Lakeland Industry & Community Association

MARCH 2021

Monthly Ambient Air Quality Monitoring Report

LICA-202103

Operation and Maintenance:

Bureau Veritas Canada

Data Validation and Report:

Lakeland Industry & Community Association

April 13, 2021

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April 13, 2021

Alberta Environment and Parks (AEP)
11th Floor, Oxbridge Place
9820 106 Street
Edmonton, AB, T5K 2J6

RE: LICA – March 2021 Monthly Ambient Air Quality Monitoring Report

Enclosed is the March 2021 Monthly Ambient Air Quality Monitoring Report for the continuous ambient air quality monitoring stations of the Lakeland Industry & Community Association (LICA) regional air quality monitoring network.

The representative of the Person Responsible for this monitoring program is

LICA Airshed
Michael Bisaga, Monitoring Programs Manager
5107 50 Street
Bonnyville, AB, T9N 2J7
Phone #: 780-226-7068
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This report has been reviewed by Michael Bisaga of the LICA Airshed.

TABLE OF CONTECTS

LIST OF ACRONYMS

AAAQOs	Alberta Ambient Air Quality Objectives
AEP	Alberta Environment and Parks
AMD	Air Monitoring Directive
AT	Ambient Temperature
BP	Barometric Pressure
CH4	Methane
EPEA	Environmental Protection and Enhancement Act
H2S	Hydrogen Sulphide
kph	kilometers per hour
LICA	Lakeland Industry & Community Association
mb	millibar
mm	millimeter
NMHC	Non-Methane Hydrocarbons
NO	Nitric Oxide
NO2	Nitrogen Dioxide
NOx	Oxide of Nitrogen
PAC	Polycyclic Aromatic Compounds
ppb	parts per billion
ppm	parts per million
RH	Relative Humidity
SO2	Sulphur Dioxide
ST	Station Temperature
STDWD	Standard Deviation Wind Direction
THC	Total Hydrocarbons
TRS	Total Reduced Sulphur
VWD	Vector Wind Direction
VWS	Vector Wind Speed
WD	Wind Direction
WS	Wind Speed
°C	Degrees Celsius

Listing of Continuous Monitoring Stations and Integrated Sampling Stations

Station Name		Cold Lake South	Maskwa	St. Lina
Station ID		1174	1248	1250
Coordinates		54.41402, -110.23316	54.604935, -110.452637	54.215961, -111.503304
Continuous Monitoring Parameter	SO2	√	√	√
	TRS	√		
	H2S		√	√
	THC	√	√	√
	CH4	√	√	√
	NMHC	√	√	√
	NOX	√	√	√
	NO	√	√	√
	NO2	√	√	√
	O3	√		√
	PM2.5	√		√
	TPX	√	√	√
	RH	√	√	√
	BP		√	√
	PRECIPTATION		√	√
	WS	√	√	√
	WD	√	√	√
	STDWD	√	√	√
Integrated Sampling	VOCs	√		
	PAHs	√		
	Partisol	√		
	Passive	√		
	NMHC Canister			
	PAC			√

List of Contractors performing air monitoring activities

Sampling Program	Monitoring Activities Conducted By	Sample Analysis Conducted By	Data/Report Prepared By	Electronic Submission Conducted By
Continuous Monitoring Station	Bureau Veritas Canada	Bureau Veritas Canada	LICA / Bureau Veritas Canada	LICA
Intermittent (VOCs/PAHs)	Bureau Veritas Canada	InnoTech Alberta Inc	InnoTech Alberta Inc	LICA
Partisol	Bureau Veritas Canada	InnoTech Alberta Inc	InnoTech Alberta Inc	LICA
Passive	Bureau Veritas Canada	Bureau Veritas Canada	Bureau Veritas Canada	LICA
PAC	Bureau Veritas Canada	ECCC	AEP	Not Applicable

Monitoring Notes during the Month of March 2021

Cold Lake South

- Measured parameters were below Alberta Ambient Air Quality Objectives (AAAQOs) where applicable.
- All data collected this month were compliant with the requirements outlined in the AMD 2016.
- All parameters failed to meet the 90% operational uptime requirement this month. This requirement was not met because the power was disconnected on March 26 in order to relocate the station and replace the meteorological tower. (**Notification-LICA-20210324**)
- All gas parameters: A shut-down calibration was performed on all analyzers on March 24 in preparation for the scheduled station relocation. Three to five hours of downtime were recorded due to this additional calibration.
- **SO2:** The analyzer failed the daily zero-span check on March 2. A successful shut-down calibration was completed on March 4 prior to rebuilding the sample pump. As the analyzer passed the shut-down calibration check, data collected between March 3 and 4 were considered valid. No data were discarded. However, 2 hours of downtime were recorded due to the maintenance work performed on the sample pump.
- **NOx/NO/NO2:** The analyzer failed the daily zero-span check on March 2. A repeat zero-span check was attempted but failed to complete on March 2 hour 21. A successful repeat zero-span check was completed on March 3 hour 7. The possible cause for the span failure was fluctuating ambient temperatures. The analyzer was calibrated to correct this issue on March 5. As the analyzer passed the March 3 check and Mar 5 monthly calibration, no data were discarded. However, one hour of downtime was recorded due to the additional quality check.

- **O3:** The annual maintenance was performed and the sample pump was replaced following a successful shut down calibration on March 4. Three hours of downtime were recorded due to this maintenance activity.
- **WS/WD/STDWD:** Eighty-six hours of data were discarded due to wind system malfunctions.

Maskwa

- Measured parameters were below Alberta Ambient Air Quality Objectives (AAAQOs) where applicable, except PM2.5 and O3.
- All data collected this month were compliant with the requirements outlined in the AMD 2016.
- All parameters met the 90% operational uptime requirement.
- Measured parameters were below Alberta Ambient Air Quality Objectives (AAAQOs) and Alberta Ambient Air Quality Guidelines (AAAQGs) where applicable, with exceptions of PM2.5 and O3. Twenty-four 1-hour exceedances and two 24-hour exceedances of PM2.5 were recorded this month. One 1-hour exceedance of O3 was also recorded. Tree removal work around the Maskwa monitoring station was executed on March 17-19, 2021. These elevated PM and O3 concentrations were caused by smoke and dust in the area during final clean-up from the tree removal project. Brush piles were burned (creating smoke), the ground was grubbed (creating dust), and haul trucks removed merchantable timber (creating dust, diesel exhaust). As the brush piles smoldered, PM remained elevated in the vicinity of the station for several days. Given the nature of brush pile burning (low temperature, ground level) the air quality impact was very localized, likely limited to a few kilometers around the station itself.

Date	Time (MST)	Parameter	Average Period	Concentration	Reference #
March 23	16	O3	1-Hour	83.4 ppb	377241
March 23	8	PM2.5	1-Hour	207 µg/m3	377241
March 23	9	PM2.5	1-Hour	97 µg/m3	377241
March 23	10	PM2.5	1-Hour	251 µg/m3	377241
March 23	11	PM2.5	1-Hour	577 µg/m3	377241
March 23	12	PM2.5	1-Hour	719 µg/m3	377241
March 23	13	PM2.5	1-Hour	331 µg/m3	377241
March 23	14	PM2.5	1-Hour	618 µg/m3	377241
March 23	15	PM2.5	1-Hour	236 µg/m3	377241
March 23	16	PM2.5	1-Hour	1211 µg/m3	377241
March 23	17	PM2.5	1-Hour	442 µg/m3	377241
March 23	18	PM2.5	1-Hour	195 µg/m3	377241
March 23	19	PM2.5	1-Hour	211 µg/m3	377241
March 23	20	PM2.5	1-Hour	251 µg/m3	377241
March 23	21	PM2.5	1-Hour	145 µg/m3	377241

March	23	22	PM2.5	1-Hour	624 µg/m3	377241
March	23	23	PM2.5	1-Hour	565 µg/m3	377241
March	23	-	PM2.5	24-Hour	281.5 µg/m3	377242
March	24	0	PM2.5	1-Hour	444 µg/m3	377242
March	24	1	PM2.5	1-Hour	192 µg/m3	377242
March	24	2	PM2.5	1-Hour	110 µg/m3	377242
March	24	3	PM2.5	1-Hour	327 µg/m3	377242
March	24	4	PM2.5	1-Hour	303 µg/m3	377242
March	24	20	PM2.5	1-Hour	81 µg/m3	377242
March	24	21	PM2.5	1-Hour	104 µg/m3	377242
March	24	22	PM2.5	1-Hour	146 µg/m3	377242
March	24	-	PM2.5	24-Hour	85.8 µg/m3	377242

- **All parameters:** Tree removal work around the Maskwa monitoring station was executed on between March 17 and 19. Power to the station was cut on March 18 between hour 6 and hour 16 as a safety precaution while tree removal occurred in the vicinity of nearby powerlines. Eleven hours of downtime were recorded as a result. Furthermore, hourly data collected at hour 17 for both the H2S and HC analyzer were discarded as the analyzers were recovering from the power failure.
- The station name will be replaced to Tamarack and the name of “Maskwa” will be retired in April.

St. Lina Station

- Measured parameters were below Alberta Ambient Air Quality Objectives (AAAQOs) where applicable.
- All data collected this month were compliant with the requirements outlined in the AMD 2016.
- All parameters met the 90% operational uptime requirement.
- **All gas parameters:** Daily zero-span results for the March 1 check were not recorded in the calibration log. The datalogger was reset and a repeat zero-span check was completed on March 1 hour 13. One hour of downtime was recorded due to the additional quality check.
- **O3:**
  - The daily span results went outside the acceptable limits on March 2 and 3. A shut-down calibration was attempted but was unsuccessful. Maintenance was completed on the analyzer following by a successful post-repair calibration on March 3. Data were discarded back to the last valid zero-span check, which was March 1 hour 13. Forty-nine hours of downtime were recorded due to this event.
  - The analyzer failed the daily span check on March 22. A successful repeat zero-span check was completed on March 22 to correct the drift issue. As the analyzer passed the calibration check, no data were discarded. However, four hours of downtime were recorded due to the additional quality check.
- **H2S:**

- The daily span result began to exceed the lower acceptable limit, starting March 4. It was likely due to the ambient temperature fluctuations. A successful monthly calibration was completed on March 8 to correct the issue. As the analyzer passed the calibration requirements, no data were discarded.
- The scheduled daily span result for March 14 and the repeat span check result on March 15 trended outside the lower the acceptable limit. A successful repeat multi-point calibration was completed on March 16 to correct the issue. Seven hours of downtime were recorded due to the additional quality checks.
- A repeat zero-span check was completed on March 28 hour 6 and 7 to investigate a positive span drift. The drift was likely because the ambient temperature was warming up. The span check results went back to normal, starting March 29. No further action was required. Two hours of downtime were recorded due to this additional quality check.

- **THC/CH4/NMHC:** A repeat zero-span check was completed after the span gas cylinder replacement on March 22. One hour of downtime was recorded as a result.
- **NOx/NO/NO2:** Non-typical data were recorded on February 10 between hour 10 and 15. As the analyzer passed the daily zero-span checks on February9 and 10, the analyzer's functionality was confirmed. Data were considered valid. An investigation into potential sources that caused the spike is undergoing. The result will be included in the monthly report once it becomes available.

Integrated Sampling

All the integrated sampling analytical results are included in the March 2021 Integrated Sampling Report.

- **VOCs Sampling System:**
  - The VOC sampler is programed to collect a 24-hour sample of air every sixth day as per the North American Pollution Surveillance schedule (NAPS).
  - The VOCs sampling program was paused for the AQM station relocation project on March 26. The program will be resumed once the project is completed. No sample was collected on March 29 due to this event.
  - Four samples were collected this month: on March 5, 11, 17 and 23.
- **PAHs Sampling System:**
  - The PAH sampler is programed to collect a 24-hour sample of air every sixth day as per the North American Pollution Surveillance schedule (NAPS).
  - The PAHs sampling program was paused for the AQM station relocation project on March 26. The program will be resumed once the project is completed. No sample was collected on March 29 due to this event.
  - Four samples were collected this month: on March 5, 11, 17 and 23.
- **Partisol Sampling System:**
  - The Partisol sampler is programed to collect a 24-hour sample of air every sixth day as per the North American Pollution Surveillance schedule (NAPS).
  - The Partisol sampling program was paused for the AQM station relocation project on March 26. The program will be resumed once the project is completed. No sample was collected on March 29 due to this event.
  - Four samples were collected this month: on March 5, 11, 17 and 23.
- **Passive Sampling System:**
  - The passive sample filters were installed at the stations between March 1 and March 3, and were removed between March 30 and April 1.

- A total of 9 duplicate samples were collected: 2 for H_2S, 3 for SO_2, 2 for NO_2 and 2 for O_3.
- No samples were collected at passive station #40. This station was co-located with the PAMS and was decommissioned when the PAMS was removed from the Bonnyville-East location in early January. Passive H_2S monitoring may return to this location in 2021 to provide ongoing measurements in the vicinity of known sources including the nearby sewage lagoons and Jessie Lake.

- **PAC Sampling System**:
  - The PAC sampling program began in March 2019, and is designed to collect a 2-month integrated sample.
  - The PAC sampling program is temporary paused as the EC laboratory is currently closed.

Revisions to Alberta's Ambient Air Quality Data Warehouse

No revisions to historical data previously submitted to the Alberta's Ambient Air Quality Data Warehouse were made this month.

Deviations from Authorized Monitoring Methods

At the Maskwa station, nearby trees exceed the height allowed under section 2.3 of the wind speed and wind direction siting criteria in Chapter 3 of the AMD. This non-conformance was documented in the updated station site documents. Further actions are being considered including siting the wind sensor so that it meets AMD Chapter 3 siting requirements, or obtaining written authorization from "The Director" to deviate from AMD Siting requirements.

At the Cold Lake South station, the height of the existing wind sensor tower is shorter than the AMD requirements listed in section 2.3 of the wind speed and wind direction siting criteria in Chapter 3 of the AMD. This non-conformance was documented in the updated station site documents. Further actions are being considered including siting the wind sensor so that it meets AMD Chapter 3 siting requirements, or obtaining written authorization from "The Director" to deviate from AMD Siting requirements.

Disclaimer

Baseline correction were performed on the 1-minute data. 5-minute and hourly data were calculated based on the post-baseline correction 1-minute data set. Data verification/validation were then performed on the 5-minute and hourly data. Hourly data that are included in this report are the post-validation hourly data set.

Equipment calibration / maintenance records were provided by Bureau Veritas Canada.

Certification

This report was prepared and submitted by Lily Lin in accordance with Chapter 9 of the Air Monitoring Directive (AMD 2016).

Lily Lin, Data & Reporting Specialist, LICA Airshed

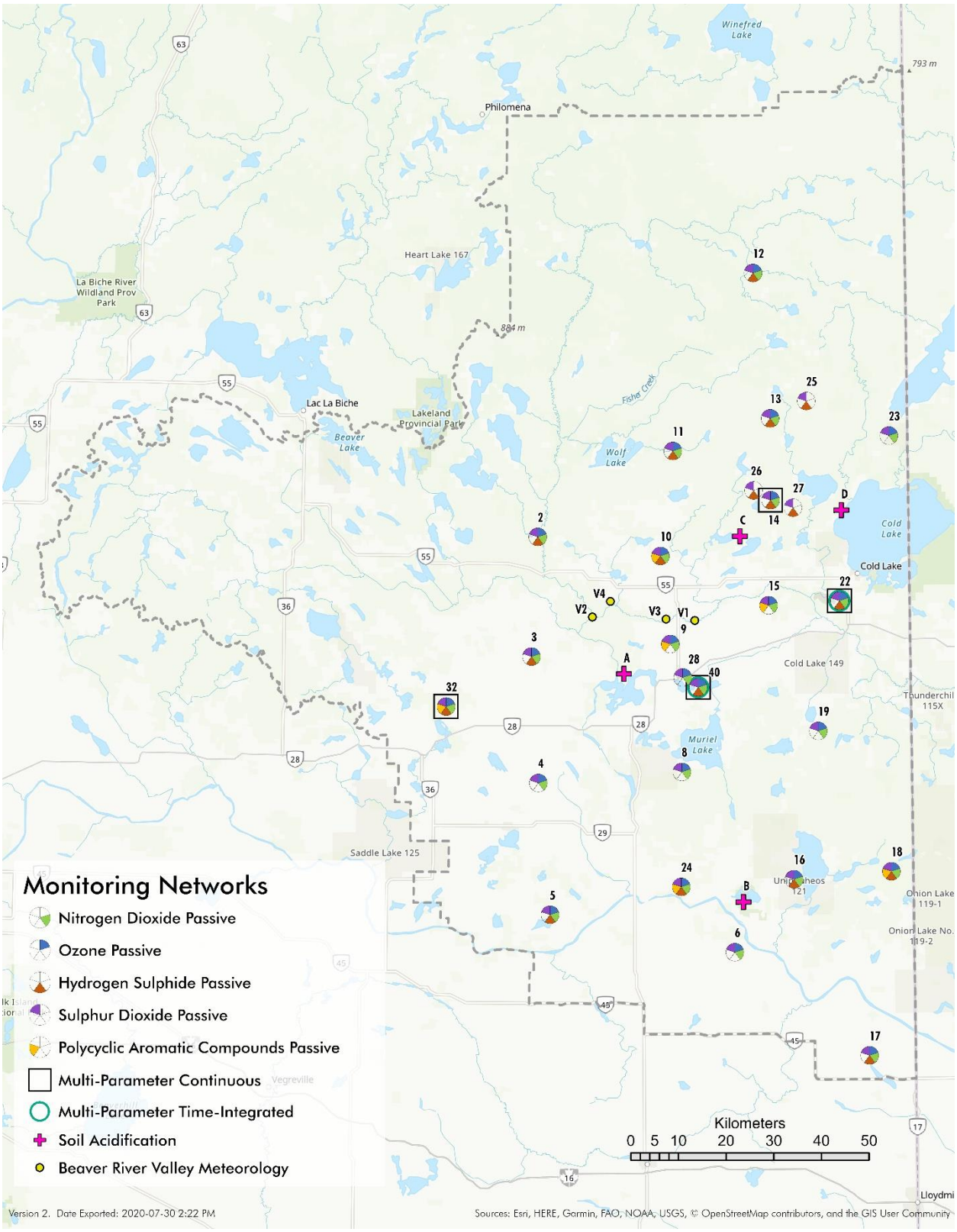
This report was reviewed by Mike Bisaga in accordance with Chapter 9 of the Air Monitoring Directive (AMD 2016).

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. I also certify that at the time of this report's submission, all air data have been electronically uploaded to Alberta's Ambient Air Quality Data Warehouse as required by the AMD, with the exception of electronic submission for the results of intermittent samples, Partisol samples and passive samples. Electronic submission for the intermittent sample, Partisol sample and passive sample results will be performed during the preparation of the March 2021 integrated sampling report. Uploading of VOC data from the canister sampling program was not required at the time of completing this report.

Michael Bisaga, Monitoring Programs Manager, LICA Airshed

April 13, 2021

Map of LICA Continuous Monitoring Network



CONTINUOUS NETWORK EQUIPMENT AND MONITORING RESULTS SUMMARY

Cold Lake South Station

Equipment Operation Summary

Parameter	Make / Model	Serial Number	Calibration Date
Sulphur Dioxide (SO2)	**Thermo / 43i-TLE**	**1180260018**	**March 24, 2021**
• The analyzer failed the daily zero-span check on March 2. A successful shut-down calibration was completed on March 4 prior to rebuilding the sample pump. A post-repair calibration was performed afterwards. As the analyzer passed the shut-down calibration check, data collected between March 3 and 4 were considered valid. No data were discarded. However, 2 hours of downtime were recorded due to the maintenance work performed on the sample pump. • A shut-down calibration was completed on March 24 in preparation for the scheduled station relocation. Three hours of downtime were recorded due to this additional calibration. • No data were collected, starting on March 26 hour 9 as the power to the air monitoring station was shut down for the station relocation. One hundred thirty-five hours of downtime were recorded.			
Total Reduced Sulphur (TRS)	**Thermo / 450i**	**812728560**	**March 24, 2021**
• A successfully monthly calibration was completed on March 5. • A shut-down calibration was completed on March 24 in preparation for the scheduled station relocation. Three hours of downtime were recorded due to this additional calibration. • No data were collected, starting on March 26 hour 9 as the power to the air monitoring station was shut down for the station relocation. One hundred thirty-five hours of downtime were recorded.			
Total Hydrocarbons / Methane/ Non-methane Hydrocarbons (THC/CH4/NMHC)	**Thermo / 55i**	**1180030034**	**March 24, 2021**
• A successfully monthly calibration was completed on March 9. • The span gas cylinder was replaced on March 5. • A shut-down calibration was completed on March 24 in preparation for the scheduled station relocation. Three hours of downtime were recorded due to this additional calibration. • No data were collected, starting on March 26 hour 9 as the power to the air monitoring station was shut down for the station relocation. One hundred thirty-five hours of downtime were recorded.			

Parameter	Make / Model	Serial Number	Calibration Date
Oxide of Nitrogen / Nitric Oxide/ Nitrogen Dioxide (NOx/NO/NO2)	**Thermo / 42i**	**1505664393**	**March 24, 2021**
• The analyzer failed the daily zero-span check on March 2. A successful repeat zero-span check was completed on March 3 hour 7. The possible cause for the span failure was fluctuating ambient temperatures. The analyzer was calibrated to correct this issue on March 5. As the analyzer passed the March 3 check and Mar 5 monthly calibration, no data were discarded. However, one hour of downtime was recorded due to the additional quality check. • A successfully monthly calibration was completed on March 5. • A shut-down calibration was completed on March 24 in preparation for the scheduled station relocation. five hours of downtime were recorded due to this additional calibration. • No data were collected, starting on March 26 hour 9 as the power to the air monitoring station was shut down for the station relocation. One hundred thirty-five hours of downtime were recorded.			
Ozone (O3)	**Thermo / 49i**	**700419951**	**March 24, 2021**
• Following a successful shut down calibration on March 4, the annual maintenance was performed and the sample pump was replaced. A successful post-repair calibration was completed after the maintenance activities. Three hours of downtime were recorded due to this maintenance activity. • A shut-down calibration was completed on March 24 in preparation for the scheduled station relocation. Three hours of downtime were recorded due to this additional calibration. • No data were collected, starting on March 26 hour 9 as the power to the air monitoring station was shut down for the station relocation. One hundred thirty-five hours of downtime were recorded.			
Particulate Matter 2.5 (PM2.5)	**Teledyne T640**	**575**	**March 24, 2021**
• A successfully monthly calibration was completed on March 9. • A shut-down verification check was completed on March 24 in preparation for the scheduled station relocation. One hour of downtime was recorded due to this additional check. • No data were collected, starting on March 26 hour 9 as the power to the air monitoring station was shut down for the station relocation. One hundred thirty-five hours of downtime were recorded.			

Parameter	Make / Model	Serial Number	System Check Date
Relative Humidity (RH)	**Rotronic HC2A-S3**	**20404750**	**February 4, 2021**
• No data were collected, starting on March 26 hour 9 as the power to the air monitoring station was shut down for the station relocation. One hundred thirty-five hours of downtime were recorded.			
Barometric Pressure (BP)	**Met One / Part 092**	**Y23368**	**February 4, 2021**
• No data were collected, starting on March 26 hour 9 as the power to the air monitoring station was shut down for the station relocation. One hundred thirty-five hours of downtime were recorded.			
Ambient Temperature (AT)	**Rotronic HC2A-S3**	**20404750**	**February 4, 2021**
• No data were collected, starting on March 26 hour 9 as the power to the air monitoring station was shut down for the station relocation. One hundred thirty-five hours of downtime were recorded.			
Station Temperature (ST)	**BV-supplied**	**n/a**	**n/a**
• No data were collected, starting on March 26 hour 9 as the power to the air monitoring station was shut down for the station relocation. One hundred thirty-five hours of downtime were recorded.			
Wind Speed (WS) / Wind Direction (WD)/ Stand Deviation Wind Direction (STDWD)	**RM Young 05305AQ**	**177354**	**February 4, 2021**
• Wind direction data contained in this report represents where the wind is coming from. • The last wind system calibration was completed on September 25, 2020. • Eighty-six hours of data were discarded due to wind system malfunctions. • No data were collected, starting on March 26 hour 9 as the power to the air monitoring station was shut down for the station relocation. One hundred thirty-five hours of downtime were recorded.			

Monitored Data Summary for Cold Lake South Station

Parameter	Objectives/Guidelines			Exceedances			Monthly Avg.	Min. 1-hr	Max. 1-hr	Date/Time	VWS (km/hr)	VWD (sector)	Max. 24-hr	Date	Operational Uptime (%)	Valid Data (%)
	1-hr	24-hr	30-day	1-hr	24-hr	30-day										
SO2 (ppb)	172	48	11	0	0	0	0.2	0	5	March 18 at hour 17	4	SW	1.3	March 18	81.2	77.0
TRS (ppb)	-	-	-	-	-	-	0.1	0	1	March 1 at hour 14	2.4	WSW	0.6	March 2	81.5	77.3
NOx (ppb)	-	-	-	-	-	-	6.0	1	52	March 2 at hour 7	1.2	E	15.5	March 3	81.0	76.5
NO (ppb)	-	-	-	-	-	-	0.9	0	26	March 17 at hour 7	X	X	3.7	March 17	81.0	76.5
NO2 (ppb)	159	-	-	0	-	-	5.1	1	28	March 1 at hour 18	X	X	12.5	March 3	81.0	76.5
O3 (ppb)	76	-	-	0	-	-	33.8	1.1	53.1	March 13 at hour 19	10.8	SE	42.7	March 12	81.0	77.0
THC (ppm)	-	-	-	-	-	-	2.02	1.88	2.84	March 13 at hour 2	0.9	S	2.24	March 3	81.5	77.4
CH4 (ppm)	-	-	-	-	-	-	2.00	1.88	2.49	March 3 at hour 7	X	X	2.17	March 3	81.5	77.4
NMHC (ppm)	-	-	-	-	-	-	0.02	0.00	0.70	March 13 at hour 2	0.9	S	0.07	March 13	81.5	77.4
PM2.5 (µg/m3)	80	29	-	0	0	-	5.8	1	30	March 4 at hour 0	X	X	13.0	March 5	81.7	81.6
RH (%)	-	-	-	-	-	-	66.0	25	100	March 24 at hour 17	3.2	NNE	83.6	March 24	81.9	81.9
BP (millibar)	-	-	-	-	-	-	948	935	964	March 23 at hour 6	3.9	NE	958	March 23	81.9	81.9
Ext. Temp. (°C)	-	-	-	-	-	-	-2.2	-20.4	13.8	March 18 at hour 15	5.7	SSE	6.3	March 14	81.9	81.9
Stn. Temp. (°C)	-	-	-	-	-	-	24.0	21.0	25.9	March 14 at hour 15	9.3	SE	24.7	March 14	81.9	81.9
WSV (km/hr)	-	-	-	-	-	-	0.3	0.2	22.8	March 20 at hour 20	22.8	NW	8.4	March 14	70.3	70.3
WDV (sector)	-	-	-	-	-	-	156 (SSE)	-	-	-	-	-	-	-	70.3	70.3

1- Date/ Time given is the first minimum and maximum value that was recorded

Alberta Ambient Air Quality Objectives (AAAQOs) Exceedances

The measured ambient air quality was within the AAAQOs for all monitored parameters.

Maskwa Station

Equipment Operation Summary

Parameter	Make / Model	Serial Number	Calibration Date
Sulphur Dioxide (SO2)	**Thermo / 43i-TLE**	**1180930031**	**March 26, 2021**
• No issues were identified this month. • Tree removal work around the Maskwa monitoring station was executed on between March 17 and 19. Power to the station was cut on March 18 between hour 6 and hour 16 as a safety precaution while tree removal occurred in the vicinity of nearby powerlines. Eleven hours of downtime were recorded as a result.			
Hydrogen Sulphide (H2S)	**Thermo / 450i**	**CM17360005**	**March 26, 2021**
• Tree removal work around the Maskwa monitoring station was executed on between March 17 and 19. Power to the station was cut on March 18 between hour 6 and hour 16 as a safety precaution while tree removal occurred in the vicinity of nearby powerlines. Eleven hours of downtime were recorded as a result. Furthermore, hourly data collected at hour 17 was discarded as the analyzer was recovering from the power failure.			
Oxide of Nitrogen / Nitric Oxide/ Nitrogen Dioxide (NOx/NO/NO2)	**Thermo / 42i**	**1180930028**	**March 26, 2021**
• No issues were identified this month. • Tree removal work around the Maskwa monitoring station was executed on between March 17 and 19. Power to the station was cut on March 18 between hour 6 and hour 16 as a safety precaution while tree removal occurred in the vicinity of nearby powerlines. Eleven hours of downtime were recorded as a result.			
Ozone (O3)	**Thermo / 49iQ**	**1202068570**	**March 29, 2021**
• No issues were identified this month. • Tree removal work around the Maskwa monitoring station was executed on between March 17 and 19. Power to the station was cut on March 18 between hour 6 and hour 16 as a safety precaution while tree removal occurred in the vicinity of nearby powerlines. Eleven hours of downtime were recorded as a result.			

Parameter	Make / Model	Serial Number	Calibration Date
Particulate Matter 2.5 (PM2.5)	**Thermo / Sharp 5030**	**CM 2209**	**March 26, 2021**
• No issues were identified this month. • Tree removal work around the Maskwa monitoring station was executed on between March 17 and 19. Power to the station was cut on March 18 between hour 6 and hour 16 as a safety precaution while tree removal occurred in the vicinity of nearby powerlines. Eleven hours of downtime were recorded as a result.			
Total Hydrocarbons / Methane/ Non-methane Hydrocarbons (THC/CH4/NMHC)	**Thermo / 55i**	**1314057759**	**March 29, 2021**
• Tree removal work around the Maskwa monitoring station was executed on between March 17 and 19. Power to the station was cut on March 18 between hour 6 and hour 16 as a safety precaution while tree removal occurred in the vicinity of nearby powerlines. Eleven hours of downtime were recorded as a result. Furthermore, hourly data collected at hour 17 was discarded as the analyzer was recovering from the power failure.			

Parameter	Make / Model	Serial Number	System Check Date
Relative Humidity (RH)	**Campbell Scientific 070 / HC2A-S3**	**20257103**	**February 2, 2021**
• No issues were identified this month. • Tree removal work around the Maskwa monitoring station was executed on between March 17 and 19. Power to the station was cut on March 18 between hour 6 and hour 16 as a safety precaution while tree removal occurred in the vicinity of nearby powerlines. Eleven hours of downtime were recorded as a result.			
Ambient Temperature (AT)	**Campbell Scientific 070 / HC2A-S3**	**20257103**	**February 2, 2021**
• No issues were identified this month. • Tree removal work around the Maskwa monitoring station was executed on between March 17 and 19. Power to the station was cut on March 18 between hour 6 and hour 16 as a safety precaution while tree removal occurred in the vicinity of nearby powerlines. Eleven hours of downtime were recorded as a result.			

Parameter	Make / Model	Serial Number	System Check Date
Barometric Pressure (BP)	**Met One / Part 090D**	**F4997**	**February 2, 2021**
• No issues were identified this month. • Tree removal work around the Maskwa monitoring station was executed on between March 17 and 19. Power to the station was cut on March 18 between hour 6 and hour 16 as a safety precaution while tree removal occurred in the vicinity of nearby powerlines. Eleven hours of downtime were recorded as a result.			
Station Temperature (ST)	**BV-supplied**	**n/a**	**n/a**
• No issues were identified this month. • Tree removal work around the Maskwa monitoring station was executed on between March 17 and 19. Power to the station was cut on March 18 between hour 6 and hour 16 as a safety precaution while tree removal occurred in the vicinity of nearby powerlines. Eleven hours of downtime were recorded as a result.			
Precipitation (PRECIP)	**Met One / Part 387**	**F4481**	**February 2, 2021**
• No issues were identified this month. • Tree removal work around the Maskwa monitoring station was executed on between March 17 and 19. Power to the station was cut on March 18 between hour 6 and hour 16 as a safety precaution while tree removal occurred in the vicinity of nearby powerlines. Eleven hours of downtime were recorded as a result.			
Wind Speed (WS) / Wind Direction (WD)/ Stand Deviation Wind Direction (STDWD)	**RM Young / 05305VK**	**161465**	**February 2, 2021**
• Wind direction data contained in this report represents where the wind is coming from. • The last wind system calibration was completed on September 10, 2020. • No issues were identified this month. • Tree removal work around the Maskwa monitoring station was executed on between March 17 and 19. Power to the station was cut on March 18 between hour 6 and hour 16 as a safety precaution while tree removal occurred in the vicinity of nearby powerlines. Eleven hours of downtime were recorded as a result.			

Monitored Data Summary for Maskwa Site

Parameter	Objectives/Guidelines			Exceedances			Monthly Avg.	Min. 1-hr	Max. 1-hr	Date/Time	VWS (km/hr)	VWD (sector)	Max. 24-hr	Date	Operational Uptime (%)	Valid Data (%)
	1-hr	24-hr	30-day	1-hr	24-hr	30-day										
SO2 (ppb)	172	48	11	0	0	0	0.9	0	12	March 21 at hour 1	11.4	NW	2.5	March 21	98.5	93.5
H2S (ppb)	10	3	-	0	0	-	0.0	0	2	March 23 at hour 16	9.1	SSE	0.4	March 23	98.4	93.4
NOx (ppb)	-	-	-	-	-	-	4.7	0	43	March 20 at hour 8	2.7	SSW	11.9	March 23	98.5	93.4
NO (ppb)	-	-	-	-	-	-	0.9	0	28	March 20 at hour 8	2.7	SSW	4.5	March 23	98.5	93.4
NO2 (ppb)	159	-	-	0	-	-	3.8	0	24	March 20 at hour 6	0	SE	7.5	March 23	98.5	93.4
O3 (ppb)	76	-	-	1	-	-	30.2	3.6	83.4	March 23 at hour 16	9.1	SSE	41.1	March 23	98.5	93.2
THC (ppm)	-	-	-	-	-	-	1.96	1.85	2.84	March 23 at hour 14	10.4	SSE	2.19	March 23	98.4	93.7
CH4 (ppm)	-	-	-	-	-	-	1.95	1.85	2.25	March 7 at hour 8	4.6	SSW	2.02	March 1	98.4	93.7
NMHC (ppm)	-	-	-	-	-	-	0.01	0.00	0.60	March 23 at hour 14	10.4	SSE	0.17	March 23	98.4	93.7
PM2.5 (µg/m3)	80	29	-	24	2	-	15.6	0	1211	March 23 at hour 16	9.1	SSE	281.5	March 23	98.5	98.4
RH (%)	-	-	-	-	-	-	69.2	27	100	March 2 at hour 4	0.7	ESE	89.3	March 2	98.5	98.5
BP (millibar)	-	-	-	-	-	-	933	913	947	March 23 at hour 6	3.6	ENE	943	March 13	98.5	98.5
Ext. Temp. (°C)	-	-	-	-	-	-	-2.5	-21.0	12.8	March 19 at hour 15	7.1	W	5.2	March 28	98.5	98.5
Stn. Temp. (°C)	-	-	-	-	-	-	22.7	18.3	25.2	March 26 at hour 14	11.3	WNW	24.5	March 28	98.5	98.5
Precipitation (mm)*	-	-	-	-	-	-	5.9	0.0	1.2	March 29 at hour 0	16.2	N	2.9	March 29	98.5	98.5
WSV (km/hr)	-	-	-	-	-	-	0.8	0.0	19.2	March 29 at hour 8	19.2	NNW	14.7	March 29	98.5	98.5
WDV (sector)	-	-	-	-	-	-	224 (SW)	-	-	-	-	-	-	-	98.5	98.5

1- Date/ Time given is the first minimum and maximum value that was recorded

* Data represents the total (sum) for the indicated time frame

Alberta Ambient Air Quality Objectives (AAAQOs) Exceedances

The following exceedances of AAAQOs were observed at the Maskwa Site.

Date	Time (MST)	Parameter	Average Period	AAAQOs	Concentration	Wind speed	Wind Direction	Reference #
March 23	16	O3	1-Hour	76 ppb	83.4 ppb	9.1 km/hr	167° (SSE)	377241
March 23	8	PM2.5	1-Hour	80 µg/m3	207 µg/m3	4.5 km/hr	84° (E)	377241
March 23	9	PM2.5	1-Hour	80 µg/m3	97 µg/m3	5.9 km/hr	107° (ESE)	377241
March 23	10	PM2.5	1-Hour	80 µg/m3	251 µg/m3	6.4 km/hr	136° (SE)	377241
March 23	11	PM2.5	1-Hour	80 µg/m3	577 µg/m3	6.7 km/hr	144° (SE)	377241
March 23	12	PM2.5	1-Hour	80 µg/m3	719 µg/m3	7.4 km/hr	156° (SSE)	377241
March 23	13	PM2.5	1-Hour	80 µg/m3	331 µg/m3	8.2 km/hr	169° (SSE)	377241
March 23	14	PM2.5	1-Hour	80 µg/m3	618 µg/m3	10.4 km/hr	164° (SSE)	377241
March 23	15	PM2.5	1-Hour	80 µg/m3	236 µg/m3	9.9 km/hr	174° (S)	377241
March 23	16	PM2.5	1-Hour	80 µg/m3	1211 µg/m3	9.1 km/hr	167° (SSE)	377241
March 23	17	PM2.5	1-Hour	80 µg/m3	442 µg/m3	10.1 km/hr	171° (S)	377241
March 23	18	PM2.5	1-Hour	80 µg/m3	195 µg/m3	9.0 km/hr	168° (SSE)	377241
March 23	19	PM2.5	1-Hour	80 µg/m3	211 µg/m3	7.5 km/hr	162° (SSE)	377241
March 23	20	PM2.5	1-Hour	80 µg/m3	251 µg/m3	6.8 km/hr	114° (ESE)	377241
March 23	21	PM2.5	1-Hour	80 µg/m3	145 µg/m3	6.6 km/hr	115° (ESE)	377241
March 23	22	PM2.5	1-Hour	80 µg/m3	624 µg/m3	6.7 km/hr	123° (ESE)	377241
March 23	23	PM2.5	1-Hour	80 µg/m3	565 µg/m3	7.4 km/hr	109° (ESE)	377241
March 23	-	PM2.5	24-Hour	29 µg/m3	281.5 µg/m3	4.5 km/hr	125° (SE)	377242
March 24	0	PM2.5	1-Hour	80 µg/m3	444 µg/m3	8.3 km/hr	107° (ESE)	377242
March 24	1	PM2.5	1-Hour	80 µg/m3	192 µg/m3	7.9 km/hr	101° (E)	377242
March 24	2	PM2.5	1-Hour	80 µg/m3	110 µg/m3	6.2 km/hr	94° (E)	377242
March 24	3	PM2.5	1-Hour	80 µg/m3	327 µg/m3	7.0 km/hr	104° (ESE)	377242
March 24	4	PM2.5	1-Hour	80 µg/m3	303 µg/m3	7.0 km/hr	108° (ESE)	377242
March 24	20	PM2.5	1-Hour	80 µg/m3	81 µg/m3	11.8 km/hr	20° (NNE)	377242
March 24	21	PM2.5	1-Hour	80 µg/m3	104 µg/m3	11.8 km/hr	9° (N)	377242
March 24	22	PM2.5	1-Hour	80 µg/m3	146 µg/m3	11.1 km/hr	9° (N)	377242
March 24	-	PM2.5	24-Hour	29 µg/m3	85.8 µg/m3	3.5 km/hr	71° (ENE)	377242

Note:

The source of the exceedances of the PM2.5 guideline and objective as well as O3 objective were caused by smoke and dust in the area during final clean-up from the tree removal project. Brush piles were burned (creating smoke), the ground was grubbed (creating dust), and haul trucks removed merchantable timber (creating dust, diesel exhaust). As the brush piles smoldered, PM remained elevated in the vicinity of the station for couple days. Given the nature of brush pile burning (low temperature, ground level) the air quality impact was very localized, likely limited to a few kilometers around the station itself.

St. Lina Station

Equipment Operation Summary

Parameter	Make / Model	Serial Number	Calibration Date
Sulphur Dioxide (SO2)	**Thermo / 43i-TLE**	**1180930030**	**March 11, 2021**
• Daily zero-span results for the March 1 check were not recorded in the calibration log. The datalogger was reset and a repeat zero-span check was completed on March 1 hour 13. One hour of downtime was recorded due to the additional quality check.			
Hydrogen Sulphide (H2S)	**Thermo / 450i**	**CM18010058**	**March 16, 2021**
• Daily zero-span results for the March 1 check were not recorded in the calibration log. The datalogger was reset and a repeat zero-span check was completed on March 1 hour 13. One hour of downtime was recorded due to the additional quality check. • The daily span result began to exceed the lower acceptable limit, starting March 4. It was likely due to the ambient temperature fluctuations. A successful monthly calibration was completed on March 8 to correct the issue. As the analyzer passed the calibration requirements, no data were discarded. • The scheduled daily span result for March 14 and the repeat span check result on March 15 trended outside the lower the acceptable limit. A successful repeat multi-point calibration was completed on March 16 to correct the issue. Seven hours of downtime were recorded due to the additional quality checks. • A repeat zero-span check was completed on March 28 hour 6 and 7 to investigate a positive span drift. The drift was likely because the ambient temperature was warming up. The span check results went back to normal, starting March 29. No further action was required. Two hours of downtime were recorded due to this additional quality check.			
Oxide of Nitrogen / Nitric Oxide/ Nitrogen Dioxide (NOx/NO/NO2)	**Thermo / 42i**	**1180930029**	**March 11, 2021**
• Daily zero-span results for the March 1 check were not recorded in the calibration log. The datalogger was reset and a repeat zero-span check was completed on March 1 hour 13. One hour of downtime was recorded due to the additional quality check.			
Total Hydrocarbons / Methane/ Non-methane Hydrocarbons (THC/CH4/NMHC)	**Thermo / 55i**	**1180930025**	**March 11, 2021**
• Daily zero-span results for the March 1 check were not recorded in the calibration log. The datalogger was reset and a repeat zero-span check was completed on March 1 hour 13. One hour of downtime was recorded due to the additional quality check. • The fuel gas cylinder was replaced on March 1. • A repeat zero-span check was completed after the span gas cylinder replacement on March 22. One hour of downtime was recorded as a result.			

Parameter	Make / Model	Serial Number	Calibration Date
Ozone (O3)	**Thermo / 49i**	**1002240371**	**March 22, 2021**
• Daily zero-span results for the March 1 check were not recorded in the calibration log. The datalogger was reset and a repeat zero-span check was completed on March 1 hour 13. One hour of downtime was recorded due to the additional quality check. • The daily span results went outside the acceptable limits on March 2 and 3. A shut-down calibration was attempted but was unsuccessful. Maintenance was completed on the analyzer following by a successful post-repair calibration on March 3. Data were discarded back to the last valid zero-span check, which was March 1 hour 13. Forty-nine hours of downtime were recorded due to this event. • The analyzer failed the daily span check on March 22. A successful repeat zero-span check was completed on March 22 to correct the drift issue. As the analyzer passed the calibration check, no data were discarded. However, four hours of downtime were recorded due to the additional quality check.			
Total Hydrocarbons / Methane/ Non-methane Hydrocarbons (THC/CH4/NMHC)	**Thermo / 55i**	**1180930025**	**March 11, 2021**
• Daily zero-span results for the March 1 check were not recorded in the calibration log. The datalogger was reset and a repeat zero-span check was completed on March 1 hour 13. One hour of downtime was recorded due to the additional quality check. • The fuel gas cylinder was replaced on March 1. • A repeat zero-span check was completed after the span gas cylinder replacement on March 22. One hour of downtime was recorded as a result.			
Particulate Matter 2.5 (PM2.5)	**Thermo / Sharp 5030i**	**CM17091001**	**March 10, 2021**
• No issues were identified this month.			

Parameter	Make / Model	Serial Number	System Check Date
Relative Humidity (RH)	**Vaisala Oyj. Finland / HMP155**	**R2640785**	**December 23, 2020**
• No issues were identified this month.			
Ambient Temperature (AT)	**Vaisala Oyj. Finland / HMP155**	**R2640785**	**December 23, 2020**
• No issues were identified this month.			

Parameter	Make / Model	Serial Number	System Check Date
Barometric Pressure (BP)	**Met One / Part 090D**	**F4998**	**December 23, 2020**
• No issues were identified this month.			
Station Temperature (ST)	**BV-supplied**	**n/a**	**n/a**
• No issues were identified this month.			
Precipitation (PRECIP)	**Met One / Part 387D**	**A23775**	**January 28, 2021**
• No issues were identified this month.			
Wind Speed (WS) / Wind Direction (WD)/ Stand Deviation Wind Direction (STDWD)	**RM Young / 05305VK**	**161466**	**March 16, 2021**
• Wind direction data contained in this report represents where the wind is coming from. • The annual wind system calibration was completed on March 16, 2021. • No issues were identified this month.			

Monitored Data Summary for St. Lina Site

Parameter	Objectives/Guidelines			Exceedances			Monthly Avg.	Min. 1-hr	Max. 1-hr	Date/Time	VWS (km/hr)	VWD (sector)	Max. 24-hr	Date	Operational Uptime (%)	Valid Data (%)
	1-hr	24-hr	30-day	1-hr	24-hr	30-day										
SO2 (ppb)	172	48	11	0	0	0	0.3	0	6	March 27 at hour 10	18	SW	1.3	March 28	99.9	94.9
H2S (ppb)	10	3	-	0	0	-	0.2	0	2	March 7 at hour 0	8.6	WNW	1.4	March 8	98.7	93.5
NOx (ppb)	-	-	-	-	-	-	2.5	0	11	March 16 at hour 17	17.5	WSW	6.8	March 5	99.9	94.6
NO (ppb)	-	-	-	-	-	-	0.2	0	2	March 1 at hour 11	15.1	SW	0.6	March 16	99.9	94.6
NO2 (ppb)	159	-	-	0	-	-	2.2	0	10	March 16 at hour 18	10.3	WSW	6.4	March 5	99.9	94.6
O3 (ppb)	76	-	-	0	-	-	38.9	25.9	58.4	March 19 at hour 20	6.2	NW	47.2	March 17	92.7	88.1
THC (ppm)	-	-	-	-	-	-	1.88	1.76	2.45	March 4 at hour 1	10.5	ESE	2.08	March 4	99.7	94.7
CH4 (ppm)	-	-	-	-	-	-	1.88	1.76	2.45	March 4 at hour 1	10.5	ESE	2.08	March 4	99.7	94.7
NMHC (ppm)	-	-	-	-	-	-	0.00	0.00	0.00	March 1 at hour 0	19	S	0.00	March 1	99.7	94.7
PM2.5 (µg/m3)	80	29	-	0	0	-	4.7	0	19	March 5 at hour 6	7.1	ESE	14.6	March 5	100.0	99.7
RH (%)	-	-	-	-	-	-	64.9	30	98	March 24 at hour 18	12.7	NNE	86.7	March 24	100.0	100.0
BP (millibar)	-	-	-	-	-	-	915	897	928	March 23 at hour 4	7.4	E	924	March 13	100.0	100.0
Ext. Temp. (°C)	-	-	-	-	-	-	-1.7	-16.4	11.4	March 19 at hour 13	17.1	WNW	6.2	March 19	100.0	100.0
Stn. Temp. (°C)	-	-	-	-	-	-	23.8	21.7	25.8	March 19 at hour 17	6.7	NW	25.1	March 6	100.0	100.0
Precipitation (mm)*	-	-	-	-	-	-	6.9	0.0	1.2	March 29 at hour 1	32.7	NNW	4.1	March 24	100.0	100.0
WSV (km/hr)	-	-	-	-	-	-	3.9	0.9	36.2	March 29 at hour 5	36.2	NNW	27.7	March 29	100.0	99.6
WDV (sector)	-	-	-	-	-	-	231 (SW)	-	-	-	-	-	-	-	100.0	99.6

1- Date/ Time given is the first minimum and maximum value that was recorded

* Data represents the total (sum) for the indicated time frame

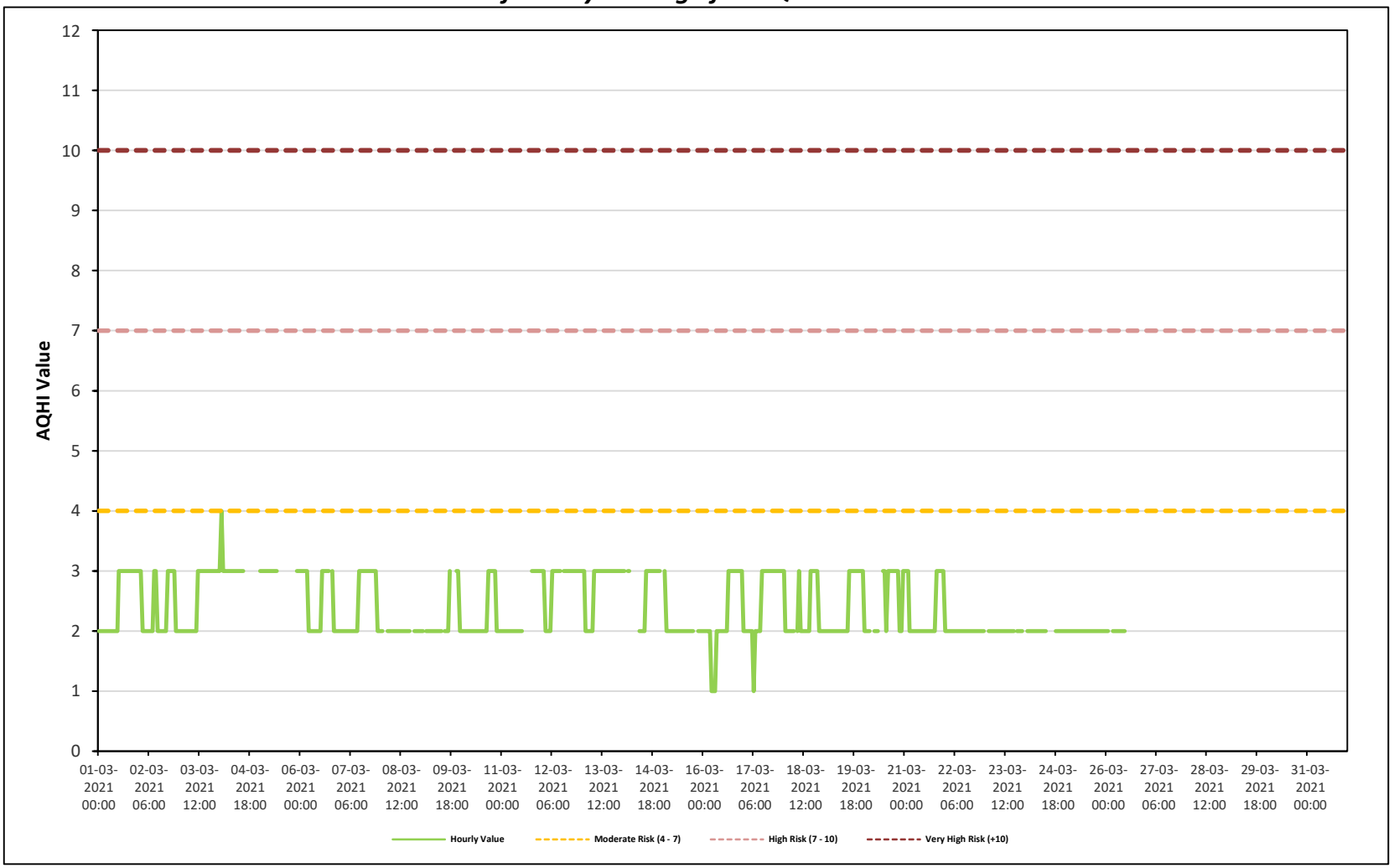
Alberta Ambient Air Quality Objectives (AAAQOs) Exceedances

The measured ambient air quality was within the AAAQOs for all monitored parameters.

TABLES AND CHARTS

COLD LAKE SOUTH STATION

Timeseries Chart of Hourly Average for AQHI - Cold Lake South Station



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - March 2021

Summary of Hourly Averages

SULPHUR DIOXIDE (SO_2) in ppb

Alberta Ambient Air Quality Objectives (AAAQO): 1-Hour 172 ppb, 24-Hour 48 ppb, 30-Day 11 ppb

Number of 1-Hour Exceedences: 0 Number of 24-Hour Exceedences: 0 30-Day Exceedence: 0

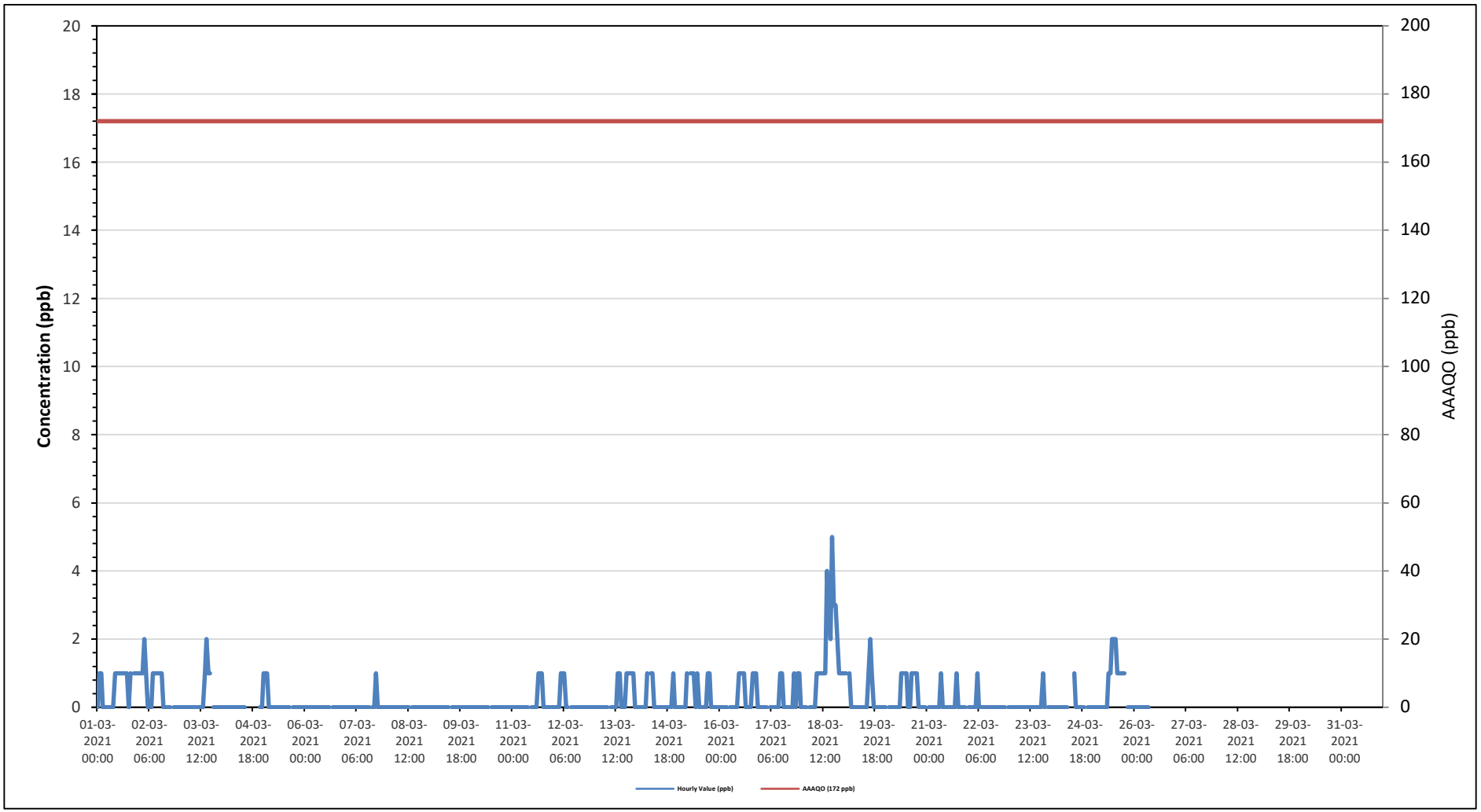
Maximum Hourly Value:	5	ppb	on March 18 at hour 17	Hours in Service:	744
Maximum Daily Value:	1.3	ppb	on March 18	Hours of Data:	573
Minimum Hourly Value:	0	ppb	on March 1 at hour 0	Hours of Missing Data:	140
Minimum Daily Value:	0.0	ppb	on March 6	Hours of Calibration:	31
Monthly Average:	0.2	ppb		Operational Uptime:	81.2

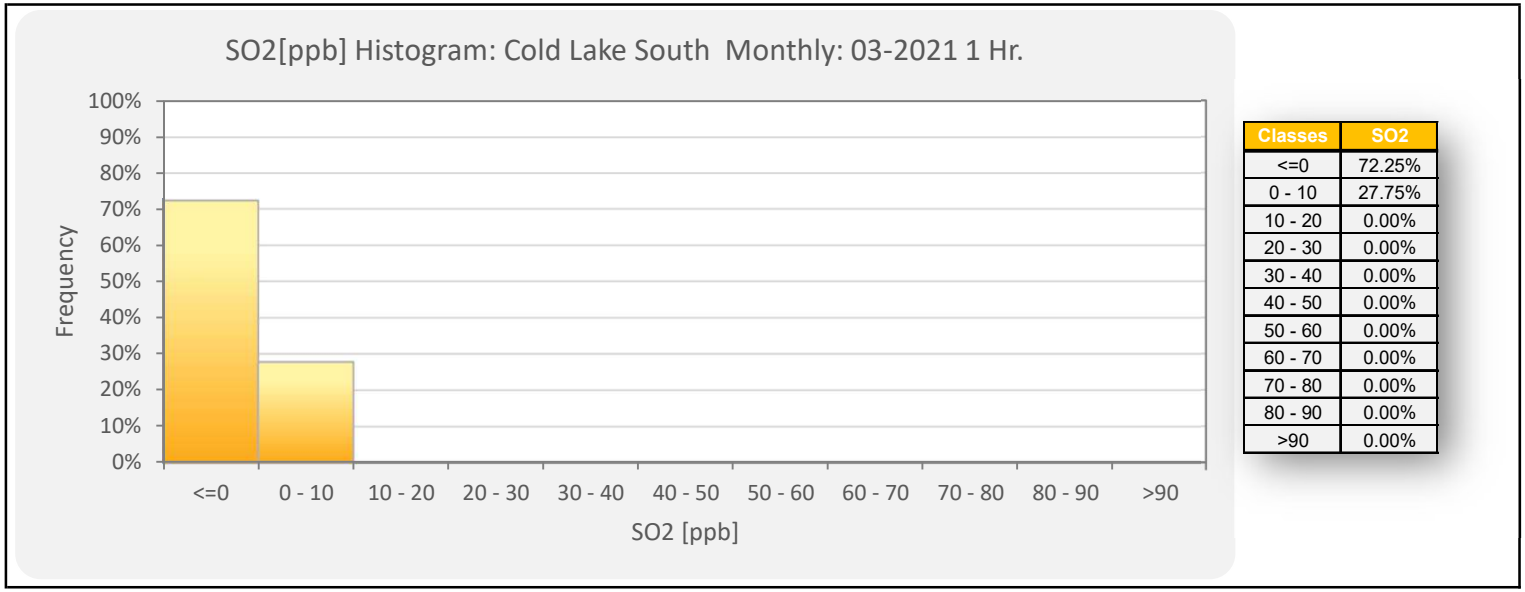
Day	Hourly Period Starting at (MST)																								Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Mar 1	0	1	1	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	1	S	1	1	1	0	1	0.6
Mar 2	1	1	1	2	1	0	0	0	1	1	1	1	1	1	0	0	0	0	0	S	0	0	0	0	0	2	0.5
Mar 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	1	1	S	0	0	0	0	0	0	2	0.2
Mar 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	C	C	C	Y	Y	C	C	C	0	0	0	0	-
Mar 5	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	1	0.1
Mar 6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0.0
Mar 7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	1	0	0	0	0	0	0	0	1	0.0
Mar 8	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Mar 9	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Mar 10	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Mar 11	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	1	1	1	0	0	0	0	0	0	0	1	0.1
Mar 12	0	0	0	0	1	1	1	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1
Mar 13	0	0	0	0	0	0	0	0	S	0	0	0	0	1	1	0	0	0	1	1	1	1	1	0	0	1	0.3
Mar 14	0	0	0	0	0	0	1	S	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0.2
Mar 15	0	0	0	0	0	1	S	1	1	1	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	1	0.3
Mar 16	0	0	0	0	0	S	0	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	0	0	0	1	0.3
Mar 17	0	0	0	0	S	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	0	1	1	0	0	1	0.2
Mar 18	0	0	0	S	0	0	0	0	1	1	1	1	1	1	4	3	2	5	3	3	2	1	1	1	0	5	1.3
Mar 19	1	1	S	1	0	0	0	0	0	0	0	0	0	0	1	2	1	0	0	0	0	0	0	0	0	2	0.3
Mar 20	0	S	0	0	0	0	0	0	0	1	1	1	1	0	0	1	1	1	1	0	0	0	0	0	0	1	0.3
Mar 21	S	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	S	0	1	0.1
Mar 22	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	1	0.0
Mar 23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	S	0	0	0	1	0.0
Mar 24	0	0	0	0	0	0	0	0	0	0	NRM	NRM	NRM	1	0	0	0	0	0	0	S	0	0	0	0	1	0.1
Mar 25	0	0	0	0	0	0	0	0	0	1	1	2	2	2	1	1	1	1	1	S	0	0	0	0	0	2	0.6
Mar 26	0	0	0	0	0	0	0	0	0	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	0	0	-
Mar 27	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-	-
Mar 28	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-	-
Mar 29	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-	-
Mar 30	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-	-
Mar 31	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-	-
Diurnal Maximum	1	1	1	2	1	1	1	1	1	1	1	2	2	2	4	3	2	5	3	3	2	1	1	1			
Daiurnal Average	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.0	0.2	0.3	0.2	0.4	0.3	0.3	0.4	0.5	0.3	0.5	0.3	0.4	0.2	0.3	0.2	0.1			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance			
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance	P	Power Failure	
X	InValid Data (Equipment Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)					

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for SO2 - Cold Lake South Station

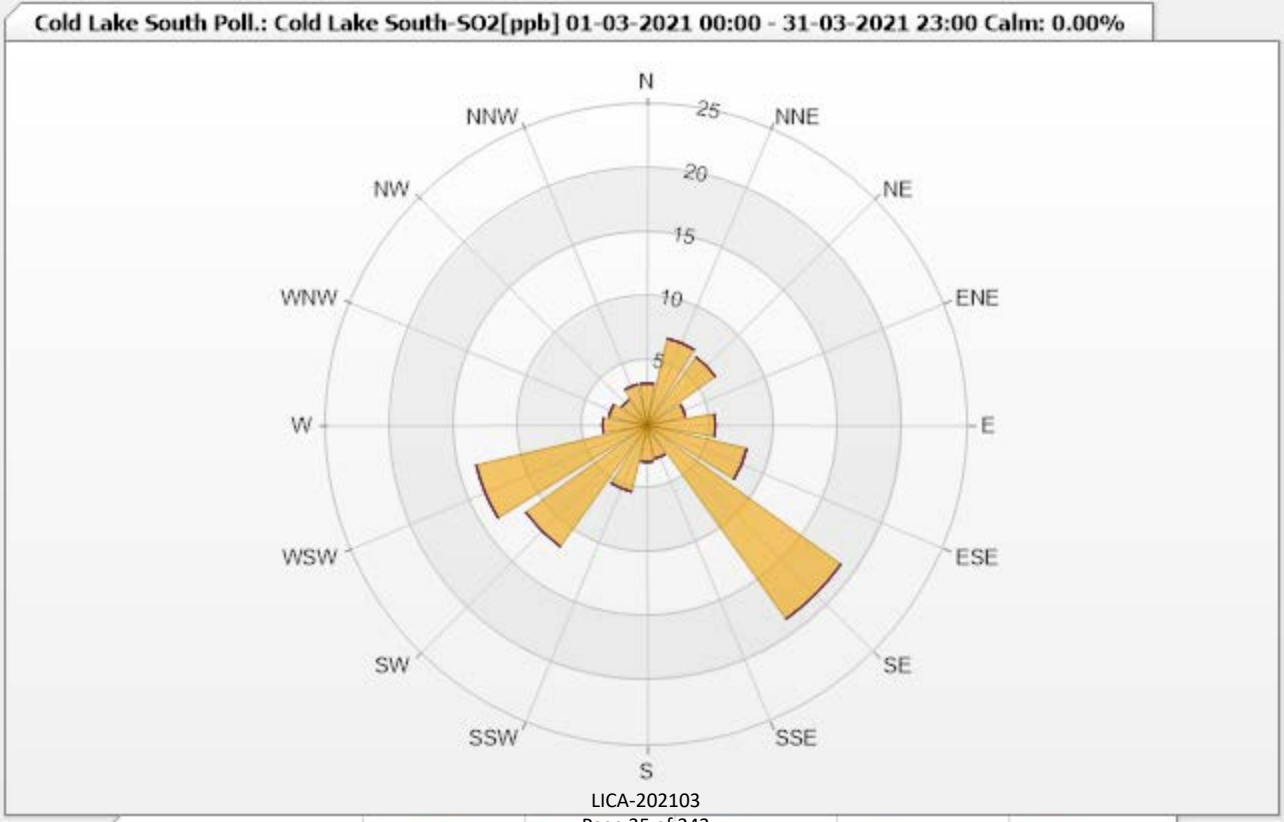




Classes	SO2
<=0	72.25%
0 - 10	27.75%
10 - 20	0.00%
20 - 30	0.00%
30 - 40	0.00%
40 - 50	0.00%
50 - 60	0.00%
60 - 70	0.00%
70 - 80	0.00%
80 - 90	0.00%
>90	0.00%

Wind: Cold Lake South Poll.: Cold Lake South-SO2[ppb] Monthly: 03-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
Calm: 0.00% Valid Data: 65.86% Calm Avg: 0.00 [ppb]

Direction	0-10	10-50	50-100	100-172	>172.0	Total
N	3.27	0	0	0	0	3.27
NNE	6.94	0	0	0	0	6.94
NE	6.53	0	0	0	0	6.53
ENE	3.06	0	0	0	0	3.06
E	5.31	0	0	0	0	5.31
ESE	7.96	0	0	0	0	7.96
SE	18.57	0	0	0	0	18.57
SSE	2.65	0	0	0	0	2.65
S	2.86	0	0	0	0	2.86
SSW	5.31	0	0	0	0	5.31
SW	11.63	0	0	0	0	11.63
WSW	13.67	0	0	0	0	13.67
W	3.47	0	0	0	0	3.47
WNW	3.06	0	0	0	0	3.06
NW	2.45	0	0	0	0	2.45
NNW	3.27	0	0	0	0	3.27
Summary	100	0	0	0	0	100


Cold Lake South Poll.: Cold Lake South-SO2[ppb] 01-03-2021 00:00 - 31-03-2021 23:00 Calm: 0.00%
N
NNE
NE
ENE
E
ESE
SE
SSE
S
SSW
SW
WSW
W
WNW
NW
NNW
25
20
15
10
5
% Icon Classes (ppb)
100 0-10
0 10-50
0 50-100
0 100-172
0 >172.0

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - March 2021

Summary of Hourly Averages

TOTAL REDUCED SULPHUR (TRS) in ppb

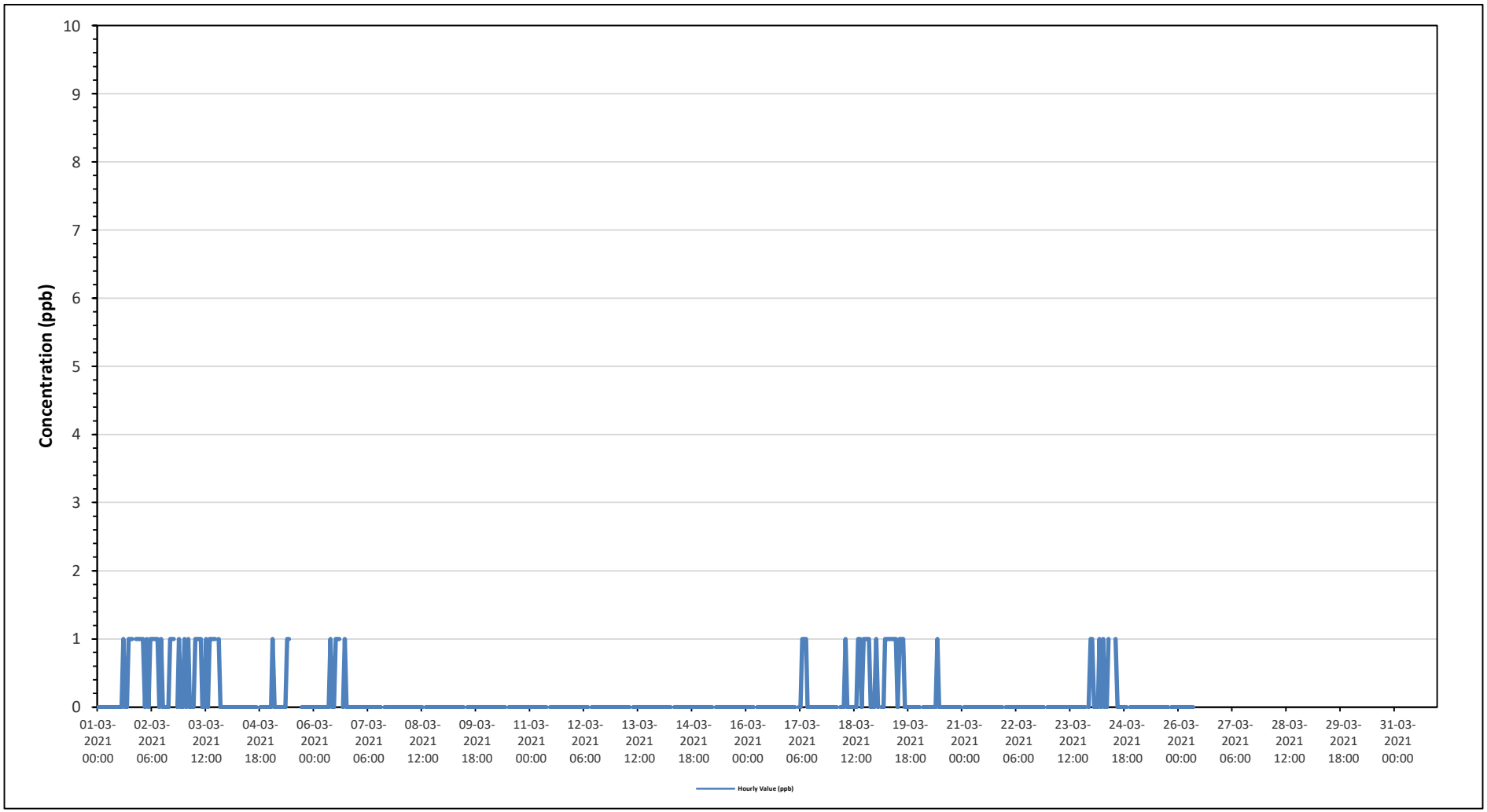
Maximum Hourly Value:	1	ppb	on March 1 at hour 14	Hours in Service:	744
Maximum Daily Value:	0.6	ppb	on March 2	Hours of Data:	575
Minimum Hourly Value:	0	ppb	on March 1 at hour 0	Hours of Missing Data:	138
Minimum Daily Value:	0.0	ppb	on March 4	Hours of Calibration:	31
Monthly Average:	0.1	ppb		Operational Uptime:	81.5

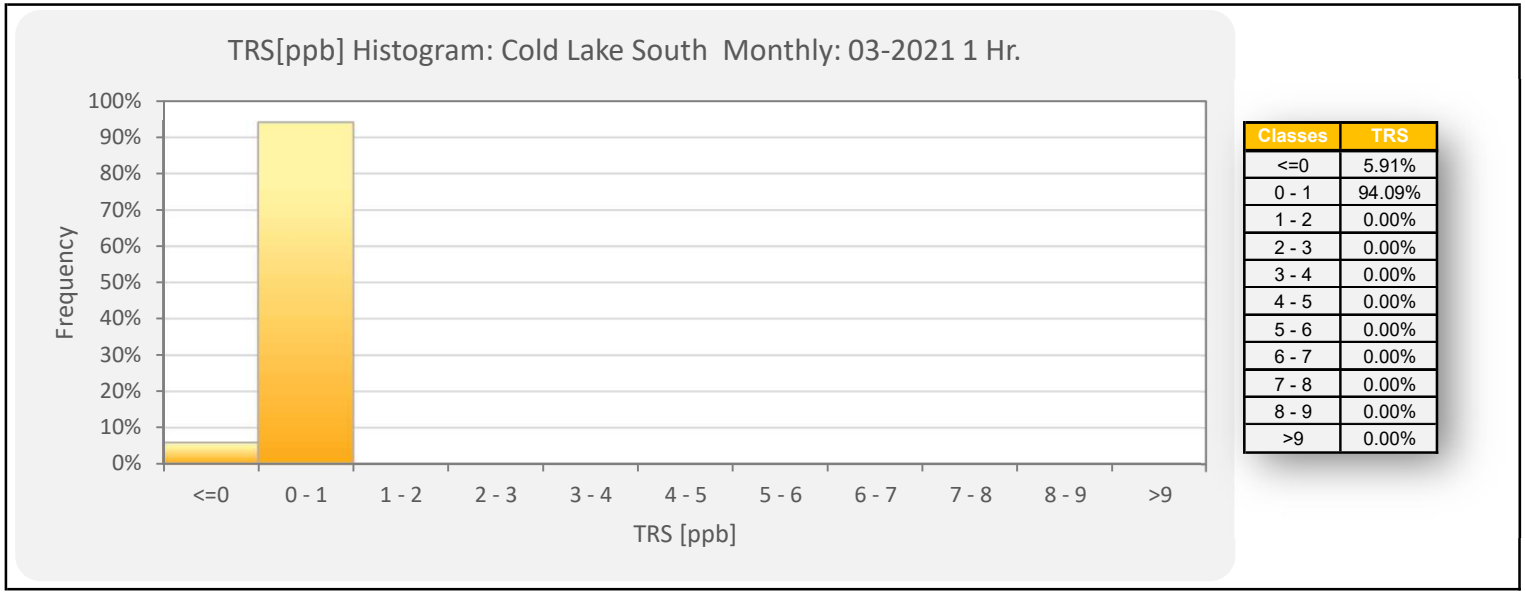
Day	Hourly Period Starting at (MST)																								Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Mar 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	S	1	1	1	0	1	0.3
Mar 2	1	1	0	1	0	1	1	1	1	1	0	1	0	0	0	0	1	1	1	S	0	1	0	0	0	1	0.6
Mar 3	1	0	1	0	0	0	1	1	1	1	0	0	1	0	1	1	1	1	S	1	0	0	0	0	0	1	0.5
Mar 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0.0
Mar 5	0	1	0	0	0	0	0	0	0	1	1	C	C	C	C	C	S	0	0	0	0	0	0	0	0	1	0.2
Mar 6	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	S	0	1	0	0	0	0	0	0	0	1	0.2
Mar 7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0.0
Mar 8	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Mar 9	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Mar 10	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Mar 11	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Mar 12	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Mar 13	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Mar 14	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Mar 15	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Mar 16	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Mar 17	0	0	0	0	S	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1
Mar 18	0	0	0	S	0	0	0	1	0	0	0	0	0	0	1	1	0	1	1	1	1	0	0	0	0	1	0.3
Mar 19	1	0	S	0	0	1	1	1	1	1	1	1	0	1	1	1	0	0	0	0	0	0	0	0	0	1	0.5
Mar 20	0	S	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0
Mar 21	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0.0
Mar 22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0.0
Mar 23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	1	0	1	0.0
Mar 24	1	0	0	0	1	0	1	0	0	1	NRM	NRM	NRM	1	0	0	0	0	0	0	S	0	0	0	0	1	0.3
Mar 25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0.0
Mar 26	0	0	0	0	0	0	0	0	0	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	0	0	-
Mar 27	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-	-
Mar 28	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-	-
Mar 29	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-	-
Mar 30	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-	-
Mar 31	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-	-
Diurnal Maximum	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Daiurnal Average	0.16	0.08	0.04	0.04	0.04	0.08	0.16	0.20	0.16	0.29	0.13	0.09	0.09	0.13	0.22	0.13	0.08	0.21	0.13	0.13	0.04	0.08	0.04	0.08			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance	P Power Failure
X	InValid Data (Equipment Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)			

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for TRS - Cold Lake South Station

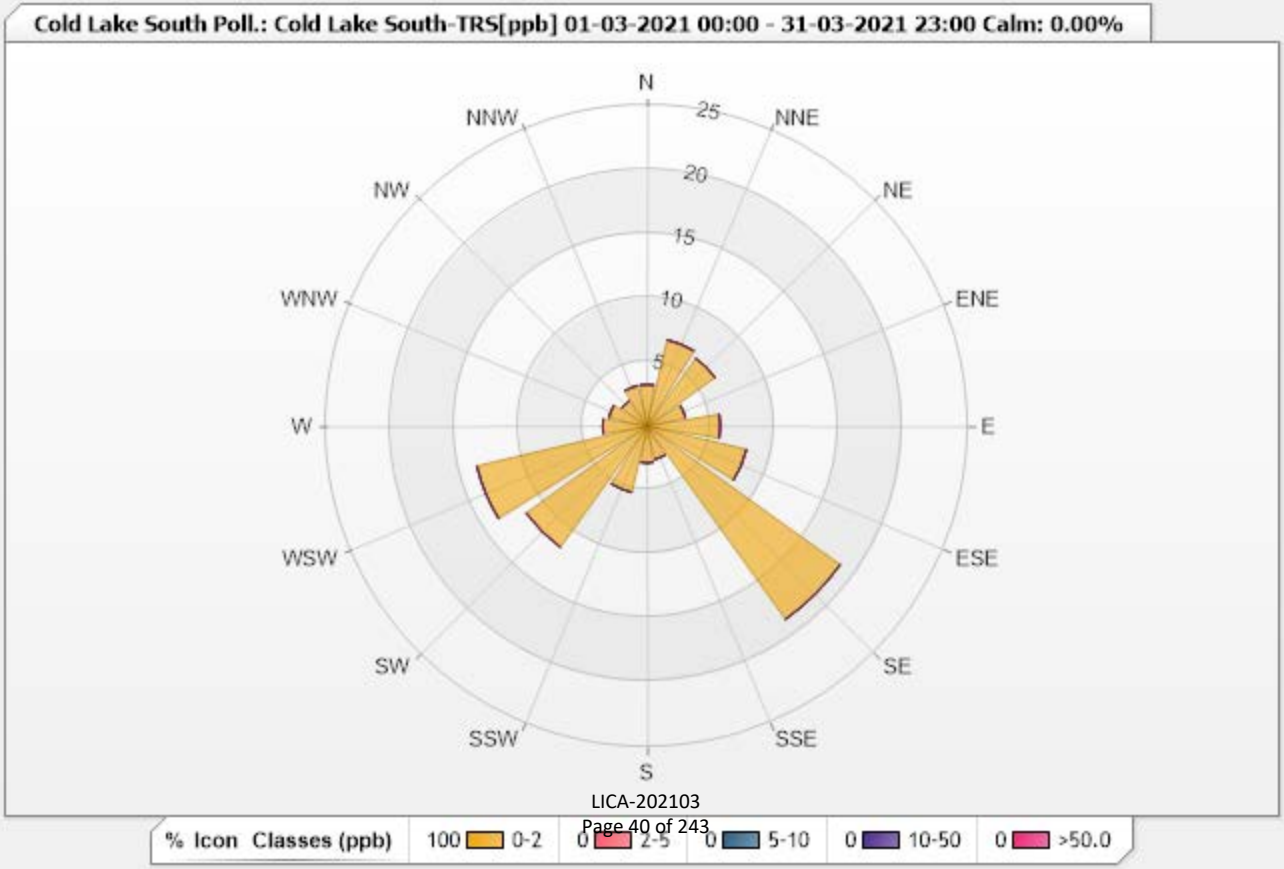




Classes	TRS
<=0	5.91%
0 - 1	94.09%
1 - 2	0.00%
2 - 3	0.00%
3 - 4	0.00%
4 - 5	0.00%
5 - 6	0.00%
6 - 7	0.00%
7 - 8	0.00%
8 - 9	0.00%
>9	0.00%

Wind: Cold Lake South Poll.: Cold Lake South-TRS[ppb] Monthly: 03-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
Calm: 0.00% Valid Data: 66.13% Calm Avg: 0.00 [ppb]

Direction	0-2	2-5	5-10	10-50	>50.0	Total
N	3.25	0	0	0	0	3.25
NNE	6.91	0	0	0	0	6.91
NE	6.5	0	0	0	0	6.5
ENE	3.05	0	0	0	0	3.05
E	5.69	0	0	0	0	5.69
ESE	7.93	0	0	0	0	7.93
SE	18.5	0	0	0	0	18.5
SSE	2.64	0	0	0	0	2.64
S	2.85	0	0	0	0	2.85
SSW	5.28	0	0	0	0	5.28
SW	11.59	0	0	0	0	11.59
WSW	13.62	0	0	0	0	13.62
W	3.46	0	0	0	0	3.46
WNW	3.05	0	0	0	0	3.05
NW	2.44	0	0	0	0	2.44
NNW	3.25	0	0	0	0	3.25
Summary	100	0	0	0	0	100


Cold Lake South Poll.: Cold Lake South-TRS[ppb] 01-03-2021 00:00 - 31-03-2021 23:00 Calm: 0.00%
N
NNE
NE
ENE
E
ESE
SE
SSE
S
SSW
SW
WSW
W
WNW
NW
NNW
25
20
15
10
5
% Icon Classes (ppb)
100 0-2
0 2-5
0 5-10
0 10-50
0 >50.0

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - March 2021

Summary of Hourly Averages

OXIDES OF NITROGEN (NOx) in ppb

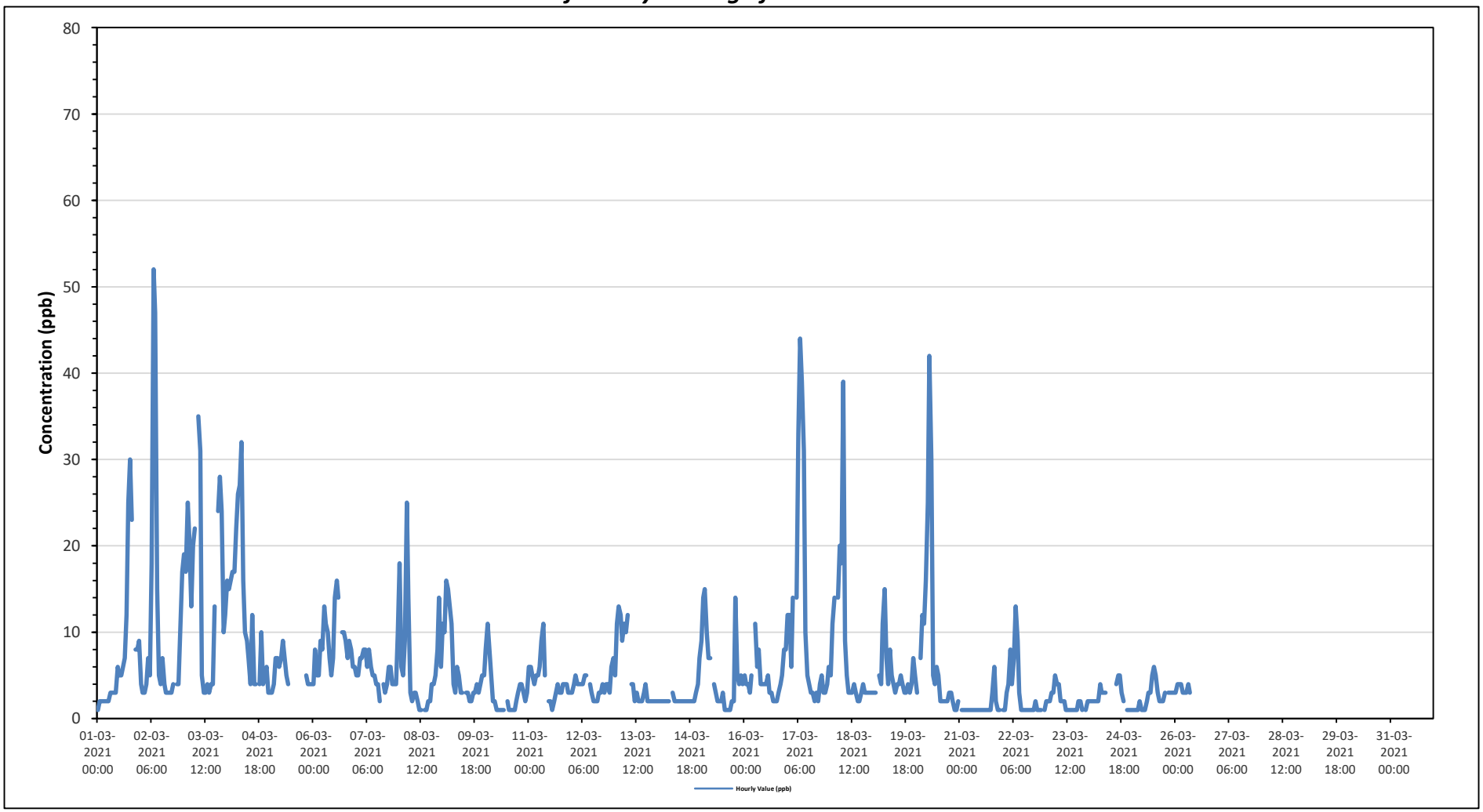
Maximum Hourly Value:	52	ppb	on March 2 at hour 7	Hours in Service:	744
Maximum Daily Value:	15.5	ppb	on March 3	Hours of Data:	569
Minimum Hourly Value:	1	ppb	on March 1 at hour 0	Hours of Missing Data:	141
Minimum Daily Value:	1.4	ppb	on March 21	Hours of Calibration:	34
Monthly Average:	6.0	ppb		Operational Uptime:	81.0

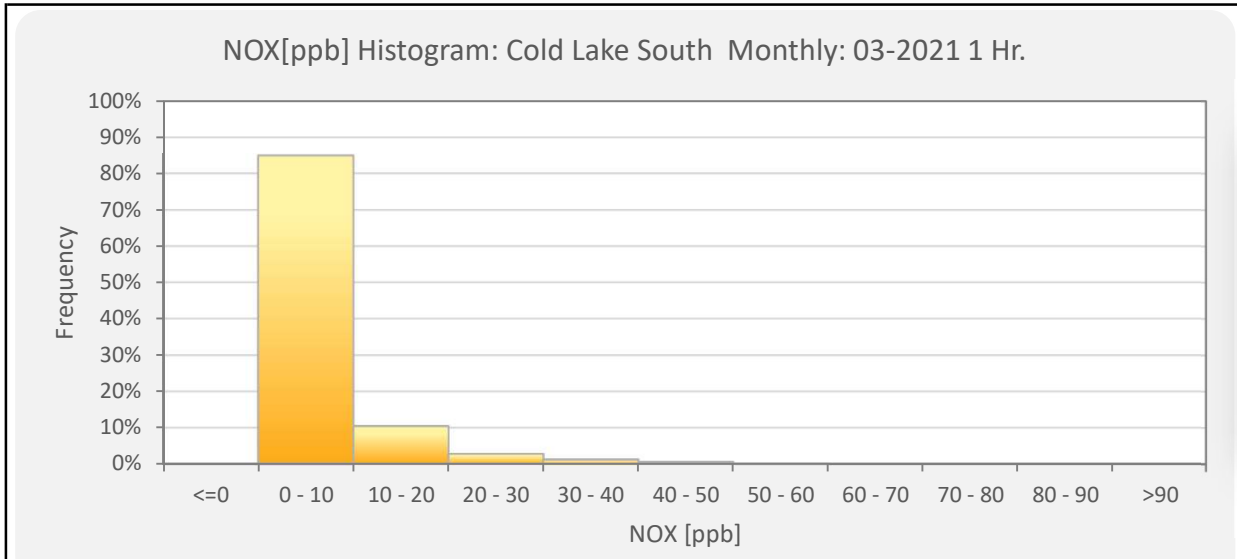
Day	Hourly Period Starting at (MST)																								Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Mar 1	1	2	2	2	2	2	2	3	3	3	3	6	5	5	6	7	12	25	30	23	S	8	8	9	1	30	7.3
Mar 2	4	3	3	4	7	5	18	52	47	15	5	4	7	4	3	3	3	3	4	S	4	4	11	17	3	52	10.0
Mar 3	19	17	25	21	13	20	22	NRM	35	31	5	3	3	4	3	4	4	13	S	24	28	24	10	12	3	35	15.5
Mar 4	16	15	16	17	17	22	26	27	32	16	10	9	7	4	12	4	4	S	4	10	4	5	6	3	3	32	12.4
Mar 5	3	3	4	7	7	6	7	9	7	5	4	C	C	C	C	C	C	C	C	C	5	4	4	4	3	9	-
Mar 6	4	8	5	5	9	8	13	11	10	7	5	7	14	16	14	S	10	10	9	7	9	8	6	6	4	16	8.7
Mar 7	5	5	7	7	8	8	6	8	6	5	5	4	4	2	S	4	3	4	6	6	4	4	4	10	2	10	5.4
Mar 8	18	6	5	9	25	14	3	2	3	3	2	1	1	S	1	1	2	2	4	4	5	8	14	6	1	25	6.0
Mar 9	11	10	16	15	13	11	4	3	6	5	3	3	S	3	3	2	2	3	3	4	3	4	5	5	2	16	6.0
Mar 10	8	11	8	5	2	2	1	1	1	1	1	S	2	1	1	1	1	2	3	4	4	3	2	3	1	11	3.0
Mar 11	6	6	5	4	5	5	6	9	11	5	S	2	2	1	2	3	4	3	3	4	4	4	3	3	1	11	4.3
Mar 12	3	4	5	4	4	4	4	5	5	S	4	3	2	2	2	3	3	4	3	4	4	3	6	7	2	7	3.8
Mar 13	5	11	13	12	9	11	10	12	S	4	4	2	3	2	2	2	3	4	2	2	2	2	2	2	2	13	5.3
Mar 14	2	2	2	2	2	2	2	S	3	2	2	2	2	2	2	2	2	2	2	2	2	3	4	7	2	7	2.4
Mar 15	9	14	15	10	7	7	S	4	3	2	2	2	3	1	1	1	1	2	2	14	5	4	5	4	1	15	5.1
Mar 16	5	4	4	3	5	S	11	6	8	4	4	4	4	5	3	3	2	2	2	3	4	5	8	8	2	11	4.7
Mar 17	12	12	6	14	S	14	33	44	39	31	10	5	4	3	3	2	3	2	4	5	3	3	4	6	2	44	11.4
Mar 18	5	11	14	S	14	20	18	39	9	5	3	3	3	4	3	2	2	3	4	3	3	3	3	3	2	39	7.7
Mar 19	3	3	S	5	4	11	15	7	4	8	5	4	3	4	4	5	4	3	3	4	3	4	7	5	3	15	5.1
Mar 20	3	S	7	12	11	16	25	42	30	5	4	6	5	2	2	2	2	2	3	3	2	1	1	2	1	42	8.2
Mar 21	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	6	2	1	1	S	1	6	1.4
Mar 22	1	1	3	4	8	4	7	13	9	3	1	1	1	1	1	1	1	1	2	1	1	1	S	1	1	13	2.9
Mar 23	2	2	2	3	3	5	4	4	2	2	2	1	1	1	1	1	1	1	2	2	1	S	1	2	1	5	2.0
Mar 24	2	2	2	2	2	2	4	3	3	3	NRM	NRM	NRM	NRM	NRM	4	5	5	3	2	S	1	1	1	1	5	2.6
Mar 25	1	1	1	1	2	1	1	1	2	3	3	5	6	5	3	2	2	2	3	S	3	3	3	3	1	6	2.5
Mar 26	3	4	4	4	3	3	3	4	3	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	3	4	-
Mar 27	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-	-
Mar 28	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-	-
Mar 29	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-	-
Mar 30	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-	-
Mar 31	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-	-
Diurnal Maximum	19	17	25	21	25	22	33	52	47	31	10	9	14	16	14	7	12	25	30	24	28	24	14	17			
Daiurnal Average	6.0	6.3	7.0	6.9	7.3	8.2	9.8	12.9	11.3	7.0	3.8	3.5	3.8	3.3	3.3	2.6	3.2	4.3	4.5	6.2	4.6	4.6	5.0	5.4			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance	P Power Failure
X	InValid Data (Equipment Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)			

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for NOx - Cold Lake South Station

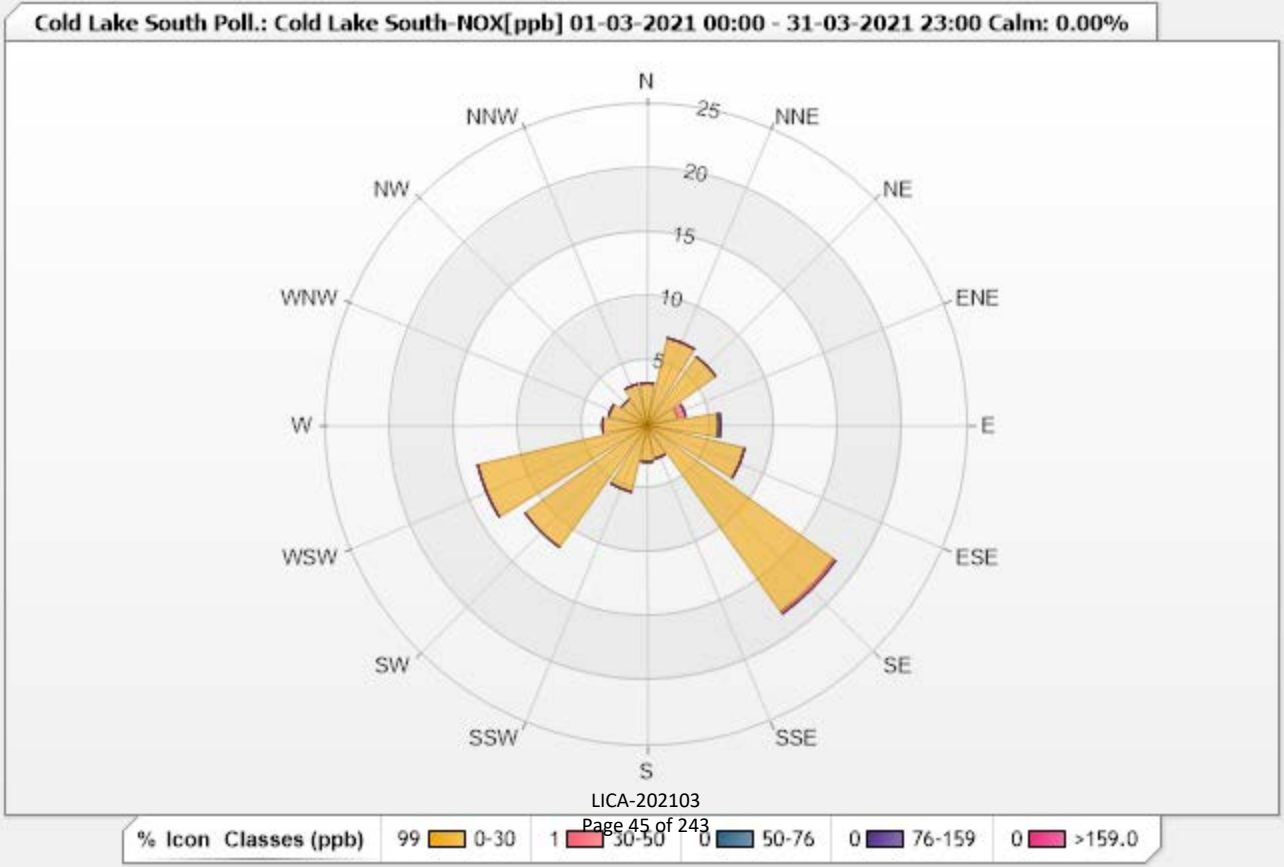




Classes	NOX
<=0	0.00%
0 - 10	84.89%
10 - 20	10.37%
20 - 30	2.81%
30 - 40	1.23%
40 - 50	0.53%
50 - 60	0.18%
60 - 70	0.00%
70 - 80	0.00%
80 - 90	0.00%
>90	0.00%

Wind: Cold Lake South Poll.: Cold Lake South-NOX[ppb] Monthly: 03-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
Calm: 0.00% Valid Data: 65.46% Calm Avg: 0.00 [ppb]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	3.29	0	0	0	0	3.29
NNE	6.98	0	0	0	0	6.98
NE	6.57	0	0	0	0	6.57
ENE	2.46	0.62	0	0	0	3.08
E	5.54	0	0.21	0	0	5.75
ESE	7.8	0	0	0	0	7.8
SE	17.86	0.21	0	0	0	18.07
SSE	2.67	0	0	0	0	2.67
S	2.87	0	0	0	0	2.87
SSW	5.34	0	0	0	0	5.34
SW	11.7	0	0	0	0	11.7
WSW	13.55	0	0	0	0	13.55
W	3.49	0	0	0	0	3.49
WNW	3.08	0	0	0	0	3.08
NW	2.46	0	0	0	0	2.46
NNW	3.29	0	0	0	0	3.29
Summary	98.95	0.83	0.21	0	0	100


Cold Lake South Poll.: Cold Lake South-NOX[ppb] 01-03-2021 00:00 - 31-03-2021 23:00 Calm: 0.00%
N
NNE
NE
ENE
E
ESE
SE
SSE
S
SSW
SW
WSW
W
WNW
NW
NNW
25
20
15
10
5
% Icon Classes (ppb)
99 0-30
1 30-50
0 50-76
0 76-159
0 >159.0

