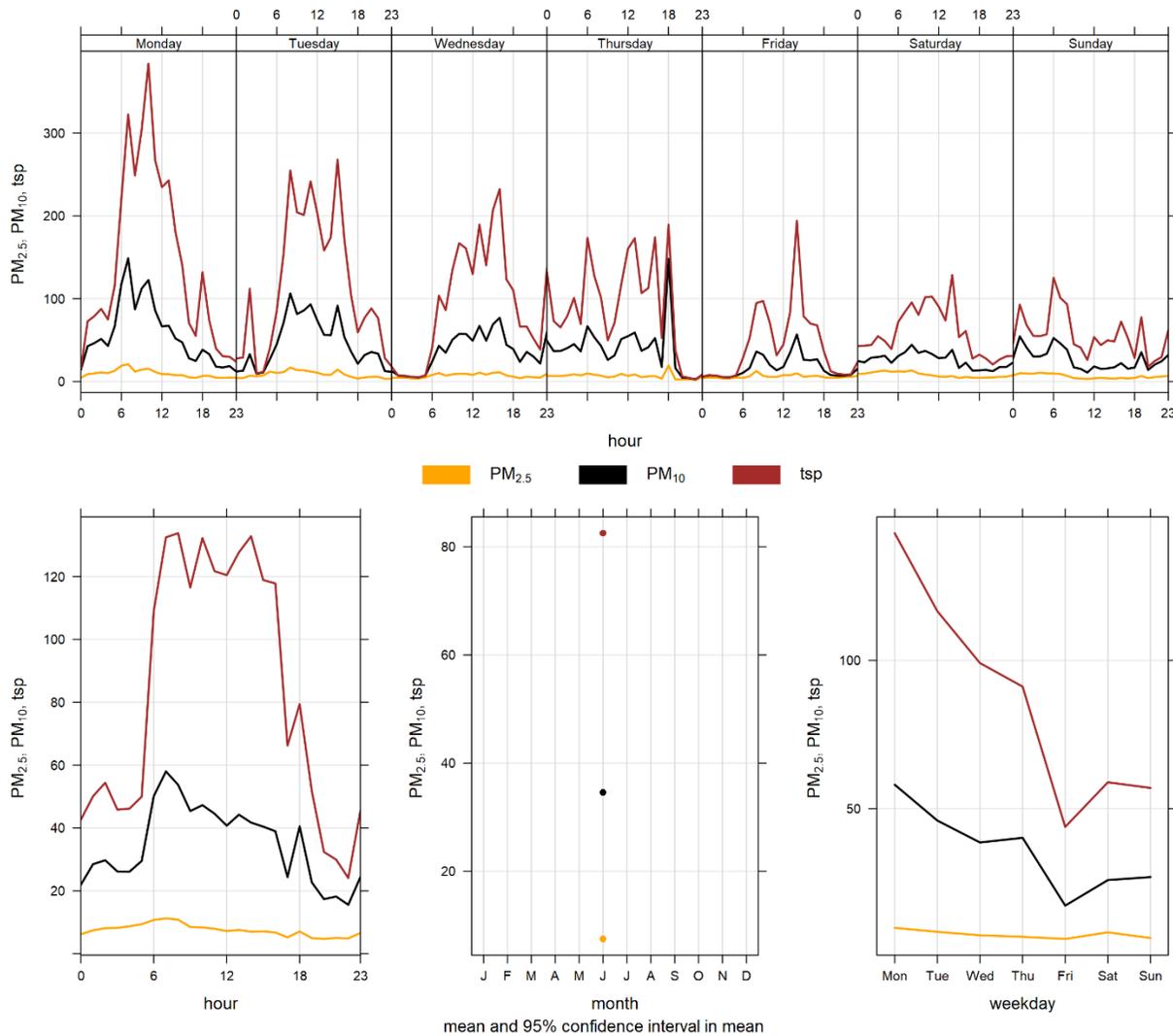


Figure 6-4 Entrance particulate matter time variation

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APPENDIX

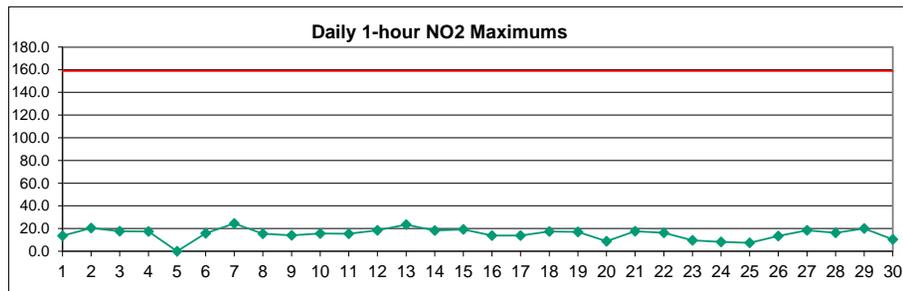
A DATA & CALIBRATION REPORTS

APPENDIX



Lagoon NO₂ (ppb) – June 2019

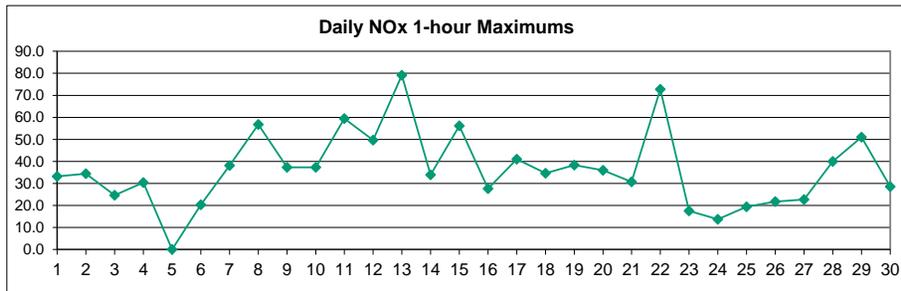
Day	HOUR																								MEAN	MAX
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1	6.0	S	5.7	13.7	4.5	2.6	6.1	7.1	10.5	7.7	4.4	1.2	5.8	10.8	11.2	1.3	2.5	1.1	3.4	4.4	2.7	3.8	4.4	5.7	5.5	13.7
2	6.3	S	10.4	20.4	17.7	14.8	17.8	14.5	16.6	10.9	5.5	5.4	5.2	8.2	8.7	6.6	7.6	7.3	3.2	17.1	3.8	3.1	3.0	3.0	9.4	20.4
3	7.6	S	12.7	6.9	7.1	8.1	9.4	17.7	5.0	2.8	3.5	6.6	5.8	4.2	2.5	1.3	0.8	0.9	5.3	1.7	4.9	3.1	8.9	5.6	5.8	17.7
4	2.1	S	3.1	4.4	6.7	6.4	15.0	15.2	12.6	9.6	15.9	3.2	8.5	5.1	8.5	17.5	13.9	10.6	5.0	10.5	8.8	1.8	3.5	3.2	8.3	17.5
5	22.5	S	16.6	17.2	11.3	15.1	20.4	21.1	18.4	C	C	C	C	C	C	18.2	11.0	8.9	1.0	3.2	1.9	8.7	10.0	8.5	-	-
6	11.3	S	14.5	15.9	14.5	10.2	5.0	3.2	0.9	1.0	0.9	4.2	1.6	3.9	5.5	4.3	4.5	3.3	1.5	1.7	2.0	2.3	3.1	2.0	5.1	15.9
7	5.8	S	4.8	9.8	3.8	3.2	8.3	10.6	17.3	24.5	16.4	20.6	16.2	9.9	4.2	3.2	10.2	6.7	1.8	1.5	0.7	3.9	4.9	5.4	8.4	24.5
8	7.5	S	11.8	15.5	12.1	11.3	10.9	13.4	8.8	5.5	3.2	2.0	1.0	0.9	1.8	2.5	4.3	3.3	7.2	2.9	1.6	9.6	7.7	3.4	6.5	15.5
9	3.6	S	13.3	14.1	11.9	10.9	4.3	4.3	5.1	1.5	2.2	1.5	2.7	2.1	1.7	3.0	1.1	3.4	2.8	6.6	3.0	1.9	2.5	3.1	4.6	14.1
10	6.3	S	13.6	15.6	7.5	10.6	10.5	10.4	3.8	2.3	3.1	1.3	1.8	7.9	6.9	5.0	3.8	7.3	3.6	4.2	2.2	6.9	6.0	7.0	6.4	15.6
11	9.6	S	12.0	10.0	8.3	11.0	13.8	14.5	15.5	2.5	5.7	5.2	2.6	1.6	2.0	9.1	8.2	7.0	3.2	4.8	8.4	4.1	7.8	10.7	7.7	15.5
12	13.5	S	3.9	5.3	4.5	5.5	4.6	5.4	5.2	18.4	13.5	4.1	1.3	4.9	6.1	4.2	1.0	1.4	2.4	2.1	7.7	3.3	2.2	13.8	5.8	18.4
13	11.2	S	4.8	5.7	7.2	10.5	18.7	14.1	14.2	6.9	23.4	15.8	2.6	9.3	6.8	8.6	11.0	2.4	3.1	2.7	6.8	6.1	5.0	9.9	9.0	23.4
14	18.2	S	4.7	3.5	5.2	9.9	11.8	11.8	14.0	3.8	1.4	6.4	12.9	4.4	7.7	7.9	7.3	4.3	1.3	7.9	5.1	5.5	12.0	3.3	7.4	18.2
15	2.1	S	7.3	10.3	9.0	6.6	13.9	12.1	19.2	11.1	6.0	4.3	2.9	4.1	4.4	5.0	2.3	1.5	0.6	2.7	3.3	4.0	8.5	9.2	6.5	19.2
16	13.8	S	5.3	7.3	7.3	7.2	6.9	6.0	6.8	9.2	6.5	4.1	4.3	5.2	5.4	5.1	10.1	13.1	0.9	2.2	3.9	3.1	3.0	4.1	6.1	13.8
17	5.7	S	11.0	11.1	11.1	10.4	13.9	11.7	12.6	10.5	4.7	5.5	4.3	3.7	2.9	8.7	8.2	3.0	4.4	3.0	7.0	4.4	6.2	7.6	7.5	13.9
18	8.2	S	8.7	15.3	5.0	5.6	17.5	6.8	6.2	8.5	12.2	1.0	3.5	6.0	9.6	9.1	7.5	11.2	6.5	9.3	4.7	8.0	3.3	2.1	7.7	17.5
19	17.0	S	3.9	8.6	10.8	11.6	13.0	14.5	8.7	1.6	5.1	0.8	4.0	2.1	0.2	0.4	0.1	4.1	8.8	3.7	1.9	2.3	3.2	2.8	5.6	17.0
20	5.7	S	1.9	6.6	2.9	4.5	8.0	8.0	8.6	5.5	3.7	2.4	8.9	3.0	4.7	0.7	2.7	3.4	0.5	1.1	3.9	7.5	6.1	3.1	4.5	8.9
21	8.5	S	4.4	6.9	13.8	1.0	0.7	1.9	1.7	9.8	16.3	17.7	9.7	5.3	0.2	0.2	0.3	0.4	0.3	0.1	0.5	2.0	1.7	1.0	4.5	17.7
22	2.1	S	4.3	6.5	9.0	6.6	8.7	11.1	8.0	3.6	16.2	1.4	0.4	5.0	3.9	5.0	6.8	1.5	0.6	1.6	5.3	7.1	7.6	7.7	5.7	16.2
23	3.7	S	5.3	9.6	7.1	7.9	7.7	5.1	3.0	8.7	6.5	1.5	6.8	5.4	1.1	1.2	1.8	2.1	0.4	4.0	2.0	3.8	3.5	2.6	4.4	9.6
24	8.3	S	0.9	3.6	6.9	3.7	1.7	1.3	1.3	2.0	3.7	1.6	0.8	2.3	5.2	1.3	0.9	1.0	1.8	2.4	7.5	2.9	3.8	6.1	3.1	8.3
25	3.8	S	4.3	4.2	4.9	5.6	7.4	5.6	5.1	3.6	1.9	1.1	1.1	1.1	0.4	0.8	0.5	1.0	0.7	0.6	0.7	3.3	6.2	2.7	2.9	7.4
26	7.7	S	7.3	4.3	5.4	7.2	8.5	6.8	5.2	7.6	3.5	1.4	1.4	1.6	3.3	1.6	0.8	0.5	0.7	4.4	3.0	2.9	7.6	13.4	4.6	13.4
27	11.3	S	18.5	15.6	15.4	13.6	16.8	9.1	9.4	4.1	3.7	5.5	2.3	1.4	5.4	6.8	3.3	5.9	4.2	6.1	6.6	8.3	7.2	3.2	8.0	18.5
28	1.9	S	10.3	12.9	16.3	7.4	10.5	10.3	6.8	2.7	0.4	0.6	2.6	3.3	4.2	3.2	3.2	8.7	2.9	0.9	2.1	1.0	1.9	8.6	5.3	16.3
29	6.6	S	4.3	5.3	5.5	6.3	3.1	3.7	6.3	4.4	9.9	15.9	20.2	14.0	15.8	16.7	8.6	4.6	4.4	4.7	4.3	0.8	1.9	6.4	7.5	20.2
30	3.8	S	10.4	8.6	8.4	5.5	7.4	8.4	3.2	4.7	1.8	6.9	3.4	2.8	2.5	0.6	5.6	3.4	0.6	3.4	4.5	1.2	2.4	5.6	4.6	10.4
NO.	30	-	30	30	30	30	30	30	30	29	29	29	29	29	29	30	30	30	30	30	30	30	30	30	684	100%
MEAN	8.1	-	8.0	9.8	8.7	8.0	10.1	9.5	8.7	6.7	6.9	5.2	5.0	4.8	4.9	5.3	5.0	4.4	2.8	4.1	4.0	4.2	5.2	5.7		
MAX	22.5	-	18.5	20.4	17.7	15.1	20.4	21.1	19.2	24.5	23.4	20.6	20.2	14.0	15.8	18.2	13.9	13.1	8.8	17.1	8.8	9.6	12.0	13.8		



Number of 1HR Exceedences	0
Number of Non-Zero Readings	684
Maximum 1-HR Average	24.5 PPB
Maximum 24-HR Average	9.4 PPB
Operational Time	720 HRS
Monthly Calibration	6
Operational Uptime	100.0 %
Standard Deviation	4.7
Monthly Average	6.3 PPB

Lagoon NOx (ppb) – June 2019

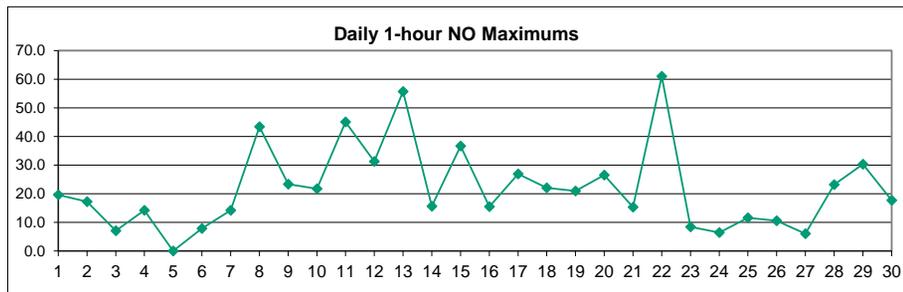
Day	HOUR																								MEAN	MAX
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1	9.1	S	9.9	33.1	7.2	4.3	15.8	17.4	25.7	13.3	6.3	1.3	9.6	19.5	19.2	1.9	3.4	1.3	4.0	5.4	2.8	3.8	4.4	6.9	9.8	33.1
2	7.1	S	13.3	30.6	24.5	31.9	34.4	24.7	31.2	19.3	9.6	10.2	9.5	11.4	12.3	8.9	13.8	11.3	4.2	24.4	4.3	3.1	3.0	3.5	15.1	34.4
3	8.2	S	17.3	7.4	7.1	8.9	11.4	24.6	7.4	5.3	5.1	11.0	9.1	5.9	3.5	1.6	0.9	1.2	7.1	1.9	5.7	3.2	10.3	6.0	7.4	24.6
4	2.2	S	3.2	5.0	7.0	7.6	28.8	29.2	20.8	15.0	26.6	5.0	14.1	8.5	14.4	30.4	24.0	17.6	8.1	15.6	12.5	1.7	3.9	3.2	13.2	30.4
5	27.1	S	26.6	29.9	12.6	23.4	46.7	52.5	38.3	C	C	C	C	C	C	32.1	21.1	14.0	1.0	3.6	2.5	9.1	11.7	8.5	-	-
6	12.7	S	17.1	20.3	16.0	12.8	6.6	4.7	1.1	1.3	1.1	10.5	2.3	8.3	13.2	6.7	5.4	3.9	1.5	2.8	2.0	2.3	3.1	1.9	6.8	20.3
7	6.1	S	5.0	12.5	4.5	3.3	13.2	16.7	28.4	38.2	22.5	32.8	30.3	21.0	7.4	3.7	15.9	8.7	1.9	1.6	0.7	5.1	5.0	6.5	12.7	38.2
8	10.2	S	17.5	28.4	15.0	27.7	31.7	56.8	25.9	11.2	5.6	3.3	1.4	1.1	2.9	3.9	7.6	5.4	12.7	3.7	1.8	12.7	9.6	3.8	13.0	56.8
9	3.9	S	26.3	37.3	30.0	23.6	7.4	6.7	9.5	2.4	4.0	2.5	5.3	4.1	2.9	5.1	1.7	6.4	5.4	11.9	3.7	2.0	2.6	3.3	9.1	37.3
10	6.5	S	35.2	37.3	10.5	20.4	17.9	19.9	7.0	4.9	5.8	2.3	3.2	14.7	13.5	8.8	7.9	12.5	5.6	6.3	2.5	9.2	5.9	7.5	11.5	37.3
11	13.2	S	21.4	24.2	11.0	20.7	46.4	59.5	46.0	4.5	11.2	10.1	4.4	2.3	2.7	15.7	15.8	14.3	5.5	8.9	13.1	4.8	9.6	16.6	16.6	59.5
12	28.4	S	6.4	9.7	8.3	11.0	10.0	14.3	12.9	49.7	31.9	7.5	1.6	9.0	11.8	7.5	1.3	1.8	3.4	2.6	9.4	3.7	2.3	20.9	11.5	49.7
13	14.9	S	6.3	10.0	14.6	24.4	50.3	29.1	33.8	12.5	79.1	34.7	3.8	22.5	14.3	15.1	16.6	3.6	5.1	2.7	8.2	6.3	5.1	10.9	18.4	79.1
14	33.9	S	6.9	3.9	5.8	15.2	21.2	21.6	25.7	6.4	1.5	9.4	17.6	6.4	13.8	13.2	12.4	7.1	1.5	11.1	5.7	6.4	18.4	3.2	11.7	33.9
15	2.1	S	7.5	26.2	12.8	8.0	21.1	24.5	56.1	21.0	10.2	7.5	4.2	8.2	6.6	9.4	3.4	1.9	0.5	3.5	3.3	4.4	13.0	14.6	11.7	56.1
16	27.6	S	5.9	11.0	8.2	15.9	22.6	18.4	20.9	21.3	10.6	5.9	6.4	7.8	8.1	7.3	16.1	18.6	0.8	2.2	4.0	3.1	3.5	4.1	10.9	27.6
17	7.4	S	11.8	12.3	11.9	16.8	41.0	28.9	34.4	24.4	6.6	7.9	5.8	5.0	3.5	13.9	10.8	3.7	5.0	3.4	9.3	4.4	6.4	7.7	12.3	41.0
18	11.9	S	17.2	27.9	7.9	10.4	34.3	10.7	10.1	15.9	34.6	1.3	7.3	13.3	16.1	15.3	10.0	14.5	9.5	15.0	5.2	12.5	3.7	2.1	13.3	34.6
19	38.4	S	4.5	9.9	13.3	13.5	23.1	22.6	14.1	2.9	10.8	1.0	9.1	5.0	0.6	0.9	0.1	5.4	15.9	6.0	2.2	4.0	3.9	2.9	9.1	38.4
20	6.4	S	2.1	13.7	3.8	6.4	17.9	20.2	22.1	10.8	7.9	7.0	36.0	12.5	11.0	1.5	3.7	5.1	0.5	1.3	5.3	8.8	6.5	5.1	9.4	36.0
21	18.2	S	8.7	14.2	29.6	1.4	0.8	2.3	2.0	13.7	22.0	30.7	12.8	7.1	0.5	0.3	0.4	0.4	0.2	0.2	0.5	2.2	1.7	1.3	7.4	30.7
22	2.7	S	6.2	10.4	54.9	34.0	50.1	72.7	28.4	10.3	36.0	1.9	0.6	7.0	5.1	7.2	12.9	1.8	0.6	2.5	6.6	7.4	9.2	9.4	16.4	72.7
23	3.9	S	7.4	13.4	8.3	14.1	11.6	7.7	4.5	17.5	12.9	2.1	11.9	9.6	1.6	2.2	3.1	3.2	0.4	9.1	2.0	5.1	3.9	2.7	6.9	17.5
24	9.7	S	0.9	4.1	13.8	4.6	2.0	2.2	2.3	3.4	6.7	2.5	1.0	4.4	10.9	1.9	1.3	1.2	2.7	3.4	8.2	2.8	4.0	6.9	4.4	13.8
25	4.6	S	9.3	5.3	5.5	8.2	19.4	12.3	9.9	7.1	3.1	1.7	1.6	1.5	0.5	1.2	0.8	1.1	0.8	0.6	0.9	3.7	8.4	2.7	4.8	19.4
26	11.2	S	12.8	6.9	10.1	16.3	19.5	17.3	10.6	15.9	5.1	1.8	2.0	2.5	4.8	2.4	0.9	0.5	0.8	5.6	3.0	2.9	11.2	21.8	8.1	21.8
27	13.2	S	22.6	18.4	21.8	18.3	21.8	12.8	14.1	5.4	5.7	6.6	2.6	1.7	8.6	7.8	3.8	7.5	4.3	6.2	8.0	10.9	7.8	3.4	10.1	22.6
28	1.9	S	20.7	26.6	40.0	17.9	21.8	20.3	14.7	5.8	0.8	1.1	5.6	6.9	9.8	5.9	6.4	18.0	5.5	1.1	2.8	1.1	2.0	11.4	10.8	40.0
29	8.4	S	6.2	11.1	8.0	8.4	4.3	5.6	12.6	8.0	20.9	38.1	51.0	34.3	41.9	42.2	20.3	9.3	8.3	7.9	8.0	0.9	2.1	9.3	16.0	51.0
30	5.1	S	28.6	21.5	20.6	11.7	24.1	26.1	7.7	11.2	3.3	21.3	9.8	5.3	4.4	0.8	10.5	8.9	0.8	5.1	6.1	1.7	2.9	5.7	10.6	28.6
NO.	30	-	30	30	30	30	30	30	30	29	29	29	29	29	29	30	30	30	30	30	30	30	30	30	684	100%
MEAN	11.9	-	12.8	17.4	14.8	14.7	22.6	22.7	19.3	13.1	14.0	9.6	9.7	9.2	9.2	9.2	8.4	7.0	4.1	5.9	5.0	5.0	6.2	7.1		
MAX	38.4	-	35.2	37.3	54.9	34.0	50.3	72.7	56.1	49.7	79.1	38.1	51.0	34.3	41.9	42.2	24.0	18.6	15.9	24.4	13.1	12.7	18.4	21.8		



Number of Non-Zero Readings	684
Maximum 1-HR Average	79.1 PPB
Maximum 24-HR Average	18.4 PPB
Operational Time	720 HRS
Operational Uptime	100.0 %
Monthly Calibration	6
Standard Deviation	10.98
Monthly Average	11.3 PPB