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - March 2021

Summary of Hourly Averages

NITRIC OXIDE (NO) in ppb

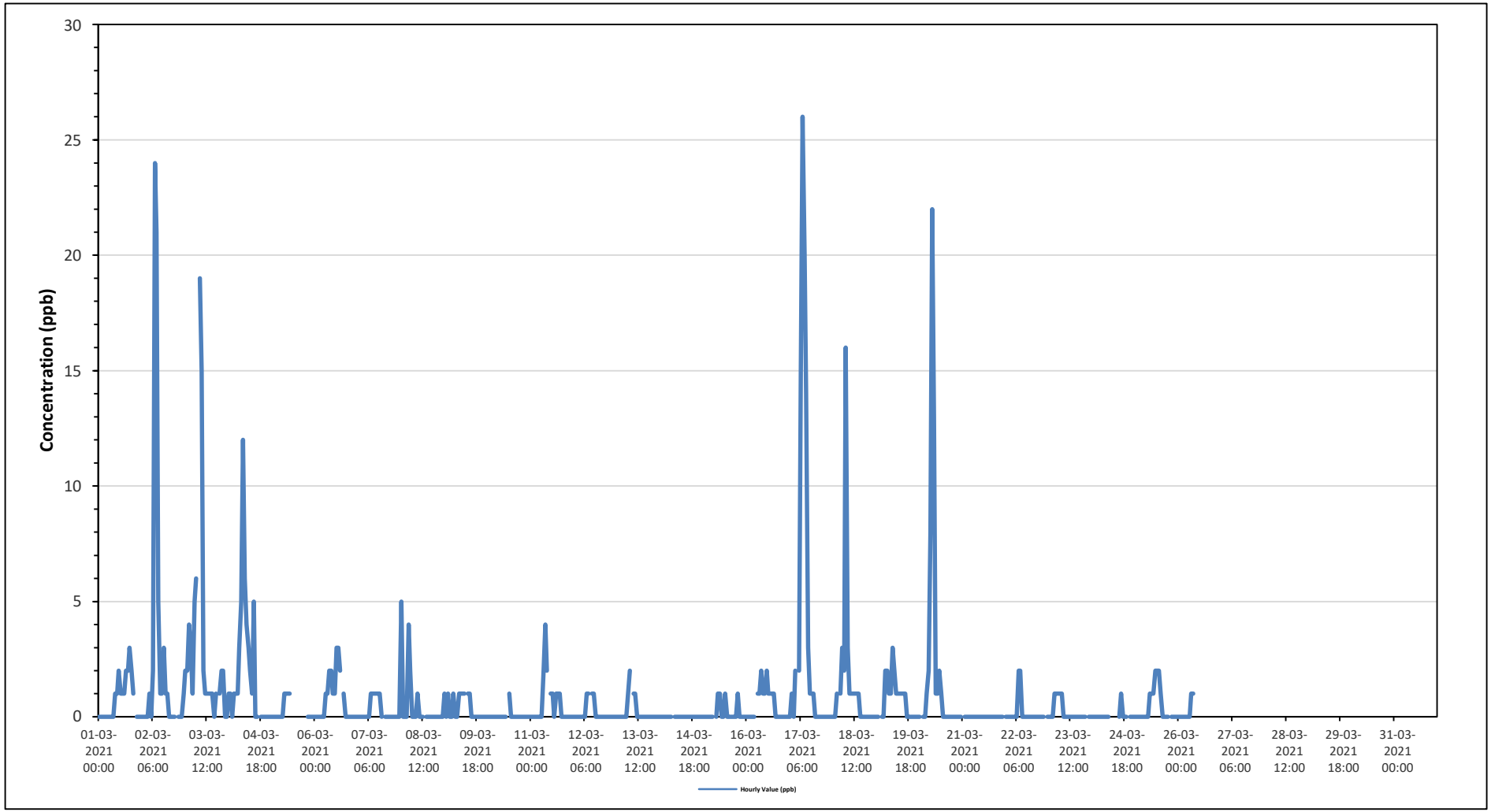
Maximum Hourly Value:	26	ppb	on March 17 at hour 7	Hours in Service:	744
Maximum Daily Value:	3.7	ppb	on March 17	Hours of Data:	569
Minimum Hourly Value:	0	ppb	on March 1 at hour 0	Hours of Missing Data:	141
Minimum Daily Value:	0.0	ppb	on March 14	Hours of Calibration:	34
Monthly Average:	0.9	ppb		Operational Uptime:	81.0

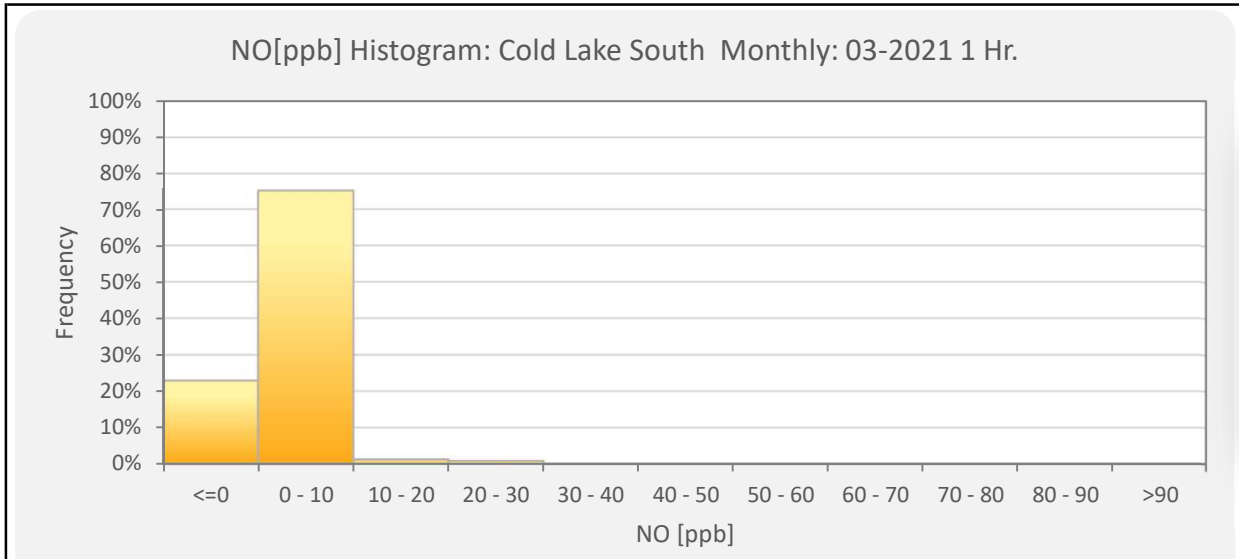
Day	Hourly Period Starting at (MST)																								Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Mar 1	0	0	0	0	0	0	0	0	0	1	1	2	1	1	1	2	2	3	2	1	S	0	0	0	0	3	0.7
Mar 2	0	0	0	0	1	0	2	24	21	5	1	1	3	1	1	0	0	0	0	S	0	0	0	1	0	24	2.7
Mar 3	2	2	4	3	1	5	6	NRM	19	15	2	1	1	1	1	1	0	1	S	1	2	2	0	0	0	19	3.2
Mar 4	1	1	0	1	1	1	3	5	12	6	4	3	2	1	5	0	0	S	0	0	0	0	0	0	0	12	2.0
Mar 5	0	0	0	0	0	0	0	1	1	1	1	C	C	C	C	C	C	C	C	C	0	0	0	0	0	1	-
Mar 6	0	0	0	0	0	0	1	1	2	2	1	1	3	3	2	S	1	0	0	0	0	0	0	0	0	3	0.7
Mar 7	0	0	0	0	0	0	0	1	1	1	1	1	1	0	S	0	0	0	0	0	0	0	0	0	0	1	0.3
Mar 8	5	0	0	0	4	2	0	0	0	1	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	5	0.5
Mar 9	1	0	1	0	0	1	0	0	1	1	1	1	S	1	1	0	0	0	0	0	0	0	0	0	0	1	0.4
Mar 10	0	0	0	0	0	0	0	0	0	0	0	S	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0
Mar 11	0	0	0	0	0	0	0	2	4	2	S	1	1	0	1	1	1	0	0	0	0	0	0	0	0	4	0.6
Mar 12	0	0	0	0	0	0	0	1	1	S	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2
Mar 13	0	0	0	0	0	0	1	2	S	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.2
Mar 14	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Mar 15	0	0	0	0	0	0	S	0	1	1	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0.2
Mar 16	0	0	0	0	0	S	1	1	2	1	1	2	1	1	1	1	0	0	0	0	0	0	0	0	0	2	0.5
Mar 17	0	1	0	2	S	2	15	26	20	14	3	1	1	1	0	0	0	0	0	0	0	0	0	0	0	26	3.7
Mar 18	0	0	1	S	1	3	2	16	3	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	16	1.4
Mar 19	0	0	S	0	0	2	2	1	1	3	2	1	1	1	1	1	1	0	0	0	0	0	0	0	0	3	0.7
Mar 20	0	S	0	0	1	2	8	22	13	1	1	2	1	0	0	0	0	0	0	0	0	0	0	0	0	22	2.2
Mar 21	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0.0
Mar 22	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	2	0.2
Mar 23	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	1	0.2
Mar 24	0	0	0	0	0	0	0	0	0	0	NRM	NRM	NRM	NRM	NRM	0	1	0	0	0	S	0	0	0	0	1	0.1
Mar 25	0	0	0	0	0	0	0	0	1	1	1	2	2	2	1	0	0	0	0	S	0	0	0	0	0	2	0.4
Mar 26	0	0	0	0	0	0	0	1	1	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	0	1	-
Mar 27	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-	-
Mar 28	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-	-
Mar 29	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-	-
Mar 30	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-	-
Mar 31	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-	-
Diurnal Maximum	5	2	4	3	4	5	15	26	21	15	4	3	3	3	5	2	2	3	2	1	2	2	0	1			
Daiurnal Average	0.4	0.2	0.2	0.3	0.4	0.8	1.7	4.5	4.2	2.4	1.0	1.0	1.0	0.6	0.7	0.3	0.3	0.2	0.1	0.1	0.1	0.1	0.0	0.0			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance	P Power Failure
X	InValid Data (Equipment Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)			

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for NO - Cold Lake South Station

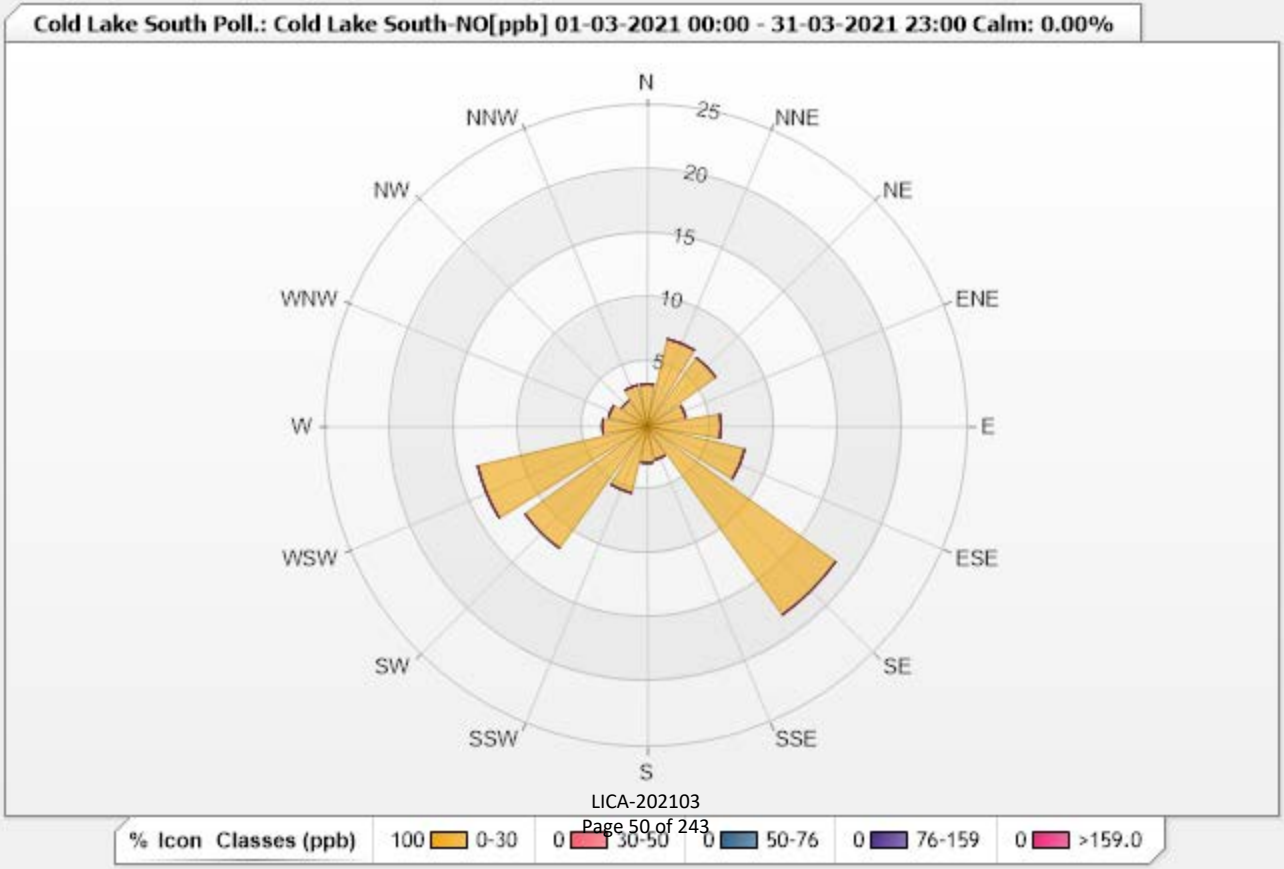




Classes	NO
<=0	22.85%
0 - 10	75.04%
10 - 20	1.23%
20 - 30	0.88%
30 - 40	0.00%
40 - 50	0.00%
50 - 60	0.00%
60 - 70	0.00%
70 - 80	0.00%
80 - 90	0.00%
>90	0.00%

Wind: Cold Lake South Poll.: Cold Lake South-NO[ppb] Monthly: 03-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
Calm: 0.00% Valid Data: 65.46% Calm Avg: 0.00 [ppb]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	3.29	0	0	0	0	3.29
NNE	6.98	0	0	0	0	6.98
NE	6.57	0	0	0	0	6.57
ENE	3.08	0	0	0	0	3.08
E	5.75	0	0	0	0	5.75
ESE	7.8	0	0	0	0	7.8
SE	18.07	0	0	0	0	18.07
SSE	2.67	0	0	0	0	2.67
S	2.87	0	0	0	0	2.87
SSW	5.34	0	0	0	0	5.34
SW	11.7	0	0	0	0	11.7
WSW	13.55	0	0	0	0	13.55
W	3.49	0	0	0	0	3.49
WNW	3.08	0	0	0	0	3.08
NW	2.46	0	0	0	0	2.46
NNW	3.29	0	0	0	0	3.29
Summary	100	0	0	0	0	100


Cold Lake South Poll.: Cold Lake South-NO[ppb] 01-03-2021 00:00 - 31-03-2021 23:00 Calm: 0.00%
N
NNE
NE
ENE
E
ESE
SE
SSE
S
SSW
SW
WSW
W
WNW
NW
NNW
25
20
15
10
5
% Icon Classes (ppb)
100 0-30
0 30-50
0 50-76
0 76-159
0 >159.0

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - March 2021

Summary of Hourly Averages

NITROGEN DIOXIDE (NO_2) in ppb

Alberta Ambient Air Quality Objectives (AAAQO): 1-Hour 159 ppb

Number of 1-Hour Exceedences: 0

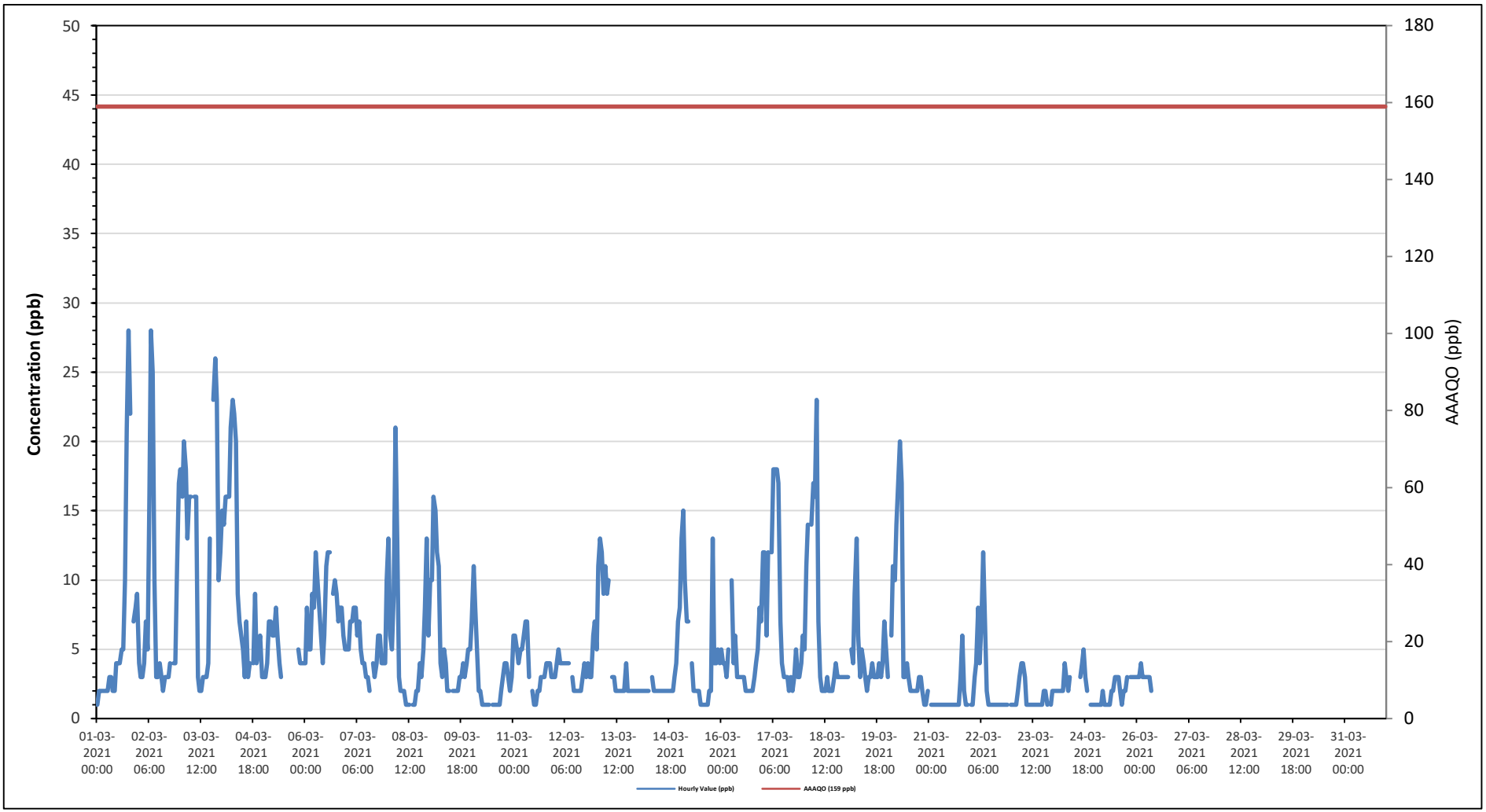
Maximum Hourly Value:	28	ppb	on March 1 at hour 18	Hours in Service:	744
Maximum Daily Value:	12.5	ppb	on March 3	Hours of Data:	569
Minimum Hourly Value:	1	ppb	on March 1 at hour 0	Hours of Missing Data:	141
Minimum Daily Value:	1.4	ppb	on March 21	Hours of Calibration:	34
Monthly Average:	5.1	ppb		Operational Uptime:	81.0

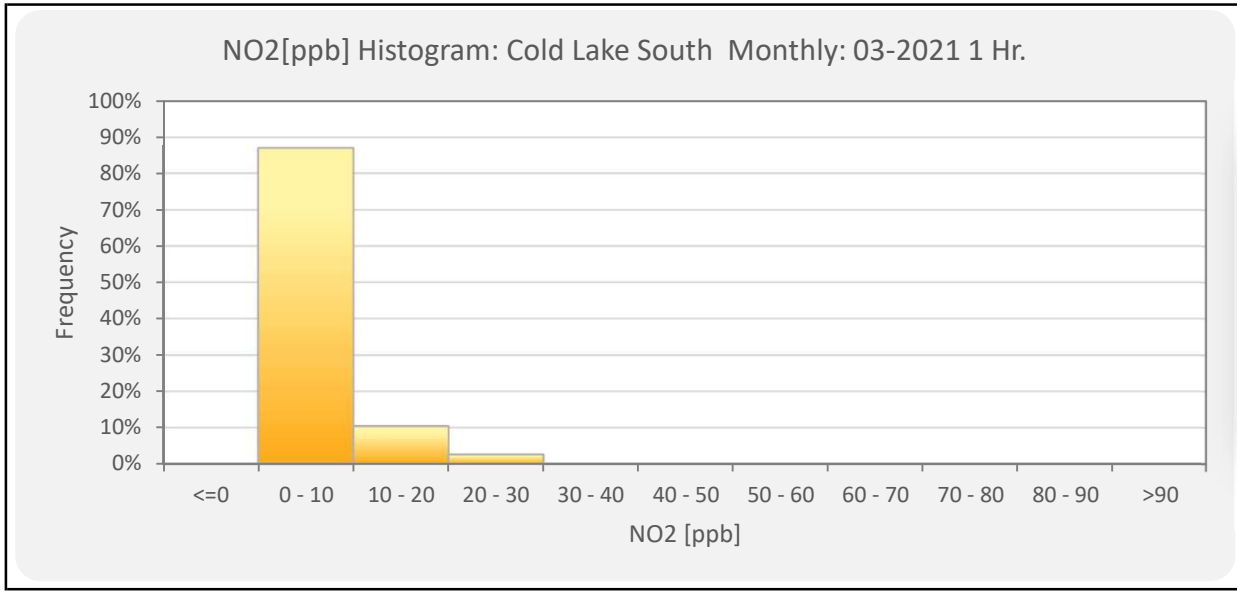
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Mar 1	1	2	2	2	2	2	2	3	3	2	2	4	4	4	5	5	10	21	28	22	S	7	8	9	1	28	6.5
Mar 2	4	3	3	4	7	5	16	28	25	10	3	3	4	3	2	3	3	3	4	S	4	4	11	17	2	28	7.3
Mar 3	18	16	20	18	13	16	16	NRM	16	16	3	2	2	3	3	3	4	13	S	23	26	23	10	12	2	26	12.5
Mar 4	15	14	16	16	16	21	23	22	20	9	7	6	5	3	7	3	4	S	4	9	4	5	6	3	3	23	10.3
Mar 5	3	3	4	7	7	6	6	8	6	4	3	C	C	C	C	C	C	C	C	C	5	4	4	4	3	8	-
Mar 6	4	8	5	5	9	8	12	10	8	6	4	6	11	12	12	S	9	10	9	7	8	8	6	5	4	12	7.9
Mar 7	5	5	7	7	8	8	6	7	5	4	4	3	3	2	S	4	3	4	6	6	4	4	4	10	2	10	5.2
Mar 8	13	6	5	9	21	13	3	2	2	2	1	1	1	S	1	1	2	2	4	3	5	8	13	6	1	21	5.4
Mar 9	10	10	16	15	12	11	4	3	5	4	2	2	S	2	2	2	2	3	3	4	3	4	5	5	2	16	5.6
Mar 10	7	11	8	5	2	2	1	1	1	1	1	S	1	1	1	1	1	2	3	4	4	3	2	3	1	11	2.9
Mar 11	6	6	5	4	5	5	6	7	7	3	S	2	1	1	2	2	3	3	3	4	4	4	3	3	1	7	3.9
Mar 12	3	4	5	4	4	4	4	4	4	S	3	2	2	2	2	2	3	4	3	4	3	3	6	7	2	7	3.6
Mar 13	5	11	13	12	9	11	9	10	S	3	3	2	2	2	2	2	2	4	2	2	2	2	2	2	2	13	5.0
Mar 14	2	2	2	2	2	2	2	S	3	2	2	2	2	2	2	2	2	2	2	2	2	3	4	7	2	7	2.4
Mar 15	8	13	15	10	7	7	S	4	2	2	2	2	1	1	1	1	1	2	2	13	4	4	5	4	1	15	4.8
Mar 16	5	4	4	3	5	S	10	4	6	3	3	3	3	3	2	2	2	2	2	3	4	5	8	7	2	10	4.0
Mar 17	12	12	6	12	S	12	18	18	18	17	7	4	3	3	3	2	3	2	3	5	3	3	4	6	2	18	7.7
Mar 18	5	11	14	S	14	17	16	23	7	3	2	2	2	3	2	2	2	3	4	3	3	3	3	3	2	23	6.4
Mar 19	3	3	S	5	4	9	13	6	3	5	4	3	2	3	3	4	3	3	3	4	3	4	7	5	2	13	4.4
Mar 20	3	S	6	11	10	14	17	20	17	3	3	4	3	2	2	2	2	2	3	3	2	1	1	2	1	20	5.8
Mar 21	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	6	2	1	1	S	1	6	1.4
Mar 22	1	1	3	4	8	4	7	12	7	2	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	12	2.7
Mar 23	1	1	1	2	3	4	4	3	1	1	1	1	1	1	1	1	1	1	2	2	1	S	1	2	1	4	1.6
Mar 24	2	2	2	2	2	2	4	3	2	3	NRM	NRM	NRM	NRM	NRM	3	4	5	3	2	S	1	1	1	1	5	2.4
Mar 25	1	1	1	1	2	1	1	1	1	2	2	3	3	3	2	1	2	2	3	S	3	3	3	3	1	3	2.0
Mar 26	3	3	4	3	3	3	3	3	2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	2	4	-
Mar 27	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-	-
Mar 28	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-	-
Mar 29	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-	-
Mar 30	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-	-
Mar 31	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-	-
Diurnal Maximum	18	16	20	18	21	21	23	28	25	17	7	6	11	12	12	5	10	21	28	23	26	23	13	17			
Daiurnal Average	5.6	6.1	6.7	6.6	7.0	7.5	8.2	8.5	6.9	4.5	2.8	2.7	2.6	2.6	2.7	2.2	2.9	4.1	4.3	6.0	4.3	4.5	4.9	5.3			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance	P Power Failure
X	InValid Data (Equipment Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)			

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for NO2 - Cold Lake South Station

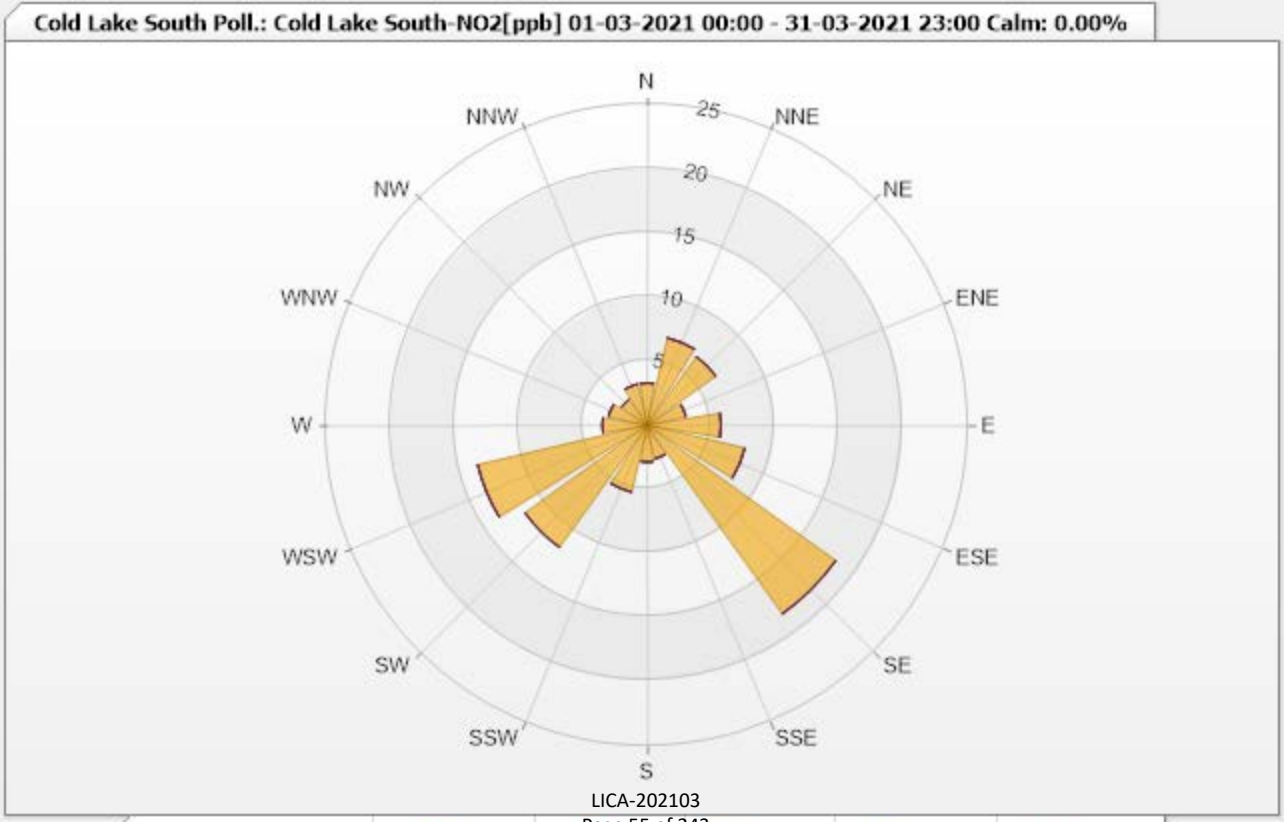




Classes	NO2
<=0	0.00%
0 - 10	86.99%
10 - 20	10.37%
20 - 30	2.64%
30 - 40	0.00%
40 - 50	0.00%
50 - 60	0.00%
60 - 70	0.00%
70 - 80	0.00%
80 - 90	0.00%
>90	0.00%

Wind: Cold Lake South Poll.: Cold Lake South-NO2[ppb] Monthly: 03-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
Calm: 0.00% Valid Data: 65.46% Calm Avg: 0.00 [ppb]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	3.29	0	0	0	0	3.29
NNE	6.98	0	0	0	0	6.98
NE	6.57	0	0	0	0	6.57
ENE	3.08	0	0	0	0	3.08
E	5.75	0	0	0	0	5.75
ESE	7.8	0	0	0	0	7.8
SE	18.07	0	0	0	0	18.07
SSE	2.67	0	0	0	0	2.67
S	2.87	0	0	0	0	2.87
SSW	5.34	0	0	0	0	5.34
SW	11.7	0	0	0	0	11.7
WSW	13.55	0	0	0	0	13.55
W	3.49	0	0	0	0	3.49
WNW	3.08	0	0	0	0	3.08
NW	2.46	0	0	0	0	2.46
NNW	3.29	0	0	0	0	3.29
Summary	100	0	0	0	0	100


Cold Lake South Poll.: Cold Lake South-NO2[ppb] 01-03-2021 00:00 - 31-03-2021 23:00 Calm: 0.00%
N
NNE
NE
ENE
E
ESE
SE
SSE
S
SSW
SW
WSW
W
WNW
NW
NNW
25
20
15
10
5
% Icon Classes (ppb)
100 0-30
0 30-50
0 50-76
0 76-159
0 >159.0

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - March 2021

Summary of Hourly Averages

OZONE (O_3) in ppb

Alberta Ambient Air Quality Objectives (AAAQO): 1-Hour 76 ppb

Number of 1-Hour Exceedences: 0

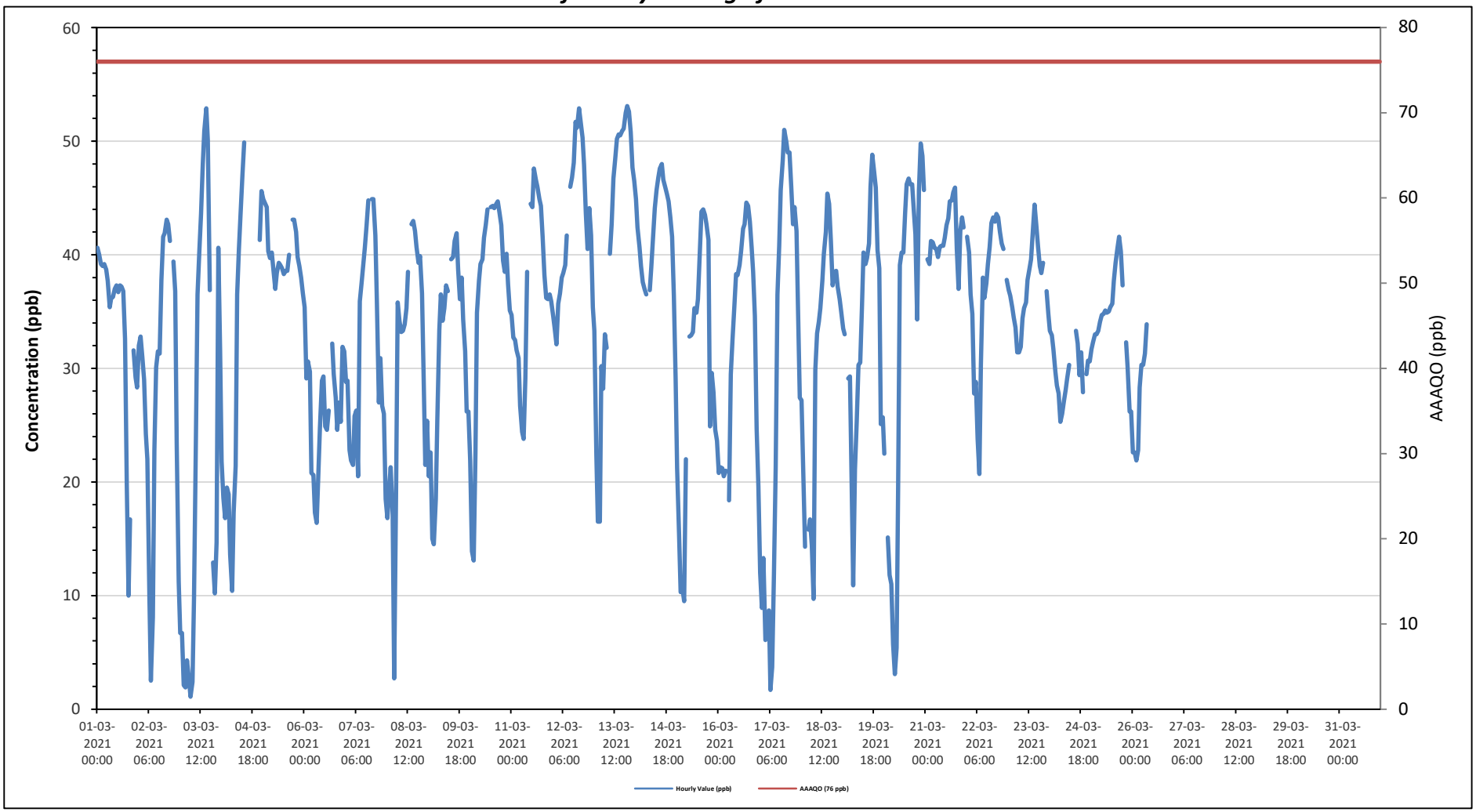
Maximum Hourly Value:	53.1	ppb	on March 13 at hour 19	Hours in Service:	744
Maximum Daily Value:	42.7	ppb	on March 12	Hours of Data:	573
Minimum Hourly Value:	1.1	ppb	on March 3 at hour 6	Hours of Missing Data:	141
Minimum Daily Value:	23.0	ppb	on March 3	Hours of Calibration:	30
Monthly Average:	33.8	ppb		Operational Uptime:	81.0

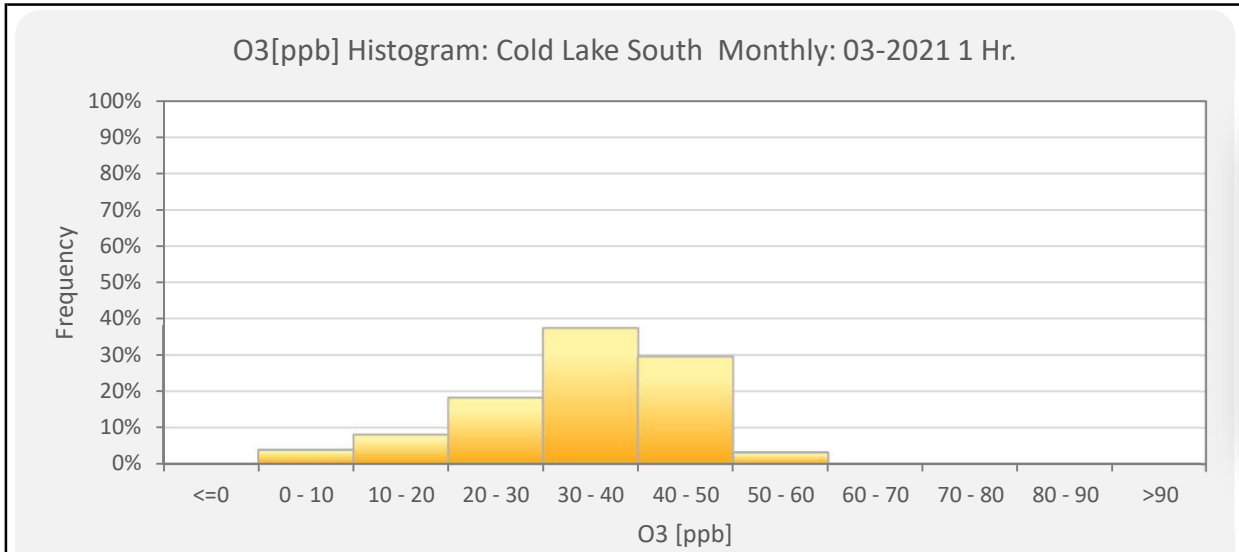
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Mar 1	40.6	40	39.2	39	39.2	38.7	37.7	35.4	36.2	36.3	37	37.3	36.7	37.3	37.2	36.8	32.6	19.7	10	16.7	S	31.6	29.2	28.3	10.0	40.6	33.6
Mar 2	32	32.8	31	29	24.2	22	10.1	2.5	8.1	22.8	30.1	31.5	31.3	37.8	41.6	41.9	43.1	42.7	41.2	S	39.4	36.8	23.4	11.2	2.5	43.1	29.0
Mar 3	6.7	6.7	2.1	1.9	4.3	2.6	1.1	2.4	9.8	22.8	36.5	40.2	43.6	48	50.9	52.9	50.1	36.9	S	12.9	10.2	14.7	40.6	31.6	**1.1**	52.9	23.0
Mar 4	21.8	18.6	16.8	19.5	18.9	13.6	10.4	17.3	21.4	36.5	40.5	43.8	47	49.9	C	C	Y	Y	Y	C	C	C	41.3	45.6	10.4	49.9	-
Mar 5	44.9	44.6	44.2	40.3	39.7	40.2	38.8	37	38.4	39.3	39.1	38.8	38.3	38.6	38.6	40	S	43.1	43.1	42	39.8	39	38	36.6	36.6	44.9	40.1
Mar 6	35.4	29.1	30.6	29.7	20.8	20.6	17.3	16.4	20.9	24.8	28.9	29.3	24.9	24.6	26.3	S	32.2	29.5	27.4	24.6	27	25.3	31.9	31.5	16.4	35.4	26.5
Mar 7	28.8	28.9	22.8	21.9	21.5	25.8	26.3	20.5	35.9	37.5	39.2	40.6	42.6	44.8	S	44.9	44.9	41.7	35.9	27	30.9	26.7	26	18.5	18.5	44.9	31.9
Mar 8	16.8	19.5	21.3	17.1	2.7	20.2	35.8	34.2	33.2	33.3	33.9	35.3	38.5	S	42.7	43	42.1	40.7	39.3	39.9	36.6	29.8	21.5	25.4	2.7	43.0	30.6
Mar 9	20.5	22.6	15	14.5	18.5	25.5	33.4	36.5	34.2	35.3	37.3	36.8	S	39.6	39.8	41.2	41.9	38.7	36.1	38	34.3	31.5	26.2	26.2	14.5	41.9	31.5
Mar 10	21.9	13.9	13.1	22.5	34.9	37.7	39.2	39.6	41.5	42.6	44	S	44.2	44.3	44.1	44.5	44.7	43.7	42.6	39.5	38.5	40.1	37.4	35.1	13.1	44.7	36.9
Mar 11	34.7	32.7	32.5	31.6	30.9	26.7	24.4	23.8	29.1	38.5	S	44.5	44.2	47.6	46.6	46	44.9	44.3	41.5	38.2	36.2	36.1	36.5	35.9	23.8	47.6	36.8
Mar 12	34.6	33.5	32.1	35.7	36.6	38	38.4	39.1	41.7	S	46	46.8	48.1	51.7	51.2	52.9	51.8	50.3	47.9	43.7	40.5	44.1	41.7	35.4	32.1	52.9	**42.7**
Mar 13	33.3	22.4	16.5	16.5	30.2	28.2	33	31.8	S	40.1	42.7	46.7	48.4	50.2	50.6	50.5	50.9	51.1	52.5	**53.1**	52.6	50.8	47.7	46.5	16.5	**53.1**	41.1
Mar 14	44.9	42.4	40.7	39	37.6	37	36.5	S	36.9	38.9	41.9	44.1	45.7	46.8	47.6	48	46.6	45.9	45.4	44.7	43.3	41.6	36.4	29.1	29.1	48.0	41.8
Mar 15	21.2	15.2	10.3	10.5	9.5	22	S	32.8	32.9	33.2	35.3	34.9	36.1	40.5	43.8	44	43.5	42.7	41.3	24.9	29.6	27.9	24.6	23.6	9.5	44.0	29.6
Mar 16	20.8	21.3	21.2	20.5	21	S	18.4	29.5	32.6	35.4	38.3	38.2	39.1	40.3	42.3	42.7	44.6	44.3	42.9	40.7	38.5	34.6	24.7	19.6	18.4	44.6	32.7
Mar 17	12	8.9	13.3	6.1	S	8.7	1.7	3.7	11.9	21.3	36.5	40.8	45.7	48.3	51	50	49	49	46	42.7	44.2	42.1	35.2	27.4	1.7	51.0	30.2
Mar 18	27.2	20.8	14.3	S	15.8	16.7	14.4	9.7	29.9	33.1	34.1	35.3	37.7	40.1	42	45.4	44.5	41.2	37.3	38.5	38.6	37.2	36.1	35	9.7	45.4	31.5
Mar 19	33.5	33	S	29.1	29.3	19.6	10.9	21.1	25.3	30.3	30.5	35.5	40.2	39.2	39.7	41	46	48.8	47.4	45.9	40.4	38.8	25.1	25.7	10.9	48.8	33.8
Mar 20	22.5	S	15.1	11.8	11	5.7	3.1	5.4	19.3	39.1	40.2	40.2	43.7	46.2	46.7	46.2	46.2	44.1	41.8	34.3	45.7	49.8	48.7	45.7	3.1	49.8	32.7
Mar 21	S	39.6	39.2	41.2	41.1	40.6	40.5	39.8	40.7	40.8	40.8	41.5	42.6	43.2	44.7	44.8	45.5	45.9	40.5	37	42.1	43.3	42.4	S	37.0	45.9	41.7
Mar 22	41.6	40.2	36.5	34.8	27.8	28.8	23.8	20.7	30.3	38	36.2	37.5	39.2	40.7	42.8	43.3	42.9	43.6	43.3	42	41	40.5	S	37.8	20.7	43.6	37.1
Mar 23	36.9	36.4	35.4	34.5	33.6	31.4	31.4	31.9	34.4	35.3	35.8	37.8	38.8	39.6	42	44.4	42.6	40.7	39	38.4	39.3	S	36.8	34.8	31.4	44.4	37.0
Mar 24	33.3	32.9	31.7	29.7	28.5	27.8	25.3	26	27.1	28.1	29.1	30.3	NRM	NRM	NRM	33.3	32.2	29.4	31.4	27.9	S	29.5	30.7	30.6	25.3	33.3	29.7
Mar 25	31.7	32.3	33	33	33.3	34.1	34.7	34.8	35.1	34.9	35	35.4	35.7	37.7	39.3	40.5	41.6	40.3	37.3	S	32.3	30.1	26.2	26.2	26.2	41.6	34.5
Mar 26	22.6	22.6	21.9	22.8	28.3	30.3	30.3	31.3	33.9	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	21.9	33.9	-
Mar 27	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-	-
Mar 28	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-	-
Mar 29	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-	-
Mar 30	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-	-
Mar 31	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-	-
Diurnal Maximum	45	45	44	41	41	41	41	40	42	43	46	47	48	52	51	53	52	51	53	53	53	51	49	47			
Daiurnal Average	28.8	27.6	25.2	25.3	25.6	25.7	24.7	24.9	29.6	34.1	37.0	38.5	40.5	42.5	43.3	44.3	43.7	41.6	39.6	36.0	37.3	35.7	33.7	31.0			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance	P Power Failure
X	InValid Data (Equipment Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)			

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for O3 - Cold Lake South Station

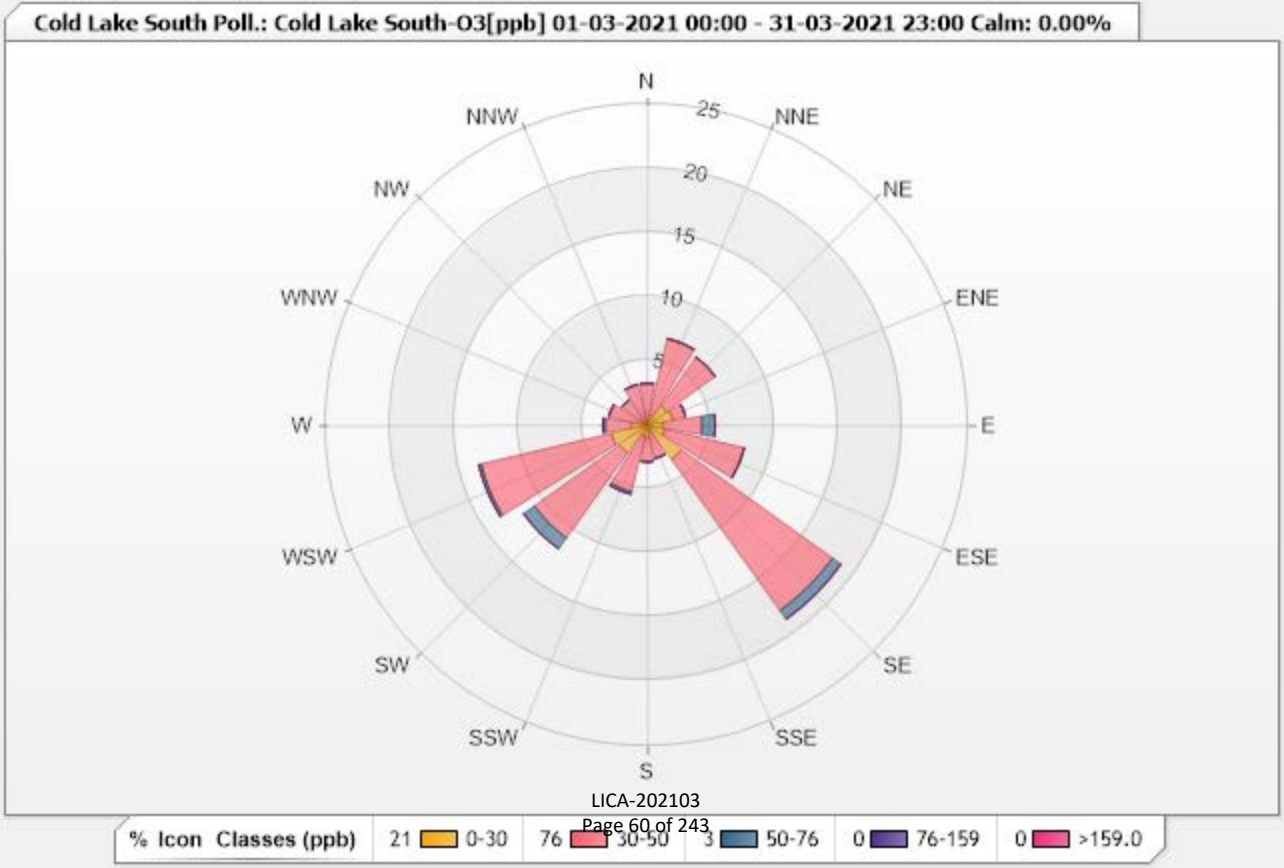




Classes	O3
<=0	0.00%
0 - 10	3.84%
10 - 20	8.03%
20 - 30	18.15%
30 - 40	37.35%
40 - 50	29.49%
50 - 60	3.14%
60 - 70	0.00%
70 - 80	0.00%
80 - 90	0.00%
>90	0.00%

Wind: Cold Lake South Poll.: Cold Lake South-O3[ppb] Monthly: 03-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
Calm: 0.00% Valid Data: 65.86% Calm Avg: 0.00 [ppb]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	0.41	2.86	0	0	0	3.27
NNE	0.82	6.12	0	0	0	6.94
NE	1.84	4.69	0	0	0	6.53
ENE	2.04	1.02	0	0	0	3.06
E	1.22	3.06	1.02	0	0	5.3
ESE	1.43	6.33	0	0	0	7.76
SE	3.27	14.49	0.82	0	0	18.58
SSE	0.41	2.24	0	0	0	2.65
S	1.02	1.84	0	0	0	2.86
SSW	0.82	4.49	0.2	0	0	5.51
SW	2.65	8.16	1.02	0	0	11.83
WSW	2.86	10.41	0.2	0	0	13.47
W	1.22	2.04	0.2	0	0	3.46
WNW	0.2	2.86	0	0	0	3.06
NW	0.2	2.24	0	0	0	2.44
NNW	0.2	3.06	0	0	0	3.26
Summary	20.61	75.91	3.46	0	0	100


Cold Lake South Poll.: Cold Lake South-O3[ppb] 01-03-2021 00:00 - 31-03-2021 23:00 Calm: 0.00%
N
NNE
NE
ENE
E
ESE
SE
SSE
S
SSW
SW
WSW
W
WNW
NW
NNW
25
20
15
10
5
% Icon Classes (ppb)
21 0-30
76 30-50
3 50-76
0 76-159
0 >159.0

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - March 2021

Summary of Hourly Averages

TOTAL HYDROCARBONS (THC) in ppm

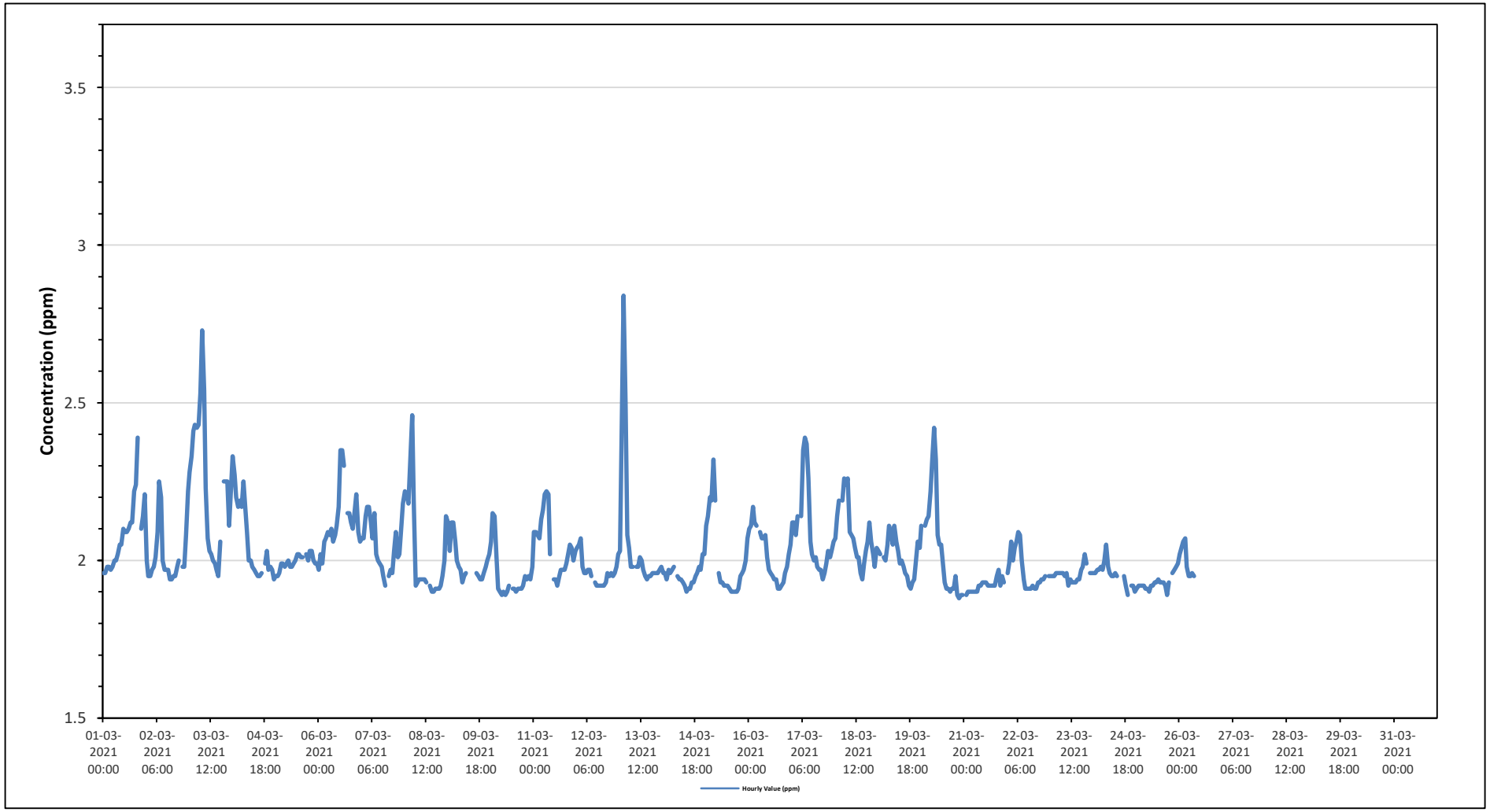
Maximum Hourly Value:	2.84	ppm	on March 13 at hour 2	Hours in Service:	744
Maximum Daily Value:	2.24	ppm	on March 3	Hours of Data:	576
Minimum Hourly Value:	1.88	ppm	on March 20 at hour 21	Hours of Missing Data:	138
Minimum Daily Value:	1.92	ppm	on March 21	Hours of Calibration:	30
Monthly Average:	2.02	ppm		Operational Uptime:	81.5

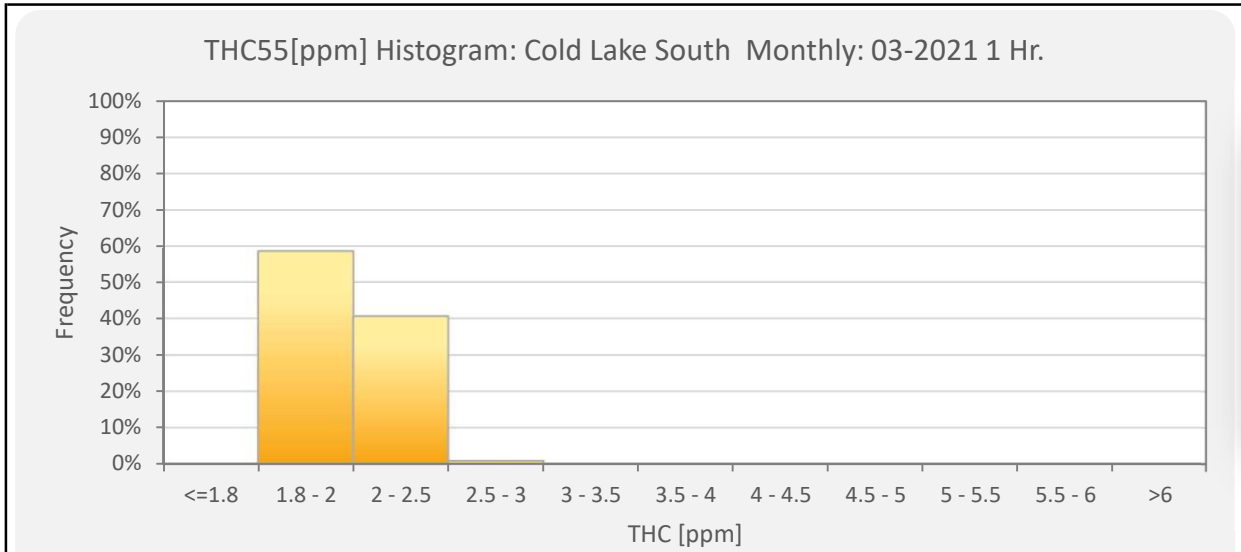
Day	Hourly Period Starting at (MST)																								Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Mar 1	1.96	1.96	1.98	1.98	1.97	1.98	2.00	2.00	2.02	2.05	2.05	2.10	2.09	2.09	2.10	2.12	2.12	2.22	2.24	2.39	S	2.10	2.14	2.21	1.96	2.39	2.08
Mar 2	2.00	1.95	1.95	1.97	1.98	2.01	2.09	2.25	2.20	2.00	1.97	1.97	1.97	1.94	1.94	1.95	1.95	1.98	2.00	S	1.98	1.98	2.08	2.22	1.94	2.25	2.01
Mar 3	2.28	2.33	2.41	2.43	2.42	2.43	2.53	2.73	2.54	2.23	2.07	2.03	2.02	2.00	1.99	1.97	1.95	2.06	S	2.25	2.25	2.25	2.11	2.22	1.95	2.73	**2.24**
Mar 4	2.33	2.27	2.20	2.17	2.19	2.17	2.25	2.17	2.09	2.00	2.00	1.98	1.97	1.96	1.95	1.95	1.96	S	1.99	2.03	1.97	1.98	1.97	1.94	1.94	2.33	2.06
Mar 5	1.95	1.95	1.96	1.99	1.99	1.98	1.99	2.00	1.98	1.98	1.99	2.00	2.02	2.02	2.01	2.01	S	2.02	2.00	2.03	2.03	2.00	1.99	1.99	1.95	2.03	1.99
Mar 6	1.97	2.02	1.99	2.06	2.07	2.09	2.08	2.10	2.06	2.08	2.11	2.17	2.35	2.35	2.30	S	2.15	2.15	2.12	2.10	2.16	2.21	2.09	2.06	1.97	2.35	2.12
Mar 7	2.07	2.07	2.14	2.17	2.17	2.12	2.07	2.15	2.02	2.00	1.99	1.98	1.95	1.92	S	1.95	1.97	1.96	2.03	2.09	2.01	2.02	2.11	2.18	1.92	2.18	2.05
Mar 8	2.22	2.21	2.18	2.31	2.46	2.19	1.92	1.93	1.94	1.94	1.94	1.94	1.93	S	1.92	1.90	1.90	1.91	1.91	1.91	1.92	1.95	2.00	2.14	1.90	2.46	2.02
Mar 9	2.12	2.03	2.12	2.12	2.06	2.00	1.98	1.97	1.93	1.95	1.96	C	C	C	C	C	1.96	1.95	1.94	1.94	1.96	1.98	2.00	2.02	1.93	2.12	2.00
Mar 10	2.06	2.15	2.14	2.02	1.91	1.90	1.89	1.90	1.89	1.90	1.92	S	1.91	1.91	1.90	1.91	1.91	1.91	1.92	1.95	1.94	1.95	1.94	1.98	1.89	2.15	1.95
Mar 11	2.09	2.09	2.08	2.07	2.13	2.16	2.21	2.22	2.21	2.02	S	1.94	1.94	1.92	1.95	1.97	1.97	1.97	1.99	2.02	2.05	2.04	2.00	2.03	1.92	2.22	2.05
Mar 12	2.04	2.05	2.07	1.98	1.96	1.96	1.97	1.97	1.95	S	1.93	1.92	1.92	1.92	1.92	1.92	1.93	1.96	1.95	1.96	1.95	1.96	1.98	2.02	1.92	2.07	1.96
Mar 13	2.03	2.49	**2.84**	2.50	2.08	2.04	1.98	1.98	S	1.98	1.98	2.01	2.00	1.97	1.95	1.94	1.95	1.95	1.96	1.96	1.96	1.96	1.97	1.98	1.94	**2.84**	2.06
Mar 14	1.96	1.96	1.94	1.97	1.96	1.97	1.98	S	1.95	1.94	1.94	1.93	1.92	1.90	1.91	1.91	1.93	1.93	1.95	1.96	1.98	1.97	2.02	2.02	1.90	2.02	1.95
Mar 15	2.11	2.14	2.20	2.19	2.32	2.19	S	1.96	1.93	1.93	1.92	1.92	1.92	1.91	1.90	1.90	1.90	1.90	1.91	1.95	1.96	1.97	2.00	2.07	1.90	2.32	2.00
Mar 16	2.10	2.11	2.17	2.12	2.11	S	2.09	2.07	2.07	2.08	2.01	1.97	1.96	1.95	1.94	1.94	1.91	1.91	1.92	1.93	1.96	1.98	2.02	2.05	1.91	2.17	2.02
Mar 17	2.12	2.12	2.08	2.14	S	2.14	2.35	2.39	2.37	2.26	2.06	2.02	2.00	2.01	1.98	1.97	1.97	1.94	1.96	1.99	2.03	2.01	2.03	2.06	1.94	2.39	2.09
Mar 18	2.07	2.14	2.19	S	2.19	2.26	2.24	2.26	2.09	2.08	2.07	2.04	2.01	2.01	1.96	1.94	1.99	2.03	2.06	2.12	2.06	2.02	1.98	2.04	1.94	2.26	2.08
Mar 19	2.03	2.02	S	2.01	2.00	2.05	2.11	2.09	2.05	2.11	2.06	2.03	1.99	2.00	1.98	1.96	1.95	1.92	1.91	1.93	1.94	2.00	2.06	2.04	1.91	2.11	2.01
Mar 20	2.11	S	2.11	2.13	2.14	2.22	2.31	2.42	2.32	2.08	2.05	2.05	1.99	1.93	1.91	1.91	1.90	1.91	1.91	1.95	1.89	1.88	1.89	1.89	1.88	2.42	2.04
Mar 21	S	1.89	1.90	1.90	1.90	1.90	1.90	1.90	1.92	1.92	1.93	1.93	1.93	1.92	1.92	1.92	1.92	1.92	1.95	1.97	1.92	1.95	1.93	S	1.89	1.97	1.92
Mar 22	1.96	1.99	2.06	2.00	2.04	2.06	2.09	2.08	2.00	1.94	1.91	1.91	1.91	1.91	1.92	1.91	1.91	1.93	1.93	1.94	1.94	1.95	S	1.95	1.91	2.09	1.97
Mar 23	1.95	1.95	1.95	1.96	1.96	1.96	1.96	1.96	1.95	1.96	1.92	1.94	1.93	1.93	1.93	1.94	1.94	1.97	1.98	2.02	1.99	S	1.96	1.96	1.92	2.02	1.96
Mar 24	1.96	1.96	1.97	1.97	1.98	1.97	2.00	2.05	1.98	1.96	1.95	1.95	1.96	1.95	NRM	NRM	NRM	1.95	1.92	1.89	S	1.92	1.92	1.90	1.89	2.05	1.96
Mar 25	1.91	1.92	1.92	1.92	1.92	1.91	1.91	1.90	1.92	1.92	1.93	1.93	1.94	1.93	1.93	1.93	1.92	1.89	1.93	S	1.96	1.97	1.98	1.99	1.89	1.99	1.93
Mar 26	2.02	2.04	2.06	2.07	1.98	1.95	1.95	1.96	1.95	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	1.95	2.07	-
Mar 27	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-	-
Mar 28	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-	-
Mar 29	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-	-
Mar 30	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-	-
Mar 31	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-	-
Diurnal Maximum	2.33	2.49	2.84	2.50	2.46	2.43	2.53	2.73	2.54	2.26	2.11	2.17	2.35	2.35	2.30	2.12	2.15	2.22	2.24	2.39	2.25	2.25	2.14	2.22			
Daiurnal Average	2.06	2.07	2.10	2.09	2.08	2.06	2.07	2.10	2.05	2.01	1.99	1.99	1.98	1.97	1.96	1.95	1.95	1.97	1.97	2.01	1.99	2.00	2.01	2.04			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance	P Power Failure
X	InValid Data (Equipment Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)			

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for THC - Cold Lake South Station

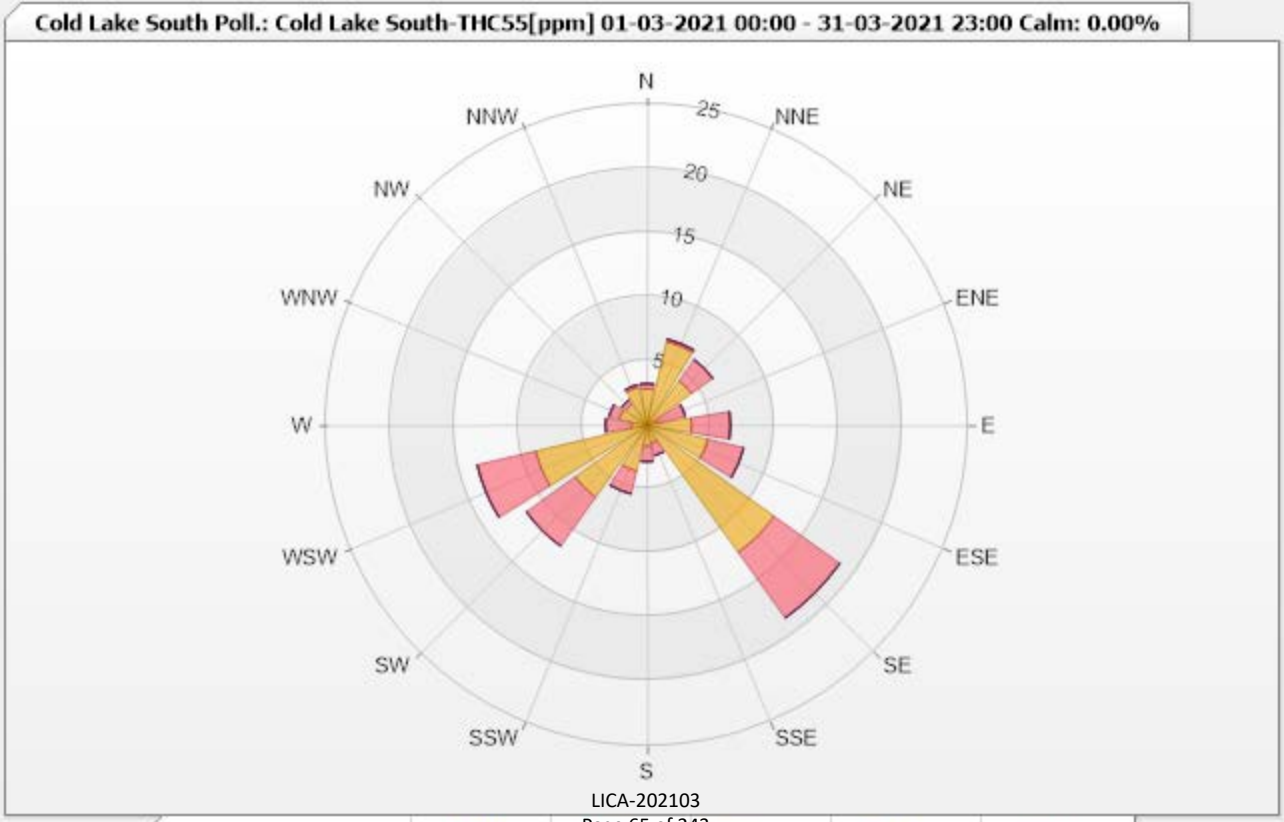




Classes	THC55
<=1.8	0.00%
1.8 - 2	58.51%
2 - 2.5	40.63%
2.5 - 3	0.87%
3 - 3.5	0.00%
3.5 - 4	0.00%
4 - 4.5	0.00%
4.5 - 5	0.00%
5 - 5.5	0.00%
5.5 - 6	0.00%
>6	0.00%

Wind: Cold Lake South Poll.: Cold Lake South-THC55[ppm] Monthly: 03-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
Calm: 0.00% Valid Data: 66.26% Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-40	>40.0	Total
N	2.84	0.41	0	0	0	3.25
NNE	6.69	0.2	0	0	0	6.89
NE	4.26	2.03	0	0	0	6.29
ENE	0.81	2.23	0	0	0	3.04
E	3.45	3.04	0	0	0	6.49
ESE	4.87	2.84	0	0	0	7.71
SE	12.17	6.29	0	0	0	18.46
SSE	1.42	1.01	0	0	0	2.43
S	1.62	1.22	0	0	0	2.84
SSW	3.65	1.83	0	0	0	5.48
SW	6.9	4.67	0	0	0	11.57
WSW	8.92	4.67	0	0	0	13.59
W	1.22	2.03	0	0	0	3.25
WNW	2.23	0.81	0	0	0	3.04
NW	2.03	0.41	0	0	0	2.44
NNW	3.04	0.2	0	0	0	3.24
Summary	66.12	33.89	0	0	0	100


Cold Lake South Poll.: Cold Lake South-THC55[ppm] 01-03-2021 00:00 - 31-03-2021 23:00 Calm: 0.00%
N
NNE
NE
ENE
E
ESE
SE
SSE
S
SSW
SW
WSW
W
WNW
NW
NNW
25
20
15
10
5
% Icon Classes (ppm)
66 0-2
34 2-5
0 5-10
0 10-40
0 >40.0

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - March 2021

Summary of Hourly Averages

METHANE (CH4) in ppm

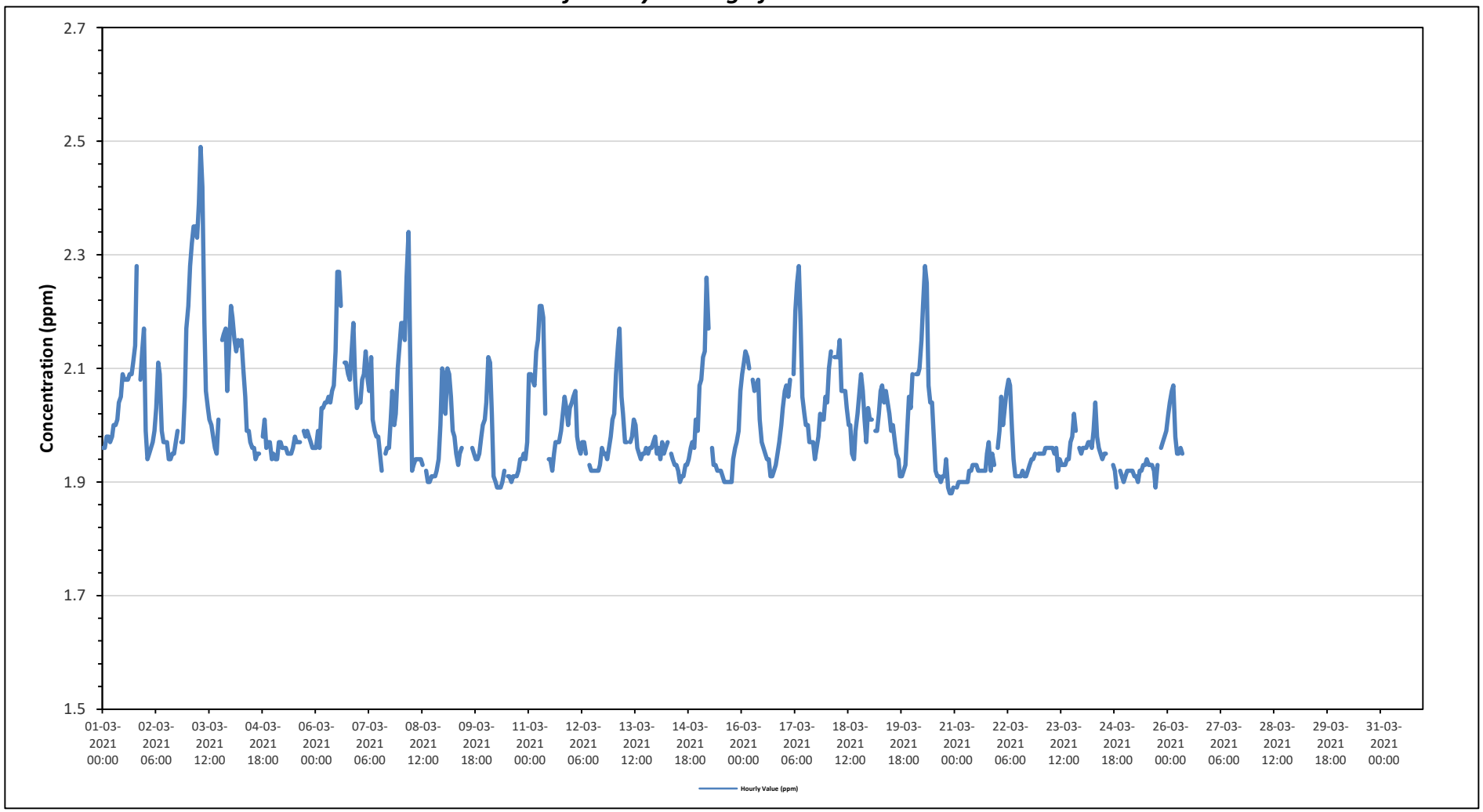
Maximum Hourly Value:	2.49	ppm	on March 3 at hour 7	Hours in Service:	744
Maximum Daily Value:	2.17	ppm	on March 3	Hours of Data:	576
Minimum Hourly Value:	1.88	ppm	on March 20 at hour 21	Hours of Missing Data:	138
Minimum Daily Value:	1.92	ppm	on March 21	Hours of Calibration:	30
Monthly Average:	2.00	ppm		Operational Uptime:	81.5

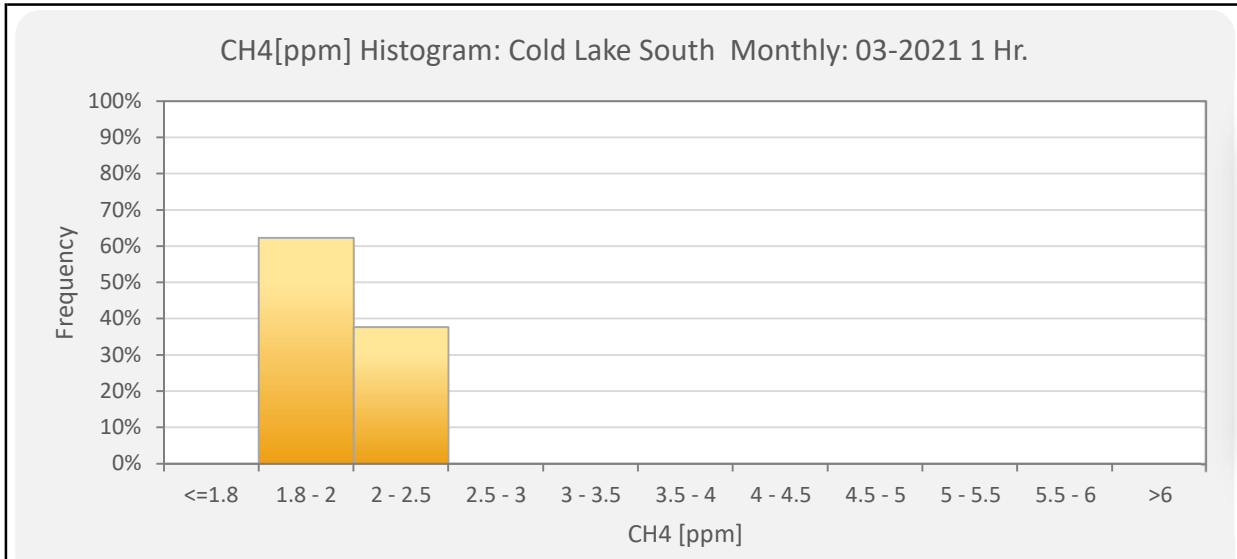
Day	Hourly Period Starting at (MST)																								Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Mar 1	1.96	1.96	1.98	1.98	1.97	1.98	2.00	2.00	2.01	2.04	2.05	2.09	2.08	2.08	2.08	2.09	2.09	2.11	2.14	2.28	S	2.08	2.13	2.17	1.96	2.28	2.06
Mar 2	1.99	1.94	1.95	1.96	1.97	1.99	2.03	2.11	2.09	1.99	1.97	1.97	1.97	1.94	1.94	1.95	1.95	1.97	1.99	S	1.97	1.97	2.05	2.17	1.94	2.17	1.99
Mar 3	2.21	2.28	2.32	2.35	2.35	2.33	2.39	**2.49**	2.42	2.18	2.06	2.03	2.01	2.00	1.98	1.96	1.95	2.01	S	2.15	2.16	2.17	2.06	2.13	1.95	**2.49**	**2.17**
Mar 4	2.21	2.19	2.15	2.13	2.15	2.14	2.15	2.10	2.05	1.99	1.99	1.97	1.96	1.96	1.94	1.95	1.95	S	1.98	2.01	1.96	1.97	1.97	1.94	1.94	2.21	2.04
Mar 5	1.95	1.94	1.94	1.97	1.97	1.96	1.96	1.96	1.95	1.95	1.95	1.96	1.98	1.97	1.97	1.97	S	1.99	1.98	1.99	1.98	1.97	1.96	1.96	1.94	1.99	1.96
Mar 6	1.96	1.99	1.96	2.03	2.03	2.04	2.04	2.05	2.04	2.06	2.07	2.13	2.27	2.27	2.21	S	2.11	2.11	2.09	2.08	2.13	2.18	2.08	2.03	1.96	2.27	2.09
Mar 7	2.04	2.04	2.08	2.09	2.13	2.08	2.06	2.12	2.01	1.99	1.98	1.98	1.95	1.92	S	1.95	1.96	1.96	2.01	2.06	2.00	2.02	2.10	2.14	1.92	2.14	2.03
Mar 8	2.18	2.18	2.15	2.26	2.34	2.14	1.92	1.93	1.94	1.94	1.94	1.94	1.93	S	1.92	1.90	1.90	1.91	1.91	1.91	1.92	1.94	2.00	2.10	1.90	2.34	2.01
Mar 9	2.09	2.02	2.10	2.09	2.05	1.99	1.98	1.95	1.93	1.95	1.96	C	C	C	C	C	1.96	1.95	1.94	1.94	1.95	1.98	2.00	2.01	1.93	2.10	1.99
Mar 10	2.04	2.12	2.11	2.02	1.91	1.90	1.89	1.89	1.89	1.90	1.92	S	1.91	1.91	1.90	1.91	1.91	1.91	1.92	1.94	1.94	1.95	1.94	1.97	1.89	2.12	1.94
Mar 11	2.09	2.09	2.08	2.07	2.13	2.15	2.21	2.21	2.19	2.02	S	1.94	1.94	1.92	1.95	1.97	1.97	1.97	1.99	2.02	2.05	2.03	2.00	2.03	1.92	2.21	2.04
Mar 12	2.04	2.05	2.06	1.98	1.96	1.95	1.97	1.97	1.95	S	1.93	1.92	1.92	1.92	1.92	1.92	1.93	1.96	1.95	1.95	1.94	1.96	1.98	2.01	1.92	2.06	1.96
Mar 13	2.02	2.09	2.14	2.17	2.05	2.02	1.97	1.97	S	1.97	1.98	2.01	2.00	1.96	1.95	1.94	1.95	1.95	1.96	1.95	1.96	1.96	1.97	1.98	1.94	2.17	2.00
Mar 14	1.95	1.96	1.94	1.97	1.95	1.96	1.97	S	1.95	1.94	1.93	1.93	1.92	1.90	1.91	1.91	1.93	1.93	1.94	1.96	1.97	1.96	2.01	1.99	1.90	2.01	1.95
Mar 15	2.07	2.08	2.12	2.13	2.26	2.17	S	1.96	1.93	1.93	1.92	1.92	1.92	1.91	1.90	1.90	1.90	1.90	1.90	1.94	1.96	1.97	1.99	2.06	1.90	2.26	1.99
Mar 16	2.09	2.11	2.13	2.12	2.10	S	2.08	2.06	2.07	2.08	2.01	1.97	1.96	1.95	1.94	1.94	1.91	1.91	1.92	1.93	1.95	1.97	2.00	2.03	1.91	2.13	2.01
Mar 17	2.06	2.07	2.05	2.08	S	2.09	2.20	2.25	2.28	2.18	2.05	2.02	2.00	2.00	1.97	1.97	1.97	1.94	1.96	1.98	2.02	2.01	2.01	2.05	1.94	2.28	2.05
Mar 18	2.04	2.10	2.13	S	2.12	2.12	2.12	2.15	2.06	2.06	2.06	2.03	2.00	2.00	1.95	1.94	1.99	2.02	2.05	2.09	2.06	2.01	1.97	2.03	1.94	2.15	2.05
Mar 19	2.01	2.01	S	1.99	1.99	2.02	2.06	2.07	2.04	2.06	2.04	2.02	1.99	2.00	1.97	1.95	1.94	1.91	1.91	1.92	1.93	1.99	2.05	2.03	1.91	2.07	2.00
Mar 20	2.09	S	2.09	2.09	2.10	2.15	2.21	2.28	2.25	2.07	2.04	2.04	1.98	1.92	1.91	1.91	1.90	1.91	1.91	1.94	1.89	1.88	1.88	1.89	1.88	2.28	2.01
Mar 21	S	1.89	1.90	1.90	1.90	1.90	1.90	1.90	1.92	1.92	1.93	1.93	1.93	1.92	1.92	1.92	1.92	1.92	1.95	1.97	1.92	1.95	1.93	S	1.89	1.97	1.92
Mar 22	1.96	1.99	2.05	2.00	2.03	2.06	2.08	2.07	1.99	1.94	1.91	1.91	1.91	1.91	1.92	1.91	1.91	1.92	1.93	1.94	1.94	1.95	S	1.95	1.91	2.08	1.96
Mar 23	1.95	1.95	1.95	1.96	1.96	1.96	1.96	1.96	1.95	1.96	1.92	1.94	1.93	1.93	1.93	1.94	1.94	1.97	1.98	2.02	1.99	S	1.96	1.95	1.92	2.02	1.95
Mar 24	1.96	1.96	1.96	1.97	1.97	1.96	1.99	2.04	1.98	1.96	1.95	1.94	1.95	1.95	NRM	NRM	NRM	1.93	1.92	1.89	S	1.92	1.91	1.90	1.89	2.04	1.95
Mar 25	1.91	1.92	1.92	1.92	1.92	1.91	1.91	1.90	1.92	1.92	1.93	1.93	1.94	1.93	1.93	1.93	1.92	1.89	1.93	S	1.96	1.97	1.98	1.99	1.89	1.99	1.93
Mar 26	2.02	2.04	2.06	2.07	1.98	1.95	1.95	1.96	1.95	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	1.95	2.07	-
Mar 27	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-	-
Mar 28	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-	-
Mar 29	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-	-
Mar 30	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-	-
Mar 31	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-	-
Diurnal Maximum	2.21	2.28	2.32	2.35	2.35	2.33	2.39	2.49	2.42	2.18	2.07	2.13	2.27	2.27	2.21	2.09	2.11	2.11	2.14	2.28	2.16	2.18	2.13	2.17			
Daiurnal Average	2.04	2.04	2.05	2.05	2.05	2.04	2.04	2.05	2.03	2.00	1.98	1.98	1.97	1.96	1.96	1.94	1.95	1.96	1.97	1.99	1.98	1.99	2.00	2.02			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance	P Power Failure
X	InValid Data (Equipment Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)			

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for CH4 - Cold Lake South Station

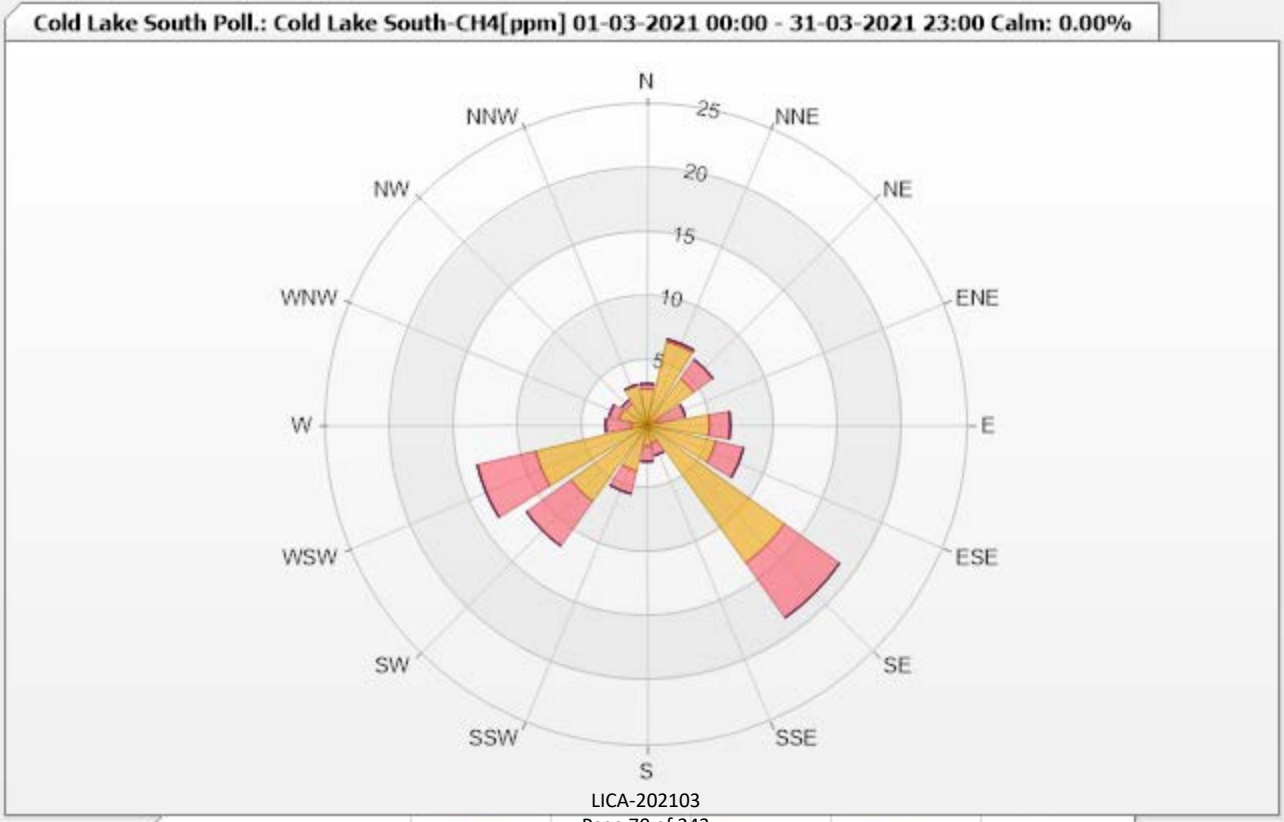




Classes	CH4
<=1.8	0.00%
1.8 - 2	62.33%
2 - 2.5	37.67%
2.5 - 3	0.00%
3 - 3.5	0.00%
3.5 - 4	0.00%
4 - 4.5	0.00%
4.5 - 5	0.00%
5 - 5.5	0.00%
5.5 - 6	0.00%
>6	0.00%

Wind: Cold Lake South Poll.: Cold Lake South-CH4[ppm] Monthly: 03-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
Calm: 0.00% Valid Data: 66.26% Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-20	>20.0	Total
N	2.84	0.41	0	0	0	3.25
NNE	6.69	0.2	0	0	0	6.89
NE	4.46	1.83	0	0	0	6.29
ENE	0.81	2.23	0	0	0	3.04
E	4.87	1.62	0	0	0	6.49
ESE	5.48	2.23	0	0	0	7.71
SE	13.18	5.27	0	0	0	18.45
SSE	1.42	1.01	0	0	0	2.43
S	1.62	1.22	0	0	0	2.84
SSW	3.65	1.83	0	0	0	5.48
SW	7.3	4.26	0	0	0	11.56
WSW	8.92	4.67	0	0	0	13.59
W	1.22	2.03	0	0	0	3.25
WNW	2.23	0.81	0	0	0	3.04
NW	2.03	0.41	0	0	0	2.44
NNW	3.25	0	0	0	0	3.25
Summary	69.97	30.03	0	0	0	100


Cold Lake South Poll.: Cold Lake South-CH4[ppm] 01-03-2021 00:00 - 31-03-2021 23:00 Calm: 0.00%
N
NNE
NE
ENE
E
ESE
SE
SSE
S
SSW
SW
WSW
W
WNW
NW
NNW
25
20
15
10
5
% Icon Classes (ppm)
70 0-2
30 2-5
0 5-10
0 10-20
0 >20.0

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - March 2021

Summary of Hourly Averages

NON-METHANE HYDROCARBONS (NMHC) in ppm

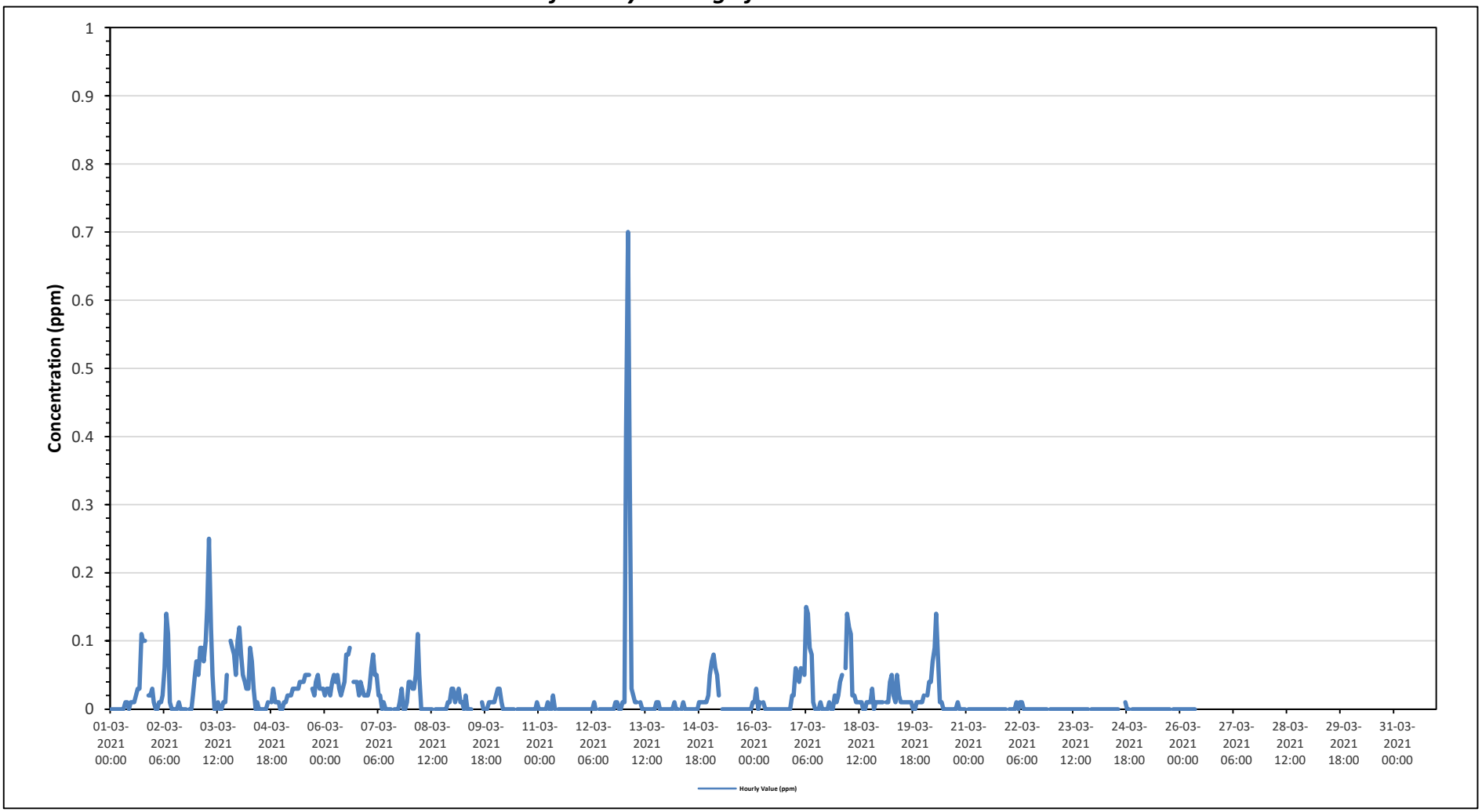
Maximum Hourly Value:	0.70	ppm	on March 13 at hour 2	Hours in Service:	744
Maximum Daily Value:	0.07	ppm	on March 13	Hours of Data:	576
Minimum Hourly Value:	0.00	ppm	on March 1 at hour 0	Hours of Missing Data:	138
Minimum Daily Value:	0.00	ppm	on March 21	Hours of Calibration:	30
Monthly Average:	0.02	ppm		Operational Uptime:	81.5

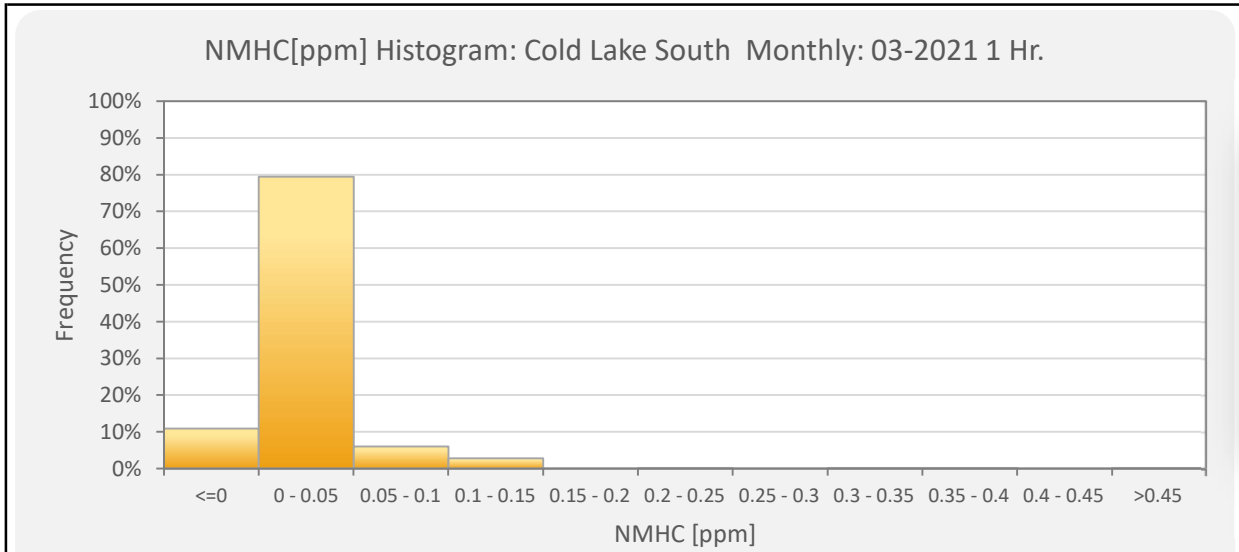
Day	Hourly Period Starting at (MST)																								Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Mar 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.01	0.01	0.01	0.02	0.03	0.03	0.11	0.10	0.10	S	0.02	0.02	0.03	0.00	0.11	0.02
Mar 2	0.01	0.00	0.00	0.01	0.01	0.02	0.06	0.14	0.11	0.01	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	S	0.00	0.00	0.02	0.05	0.00	0.14	0.02
Mar 3	0.07	0.05	0.09	0.09	0.07	0.10	0.15	0.25	0.12	0.05	0.00	0.00	0.01	0.00	0.00	0.01	0.01	0.05	S	0.10	0.09	0.08	0.05	0.10	0.00	0.25	0.07
Mar 4	0.12	0.08	0.05	0.04	0.03	0.03	0.09	0.07	0.03	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.01	S	0.01	0.03	0.01	0.01	0.01	0.00	0.00	0.12	0.03
Mar 5	0.00	0.01	0.01	0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.05	0.05	0.05	S	0.03	0.02	0.04	0.05	0.03	0.03	0.03	0.00	0.05	0.03
Mar 6	0.02	0.03	0.03	0.02	0.04	0.05	0.04	0.05	0.03	0.02	0.03	0.04	0.08	0.08	0.09	S	0.04	0.04	0.04	0.02	0.04	0.03	0.02	0.02	0.02	0.09	0.04
Mar 7	0.02	0.03	0.06	0.08	0.05	0.05	0.02	0.02	0.00	0.01	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.01	0.03	0.00	0.00	0.01	0.04	0.00	0.08	0.02
Mar 8	0.04	0.03	0.03	0.05	0.11	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.03	0.00	0.11	0.02
Mar 9	0.03	0.01	0.02	0.03	0.01	0.01	0.00	0.02	0.00	0.00	0.00	C	C	C	C	C	0.01	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.00	0.03	0.01
Mar 10	0.02	0.03	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.03	0.00
Mar 11	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.02	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00
Mar 12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.01	0.00	0.01	0.00
Mar 13	0.01	0.40	**0.70**	0.34	0.03	0.02	0.01	0.01	S	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	**0.70**	**0.07**
Mar 14	0.00	0.00	0.00	0.00	0.01	0.00	0.00	S	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.02	0.00	0.02	0.00
Mar 15	0.05	0.07	0.08	0.06	0.05	0.02	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.01
Mar 16	0.01	0.01	0.03	0.00	0.01	S	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02	0.00	0.03	0.00
Mar 17	0.06	0.05	0.04	0.06	S	0.05	0.15	0.14	0.09	0.08	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.02	0.01	0.00	0.15	0.03
Mar 18	0.02	0.04	0.05	S	0.06	0.14	0.12	0.11	0.02	0.02	0.01	0.01	0.01	0.01	0.00	0.00	0.01	0.01	0.01	0.03	0.00	0.01	0.01	0.01	0.00	0.14	0.03
Mar 19	0.01	0.01	S	0.01	0.01	0.04	0.05	0.02	0.01	0.05	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.01	0.01	0.01	0.01	0.00	0.05	0.01
Mar 20	0.02	S	0.02	0.04	0.04	0.07	0.09	0.14	0.07	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.14	0.02
Mar 21	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00
Mar 22	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.01	0.00
Mar 23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00
Mar 24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NRM	NRM	NRM	0.01	0.00	0.00	S	0.00	0.00	0.00	0.00	0.01	0.00
Mar 25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mar 26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	0.00	0.00	-
Mar 27	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-	-
Mar 28	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-	-
Mar 29	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-	-
Mar 30	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-	-
Mar 31	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-	-
Diurnal Maximum	0.12	0.40	0.70	0.34	0.11	0.14	0.15	0.25	0.12	0.08	0.04	0.04	0.08	0.08	0.09	0.05	0.04	0.11	0.10	0.10	0.09	0.08	0.05	0.10			
Daiurnal Average	0.02	0.03	0.05	0.03	0.02	0.03	0.03	0.04	0.02	0.01	0.01	0.00	0.01	0.01	0.01	0.00	0.01	0.01	0.01	0.02	0.01	0.01	0.01	0.02			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance	P Power Failure
X	InValid Data (Equipment Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)			

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for NMHC - Cold Lake South Station

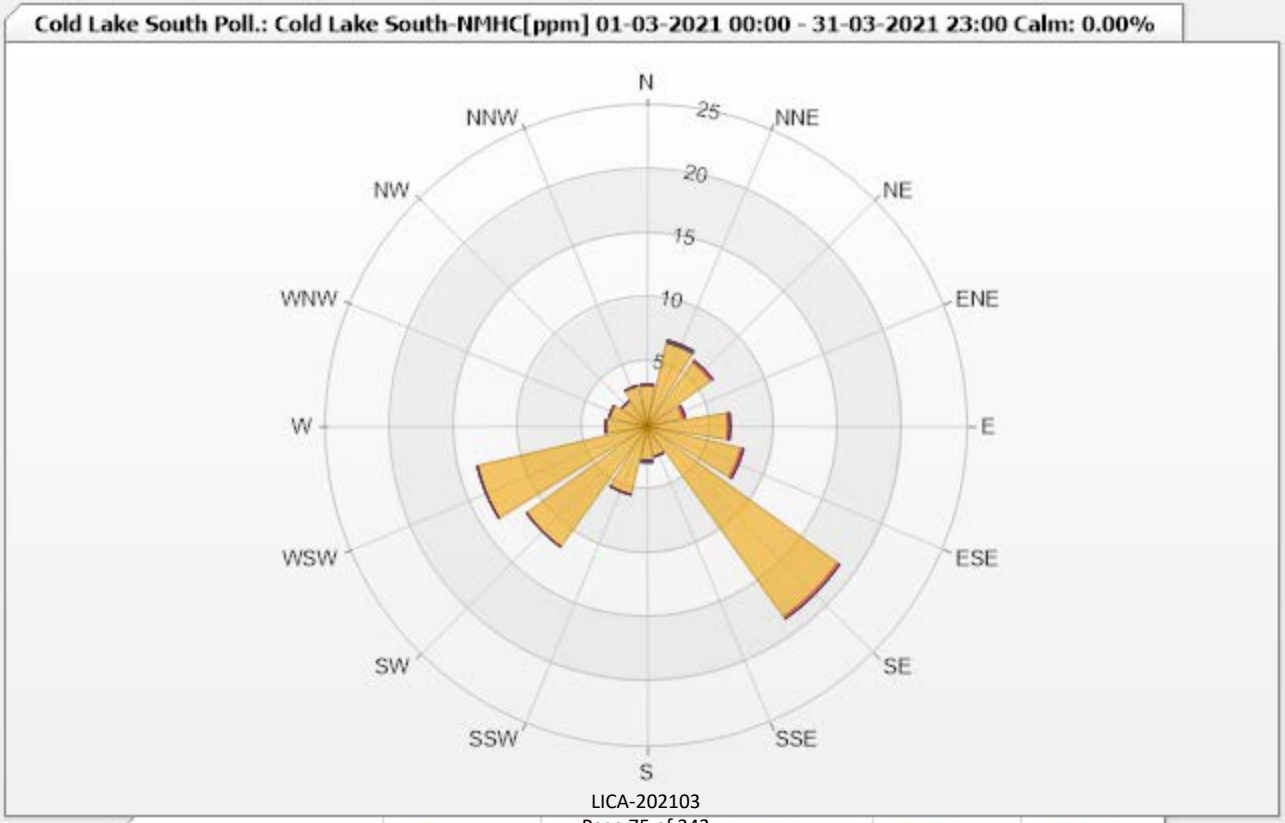




Classes	NMHC
<=0	10.94%
0 - 0.05	79.51%
0.05 - 0.1	6.08%
0.1 - 0.15	2.78%
0.15 - 0.2	0.00%
0.2 - 0.25	0.17%
0.25 - 0.3	0.00%
0.3 - 0.35	0.17%
0.35 - 0.4	0.17%
0.4 - 0.45	0.00%
>0.45	0.17%

Wind: Cold Lake South Poll.: Cold Lake South-NMHC[ppm] Monthly: 03-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
Calm: 0.00% Valid Data: 66.26% Calm Avg: 0.00 [ppm]

Direction	0-0.1	0.1-0.3	0.3-0.9	0.9-2	>2.0	Total
N	3.25	0	0	0	0	3.25
NNE	6.69	0	0.2	0	0	6.89
NE	6.09	0.2	0	0	0	6.29
ENE	2.84	0.2	0	0	0	3.04
E	6.29	0.2	0	0	0	6.49
ESE	7.51	0.2	0	0	0	7.71
SE	18.26	0.2	0	0	0	18.46
SSE	2.43	0	0	0	0	2.43
S	2.64	0	0.2	0	0	2.84
SSW	5.48	0	0	0	0	5.48
SW	11.56	0	0	0	0	11.56
WSW	13.59	0	0	0	0	13.59
W	3.25	0	0	0	0	3.25
WNW	3.04	0	0	0	0	3.04
NW	2.43	0	0	0	0	2.43
NNW	3.25	0	0	0	0	3.25
Summary	98.6	1	0.4	0	0	100


Cold Lake South Poll.: Cold Lake South-NMHC[ppm] 01-03-2021 00:00 - 31-03-2021 23:00 Calm: 0.00%
N
NNE
NE
ENE
E
ESE
SE
SSE
S
SSW
SW
WSW
W
WNW
NW
NNW
25
20
15
10
5
% Icon Classes (ppm)
99 0-0.1
1 0.1-0.3
0 0.3-0.9
0 0.9-2
0 >2.0

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - March 2021

Summary of Hourly Averages

PARTICULATE MATTER 2.5 ($PM_{2.5}$) in $\mu g/m^3$

Alberta Ambient Air Quality Objectives (AAAQO): 1-Hour 80 µg/m3, 24-Hour 29 µg/m3

Number of 1-Hour Exceedences: 0 Number of 24-Hour Exceedences: 0

Maximum Hourly Value:	30 $\mu g/m^3$ on March 4 at hour 0	Hours in Service:	744
Maximum Daily Value:	13.0 $\mu g/m^3$ on March 5	Hours of Data:	607
Minimum Hourly Value:	1 $\mu g/m^3$ on March 7 at hour 14	Hours of Missing Data:	136
Minimum Daily Value:	2 $\mu g/m^3$ on March 21	Hours of Calibration:	1
Monthly Average:	5.8 $\mu g/m^3$	Operational Uptime:	81.7

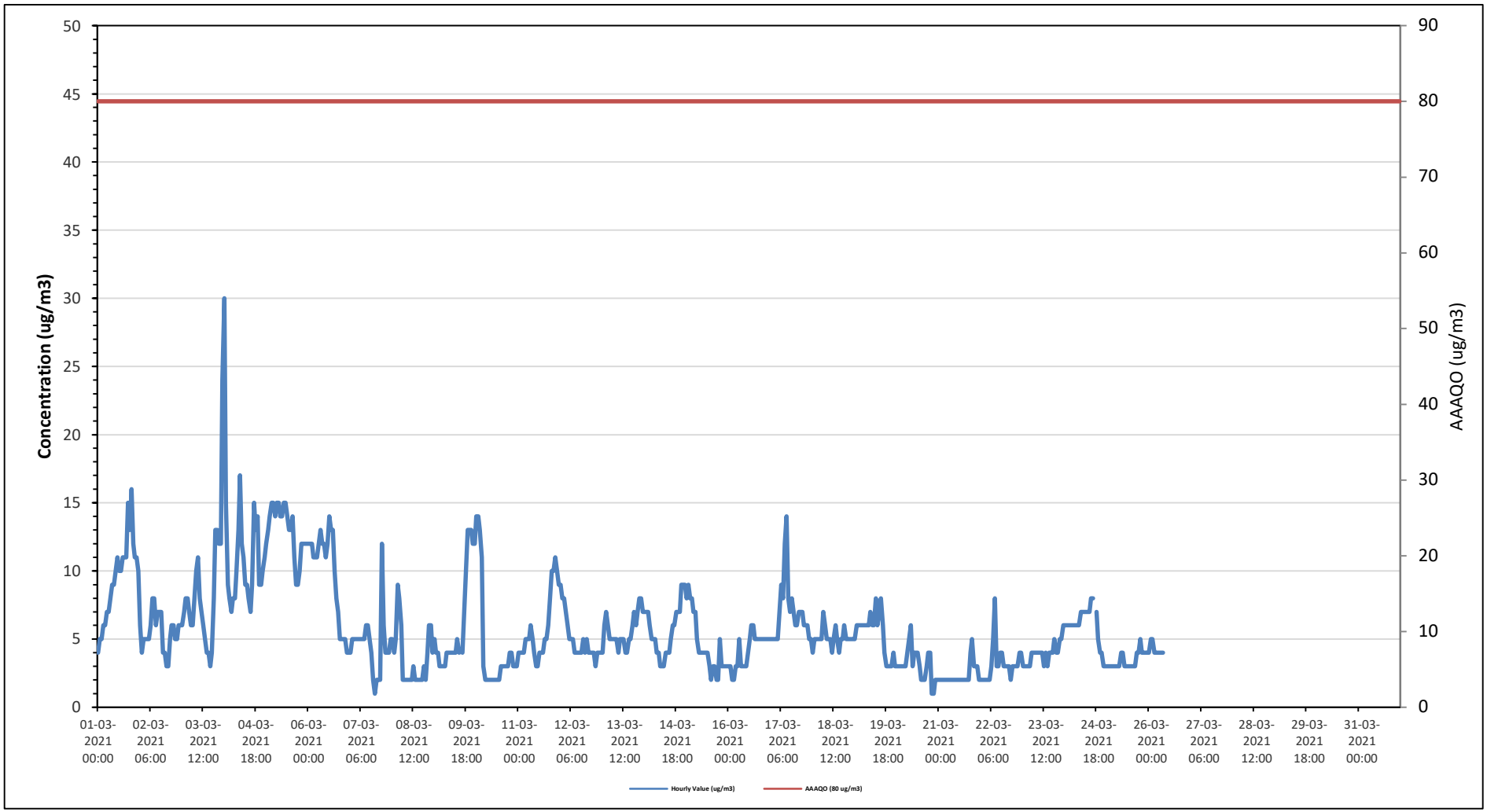
Day	Hourly Period Starting at (MST)																								Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Mar 1	4	5	5	6	6	7	7	8	9	9	10	11	10	10	11	11	11	15	13	16	12	11	11	10	4	16	9.5
Mar 2	6	4	5	5	5	5	6	8	8	6	7	7	7	4	4	3	3	5	6	6	5	5	6	6	3	8	5.5
Mar 3	6	7	8	8	7	6	6	8	10	11	8	7	6	5	4	4	3	4	8	13	13	12	12	24	3	24	8.3
Mar 4	**30**	15	9	8	7	8	8	10	13	17	12	11	9	9	8	7	9	15	13	14	9	9	10	11	7	**30**	11.3
Mar 5	12	13	14	15	15	14	15	15	14	14	15	15	14	13	13	14	11	9	9	10	12	12	12	12	9	15	**13.0**
Mar 6	12	12	12	11	11	11	12	13	12	12	11	12	14	13	13	10	8	7	5	5	5	5	4	4	4	14	9.8
Mar 7	4	5	5	5	5	5	5	5	5	6	6	5	4	2	1	2	2	2	12	6	4	4	4	5	**1**	12	4.5
Mar 8	5	4	5	9	8	6	2	2	2	2	2	2	3	2	2	2	2	2	3	2	4	6	6	4	2	9	3.6
Mar 9	5	4	4	3	3	3	3	4	4	4	4	4	4	5	4	**C**	4	7	10	13	13	13	12	12	3	13	6.2
Mar 10	14	14	13	11	3	2	2	2	2	2	2	2	2	2	3	3	3	3	3	4	4	3	3	3	2	14	4.4
Mar 11	4	4	4	4	5	5	5	6	5	4	3	3	4	4	4	5	5	6	8	10	10	11	10	9	3	11	5.8
Mar 12	9	8	8	7	6	5	5	5	4	4	4	4	4	5	4	5	4	4	4	4	3	4	4	4	3	9	4.9
Mar 13	4	6	7	6	5	5	5	5	5	4	5	5	5	4	4	5	5	6	7	6	7	8	8	7	4	8	5.6
Mar 14	7	7	7	6	5	5	5	4	4	3	3	3	4	4	4	5	6	6	7	7	7	9	9	9	3	9	5.7
Mar 15	8	9	8	8	7	7	5	4	4	4	4	4	4	3	2	3	3	2	2	5	3	3	3	3	2	9	4.5
Mar 16	3	3	2	2	3	3	5	3	3	3	3	4	5	6	6	5	5	5	5	5	5	5	5	5	2	6	4.1
Mar 17	5	5	5	5	5	7	9	8	12	14	8	7	8	7	6	6	7	7	7	6	6	6	5	5	5	14	6.9
Mar 18	4	5	5	5	5	5	7	6	5	5	5	4	5	6	5	4	5	5	6	5	5	5	5	5	4	7	5.1
Mar 19	5	6	6	6	6	6	6	6	6	7	6	6	8	6	7	8	6	4	3	3	3	3	4	3	3	8	5.4
Mar 20	3	3	3	3	3	3	4	5	6	3	4	4	4	3	2	2	2	3	4	4	1	1	2	2	**1**	6	3.1
Mar 21	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	4	5	3	3	3	2	2	5	2.3
Mar 22	2	2	2	2	2	2	3	5	8	3	3	4	4	3	3	3	3	2	3	3	3	3	4	4	2	8	3.2
Mar 23	3	3	3	3	3	4	4	4	4	4	4	4	3	4	3	4	4	4	5	4	4	5	5	6	3	6	3.9
Mar 24	6	6	6	6	6	6	6	6	6	7	7	7	7	7	7	8	8	**NRM**	7	5	4	4	3	3	3	8	6.0
Mar 25	3	3	3	3	3	3	3	3	4	4	3	3	3	3	3	3	3	4	4	5	4	4	4	4	3	5	3.4
Mar 26	4	5	5	4	4	4	4	4	4	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	4	5	-
Mar 27	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	-	-	-
Mar 28	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	-	-	-
Mar 29	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	-	-	-
Mar 30	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	-	-	-
Mar 31	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	-	-	-
Diurnal Maximum	30	15	14	15	15	14	15	15	14	17	15	15	14	13	13	14	11	15	13	16	13	13	12	24			
Daiurnal Average	6.5	6.2	6.0	5.9	5.4	5.3	5.5	5.8	6.2	6.2	5.6	5.6	5.7	5.3	5.0	5.2	5.0	5.4	6.3	6.6	6.0	6.2	6.2	6.5			

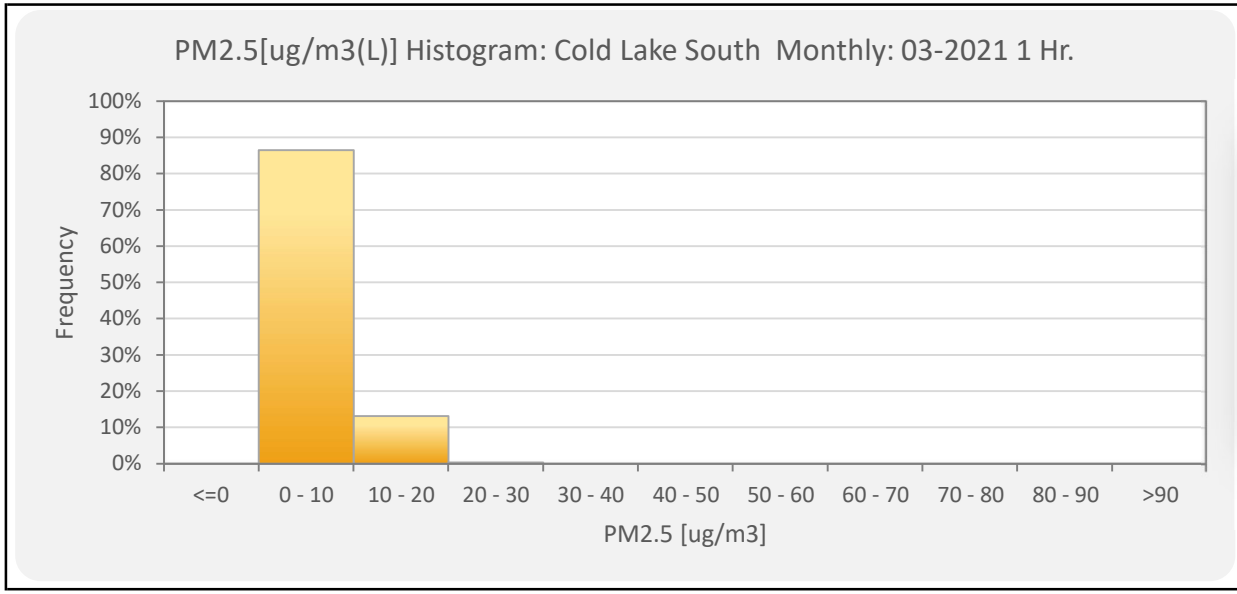
C	Monthly Calibration	**S**	Daily Zero-Span Check	**Q**	Quality Assurance	
K	Collection Error	**N**	No Data (Machine Not in Service)	**Y**	Routine Maintenance	**P** Power Failure
X	InValid Data (Equipment Malfunction /Recovery)	**NRM**	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)			

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.

Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for PM2.5 - Cold Lake South Station

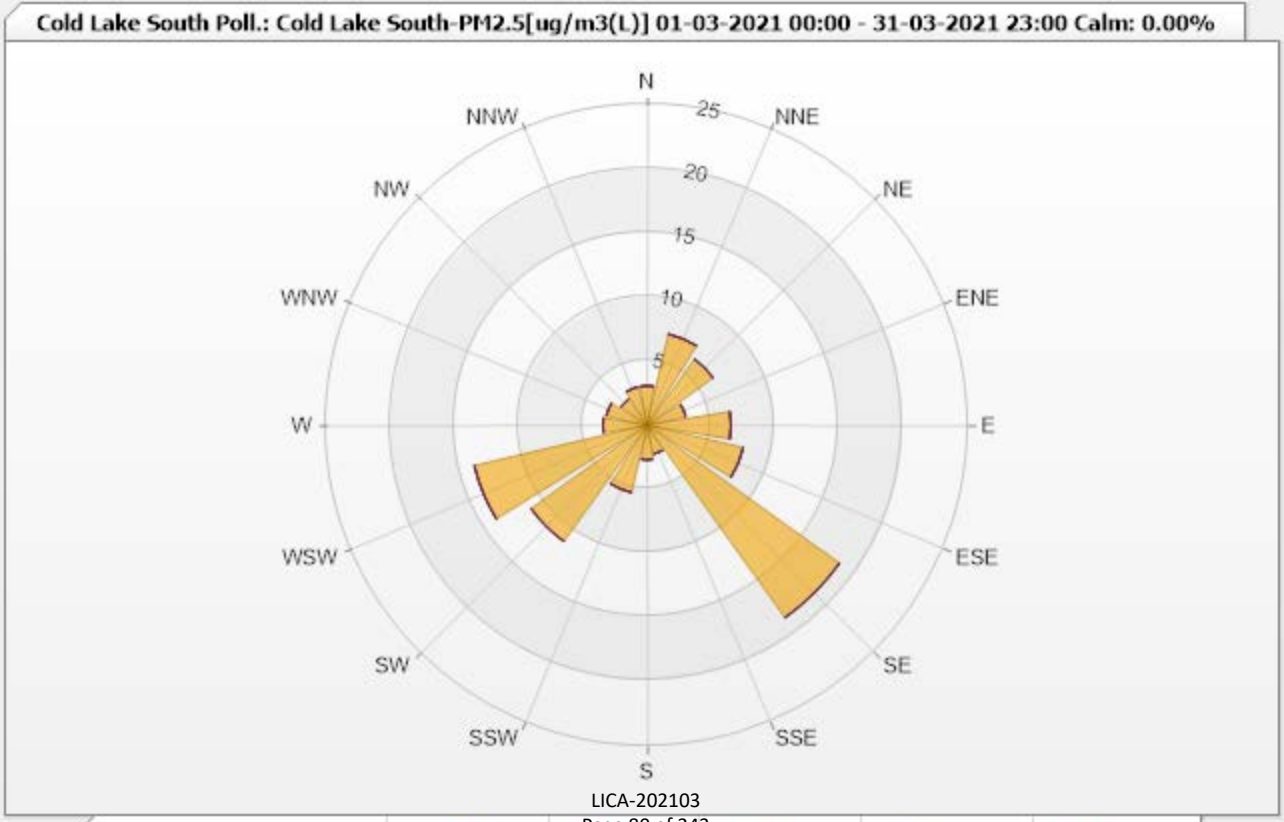




Classes	PM2.5
<=0	0.00%
0 - 10	86.49%
10 - 20	13.18%
20 - 30	0.33%
30 - 40	0.00%
40 - 50	0.00%
50 - 60	0.00%
60 - 70	0.00%
70 - 80	0.00%
80 - 90	0.00%
>90	0.00%

Wind: Cold Lake South Poll.: Cold Lake South-PM2.5[ug/m3(L)] Monthly: 03-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
Calm: 0.00% Valid Data: 70.03% Calm Avg: 0.00 [ug/m3(L)]

Direction	0-50	50-80	80-120	120-240	>240.0	Total
N	3.07	0	0	0	0	3.07
NNE	7.29	0	0	0	0	7.29
NE	6.33	0	0	0	0	6.33
ENE	3.07	0	0	0	0	3.07
E	6.53	0	0	0	0	6.53
ESE	7.68	0	0	0	0	7.68
SE	18.43	0	0	0	0	18.43
SSE	2.3	0	0	0	0	2.3
S	2.69	0	0	0	0	2.69
SSW	5.37	0	0	0	0	5.37
SW	11.13	0	0	0	0	11.13
WSW	13.82	0	0	0	0	13.82
W	3.45	0	0	0	0	3.45
WNW	3.26	0	0	0	0	3.26
NW	2.5	0	0	0	0	2.5
NNW	3.07	0	0	0	0	3.07
Summary	100	0	0	0	0	100


Cold Lake South Poll.: Cold Lake South-PM2.5[ug/m3(L)] 01-03-2021 00:00 - 31-03-2021 23:00 Calm: 0.00%
N
NNE
NE
ENE
E
ESE
SE
SSE
S
SSW
SW
WSW
W
WNW
NW
NNW
25
20
15
10
5
% Icon Classes (ug/m3(L))
100 0-50
0 50-80
0 80-120
0 120-240
0 >240.0

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - March 2021

Summary of Hourly Averages

RELATIVE HUMIDITY (RH) in %

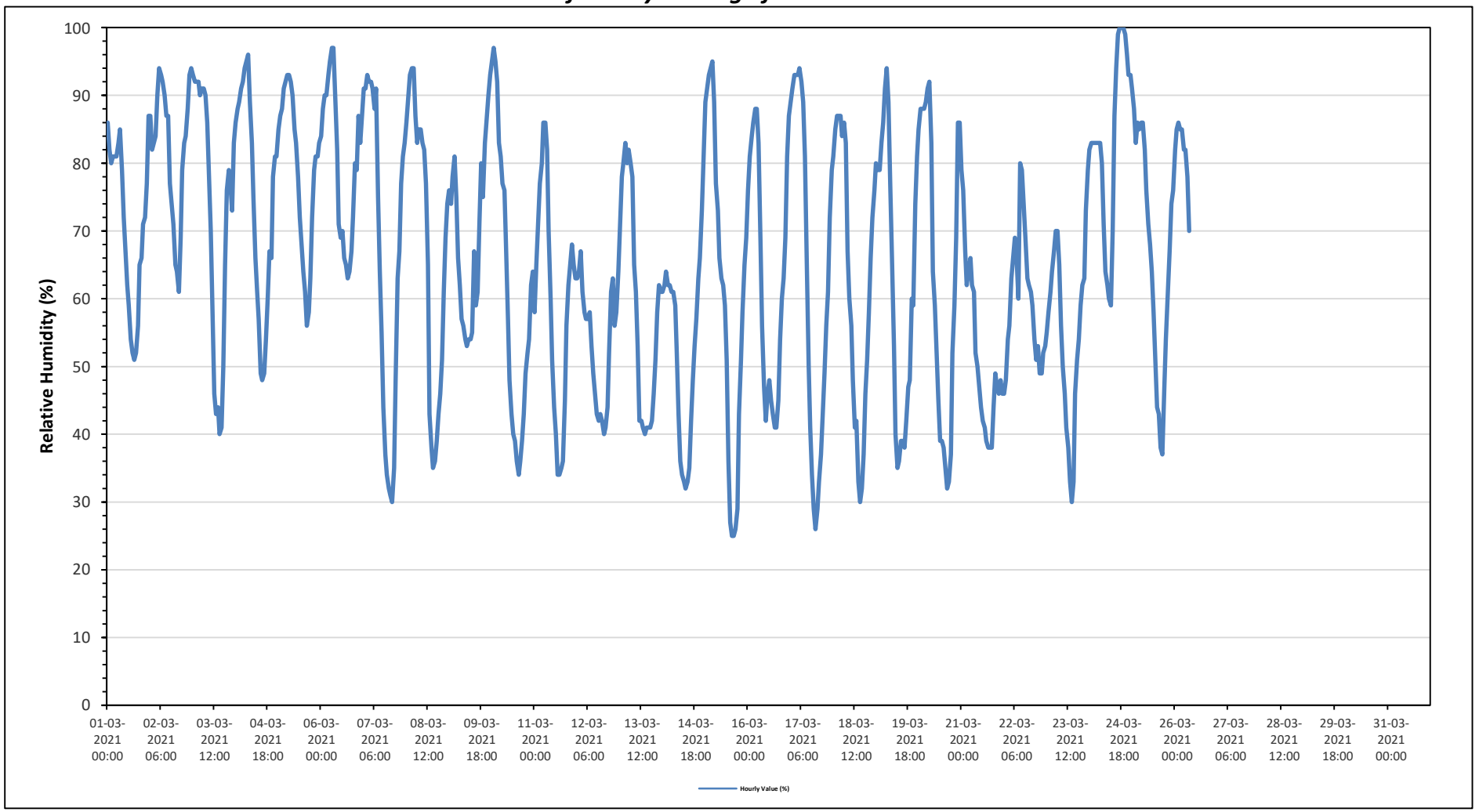
Maximum Hourly Value:	100	%	on March 24 at hour 17	Hours in Service:	744
Maximum Daily Value:	83.6	%	on March 24	Hours of Data:	609
Minimum Hourly Value:	25	%	on March 15 at hour 15	Hours of Missing Data:	135
Minimum Daily Value:	51.9	%	on March 21	Hours of Calibration:	0
Monthly Average:	66.0	%		Operational Uptime:	81.9

Day	Hourly Period Starting at (MST)																								Daily	Daily	Daily
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Minimum	Maximum	Average
Mar 1	86	82	80	81	81	81	83	85	79	72	67	62	59	54	52	51	52	56	65	66	71	72	77	87	51	87	70.9
Mar 2	87	82	83	84	90	94	93	92	90	87	87	77	74	71	65	64	61	69	79	83	84	88	93	94	61	94	82.1
Mar 3	93	92	92	92	90	91	91	90	86	78	70	58	46	43	44	40	41	50	65	76	79	77	73	83	40	93	72.5
Mar 4	86	88	89	91	92	94	95	96	89	83	75	66	61	57	49	48	49	54	60	67	66	78	81	81	48	96	74.8
Mar 5	85	87	88	91	92	93	93	92	90	85	83	78	72	68	64	61	56	58	63	72	79	81	81	83	56	93	79.0
Mar 6	84	88	90	90	93	95	97	97	89	82	71	69	70	66	65	63	64	67	72	80	79	87	83	87	63	97	80.3
Mar 7	91	91	93	92	92	91	88	91	75	64	55	44	37	34	32	31	30	35	48	63	67	77	81	83	30	93	66.0
Mar 8	86	90	93	94	94	87	83	85	85	83	82	77	65	43	38	35	36	39	43	46	51	61	69	74	35	94	68.3
Mar 9	76	74	78	81	75	66	62	57	56	54	53	54	54	55	67	59	61	71	80	75	83	86	90	93	53	93	69.2
Mar 10	95	97	95	92	83	81	77	76	68	57	48	43	40	39	36	34	36	39	43	49	52	54	62	64	34	97	60.8
Mar 11	58	65	71	77	80	86	86	82	70	60	51	44	40	34	34	35	36	45	56	62	65	68	65	63	34	86	59.7
Mar 12	63	64	67	61	58	57	57	58	53	49	46	43	42	43	42	40	41	44	52	61	63	56	58	64	40	67	53.4
Mar 13	70	78	80	83	80	82	80	78	65	61	53	42	42	41	40	41	41	41	42	46	51	58	62	61	40	83	59.1
Mar 14	61	62	64	62	62	61	61	59	52	43	36	34	33	32	33	35	42	48	53	57	63	66	73	81	32	81	53.0
Mar 15	89	91	93	94	95	89	77	73	66	63	62	59	51	36	27	**25**	**25**	26	29	43	51	58	65	69	**25**	95	60.7
Mar 16	76	81	84	86	88	88	83	68	56	47	42	46	48	45	43	41	41	45	54	60	63	69	81	87	41	88	63.4
Mar 17	89	91	93	93	93	94	92	89	81	66	50	41	34	29	26	29	33	37	43	49	56	61	72	79	26	94	63.3
Mar 18	81	85	87	87	87	84	86	83	67	60	56	48	41	42	33	30	32	37	46	51	58	66	72	76	30	87	62.3
Mar 19	80	79	79	83	86	91	94	89	77	66	53	40	35	36	39	39	38	42	47	48	60	59	74	81	35	94	63.1
Mar 20	85	88	88	88	89	91	92	83	64	59	52	45	39	39	38	35	32	33	37	52	59	69	86	86	32	92	63.7
Mar 21	79	76	67	62	64	66	62	61	52	50	47	44	42	41	39	38	38	38	44	49	47	46	48	46	38	79	51.9
Mar 22	46	48	54	56	63	66	69	66	60	80	79	74	69	63	62	61	59	54	51	53	49	49	52	53	46	80	59.8
Mar 23	55	58	61	64	67	70	70	65	56	50	46	41	38	33	30	33	46	51	54	59	62	63	73	79	30	79	55.2
Mar 24	82	83	83	83	83	83	83	80	71	64	62	60	59	70	87	94	99	**100**	**100**	**100**	99	96	93	93	59	**100**	**83.6**
Mar 25	91	88	83	86	85	86	86	82	76	71	68	64	58	51	44	43	38	37	47	54	61	67	74	76	37	91	67.3
Mar 26	82	85	86	85	85	82	82	78	70	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	70	86	-
Mar 27	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-	-
Mar 28	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-	-
Mar 29	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-	-
Mar 30	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-	-
Mar 31	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-	-
Diurnal Maximum	95	97	95	94	95	95	97	97	90	87	87	78	74	71	87	94	99	100	100	100	99	96	93	94			
Daiurnal Average	79.1	80.5	81.6	82.2	82.6	82.7	81.6	79.0	70.9	65.4	59.8	54.1	50.0	46.6	45.2	44.2	45.1	48.6	54.9	60.8	64.7	68.5	73.5	76.9			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance	P Power Failure
X	InValid Data (Equipment Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)			

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for RH - Cold Lake South Station



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - March 2021

Summary of Hourly Averages

BAROMETRIC PRESSURE (BP) in millibar

Maximum Hourly Value:	964	mb	on March 23 at hour 6	Hours in Service:	744
Maximum Daily Value:	958	mb	on March 23	Hours of Data:	609
Minimum Hourly Value:	935	mb	on March 1 at hour 18	Hours of Missing Data:	135
Minimum Daily Value:	940	mb	on March 24	Hours of Calibration:	0
Monthly Average:	948	mb		Operational Uptime:	81.9

Day	Hourly Period Starting at (MST)																								Daily	Daily	Daily
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Minimum	Maximum	Average
Mar 1	947	947	946	945	944	944	943	943	942	942	941	941	940	939	939	938	937	936	**935**	**935**	**935**	**935**	**935**	936	**935**	947	940
Mar 2	938	939	941	942	942	943	943	943	943	943	942	942	942	940	940	940	940	939	939	939	939	939	940	941	938	943	941
Mar 3	941	942	942	942	943	944	944	944	945	945	945	946	946	946	946	947	947	948	948	948	949	949	950	950	941	950	946
Mar 4	950	951	952	952	952	953	954	954	954	955	955	955	955	955	955	955	956	955	956	955	955	955	955	955	950	956	954
Mar 5	955	955	955	954	954	953	953	952	952	952	952	951	950	949	948	948	947	946	945	945	944	942	942	941	941	955	949
Mar 6	941	941	940	940	939	939	939	939	939	939	940	940	940	940	941	940	940	939	940	941	941	942	942	942	939	942	940
Mar 7	943	944	944	945	945	946	946	946	946	947	947	947	947	947	946	946	946	946	946	946	946	946	946	946	943	947	946
Mar 8	947	947	948	948	949	950	951	952	953	954	954	955	955	955	955	955	955	955	955	955	955	956	956	956	947	956	953
Mar 9	956	955	955	954	954	953	953	952	952	951	950	950	949	948	947	946	945	945	945	945	944	944	943	943	943	956	949
Mar 10	943	943	943	944	945	947	948	950	951	952	952	953	954	954	954	954	954	954	955	955	956	956	956	956	943	956	951
Mar 11	956	956	956	956	956	956	955	955	954	954	954	954	953	952	952	951	951	950	950	949	949	948	948	948	948	956	953
Mar 12	947	947	947	947	948	948	948	949	950	951	951	951	951	951	952	952	952	953	953	953	954	954	955	955	947	955	951
Mar 13	956	956	956	957	957	957	958	958	959	960	960	959	960	959	959	958	958	958	957	957	956	956	956	955	955	960	958
Mar 14	954	954	952	952	951	950	949	949	949	948	947	946	945	944	943	943	942	942	941	940	940	939	938	938	938	954	946
Mar 15	938	937	937	938	939	941	943	945	946	948	950	951	951	951	951	952	952	952	952	952	953	954	954	954	937	954	948
Mar 16	954	954	954	954	954	953	952	951	951	951	951	951	950	950	949	949	949	949	949	950	950	951	951	952	949	954	951
Mar 17	952	953	953	954	954	954	954	955	955	955	955	954	954	953	953	953	953	952	952	951	951	951	951	950	950	955	953
Mar 18	950	950	950	950	949	949	949	949	949	949	949	948	947	947	946	946	946	946	945	945	945	944	944	943	943	950	947
Mar 19	943	942	941	941	940	940	939	939	940	940	939	938	938	938	938	938	939	939	940	940	941	941	941	941	938	943	940
Mar 20	941	941	942	942	942	942	942	942	942	942	941	941	941	940	940	940	939	938	938	938	940	942	943	943	938	943	941
Mar 21	944	945	946	947	948	949	950	950	950	951	951	951	950	950	949	949	948	947	947	946	945	945	944	944	944	951	948
Mar 22	943	943	942	942	942	942	942	943	943	944	945	946	947	948	949	950	951	952	953	954	956	958	959	960	942	960	948
Mar 23	961	961	962	962	962	963	**964**	963	962	962	962	961	960	959	958	957	956	955	954	952	952	950	949	948	948	**964**	**958**
Mar 24	946	945	943	942	941	940	939	939	938	938	938	938	938	938	937	937	938	938	938	939	939	940	940	941	937	946	940
Mar 25	941	942	942	943	944	945	945	946	946	946	947	947	947	947	947	947	947	947	947	947	948	948	948	948	941	948	946
Mar 26	948	948	948	947	947	947	947	947	948	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	947	948	-
Mar 27	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-	-
Mar 28	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-	-
Mar 29	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-	-
Mar 30	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-	-
Mar 31	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-	-
Diurnal Maximum	961	961	962	962	962	963	964	963	962	962	962	961	960	959	959	958	958	958	957	957	956	958	959	960			
Diurnal Average	948	948	948	948	948	948	948	948	948	949	949	949	948	948	948	948	948	947	947	947	947	947	947	947			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance	P Power Failure
X	InValid Data (Equipment Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)			

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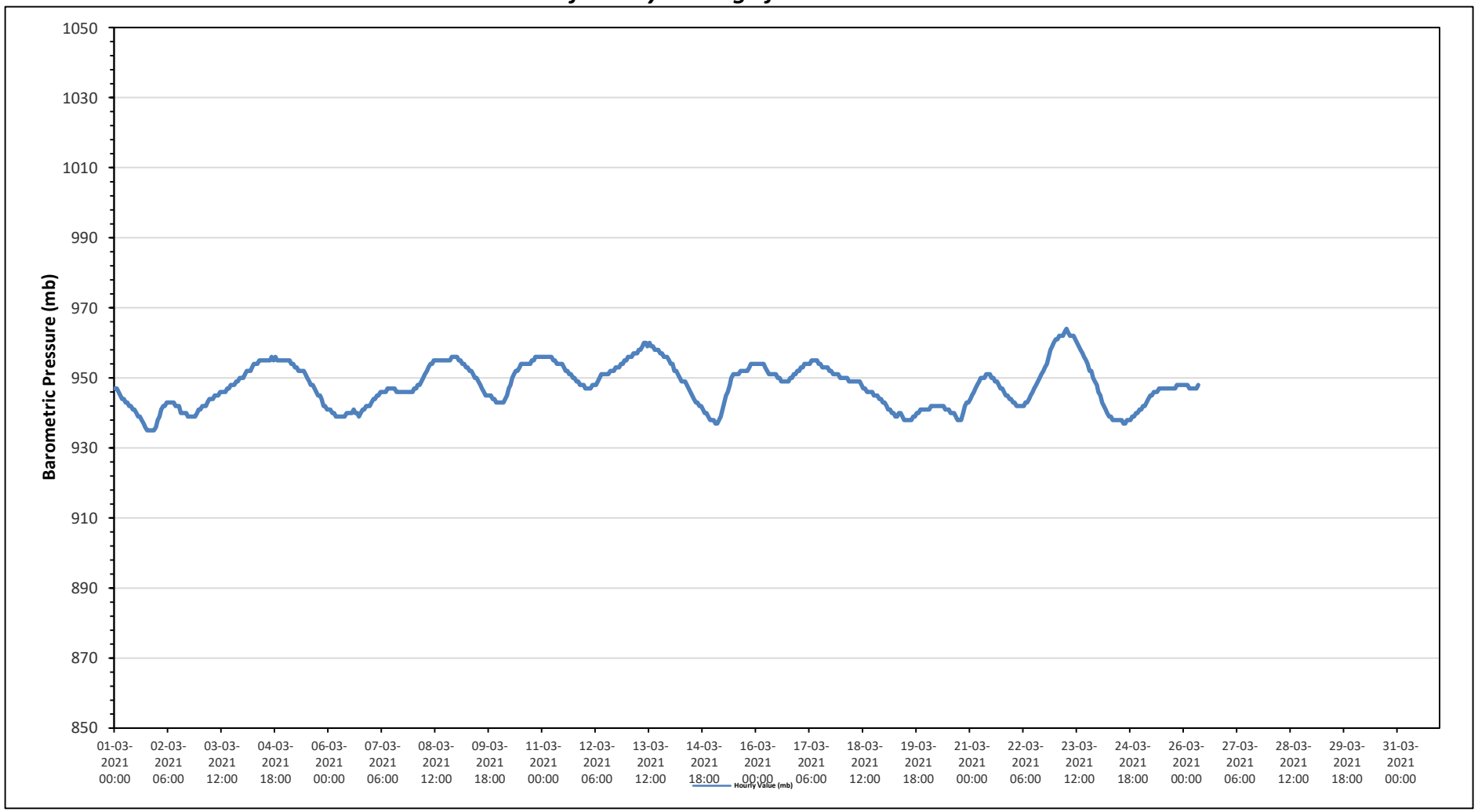
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for BP - Cold Lake South Station



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - March 2021

Summary of Hourly Averages

AMBIENT TEMPERATURE (AT) in Degree Celsius

Maximum Hourly Value:	13.8	°C	on March 18 at hour 15	Hours in Service:	744
Maximum Daily Value:	6.3	°C	on March 14	Hours of Data:	609
Minimum Hourly Value:	-20.4	°C	on March 11 at hour 6	Hours of Missing Data:	135
Minimum Daily Value:	-9.6	°C	on March 11	Hours of Calibration:	0
Monthly Average:	-2.2	°C		Operational Uptime:	81.9

Day	Hourly Period Starting at (MST)																								Daily	Daily	Daily
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Minimum	Maximum	Average
Mar 1	-13	-12.6	-12.2	-11.6	-10.9	-10.9	-11.1	-11.6	-10.6	-9	-7.1	-5.5	-4.2	-2.3	-1.6	-1.1	-0.8	-1.2	-2.6	-2.4	-3.2	-3.2	-2.8	-2.3	-13.0	-0.8	-6.4
Mar 2	-3.3	-5.8	-7.5	-8.4	-11	-13.5	-15.1	-14	-11.5	-9.3	-7	-4.4	-2.9	-0.5	0.9	1.2	2.2	0.5	-0.9	-1.6	-1.8	-3.9	-6.6	-8.8	-15.1	2.2	-5.5
Mar 3	-10.4	-11	-12	-13	-13.1	-13	-14	-14.2	-9.9	-3.8	-0.9	2.3	5.3	6.6	5.9	6.7	6.1	3.8	0.4	-2.3	-3.1	-3	-1.6	-3.8	-14.2	6.7	-3.8
Mar 4	-5.4	-6.8	-7.5	-8.2	-9.1	-9.3	-9.9	-9.5	-5.6	-2.1	-0.3	2.1	3.3	4.5	6.2	6.3	6	4.5	3.1	1.7	2	-0.2	-0.4	-0.2	-9.9	6.3	-1.5
Mar 5	-1.1	-1.4	-1.9	-2.9	-3.4	-3.6	-3.8	-3.5	-3.1	-2.3	-1.3	0.2	1.7	2.4	3.9	5.2	6.3	5	3.4	1.7	0.6	0.3	0.2	-0.3	-3.8	6.3	0.1
Mar 6	-0.5	-1.5	-2.3	-2.3	-3.6	-4.5	-5.2	-5.7	-3.3	-1.2	1.6	2.3	2.2	3.5	4.1	4.7	4.4	3.5	2.1	0.6	0	-2.2	-2.8	-4.6	-5.7	4.7	-0.4
Mar 7	-6	-6.7	-7.9	-8.6	-9	-9.1	-8.7	-9.9	-3.9	-1.7	0.6	3.3	5.6	6.6	6.7	7.2	8	5.4	2.5	-0.5	-1	-2.3	-3.6	-4.1	-9.9	8.0	-1.5
Mar 8	-4.7	-6.1	-7.4	-8.2	-8.7	-6.2	-4.2	-5	-5.1	-4.5	-4.6	-4.4	-3.5	-2.9	-2.4	-2.1	-2	-2.9	-4.9	-6.7	-8.4	-10.3	-11.7	-13.2	-13.2	-2.0	-5.8
Mar 9	-13.8	-14.2	-14.3	-14.8	-13.6	-11.3	-10.5	-9.9	-8.9	-6.9	-3.7	-1.8	-0.4	0.6	0.5	1	0.9	0.2	-0.6	-0.7	-1.9	-2.3	-3.6	-4	-14.8	1.0	-5.6
Mar 10	-4.9	-6.3	-6.8	-5.3	-5.9	-7.3	-9.2	-10.2	-10.7	-10.8	-10.5	-9.7	-8.8	-8.2	-7.3	-6.7	-7.2	-7.7	-8.3	-8.6	-9.2	-9.6	-10.8	-11.2	-11.2	-4.9	-8.4
Mar 11	-11.9	-13.7	-15.2	-16.6	-17.5	-19.3	**-20.4**	-19.7	-15.3	-12.4	-9.7	-7.6	-6.1	-4.6	-3.5	-2.7	-2.5	-3.5	-4.5	-5.2	-5.5	-4.9	-3.8	-3.4	**-20.4**	-2.5	-9.6
Mar 12	-3.5	-3.3	-3.6	-1.7	-1.1	-1	-1.3	-1.6	-0.2	1.5	3	4.4	4.7	5.4	5.7	6.1	6.2	5.3	3.4	1.2	0.6	2.3	2.5	1.4	-3.6	6.2	1.5
Mar 13	-0.3	-1.1	-1.3	-2.1	-1.6	-2.1	-2.6	-2.7	-0.4	0.6	3.4	6.4	7	7.4	7.8	7.9	8.1	7.3	6.3	5.1	4	3.1	2.8	2.8	-2.7	8.1	2.7
Mar 14	3.2	3.5	3.2	3.4	3.3	3.3	3	3.2	4.3	6.1	8	9.7	10.8	11.8	12	12.1	11.1	9.5	7.9	6.9	5.5	4.9	3	1.2	1.2	12.1	**6.3**
Mar 15	-0.8	-1.5	-2.1	-2.6	-3.1	-1	-0.7	-1.9	-2.5	-3.4	-3.8	-3.6	-2.7	-0.8	0	0.4	0.5	0.4	-1.6	-4	-5.9	-6.7	-8.4	-9	-9.0	0.5	-2.7
Mar 16	-9.9	-11	-11.8	-12.3	-12.6	-12.6	-11.5	-7.9	-4.1	-1.4	1.1	2.3	3.3	4.5	5.3	6	6.1	5.5	3.8	2.2	1	-0.5	-3	-4.4	-12.6	6.1	-2.6
Mar 17	-5.3	-6.3	-7.2	-7.9	-8.6	-8.7	-9.1	-7.9	-4.5	0	3.6	6.7	9.2	10.2	10.9	10.5	9.8	9	7	5.2	4.2	3.1	0.6	-1.2	-9.1	10.9	1.0
Mar 18	-2	-2.9	-3.3	-3.5	-3.4	-2.9	-3.3	-2.9	1.5	3.5	4.9	7.3	9.4	10	12.9	**13.8**	13	11.3	8.3	7	5.8	4.2	3.2	2.7	-3.5	**13.8**	3.9
Mar 19	2.2	2.2	2.3	1.4	0.6	-0.9	-2	-0.6	2.4	4.9	8.2	11.5	12.7	13.2	12.8	12.5	12.3	10.8	8.4	6.2	2.8	2.2	-0.7	-2.3	-2.3	13.2	5.1
Mar 20	-3.1	-3.6	-3.9	-3.9	-4	-4.6	-5.1	-2.9	2.4	5.4	7.6	9.3	10.5	10.2	9.5	9.7	10.2	9.7	7.2	3.2	4.4	1.6	0.3	-0.5	-5.1	10.5	2.9
Mar 21	-0.6	-2	-2.7	-3.6	-4.7	-5.8	-6.9	-6.9	-6.3	-5.2	-4	-2.8	-1.6	-0.5	0.4	1.3	1.6	1.2	-0.1	-1.1	-0.8	-1.1	-1.5	-1.3	-6.9	1.6	-2.3
Mar 22	-1	-1.1	-2	-1.9	-2.7	-2.4	-2.5	-1.8	-0.5	-1.3	-3.6	-4.8	-4.3	-3.3	-3.3	-3.6	-4	-4.5	-5.6	-7.2	-9.1	-10.4	-11.3	-12.1	-12.1	-0.5	-4.3
Mar 23	-12.9	-13.8	-14.5	-15.1	-15.7	-16.1	-16.3	-15.4	-12.8	-10.8	-9	-7	-5.2	-3.1	-1.1	-0.7	-1.3	-1.3	-1.5	-1.8	-1.9	-2	-2.6	-2.8	-16.3	-0.7	-7.7
Mar 24	-3.2	-3.2	-3.2	-3	-2.8	-2.7	-2.8	-2	-0.2	1.2	1.9	2.7	3.3	2.7	1.8	1.1	0.8	0.4	-0.2	-1.2	-2.1	-3	-4.2	-4.9	-4.9	3.3	-1.0
Mar 25	-5.8	-6.2	-7.3	-8.3	-9.1	-10.3	-10.6	-10.2	-9.3	-8.7	-7.7	-6.3	-5.2	-4.2	-3.1	-2.4	-2.2	-2.4	-4.1	-5.7	-7.2	-8.2	-8.9	-9.3	-10.6	-2.2	-6.8
Mar 26	-10.2	-10.9	-10.4	-8.8	-7.3	-6.9	-6.8	-6.1	-4.8	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-10.9	-4.8	-
Mar 27	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-	-
Mar 28	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-	-
Mar 29	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-	-
Mar 30	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-	-
Mar 31	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-	-
Diurnal Maximum	3.2	3.5	3.2	3.4	3.3	3.3	3.0	3.2	4.3	6.1	8.2	11.5	12.7	13.2	12.9	13.8	13.0	11.3	8.4	7.0	5.8	4.9	3.2	2.8			
Daiurnal Average	-4.9	-5.7	-6.3	-6.5	-6.9	-7.0	-7.3	-7.0	-4.7	-2.9	-1.2	0.5	1.8	2.8	3.4	3.8	3.7	2.8	1.2	-0.3	-1.2	-2.1	-3.0	-3.8			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance	P Power Failure
X	InValid Data (Equipment Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)			

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
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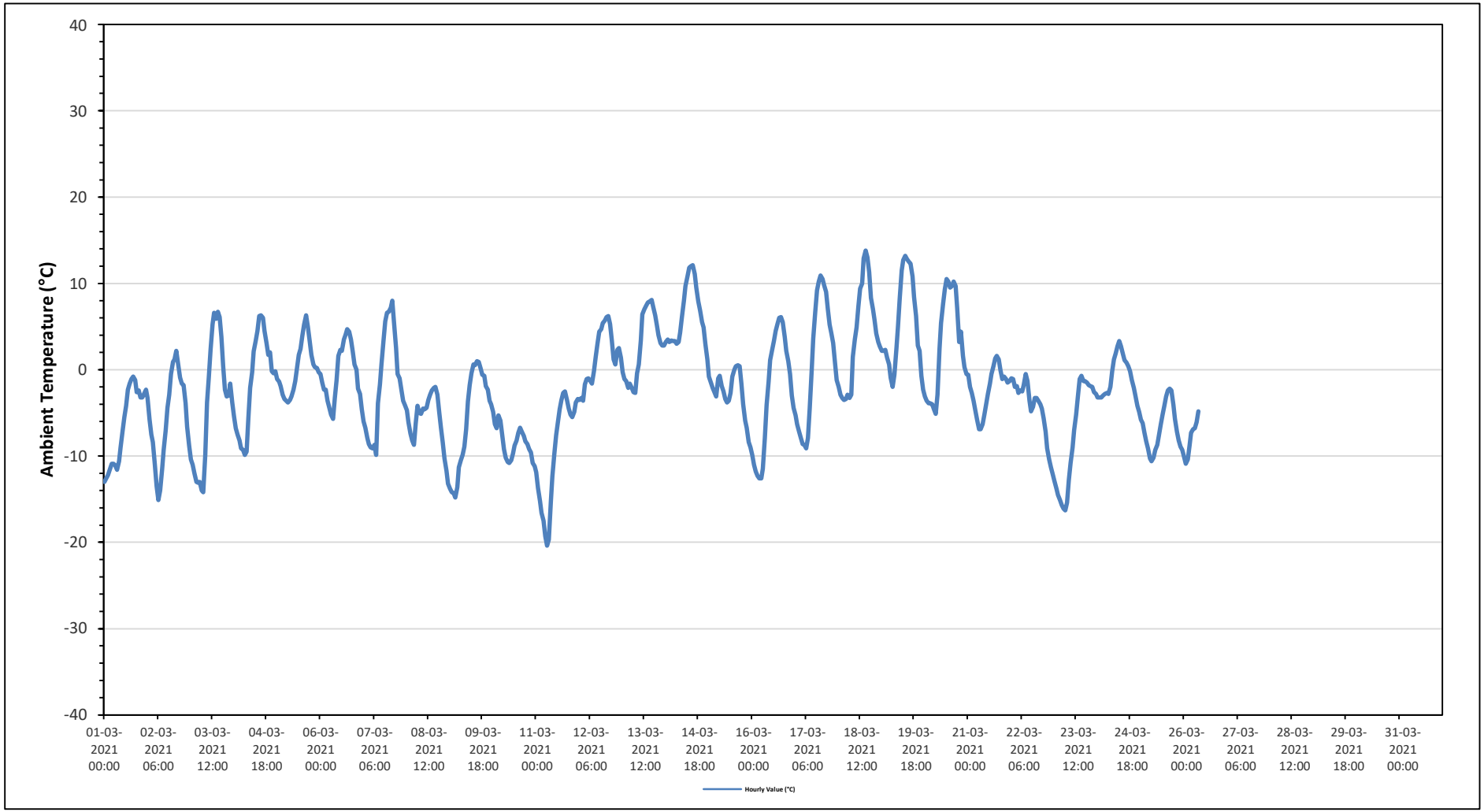
Timeseries Chart of Hourly Average for AT - Cold Lake South Station



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - March 2021

Summary of Hourly Averages

STATION TEMPERATURE (ST) in Degree Celsius

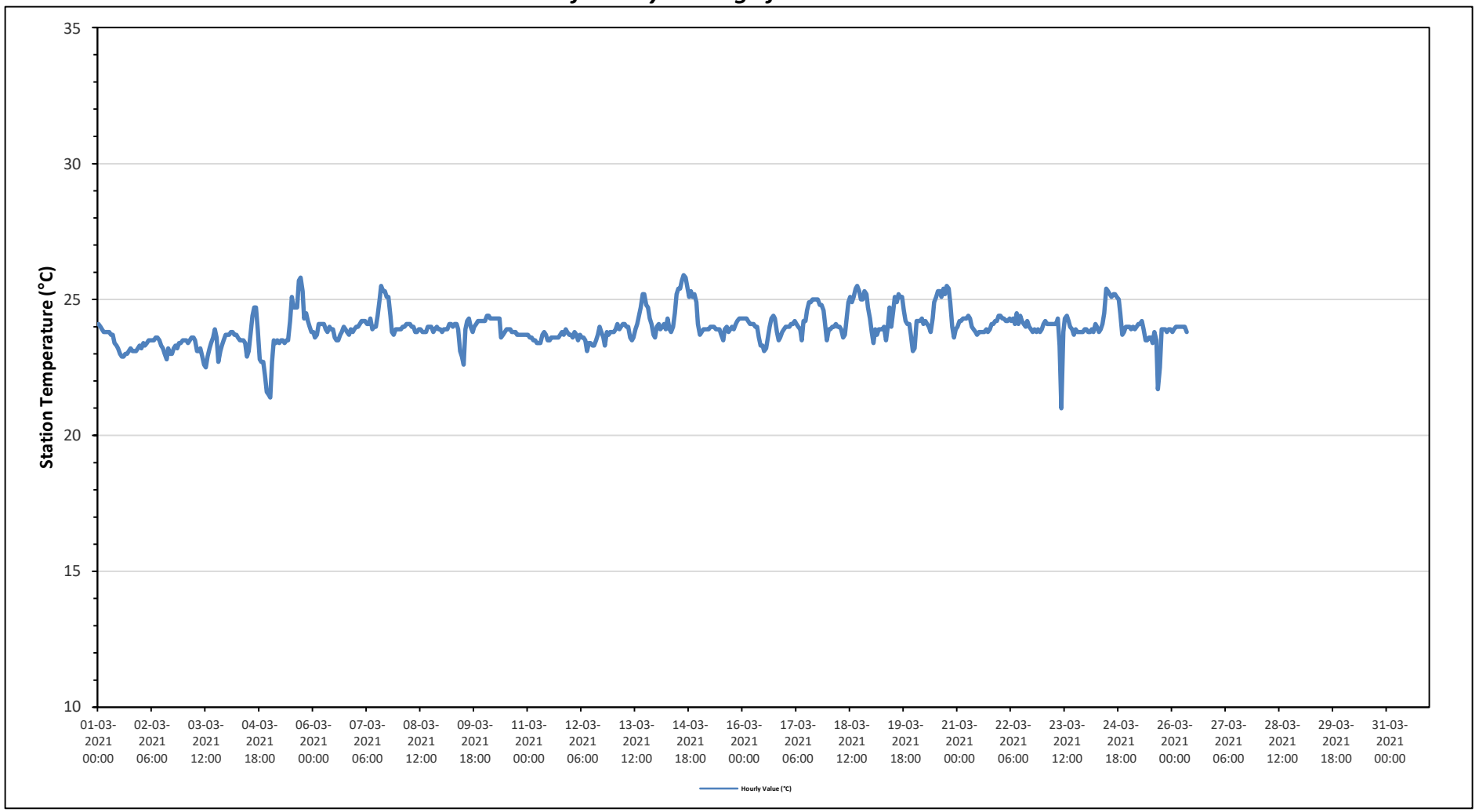
Maximum Hourly Value:	25.9	°C	on March 14 at hour 15	Hours in Service:	744
Maximum Daily Value:	24.7	°C	on March 14	Hours of Data:	609
Minimum Hourly Value:	21.0	°C	on March 23 at hour 10	Hours of Missing Data:	135
Minimum Daily Value:	23.3	°C	on March 3	Hours of Calibration:	0
Monthly Average:	24.0	°C		Operational Uptime:	81.9

Day	Hourly Period Starting at (MST)																							Daily	Daily	Daily
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Minimum	Maximum	Average
Mar 1	24.1	24.0	23.9	23.8	23.8	23.8	23.8	23.7	23.7	23.4	23.3	23.2	23.0	22.9	22.9	23.0	23.0	23.1	23.2	23.1	23.1	23.1	23.2	23.3	22.9	24.1	23.4
Mar 2	23.2	23.4	23.3	23.4	23.5	23.5	23.5	23.5	23.6	23.6	23.5	23.3	23.2	23.0	22.8	23.2	23.0	23.0	23.2	23.3	23.2	23.4	23.4	23.5	22.8	23.6	23.3
Mar 3	23.5	23.5	23.4	23.5	23.6	23.6	23.5	23.1	23.1	23.2	22.9	22.6	22.5	22.9	23.2	23.4	23.6	23.9	23.6	22.7	23.1	23.3	23.5	23.7	22.5	23.9	23.3
Mar 4	23.7	23.7	23.8	23.8	23.7	23.7	23.6	23.5	23.5	23.5	23.4	22.9	23.1	23.7	24.4	24.7	24.7	23.9	22.8	22.7	22.7	22.2	21.6	21.5	21.5	24.7	23.4
Mar 5	21.4	22.7	23.5	23.4	23.5	23.4	23.5	23.5	23.4	23.5	23.5	24.2	25.1	24.7	24.7	24.7	25.7	25.8	25.3	24.3	24.5	24.2	24.0	23.8	21.4	25.8	24.0
Mar 6	23.8	23.6	23.7	24.1	24.1	24.1	24.1	23.9	23.8	24.0	23.9	23.9	23.6	23.5	23.5	23.7	23.8	24.0	23.9	23.8	23.7	23.9	23.8	23.9	23.5	24.1	23.8
Mar 7	24.0	24.0	24.1	24.2	24.2	24.2	24.1	24.1	24.3	23.9	24.0	24.0	24.4	25.0	25.5	25.3	25.3	25.1	25.1	24.4	23.8	23.7	23.9	23.9	23.7	25.5	24.4
Mar 8	23.9	23.9	24.0	24.0	24.1	24.1	24.1	24.0	24.0	23.8	23.8	23.9	23.9	23.8	23.8	23.8	24.0	24.0	24.0	23.8	23.9	24.0	23.9	23.9	23.8	24.1	23.9
Mar 9	23.8	23.9	23.9	23.9	24.1	24.1	24.0	24.1	24.1	23.9	23.1	22.9	22.6	23.9	24.2	24.3	24.0	23.8	24.0	24.1	24.2	24.2	24.2	24.2	22.6	24.3	23.9
Mar 10	24.2	24.4	24.4	24.3	24.3	24.3	24.3	24.3	24.3	23.6	23.7	23.8	23.9	23.9	23.9	23.8	23.8	23.8	23.7	23.7	23.7	23.7	23.7	23.7	23.6	24.4	24.0
Mar 11	23.7	23.6	23.6	23.5	23.5	23.4	23.4	23.4	23.7	23.8	23.7	23.5	23.5	23.6	23.6	23.6	23.6	23.6	23.7	23.8	23.7	23.9	23.8	23.7	23.4	23.9	23.6
Mar 12	23.7	23.6	23.8	23.7	23.5	23.7	23.6	23.6	23.5	23.1	23.4	23.4	23.3	23.3	23.5	23.7	24.0	23.8	23.6	23.3	23.8	23.7	23.8	23.8	23.1	24.0	23.6
Mar 13	23.8	23.9	24.1	23.9	24.0	24.1	24.1	24.0	24.0	23.6	23.5	23.6	23.9	24.1	24.4	24.7	25.2	25.2	24.8	24.7	24.3	24.1	23.7	23.6	23.5	25.2	24.1
Mar 14	24.0	24.1	23.9	24.0	24.1	23.9	24.3	23.9	23.8	24.0	24.5	25.2	25.4	25.4	25.7	**25.9**	25.8	25.5	25.1	25.3	25.1	25.2	24.9	24.1	23.8	**25.9**	**24.7**
Mar 15	23.7	23.8	23.9	23.9	23.9	23.9	24.0	24.0	24.0	23.9	23.9	23.9	23.7	23.5	23.9	24.0	23.8	23.9	24.0	23.9	24.1	24.2	24.3	24.3	23.5	24.3	23.9
Mar 16	24.3	24.3	24.3	24.2	24.1	24.1	24.1	24.0	24.0	23.6	23.3	23.3	23.1	23.2	23.6	24.0	24.3	24.4	24.3	23.8	23.5	23.6	23.8	23.9	23.1	24.4	23.9
Mar 17	24.0	24.0	24.0	24.1	24.1	24.2	24.1	24.0	23.9	23.5	24.2	24.2	24.6	24.9	24.9	25.0	25.0	25.0	25.0	24.8	24.8	24.6	24.1	23.5	23.5	25.0	24.4
Mar 18	23.9	23.9	24.0	24.0	24.1	24.0	24.0	23.9	23.6	23.7	24.3	24.9	25.1	24.9	25.1	25.4	25.5	25.3	25.0	25.0	25.3	25.2	24.7	24.3	23.6	25.5	24.5
Mar 19	23.8	23.4	23.9	23.7	23.9	23.9	23.9	24.0	23.5	24.0	24.7	24.0	24.6	25.1	24.9	25.2	25.1	25.1	24.6	24.2	24.1	24.1	23.7	23.1	23.1	25.2	24.2
Mar 20	23.2	24.2	24.2	24.2	24.3	24.1	24.2	24.1	24.0	23.8	24.3	24.9	25.1	25.3	25.3	25.1	25.4	25.2	25.5	25.4	24.9	24.0	23.6	23.9	23.2	25.5	24.5
Mar 21	24.0	24.2	24.2	24.3	24.3	24.3	24.4	24.3	24.0	23.9	23.8	23.7	23.8	23.8	23.8	23.8	23.9	23.8	23.9	24.1	24.1	24.2	24.2	24.4	23.7	24.4	24.1
Mar 22	24.4	24.3	24.3	24.2	24.2	24.3	24.2	24.3	24.1	24.5	24.1	24.4	24.2	24.1	24.0	24.2	24.0	23.9	23.8	23.9	23.8	23.9	23.8	23.9	23.8	24.5	24.1
Mar 23	24.1	24.2	24.1	24.1	24.1	24.1	24.1	24.1	24.3	23.3	**21.0**	23.8	24.3	24.4	24.2	24.0	23.9	23.7	23.9	23.8	23.8	23.8	23.8	23.9	**21.0**	24.4	23.9
Mar 24	23.9	23.8	23.8	23.9	23.8	24.1	24.0	23.8	23.9	24.1	24.5	25.4	25.3	25.2	25.1	25.2	25.2	25.1	25.0	24.5	23.7	23.8	24.0	24.0	23.7	25.4	24.4
Mar 25	24.0	23.9	24.0	23.9	24.0	24.1	24.1	24.2	23.9	23.5	23.5	23.6	23.6	23.4	23.8	23.5	21.7	22.5	23.9	23.9	23.9	23.8	23.9	23.9	21.7	24.2	23.7
Mar 26	23.8	23.9	24.0	24.0	24.0	24.0	24.0	24.0	23.8	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	23.8	24.0	-
Mar 27	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-	-
Mar 28	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-	-
Mar 29	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-	-
Mar 30	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-	-
Mar 31	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-	-
Diurnal Maximum	24.4	24.4	24.4	24.3	24.3	24.3	24.4	24.3	24.3	24.5	24.7	25.4	25.4	25.4	25.7	25.9	25.8	25.8	25.5	25.4	25.3	25.2	24.9	24.4			
Daiurnal Average	23.8	23.9	23.9	23.9	24.0	24.0	24.0	23.9	23.8	23.7	23.7	23.9	24.0	24.1	24.2	24.3	24.3	24.3	24.2	24.0	24.0	23.9	23.8	23.7			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance	P Power Failure
X	InValid Data (Equipment Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)			

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for ST - Cold Lake South Station



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - March 2021

Summary of Hourly Averages

VECTOR WIND SPEED (VWS) in km/hr

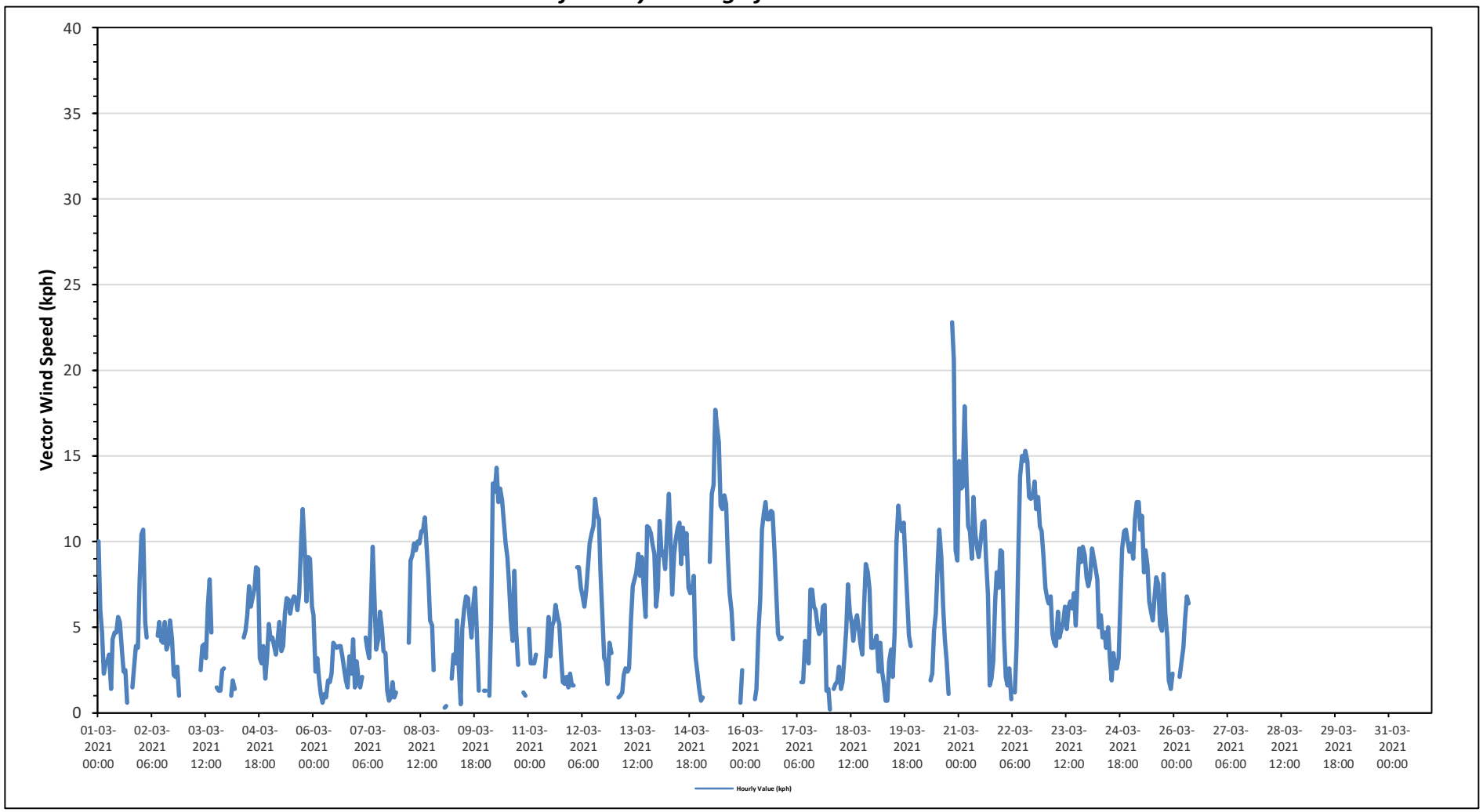
Maximum Hourly Value:	22.8	kph	on March 20 at hour 20	Hours in Service:	744
Maximum Daily Value:	8.4	kph	on March 14	Hours of Data:	523
Minimum Hourly Value:	0.2	kph	on March 18 at hour 0	Hours of Missing Data:	221
Minimum Daily Value:	0.4	kph	on March 2	Hours of Calibration:	0
Monthly Average:	0.3	kph		Operational Uptime:	70.3

Day	Hourly Period Starting at (MST)																								Daily	Daily	Daily
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Minimum	Maximum	Average
Mar 1	10.0	6.0	4.7	2.3	2.9	3.0	3.4	1.4	4.3	4.7	4.7	5.6	5.3	3.7	2.4	2.5	0.6	X	X	1.5	2.9	3.9	3.8	7.8	0.6	10.0	2.1
Mar 2	10.4	10.7	5.3	4.4	X	0.7	X	1.2	X	4.5	5.3	4.2	4.1	5.3	3.7	4.1	5.4	4.3	2.2	2.1	2.7	1.0	X	X	0.7	10.7	**0.4**
Mar 3	X	X	X	X	0.8	X	X	X	X	2.5	3.9	4.0	3.2	6.3	7.8	4.7	X	X	1.5	1.3	1.3	2.5	2.6	X	0.8	7.8	-
Mar 4	X	X	1.0	1.9	1.4	X	X	1.5	X	4.4	4.8	5.7	7.4	6.2	6.7	7.3	8.5	8.4	3.2	2.9	3.9	2.0	3.3	5.2	1.0	8.5	4.3
Mar 5	4.3	4.4	3.9	3.4	4.4	5.3	3.6	3.9	5.8	6.7	6.6	5.8	6.5	6.8	6.7	6.0	7.0	10.1	11.9	9.5	6.5	9.1	9.0	6.2	3.4	11.9	6.1
Mar 6	5.7	2.4	3.2	2.0	1.1	0.6	1.1	0.9	1.9	1.8	2.3	4.1	3.9	3.8	3.9	3.9	3.3	2.6	1.9	1.5	3.3	2.3	4.3	1.5	0.6	5.7	1.6
Mar 7	3.0	1.9	1.5	2.1	X	4.4	3.7	3.2	6.2	9.7	6.3	3.7	4.3	5.9	4.9	3.6	3.5	1.3	0.7	0.9	1.8	0.9	1.2	X	0.7	9.7	3.3
Mar 8	X	X	X	1.2	X	4.1	8.9	9.2	9.9	9.5	10.0	9.9	10.6	10.6	11.4	9.7	7.9	5.4	5.1	2.5	X	X	X	X	1.2	11.4	-
Mar 9	X	0.3	0.4	X	X	2.0	3.4	2.9	5.4	2.4	0.5	4.9	6.1	6.8	6.7	5.6	4.4	6.3	7.3	4.8	1.3	X	X	1.3	0.3	7.3	2.3
Mar 10	1.3	X	1.0	5.3	13.4	12.9	14.3	12.3	13.1	12.4	11.3	9.9	9.1	7.7	5.4	4.2	8.3	4.8	2.8	X	X	1.2	1.0	X	1.0	14.3	7.1
Mar 11	4.9	2.9	2.9	2.9	3.4	X	X	X	X	2.1	3.6	5.6	3.3	5.1	5.4	6.3	5.6	5.2	3.3	1.8	1.7	2.1	1.5	2.3	1.5	6.3	3.0
Mar 12	1.6	1.6	X	8.5	8.5	7.3	6.8	6.2	7.1	8.7	9.9	10.5	10.9	12.5	11.6	11.3	8.3	5.9	3.2	3.0	1.7	4.1	3.5	X	1.6	12.5	6.8
Mar 13	X	X	0.9	1.0	1.2	2.2	2.6	2.4	2.6	5.5	7.4	7.8	8.2	9.3	8.0	9.1	7.4	5.6	10.9	10.8	10.5	9.9	9.3	6.2	0.9	10.9	5.4
Mar 14	7.3	11.2	9.2	9.4	8.4	10.6	12.8	10.3	6.9	9.3	10.1	10.8	11.1	8.7	10.8	9.3	10.5	7.3	7.0	7.1	8.0	3.3	2.3	1.5	1.5	12.8	**8.4**
Mar 15	0.7	0.9	X	X	X	8.8	12.8	13.3	17.7	16.7	15.8	12.1	11.9	12.7	12.2	9.1	7.0	5.9	4.3	X	2.9	X	0.6	2.5	0.6	17.7	8.2
Mar 16	X	X	X	X	X	X	0.8	1.4	4.8	6.6	10.7	11.6	12.3	11.3	11.3	11.8	11.7	9.4	7.0	4.6	4.3	4.4	X	X	0.8	12.3	-
Mar 17	X	X	X	X	X	X	X	X	1.8	1.8	4.2	3.9	2.9	7.2	7.2	6.2	6.0	5.0	4.6	4.8	6.2	6.3	1.3	1.4	1.3	7.2	-
Mar 18	**0.2**	X	1.4	1.7	1.8	2.7	1.4	1.8	3.3	4.9	7.5	5.9	5.2	4.2	5.3	5.7	4.9	4.0	3.4	6.2	8.7	8.2	7.2	3.8	**0.2**	8.7	3.6
Mar 19	3.8	4.2	4.5	2.4	4.1	2.4	1.7	0.7	0.7	3.0	3.7	2.1	4.7	9.9	12.1	11.0	10.6	11.1	8.8	6.7	4.5	3.9	X	X	0.7	12.1	3.5
Mar 20	X	X	X	X	X	X	0.5	X	1.9	2.3	4.8	5.8	8.8	10.7	9.1	6.3	4.3	3.1	1.1	X	**22.8**	20.6	9.5	8.9	0.5	**22.8**	-
Mar 21	14.7	13.1	13.2	17.9	14.0	10.9	10.6	9.0	12.6	10.4	9.6	9.1	10.0	11.1	11.2	9.1	6.9	1.6	2.0	3.0	6.6	8.2	7.3	9.5	1.6	17.9	6.0
Mar 22	9.4	4.5	2.1	1.6	2.6	0.8	X	1.2	3.9	9.9	13.8	15.0	14.7	15.3	14.7	12.6	12.5	12.6	13.5	11.9	12.6	10.9	10.6	9.2	0.8	15.3	8.3
Mar 23	7.3	6.7	6.4	6.8	4.6	4.1	3.9	5.9	4.4	4.9	5.3	6.2	4.9	6.2	6.5	6.1	7.0	5.1	7.7	9.6	8.8	9.7	9.2	7.9	3.9	9.7	4.2
Mar 24	7.4	7.9	9.6	9.1	8.5	7.8	5.0	5.7	4.4	4.7	3.8	5.0	3.2	1.9	3.5	2.6	2.6	3.2	6.9	9.6	10.6	10.7	10.0	9.4	1.9	10.7	2.9
Mar 25	9.9	9.0	11.3	12.3	12.3	10.7	11.5	8.2	9.5	8.6	6.5	5.9	5.4	6.9	7.9	7.5	5.1	4.8	8.1	5.8	4.4	1.9	1.4	2.3	1.4	12.3	5.9
Mar 26	X	X	X	2.1	3.0	3.8	5.5	6.8	6.4	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	2.1	6.8	-
Mar 27	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-	-
Mar 28	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-	-
Mar 29	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-	-
Mar 30	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-	-
Mar 31	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-	-
Diurnal Maximum	15	13	13	18	14	13	14	13	18	17	16	15	15	15	15	13	13	13	14	12	23	21	11	10			
Daiurnal Average	6.0	5.5	4.6	4.9	5.4	5.3	5.7	5.0	6.1	6.3	6.9	7.0	7.1	7.8	7.9	7.0	6.6	5.8	5.4	5.1	6.0	5.8	4.9	5.1			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance		
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance	P	Power Failure
X	InValid Data (Equipment Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)				

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

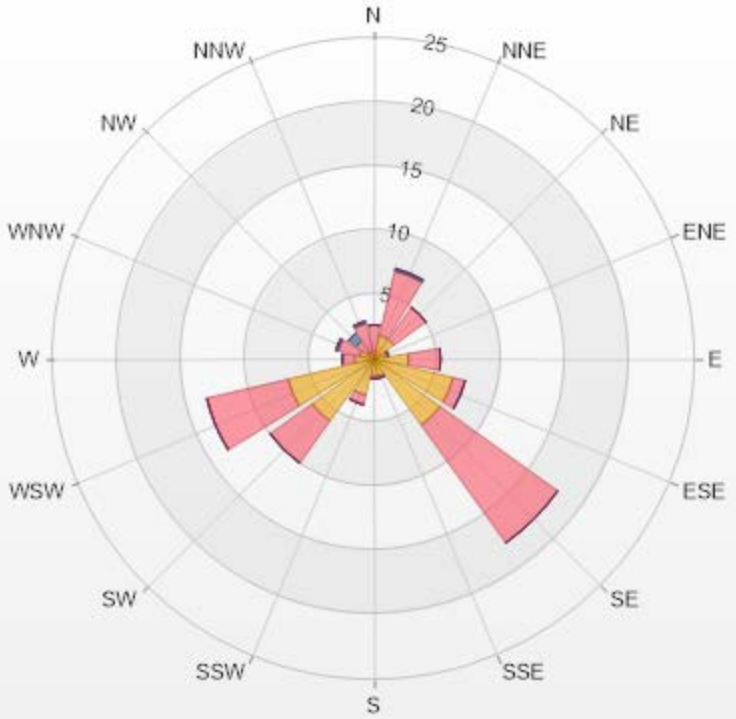
Timeseries Chart of Hourly Average for VWS - Cold Lake South Station



Wind: Cold Lake South Monitor: WDS [kph] Monthly: 03-2021 Type: WindRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
Calm: 12.81% Valid Data: 70.30%

Direction	1.8-6.0	6.0-15.0	15.0-29.0	29.0-39.0	>39.0	Total
N	0.38	2.29	0	0	0	2.67
NNE	1.91	5.16	0.19	0	0	7.26
NE	1.91	3.06	0	0	0	4.97
ENE	0.96	0.19	0	0	0	1.15
E	2.68	2.49	0	0	0	5.17
ESE	6.31	0.96	0	0	0	7.27
SE	6.31	11.28	0	0	0	17.59
SSE	1.34	0.19	0	0	0	1.53
S	1.34	0.19	0	0	0	1.53
SSW	2.87	0.76	0	0	0	3.63
SW	5.93	4.02	0	0	0	9.95
WSW	6.88	6.5	0	0	0	13.38
W	1.53	0.96	0	0	0	2.49
WNW	1.15	1.72	0.19	0	0	3.06
NW	0.57	1.15	0.76	0	0	2.48
NNW	0.57	2.29	0.19	0	0	3.05
Summary	42.64	43.21	1.33	0	0	87.18

Cold Lake South 01-03-2021 00:00 - 31-03-2021 23:00 Calm: 12.81% Calm Wind Avg Speed: 1.16(kph)



% Icon Classes (kph)	43 1.8-6.0	43 6.0-15.0	1 15.0-29.0	0 29.0-39.0	0 >39.0

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - March 2021

Summary of Hourly Averages

WIND DIRECTION (VWD) in sector

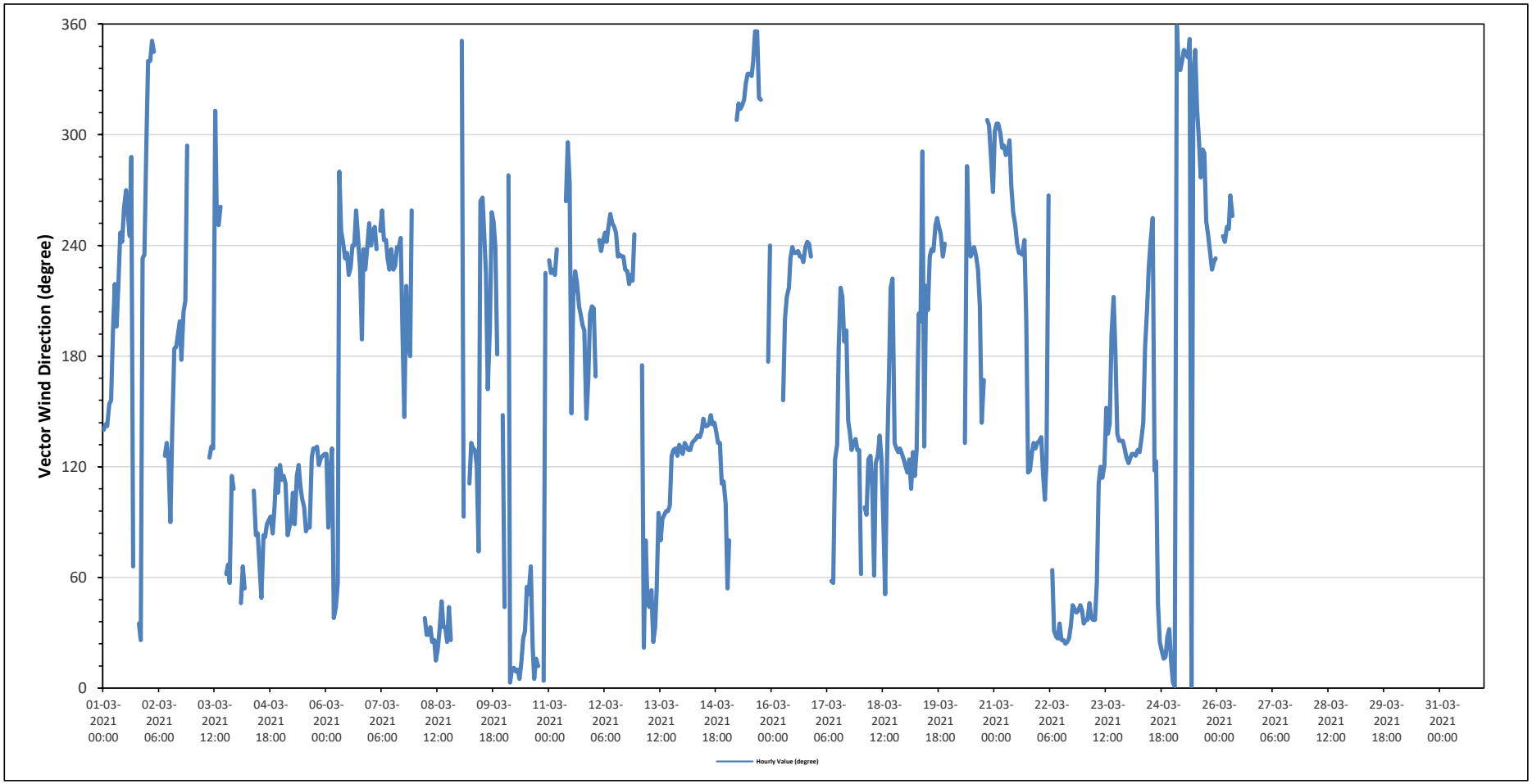
Monthly Average:	156 (SSE)	degree	
		Hours in Service:	744
		Hours of Data:	523
		Hours of Missing Data:	221
		Hours of Calibration:	0
		Operational Uptime:	70.3

Day	Hourly Period Starting at (MST)																							Daily Average	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Degree	Quadrant
Mar 1	SE	SE	SE	SSE	SSE	S	SW	SSW	SW	WSW	WSW	WSW	W	WSW	WSW	WNW	ENE	X	X	NE	NNE	SW	SW	WNW	220	SW
Mar 2	NNW	NNW	N	NNW	X	SW	X	E	X	SE	SE	ESE	E	SE	S	S	S	SSW	S	SSW	SSW	WNW	X	X	151	SSE
Mar 3	X	X	X	X	SW	X	X	X	X	SE	SE	SE	NW	WSW	WSW	W	X	X	ENE	ENE	ENE	ESE	ESE	X	-	-
Mar 4	X	X	NE	ENE	NE	X	X	ENE	X	ESE	E	E	ENE	NE	E	E	E	E	E	E	E	ESE	ESE	ESE	86	E
Mar 5	ESE	ESE	ESE	E	E	E	ESE	E	ESE	ESE	ESE	ESE	E	E	E	E	SE	SE	SE	SE	ESE	SE	SE	SE	112	ESE
Mar 6	SE	E	ESE	SE	NE	NE	ENE	W	WSW	WSW	SW	SW	SW	SW	WSW	WSW	WSW	WSW	SW	S	SW	SW	SW	WSW	221	SW
Mar 7	WSW	WSW	WSW	SW	X	WSW	WSW	WSW	WSW	SW	SW	SW	SW	SW	WSW	WSW	WSW	S	SE	SW	S	S	WSW	X	235	SW
Mar 8	X	X	X	W	X	NE	NNE	NNE	NNE	NNE	NNE	NNE	NNE	NNE	NE	NNE	NNE	NNE	NE	NNE	X	X	X	X	-	-
Mar 9	X	N	E	X	X	ESE	SE	SE	SE	ESE	ENE	W	W	WSW	SW	SSE	SSW	WSW	WSW	WSW	S	X	X	SE	214	SSW
Mar 10	NE	X	W	N	N	NNE	N	N	N	NNE	NNE	NNE	NE	NE	ENE	NNE	N	NNE	NNE	X	X	N	SW	X	19	NNE
Mar 11	SW	SW	SW	SW	SW	X	X	X	X	W	WNW	W	SSE	SSW	SW	SW	SSW	SSW	SSW	SSW	SE	SSE	SSW	SSW	220	SW
Mar 12	SSW	SSE	X	WSW	SW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	SW	SW	SW	SW	SW	SW	SW	SW	SW	WSW	X	240	WSW
Mar 13	X	X	S	NNE	E	NE	NE	NE	NNE	NNE	NE	E	E	E	E	E	E	E	SE	SE	SE	SE	SE	SE	101	E
Mar 14	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	ESE	ESE	E	136	SE
Mar 15	NE	E	X	X	X	NW	NW	NW	NW	NW	NNW	NNW	NNW	NNW	NNW	N	N	NW	NW	X	SW	X	S	WSW	325	NW
Mar 16	X	X	X	X	X	X	SSE	SSW	SSW	SW	SW	WSW	SW	SW	SW	SW	SW	SW	WSW	WSW	WSW	SW	X	X	-	-
Mar 17	X	X	X	X	X	X	X	X	ENE	ENE	ESE	SE	S	SW	SSW	S	SSW	SE	SE	SE	SE	SE	SE	SE	-	-
Mar 18	ENE	X	E	E	ESE	SE	ESE	ENE	ESE	SE	SE	ESE	E	NE	ESE	SSE	SW	SW	SE	SE	SE	SE	SE	ESE	129	SE
Mar 19	ESE	ESE	ESE	ESE	SE	ESE	SE	SSW	SSW	WNW	SE	SW	SSW	SW	SW	SW	WSW	WSW	WSW	WSW	SW	WSW	X	X	224	SW
Mar 20	X	X	X	X	X	X	SE	X	SE	W	WSW	SW	SW	WSW	SW	SW	SSW	SE	SSE	X	NW	WNW	WNW	W	-	-
Mar 21	WNW	NW	NW	WNW	WNW	WNW	WNW	WNW	WNW	W	WSW	WSW	WSW	SW	SW	SW	WSW	SSW	ESE	ESE	SE	SE	SE	SE	270	W
Mar 22	SE	SE	ESE	E	ESE	W	X	ENE	NNE	NNE	NNE	NE	NNE	NNE	NNE	NNE	NNE	NE	NE	NE	NE	NE	NE	NE	39	NE
Mar 23	NE	NE	NE	NE	NE	NE	NE	ENE	ESE	ESE	ESE	ESE	SSE	SE	SE	S	SSW	S	SE	SE	SE	SE	SE	SE	114	ESE
Mar 24	ESE	SE	SE	SE	SE	SE	SE	SE	SE	S	SSW	SW	WSW	WSW	ESE	ESE	NE	NNE	NNE	NNE	NNE	NNE	NNE	NNE	89	E
Mar 25	N	N	N	NNW	NNW	NNW	NNW	NNW	NNW	N	N	NNW	NNW	NW	WNW	W	WNW	WNW	WSW	WSW	SW	SW	SW	SW	327	NW
Mar 26	X	X	X	WSW	WSW	WSW	WSW	W	WSW	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-
Mar 27	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-
Mar 28	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-
Mar 29	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-
Mar 30	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-
Mar 31	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance		
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance	P	Power Failure
X	InValid Data (Machine Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)				

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for VWD - Cold Lake South Station



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - March 2021

Summary of Hourly Averages

VECTOR WIND SPEED (VWS) in km/hr & WIND DIRECTION (VWD) in sector

WIND SPEED

Maximum Hourly Value:	22.8	kph	on March 20 at hour 20	Hours in Service:	744
Maximum Daily Value:	8.4	kph	on March 14	Hours of Data:	523
Minimum Hourly Value:	0.2	kph	on March 18 at hour 0	Hours of Missing Data:	221
Minimum Daily Value:	0.4	kph	on March 2	Hours of Calibration:	0
Monthly Average:	0.3	kph		Operational Uptime:	70.3

WIND DIRECTION

Monthly Average: 156 (SSE) degree

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Mar 1	10.0	6.0	4.7	2.3	2.9	3.0	3.4	1.4	4.3	4.7	4.7	5.6	5.3	3.7	2.4	2.5	0.6	X	X	1.5	2.9	3.9	3.8	7.8	0.6	10.0	2.1
	SE	SE	SE	SSE	SSE	S	SW	SSW	SW	WSW	WSW	WSW	W	WSW	WSW	WNW	ENE	X	X	NE	NNE	SW	SW	WNW			
Mar 2	10.4	10.7	5.3	4.4	X	0.7	X	1.2	X	4.5	5.3	4.2	4.1	5.3	3.7	4.1	5.4	4.3	2.2	2.1	2.7	1.0	X	X	0.7	10.7	**0.4**
	NNW	NNW	N	NNW	X	SW	X	E	X	SE	SE	ESE	E	SE	S	S	S	SSW	S	SSW	SSW	WNW	X	X			
Mar 3	X	X	X	X	0.8	X	X	X	X	2.5	3.9	4.0	3.2	6.3	7.8	4.7	X	X	1.5	1.3	1.3	2.5	2.6	X	0.8	7.8	-
	X	X	X	X	SW	X	X	X	X	SE	SE	SE	NW	WSW	WSW	W	X	X	ENE	ENE	ENE	ESE	ESE	X			
Mar 4	X	X	1.0	1.9	1.4	X	X	1.5	X	4.4	4.8	5.7	7.4	6.2	6.7	7.3	8.5	8.4	3.2	2.9	3.9	2.0	3.3	5.2	1.0	8.5	4.3
	X	X	NE	ENE	NE	X	X	ENE	X	ESE	E	E	ENE	NE	E	E	E	E	E	E	E	ESE	ESE	ESE			
Mar 5	4.3	4.4	3.9	3.4	4.4	5.3	3.6	3.9	5.8	6.7	6.6	5.8	6.5	6.8	6.7	6.0	7.0	10.1	11.9	9.5	6.5	9.1	9.0	6.2	3.4	11.9	6.1
	ESE	ESE	ESE	E	E	E	ESE	E	ESE	ESE	ESE	ESE	E	E	E	E	SE	SE	SE	SE	ESE	SE	SE	SE			
Mar 6	5.7	2.4	3.2	2.0	1.1	0.6	1.1	0.9	1.9	1.8	2.3	4.1	3.9	3.8	3.9	3.9	3.3	2.6	1.9	1.5	3.3	2.3	4.3	1.5	0.6	5.7	1.6
	SE	E	ESE	SE	NE	NE	ENE	W	WSW	WSW	SW	SW	SW	SW	WSW	WSW	WSW	WSW	SW	S	SW	SW	SW	WSW			
Mar 7	3.0	1.9	1.5	2.1	X	4.4	3.7	3.2	6.2	9.7	6.3	3.7	4.3	5.9	4.9	3.6	3.5	1.3	0.7	0.9	1.8	0.9	1.2	X	0.7	9.7	3.3
	WSW	WSW	WSW	SW	X	WSW	WSW	WSW	WSW	SW	SW	SW	SW	SW	WSW	WSW	WSW	S	SE	SW	S	S	WSW	X			
Mar 8	X	X	X	1.2	X	4.1	8.9	9.2	9.9	9.5	10.0	9.9	10.6	10.6	11.4	9.7	7.9	5.4	5.1	2.5	X	X	X	X	1.2	11.4	-
	X	X	X	W	X	NE	NNE	NNE	NNE	NNE	NNE	NNE	NNE	NNE	NE	NNE	NNE	NNE	NE	NNE	X	X	X	X			
Mar 9	X	0.3	0.4	X	X	2.0	3.4	2.9	5.4	2.4	0.5	4.9	6.1	6.8	6.7	5.6	4.4	6.3	7.3	4.8	1.3	X	X	1.3	0.3	7.3	2.3
	X	N	E	X	X	ESE	SE	SE	SE	ESE	ENE	W	W	WSW	SW	SSE	SSW	WSW	WSW	WSW	S	X	X	SE			
Mar 10	1.3	X	1.0	5.3	13.4	12.9	14.3	12.3	13.1	12.4	11.3	9.9	9.1	7.7	5.4	4.2	8.3	4.8	2.8	X	X	1.2	1.0	X	1.0	14.3	7.1
	NE	X	W	N	N	NNE	N	N	N	NNE	NNE	NNE	NE	NE	ENE	NNE	N	NNE	NNE	X	X	N	SW	X			
Mar 11	4.9	2.9	2.9	2.9	3.4	X	X	X	X	2.1	3.6	5.6	3.3	5.1	5.4	6.3	5.6	5.2	3.3	1.8	1.7	2.1	1.5	2.3	1.5	6.3	3.0
	SW	SW	SW	SW	SW	X	X	X	X	W	WNW	W	SSE	SSW	SW	SW	SSW	SSW	SSW	SSW	SE	SSE	SSW	SSW			
Mar 12	1.6	1.6	X	8.5	8.5	7.3	6.8	6.2	7.1	8.7	9.9	10.5	10.9	12.5	11.6	11.3	8.3	5.9	3.2	3.0	1.7	4.1	3.5	X	1.6	12.5	6.8
	SSW	SSE	X	WSW	SW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	SW	SW	SW	SW	SW	SW	SW	SW	SW	WSW	X			
Mar 13	X	X	0.9	1.0	1.2	2.2	2.6	2.4	2.6	5.5	7.4	7.8	8.2	9.3	8.0	9.1	7.4	5.6	10.9	10.8	10.5	9.9	9.3	6.2	0.9	10.9	5.4
	X	X	S	NNE	E	NE	NE	NE	NNE	NNE	NE	E	E	E	E	E	E	E	SE	SE	SE	SE	SE			
Mar 14	7.3	11.2	9.2	9.4	8.4	10.6	12.8	10.3	6.9	9.3	10.1	10.8	11.1	8.7	10.8	9.3	10.5	7.3	7.0	7.1	8.0	3.3	2.3	1.5	1.5	12.8	**8.4**
	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	ESE	ESE	E			
Mar 15	0.7	0.9	X	X	X	8.8	12.8	13.3	17.7	16.7	15.8	12.1	11.9	12.7	12.2	9.1	7.0	5.9	4.3	X	2.9	X	0.6	2.5	0.6	17.7	8.2
	NE	E	X	X	X	NW	NW	NW	NW	NW	NNW	NNW	NNW	NNW	NNW	N	N	NW	NW	X	SW	X	S	WSW			
Mar 16	X	X	X	X	X	X	0.8	1.4	4.8	6.6	10.7	11.6	12.3	11.3	11.3	11.8	11.7	9.4	7.0	4.6	4.3	4.4	X	X	0.8	12.3	-
	X	X	X	X	X	X	SSE	SSW	SSW	SW	SW	WSW	SW	SW	SW	SW	SW	SW	WSW	WSW	WSW	SW	X	X			
Mar 17	X	X	X	X	X	X	X	X	1.8	1.8	4.2	3.9	2.9	7.2	7.2	6.2	6.0	5.0	4.6	4.8	6.2	6.3	1.3	1.4	1.3	7.2	-
	X	X	X	X	X	X	X	X	ENE	ENE	ESE	SE	S	SW	SSW	S	SSW	SE	SE	SE	SE	SE	SE	SE			
Mar 18	**0.2**	X	1.4	1.7	1.8	2.7	1.4	1.8	3.3	4.9	7.5	5.9	5.2	4.2	5.3	5.7	4.9	4.0	3.4	6.2	8.7	8.2	7.2	3.8	**0.2**	8.7	3.6
	ENE	X	E	E	ESE	SE	ESE	ENE	ESE	SE	SE	ESE	E	NE	ESE	SSE	SW	SW	SE	SE	SE	SE	SE	ESE			
Mar 19	3.8	4.2	4.5	2.4	4.1	2.4	1.7	0.7	0.7	3.0	3.7	2.1	4.7	9.9	12.1	11.0	10.6	11.1	8.8	6.7	4.5	3.9	X	X	0.7	12.1	3.5
	ESE	ESE	ESE	ESE	SE	ESE	SE	SSW	SSW	WNW	SE	SW	SSW	SW	SW	SW	WSW	WSW	WSW	WSW	SW	WSW	X	X			
Mar 20	X	X	X	X	X	X	0.5	X	1.9	2.3	4.8	5.8	8.8	10.7	9.1	6.3	4.3	3.1	1.1	X	**22.8**	20.6	9.5	8.9	0.5	**22.8**	-
	X	X	X	X	X	X	SE	X	SE	W	WSW	SW	SW	WSW	SW	SW	SSW	SE	SSE	X	NW	WNW	WNW	W			

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - March 2021

Summary of Hourly Averages

VECTOR WIND SPEED (VWS) in km/hr & WIND DIRECTION (VWD) in sector

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WIND DIRECTION

Monthly Average: 156 (SSE) degree

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Mar 21	14.7	13.1	13.2	17.9	14.0	10.9	10.6	9.0	12.6	10.4	9.6	9.1	10.0	11.1	11.2	9.1	6.9	1.6	2.0	3.0	6.6	8.2	7.3	9.5	1.6	17.9	6.0
	WNW	NW	NW	WNW	WNW	WNW	WNW	WNW	WNW	W	WSW	WSW	WSW	SW	SW	SW	WSW	SSW	ESE	ESE	SE	SE	SE	SE			
Mar 22	9.4	4.5	2.1	1.6	2.6	0.8	X	1.2	3.9	9.9	13.8	15.0	14.7	15.3	14.7	12.6	12.5	12.6	13.5	11.9	12.6	10.9	10.6	9.2	0.8	15.3	8.3
	SE	SE	ESE	E	ESE	W	X	ENE	NNE	NNE	NNE	NE	NNE	NNE	NNE	NNE	NNE	NE	NE	NE	NE	NE	NE	NE			
Mar 23	7.3	6.7	6.4	6.8	4.6	4.1	3.9	5.9	4.4	4.9	5.3	6.2	4.9	6.2	6.5	6.1	7.0	5.1	7.7	9.6	8.8	9.7	9.2	7.9	3.9	9.7	4.2
	NE	NE	NE	NE	NE	NE	NE	ENE	ESE	ESE	ESE	ESE	SSE	SE	SE	S	SSW	S	SE	SE	SE	SE	SE	SE			
Mar 24	7.4	7.9	9.6	9.1	8.5	7.8	5.0	5.7	4.4	4.7	3.8	5.0	3.2	1.9	3.5	2.6	2.6	3.2	6.9	9.6	10.6	10.7	10.0	9.4	1.9	10.7	2.9
	ESE	SE	SE	SE	SE	SE	SE	SE	SE	S	SSW	SW	WSW	WSW	ESE	ESE	NE	NNE	NNE	NNE	NNE	NNE	NNE	NNE			
Mar 25	9.9	9.0	11.3	12.3	12.3	10.7	11.5	8.2	9.5	8.6	6.5	5.9	5.4	6.9	7.9	7.5	5.1	4.8	8.1	5.8	4.4	1.9	1.4	2.3	1.4	12.3	5.9
	N	N	N	NNW	NNW	NNW	NNW	NNW	NNW	N	N	NNW	NNW	NW	WNW	W	WNW	WNW	WSW	WSW	SW	SW	SW	SW			
Mar 26	X	X	X	2.1	3.0	3.8	5.5	6.8	6.4	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	2.1	6.8	-
	X	X	X	WSW	WSW	WSW	WSW	W	WSW	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N			
Mar 27	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-	-
	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N			
Mar 28	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-	-
	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N			
Mar 29	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-	-
	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N			
Mar 30	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-	-
	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N			
Mar 31	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-	-
	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance	P Power Failure
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LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - March 2021