Lagoon NO (ppb) – June 2019

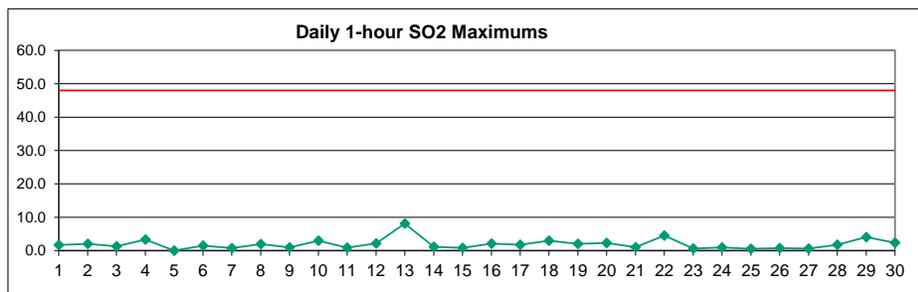
Day	HOUR																								MEAN	MAX
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1	3.3	S	4.4	19.6	2.9	1.9	9.8	10.4	15.3	5.9	2.1	0.4	4.0	8.9	8.2	0.8	1.2	0.5	0.8	1.3	0.3	0.3	0.3	1.3	4.5	19.6
2	1.0	S	3.0	10.2	6.9	17.2	16.6	10.3	14.7	8.6	4.2	5.0	4.5	3.4	3.9	2.4	6.4	4.2	1.2	7.4	0.8	0.2	0.2	0.8	5.8	17.2
3	0.8	S	4.8	0.7	0.3	0.9	2.2	7.1	2.6	2.7	1.8	4.6	3.5	1.9	1.1	0.6	0.4	0.4	2.0	0.4	1.0	0.3	1.5	0.6	1.8	7.1
4	0.3	S	0.4	0.8	0.6	1.4	13.9	14.2	8.5	5.8	10.9	2.0	5.8	3.6	6.1	13.0	10.3	7.1	3.2	5.2	3.9	0.2	0.6	0.2	5.1	14.2
5	4.7	S	10.2	12.8	1.5	8.5	26.3	31.4	20.0	C	C	C	C	C	14.0	10.2	5.3	0.1	0.6	0.7	0.6	1.9	0.2	-	-	
6	1.6	S	2.8	4.6	1.7	2.8	1.8	1.7	0.4	0.4	0.4	6.4	0.8	4.6	7.9	2.7	1.2	0.8	0.2	1.2	0.1	0.2	0.2	0.1	1.9	7.9
7	0.6	S	0.4	2.9	0.9	0.3	5.2	6.3	11.2	13.7	6.3	12.3	14.2	11.2	3.5	0.7	5.9	2.3	0.4	0.3	0.2	1.5	0.3	1.4	4.4	14.2
8	2.9	S	5.9	13.0	3.1	16.5	20.9	43.4	17.3	5.9	2.6	1.4	0.6	0.4	1.3	1.6	3.4	2.4	5.6	0.9	0.3	3.3	2.2	0.6	6.8	43.4
9	0.5	S	13.1	23.3	18.2	13.0	3.4	2.6	4.6	1.1	2.0	1.2	2.8	2.2	1.5	2.4	0.8	3.2	2.8	5.6	1.0	0.3	0.2	0.4	4.6	23.3
10	0.5	S	21.7	21.8	3.2	10.0	7.6	9.7	3.3	2.7	2.8	1.2	1.6	7.2	6.8	4.0	4.2	5.4	2.2	2.3	0.6	2.4	0.1	0.6	5.3	21.8
11	3.8	S	9.6	14.4	2.9	9.9	32.7	45.1	30.4	2.2	5.6	5.2	2.0	0.9	0.9	6.8	7.7	7.6	2.5	4.3	4.9	0.9	2.1	6.0	9.1	45.1
12	14.9	S	2.5	4.5	3.9	5.6	5.4	9.0	7.9	31.3	18.6	3.6	0.5	4.3	5.8	3.5	0.5	0.6	1.2	0.7	1.9	0.7	0.3	7.2	5.8	31.3
13	3.9	S	1.6	4.4	7.4	13.9	31.5	14.9	19.6	5.7	55.7	19.1	1.3	13.4	7.7	6.7	5.8	1.4	2.1	0.1	1.4	0.2	0.1	1.0	9.5	55.7
14	15.6	S	2.2	0.3	0.6	5.3	9.3	9.7	11.6	2.6	0.3	3.0	4.7	2.0	5.8	5.1	5.0	2.6	0.1	3.2	0.4	0.7	6.3	0.0	4.2	15.6
15	0.0	S	0.1	15.7	3.6	1.2	7.0	12.1	36.7	9.7	4.1	3.1	1.2	4.0	2.1	4.2	1.0	0.4	0.0	0.7	0.0	0.3	4.5	5.2	5.1	36.7
16	13.5	S	0.5	3.6	0.9	8.6	15.5	12.2	13.9	11.9	4.0	1.8	2.1	2.5	2.7	2.2	6.0	5.4	0.0	0.1	0.0	0.0	0.4	0.0	4.7	15.5
17	1.6	S	0.8	1.1	0.7	6.3	27.0	17.1	21.6	13.8	1.8	2.4	1.5	1.3	0.5	5.1	2.5	0.7	0.6	0.3	2.3	0.0	0.0	0.0	4.7	27.0
18	3.6	S	8.4	12.4	2.8	4.7	16.4	3.5	3.5	7.1	22.1	0.0	3.6	7.0	6.3	5.9	2.3	3.0	2.8	5.5	0.3	4.3	0.2	0.0	5.5	22.1
19	21.0	S	0.2	0.8	2.0	1.4	9.5	7.5	4.8	0.8	5.1	0.0	4.6	2.3	0.0	0.0	0.0	0.7	6.6	1.8	0.0	1.2	0.2	0.0	3.1	21.0
20	0.3	S	0.0	6.6	0.4	1.5	9.4	11.8	13.1	4.8	3.7	4.1	26.6	9.0	5.8	0.3	0.5	1.2	0.0	0.0	1.0	0.9	0.0	1.5	4.5	26.6
21	9.2	S	3.9	6.9	15.3	0.0	0.0	0.0	0.0	3.4	5.2	12.5	2.6	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.6	15.3
22	0.2	S	1.5	3.5	45.4	26.9	40.9	61.0	19.9	6.2	19.2	0.1	0.0	1.6	0.7	1.8	5.6	0.0	0.0	0.5	0.9	0.0	1.2	1.4	10.4	61.0
23	0.0	S	1.7	3.4	0.9	5.7	3.5	2.2	1.1	8.4	5.9	0.3	4.7	3.8	0.2	0.7	1.0	0.7	0.0	4.7	0.0	0.9	0.0	0.0	2.2	8.4
24	1.1	S	0.0	0.1	6.5	0.5	0.0	0.5	0.5	0.9	2.5	0.5	0.0	1.7	5.4	0.3	0.1	0.0	0.6	0.7	0.3	0.0	0.0	0.4	1.0	6.5
25	0.4	S	4.6	0.8	0.2	2.2	11.6	6.4	4.5	3.1	0.9	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.8	0.0	1.6	11.6
26	3.1	S	5.1	2.3	4.2	8.7	10.6	10.1	5.0	7.9	1.3	0.1	0.3	0.6	1.2	0.5	0.0	0.0	0.0	0.9	0.0	0.0	3.2	7.9	3.2	10.6
27	1.5	S	3.7	2.4	6.0	4.3	4.5	3.4	4.3	0.9	1.6	0.7	0.0	0.0	2.8	0.6	0.2	1.2	0.0	0.0	1.1	2.3	0.3	0.0	1.8	6.0
28	0.0	S	10.0	13.2	23.2	10.1	10.9	9.6	7.5	2.7	0.1	0.1	2.7	3.3	5.2	2.4	2.9	9.0	2.3	0.0	0.3	0.0	0.0	2.4	5.1	23.2
29	1.4	S	1.6	5.4	2.2	1.7	0.9	1.5	5.9	3.3	10.7	21.7	30.3	19.9	25.7	25.1	11.4	4.3	3.6	2.8	3.3	0.0	0.0	2.5	8.1	30.3
30	0.9	S	17.7	12.6	11.9	5.9	16.5	17.3	4.2	6.2	1.1	14.0	6.0	2.1	1.6	0.0	4.5	5.2	0.0	1.5	1.3	0.2	0.2	0.0	5.7	17.7
NO.	30	-	30	30	30	30	30	30	30	29	29	29	29	29	29	30	30	30	30	30	30	30	30	30	684	100%
MEAN	3.7	-	4.7	7.5	6.0	6.6	12.4	13.1	10.5	6.2	7.0	4.4	4.6	4.3	4.2	3.8	3.4	2.5	1.4	1.8	0.9	0.7	0.9	1.4		
MAX	21.0	-	21.7	23.3	45.4	26.9	40.9	61.0	36.7	31.3	55.7	21.7	30.3	19.9	25.7	25.1	11.4	9.0	6.6	7.4	4.9	4.3	6.3	7.9		



Number of Non-Zero Readings	611	Operational Time	720 HRS
Maximum 1-HR Average	61.0 PPB	Operational Uptime	100.0 %
Maximum 24-HR Average	10.4 PPB	Monthly Average	4.9 PPB
Monthly Calibration	6		
Standard Deviation	7.264		

Lagoon SO₂ (ppb) – June 2019

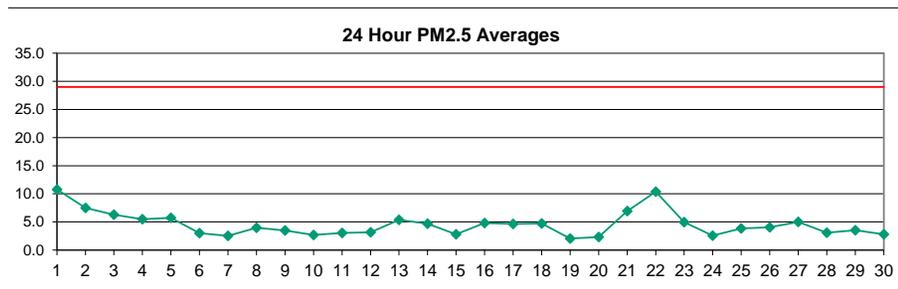
Day	HOURLY																								MEAN	MAX
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1	0.5	S	0.9	1.7	0.7	0.6	0.9	0.8	1.7	0.7	0.8	0.5	0.6	1.6	1.0	0.4	0.6	0.5	0.2	0.7	0.5	0.4	0.4	0.9	0.8	1.7
2	1.0	S	1.2	1.4	1.5	1.0	0.9	1.6	1.6	1.4	1.1	1.5	1.6	1.7	1.7	0.6	0.8	1.0	0.8	2.0	0.8	0.9	0.8	0.5	1.2	2.0
3	0.6	S	1.3	0.9	0.3	1.0	0.8	0.9	0.9	0.7	0.9	1.1	0.5	0.9	0.6	0.8	0.4	0.4	0.8	0.7	0.4	0.6	0.4	0.6	0.7	1.3
4	0.6	S	0.6	0.5	0.6	0.7	0.6	1.3	1.0	0.8	3.3	0.5	0.7	0.4	0.9	1.8	0.8	1.3	0.8	1.4	0.4	0.3	0.0	0.4	0.9	3.3
5	0.7	S	1.3	0.7	0.3	1.1	1.1	1.2	0.7	C	C	C	C	C	C	3.1	2.1	1.4	0.0	0.4	0.3	0.1	0.2	0.3	-	-
6	0.2	S	0.1	0.3	0.6	0.1	0.3	0.0	0.4	0.0	0.1	1.1	0.0	0.7	1.5	0.1	0.0	0.1	0.0	0.4	0.2	0.8	0.0	0.2	0.3	1.5
7	0.0	S	0.3	0.4	0.3	0.5	0.3	0.4	0.4	0.3	0.6	0.4	0.7	0.3	0.1	0.0	0.7	0.4	0.0	0.2	0.0	0.0	0.1	0.1	0.3	0.7
8	0.0	S	0.0	0.2	0.0	0.1	0.3	2.0	0.8	0.1	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.0	0.0	0.1	0.0	0.2	0.0	0.0	0.2	2.0
9	0.2	S	0.0	0.8	1.0	0.9	0.0	0.1	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.1	0.0	0.0	0.2	0.2	1.0
10	0.0	S	1.2	2.9	0.4	0.5	0.6	0.2	0.0	0.0	0.1	0.0	0.4	0.4	0.7	0.0	1.1	2.2	0.6	0.6	0.3	0.0	0.0	0.0	0.5	2.9
11	0.0	S	0.2	0.0	0.0	0.0	0.7	0.9	0.5	0.2	0.0	0.0	0.0	0.1	0.0	0.0	0.4	0.1	0.2	0.0	0.0	0.0	0.0	0.4	0.2	0.9
12	1.3	S	0.2	0.3	0.0	0.0	0.0	0.3	0.7	2.1	0.9	0.0	0.0	0.9	0.6	0.4	0.3	0.1	0.3	0.0	0.0	0.0	0.0	1.9	0.5	2.1
13	0.8	S	1.1	1.1	1.4	2.7	3.9	2.0	2.7	0.5	8.1	3.4	0.3	2.3	1.7	1.1	1.1	0.6	0.1	0.0	0.3	0.3	0.2	0.2	1.6	8.1
14	1.1	S	0.6	0.4	0.2	0.1	0.8	0.7	0.8	0.3	0.4	0.6	0.2	0.5	0.4	0.7	0.5	0.2	0.1	0.4	0.5	0.0	0.3	0.0	0.4	1.1
15	0.0	S	0.1	0.1	0.7	0.4	0.1	0.3	0.5	0.0	0.0	0.2	0.0	0.8	0.0	0.3	0.6	0.5	0.4	0.1	0.2	0.0	0.2	0.3	0.3	0.8
16	0.0	S	0.1	0.2	0.1	0.1	1.0	0.7	1.3	2.1	0.2	0.0	0.0	0.2	0.8	0.5	0.8	0.6	0.2	0.0	0.0	0.0	0.3	0.1	0.4	2.1
17	0.0	S	0.1	0.0	0.0	0.4	1.3	1.0	1.8	1.3	0.2	0.8	0.4	0.4	0.2	0.2	0.5	0.3	0.3	0.7	0.2	0.3	0.5	0.5	0.5	1.8
18	0.4	S	0.9	0.6	0.5	0.6	1.0	0.0	0.6	1.4	3.0	1.0	1.0	1.1	1.1	1.0	0.6	0.8	0.3	1.1	0.4	0.1	0.3	0.6	0.8	3.0
19	1.0	S	0.7	0.2	0.3	0.1	0.7	0.8	0.8	0.3	0.4	0.0	0.2	0.4	0.7	0.2	0.3	0.8	2.0	0.8	0.1	0.1	0.4	0.2	0.5	2.0
20	0.2	S	0.6	0.6	0.0	0.7	0.4	0.5	0.7	0.5	0.4	0.3	2.3	1.7	0.6	0.2	0.4	0.2	0.3	0.2	0.1	0.0	0.1	0.5	0.5	2.3
21	0.6	S	0.2	1.0	0.9	0.5	0.3	0.3	0.0	0.5	0.5	0.2	0.2	0.2	0.3	0.0	0.0	0.3	0.2	0.1	0.0	0.2	0.4	0.4	0.3	1.0
22	0.2	S	0.0	0.0	1.7	1.5	2.5	4.5	1.9	0.8	1.7	0.3	0.0	0.3	0.3	0.4	0.1	0.2	0.3	0.4	0.6	0.3	0.0	0.7	0.8	4.5
23	0.1	S	0.2	0.4	0.6	0.0	0.6	0.3	0.2	0.6	0.6	0.1	0.5	0.1	0.2	0.0	0.2	0.4	0.3	0.3	0.1	0.2	0.1	0.3	0.3	0.6
24	0.0	S	0.0	0.2	0.4	0.0	0.5	0.0	0.5	0.4	0.6	0.0	0.5	0.5	1.0	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.6	0.4	0.3	1.0
25	0.5	S	0.1	0.2	0.5	0.2	0.1	0.5	0.1	0.4	0.2	0.4	0.0	0.2	0.1	0.3	0.2	0.2	0.3	0.1	0.0	0.0	0.0	0.2	0.5	0.5
26	0.6	S	0.2	0.5	0.2	0.3	0.2	0.1	0.8	0.7	0.7	0.5	0.4	0.4	0.1	0.4	0.5	0.0	0.5	0.2	0.2	0.0	0.3	0.5	0.4	0.8
27	0.6	S	0.2	0.2	0.1	0.4	0.0	0.1	0.1	0.1	0.0	0.4	0.3	0.0	0.0	0.0	0.2	0.1	0.4	0.1	0.2	0.4	0.2	0.3	0.2	0.6
28	0.1	S	0.7	0.7	1.3	0.8	0.9	0.4	0.1	0.0	0.0	0.2	0.4	0.0	0.4	0.3	0.0	1.8	0.2	0.0	0.2	0.0	0.3	0.2	0.4	1.8
29	0.1	S	0.3	0.7	0.3	0.6	0.1	0.1	0.6	0.0	1.5	3.7	4.1	2.2	2.8	1.9	1.7	0.5	0.6	0.0	0.5	0.0	0.0	0.0	1.0	4.1
30	0.4	S	2.1	0.8	0.6	0.7	0.8	1.3	0.7	0.7	0.1	2.4	0.6	0.0	0.4	0.0	0.0	1.0	0.3	0.1	0.0	0.0	0.0	0.0	0.6	2.4
NO.	30	-	30	30	30	30	30	30	30	29	29	29	29	29	29	30	30	30	30	30	30	30	30	30	684	100%
MEAN	0.4	-	0.5	0.6	0.5	0.6	0.7	0.8	0.8	0.6	0.9	0.7	0.6	0.6	0.6	0.5	0.5	0.5	0.4	0.4	0.2	0.2	0.2	0.4		
MAX	1.3	-	2.1	2.9	1.7	2.7	3.9	4.5	2.7	2.1	8.1	3.7	4.1	2.3	2.8	3.1	2.1	2.2	2.0	2.0	0.8	0.9	0.8	1.9		



Number of 1HR Exceedences	0
Number of Non-Zero Readings	576
Maximum 1-HR Average	8.1 PPB
Maximum 24-HR Average	1.6 PPB
Operational Time	720 HRS
Operational Uptime	100.0 %
Monthly Calibration	6
Standard Deviation	0.679
Monthly Average	0.5 PPB

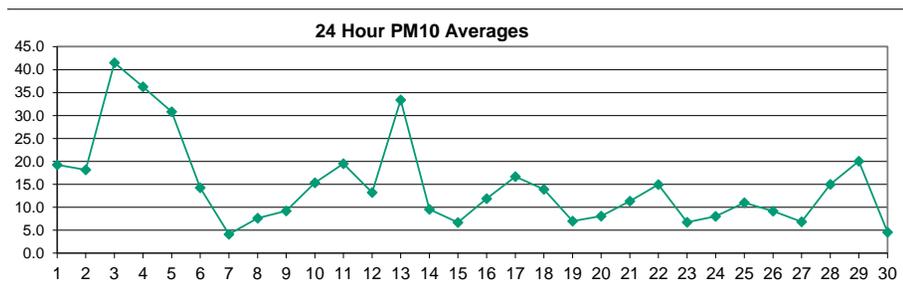
Lagoon PM_{2.5} (µg/m³) – June 2019

Day	HOUR																								MEAN	MAX
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1	12.3	12.3	13.4	16.9	14.8	11.3	13.3	12.7	14.1	16.7	14.5	10.9	7.0	10.8	10.1	8.3	5.5	5.1	7.9	5.8	9.0	7.6	8.0	10.7	10.8	16.9
2	8.9	10.5	8.7	8.3	7.3	4.5	8.3	8.0	6.6	5.8	8.0	5.5	3.3	6.1	14.7	11.9	8.0	5.5	2.6	10.1	9.1	8.7	4.8	5.1	7.5	14.7
3	6.5	5.5	6.0	8.0	6.9	6.6	6.9	6.2	12.6	8.4	8.3	10.1	6.6	5.5	3.0	1.9	1.9	2.6	2.2	8.2	6.6	9.4	7.3	4.1	6.3	12.6
4	4.7	5.8	6.2	6.9	4.8	5.1	3.7	9.0	16.2	10.6	8.3	5.8	2.3	4.4	4.4	3.7	9.0	5.9	2.3	1.9	1.8	2.6	3.3	3.0	5.5	16.2
5	1.9	5.4	5.5	5.1	5.8	5.1	3.3	3.0	4.4	4.0	6.9	C	C	C	6.2	14.0	10.2	6.2	5.5	8.3	6.6	3.7	4.4	4.7	5.7	14.0
6	3.3	3.3	7.2	6.6	7.3	8.3	9.8	4.5	1.2	1.2	0.4	0.1	0.0	0.0	1.5	3.3	1.9	2.2	3.7	2.3	2.2	0.5	0.1	1.9	3.0	9.8
7	0.5	2.2	3.3	3.2	3.0	2.6	1.9	1.8	2.6	1.9	2.9	1.5	0.5	2.2	2.6	4.0	3.8	4.0	1.9	2.2	5.1	3.7	0.1	2.9	2.5	5.1
8	4.0	1.9	1.9	4.7	6.2	5.1	10.1	5.9	6.9	5.8	1.6	3.3	4.0	1.9	0.5	1.5	1.2	2.2	2.6	3.7	6.9	6.2	3.4	3.7	4.0	10.1
9	5.8	5.1	2.6	1.9	4.7	3.7	4.7	4.7	3.7	5.8	3.0	2.2	1.5	0.0	0.8	2.2	3.3	3.3	1.2	3.3	5.8	5.8	4.4	4.0	3.5	5.8
10	4.7	5.5	4.1	2.3	1.2	0.0	1.9	3.3	3.7	6.1	3.7	1.9	1.9	1.9	2.2	4.0	2.6	0.5	1.9	2.6	2.2	2.2	1.9	2.2	2.7	6.1
11	2.2	2.9	3.7	6.5	5.8	4.1	4.0	6.5	6.5	3.9	2.6	1.5	2.0	1.9	0.1	0.0	2.5	2.9	0.5	0.1	1.8	5.4	3.3	2.2	3.1	6.5
12	3.3	3.4	2.3	0.8	2.9	3.0	3.3	5.1	2.6	4.0	5.8	9.4	6.2	2.6	1.9	1.2	1.2	1.5	0.8	3.6	3.0	2.6	2.6	3.3	3.2	9.4
13	4.0	4.7	2.0	0.5	3.8	5.1	3.0	10.4	10.8	10.5	5.9	2.6	5.8	4.5	4.0	3.7	7.2	12.2	8.0	4.4	3.8	4.0	4.7	3.3	5.4	12.2
14	3.7	10.0	8.4	5.5	6.5	4.8	5.8	7.2	5.1	6.5	5.5	3.7	3.3	1.9	0.8	3.6	5.1	4.4	3.7	2.3	1.9	6.8	4.5	1.9	4.7	10.0
15	1.8	4.7	4.0	3.3	5.8	5.5	2.3	1.5	1.8	2.6	1.5	1.2	2.2	1.9	0.8	2.6	3.3	3.2	2.2	2.9	2.6	0.5	2.6	6.5	2.8	6.5
16	9.3	10.1	8.7	6.2	4.1	7.2	5.5	4.4	3.7	1.2	3.3	4.4	2.3	3.3	3.3	1.5	1.9	4.4	6.2	4.4	3.3	4.7	7.2	5.2	4.8	10.1
17	3.4	6.2	4.8	4.8	5.8	5.5	5.8	5.2	4.4	4.0	2.3	4.7	5.4	5.8	6.0	5.8	9.0	4.8	0.9	1.2	1.5	2.9	3.7	8.3	4.7	9.0
18	8.3	5.1	3.8	5.8	6.5	3.7	4.7	5.5	4.1	6.5	7.6	7.6	4.4	1.9	0.5	2.2	1.9	5.0	9.0	7.6	5.2	2.6	2.2	1.9	4.7	9.0
19	1.2	5.0	4.4	2.3	2.9	4.4	3.7	3.7	3.3	3.0	2.2	0.5	2.2	1.9	0.1	0.0	0.1	2.9	2.2	0.1	0.0	0.0	1.1	1.9	2.0	5.0
20	1.5	0.0	1.9	1.9	1.9	4.0	4.0	3.3	3.0	1.9	1.2	1.9	5.8	5.5	1.2	1.5	2.6	1.9	2.6	1.2	1.9	2.2	3.3	0.1	2.3	5.8
21	0.0	2.9	4.4	3.0	3.0	3.0	3.3	5.1	3.3	2.3	4.4	7.9	7.3	10.1	8.7	7.3	8.7	11.5	10.5	15.1	10.6	7.7	11.2	15.8	7.0	15.8
22	13.1	12.0	13.4	17.1	13.8	15.9	14.8	15.2	16.2	14.1	16.2	10.2	6.2	6.2	7.9	5.1	3.7	5.1	6.5	5.5	6.5	4.4	7.9	12.6	10.4	17.1
23	10.2	7.5	4.8	4.0	5.4	4.4	5.8	6.5	4.8	1.9	2.9	5.4	3.7	6.8	6.0	2.3	1.2	2.9	4.3	4.0	5.8	4.1	8.3	6.6	5.0	10.2
24	4.4	6.2	6.2	3.0	0.0	1.1	1.9	1.9	1.9	4.0	3.3	1.5	0.0	0.0	1.5	0.5	3.3	2.6	1.5	3.6	2.6	2.2	4.4	4.0	2.6	6.2
25	10.4	8.4	5.5	4.1	3.7	1.9	6.8	6.2	2.3	1.2	1.9	1.2	0.0	0.1	5.4	5.1	3.0	4.0	3.7	1.7	2.6	1.9	6.1	5.8	3.9	10.4
26	3.4	4.0	3.3	4.0	2.6	1.2	2.6	4.0	6.5	5.8	4.1	4.4	5.1	3.0	3.7	7.2	6.9	4.8	4.4	3.3	1.2	2.6	3.7	5.4	4.0	7.2
27	6.2	6.5	4.4	7.2	5.5	6.9	10.4	6.3	1.3	3.6	5.1	4.4	4.7	8.3	6.6	3.0	4.0	5.1	5.8	3.0	3.0	4.0	3.3	1.9	5.0	10.4
28	1.9	3.6	4.0	1.9	0.5	4.0	5.9	4.8	4.4	4.4	2.6	2.2	1.5	0.0	1.2	4.0	3.3	4.7	6.9	5.8	2.7	1.2	0.8	1.5	3.1	6.9
29	3.3	3.3	3.3	3.7	2.6	3.7	2.6	1.2	4.0	3.7	2.6	5.1	6.2	5.8	5.1	5.8	4.8	3.3	2.6	3.3	3.7	3.0	1.8	0.5	3.5	6.2
30	1.2	4.3	3.3	1.2	3.3	2.3	2.2	4.7	6.5	4.4	3.0	2.9	1.9	2.9	2.6	0.1	0.0	3.2	3.3	2.3	2.2	1.2	2.9	5.1	2.8	6.5
NO.	30	30	30	30	30	30	30	30	30	30	30	29	29	29	30	30	30	30	30	30	30	30	30	30	717	100%
MEAN	4.8	5.6	5.2	5.0	4.9	4.8	5.4	5.6	5.6	5.2	4.7	4.3	3.6	3.7	3.8	3.9	4.0	4.3	3.9	4.1	4.0	3.8	4.1	4.5		
MAX	13.1	12.3	13.4	17.1	14.8	15.9	14.8	15.2	16.2	16.7	16.2	10.9	7.3	10.8	14.7	14.0	10.2	12.2	10.5	15.1	10.6	9.4	11.2	15.8		