Summary of Hour Standard Deviations

STANDARD DEVIATION WIND DIRECTION (STDWD) in Degree

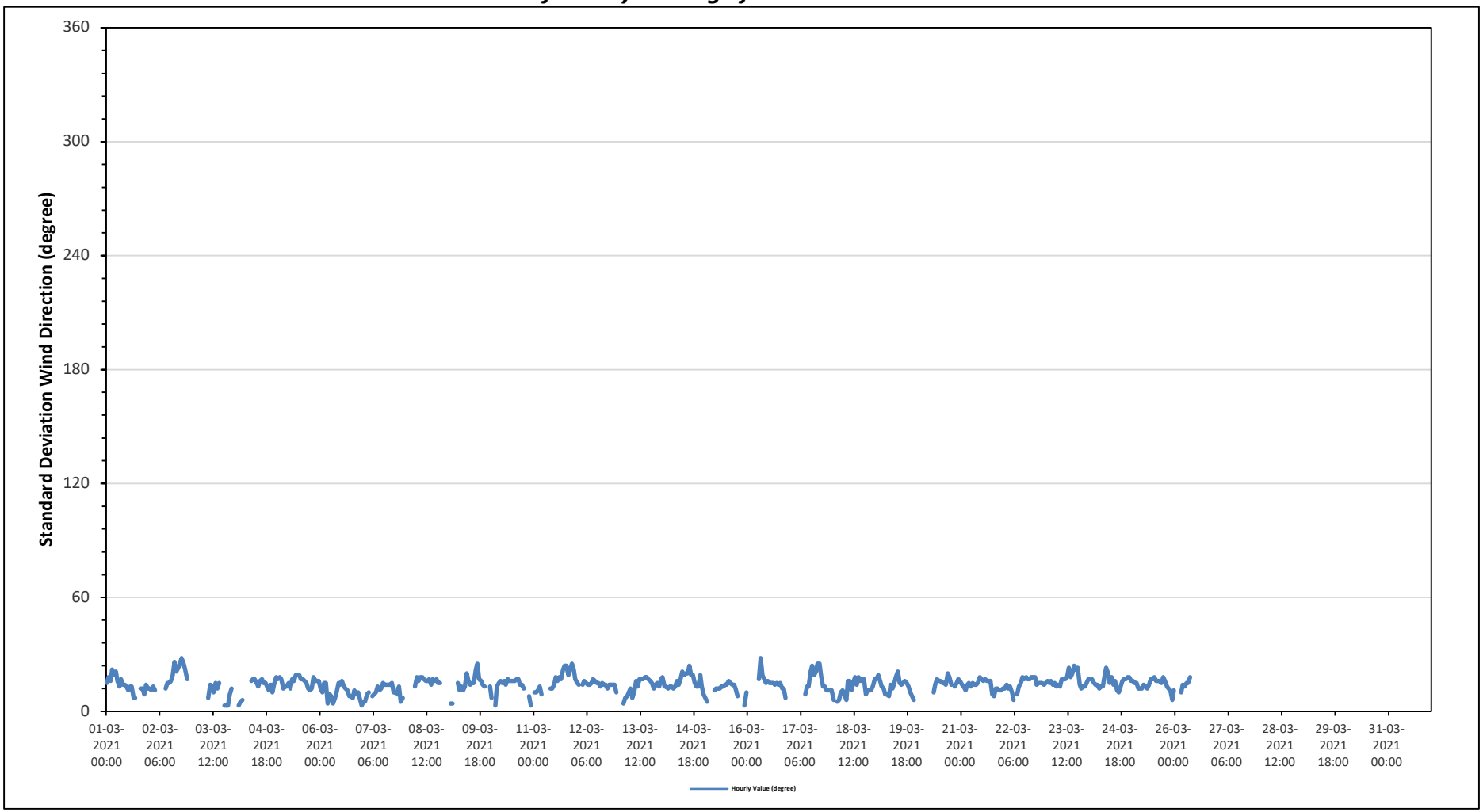
Maximum Hourly Value:	28	degree	on March 2 at hour 18	Hours in Service:	744
				Hours of Data:	523
Minimum Hourly Value:	3	degree	on March 2 at hour 5	Hours of Missing Data:	221
				Hours of Calibration:	0
				Operational Uptime:	70.3

Day	Hourly Period Starting at (MST)																								Daily Minimum	Daily Maximum
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
Mar 1	15	18	16	22	19	21	16	13	17	14	14	13	11	13	13	7	7	X	X	12	12	9	14	12	7	22
Mar 2	12	11	13	11	X	3	X	5	X	12	15	15	16	19	26	21	23	25	28	25	22	17	X	X	3	28
Mar 3	X	X	X	X	9	X	X	X	X	7	14	13	10	15	12	15	X	X	3	3	3	9	12	X	3	15
Mar 4	X	X	3	5	6	X	X	7	X	16	17	17	15	13	16	17	15	15	13	11	14	10	15	18	3	18
Mar 5	17	18	17	12	13	13	15	12	17	16	19	19	19	17	17	16	15	12	11	12	18	16	16	16	11	19
Mar 6	12	10	15	15	4	9	8	4	7	10	15	14	16	13	12	11	8	8	7	11	9	10	7	3	3	16
Mar 7	5	5	9	10	X	8	9	10	13	11	12	15	14	14	14	14	15	10	10	9	13	5	7	X	5	15
Mar 8	X	X	X	5	X	13	18	16	18	18	17	16	16	17	14	17	16	17	15	15	X	X	X	X	5	18
Mar 9	X	4	4	X	X	15	11	13	11	13	20	16	14	15	15	22	25	17	16	14	13	X	X	13	4	25
Mar 10	7	X	3	13	15	16	15	16	14	17	16	16	16	16	17	17	14	14	12	X	X	8	3	X	3	17
Mar 11	10	10	11	13	9	X	X	X	X	12	12	14	18	16	18	17	22	24	24	19	22	25	22	17	9	25
Mar 12	15	14	X	14	16	15	14	14	15	17	16	15	15	13	15	14	14	12	14	14	14	14	10	X	10	17
Mar 13	X	X	4	7	8	10	12	7	10	16	13	17	17	17	18	18	17	16	15	12	14	15	13	17	4	18
Mar 14	18	13	13	12	13	13	12	13	16	14	17	21	19	20	20	24	19	19	15	13	13	19	13	9	9	24
Mar 15	7	5	X	X	X	11	12	12	12	13	13	14	14	16	15	14	14	12	8	X	9	X	3	10	3	16
Mar 16	X	X	X	X	X	X	17	28	19	17	15	16	15	15	15	14	15	14	15	12	12	7	X	X	7	28
Mar 17	X	X	X	X	X	X	X	X	9	13	13	21	24	19	21	25	25	18	13	13	11	11	11	11	9	25
Mar 18	6	X	5	6	10	11	9	6	16	16	11	15	18	14	18	16	17	17	9	11	11	11	13	17	5	18
Mar 19	17	19	16	13	12	9	9	8	14	12	15	18	21	15	14	15	16	15	13	10	8	6	X	X	6	21
Mar 20	X	X	X	X	X	X	3	X	10	14	17	16	16	15	15	14	20	18	14	X	13	15	17	16	3	20
Mar 21	14	13	11	14	15	13	15	14	14	15	18	17	16	17	16	16	16	9	8	12	12	11	11	12	8	18
Mar 22	12	14	12	13	10	6	X	9	13	15	18	17	18	17	17	18	18	18	14	15	15	15	14	15	6	18
Mar 23	16	15	16	14	15	13	14	13	17	17	17	18	23	18	20	24	22	23	14	12	13	13	15	17	12	24
Mar 24	17	17	15	14	14	12	13	13	18	23	20	15	18	14	16	11	10	13	16	17	17	18	18	16	10	23
Mar 25	16	15	15	12	12	12	14	13	12	14	17	17	18	16	16	16	15	18	16	13	12	11	6	11	6	18
Mar 26	X	X	X	10	14	13	15	15	18	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	10	18
Mar 27	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-
Mar 28	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-
Mar 29	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-
Mar 30	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-
Mar 31	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-
Diurnal Minimum	5	4	3	5	4	3	3	4	7	7	11	13	10	13	12	7	7	8	3	3	3	5	3	3		
Daiurnal Maximum	18	19	17	22	19	21	18	28	19	23	20	21	24	20	26	25	25	25	28	25	22	25	22	18		

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance	P Power Failure
X	InValid Data (Machine Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)			

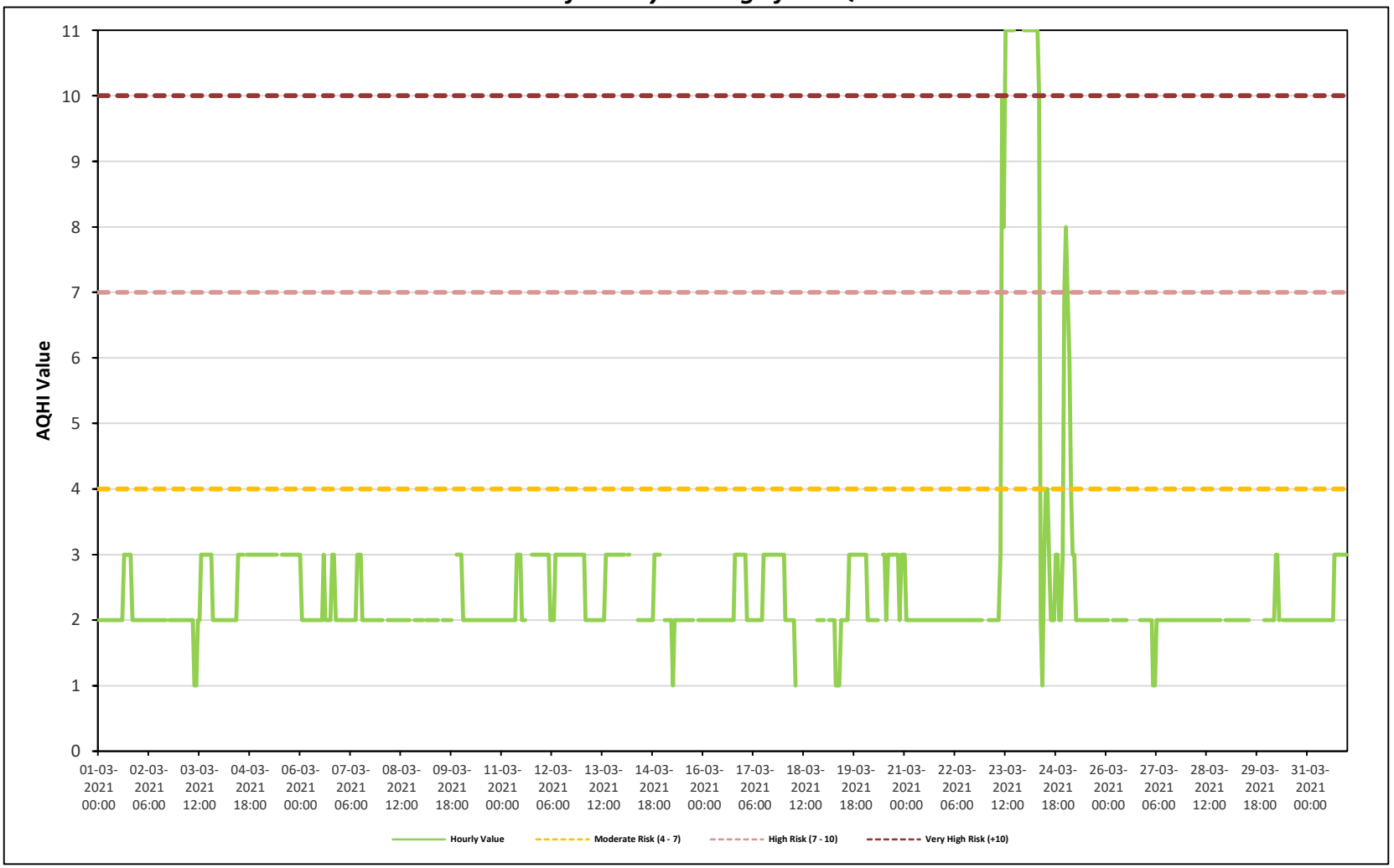
Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for STDWD - Cold Lake South Station



MASKWA STATION

Timeseries Chart of Hourly Average for AQHI - Maskwa Site



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Maskwa Site - March 2021

Summary of Hourly Averages

SULPHUR DIOXIDE (SO_2) in ppb

Alberta Ambient Air Quality Objectives (AAAQO): 1-Hour 172 ppb, 24-Hour 48 ppb, 30-Day 11 ppb

Number of 1-Hour Exceedences: 0 Number of 24-Hour Exceedences: 0 30-Day Exceedence: 0

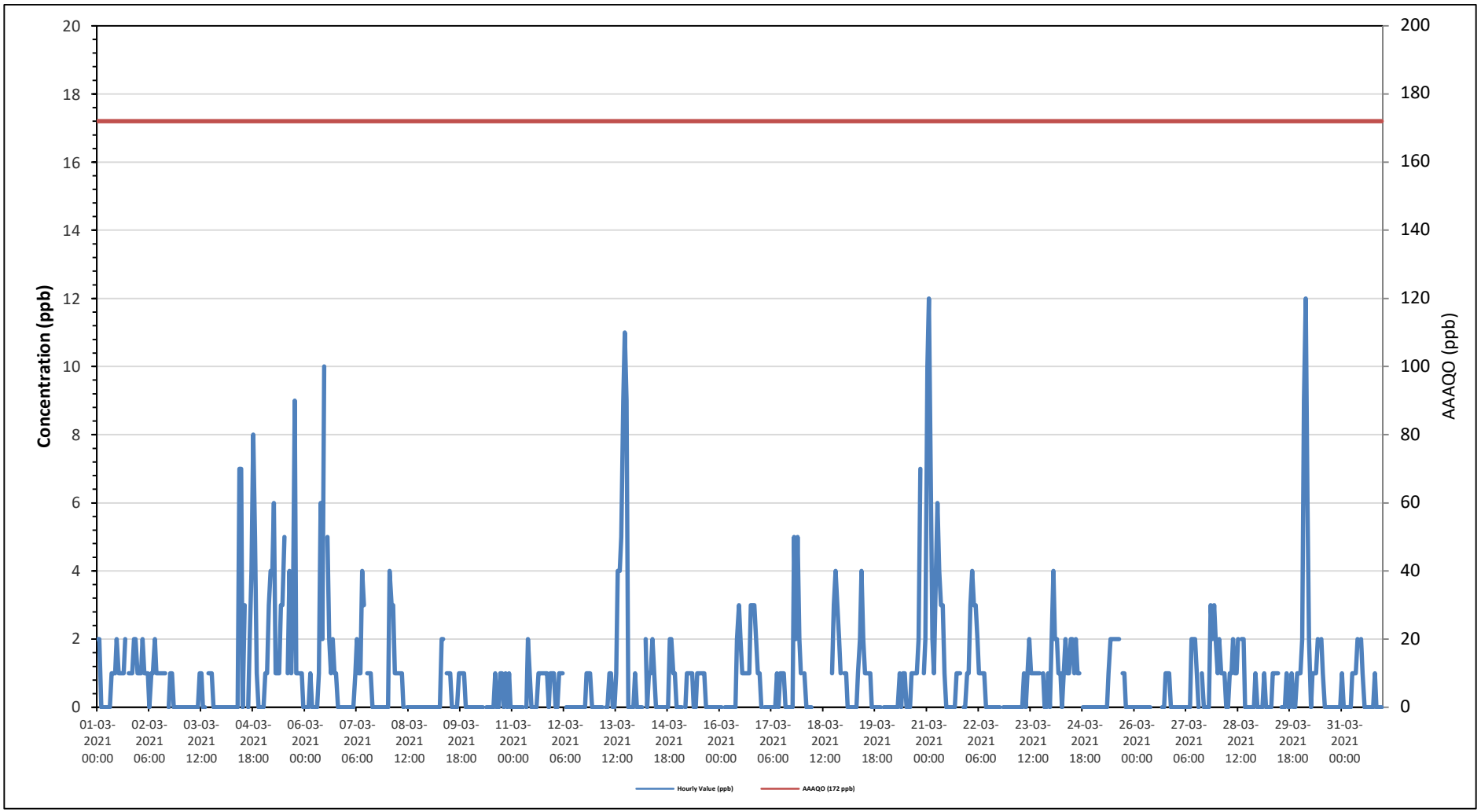
Maximum Hourly Value:	12	ppb	on March 21 at hour 1	Hours in Service:	744
Maximum Daily Value:	2.5	ppb	on March 21	Hours of Data:	696
Minimum Hourly Value:	0	ppb	on March 1 at hour 2	Hours of Missing Data:	11
Minimum Daily Value:	0.2	ppb	on March 26	Hours of Calibration:	37
Monthly Average:	0.9	ppb		Operational Uptime:	98.5

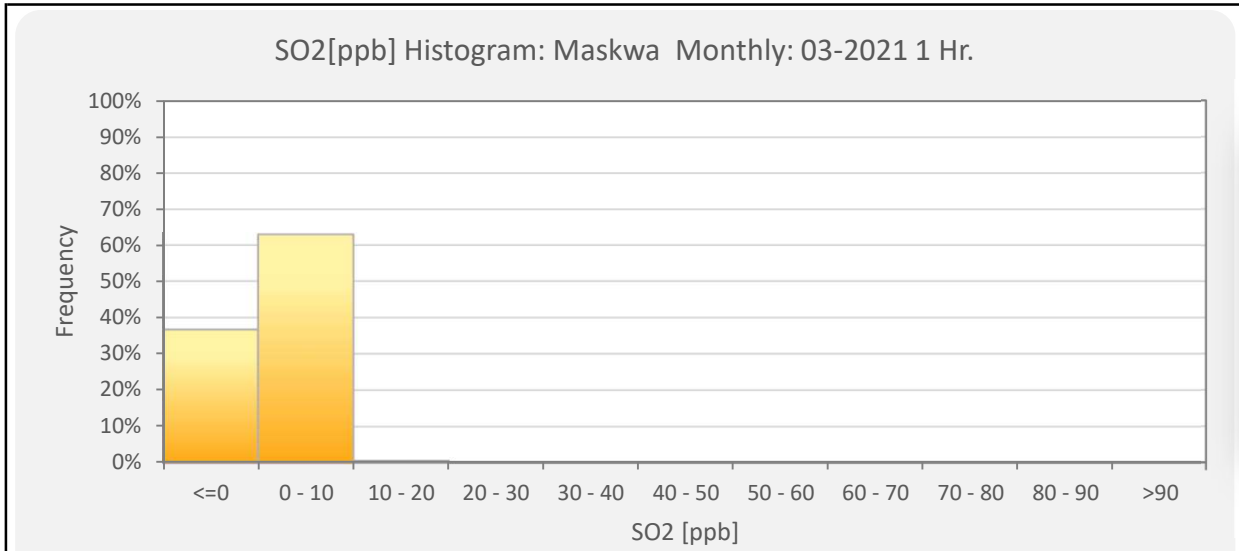
Day	Hourly Period Starting at (MST)																								Daily	Daily	Daily
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Minimum	Maximum	Average
Mar 1	2	2	0	0	0	0	0	0	1	1	1	2	1	1	1	1	2	S	1	1	1	2	2	1	0	2	1.0
Mar 2	1	1	2	1	1	1	0	1	1	2	1	1	1	1	1	1	S	0	1	1	0	0	0	0	0	2	0.8
Mar 3	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	S	1	1	1	0	0	0	0	0	0	1	0.2
Mar 4	0	0	0	0	0	0	0	0	0	0	7	7	0	3	S	0	2	4	8	5	1	0	0	0	0	8	1.6
Mar 5	0	1	1	3	4	4	6	1	1	1	3	3	5	S	1	4	1	3	9	1	1	1	1	0	0	9	2.4
Mar 6	0	0	0	1	0	0	0	0	1	6	2	10	S	5	2	1	2	1	1	0	0	0	0	0	0	10	1.4
Mar 7	0	0	0	0	0	1	2	1	1	4	3	S	1	1	1	0	0	0	0	0	0	0	0	0	0	4	0.7
Mar 8	0	4	3	3	1	1	1	1	1	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0.7
Mar 9	0	0	0	0	0	0	0	2	2	S	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	2	0.5
Mar 10	0	0	0	0	0	0	0	0	S	0	0	0	0	0	1	0	0	1	1	0	1	0	1	0	0	1	0.2
Mar 11	0	0	0	0	0	0	0	S	0	2	1	0	0	0	0	1	1	1	1	1	1	0	1	1	0	2	0.5
Mar 12	1	0	0	1	1	1	S	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	1	0.3
Mar 13	0	0	0	0	0	S	0	0	1	1	0	0	1	4	4	5	9	11	9	0	0	0	0	1	0	11	2.0
Mar 14	0	0	0	0	S	2	0	1	1	2	1	0	0	0	0	0	0	0	0	2	2	1	1	0	0	2	0.6
Mar 15	0	0	0	S	0	1	1	1	1	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	1	0.4
Mar 16	0	0	S	0	0	0	0	0	0	0	2	3	2	1	1	1	1	1	3	3	3	2	1	1	0	3	1.1
Mar 17	0	S	0	0	0	0	0	0	0	1	0	1	1	1	0	0	0	0	0	5	2	5	2	1	0	5	0.8
Mar 18	S	1	0	0	0	0	P	P	P	P	P	P	P	P	P	P	P	1	3	4	3	2	1	S	0	4	-
Mar 19	1	1	0	0	0	0	0	0	1	2	4	2	1	1	1	1	0	0	0	0	0	0	S	0	0	4	0.7
Mar 20	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	1	1	1	1	2	7	S	1	2	0	7	0.8
Mar 21	10	12	7	2	1	4	6	4	3	3	1	0	0	0	0	0	0	1	1	1	S	0	0	1	0	12	2.5
Mar 22	1	3	4	3	3	2	1	1	1	1	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	4	0.9
Mar 23	0	0	0	0	0	0	0	0	1	0	1	2	1	1	1	1	1	1	S	1	0	0	1	0	0	2	0.5
Mar 24	2	4	2	2	1	1	0	1	2	1	1	2	2	1	2	1	1	S	0	0	0	0	0	0	0	4	1.1
Mar 25	0	0	0	0	0	0	0	0	0	1	2	2	2	2	2	2	S	1	1	0	0	0	0	0	0	2	0.7
Mar 26	0	0	0	0	0	0	0	0	0	0	C	C	C	C	C	S	0	0	1	1	1	0	0	0	0	1	0.2
Mar 27	0	0	0	0	0	0	0	0	0	2	2	2	1	0	S	1	0	0	0	0	3	2	3	2	0	3	0.8
Mar 28	1	2	1	1	1	0	0	1	1	2	1	1	2	S	2	2	0	0	0	0	0	0	1	0	0	2	0.8
Mar 29	0	0	0	1	0	0	0	0	1	1	1	1	S	0	0	0	1	0	0	1	0	0	1	1	0	1	0.4
Mar 30	1	2	9	12	6	2	0	1	1	1	2	S	2	1	0	0	0	0	0	0	0	0	0	0	0	12	1.7
Mar 31	1	0	0	0	0	0	1	1	1	2	S	2	1	0	0	0	0	0	0	1	0	0	0	0	0	2	0.4
Diurnal Maximum	10	12	9	12	6	4	6	4	3	6	7	10	5	5	4	5	9	11	9	5	7	5	3	2			
Daiurnal Average	0.7	1.1	1.0	1.0	0.6	0.7	0.6	0.6	0.8	1.2	1.4	1.7	1.0	0.9	0.8	0.9	0.8	1.0	1.4	1.1	0.9	0.5	0.6	0.4			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance			
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance	P	Power Failure	
X	InValid Data (Equipment Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)					

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for SO2 - Maskwa Site

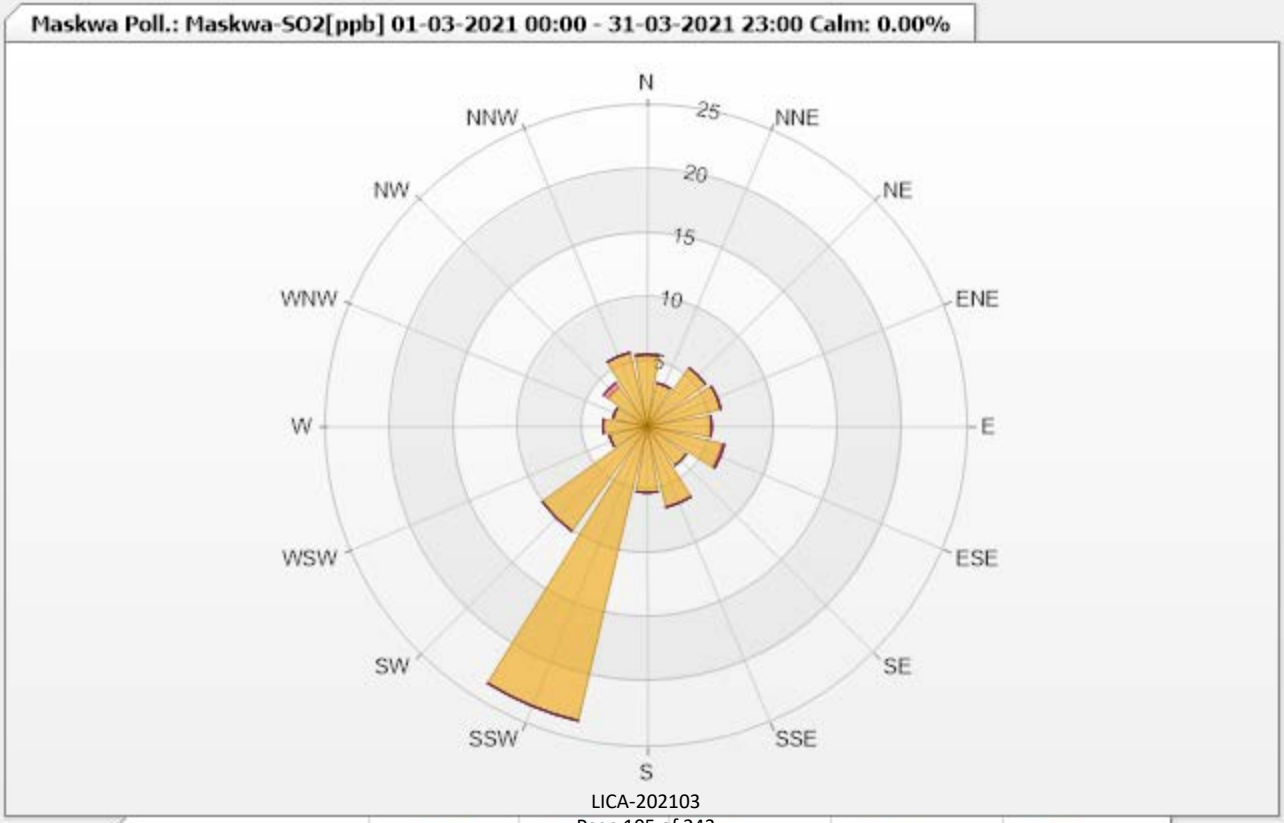




Classes	SO2
<=0	36.64%
0 - 10	62.79%
10 - 20	0.57%
20 - 30	0.00%
30 - 40	0.00%
40 - 50	0.00%
50 - 60	0.00%
60 - 70	0.00%
70 - 80	0.00%
80 - 90	0.00%
>90	0.00%

Wind: Maskwa Poll.: Maskwa-SO2[ppb] Monthly: 03-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
Calm: 0.00% Valid Data: 93.55% Calm Avg: 0.00 [ppb]

Direction	0-10	10-50	50-100	100-172	>172.0	Total
N	5.6	0	0	0	0	5.6
NNE	3.45	0	0	0	0	3.45
NE	5.6	0	0	0	0	5.6
ENE	5.89	0	0	0	0	5.89
E	5.03	0	0	0	0	5.03
ESE	6.03	0.14	0	0	0	6.17
SE	3.74	0	0	0	0	3.74
SSE	6.47	0	0	0	0	6.47
S	5.17	0	0	0	0	5.17
SSW	23.56	0	0	0	0	23.56
SW	10.06	0	0	0	0	10.06
WSW	3.02	0	0	0	0	3.02
W	3.45	0	0	0	0	3.45
WNW	2.73	0	0	0	0	2.73
NW	3.74	0.43	0	0	0	4.17
NNW	5.89	0	0	0	0	5.89
Summary	99.43	0.57	0	0	0	100


Maskwa Poll.: Maskwa-SO2[ppb] 01-03-2021 00:00 - 31-03-2021 23:00 Calm: 0.00%
N
NNE
NE
ENE
E
ESE
SE
SSE
S
SSW
SW
WSW
W
WNW
NW
NNW
25
20
15
10
% Icon Classes (ppb)
99 0-10
1 10-50
0 50-100
0 100-172
0 >172.0

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Maskwa Site - March 2021

Summary of Hourly Averages

HYDROGEN SULPHIDE (H_2S) in ppb

Alberta Ambient Air Quality Objectives (AAAQO): 1-Hour 10 ppb, 24-Hour 3 ppb

Number of 1-Hour Exceedances: 0 Number of 24-Hour Exceedances: 0

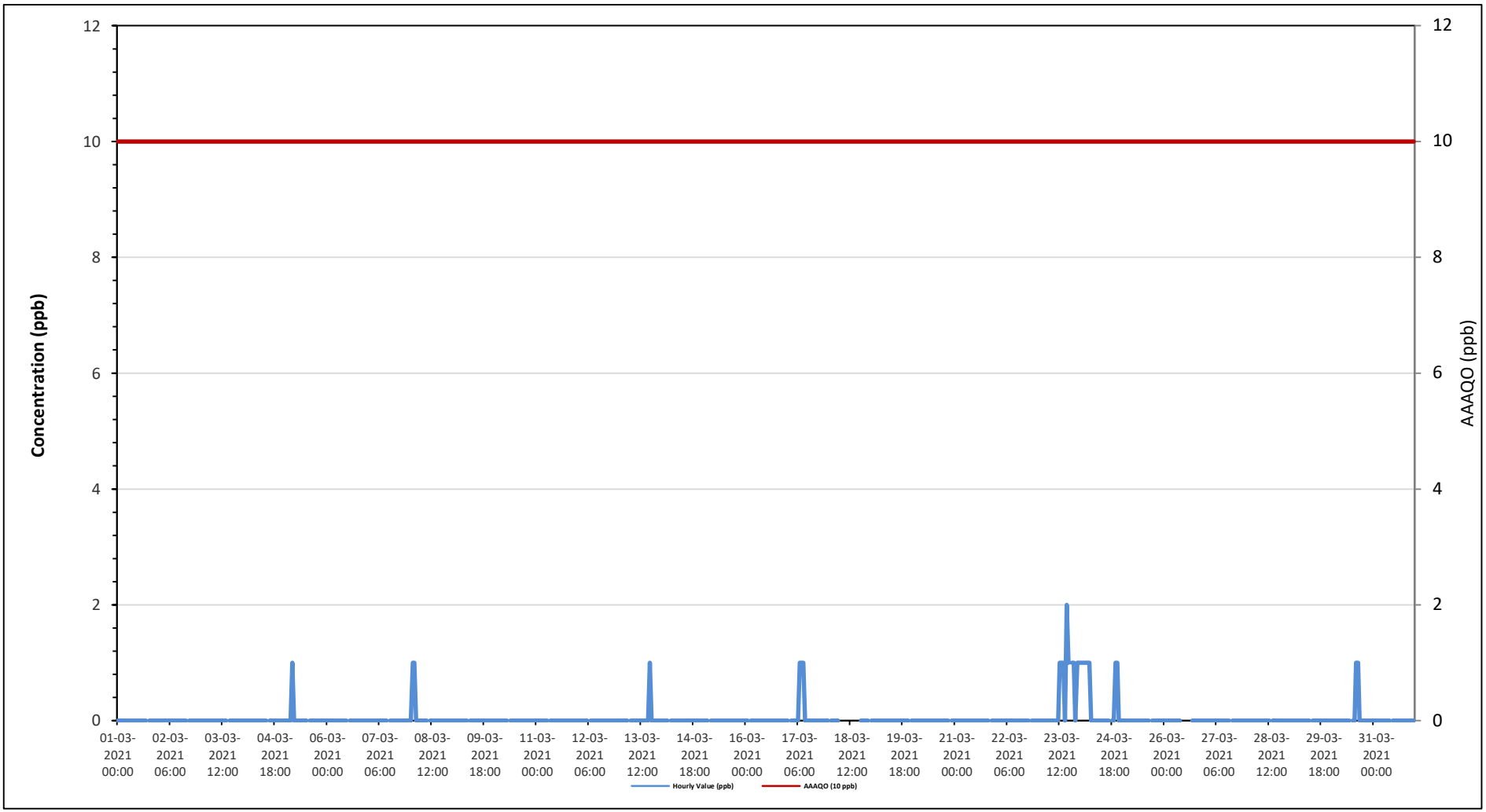
Maximum Hourly Value:	2	ppb	on March 23 at hour 16	Hours in Service:	744
Maximum Daily Value:	0.4	ppb	on March 23	Hours of Data:	695
Minimum Hourly Value:	0	ppb	on March 1 at hour 0	Hours of Missing Data:	12
Minimum Daily Value:	0.0	ppb	on March 1	Hours of Calibration:	37
Monthly Average:	0.0	ppb		Operational Uptime:	98.4

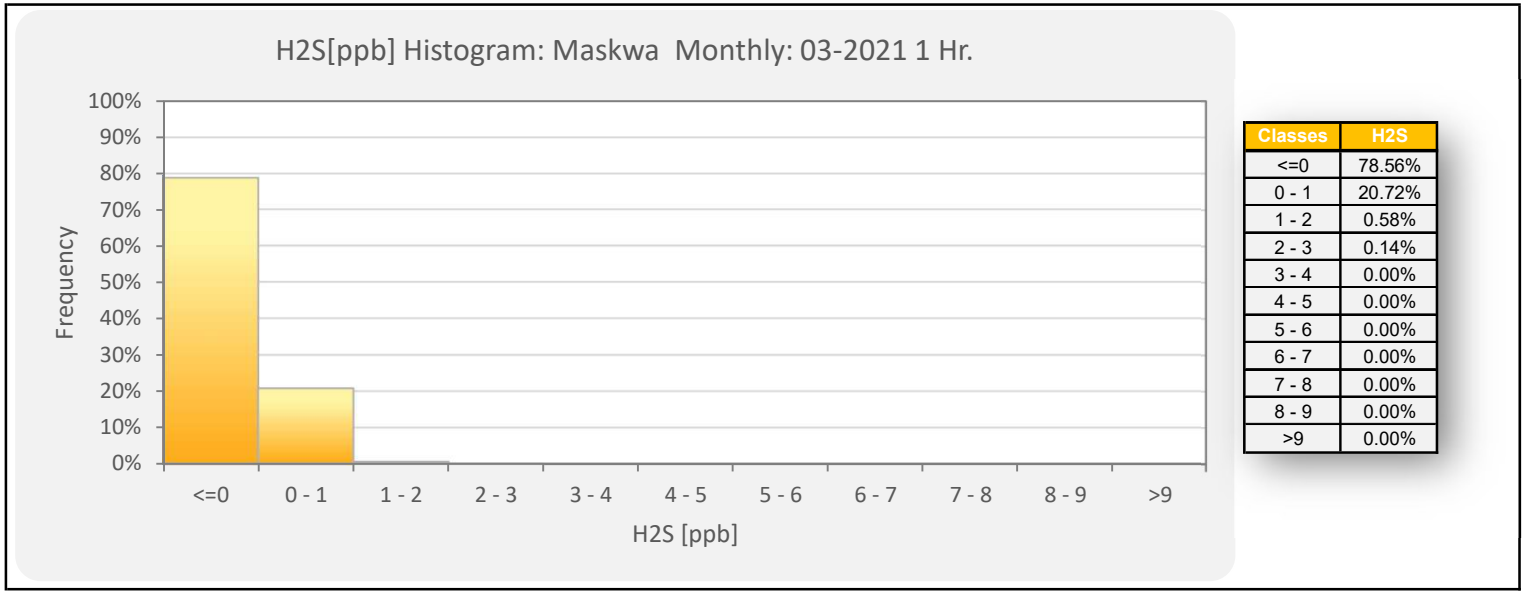
Day	Hourly Period Starting at (MST)																								Daily	Daily	Daily
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Minimum	Maximum	Average
Mar 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0.0
Mar 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0.0
Mar 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0.0
Mar 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0.0
Mar 5	0	0	0	0	1	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	1	0.0
Mar 6	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Mar 7	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Mar 8	0	1	1	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1
Mar 9	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Mar 10	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Mar 11	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Mar 12	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Mar 13	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0.0
Mar 14	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Mar 15	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Mar 16	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Mar 17	0	S	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1
Mar 18	S	0	0	0	0	0	P	P	P	P	P	P	P	P	P	P	P	X	0	0	0	0	0	S	0	0	-
Mar 19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0.0
Mar 20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0.0
Mar 21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0.0
Mar 22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0.0
Mar 23	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	2	1	S	1	1	0	1	1	0	2	0.4
Mar 24	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	S	0	0	1	1	0	0	0	1	0.3
Mar 25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0.0
Mar 26	0	0	0	0	0	0	0	0	0	0	C	C	C	C	C	S	0	0	0	0	0	0	0	0	0	0	0.0
Mar 27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0.0
Mar 28	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Mar 29	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Mar 30	0	0	0	0	0	0	0	0	0	0	0	S	0	0	1	1	0	0	0	0	0	0	0	0	0	1	0.1
Mar 31	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Diurnal Maximum	1	1	1	1	1	1	0	1	1	1	0	0	1	1	1	1	2	1	0	1	1	1	1	1			
Diurnal Average	0.0	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.0			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance			
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance	P	Power Failure	
X	InValid Data (Equipment Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)					

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for H2S - Maskwa Site

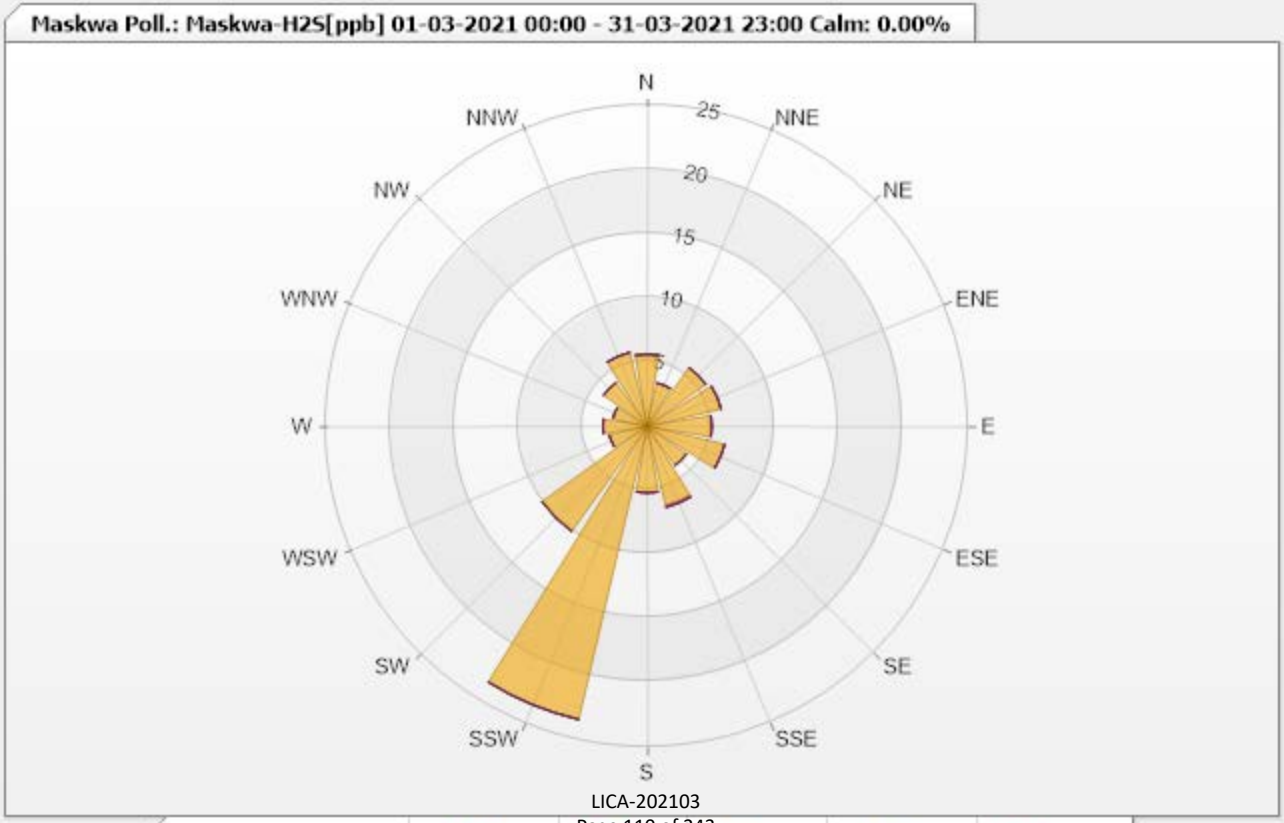




Classes	H2S
<=0	78.56%
0 - 1	20.72%
1 - 2	0.58%
2 - 3	0.14%
3 - 4	0.00%
4 - 5	0.00%
5 - 6	0.00%
6 - 7	0.00%
7 - 8	0.00%
8 - 9	0.00%
>9	0.00%

Wind: Maskwa Poll.: Maskwa-H2S[ppb] Monthly: 03-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
Calm: 0.00% Valid Data: 93.41% Calm Avg: 0.00 [ppb]

Direction	0-2	2-5	5-10	10-50	>50.0	Total
N	5.61	0	0	0	0	5.61
NNE	3.45	0	0	0	0	3.45
NE	5.61	0	0	0	0	5.61
ENE	5.9	0	0	0	0	5.9
E	5.04	0	0	0	0	5.04
ESE	6.19	0	0	0	0	6.19
SE	3.74	0	0	0	0	3.74
SSE	6.33	0.14	0	0	0	6.47
S	5.18	0	0	0	0	5.18
SSW	23.45	0	0	0	0	23.45
SW	10.07	0	0	0	0	10.07
WSW	3.02	0	0	0	0	3.02
W	3.45	0	0	0	0	3.45
WNW	2.73	0	0	0	0	2.73
NW	4.17	0	0	0	0	4.17
NNW	5.9	0	0	0	0	5.9
Summary	100	0.14	0	0	0	100


Maskwa Poll.: Maskwa-H2S[ppb] 01-03-2021 00:00 - 31-03-2021 23:00 Calm: 0.00%
N
NNE
NE
ENE
E
ESE
SE
SSE
S
SSW
SW
WSW
W
WNW
NW
NNW
25
20
15
10
% Icon Classes (ppb)
100 0-2
0 2-5
0 5-10
0 10-50
0 >50.0

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Maskwa Site - March 2021

Summary of Hourly Averages

OXIDES OF NITROGEN (NOx) in ppb

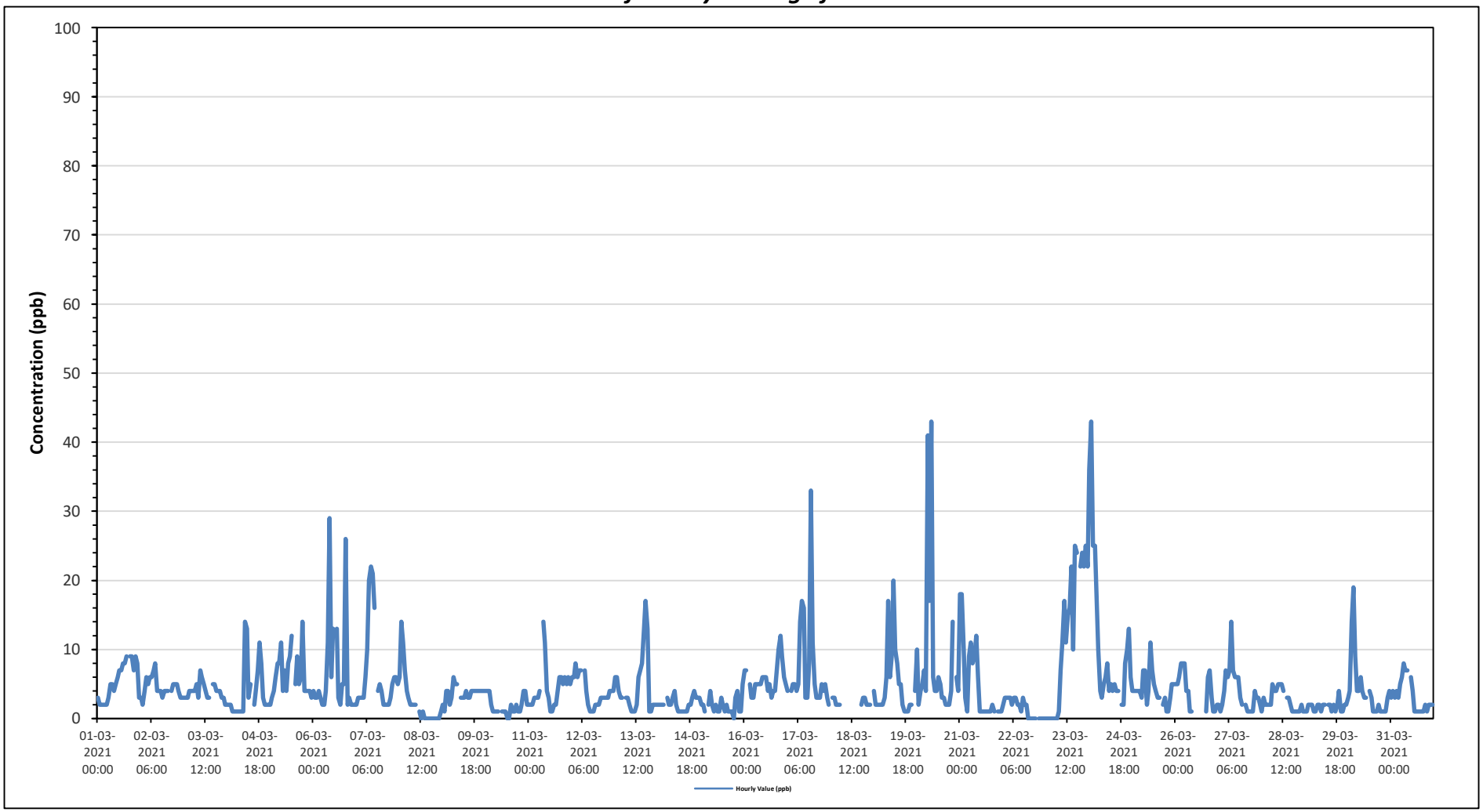
Maximum Hourly Value:	43	ppb	on March 20 at hour 8	Hours in Service:	744
Maximum Daily Value:	11.9	ppb	on March 23	Hours of Data:	695
Minimum Hourly Value:	0	ppb	on March 8 at hour 12	Hours of Missing Data:	11
Minimum Daily Value:	1.5	ppb	on March 22	Hours of Calibration:	38
Monthly Average:	4.7	ppb		Operational Uptime:	98.5

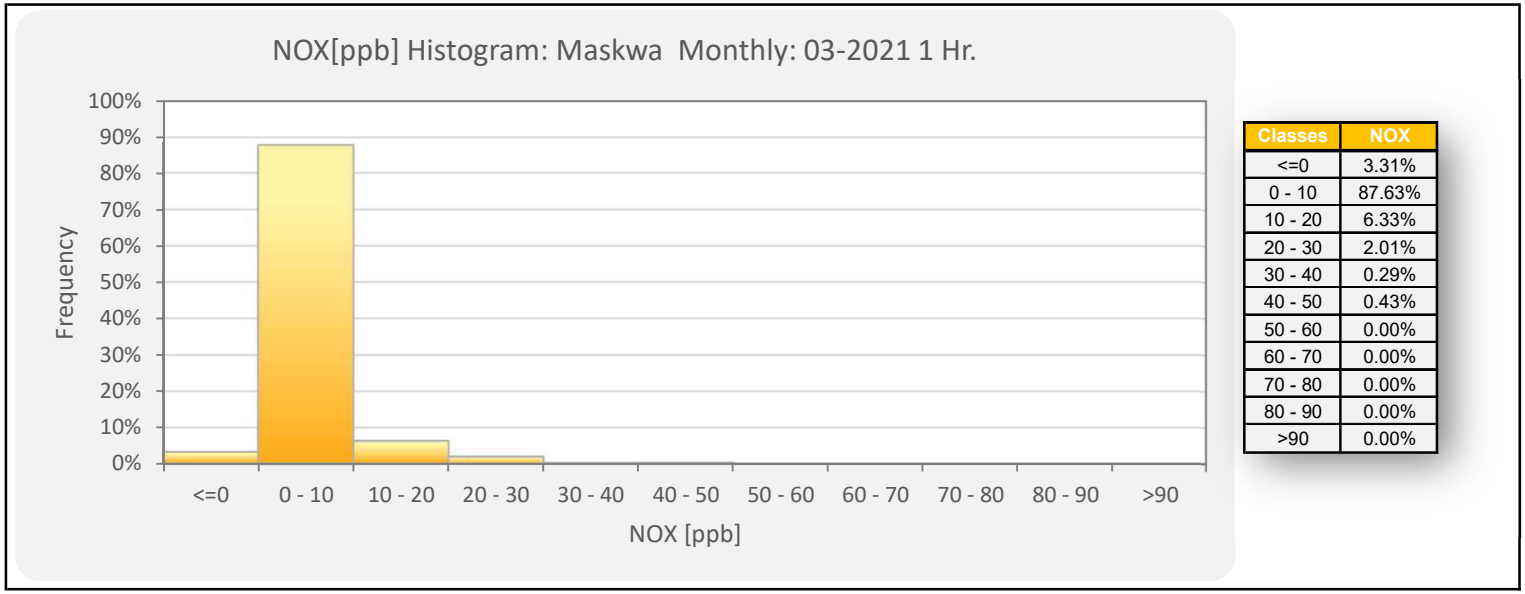
Day	Hourly Period Starting at (MST)																								Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Mar 1	3	2	2	2	2	2	3	5	5	4	5	6	7	7	8	8	9	S	9	9	7	9	8	3	2	9	5.4
Mar 2	3	2	4	6	5	6	6	7	8	4	4	4	3	4	4	4	S	4	5	5	5	4	3	3	2	8	4.5
Mar 3	3	3	3	4	4	4	4	5	3	7	6	5	4	3	3	S	5	5	4	4	4	3	3	2	2	7	4.0
Mar 4	2	2	2	1	1	1	1	1	1	1	14	13	3	5	S	2	4	7	11	8	3	2	2	2	1	14	3.9
Mar 5	2	3	4	6	8	8	11	4	7	4	8	9	12	S	5	9	5	6	14	4	4	4	4	3	2	14	6.3
Mar 6	4	3	3	4	3	2	2	4	11	29	6	13	S	13	3	2	5	5	26	2	3	2	2	2	2	29	6.5
Mar 7	2	3	3	3	3	6	10	20	22	21	16	S	4	5	4	2	2	2	2	3	5	6	6	5	2	22	6.7
Mar 8	6	14	11	7	4	3	2	2	2	2	S	1	0	1	0	0	0	0	0	0	0	0	0	1	0	14	2.4
Mar 9	2	1	4	4	2	3	6	5	5	S	3	3	3	4	3	3	4	4	4	4	4	4	4	4	1	6	3.6
Mar 10	4	4	4	2	1	1	1	1	S	1	1	1	0	0	2	1	1	2	1	1	2	4	4	2	0	4	1.8
Mar 11	2	2	2	3	3	3	4	S	14	11	4	3	1	1	2	2	4	6	6	5	6	5	6	5	1	14	4.3
Mar 12	6	6	8	6	7	7	S	7	4	2	1	1	1	2	2	2	3	3	3	3	3	4	4	4	1	8	3.9
Mar 13	6	6	4	3	3	S	3	3	2	1	1	1	2	6	7	8	13	17	13	1	1	2	2	2	1	17	4.7
Mar 14	2	2	2	2	S	3	2	2	3	4	2	1	1	1	1	1	1	2	2	3	4	3	3	3	1	4	2.2
Mar 15	2	2	1	S	2	4	2	1	2	1	1	3	2	1	2	1	1	1	0	3	4	1	1	5	0	5	1.9
Mar 16	7	7	S	5	3	3	5	5	5	5	6	6	6	4	5	3	4	4	7	10	12	9	6	5	3	12	5.7
Mar 17	4	S	4	5	5	4	5	14	17	16	3	3	8	33	11	5	3	3	3	5	4	5	3	2	2	33	7.2
Mar 18	S	3	3	2	2	2	P	P	P	P	P	P	P	P	P	P	P	2	3	3	2	2	2	S	2	3	-
Mar 19	4	2	2	2	2	2	3	6	17	6	9	20	10	8	5	5	2	1	1	1	2	2	S	4	1	20	5.0
Mar 20	10	2	4	5	7	4	41	17	**43**	6	4	4	6	5	3	3	2	2	2	4	14	S	6	4	2	**43**	8.6
Mar 21	18	18	10	3	1	9	11	8	9	12	6	1	1	1	1	1	1	1	2	1	S	1	1	1	1	18	5.1
Mar 22	2	3	3	3	3	2	3	3	2	2	1	3	2	2	0	0	0	0	0	S	0	0	0	0	0	3	1.5
Mar 23	0	0	0	0	0	0	0	1	7	11	17	11	15	16	22	10	25	24	S	22	24	22	25	22	0	25	**11.9**
Mar 24	36	**43**	25	25	18	10	4	3	5	6	8	4	5	4	5	4	4	S	2	2	8	10	13	6	2	**43**	10.9
Mar 25	4	4	4	4	4	3	7	7	2	4	11	7	5	4	3	3	S	2	3	1	1	3	5	5	1	11	4.2
Mar 26	5	5	6	8	8	8	4	4	1	1	C	C	C	C	C	C	C	1	6	7	3	1	1	2	1	8	-
Mar 27	2	1	2	4	7	6	7	14	7	6	6	6	3	2	S	2	1	1	1	1	4	3	3	2	1	14	4.0
Mar 28	1	3	2	2	2	2	5	4	4	5	5	5	4	S	3	3	2	1	1	1	1	1	2	1	1	5	2.6
Mar 29	1	1	2	2	2	1	1	2	2	1	2	2	S	2	2	1	2	1	2	4	1	1	2	2	1	4	1.7
Mar 30	3	4	14	19	9	4	4	6	4	3	3	S	4	3	1	1	1	2	1	1	1	1	3	4	1	19	4.2
Mar 31	3	4	3	4	3	5	6	8	7	7	S	6	4	1	1	1	1	1	1	2	1	2	2	2	1	8	3.3
Diurnal Maximum	36	43	25	25	18	10	41	20	43	29	17	20	15	33	22	10	25	24	26	22	24	22	25	22			
Daiurnal Average	5.0	5.2	4.7	4.9	4.1	3.9	5.6	5.8	7.6	6.3	5.7	5.3	4.3	5.1	4.0	3.1	3.9	3.8	4.5	4.0	4.4	3.9	4.2	3.6			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance	P Power Failure
X	InValid Data (Equipment Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)			

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for NOx - Maskwa Site

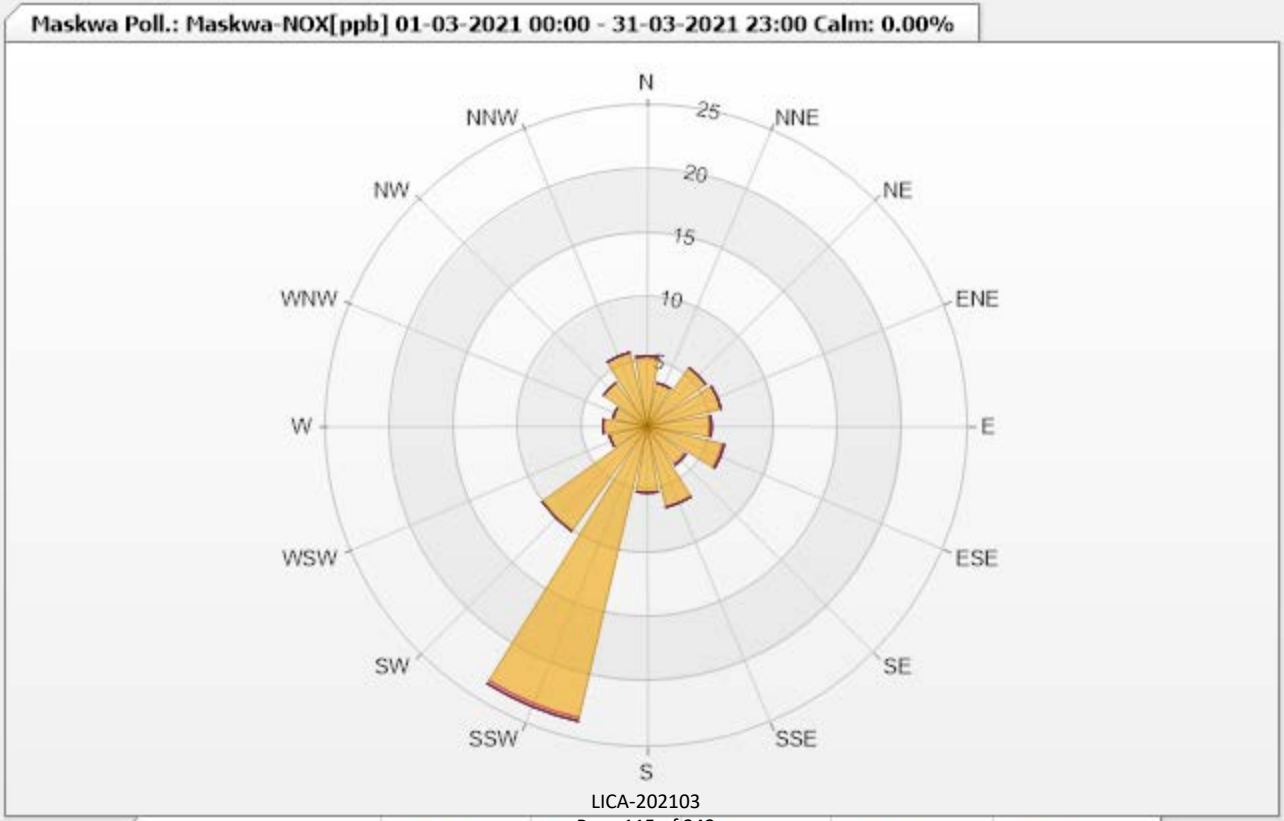




Classes	NOX
<=0	3.31%
0 - 10	87.63%
10 - 20	6.33%
20 - 30	2.01%
30 - 40	0.29%
40 - 50	0.43%
50 - 60	0.00%
60 - 70	0.00%
70 - 80	0.00%
80 - 90	0.00%
>90	0.00%

Wind: Maskwa Poll.: Maskwa-NOX[ppb] Monthly: 03-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
Calm: 0.00% Valid Data: 93.41% Calm Avg: 0.00 [ppb]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	5.47	0	0	0	0	5.47
NNE	3.45	0	0	0	0	3.45
NE	5.61	0	0	0	0	5.61
ENE	5.9	0	0	0	0	5.9
E	4.89	0.14	0	0	0	5.03
ESE	6.04	0.14	0	0	0	6.18
SE	3.6	0.14	0	0	0	3.74
SSE	6.47	0	0	0	0	6.47
S	5.18	0	0	0	0	5.18
SSW	23.31	0.29	0	0	0	23.6
SW	10.07	0	0	0	0	10.07
WSW	3.02	0	0	0	0	3.02
W	3.45	0	0	0	0	3.45
WNW	2.73	0	0	0	0	2.73
NW	4.17	0	0	0	0	4.17
NNW	5.9	0	0	0	0	5.9
Summary	99.26	0.71	0	0	0	100


Maskwa Poll.: Maskwa-NOX[ppb] 01-03-2021 00:00 - 31-03-2021 23:00 Calm: 0.00%
N
NNE
NE
ENE
E
ESE
SE
SSE
S
SSW
SW
WSW
W
WNW
NW
NNW
25
20
15
10
% Icon Classes (ppb)
99 0-30
1 30-50
0 50-76
0 76-159
0 >159.0

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Maskwa Site - March 2021

Summary of Hourly Averages

NITRIC OXIDE (NO) in ppb

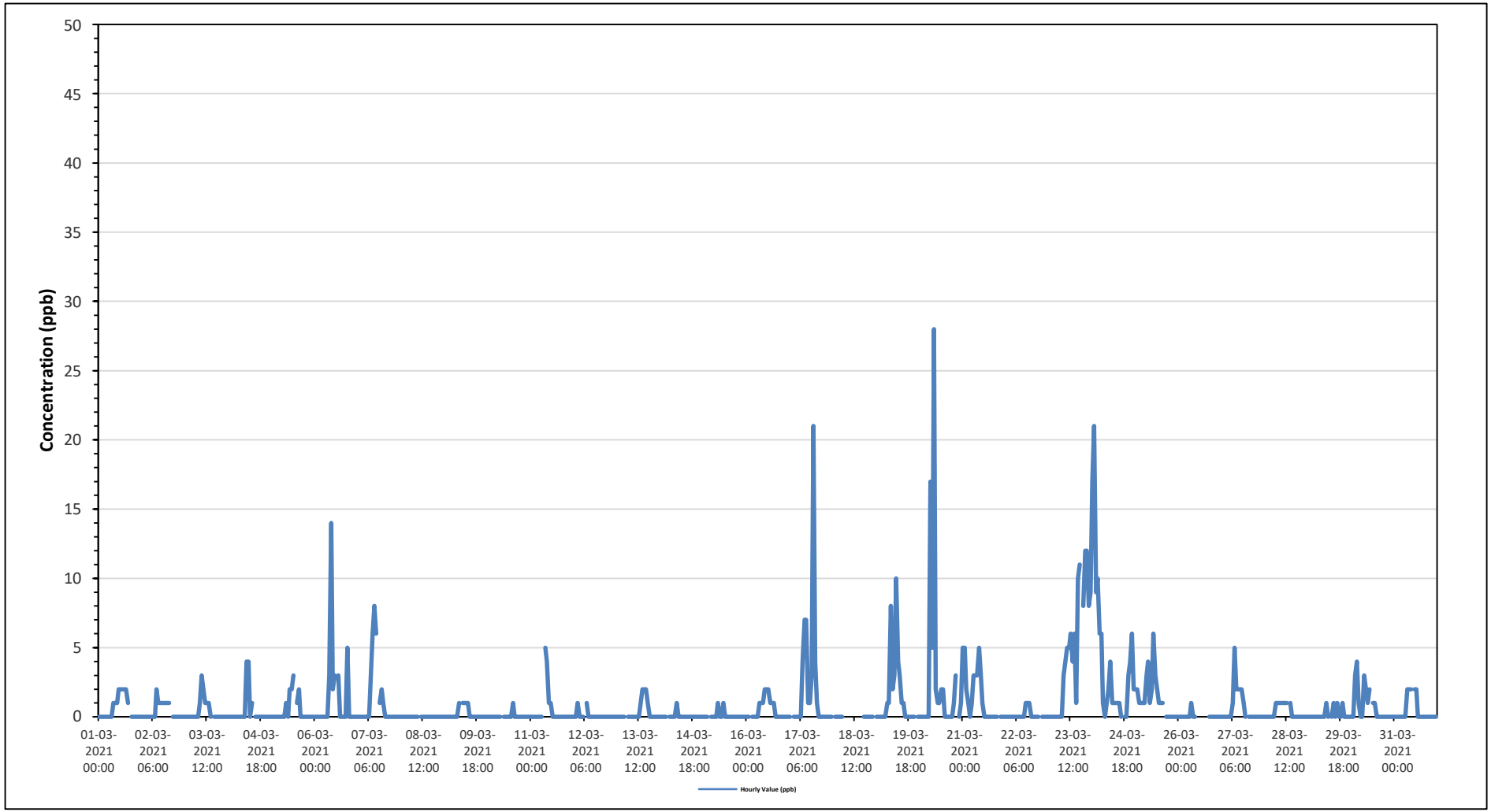
Maximum Hourly Value:	28	ppb	on March 20 at hour 8	Hours in Service:	744
Maximum Daily Value:	4.5	ppb	on March 23	Hours of Data:	695
Minimum Hourly Value:	0	ppb	on March 1 at hour 0	Hours of Missing Data:	11
Minimum Daily Value:	0.0	ppb	on March 8	Hours of Calibration:	38
Monthly Average:	0.9	ppb		Operational Uptime:	98.5

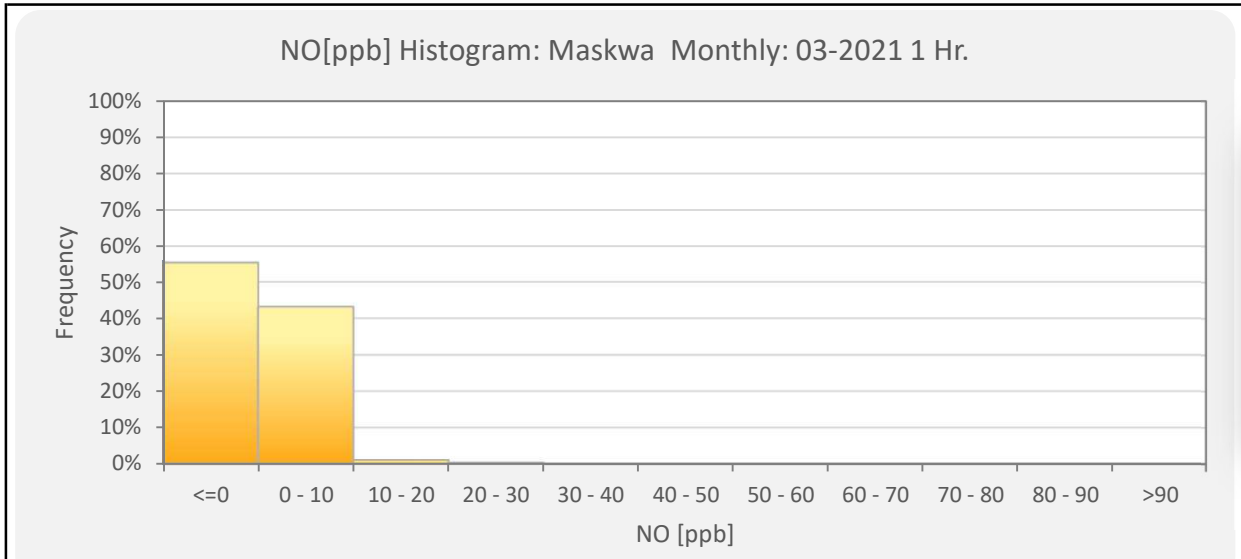
Day	Hourly Period Starting at (MST)																								Daily	Daily	Daily
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Minimum	Maximum	Average
Mar 1	0	0	0	0	0	0	0	0	1	1	1	2	2	2	2	2	1	S	0	0	0	0	0	0	0	2	0.6
Mar 2	0	0	0	0	0	0	0	0	2	1	1	1	1	1	1	1	S	0	0	0	0	0	0	0	0	2	0.4
Mar 3	0	0	0	0	0	0	0	0	1	3	2	1	1	1	0	S	0	0	0	0	0	0	0	0	0	3	0.4
Mar 4	0	0	0	0	0	0	0	0	0	0	4	4	0	1	S	0	0	0	0	0	0	0	0	0	0	4	0.4
Mar 5	0	0	0	0	0	0	0	0	1	0	2	2	3	S	1	2	0	0	0	0	0	0	0	0	0	3	0.5
Mar 6	0	0	0	0	0	0	0	0	3	14	2	3	S	3	0	0	0	0	5	0	0	0	0	0	0	14	1.3
Mar 7	0	0	0	0	0	0	0	3	6	8	6	S	1	2	1	0	0	0	0	0	0	0	0	0	0	8	1.2
Mar 8	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Mar 9	0	0	0	0	0	0	0	0	1	S	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0.2
Mar 10	0	0	0	0	0	0	0	0	S	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0.0
Mar 11	0	0	0	0	0	0	0	S	5	4	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0.5
Mar 12	0	0	1	0	0	0	S	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1
Mar 13	0	0	0	0	0	S	0	0	0	0	0	0	0	1	2	2	2	1	0	0	0	0	0	0	0	2	0.3
Mar 14	0	0	0	0	S	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0
Mar 15	0	0	0	S	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1
Mar 16	0	0	S	0	0	0	0	1	1	1	2	2	2	1	1	1	0	0	0	0	0	0	0	0	0	2	0.5
Mar 17	0	S	0	0	0	0	0	4	7	7	1	1	3	21	4	1	0	0	0	0	0	0	0	0	0	21	2.1
Mar 18	S	0	0	0	0	0	P	P	P	P	P	P	P	P	P	P	P	0	0	0	0	0	0	S	0	0	-
Mar 19	0	0	0	0	0	0	1	1	8	2	3	10	4	3	1	1	0	0	0	0	0	0	S	0	0	10	1.5
Mar 20	0	0	0	0	0	0	17	5	**28**	2	1	1	2	2	0	0	0	0	0	1	3	S	0	1	0	**28**	2.7
Mar 21	5	5	2	1	0	1	3	3	3	5	3	1	0	0	0	0	0	0	0	0	S	0	0	0	0	5	1.4
Mar 22	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	S	0	0	0	0	0	1	0.1
Mar 23	0	0	0	0	0	0	0	0	3	4	5	5	6	4	6	1	10	11	S	8	12	12	8	9	0	12	**4.5**
Mar 24	17	21	9	10	6	6	1	0	1	2	4	1	1	1	1	1	0	S	0	0	3	4	6	2	0	21	4.2
Mar 25	2	2	1	1	1	1	3	4	1	2	6	3	2	1	1	1	S	0	0	0	0	0	0	0	0	6	1.4
Mar 26	0	0	0	0	0	0	0	1	0	0	C	C	C	C	C	C	C	0	0	0	0	0	0	0	0	1	-
Mar 27	0	0	0	0	0	0	1	5	2	2	2	2	1	0	S	0	0	0	0	0	0	0	0	0	0	5	0.7
Mar 28	0	0	0	0	0	0	1	1	1	1	1	1	1	S	1	0	0	0	0	0	0	0	0	0	0	1	0.3
Mar 29	0	0	0	0	0	0	0	0	0	0	1	0	S	0	1	0	1	0	0	1	0	0	0	0	0	1	0.2
Mar 30	0	0	3	4	1	0	0	3	2	1	2	S	1	1	0	0	0	0	0	0	0	0	0	0	0	4	0.8
Mar 31	0	0	0	0	0	0	0	2	2	2	S	2	2	0	0	0	0	0	0	0	0	0	0	0	0	2	0.4
Diurnal Maximum	17	21	9	10	6	6	17	5	28	14	6	10	6	21	6	2	10	11	5	8	12	12	8	9			
Daiurnal Average	0.8	0.9	0.5	0.5	0.3	0.3	0.9	1.2	2.8	2.2	1.9	1.7	1.3	1.7	0.9	0.5	0.5	0.4	0.2	0.3	0.6	0.5	0.5	0.4			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance	P Power Failure
X	InValid Data (Equipment Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)			

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for NO - Maskwa Site

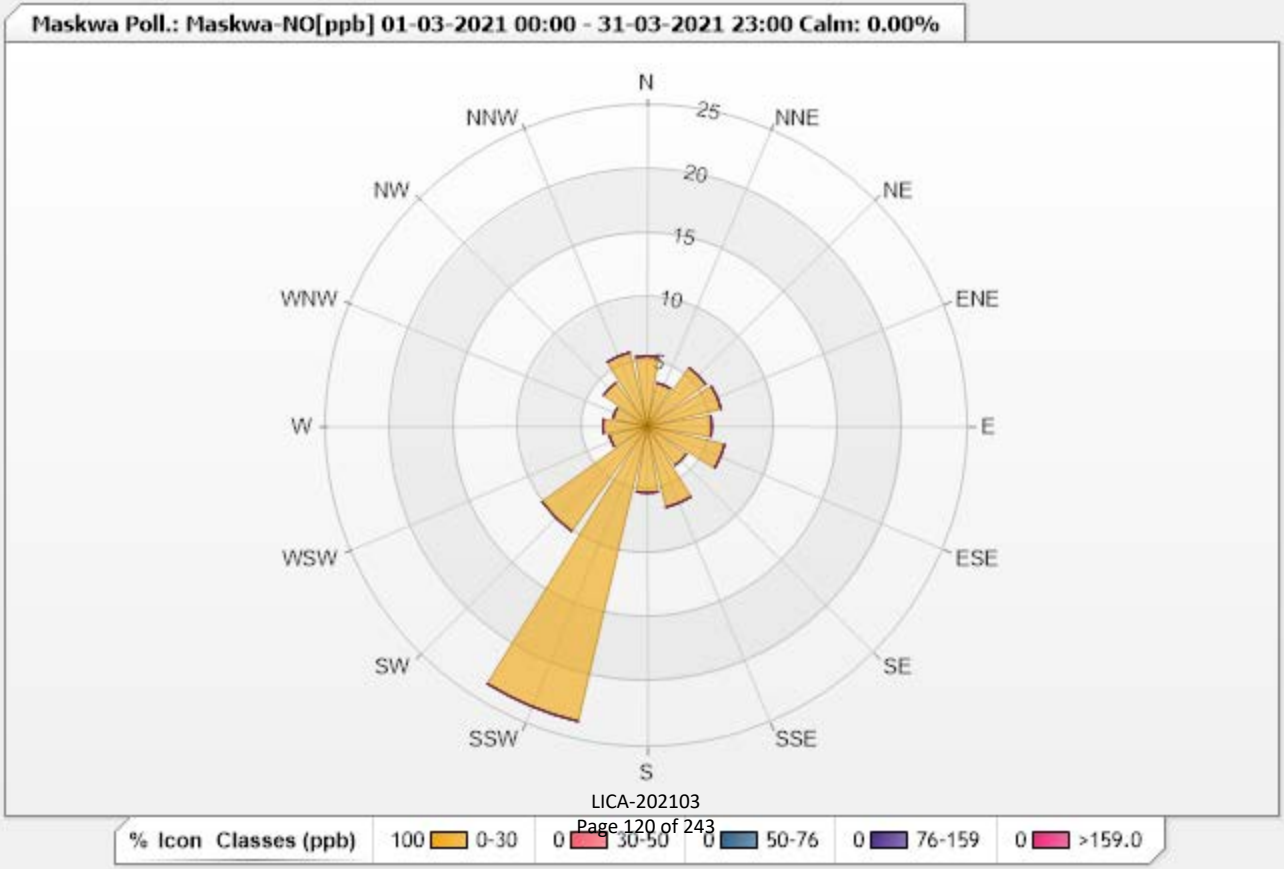




Classes	NO
<=0	55.25%
0 - 10	43.17%
10 - 20	1.15%
20 - 30	0.43%
30 - 40	0.00%
40 - 50	0.00%
50 - 60	0.00%
60 - 70	0.00%
70 - 80	0.00%
80 - 90	0.00%
>90	0.00%

Wind: Maskwa Poll.: Maskwa-NO[ppb] Monthly: 03-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
Calm: 0.00% Valid Data: 93.41% Calm Avg: 0.00 [ppb]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	5.47	0	0	0	0	5.47
NNE	3.45	0	0	0	0	3.45
NE	5.61	0	0	0	0	5.61
ENE	5.9	0	0	0	0	5.9
E	5.04	0	0	0	0	5.04
ESE	6.19	0	0	0	0	6.19
SE	3.74	0	0	0	0	3.74
SSE	6.47	0	0	0	0	6.47
S	5.18	0	0	0	0	5.18
SSW	23.6	0	0	0	0	23.6
SW	10.07	0	0	0	0	10.07
WSW	3.02	0	0	0	0	3.02
W	3.45	0	0	0	0	3.45
WNW	2.73	0	0	0	0	2.73
NW	4.17	0	0	0	0	4.17
NNW	5.9	0	0	0	0	5.9
Summary	100	0	0	0	0	100


Maskwa Poll.: Maskwa-NO[ppb] 01-03-2021 00:00 - 31-03-2021 23:00 Calm: 0.00%
N
NNE
NE
ENE
E
ESE
SE
SSE
S
SSW
SW
WSW
W
WNW
NW
NNW
25
20
15
10
% Icon Classes (ppb)
100 0-30
0 30-50
0 50-76
0 76-159
0 >159.0

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Maskwa Site - March 2021

Summary of Hourly Averages

NITROGEN DIOXIDE (NO_2) in ppb

Alberta Ambient Air Quality Objectives (AAAQO): 1-Hour 159 ppb

Number of 1-Hour Exceedences: 0

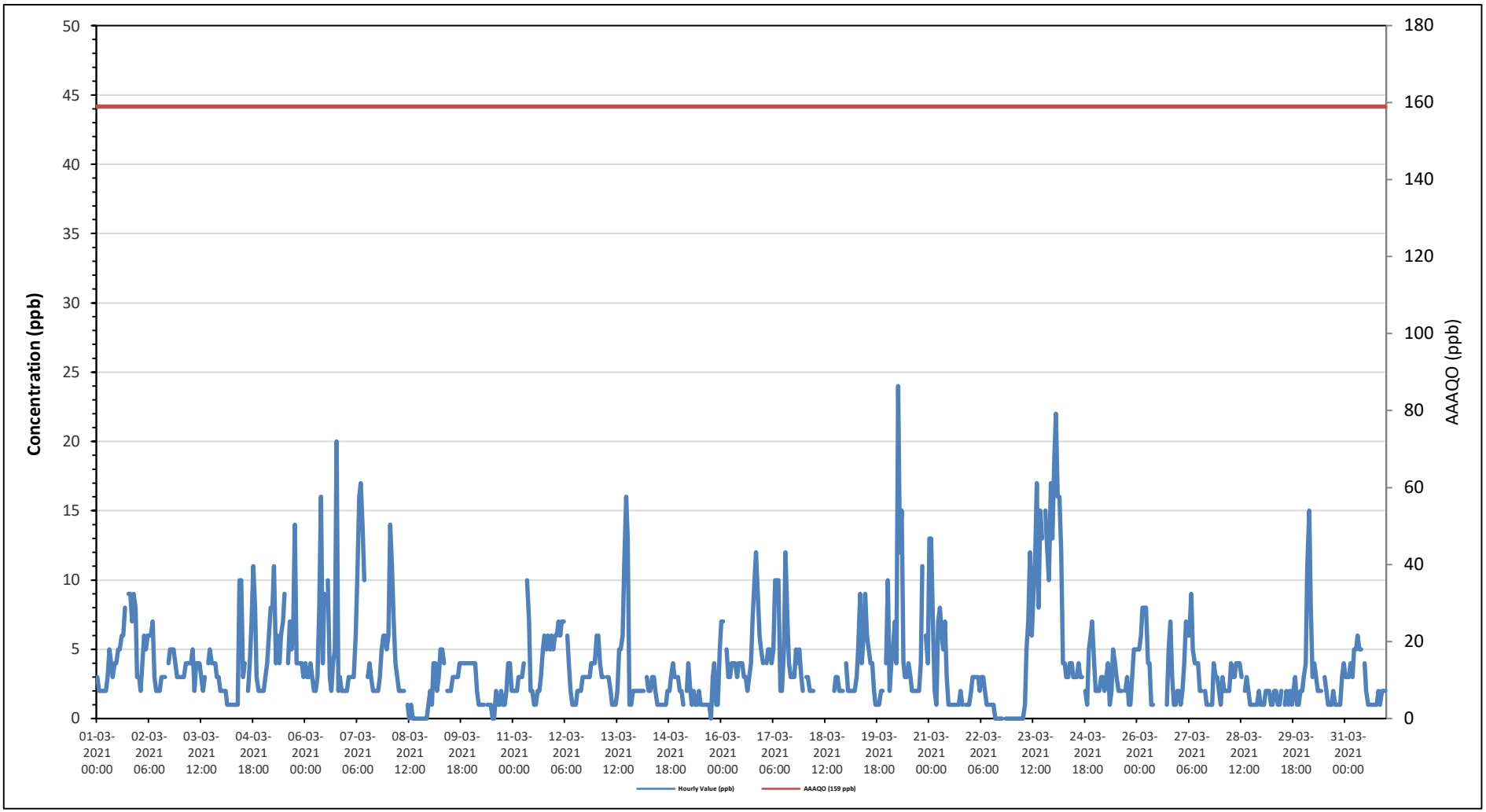
Maximum Hourly Value:	24	ppb	on March 20 at hour 6	Hours in Service:	744
Maximum Daily Value:	7.5	ppb	on March 23	Hours of Data:	695
Minimum Hourly Value:	0	ppb	on March 8 at hour 12	Hours of Missing Data:	11
Minimum Daily Value:	1.3	ppb	on March 22	Hours of Calibration:	38
Monthly Average:	3.8	ppb		Operational Uptime:	98.5

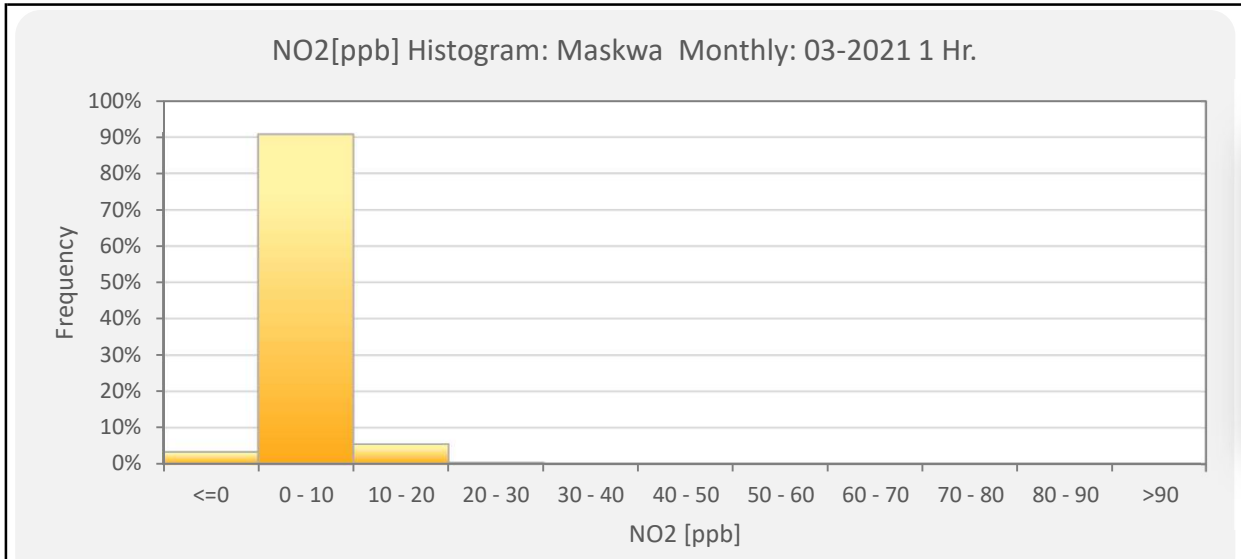
Day	Hourly Period Starting at (MST)																								Daily	Daily	Daily
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Minimum	Maximum	Average
Mar 1	3	2	2	2	2	2	3	5	4	3	4	4	5	5	6	6	8	S	9	9	7	9	8	3	2	9	4.8
Mar 2	3	2	4	6	5	6	6	6	7	3	2	2	2	3	3	3	S	4	5	5	5	4	3	3	2	7	4.0
Mar 3	3	3	3	4	4	4	4	5	2	4	4	4	3	2	3	S	4	5	4	4	4	3	3	2	2	5	3.5
Mar 4	2	2	2	1	1	1	1	1	1	1	10	10	3	4	S	2	4	7	11	8	3	2	2	2	1	11	3.5
Mar 5	2	3	4	6	8	8	11	4	6	4	6	7	9	S	4	7	5	6	14	4	4	4	4	3	2	14	5.8
Mar 6	4	3	3	4	3	2	2	3	8	16	4	9	S	10	3	2	4	5	20	2	3	2	2	2	2	20	5.0
Mar 7	2	3	3	3	3	6	10	16	17	14	10	S	3	4	3	2	2	2	2	3	5	6	6	5	2	17	5.7
Mar 8	6	14	11	7	4	3	2	2	2	2	S	1	0	1	0	0	0	0	0	0	0	0	0	1	0	14	2.4
Mar 9	2	1	4	4	2	3	5	5	4	S	2	2	2	3	3	3	3	4	4	4	4	4	4	4	1	5	3.3
Mar 10	4	4	4	2	1	1	1	1	S	1	1	1	0	0	2	1	1	2	1	1	2	4	4	2	0	4	1.8
Mar 11	2	2	2	3	3	3	4	S	10	7	2	2	1	1	2	2	3	5	6	5	6	5	6	5	1	10	3.8
Mar 12	6	6	7	6	7	7	S	6	4	2	1	1	1	2	2	2	3	3	3	3	3	4	4	4	1	7	3.8
Mar 13	6	6	4	3	3	S	3	3	2	1	1	1	2	5	5	6	11	16	13	1	1	2	2	2	1	16	4.3
Mar 14	2	2	2	2	S	3	2	2	3	3	2	1	1	1	1	1	1	2	2	3	4	3	3	3	1	4	2.1
Mar 15	2	2	1	S	2	4	2	1	2	1	1	2	1	1	1	1	1	1	0	3	4	1	1	5	0	5	1.7
Mar 16	7	7	S	5	3	3	4	4	4	3	4	4	4	3	3	2	3	4	7	10	12	9	6	5	2	12	5.0
Mar 17	4	S	4	5	5	4	5	10	10	10	2	2	5	12	7	4	3	3	3	5	4	5	3	2	2	12	5.1
Mar 18	S	3	3	2	2	2	P	P	P	P	P	P	P	P	P	P	P	2	3	3	2	2	2	S	2	3	-
Mar 19	4	2	2	2	2	2	3	5	9	4	6	9	6	5	4	4	2	1	1	1	2	2	S	4	1	9	3.6
Mar 20	10	2	4	5	7	4	**24**	12	15	4	3	3	4	3	2	2	2	2	2	4	11	S	6	4	2	**24**	5.9
Mar 21	13	13	7	2	1	7	8	6	5	7	3	1	1	1	1	1	1	1	2	1	S	1	1	1	1	13	3.7
Mar 22	2	3	3	3	3	2	3	3	2	1	1	1	1	1	0	0	0	0	0	S	0	0	0	0	0	3	1.3
Mar 23	0	0	0	0	0	0	0	1	5	7	12	6	9	12	17	8	15	13	S	15	12	10	17	13	0	17	**7.5**
Mar 24	19	22	16	16	12	4	4	3	3	4	4	3	3	3	4	3	3	S	2	1	5	6	7	4	1	22	6.6
Mar 25	2	2	2	3	3	2	3	4	1	2	5	4	3	2	2	2	S	2	3	1	1	3	5	5	1	5	2.7
Mar 26	5	5	6	8	8	8	4	4	1	1	C	C	C	C	C	C	C	1	5	7	3	1	1	2	1	8	-
Mar 27	2	1	2	4	7	6	6	9	5	4	4	4	2	2	S	2	1	1	1	1	4	3	3	2	1	9	3.3
Mar 28	1	3	2	2	2	2	4	3	3	4	4	4	3	S	2	3	2	1	1	1	1	1	2	1	1	4	2.3
Mar 29	1	1	2	2	2	1	1	2	2	1	1	2	S	1	2	1	2	1	2	3	1	1	2	2	1	3	1.6
Mar 30	3	4	11	15	8	3	4	3	2	2	2	S	3	2	1	1	1	2	1	1	1	1	3	4	1	15	3.4
Mar 31	3	3	3	4	3	5	5	6	5	5	S	4	2	1	1	1	1	1	1	2	1	2	2	2	1	6	2.7
Diurnal Maximum	19	22	16	16	12	8	24	16	17	16	12	10	9	12	17	8	15	16	20	15	12	10	17	13			
Daiurnal Average	4.2	4.2	4.1	4.4	3.9	3.6	4.6	4.7	5.0	4.2	3.7	3.5	2.9	3.3	3.1	2.6	3.2	3.3	4.3	3.7	3.8	3.3	3.7	3.2			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance	P Power Failure
X	InValid Data (Equipment Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)			

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for NO2 - Maskwa Site

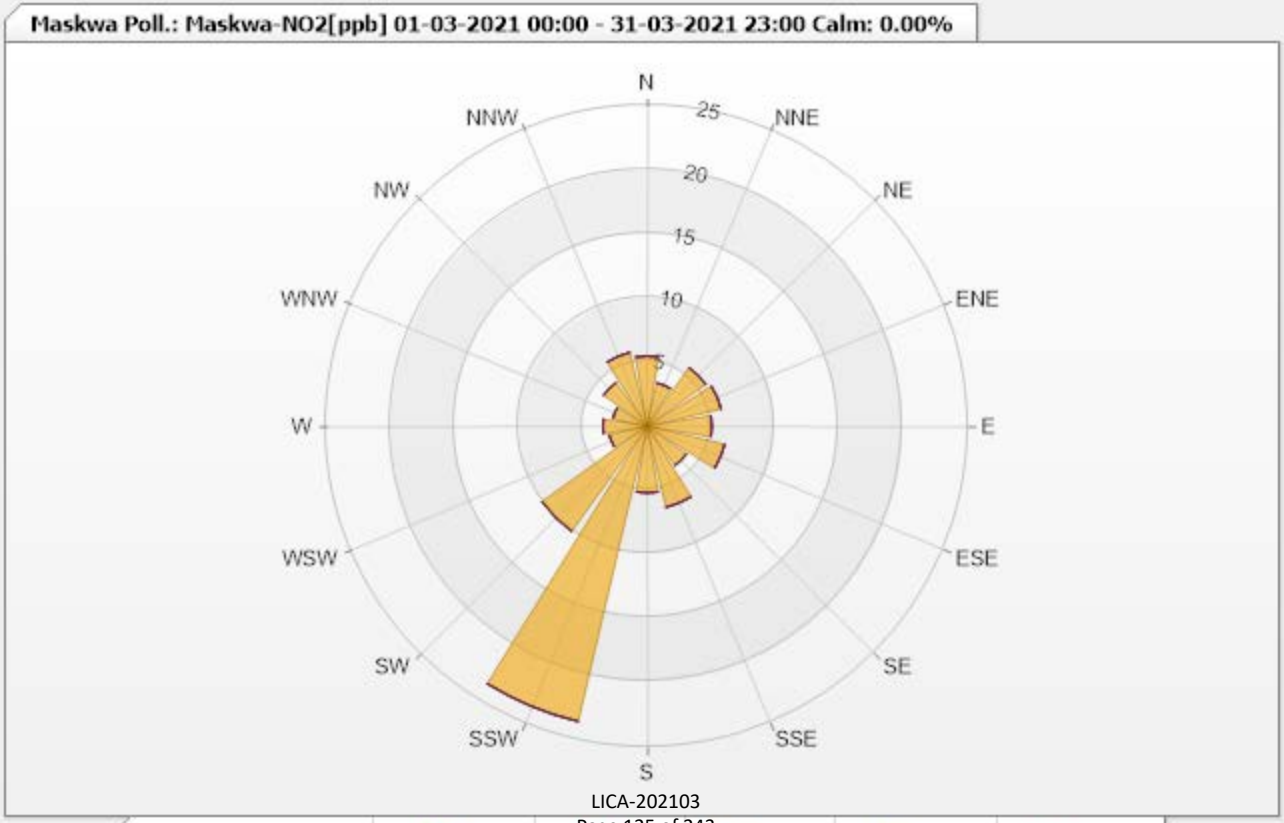




Classes	NO2
<=0	3.31%
0 - 10	90.79%
10 - 20	5.47%
20 - 30	0.43%
30 - 40	0.00%
40 - 50	0.00%
50 - 60	0.00%
60 - 70	0.00%
70 - 80	0.00%
80 - 90	0.00%
>90	0.00%

Wind: Maskwa Poll.: Maskwa-NO2[ppb] Monthly: 03-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
Calm: 0.00% Valid Data: 93.41% Calm Avg: 0.00 [ppb]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	5.47	0	0	0	0	5.47
NNE	3.45	0	0	0	0	3.45
NE	5.61	0	0	0	0	5.61
ENE	5.9	0	0	0	0	5.9
E	5.04	0	0	0	0	5.04
ESE	6.19	0	0	0	0	6.19
SE	3.74	0	0	0	0	3.74
SSE	6.47	0	0	0	0	6.47
S	5.18	0	0	0	0	5.18
SSW	23.6	0	0	0	0	23.6
SW	10.07	0	0	0	0	10.07
WSW	3.02	0	0	0	0	3.02
W	3.45	0	0	0	0	3.45
WNW	2.73	0	0	0	0	2.73
NW	4.17	0	0	0	0	4.17
NNW	5.9	0	0	0	0	5.9
Summary	100	0	0	0	0	100


Maskwa Poll.: Maskwa-NO2[ppb] 01-03-2021 00:00 - 31-03-2021 23:00 Calm: 0.00%
N
NNE
NE
ENE
E
ESE
SE
SSE
S
SSW
SW
WSW
W
WNW
NW
NNW
25
20
15
10
% Icon Classes (ppb)
100 0-30
0 30-50
0 50-76
0 76-159
0 >159.0

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Maskwa Site - March 2021

Summary of Hourly Averages

OZONE (O_3) in ppb

Alberta Ambient Air Quality Objectives (AAAQO): 1-Hour 76 ppb

Number of 1-Hour Exceedences: 1

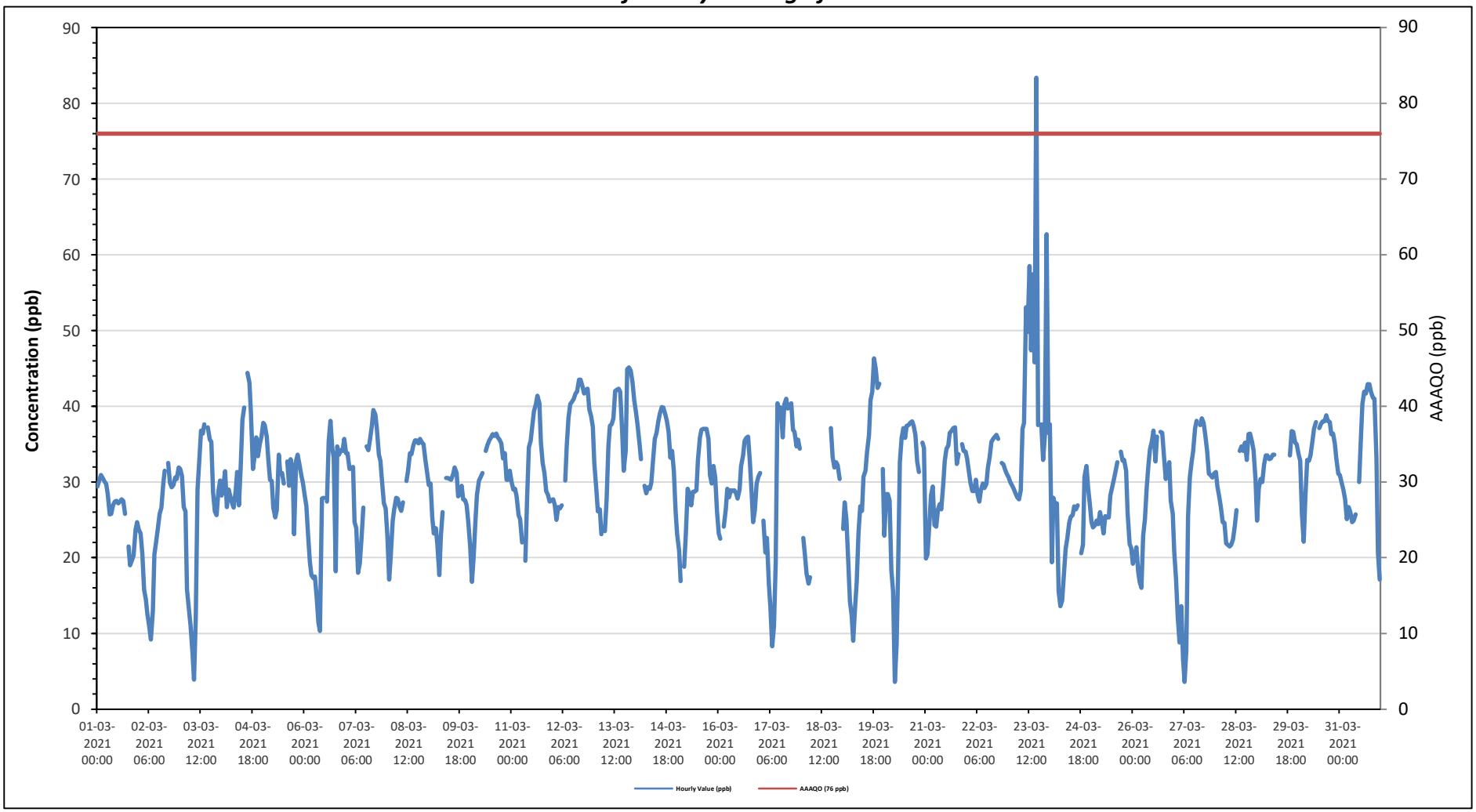
Maximum Hourly Value:	83.4	ppb	on March 23 at hour 16	Hours in Service:	744
Maximum Daily Value:	41.1	ppb	on March 23	Hours of Data:	694
Minimum Hourly Value:	3.6	ppb	on March 20 at hour 6	Hours of Missing Data:	11
Minimum Daily Value:	23.4	ppb	on March 2	Hours of Calibration:	39
Monthly Average:	30.2	ppb		Operational Uptime:	98.5