Lagoon PM₁₀ (µg/m³) – June 2019

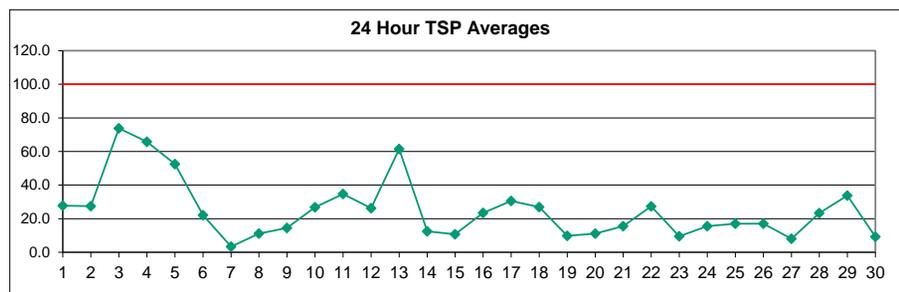
Day	HOUR																								MEAN	MAX
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1	13.6	14.8	13.6	16.8	14.3	17.5	15.7	21.8	27.4	32.2	27.2	31.9	14.2	17.6	37.0	15.4	13.0	19.4	14.8	13.3	10.5	21.5	18.9	20.7	19.3	37.0
2	14.0	10.8	11.5	12.0	9.4	8.9	14.7	10.9	10.7	9.5	12.7	11.4	10.2	16.4	42.1	28.1	20.0	13.6	21.5	38.9	49.5	33.1	14.7	11.5	18.2	49.5
3	14.1	14.2	14.9	16.4	21.5	20.0	15.0	22.7	72.8	103.7	94.8	190.0	142.8	73.0	33.3	21.5	14.6	8.6	5.6	30.8	23.6	13.7	13.5	14.9	41.5	190.0
4	15.3	10.2	13.4	10.7	9.0	16.8	16.3	77.6	104.9	31.8	33.7	14.3	19.8	39.8	38.4	73.4	117.7	60.1	46.7	31.1	32.3	30.6	17.2	9.4	36.3	117.7
5	10.9	16.8	15.5	15.0	20.8	19.5	19.0	35.8	62.4	30.9	54.5	C	C	C	29.0	77.4	89.2	43.6	44.6	21.1	9.1	6.0	12.1	14.1	30.8	89.2
6	14.1	12.8	22.9	20.9	19.6	20.2	25.6	12.4	8.1	3.6	3.5	2.2	19.4	5.4	35.3	24.4	12.9	33.0	15.6	3.4	12.0	7.4	4.0	4.0	14.3	35.3
7	3.3	4.0	4.6	4.7	4.0	2.6	1.9	2.6	1.9	1.3	3.3	3.5	2.0	10.0	5.4	2.6	3.5	10.0	10.1	6.1	2.6	2.6	3.5	3.3	4.1	10.1
8	4.0	2.6	2.6	5.3	10.0	10.1	9.4	8.7	26.2	7.5	8.7	8.7	5.3	4.0	0.6	12.0	6.7	7.3	7.4	12.7	6.1	6.0	6.7	4.0	7.6	26.2
9	4.6	6.7	6.7	10.1	15.5	7.4	11.2	10.1	9.4	25.5	4.8	3.3	1.3	15.4	10.1	7.4	6.0	6.0	7.3	7.3	14.1	11.2	8.1	12.1	9.2	25.5
10	8.7	16.1	4.7	5.3	7.3	6.0	6.0	22.8	25.0	8.1	17.5	25.6	10.8	8.7	54.5	24.4	18.2	13.5	29.6	23.0	9.5	6.0	7.4	10.1	15.4	54.5
11	9.4	10.1	8.7	20.2	11.2	8.1	20.8	45.2	26.4	37.1	19.0	19.5	26.9	11.3	12.8	10.8	58.6	19.8	16.2	19.5	10.1	29.2	1.4	16.1	19.5	58.6
12	4.2	8.0	5.3	3.3	6.0	6.0	5.3	10.0	16.8	11.4	31.0	44.5	25.7	6.8	10.7	18.0	10.1	14.8	16.8	12.8	9.1	18.8	10.3	11.6	13.2	44.5
13	33.6	20.3	7.4	7.4	7.6	11.4	16.1	51.9	80.4	67.3	23.2	29.7	31.7	43.9	52.0	34.5	56.7	158.6	25.6	15.5	8.7	8.7	6.0	3.3	33.4	158.6
14	1.9	10.0	24.9	8.1	10.1	6.7	5.7	7.4	26.2	18.9	4.0	4.0	5.7	12.7	7.3	16.8	17.5	6.0	5.3	4.0	3.3	5.3	8.0	9.0	9.5	26.2
15	5.3	4.0	6.7	8.0	13.4	10.8	6.0	3.3	6.0	7.3	4.0	10.0	7.6	4.7	4.6	3.3	12.7	7.4	5.3	4.6	2.6	6.0	8.0	8.7	6.7	13.4
16	25.6	17.6	14.8	14.1	10.8	13.5	9.4	7.4	6.7	6.7	5.3	6.7	6.7	6.7	8.7	17.5	18.8	19.5	25.6	5.4	6.7	8.7	11.4	11.4	11.9	25.6
17	6.7	6.7	5.3	6.7	14.8	8.1	15.5	25.6	23.6	29.7	26.3	26.3	12.8	25.3	43.9	23.1	32.4	11.5	7.6	8.0	7.6	10.7	12.8	10.1	16.7	43.9
18	12.1	10.1	12.8	27.0	8.8	4.7	2.6	7.4	7.4	10.1	26.3	24.3	8.1	4.7	9.4	26.9	24.3	25.3	18.1	19.5	15.5	8.0	12.5	8.0	13.9	27.0
19	4.7	18.0	7.4	10.7	10.1	8.7	4.7	10.1	11.5	8.7	6.3	7.4	4.0	4.6	6.0	4.0	3.3	1.9	3.3	6.7	9.4	7.4	4.7	4.0	7.0	18.0
20	4.0	1.9	2.6	6.7	7.4	6.0	8.7	8.7	15.5	12.1	11.5	31.0	33.1	21.6	6.0	4.7	1.3	0.0	0.6	0.6	0.0	2.6	4.0	3.3	8.1	33.1
21	5.3	8.0	6.7	6.0	3.3	8.0	8.0	7.4	5.3	4.0	6.0	22.3	35.1	19.6	16.8	7.4	6.6	8.7	11.4	14.8	12.1	14.3	14.8	20.2	11.3	35.1
22	22.3	14.1	14.8	14.7	16.2	22.9	12.8	18.7	38.5	38.5	13.4	13.5	7.5	3.5	8.7	7.3	12.1	10.1	14.8	8.0	10.9	8.7	12.1	14.8	15.0	38.5
23	14.1	10.8	7.4	6.7	4.7	3.4	6.0	12.8	18.2	4.7	4.0	6.7	4.6	6.0	6.7	5.3	2.6	4.6	6.6	3.3	5.5	6.7	4.7	6.0	6.7	18.2
24	6.7	4.0	3.0	2.6	5.3	5.3	3.3	2.6	5.8	10.1	12.8	6.7	1.9	8.7	6.0	12.8	12.1	7.4	12.1	14.1	9.4	10.9	11.4	17.5	8.0	17.5
25	22.3	6.0	6.7	10.1	10.1	10.8	10.1	14.1	19.5	12.8	7.3	8.0	5.3	2.6	17.9	34.4	14.8	0.6	5.3	7.3	4.7	10.7	10.1	12.8	11.0	34.4
26	7.4	4.0	5.3	7.4	5.3	4.7	8.0	16.8	14.7	6.0	6.0	8.0	5.3	12.8	20.9	16.1	14.1	9.4	5.3	7.4	8.0	4.7	12.8	9.4	9.2	20.9
27	18.2	12.1	8.0	5.3	10.1	10.1	9.4	10.1	8.7	8.7	5.3	5.3	5.7	4.6	4.0	4.0	4.0	3.3	5.8	5.3	5.3	3.3	4.0	4.0	6.9	18.2
28	4.6	4.7	7.4	5.3	11.4	8.7	4.7	17.5	33.6	20.2	10.1	8.0	6.0	7.4	15.9	36.5	30.4	25.0	69.6	12.8	6.1	1.3	3.3	9.4	15.0	69.6
29	12.1	6.7	4.0	4.0	6.0	5.3	9.4	7.4	6.0	6.1	9.5	48.0	37.8	38.5	55.5	103.4	47.8	24.3	12.1	13.7	9.4	6.7	4.0	4.0	20.1	103.4
30	9.4	6.0	3.3	0.0	3.3	3.3	3.3	4.0	2.6	0.6	4.1	3.3	10.1	6.7	4.6	4.0	6.7	5.3	3.3	3.5	4.0	5.3	4.0	9.4	4.6	10.1
NO.	30	30	30	30	30	30	30	30	30	30	30	29	29	29	30	30	30	30	30	30	30	30	30	30	717	100%
MEAN	11.1	9.7	9.1	9.7	10.2	9.8	10.2	17.1	24.1	19.2	16.6	21.5	17.5	15.3	20.1	22.6	23.0	19.3	15.7	12.5	10.6	10.6	8.9	9.9		
MAX	33.6	20.3	24.9	27.0	21.5	22.9	25.6	77.6	104.9	103.7	94.8	190.0	142.8	73.0	55.5	103.4	117.7	158.6	69.6	38.9	49.5	33.1	18.9	20.7		



Number of Non-Zero Readings	714	Operational Time	720 HRS
Maximum 1-HR Average	190.0 UG/M3	Operational Uptime	100.0 %
Maximum 24-HR Average	41.5 UG/M3	Monthly Average	14.7 UG/M3
Monthly Calibration	3		
Standard Deviation	17.58		

Lagoon TSP (µg/m³) – June 2019

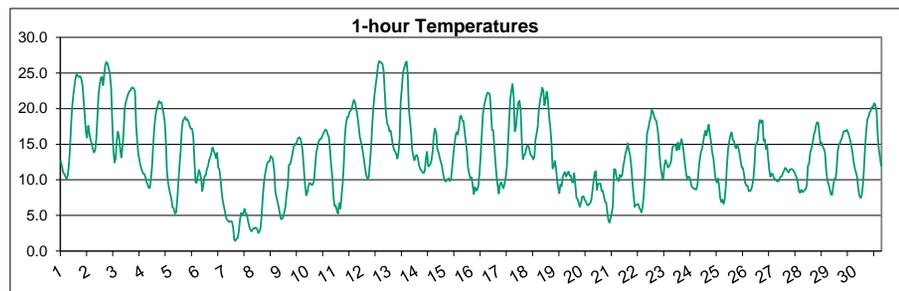
Day	HOUR																								MEAN	MAX
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1	16.8	15.4	19.5	15.4	19.5	18.2	25.0	20.9	29.2	40.2	41.6	49.9	19.8	38.0	63.5	24.0	15.5	26.4	21.0	22.3	22.3	36.0	33.4	30.6	27.7	63.5
2	23.8	16.7	18.2	14.1	22.2	8.5	15.3	9.9	16.7	20.9	15.4	20.9	19.6	31.9	62.1	37.7	30.7	24.8	27.8	55.2	82.8	42.0	23.9	18.2	27.5	82.8
3	16.8	30.5	26.5	28.0	40.1	28.2	23.8	48.3	117.0	187.4	155.2	338.3	275.7	132.9	65.8	37.8	29.3	21.0	11.3	52.2	32.2	29.3	19.7	23.7	73.8	338.3
4	19.6	16.9	9.9	20.9	10.0	20.8	23.7	116.8	158.7	46.9	78.6	31.1	42.9	77.2	68.0	152.7	280.8	119.2	90.3	51.7	52.7	52.7	24.6	12.8	65.8	280.8
5	18.1	20.9	19.6	10.0	16.8	12.7	19.5	37.3	99.1	62.8	103.4	C	C	C	52.6	160.8	182.4	96.4	86.0	47.6	15.7	11.4	13.5	16.8	52.5	182.4
6	18.2	19.5	33.3	30.6	25.5	27.8	36.1	19.7	5.9	3.0	3.0	11.2	41.3	11.6	60.5	40.5	25.2	52.4	24.0	12.8	16.7	7.2	1.6	2.9	22.1	60.5
7	3.0	8.2	5.8	3.4	4.3	3.0	1.6	1.6	1.6	2.9	5.7	4.4	0.0	1.6	1.6	0.2	0.2	1.6	7.1	5.8	4.4	4.4	5.5	4.4	3.4	8.2
8	9.8	11.3	7.2	4.4	9.8	18.1	1.8	12.5	23.6	5.9	13.9	8.6	5.7	5.9	3.0	35.8	0.6	18.0	20.9	27.7	6.0	4.4	7.1	4.4	11.1	35.8
9	7.1	16.7	7.2	13.4	9.9	8.5	8.5	8.5	11.3	52.3	11.7	5.8	5.7	23.4	14.3	5.8	14.1	15.4	14.0	12.6	29.0	18.3	11.1	22.2	14.5	52.3
10	12.8	22.2	3.6	5.7	7.1	4.4	9.8	45.1	49.9	29.5	34.7	48.4	13.0	14.0	95.9	47.8	33.5	22.4	48.2	37.6	14.3	16.8	14.1	12.7	26.8	95.9
11	15.4	0.0	9.8	34.5	19.7	15.5	22.2	66.0	44.7	58.1	35.0	45.6	58.1	21.7	27.8	23.7	120.7	34.1	36.1	30.7	19.7	63.2	9.2	22.1	34.7	120.7
12	23.3	25.1	12.8	9.9	11.3	8.5	4.4	18.0	22.3	20.9	59.1	82.8	42.2	13.0	23.6	26.4	22.4	31.9	38.8	30.7	22.4	41.4	19.8	18.2	26.2	82.8
13	70.3	61.1	39.2	17.1	13.7	16.8	21.0	83.7	143.2	112.5	38.4	51.2	69.1	92.5	105.0	83.4	113.2	234.9	48.2	26.7	12.8	9.9	5.8	4.4	61.4	234.9
14	7.1	15.3	31.7	5.9	8.5	4.4	8.4	8.4	29.0	21.0	7.3	8.5	10.9	14.0	3.1	18.0	29.1	8.7	12.6	5.8	7.1	8.5	12.6	14.0	12.5	31.7
15	8.6	8.4	3.0	5.8	7.1	11.2	8.5	8.4	4.4	11.3	7.2	7.1	11.2	8.5	12.6	7.2	15.3	16.8	11.3	30.3	11.5	12.6	15.4	14.0	10.7	30.3
16	42.7	30.8	21.1	16.9	14.1	15.4	11.1	7.2	5.7	11.1	19.4	16.8	23.6	15.5	35.8	41.6	40.3	33.5	77.0	17.6	20.9	14.1	15.4	16.5	23.5	77.0
17	11.3	9.9	7.2	15.3	16.8	11.1	12.6	44.0	44.4	56.7	56.9	58.2	31.0	51.0	85.4	38.2	43.4	13.1	24.9	29.2	22.4	20.9	15.5	14.0	30.6	85.4
18	14.1	25.4	16.7	74.0	16.2	11.3	8.5	15.3	4.5	16.6	34.5	37.5	8.9	9.9	27.6	59.2	54.2	29.6	30.6	44.2	40.5	19.8	33.2	15.7	27.0	74.0
19	14.0	27.8	10.1	9.9	11.2	8.5	4.4	11.2	8.5	12.6	12.6	9.9	11.0	5.8	5.7	3.0	9.8	5.8	8.5	18.0	18.2	4.6	1.6	3.3	9.8	27.8
20	4.3	15.3	5.9	4.4	7.1	4.4	8.4	5.8	8.5	16.7	14.1	41.3	43.0	30.8	12.9	8.6	4.4	3.5	13.9	7.2	3.0	3.0	1.6	0.2	11.2	43.0
21	2.9	4.3	12.5	7.2	4.4	5.7	11.2	8.5	5.8	5.7	16.5	23.6	49.6	24.1	25.1	12.8	11.3	23.4	26.4	25.1	18.3	12.7	16.7	18.2	15.5	49.6
22	23.6	14.2	13.5	20.8	23.7	23.7	23.7	21.1	61.8	56.9	11.9	34.4	11.6	8.5	24.8	11.5	41.2	45.7	45.7	37.6	26.6	25.1	21.2	26.4	27.3	61.8
23	15.6	5.9	5.7	5.7	4.4	9.8	8.5	15.3	27.6	7.4	12.5	8.6	5.8	9.8	15.3	7.2	9.8	8.6	9.9	5.8	4.4	7.1	12.6	5.8	9.5	27.6
24	5.7	8.5	4.4	0.3	12.5	7.2	7.1	7.1	8.5	11.4	23.5	14.1	11.3	16.7	12.7	27.6	21.0	22.3	26.4	27.8	17.0	19.5	26.4	36.0	15.6	36.0
25	19.8	22.3	8.6	10.9	11.0	15.3	10.0	24.1	27.8	22.4	10.1	5.8	15.2	11.3	26.2	53.6	26.9	8.8	16.6	15.4	5.9	7.1	13.9	19.5	17.0	53.6
26	4.6	23.4	7.4	9.8	4.4	8.5	7.1	18.0	15.4	8.6	13.9	11.3	8.5	25.8	57.7	39.2	41.6	25.2	11.5	9.9	20.7	11.4	8.5	16.7	17.0	57.7
27	19.5	21.0	16.9	8.6	8.4	9.9	11.2	11.3	9.9	5.7	8.5	3.6	5.7	5.7	3.0	4.3	8.4	5.8	3.0	4.3	3.0	4.3	5.8	7.1	8.1	21.0
28	7.1	15.3	3.2	3.0	4.3	7.1	7.1	22.1	56.3	35.1	25.2	16.9	16.8	15.4	29.0	56.9	48.7	36.3	110.8	22.5	6.2	5.7	1.7	5.6	23.3	110.8
29	16.6	14.1	4.5	8.3	7.1	5.8	7.1	11.2	8.5	11.3	24.5	79.3	76.3	62.6	105.8	170.4	86.0	27.5	16.9	23.6	18.3	12.7	7.2	3.6	33.7	170.4
30	23.4	10.1	7.2	8.5	4.4	3.0	0.3	5.6	7.1	3.0	5.9	8.4	19.3	6.3	13.9	14.0	8.6	12.6	12.6	7.2	8.5	11.3	5.9	13.9	9.2	23.4
NO.	30	30	30	30	30	30	30	30	30	30	30	29	29	29	30	30	30	30	30	30	30	30	30	30	717	100%
MEAN	16.5	17.9	13.1	14.1	12.5	11.8	12.3	24.4	35.2	31.9	30.0	37.4	32.9	27.1	38.0	41.7	45.6	34.2	31.1	24.8	19.4	17.9	13.5	14.1		
MAX	70.3	61.1	39.2	74.0	40.1	28.2	36.1	116.8	158.7	187.4	155.2	338.3	275.7	132.9	105.8	170.4	280.8	234.9	110.8	55.2	82.8	63.2	33.4	36.0		



Number of 24HR Exceedences	0
Number of Non-Zero Readings	715
Maximum 1-HR Average	338.3 UG/M3
Maximum 24-HR Average	73.8 UG/M3
Operational Time	720 HRS
Monthly Calibration	3
Operational Uptime	100.0 %
Standard Deviation	32.4
Monthly Average	24.9 UG/M3