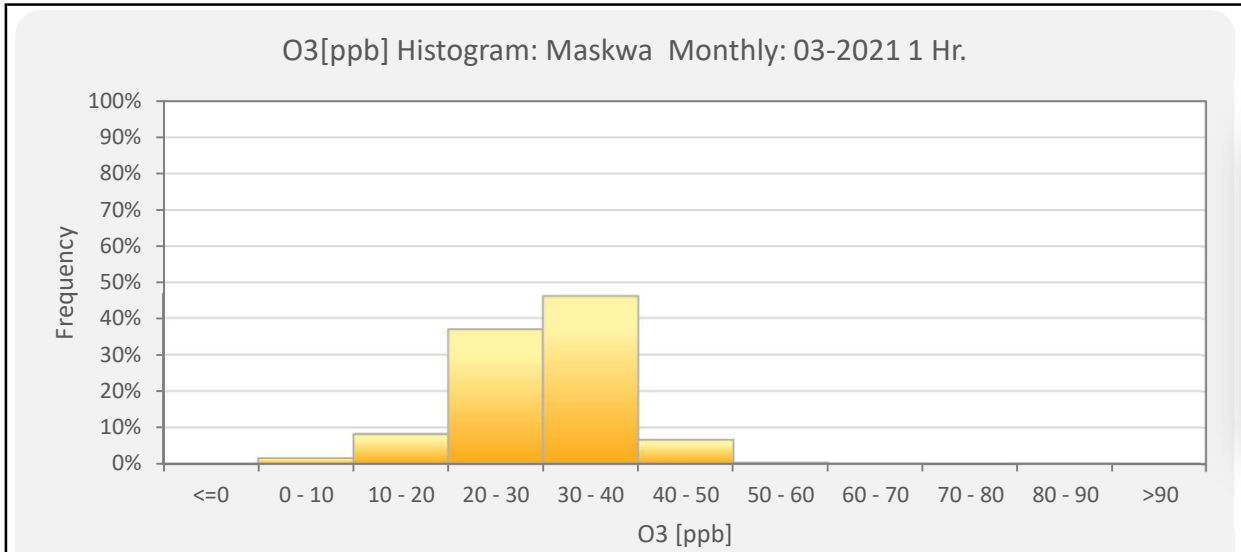
Day	Hourly Period Starting at (MST)																						Daily	Daily	Daily
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Minimum	Maximum	Average
Mar 1	29.4	30.2	30.9	30.5	30.1	29.7	28.4	25.7	25.8	26.9	27.4	27.5	27.2	27.4	27.7	27.5	25.8	S	21.5	19	19.7	20.3	23.7	24.7	19.0	30.9	26.4
Mar 2	23.7	23.2	20.5	15.8	14.5	12.6	10.8	9.2	13	20.4	22.1	23.9	25.8	26.6	29.6	31.5	S	32.5	29.9	29.3	29.6	30.6	30.4	31.9	9.2	32.5	23.4
Mar 3	31.7	30.8	26.7	26.1	15.8	13.1	11.1	7.4	3.9	12.1	29	32.8	36.8	36.4	37.6	S	37.2	35.6	35.3	28.6	26.1	25.6	28.7	30.2	3.9	37.6	26.0
Mar 4	28.2	29.5	31.4	26.7	29	28.2	27.2	26.6	28.8	31.3	26.9	31.9	38.2	39.8	S	44.4	43.1	39	31.7	33.3	35.9	33.4	35	36	26.6	44.4	32.8
Mar 5	37.8	37.5	36	33.1	30.3	30.1	26.6	25.3	26.3	33.6	31.1	31.2	29.8	S	32.7	29.5	33	32	23.1	32.8	33.6	32.4	31	29.9	23.1	37.8	31.2
Mar 6	28.3	26.8	23.4	19.4	17.7	17.3	17.5	14.8	11.4	10.3	27.8	27.9	S	27.4	35.4	38.1	34.5	33.2	18.2	34.7	33.6	34.2	34.1	35.7	10.3	38.1	26.2
Mar 7	33.8	33.8	31.7	31.8	32	24.7	23.9	18	19.3	22.7	26.6	S	34.7	34.2	35.7	37.4	39.5	38.9	37	33.6	32.8	29.9	27.2	26.5	18.0	39.5	30.7
Mar 8	22.8	17.1	20	24.8	26.4	27.9	27.8	26.8	26.2	27.3	S	30.1	31.4	33.8	33.7	34.8	35.5	35.5	35.1	35.7	35.2	35	33	31.3	17.1	35.7	29.9
Mar 9	29.6	29.8	25.2	23.2	23.9	21.8	17.7	22.8	26	S	30.5	30.5	30.4	30.3	31	31.9	31.2	28.1	28.4	29.5	27.7	27.6	26.9	24.5	17.7	31.9	27.3
Mar 10	21.5	16.8	20.2	24.9	28.3	30.2	30.6	31.2	S	34.1	34.9	35.5	35.8	36.3	36.1	36.4	35.9	35.6	35.1	33.1	33.8	30.3	30.3	31.5	16.8	36.4	31.2
Mar 11	30	29	29.1	28.1	25.6	25.1	22	S	19.6	28	34.6	35.4	37.5	39.3	40.3	41.4	40.4	35.2	32.5	31.2	28.8	28.3	27.4	27.6	19.6	41.4	31.1
Mar 12	27.7	27	25	26.7	26.5	26.9	S	30.2	34.8	38.5	40.3	40.6	41	41.7	41.9	43.5	43.5	42.6	41.7	42.2	42.3	39.6	38.7	37.3	25.0	43.5	36.5
Mar 13	32.4	29	26.1	26.4	23.1	S	23.5	27.7	34.7	37.4	37.6	38.4	42	42.2	42.3	41.9	36.6	31.5	34.1	44.9	45.1	44.7	43.2	40.8	23.1	45.1	35.9
Mar 14	39.2	37.6	35.1	33	S	29.5	28.5	29.3	29.1	29.9	33.3	35.7	36.5	38	39	39.9	39.8	38.9	38.1	36.6	33.2	34.1	31.4	26.1	26.1	39.9	34.4
Mar 15	23.1	20.9	16.9	S	18.8	23.3	29.1	28.4	26.9	28.7	28.7	28.9	32.9	35.9	36.9	37	37	37	35.7	30.9	29.8	32.1	30.6	26.1	16.9	37.0	29.4
Mar 16	23.2	22.5	S	24.1	26.4	29.1	28	28.9	28.8	28.9	28.5	27.8	29	32.1	33.5	35.4	35.8	36	32.7	28.6	24.7	26.3	29.8	30.7	22.5	36.0	29.2
Mar 17	31.2	S	24.9	20.7	22.6	16.4	13.4	8.3	10.9	19.3	40.4	39.5	39.8	35.9	40.2	41	39.7	39.9	40.4	36.9	36.6	34.7	35.6	34.4	8.3	41.0	30.6
Mar 18	S	22.6	20.2	17.9	16.6	17.4	P	P	P	P	P	P	P	P	P	P	P	37.1	33.3	31.9	32.6	32.2	30.4	S	16.6	37.1	-
Mar 19	23.8	27.3	25	19.7	14.2	12.3	9	13.2	16.8	23.2	26.8	26.2	30.7	31.5	33.9	36.2	40.8	41.9	46.3	44.9	42.4	43	S	31.7	9.0	46.3	28.7
Mar 20	22.9	28.4	28.4	27.6	18.4	15.5	3.6	8.5	18.4	32.6	35.8	37.1	35.8	37.4	37.5	37.8	38	37.4	36.2	32.7	31.3	S	35.2	34.5	**3.6**	38.0	29.2
Mar 21	19.9	20.4	24.6	28.2	29.4	24.3	24.1	26.4	27.1	26.4	29.7	32.8	34.4	34.8	36.5	36.8	37.1	37.2	32.4	33.7	S	35	34.1	34	19.9	37.2	30.4
Mar 22	33.1	31.2	29.8	28.8	28.8	30.3	28.3	27.4	28.9	29.8	29.2	29.7	31.9	33.3	35.3	35.7	36	36.2	35.7	S	32.5	32.3	31.6	31.1	27.4	36.2	31.6
Mar 23	30.6	30	29.5	29.1	28.5	28	27.7	28.9	37	37.8	53.1	49.8	58.5	47.4	57.4	45.8	**83.4**	37.5	S	37.6	32.9	36.1	62.7	36.5	27.7	**83.4**	**41.1**
Mar 24	37.6	19.4	27.9	26.8	27.2	15.5	13.6	14.3	17.8	21.2	22.4	24.6	25.4	25.6	26.8	26.4	26.9	S	20.6	21.7	30.7	32.1	29.4	27.2	13.6	37.6	24.4
Mar 25	24.7	24	24.3	24.9	24.4	26	24.8	23.2	25.5	25.3	25.3	28.2	29.4	30.3	31.4	32.6	S	34	32.8	32.9	31.5	25.9	21.8	21.3	21.3	34.0	27.2
Mar 26	19.2	20.3	21.4	18.2	16.8	16	22.9	25.1	29.2	32.2	34.3	35.4	36.8	32.7	36	S	36.6	36.5	33.4	30.4	31.3	32.6	27.5	25.8	16.0	36.8	28.3
Mar 27	20.7	17.2	12.1	8.8	13.6	6.6	3.6	7.7	25.5	30.6	32.6	34	37.1	38.1	S	37.5	38.4	37.8	36.1	34.1	31.1	30.9	30.6	31.1	**3.6**	38.4	25.9
Mar 28	31.3	29.4	28.1	26.6	24.7	24.6	21.9	21.7	21.5	21.7	22.4	24.1	26.3	S	34.1	34.7	34.1	35.2	32.9	36.3	36.4	35.3	34.2	30.3	21.5	36.4	29.0
Mar 29	24.9	29.2	30.4	30	32.3	33.5	33.5	33	33.1	33.6	33.6	C	C	C	C	C	C	C	C	33.5	36.7	36.6	35.2	35	24.9	36.7	-
Mar 30	33.6	32.8	25.7	22.1	28.3	32.9	32.8	33.5	35.4	37	37.9	S	37.1	37.7	38	38	38.8	38.1	37.9	36.3	36.4	35.1	33.1	31.1	22.1	38.8	34.3
Mar 31	30.9	29.8	29	27.7	25.1	26.7	26	24.7	24.9	25.7	S	30	35	40.3	41.9	41.7	42.9	42.9	41.9	41.1	41	33.2	20.7	17.1	17.1	42.9	32.2
Diurnal Maximum	39	38	36	33	32	34	34	34	37	39	53	50	59	47	57	46	83	43	46	45	45	45	63	41			
Daiurnal Average	28.2	26.8	26.0	25.1	24.0	23.2	22.0	22.4	24.4	27.8	31.5	32.2	34.5	35.1	36.4	36.8	38.6	36.5	33.4	33.6	33.2	32.6	32.1	30.4			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance	P Power Failure
X	InValid Data (Equipment Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)			

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for O3 - Maskwa Site

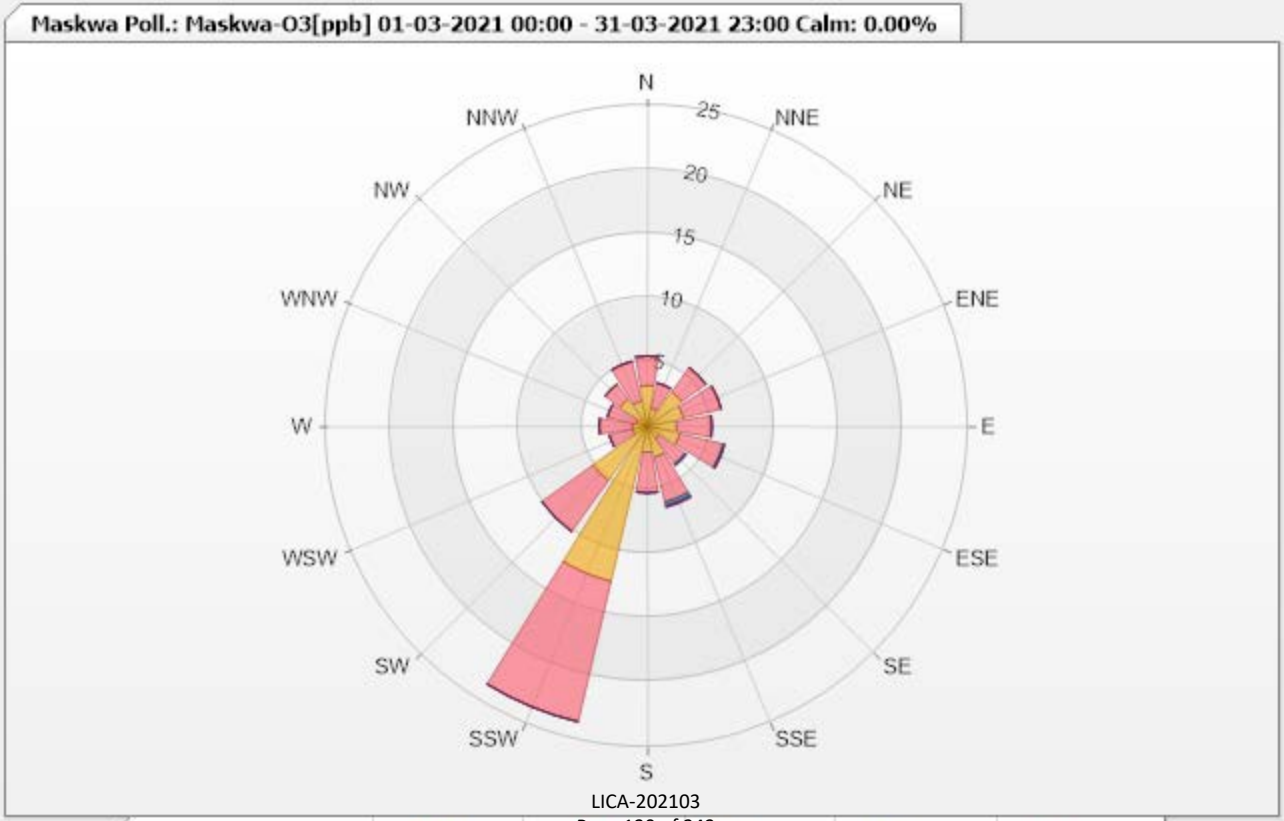




Classes	O3
<=0	0.00%
0 - 10	1.59%
10 - 20	8.21%
20 - 30	36.89%
30 - 40	45.97%
40 - 50	6.63%
50 - 60	0.43%
60 - 70	0.14%
70 - 80	0.00%
80 - 90	0.14%
>90	0.00%

Wind: Maskwa Poll.: Maskwa-O3[ppb] Monthly: 03-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
Calm: 0.00% Valid Data: 93.28% Calm Avg: 0.00 [ppb]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	3.17	2.31	0	0	0	5.48
NNE	1.44	2.02	0	0	0	3.46
NE	3.31	2.31	0	0	0	5.62
ENE	2.88	3.03	0	0	0	5.91
E	2.31	2.74	0	0	0	5.05
ESE	2.59	3.46	0.14	0	0	6.19
SE	1.15	2.45	0.14	0	0	3.74
SSE	2.45	3.6	0.29	0.14	0	6.48
S	2.02	3.17	0	0	0	5.19
SSW	12.39	11.24	0	0	0	23.63
SW	5.19	4.9	0	0	0	10.09
WSW	1.15	1.87	0	0	0	3.02
W	1.15	2.59	0	0	0	3.74
WNW	0.86	2.31	0	0	0	3.17
NW	2.59	1.44	0	0	0	4.03
NNW	2.02	3.17	0	0	0	5.19
Summary	46.67	52.61	0.57	0.14	0	100


Maskwa Poll.: Maskwa-O3[ppb] 01-03-2021 00:00 - 31-03-2021 23:00 Calm: 0.00%
N
NNE
NE
ENE
E
ESE
SE
SSE
S
SSW
SW
WSW
W
WNW
NW
NNW
25
20
15
10
% Icon Classes (ppb)
47 0-30
53 30-50
1 50-76
0 76-159
0 >159.0

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Maskwa Site - March 2021

Summary of Hourly Averages

TOTAL HYDROCARBONS (THC) in ppm

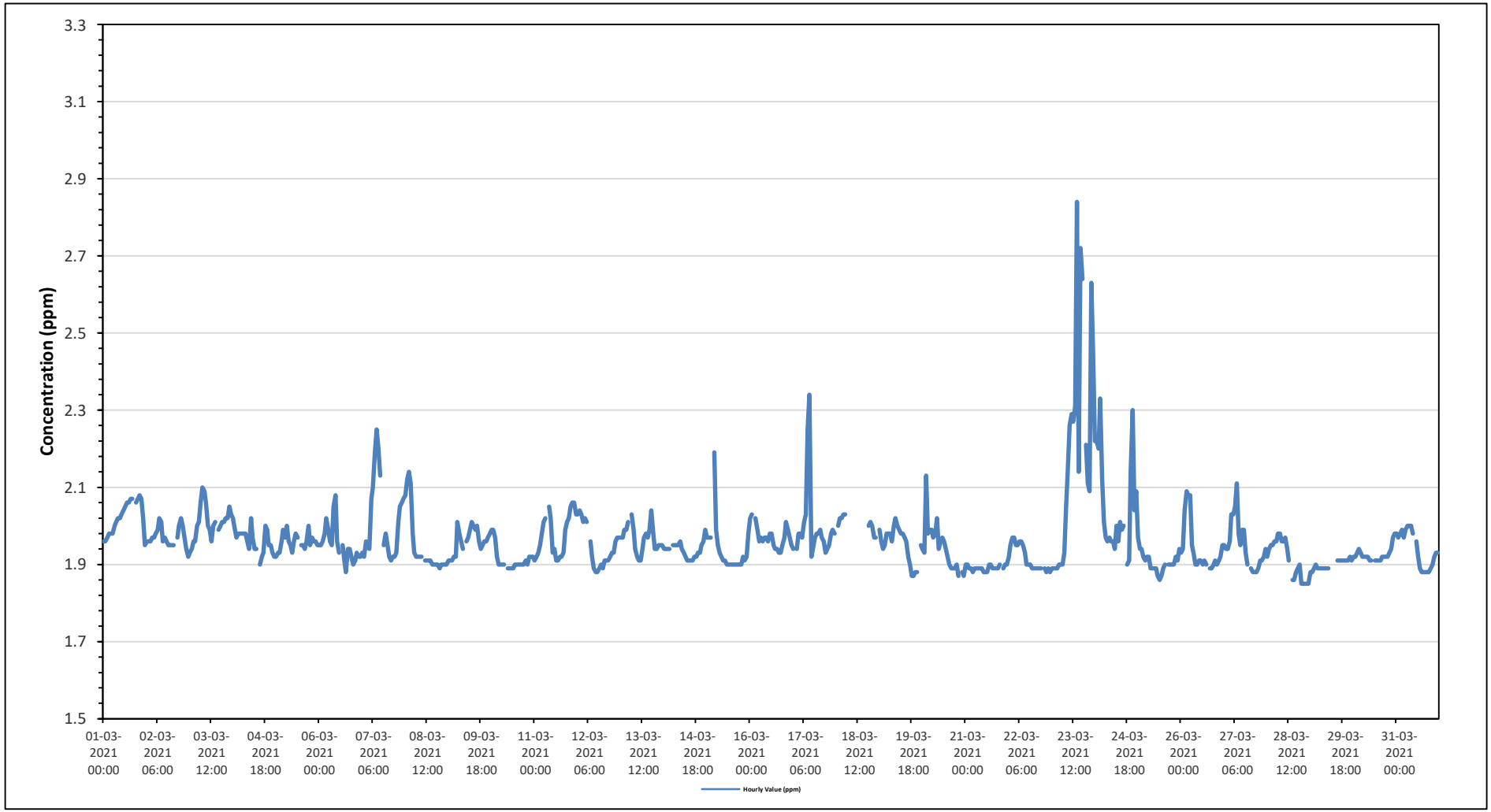
Maximum Hourly Value:	2.84	ppm	on March 23 at hour 14	Hours in Service:	744
Maximum Daily Value:	2.19	ppm	on March 23	Hours of Data:	697
Minimum Hourly Value:	1.85	ppm	on March 28 at hour 19	Hours of Missing Data:	12
Minimum Daily Value:	1.89	ppm	on March 21	Hours of Calibration:	35
Monthly Average:	1.96	ppm		Operational Uptime:	98.4

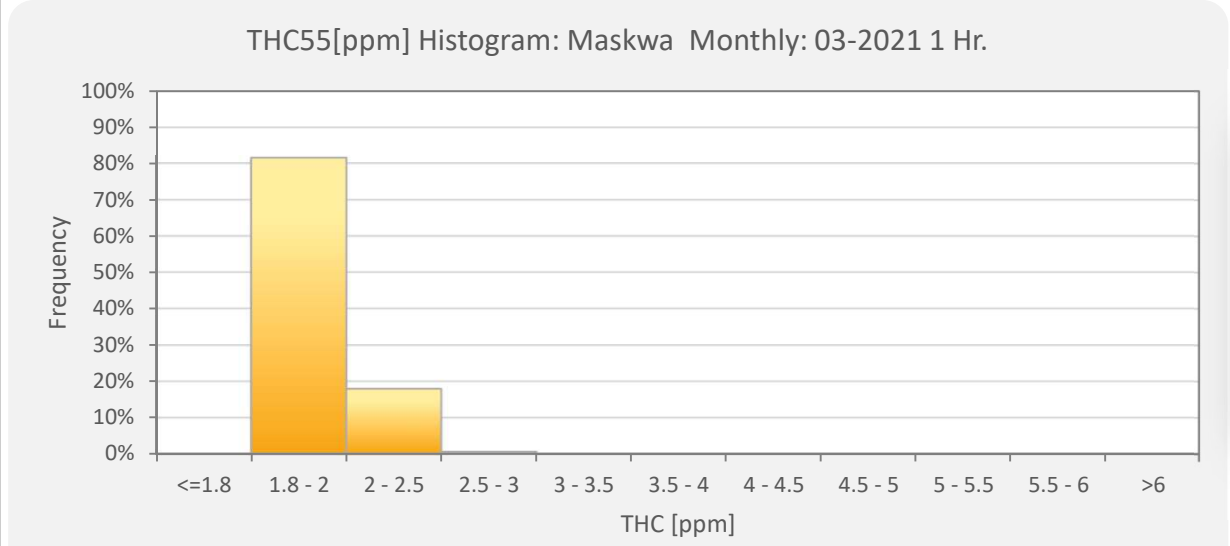
Day	Hourly Period Starting at (MST)																								Daily	Daily	Daily
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Minimum	Maximum	Average
Mar 1	1.96	1.96	1.97	1.98	1.98	1.98	2.00	2.01	2.02	2.02	2.03	2.04	2.05	2.06	2.06	2.07	2.07	S	2.06	2.07	2.08	2.07	2.02	1.95	1.95	2.08	2.02
Mar 2	1.96	1.96	1.96	1.97	1.97	1.98	1.99	2.02	2.01	1.96	1.97	1.96	1.95	1.95	1.95	1.95	S	1.97	2.00	2.02	2.00	1.97	1.94	1.92	1.92	2.02	1.97
Mar 3	1.93	1.94	1.96	1.96	2.00	2.01	2.06	2.10	2.09	2.06	2.00	1.99	1.96	2.00	2.01	S	1.99	2.00	2.01	2.01	2.02	2.02	2.05	2.03	1.93	2.10	2.01
Mar 4	2.02	1.99	1.97	1.98	1.98	1.98	1.98	1.98	1.96	1.94	2.02	1.97	1.94	1.94	S	1.90	1.92	1.93	2.00	1.99	1.95	1.95	1.93	1.92	1.90	2.02	1.96
Mar 5	1.92	1.93	1.93	1.96	1.99	1.97	2.00	1.96	1.95	1.93	1.96	1.98	1.97	S	1.95	1.95	1.94	1.96	2.00	1.95	1.97	1.96	1.96	1.95	1.92	2.00	1.96
Mar 6	1.95	1.95	1.96	1.98	2.02	1.99	1.96	1.95	2.05	2.08	1.96	1.93	S	1.95	1.91	1.88	1.94	1.94	1.92	1.90	1.91	1.93	1.92	1.92	1.88	2.08	1.95
Mar 7	1.93	1.92	1.96	1.95	1.94	2.07	2.10	2.19	2.25	2.20	2.13	S	1.95	1.98	1.95	1.92	1.91	1.92	1.92	1.93	2.01	2.05	2.06	2.07	1.91	2.25	2.01
Mar 8	2.08	2.12	2.14	2.11	1.98	1.93	1.92	1.92	1.92	1.92	S	1.91	1.91	1.91	1.91	1.90	1.90	1.90	1.90	1.89	1.90	1.90	1.90	1.90	1.89	2.14	1.95
Mar 9	1.91	1.91	1.91	1.92	1.92	2.01	1.98	1.96	1.94	S	1.96	1.97	1.99	2.01	2.00	1.99	2.00	1.96	1.94	1.95	1.96	1.96	1.97	1.98	1.91	2.01	1.96
Mar 10	1.99	1.99	1.97	1.92	1.90	1.90	1.90	1.90	S	1.89	1.89	1.89	1.89	1.90	1.90	1.90	1.90	1.90	1.90	1.91	1.90	1.92	1.92	1.92	1.89	1.99	1.91
Mar 11	1.91	1.92	1.93	1.95	1.98	2.01	2.02	S	2.05	2.02	1.93	1.94	1.91	1.91	1.92	1.92	1.93	1.99	2.01	2.02	2.05	2.06	2.06	2.03	1.91	2.06	1.98
Mar 12	2.03	2.04	2.03	2.01	2.02	2.01	S	1.96	1.92	1.89	1.88	1.88	1.89	1.90	1.89	1.91	1.91	1.91	1.92	1.93	1.93	1.96	1.97	1.97	1.88	2.04	1.95
Mar 13	1.97	1.97	1.99	1.99	2.01	S	2.03	1.99	1.94	1.92	1.91	1.91	1.94	1.97	1.98	1.97	1.99	2.04	1.98	1.94	1.94	1.95	1.95	1.95	1.91	2.04	1.97
Mar 14	1.94	1.94	1.94	1.94	S	1.95	1.95	1.95	1.95	1.96	1.94	1.93	1.92	1.91	1.91	1.91	1.91	1.92	1.92	1.93	1.93	1.95	1.96	1.99	1.91	1.99	1.94
Mar 15	1.97	1.97	1.97	S	2.19	1.99	1.95	1.93	1.92	1.91	1.91	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.92	1.91	1.92	1.98	1.90	2.19	1.94
Mar 16	2.02	2.03	S	2.02	1.99	1.96	1.97	1.96	1.97	1.97	1.96	1.98	1.98	1.95	1.94	1.94	1.93	1.93	1.95	1.97	2.01	1.99	1.97	1.95	1.93	2.03	1.97
Mar 17	1.94	S	1.94	1.98	1.98	1.97	2.01	2.03	2.25	2.34	1.92	1.94	1.97	1.98	1.98	1.99	1.97	1.96	1.93	1.94	1.95	1.98	1.99	1.98	1.92	2.34	2.00
Mar 18	S	2.00	2.02	2.02	2.03	2.03	P	P	P	P	P	P	P	P	P	P	P	X	2.00	2.01	2.00	1.97	1.97	S	1.97	2.03	-
Mar 19	1.99	1.96	1.94	1.95	1.98	1.98	1.98	1.96	2.00	2.02	2.00	1.99	1.98	1.98	1.97	1.96	1.92	1.90	1.87	1.87	1.88	1.88	S	1.95	1.87	2.02	1.95
Mar 20	1.94	1.93	2.13	1.98	1.99	1.99	1.97	1.98	2.02	1.94	1.96	1.97	1.96	1.94	1.92	1.90	1.89	1.89	1.89	1.90	1.87	S	1.88	1.87	1.87	2.13	1.94
Mar 21	1.90	1.90	1.89	1.89	1.88	1.89	1.89	1.89	1.89	1.89	1.88	1.88	1.88	1.90	1.90	1.89	1.89	1.89	1.89	1.90	S	1.89	1.90	1.90	1.88	1.90	1.89
Mar 22	1.92	1.95	1.97	1.97	1.95	1.95	1.96	1.96	1.95	1.93	1.90	1.90	1.90	1.89	1.89	1.89	1.89	1.89	1.89	S	1.89	1.88	1.89	1.88	1.88	1.97	1.92
Mar 23	1.89	1.89	1.89	1.89	1.90	1.90	1.90	1.93	2.05	2.15	2.26	2.29	2.27	2.31	**2.84**	2.14	2.72	2.64	S	2.21	2.11	2.09	2.63	2.45	1.89	**2.84**	**2.19**
Mar 24	2.22	2.22	2.20	2.33	2.12	2.01	1.97	1.96	1.97	1.96	1.96	1.94	2.00	1.96	2.01	1.99	2.00	S	1.90	1.91	2.14	2.30	2.04	2.09	1.90	2.33	2.05
Mar 25	1.97	1.94	1.94	1.92	1.91	1.92	1.92	1.89	1.89	1.89	1.89	1.87	1.86	1.87	1.89	1.90	S	1.90	1.90	1.90	1.90	1.92	1.91	1.94	1.86	1.97	1.91
Mar 26	1.93	1.94	2.04	2.09	2.08	2.08	1.95	1.93	1.90	1.90	1.91	1.91	1.90	1.91	1.90	S	1.89	1.89	1.90	1.91	1.90	1.91	1.92	1.95	1.89	2.09	1.94
Mar 27	1.95	1.94	1.94	1.96	2.03	2.03	2.05	2.11	1.98	1.95	1.99	1.99	1.93	1.90	S	1.89	1.88	1.88	1.88	1.89	1.91	1.91	1.92	1.94	1.88	2.11	1.95
Mar 28	1.92	1.94	1.95	1.95	1.96	1.96	1.98	1.98	1.96	1.96	1.97	1.94	1.91	S	1.86	1.86	1.88	1.89	1.90	1.85	1.85	1.85	1.85	1.85	1.85	1.98	1.91
Mar 29	1.88	1.88	1.89	1.90	1.89	1.89	1.89	1.89	1.89	1.89	1.89	C	C	C	C	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.92	1.91	1.88	1.92	1.90
Mar 30	1.92	1.92	1.93	1.94	1.93	1.92	1.92	1.92	1.92	1.91	1.91	S	1.91	1.91	1.91	1.91	1.92	1.92	1.92	1.92	1.93	1.94	1.97	1.98	1.91	1.98	1.93
Mar 31	1.98	1.97	1.98	1.99	1.97	1.99	2.00	2.00	2.00	1.98	S	1.96	1.92	1.89	1.88	1.88	1.88	1.88	1.88	1.89	1.90	1.92	1.93	1.93	1.88	2.00	1.94
Diurnal Maximum	2.22	2.22	2.20	2.33	2.19	2.08	2.10	2.19	2.25	2.34	2.26	2.29	2.27	2.31	2.84	2.14	2.72	2.64	2.06	2.21	2.14	2.30	2.63	2.45			
Daiurnal Average	1.96	1.96	1.97	1.98	1.98	1.98	1.97	1.97	1.99	1.98	1.96	1.95	1.95	1.95	1.97	1.93	1.96	1.95	1.93	1.94	1.95	1.96	1.97	1.97			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance	P Power Failure
X	InValid Data (Equipment Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)			

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for THC - Maskwa Site

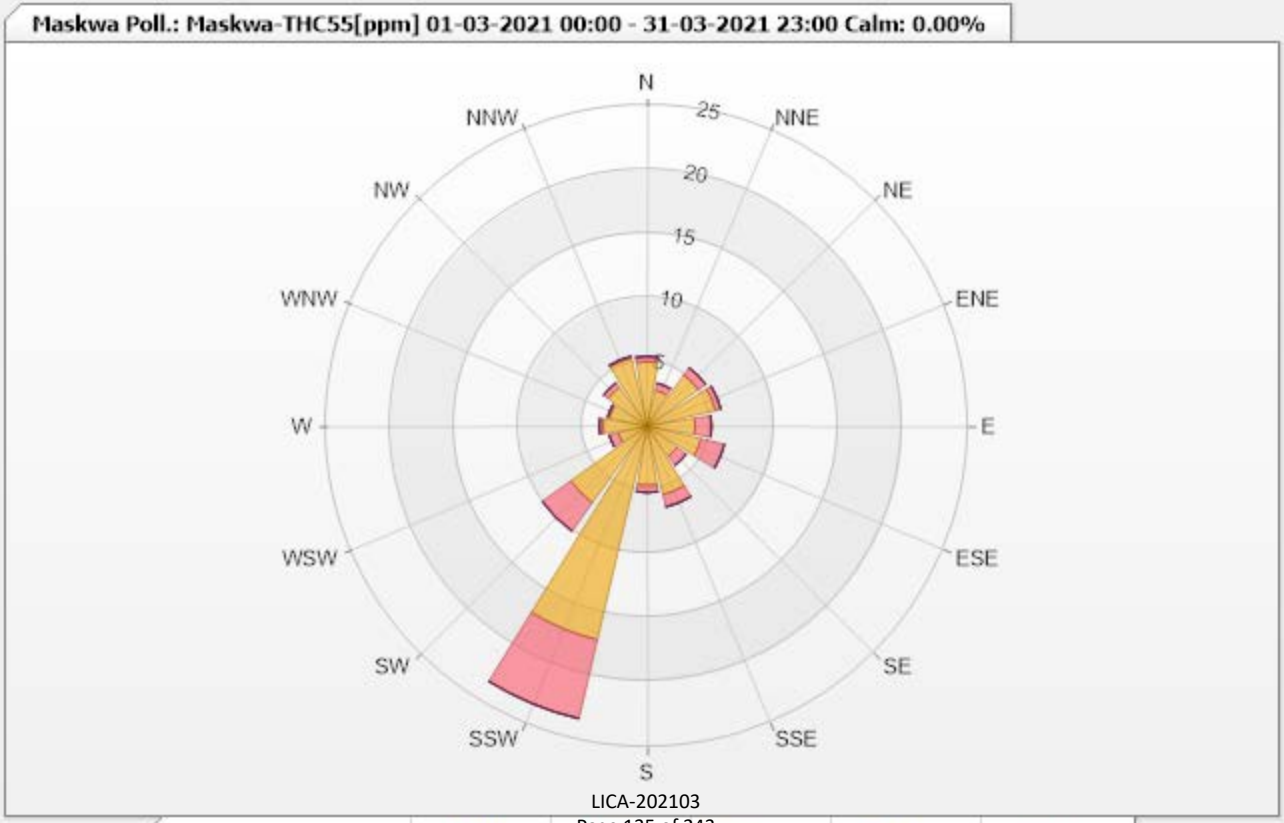




Classes	THC55
<=1.8	0.00%
1.8 - 2	81.49%
2 - 2.5	17.93%
2.5 - 3	0.57%
3 - 3.5	0.00%
3.5 - 4	0.00%
4 - 4.5	0.00%
4.5 - 5	0.00%
5 - 5.5	0.00%
5.5 - 6	0.00%
>6	0.00%

Wind: Maskwa Poll.: Maskwa-THC55[ppm] Monthly: 03-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
Calm: 0.00% Valid Data: 93.68% Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-40	>40.0	Total
N	5.02	0.43	0	0	0	5.45
NNE	2.87	0.57	0	0	0	3.44
NE	4.88	0.72	0	0	0	5.6
ENE	5.45	0.43	0	0	0	5.88
E	3.73	1.29	0	0	0	5.02
ESE	4.3	1.87	0	0	0	6.17
SE	2.87	0.86	0	0	0	3.73
SSE	5.45	1	0	0	0	6.45
S	4.59	0.57	0	0	0	5.16
SSW	17.07	6.31	0	0	0	23.38
SW	7.32	2.73	0	0	0	10.05
WSW	2.3	0.72	0	0	0	3.02
W	3.44	0.29	0	0	0	3.73
WNW	3.01	0.14	0	0	0	3.15
NW	3.73	0.43	0	0	0	4.16
NNW	5.45	0.14	0	0	0	5.59
Summary	81.48	18.5	0	0	0	100


Maskwa Poll.: Maskwa-THC55[ppm] 01-03-2021 00:00 - 31-03-2021 23:00 Calm: 0.00%
N
NNE
NE
ENE
E
ESE
SE
SSE
S
SSW
SW
WSW
W
WNW
NW
NNW
25
20
15
10
% Icon Classes (ppm)
81 0-2
19 2-5
0 5-10
0 10-40
0 >40.0

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Maskwa Site - March 2021

Summary of Hourly Averages

METHANE (CH4) in ppm

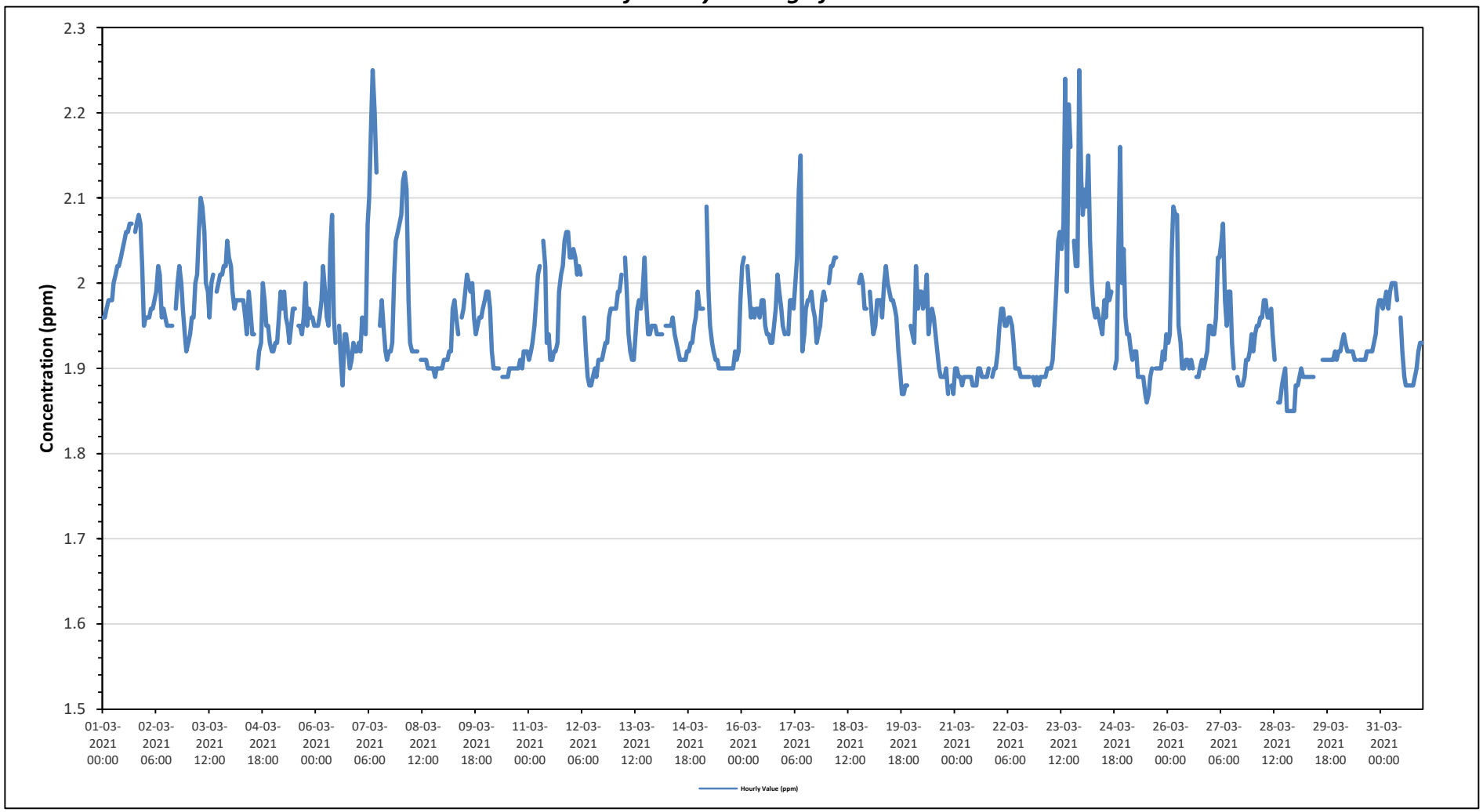
Maximum Hourly Value:	2.25	ppm	on March 7 at hour 8	Hours in Service:	744
Maximum Daily Value:	2.02	ppm	on March 1	Hours of Data:	697
Minimum Hourly Value:	1.85	ppm	on March 28 at hour 19	Hours of Missing Data:	12
Minimum Daily Value:	1.89	ppm	on March 21	Hours of Calibration:	35
Monthly Average:	1.95	ppm		Operational Uptime:	98.4

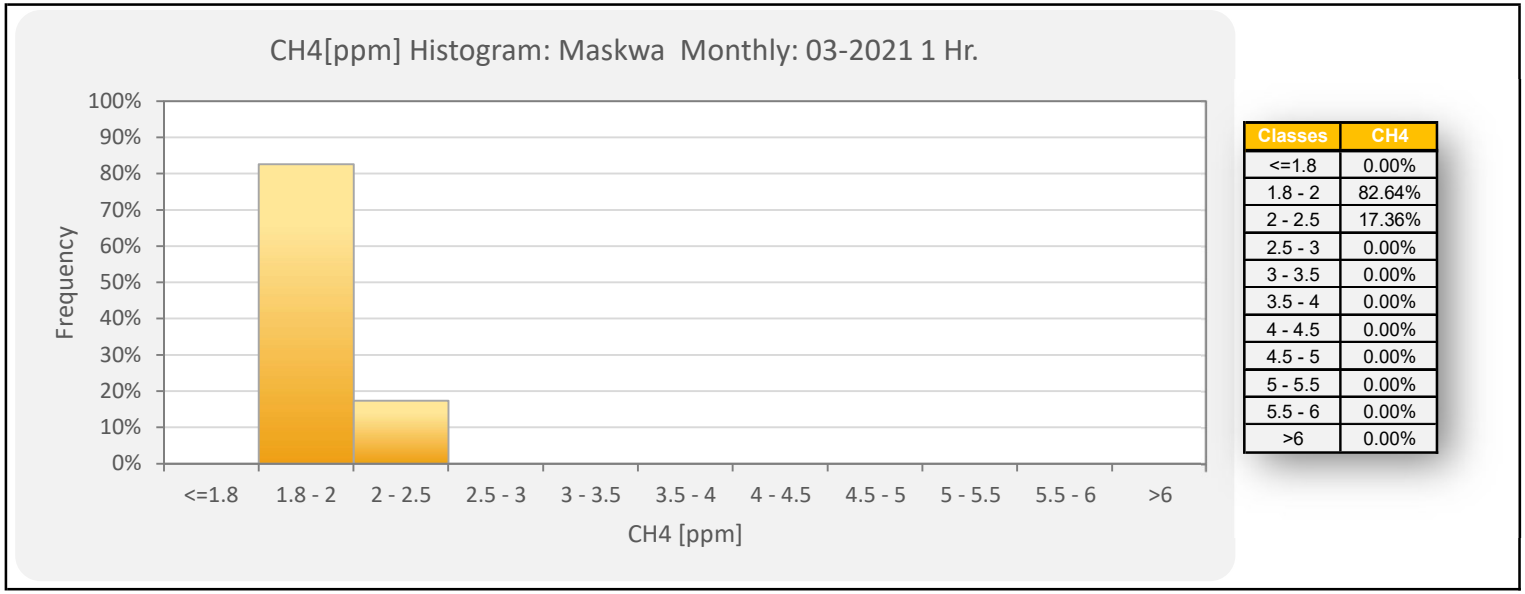
Day	Hourly Period Starting at (MST)																								Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Mar 1	1.96	1.96	1.97	1.98	1.98	1.98	2.00	2.01	2.02	2.02	2.03	2.04	2.05	2.06	2.06	2.07	2.07	S	2.06	2.07	2.08	2.07	2.02	1.95	1.95	2.08	**2.02**
Mar 2	1.96	1.96	1.96	1.97	1.97	1.98	1.99	2.02	2.01	1.96	1.97	1.96	1.95	1.95	1.95	1.95	S	1.97	2.00	2.02	2.00	1.97	1.94	1.92	1.92	2.02	1.97
Mar 3	1.93	1.94	1.96	1.96	2.00	2.01	2.06	2.10	2.09	2.06	2.00	1.99	1.96	2.00	2.01	S	1.99	2.00	2.01	2.01	2.02	2.02	2.05	2.03	1.93	2.10	2.01
Mar 4	2.02	1.99	1.97	1.98	1.98	1.98	1.98	1.98	1.96	1.94	1.99	1.97	1.94	1.94	S	1.90	1.92	1.93	2.00	1.98	1.95	1.95	1.93	1.92	1.90	2.02	1.96
Mar 5	1.92	1.93	1.93	1.96	1.99	1.97	1.99	1.96	1.95	1.93	1.95	1.97	1.97	S	1.95	1.95	1.94	1.96	2.00	1.95	1.97	1.96	1.96	1.95	1.92	2.00	1.96
Mar 6	1.95	1.95	1.96	1.98	2.02	1.99	1.96	1.95	2.04	2.08	1.96	1.93	S	1.95	1.91	1.88	1.94	1.94	1.92	1.90	1.91	1.93	1.92	1.92	1.88	2.08	1.95
Mar 7	1.93	1.92	1.96	1.95	1.94	2.07	2.10	2.19	**2.25**	2.20	2.13	S	1.95	1.98	1.95	1.92	1.91	1.92	1.92	1.93	2.01	2.05	2.06	2.07	1.91	**2.25**	2.01
Mar 8	2.08	2.12	2.13	2.11	1.98	1.93	1.92	1.92	1.92	1.92	S	1.91	1.91	1.91	1.91	1.90	1.90	1.90	1.90	1.89	1.90	1.90	1.90	1.90	1.89	2.13	1.95
Mar 9	1.91	1.91	1.91	1.92	1.92	1.97	1.98	1.96	1.94	S	1.96	1.97	1.99	2.01	2.00	1.99	2.00	1.96	1.94	1.95	1.96	1.96	1.97	1.98	1.91	2.01	1.96
Mar 10	1.99	1.99	1.97	1.92	1.90	1.90	1.90	1.90	S	1.89	1.89	1.89	1.89	1.90	1.90	1.90	1.90	1.90	1.90	1.91	1.90	1.92	1.92	1.92	1.89	1.99	1.91
Mar 11	1.91	1.92	1.93	1.95	1.98	2.01	2.02	S	2.05	2.02	1.93	1.94	1.91	1.91	1.92	1.92	1.93	1.99	2.01	2.02	2.05	2.06	2.06	2.03	1.91	2.06	1.98
Mar 12	2.03	2.04	2.03	2.01	2.02	2.01	S	1.96	1.92	1.89	1.88	1.88	1.89	1.90	1.89	1.91	1.91	1.91	1.92	1.93	1.93	1.96	1.97	1.97	1.88	2.04	1.95
Mar 13	1.97	1.97	1.99	1.99	2.01	S	2.03	1.99	1.94	1.92	1.91	1.91	1.94	1.97	1.98	1.97	1.99	2.03	1.98	1.94	1.94	1.95	1.95	1.95	1.91	2.03	1.97
Mar 14	1.94	1.94	1.94	1.94	S	1.95	1.95	1.95	1.95	1.96	1.94	1.93	1.92	1.91	1.91	1.91	1.91	1.92	1.92	1.93	1.93	1.95	1.96	1.99	1.91	1.99	1.94
Mar 15	1.97	1.97	1.97	S	2.09	1.99	1.95	1.93	1.92	1.91	1.91	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.92	1.91	1.92	1.98	1.90	2.09	1.93
Mar 16	2.02	2.03	S	2.02	1.99	1.96	1.97	1.96	1.97	1.97	1.96	1.98	1.98	1.95	1.94	1.94	1.93	1.93	1.95	1.97	2.01	1.99	1.97	1.95	1.93	2.03	1.97
Mar 17	1.94	S	1.94	1.98	1.98	1.97	2.00	2.03	2.11	2.15	1.92	1.94	1.97	1.98	1.98	1.99	1.97	1.96	1.93	1.94	1.95	1.98	1.99	1.98	1.92	2.15	1.98
Mar 18	S	2.00	2.02	2.02	2.03	2.03	P	P	P	P	P	P	P	P	P	P	P	X	2.00	2.01	2.00	1.97	1.97	S	1.97	2.03	-
Mar 19	1.99	1.96	1.94	1.95	1.98	1.98	1.98	1.96	2.00	2.02	2.00	1.99	1.98	1.98	1.97	1.96	1.92	1.90	1.87	1.87	1.88	1.88	S	1.95	1.87	2.02	1.95
Mar 20	1.94	1.93	2.02	1.97	1.99	1.99	1.97	1.98	2.01	1.94	1.96	1.97	1.96	1.94	1.92	1.90	1.89	1.89	1.89	1.90	1.87	S	1.88	1.87	1.87	2.02	1.94
Mar 21	1.90	1.90	1.89	1.89	1.88	1.89	1.89	1.89	1.89	1.89	1.88	1.88	1.88	1.90	1.90	1.89	1.89	1.89	1.89	1.90	S	1.89	1.90	1.90	1.88	1.90	1.89
Mar 22	1.92	1.95	1.97	1.97	1.95	1.95	1.96	1.96	1.95	1.93	1.90	1.90	1.90	1.89	1.89	1.89	1.89	1.89	1.89	S	1.89	1.88	1.89	1.88	1.88	1.97	1.92
Mar 23	1.89	1.89	1.89	1.89	1.90	1.90	1.90	1.91	1.95	1.99	2.05	2.06	2.04	2.07	2.24	1.99	2.21	2.16	S	2.05	2.02	2.02	**2.25**	2.12	1.89	**2.25**	2.02
Mar 24	2.08	2.11	2.09	2.15	2.05	2.00	1.97	1.96	1.97	1.96	1.95	1.94	1.98	1.96	2.00	1.98	1.99	S	1.90	1.91	2.04	2.16	2.00	2.04	1.90	2.16	2.01
Mar 25	1.96	1.94	1.94	1.92	1.91	1.92	1.92	1.89	1.89	1.89	1.89	1.87	1.86	1.87	1.89	1.90	S	1.90	1.90	1.90	1.90	1.92	1.91	1.94	1.86	1.96	1.91
Mar 26	1.93	1.94	2.04	2.09	2.08	2.08	1.95	1.93	1.90	1.90	1.91	1.91	1.90	1.91	1.90	S	1.89	1.89	1.90	1.91	1.90	1.91	1.92	1.95	1.89	2.09	1.94
Mar 27	1.95	1.94	1.94	1.96	2.03	2.03	2.05	2.07	1.98	1.95	1.99	1.99	1.93	1.90	S	1.89	1.88	1.88	1.88	1.89	1.91	1.91	1.92	1.94	1.88	2.07	1.95
Mar 28	1.92	1.94	1.95	1.95	1.96	1.96	1.98	1.98	1.96	1.96	1.97	1.94	1.91	S	1.86	1.86	1.88	1.89	1.90	1.85	1.85	1.85	1.85	1.85	1.85	1.98	1.91
Mar 29	1.88	1.88	1.89	1.90	1.89	1.89	1.89	1.89	1.89	1.89	1.89	C	C	C	C	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.92	1.91	1.88	1.92	1.90
Mar 30	1.92	1.92	1.93	1.94	1.93	1.92	1.92	1.92	1.92	1.91	1.91	S	1.91	1.91	1.91	1.91	1.92	1.92	1.92	1.92	1.93	1.94	1.97	1.98	1.91	1.98	1.93
Mar 31	1.98	1.97	1.98	1.99	1.97	1.99	2.00	2.00	2.00	1.98	S	1.96	1.92	1.89	1.88	1.88	1.88	1.88	1.88	1.89	1.90	1.92	1.93	1.93	1.88	2.00	1.94
Diurnal Maximum	2.08	2.12	2.13	2.15	2.09	2.08	2.10	2.19	2.25	2.20	2.13	2.06	2.05	2.07	2.24	2.07	2.21	2.16	2.06	2.07	2.08	2.16	2.25	2.12			
Daiurnal Average	1.96	1.96	1.97	1.97	1.98	1.97	1.97	1.97	1.98	1.97	1.95	1.95	1.94	1.94	1.95	1.93	1.94	1.93	1.93	1.94	1.95	1.96	1.96	1.96			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance	P Power Failure
X	InValid Data (Equipment Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)			

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for CH4 - Maskwa Site

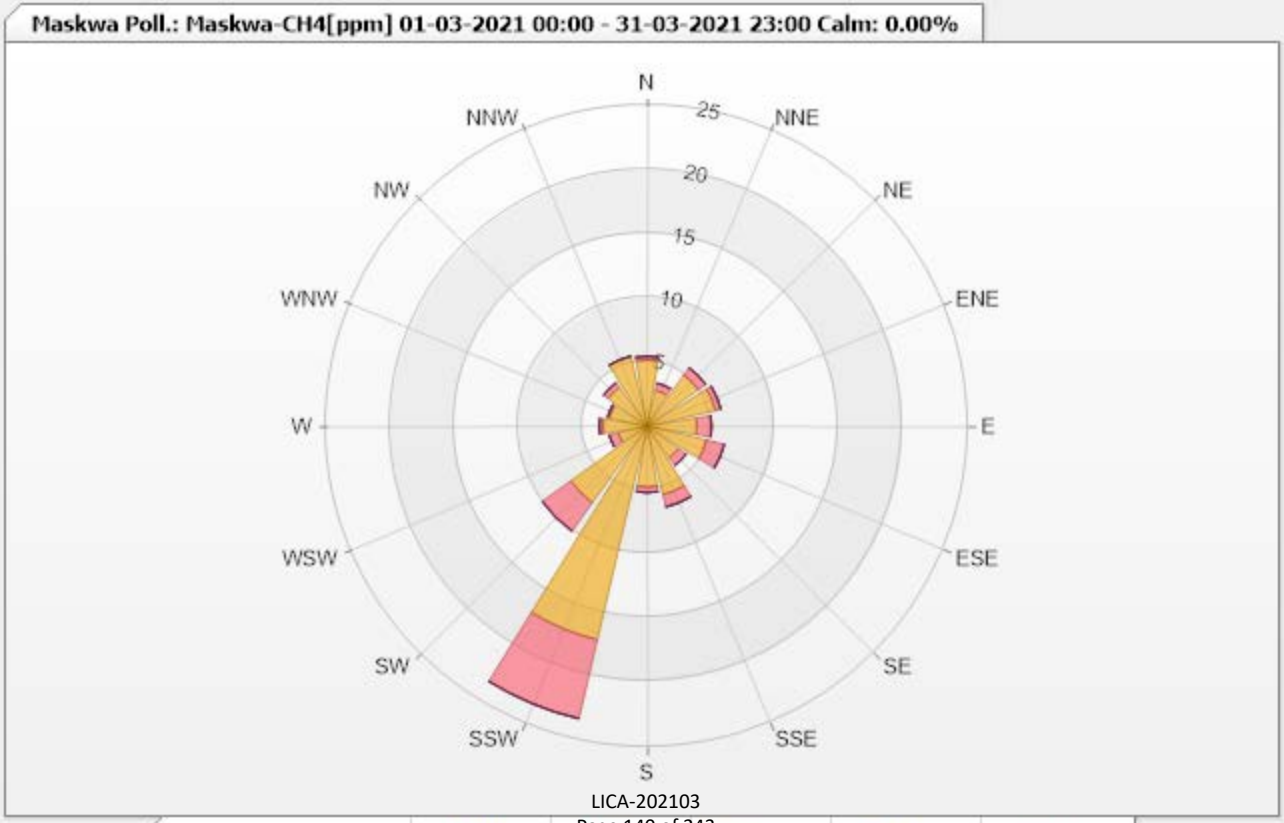




Classes	CH4
<=1.8	0.00%
1.8 - 2	82.64%
2 - 2.5	17.36%
2.5 - 3	0.00%
3 - 3.5	0.00%
3.5 - 4	0.00%
4 - 4.5	0.00%
4.5 - 5	0.00%
5 - 5.5	0.00%
5.5 - 6	0.00%
>6	0.00%

Wind: Maskwa Poll.: Maskwa-CH4[ppm] Monthly: 03-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
Calm: 0.00% Valid Data: 93.68% Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-20	>20.0	Total
N	5.16	0.29	0	0	0	5.45
NNE	2.87	0.57	0	0	0	3.44
NE	4.88	0.72	0	0	0	5.6
ENE	5.45	0.43	0	0	0	5.88
E	3.87	1.15	0	0	0	5.02
ESE	4.73	1.43	0	0	0	6.16
SE	3.01	0.72	0	0	0	3.73
SSE	5.45	1	0	0	0	6.45
S	4.73	0.43	0	0	0	5.16
SSW	17.07	6.31	0	0	0	23.38
SW	7.32	2.73	0	0	0	10.05
WSW	2.3	0.72	0	0	0	3.02
W	3.44	0.29	0	0	0	3.73
WNW	3.01	0.14	0	0	0	3.15
NW	3.73	0.43	0	0	0	4.16
NNW	5.6	0	0	0	0	5.6
Summary	82.62	17.36	0	0	0	100


Maskwa Poll.: Maskwa-CH4[ppm] 01-03-2021 00:00 - 31-03-2021 23:00 Calm: 0.00%
N
NNE
NE
ENE
E
ESE
SE
SSE
S
SSW
SW
WSW
W
WNW
NW
NNW
25
20
15
10
% Icon Classes (ppm)
83 0-2
17 2-5
0 5-10
0 10-20
0 >20.0

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Maskwa Site - March 2021

Summary of Hourly Averages

NON-METHANE HYDROCARBONS (NMHC) in ppm

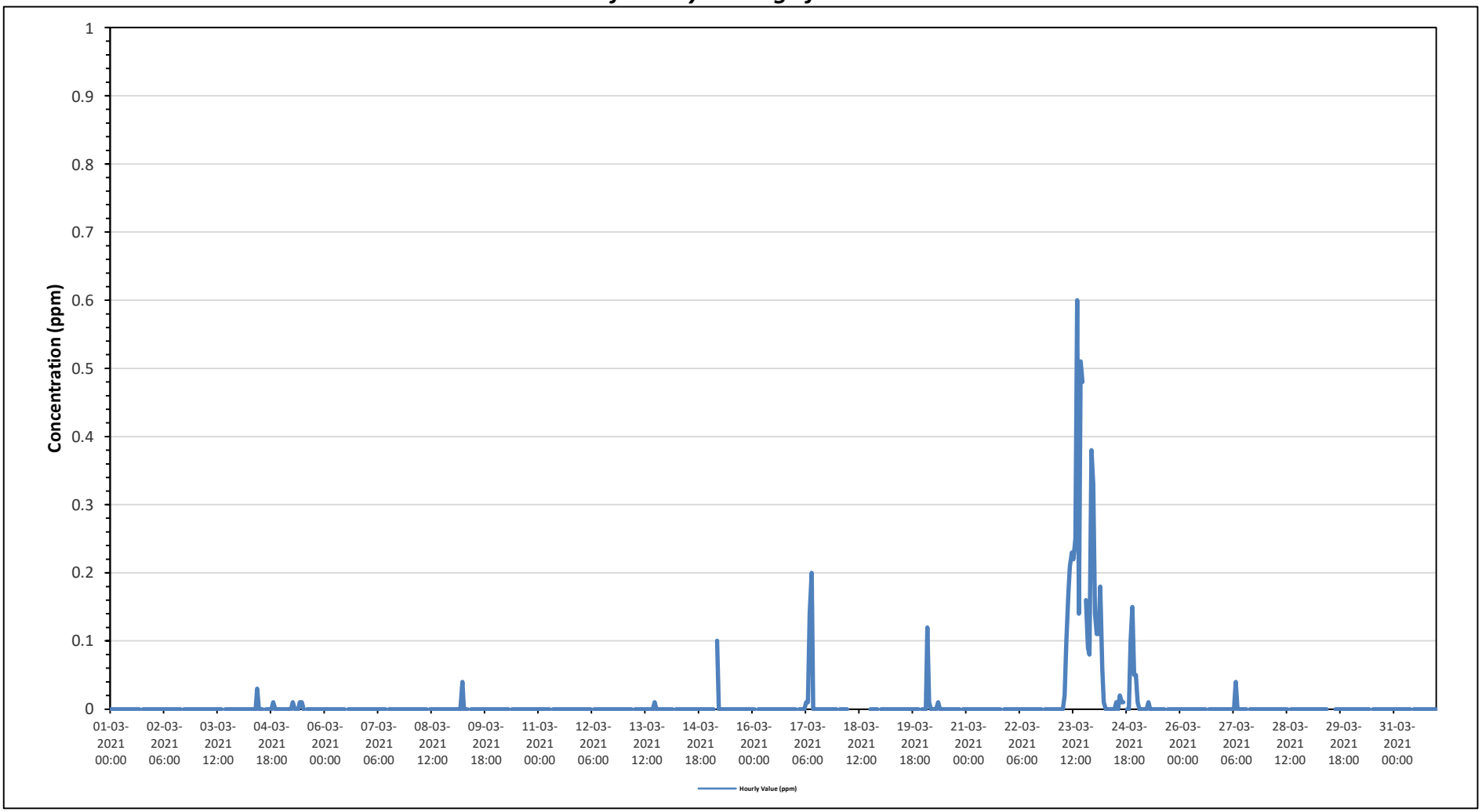
Maximum Hourly Value:	0.60	ppm	on March 23 at hour 14	Hours in Service:	744
Maximum Daily Value:	0.17	ppm	on March 23	Hours of Data:	697
Minimum Hourly Value:	0.00	ppm	on March 1 at hour 0	Hours of Missing Data:	12
Minimum Daily Value:	0.00	ppm	on March 1	Hours of Calibration:	35
Monthly Average:	0.01	ppm		Operational Uptime:	98.4

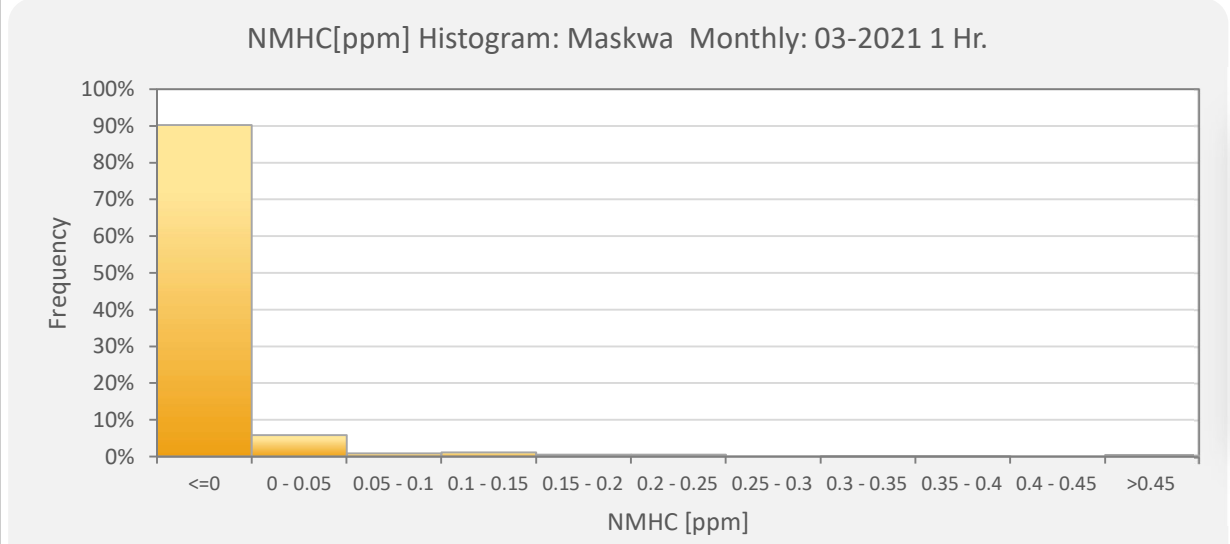
Day	Hourly Period Starting at (MST)																								Daily	Daily	Daily
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Minimum	Maximum	Average
Mar 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mar 2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mar 3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mar 4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.03	0.00
Mar 5	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.01	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Mar 6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mar 7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mar 8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mar 9	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00
Mar 10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mar 11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mar 12	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mar 13	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Mar 14	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mar 15	0.00	0.00	0.00	S	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00
Mar 16	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mar 17	0.00	S	0.00	0.00	0.00	0.00	0.01	0.01	0.14	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.02
Mar 18	S	0.00	0.00	0.00	0.00	0.00	P	P	P	P	P	P	P	P	P	P	P	X	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	-
Mar 19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00
Mar 20	0.00	0.00	0.12	0.01	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.12	0.01
Mar 21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00
Mar 22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mar 23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.10	0.17	0.21	0.23	0.22	0.25	**0.60**	0.14	0.51	0.48	S	0.16	0.09	0.08	0.38	0.33	0.00	**0.60**	**0.17**
Mar 24	0.14	0.11	0.11	0.18	0.06	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.02	0.01	0.01	S	0.00	0.00	0.10	0.15	0.05	0.05	0.00	0.18	0.04
Mar 25	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Mar 26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mar 27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00
Mar 28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mar 29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	C	C	C	C	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mar 30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mar 31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diurnal Maximum	0.14	0.11	0.12	0.18	0.10	0.04	0.01	0.04	0.14	0.20	0.21	0.23	0.22	0.25	0.60	0.14	0.51	0.48	0.00	0.16	0.10	0.15	0.38	0.33			
Daiurnal Average	0.01	0.00	0.01	0.01	0.01	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.02	0.02	0.00	0.01	0.01	0.01	0.01	0.01			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance	P Power Failure
X	InValid Data (Equipment Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)			

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for NMHC - Maskwa Site

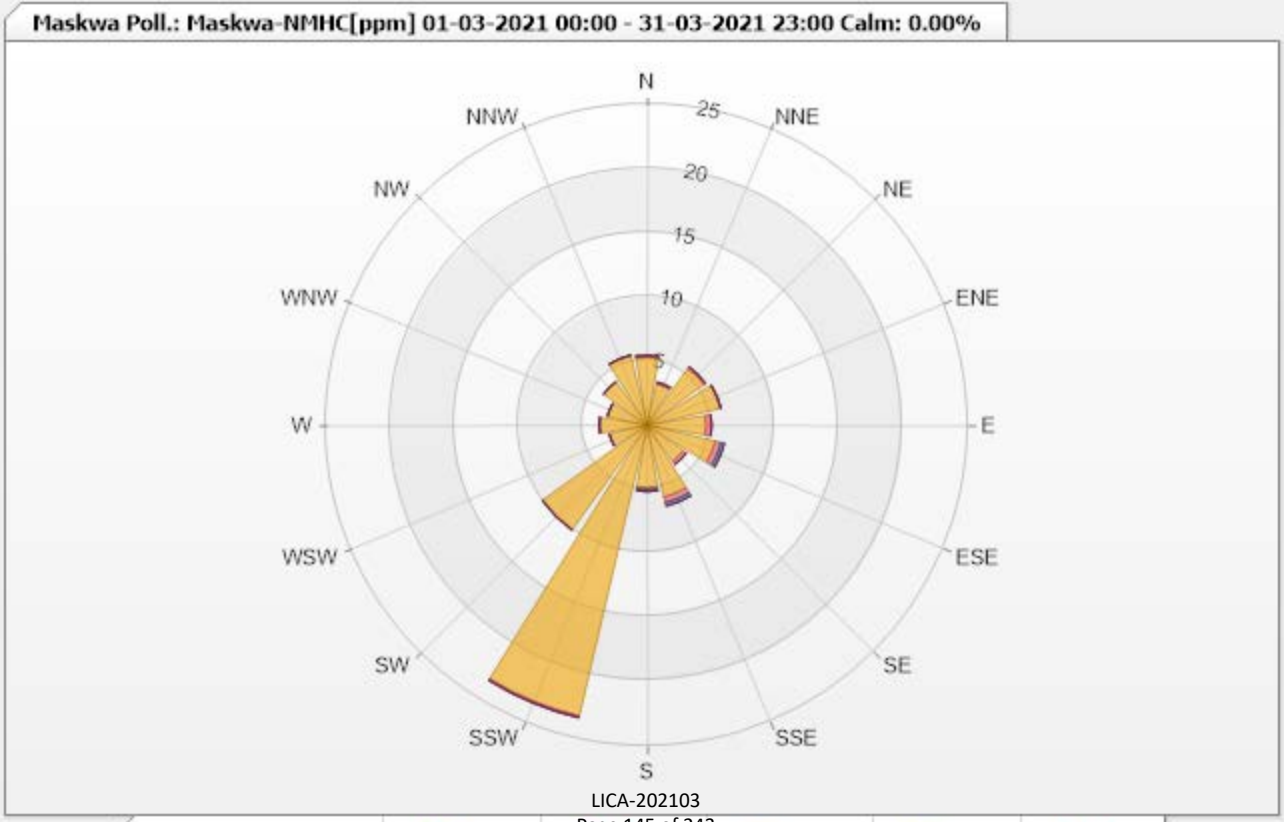




Classes	NMHC
<=0	90.24%
0 - 0.05	5.88%
0.05 - 0.1	0.86%
0.1 - 0.15	1.15%
0.15 - 0.2	0.57%
0.2 - 0.25	0.57%
0.25 - 0.3	0.00%
0.3 - 0.35	0.14%
0.35 - 0.4	0.14%
0.4 - 0.45	0.00%
>0.45	0.43%

Wind: Maskwa Poll.: Maskwa-NMHC[ppm] Monthly: 03-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
Calm: 0.00% Valid Data: 93.68% Calm Avg: 0.00 [ppm]

Direction	0-0.1	0.1-0.3	0.3-0.9	0.9-2	>2.0	Total
N	5.31	0.14	0	0	0	5.45
NNE	3.3	0.14	0	0	0	3.44
NE	5.45	0.14	0	0	0	5.59
ENE	5.88	0	0	0	0	5.88
E	4.59	0.43	0	0	0	5.02
ESE	5.45	0.43	0.29	0	0	6.17
SE	3.44	0.29	0	0	0	3.73
SSE	5.74	0.43	0.29	0	0	6.46
S	4.88	0.14	0.14	0	0	5.16
SSW	23.24	0.14	0	0	0	23.38
SW	10.04	0	0	0	0	10.04
WSW	3.01	0	0	0	0	3.01
W	3.73	0	0	0	0	3.73
WNW	3.16	0	0	0	0	3.16
NW	4.16	0	0	0	0	4.16
NNW	5.6	0	0	0	0	5.6
Summary	96.98	2.28	0.72	0	0	100


Maskwa Poll.: Maskwa-NMHC[ppm] 01-03-2021 00:00 - 31-03-2021 23:00 Calm: 0.00%
N
NNE
NE
ENE
E
ESE
SE
SSE
S
SSW
SW
WSW
W
WNW
NW
NNW
25
20
15
10
% Icon Classes (ppm)
97 0-0.1
2 0.1-0.3
1 0.3-0.9
0 0.9-2
0 >2.0

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Maskwa Site - March 2021

Summary of Hourly Averages

PARTICULATE MATTER 2.5 ($PM_{2.5}$) in $\mu g/m^3$

Alberta Ambient Air Quality Objectives (AAAQO): 1-Hour 80 µg/m3, 24-Hour 29 µg/m3

Number of 1-Hour Exceedences: 24 Number of 24-Hour Exceedences: 2

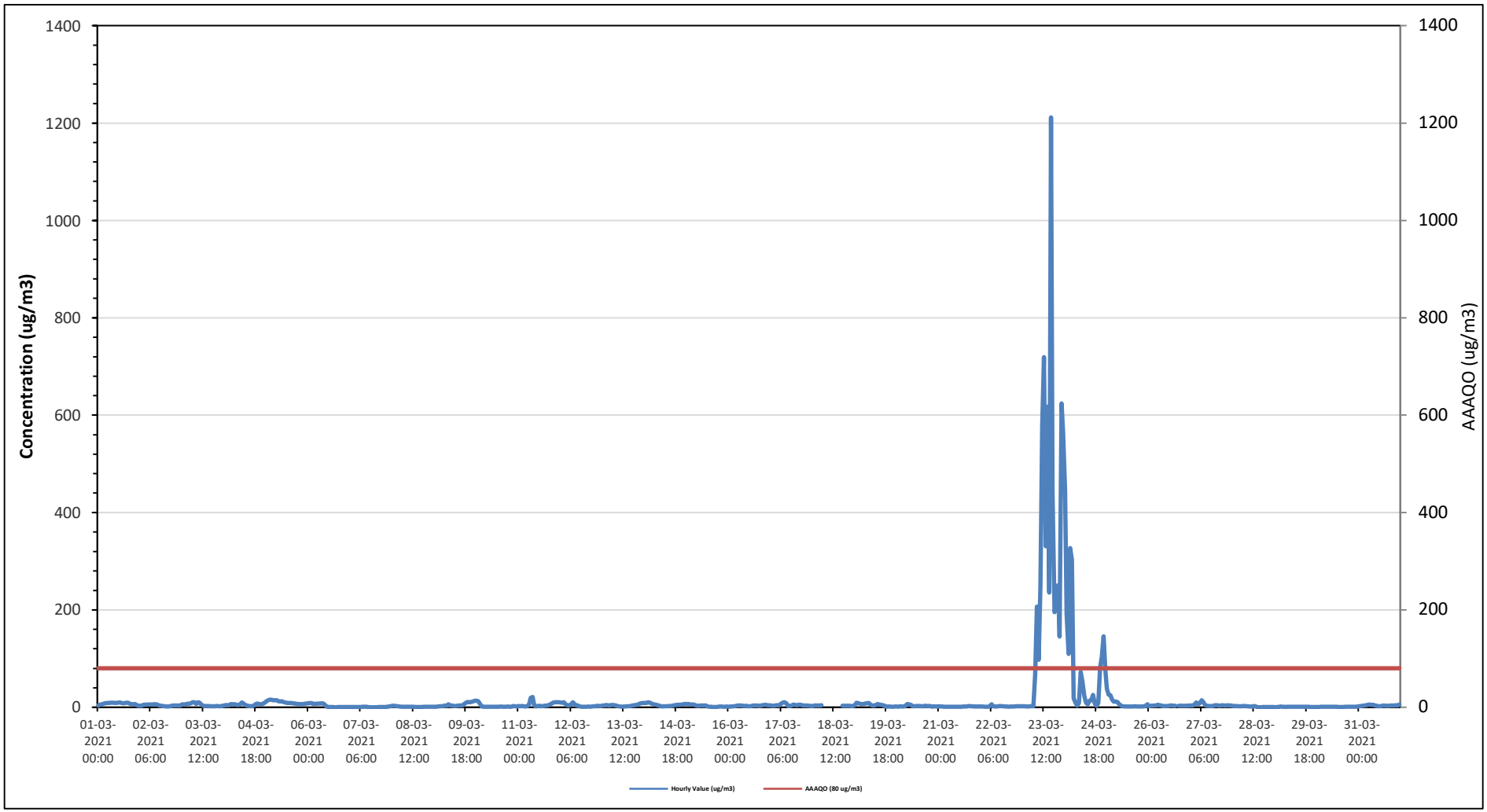
Maximum Hourly Value:	1211 $\mu g/m^3$ on March 23 at hour 16	Hours in Service:	744
Maximum Daily Value:	281.5 $\mu g/m^3$ on March 23	Hours of Data:	732
Minimum Hourly Value:	0 $\mu g/m^3$ on March 28 at hour 15	Hours of Missing Data:	11
Minimum Daily Value:	1 $\mu g/m^3$ on March 7	Hours of Calibration:	1
Monthly Average:	15.6 $\mu g/m^3$	Operational Uptime:	98.5

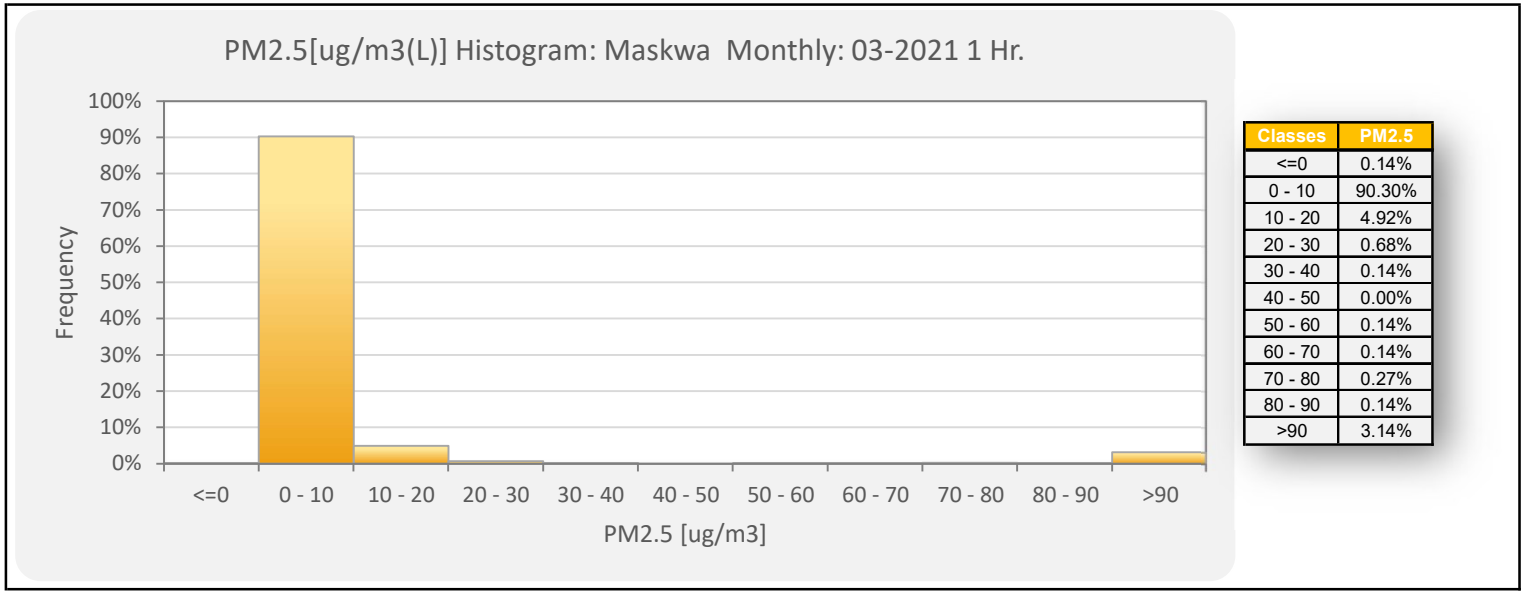
Day	Hourly Period Starting at (MST)																								Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Mar 1	4	5	6	7	8	9	9	9	9	9	9	9	9	9	8	8	9	9	8	7	6	7	5	3	3	9	7.5
Mar 2	3	4	5	5	6	6	6	6	7	6	5	4	3	2	2	2	2	2	3	4	4	4	3	4	2	7	4.0
Mar 3	6	6	6	7	7	8	11	10	7	11	9	5	3	2	3	3	2	2	2	2	2	2	2	3	2	11	5.0
Mar 4	4	5	4	5	7	6	6	5	5	6	10	8	5	4	2	2	2	4	7	8	6	6	7	9	2	10	5.5
Mar 5	12	14	15	15	14	15	14	13	12	12	10	10	9	9	9	8	8	7	7	7	6	7	7	8	6	15	10.3
Mar 6	8	9	8	7	7	7	8	8	8	7	3	1	0	1	0	0	0	0	0	0	0	1	1	1	0	9	3.5
Mar 7	1	1	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	1	1	1	2	0	2	0.5
Mar 8	3	3	2	2	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	0	3	1.2
Mar 9	1	1	1	2	2	2	4	3	6	4	3	2	2	3	4	3	3	7	9	11	11	11	12	13	1	13	5.1
Mar 10	13	13	7	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	3	2	2	1	13	2.4
Mar 11	2	2	2	2	1	2	6	19	21	4	2	3	3	2	2	3	4	4	6	8	10	10	10	10	1	21	5.7
Mar 12	9	9	10	6	5	4	6	11	7	4	3	1	1	1	1	1	1	1	2	2	2	3	3	3	1	11	3.9
Mar 13	3	4	5	5	4	5	5	4	3	2	2	1	1	2	2	2	2	4	5	5	5	7	8	9	1	9	3.9
Mar 14	9	9	10	9	8	6	6	5	4	2	2	2	2	2	2	2	3	5	5	5	5	6	6	7	2	10	5.0
Mar 15	7	7	6	6	6	4	3	3	4	4	4	3	2	1	1	1	1	1	1	1	1	1	1	2	1	7	2.8
Mar 16	1	1	2	2	3	4	4	4	3	3	3	2	2	2	4	4	4	3	3	4	5	5	4	4	1	5	3.1
Mar 17	4	3	3	4	4	4	7	10	10	8	2	2	4	6	5	5	5	5	4	4	3	3	3	3	2	10	4.7
Mar 18	3	4	4	4	4	4	P	P	P	P	P	P	P	P	P	P	P	3	3	3	3	3	3	3	3	4	-
Mar 19	4	9	8	7	7	7	8	8	9	5	3	4	5	7	6	5	4	3	1	2	2	1	1	2	1	9	4.8
Mar 20	1	1	2	1	2	3	7	6	6	2	2	2	2	2	2	2	3	3	3	2	1	2	1	2	1	7	2.4
Mar 21	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	1	1	2	1.4
Mar 22	1	1	1	1	1	2	6	2	2	2	2	2	2	2	2	1	1	1	2	2	2	2	2	2	1	6	1.8
Mar 23	2	2	2	2	2	2	2	67	207	97	251	577	719	331	618	236	**1211**	442	195	211	251	145	624	565	2	**1211**	**281.5**
Mar 24	444	192	110	327	303	19	9	4	9	72	52	24	9	6	14	14	26	7	3	9	81	104	146	76	3	444	85.8
Mar 25	38	26	25	16	12	12	11	6	4	2	2	1	1	1	1	2	2	2	1	1	2	2	2	6	1	38	7.4
Mar 26	2	3	3	3	4	5	5	4	2	3	2	3	3	4	3	3	C	3	3	3	3	3	3	4	2	5	3.1
Mar 27	4	4	6	9	6	8	15	11	4	3	2	3	2	3	4	5	3	4	4	4	4	4	4	3	2	15	5.0
Mar 28	3	2	2	2	2	2	3	2	2	2	2	1	2	2	0	0	0	1	1	0	1	1	1	0	**0**	3	1.3
Mar 29	0	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	2	0.9
Mar 30	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9
Mar 31	2	2	3	4	5	5	6	5	5	4	3	2	2	3	3	3	3	3	3	4	4	4	4	6	2	6	3.6
Diurnal Maximum	444	192	110	327	303	19	15	67	207	97	251	577	719	331	618	236	1211	442	195	211	251	145	624	565			
Daiurnal Average	19.3	11.1	8.4	15.0	14.0	5.0	5.6	7.7	12.0	9.3	13.1	22.5	26.6	13.7	23.4	10.7	45.0	17.1	9.2	10.1	13.7	11.3	28.0	24.3			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance	P Power Failure
X	InValid Data (Equipment Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)			

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for PM2.5 - Maskwa Site

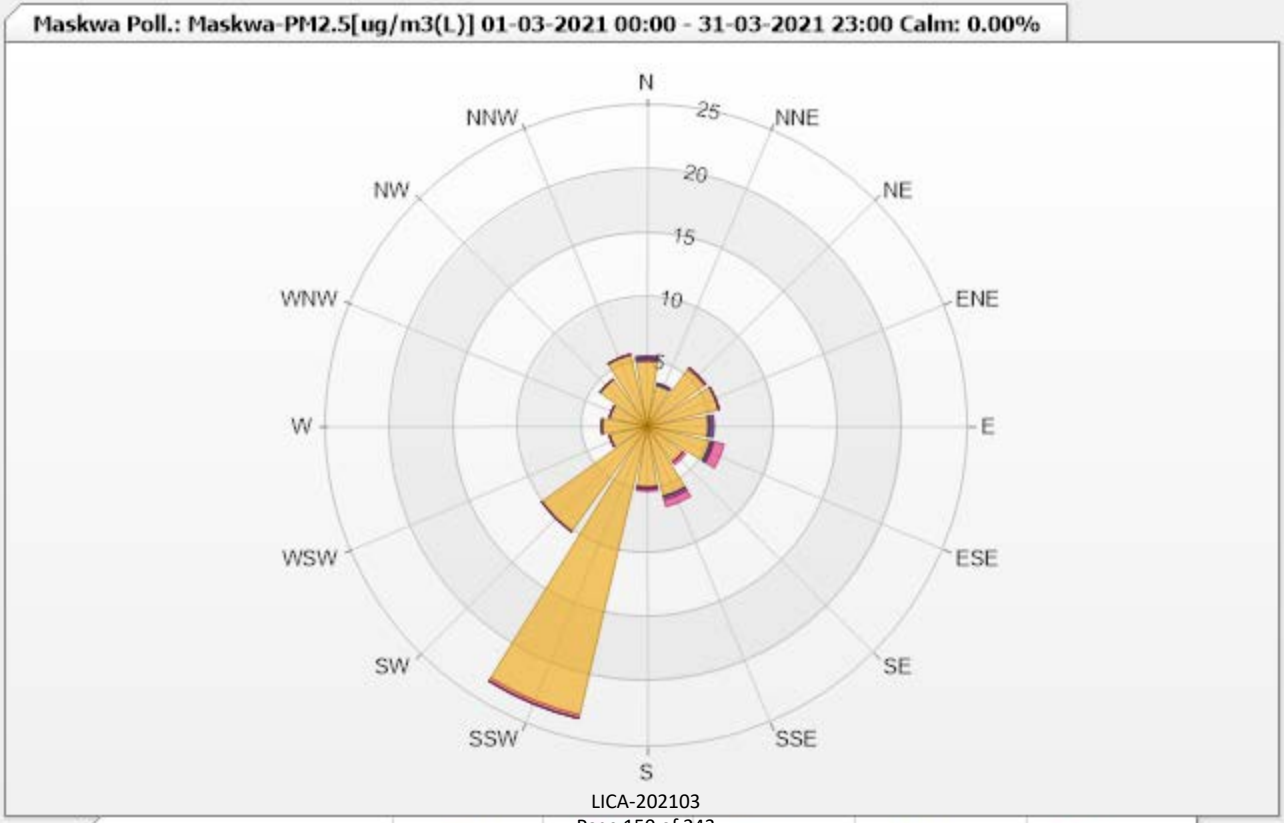




Classes	PM2.5
<=0	0.14%
0 - 10	90.30%
10 - 20	4.92%
20 - 30	0.68%
30 - 40	0.14%
40 - 50	0.00%
50 - 60	0.14%
60 - 70	0.14%
70 - 80	0.27%
80 - 90	0.14%
>90	3.14%

Wind: Maskwa Poll.: Maskwa-PM2.5[ug/m3(L)] Monthly: 03-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
Calm: 0.00% Valid Data: 98.39% Calm Avg: 0.00 [ug/m3(L)]

Direction	0-50	50-80	80-120	120-240	>240.0	Total
N	5.05	0.14	0.14	0.14	0	5.47
NNE	3.28	0	0.14	0	0	3.42
NE	5.46	0.14	0	0	0	5.6
ENE	5.74	0	0	0	0	5.74
E	4.78	0	0.14	0.27	0	5.19
ESE	5.05	0	0.14	0.14	0.82	6.15
SE	3.42	0	0	0	0.27	3.69
SSE	5.6	0	0	0.27	0.55	6.42
S	4.78	0	0	0.14	0.14	5.06
SSW	23.09	0.27	0	0	0	23.36
SW	10.11	0	0	0	0	10.11
WSW	3.01	0	0	0	0	3.01
W	3.55	0	0	0	0	3.55
WNW	3.01	0	0	0	0	3.01
NW	4.51	0	0	0	0	4.51
NNW	5.74	0	0	0	0	5.74
Summary	96.18	0.55	0.56	0.96	1.78	100


Maskwa Poll.: Maskwa-PM2.5[ug/m3(L)] 01-03-2021 00:00 - 31-03-2021 23:00 Calm: 0.00%
N
NNE
NE
ENE
E
ESE
SE
SSE
S
SSW
SW
WSW
W
WNW
NW
NNW
25
20
15
10
% Icon Classes (ug/m3(L))
96 0-50
1 50-80
1 80-120
1 120-240
2 >240.0

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Maskwa Site - March 2021

Summary of Hourly Averages

RELATIVE HUMIDITY (RH) in %

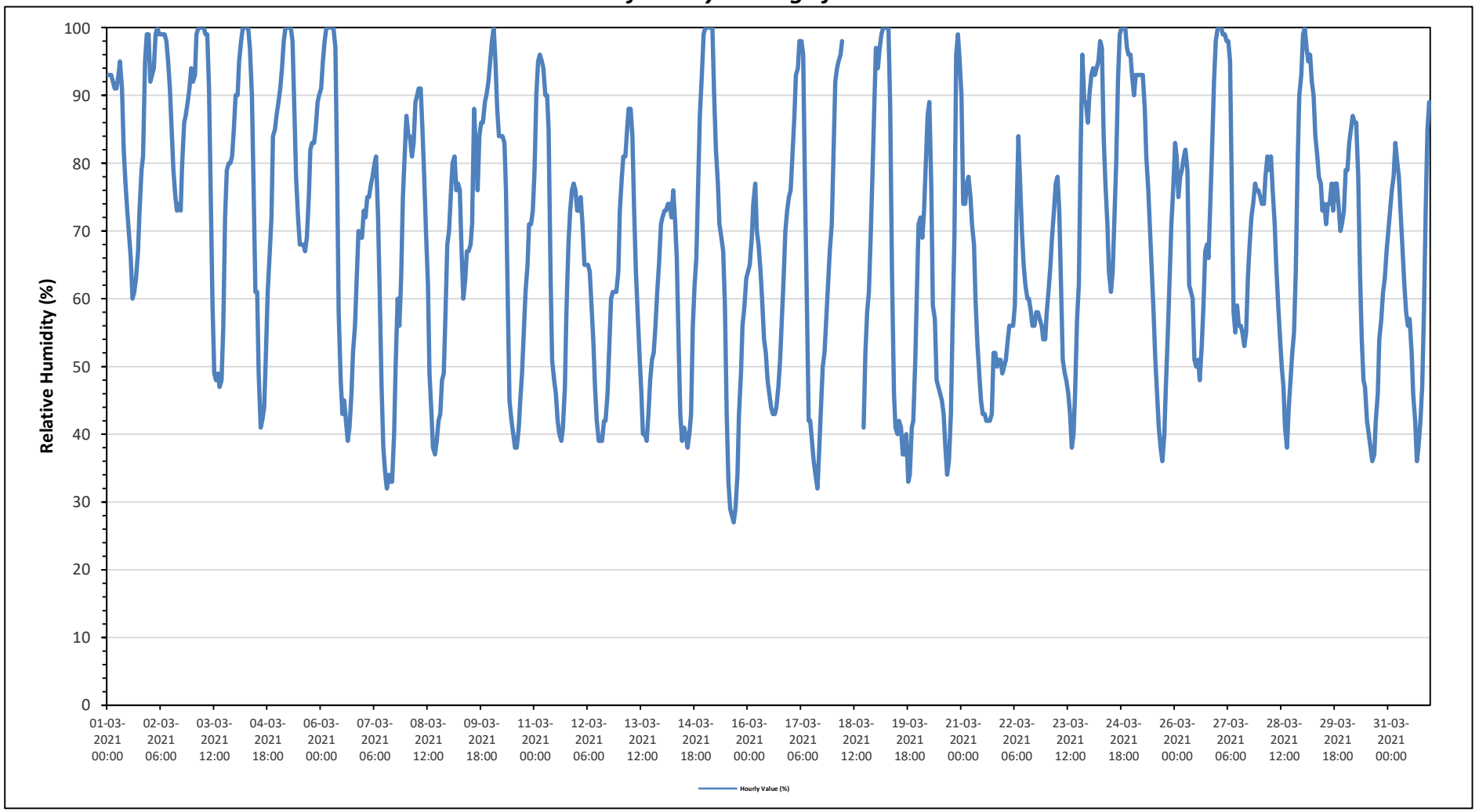
Maximum Hourly Value:	100	%	on March 2 at hour 4	Hours in Service:	744
Maximum Daily Value:	89.3	%	on March 2	Hours of Data:	733
Minimum Hourly Value:	27	%	on March 15 at hour 16	Hours of Missing Data:	11
Minimum Daily Value:	56.6	%	on March 12	Hours of Calibration:	0
Monthly Average:	69.2	%		Operational Uptime:	98.5

Day	Hourly Period Starting at (MST)																								Daily	Daily	Daily
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Minimum	Maximum	Average
Mar 1	93	93	93	92	91	91	93	95	91	82	77	73	70	66	60	61	63	67	73	79	81	95	99	99	60	99	82.4
Mar 2	92	93	94	99	**100**	99	99	99	99	98	95	91	85	79	75	73	74	73	80	86	87	89	91	94	73	**100**	**89.3**
Mar 3	92	93	99	**100**	**100**	**100**	**100**	99	99	91	75	59	49	48	49	47	48	56	72	79	80	80	81	85	47	**100**	78.4
Mar 4	90	90	95	98	**100**	**100**	**100**	**100**	97	90	78	61	61	49	41	42	44	52	61	66	72	84	85	87	41	**100**	76.8
Mar 5	89	91	94	98	**100**	**100**	**100**	**100**	98	87	78	72	68	68	68	67	69	75	82	83	83	85	89	90	67	**100**	84.8
Mar 6	91	95	98	**100**	**100**	**100**	**100**	**100**	97	78	58	48	43	45	42	39	41	46	52	56	63	70	69	69	39	**100**	70.8
Mar 7	73	72	75	75	77	78	80	81	72	60	47	38	34	32	34	33	33	40	50	60	56	63	75	81	32	81	59.1
Mar 8	87	84	84	81	83	89	90	91	91	85	78	70	62	49	43	38	37	39	42	43	48	49	58	68	37	91	66.2
Mar 9	70	76	80	81	76	77	76	67	60	63	67	67	68	71	88	82	76	84	86	86	89	90	92	95	60	95	77.8
Mar 10	98	**100**	95	88	84	84	84	83	76	58	45	42	40	38	38	41	45	49	55	61	65	71	71	73	38	**100**	66.0
Mar 11	79	90	95	96	95	94	90	90	85	63	51	48	46	42	40	39	41	47	58	68	73	76	77	76	39	96	69.1
Mar 12	73	73	75	71	65	65	65	64	59	54	47	42	39	39	39	42	42	46	52	60	61	61	61	64	39	75	56.6
Mar 13	73	78	81	81	85	88	88	84	73	64	58	52	46	40	40	39	43	48	51	52	56	61	65	71	39	88	63.2
Mar 14	72	73	73	74	74	72	76	71	66	54	43	39	41	40	38	40	43	56	62	66	78	87	93	99	38	99	63.8
Mar 15	**100**	**100**	**100**	**100**	**100**	90	82	77	71	69	67	59	43	33	29	28	**27**	29	34	43	49	56	59	63	**27**	**100**	62.8
Mar 16	64	65	69	74	77	70	68	64	60	54	52	48	46	44	43	43	44	47	51	57	63	70	73	75	43	77	59.2
Mar 17	76	81	87	93	94	98	98	96	77	61	42	42	39	36	34	32	37	44	50	52	57	62	67	71	32	98	63.6
Mar 18	80	92	94	95	96	98	**P**	**P**	**P**	**P**	**P**	**P**	**P**	**P**	**P**	**P**	**P**	41	52	58	61	69	78	89	41	98	-
Mar 19	97	94	97	99	**100**	**100**	**100**	**100**	88	64	46	41	40	42	41	37	37	40	33	34	41	42	51	62	33	**100**	63.6
Mar 20	71	72	69	73	80	87	89	76	59	57	48	47	46	45	43	38	34	36	43	55	69	96	99	95	34	99	63.6
Mar 21	90	74	74	77	78	75	71	68	60	53	49	45	43	43	42	42	42	43	52	52	50	51	51	49	42	90	57.3
Mar 22	50	51	54	56	56	56	59	73	84	77	70	65	62	60	60	58	56	56	58	58	57	56	54	54	50	84	60.0
Mar 23	58	61	65	69	73	77	78	73	62	51	49	48	46	43	38	40	46	57	62	81	96	89	89	86	38	96	64.0
Mar 24	90	93	94	93	94	95	98	97	84	77	71	64	61	64	72	80	92	99	**100**	**100**	**100**	97	96	96	61	**100**	87.8
Mar 25	93	90	93	93	93	93	93	88	81	76	70	64	58	51	46	41	38	36	40	47	55	63	71	76	36	93	68.7
Mar 26	83	81	75	78	79	81	82	79	62	61	60	51	50	51	48	53	59	67	68	66	75	83	92	98	48	98	70.1
Mar 27	**100**	**100**	**100**	99	99	98	98	95	76	58	55	59	56	56	55	53	55	63	68	72	74	77	76	76	53	**100**	75.8
Mar 28	75	74	74	78	81	79	81	76	71	65	59	55	50	47	41	38	44	48	52	55	64	81	90	93	38	93	65.5
Mar 29	99	**100**	97	95	96	92	90	84	81	78	77	73	74	71	74	74	77	73	77	77	74	70	71	73	70	**100**	81.1
Mar 30	79	79	83	85	87	86	86	78	64	54	48	47	42	40	38	36	37	42	46	54	57	61	63	67	36	87	60.8
Mar 31	70	73	76	78	83	80	78	72	67	62	58	56	57	52	46	42	36	38	42	47	58	73	85	89	36	89	63.3
Diurnal Maximum	100	100	100	100	100	100	100	100	99	98	95	91	85	79	88	82	92	99	100	100	100	97	99	99			
Daiurnal Average	82.2	83.3	84.9	86.1	87.0	86.8	86.4	84.0	77.0	68.1	60.6	55.5	52.2	49.5	48.2	47.3	48.7	52.8	58.2	63.0	67.5	72.8	76.5	79.5			

C	Monthly Calibration	**S**	Daily Zero-Span Check	**Q**	Quality Assurance	
K	Collection Error	**N**	No Data (Machine Not in Service)	**Y**	Routine Maintenance	**P** Power Failure
X	InValid Data (Equipment Malfunction /Recovery)	**NRM**	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)			

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for RH - Maskwa Site



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Maskwa Site - March 2021

Summary of Hourly Averages

BAROMETRIC PRESSURE (BP) in millibar

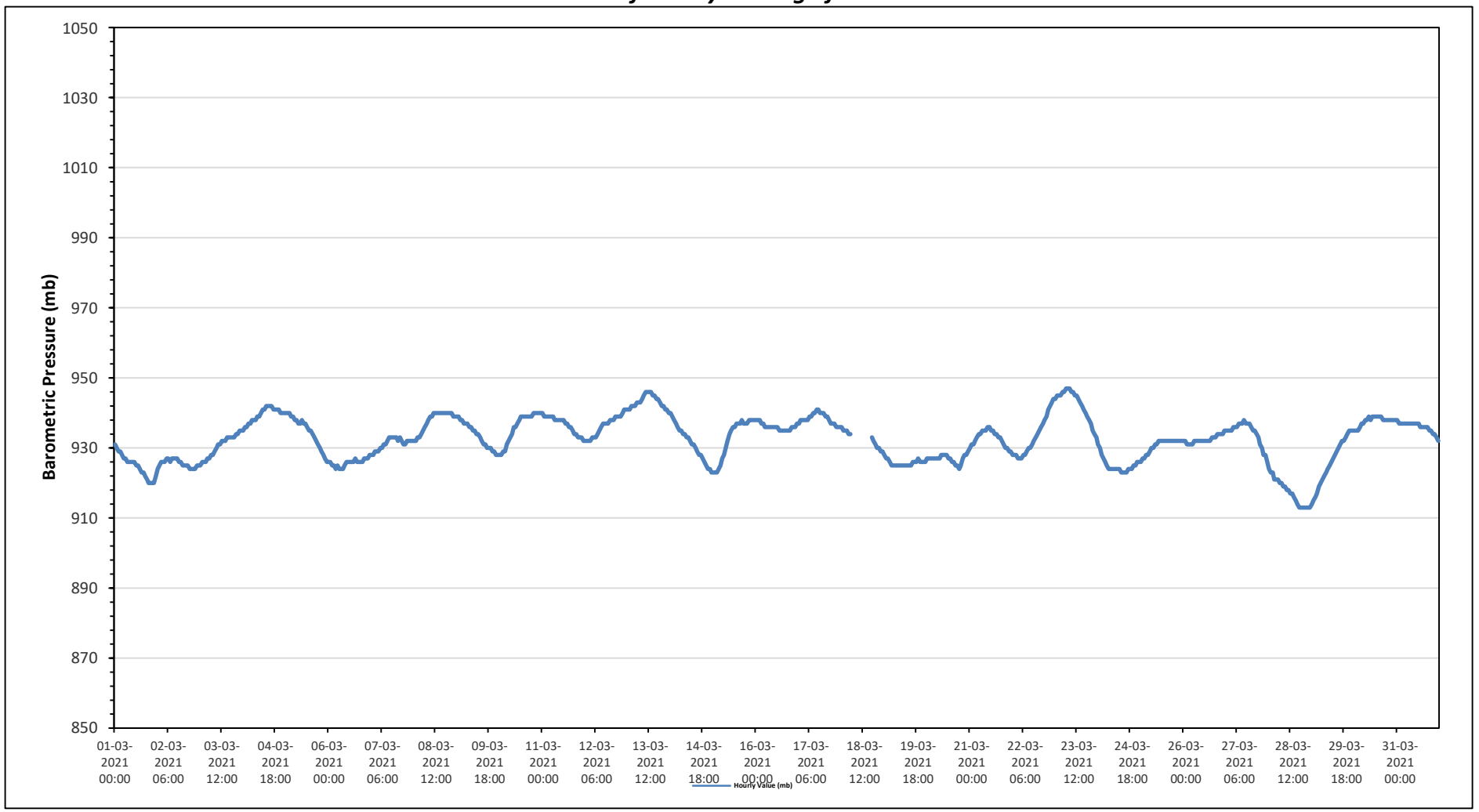
Maximum Hourly Value:	947	mb	on March 23 at hour 6	Hours in Service:	744
Maximum Daily Value:	943	mb	on March 13	Hours of Data:	733
Minimum Hourly Value:	913	mb	on March 28 at hour 17	Hours of Missing Data:	11
Minimum Daily Value:	917	mb	on March 28	Hours of Calibration:	0
Monthly Average:	933	mb		Operational Uptime:	98.5

Day	Hourly Period Starting at (MST)																								Daily	Daily	Daily
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Minimum	Maximum	Average
Mar 1	931	930	929	929	928	927	927	926	926	926	926	926	925	925	924	923	923	922	921	920	920	920	920	922	920	931	925
Mar 2	924	925	926	926	926	927	927	926	927	927	927	927	926	926	925	925	925	925	924	924	924	924	925	925	924	927	926
Mar 3	925	926	926	926	927	927	928	928	929	930	931	931	932	932	932	933	933	933	933	933	934	934	935	935	925	935	931
Mar 4	935	936	936	937	937	938	938	938	939	939	940	941	941	942	942	942	942	941	941	941	941	940	940	940	935	942	939
Mar 5	940	940	940	939	939	938	938	937	937	938	937	937	936	935	935	934	933	932	931	930	929	928	927	926	926	940	935
Mar 6	926	926	925	925	924	925	924	924	924	925	926	926	926	926	926	927	926	926	926	926	927	927	927	928	924	928	926
Mar 7	928	928	929	929	929	930	930	931	931	932	933	933	933	933	933	932	933	932	931	931	932	932	932	932	928	933	931
Mar 8	932	932	933	933	934	935	936	937	938	939	939	940	940	940	940	940	940	940	940	940	940	940	939	939	932	940	938
Mar 9	939	939	938	938	937	937	937	936	936	935	935	934	934	933	932	931	931	930	930	930	929	929	928	928	928	939	934
Mar 10	928	928	929	929	931	932	933	934	936	936	937	938	939	939	939	939	939	939	939	940	940	940	940	940	928	940	936
Mar 11	940	939	939	939	939	939	939	938	938	938	938	938	938	937	937	936	936	935	934	934	933	933	933	932	932	940	937
Mar 12	932	932	932	932	933	933	933	934	935	936	937	937	937	937	938	938	938	939	939	939	939	940	941	941	932	941	936
Mar 13	941	941	942	942	942	943	943	943	944	945	946	946	946	946	945	945	944	944	943	942	942	941	941	940	940	946	**943**
Mar 14	940	939	938	937	936	935	935	934	934	933	933	932	931	931	930	929	928	928	927	926	925	924	924	923	923	940	931
Mar 15	923	923	923	924	925	927	928	930	932	934	935	936	936	937	937	937	938	937	937	937	938	938	938	938	923	938	933
Mar 16	938	938	938	937	937	936	936	936	936	936	936	936	936	935	935	935	935	935	935	935	936	936	936	937	935	938	936
Mar 17	937	938	938	938	938	938	939	939	940	940	941	941	940	940	940	939	939	938	937	937	937	936	936	936	936	941	938
Mar 18	936	935	935	935	934	934	**P**	**P**	**P**	**P**	**P**	**P**	**P**	**P**	**P**	**P**	**P**	933	932	931	930	930	929	929	929	936	-
Mar 19	928	927	927	926	925	925	925	925	925	925	925	925	925	925	925	925	926	926	926	927	926	926	926	926	925	928	926
Mar 20	927	927	927	927	927	927	927	927	928	928	928	928	927	927	926	926	925	925	924	925	927	928	928	929	924	929	927
Mar 21	930	931	931	932	933	934	934	935	935	935	936	936	935	935	934	934	933	933	932	931	930	930	929	929	929	936	933
Mar 22	928	928	928	927	927	927	928	928	929	930	930	931	932	933	934	935	936	937	938	939	941	942	943	944	927	944	933
Mar 23	944	945	945	945	946	946	**947**	**947**	**947**	946	946	945	945	944	943	942	941	940	939	938	937	935	934	933	933	**947**	943
Mar 24	931	930	928	927	926	925	924	924	924	924	924	924	924	923	923	923	923	924	924	924	925	925	926	926	923	931	925
Mar 25	926	927	927	928	928	929	930	930	931	931	932	932	932	932	932	932	932	932	932	932	932	932	932	932	926	932	931
Mar 26	932	932	931	931	931	931	932	932	932	932	932	932	932	932	932	932	933	933	933	934	934	934	934	935	931	935	932
Mar 27	935	935	935	935	936	936	936	937	937	937	938	937	937	937	936	935	935	934	933	931	930	928	928	926	926	938	934
Mar 28	924	923	923	921	921	921	920	920	919	919	918	918	917	917	916	915	914	**913**	**913**	**913**	**913**	**913**	**913**	**913**	**913**	924	917
Mar 29	914	915	916	917	919	920	921	922	923	924	925	926	927	928	929	930	931	932	932	933	934	935	935	935	914	935	926
Mar 30	935	935	935	936	937	937	938	938	939	938	939	939	939	939	939	939	938	938	938	938	938	938	938	938	935	939	938
Mar 31	938	937	937	937	937	937	937	937	937	937	937	937	937	936	936	936	936	936	935	935	934	934	933	932	932	938	936
Diurnal Maximum	944	945	945	945	946	946	947	947	947	946	946	946	946	946	945	945	944	944	943	942	942	942	943	944			
Diurnal Average	932	932	932	932	932	932	932	932	933	933	934	934	934	933	933	933	933	933	932	932	932	932	932	932			

C	Monthly Calibration	**S**	Daily Zero-Span Check	**Q**	Quality Assurance	
K	Collection Error	**N**	No Data (Machine Not in Service)	**Y**	Routine Maintenance	**P** Power Failure
X	InValid Data (Equipment Malfunction /Recovery)	**NRM**	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)			

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for BP - Maskwa Site



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Maskwa Site - March 2021

Summary of Hourly Averages

AMBIENT TEMPERATURE (AT) in Degree Celsius

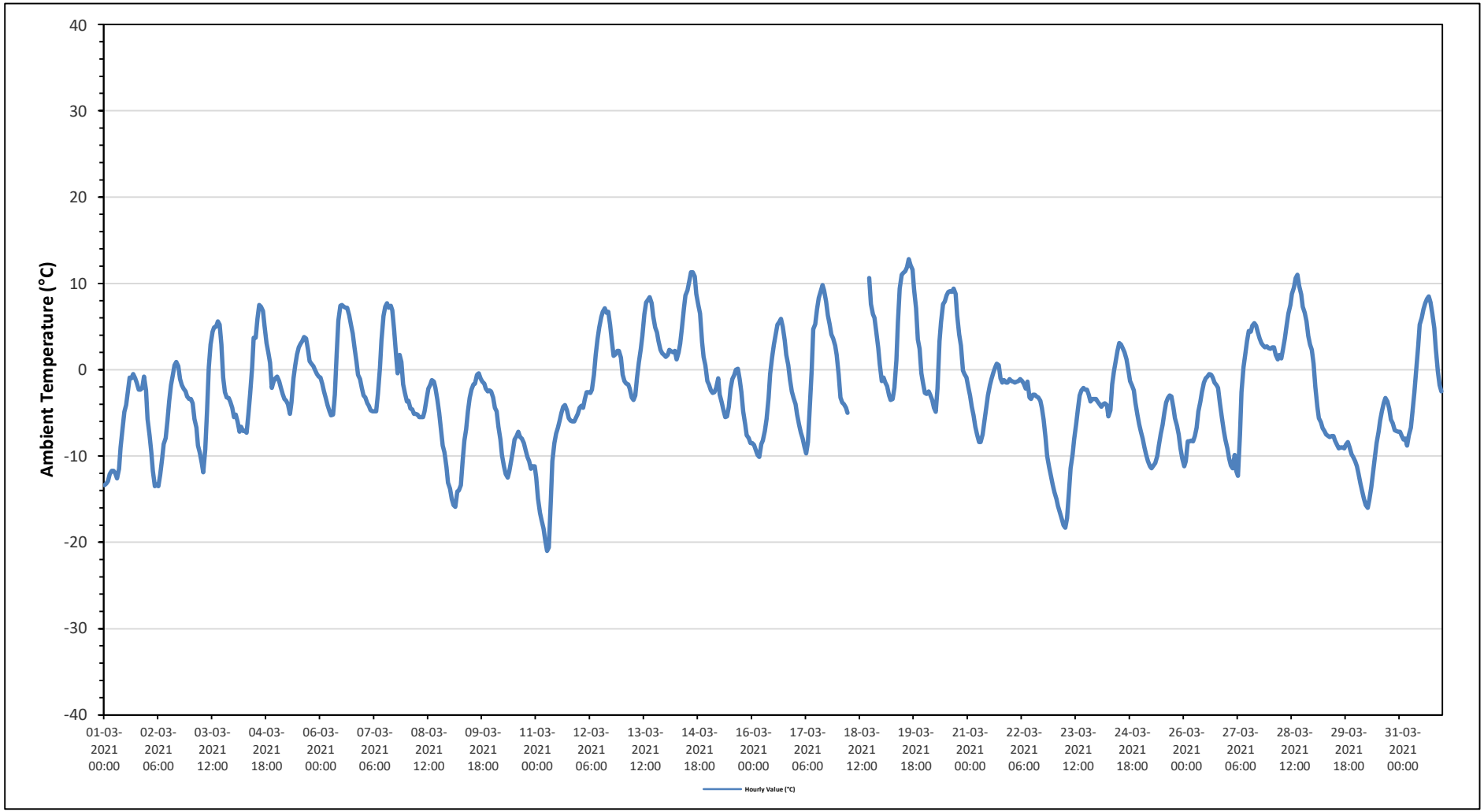
Maximum Hourly Value:	12.8	°C	on March 19 at hour 15	Hours in Service:	744
Maximum Daily Value:	5.2	°C	on March 28	Hours of Data:	733
Minimum Hourly Value:	-21.0	°C	on March 11 at hour 6	Hours of Missing Data:	11
Minimum Daily Value:	-10.3	°C	on March 11	Hours of Calibration:	0
Monthly Average:	-2.5	°C		Operational Uptime:	98.5

Day	Hourly Period Starting at (MST)																								Daily	Daily	Daily
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Minimum	Maximum	Average
Mar 1	-13.4	-13.2	-12.9	-12.1	-11.7	-11.7	-12	-12.6	-11.5	-9	-6.8	-4.9	-4.1	-2.5	-0.9	-1	-0.5	-1	-1.5	-2.3	-2.3	-2.1	-0.8	-2.4	-13.4	-0.5	-6.4
Mar 2	-5.7	-7.6	-9.6	-11.7	-13.5	-13.3	-13.5	-12.2	-10.3	-8.6	-7.9	-5.9	-3.6	-1.8	-0.5	0.5	0.9	0.4	-1.1	-1.8	-2.2	-2.5	-3.1	-3.4	-13.5	0.9	-5.8
Mar 3	-3.4	-3.9	-5.7	-6.7	-8.8	-9.6	-10.8	-11.9	-9.2	-4.8	0.3	2.9	4.4	4.9	5	5.6	5.2	2.9	-0.9	-2.6	-3.2	-3.3	-3.7	-4.4	-11.9	5.6	-2.6
Mar 4	-5.5	-5.2	-6	-7.2	-6.6	-7.1	-7.1	-7.3	-5.2	-2.8	0.3	3.7	3.7	5.9	7.5	7.3	6.8	5.1	3.1	2	0.8	-2.1	-1.4	-1	-7.3	7.5	-0.8
Mar 5	-0.8	-1.3	-2	-2.8	-3.4	-3.6	-4	-5.1	-3.8	-1	0.5	1.8	2.6	3	3.3	3.8	3.6	2.4	1	0.7	0.4	0	-0.5	-0.8	-5.1	3.8	-0.3
Mar 6	-0.9	-1.6	-2.5	-3.3	-4.1	-4.8	-5.3	-5.2	-2.9	1.6	5.7	7.4	7.5	7.3	7.2	7.2	6.3	5.2	4.2	2.6	0.9	-0.6	-1.1	-2.1	-5.3	7.5	1.2
Mar 7	-3	-3.2	-3.9	-4.2	-4.7	-4.8	-4.8	-4.8	-2.8	0.2	3.4	6.2	7.3	7.7	7.2	7.4	6.9	4.7	1.7	-0.4	1.7	0.9	-1.7	-2.7	-4.8	7.7	0.6
Mar 8	-3.7	-3.6	-4.5	-4.6	-5.1	-5.1	-5.2	-5.5	-5.5	-5.5	-4.8	-3.4	-2.2	-1.8	-1.2	-1.4	-2.1	-3.5	-5	-6.9	-8.8	-9.6	-11.3	-13.1	-13.1	-1.2	-5.1
Mar 9	-13.8	-15	-15.7	-15.9	-14.1	-14	-13.4	-10.6	-8.2	-6.9	-4.8	-3.3	-2.3	-1.7	-1.6	-0.6	-0.4	-1	-1.4	-1.6	-2.2	-2.5	-2.4	-2.5	-15.9	-0.4	-6.5
Mar 10	-3.2	-4.4	-4.8	-6.6	-8.1	-9.9	-11.2	-12.1	-12.5	-11.8	-10.5	-9.3	-8.1	-7.7	-7.2	-7.8	-8	-8.5	-9.2	-10.1	-10.6	-11.5	-11.2	-11.2	-12.5	-3.2	-9.0
Mar 11	-12.5	-14.9	-16.6	-17.4	-18.4	-19.8	**-21**	-20.6	-15.1	-10.6	-8.5	-7.4	-6.7	-5.9	-5	-4.3	-4.1	-4.7	-5.6	-5.9	-6	-6	-5.6	-5.1	**-21.0**	-4.1	-10.3
Mar 12	-4.4	-4.2	-4.4	-3.4	-2.6	-2.6	-2.7	-2.3	-0.6	1.7	3.5	4.9	6.1	6.7	7.1	6.6	6.7	5.2	3.3	1.6	1.8	2.2	2.2	1.4	-4.4	7.1	1.4
Mar 13	-0.6	-1.3	-1.6	-1.7	-2.2	-3.2	-3.5	-3	-0.9	0.8	2.4	3.9	6.4	7.8	8.1	8.4	7.7	6.2	4.9	4.3	3.3	2.3	1.9	1.7	-3.5	8.4	2.2
Mar 14	1.5	1.7	2.3	2.1	2	2.2	1.2	2	3	4.8	7.1	8.6	9.2	10.2	11.3	11.3	10.8	8.8	7.5	6.5	3.2	1.5	0.5	-1.3	-1.3	11.3	4.9
Mar 15	-1.7	-2.4	-2.7	-2.6	-2.1	-1	-2.9	-3.8	-4.7	-5.5	-5.4	-4.3	-2.2	-1.1	-0.6	0	0.1	-1.1	-2.6	-4.8	-6.3	-7.6	-7.9	-8.5	-8.5	0.1	-3.4
Mar 16	-8.5	-8.7	-9.3	-9.9	-10.1	-8.6	-8.2	-7.1	-5.7	-3.2	-0.5	1.5	2.9	4.1	5.2	5.5	5.9	5	3.4	1.7	0.5	-1.2	-2.5	-3.3	-10.1	5.9	-2.1
Mar 17	-4	-5.2	-6.4	-7.3	-8	-8.9	-9.7	-8.4	-4.5	0	4.7	5.3	7	8.3	9	9.8	9.2	7.9	6.3	5.3	4.1	3.6	2.8	1.7	-9.7	9.8	0.9
Mar 18	-0.6	-3.2	-3.8	-4	-4.4	-5	P	P	P	P	P	P	P	P	P	P	P	10.6	7.6	6.4	6	4.4	2.5	0.6	-5.0	10.6	-
Mar 19	-1.3	-0.9	-1.5	-1.9	-3	-3.5	-3.4	-2.1	1.1	5.5	9.4	11	11.2	11.4	11.9	**12.8**	12.1	11.6	9.3	7.1	3.5	2.4	-0.4	-1.6	-3.5	**12.8**	4.2
Mar 20	-2.7	-2.8	-2.5	-2.9	-3.5	-4.4	-4.9	-2.2	3.3	5.5	7.6	7.9	8.6	9	9.1	9	9.4	8.8	6.3	4.1	2.8	-0.1	-0.5	-0.9	-4.9	9.4	2.7
Mar 21	-2	-3	-4.3	-5.3	-6.6	-7.5	-8.4	-8.4	-7.5	-6	-4.5	-3	-1.8	-1.1	-0.3	0.3	0.7	0.5	-1	-1.5	-1.2	-1.5	-1.5	-1.1	-8.4	0.7	-3.2
Mar 22	-1.3	-1.4	-1.5	-1.4	-1.3	-1.1	-1.3	-1.6	-2.2	-1.4	-3.2	-3.4	-2.9	-2.9	-3.1	-3.2	-3.6	-4.4	-5.8	-8	-10	-11.3	-12.3	-13.3	-13.3	-1.1	-4.2
Mar 23	-14.2	-15	-15.8	-16.6	-17.3	-18	-18.3	-17.2	-14.4	-11.4	-9.8	-8.1	-6.3	-4.6	-3	-2.4	-2.1	-2.3	-2.3	-2.9	-3.7	-3.4	-3.4	-3.4	-18.3	-2.1	-9.0
Mar 24	-3.7	-4	-4.3	-4	-3.9	-4.1	-5.4	-4.7	-1.7	-0.2	1	2.2	3.1	2.9	2.4	2	1.2	0	-1.3	-1.8	-2.4	-3.8	-5.2	-6.3	-6.3	3.1	-1.8
Mar 25	-7.2	-8	-9	-9.9	-10.6	-11.2	-11.4	-11.1	-10.8	-10	-8.8	-7.4	-6.4	-5	-3.8	-3.3	-3	-3.1	-4.4	-5.6	-6.5	-7.5	-9.1	-10.3	-11.4	-3.0	-7.6
Mar 26	-11.2	-10.6	-8.3	-8.3	-8.2	-8.3	-7.7	-6.7	-4.8	-3.7	-2.6	-1.5	-1	-0.8	-0.5	-0.6	-0.9	-1.5	-1.8	-2.1	-4	-5.5	-7.1	-8.1	-11.2	-0.5	-4.8
Mar 27	-9.1	-10.3	-11.1	-11.4	-9.9	-11.7	-12.3	-7.5	-2.6	0.3	1.8	3.3	4.5	4.4	5.1	5.4	5.1	4.3	3.6	3.1	2.8	2.6	2.7	2.5	-12.3	5.4	-1.4
Mar 28	2.4	2.6	2.6	1.7	1.2	1.7	1.3	2.4	3.6	5.1	6.5	7.5	8.8	9.5	10.6	11	9.7	8.7	7.3	6.6	5.6	3.9	2.9	2.3	1.2	11.0	**5.2**
Mar 29	0.7	-2	-4.3	-5.6	-6.1	-6.8	-7.1	-7.5	-7.7	-7.8	-7.7	-7.7	-8.2	-8.7	-9.1	-9	-9	-9.1	-8.7	-8.4	-9	-9.8	-10.1	-10.6	-10.6	0.7	-7.5
Mar 30	-11.2	-12	-13.2	-14.1	-15	-15.7	-16	-15.1	-13.6	-11.9	-10.2	-8.5	-7.2	-5.9	-4.8	-3.8	-3.3	-3.7	-4.5	-5.8	-6.2	-7	-7.1	-7.2	-16.0	-3.3	-9.3
Mar 31	-7.2	-7.7	-8.1	-8	-8.8	-7.6	-6.7	-5	-2.6	-0.1	2.7	5.2	6	7	7.7	8.2	8.5	7.8	6.5	4.8	2.4	-0.2	-1.8	-2.5	-8.8	8.5	0.0
Diurnal Maximum	2.4	2.6	2.6	2.1	2.0	2.2	1.3	2.4	3.6	5.5	9.4	11.0	11.2	11.4	11.9	12.8	12.1	11.6	9.3	7.1	6.0	4.4	2.9	2.5			
Daiurnal Average	-4.9	-5.6	-6.2	-6.7	-7.1	-7.4	-7.9	-7.2	-5.3	-3.2	-1.3	0.2	1.2	2.0	2.5	2.8	2.7	2.0	0.6	-0.5	-1.4	-2.4	-3.1	-3.8			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance	P Power Failure
X	InValid Data (Equipment Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)			

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for AT - Maskwa Site



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Maskwa Site - March 2021

Summary of Hourly Averages

STATION TEMPERATURE (ST) in Degree Celsius

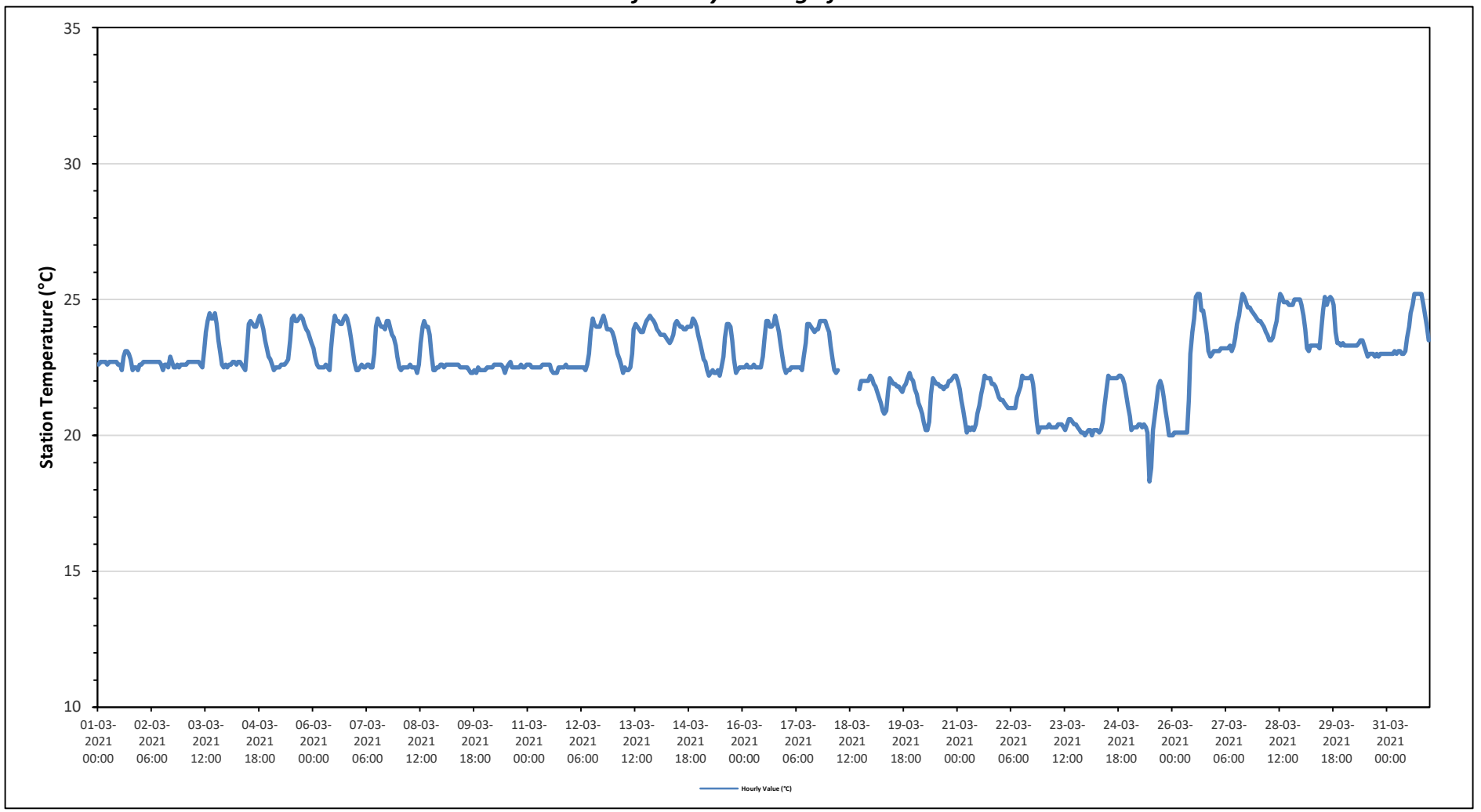
Maximum Hourly Value:	25.2	°C	on March 26 at hour 14	Hours in Service:	744
Maximum Daily Value:	24.5	°C	on March 28	Hours of Data:	733
Minimum Hourly Value:	18.3	°C	on March 25 at hour 11	Hours of Missing Data:	11
Minimum Daily Value:	20.3	°C	on March 23	Hours of Calibration:	0
Monthly Average:	22.7	°C		Operational Uptime:	98.5

Day	Hourly Period Starting at (MST)																								Daily	Daily	Daily
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Minimum	Maximum	Average
Mar 1	22.6	22.7	22.7	22.7	22.7	22.6	22.7	22.7	22.7	22.7	22.7	22.6	22.6	22.4	22.9	23.1	23.1	23.0	22.8	22.4	22.5	22.5	22.4	22.6	22.4	23.1	22.7
Mar 2	22.6	22.7	22.7	22.7	22.7	22.7	22.7	22.7	22.7	22.7	22.7	22.6	22.4	22.6	22.6	22.5	22.9	22.7	22.5	22.5	22.6	22.5	22.6	22.6	22.4	22.9	22.6
Mar 3	22.6	22.6	22.7	22.7	22.7	22.7	22.7	22.7	22.7	22.6	22.5	23.1	23.8	24.2	24.5	24.3	24.3	24.5	24.1	23.5	23.0	22.6	22.5	22.6	22.5	24.5	23.2
Mar 4	22.5	22.6	22.6	22.7	22.7	22.6	22.7	22.7	22.6	22.5	22.4	23.2	24.1	24.2	24.1	24.0	24.0	24.2	24.4	24.2	23.9	23.5	23.2	22.9	22.4	24.4	23.3
Mar 5	22.8	22.6	22.4	22.5	22.5	22.5	22.6	22.6	22.6	22.7	22.8	23.5	24.3	24.4	24.2	24.2	24.3	24.4	24.3	24.1	23.9	23.8	23.6	23.4	22.4	24.4	23.4
Mar 6	23.2	22.9	22.6	22.5	22.5	22.5	22.5	22.6	22.5	22.4	23.2	24.0	24.4	24.2	24.2	24.1	24.1	24.3	24.4	24.3	24.0	23.6	23.1	22.7	22.4	24.4	23.4
Mar 7	22.4	22.4	22.5	22.6	22.5	22.5	22.6	22.6	22.5	22.5	23.0	24.0	24.3	24.1	24.0	24.0	23.9	24.2	24.2	23.9	23.7	23.6	23.3	22.9	22.4	24.3	23.3
Mar 8	22.5	22.4	22.5	22.5	22.5	22.5	22.6	22.5	22.5	22.5	22.3	22.6	23.4	24.0	24.2	24.0	24.0	23.7	23.0	22.4	22.4	22.5	22.5	22.6	22.3	24.2	22.9
Mar 9	22.6	22.5	22.6	22.6	22.6	22.6	22.6	22.6	22.6	22.6	22.5	22.5	22.5	22.5	22.5	22.4	22.3	22.3	22.4	22.3	22.5	22.4	22.4	22.4	22.3	22.6	22.5
Mar 10	22.4	22.5	22.5	22.5	22.5	22.6	22.6	22.6	22.6	22.6	22.5	22.3	22.5	22.6	22.7	22.5	22.5	22.5	22.5	22.5	22.6	22.5	22.5	22.6	22.3	22.7	22.5
Mar 11	22.6	22.6	22.5	22.5	22.5	22.5	22.5	22.5	22.6	22.6	22.6	22.6	22.6	22.4	22.3	22.3	22.3	22.5	22.5	22.5	22.5	22.6	22.5	22.5	22.3	22.6	22.5
Mar 12	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.4	22.6	23.0	23.8	24.3	24.1	24.0	24.0	24.0	24.2	24.4	24.2	23.9	23.9	23.9	23.8	22.4	24.4	23.4
Mar 13	23.6	23.3	23.0	22.8	22.6	22.3	22.5	22.4	22.4	22.5	23.0	23.9	24.1	24.0	23.9	23.8	23.8	24.0	24.2	24.3	24.4	24.3	24.2	24.1	22.3	24.4	23.5
Mar 14	23.9	23.8	23.7	23.7	23.7	23.6	23.5	23.4	23.5	23.7	24.1	24.2	24.1	24.0	24.0	23.9	23.9	24.0	24.0	24.0	24.3	24.2	24.0	23.7	23.4	24.3	23.9
Mar 15	23.4	23.1	22.8	22.7	22.4	22.2	22.3	22.4	22.3	22.3	22.4	22.2	22.5	22.9	23.6	24.1	24.1	24.0	23.5	22.8	22.3	22.4	22.5	22.5	22.2	24.1	22.8
Mar 16	22.5	22.5	22.6	22.5	22.5	22.5	22.6	22.5	22.5	22.5	22.5	22.9	23.5	24.2	24.2	24.0	24.0	24.1	24.4	24.1	23.8	23.4	22.9	22.5	22.5	24.4	23.2
Mar 17	22.3	22.4	22.4	22.5	22.5	22.5	22.5	22.5	22.5	22.4	22.9	23.4	24.1	24.1	24.0	23.9	23.8	23.9	23.9	24.2	24.2	24.2	24.2	24.0	22.3	24.2	23.3
Mar 18	23.8	23.3	22.8	22.4	22.3	22.4	P	P	P	P	P	P	P	P	P	P	P	21.7	22.0	22.0	22.0	22.0	22.0	22.2	21.7	23.8	-
Mar 19	22.1	21.9	21.8	21.6	21.4	21.2	20.9	20.8	20.9	21.6	22.1	22.0	21.9	21.9	21.8	21.8	21.7	21.6	21.8	21.9	22.1	22.3	22.1	22.0	20.8	22.3	21.7
Mar 20	21.7	21.5	21.2	21.0	20.8	20.5	20.2	20.2	20.5	21.5	22.1	22.0	21.9	21.9	21.8	21.8	21.7	21.8	21.8	22.0	22.0	22.1	22.2	22.2	20.2	22.2	21.5
Mar 21	22.0	21.7	21.3	20.9	20.5	20.1	20.3	20.2	20.3	20.2	20.4	20.8	21.1	21.5	21.8	22.2	22.1	22.1	22.1	21.9	21.9	21.8	21.6	21.4	20.1	22.2	21.3
Mar 22	21.3	21.3	21.2	21.1	21.0	21.0	21.0	21.0	21.0	21.4	21.6	21.8	22.2	22.1	22.1	22.1	22.1	22.2	21.9	21.3	20.5	20.1	20.3	20.3	20.1	22.2	21.3
Mar 23	20.3	20.3	20.3	20.4	20.3	20.3	20.3	20.3	20.4	20.4	20.4	20.3	20.2	20.4	20.6	20.6	20.5	20.4	20.4	20.3	20.2	20.1	20.1	20.0	20.0	20.6	20.3
Mar 24	20.1	20.2	20.2	20.0	20.2	20.2	20.2	20.1	20.2	20.5	21.1	21.7	22.2	22.1	22.1	22.1	22.1	22.1	22.2	22.2	22.1	21.9	21.5	21.1	20.0	22.2	21.2
Mar 25	20.7	20.2	20.3	20.3	20.3	20.4	20.4	20.3	20.4	20.3	20.1	**18.3**	18.8	20.2	20.7	21.3	21.8	22.0	21.8	21.4	20.9	20.5	20.0	20.0	**18.3**	22.0	20.5
Mar 26	20.0	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	21.3	23.0	23.8	24.3	25.1	**25.2**	**25.2**	24.6	24.6	24.2	23.7	23.1	22.9	23.0	23.1	20.0	**25.2**	22.4
Mar 27	23.1	23.1	23.1	23.2	23.2	23.2	23.2	23.2	23.3	23.1	23.3	23.6	24.1	24.4	24.8	**25.2**	25.1	24.9	24.7	24.7	24.6	24.5	24.4	24.3	23.1	**25.2**	23.9
Mar 28	24.2	24.2	24.1	24.0	23.8	23.7	23.5	23.5	23.6	23.9	24.2	24.7	**25.2**	25.1	24.9	24.9	24.9	24.8	24.8	24.8	25.0	25.0	25.0	25.0	23.5	**25.2**	**24.5**
Mar 29	24.8	24.4	23.9	23.2	23.1	23.3	23.3	23.3	23.3	23.3	23.2	23.9	24.6	25.1	24.8	25.0	25.1	25.0	24.8	23.8	23.4	23.4	23.3	23.4	23.1	25.1	23.9
Mar 30	23.3	23.3	23.3	23.3	23.3	23.3	23.3	23.3	23.4	23.5	23.5	23.3	23.1	22.9	23.0	23.0	23.0	22.9	23.0	22.9	23.0	23.0	23.0	23.0	22.9	23.5	23.2
Mar 31	23.0	23.0	23.0	23.0	23.1	23.0	23.1	23.1	23.0	23.0	23.1	23.6	24.0	24.5	24.8	**25.2**	**25.2**	**25.2**	**25.2**	**25.2**	24.8	24.4	24.0	23.5	23.0	**25.2**	23.9
Diurnal Maximum	24.8	24.4	24.1	24.0	23.8	23.7	23.5	23.5	23.6	23.9	24.2	24.7	25.2	25.1	25.2	25.2	25.2	25.2	25.2	25.2	25.0	25.0	25.0	25.0			
Daiurnal Average	22.5	22.4	22.3	22.2	22.2	22.1	22.2	22.1	22.2	22.3	22.5	22.8	23.1	23.3	23.3	23.4	23.4	23.3	23.3	23.1	23.0	22.9	22.7	22.6			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance	P Power Failure
X	InValid Data (Equipment Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)			

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for ST - Maskwa Site



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Maskwa Site - March 2021

Summary of Hourly Averages

PRECIPITATION in mm

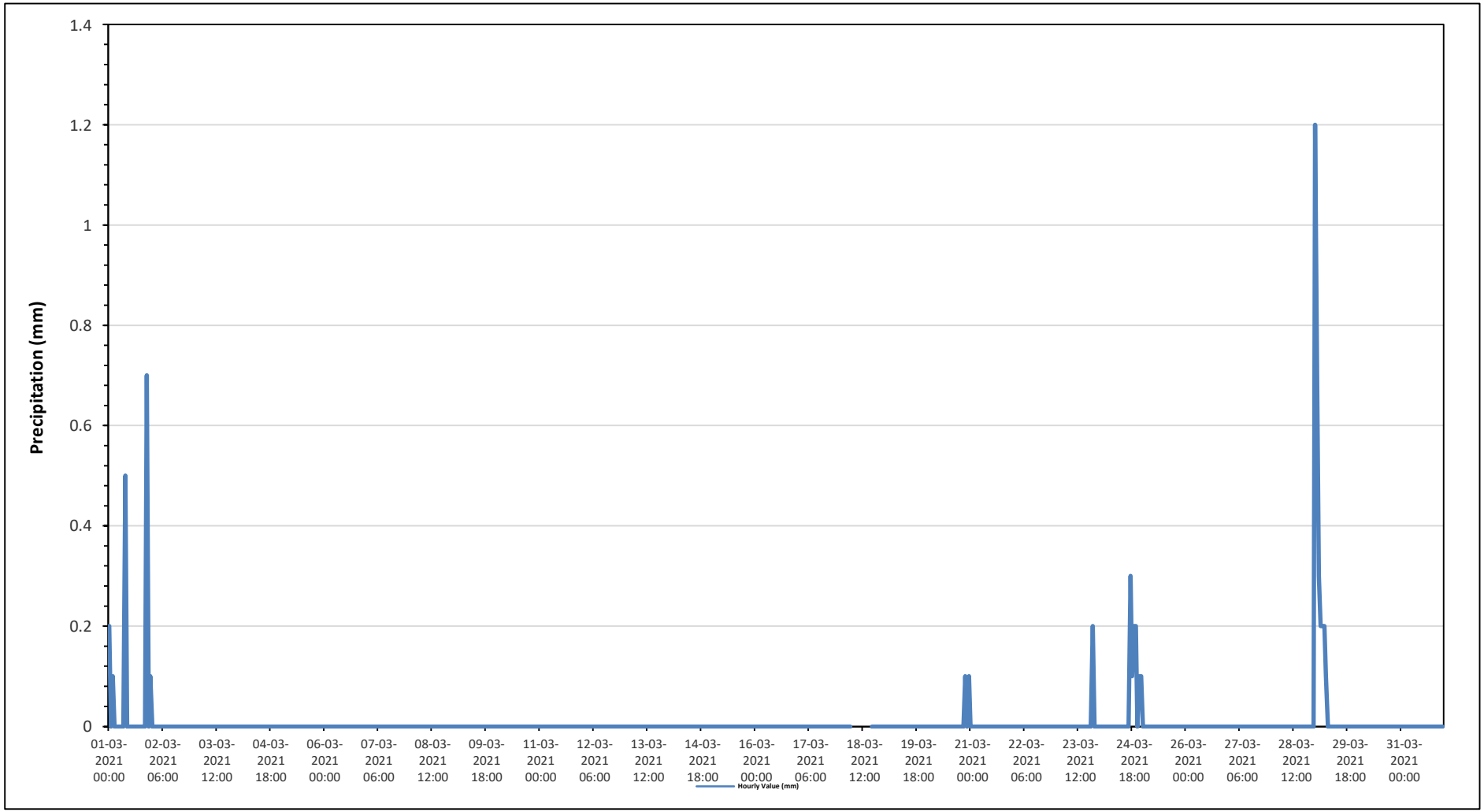
Maximum Hourly Value:	1.2	mm	on March 29 at hour 0	Hours in Service:	744
Maximum Daily Value:	2.9	mm	on March 29	Hours of Data:	733
Minimum Hourly Value:	0.0	mm	on March 1 at hour 1	Hours of Missing Data:	11
Minimum Daily Value:	0.0	mm	on March 2	Hours of Calibration:	0
Monthly Total:	5.9	mm		Operational Uptime:	98.5

Day	Hourly Period Starting at (MST)																								Daily	Daily	Daily
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Minimum	Maximum	Total
Mar 1	0.2	0	0.1	0	0	0	0	0	0	0.5	0	0	0	0	0	0	0	0	0	0	0	0.7	0	0.1	0.0	0.7	1.6
Mar 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Mar 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Mar 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Mar 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Mar 6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Mar 7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Mar 8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Mar 9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Mar 10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Mar 11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Mar 12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Mar 13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Mar 14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Mar 15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Mar 16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Mar 17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Mar 18	0	0	0	0	0	0	P	P	P	P	P	P	P	P	P	P	P	0	0	0	0	0	0	0	0.0	0.0	0.0
Mar 19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Mar 20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0.1	0.0	0.1	0.2
Mar 21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Mar 22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Mar 23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0	0	0	0.0	0.2	0.2
Mar 24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.1	0.2	0.2	0	0.1	0.1	0.0	0.3	1.0
Mar 25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Mar 26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Mar 27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Mar 28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Mar 29	**1.2**	0.7	0.3	0.2	0.2	0.2	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	**1.2**	**2.9**
Mar 30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Mar 31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Diurnal Maximum	1.2	0.7	0.3	0.2	0.2	0.2	0.1	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.1	0.2	0.2	0.7	0.1	0.1			
Diurnal Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance	P Power Failure
X	InValid Data (Equipment Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)			

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for Precipitation - Maskwa Site



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Maskwa Site - March 2021

Summary of Hourly Averages

VECTOR WIND SPEED (VWS) in km/hr

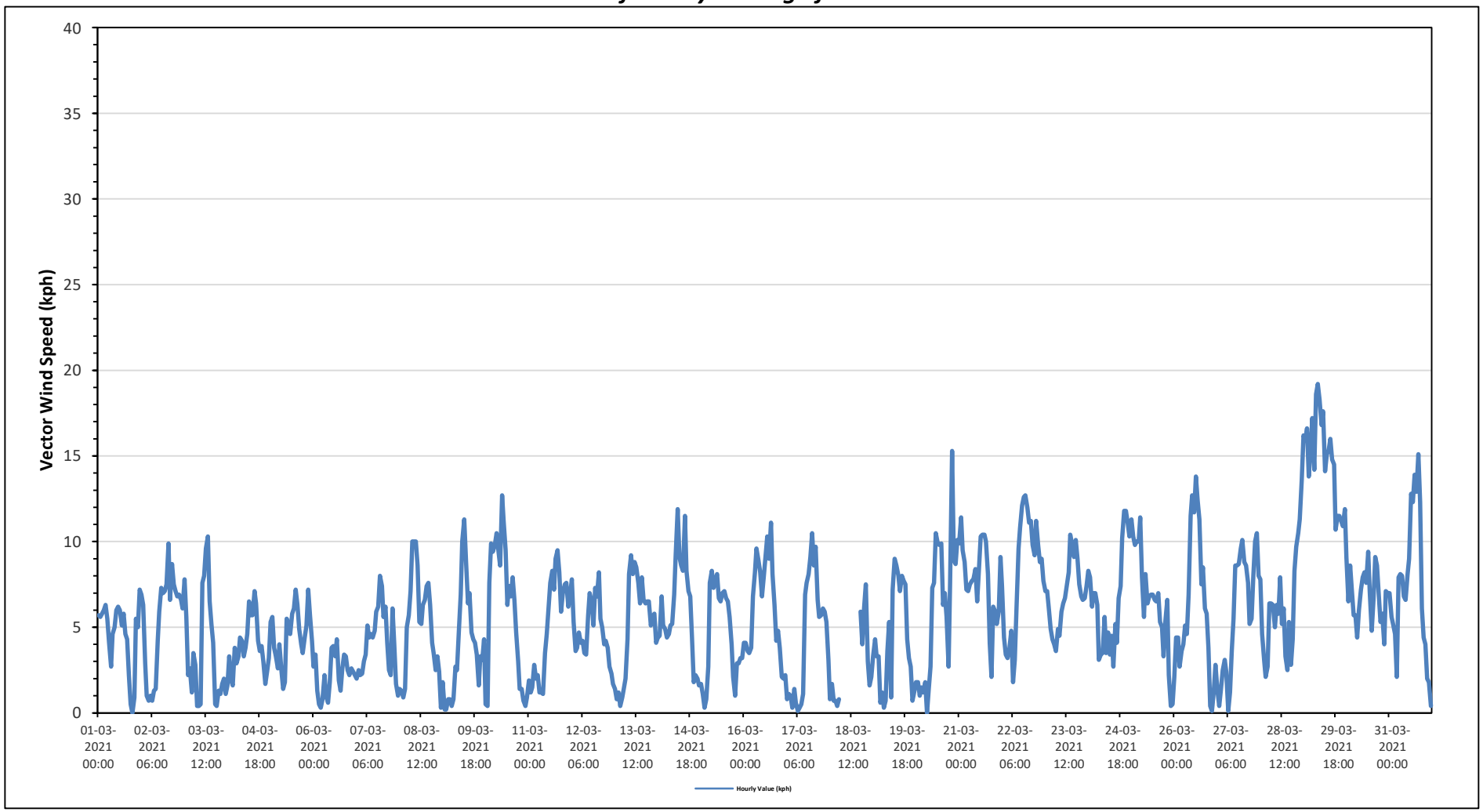
Maximum Hourly Value:	19.2	kph	on March 29 at hour 8	Hours in Service:	744
Maximum Daily Value:	14.7	kph	on March 29	Hours of Data:	733
Minimum Hourly Value:	0.0	kph	on March 1 at hour 19	Hours of Missing Data:	11
Minimum Daily Value:	0.5	kph	on March 28	Hours of Calibration:	0
Monthly Average:	0.8	kph		Operational Uptime:	98.5

Day	Hourly Period Starting at (MST)																								Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Mar 1	5.7	5.6	5.8	6.0	6.3	5.5	4.1	2.7	4.6	5.0	6.0	6.2	6.0	5.1	5.8	4.6	4.3	2.2	0.5	**0.0**	0.9	5.5	5.0	7.2	**0.0**	7.2	3.7
Mar 2	6.9	6.3	2.9	1.0	0.7	1.0	0.7	1.3	1.4	4.2	5.9	7.3	7.0	7.1	7.5	9.9	6.6	8.7	7.5	7.1	6.8	6.9	6.6	6.1	0.7	9.9	3.8
Mar 3	7.8	5.6	2.2	2.6	1.2	3.5	2.8	0.4	0.4	0.5	7.6	8.0	9.6	10.3	6.5	5.2	4.1	0.5	0.4	1.3	1.1	1.7	2.0	1.1	0.4	10.3	3.1
Mar 4	1.6	3.3	1.9	1.6	3.8	2.9	3.3	4.4	4.2	3.3	3.8	4.6	6.5	5.7	5.7	7.1	6.4	4.2	3.6	3.9	3.0	1.7	2.4	3.2	1.6	7.1	3.4
Mar 5	5.3	5.6	3.8	3.3	2.6	4.0	2.5	1.4	1.8	5.5	5.2	4.6	5.8	6.1	7.2	6.3	4.9	4.0	3.5	4.4	5.1	7.2	5.7	4.2	1.4	7.2	4.5
Mar 6	2.7	3.4	1.3	0.5	0.3	0.8	2.2	1.0	0.6	1.8	3.8	3.9	3.3	4.3	1.9	1.3	2.6	3.4	3.3	2.5	2.2	2.6	2.4	2.2	0.3	4.3	1.0
Mar 7	2.0	2.5	2.2	2.3	3.0	3.4	5.1	4.4	4.6	4.4	4.8	5.9	6.2	8.0	7.4	5.6	6.2	4.1	2.5	2.2	6.1	4.0	1.7	1.0	1.0	8.0	4.1
Mar 8	1.4	1.3	0.9	1.4	5.0	5.7	7.1	10.0	10.0	10.0	8.6	5.3	5.2	6.3	6.6	7.4	7.6	6.3	4.1	3.5	2.5	3.3	2.4	0.3	0.3	10.0	4.4
Mar 9	1.8	0.2	0.2	0.8	0.8	0.4	0.8	2.7	2.5	4.9	6.9	10.0	11.3	8.9	6.4	7.0	4.7	4.3	4.1	3.4	1.6	3.3	3.1	4.3	0.2	11.3	3.4
Mar 10	0.5	0.4	7.6	9.9	9.4	9.8	10.5	9.5	8.6	12.7	11.2	9.5	6.3	7.4	6.8	7.9	6.6	4.7	3.0	1.4	1.4	0.7	0.4	0.9	0.4	12.7	5.9
Mar 11	1.9	1.2	1.5	2.8	2.0	2.2	1.2	1.2	1.1	3.5	4.6	6.1	7.6	8.3	7.2	9.0	9.5	8.2	5.9	7.0	7.5	7.6	6.2	6.9	1.1	9.5	5.0
Mar 12	7.8	5.3	3.6	3.8	4.7	4.1	4.2	3.5	3.4	5.7	7.0	6.5	5.1	7.3	6.8	8.2	5.5	5.0	4.0	4.2	3.8	2.7	2.3	1.7	1.7	8.2	4.3
Mar 13	1.4	0.8	1.2	0.4	0.9	1.4	2.0	4.3	8.1	9.2	8.1	8.8	8.5	7.6	6.4	7.9	6.6	6.4	6.5	6.5	5.1	5.6	5.8	4.1	0.4	9.2	4.4
Mar 14	4.4	4.5	6.8	5.1	4.9	4.4	4.6	5.1	5.2	6.9	9.2	11.9	9.1	8.6	8.3	11.5	8.3	7.1	6.8	4.4	1.8	2.2	2.0	1.6	1.6	11.9	5.5
Mar 15	1.7	1.1	0.3	0.8	2.7	7.6	8.3	7.3	7.8	8.1	6.7	6.5	7.0	7.1	6.7	6.5	5.6	4.0	2.1	1.0	2.9	2.9	3.2	3.2	0.3	8.3	3.5
Mar 16	4.1	4.1	3.6	3.5	3.8	6.8	8.2	9.6	8.9	8.2	6.8	7.9	9.1	10.3	9.0	11.1	8.1	6.3	4.2	4.8	3.8	2.1	2.0	2.2	2.0	11.1	6.2
Mar 17	0.8	1.1	1.0	0.3	1.4	0.6	0.1	0.3	0.5	1.1	6.9	7.6	8.1	9.1	10.5	8.6	9.7	6.6	5.6	5.7	6.1	5.9	5.3	3.1	0.1	10.5	4.1
Mar 18	0.8	1.7	0.7	0.7	0.4	0.8	**P**	**P**	**P**	**P**	**P**	**P**	**P**	**P**	**P**	**P**	**P**	5.9	4.0	6.1	7.5	3.0	1.6	2.1	0.4	7.5	-
Mar 19	3.3	4.3	3.3	3.3	0.6	1.2	0.3	0.7	3.6	5.3	0.9	7.2	9.0	8.6	8.0	7.1	8.0	7.7	7.5	4.3	3.2	2.7	0.7	1.3	0.3	9.0	2.3
Mar 20	1.8	1.8	1.0	1.5	1.2	1.8	**0.0**	1.4	2.7	7.3	7.6	10.5	9.9	9.8	9.9	6.3	7.0	5.6	2.7	7.6	15.3	8.9	8.7	10.1	**0.0**	15.3	3.7
Mar 21	9.9	11.4	9.5	8.8	7.2	7.1	7.5	7.7	7.8	8.4	6.5	8.1	10.3	10.4	10.4	10.0	8.1	4.1	2.1	6.2	5.9	5.2	5.9	9.1	2.1	11.4	3.7
Mar 22	7.4	4.4	3.4	3.2	3.7	4.8	1.8	3.1	6.2	9.6	10.8	12.1	12.6	12.7	12.0	11.1	11.2	9.8	9.2	11.2	9.8	8.8	9.0	7.7	1.8	12.7	6.7
Mar 23	7.1	7.1	6.2	4.9	4.3	4.0	3.6	4.9	4.5	5.9	6.4	6.7	7.4	8.2	10.4	9.9	9.1	10.1	9.0	7.5	6.8	6.6	6.7	7.4	3.6	10.4	4.5
Mar 24	8.3	7.9	6.2	7.0	7.0	6.3	3.1	3.4	3.5	5.6	3.5	4.7	3.4	4.5	2.7	5.2	4.1	6.7	7.4	10.2	11.8	11.8	11.1	10.3	2.7	11.8	3.5
Mar 25	11.3	10.3	9.8	10.0	10.0	11.4	7.9	5.6	8.1	6.4	6.8	6.9	6.9	6.6	6.5	7.0	5.3	5.0	3.3	5.3	6.6	2.2	0.4	0.5	0.4	11.4	5.9
Mar 26	2.1	4.4	4.4	2.7	3.6	4.0	5.1	4.6	6.9	11.5	12.7	11.7	13.8	12.4	11.3	7.5	8.5	6.1	5.8	3.8	0.4	0.1	1.2	2.8	0.1	13.8	4.6
Mar 27	1.3	0.4	1.4	2.5	3.1	2.4	0.1	1.2	3.6	5.5	8.6	8.6	8.7	9.6	10.1	8.8	8.6	7.6	5.2	5.5	8.0	10.0	10.5	8.0	0.1	10.5	5.1
Mar 28	7.8	4.6	3.1	2.1	2.7	6.4	6.4	6.3	5.0	6.3	5.8	7.9	5.2	6.1	3.3	2.5	5.3	2.8	4.3	8.3	9.7	10.5	11.3	13.6	2.1	13.6	**0.5**
Mar 29	16.2	15.9	16.6	13.8	15.6	17.2	14.2	18.6	**19.2**	18.3	16.8	17.6	14.1	15.1	15.3	16.0	14.8	14.5	10.7	11.5	11.5	11.2	10.9	11.9	10.7	**19.2**	**14.7**
Mar 30	9.1	6.5	8.6	7.1	5.7	5.7	4.4	6.0	7.2	7.9	8.2	7.6	9.4	7.1	4.8	6.6	9.1	8.6	6.9	5.3	5.8	4.0	7.1	7.0	4.0	9.4	4.3
Mar 31	7.0	5.6	5.2	4.6	2.1	7.9	8.1	8.0	6.8	6.6	8.1	9.0	12.8	12.3	13.9	12.9	15.1	12.3	6.1	4.4	4.0	2.0	1.8	0.4	0.4	15.1	6.5
Diurnal Maximum	16	16	17	14	16	17	14	19	19	18	17	18	14	15	15	16	15	15	11	12	15	12	11	14			
Daiurnal Average	4.9	4.5	4.1	3.8	3.9	4.7	4.3	4.7	5.3	6.7	7.2	8.0	8.2	8.4	7.8	7.9	7.4	6.2	4.9	5.2	5.4	4.9	4.7	4.7			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance		
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance	P	Power Failure
X	InValid Data (Equipment Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)				

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

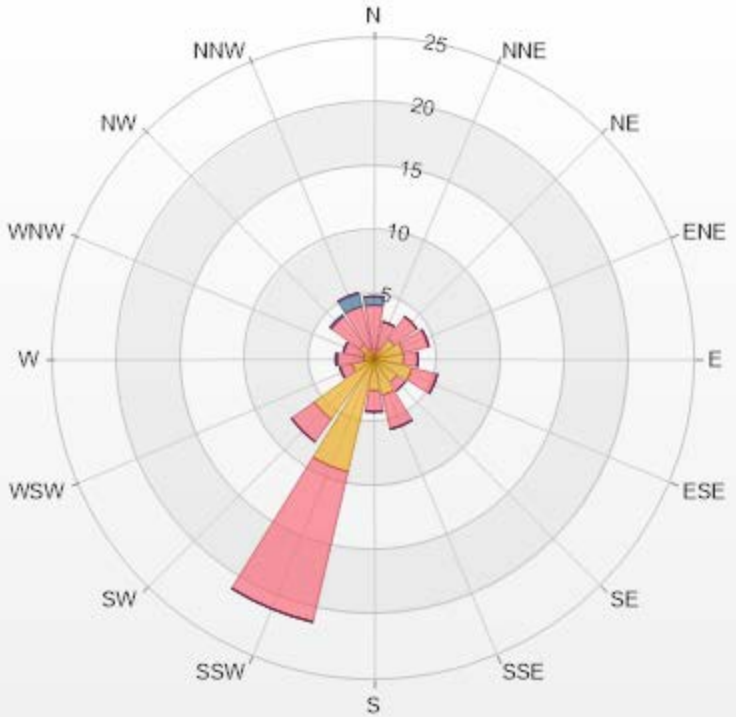
Timeseries Chart of Hourly Average for VWS - Maskwa Site



Wind: Maskwa Monitor: WDS [kph] Monthly: 03-2021 Type: WindRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
Calm: 15.83% Valid Data: 98.52%

Direction	1.8-6.0	6.0-15.0	15.0-29.0	29.0-39.0	>39.0	Total
N	0.14	4.09	0.68	0	0	4.91
NNE	0.82	2.18	0	0	0	3
NE	1.91	2.18	0	0	0	4.09
ENE	2.32	2.05	0	0	0	4.37
E	2.32	1.09	0	0	0	3.41
ESE	3	2.05	0	0	0	5.05
SE	2.18	0.82	0	0	0	3
SSE	2.86	2.73	0	0	0	5.59
S	2.46	1.64	0	0	0	4.1
SSW	9	12.01	0	0	0	21.01
SW	5.73	2.18	0	0	0	7.91
WSW	1.77	0.95	0	0	0	2.72
W	0.82	2.05	0.14	0	0	3.01
WNW	0.82	1.64	0	0	0	2.46
NW	1.36	2.73	0.14	0	0	4.23
NNW	0.82	3.41	1.09	0	0	5.32
Summary	38.33	43.8	2.05	0	0	84.18

Maskwa 01-03-2021 00:00 - 31-03-2021 23:00 Calm: 15.83% Calm Wind Avg Speed: 0.96(kph)



% Icon Classes (kph)	38 1.8-6.0	44 6.0-15.0	2 15.0-29.0	0 29.0-39.0	0 >39.0

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Maskwa Site - March 2021

Summary of Hourly Averages

WIND DIRECTION (VWD) in sector

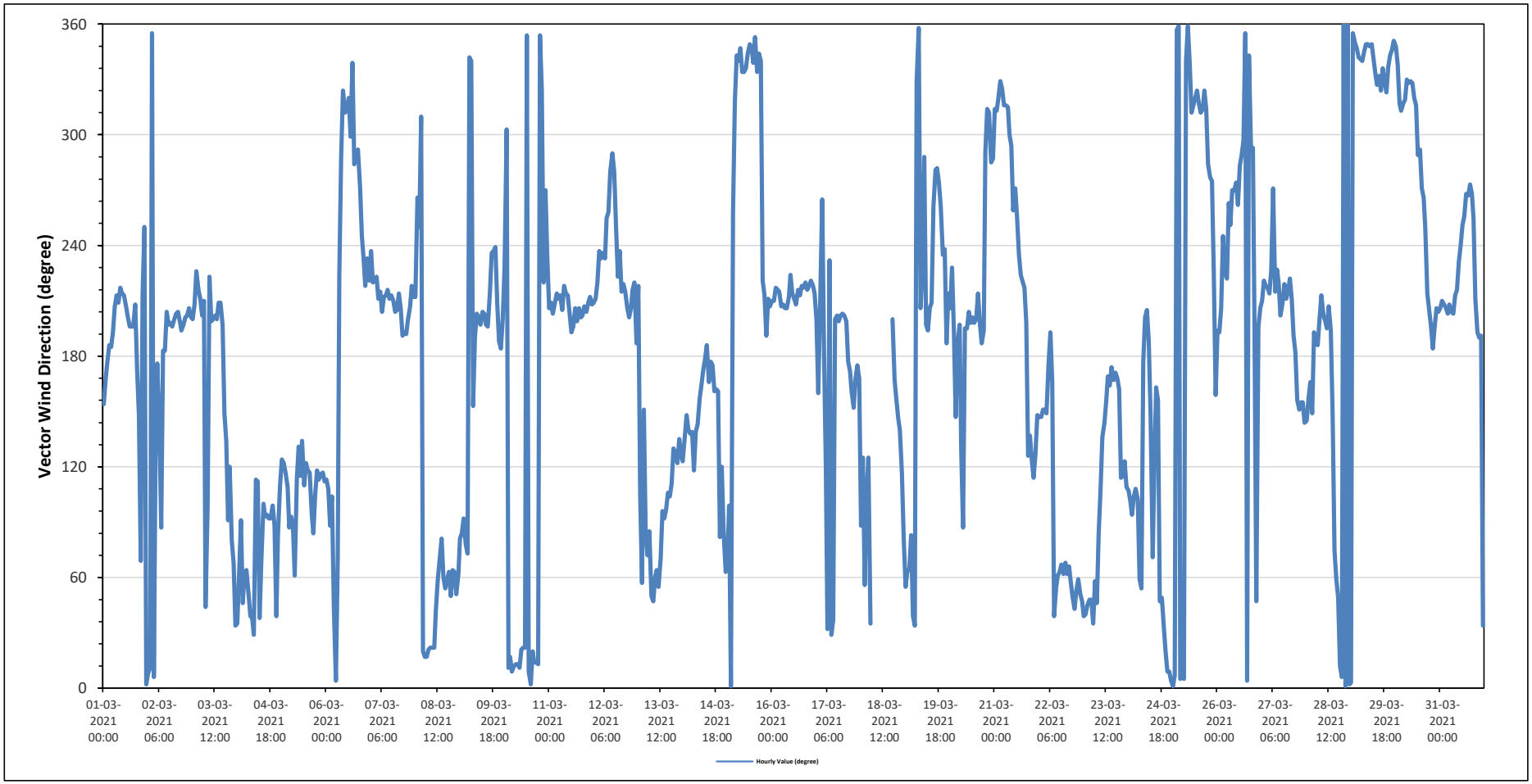
Monthly Average:	224 (SW)	degree	
		Hours in Service:	744
		Hours of Data:	733
		Hours of Missing Data:	11
		Hours of Calibration:	0
		Operational Uptime:	98.5

Day	Hourly Period Starting at (MST)																							Daily Average	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Degree	Quadrant
Mar 1	SSE	SSE	S	S	S	S	SSW	SSW	SSW	SW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	S	SE	ENE	SSW	WSW	N	200	SSW
Mar 2	N	NNE	N	N	ESE	S	SE	E	S	S	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	200	SSW
Mar 3	SSW	SSW	SW	SW	SSW	SSW	SSW	NE	E	SW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSE	SE	E	ESE	E	ENE	NE	199	SSW
Mar 4	NE	ENE	E	NE	ENE	ENE	NE	NE	NE	NNE	ESE	ESE	NE	ENE	E	E	E	E	E	E	E	NE	E	ESE	76	ENE
Mar 5	ESE	ESE	ESE	ESE	E	E	E	ENE	ESE	SE	ESE	SE	ESE	ESE	ESE	ESE	E	E	ESE	ESE	ESE	ESE	ESE	ESE	113	ESE
Mar 6	ESE	ESE	E	ESE	NE	N	ENE	SW	WNW	NW	NW	NW	NW	WNW	NNW	WNW	WNW	WNW	W	WSW	SW	SW	SW	SW	287	WNW
Mar 7	SW	SW	SW	SW	SSW	SSW	SSW	SSW	SSW	SW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	S	S	S	SSW	SSW	SW	SSW	209	SSW
Mar 8	SSW	W	WSW	NW	NNE	NNE	NNE	NNE	NNE	NNE	NNE	NE	ENE	ENE	E	ENE	NE	ENE	ENE	NE	ENE	ENE	NE	ENE	40	NE
Mar 9	E	E	E	ENE	ENE	NNW	NNW	SSE	S	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SW	SW	WSW	SSW	S	S	SSW	201	SSW
Mar 10	SW	WNW	NNE	NNE	N	NNE	NNE	NNE	NNE	NNE	NNE	NNE	N	N	N	NNE	NNE	NNE	NNE	N	NW	SW	W	SW	12	NNE
Mar 11	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SW	SSW	SSW	SSW	S	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	205	SSW
Mar 12	SSW	SSW	SW	SW	SW	SW	SW	WSW	WSW	W	WNW	W	WSW	SW	SW	SSW	SW	SSW	SSW	SSW	SSW	SW	SW	S	233	SW
Mar 13	SW	ESE	ENE	SSE	E	ENE	E	NE	NE	ENE	ENE	NE	ENE	E	E	E	ESE	ESE	ESE	SE	SE	ESE	SE	SE	90	E
Mar 14	ESE	SE	SE	SE	SE	SE	ESE	SE	SE	SSE	SSE	S	S	S	SSE	S	S	SSE	SSE	SSE	E	ESE	E	ENE	157	SSE
Mar 15	ENE	E	N	WSW	NW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	N	NNW	NNW	NNW	SW	SSW	S	SSW	SSW	336	NNW
Mar 16	SSW	SSW	SW	SW	SSW	SSW	SSW	SSW	SSW	SSW	SW	SSW	SSW	SSW	SW	SSW	SW	SW	SW	SW	SW	SW	SW	SSW	213	SSW
Mar 17	SSW	SSE	SSW	W	S	ESE	NNE	SW	NNE	NE	SSW	SSW	SSW	SSW	SSW	SSW	SSW	S	S	SSE	SSE	SSE	S	SSE	188	S
Mar 18	E	SE	NE	ESE	SE	NE	P	P	P	P	P	P	P	P	P	P	P	SSW	SSE	SSE	SE	SE	ESE	E	-	SE
Mar 19	NE	ENE	ENE	E	NE	NE	NNW	N	SSW	SW	WNW	SSW	SSW	SSW	SSW	W	W	W	W	W	SW	SW	S	SSW	234	SW
Mar 20	SSW	SW	SSW	SE	S	SSW	SE	E	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	S	SSW	WNW	NW	NW	WNW	WNW	230	SW
Mar 21	NW	NW	NW	NNW	NW	NW	NW	NW	WNW	WNW	WSW	W	WSW	SW	SW	SW	SW	SSW	SE	SE	ESE	ESE	SE	SE	271	W
Mar 22	SE	SE	SSE	SSE	SSE	S	S	SSE	NE	NE	ENE	ENE	ENE	ENE	ENE	ENE	ENE	ENE	NE	NE	NE	ENE	NE	NE	69	ENE
Mar 23	NE	NE	NE	NE	NE	NE	ENE	NE	E	ESE	SE	SE	SSE	SSE	SSE	S	SSE	S	SSE	SSE	ESE	ESE	ESE	ESE	125	SE
Mar 24	ESE	E	E	ESE	ESE	E	ENE	NE	S	SSW	SSW	S	SE	ENE	SE	SSE	SSE	NE	NE	NE	NNE	N	N	N	71	ENE
Mar 25	N	N	N	N	N	N	N	NNW	N	NNW	NW	NW	NW	NW	NW	NW	NW	NW	NW	WNW	W	W	SW	SSE	338	NNW
Mar 26	SSW	S	SSW	WSW	SW	SW	W	WSW	W	W	W	W	W	WNW	WNW	N	N	NNW	WNW	WNW	SSW	NE	SSW	SSW	277	W
Mar 27	SSW	SW	SW	SW	SSW	SW	W	SSW	SW	SW	SSW	SSW	SW	SSW	SSW	SW	SSW	S	S	SSE	SSE	SSE	SSE	SE	194	SSW
Mar 28	SE	SSE	SSE	SSE	S	S	S	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SE	ENE	ENE	NE	NNE	N	N	N	N	N	158	SSE
Mar 29	N	N	N	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NW	NNW	NW	NNW	NNW	NW	NNW	NNW	NNW	N	342	NNW
Mar 30	NNW	NNW	NW	NW	NW	NW	NNW	NNW	NNW	NNW	NW	NW	WNW	WNW	W	W	WSW	SSW	SSW	SSW	S	SSW	SSW	SSW	286	WNW
Mar 31	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SW	SW	WSW	WSW	WSW	W	W	W	W	WSW	SSW	S	S	S	NE	237	SW

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance		
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance	P	Power Failure
X	InValid Data (Machine Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)				

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for VWD - Maskwa Site



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Maskwa Site - March 2021

Summary of Hourly Averages

VECTOR WIND SPEED (VWS) in km/hr & WIND DIRECTION (VWD) in sector

WIND SPEED

Maximum Hourly Value:	19.2	kph	on March 29 at hour 8	Hours in Service:	744
Maximum Daily Value:	14.7	kph	on March 29	Hours of Data:	733
Minimum Hourly Value:	0.0	kph	on March 1 at hour 19	Hours of Missing Data:	11
Minimum Daily Value:	0.5	kph	on March 28	Hours of Calibration:	0
Monthly Average:	0.8	kph		Operational Uptime:	98.5

WIND DIRECTION

Monthly Average: 224 (SW) degree

Day	Hourly Period Starting at (MST)																							Daily	Daily	Daily
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Minimum	Maximum	Average
Mar 1	5.7	5.6	5.8	6.0	6.3	5.5	4.1	2.7	4.6	5.0	6.0	6.2	6.0	5.1	5.8	4.6	4.3	2.2	0.5	**0.0**	0.9	5.5	5.0	7.2	**0.0**	7.2	3.7
	SSE	SSE	S	S	S	S	SSW	SSW	SSW	SW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	S	SE	ENE	SSW	WSW	N			
Mar 2	6.9	6.3	2.9	1.0	0.7	1.0	0.7	1.3	1.4	4.2	5.9	7.3	7.0	7.1	7.5	9.9	6.6	8.7	7.5	7.1	6.8	6.9	6.6	6.1	0.7	9.9	3.8
	N	NNE	N	N	ESE	S	SE	E	S	S	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW			
Mar 3	7.8	5.6	2.2	2.6	1.2	3.5	2.8	0.4	0.4	0.5	7.6	8.0	9.6	10.3	6.5	5.2	4.1	0.5	0.4	1.3	1.1	1.7	2.0	1.1	0.4	10.3	3.1
	SSW	SSW	SW	SW	SSW	SSW	SSW	NE	E	SW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSE	SE	E	ESE	E	ENE	NE			
Mar 4	1.6	3.3	1.9	1.6	3.8	2.9	3.3	4.4	4.2	3.3	3.8	4.6	6.5	5.7	5.7	7.1	6.4	4.2	3.6	3.9	3.0	1.7	2.4	3.2	1.6	7.1	3.4
	NE	ENE	E	NE	ENE	ENE	NE	NE	NE	NNE	ESE	ESE	NE	ENE	E	E	E	E	E	E	E	NE	E	ESE			
Mar 5	5.3	5.6	3.8	3.3	2.6	4.0	2.5	1.4	1.8	5.5	5.2	4.6	5.8	6.1	7.2	6.3	4.9	4.0	3.5	4.4	5.1	7.2	5.7	4.2	1.4	7.2	4.5
	ESE	ESE	ESE	ESE	E	E	E	ENE	ESE	SE	ESE	SE	ESE	ESE	ESE	ESE	E	E	ESE	ESE	ESE	ESE	ESE	ESE			
Mar 6	2.7	3.4	1.3	0.5	0.3	0.8	2.2	1.0	0.6	1.8	3.8	3.9	3.3	4.3	1.9	1.3	2.6	3.4	3.3	2.5	2.2	2.6	2.4	2.2	0.3	4.3	1.0
	ESE	ESE	E	ESE	NE	N	ENE	SW	WNW	NW	NW	NW	NW	WNW	NNW	WNW	WNW	WNW	W	WSW	SW	SW	SW	SW			
Mar 7	2.0	2.5	2.2	2.3	3.0	3.4	5.1	4.4	4.6	4.4	4.8	5.9	6.2	8.0	7.4	5.6	6.2	4.1	2.5	2.2	6.1	4.0	1.7	1.0	1.0	8.0	4.1
	SW	SW	SW	SW	SSW	SSW	SSW	SSW	SSW	SW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	S	S	S	SSW	SSW	SW	SSW			
Mar 8	1.4	1.3	0.9	1.4	5.0	5.7	7.1	10.0	10.0	10.0	8.6	5.3	5.2	6.3	6.6	7.4	7.6	6.3	4.1	3.5	2.5	3.3	2.4	0.3	0.3	10.0	4.4
	SSW	W	WSW	NW	NNE	NNE	NNE	NNE	NNE	NNE	NNE	NE	ENE	ENE	E	ENE	NE	ENE	ENE	NE	ENE	ENE	NE	ENE			
Mar 9	1.8	0.2	0.2	0.8	0.8	0.4	0.8	2.7	2.5	4.9	6.9	10.0	11.3	8.9	6.4	7.0	4.7	4.3	4.1	3.4	1.6	3.3	3.1	4.3	0.2	11.3	3.4
	E	E	E	ENE	ENE	NNW	NNW	SSE	S	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SW	SW	WSW	SSW	S	S	SSW			
Mar 10	0.5	0.4	7.6	9.9	9.4	9.8	10.5	9.5	8.6	12.7	11.2	9.5	6.3	7.4	6.8	7.9	6.6	4.7	3.0	1.4	1.4	0.7	0.4	0.9	0.4	12.7	5.9
	SW	WNW	NNE	NNE	N	NNE	NNE	NNE	NNE	NNE	NNE	NNE	N	N	N	NNE	NNE	NNE	NNE	N	NW	SW	W	SW			
Mar 11	1.9	1.2	1.5	2.8	2.0	2.2	1.2	1.2	1.1	3.5	4.6	6.1	7.6	8.3	7.2	9.0	9.5	8.2	5.9	7.0	7.5	7.6	6.2	6.9	1.1	9.5	5.0
	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SW	SSW	SSW	SSW	S	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW			
Mar 12	7.8	5.3	3.6	3.8	4.7	4.1	4.2	3.5	3.4	5.7	7.0	6.5	5.1	7.3	6.8	8.2	5.5	5.0	4.0	4.2	3.8	2.7	2.3	1.7	1.7	8.2	4.3
	SSW	SSW	SW	SW	SW	SW	SW	WSW	WSW	W	WNW	W	WSW	SW	SW	SSW	SW	SSW	SSW	SSW	SSW	SW	SW	S			
Mar 13	1.4	0.8	1.2	0.4	0.9	1.4	2.0	4.3	8.1	9.2	8.1	8.8	8.5	7.6	6.4	7.9	6.6	6.4	6.5	6.5	5.1	5.6	5.8	4.1	0.4	9.2	4.4
	SW	ESE	ENE	SSE	E	ENE	E	NE	NE	ENE	ENE	NE	ENE	E	E	E	ESE	ESE	ESE	SE	SE	ESE	SE	SE			
Mar 14	4.4	4.5	6.8	5.1	4.9	4.4	4.6	5.1	5.2	6.9	9.2	11.9	9.1	8.6	8.3	11.5	8.3	7.1	6.8	4.4	1.8	2.2	2.0	1.6	1.6	11.9	5.5
	ESE	SE	SE	SE	SE	SE	ESE	SE	SE	SSE	SSE	S	S	S	SSE	S	S	SSE	SSE	SSE	E	ESE	E	ENE			
Mar 15	1.7	1.1	0.3	0.8	2.7	7.6	8.3	7.3	7.8	8.1	6.7	6.5	7.0	7.1	6.7	6.5	5.6	4.0	2.1	1.0	2.9	2.9	3.2	3.2	0.3	8.3	3.5
	ENE	E	N	WSW	NW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	N	NNW	NNW	NNW	SW	SSW	S	SSW	SSW			
Mar 16	4.1	4.1	3.6	3.5	3.8	6.8	8.2	9.6	8.9	8.2	6.8	7.9	9.1	10.3	9.0	11.1	8.1	6.3	4.2	4.8	3.8	2.1	2.0	2.2	2.0	11.1	6.2
	SSW	SSW	SW	SW	SSW	SSW	SSW	SSW	SSW	SSW	SW	SSW	SSW	SSW	SW	SSW	SW	SW	SW	SW	SW	SW	SW	SSW			
Mar 17	0.8	1.1	1.0	0.3	1.4	0.6	0.1	0.3	0.5	1.1	6.9	7.6	8.1	9.1	10.5	8.6	9.7	6.6	5.6	5.7	6.1	5.9	5.3	3.1	0.1	10.5	4.1
	SSW	SSE	SSW	W	S	ESE	NNE	SW	NNE	NE	SSW	SSW	SSW	SSW	SSW	SSW	SSW	S	S	SSE	SSE	SSE	S	SSE			
Mar 18	0.8	1.7	0.7	0.7	0.4	0.8	**P**	**P**	**P**	**P**	**P**	**P**	**P**	**P**	**P**	**P**	**P**	5.9	4.0	6.1	7.5	3.0	1.6	2.1	0.4	7.5	-
	E	SE	NE	ESE	SE	NE	**P**	**P**	**P**	**P**	**P**	**P**	**P**	**P**	**P**	**P**	**P**	SSW	SSE	SSE	SE	SE	ESE	E			
Mar 19	3.3	4.3	3.3	3.3	0.6	1.2	0.3	0.7	3.6	5.3	0.9	7.2	9.0	8.6	8.0	7.1	8.0	7.7	7.5	4.3	3.2	2.7	0.7	1.3	0.3	9.0	2.3
	NE	ENE	ENE	E	NE	NE	NNW	N	SSW	SW	WNW	SSW	SSW	SSW	SSW	W	W	W	W	W	SW	SW	S	SSW			
Mar 20	1.8	1.8	1.0	1.5	1.2	1.8	**0.0**	1.4	2.7	7.3	7.6	10.5	9.9	9.8	9.9	6.3	7.0	5.6	2.7	7.6	15.3	8.9	8.7	10.1	**0.0**	15.3	3.7
	SSW	SW	SSW	SE	S	SSW	SE	E	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	S	SSW	WNW	NW	NW	WNW	WNW			

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Maskwa Site - March 2021

Summary of Hourly Averages

VECTOR WIND SPEED (VWS) in km/hr & WIND DIRECTION (VWD) in sector

WIND SPEED

Maximum Hourly Value:	19.2	kph	on March 29 at hour 8	Hours in Service:	744
Maximum Daily Value:	14.7	kph	on March 29	Hours of Data:	733
Minimum Hourly Value:	0.0	kph	on March 1 at hour 19	Hours of Missing Data:	11
Minimum Daily Value:	0.5	kph	on March 28	Hours of Calibration:	0
Monthly Average:	0.8	kph		Operational Uptime:	98.5

WIND DIRECTION

Monthly Average: 224 (SW) degree

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Mar 21	9.9	11.4	9.5	8.8	7.2	7.1	7.5	7.7	7.8	8.4	6.5	8.1	10.3	10.4	10.4	10.0	8.1	4.1	2.1	6.2	5.9	5.2	5.9	9.1	2.1	11.4	3.7
	NW	NW	NW	NNW	NW	NW	NW	NW	WNW	WNW	WSW	W	WSW	SW	SW	SW	SW	SSW	SE	SE	ESE	ESE	SE	SE			
Mar 22	7.4	4.4	3.4	3.2	3.7	4.8	1.8	3.1	6.2	9.6	10.8	12.1	12.6	12.7	12.0	11.1	11.2	9.8	9.2	11.2	9.8	8.8	9.0	7.7	1.8	12.7	6.7
	SE	SE	SSE	SSE	SSE	S	S	SSE	NE	NE	ENE	ENE	ENE	ENE	ENE	ENE	ENE	ENE	NE	NE	NE	ENE	NE	NE			
Mar 23	7.1	7.1	6.2	4.9	4.3	4.0	3.6	4.9	4.5	5.9	6.4	6.7	7.4	8.2	10.4	9.9	9.1	10.1	9.0	7.5	6.8	6.6	6.7	7.4	3.6	10.4	4.5
	NE	NE	NE	NE	NE	NE	ENE	NE	E	ESE	SE	SE	SSE	SSE	SSE	S	SSE	S	SSE	SSE	ESE	ESE	ESE	ESE			
Mar 24	8.3	7.9	6.2	7.0	7.0	6.3	3.1	3.4	3.5	5.6	3.5	4.7	3.4	4.5	2.7	5.2	4.1	6.7	7.4	10.2	11.8	11.8	11.1	10.3	2.7	11.8	3.5
	ESE	E	E	ESE	ESE	E	ENE	NE	S	SSW	SSW	S	SE	ENE	SE	SSE	SSE	NE	NE	NE	NNE	N	N	N			
Mar 25	11.3	10.3	9.8	10.0	10.0	11.4	7.9	5.6	8.1	6.4	6.8	6.9	6.9	6.6	6.5	7.0	5.3	5.0	3.3	5.3	6.6	2.2	0.4	0.5	0.4	11.4	5.9
	N	N	N	N	N	N	N	NNW	N	NNW	NW	NW	NW	NW	NW	NW	NW	NW	NW	WNW	W	W	SW	SSE			
Mar 26	2.1	4.4	4.4	2.7	3.6	4.0	5.1	4.6	6.9	11.5	12.7	11.7	13.8	12.4	11.3	7.5	8.5	6.1	5.8	3.8	0.4	0.1	1.2	2.8	0.1	13.8	4.6
	SSW	S	SSW	WSW	SW	SW	W	WSW	W	W	W	W	W	WNW	WNW	N	N	NNW	WNW	WNW	SSW	NE	SSW	SSW			
Mar 27	1.3	0.4	1.4	2.5	3.1	2.4	0.1	1.2	3.6	5.5	8.6	8.6	8.7	9.6	10.1	8.8	8.6	7.6	5.2	5.5	8.0	10.0	10.5	8.0	0.1	10.5	5.1
	SSW	SW	SW	SW	SSW	SW	W	SSW	SW	SW	SSW	SSW	SW	SSW	SSW	SW	SSW	S	S	SSE	SSE	SSE	SSE	SE			
Mar 28	7.8	4.6	3.1	2.1	2.7	6.4	6.4	6.3	5.0	6.3	5.8	7.9	5.2	6.1	3.3	2.5	5.3	2.8	4.3	8.3	9.7	10.5	11.3	13.6	2.1	13.6	**0.5**
	SE	SSE	SSE	SSE	S	S	S	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SE	ENE	ENE	NE	NNE	N	N	N	N	N			
Mar 29	16.2	15.9	16.6	13.8	15.6	17.2	14.2	18.6	**19.2**	18.3	16.8	17.6	14.1	15.1	15.3	16.0	14.8	14.5	10.7	11.5	11.5	11.2	10.9	11.9	10.7	**19.2**	**14.7**
	N	N	N	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NW	NNW	NW	NNW	NNW	NW	NNW	NNW	NNW	N			
Mar 30	9.1	6.5	8.6	7.1	5.7	5.7	4.4	6.0	7.2	7.9	8.2	7.6	9.4	7.1	4.8	6.6	9.1	8.6	6.9	5.3	5.8	4.0	7.1	7.0	4.0	9.4	4.3
	NNW	NNW	NW	NW	NW	NW	NNW	NNW	NNW	NNW	NW	NW	WNW	WNW	W	W	WSW	SSW	SSW	SSW	S	SSW	SSW	SSW			
Mar 31	7.0	5.6	5.2	4.6	2.1	7.9	8.1	8.0	6.8	6.6	8.1	9.0	12.8	12.3	13.9	12.9	15.1	12.3	6.1	4.4	4.0	2.0	1.8	0.4	0.4	15.1	6.5
	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SW	SW	WSW	WSW	WSW	W	W	W	W	WSW	SSW	S	S	S	NE			

C	Monthly Calibration	**S**	Daily Zero-Span Check	**Q**	Quality Assurance	
K	Collection Error	**N**	No Data (Machine Not in Service)	**Y**	Routine Maintenance	**P** Power Failure
X	InValid Data (Equipment Malfunction /Recovery)	**NRM**	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)			

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Maskwa Site - March 2021

Summary of Hour Standard Deviations

STANDARD DEVIATION WIND DIRECTION (STDWD) in Degree

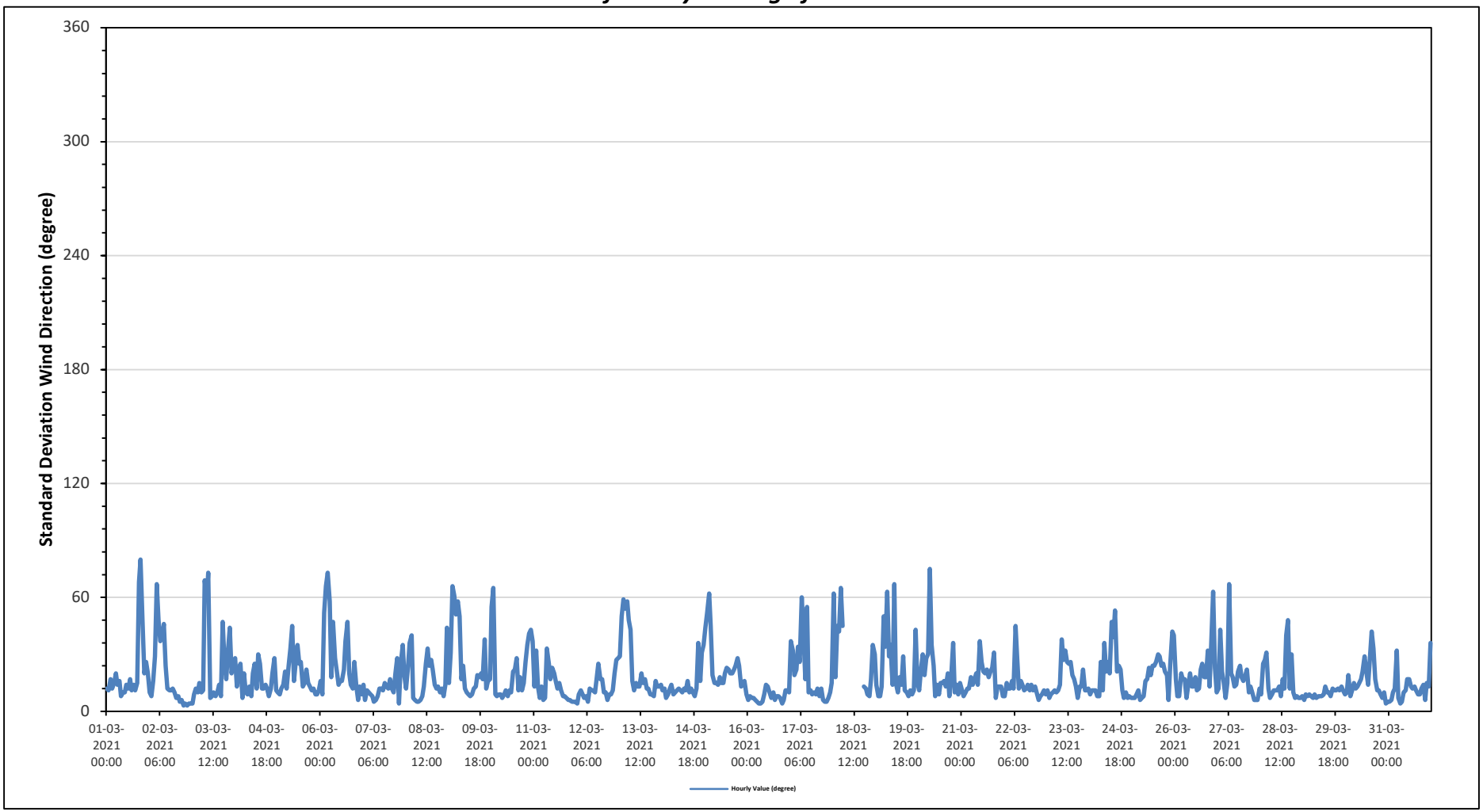
Maximum Hourly Value:	80	degree	on March 1 at hour 19	Hours in Service:	744
				Hours of Data:	733
Minimum Hourly Value:	3	degree	on March 2 at hour 19	Hours of Missing Data:	11
				Hours of Calibration:	0
				Operational Uptime:	98.5

Day	Hourly Period Starting at (MST)																								Daily Minimum	Daily Maximum
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
Mar 1	12	11	17	12	15	20	14	16	8	10	10	14	12	17	11	14	11	15	68	**80**	47	20	26	20	8	**80**
Mar 2	10	8	16	29	67	48	37	39	46	24	12	11	11	12	10	7	8	5	6	**3**	4	**3**	4	4	**3**	67
Mar 3	4	9	12	10	15	10	11	69	59	73	7	8	10	8	10	14	8	47	26	17	32	44	20	25	4	73
Mar 4	28	13	21	25	7	20	10	9	13	8	20	25	12	30	25	12	12	14	12	8	12	20	28	11	7	30
Mar 5	10	9	12	14	21	12	24	33	45	16	26	35	25	26	13	15	22	15	13	11	12	9	9	11	9	45
Mar 6	16	9	52	66	73	58	18	47	28	22	14	16	16	22	37	47	20	14	12	26	13	6	13	9	6	73
Mar 7	14	6	11	10	9	8	5	6	8	12	12	11	15	13	12	17	12	10	20	28	4	25	35	19	4	35
Mar 8	12	24	36	40	7	6	5	5	6	8	13	25	33	24	27	22	14	12	13	10	12	8	14	44	5	44
Mar 9	15	31	66	61	51	58	50	17	24	12	10	9	8	9	12	13	19	18	20	17	38	12	16	17	8	66
Mar 10	55	65	9	8	9	9	7	9	11	8	11	10	21	22	28	11	18	11	15	26	35	41	43	37	7	65
Mar 11	13	32	13	7	13	6	7	33	25	17	23	20	16	12	15	11	8	8	7	6	6	5	5	5	5	33
Mar 12	4	9	11	9	7	8	5	12	11	11	10	18	25	17	17	10	10	6	9	9	11	20	27	28	4	28
Mar 13	29	50	59	54	58	48	43	16	11	15	13	13	20	15	17	12	12	9	9	8	16	13	13	14	8	59
Mar 14	11	12	7	9	12	14	9	10	11	12	11	10	12	11	16	10	12	10	8	12	36	16	31	35	7	36
Mar 15	44	52	62	45	19	15	15	14	18	15	15	20	23	22	20	20	22	24	28	24	13	14	16	9	9	62
Mar 16	6	8	7	7	6	5	4	4	5	9	14	13	10	7	10	6	8	8	7	4	6	11	11	10	4	14
Mar 17	37	32	19	22	34	26	60	44	17	55	10	11	9	10	9	12	8	12	6	5	5	7	10	15	5	60
Mar 18	62	18	45	42	65	45	**P**	**P**	**P**	**P**	**P**	**P**	**P**	**P**	**P**	**P**	**P**	13	12	9	8	17	35	30	8	65
Mar 19	14	8	8	13	50	34	63	29	35	14	67	15	10	18	14	29	11	10	8	11	9	11	43	15	8	67
Mar 20	11	22	30	19	28	30	75	35	24	8	14	9	15	15	16	13	20	8	20	36	10	14	9	15	8	75
Mar 21	11	8	10	12	12	18	14	17	20	14	37	26	21	20	22	18	21	23	31	7	13	13	13	8	7	37
Mar 22	8	15	12	12	16	12	45	29	12	16	14	11	12	14	11	14	11	13	10	6	8	9	11	9	6	45
Mar 23	11	7	9	10	11	10	11	14	38	27	32	26	25	26	19	17	13	7	13	13	22	11	11	12	7	38
Mar 24	9	11	11	11	8	8	26	11	36	21	26	20	47	39	53	21	24	22	11	7	10	7	8	7	7	53
Mar 25	7	7	9	11	6	7	8	16	17	23	19	24	24	26	30	29	24	25	21	19	6	25	42	40	6	42
Mar 26	17	8	8	20	17	17	7	13	20	13	13	18	11	12	22	25	18	18	32	13	38	63	23	10	7	63
Mar 27	12	43	21	15	7	15	67	20	18	13	14	21	24	18	16	19	22	10	13	10	6	6	6	12	6	67
Mar 28	9	25	27	31	12	7	9	11	11	11	13	8	17	12	40	48	12	30	10	7	8	7	7	8	7	48
Mar 29	6	9	8	9	8	7	9	7	8	8	8	9	13	10	10	8	12	11	11	12	11	13	11	9	6	13
Mar 30	10	19	8	11	15	12	13	15	17	21	29	21	14	28	42	33	17	11	11	9	7	10	4	5	4	42
Mar 31	5	6	10	12	32	7	4	5	10	11	17	17	13	12	13	11	9	9	12	14	6	15	13	36	4	36
Diurnal Minimum	4	6	7	7	6	5	4	4	5	8	7	8	8	7	9	6	8	5	6	3	4	3	4	4		
Daiurnal Maximum	62	65	66	66	73	58	75	69	59	73	67	35	47	39	53	48	24	47	68	80	47	63	43	44		

C	Monthly Calibration	**S**	Daily Zero-Span Check	**Q**	Quality Assurance	
K	Collection Error	**N**	No Data (Machine Not in Service)	**Y**	Routine Maintenance	**P** Power Failure
X	InValid Data (Machine Malfunction /Recovery)	**NRM**	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)			

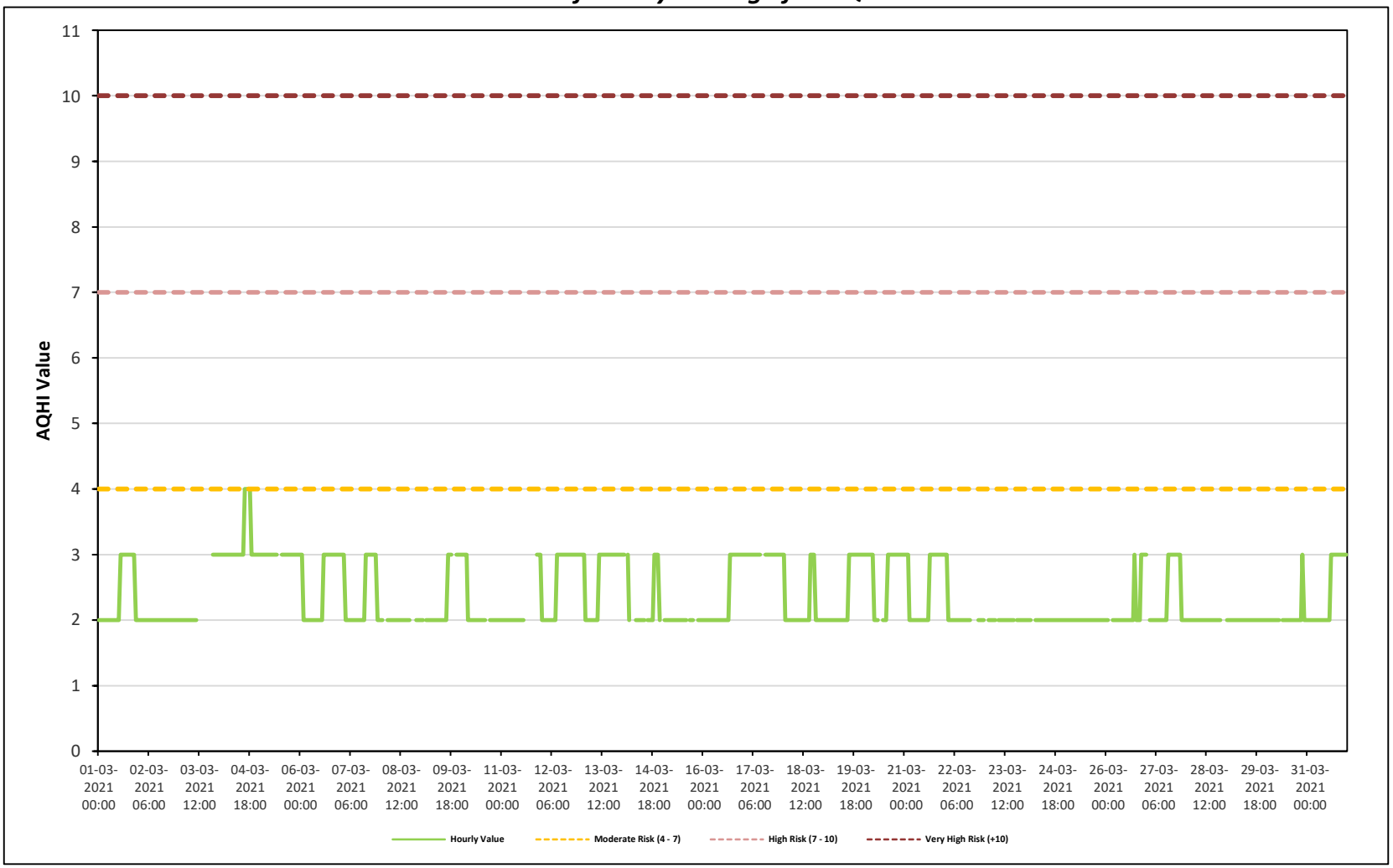
Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for STDWD - Maskwa Site



ST. LINA STATION

Timeseries Chart of Hourly Average for AQHI - St. Lina Site



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - March 2021

Summary of Hourly Averages

SULPHUR DIOXIDE (SO_2) in ppb

Alberta Ambient Air Quality Objectives (AAAQO): 1-Hour 172 ppb, 24-Hour 48 ppb, 30-Day 11 ppb

Number of 1-Hour Exceedences: 0 Number of 24-Hour Exceedences: 0 30-Day Exceedence: 0

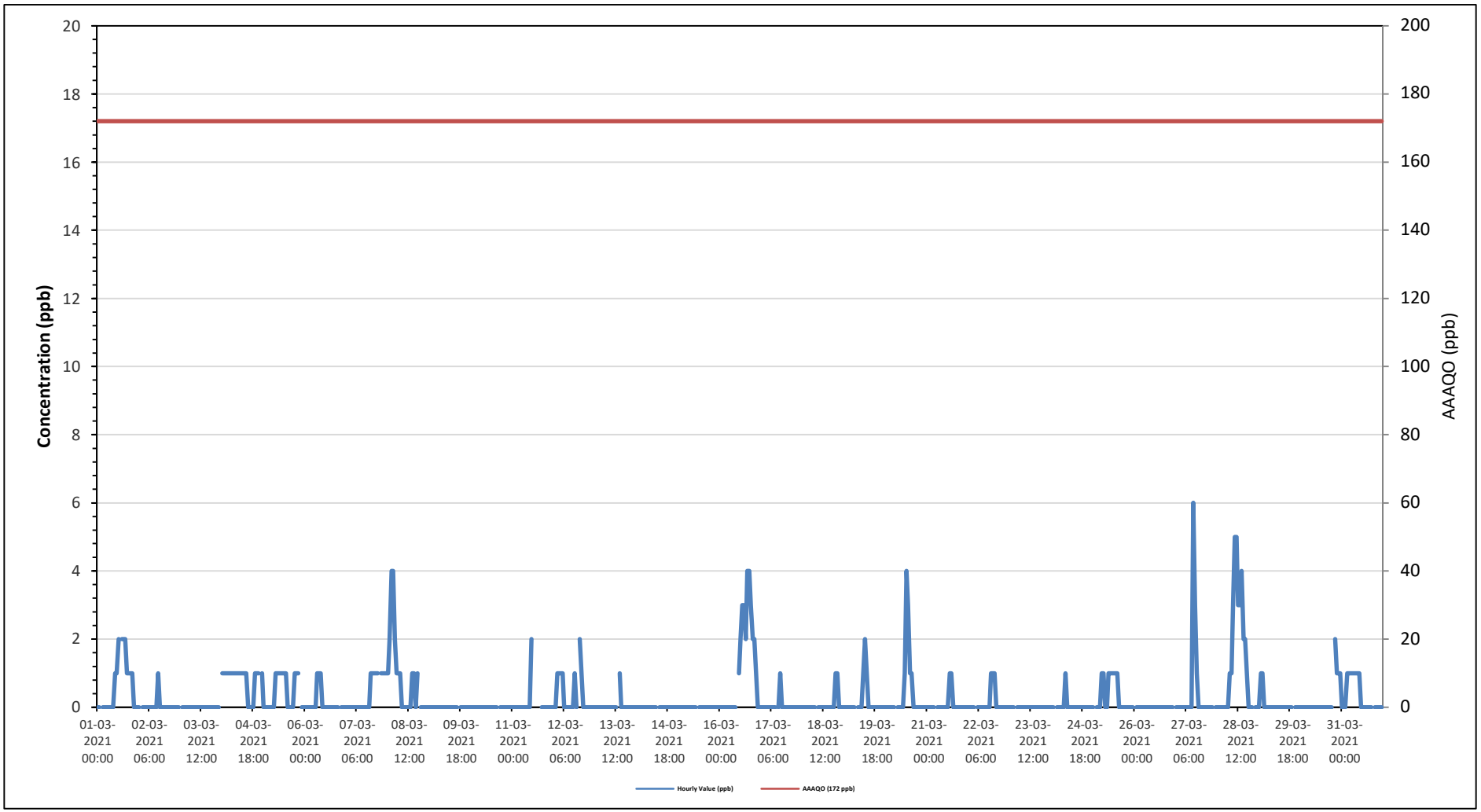
Maximum Hourly Value:	6	ppb	on March 27 at hour 10	Hours in Service:	744
Maximum Daily Value:	1.3	ppb	on March 28	Hours of Data:	706
Minimum Hourly Value:	0	ppb	on March 1 at hour 0	Hours of Missing Data:	1
Minimum Daily Value:	0.0	ppb	on March 3	Hours of Calibration:	37
Monthly Average:	0.3	ppb		Operational Uptime:	99.9

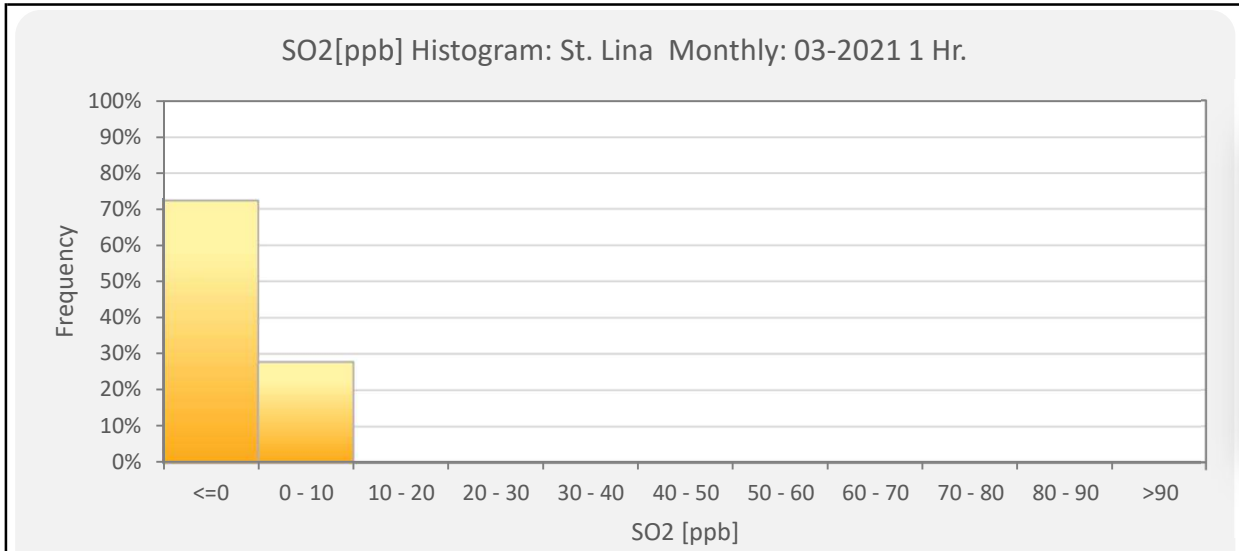
Day	Hourly Period Starting at (MST)																								Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Mar 1	0	0	S	0	0	0	0	0	0	0	1	1	2	NRM	2	2	2	1	1	1	1	0	0	0	0	2	0.6
Mar 2	0	S	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0
Mar 3	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0.0
Mar 4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	1	1	1	S	1	0	1	0.8
Mar 5	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	1	1	1	S	0	0	0	1	0.4
Mar 6	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	1	0.1
Mar 7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	S	1	1	1	1	0	1	0.4
Mar 8	1	2	4	4	2	1	1	1	0	0	0	0	0	0	1	1	0	1	S	0	0	0	0	0	0	4	0.8
Mar 9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0.0
Mar 10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0.0
Mar 11	0	0	0	0	0	0	0	0	0	0	0	2	C	C	C	C	C	0	0	0	0	0	0	0	0	2	0.1
Mar 12	0	0	1	1	1	1	0	0	0	0	0	0	1	0	S	2	1	0	0	0	0	0	0	0	0	2	0.3
Mar 13	0	0	0	0	0	0	0	0	0	0	0	0	0	S	1	0	0	0	0	0	0	0	0	0	0	1	0.0
Mar 14	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Mar 15	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Mar 16	0	0	0	0	0	0	0	0	0	0	S	1	2	3	3	2	4	4	3	2	2	1	0	0	0	4	1.2
Mar 17	0	0	0	0	0	0	0	0	0	S	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0
Mar 18	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	0.1
Mar 19	0	0	0	0	0	0	0	S	0	0	0	1	2	1	0	0	0	0	0	0	0	0	0	0	0	2	0.2
Mar 20	0	0	0	0	0	0	S	0	0	0	0	1	4	3	1	1	0	0	0	0	0	0	0	0	0	4	0.4
Mar 21	0	0	0	0	0	S	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0.1
Mar 22	0	0	0	0	S	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	1	0.1
Mar 23	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Mar 24	0	0	S	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0
Mar 25	0	S	0	0	0	1	1	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	1	0.3
Mar 26	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0.0
Mar 27	0	0	0	0	0	0	0	0	0	0	6	3	1	0	0	0	0	0	0	0	0	0	S	0	0	6	0.4
Mar 28	0	0	0	0	0	0	0	1	1	3	5	5	3	3	4	2	2	1	0	0	0	S	0	0	0	5	1.3
Mar 29	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	1	0.1
Mar 30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	2	1	1	1	0	2	0.2
Mar 31	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	S	0	0	0	0	0	0	1	0.3
Diurnal Maximum	1	2	4	4	2	1	1	1	1	3	6	5	4	3	4	2	4	4	3	2	2	1	1	1			
Daiurnal Average	0.1	0.1	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.3	0.5	0.6	0.6	0.5	0.6	0.4	0.3	0.3	0.2	0.2	0.3	0.1	0.1	0.1			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance	P Power Failure
X	InValid Data (Equipment Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)			