Lagoon Temperature (°C) – June 2019

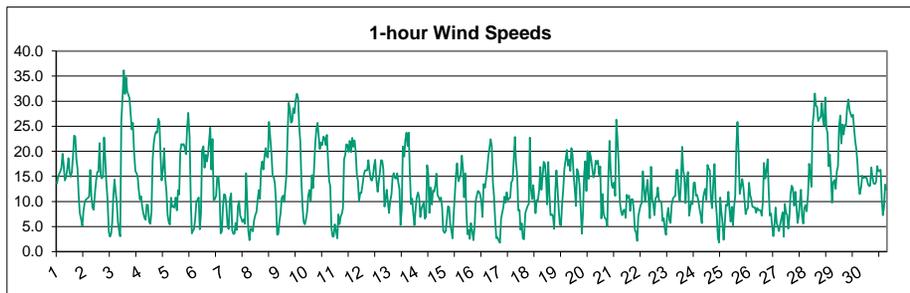
Day	HOUR																								MEAN	MAX
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1	12.6	11.8	11.0	10.9	10.4	10.1	10.7	12.0	14.4	17.8	20.3	21.9	23.2	24.4	24.8	24.5	24.5	24.5	24.1	23.2	21.0	19.0	16.6	15.9	17.9	24.8
2	17.6	16.6	15.7	15.1	14.4	13.9	14.2	15.8	18.8	22.0	23.3	24.2	24.5	23.3	24.7	26.1	26.5	26.3	25.6	25.0	22.9	18.1	14.1	12.4	20.0	26.5
3	13.0	15.5	16.7	16.0	14.4	13.2	14.5	16.4	20.0	20.9	21.6	22.1	22.4	22.6	22.9	23.0	22.8	22.4	17.7	15.3	13.6	12.7	12.0	11.4	17.6	23.0
4	10.9	10.9	10.4	9.7	9.4	8.9	8.9	10.2	12.0	14.9	17.4	19.0	19.8	20.4	21.1	20.8	20.9	20.1	19.3	18.3	15.6	11.2	9.6	8.7	14.5	21.1
5	8.0	7.3	6.1	6.0	5.3	5.4	7.3	9.7	12.0	14.1	17.0	18.3	18.5	18.8	18.4	18.5	18.1	17.6	17.2	17.1	16.1	12.9	9.6	9.6	12.9	18.8
6	10.5	11.4	11.0	10.2	8.4	9.3	10.5	10.6	11.4	12.0	12.8	13.2	13.9	14.5	14.0	13.7	13.1	13.8	11.7	11.5	10.2	8.4	7.1	6.3	11.2	14.5
7	5.3	4.6	4.4	4.1	4.1	4.2	4.1	3.4	1.6	1.4	1.8	1.8	2.7	4.2	5.4	5.0	5.4	5.9	5.3	5.2	4.3	3.5	3.1	2.8	3.9	5.9
8	3.0	3.2	3.2	3.3	3.1	2.5	2.7	3.2	5.1	7.6	9.5	10.8	11.6	12.4	12.5	12.6	13.3	13.1	12.9	11.2	8.3	7.6	6.9	6.1	7.7	13.3
9	5.2	4.5	4.5	4.8	5.5	6.3	8.1	9.1	12.1	12.2	12.9	13.7	14.6	15.0	14.9	15.4	15.8	16.0	15.8	15.2	14.0	11.8	9.5	7.8	11.0	16.0
10	8.3	9.2	9.6	9.4	9.2	9.4	10.0	12.0	13.9	14.6	15.3	15.7	15.7	16.1	16.5	16.8	17.1	16.9	16.3	16.0	14.1	12.0	10.4	7.7	13.0	17.1
11	6.3	6.4	5.7	5.3	6.7	6.0	7.8	9.4	12.2	16.2	17.9	18.8	18.8	19.5	19.7	19.9	20.7	21.2	20.8	19.8	18.9	17.6	16.0	15.4	14.5	21.2
12	14.6	13.6	12.5	11.3	10.5	10.2	10.4	12.3	14.9	18.0	20.4	22.1	23.3	24.6	26.0	26.7	26.5	26.5	26.2	25.3	22.4	19.5	17.9	17.6	18.9	26.7
13	16.8	16.9	16.0	14.9	14.2	14.0	13.6	13.0	13.8	15.8	21.1	22.8	25.1	25.8	26.3	26.6	24.9	20.0	18.4	16.7	14.2	13.3	12.7	13.3	17.9	26.6
14	13.5	13.1	12.1	11.5	11.3	11.0	10.9	11.3	13.0	13.9	11.9	12.0	12.2	12.8	14.0	16.2	17.2	16.5	14.3	13.9	13.2	12.5	12.0	10.9	13.0	17.2
15	10.2	9.8	9.9	10.1	10.2	9.8	10.0	11.4	13.5	15.0	16.2	16.7	16.3	17.4	18.9	19.0	18.3	18.3	16.8	15.4	14.1	11.8	10.7	10.1	13.8	19.0
16	10.4	9.2	8.0	9.0	8.5	8.6	9.1	10.9	13.3	16.1	19.1	20.3	21.2	21.8	22.2	22.2	22.0	19.7	17.0	16.9	14.8	12.4	10.5	9.2	14.7	22.2
17	8.1	9.4	9.7	9.1	8.8	9.5	10.5	12.0	15.1	18.4	21.4	22.6	23.4	21.8	16.8	17.3	19.2	20.9	21.1	19.8	15.6	12.9	13.4	13.6	15.4	23.4
18	14.4	14.9	14.7	14.1	13.4	13.4	12.9	13.2	15.6	16.5	17.5	19.9	21.0	21.9	22.9	22.5	20.5	21.2	22.4	21.3	19.2	17.3	15.3	11.6	17.4	22.9
19	11.8	12.6	11.8	10.0	8.8	8.1	9.3	9.1	10.4	10.8	11.1	10.5	10.9	11.1	10.6	10.6	9.7	9.6	10.9	9.3	7.5	7.3	6.7	6.2	9.8	12.6
20	6.8	7.6	7.7	7.2	7.0	6.6	6.4	6.6	6.7	7.2	8.4	9.8	11.0	11.2	8.6	9.4	9.5	9.5	8.4	8.4	7.7	7.0	6.8	5.6	8.0	11.2
21	4.3	4.0	4.7	5.4	6.4	11.5	11.5	10.3	10.1	9.8	10.7	10.4	10.6	11.9	12.7	13.7	14.3	15.1	14.2	13.5	12.2	9.7	7.9	6.2	10.1	15.1
22	6.5	6.5	6.6	6.2	5.8	5.4	6.1	7.7	10.3	13.4	16.5	17.3	18.2	18.8	19.8	19.5	19.0	18.5	18.3	17.3	15.9	13.3	11.7	10.6	12.9	19.8
23	10.0	11.9	12.8	12.4	11.7	11.9	12.2	12.7	14.4	14.8	14.9	14.8	14.1	15.2	14.3	15.0	15.7	15.0	13.8	12.4	11.0	10.2	10.4	10.4	13.0	15.7
24	9.9	9.1	8.9	8.8	8.7	8.6	9.3	11.3	12.8	13.9	14.3	15.2	16.2	16.9	16.2	17.1	17.7	16.5	15.4	14.0	13.0	11.4	10.0	9.6	12.7	17.7
25	10.2	9.1	7.5	6.9	7.2	6.7	7.2	9.2	12.1	14.3	15.6	16.4	16.7	15.6	15.4	14.7	14.4	14.9	14.5	13.7	12.7	11.7	11.6	10.8	12.0	16.7
26	9.5	9.2	9.2	8.4	8.4	8.6	9.1	10.1	11.9	14.9	15.2	15.5	17.8	18.4	18.0	18.3	15.4	15.7	14.3	14.8	13.1	11.4	10.4	10.9	12.9	18.4
27	10.8	10.3	10.1	9.9	9.8	9.8	10.2	10.5	10.5	11.0	11.3	11.7	11.5	11.2	11.0	11.4	11.5	11.5	11.4	11.1	10.6	10.3	9.6	8.4	10.6	11.7
28	8.2	8.6	8.3	8.3	8.6	8.6	9.3	12.0	12.2	13.8	14.4	15.2	16.3	16.8	17.7	18.1	18.0	16.4	14.9	15.2	14.7	14.4	13.8	11.3	13.1	18.1
29	9.8	9.4	8.7	8.0	7.9	9.0	10.2	10.0	11.3	13.9	14.8	15.2	15.6	16.0	16.8	16.9	16.8	17.0	16.6	16.1	15.6	14.7	13.9	12.5	13.2	17.0
30	11.7	11.1	10.5	9.0	7.8	7.4	7.8	9.2	11.6	14.6	16.9	18.5	18.8	19.5	19.7	20.2	20.2	20.7	20.6	19.7	16.3	14.2	13.3	12.0	14.6	20.7
NO.	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	720	100%
MEAN	9.9	9.9	9.6	9.2	8.9	8.9	9.5	10.5	12.2	14.0	15.4	16.2	16.9	17.3	17.4	17.7	17.6	17.4	16.5	15.7	14.1	12.3	11.1	10.2		
MAX	17.6	16.9	16.7	16.0	14.4	14.0	14.5	16.4	20.0	22.0	23.3	24.2	25.1	25.8	26.3	26.7	26.5	26.5	26.2	25.3	22.9	19.5	17.9	17.6		



Number of Non-Zero Readings	720		
Maximum 1-HR Average	26.7 C		
Maximum 24-HR Average	20.0 C		
Monthly Calibration	0	Operational Time	720 HRS
Standard Deviation	5.215	Operational Uptime	100.0 %
		Monthly Average	13.3 C

Lagoon Wind Speed (km/hr) – June 2019

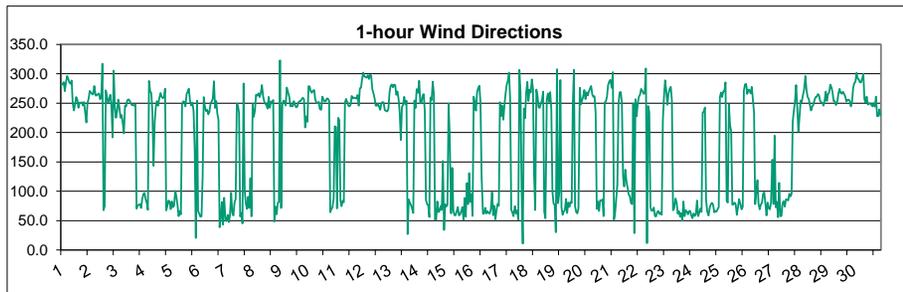
Day	HOUR																								MEAN	MAX
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1	13.6	14.9	15.5	16.0	16.7	19.5	17.3	14.2	14.8	16.2	18.6	15.8	15.0	15.9	19.1	23.1	22.9	18.6	16.5	11.2	7.7	6.6	5.1	8.0	15.1	23.1
2	9.7	10.3	10.5	10.7	11.0	16.3	11.1	8.8	8.4	11.8	14.2	15.9	15.9	21.6	15.4	14.6	15.0	22.8	18.7	13.8	10.6	3.9	3.0	3.5	12.4	22.8
3	5.9	11.3	14.4	11.9	9.8	5.9	4.2	3.0	26.1	31.3	36.2	31.4	34.7	31.9	31.3	30.6	27.6	24.4	25.7	20.1	16.1	15.6	15.0	12.2	19.9	36.2
4	10.4	11.0	9.0	7.7	6.8	6.4	9.4	9.3	5.9	5.5	8.0	18.3	21.6	23.2	23.9	23.7	26.5	25.9	19.1	14.2	16.6	20.6	14.4	11.9	14.5	26.5
5	7.3	5.9	5.4	10.8	8.9	9.1	8.8	10.8	8.2	12.3	11.4	20.0	21.4	21.2	21.4	20.6	19.4	24.5	27.7	23.0	10.6	3.6	4.2	4.6	13.4	27.7
6	6.7	10.1	10.3	10.8	4.4	7.5	20.3	21.0	16.7	19.3	18.0	19.3	22.1	24.7	16.4	22.5	10.3	10.4	11.2	15.0	15.0	11.9	3.6	4.0	13.8	24.7
7	8.8	11.4	11.3	9.2	5.3	4.5	10.6	11.6	4.2	3.6	3.6	5.7	4.3	9.1	10.1	7.2	6.6	5.9	6.4	5.5	15.6	9.8	4.0	2.3	7.4	15.6
8	4.6	4.5	4.0	6.2	7.2	7.9	10.4	12.2	10.5	16.5	17.9	16.4	18.9	20.6	19.0	18.8	25.9	22.5	19.6	15.0	14.9	13.6	9.7	3.4	13.3	25.9
9	3.5	6.1	7.6	10.7	11.2	9.9	12.7	15.5	23.6	29.6	28.5	25.7	25.9	28.6	27.6	30.1	31.5	30.7	25.0	21.9	13.9	8.8	5.9	5.5	18.3	31.5
10	6.4	7.9	11.1	12.3	10.0	15.3	12.6	16.8	21.7	24.4	25.7	23.1	20.4	21.7	21.2	22.9	22.6	21.3	23.3	18.5	14.2	13.0	4.9	3.0	16.4	25.7
11	3.0	5.5	4.3	2.7	7.4	5.5	7.0	7.5	8.7	18.4	19.3	21.4	21.3	19.9	22.1	19.9	22.7	20.9	22.2	20.1	15.5	14.1	10.0	11.7	13.8	22.7
12	11.7	13.2	15.4	16.2	16.2	16.2	18.2	16.1	14.5	14.2	14.9	17.0	18.3	14.5	11.9	14.1	15.9	18.2	18.2	16.4	9.0	10.5	12.4	9.9	14.7	18.3
13	7.7	9.9	11.5	14.9	15.7	14.7	14.6	15.6	13.8	12.5	5.3	8.4	21.0	18.9	22.3	23.7	21.1	23.7	15.6	9.5	10.6	7.6	5.3	8.3	13.8	23.7
14	10.8	11.8	10.7	6.9	8.6	9.2	9.8	6.6	7.0	17.2	15.5	7.7	12.8	9.4	12.2	11.9	13.2	15.5	11.3	10.9	10.3	10.8	8.9	4.2	10.5	17.2
15	3.7	4.1	6.4	9.0	8.9	5.4	4.2	2.6	7.5	11.2	15.3	17.6	14.0	14.8	15.4	19.1	16.6	10.8	15.6	8.0	3.4	4.4	2.5	5.7	9.4	19.1
16	4.0	2.3	4.8	10.1	11.2	12.1	11.9	11.4	9.9	6.9	13.5	12.7	14.5	16.5	19.1	20.7	22.4	21.0	13.8	11.0	6.2	2.7	2.8	2.2	11.0	22.4
17	1.8	6.5	7.8	8.8	11.0	9.7	11.8	10.3	10.6	10.7	13.7	14.3	18.4	22.9	17.7	15.2	8.2	8.4	4.4	5.6	2.6	2.5	7.7	8.5	10.0	22.9
18	9.1	9.5	22.7	12.4	10.5	13.2	10.3	7.7	10.3	10.2	12.3	16.9	12.4	15.0	17.9	17.5	15.1	9.4	17.9	11.4	7.3	7.4	7.0	4.5	12.0	22.7
19	12.0	16.2	12.5	8.5	5.5	5.2	9.5	12.4	16.5	18.4	20.3	17.1	18.3	16.1	20.6	19.3	15.3	12.4	9.1	16.5	15.8	13.2	8.6	3.6	13.5	20.6
20	7.7	15.4	18.0	12.1	20.1	14.5	19.8	18.8	16.6	14.8	15.6	18.1	17.5	18.2	15.3	17.0	6.6	11.5	7.6	6.8	6.4	5.1	15.0	22.1	14.2	22.1
21	16.2	13.3	12.7	13.8	11.1	26.3	22.6	17.8	9.8	8.0	7.3	8.3	8.4	6.8	11.4	10.7	11.2	8.1	10.4	10.4	8.3	4.3	3.8	2.1	11.0	26.3
22	7.1	8.2	9.3	9.7	16.0	12.9	9.9	12.6	14.3	9.9	6.7	16.9	10.6	9.4	7.2	10.7	10.9	12.8	10.1	10.1	9.7	6.1	6.7	4.5	10.1	16.9
23	3.3	7.2	8.7	6.3	5.7	9.4	10.6	10.9	11.1	16.3	16.3	11.4	10.1	13.8	20.9	16.2	14.7	9.7	14.7	15.9	7.2	8.6	10.0	9.5	11.2	20.9
24	13.7	13.8	11.2	11.3	10.3	8.8	7.3	5.7	10.4	11.8	12.5	10.3	17.3	16.6	16.2	10.6	8.7	14.3	17.5	10.1	7.2	2.7	1.8	10.8	10.9	17.5
25	8.0	5.9	2.3	5.5	9.3	9.1	12.0	8.3	6.0	8.9	5.2	8.9	11.1	20.8	25.9	19.8	11.5	13.1	14.5	12.9	10.3	7.5	8.4	8.6	10.6	25.9
26	13.7	11.3	10.4	8.9	8.8	8.8	7.8	8.7	8.3	8.3	8.2	7.2	10.0	17.7	14.6	16.0	18.4	11.9	7.2	7.6	5.1	3.1	5.3	8.8	9.8	18.4
27	5.7	5.0	4.1	5.6	6.7	7.8	3.0	9.5	7.7	7.4	4.6	6.9	11.5	13.2	12.7	9.2	11.9	9.1	5.7	7.1	9.7	12.3	7.1	5.6	7.9	13.2
28	8.8	9.3	8.0	11.3	17.5	15.4	12.9	25.1	27.4	31.5	29.1	28.9	26.0	26.5	26.9	29.6	26.3	25.1	30.7	24.7	23.6	17.0	19.4	15.5	21.5	31.5
29	9.8	13.9	14.3	12.5	16.0	17.0	24.9	27.1	21.5	25.3	23.4	25.3	25.0	28.4	30.3	28.2	27.4	26.8	27.3	24.6	22.1	20.4	17.6	13.4	21.8	30.3
30	11.5	12.8	15.2	14.7	14.8	14.8	14.6	13.6	13.1	13.2	16.8	14.9	13.6	13.5	13.9	17.1	16.1	16.1	16.3	10.6	7.3	8.9	13.4	12.4	13.7	17.1
NO.	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	720	100%
MEAN	8.2	9.6	10.3	10.2	10.8	11.3	12.0	12.4	12.8	14.9	15.3	16.1	17.1	18.4	18.7	18.7	17.4	16.9	16.1	13.6	11.1	9.2	8.1	7.7		
MAX	16.2	16.2	22.7	16.2	20.1	26.3	24.9	27.1	27.4	31.5	36.2	31.4	34.7	31.9	31.3	30.6	31.5	30.7	30.7	24.7	23.6	20.6	19.4	22.1		



Number of Non-Zero Readings	720	Operational Time	720 HRS
Maximum 1-HR Average	36.2 KM/HR	Operational Uptime	100.0 %
Maximum 24-HR Average	21.8 KM/HR	Monthly Average	13.2 KM/HR
Monthly Calibration	0		
Standard Deviation	6.646		

Lagoon Wind Direction (°) – June 2019

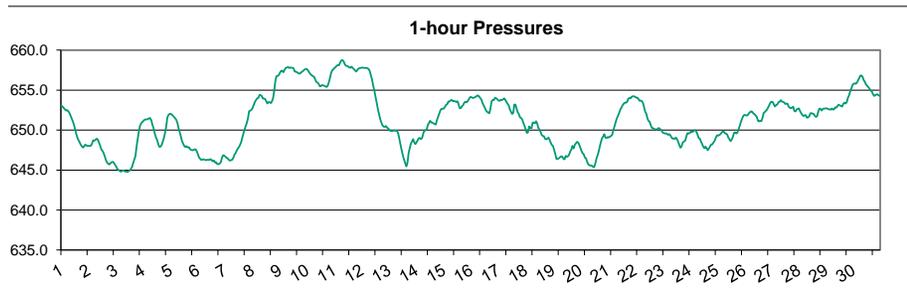
Day	HOUR																								MEAN	MAX
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1	279.9	282.2	285.8	270.3	286.0	296.3	291.7	285.1	283.0	288.5	249.8	237.4	247.7	260.2	256.1	242.1	251.1	250.0	251.5	245.9	251.8	233.7	217.3	250.3	264.3	296.3
2	257.2	270.8	268.6	265.6	265.0	279.1	263.1	263.2	265.2	266.5	256.3	260.5	317.3	67.9	74.8	271.9	261.5	250.4	256.8	264.2	243.7	191.6	305.4	244.3	267.1	317.3
3	225.0	236.5	256.0	243.1	225.2	229.8	216.5	198.6	246.0	244.6	254.9	256.5	253.8	249.3	246.6	246.9	245.8	247.6	70.4	75.3	77.5	78.0	71.4	86.8	243.7	256.5
4	95.1	97.1	86.6	80.5	68.6	287.8	270.6	267.1	235.7	143.5	216.5	243.8	253.4	245.7	257.6	267.2	260.6	258.2	260.3	274.7	67.3	74.5	84.4	82.5	252.0	287.8
5	69.8	82.9	73.0	76.0	101.0	91.1	76.4	57.8	66.7	60.8	247.5	253.2	252.4	244.7	265.4	269.8	274.6	254.7	246.2	251.0	236.6	172.0	20.5	254.2	254.9	274.6
6	66.0	62.1	57.0	57.4	125.0	260.2	244.0	236.3	238.7	231.1	235.2	249.1	252.9	257.5	287.3	241.7	253.8	232.0	222.2	38.6	54.3	81.8	43.2	88.8	248.4	287.3
7	51.2	49.0	59.9	47.5	59.7	97.3	63.0	58.8	80.8	86.8	249.7	246.0	232.4	57.3	62.9	45.2	283.5	101.4	79.3	69.9	90.6	71.5	122.0	57.4	66.1	283.5
8	248.7	226.8	237.4	264.7	262.8	266.9	260.3	267.1	280.8	262.8	253.5	249.1	246.4	240.6	260.7	242.2	252.5	251.0	255.4	48.2	74.0	60.8	79.7	81.8	256.2	280.8
9	323.0	71.6	245.7	254.4	252.8	246.0	276.6	269.2	260.8	244.4	246.5	244.5	253.6	247.6	242.9	243.6	250.6	253.2	253.7	257.0	259.2	256.7	208.8	227.4	251.2	323.0
10	218.1	279.0	278.7	270.2	267.5	271.4	272.4	255.7	250.7	249.8	252.2	239.7	238.9	261.1	256.4	253.0	253.4	258.1	257.5	254.2	64.3	69.8	72.7	88.2	256.3	279.0
11	210.7	209.8	70.9	225.3	221.3	83.9	74.8	83.8	81.1	251.1	257.2	252.4	245.8	244.3	247.2	262.2	257.9	259.5	258.8	257.6	264.0	245.8	275.2	276.0	252.7	276.0
12	291.7	302.0	295.4	294.2	293.4	297.4	291.3	298.5	296.6	273.4	267.1	258.6	245.8	245.5	248.8	243.6	238.8	250.0	251.8	251.0	237.9	236.8	235.9	240.3	267.2	302.0
13	268.2	279.3	282.1	276.8	281.4	280.6	264.4	270.0	257.1	234.6	187.5	243.8	246.9	260.8	248.2	254.3	27.1	86.2	80.6	76.6	70.2	63.2	254.5	241.7	266.8	282.1
14	274.0	267.9	288.0	250.0	250.4	263.2	265.5	236.0	85.4	78.1	76.2	56.1	259.7	254.8	286.6	265.3	51.7	51.9	82.7	64.6	66.9	75.1	68.6	151.6	3.7	288.0
15	34.1	78.1	74.4	77.0	249.7	194.0	62.2	139.8	67.7	59.4	59.0	66.7	73.3	58.7	60.6	65.8	73.3	51.5	88.5	57.0	113.9	78.1	131.0	82.0	70.4	249.7
16	95.3	57.9	261.0	250.6	237.1	268.7	275.8	279.8	251.5	123.3	61.9	62.0	72.1	62.3	66.0	63.2	62.1	70.1	98.4	59.1	75.4	52.1	68.4	78.5	63.1	279.8
17	75.2	251.3	228.0	245.6	221.6	246.9	266.9	281.4	288.0	302.0	258.5	68.9	63.7	57.5	74.6	62.2	67.5	51.7	306.9	267.3	96.8	11.1	241.0	224.3	331.2	306.9
18	267.5	286.4	253.7	273.1	268.1	290.3	274.8	127.4	67.9	273.1	262.8	242.5	242.0	249.9	255.4	269.6	65.1	54.2	256.7	266.5	252.4	268.7	239.7	100.2	263.1	290.3
19	79.1	77.2	30.1	307.9	79.8	97.0	289.2	72.5	60.0	65.5	67.5	86.9	63.2	80.7	73.4	81.9	80.0	246.8	306.8	74.3	64.5	62.3	71.0	276.3	66.3	307.9
20	248.1	254.6	261.6	272.3	256.8	268.6	262.9	269.5	275.2	279.2	264.9	260.6	261.7	233.4	70.2	82.7	66.6	84.8	84.4	86.1	57.8	251.0	252.9	260.7	262.8	279.2
21	280.7	286.7	289.7	276.3	302.7	51.7	63.1	87.7	111.2	248.3	268.5	268.9	250.0	126.0	108.4	136.9	117.6	106.2	94.6	91.8	80.6	78.3	249.4	28.8	71.7	302.7
22	256.8	227.9	248.9	261.0	264.3	274.3	271.2	265.9	267.8	309.1	11.7	245.0	234.5	72.7	66.8	67.5	72.5	57.7	57.5	64.6	66.4	61.0	64.0	60.2	305.4	309.1
23	220.6	260.6	289.0	271.4	247.3	265.8	274.4	277.7	254.2	67.6	71.4	87.6	80.9	62.0	66.1	56.8	62.7	49.4	82.7	57.7	67.8	66.0	60.8	66.3	56.3	289.0
24	66.4	58.3	54.1	62.2	58.1	60.4	84.2	57.8	63.6	70.5	64.9	234.0	235.4	242.7	85.3	65.9	59.0	72.0	77.7	80.5	77.5	64.1	66.7	65.6	70.7	242.7
25	69.6	72.6	259.9	267.9	260.3	269.9	270.4	285.6	83.4	80.7	247.6	212.1	203.0	77.3	77.6	80.7	77.5	59.8	72.9	86.5	77.6	69.2	73.3	270.9	77.5	285.6
26	282.1	282.7	265.8	273.2	271.8	266.5	277.7	256.0	234.4	78.0	98.5	119.1	78.4	69.4	77.5	80.3	95.3	98.2	79.9	58.7	80.7	71.3	69.1	81.2	74.2	282.7
27	153.7	78.0	194.6	72.7	82.2	55.6	114.6	57.7	58.2	79.7	83.0	74.1	86.4	86.0	84.3	96.0	91.2	95.9	218.0	237.3	253.0	280.7	243.7	201.5	93.7	280.7
28	226.9	254.5	252.0	263.2	271.8	296.2	271.9	260.3	257.4	246.4	237.5	244.3	247.1	255.0	260.2	260.8	265.5	263.3	254.1	251.4	250.6	245.5	254.1	269.8	255.9	296.2
29	253.7	265.7	268.1	281.7	276.9	268.6	253.5	253.3	247.0	252.6	266.5	274.2	267.3	266.1	269.7	265.6	261.4	253.0	255.3	256.3	254.0	244.5	252.0	275.6	261.1	281.7
30	284.4	286.2	301.6	292.1	290.4	285.4	285.5	291.6	300.1	256.5	251.1	261.1	247.5	249.5	249.4	246.8	244.5	249.9	244.1	261.2	227.8	227.8	239.3	229.2	263.4	301.6
NO.	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	720	100%
MEAN	192.4	193.2	210.6	220.8	220.0	223.7	224.3	210.4	193.9	190.3	194.2	203.3	208.4	179.5	172.9	177.7	164.2	162.3	180.2	156.2	138.5	134.8	154.5	164.7		
MAX	323.0	302.0	301.6	307.9	302.7	297.4	291.7	298.5	300.1	309.1	268.5	274.2	317.3	266.1	287.3	271.9	283.5	263.3	306.9	274.7	264.0	280.7	305.4	276.3		