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for SO2 - St. Lina Site

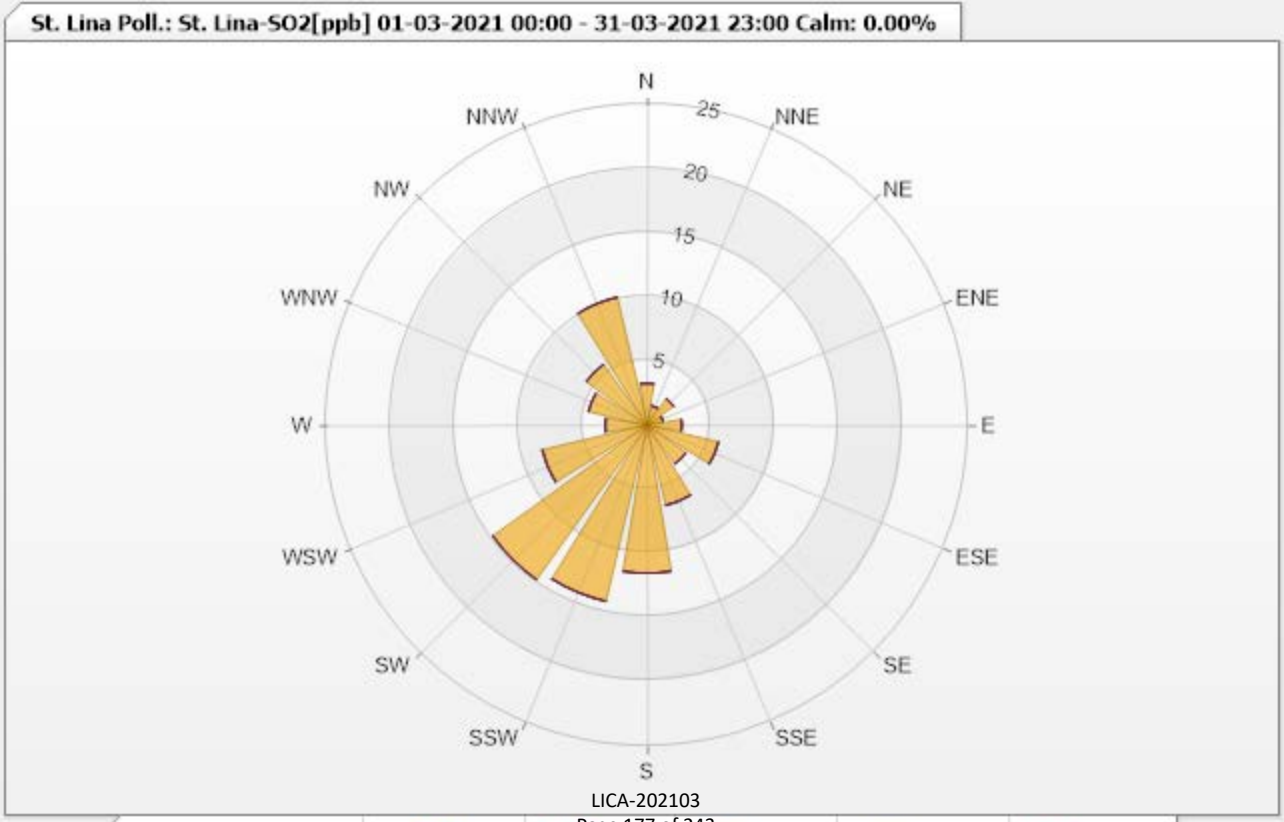




Classes	SO2
<=0	72.24%
0 - 10	27.76%
10 - 20	0.00%
20 - 30	0.00%
30 - 40	0.00%
40 - 50	0.00%
50 - 60	0.00%
60 - 70	0.00%
70 - 80	0.00%
80 - 90	0.00%
>90	0.00%

Wind: St. Lina Poll.: St. Lina-SO2[ppb] Monthly: 03-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
Calm: 0.00% Valid Data: 94.49% Calm Avg: 0.00 [ppb]

Direction	0-10	10-50	50-100	100-172	>172.0	Total
N	3.27	0	0	0	0	3.27
NNE	1.56	0	0	0	0	1.56
NE	2.56	0	0	0	0	2.56
ENE	1.28	0	0	0	0	1.28
E	2.7	0	0	0	0	2.7
ESE	5.69	0	0	0	0	5.69
SE	3.7	0	0	0	0	3.7
SSE	6.4	0	0	0	0	6.4
S	11.52	0	0	0	0	11.52
SSW	14.08	0	0	0	0	14.08
SW	14.79	0	0	0	0	14.79
WSW	8.39	0	0	0	0	8.39
W	3.27	0	0	0	0	3.27
WNW	4.69	0	0	0	0	4.69
NW	5.83	0	0	0	0	5.83
NNW	10.24	0	0	0	0	10.24
Summary	100	0	0	0	0	100


St. Lina Poll.: St. Lina-SO2[ppb] 01-03-2021 00:00 - 31-03-2021 23:00 Calm: 0.00%
N
NNE
NE
ENE
E
ESE
SE
SSE
S
SSW
SW
WSW
W
WNW
NW
NNW
25
20
15
10
5
% Icon Classes (ppb)
100 0-10
0 10-50
0 50-100
0 100-172
0 >172.0

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - March 2021

Summary of Hourly Averages

HYDROGEN SULPHIDE (H_2S) in ppb

Alberta Ambient Air Quality Objectives (AAAQO): 1-Hour 10 ppb, 24-Hour 3 ppb

Number of 1-Hour Exceedances: 0 Number of 24-Hour Exceedances: 0

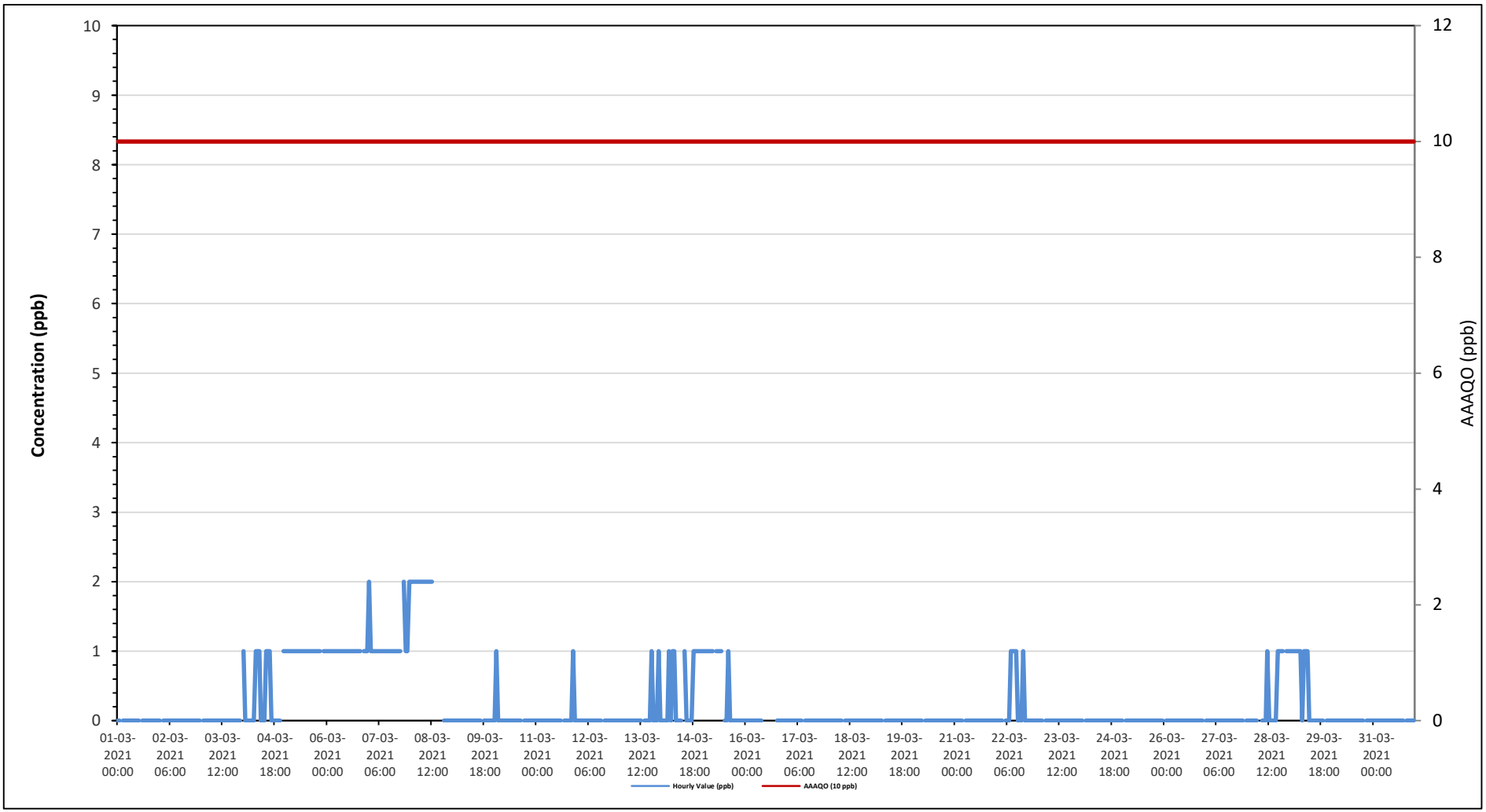
Maximum Hourly Value:	2	ppb	on March 7 at hour 0	Hours in Service:	744
Maximum Daily Value:	1.4	ppb	on March 8	Hours of Data:	696
Minimum Hourly Value:	0	ppb	on March 1 at hour 0	Hours of Missing Data:	10
Minimum Daily Value:	0.0	ppb	on March 1	Hours of Calibration:	38
Monthly Average:	0.2	ppb		Operational Uptime:	98.7

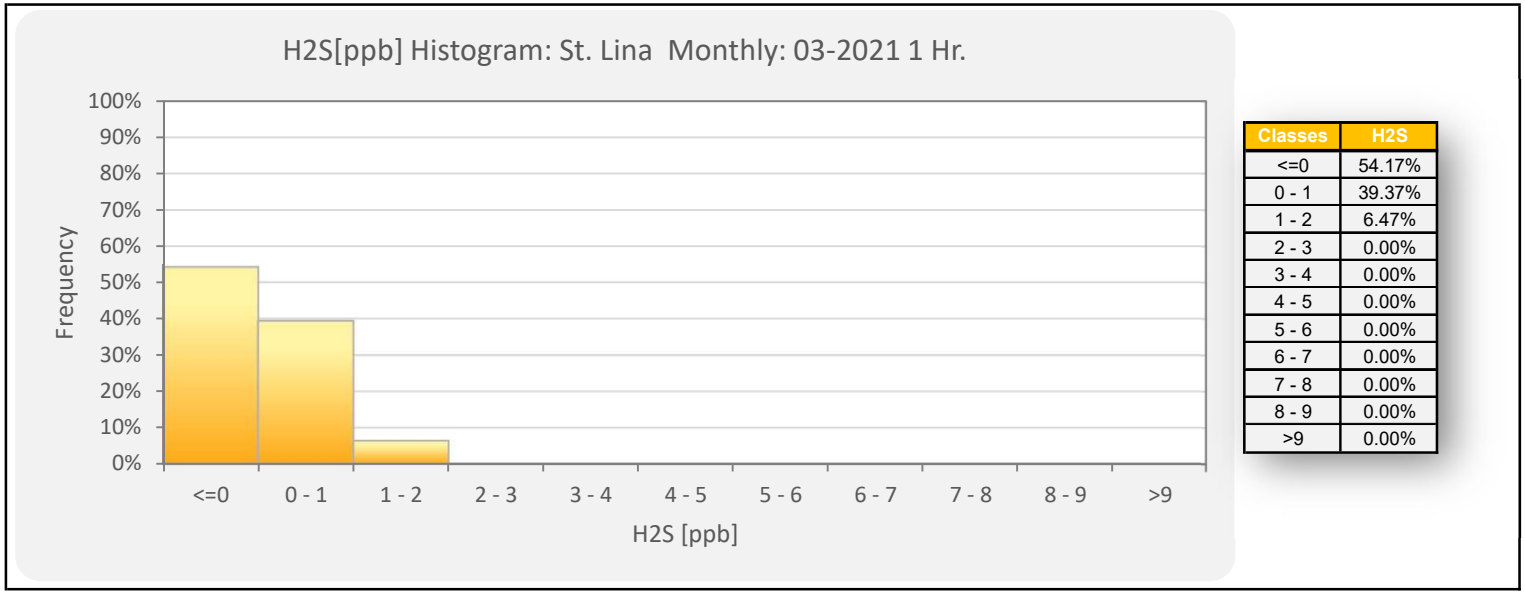
Day	Hourly Period Starting at (MST)																								Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Mar 1	0	0	S	0	0	0	0	0	0	0	0	0	0	NRM	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Mar 2	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Mar 3	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0.0
Mar 4	1	0	0	0	0	0	0	1	1	1	0	0	0	1	1	1	0	0	0	0	0	0	S	1	0	1	0.3
Mar 5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1.0
Mar 6	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1.0
Mar 7	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	2	1	1	2	1	2	1.1
Mar 8	2	2	2	2	2	2	2	2	2	2	2	2	2	C	C	C	C	C	S	0	0	0	0	0	0	2	1.4
Mar 9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0.0
Mar 10	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	1	0.0
Mar 11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	1	0	0	0	1	0.0
Mar 12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0.0
Mar 13	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	1	0	0	0	1	0	0	1	0.1
Mar 14	0	0	0	0	1	0	1	1	0	0	0	0	S	1	0	0	0	0	1	1	1	1	1	1	0	1	0.4
Mar 15	1	1	1	1	1	1	NRM	1	1	1	1	S	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0.5
Mar 16	0	0	0	0	0	0	0	0	0	0	S	0	NRM	NRM	NRM	NRM	NRM	NRM	0	0	0	0	0	0	0	0	-
Mar 17	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Mar 18	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Mar 19	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Mar 20	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Mar 21	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Mar 22	0	0	0	0	S	0	0	0	1	1	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0.2
Mar 23	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Mar 24	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Mar 25	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Mar 26	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0.0
Mar 27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0.0
Mar 28	0	0	0	0	0	0	NRM	NRM	0	0	0	1	0	0	0	0	0	1	1	1	1	S	1	1	0	1	0.3
Mar 29	1	1	1	1	1	1	1	0	1	1	1	0	0	0	0	0	0	0	0	0	S	0	0	0	0	1	0.4
Mar 30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0.0
Mar 31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0.0
Diurnal Maximum	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1	2	1	1	2			
Diurnal Average	0.3	0.3	0.2	0.2	0.3	0.2	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.1	0.2	0.1	0.2	0.2			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance	P Power Failure
X	InValid Data (Equipment Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)			

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for H2S - St. Lina Site

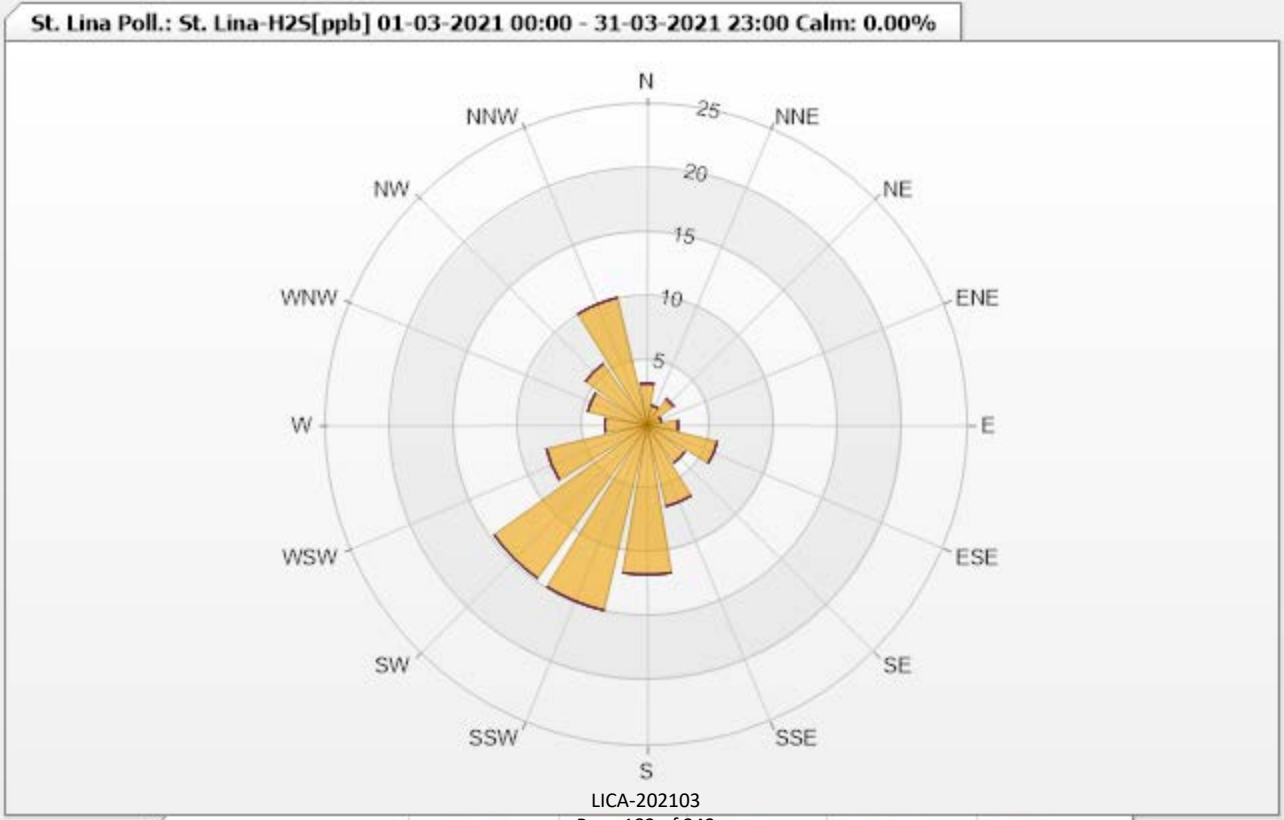




Classes	H2S
<=0	54.17%
0 - 1	39.37%
1 - 2	6.47%
2 - 3	0.00%
3 - 4	0.00%
4 - 5	0.00%
5 - 6	0.00%
6 - 7	0.00%
7 - 8	0.00%
8 - 9	0.00%
>9	0.00%

Wind: St. Lina Poll.: St. Lina-H2S[ppb] Monthly: 03-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
Calm: 0.00% Valid Data: 93.55% Calm Avg: 0.00 [ppb]

Direction	0-2	2-5	5-10	10-50	>50.0	Total
N	3.16	0.14	0	0	0	3.3
NNE	1.58	0	0	0	0	1.58
NE	2.44	0.14	0	0	0	2.58
ENE	1.15	0	0	0	0	1.15
E	2.44	0	0	0	0	2.44
ESE	5.6	0	0	0	0	5.6
SE	3.59	0	0	0	0	3.59
SSE	6.47	0	0	0	0	6.47
S	11.64	0	0	0	0	11.64
SSW	14.8	0	0	0	0	14.8
SW	14.66	0	0	0	0	14.66
WSW	8.05	0	0	0	0	8.05
W	3.3	0	0	0	0	3.3
WNW	4.74	0	0	0	0	4.74
NW	5.89	0	0	0	0	5.89
NNW	10.2	0	0	0	0	10.2
Summary	100	0.28	0	0	0	100


St. Lina Poll.: St. Lina-H2S[ppb] 01-03-2021 00:00 - 31-03-2021 23:00 Calm: 0.00%
N
NNE
NE
ENE
E
ESE
SE
SSE
S
SSW
SW
WSW
W
WNW
NW
NNW
25
20
15
10
5
% Icon Classes (ppb)
100 0-2
0 2-5
0 5-10
0 10-50
0 >50.0

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - March 2021

Summary of Hourly Averages

OXIDES OF NITROGEN (NOx) in ppb

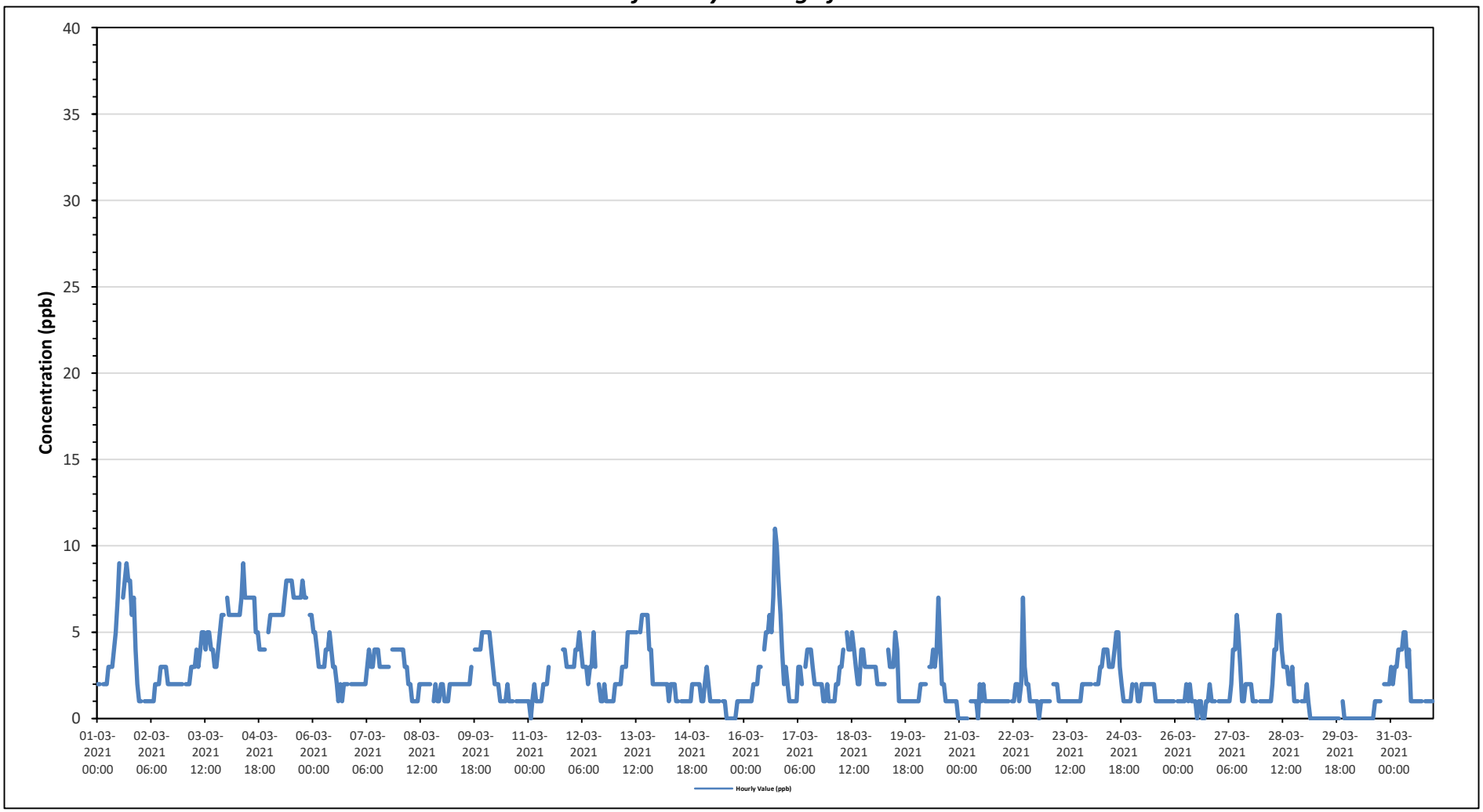
Maximum Hourly Value:	11	ppb	on March 16 at hour 17	Hours in Service:	744
Maximum Daily Value:	6.8	ppb	on March 5	Hours of Data:	704
Minimum Hourly Value:	0	ppb	on March 11 at hour 1	Hours of Missing Data:	1
Minimum Daily Value:	0.2	ppb	on March 29	Hours of Calibration:	39
Monthly Average:	2.5	ppb		Operational Uptime:	99.9

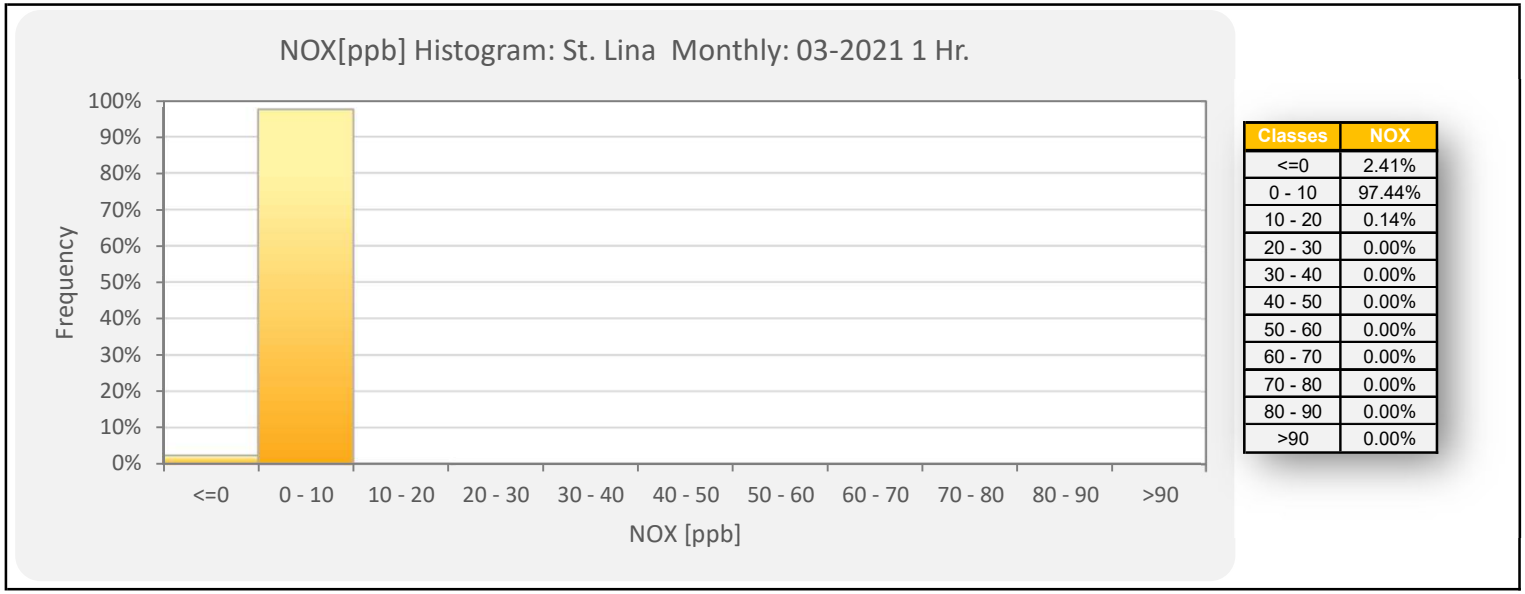
Day	Hourly Period Starting at (MST)																								Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Mar 1	2	2	S	2	2	2	3	3	3	4	5	7	9	NRM	7	8	9	8	8	6	7	4	2	1	1	9	4.7
Mar 2	1	S	1	1	1	1	1	1	2	2	2	3	3	3	3	2	2	2	2	2	2	2	2	2	1	3	1.9
Mar 3	S	2	2	2	3	3	3	4	3	4	5	5	4	5	5	4	4	3	3	4	5	6	6	S	2	6	3.9
Mar 4	7	6	6	6	6	6	6	6	7	9	7	7	7	7	7	7	5	5	4	4	4	4	S	5	4	9	6.0
Mar 5	6	6	6	6	6	6	6	6	7	8	8	8	8	7	7	7	7	7	8	7	7	S	6	6	6	8	**6.8**
Mar 6	5	5	4	3	3	3	3	4	4	5	4	3	3	2	1	2	1	2	2	2	S	2	2	2	1	5	2.9
Mar 7	2	2	2	2	2	2	3	4	3	3	4	4	4	3	3	3	3	3	3	S	4	4	4	4	2	4	3.1
Mar 8	4	4	4	3	3	2	2	1	1	1	1	2	2	2	2	2	2	2	S	1	2	1	1	2	1	4	2.0
Mar 9	2	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	3	S	4	4	4	4	5	5	1	5	2.5
Mar 10	5	5	5	4	3	2	2	2	1	1	1	1	2	1	1	1	S	1	1	1	1	1	1	1	1	5	1.9
Mar 11	1	0	1	2	1	1	1	1	2	2	2	3	C	C	C	C	C	C	C	4	4	3	3	3	0	4	-
Mar 12	3	3	4	4	5	4	3	3	3	2	3	3	5	3	S	2	1	1	2	1	1	1	1	1	1	5	2.6
Mar 13	2	2	2	2	3	3	3	5	5	5	5	5	5	S	5	6	6	6	6	4	4	2	2	2	2	6	3.9
Mar 14	2	2	2	2	2	2	1	2	2	2	1	1	S	1	1	1	1	1	1	2	2	2	2	2	1	2	1.6
Mar 15	1	1	2	3	2	1	1	1	1	1	1	S	1	1	0	0	0	0	0	0	1	1	1	1	0	3	0.9
Mar 16	1	1	1	1	1	2	2	2	3	3	S	4	5	5	6	5	7	**11**	10	8	6	4	2	3	1	**11**	4.0
Mar 17	2	1	1	1	1	1	3	3	2	S	3	4	4	4	3	2	2	2	2	2	1	1	2	1	1	4	2.1
Mar 18	1	1	1	2	2	3	3	4	S	5	4	4	5	4	3	2	2	4	4	3	3	3	3	3	1	5	3.0
Mar 19	3	3	2	2	2	2	2	S	4	3	3	3	5	4	1	1	1	1	1	1	1	1	1	1	1	5	2.1
Mar 20	1	1	2	2	2	2	S	3	3	4	3	4	7	4	2	2	1	1	1	1	1	1	1	0	0	7	2.1
Mar 21	0	0	0	0	0	S	1	1	1	1	0	2	1	2	1	1	1	1	1	1	1	1	1	1	0	2	0.8
Mar 22	1	1	1	1	S	1	1	2	2	1	2	7	3	2	2	1	1	1	1	1	0	1	1	1	0	7	1.5
Mar 23	1	1	1	S	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	1	2	1.3
Mar 24	2	2	S	2	2	2	3	3	4	4	4	3	3	3	4	5	5	3	2	1	1	1	1	1	1	5	2.7
Mar 25	2	S	2	1	1	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	2	1.4
Mar 26	S	1	1	1	1	1	2	1	2	1	1	1	0	1	1	0	0	1	1	2	1	1	1	S	0	2	1.0
Mar 27	1	1	1	1	1	1	1	2	4	4	6	5	3	1	1	2	2	2	2	1	1	1	S	1	1	6	2.0
Mar 28	1	1	1	1	1	1	2	4	4	6	6	4	3	3	3	2	2	3	1	1	1	S	1	1	1	6	2.3
Mar 29	1	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	1	0	0	0	2	0.2
Mar 30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	S	2	2	2	0	2	0.5
Mar 31	3	2	3	3	4	4	4	5	5	3	4	1	1	1	1	1	1	1	S	1	1	1	1	1	1	5	2.3
Diurnal Maximum	7	6	6	6	6	6	6	6	7	9	8	8	9	7	7	8	9	11	10	8	7	6	6	6			
Daiurnal Average	2.2	2.0	2.1	2.0	2.1	2.1	2.3	2.6	2.8	3.0	3.0	3.3	3.4	2.6	2.6	2.5	2.5	2.6	2.6	2.3	2.4	2.0	2.0	1.9			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance	P Power Failure
X	InValid Data (Equipment Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)			

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for NOx - St. Lina Site

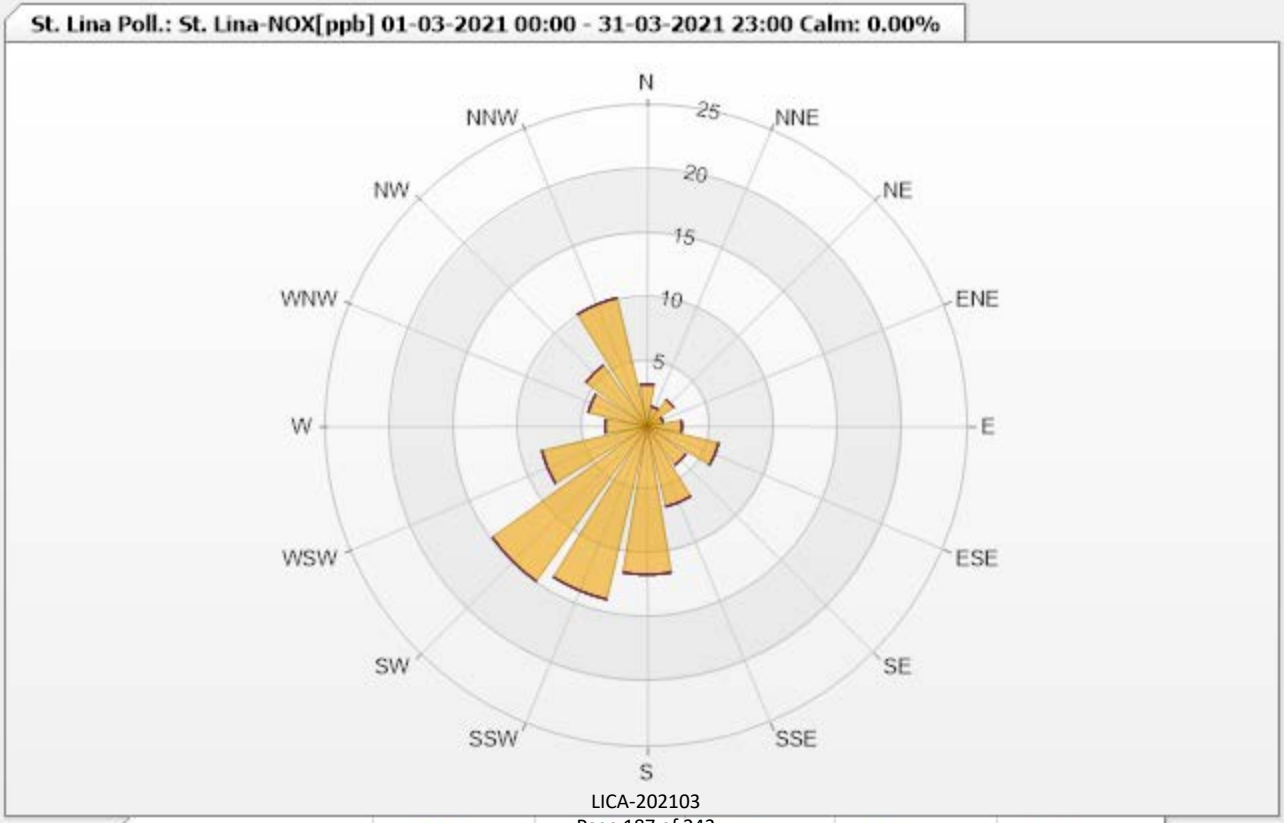




Classes	NOX
<=0	2.41%
0 - 10	97.44%
10 - 20	0.14%
20 - 30	0.00%
30 - 40	0.00%
40 - 50	0.00%
50 - 60	0.00%
60 - 70	0.00%
70 - 80	0.00%
80 - 90	0.00%
>90	0.00%

Wind: St. Lina Poll.: St. Lina-NOX[ppb] Monthly: 03-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
Calm: 0.00% Valid Data: 94.22% Calm Avg: 0.00 [ppb]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	3.28	0	0	0	0	3.28
NNE	1.57	0	0	0	0	1.57
NE	2.57	0	0	0	0	2.57
ENE	1.28	0	0	0	0	1.28
E	2.71	0	0	0	0	2.71
ESE	5.71	0	0	0	0	5.71
SE	3.71	0	0	0	0	3.71
SSE	6.42	0	0	0	0	6.42
S	11.55	0	0	0	0	11.55
SSW	13.84	0	0	0	0	13.84
SW	14.84	0	0	0	0	14.84
WSW	8.42	0	0	0	0	8.42
W	3.28	0	0	0	0	3.28
WNW	4.71	0	0	0	0	4.71
NW	5.85	0	0	0	0	5.85
NNW	10.27	0	0	0	0	10.27
Summary	100	0	0	0	0	100


St. Lina Poll.: St. Lina-NOX[ppb] 01-03-2021 00:00 - 31-03-2021 23:00 Calm: 0.00%
N
NNE
NE
ENE
E
ESE
SE
SSE
S
SSW
SW
WSW
W
WNW
NW
NNW
25
20
15
10
5
% Icon Classes (ppb)
100 0-30
0 30-50
0 50-76
0 76-159
0 >159.0

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - March 2021

Summary of Hourly Averages

NITRIC OXIDE (NO) in ppb

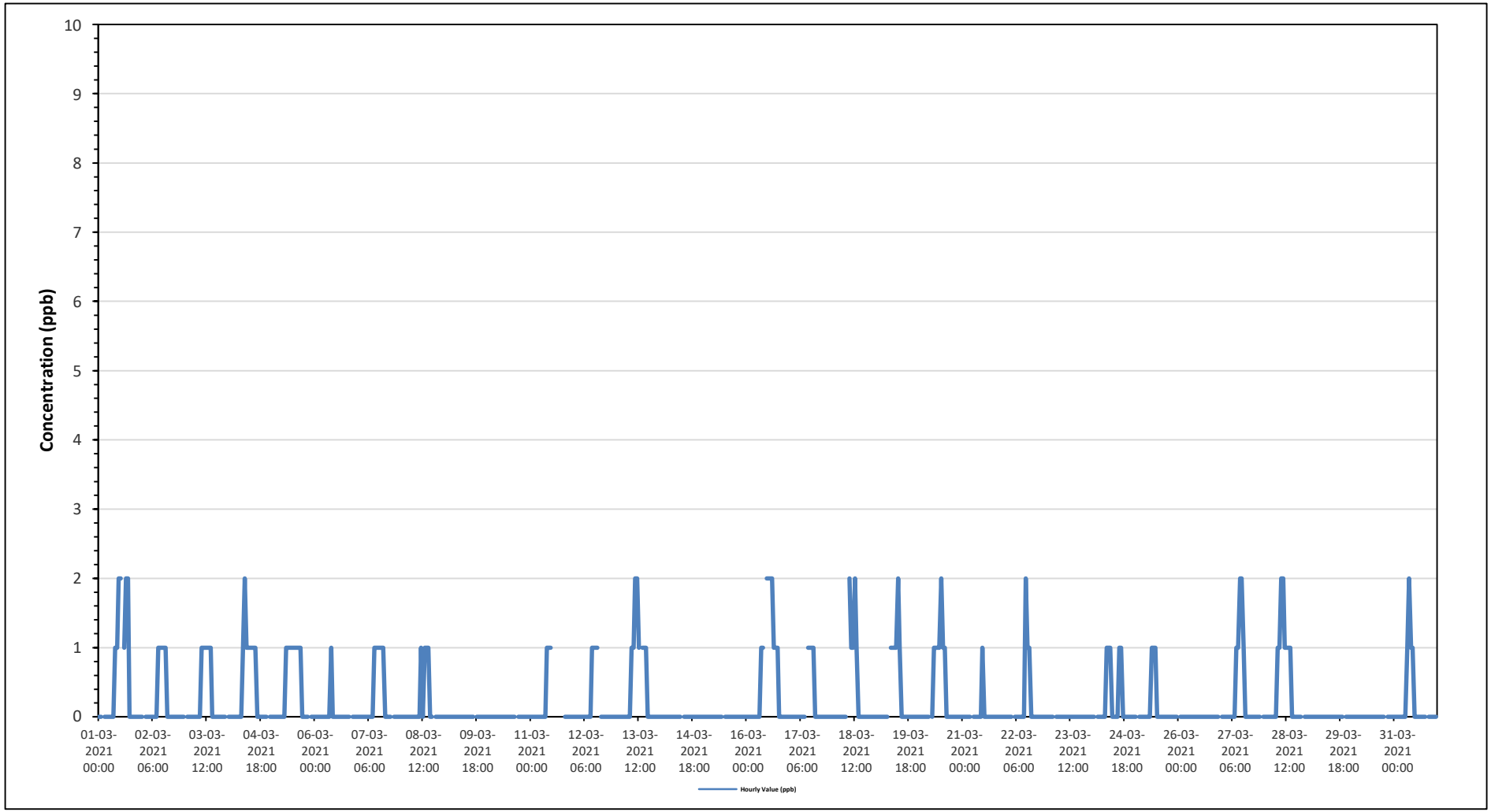
Maximum Hourly Value:	2	ppb	on March 1 at hour 11	Hours in Service:	744
Maximum Daily Value:	0.6	ppb	on March 16	Hours of Data:	704
Minimum Hourly Value:	0	ppb	on March 1 at hour 0	Hours of Missing Data:	1
Minimum Daily Value:	0.0	ppb	on March 9	Hours of Calibration:	39
Monthly Average:	0.2	ppb		Operational Uptime:	99.9

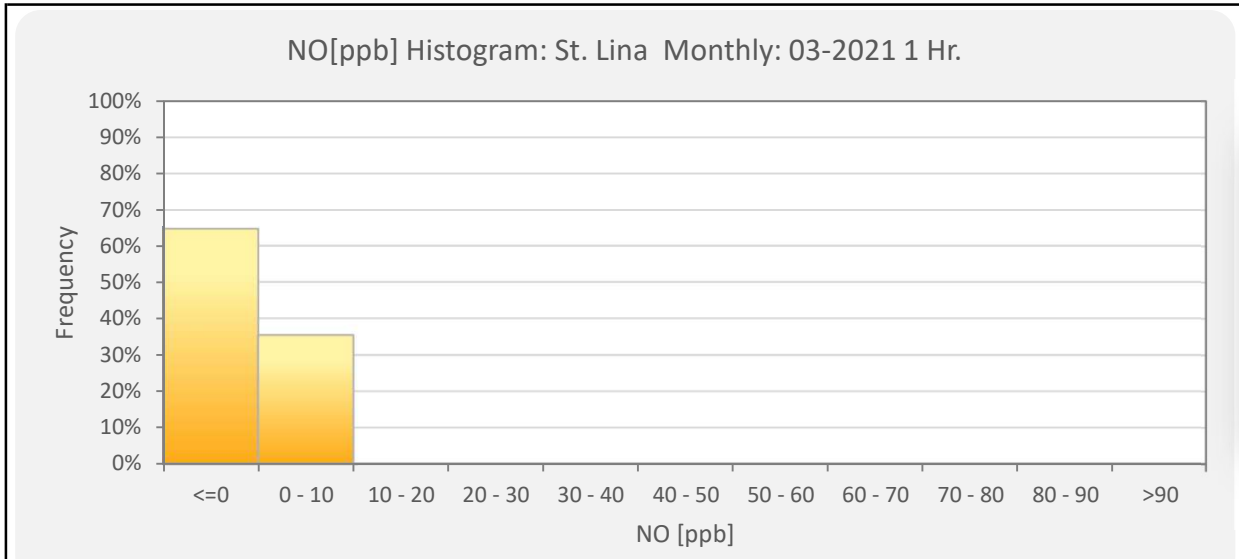
Day	Hourly Period Starting at (MST)																								Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Mar 1	0	0	S	0	0	0	0	0	0	1	1	2	2	NRM	1	2	2	0	0	0	0	0	0	0	0	2	0.5
Mar 2	0	S	0	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0.2
Mar 3	S	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	S	0	1	0.3
Mar 4	0	0	0	0	0	0	0	0	1	2	1	1	1	1	1	1	0	0	0	0	0	0	S	0	0	2	0.4
Mar 5	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	0	0	0	0	S	0	0	0	1	0.4
Mar 6	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	1	0.0
Mar 7	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0	0	0	0	S	0	0	0	0	0	1	0.3
Mar 8	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1	0	0	S	0	0	0	0	0	0	1	0.2
Mar 9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0.0
Mar 10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0.0
Mar 11	0	0	0	0	0	0	0	0	0	1	1	1	C	C	C	C	C	C	C	0	0	0	0	0	0	1	-
Mar 12	0	0	0	0	0	0	0	0	0	0	1	1	1	1	S	0	0	0	0	0	0	0	0	0	0	1	0.2
Mar 13	0	0	0	0	0	0	0	0	1	1	2	2	1	S	1	1	1	0	0	0	0	0	0	0	0	2	0.4
Mar 14	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Mar 15	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Mar 16	0	0	0	0	0	0	0	0	1	1	S	2	2	2	2	1	1	1	0	0	0	0	0	0	0	2	0.6
Mar 17	0	0	0	0	0	0	0	0	0	S	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0.2
Mar 18	0	0	0	0	0	0	0	0	S	2	1	1	2	1	0	0	0	0	0	0	0	0	0	0	0	2	0.3
Mar 19	0	0	0	0	0	0	0	S	1	1	1	1	2	1	0	0	0	0	0	0	0	0	0	0	0	2	0.3
Mar 20	0	0	0	0	0	0	S	0	1	1	1	1	2	1	1	0	0	0	0	0	0	0	0	0	0	2	0.3
Mar 21	0	0	0	0	0	S	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0
Mar 22	0	0	0	0	S	0	0	0	0	0	0	2	1	1	0	0	0	0	0	0	0	0	0	0	0	2	0.2
Mar 23	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Mar 24	0	0	S	0	0	0	0	0	1	1	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0.2
Mar 25	0	S	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1
Mar 26	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0.0
Mar 27	0	0	0	0	0	0	0	0	1	1	2	2	1	0	0	0	0	0	0	0	0	0	S	0	0	2	0.3
Mar 28	0	0	0	0	0	0	0	1	1	2	2	1	1	1	1	0	0	0	0	0	0	S	0	0	0	2	0.4
Mar 29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0.0
Mar 30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0.0
Mar 31	0	0	0	0	0	0	0	1	2	1	1	0	0	0	0	0	0	0	S	0	0	0	0	0	0	2	0.2
Diurnal Maximum	0	0	0	0	0	0	0	1	2	2	2	2	2	2	2	2	2	1	0	0	0	0	0	0			
Daiurnal Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4	0.7	0.7	0.8	0.7	0.5	0.4	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance	P Power Failure
X	InValid Data (Equipment Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)			

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for NO - St. Lina Site

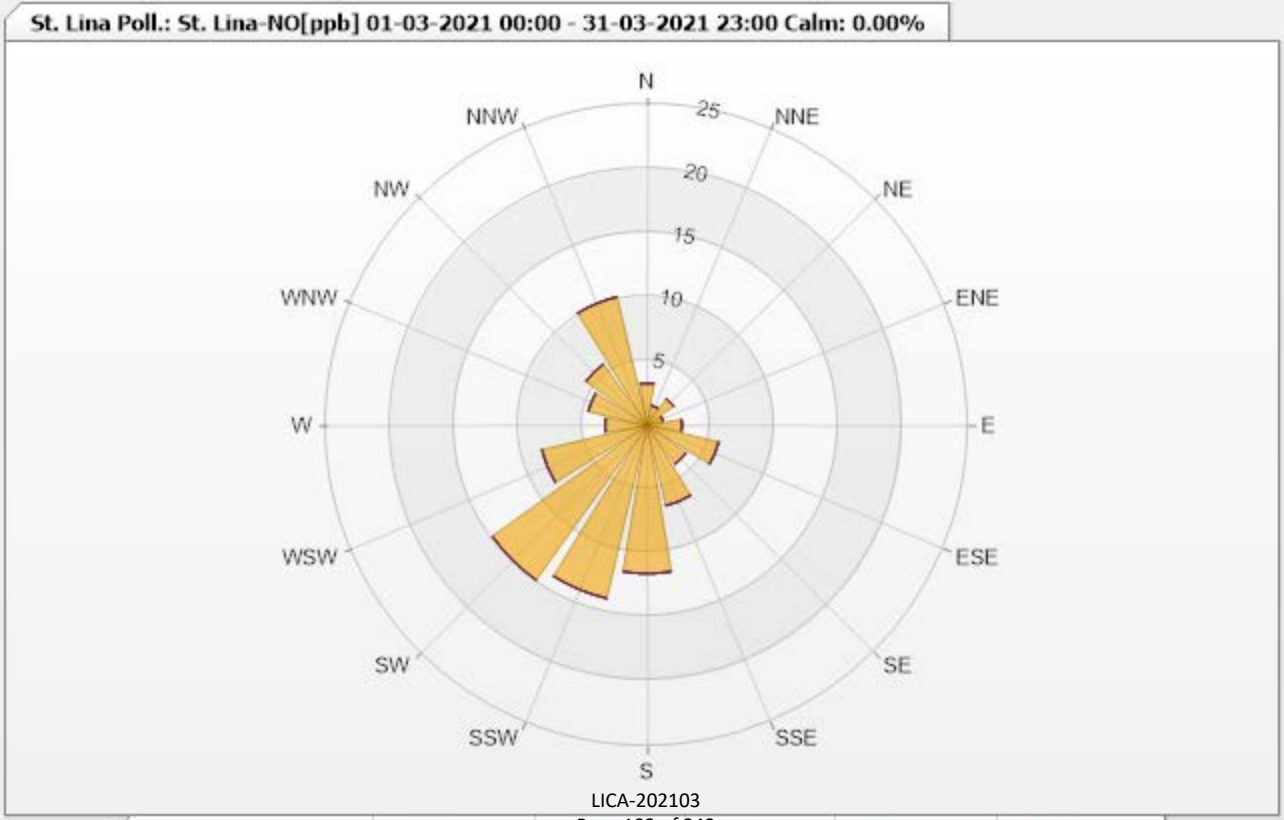




Classes	NO
<=0	64.63%
0 - 10	35.37%
10 - 20	0.00%
20 - 30	0.00%
30 - 40	0.00%
40 - 50	0.00%
50 - 60	0.00%
60 - 70	0.00%
70 - 80	0.00%
80 - 90	0.00%
>90	0.00%

Wind: St. Lina Poll.: St. Lina-NO[ppb] Monthly: 03-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
Calm: 0.00% Valid Data: 94.22% Calm Avg: 0.00 [ppb]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	3.28	0	0	0	0	3.28
NNE	1.57	0	0	0	0	1.57
NE	2.57	0	0	0	0	2.57
ENE	1.28	0	0	0	0	1.28
E	2.71	0	0	0	0	2.71
ESE	5.71	0	0	0	0	5.71
SE	3.71	0	0	0	0	3.71
SSE	6.42	0	0	0	0	6.42
S	11.55	0	0	0	0	11.55
SSW	13.84	0	0	0	0	13.84
SW	14.84	0	0	0	0	14.84
WSW	8.42	0	0	0	0	8.42
W	3.28	0	0	0	0	3.28
WNW	4.71	0	0	0	0	4.71
NW	5.85	0	0	0	0	5.85
NNW	10.27	0	0	0	0	10.27
Summary	100	0	0	0	0	100


St. Lina Poll.: St. Lina-NO[ppb] 01-03-2021 00:00 - 31-03-2021 23:00 Calm: 0.00%
N
NNE
NE
ENE
E
ESE
SE
SSE
S
SSW
SW
WSW
W
WNW
NW
NNW
25
20
15
10
5
% Icon Classes (ppb)
100 0-30
0 30-50
0 50-76
0 76-159
0 >159.0

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - March 2021

Summary of Hourly Averages

NITROGEN DIOXIDE (NO_2) in ppb

Alberta Ambient Air Quality Objectives (AAAQO): 1-Hour 159 ppb

Number of 1-Hour Exceedences: 0

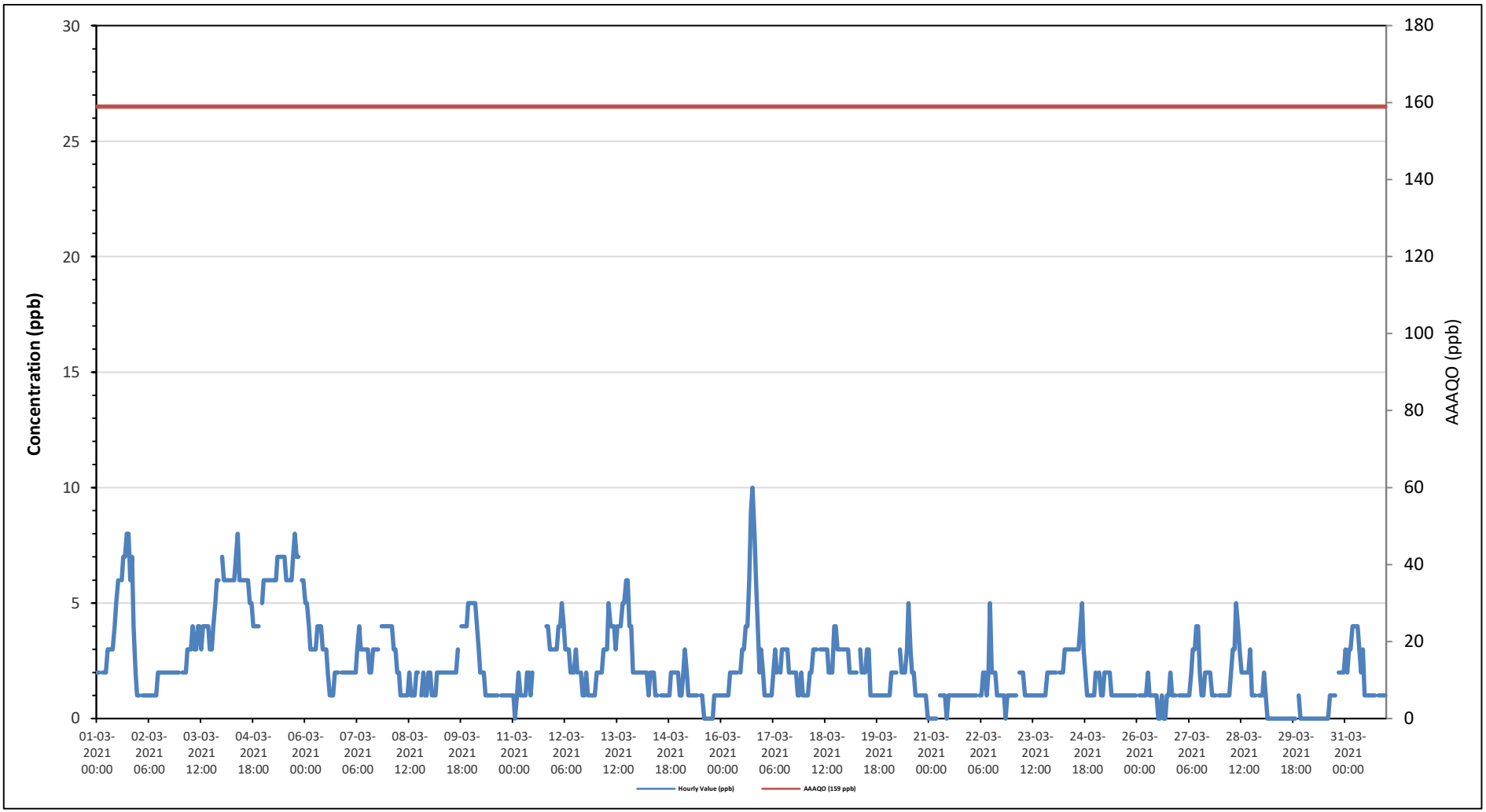
Maximum Hourly Value:	10	ppb	on March 16 at hour 18	Hours in Service:	744
Maximum Daily Value:	6.4	ppb	on March 5	Hours of Data:	704
Minimum Hourly Value:	0	ppb	on March 11 at hour 1	Hours of Missing Data:	1
Minimum Daily Value:	0.2	ppb	on March 29	Hours of Calibration:	39
Monthly Average:	2.2	ppb		Operational Uptime:	99.9

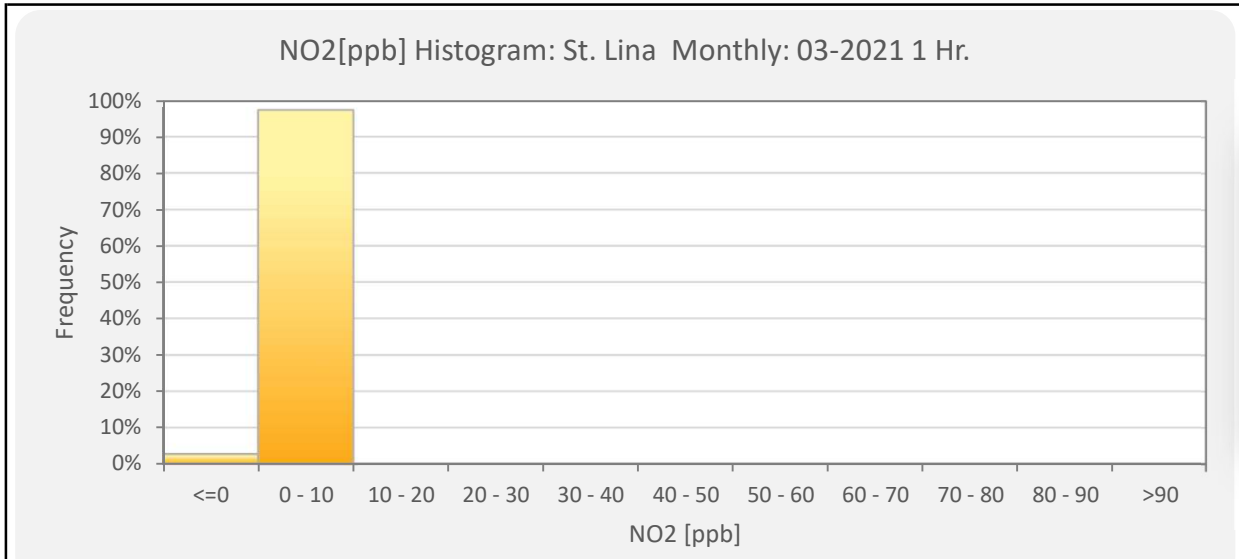
Day	Hourly Period Starting at (MST)																								Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Mar 1	2	2	S	2	2	2	3	3	3	3	4	5	6	NRM	6	7	7	8	8	6	7	4	2	1	1	8	4.2
Mar 2	1	S	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	1	2	1.6
Mar 3	S	2	2	2	3	3	3	4	3	3	4	4	3	4	4	4	4	3	3	4	5	6	6	S	2	6	3.6
Mar 4	7	6	6	6	6	6	6	6	7	8	6	6	6	6	6	6	5	5	4	4	4	4	S	5	4	8	5.7
Mar 5	6	6	6	6	6	6	6	6	7	7	7	7	7	6	6	6	6	7	8	7	7	S	6	6	6	8	6.4
Mar 6	5	5	4	3	3	3	3	4	4	4	3	3	3	2	1	1	1	2	2	2	S	2	2	2	1	5	2.8
Mar 7	2	2	2	2	2	2	3	4	3	3	3	3	3	2	2	3	3	3	3	S	4	4	4	4	2	4	2.9
Mar 8	4	4	4	3	3	2	2	1	1	1	1	1	2	1	1	1	2	2	S	1	2	1	1	2	1	4	1.9
Mar 9	2	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	3	S	4	4	4	4	5	5	1	5	2.5
Mar 10	5	5	5	4	3	2	2	2	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	5	1.9
Mar 11	1	0	1	2	1	1	1	1	2	2	1	2	C	C	C	C	C	C	C	4	4	3	3	3	0	4	-
Mar 12	3	3	4	4	5	4	3	3	3	2	2	2	3	2	S	2	1	1	2	1	1	1	1	1	1	5	2.3
Mar 13	2	2	2	2	3	3	3	5	4	4	4	3	4	S	4	5	5	6	6	4	4	2	2	2	2	6	3.5
Mar 14	2	2	2	2	2	2	1	2	2	2	1	1	S	1	1	1	1	1	1	2	2	2	2	2	1	2	1.6
Mar 15	1	1	2	3	2	1	1	1	1	1	1	S	1	1	0	0	0	0	0	0	1	1	1	1	0	3	0.9
Mar 16	1	1	1	1	1	2	2	2	2	2	S	2	3	3	4	4	6	9	10	8	6	4	2	3	1	10	3.4
Mar 17	2	1	1	1	1	1	2	3	2	S	2	3	3	3	3	2	2	2	2	2	1	1	2	1	1	3	1.9
Mar 18	1	1	1	2	2	3	3	3	S	3	3	3	3	3	2	2	2	4	4	3	3	3	3	3	1	4	2.6
Mar 19	3	3	2	2	2	2	2	S	3	2	2	2	3	3	1	1	1	1	1	1	1	1	1	1	1	3	1.8
Mar 20	1	1	2	2	2	2	S	3	2	2	2	3	5	3	2	2	1	1	1	1	1	1	1	0	0	5	1.8
Mar 21	0	0	0	0	0	S	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0.7
Mar 22	1	1	1	1	S	1	1	2	2	1	2	5	2	2	2	1	1	1	1	1	0	1	1	1	0	5	1.4
Mar 23	1	1	1	S	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	1	2	1.3
Mar 24	2	2	S	2	2	2	3	3	3	3	3	3	3	3	3	4	5	3	2	1	1	1	1	1	1	5	2.4
Mar 25	2	S	2	1	1	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.3
Mar 26	S	1	1	1	1	1	2	1	1	1	1	1	0	0	1	0	0	1	1	2	1	1	1	S	0	2	0.9
Mar 27	1	1	1	1	1	1	1	2	3	3	4	4	2	1	1	2	2	2	2	1	1	1	S	1	1	4	1.7
Mar 28	1	1	1	1	1	1	2	3	3	5	4	3	2	2	2	2	2	3	1	1	1	S	1	1	1	5	1.9
Mar 29	1	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	1	0	0	0	2	0.2
Mar 30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	S	2	2	2	2	0	2	0.5
Mar 31	3	2	3	3	4	4	4	4	3	2	3	1	1	1	1	1	1	1	S	1	1	1	1	1	1	4	2.0
Diurnal Maximum	7	6	6	6	6	6	6	6	7	8	7	7	7	6	6	7	7	9	10	8	7	6	6	6			
Daiurnal Average	2.2	2.0	2.1	2.0	2.1	2.1	2.2	2.5	2.4	2.4	2.3	2.5	2.5	2.0	2.1	2.2	2.3	2.5	2.6	2.3	2.4	2.0	2.0	1.9			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance	P Power Failure
X	InValid Data (Equipment Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)			

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for NO2 - St. Lina Site

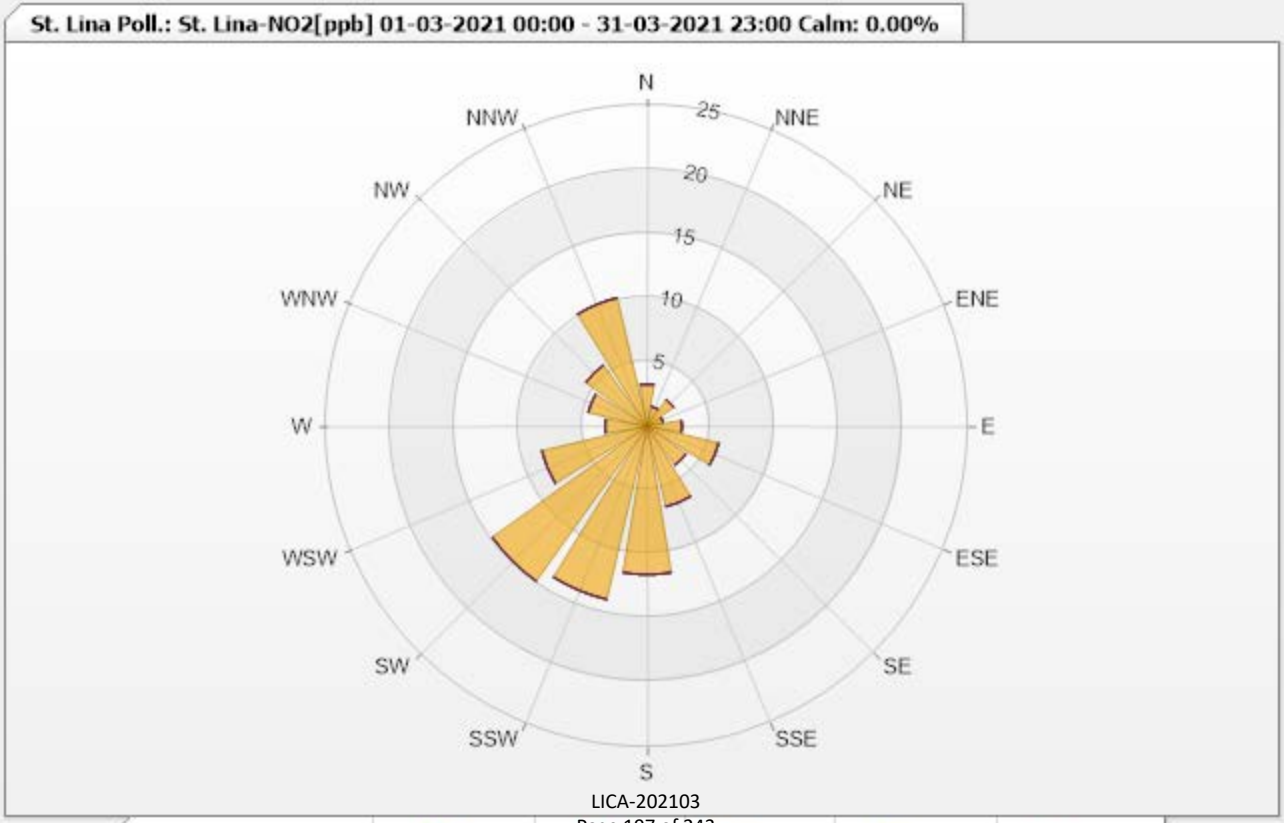




Classes	NO2
<=0	2.70%
0 - 10	97.30%
10 - 20	0.00%
20 - 30	0.00%
30 - 40	0.00%
40 - 50	0.00%
50 - 60	0.00%
60 - 70	0.00%
70 - 80	0.00%
80 - 90	0.00%
>90	0.00%

Wind: St. Lina Poll.: St. Lina-NO2[ppb] Monthly: 03-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
Calm: 0.00% Valid Data: 94.22% Calm Avg: 0.00 [ppb]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	3.28	0	0	0	0	3.28
NNE	1.57	0	0	0	0	1.57
NE	2.57	0	0	0	0	2.57
ENE	1.28	0	0	0	0	1.28
E	2.71	0	0	0	0	2.71
ESE	5.71	0	0	0	0	5.71
SE	3.71	0	0	0	0	3.71
SSE	6.42	0	0	0	0	6.42
S	11.55	0	0	0	0	11.55
SSW	13.84	0	0	0	0	13.84
SW	14.84	0	0	0	0	14.84
WSW	8.42	0	0	0	0	8.42
W	3.28	0	0	0	0	3.28
WNW	4.71	0	0	0	0	4.71
NW	5.85	0	0	0	0	5.85
NNW	10.27	0	0	0	0	10.27
Summary	100	0	0	0	0	100


St. Lina Poll.: St. Lina-NO2[ppb] 01-03-2021 00:00 - 31-03-2021 23:00 Calm: 0.00%
N
NNE
NE
ENE
E
ESE
SE
SSE
S
SSW
SW
WSW
W
WNW
NW
NNW
25
20
15
10
5
% Icon Classes (ppb)
100 0-30
0 30-50
0 50-76
0 76-159
0 >159.0

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - March 2021

Summary of Hourly Averages

OZONE (O_3) in ppb

Alberta Ambient Air Quality Objectives (AAAQO): 1-Hour 76 ppb

Number of 1-Hour Exceedences: 0

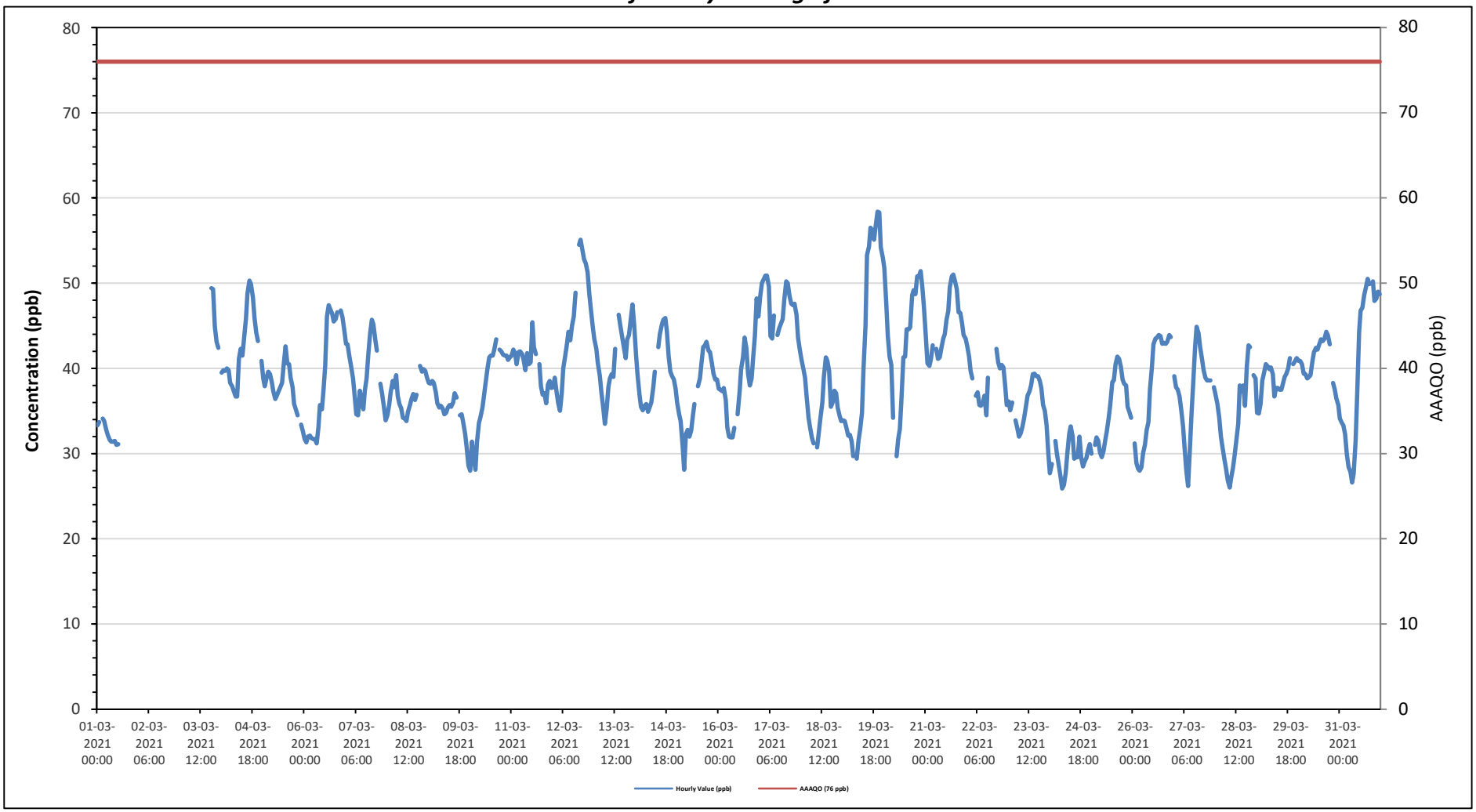
Maximum Hourly Value:	58.4	ppb	on March 19 at hour 20	Hours in Service:	744
Maximum Daily Value:	47.2	ppb	on March 17	Hours of Data:	656
Minimum Hourly Value:	25.9	ppb	on March 24 at hour 7	Hours of Missing Data:	54
Minimum Daily Value:	29.6	ppb	on March 24	Hours of Calibration:	34
Monthly Average:	38.9	ppb		Operational Uptime:	92.7

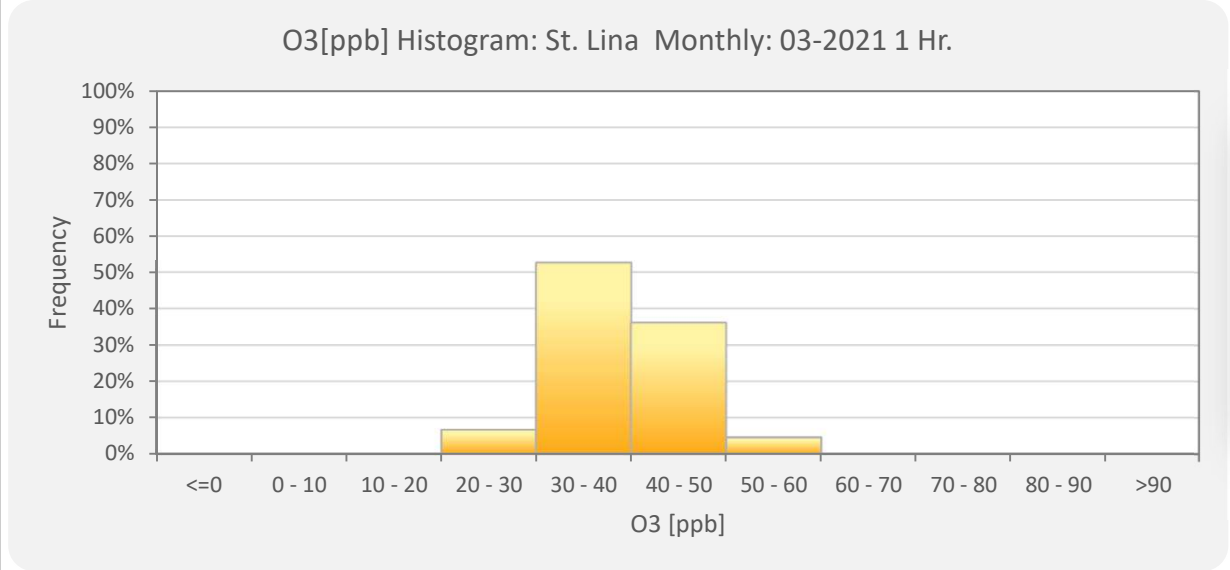
Day	Hourly Period Starting at (MST)																							Daily	Daily	Daily
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Minimum	Maximum	Average
Mar 1	33.3	33.7	S	34.1	33.8	32.8	32.2	31.6	31.4	31.4	31.5	31	31.1	NRM	X	X	X	X	X	X	X	X	X	X	31.0	34.1	-
Mar 2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
Mar 3	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	C	C	C	49.4	49.3	44.9	43.1	42.4	S	42.4	49.4	-
Mar 4	39.5	39.8	39.7	40	39.8	38.3	37.9	37.4	36.7	36.7	41.1	42.3	41.5	43.7	45.8	48.8	50.3	49.9	48.3	46	44.2	43.2	S	40.9	36.7	50.3	42.3
Mar 5	38.8	37.9	39	39.6	39.3	38.4	37.3	36.4	36.8	37.4	37.8	38.3	40.6	42.6	40.6	40.5	38.9	37.8	35.8	35.1	34.5	S	33.4	32.6	32.6	42.6	37.8
Mar 6	31.7	31.3	32	32.1	31.8	31.7	31.7	31.2	33.1	35.7	35.2	37.4	40.3	46.1	47.4	46.9	46.4	45.5	45.8	46.6	S	46.8	46	44.5	31.2	47.4	39.0
Mar 7	42.9	42.8	41.3	40.3	38.8	36.9	34.6	34.5	37.4	36.2	35.2	37.4	38.8	41.7	44.1	45.7	45.2	43.3	42.1	S	38.2	37	35.5	33.9	33.9	45.7	39.3
Mar 8	34.5	35.7	37.2	38.5	37.8	39.2	36.8	35.8	35.3	34.2	34.1	33.8	34.9	35.7	36.4	37	36.3	36.9	S	40.3	39.6	39.9	39.7	38.9	33.8	40.3	36.9
Mar 9	38.3	38.2	38.5	38.3	37.2	35.9	35.4	35.6	35.3	34.6	34.8	35.4	35.7	35.5	36	37.1	36.6	S	34.5	34.6	33.7	32.3	30.7	28.6	28.6	38.5	35.3
Mar 10	28	31.4	29.5	28.1	31.3	33.6	34.3	35.4	36.8	38.4	40	41.3	41.5	41.5	42.2	43.4	S	42.2	42	41.6	41.5	41.5	41	41.3	28.0	43.4	37.7
Mar 11	41.5	42.2	41.8	40.5	41.9	42	41.7	41	39.8	41.8	40.5	40.7	45.4	42.5	41.7	S	40.5	37.9	36.9	37.1	35.9	38.1	38.5	37.7	35.9	45.4	40.3
Mar 12	37.8	38.9	37.3	35.9	35	37.1	40	41.5	42.7	44.3	43.3	45	46.1	48.9	S	54.5	55.1	53.8	52.8	52.3	51.3	48.7	46.7	44.8	35.0	55.1	44.9
Mar 13	43.4	42.3	40.6	39.1	37.2	35.5	33.5	35.2	37.8	38.8	39.3	39	42.3	S	46.3	45.1	43.7	42.6	41.2	43.4	43.9	45.7	47.5	45	33.5	47.5	41.2
Mar 14	41.7	39.3	36.9	35.5	35.1	35.6	35.8	34.9	35.5	36	37.8	39.6	S	42.5	44	45.1	45.7	45.9	44.4	41.5	39.6	39.1	38.7	37.6	34.9	45.9	39.5
Mar 15	36	34.6	33.8	30.9	28.1	32.3	32.8	32	32.7	34.5	35.8	S	37.9	38.8	40.6	42.5	42.7	43.1	42.1	41.9	40.7	39.4	38.7	38.7	28.1	43.1	37.0
Mar 16	37.6	37.5	37.3	37.7	36.3	33.1	32	31.9	31.9	33	S	34.6	37.2	39.9	41.4	43.6	42.4	39.3	38	38.8	41.2	43.8	48.2	46.1	31.9	48.2	38.4
Mar 17	48.4	50	50.4	50.9	50.9	49.6	43.8	43.5	46.2	S	43.9	44.7	45.2	45.8	48	50.2	50	48.5	47.6	47.4	47.6	46.3	43.6	42.2	42.2	50.9	**47.2**
Mar 18	41	40	38.9	36.8	34.2	33.1	31.9	31.2	S	30.7	32.5	34.1	36	39	41.3	40.9	39.7	35.5	36	37.4	37.1	35.4	34.4	33.8	30.7	41.3	36.1
Mar 19	33.9	33.8	33	32.1	32.2	31.4	29.7	S	29.4	31.5	32.9	34.8	39.9	45	53.3	54.3	56.5	56.2	55.1	56.8	**58.4**	58.3	54.2	53	29.4	**58.4**	43.3
Mar 20	51.8	47.5	43.8	41.4	40.4	34.2	S	29.7	31.6	32.9	36.8	41.3	41.4	44.6	44.6	44.8	48.6	49.2	48.7	50.8	50.8	51.4	49.4	47.2	29.7	51.8	43.6
Mar 21	43.5	40.6	40.3	41.1	42.7	S	42.3	41.1	41.3	42.3	43.5	44	45.7	46.7	49.5	50.8	51	50.2	49.3	46.6	46.5	45.3	43.9	43.5	40.3	51.0	44.9
Mar 22	42.7	41.4	39.7	38.8	S	36.8	37.2	35.7	35.6	36	36.8	34.5	38.9	NRM	NRM	NRM	NRM	42.3	40.7	40	40.4	40.1	37.9	35.7	34.5	42.7	38.5
Mar 23	36.1	35.1	36	S	33.9	33	32	32.4	33.2	34.1	35.6	36.8	37.3	38	39.3	39.4	39.1	39.1	38.5	37.7	35.7	35	33.3	30	30.0	39.4	35.7
Mar 24	27.7	28.8	S	31.5	30	28.7	27.4	25.9	26.3	27.7	29.8	32.3	33.2	32	29.4	29.6	29.6	32	29.5	28.5	29	29.5	30.4	31.1	**25.9**	33.2	29.6
Mar 25	30	S	31	31.9	31.5	30.1	29.6	30.3	31.6	32.6	34.3	35.8	38.4	38.6	40.5	41.4	41.1	40.2	38.7	38.2	38	35.5	34.8	34.2	29.6	41.4	35.1
Mar 26	S	31.2	28.9	28.2	28	28.4	30.1	31	32.8	33.7	37.5	40.2	42.8	43.5	43.6	43.9	43.8	42.9	43	42.9	43.1	43.9	43.7	S	28.0	43.9	37.6
Mar 27	39.1	37.8	37.5	36.7	35.1	33.2	30.7	28	26.2	30.4	34.8	38	42.5	44.9	44.1	42.5	41.2	39.8	38.9	38.6	38.6	38.6	S	37.8	26.2	44.9	37.2
Mar 28	36.7	35.8	34.3	32	30.6	29.3	28.1	26.9	26	27.2	28.3	29.9	31.7	33.5	38	37.3	38	35.6	40.1	42.7	42.5	S	39.2	38.8	26.0	42.7	34.0
Mar 29	34.8	34.7	35.8	38.6	39.5	40.5	40.3	39.9	40.1	39.3	36.7	37.7	37.7	37.5	37.5	38.3	39	39.4	40	41.2	S	40.5	40.9	41.2	34.7	41.2	38.7
Mar 30	40.9	40.9	40.5	39.4	39.3	38.8	39	39.2	40.9	41.9	42.4	42.2	42.8	43.4	43.2	43.5	44.3	43.9	42.8	S	38.3	37.5	36.5	35.7	35.7	44.3	40.8
Mar 31	34.1	33.6	33.3	32.3	29.9	28.4	27.9	26.6	27.6	31.5	36.8	44.3	46.8	47.1	48.6	49.5	50.5	49.9	S	50.2	47.9	48.2	49	48.7	26.6	50.5	40.1
Diurnal Maximum	52	50	50	51	51	50	44	44	46	44	44	45	47	49	53	55	57	56	55	57	58	58	54	53			
Daiurnal Average	38.1	37.7	37.3	36.5	35.8	34.9	34.5	34.1	34.7	35.2	36.8	38.1	39.8	41.5	42.6	43.7	43.7	43.1	42.3	42.5	41.6	41.6	40.7	39.4			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance	P Power Failure
X	InValid Data (Equipment Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)			

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for O3 - St. Lina Site



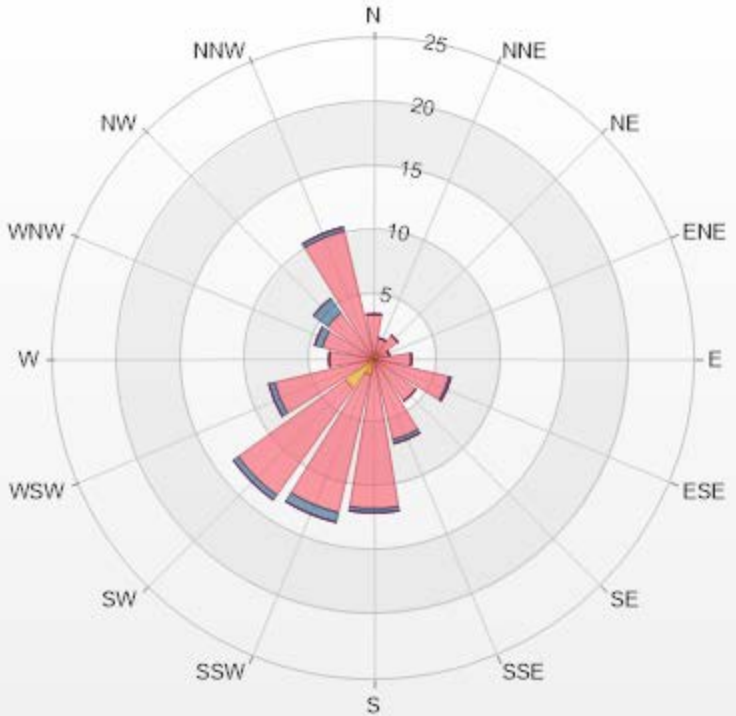


Classes	O3
<=0	0.00%
0 - 10	0.00%
10 - 20	0.00%
20 - 30	6.71%
30 - 40	52.59%
40 - 50	36.13%
50 - 60	4.57%
60 - 70	0.00%
70 - 80	0.00%
80 - 90	0.00%
>90	0.00%

Wind: St. Lina Poll.: St. Lina-O3[ppb] Monthly: 03-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
Calm: 0.00% Valid Data: 87.77% Calm Avg: 0.00 [ppb]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	0.46	3.06	0	0	0	3.52
NNE	0.46	1.23	0	0	0	1.69
NE	0.46	1.84	0	0	0	2.3
ENE	0	1.23	0	0	0	1.23
E	0	2.91	0	0	0	2.91
ESE	0.31	5.67	0.15	0	0	6.13
SE	0	3.98	0	0	0	3.98
SSE	0.15	6.28	0.31	0	0	6.74
S	0	11.64	0.31	0	0	11.95
SSW	1.23	11.03	0.77	0	0	13.03
SW	2.76	10.26	0.46	0	0	13.48
WSW	0.46	7.5	0.46	0	0	8.42
W	0.15	3.37	0	0	0	3.52
WNW	0	4.13	0.61	0	0	4.74
NW	0	4.44	1.38	0	0	5.82
NNW	0.31	9.95	0.31	0	0	10.57
Summary	6.75	88.52	4.76	0	0	100

St. Lina Poll.: St. Lina-O3[ppb] 01-03-2021 00:00 - 31-03-2021 23:00 Calm: 0.00%



% Icon Classes (ppb)	7 0-30	89 30-50	5 50-76	0 76-159	0 >159.0

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - March 2021

Summary of Hourly Averages

TOTAL HYDROCARBONS (THC) in ppm

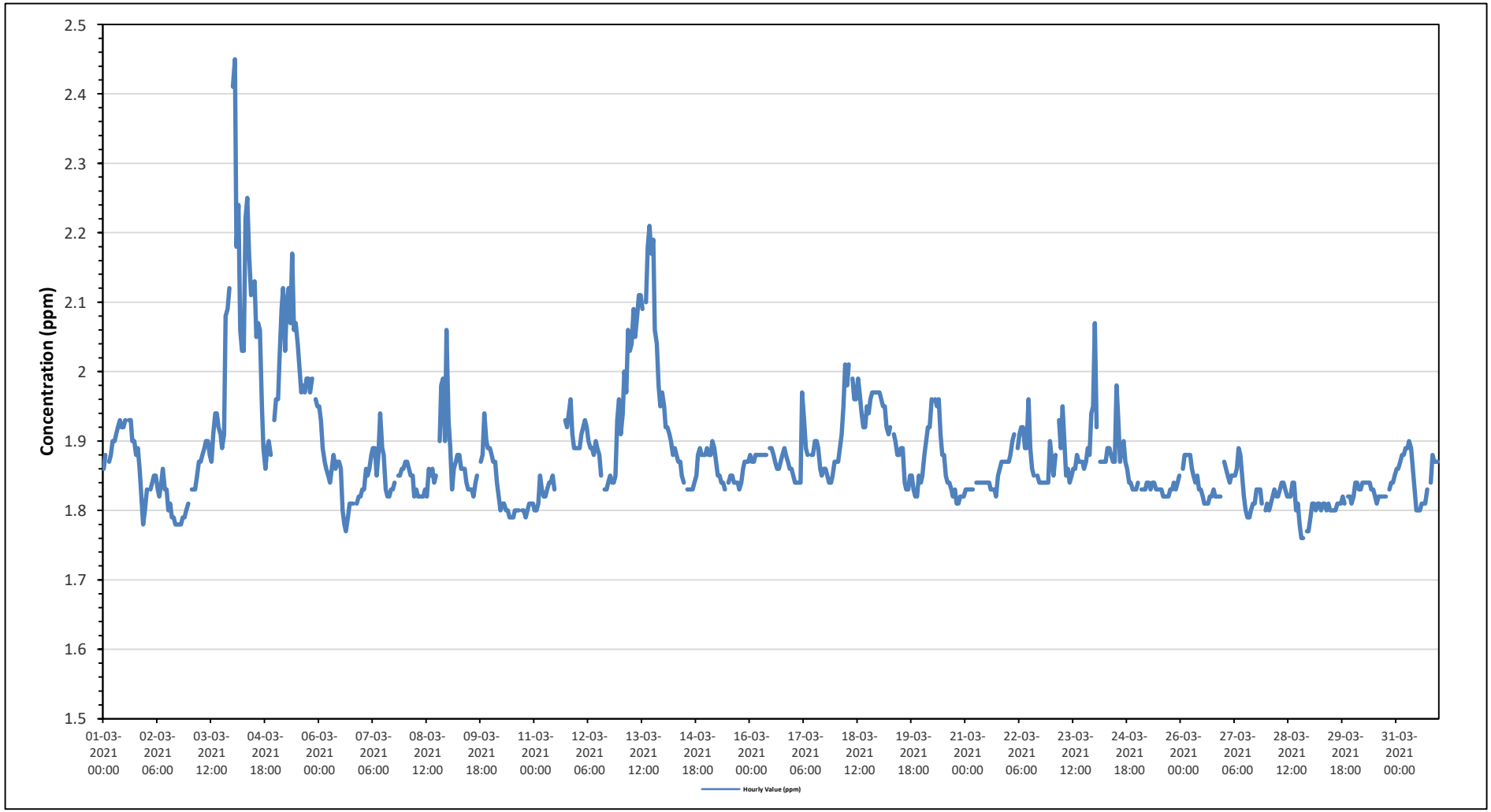
Maximum Hourly Value:	2.45	ppm	on March 4 at hour 1	Hours in Service:	744
Maximum Daily Value:	2.08	ppm	on March 4	Hours of Data:	705
Minimum Hourly Value:	1.76	ppm	on March 28 at hour 19	Hours of Missing Data:	2
Minimum Daily Value:	1.81	ppm	on March 29	Hours of Calibration:	37
Monthly Average:	1.88	ppm		Operational Uptime:	99.7

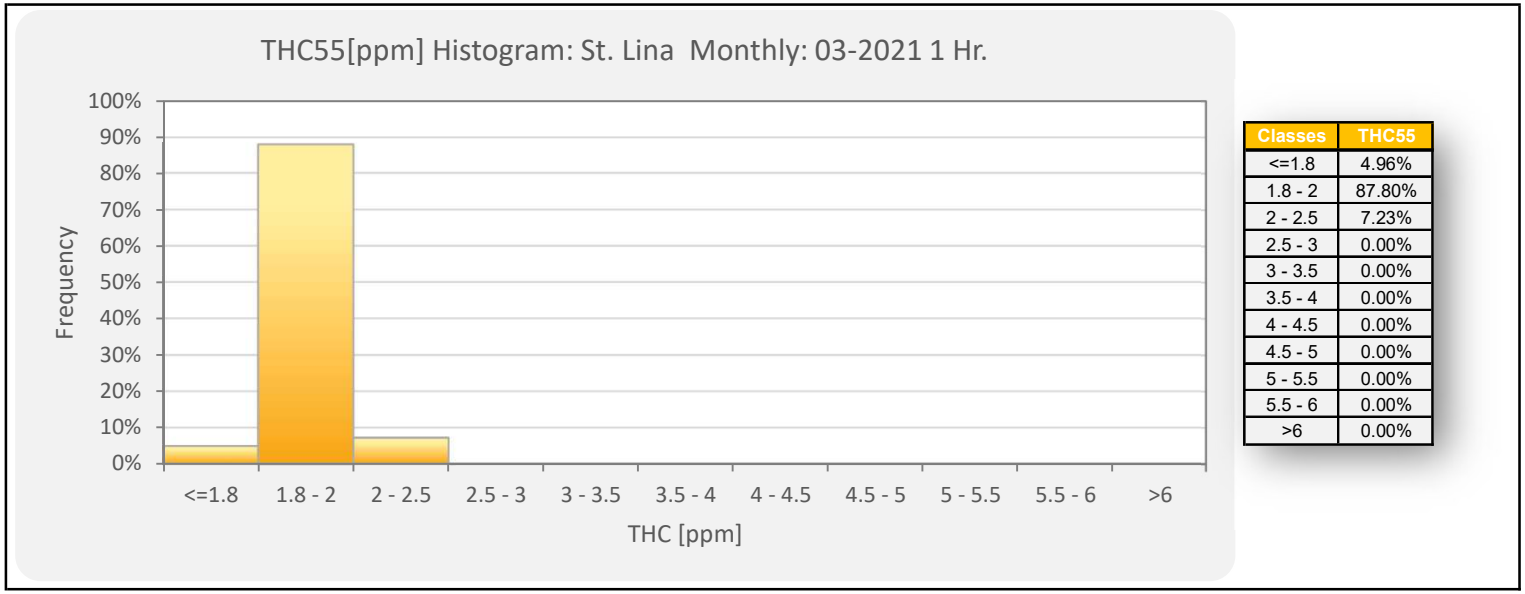
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Mar 1	1.86	1.88	S	1.87	1.88	1.90	1.90	1.91	1.92	1.93	1.92	1.92	1.93	NRM	1.93	1.93	1.90	1.90	1.88	1.89	1.86	1.82	1.78	1.80	1.78	1.93	1.89
Mar 2	1.83	S	1.83	1.84	1.85	1.85	1.83	1.82	1.84	1.86	1.83	1.83	1.80	1.81	1.79	1.79	1.78	1.78	1.78	1.78	1.79	1.79	1.80	1.81	1.78	1.86	1.81
Mar 3	S	1.83	1.83	1.83	1.85	1.87	1.87	1.88	1.89	1.90	1.90	1.88	1.87	1.91	1.94	1.94	1.92	1.91	1.89	1.91	2.08	2.09	2.12	S	1.83	2.12	1.91
Mar 4	2.41	**2.45**	2.18	2.24	2.06	2.03	2.03	2.22	2.25	2.17	2.11	2.12	2.13	2.05	2.07	2.06	1.95	1.89	1.86	1.89	1.90	1.88	S	1.93	1.86	**2.45**	**2.08**
Mar 5	1.96	1.96	2.02	2.09	2.12	2.03	2.10	2.12	2.07	2.17	2.06	2.07	2.04	2.01	1.97	1.98	1.97	1.99	1.99	1.97	1.99	S	1.96	1.95	1.95	2.17	2.03
Mar 6	1.95	1.93	1.89	1.87	1.86	1.85	1.84	1.86	1.88	1.86	1.87	1.87	1.86	1.80	1.78	1.77	1.79	1.81	1.81	1.81	S	1.81	1.82	1.82	1.77	1.95	1.84
Mar 7	1.83	1.83	1.86	1.85	1.86	1.88	1.89	1.89	1.85	1.88	1.94	1.89	1.88	1.83	1.82	1.82	1.83	1.83	1.84	S	1.85	1.85	1.86	1.86	1.82	1.94	1.86
Mar 8	1.87	1.87	1.86	1.85	1.85	1.82	1.83	1.82	1.82	1.82	1.82	1.83	1.82	1.86	1.85	1.86	1.84	1.85	S	1.90	1.98	1.99	1.90	2.06	1.82	2.06	1.87
Mar 9	1.93	1.89	1.83	1.86	1.87	1.88	1.88	1.86	1.86	1.86	1.84	1.83	1.83	1.83	1.82	1.84	1.85	S	1.87	1.88	1.94	1.90	1.89	1.89	1.82	1.94	1.87
Mar 10	1.88	1.87	1.87	1.84	1.82	1.80	1.81	1.81	1.80	1.80	1.79	1.79	1.79	1.80	1.80	1.80	S	1.80	1.80	1.79	1.80	1.81	1.81	1.81	1.79	1.88	1.81
Mar 11	1.80	1.80	1.81	1.85	1.83	1.82	1.82	1.83	1.84	1.84	1.85	1.83	C	C	C	C	C	1.93	1.92	1.94	1.96	1.91	1.89	1.89	1.80	1.96	1.86
Mar 12	1.89	1.89	1.91	1.92	1.93	1.92	1.90	1.89	1.89	1.88	1.90	1.89	1.88	1.85	S	1.83	1.83	1.84	1.85	1.84	1.84	1.85	1.93	1.96	1.83	1.96	1.88
Mar 13	1.91	1.94	2.00	1.97	2.06	2.03	2.04	2.09	2.05	2.08	2.11	2.11	2.09	S	2.10	2.18	2.21	2.17	2.19	2.06	2.04	1.98	1.95	1.97	1.91	2.21	2.06
Mar 14	1.95	1.92	1.92	1.91	1.90	1.88	1.89	1.88	1.87	1.87	1.85	1.84	S	1.83	1.83	1.83	1.83	1.84	1.85	1.88	1.89	1.88	1.88	1.88	1.83	1.95	1.87
Mar 15	1.89	1.88	1.88	1.90	1.89	1.87	1.85	1.85	1.84	1.84	1.83	S	1.84	1.85	1.85	1.84	1.84	1.84	1.83	1.84	1.86	1.87	1.87	1.87	1.83	1.90	1.86
Mar 16	1.88	1.87	1.87	1.88	1.88	1.88	1.88	1.88	1.88	1.88	S	1.89	1.89	1.88	1.87	1.86	1.86	1.87	1.88	1.89	1.88	1.87	1.86	1.86	1.86	1.89	1.88
Mar 17	1.85	1.84	1.84	1.84	1.84	1.97	1.93	1.89	1.88	S	1.88	1.88	1.90	1.90	1.89	1.86	1.85	1.86	1.86	1.85	1.84	1.84	1.85	1.87	1.84	1.97	1.87
Mar 18	1.87	1.87	1.89	1.91	1.95	2.01	1.98	2.01	S	1.99	1.96	1.96	1.99	1.97	1.94	1.92	1.92	1.95	1.94	1.96	1.97	1.97	1.97	1.97	1.87	2.01	1.95
Mar 19	1.97	1.96	1.95	1.95	1.92	1.91	1.92	S	1.91	1.90	1.88	1.88	1.89	1.89	1.84	1.83	1.83	1.85	1.85	1.83	1.82	1.82	1.85	1.84	1.82	1.97	1.88
Mar 20	1.85	1.88	1.90	1.92	1.92	1.96	S	1.96	1.95	1.96	1.91	1.88	1.88	1.85	1.84	1.84	1.83	1.82	1.83	1.81	1.81	1.82	1.82	1.82	1.81	1.96	1.87
Mar 21	1.83	1.83	1.83	1.83	1.83	S	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.83	1.83	1.83	1.82	1.85	1.86	1.87	1.87	1.87	1.87	1.82	1.87	1.84
Mar 22	1.87	1.88	1.90	1.91	S	1.89	1.91	1.92	1.92	1.89	1.89	1.96	1.89	1.86	1.85	NRM	1.85	1.84	1.84	1.84	1.84	1.84	1.84	1.90	1.84	1.96	1.88
Mar 23	1.87	1.85	1.88	S	1.93	1.89	1.95	1.90	1.85	1.86	1.84	1.85	1.86	1.86	1.88	1.87	1.87	1.87	1.86	1.87	1.89	1.88	1.94	1.95	1.84	1.95	1.88
Mar 24	2.07	1.92	S	1.87	1.87	1.87	1.87	1.89	1.89	1.88	1.87	1.87	1.98	1.93	1.87	1.89	1.90	1.87	1.86	1.84	1.84	1.83	1.83	1.83	1.83	2.07	1.88
Mar 25	1.84	S	1.83	1.83	1.83	1.84	1.84	1.83	1.84	1.84	1.83	1.83	1.83	1.83	1.82	1.82	1.82	1.82	1.83	1.83	1.84	1.83	1.84	1.85	1.82	1.85	1.83
Mar 26	S	1.86	1.88	1.88	1.88	1.88	1.86	1.85	1.84	1.85	1.83	1.83	1.82	1.81	1.81	1.81	1.82	1.82	1.83	1.82	1.82	1.82	1.82	S	1.81	1.88	1.84
Mar 27	1.87	1.86	1.85	1.84	1.85	1.85	1.85	1.86	1.89	1.88	1.85	1.82	1.80	1.79	1.79	1.80	1.81	1.81	1.83	1.83	1.83	1.81	S	1.80	1.79	1.89	1.83
Mar 28	1.81	1.80	1.81	1.82	1.83	1.82	1.82	1.83	1.84	1.84	1.83	1.82	1.82	1.82	1.84	1.84	1.80	1.81	1.78	1.76	1.76	S	1.77	1.77	1.76	1.84	1.81
Mar 29	1.79	1.81	1.81	1.80	1.81	1.81	1.80	1.81	1.81	1.80	1.81	1.80	1.80	1.80	1.80	1.81	1.81	1.81	1.82	1.81	S	1.82	1.82	1.81	1.79	1.82	1.81
Mar 30	1.82	1.84	1.84	1.83	1.83	1.84	1.84	1.84	1.84	1.84	1.83	1.83	1.82	1.81	1.82	1.82	1.82	1.82	1.82	S	1.83	1.84	1.84	1.85	1.81	1.85	1.83
Mar 31	1.86	1.86	1.87	1.88	1.88	1.89	1.89	1.90	1.89	1.86	1.83	1.80	1.80	1.80	1.81	1.81	1.81	1.83	S	1.84	1.88	1.87	1.87	1.87	1.80	1.90	1.85
Diurnal Maximum	2.41	2.45	2.18	2.24	2.12	2.03	2.10	2.22	2.25	2.17	2.11	2.12	2.13	2.05	2.10	2.18	2.21	2.17	2.19	2.06	2.08	2.09	2.12	2.06			
Daiurnal Average	1.90	1.89	1.88	1.89	1.89	1.89	1.89	1.90	1.89	1.90	1.88	1.88	1.88	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.88	1.87	1.87	1.87			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance	P Power Failure
X	InValid Data (Equipment Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)			