Number of Non-Zero Readings	720		
Maximum 1-HR Average	323 degrees		
Maximum 24-HR Average	331 degrees		
		Operational Time	720 HRS
Monthly Calibration	0	Operational Uptime	100.0 %
Standard Deviation	91.83	Monthly Average	186.3 degrees

Lagoon Pressure (mmHg) – June 2019

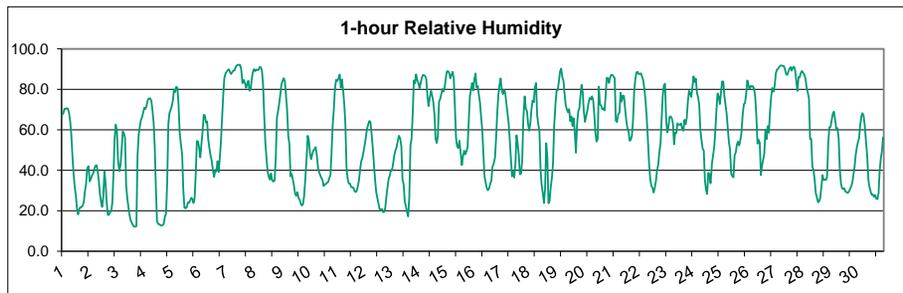
Day	HOUR																								MEAN	MAX
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1	653.1	652.9	652.8	652.6	652.4	652.5	652.4	652.1	651.8	651.4	651.1	650.7	650.1	649.5	649.1	648.7	648.5	648.2	648.0	647.8	648.0	648.2	648.1	648.0	650.3	653.1
2	648.0	648.0	648.1	648.3	648.7	648.7	648.8	648.9	648.8	648.4	648.0	647.6	647.4	647.1	646.7	646.3	646.0	645.8	645.7	645.8	646.0	646.0	645.9	645.9	646.4	648.9
3	645.5	645.2	645.1	644.9	644.8	644.8	645.0	644.9	644.8	644.8	644.8	644.9	645.0	645.1	645.4	645.9	646.3	646.8	647.9	648.9	649.8	650.5	650.8	651.0	646.4	651.0
4	651.1	651.3	651.3	651.3	651.4	651.5	651.5	651.3	650.7	650.3	649.6	649.2	648.8	648.2	647.9	647.9	648.1	648.5	649.0	649.7	650.4	651.6	651.9	652.0	650.2	652.0
5	652.0	651.9	651.8	651.6	651.5	651.3	650.9	650.2	649.7	649.2	648.6	648.3	648.0	647.9	648.0	647.8	647.9	647.6	647.5	647.5	647.5	647.6	647.3	649.1	652.0	
6	646.9	646.6	646.4	646.3	646.3	646.4	646.3	646.2	646.3	646.3	646.3	646.4	646.3	646.1	646.2	646.0	646.0	645.7	645.7	645.8	646.0	646.6	646.9	646.8	646.3	646.9
7	646.7	646.5	646.5	646.3	646.2	646.2	646.3	646.5	646.9	647.1	647.4	647.7	647.9	648.2	648.5	649.1	649.6	650.1	650.5	650.9	651.5	652.3	652.4	652.6	648.5	652.6
8	652.8	653.2	653.6	653.8	654.0	654.0	654.4	654.4	654.3	653.9	653.9	653.9	653.6	653.3	653.5	653.5	653.4	653.6	654.0	654.9	656.1	656.8	656.8	656.9	654.3	656.9
9	657.2	657.4	657.4	657.2	657.5	657.8	657.8	657.9	657.8	657.8	657.8	657.8	657.7	657.3	657.3	657.2	657.1	657.1	657.1	657.3	657.4	657.5	657.6	657.6	657.5	657.9
10	657.6	657.4	657.2	657.0	656.9	656.7	656.7	656.3	656.0	655.9	655.8	655.5	655.5	655.7	655.6	655.5	655.5	655.4	655.6	656.0	656.5	657.2	657.5	657.6	656.3	657.6
11	657.8	657.9	658.0	658.1	658.1	658.5	658.7	658.8	658.6	658.2	658.1	658.0	658.0	657.8	657.8	657.9	657.8	657.6	657.5	657.3	657.5	657.7	657.7	657.8	658.0	658.8
12	657.8	657.8	657.8	657.8	657.8	657.7	657.6	657.4	656.8	656.3	655.6	654.8	654.1	653.4	652.6	652.0	651.4	651.0	650.6	650.4	650.4	650.5	650.3	650.2	654.3	657.8
13	650.1	649.9	649.9	649.9	650.0	649.9	649.9	649.9	649.6	648.9	648.2	647.5	646.9	646.4	645.9	645.5	645.9	647.1	647.8	648.3	648.6	648.9	648.4	648.2	648.4	650.1
14	648.5	648.7	649.0	649.0	648.9	649.0	649.6	649.9	650.0	650.1	650.7	650.9	651.2	651.0	650.9	650.8	650.8	650.7	651.3	651.7	652.1	652.5	652.7	652.7	650.5	652.7
15	652.7	652.9	653.2	653.2	653.6	653.6	653.7	653.8	653.6	653.6	653.6	653.5	653.6	653.3	652.7	652.8	653.0	653.1	653.4	653.6	653.5	653.6	653.9	654.1	653.4	654.1
16	654.1	654.0	654.0	654.1	654.2	654.3	654.4	654.2	654.0	653.8	653.4	653.1	652.8	652.5	652.3	652.2	652.1	652.7	652.2	652.0	651.6	651.5	651.3	650.9	653.5	654.4
17	653.7	653.7	653.8	653.8	653.8	654.0	653.8	653.5	653.3	653.1	652.6	652.3	652.0	652.1	653.2	653.2	652.7	652.2	652.0	651.6	651.5	651.3	650.9	650.5	652.7	654.0
18	650.1	649.7	649.7	650.5	650.3	650.2	650.9	651.0	650.9	651.1	650.8	650.3	650.1	649.8	649.4	649.3	649.2	648.9	648.8	648.9	649.1	648.8	648.4	648.1	649.8	651.1
19	648.0	647.5	647.0	646.4	646.4	646.5	646.6	646.7	646.7	646.4	646.4	646.8	646.7	646.7	646.9	647.3	647.6	648.0	647.7	648.1	648.3	648.5	648.4	648.2	647.2	648.5
20	647.8	647.4	647.1	647.0	646.6	646.5	646.0	645.7	645.6	645.6	645.5	645.4	645.4	645.8	646.4	646.8	647.3	647.9	648.5	649.0	649.2	649.5	649.0	649.0	647.1	649.5
21	649.1	649.1	649.2	649.3	649.4	650.0	650.5	651.0	651.4	651.8	652.1	652.5	652.8	653.1	653.3	653.4	653.5	653.5	654.0	654.0	654.0	654.2	654.2	654.2	652.1	654.2
22	654.2	654.1	654.1	653.9	653.7	653.7	653.6	653.4	652.9	652.3	652.0	651.5	651.1	651.0	650.6	650.3	650.2	650.2	650.1	650.1	650.2	650.3	650.1	650.0	651.8	654.2
23	649.7	649.6	649.6	649.6	649.5	649.4	649.5	649.4	649.1	648.9	649.0	648.9	649.1	648.8	648.5	648.1	647.8	648.0	648.4	648.5	648.7	649.2	649.6	649.6	649.0	649.7
24	649.6	649.8	649.8	649.8	650.0	650.0	649.8	649.4	649.0	648.9	648.6	648.2	647.9	647.7	647.9	647.7	647.5	647.7	648.0	648.2	648.2	648.4	648.7	648.7	648.7	650.0
25	649.3	649.3	649.4	649.5	649.7	649.8	649.8	649.6	649.5	649.4	649.1	648.8	648.6	648.8	649.2	649.7	649.7	649.6	649.7	650.1	650.5	651.0	651.4	651.7	649.7	651.7
26	651.9	651.9	651.8	651.9	652.1	652.2	652.4	652.3	652.1	652.0	651.8	651.6	651.2	651.1	651.2	651.1	651.5	652.1	652.3	652.4	652.6	652.8	653.1	653.4	652.0	653.4
27	653.6	653.5	653.2	653.0	653.1	653.2	653.5	653.5	653.8	653.6	653.5	653.5	653.3	653.3	653.3	652.9	652.8	652.7	652.8	652.9	652.4	652.3	652.6	652.6	653.1	653.8
28	652.7	652.4	652.1	651.9	651.8	651.9	651.9	651.6	651.6	651.7	652.1	652.1	652.1	652.0	651.8	651.6	651.8	652.3	652.7	652.6	652.4	652.6	652.7	652.1	652.7	652.7
29	652.7	652.7	652.6	652.6	652.6	652.7	652.6	652.6	652.8	652.8	653.0	653.2	653.1	653.0	653.0	653.3	653.4	653.3	653.5	654.0	654.3	654.8	655.2	655.6	653.3	655.6
30	655.8	655.8	655.8	655.9	656.2	656.5	656.8	656.8	656.7	656.2	656.1	655.7	655.6	655.4	655.2	655.0	654.8	654.5	654.3	654.4	654.4	654.5	654.4	654.3	655.5	656.8
NO.	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	720	100%
MEAN	651.7	651.6	651.6	651.6	651.6	651.6	651.7	651.6	651.5	651.3	651.2	651.0	650.9	650.7	650.7	650.6	650.6	650.7	650.9	651.2	651.4	651.7	651.7	651.7		
MAX	657.8	657.9	658.0	658.1	658.1	658.5	658.7	658.8	658.6	658.2	658.1	658.0	658.0	657.8	657.8	657.9	657.8	657.6	657.5	657.3	657.5	657.7	657.7	657.8		



Number of Non-Zero Readings	720	Operational Time	720 HRS
Maximum 1-HR Average	659 MMHg	Operational Uptime	100.0 %
Maximum 24-HR Average	658 MMHg	Monthly Average	651.3 MMHg
Monthly Calibration	0		
Standard Deviation	3.432		

Lagoon Relative Humidity (%) – June 2019

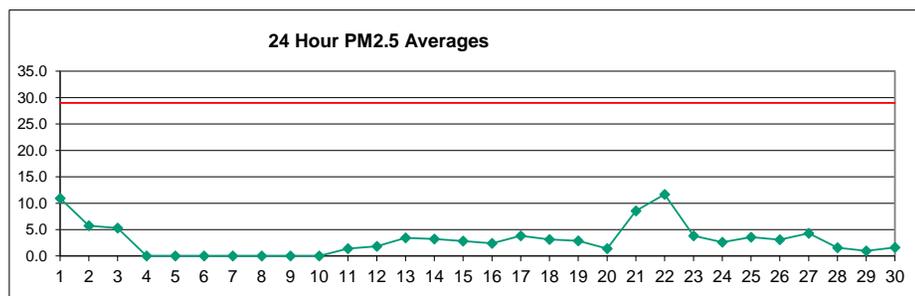
Day	HOUR																								MEAN	MAX
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1	67.4	68.2	70.4	70.4	70.7	70.5	68.3	64.3	57.7	47.1	38.2	32.0	27.6	21.1	18.3	20.8	21.8	21.8	22.6	24.3	29.6	33.2	41.0	42.0	43.7	70.7
2	34.5	35.7	37.4	38.2	40.6	42.1	42.6	40.0	35.2	28.6	24.5	22.0	26.9	39.6	34.0	24.1	18.0	18.0	19.4	19.7	24.1	38.3	55.6	62.6	33.4	62.6
3	60.0	44.9	39.5	42.6	50.3	59.2	58.2	56.1	32.5	26.1	21.8	17.7	15.2	14.1	12.9	12.2	12.2	12.4	47.0	57.3	61.5	64.8	66.1	68.5	39.7	68.5
4	70.9	70.4	71.9	74.6	75.5	75.5	74.4	69.7	63.7	51.8	31.7	14.8	13.5	13.4	12.9	12.8	12.8	13.7	17.2	18.7	34.3	62.9	68.3	69.9	45.6	75.5
5	71.5	74.4	79.9	78.7	81.2	80.8	72.5	58.8	53.3	47.8	30.4	21.5	21.2	21.7	24.1	24.0	25.0	26.4	25.9	23.8	26.2	38.6	54.5	54.1	46.5	81.2
6	51.0	46.4	53.1	59.1	67.4	67.1	63.6	64.1	55.4	51.2	47.4	44.9	39.9	36.7	40.2	39.4	44.5	39.2	46.2	54.1	65.5	76.8	85.5	87.8	55.3	87.8
7	88.6	89.5	89.9	88.6	87.5	88.6	89.2	89.3	91.0	91.8	92.1	92.2	92.0	89.3	83.1	84.6	83.2	80.8	82.8	84.3	79.3	79.9	85.1	88.5	87.1	92.2
8	90.0	89.0	89.8	89.5	89.6	91.0	90.9	89.2	82.2	66.8	53.5	46.0	39.4	36.9	35.4	38.4	35.0	34.4	35.1	46.3	66.0	69.2	73.0	77.5	64.8	91.0
9	82.3	84.2	85.5	84.1	77.0	69.6	57.1	53.2	37.0	38.3	35.6	32.6	28.5	27.4	29.2	26.4	25.5	23.6	22.6	23.2	27.3	35.2	46.3	57.1	46.2	85.5
10	54.7	48.3	45.5	48.0	49.9	50.3	51.5	47.5	41.7	39.2	37.7	36.1	35.3	32.3	32.9	33.2	33.9	34.1	36.2	37.6	48.9	62.5	70.0	80.4	45.3	80.4
11	84.7	84.2	85.5	87.4	80.9	84.8	79.4	72.9	62.9	41.2	35.8	33.5	33.5	31.8	31.6	31.5	29.9	29.2	29.9	32.2	35.0	40.5	44.5	46.2	52.0	87.4
12	49.1	52.4	56.1	60.2	62.8	64.4	63.6	57.4	50.9	43.0	35.4	29.2	26.3	23.5	20.9	20.3	20.9	19.4	19.4	21.4	27.1	31.8	35.9	37.4	38.7	64.4
13	40.2	40.1	43.7	47.6	49.9	51.5	54.2	57.1	55.6	51.6	35.5	33.0	24.5	22.2	19.3	17.2	26.9	52.1	55.6	67.7	84.4	82.9	87.4	84.4	49.4	87.4
14	83.3	80.6	83.1	85.6	87.0	87.0	86.6	84.9	76.4	71.7	75.7	79.2	76.8	73.6	67.6	55.5	53.4	56.9	73.8	75.1	77.6	80.1	78.9	80.9	76.3	87.0
15	85.6	88.9	89.0	88.1	85.4	87.1	88.7	85.6	71.9	56.1	51.8	51.0	54.6	49.2	42.5	47.1	49.7	47.8	49.3	51.3	63.6	76.3	79.8	83.2	67.7	89.0
16	79.4	85.0	87.8	80.9	81.6	77.2	73.3	66.1	59.8	47.7	36.9	33.9	31.1	30.2	31.2	33.2	35.0	41.8	43.6	46.2	56.2	68.6	77.3	82.2	57.8	87.8
17	85.4	79.8	77.6	79.7	78.4	73.3	68.4	63.4	55.2	46.1	37.0	39.3	36.4	43.1	57.3	53.4	47.4	38.0	38.4	44.9	65.5	76.5	70.4	69.3	59.3	85.4
18	63.0	59.6	63.3	70.3	74.5	73.6	81.0	83.2	67.0	62.7	59.6	40.1	32.5	28.6	23.8	30.9	53.4	46.2	23.7	24.9	31.8	36.4	43.5	61.9	51.5	83.2
19	73.0	79.6	79.7	84.0	88.8	90.2	86.0	84.3	77.7	72.1	70.1	68.6	70.2	64.2	66.6	61.9	65.7	58.7	48.6	62.4	69.0	70.5	76.9	82.2	73.0	90.2
20	78.5	69.1	63.9	67.3	69.7	73.6	75.7	74.9	76.5	74.7	67.6	58.4	54.1	55.5	81.3	72.6	72.0	70.3	70.6	69.6	76.7	85.7	85.5	83.1	72.0	85.7
21	86.0	87.2	87.0	86.3	85.6	64.5	63.8	68.0	68.5	78.3	74.0	77.0	76.6	70.6	64.9	60.9	59.5	54.6	55.0	57.2	64.7	79.1	85.0	88.3	72.6	88.3
22	88.7	87.5	87.6	87.8	86.3	84.3	80.3	74.5	66.5	56.4	42.8	35.4	32.2	31.2	29.0	31.4	34.8	40.3	42.6	49.0	52.9	65.1	76.8	82.0	60.2	88.7
23	82.8	65.0	58.6	61.2	66.3	66.6	65.8	62.9	52.9	58.7	58.4	63.2	62.6	62.5	63.2	60.5	59.5	64.9	62.7	66.1	74.2	79.2	77.9	76.1	65.5	82.8
24	81.2	86.4	83.6	85.3	78.4	76.1	72.2	59.8	55.0	50.8	49.7	35.2	30.2	28.3	38.7	38.0	33.6	43.2	47.3	51.3	59.7	69.9	78.0	76.4	58.7	86.4
25	72.7	78.5	84.0	83.8	76.6	72.3	67.9	60.7	53.8	50.1	38.2	37.1	36.6	47.4	48.7	52.7	54.2	52.3	54.7	58.2	68.1	72.7	73.2	77.7	61.3	84.0
26	84.4	82.0	80.2	81.6	81.4	81.6	80.3	76.2	66.7	53.1	55.1	53.5	37.6	42.4	45.3	48.2	60.1	55.4	61.8	58.5	68.5	76.0	80.6	78.9	66.2	84.4
27	82.0	88.0	89.8	90.2	91.1	91.7	91.8	91.6	91.6	90.0	87.6	87.1	88.7	90.2	91.0	89.2	90.8	91.3	89.6	84.1	79.2	86.0	86.0	88.1	88.6	91.8
28	89.0	88.2	87.3	85.2	80.6	78.3	75.6	55.4	55.5	41.8	40.1	35.5	28.8	26.7	24.2	24.7	26.5	32.0	37.7	35.2	35.4	35.1	36.9	53.1	50.4	89.0
29	61.2	61.3	64.6	67.9	68.9	65.4	60.1	60.8	55.8	40.8	33.7	31.1	30.7	31.1	29.4	29.2	28.7	29.5	30.7	31.9	33.7	37.8	41.4	47.5	44.7	68.9
30	51.2	53.9	55.8	62.1	66.5	68.2	67.0	62.4	55.1	47.0	35.6	31.7	29.6	27.8	28.0	26.8	27.8	26.0	25.8	28.7	39.9	46.0	49.4	56.3	44.5	68.2
NO.	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	720	100%
MEAN	72.4	71.6	72.4	73.9	74.4	73.6	71.7	67.8	60.8	54.1	47.8	43.8	41.1	40.4	40.9	40.0	41.4	41.8	43.9	46.8	54.2	61.9	67.0	70.8		
MAX	90.0	89.5	89.9	90.2	91.1	91.7	91.8	91.6	91.6	91.8	92.1	92.2	92.0	90.2	91.0	89.2	90.8	91.3	89.6	84.3	84.4	86.0	87.4	88.5		



Number of Non-Zero Readings	720
Maximum 1-HR Average	92.2 %
Maximum 24-HR Average	88.6 %
Operational Time	720 HRS
Monthly Calibration	0
Operational Uptime	100.0 %
Standard Deviation	21.92
Monthly Average	57.3 %

West PM_{2.5} (µg/m³) – June 2019

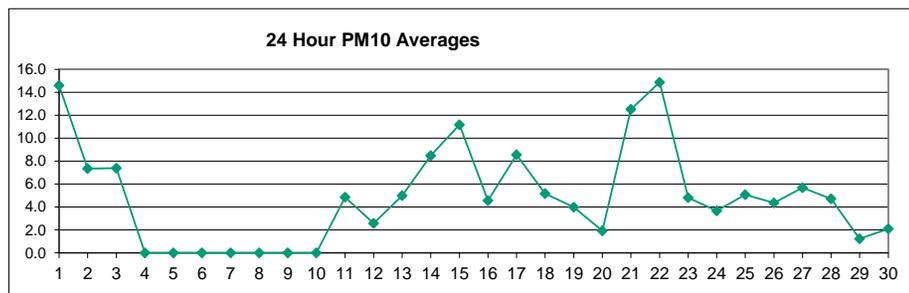
Day	HOUR																								MEAN	MAX
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1	12.5	13.2	13.5	15.5	16.6	18.8	16.2	14.3	14.9	15.0	12.6	12.0	7.7	5.8	5.3	6.7	7.3	7.0	7.5	8.7	7.9	7.6	7.7	8.4	10.9	18.8
2	8.3	8.6	8.1	7.8	7.7	7.5	8.0	7.0	5.9	4.3	3.9	4.0	4.0	6.4	5.3	4.1	4.2	4.0	4.0	4.1	4.3	4.9	5.5	6.1	5.8	8.6
3	6.5	6.4	6.9	7.0	6.9	6.6	7.0	7.1	6.5	5.6	4.4	4.0	3.1	3.0	2.9	2.6	1.7	1.6	7.5	6.5	5.2	7.6	4.6	5.8	5.3	7.6
4	6.5	7.0	7.3	5.0	5.1	5.8	6.4	6.9	6.6	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	-	-
5	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	-	-
6	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	-	-
7	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	-	-
8	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	-	-
9	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	-	-
10	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	-	-
11	1.7	1.5	1.4	1.3	1.1	1.0	2.6	2.9	2.6	1.4	2.0	2.0	1.9	1.9	1.3	1.0	0.8	0.5	0.6	1.0	0.6	0.6	0.7	0.9	1.4	2.9
12	1.2	1.1	1.2	1.2	1.3	1.7	2.2	3.4	2.9	2.2	2.9	2.3	2.5	2.5	2.5	1.8	1.6	1.5	1.0	1.2	1.1	1.1	1.6	1.8	1.8	3.4
13	2.2	2.2	2.1	2.2	2.3	2.6	3.9	5.8	8.7	6.9	4.4	4.6	2.7	2.6	2.6	2.0	3.8	6.3	4.0	2.7	1.4	2.3	2.2	2.5	3.4	8.7
14	3.2	3.1	2.1	2.1	1.6	2.4	7.4	8.8	7.3	3.8	1.9	4.8	3.1	2.8	3.8	2.2	2.5	1.8	2.0	1.7	2.1	2.2	2.3	2.0	3.2	8.8
15	2.1	2.0	2.3	3.4	3.3	2.6	1.8	4.7	9.6	3.1	2.2	3.0	4.3	4.3	2.0	2.2	1.7	2.1	1.2	1.5	1.8	2.1	2.6	2.8	9.6	
16	4.3	3.2	2.8	3.2	3.4	3.0	2.7	3.0	2.5	2.3	1.7	1.6	1.8	1.7	1.9	2.0	2.0	2.4	2.8	1.9	1.7	1.9	2.2	1.8	2.4	4.3
17	2.0	2.5	3.4	3.8	3.8	3.5	4.0	5.8	5.4	4.4	5.8	4.7	3.3	4.4	6.8	3.5	4.4	2.8	2.3	2.3	2.5	3.0	3.6	4.2	3.8	6.8
18	4.6	4.5	4.2	2.8	2.4	3.5	3.5	3.9	7.7	6.6	5.5	3.3	2.7	2.5	1.9	1.9	3.5	1.6	1.2	1.3	2.0	1.4	1.6	1.7	3.2	7.7
19	2.9	9.8	5.5	1.8	2.0	3.7	3.6	2.2	5.4	4.2	6.0	4.1	2.5	2.1	2.6	2.1	2.2	1.1	0.9	1.2	1.0	0.6	0.6	0.7	2.9	9.8
20	1.2	1.0	0.8	0.7	0.7	1.1	1.3	1.2	1.3	2.0	2.7	1.1	2.3	2.7	2.2	1.9	1.1	1.1	1.0	1.1	1.6	1.8	0.6	1.4	2.7	0.6
21	0.4	0.3	0.2	0.3	0.7	4.5	5.8	4.1	2.7	4.1	7.0	7.6	11.8	14.9	11.9	11.4	12.2	15.0	17.7	14.3	13.5	13.6	15.6	15.7	8.5	17.7
22	16.4	17.3	19.9	19.7	19.9	19.7	19.5	18.6	16.8	15.9	12.8	8.3	6.7	6.5	5.8	6.6	7.3	7.3	7.8	8.1	4.8	6.4	3.9	4.3	11.7	19.9
23	4.3	4.6	5.1	5.5	5.3	5.5	5.4	3.9	3.1	3.8	5.0	6.6	4.1	2.0	3.5	3.8	3.3	2.6	2.5	2.4	2.3	2.4	2.8	1.9	3.8	6.6
24	1.6	1.8	1.3	1.5	1.2	1.2	2.5	2.6	4.2	3.4	4.5	3.2	2.7	2.6	3.0	3.4	1.7	2.5	3.2	3.5	2.6	2.6	2.6	3.2	2.6	4.5
25	2.9	2.4	2.1	3.0	3.3	3.5	3.2	3.8	4.7	5.0	2.9	2.8	2.0	8.3	11.0	4.3	3.0	3.1	2.6	3.2	3.0	1.8	1.7	1.7	3.6	11.0
26	1.8	1.5	1.2	1.2	1.0	1.1	3.6	4.8	2.8	3.7	4.9	4.4	3.6	5.0	4.6	3.4	4.7	3.9	2.9	2.5	2.3	2.3	2.9	3.8	3.1	5.0
27	4.2	3.7	3.8	4.5	4.5	5.4	5.9	6.1	5.3	5.6	6.8	6.3	5.9	5.1	3.3	4.1	4.9	4.0	4.3	1.3	1.2	2.5	2.7	2.2	4.3	6.8
28	2.1	2.1	2.0	1.7	1.4	1.6	1.8	2.6	2.4	2.0	1.2	1.2	2.0	1.4	1.7	1.4	1.5	1.0	0.8	1.0	0.9	1.1	1.0	1.7	1.6	2.6
29	1.9	1.6	1.8	1.7	1.9	1.2	0.7	1.7	0.9	0.6	0.7	0.8	0.8	0.8	0.8	0.8	0.7	0.6	0.6	0.5	0.5	0.5	0.5	0.9	1.0	1.9
30	1.2	1.1	1.0	1.2	1.1	1.2	1.7	1.4	1.2	1.3	1.1	1.5	1.5	1.5	1.8	1.7	2.3	1.6	1.5	1.8	1.9	1.9	2.8	3.2	1.6	3.2
NO.	24	24	24	24	24	24	24	24	24	23	24	24	24	24	24	24	24	24	24	24	24	24	24	24	575	100%
MEAN	4.0	4.3	4.2	4.1	4.1	4.5	5.0	5.3	5.5	4.6	4.4	4.2	3.5	3.9	3.8	3.2	3.4	3.2	3.4	3.1	2.8	3.1	3.1	3.3		
MAX	16.4	17.3	19.9	19.7	19.9	19.7	19.5	18.6	16.8	15.9	12.8	12.0	11.8	14.9	11.9	11.4	12.2	15.0	17.7	14.3	13.5	13.6	15.6	15.7		



Number of 24HR Exceedences	0	Proposed Guideline
Number of Non-Zero Readings	575	
Maximum 1-HR Average	19.9 UG/M3	
Maximum 24-HR Average	11.7 UG/M3	
IZS Calibration Time		Operational Time
Down Time	0	Operational Uptime
Standard Deviation	3.603	Monthly Average
		720 HRS
		100.0 %
		3.9 UG/M3

West PM₁₀ (µg/m³) – June 2019

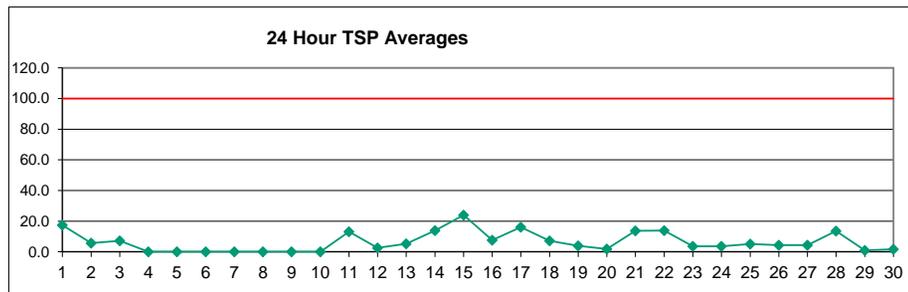
Day	HOUR																								MEAN	MAX	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1	13.8	14.4	14.5	16.6	17.7	20.1	17.8	16.5	19.1	22.8	18.3	38.6	13.8	10.7	8.7	11.3	9.7	8.7	9.2	10.1	9.5	9.0	9.2	10.2	14.6	38.6	
2	10.1	10.8	9.8	9.5	9.4	9.0	10.1	9.0	7.9	5.6	5.3	5.4	5.5	8.6	7.1	5.6	5.7	5.4	5.2	5.3	5.3	6.0	6.8	7.9	7.3	10.8	
3	8.3	8.2	8.9	9.0	9.1	8.5	9.0	9.4	9.7	8.2	6.5	5.9	4.6	4.3	4.3	3.7	2.3	2.1	11.0	9.7	7.7	11.4	6.8	8.5	7.4	11.4	
4	9.8	10.5	10.9	7.1	7.3	8.3	9.1	10.1	9.7	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	-	-	
5	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	-	-	
6	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	-	-	
7	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	-	-	
8	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	-	-	
9	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	-	-	
10	C	C	C	C	C	C	C	C	C	C	C	18.8	47.4	10.1	3.6	3.2	2.4	1.2	1.0	1.2	0.9	1.8	2.0	1.5	2.2	-	-
11	2.4	2.0	1.8	1.7	1.4	1.2	3.8	8.9	17.6	12.5	17.5	22.7	9.1	2.8	1.9	1.4	1.1	0.7	0.7	1.3	0.8	0.8	0.9	1.1	4.8	22.7	
12	1.5	1.4	1.5	1.5	1.6	2.2	3.0	5.0	4.3	3.3	4.4	3.4	3.7	3.8	3.6	2.7	2.3	2.1	1.3	1.7	1.4	1.5	2.2	2.5	2.6	5.0	
13	3.0	3.0	2.8	2.9	3.1	3.5	5.7	8.6	12.8	10.3	6.5	6.9	3.9	3.7	3.8	2.8	5.4	9.4	5.9	3.9	1.9	3.2	3.0	3.4	5.0	12.8	
14	4.3	3.9	2.5	2.7	2.0	2.9	16.4	22.4	24.8	16.0	6.9	28.4	7.1	8.3	12.5	8.5	10.9	5.4	3.8	2.4	2.7	2.9	3.1	2.7	8.5	28.4	
15	2.8	2.8	4.2	7.3	6.9	4.6	3.1	15.9	64.8	14.9	9.1	16.1	30.7	32.4	6.3	8.5	9.1	4.4	10.6	2.5	2.0	2.5	3.0	3.7	11.2	64.8	
16	6.3	4.7	3.9	4.5	4.6	3.9	3.6	4.2	4.7	5.8	4.8	3.7	5.3	6.6	9.3	7.8	6.5	3.3	3.8	2.4	2.1	2.5	2.8	2.2	4.6	9.3	
17	2.5	3.2	4.2	4.7	4.6	4.1	5.4	8.6	8.0	6.5	41.7	35.3	20.4	7.7	10.0	5.0	6.5	3.8	2.9	2.9	3.0	4.1	5.0	5.6	8.6	41.7	
18	6.0	5.6	5.4	3.3	2.7	4.3	4.2	5.3	11.3	9.5	7.7	14.8	11.0	8.5	2.9	2.6	5.1	2.2	1.6	1.6	2.6	1.7	2.0	2.2	5.2	14.8	
19	4.0	12.6	7.0	2.2	2.6	4.9	4.8	3.0	8.0	6.2	9.0	6.1	3.6	3.1	3.9	3.1	3.3	1.6	1.3	1.7	1.3	0.8	0.8	0.9	4.0	12.6	
20	1.6	1.2	1.0	0.9	0.8	0.9	1.6	1.8	1.7	1.9	3.0	4.0	1.6	3.4	4.0	3.2	2.7	1.5	1.4	1.3	1.5	2.1	2.4	0.8	1.9	4.0	
21	0.5	0.4	0.3	0.4	0.8	4.9	6.6	5.2	3.1	4.8	10.0	10.9	17.3	33.4	29.6	22.3	17.8	18.7	26.0	18.1	16.9	16.2	18.2	18.1	12.5	33.4	
22	20.8	20.4	22.6	22.7	21.8	21.2	21.2	20.3	18.5	23.3	17.1	10.2	8.2	10.8	9.3	14.7	17.8	10.6	9.9	10.4	6.1	8.5	5.0	5.5	14.9	23.3	
23	5.4	5.5	6.0	6.4	6.2	6.3	6.2	4.6	3.6	4.9	6.6	8.5	5.5	2.6	4.6	5.3	4.7	3.7	3.3	3.2	3.0	3.1	3.7	2.4	4.8	8.5	
24	2.0	2.0	1.5	1.8	1.5	1.5	3.5	3.7	6.3	4.9	6.6	4.5	3.8	3.6	4.4	5.0	2.3	3.6	4.7	5.2	3.7	3.6	3.5	4.6	3.7	6.6	
25	4.1	3.2	2.8	4.1	4.4	4.5	4.1	5.4	6.9	7.4	4.1	4.0	2.8	12.5	16.4	6.5	4.4	4.5	3.8	4.6	4.2	2.5	2.2	2.2	5.1	16.4	
26	2.1	1.8	1.4	1.5	1.3	1.3	5.2	7.0	4.1	5.4	7.3	6.4	5.4	7.5	6.8	5.1	7.1	5.7	4.0	3.2	2.9	2.9	3.9	5.6	4.4	7.5	
27	5.9	5.1	5.3	5.9	6.2	6.6	7.2	7.7	6.6	7.2	9.1	8.8	7.7	6.4	4.4	5.7	6.6	5.0	5.8	1.8	1.7	3.3	3.6	3.0	5.7	9.1	
28	2.9	2.9	2.8	2.3	2.1	2.7	4.2	8.5	8.3	11.2	4.8	5.5	12.6	8.5	11.0	6.4	6.1	2.1	1.0	1.3	1.1	1.5	1.3	2.2	4.7	12.6	
29	2.4	2.0	2.2	2.2	2.4	1.5	0.9	2.3	1.1	0.8	0.9	1.0	1.0	1.0	1.0	1.0	0.9	0.8	0.8	0.6	0.6	0.6	0.7	1.1	1.2	2.4	
30	1.5	1.3	1.3	1.5	1.5	1.5	2.3	1.7	1.6	1.8	1.5	2.0	2.1	2.0	2.5	2.3	3.1	2.0	1.9	2.3	2.3	2.4	3.8	4.4	2.1	4.4	
NO.	24	24	24	24	24	24	24	24	24	23	24	24	24	24	24	24	24	24	24	24	24	24	24	24	575	100%	
MEAN	5.2	5.4	5.2	5.1	5.1	5.4	6.6	8.1	11.0	8.5	9.5	12.5	8.2	8.2	7.2	5.9	5.9	4.5	5.0	4.1	3.6	4.0	4.0	4.3			
MAX	20.8	20.4	22.6	22.7	21.8	21.2	21.2	22.4	64.8	23.3	41.7	47.4	30.7	33.4	29.6	22.3	17.8	18.7	26.0	18.1	16.9	16.2	18.2	18.1			



Number of Non-Zero Readings	575		
Maximum 1-HR Average	64.8 UG/M3		
Maximum 24-HR Average	14.9 UG/M3		
IZS Calibration Time		OperatioEI Time	720 HRS
Down Time	0	OperatioEI Uptime	100.0 %
Standard Deviation	6.6	Monthly Average	6.3 UG/M3

West TSP ($\mu\text{g}/\text{m}^3$) – June 2019

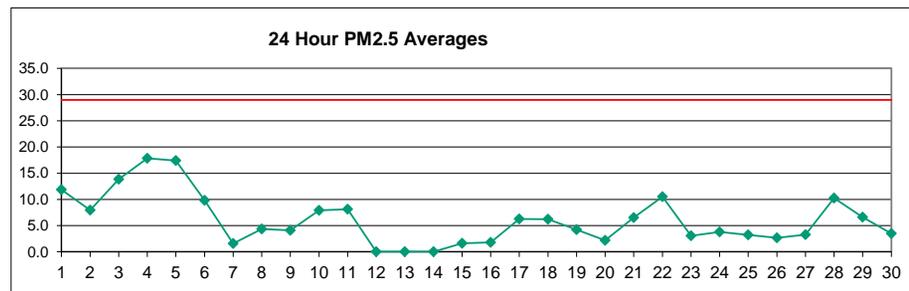
Day	HOUR																								MEAN	MAX	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1	9.0	9.4	9.4	10.9	11.5	13.4	11.9	11.9	16.2	53.2	29.7	100.6	20.2	18.3	20.7	19.4	8.1	6.5	6.6	6.8	6.7	6.1	6.2	6.9	17.5	100.6	
2	7.0	7.9	7.0	6.9	6.9	6.4	7.8	6.9	6.5	4.2	4.3	4.5	4.5	8.2	6.3	4.7	4.8	4.2	3.9	4.1	3.7	4.1	4.7	5.6	5.6	8.2	
3	5.7	5.8	6.4	6.5	6.9	7.3	8.5	10.3	10.8	8.9	7.1	6.4	4.9	4.5	4.5	3.7	2.2	1.8	12.5	10.8	7.8	13.2	7.0	8.6	7.2	13.2	
4	11.1	11.7	11.6	5.9	6.1	6.6	8.0	10.1	10.0	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	-	-	
5	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	-	-
6	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	-	-
7	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	-	-
8	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	-	-
9	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	-	-
10	C	C	C	C	C	C	C	C	C	C	73.9	135.2	29.9	3.8	3.3	2.5	1.1	0.9	0.9	0.7	1.8	2.0	1.4	2.0	-	-	
11	2.1	1.7	1.5	1.4	1.1	0.9	3.9	15.1	42.0	61.9	64.4	85.2	22.9	2.9	2.0	1.4	1.0	0.6	0.6	1.3	0.6	0.6	0.7	0.9	13.2	85.2	
12	1.1	1.1	1.2	1.1	1.2	1.8	2.8	5.5	4.7	3.6	4.9	3.7	4.1	4.2	4.0	2.8	2.2	2.2	1.1	1.5	1.2	1.2	2.0	2.3	2.5	5.5	
13	2.7	2.7	2.3	2.3	2.5	3.1	6.1	9.6	14.9	12.0	7.4	7.9	4.3	4.0	4.2	2.9	5.9	10.9	6.8	4.0	1.4	2.7	2.4	2.8	5.2	14.9	
14	3.2	2.6	1.7	1.9	1.4	1.9	12.6	23.0	40.9	38.5	15.1	60.5	6.8	24.8	32.0	11.6	27.9	13.4	3.1	1.8	2.0	2.2	2.5	2.0	13.9	60.5	
15	2.3	2.2	3.0	6.7	5.8	3.1	2.0	25.8	93.2	28.7	29.3	49.3	87.8	87.8	17.5	29.8	28.3	12.6	43.4	5.5	1.8	2.2	2.6	3.3	23.9	93.2	
16	6.3	4.5	3.4	3.7	3.4	2.9	2.7	3.7	4.2	10.2	7.8	5.2	6.7	24.0	29.5	22.2	29.0	2.9	3.7	1.9	1.5	1.9	2.1	1.6	7.7	29.5	
17	1.7	2.3	2.9	3.2	3.2	2.8	4.7	9.6	8.8	7.0	128.1	95.1	62.8	8.8	11.4	4.8	6.8	3.4	2.3	2.1	2.1	3.3	4.1	4.3	16.1	128.1	
18	4.4	4.0	4.5	2.3	1.8	3.4	2.8	4.5	12.1	9.3	7.6	44.6	24.2	24.8	3.3	2.4	5.5	2.0	1.3	1.2	2.3	1.3	1.5	1.6	7.2	44.6	
19	3.9	10.5	5.1	1.6	1.8	3.9	4.0	2.9	8.9	6.7	10.4	6.9	3.9	3.3	4.4	3.4	3.6	1.4	1.1	1.5	1.2	0.6	0.6	0.7	3.8	10.5	
20	1.2	0.9	0.8	0.6	0.5	0.7	1.4	1.7	1.6	1.8	3.2	4.4	1.7	3.8	4.3	3.5	2.9	1.2	1.1	1.1	1.2	1.7	1.9	0.6	1.8	4.4	
21	0.4	0.3	0.2	0.2	0.5	3.2	4.5	3.9	2.2	3.5	10.2	11.0	17.1	43.5	51.8	38.6	23.8	21.5	35.8	13.0	11.2	10.5	12.1	11.8	13.8	51.8	
22	14.1	13.4	14.7	14.8	14.2	13.7	13.9	13.3	14.8	30.6	20.4	8.4	7.0	17.4	10.9	33.3	33.5	12.5	7.1	8.0	4.6	6.1	3.6	4.0	13.9	33.5	
23	3.7	3.7	4.0	4.2	4.2	4.1	4.1	3.3	2.5	4.2	5.2	6.5	4.6	2.3	4.0	5.2	4.7	3.6	2.7	2.4	2.2	2.3	2.7	1.8	3.7	6.5	
24	1.4	1.4	1.0	1.5	1.2	1.2	3.7	3.8	7.1	5.3	7.5	4.7	3.9	3.6	4.7	5.4	2.0	3.5	4.7	5.5	3.4	3.3	2.9	4.1	3.6	7.5	
25	3.4	2.4	2.1	3.2	3.4	3.2	3.0	5.2	7.4	8.2	4.1	4.0	2.7	14.4	19.1	7.3	4.5	4.8	3.7	4.7	4.4	2.2	1.9	1.6	5.0	19.1	
26	1.4	1.2	0.9	1.1	0.9	0.9	5.2	7.3	4.0	5.7	8.2	6.9	5.8	8.5	7.8	5.5	7.9	6.2	3.3	2.4	2.1	2.1	3.4	5.1	4.3	8.5	
27	4.9	3.9	4.3	4.2	4.4	4.4	4.9	5.4	4.6	5.3	9.7	7.2	5.6	4.6	3.4	4.4	4.7	3.4	4.5	1.7	1.5	2.5	2.8	2.3	4.4	9.7	
28	2.4	2.3	2.3	1.8	1.5	3.2	10.2	30.6	24.9	35.1	17.9	29.2	54.6	23.0	37.4	16.9	21.1	6.3	0.7	1.1	0.8	1.2	0.9	1.6	13.6	54.6	
29	1.8	1.5	1.5	1.6	1.8	1.1	0.6	2.0	0.8	0.6	0.8	0.7	0.7	0.8	0.8	0.8	0.7	0.6	0.7	0.5	0.5	0.5	0.5	0.8	0.9	2.0	
30	1.0	0.9	0.9	1.1	1.1	1.1	1.8	1.2	1.2	1.5	1.2	1.9	1.8	1.7	2.4	2.0	2.7	1.6	1.4	1.6	1.7	1.7	2.9	3.5	1.7	3.5	
NO.	24	24	24	24	24	24	24	24	24	23	24	24	24	24	24	24	24	24	24	24	24	24	24	24	575	100%	
MEAN	4.0	4.1	3.9	3.7	3.6	3.9	5.5	9.0	14.3	15.0	19.9	28.8	16.2	14.3	12.1	9.8	9.8	5.3	6.4	3.5	2.8	3.1	3.1	3.3			
MAX	14.1	13.4	14.7	14.8	14.2	13.7	13.9	30.6	93.2	61.9	128.1	135.2	87.8	87.8	51.8	38.6	33.5	21.5	43.4	13.0	11.2	13.2	12.1	11.8			



Number of 24HR Exceedences	0	Proposed Guideline
Number of Non-Zero Readings	575	
Maximum 1-HR Average	128.1 UG/M3	
Maximum 24-HR Average	23.9 UG/M3	
IZS Calibration Time		Operational Time 720 HRS
Down Time	0	Operational Uptime 100.0 %
Standard Deviation	15.14	Monthly Average 8.6 UG/M3

Berm PM_{2.5} (µg/m³) – June 2019

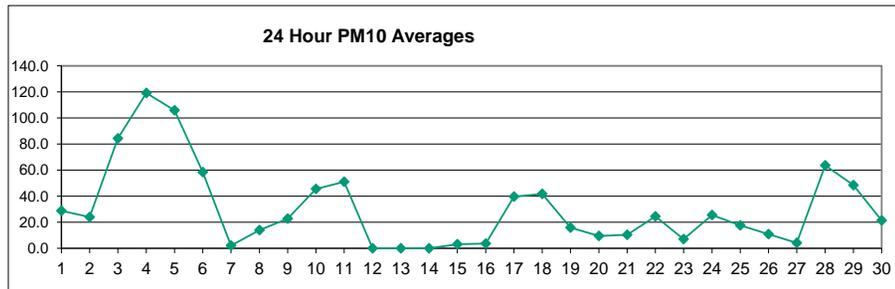
DAY	HOUR																								MEAN	MAX
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1	10.4	10.6	11.7	13.6	14.4	15.2	14.5	15.8	14.5	14.0	14.6	12.5	11.8	20.5	12.5	13.1	9.8	7.8	9.4	7.9	8.0	7.4	7.6	7.5	11.9	20.5
2	7.5	13.1	7.8	6.8	6.8	6.6	6.3	5.9	5.3	5.0	8.0	7.3	10.2	10.2	7.7	9.8	5.7	14.9	16.6	8.3	7.5	4.2	4.5	5.2	8.0	16.6
3	5.2	5.7	7.0	5.8	5.5	5.2	14.9	37.1	26.1	23.8	35.7	20.2	25.9	28.6	17.4	23.9	8.8	8.6	10.0	4.6	3.6	3.1	2.7	2.9	13.9	37.1
4	3.3	3.5	3.9	3.8	3.1	3.8	18.9	23.4	10.1	5.3	8.5	19.6	25.8	44.6	68.2	57.6	38.3	35.4	25.3	10.4	6.2	3.7	2.3	3.2	17.8	68.2
5	1.9	1.9	3.5	3.3	3.3	4.9	4.3	2.1	3.5	3.4	17.0	46.0	52.9	37.3	55.5	43.9	19.2	28.4	26.0	30.6	18.7	3.2	2.5	4.1	17.4	55.5
6	5.3	5.2	4.8	4.5	4.0	4.0	9.2	23.2	14.3	19.2	14.6	11.5	9.4	24.1	19.1	13.7	16.9	20.2	6.3	2.1	1.0	1.0	1.2	1.0	9.8	24.1
7	0.7	0.3	0.5	0.2	0.3	0.3	1.1	0.7	3.1	2.9	3.2	4.7	5.2	1.0	0.7	0.5	1.9	1.3	1.0	1.1	1.4	1.9	1.9	2.1	1.6	5.2
8	2.3	1.7	3.1	5.1	5.4	6.1	5.9	6.8	5.4	6.5	5.1	3.3	4.1	7.7	12.4	5.9	5.0	3.7	2.6	1.5	2.0	1.0	0.8	1.4	4.4	12.4
9	1.0	1.4	1.7	1.8	1.5	1.1	1.2	1.1	2.4	3.5	9.3	4.0	4.8	9.0	13.1	10.6	8.7	9.3	5.5	3.3	1.5	0.9	0.9	1.2	4.1	13.1
10	1.2	1.2	1.3	1.5	1.3	1.4	8.7	6.7	12.5	13.9	16.7	16.4	19.3	17.7	11.3	9.5	10.1	10.4	12.6	10.3	3.1	1.2	1.0	0.8	7.9	19.3
11	0.7	0.7	0.9	1.0	0.7	0.8	2.6	4.8	7.1	17.7	11.4	18.9	11.7	12.7	12.1	13.1	16.5	13.1	20.4	12.3	7.3	5.0	1.2	2.5	8.1	20.4
12	1.2	1.1	1.1	1.0	1.0	1.2	2.2	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	-	-
13	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	-	-
14	C	C	C	C	C	C	C	C	C	C	C	C	5.2	2.7	2.1	2.9	4.9	2.3	1.7	1.2	2.0	2.1	1.6	1.7	-	-
15	1.8	1.6	2.2	2.6	1.8	1.1	1.3	2.6	1.6	2.1	1.1	1.4	1.6	1.5	1.5	1.5	1.5	1.4	1.2	0.9	1.1	1.3	1.2	3.1	1.6	3.1
16	3.5	1.7	1.7	1.6	1.7	2.1	2.4	1.7	1.8	2.0	1.1	1.1	1.2	1.3	1.5	1.7	1.8	2.3	1.8	1.6	2.0	2.3	1.5	1.4	1.8	3.5
17	1.3	1.8	1.8	2.0	2.0	2.4	5.8	15.6	17.7	22.6	8.2	7.6	12.1	13.7	7.2	5.5	4.8	3.4	3.0	2.0	2.3	2.4	2.5	3.2	6.3	22.6
18	3.4	3.6	11.8	2.2	1.7	2.0	3.0	4.8	8.0	5.5	5.0	8.3	7.5	8.9	17.5	11.1	10.6	6.9	18.1	2.6	2.3	1.5	1.4	1.4	6.2	18.1
19	4.5	6.4	5.9	4.1	1.5	2.0	5.1	2.8	3.5	2.5	13.7	14.2	2.9	5.8	4.3	4.3	6.7	4.6	2.4	0.9	1.2	0.6	0.5	0.6	4.2	14.2
20	1.1	7.5	1.7	0.8	4.5	1.5	1.6	1.7	1.1	1.5	3.6	3.2	3.5	7.2	1.5	1.1	0.8	1.8	0.8	0.8	1.6	1.6	1.7	0.6	2.2	7.5
21	0.6	0.1	0.1	0.2	1.0	4.6	4.2	2.6	1.8	4.0	6.4	5.7	6.9	7.9	13.4	9.3	9.8	12.4	12.3	10.0	9.3	9.8	11.2	12.9	6.5	13.4
22	13.8	13.5	13.2	14.7	15.4	15.1	14.9	17.1	17.4	12.9	17.1	14.2	10.5	6.3	5.1	5.7	5.6	6.0	6.1	6.7	5.0	6.2	6.1	4.5	10.5	17.4
23	3.3	3.3	3.5	3.7	3.6	3.7	3.5	3.6	5.8	4.6	5.1	4.4	3.8	3.5	2.0	2.1	1.6	1.6	1.6	1.4	2.4	2.1	1.9	1.3	3.1	5.8
24	1.6	1.6	0.9	1.0	0.8	0.8	2.5	2.5	2.6	4.3	8.2	10.8	10.2	10.5	4.3	2.9	6.6	3.8	2.9	1.8	1.9	2.4	1.9	2.7	3.8	12.0
25	2.2	1.8	1.7	1.8	2.2	2.3	3.9	7.0	4.5	3.8	3.2	7.2	6.6	4.8	5.9	2.8	2.4	1.6	2.2	2.0	2.1	1.1	1.3	3.2	3.2	7.2
26	2.3	2.4	2.2	0.8	1.2	1.4	2.0	3.1	3.7	3.8	3.2	4.3	3.0	4.0	3.0	2.4	3.4	2.3	1.9	2.2	1.9	2.9	3.0	3.2	2.6	4.3
27	3.0	2.8	2.3	1.9	3.1	3.0	3.3	4.9	3.9	7.0	8.1	4.0	4.3	4.8	2.4	2.9	2.5	3.4	3.0	1.8	1.3	1.8	1.7	1.6	3.3	8.1
28	1.5	1.6	1.4	1.2	1.1	1.0	2.0	4.1	5.2	4.5	6.4	5.5	7.2	6.5	36.5	29.3	18.8	56.9	11.4	3.7	7.6	25.0	6.3	1.8	10.3	56.9
29	1.4	1.1	1.2	1.4	1.3	1.5	5.5	7.4	5.9	11.2	16.3	6.4	6.7	15.4	23.4	10.3	5.4	7.1	10.8	6.0	3.6	4.6	3.2	1.2	6.6	23.4
30	1.0	1.0	0.8	1.1	1.0	0.9	1.4	1.2	1.0	3.4	6.6	6.7	8.4	7.9	9.0	6.7	7.7	5.1	5.0	1.8	1.5	1.6	1.6	1.7	3.5	9.0
NO.	28	28	28	28	28	28	28	27	27	27	27	27	28	28	28	28	28	28	28	28	28	28	28	28	667	100%
MEAN	3.1	3.5	3.6	3.2	3.3	3.4	5.4	7.8	7.0	7.8	9.5	10.0	10.2	11.6	13.2	10.9	8.4	9.8	7.9	5.0	3.9	3.6	2.7	2.8		
MAX	13.8	13.5	13.2	14.7	15.4	15.2	18.9	37.1	26.1	23.8	35.7	46.0	52.9	44.6	68.2	57.6	38.3	56.9	26.0	30.6	18.7	25.0	11.2	12.9		



Number of 24HR Exceedences	0	Proposed Guideline	
Number of Non-Zero Readings	667		
Maximum 1-HR Average	68.2 UG/M3		
Maximum 24-HR Average	17.8 UG/M3		
Monthly Calibration	53	Operational Time	720 HRS
Standard Deviation	8.2	Operational Uptime	100.0 %
		Monthly Average	6.6 UG/M3

Berm PM₁₀ (µg/m³) – June 2019

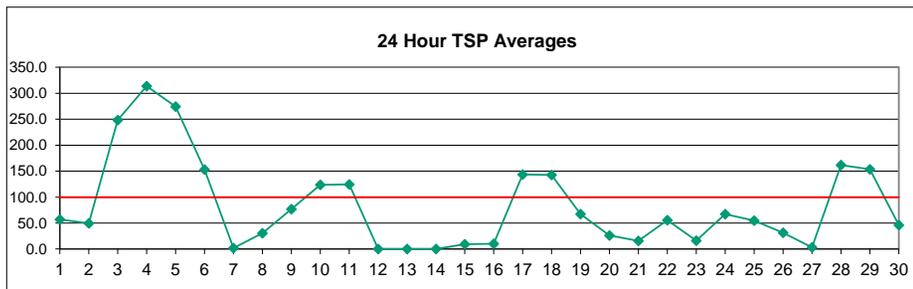
DAY	HOUR																								MEAN	MAX		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24				
1	10.8	10.9	12.2	14.2	14.8	15.7	22.0	47.2	34.1	33.3	37.4	35.7	54.5	99.7	53.4	60.9	33.6	17.4	25.5	14.6	10.9	9.8	12.7	9.6	28.8	99.7		
2	9.6	44.4	13.9	8.5	8.1	8.1	8.2	8.0	7.7	12.2	34.8	28.1	43.2	26.0	17.9	41.5	22.5	75.4	78.7	33.9	23.6	5.7	5.6	7.4	23.9	78.7		
3	6.9	8.0	15.0	7.9	7.0	7.3	94.7	310.9	162.0	155.5	254.0	141.1	169.8	200.9	115.5	151.1	58.3	51.2	62.7	12.8	9.0	8.1	5.9	6.0	84.2	310.9		
4	6.8	7.4	8.5	8.8	5.4	5.0	97.2	131.5	46.8	17.8	50.8	137.8	185.6	329.0	481.8	454.3	295.2	249.9	197.9	73.7	36.5	14.7	6.2	9.5	119.1	481.8		
5	4.6	3.8	7.6	4.9	4.8	7.4	13.6	6.4	13.9	11.7	99.8	316.3	324.9	215.4	377.1	277.3	135.3	205.9	184.5	168.9	133.1	7.2	3.5	12.8	105.9	377.1		
6	17.8	13.2	12.0	10.9	8.7	12.9	47.7	94.6	87.1	121.8	86.0	72.5	62.6	165.4	138.8	95.1	133.6	165.4	43.7	6.1	1.8	1.7	1.6	1.2	58.4	165.4		
7	0.8	0.4	0.7	0.2	0.4	0.4	1.5	0.9	4.5	4.0	4.4	6.8	7.6	1.2	0.9	0.6	2.1	1.7	1.2	1.2	1.5	2.0	2.0	2.3	2.1	7.6		
8	2.6	1.8	3.6	6.5	6.6	7.1	7.1	8.8	5.9	23.0	21.7	10.4	16.3	46.4	68.3	28.6	27.5	19.0	12.1	4.5	3.2	1.3	0.9	2.8	14.0	68.3		
9	1.1	1.7	2.2	2.2	1.7	1.4	2.2	2.4	11.5	20.7	58.1	22.9	29.7	59.3	80.4	78.6	61.4	51.4	30.3	16.4	4.8	1.3	1.2	1.9	22.7	80.4		
10	1.6	1.5	1.8	2.3	1.8	2.2	70.2	36.8	62.2	73.6	85.5	87.4	106.0	114.5	75.6	56.1	55.7	75.7	86.5	72.0	17.3	2.8	2.4	1.3	45.5	114.5		
11	1.1	1.0	1.5	1.7	0.8	1.2	11.7	29.1	43.3	95.0	78.5	123.6	69.6	84.8	74.2	95.1	113.5	88.3	135.0	77.9	51.0	30.3	4.1	14.0	51.1	135.0		
12	3.7	3.1	2.7	1.8	1.7	2.4	9.1	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	-	-		
13	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	-	-	
14	C	C	C	C	C	C	C	C	C	C	C	C	C	C	7.8	8.0	6.3	14.9	29.1	13.9	3.3	1.7	2.7	2.9	1.9	2.0	-	-
15	2.1	2.0	2.8	3.5	2.4	1.4	1.6	3.8	2.4	6.2	1.5	2.4	3.8	3.8	2.4	5.5	3.0	2.7	4.2	1.6	1.9	2.8	1.9	6.2	3.0	6.2		
16	5.0	2.2	2.2	2.0	2.2	2.6	4.9	2.9	2.9	6.2	1.7	1.9	2.4	3.4	5.0	5.1	5.5	9.3	3.3	2.2	3.1	5.3	2.1	1.8	3.6	9.3		
17	1.7	2.9	2.4	2.5	2.4	3.2	39.0	119.2	139.8	177.6	63.5	64.1	93.7	108.7	37.7	23.3	20.6	17.7	13.3	3.2	3.3	3.9	3.6	5.9	39.7	177.6		
18	6.0	6.4	78.3	3.5	1.9	2.2	3.6	8.2	34.5	22.1	27.7	62.6	67.3	76.2	146.4	101.0	70.4	65.6	174.3	18.5	14.2	4.4	2.5	2.4	41.7	174.3		
19	11.0	7.4	7.7	5.7	1.8	2.4	7.2	3.9	6.9	9.1	75.4	77.2	15.1	27.9	19.9	19.6	29.8	27.2	17.5	3.0	2.3	1.0	0.6	0.7	15.8	77.2		
20	1.5	20.9	10.5	3.1	25.1	5.0	2.4	2.4	1.5	2.2	21.6	20.1	26.6	60.0	2.8	3.1	1.9	6.4	1.6	1.0	1.7	1.9	2.3	0.8	9.4	60.0		
21	0.9	0.1	0.2	0.3	1.1	5.2	4.8	3.3	2.2	5.6	9.0	8.1	10.0	12.9	51.3	22.8	12.7	23.7	14.0	11.2	10.3	10.7	12.2	13.8	10.3	51.3		
22	15.2	14.7	15.5	16.4	17.2	15.8	16.1	49.0	60.0	21.8	95.1	75.8	45.2	15.8	14.3	20.2	17.8	9.7	9.0	10.0	8.6	8.7	8.2	6.3	24.4	95.1		
23	4.3	4.1	4.1	4.3	4.0	4.1	6.6	14.5	37.8	14.9	10.1	5.8	12.8	16.0	2.7	5.3	2.5	2.4	2.6	1.8	3.2	2.5	2.3	1.5	7.1	37.8		
24	2.0	1.8	0.9	1.1	0.9	0.9	19.5	17.2	20.0	30.1	64.5	89.8	93.5	92.1	29.5	18.0	63.2	30.7	14.1	3.5	3.8	5.2	2.7	6.0	25.5	93.5		
25	4.1	2.8	2.2	2.3	2.7	3.0	22.1	59.3	29.5	21.1	18.0	64.8	59.0	33.9	42.9	13.0	8.1	3.4	6.1	5.9	6.1	1.8	2.4	7.2	17.6	64.8		
26	3.2	3.3	3.1	1.0	1.6	1.8	2.7	12.7	21.2	25.0	18.1	29.9	23.4	29.7	16.4	12.6	18.5	7.1	3.3	4.5	2.8	3.6	7.0	6.0	10.8	29.9		
27	4.6	3.6	2.7	2.3	3.5	3.3	3.7	6.2	4.6	9.7	11.5	5.2	5.3	5.9	2.9	3.7	3.0	4.1	3.5	2.3	1.7	2.2	2.1	2.1	4.2	11.5		
28	2.1	2.1	1.8	1.6	1.4	1.2	5.9	17.1	27.1	28.0	44.2	38.4	57.1	50.9	267.3	189.8	115.4	357.3	77.7	25.4	49.2	117.1	41.3	5.3	63.5	357.3		
29	2.2	1.7	1.8	2.0	2.3	5.1	34.8	42.7	42.1	74.7	133.9	55.1	57.5	130.3	196.6	82.1	43.3	56.7	75.6	43.1	21.6	34.9	20.0	3.3	48.5	196.6		
30	1.6	2.7	1.3	2.5	1.4	1.4	4.4	2.0	1.9	21.9	52.5	53.0	74.1	58.3	78.9	43.4	39.0	26.3	30.9	4.9	2.1	2.0	2.0	2.0	21.3	78.9		
NO.	28	28	28	28	28	28	28	27	27	27	27	27	28	28	28	28	28	28	28	28	28	28	28	28	28	667	100%	
MEAN	4.8	6.3	7.8	4.4	4.8	4.6	20.2	38.5	33.8	38.7	54.1	60.6	61.6	74.2	86.0	68.7	50.8	59.5	46.9	22.3	15.4	10.6	5.8	5.1				
MAX	17.8	44.4	78.3	16.4	25.1	15.8	97.2	310.9	162.0	177.6	254.0	316.3	324.9	329.0	481.8	454.3	295.2	357.3	197.9	168.9	133.1	117.1	41.3	14.0				



Number of Non-Zero Readings	667
Maximum 1-HR Average	481.8 UG/M3
Maximum 24-HR Average	119.1 UG/M3
Monthly Calibration	53
Standard Deviation	58.45
Operational Time	720 HRS
Operational Uptime	100.0 %
Monthly Average	32.6 UG/M3

Berm TSP ($\mu\text{g}/\text{m}^3$) – June 2019

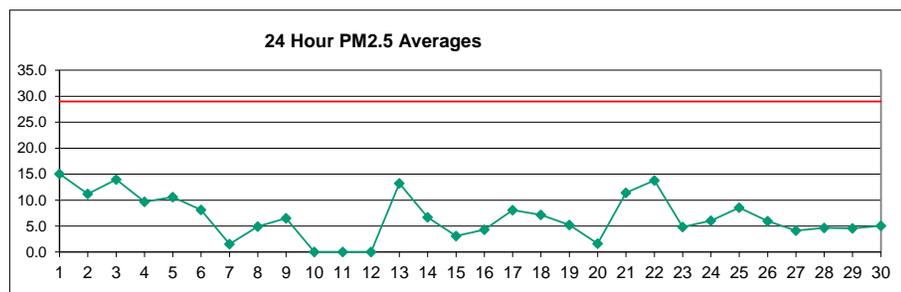
DAY	HOUR																								MEAN	MAX
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1	9.6	7.5	7.9	10.5	9.7	12.8	41.2	168.3	88.1	82.7	71.1	67.9	128.8	186.0	106.8	143.4	85.5	26.0	42.5	17.9	15.1	8.4	16.9	10.7	56.9	186.0
2	7.4	95.0	38.2	11.1	7.1	12.8	15.0	10.1	8.6	19.0	58.8	53.4	113.2	73.4	36.4	79.5	63.2	217.1	146.3	77.0	26.7	5.6	6.2	5.3	49.4	217.1
3	10.6	15.4	31.8	9.2	11.3	9.1	220.7	642.0	464.9	517.2	929.7	496.7	520.0	604.1	308.0	445.2	149.4	126.0	335.3	41.8	23.1	19.3	11.3	14.3	248.2	929.7
4	9.7	9.4	13.0	13.5	9.6	4.2	172.0	239.7	98.0	28.5	93.6	321.2	520.9	631.1	1381.4	1497.9	942.3	654.9	513.0	211.8	96.6	48.3	9.2	13.6	313.9	1497.9
5	7.7	5.4	14.7	4.9	4.6	7.8	20.9	14.4	26.3	28.1	233.1	826.6	745.2	506.1	1089.3	896.4	482.0	551.9	491.4	334.4	245.1	16.9	4.2	23.7	274.2	1089.3
6	24.7	21.5	24.2	18.5	12.5	41.9	122.6	200.7	224.2	299.5	193.9	200.3	178.9	504.1	419.6	237.9	380.2	415.4	124.5	16.6	3.6	2.2	1.1	0.8	152.9	504.1
7	0.5	0.3	0.5	0.1	0.3	0.3	1.3	0.6	4.7	3.6	3.6	6.5	7.0	0.8	0.7	0.4	1.4	1.2	0.8	0.8	1.0	1.3	1.3	1.5	1.7	7.0
8	1.8	1.2	2.5	4.8	4.7	4.9	5.2	6.7	3.9	53.4	60.9	18.7	36.3	128.3	143.6	50.6	84.6	55.2	29.9	20.1	4.1	1.0	0.6	3.5	30.3	143.6
9	0.7	1.2	1.7	1.5	1.2	0.9	3.3	3.2	49.2	82.6	179.9	58.8	107.8	167.4	278.9	316.1	268.4	156.3	89.8	61.8	13.5	1.1	0.8	1.8	77.0	316.1
10	1.3	1.0	1.2	2.3	1.7	5.3	210.0	95.0	156.3	195.2	213.4	152.4	253.2	348.5	191.6	162.5	175.0	267.1	282.7	185.2	53.5	4.8	5.9	2.2	123.6	348.5
11	1.2	0.7	1.1	1.3	0.5	1.4	32.2	62.4	94.2	202.9	196.8	319.3	158.5	214.4	168.4	268.8	309.3	226.1	313.3	151.1	151.6	70.3	10.8	30.6	124.5	319.3
12	12.9	12.9	7.4	6.1	4.2	7.7	27.9	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	-	-
13	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	-	-
14	C	C	C	C	C	C	C	C	C	C	C	C	8.4	21.6	18.9	51.3	106.2	74.0	5.3	1.1	3.3	3.5	1.3	1.4	-	-
15	1.4	1.3	2.0	2.6	1.8	0.9	1.2	3.9	4.5	13.7	1.1	5.1	24.5	19.1	4.5	45.9	16.1	7.4	36.5	3.3	9.6	7.5	2.3	9.9	9.4	45.9
16	4.3	1.6	1.7	1.4	1.7	2.0	8.0	6.0	3.0	12.0	3.6	4.9	8.8	15.0	20.3	22.6	26.3	65.1	12.6	4.0	4.6	12.5	2.1	2.5	10.3	65.1
17	6.8	4.8	3.0	1.7	1.7	3.4	111.0	464.1	421.3	515.6	162.5	269.8	399.6	563.5	238.3	83.9	72.8	47.7	37.5	5.4	5.6	8.9	3.7	12.9	143.6	563.5
18	17.2	21.0	380.0	5.8	1.3	1.5	2.6	11.4	131.0	69.9	102.0	196.9	214.0	235.0	442.8	332.7	357.3	206.3	562.5	78.3	35.1	12.1	3.4	4.8	142.7	562.5
19	25.0	5.1	6.6	5.6	1.3	1.6	7.1	3.2	16.2	50.2	453.2	399.3	52.2	99.1	69.6	84.6	118.7	110.1	80.7	14.2	5.5	4.5	0.4	0.5	67.3	453.2
20	1.4	25.6	41.8	8.0	71.5	9.5	2.2	2.3	1.3	2.1	51.6	55.7	88.4	225.0	6.2	3.9	3.7	20.4	2.1	0.9	1.2	1.3	1.9	0.6	26.2	225.0
21	0.7	0.1	0.1	0.2	0.8	3.8	7.9	4.3	1.7	4.8	8.5	7.8	9.6	15.0	121.1	58.1	21.9	53.9	17.1	9.4	7.9	7.0	8.0	9.0	15.8	121.1
22	9.9	9.7	10.6	10.8	11.6	10.3	10.9	163.7	172.7	61.1	316.1	191.8	76.6	28.7	35.2	57.7	51.3	21.6	19.4	22.6	21.1	9.1	9.9	6.9	55.8	316.1
23	5.0	4.1	6.4	4.3	3.8	5.2	10.1	44.3	114.2	39.9	21.0	6.7	33.1	51.7	3.0	10.2	4.7	4.9	5.9	1.6	2.2	1.7	1.6	1.0	16.1	114.2
24	1.4	1.2	0.6	0.7	0.6	0.6	63.3	61.8	55.7	82.5	196.2	164.2	209.1	239.2	79.3	63.9	184.0	114.7	51.8	6.5	9.2	12.0	4.0	9.9	67.2	239.2
25	9.9	2.3	1.6	1.5	1.9	2.2	54.0	159.0	83.7	56.4	51.1	186.5	227.9	145.6	186.1	54.8	23.3	10.7	18.5	12.7	14.1	1.3	4.2	6.8	54.8	227.9
26	2.7	3.3	3.0	0.7	1.4	1.4	2.4	32.6	54.4	75.1	60.5	98.7	82.5	112.6	54.4	45.1	61.8	24.2	4.4	9.8	3.2	2.6	9.7	8.0	31.4	112.6
27	4.5	2.6	1.8	1.6	2.3	2.1	2.6	4.9	3.3	8.6	10.6	3.9	3.7	4.0	2.0	2.7	2.0	2.9	2.4	1.8	1.3	1.5	1.4	1.5	3.2	10.6
28	1.6	1.5	1.3	1.2	1.0	0.8	10.4	44.4	65.5	97.1	122.3	117.1	174.2	147.6	804.2	500.0	273.3	796.7	251.1	75.5	120.6	160.2	93.2	17.0	161.6	804.2
29	3.8	3.3	2.1	2.2	3.8	12.8	101.3	112.9	96.3	192.9	392.2	191.4	193.4	414.5	685.6	303.4	156.1	205.8	248.7	136.0	60.2	101.0	60.2	6.3	153.6	685.6
30	1.3	5.9	2.9	1.9	1.2	1.5	11.1	2.8	2.5	55.2	128.5	126.1	174.0	113.7	217.9	93.9	50.5	40.7	56.9	7.7	3.0	1.9	1.9	1.9	46.0	217.9
NO.	28	28	28	28	28	28	28	27	27	27	27	27	28	28	28	28	28	28	28	28	28	28	28	28	667	100%
MEAN	6.6	9.5	21.8	4.8	6.2	6.0	45.7	95.0	90.6	105.6	159.9	168.4	169.6	207.7	254.1	211.2	159.7	160.9	135.1	53.9	33.6	18.9	9.9	7.5		
MAX	25.0	95.0	380.0	18.5	71.5	41.9	220.7	642.0	464.9	517.2	929.7	826.6	745.2	631.1	1381.4	1497.9	942.3	796.7	562.5	334.4	245.1	160.2	93.2	30.6		



Number of 24HR Exceedences	10	Proposed Guideline
Number of Non-Zero Readings	667	
Maximum 1-HR Average	1497.9	UG/M3
Maximum 24-HR Average	313.9	UG/M3
IZS Calibration Time		Operational Time
Monthly Calibration	53	Operational Uptime
Standard Deviation	169.1	Monthly Average
		720 HRS
		100.0 %
		89.0 UG/M3

Entrance PM_{2.5} (µg/m³) – June 2019

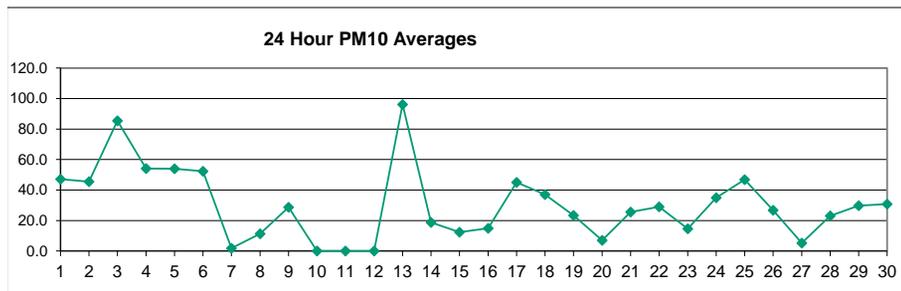
Day	HOUR																								MEAN	MAX	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1	16.0	15.8	18.9	20.3	21.7	22.3	21.0	24.8	24.7	20.2	15.3	11.6	9.1	10.0	7.9	7.0	8.4	6.8	7.0	10.5	12.8	13.9	15.2	19.8	15.0	24.8	
2	23.2	22.3	18.0	14.3	13.8	12.5	14.2	13.7	11.6	6.4	4.8	5.0	7.0	11.7	8.7	5.1	8.4	5.0	11.1	15.4	8.4	7.0	7.9	12.7	11.2	23.2	
3	9.4	20.4	16.9	15.4	13.5	20.2	31.4	42.0	19.4	19.6	24.5	16.3	11.8	11.1	8.7	9.1	3.5	4.0	10.0	8.0	6.5	5.2	4.0	4.1	14.0	42.0	
4	4.0	3.9	4.7	7.8	10.7	16.0	15.7	12.0	13.9	15.3	16.9	11.2	13.2	9.5	9.5	15.4	8.9	7.5	4.6	8.1	7.5	6.8	4.0	4.7	9.7	16.9	
5	4.0	3.6	5.8	4.9	5.2	9.1	15.2	15.3	8.5	9.5	10.2	14.8	16.7	17.4	15.3	21.9	20.1	12.5	10.2	8.1	5.0	4.7	6.1	9.2	10.6	21.9	
6	5.8	6.1	6.7	5.7	8.6	8.4	4.4	2.9	5.6	6.3	4.5	9.6	4.6	14.0	9.1	4.4	4.0	3.9	68.9	5.5	2.3	1.5	1.5	1.0	8.1	68.9	
7	0.9	0.5	0.6	0.4	0.8	0.6	1.0	0.8	1.4	1.6	1.5	2.1	3.0	1.3	0.7	1.1	3.3	1.7	1.1	1.4	1.7	2.4	2.9	3.5	1.5	3.5	
8	4.4	4.1	4.4	6.0	6.9	10.2	9.1	11.6	14.1	4.1	3.6	4.0	3.3	1.9	3.5	1.6	3.8	5.3	3.0	3.9	1.8	2.1	2.4	2.5	4.9	14.1	
9	1.3	2.8	7.7	14.1	17.7	15.9	13.4	8.6	6.4	3.2	2.8	1.4	2.7	2.4	3.8	3.1	3.6	4.1	3.9	3.6	3.6	9.9	10.5	10.4	6.5	17.7	
10	4.9	8.5	15.3	19.3	17.6	16.3	16.8	13.4	7.5	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	-	-	
11	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	-	-	
12	C	C	C	C	C	C	C	C	C	C	C	8.3	7.3	5.8	7.8	5.4	4.9	8.3	6.8	3.5	1.9	8.6	8.7	7.2	20.5	-	-
13	16.8	15.8	15.9	20.3	21.8	16.4	30.1	24.9	17.7	9.1	10.8	13.9	14.5	12.3	8.1	13.8	17.3	6.6	4.0	3.1	3.0	2.7	1.9	16.6	13.2	30.1	
14	8.1	5.8	3.9	3.1	2.2	8.1	7.6	16.9	35.7	14.1	4.8	1.9	3.9	4.0	10.9	3.6	3.3	4.0	1.9	2.2	3.5	5.6	2.9	2.2	6.7	35.7	
15	2.1	2.1	3.4	4.8	3.8	1.4	2.0	2.6	5.3	3.9	4.2	3.1	4.3	2.7	3.8	2.2	3.6	1.7	2.3	1.1	1.5	4.2	1.5	6.3	3.1	6.3	
16	5.1	2.8	5.6	5.9	7.2	9.7	7.1	9.5	4.1	2.7	1.8	1.7	3.3	2.2	2.0	2.7	3.8	4.0	2.6	6.8	3.7	4.6	2.6	1.7	4.3	9.7	
17	2.0	4.2	5.5	7.4	7.1	10.6	14.5	21.4	12.9	14.9	11.3	8.2	7.8	8.1	7.3	7.6	5.7	5.2	5.0	5.7	4.0	3.7	8.4	5.2	8.1	21.4	
18	5.8	5.8	11.0	6.4	4.7	10.8	7.0	4.4	17.0	11.8	8.4	8.6	7.0	5.5	6.0	9.0	10.9	6.6	3.1	3.9	7.0	5.5	2.2	3.2	7.1	17.0	
19	4.3	6.2	5.3	3.1	2.5	2.8	3.7	11.8	8.6	9.1	9.3	6.0	4.1	12.2	4.0	6.3	7.2	2.6	4.4	2.1	5.9	1.5	1.0	1.0	5.2	12.2	
20	1.4	0.9	1.1	0.9	0.6	0.9	0.7	0.7	1.0	0.9	0.8	3.3	3.9	4.3	1.5	4.6	2.2	0.9	1.0	0.8	1.1	2.3	1.9	1.0	1.6	4.6	
21	4.6	9.3	7.0	4.1	5.4	6.0	5.0	3.2	6.4	7.9	10.4	14.8	19.8	19.9	20.1	13.9	15.0	18.0	15.8	12.7	11.9	12.9	15.6	14.4	11.4	20.1	
22	16.5	17.0	18.2	22.0	25.0	24.1	27.6	18.7	19.9	18.1	14.2	11.6	7.3	8.5	8.4	7.2	9.1	7.0	8.7	8.2	8.3	7.1	9.9	8.7	13.8	27.6	
23	5.7	4.9	7.7	6.8	9.1	7.3	5.1	5.6	4.5	4.8	6.6	5.6	4.4	2.8	2.7	4.4	3.6	3.1	2.4	4.9	3.9	3.7	3.7	2.1	4.8	9.1	
24	2.7	2.5	2.2	2.3	2.8	5.1	14.0	7.2	8.6	8.9	11.0	10.4	7.2	7.5	7.1	6.5	6.5	4.5	5.4	7.3	3.9	4.4	2.4	4.6	6.0	14.0	
25	2.9	2.9	5.8	4.6	7.0	9.4	8.5	17.9	20.0	14.3	15.7	16.6	12.1	9.8	9.1	18.8	6.1	3.1	3.0	3.2	2.6	5.1	3.9	2.7	8.5	20.0	
26	4.8	4.6	3.3	3.6	3.1	3.4	5.1	3.7	4.7	7.6	10.2	9.4	5.9	5.7	8.8	9.7	9.4	7.3	6.0	4.1	4.3	6.1	5.4	6.8	6.0	10.2	
27	3.5	3.6	3.4	3.0	4.3	3.8	4.3	4.9	4.5	3.8	8.3	10.5	4.4	4.2	2.4	2.8	2.9	3.1	3.6	1.5	4.2	5.1	3.0	3.7	4.1	10.5	
28	2.3	4.7	8.6	7.3	6.5	5.7	4.1	4.6	7.7	3.9	5.2	3.6	4.8	5.5	8.3	4.8	4.5	4.0	2.4	1.1	1.4	1.1	2.0	7.3	4.6	8.6	
29	8.5	8.9	10.0	8.3	9.3	1.6	2.3	2.6	3.8	3.2	5.3	7.4	6.8	6.3	9.5	3.9	3.0	3.2	1.2	1.0	1.0	0.7	0.8	1.0	4.6	10.0	
30	2.5	17.8	10.3	7.1	5.1	4.0	9.6	8.5	8.1	4.0	3.1	2.3	2.4	2.9	2.7	2.9	2.4	2.7	2.0	3.1	1.9	2.2	6.0	7.2	5.0	17.8	
NO.	28	28	28	28	28	28	28	28	28	27	28	28	28	28	28	28	28	28	28	28	28	28	28	28	671	100%	
MEAN	6.2	7.4	8.1	8.2	8.7	9.4	10.7	11.2	10.8	8.5	8.4	7.9	7.2	7.6	7.0	7.1	6.8	5.2	7.1	5.0	4.7	5.0	4.9	6.6			
MAX	23.2	22.3	18.9	22.0	25.0	24.1	31.4	42.0	35.7	20.2	24.5	16.6	19.8	19.9	20.1	21.9	20.1	18.0	68.9	15.4	12.8	13.9	15.6	20.5			



Number of 24HR Exceedences	0	Proposed Guideline	
Number of Non-Zero Readings	671		
Maximum 1-HR Average	68.9 UG/M3		
Maximum 24-HR Average	15.0 UG/M3		
Operational Time	720 HRS		
Monthly Calibration	49	Operational Uptime	100.0 %
Standard Deviation	6.28	Monthly Average	7.5 UG/M3

Entrance PM₁₀ (µg/m³) – June 2019

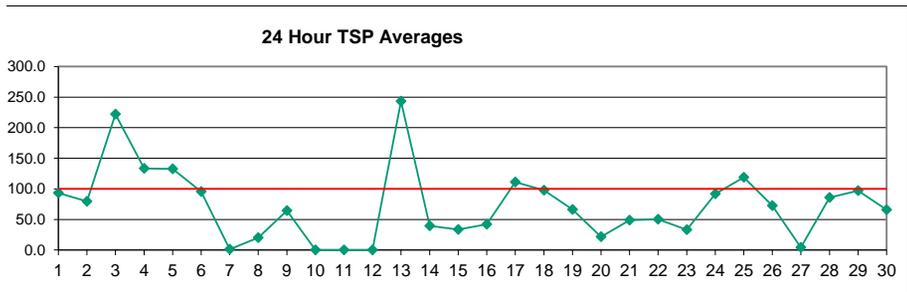
Day	HOUR																								MEAN	MAX	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1	38.2	31.4	52.0	51.7	50.3	54.9	67.9	107.6	103.1	63.7	46.8	32.3	23.5	51.6	30.7	16.9	21.7	11.2	11.1	28.4	36.5	50.0	60.1	89.0	47.1	107.6	
2	109.1	109.3	81.6	54.2	49.4	42.9	62.5	65.0	48.8	18.5	13.8	18.5	28.2	34.0	21.8	13.7	49.3	16.6	47.3	76.5	30.2	19.9	24.1	58.4	45.6	109.3	
3	26.9	109.9	79.4	71.6	54.0	101.4	190.8	278.7	147.5	159.6	206.6	128.0	89.3	79.0	65.3	60.3	19.7	18.8	58.3	37.2	25.3	19.6	12.9	11.1	85.5	278.7	
4	9.7	9.8	10.4	11.7	16.0	25.9	74.1	67.7	73.4	96.5	110.4	95.3	95.4	75.4	67.5	123.2	63.0	57.3	31.6	60.3	55.8	33.5	14.5	19.3	54.1	123.2	
5	17.9	7.6	8.7	7.2	7.8	13.6	58.9	92.0	47.6	51.3	54.2	83.0	84.3	103.3	75.4	139.3	142.2	80.3	63.6	51.6	18.9	16.6	25.5	44.4	54.0	142.2	
6	22.2	22.4	24.6	17.2	33.8	37.1	24.9	15.2	39.8	42.6	25.1	57.8	35.9	93.4	65.8	26.2	20.7	24.9	563.8	47.8	8.0	2.8	1.9	1.3	52.3	563.8	
7	1.1	0.6	0.8	0.6	1.0	0.7	1.3	1.1	1.8	2.0	1.9	2.4	3.7	1.6	0.8	1.4	4.5	2.0	1.3	1.5	1.8	2.6	3.4	4.1	1.8	4.5	
8	5.9	4.9	5.0	7.0	8.5	14.6	11.9	16.5	24.8	12.1	12.4	14.1	13.4	6.9	21.7	5.8	17.6	20.6	11.5	21.6	3.8	2.8	4.3	3.0	11.3	24.8	
9	1.6	3.5	11.3	21.2	26.5	62.6	76.1	42.3	39.1	24.8	19.8	6.6	17.0	15.2	28.8	20.1	19.8	18.4	13.5	17.3	13.0	55.7	66.0	69.3	28.7	76.1	
10	23.8	50.3	92.2	120.4	103.9	92.1	101.5	99.0	51.9	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	-	-	
11	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	-	-	
12	C	C	C	C	C	C	C	C	C	C	C	73.0	64.5	50.9	52.4	43.1	36.5	60.9	40.0	27.5	10.7	63.1	66.0	48.8	184.4	-	-
13	167.7	116.8	113.7	136.7	140.5	103.0	235.9	192.5	125.7	56.4	86.2	102.4	149.4	104.7	78.1	111.6	173.6	39.9	21.8	15.1	4.3	3.7	2.7	24.7	96.1	235.9	
14	12.1	8.5	5.5	4.5	2.7	12.1	11.3	25.3	88.1	83.7	24.3	2.7	5.7	6.2	59.4	20.9	20.7	26.9	3.8	5.4	5.0	8.1	3.9	2.9	18.7	88.1	
15	2.7	2.7	4.6	7.0	5.5	1.8	2.7	6.7	38.0	27.8	31.8	17.7	27.3	12.4	17.9	9.0	20.3	5.3	14.1	2.7	4.0	23.3	2.9	10.0	12.4	38.0	
16	7.8	4.1	8.2	8.8	10.7	14.5	34.3	37.0	15.9	9.6	6.3	5.9	24.0	9.0	8.5	13.8	19.7	22.7	9.7	47.1	15.3	16.5	7.4	2.6	15.0	47.1	
17	3.4	7.8	11.6	10.8	10.2	50.2	100.5	169.4	88.3	101.5	80.8	56.3	55.9	64.5	41.4	38.2	30.0	32.2	25.5	23.5	11.6	14.5	38.7	15.9	45.1	169.4	
18	20.2	22.2	80.1	9.5	6.9	16.1	10.3	7.2	106.5	65.6	46.7	62.5	35.8	39.0	43.7	70.0	64.3	35.1	20.7	23.1	42.0	41.1	9.6	12.1	37.1	106.5	
19	13.1	7.8	7.0	4.4	3.2	3.5	5.5	19.4	33.0	54.8	45.7	30.9	25.8	77.4	24.2	41.7	46.8	18.6	33.5	12.0	42.7	8.5	1.5	1.4	23.4	77.4	
20	1.8	2.8	4.9	3.9	1.4	1.2	0.9	0.9	1.4	1.2	3.2	29.4	28.5	33.6	2.0	24.8	12.0	2.2	2.5	1.2	1.3	2.9	2.5	1.4	7.0	33.6	
21	6.7	13.9	10.3	5.9	7.8	7.6	7.0	4.8	13.0	13.7	20.0	22.1	29.6	92.3	96.9	47.5	43.6	50.6	31.7	20.2	18.7	15.4	19.0	15.8	25.6	96.9	
22	21.1	22.1	21.6	29.9	35.9	34.8	57.1	34.0	39.9	48.1	51.7	37.0	22.2	31.4	39.2	23.9	36.5	14.7	25.3	14.0	15.0	10.2	19.2	11.0	29.0	57.1	
23	9.1	11.2	25.6	20.9	35.8	25.5	15.1	13.3	17.3	10.9	21.4	11.2	13.3	7.9	7.0	25.4	13.9	11.6	7.9	26.4	7.3	4.9	5.0	2.8	14.6	35.8	
24	3.3	2.9	2.8	2.9	4.0	22.6	78.9	47.6	61.1	76.0	80.2	72.6	54.4	58.9	49.4	43.6	34.6	23.6	31.4	38.5	17.1	16.8	4.6	9.4	34.9	80.2	
25	6.5	7.3	8.5	6.7	10.4	40.0	51.5	137.9	139.3	82.5	100.4	121.8	89.8	54.7	56.6	81.6	33.9	15.9	12.2	12.6	9.3	26.3	13.8	4.2	46.8	139.3	
26	6.9	6.8	4.7	5.2	4.6	5.0	7.4	18.0	23.9	45.4	57.6	51.7	36.4	35.6	54.6	58.6	58.1	38.5	32.5	20.8	18.5	29.6	11.2	9.8	26.7	58.6	
27	4.9	4.6	4.4	3.6	5.1	4.3	5.2	5.7	5.3	4.4	11.8	15.3	5.6	5.0	2.7	3.1	3.2	3.4	4.2	1.8	6.1	7.5	4.3	5.4	5.3	15.3	
28	3.2	7.0	12.5	10.9	9.7	8.5	22.5	33.9	42.3	29.7	33.7	27.5	32.0	40.1	70.3	35.3	33.7	28.5	15.8	4.4	3.4	2.8	6.5	39.5	23.1	70.3	
29	56.2	54.7	61.2	52.0	55.7	7.0	14.1	12.2	16.3	21.5	42.3	64.9	54.7	42.5	81.9	26.3	17.8	14.8	5.6	3.8	3.5	1.3	1.4	2.0	29.7	81.9	
30	11.9	145.0	79.0	46.0	29.4	22.6	74.8	72.9	71.4	21.8	15.3	12.5	8.8	10.8	13.4	13.4	8.3	8.3	6.2	9.5	4.4	6.0	20.1	28.0	30.8	145.0	
NO.	28	28	28	28	28	28	28	28	27	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	671	100%
MEAN	22.0	28.5	29.7	26.2	26.1	29.5	50.2	58.0	53.7	45.4	47.3	44.5	40.7	44.2	41.7	40.4	39.0	24.4	40.5	22.7	17.4	18.2	15.6	24.4			
MAX	167.7	145.0	113.7	136.7	140.5	103.0	235.9	278.7	147.5	159.6	206.6	128.0	149.4	104.7	96.9	139.3	173.6	80.3	563.8	76.5	63.1	66.0	66.0	184.4			



Number of Non-Zero Readings	671	Operational Time	720 HRS
Maximum 1-HR Average	563.8 UG/M3	Operational Uptime	100.0 %
Maximum 24-HR Average	96.1 UG/M3	Monthly Average	34.6 UG/M3
Monthly Calibration	49		
Standard Deviation	42.32		

Entrance TSP ($\mu\text{g}/\text{m}^3$) – June 2019

Day	HOUR																								MEAN	MAX	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1	78.1	68.4	80.6	104.2	81.0	119.2	173.6	289.7	240.7	123.5	89.2	54.2	42.6	105.7	75.4	45.4	49.0	15.4	16.6	34.5	37.0	77.1	108.7	130.1	93.3	289.7	
2	177.9	180.3	138.2	95.1	88.7	79.9	123.2	111.7	76.2	31.1	28.1	39.9	85.4	95.7	39.9	21.7	133.8	42.0	48.0	87.8	28.6	18.7	25.1	116.9	79.7	180.3	
3	29.7	198.2	151.5	131.2	110.8	129.8	279.4	493.5	491.1	472.1	730.5	452.2	359.6	291.6	229.8	182.5	63.0	42.4	237.2	114.8	52.2	41.1	22.1	26.8	222.2	730.5	
4	18.8	21.5	13.9	12.1	17.0	28.8	140.4	138.5	165.5	214.4	253.9	281.3	263.6	202.4	188.4	353.9	193.6	167.4	74.5	137.7	163.5	88.6	31.7	26.9	133.3	353.9	
5	24.0	8.0	8.9	7.4	8.0	15.0	109.5	235.2	107.4	117.2	131.6	219.2	164.8	294.9	194.1	389.1	397.1	238.7	213.0	155.4	30.8	22.4	37.4	56.5	132.7	397.1	
6	34.3	30.2	39.6	20.2	44.7	58.3	82.3	40.8	95.7	82.6	58.4	168.4	88.0	280.5	175.7	77.2	39.2	54.9	682.2	120.3	15.1	5.3	1.5	0.9	95.7	682.2	
7	0.8	0.4	0.6	0.5	0.9	0.5	1.1	0.8	1.3	1.5	1.4	1.6	2.6	1.1	0.6	1.0	3.8	1.4	0.8	1.0	1.2	1.7	2.3	2.7	1.3	3.8	
8	5.0	3.3	3.4	4.9	6.2	11.9	8.9	14.5	36.8	29.1	24.2	24.3	30.4	20.0	59.1	13.5	53.5	36.8	24.3	62.7	5.2	2.5	5.4	2.2	20.3	62.7	
9	1.1	2.5	11.5	23.8	30.5	83.4	142.9	56.7	137.0	97.9	81.3	22.2	62.6	50.6	131.8	78.6	85.4	55.3	30.1	44.2	20.6	73.2	84.7	135.6	64.3	142.9	
10	28.4	82.0	137.5	206.6	176.0	164.3	182.0	251.1	142.6	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	-	-	
11	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	-	-	
12	C	C	C	C	C	C	C	C	C	C	C	222.4	187.2	148.0	109.8	93.8	103.6	146.1	98.1	61.7	25.0	120.8	112.6	101.1	481.6	-	-
13	487.0	251.4	204.6	280.7	352.3	215.6	607.2	466.3	304.6	112.6	196.2	193.8	461.5	252.1	247.9	297.0	628.3	146.6	63.6	29.0	3.6	3.4	2.2	27.8	243.1	628.3	
14	13.3	9.0	5.4	4.0	2.0	12.9	11.8	28.5	166.4	227.8	93.9	2.4	5.5	7.8	156.4	36.9	60.4	64.2	6.2	11.4	4.4	7.8	2.8	2.2	39.3	227.8	
15	1.9	1.9	3.5	6.0	5.2	1.4	2.1	12.6	92.7	70.3	115.2	65.4	106.8	32.2	48.8	42.4	57.2	9.6	63.3	7.7	8.4	42.1	2.6	10.3	33.7	115.2	
16	7.3	3.3	8.8	8.9	11.2	16.4	96.0	113.2	21.3	18.0	17.5	17.0	72.0	28.3	33.3	53.6	80.5	129.2	34.4	185.7	20.7	20.2	9.1	2.6	42.0	185.7	
17	2.9	8.5	24.9	10.8	9.1	105.4	280.4	418.5	203.8	210.9	196.0	154.1	167.4	243.4	155.8	129.0	60.7	52.0	51.0	46.7	26.9	26.2	61.5	24.3	111.3	418.5	
18	52.4	54.3	313.6	10.4	7.4	18.3	11.1	12.3	266.4	173.1	117.0	147.4	79.0	79.3	107.6	212.0	219.9	96.4	64.9	55.3	86.3	112.0	30.0	23.0	97.9	313.6	
19	23.0	5.7	5.7	3.8	2.3	2.5	5.3	25.1	101.0	174.6	153.5	105.2	87.8	224.7	94.5	136.3	166.2	43.6	95.0	38.3	78.1	10.5	1.2	1.2	66.0	224.7	
20	1.6	6.7	14.1	12.3	3.3	0.9	0.7	0.7	1.2	1.1	17.0	91.1	88.2	155.6	1.6	75.3	26.3	6.7	8.4	1.7	0.9	2.2	1.9	1.0	21.7	155.6	
21	6.8	15.0	10.0	4.6	5.9	8.1	10.8	9.6	18.1	20.4	23.6	24.4	32.4	173.3	315.9	126.8	118.9	101.7	60.0	27.2	23.1	11.4	14.8	10.3	48.9	315.9	
22	15.3	15.3	14.2	24.5	31.9	31.6	101.2	54.4	71.2	114.2	122.3	92.5	44.7	64.6	69.6	67.4	85.0	28.6	42.6	24.1	42.2	9.3	32.7	7.8	50.3	122.3	
23	9.7	24.5	69.4	44.2	77.1	57.9	27.3	43.6	30.3	46.7	29.3	36.3	28.2	20.1	54.7	43.8	24.2	21.4	56.4	10.3	3.7	4.4	3.2	33.1	77.1		
24	2.4	2.0	2.4	2.3	3.9	63.1	142.2	126.2	157.9	229.9	224.2	194.4	177.1	193.2	155.7	110.6	88.4	71.1	107.6	59.8	40.5	24.4	6.3	20.6	91.9	229.9	
25	12.0	11.5	8.8	6.9	11.0	75.9	106.0	311.2	332.6	225.3	232.3	296.0	266.3	193.0	225.9	237.6	101.9	48.5	38.8	37.9	15.1	28.9	22.9	4.5	118.8	332.6	
26	7.0	7.1	4.3	5.5	4.6	5.0	7.4	50.7	50.4	112.2	160.6	131.7	118.6	128.2	178.9	198.3	219.5	112.8	71.4	46.9	36.1	61.8	15.1	9.0	72.6	219.5	
27	4.0	3.3	3.3	2.5	3.3	2.8	3.5	3.8	3.5	3.0	11.9	16.0	3.8	3.4	1.8	2.0	2.2	2.2	2.8	1.2	5.5	7.5	4.1	5.4	4.3	16.0	
28	2.9	7.2	12.5	12.2	10.9	9.5	89.6	171.1	193.2	139.5	164.2	98.2	138.2	152.3	303.4	150.2	96.8	103.8	78.7	10.9	9.0	13.0	14.9	79.7	85.9	303.4	
29	113.5	127.9	118.6	134.2	120.8	32.7	73.6	49.7	36.1	65.6	158.4	276.3	227.7	146.3	389.9	99.5	60.3	48.6	15.8	9.8	10.3	2.1	2.9	4.2	96.9	389.9	
30	33.3	253.7	113.3	103.9	66.6	48.0	236.6	196.3	188.8	48.2	31.6	22.6	12.2	17.7	23.9	33.5	18.2	12.8	8.8	13.9	9.9	8.5	24.8	53.9	65.9	253.7	
NO.	28	28	28	28	28	28	28	28	28	27	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	671	100%
MEAN	42.7	50.1	54.4	45.9	46.2	50.0	109.2	132.5	133.8	116.5	132.3	121.7	120.5	127.7	132.8	118.9	117.8	66.2	79.4	51.7	32.4	29.9	24.1	45.4			
MAX	487.0	253.7	313.6	280.7	352.3	215.6	607.2	493.5	491.1	472.1	730.5	452.2	461.5	294.9	389.9	389.1	628.3	238.7	682.2	185.7	163.5	112.6	108.7	481.6			



Number of 24HR Exceedences	6	Proposed Guideline
Number of Non-Zero Readings	671	
Maximum 1-HR Average	730.5 UG/M3	
Maximum 24-HR Average	243.1 UG/M3	
Monthly Calibration	49	Operational Time
Standard Deviation	103.0	Operational Uptime
		Monthly Average
		720 HRS
		100.0 %
		82.5 UG/M3