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for THC - St. Lina Site

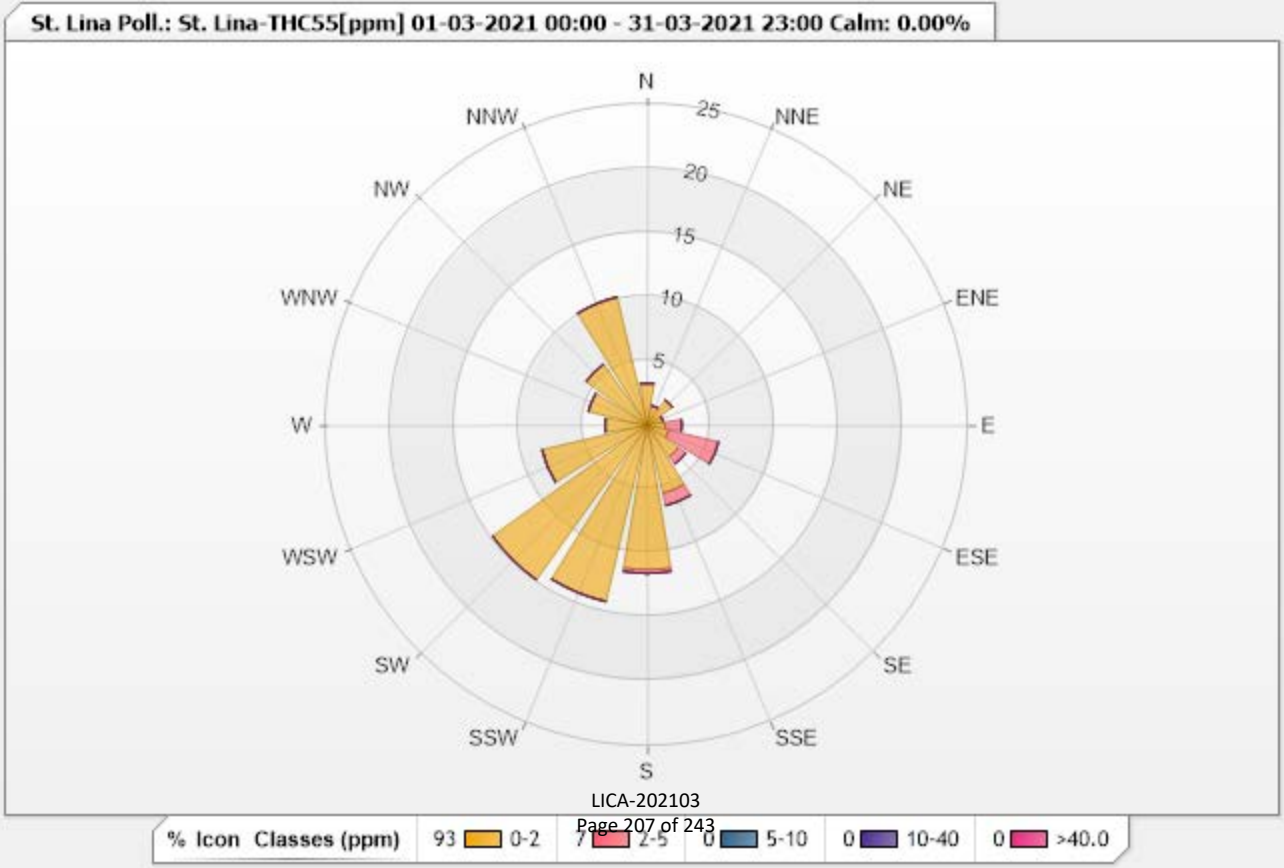




Classes	THC55
<=1.8	4.96%
1.8 - 2	87.80%
2 - 2.5	7.23%
2.5 - 3	0.00%
3 - 3.5	0.00%
3.5 - 4	0.00%
4 - 4.5	0.00%
4.5 - 5	0.00%
5 - 5.5	0.00%
5.5 - 6	0.00%
>6	0.00%

Wind: St. Lina Poll.: St. Lina-THC55[ppm] Monthly: 03-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
Calm: 0.00% Valid Data: 94.35% Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-40	>40.0	Total
N	3.28	0	0	0	0	3.28
NNE	1.57	0	0	0	0	1.57
NE	2.42	0	0	0	0	2.42
ENE	1.28	0	0	0	0	1.28
E	1.42	1.28	0	0	0	2.7
ESE	1.71	3.99	0	0	0	5.7
SE	2.99	0.71	0	0	0	3.7
SSE	5.41	1	0	0	0	6.41
S	11.25	0.28	0	0	0	11.53
SSW	14.1	0	0	0	0	14.1
SW	14.81	0	0	0	0	14.81
WSW	8.4	0	0	0	0	8.4
W	3.28	0	0	0	0	3.28
WNW	4.7	0	0	0	0	4.7
NW	5.84	0	0	0	0	5.84
NNW	10.26	0	0	0	0	10.26
Summary	92.72	7.26	0	0	0	100


St. Lina Poll.: St. Lina-THC55[ppm] 01-03-2021 00:00 - 31-03-2021 23:00 Calm: 0.00%
N
NNE
NE
ENE
E
ESE
SE
SSE
S
SSW
SW
WSW
W
WNW
NW
NNW
25
20
15
10
5
% Icon Classes (ppm)
93 0-2
7 2-5
0 5-10
0 10-40
0 >40.0

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - March 2021

Summary of Hourly Averages

METHANE (CH4) in ppm

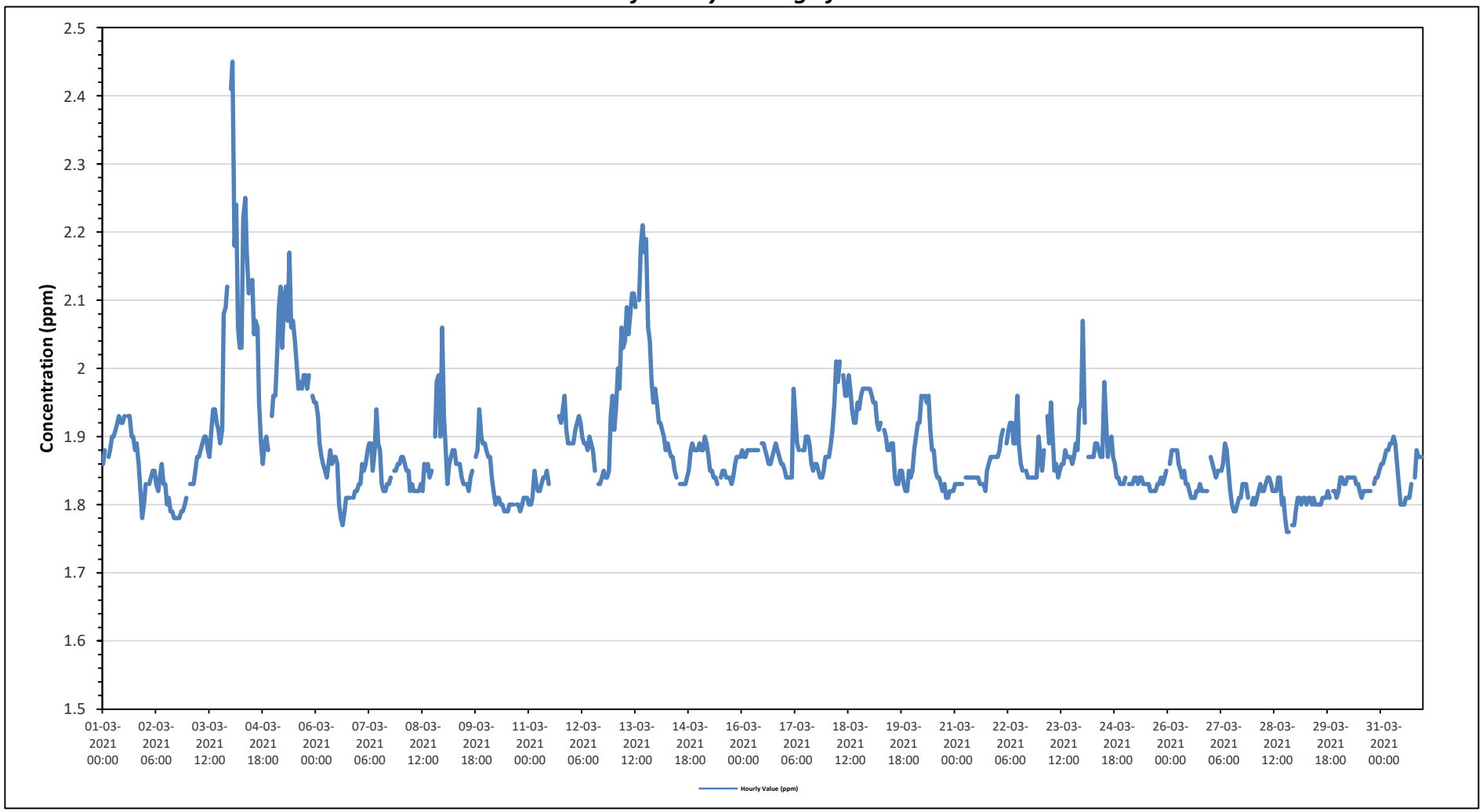
Maximum Hourly Value:	2.45	ppm	on March 4 at hour 1	Hours in Service:	744
Maximum Daily Value:	2.08	ppm	on March 4	Hours of Data:	705
Minimum Hourly Value:	1.76	ppm	on March 28 at hour 19	Hours of Missing Data:	2
Minimum Daily Value:	1.81	ppm	on March 29	Hours of Calibration:	37
Monthly Average:	1.88	ppm		Operational Uptime:	99.7

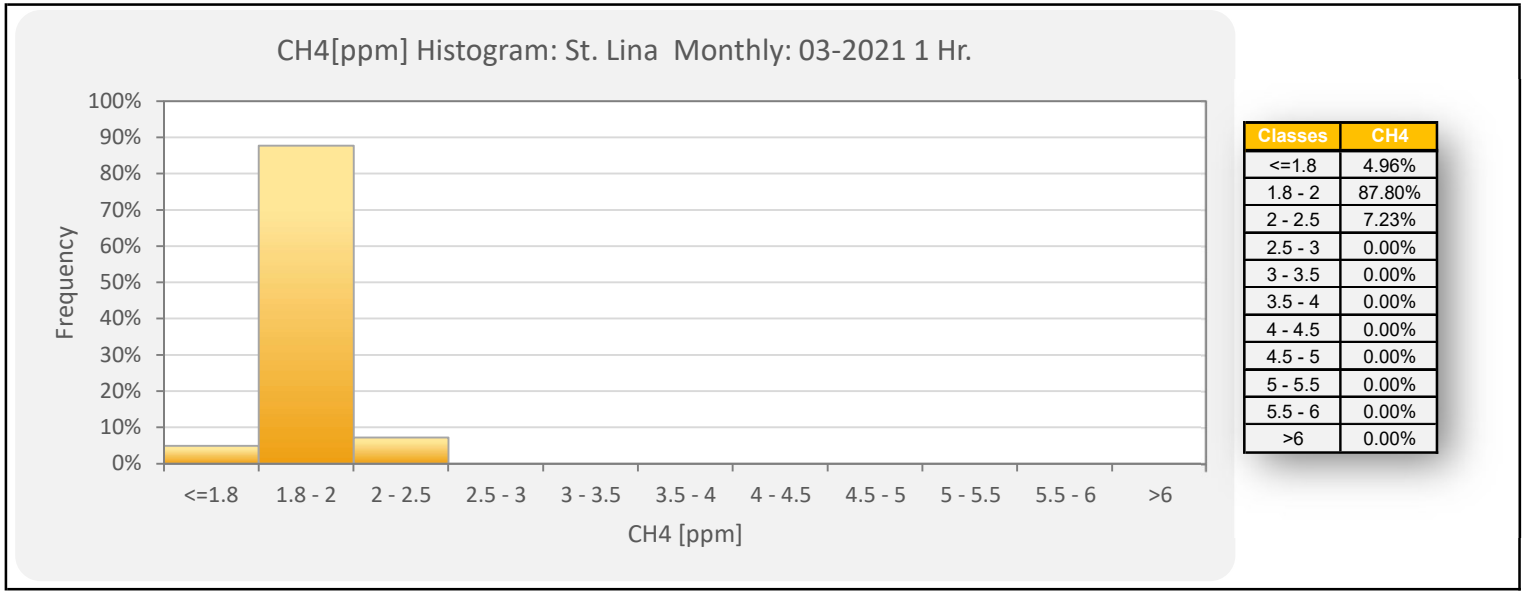
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Mar 1	1.86	1.88	S	1.87	1.88	1.90	1.90	1.91	1.92	1.93	1.92	1.92	1.93	NRM	1.93	1.93	1.90	1.90	1.88	1.89	1.86	1.82	1.78	1.80	1.78	1.93	1.89
Mar 2	1.83	S	1.83	1.84	1.85	1.85	1.83	1.82	1.84	1.86	1.83	1.83	1.80	1.81	1.79	1.79	1.78	1.78	1.78	1.78	1.79	1.79	1.80	1.81	1.78	1.86	1.81
Mar 3	S	1.83	1.83	1.83	1.85	1.87	1.87	1.88	1.89	1.90	1.90	1.88	1.87	1.91	1.94	1.94	1.92	1.91	1.89	1.91	2.08	2.09	2.12	S	1.83	2.12	1.91
Mar 4	2.41	**2.45**	2.18	2.24	2.06	2.03	2.03	2.22	2.25	2.17	2.11	2.12	2.13	2.05	2.07	2.06	1.95	1.89	1.86	1.89	1.90	1.88	S	1.93	1.86	**2.45**	**2.08**
Mar 5	1.96	1.96	2.02	2.09	2.12	2.03	2.10	2.12	2.07	2.17	2.06	2.07	2.04	2.01	1.97	1.98	1.97	1.99	1.99	1.97	1.99	S	1.96	1.95	1.95	2.17	2.03
Mar 6	1.95	1.93	1.89	1.87	1.86	1.85	1.84	1.86	1.88	1.86	1.87	1.87	1.86	1.80	1.78	1.77	1.79	1.81	1.81	1.81	S	1.81	1.82	1.82	1.77	1.95	1.84
Mar 7	1.83	1.83	1.86	1.85	1.86	1.88	1.89	1.89	1.85	1.88	1.94	1.89	1.88	1.83	1.82	1.82	1.83	1.83	1.84	S	1.85	1.85	1.86	1.86	1.82	1.94	1.86
Mar 8	1.87	1.87	1.86	1.85	1.85	1.82	1.83	1.82	1.82	1.82	1.82	1.83	1.82	1.86	1.85	1.86	1.84	1.85	S	1.90	1.98	1.99	1.90	2.06	1.82	2.06	1.87
Mar 9	1.93	1.89	1.83	1.86	1.87	1.88	1.88	1.86	1.86	1.86	1.84	1.83	1.83	1.83	1.82	1.84	1.85	S	1.87	1.88	1.94	1.90	1.89	1.89	1.82	1.94	1.87
Mar 10	1.88	1.87	1.87	1.84	1.82	1.80	1.81	1.81	1.80	1.80	1.79	1.79	1.79	1.80	1.80	1.80	S	1.80	1.80	1.79	1.80	1.81	1.81	1.81	1.79	1.88	1.81
Mar 11	1.80	1.80	1.81	1.85	1.83	1.82	1.82	1.83	1.84	1.84	1.85	1.83	C	C	C	C	C	1.93	1.92	1.94	1.96	1.91	1.89	1.89	1.80	1.96	1.86
Mar 12	1.89	1.89	1.91	1.92	1.93	1.92	1.90	1.89	1.89	1.88	1.90	1.89	1.88	1.85	S	1.83	1.83	1.84	1.85	1.84	1.84	1.85	1.93	1.96	1.83	1.96	1.88
Mar 13	1.91	1.94	2.00	1.97	2.06	2.03	2.04	2.09	2.05	2.08	2.11	2.11	2.09	S	2.10	2.18	2.21	2.17	2.19	2.06	2.04	1.98	1.95	1.97	1.91	2.21	2.06
Mar 14	1.95	1.92	1.92	1.91	1.90	1.88	1.89	1.88	1.87	1.87	1.85	1.84	S	1.83	1.83	1.83	1.83	1.84	1.85	1.88	1.89	1.88	1.88	1.88	1.83	1.95	1.87
Mar 15	1.89	1.88	1.88	1.90	1.89	1.87	1.85	1.85	1.84	1.84	1.83	S	1.84	1.85	1.85	1.84	1.84	1.84	1.83	1.84	1.86	1.87	1.87	1.87	1.83	1.90	1.86
Mar 16	1.88	1.87	1.87	1.88	1.88	1.88	1.88	1.88	1.88	1.88	S	1.89	1.89	1.88	1.87	1.86	1.86	1.87	1.88	1.89	1.88	1.87	1.86	1.86	1.86	1.89	1.88
Mar 17	1.85	1.84	1.84	1.84	1.84	1.97	1.93	1.89	1.88	S	1.88	1.88	1.90	1.90	1.89	1.86	1.85	1.86	1.86	1.85	1.84	1.84	1.85	1.87	1.84	1.97	1.87
Mar 18	1.87	1.87	1.89	1.91	1.95	2.01	1.98	2.01	S	1.99	1.96	1.96	1.99	1.97	1.94	1.92	1.92	1.95	1.94	1.96	1.97	1.97	1.97	1.97	1.87	2.01	1.95
Mar 19	1.97	1.96	1.95	1.95	1.92	1.91	1.92	S	1.91	1.90	1.88	1.88	1.89	1.89	1.84	1.83	1.83	1.85	1.85	1.83	1.82	1.82	1.85	1.84	1.82	1.97	1.88
Mar 20	1.85	1.88	1.90	1.92	1.92	1.96	S	1.96	1.95	1.96	1.91	1.88	1.88	1.85	1.84	1.84	1.83	1.82	1.83	1.81	1.81	1.82	1.82	1.82	1.81	1.96	1.87
Mar 21	1.83	1.83	1.83	1.83	1.83	S	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.83	1.83	1.83	1.82	1.85	1.86	1.87	1.87	1.87	1.87	1.82	1.87	1.84
Mar 22	1.87	1.88	1.90	1.91	S	1.89	1.91	1.92	1.92	1.89	1.89	1.96	1.89	1.86	1.85	NRM	1.85	1.84	1.84	1.84	1.84	1.84	1.84	1.90	1.84	1.96	1.88
Mar 23	1.87	1.85	1.88	S	1.93	1.89	1.95	1.90	1.85	1.86	1.84	1.85	1.86	1.86	1.88	1.87	1.87	1.87	1.86	1.87	1.89	1.88	1.94	1.95	1.84	1.95	1.88
Mar 24	2.07	1.92	S	1.87	1.87	1.87	1.87	1.89	1.89	1.88	1.87	1.87	1.98	1.93	1.87	1.89	1.90	1.87	1.86	1.84	1.84	1.83	1.83	1.83	1.83	2.07	1.88
Mar 25	1.84	S	1.83	1.83	1.83	1.84	1.84	1.83	1.84	1.84	1.83	1.83	1.83	1.83	1.82	1.82	1.82	1.82	1.83	1.83	1.84	1.83	1.84	1.85	1.82	1.85	1.83
Mar 26	S	1.86	1.88	1.88	1.88	1.88	1.86	1.85	1.84	1.85	1.83	1.83	1.82	1.81	1.81	1.81	1.82	1.82	1.83	1.82	1.82	1.82	1.82	S	1.81	1.88	1.84
Mar 27	1.87	1.86	1.85	1.84	1.85	1.85	1.85	1.86	1.89	1.88	1.85	1.82	1.80	1.79	1.79	1.80	1.81	1.81	1.83	1.83	1.83	1.81	S	1.80	1.79	1.89	1.83
Mar 28	1.81	1.80	1.81	1.82	1.83	1.82	1.82	1.83	1.84	1.84	1.83	1.82	1.82	1.82	1.84	1.84	1.80	1.81	1.78	1.76	1.76	S	1.77	1.77	1.76	1.84	1.81
Mar 29	1.79	1.81	1.81	1.80	1.81	1.81	1.80	1.81	1.81	1.80	1.81	1.80	1.80	1.80	1.80	1.81	1.81	1.81	1.82	1.81	S	1.82	1.82	1.81	1.79	1.82	1.81
Mar 30	1.82	1.84	1.84	1.83	1.83	1.84	1.84	1.84	1.84	1.84	1.83	1.83	1.82	1.81	1.82	1.82	1.82	1.82	1.82	S	1.83	1.84	1.84	1.85	1.81	1.85	1.83
Mar 31	1.86	1.86	1.87	1.88	1.88	1.89	1.89	1.90	1.89	1.86	1.83	1.80	1.80	1.80	1.81	1.81	1.81	1.83	S	1.84	1.88	1.87	1.87	1.87	1.80	1.90	1.85
Diurnal Maximum	2.41	2.45	2.18	2.24	2.12	2.03	2.10	2.22	2.25	2.17	2.11	2.12	2.13	2.05	2.10	2.18	2.21	2.17	2.19	2.06	2.08	2.09	2.12	2.06			
Daiurnal Average	1.90	1.89	1.88	1.89	1.89	1.89	1.89	1.90	1.89	1.90	1.88	1.88	1.88	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.88	1.87	1.87	1.87			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance	P Power Failure
X	InValid Data (Equipment Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)			

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for CH4 - St. Lina Site

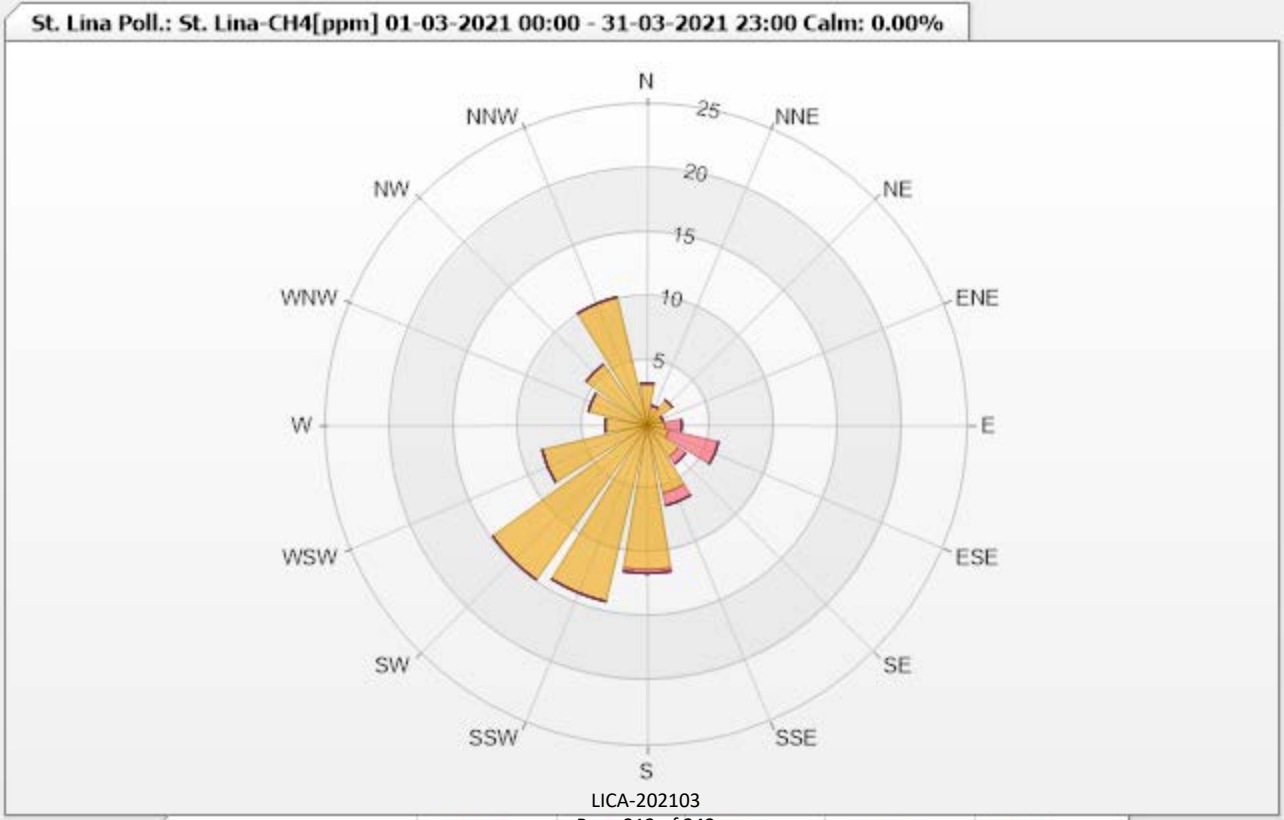




Classes	CH4
<=1.8	4.96%
1.8 - 2	87.80%
2 - 2.5	7.23%
2.5 - 3	0.00%
3 - 3.5	0.00%
3.5 - 4	0.00%
4 - 4.5	0.00%
4.5 - 5	0.00%
5 - 5.5	0.00%
5.5 - 6	0.00%
>6	0.00%

Wind: St. Lina Poll.: St. Lina-CH4[ppm] Monthly: 03-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
Calm: 0.00% Valid Data: 94.35% Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-20	>20.0	Total
N	3.28	0	0	0	0	3.28
NNE	1.57	0	0	0	0	1.57
NE	2.42	0	0	0	0	2.42
ENE	1.28	0	0	0	0	1.28
E	1.42	1.28	0	0	0	2.7
ESE	1.71	3.99	0	0	0	5.7
SE	2.99	0.71	0	0	0	3.7
SSE	5.41	1	0	0	0	6.41
S	11.25	0.28	0	0	0	11.53
SSW	14.1	0	0	0	0	14.1
SW	14.81	0	0	0	0	14.81
WSW	8.4	0	0	0	0	8.4
W	3.28	0	0	0	0	3.28
WNW	4.7	0	0	0	0	4.7
NW	5.84	0	0	0	0	5.84
NNW	10.26	0	0	0	0	10.26
Summary	92.72	7.26	0	0	0	100


St. Lina Poll.: St. Lina-CH4[ppm] 01-03-2021 00:00 - 31-03-2021 23:00 Calm: 0.00%
N
NNE
NE
ENE
E
ESE
SE
SSE
S
SSW
SW
WSW
W
WNW
NW
NNW
25
20
15
10
5
% Icon Classes (ppm)
93 0-2
7 2-5
0 5-10
0 10-20
0 >20.0

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - March 2021

Summary of Hourly Averages

NON-METHANE HYDROCARBONS (NMHC) in ppm

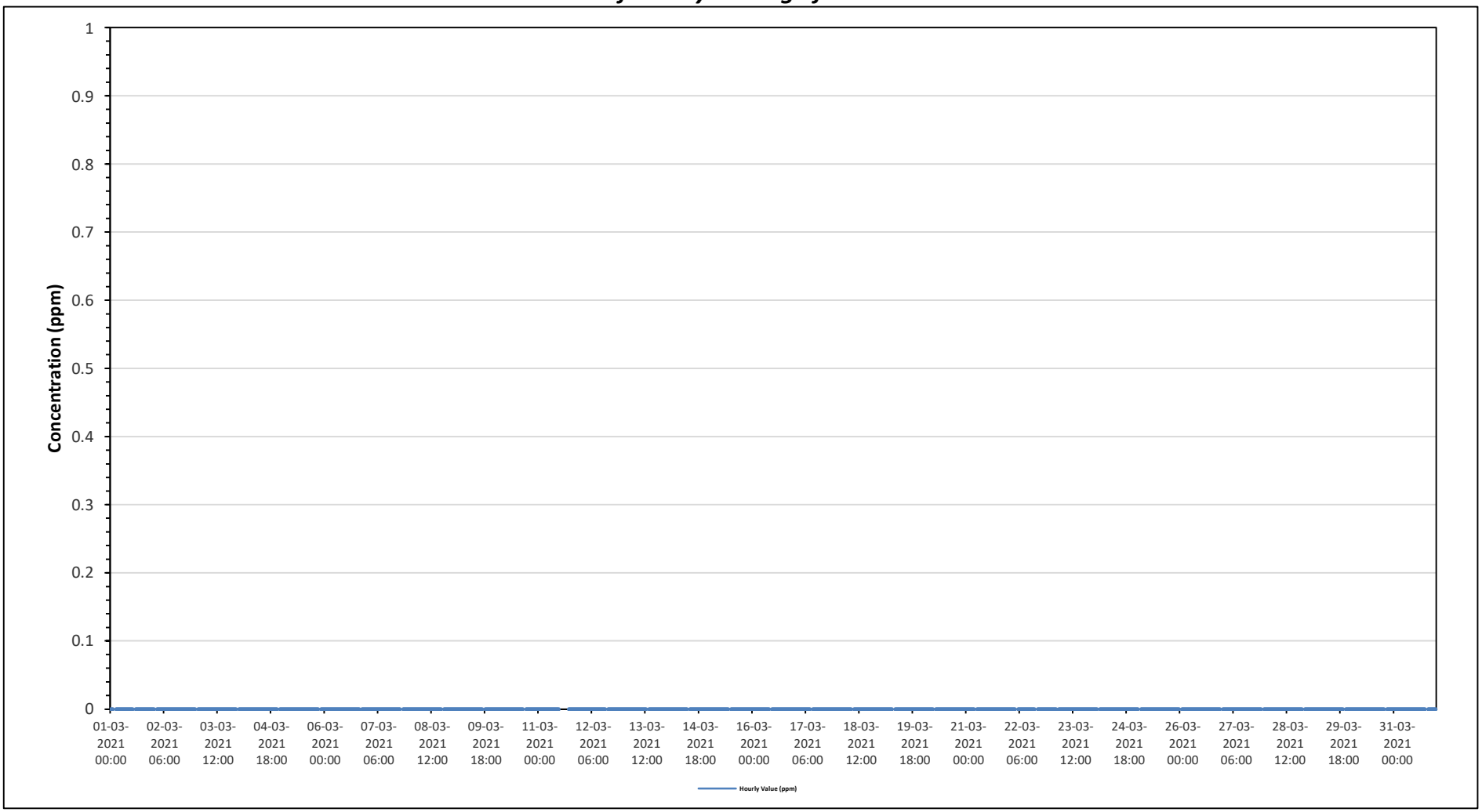
Maximum Hourly Value:	0.00	ppm	on March 1 at hour 0	Hours in Service:	744
Maximum Daily Value:	0.00	ppm	on March 1	Hours of Data:	705
Minimum Hourly Value:	0.00	ppm	on March 1 at hour 0	Hours of Missing Data:	2
Minimum Daily Value:	0.00	ppm	on March 1	Hours of Calibration:	37
Monthly Average:	0.00	ppm		Operational Uptime:	99.7

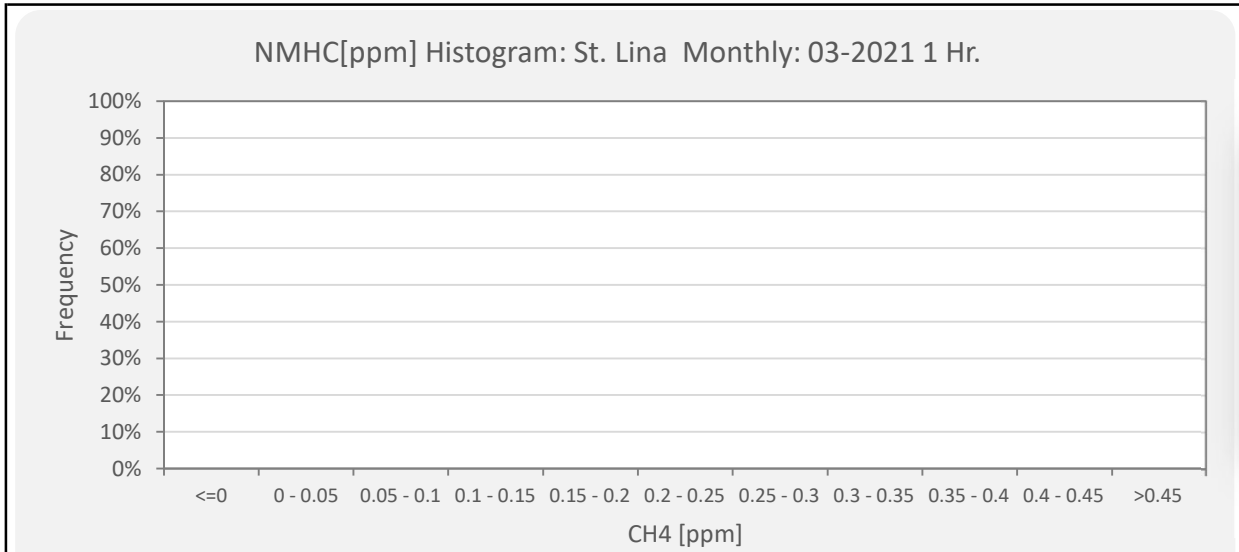
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Mar 1	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NRM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mar 2	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mar 3	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00
Mar 4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00
Mar 5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00
Mar 6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00
Mar 7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mar 8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mar 9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mar 10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mar 11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	C	C	C	C	C	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mar 12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mar 13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mar 14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mar 15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mar 16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mar 17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mar 18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mar 19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mar 20	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mar 21	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mar 22	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NRM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mar 23	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mar 24	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mar 25	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mar 26	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00
Mar 27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00
Mar 28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00
Mar 29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00
Mar 30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mar 31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diurnal Maximum	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
Daiurnal Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance	P Power Failure
X	InValid Data (Equipment Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)			

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for NMHC - St. Lina Site

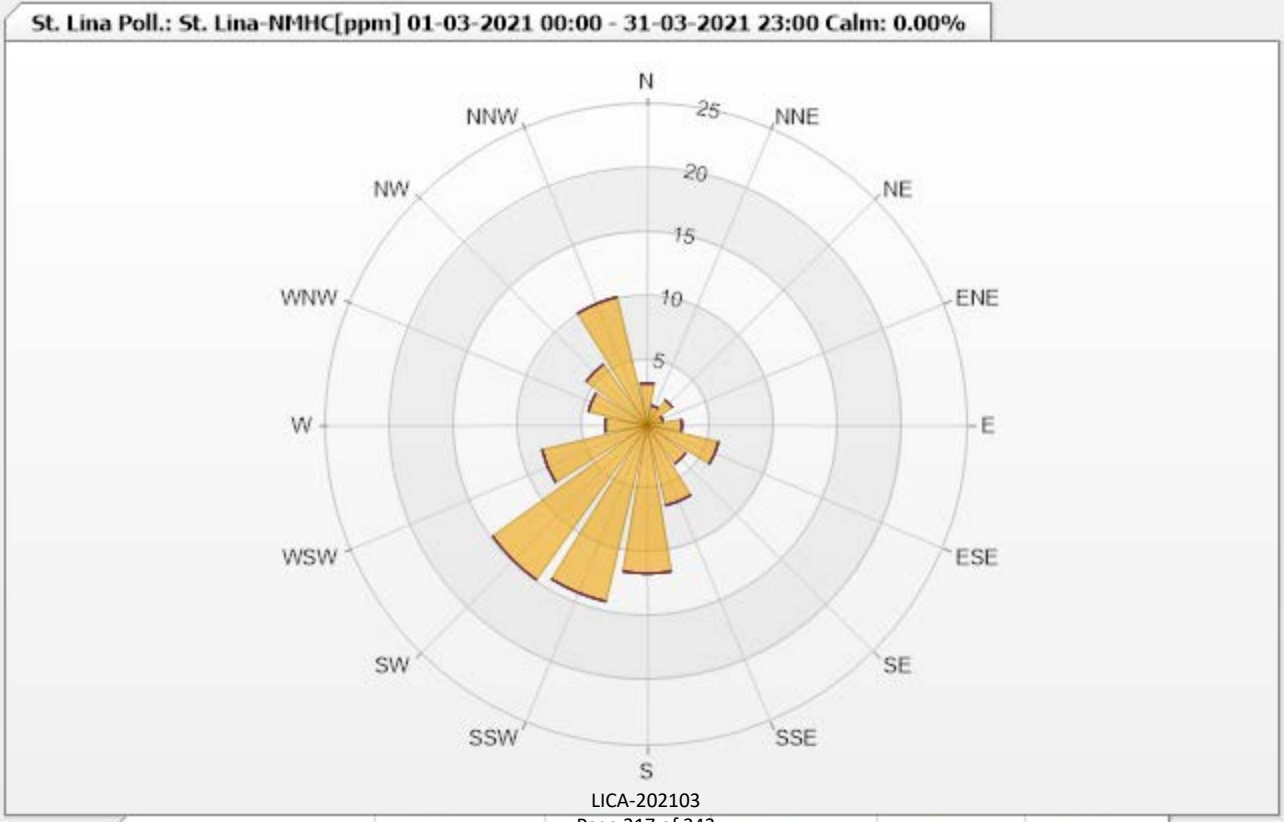




Classes	NMHC
<=0	100.00%
0 - 0.05	0.00%
0.05 - 0.1	0.00%
0.1 - 0.15	0.00%
0.15 - 0.2	0.00%
0.2 - 0.25	0.00%
0.25 - 0.3	0.00%
0.3 - 0.35	0.00%
0.35 - 0.4	0.00%
0.4 - 0.45	0.00%
>0.45	0.00%

Wind: St. Lina Poll.: St. Lina-NMHC[ppm] Monthly: 03-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
Calm: 0.00% Valid Data: 94.35% Calm Avg: 0.00 [ppm]

Direction	0-0.1	0.1-0.3	0.3-0.9	0.9-2	>2.0	Total
N	3.28	0	0	0	0	3.28
NNE	1.57	0	0	0	0	1.57
NE	2.42	0	0	0	0	2.42
ENE	1.28	0	0	0	0	1.28
E	2.71	0	0	0	0	2.71
ESE	5.7	0	0	0	0	5.7
SE	3.7	0	0	0	0	3.7
SSE	6.41	0	0	0	0	6.41
S	11.54	0	0	0	0	11.54
SSW	14.1	0	0	0	0	14.1
SW	14.81	0	0	0	0	14.81
WSW	8.4	0	0	0	0	8.4
W	3.28	0	0	0	0	3.28
WNW	4.7	0	0	0	0	4.7
NW	5.84	0	0	0	0	5.84
NNW	10.26	0	0	0	0	10.26
Summary	100	0	0	0	0	100


St. Lina Poll.: St. Lina-NMHC[ppm] 01-03-2021 00:00 - 31-03-2021 23:00 Calm: 0.00%
N
NNE
NE
ENE
E
ESE
SE
SSE
S
SSW
SW
WSW
W
WNW
NW
NNW
25
20
15
10
5
% Icon Classes (ppm)
100 0-0.1
0 0.1-0.3
0 0.3-0.9
0 0.9-2
0 >2.0

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - March 2021

Summary of Hourly Averages

PARTICULATE MATTER 2.5 ($PM_{2.5}$) in $\mu g/m^3$

Alberta Ambient Air Quality Objectives (AAAQO): 1-Hour 80 µg/m3, 24-Hour 29 µg/m3

Number of 1-Hour Exceedences: 0 Number of 24-Hour Exceedences: 0

Maximum Hourly Value:	19 $\mu g/m^3$ on March 5 at hour 6	Hours in Service:	744
Maximum Daily Value:	14.6 $\mu g/m^3$ on March 5	Hours of Data:	742
Minimum Hourly Value:	0 $\mu g/m^3$ on March 6 at hour 14	Hours of Missing Data:	0
Minimum Daily Value:	2 $\mu g/m^3$ on March 28	Hours of Calibration:	2
Monthly Average:	4.7 $\mu g/m^3$	Operational Uptime:	100.0

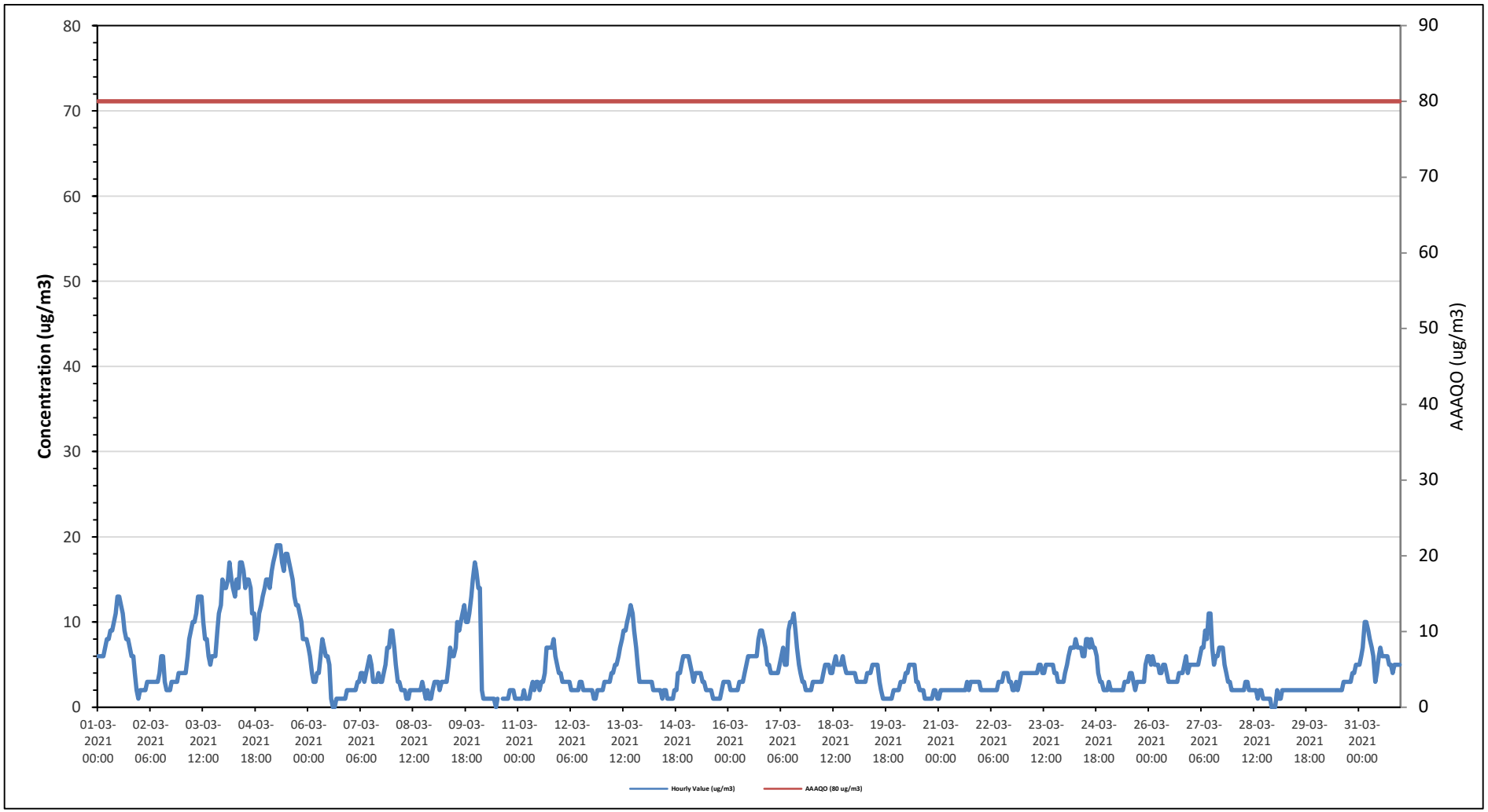
Day	Hourly Period Starting at (MST)																								Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Mar 1	6	6	6	6	7	8	8	9	9	10	11	13	13	12	11	9	8	8	7	6	6	4	2	1	1	13	7.8
Mar 2	2	2	2	2	3	3	3	3	3	3	3	4	6	6	3	2	2	2	3	3	3	3	4	4	2	6	3.1
Mar 3	4	4	4	6	8	9	10	10	11	13	13	13	10	8	8	6	5	6	6	6	9	11	12	15	4	15	8.6
Mar 4	14	14	15	17	15	14	13	15	14	17	17	16	14	15	15	14	11	11	8	9	11	12	13	14	8	17	13.7
Mar 5	15	15	14	16	17	18	**19**	**19**	**19**	17	16	18	18	17	16	15	13	12	12	11	10	8	8	8	8	**19**	**14.6**
Mar 6	7	6	4	3	3	4	4	6	8	7	6	6	5	1	0	0	1	1	1	1	1	1	2	2	**0**	8	3.3
Mar 7	2	2	2	2	3	3	4	4	3	4	5	6	5	3	3	3	4	3	3	4	5	7	7	9	2	9	4.0
Mar 8	9	7	5	3	3	2	2	2	1	1	2	2	2	2	2	2	2	3	2	1	2	1	1	2	1	9	2.5
Mar 9	3	3	3	2	3	3	3	3	5	7	6	6	7	10	9	10	11	12	10	10	11	13	15	17	2	17	7.6
Mar 10	16	14	14	2	1	1	1	1	1	1	1	0	1	C	C	1	1	1	1	2	2	2	1	1	**0**	16	3.0
Mar 11	1	1	1	2	1	1	1	2	3	2	3	3	2	3	3	4	7	7	7	7	8	6	5	4	1	8	3.5
Mar 12	4	3	3	3	3	3	2	2	2	2	2	3	3	2	2	2	2	2	2	1	1	2	2	2	1	4	2.3
Mar 13	2	3	3	3	3	4	4	5	5	6	7	8	9	9	10	11	12	11	9	7	5	3	3	3	2	12	6.0
Mar 14	3	3	3	3	3	2	2	2	2	2	1	2	2	1	1	1	1	2	2	4	4	5	6	6	1	6	2.6
Mar 15	6	6	5	4	3	4	4	4	4	3	3	2	2	2	2	1	1	1	1	1	2	3	3	3	1	6	2.9
Mar 16	3	2	2	2	2	2	3	3	3	4	5	6	6	6	6	6	6	8	9	9	8	7	5	5	2	9	4.9
Mar 17	4	4	4	4	4	5	6	7	5	5	9	10	10	11	9	7	5	4	3	3	2	2	2	2	2	11	5.3
Mar 18	3	3	3	3	3	3	4	5	5	5	4	4	5	6	5	5	5	6	5	4	4	4	4	4	3	6	4.3
Mar 19	4	3	3	3	3	3	3	4	4	4	5	5	5	5	3	2	1	1	1	1	1	1	2	2	1	5	2.9
Mar 20	2	2	3	3	3	4	4	5	5	5	5	3	3	2	2	2	1	1	1	1	1	2	2	1	1	5	2.6
Mar 21	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	2	3	3	3	3	3	3	1	3	2.3
Mar 22	2	2	2	2	2	2	2	2	2	2	3	3	3	4	4	4	3	3	2	2	3	2	3	4	2	4	2.6
Mar 23	4	4	4	4	4	4	4	4	4	5	5	4	4	5	5	5	5	5	4	4	3	3	3	3	3	5	4.1
Mar 24	4	5	6	7	7	7	8	7	7	7	6	6	8	8	7	8	7	7	6	4	3	3	2	2	2	8	5.9
Mar 25	2	3	2	2	2	2	2	2	2	2	3	3	3	4	4	3	2	3	3	3	3	3	5	6	2	6	2.9
Mar 26	6	5	6	5	5	5	4	4	5	5	4	3	3	3	3	3	3	4	4	4	5	6	4	5	3	6	4.3
Mar 27	5	5	5	5	5	6	7	7	9	8	11	11	7	5	6	6	7	7	7	5	4	3	3	2	2	11	6.1
Mar 28	2	2	2	2	2	2	2	3	3	2	2	2	2	2	1	2	2	1	1	1	1	1	0	0	**0**	3	1.7
Mar 29	0	2	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	**0**	2	1.8
Mar 30	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3	4	4	5	5	2	5	2.6
Mar 31	5	6	7	10	10	9	8	7	6	3	4	6	7	6	6	6	6	5	5	4	5	5	5	5	3	10	6.1
Diurnal Maximum	16	15	15	17	17	18	19	19	19	17	17	18	18	17	16	15	13	12	12	11	11	13	15	17			
Daiurnal Average	4.6	4.5	4.5	4.2	4.3	4.5	4.6	4.9	5.0	5.1	5.4	5.6	5.5	5.5	5.1	4.7	4.6	4.6	4.3	4.1	4.3	4.3	4.3	4.6			

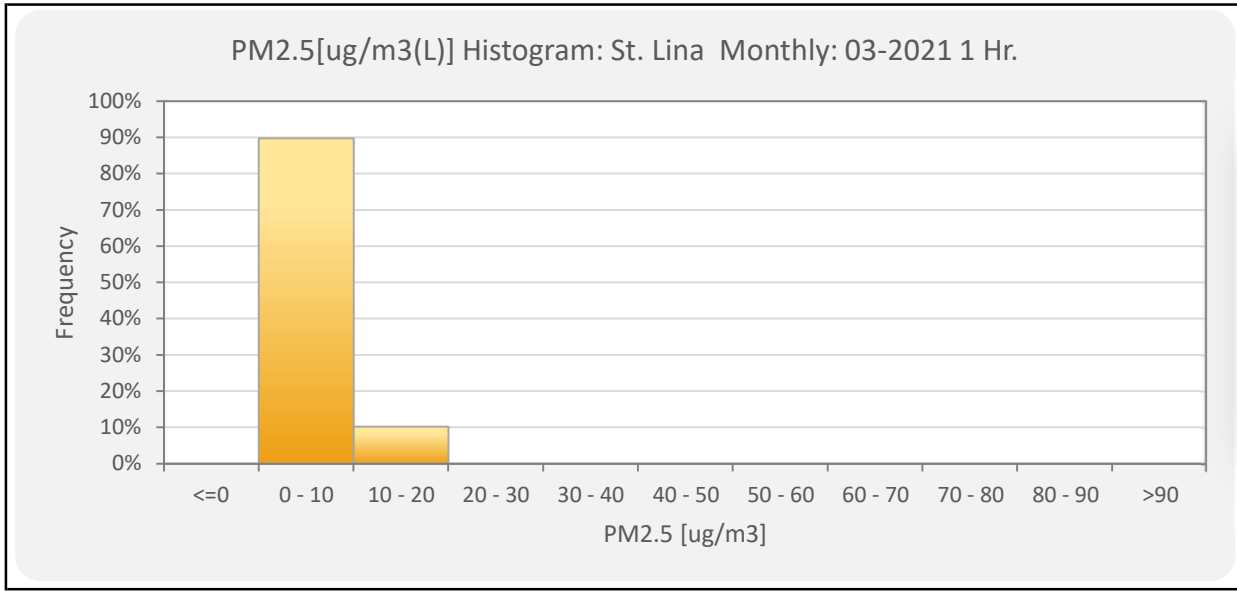
C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance	P Power Failure
X	InValid Data (Equipment Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)			

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.

Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for PM2.5 - St. Lina Site

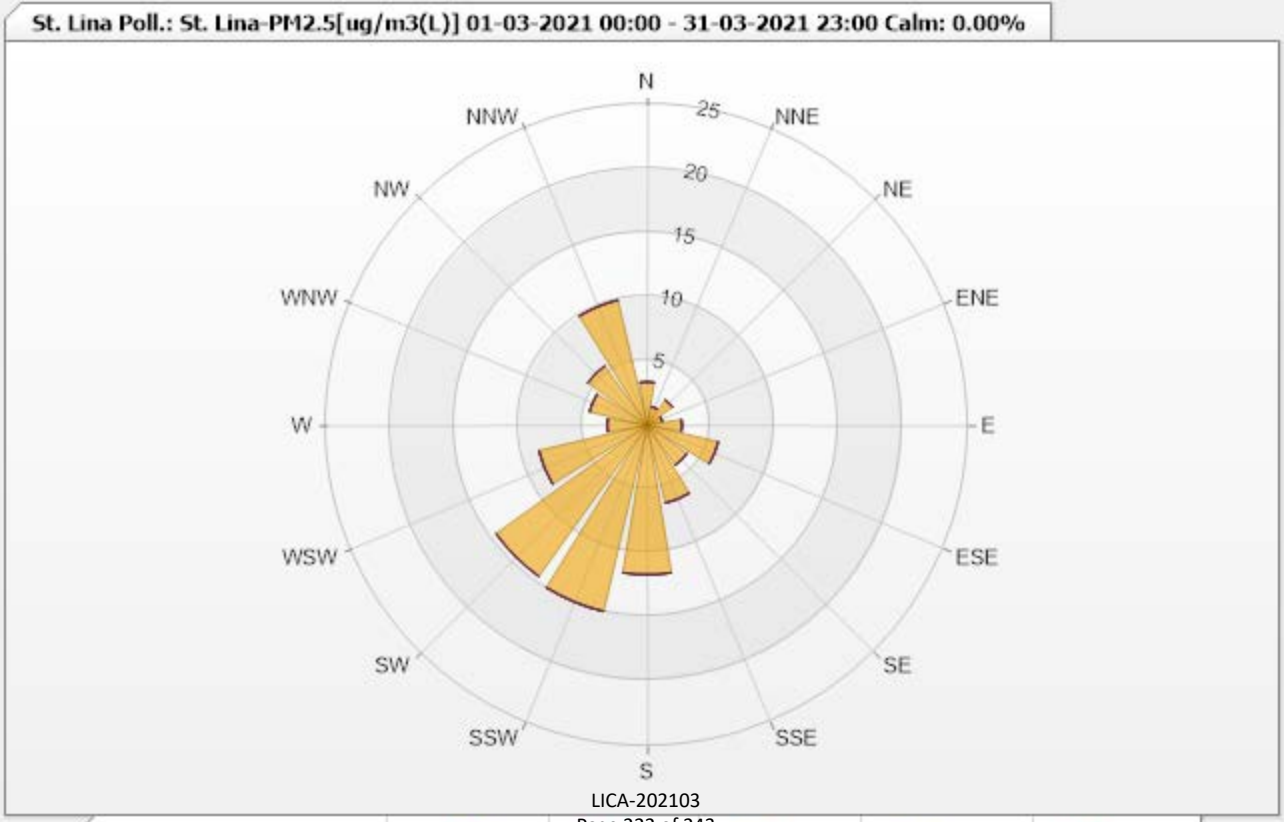




Classes	PM2.5
<=0	0.00%
0 - 10	89.76%
10 - 20	10.24%
20 - 30	0.00%
30 - 40	0.00%
40 - 50	0.00%
50 - 60	0.00%
60 - 70	0.00%
70 - 80	0.00%
80 - 90	0.00%
>90	0.00%

Wind: St. Lina Poll.: St. Lina-PM2.5[ug/m3(L)] Monthly: 03-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
Calm: 0.00% Valid Data: 99.33% Calm Avg: 0.00 [ug/m3(L)]

Direction	0-50	50-80	80-120	120-240	>240.0	Total
N	3.38	0	0	0	0	3.38
NNE	1.49	0	0	0	0	1.49
NE	2.44	0	0	0	0	2.44
ENE	1.22	0	0	0	0	1.22
E	2.71	0	0	0	0	2.71
ESE	5.68	0	0	0	0	5.68
SE	3.79	0	0	0	0	3.79
SSE	6.22	0	0	0	0	6.22
S	11.64	0	0	0	0	11.64
SSW	14.88	0	0	0	0	14.88
SW	14.48	0	0	0	0	14.48
WSW	8.66	0	0	0	0	8.66
W	3.11	0	0	0	0	3.11
WNW	4.6	0	0	0	0	4.6
NW	5.68	0	0	0	0	5.68
NNW	10.01	0	0	0	0	10.01
Summary	100	0	0	0	0	100


St. Lina Poll.: St. Lina-PM2.5[ug/m3(L)] 01-03-2021 00:00 - 31-03-2021 23:00 Calm: 0.00%
N
NNE
NE
ENE
E
ESE
SE
SSE
S
SSW
SW
WSW
W
WNW
NW
NNW
25
20
15
10
5
% Icon Classes (ug/m3(L))
100 0-50
0 50-80
0 80-120
0 120-240
0 >240.0

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - March 2021

Summary of Hourly Averages

RELATIVE HUMIDITY (RH) in %

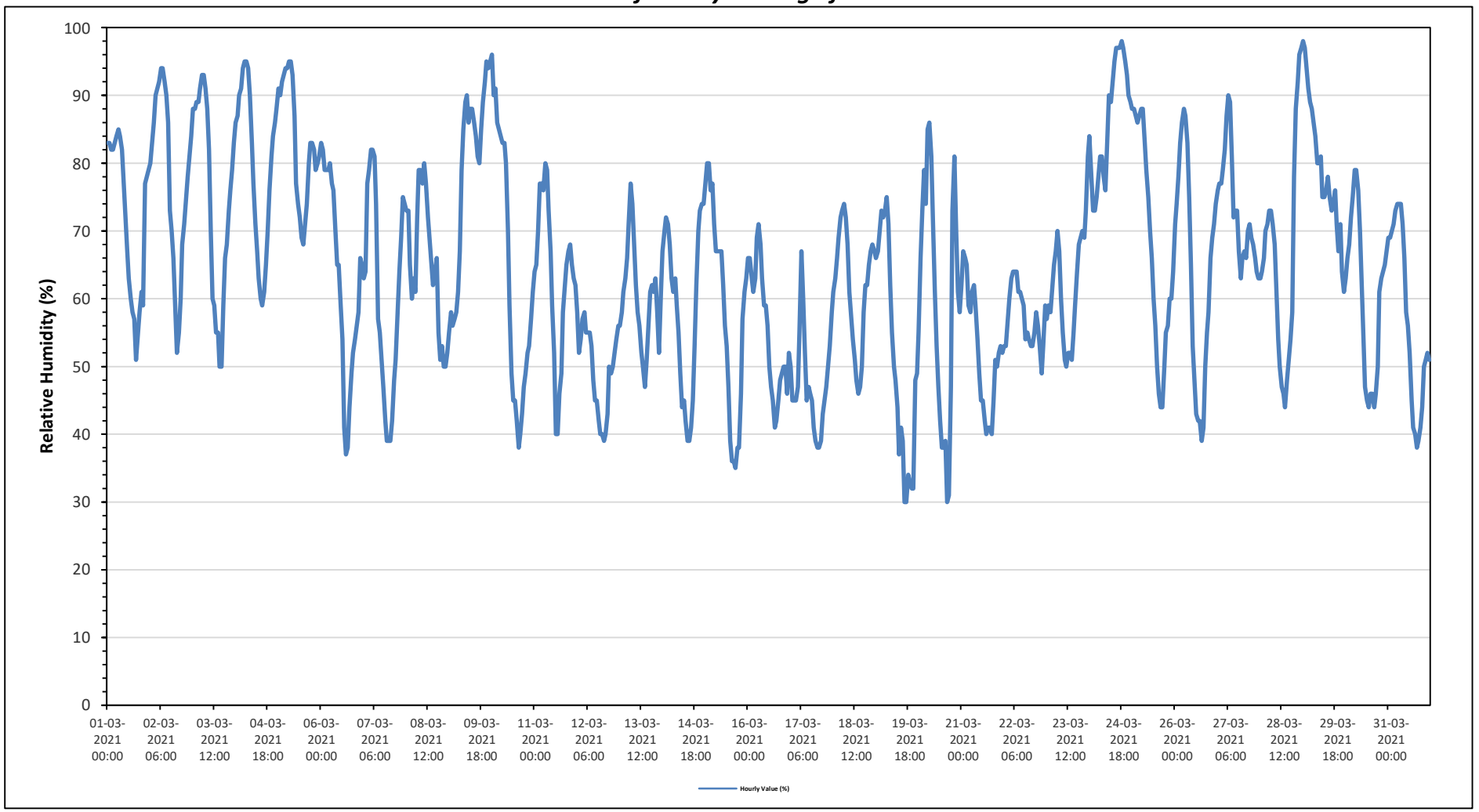
Maximum Hourly Value:	98	%	on March 24 at hour 18	Hours in Service:	744
Maximum Daily Value:	86.7	%	on March 24	Hours of Data:	744
Minimum Hourly Value:	30	%	on March 19 at hour 16	Hours of Missing Data:	0
Minimum Daily Value:	47.5	%	on March 17	Hours of Calibration:	0
Monthly Average:	64.9	%		Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																								Daily	Daily	Daily
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Minimum	Maximum	Average
Mar 1	83	83	82	82	83	84	85	84	82	77	72	67	63	60	58	57	51	55	58	61	59	77	78	79	51	85	71.7
Mar 2	80	83	86	90	91	92	94	94	92	90	86	73	70	66	58	52	55	60	68	71	74	78	81	84	52	94	77.8
Mar 3	88	88	89	89	91	93	93	91	88	82	70	60	59	55	55	50	50	59	66	68	73	76	79	83	50	93	74.8
Mar 4	86	87	90	91	94	95	95	94	90	83	77	71	67	63	60	59	61	65	70	76	81	84	86	88	59	95	79.7
Mar 5	91	90	92	93	94	94	95	95	93	87	77	74	72	69	68	71	74	80	83	83	82	79	80	81	68	95	83.2
Mar 6	83	82	79	79	79	80	77	76	70	65	65	59	54	41	37	38	44	49	52	54	56	58	66	65	37	83	62.8
Mar 7	63	64	77	79	82	82	81	74	57	55	51	47	42	39	39	39	42	48	51	58	64	69	75	74	39	82	60.5
Mar 8	73	73	65	60	63	61	72	79	79	77	80	77	72	69	65	62	64	66	55	51	53	50	50	52	50	80	65.3
Mar 9	55	58	56	57	58	61	67	79	85	89	90	86	88	88	86	84	81	80	85	89	92	95	94	95	55	95	79.1
Mar 10	96	90	91	86	85	84	83	83	80	70	59	49	45	45	42	38	40	43	47	49	52	53	57	61	38	96	63.7
Mar 11	64	65	70	77	77	76	80	79	73	67	59	52	40	40	46	49	58	62	65	67	68	65	63	62	40	80	63.5
Mar 12	58	52	54	57	58	55	55	55	53	48	45	45	42	40	40	39	40	43	50	49	50	52	54	56	39	58	49.6
Mar 13	56	58	61	63	66	71	77	74	68	62	58	56	52	50	47	51	56	61	62	61	63	58	52	61	47	77	60.2
Mar 14	67	70	72	71	68	63	61	63	59	55	49	44	45	42	39	39	41	45	53	62	70	73	74	74	39	74	58.3
Mar 15	77	80	80	76	77	71	67	67	67	67	62	56	53	47	39	36	36	35	38	38	46	57	61	63	35	80	58.2
Mar 16	66	66	63	61	63	69	71	68	63	59	59	56	50	47	45	41	42	45	48	49	50	50	46	52	41	71	55.4
Mar 17	50	45	45	45	47	55	67	60	52	45	47	46	45	41	39	38	38	39	43	45	47	50	53	58	38	67	47.5
Mar 18	61	63	66	69	72	73	74	72	68	61	57	54	51	48	46	47	50	58	62	62	65	67	68	67	46	74	61.7
Mar 19	66	67	70	73	72	73	75	71	62	55	50	48	44	37	41	39	**30**	**30**	34	33	32	32	48	49	**30**	75	51.3
Mar 20	55	66	73	79	74	85	86	81	72	61	53	47	42	38	38	39	**30**	31	47	73	81	70	61	58	**30**	86	60.0
Mar 21	62	67	66	65	59	58	61	62	59	54	49	45	45	42	40	41	41	40	45	51	50	52	53	52	40	67	52.5
Mar 22	53	53	57	60	63	64	64	64	61	61	60	59	54	55	54	53	53	55	58	56	53	49	53	59	49	64	57.1
Mar 23	57	59	58	61	65	67	70	67	60	55	51	50	52	52	51	55	59	64	68	69	70	69	73	81	50	81	61.8
Mar 24	84	78	73	73	75	78	81	81	78	76	84	90	89	92	95	97	97	97	**98**	97	95	93	90	89	73	**98**	**86.7**
Mar 25	88	88	87	86	87	88	88	83	79	75	70	66	60	56	50	46	44	44	50	55	56	60	60	64	44	88	67.9
Mar 26	71	74	78	83	86	88	87	83	75	65	53	48	43	42	42	39	41	50	55	58	66	69	71	74	39	88	64.2
Mar 27	76	77	77	79	82	87	90	89	81	72	73	73	67	63	66	67	66	70	71	69	68	66	64	63	63	90	73.2
Mar 28	63	64	66	70	71	73	73	71	68	62	54	50	47	46	44	48	51	54	58	78	88	92	96	97	44	97	66.0
Mar 29	**98**	97	94	91	89	88	86	84	80	80	81	75	75	76	78	75	73	74	76	71	67	71	64	61	61	**98**	79.3
Mar 30	63	66	68	72	75	79	79	76	70	62	54	47	45	44	46	46	44	46	50	61	63	64	65	67	44	79	60.5
Mar 31	69	69	70	71	73	74	74	74	71	66	58	56	52	45	41	40	38	39	41	44	50	51	52	51	38	74	57.0
Diurnal Maximum	98	97	94	93	94	95	95	95	93	90	90	90	89	92	95	97	97	97	98	97	95	95	96	97			
Daiurnal Average	71.0	71.7	72.7	73.8	74.8	76.2	77.7	76.5	72.1	67.2	63.0	58.9	55.6	52.8	51.5	50.8	51.3	54.4	58.3	61.5	64.0	65.5	66.7	68.4			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance	P Power Failure
X	InValid Data (Equipment Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)			

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for RH - St. Lina Site



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - March 2021

Summary of Hourly Averages

BAROMETRIC PRESSURE (BP) in millibar

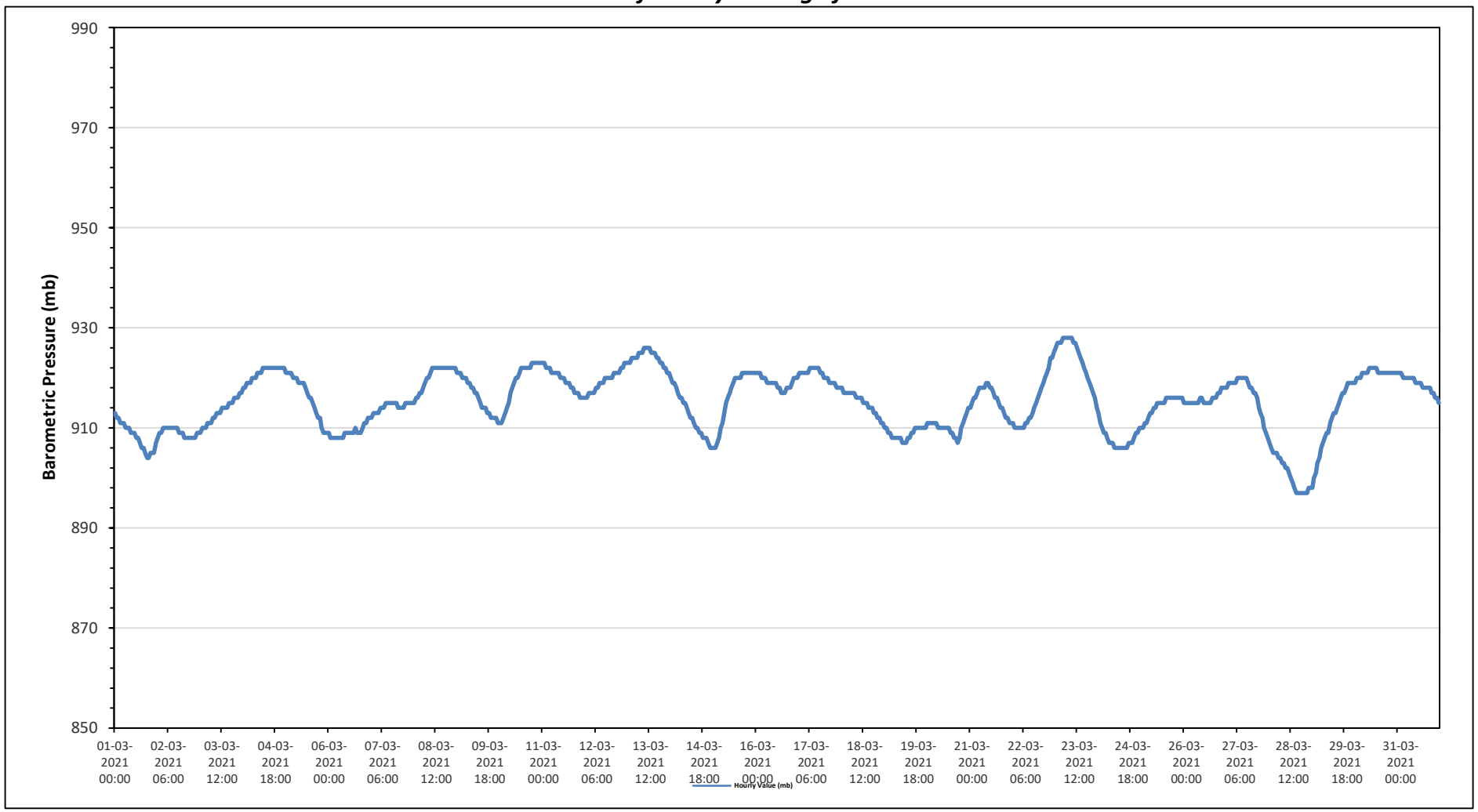
Maximum Hourly Value:	928	mb	on March 23 at hour 4	Hours in Service:	744
Maximum Daily Value:	924	mb	on March 13	Hours of Data:	744
Minimum Hourly Value:	897	mb	on March 28 at hour 15	Hours of Missing Data:	0
Minimum Daily Value:	901	mb	on March 28	Hours of Calibration:	0
Monthly Average:	915	mb		Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																								Daily	Daily	Daily
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Minimum	Maximum	Average
Mar 1	913	912	912	911	911	911	910	910	910	909	909	909	908	908	907	906	906	905	904	904	905	905	905	907	904	913	908
Mar 2	908	909	909	910	910	910	910	910	910	910	910	910	909	909	909	908	908	908	908	908	908	908	909	909	908	910	909
Mar 3	909	910	910	910	911	911	911	912	912	913	913	913	914	914	914	914	915	915	915	916	916	916	917	917	909	917	913
Mar 4	918	918	919	919	919	920	920	920	921	921	921	922	922	922	922	922	922	922	922	922	922	922	922	922	918	922	921
Mar 5	921	921	921	921	920	920	920	919	919	919	919	918	917	916	916	915	914	913	912	912	910	909	909	909	909	921	916
Mar 6	909	908	908	908	908	908	908	908	908	909	909	909	909	909	909	910	909	909	909	910	911	911	912	912	908	912	909
Mar 7	912	913	913	913	913	914	914	914	915	915	915	915	915	915	915	914	914	914	914	915	915	915	915	915	912	915	914
Mar 8	915	916	916	917	917	918	919	920	920	921	922	922	922	922	922	922	922	922	922	922	922	922	922	922	915	922	920
Mar 9	921	921	921	920	920	920	919	919	918	918	917	917	916	915	914	914	914	913	913	912	912	912	912	911	911	921	916
Mar 10	911	911	912	913	914	915	917	918	919	920	920	921	922	922	922	922	922	922	923	923	923	923	923	923	911	923	919
Mar 11	923	923	922	922	922	921	921	921	921	921	920	920	920	919	919	919	918	918	917	917	917	916	916	916	916	923	920
Mar 12	916	916	917	917	917	917	918	918	919	919	919	920	920	920	920	920	921	921	921	921	922	922	923	923	916	923	919
Mar 13	923	923	924	924	924	924	925	925	925	926	926	926	926	925	925	925	924	924	923	923	922	922	921	921	921	926	**924**
Mar 14	920	919	919	918	917	916	916	915	915	914	913	912	912	911	910	910	909	909	908	908	908	907	906	906	906	920	912
Mar 15	906	906	907	908	910	911	913	915	916	917	918	919	920	920	920	920	921	921	921	921	921	921	921	921	906	921	916
Mar 16	921	921	921	920	920	920	919	919	919	919	919	919	918	918	917	917	917	918	918	918	919	920	920	920	917	921	919
Mar 17	921	921	921	921	921	921	922	922	922	922	922	922	921	921	920	920	920	919	919	919	919	918	918	918	918	922	920
Mar 18	918	917	917	917	917	917	917	917	916	916	916	916	915	915	915	914	914	914	913	913	912	912	911	911	911	918	915
Mar 19	910	910	909	909	908	908	908	908	908	908	907	907	907	908	908	909	909	910	910	910	910	910	910	910	907	910	909
Mar 20	911	911	911	911	911	911	910	910	910	910	910	910	910	909	909	908	908	907	908	910	911	912	913	914	907	914	910
Mar 21	914	915	916	916	917	918	918	918	918	919	919	918	918	917	916	916	915	914	914	913	912	912	911	911	911	919	916
Mar 22	911	910	910	910	910	910	910	911	911	912	912	913	914	915	916	917	918	919	920	921	922	924	924	925	910	925	915
Mar 23	926	927	927	927	**928**	**928**	**928**	**928**	**928**	**928**	927	927	926	925	924	923	922	921	920	919	918	917	916	914	914	**928**	924
Mar 24	913	911	910	909	909	908	907	907	907	906	906	906	906	906	906	906	906	907	907	907	908	909	909	910	906	913	908
Mar 25	910	910	911	911	912	913	913	914	914	915	915	915	915	915	916	916	916	916	916	916	916	916	916	916	910	916	914
Mar 26	915	915	915	915	915	915	915	915	915	916	916	915	915	915	915	915	916	916	916	917	917	918	918	918	915	918	916
Mar 27	918	919	919	919	919	919	920	920	920	920	920	920	919	918	918	917	917	916	914	913	912	910	909	908	908	920	917
Mar 28	907	906	905	905	905	904	904	903	903	902	902	901	900	899	898	**897**	**897**	**897**	**897**	**897**	**897**	**897**	898	898	**897**	907	901
Mar 29	898	900	901	903	904	906	907	908	909	909	911	912	913	913	914	915	916	917	917	918	919	919	919	919	898	919	911
Mar 30	919	920	920	920	921	921	921	921	922	922	922	922	922	921	921	921	921	921	921	921	921	921	921	921	919	922	921
Mar 31	921	921	921	920	920	920	920	920	920	920	919	919	919	919	918	918	918	918	918	917	917	916	916	915	915	921	919
Diurnal Maximum	926	927	927	927	928	928	928	928	928	928	927	927	926	925	925	925	924	924	923	923	923	924	924	925			
Diurnal Average	915	915	915	915	915	915	915	916	916	916	916	916	916	916	915	915	915	915	915	915	915	915	915	915			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance	P Power Failure
X	InValid Data (Equipment Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)			

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for BP - St. Lina Site



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - March 2021

Summary of Hourly Averages

AMBIENT TEMPERATURE (AT) in Degree Celsius

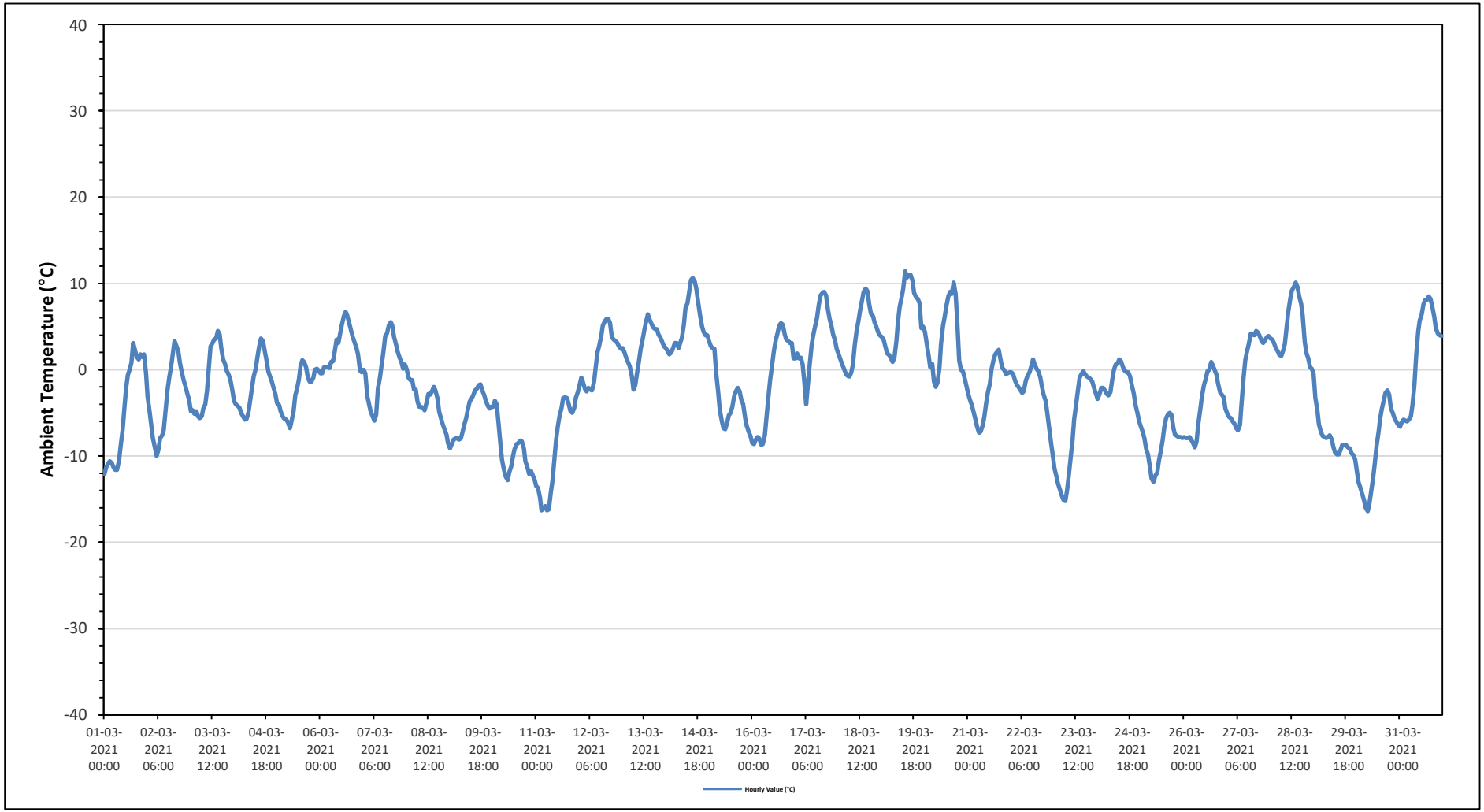
Maximum Hourly Value:	11.4	°C	on March 19 at hour 13	Hours in Service:	744
Maximum Daily Value:	6.2	°C	on March 19	Hours of Data:	744
Minimum Hourly Value:	-16.4	°C	on March 30 at hour 6	Hours of Missing Data:	0
Minimum Daily Value:	-9.6	°C	on March 10	Hours of Calibration:	0
Monthly Average:	-1.7	°C		Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																								Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Mar 1	-12.1	-11.3	-10.9	-10.6	-10.8	-11.3	-11.6	-11.6	-10.5	-8.9	-7	-4.5	-2.1	-0.6	0	0.8	3.1	2.2	1.5	1.2	1.8	1.5	1.8	-0.4	-12.1	3.1	-4.6
Mar 2	-3.1	-4.8	-6.5	-7.9	-9	-10	-9.3	-7.9	-7.6	-7	-4.6	-2.4	-0.9	0.3	2	3.3	2.8	2.1	0.7	-0.3	-1.2	-2	-2.7	-3.5	-10.0	3.3	-3.3
Mar 3	-4.8	-4.7	-5.1	-4.8	-5.4	-5.6	-5.4	-4.5	-4	-2.4	0.2	2.7	3.1	3.5	3.6	4.5	4.1	2.4	1.2	0.7	-0.1	-0.6	-1.1	-2.3	-5.6	4.5	-1.0
Mar 4	-3.6	-4	-4.2	-4.4	-5	-5.4	-5.8	-5.7	-5	-3.6	-2	-0.8	0.1	1.5	2.7	3.6	3.3	2.3	1.1	-0.2	-0.8	-1.4	-2.1	-2.8	-5.8	3.6	-1.8
Mar 5	-3.9	-4.1	-4.8	-5.4	-5.7	-5.8	-6.1	-6.8	-6	-4.9	-3	-2.2	-1.2	0.4	1.1	0.9	0.3	-0.9	-1.4	-1.4	-0.9	0	0.1	-0.1	-6.8	1.1	-2.6
Mar 6	-0.4	-0.4	0.3	0.3	0.3	0.2	0.9	1	2.2	3.5	3.1	4.3	5.2	6.2	6.7	6.3	5.4	4.6	3.8	3.2	2.5	1.8	-0.1	-0.3	-0.4	6.7	2.5
Mar 7	0	-0.4	-3.1	-3.9	-4.8	-5.4	-5.9	-5.2	-2.2	-0.9	0.4	2.1	3.9	4.2	5.1	5.5	5.1	3.8	2.9	2.1	1.4	0.9	0.1	0.6	-5.9	5.5	0.3
Mar 8	0	-0.9	-1.2	-1.2	-2.3	-2.3	-3.7	-4.3	-4.3	-4.4	-4.7	-3.8	-2.8	-2.9	-2.5	-2	-2.4	-3.3	-4.9	-5.6	-6.3	-6.9	-7.5	-8.5	-8.5	0.0	-3.7
Mar 9	-9.1	-8.6	-8.1	-8	-7.9	-8.1	-8	-7.2	-6.3	-5.6	-4.6	-3.7	-3.4	-2.9	-2.4	-2.2	-1.8	-1.7	-2.4	-3	-3.6	-4.2	-4.5	-4.3	-9.1	-1.7	-5.1
Mar 10	-4.3	-3.6	-4	-6.1	-8.6	-10.4	-11.6	-12.4	-12.8	-11.9	-11.2	-10	-9.2	-8.6	-8.5	-8.2	-8.3	-9.1	-10.6	-11.3	-12.1	-11.7	-12.2	-12.8	-12.8	-3.6	-9.6
Mar 11	-13.5	-13.7	-14.8	-16.3	-16.1	-15.8	-16.3	-16.2	-14.2	-13	-10.4	-8.1	-6.5	-5.3	-4.5	-3.3	-3.2	-3.3	-4	-4.8	-5	-4.4	-3.3	-2.6	-16.3	-2.6	-9.1
Mar 12	-1.8	-0.9	-1.5	-2.2	-2.5	-2.1	-2.3	-2.4	-1.5	0.3	2	2.8	3.9	5.1	5.6	5.9	5.9	5.4	3.8	3.5	3.3	3.1	2.7	2.4	-2.5	5.9	1.6
Mar 13	2.5	2	1.4	0.8	0.4	-0.7	-2.3	-1.8	-0.4	0.9	2.5	3.3	4.6	5.6	6.4	5.8	5.3	4.9	4.7	4.7	4.1	3.7	3.2	2.7	-2.3	6.4	2.7
Mar 14	2.5	2.1	1.8	2	2.5	3.1	3.1	2.5	3.1	3.7	5.3	7.1	7.7	9	10.4	10.6	10.2	9.4	7.7	6.3	5	4.4	4	4	1.8	10.6	5.3
Mar 15	3.4	2.7	2.5	2.4	-0.4	-2.6	-4.6	-5.9	-6.8	-6.9	-6.2	-5.3	-5	-4.3	-3	-2.5	-2.1	-2.5	-3.5	-4	-5.6	-6.5	-7.2	-7.7	-7.7	3.4	-3.4
Mar 16	-8.5	-8.6	-8.1	-7.8	-8	-8.7	-8.6	-7.6	-5.4	-2.9	-1.2	0.6	2.2	3.4	4.2	5.1	5.4	5.2	4.1	3.5	3.3	3.1	3.1	1.3	-8.7	5.4	-1.3
Mar 17	1.3	1.9	1.3	1.4	0.6	-1.5	-4	-1.7	0.6	2.9	4	5.1	6	7.5	8.6	8.9	9	8.6	7	5.9	5.1	4.1	3.3	2.4	-4.0	9.0	3.7
Mar 18	1.8	1.2	0.6	0.1	-0.5	-0.7	-0.8	-0.3	0.5	2.9	4.5	5.6	6.9	8.1	9	9.4	9.1	7.6	6.5	6.2	5.5	5	4.3	4	-0.8	9.4	4.0
Mar 19	3.8	3.5	2.7	1.9	1.7	1.4	0.9	1.4	3.3	5.5	7.3	8.4	9.4	**11.4**	10.7	11	11	10.3	8.9	8.4	8.2	7.7	4.8	5	0.9	**11.4**	**6.2**
Mar 20	4.4	3.1	1.6	0.3	0.7	-1.4	-2	-1.5	0.3	3	5.1	6.2	7.5	8.5	9	8.8	10.1	8.8	5.8	1.1	0	-0.2	-0.9	-1.9	-2.0	10.1	3.2
Mar 21	-2.8	-3.5	-4.1	-4.9	-5.7	-6.6	-7.3	-7.2	-6.5	-5.4	-3.9	-2.6	-1.6	0	1.1	1.8	2	2.3	1.2	0.2	0	-0.5	-0.4	-0.3	-7.3	2.3	-2.3
Mar 22	-0.3	-0.5	-1.2	-1.8	-2	-2.3	-2.7	-2.5	-1.3	-0.7	-0.3	0.3	1.2	0.6	0.1	-0.2	-0.9	-1.9	-2.9	-3.6	-4.9	-6.7	-8.4	-9.8	-9.8	1.2	-2.2
Mar 23	-11.4	-12.4	-13.2	-13.9	-14.6	-15.1	-15.2	-14	-12.2	-10.3	-8.1	-5.8	-4	-2.4	-0.9	-0.5	-0.2	-0.5	-0.8	-0.9	-1.1	-1.4	-2.1	-2.8	-15.2	-0.2	-6.8
Mar 24	-3.4	-2.8	-2.1	-2.1	-2.4	-2.8	-3	-2.6	-1.2	0	0.6	0.7	1.2	1	0.3	-0.1	-0.3	-0.3	-0.8	-1.8	-2.8	-4	-5	-6	-6.0	1.2	-1.7
Mar 25	-6.6	-7.2	-8	-9.2	-9.8	-11.3	-12.6	-13	-12.3	-11.9	-10.6	-9.4	-8.2	-6.6	-5.6	-5.2	-5	-5.2	-6.8	-7.5	-7.7	-7.8	-7.8	-7.9	-13.0	-5.0	-8.5
Mar 26	-7.8	-7.9	-7.9	-7.8	-8.1	-8.5	-9	-8.3	-6.2	-4.5	-3.1	-1.8	-1.1	-0.2	0	0.9	0.5	0	-0.6	-1.6	-2.6	-2.9	-3.2	-4.5	-9.0	0.9	-4.0
Mar 27	-5.1	-5.5	-5.6	-6	-6.3	-6.8	-7	-6.4	-4	-1	1.1	2.1	3	4.2	4.1	4	4.5	4.3	3.9	3.4	3.1	3.4	3.8	3.9	-7.0	4.5	-0.2
Mar 28	3.6	3.5	3.1	2.5	2.1	1.7	1.6	2.2	3	4.9	6.8	8.3	9.2	9.6	10.1	9.6	8.5	7.6	6.2	3.2	1.9	1.3	0.3	0.1	0.1	10.1	4.6
Mar 29	-0.5	-3.3	-4.7	-6.3	-7.2	-7.7	-7.8	-7.9	-7.8	-7.6	-8.1	-9	-9.6	-9.8	-9.8	-9.3	-8.7	-8.7	-8.7	-9	-9.1	-9.7	-9.9	-10.4	-10.4	-0.5	-7.9
Mar 30	-11.8	-13	-13.7	-14.4	-15.1	-16	**-16.4**	-15.6	-14	-12.6	-10.8	-8.8	-7.2	-5.7	-4.5	-3.5	-2.7	-2.4	-2.9	-4.5	-5	-5.7	-6	-6.4	**-16.4**	-2.4	-9.1
Mar 31	-6.6	-6.1	-5.8	-5.9	-6	-5.8	-5.4	-4.2	-1.8	1.6	4.4	5.7	6.4	7.6	8.1	8.1	8.5	8.2	7.3	6.1	4.8	4.2	4	3.9	-6.6	8.5	1.7
Diurnal Maximum	4.4	3.5	3.1	2.5	2.5	3.1	3.1	2.5	3.3	5.5	7.3	8.4	9.4	11.4	10.7	11.0	11.0	10.3	8.9	8.4	8.2	7.7	4.8	5.0			
Daiurnal Average	-3.2	-3.5	-4.0	-4.5	-5.0	-5.6	-6.1	-5.7	-4.6	-3.1	-1.7	-0.4	0.6	1.6	2.2	2.5	2.5	1.9	0.9	0.0	-0.6	-1.0	-1.6	-2.1			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance	P Power Failure
X	InValid Data (Equipment Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)			

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for AT - St. Lina Site



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - March 2021

Summary of Hourly Averages

STATION TEMPERATURE (ST) in Degree Celsius

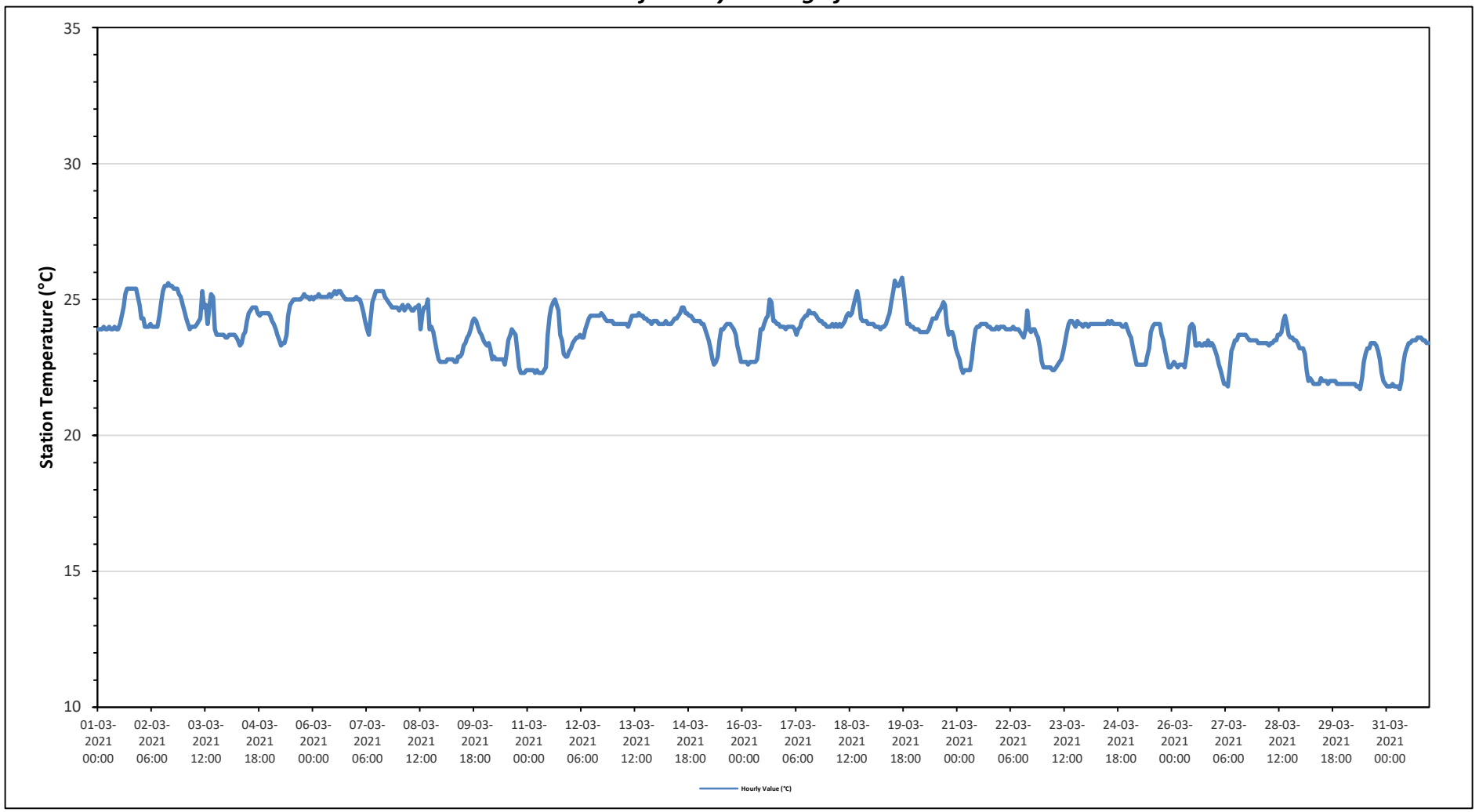
Maximum Hourly Value:	25.8	°C	on March 19 at hour 17	Hours in Service:	744
Maximum Daily Value:	25.1	°C	on March 6	Hours of Data:	744
Minimum Hourly Value:	21.7	°C	on March 30 at hour 9	Hours of Missing Data:	0
Minimum Daily Value:	22.1	°C	on March 29	Hours of Calibration:	0
Monthly Average:	23.8	°C		Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																								Daily	Daily	Daily
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Minimum	Maximum	Average
Mar 1	23.9	23.9	23.9	24.0	23.9	23.9	24.0	23.9	23.9	24.0	23.9	23.9	24.1	24.4	24.7	25.2	25.4	25.4	25.4	25.4	25.4	25.4	25.1	24.8	23.9	25.4	24.5
Mar 2	24.3	24.3	24.0	24.0	24.0	24.1	24.0	24.0	24.0	24.0	24.4	24.9	25.3	25.5	25.5	25.6	25.5	25.5	25.4	25.4	25.4	25.2	25.1	24.8	24.0	25.6	24.8
Mar 3	24.6	24.3	24.1	23.9	24.0	24.0	24.0	24.1	24.2	24.3	25.3	24.7	24.8	24.1	24.8	25.2	25.1	23.9	23.7	23.7	23.7	23.7	23.7	23.6	23.6	25.3	24.2
Mar 4	23.6	23.7	23.7	23.7	23.7	23.6	23.5	23.3	23.4	23.7	23.8	24.2	24.5	24.6	24.7	24.7	24.7	24.5	24.4	24.5	24.5	24.5	24.5	24.5	23.3	24.7	24.1
Mar 5	24.4	24.2	24.1	23.9	23.7	23.5	23.3	23.4	23.4	23.7	24.4	24.8	24.9	25.0	25.0	25.0	25.0	25.0	25.1	25.2	25.1	25.1	25.0	25.1	23.3	25.2	24.5
Mar 6	25.0	25.1	25.1	25.2	25.1	25.1	25.1	25.1	25.1	25.2	25.1	25.2	25.3	25.2	25.3	25.3	25.2	25.1	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.3	**25.1**
Mar 7	25.1	25.0	25.0	24.8	24.5	24.2	23.9	23.7	24.2	24.9	25.1	25.3	25.3	25.3	25.3	25.3	25.1	25.0	24.9	24.8	24.7	24.7	24.7	24.7	23.7	25.3	24.8
Mar 8	24.6	24.7	24.8	24.6	24.7	24.8	24.7	24.6	24.6	24.7	24.7	24.8	23.9	24.5	24.7	24.7	25.0	23.9	24.0	23.8	23.5	23.1	22.8	22.7	22.7	25.0	24.3
Mar 9	22.7	22.7	22.7	22.8	22.8	22.8	22.8	22.7	22.7	22.9	22.9	23.0	23.3	23.4	23.6	23.7	23.9	24.2	24.3	24.2	24.0	23.8	23.7	23.5	22.7	24.3	23.3
Mar 10	23.4	23.3	23.4	23.2	22.8	22.9	22.8	22.8	22.8	22.8	22.8	22.6	23.0	23.5	23.7	23.9	23.8	23.7	23.2	22.5	22.3	22.3	22.3	22.4	22.3	23.9	23.0
Mar 11	22.4	22.4	22.4	22.4	22.3	22.4	22.3	22.3	22.3	22.4	22.5	23.7	24.4	24.7	24.9	25.0	24.8	24.6	23.7	23.5	23.0	22.9	22.9	23.1	22.3	25.0	23.2
Mar 12	23.2	23.4	23.5	23.6	23.6	23.7	23.6	23.6	23.9	24.1	24.3	24.4	24.4	24.4	24.4	24.4	24.4	24.5	24.4	24.3	24.2	24.2	24.2	24.2	23.2	24.5	24.0
Mar 13	24.1	24.1	24.1	24.1	24.1	24.1	24.1	24.1	24.0	24.2	24.4	24.4	24.4	24.4	24.5	24.4	24.4	24.3	24.3	24.2	24.2	24.1	24.2	24.2	24.0	24.5	24.2
Mar 14	24.2	24.1	24.1	24.1	24.1	24.2	24.1	24.1	24.1	24.2	24.3	24.3	24.4	24.5	24.7	24.7	24.5	24.5	24.4	24.4	24.3	24.2	24.2	24.2	24.1	24.7	24.3
Mar 15	24.2	24.1	24.1	23.9	23.7	23.5	23.2	22.8	22.6	22.7	22.9	23.5	23.9	23.9	24.0	24.1	24.1	24.1	24.0	23.9	23.7	23.3	23.0	22.7	22.6	24.2	23.6
Mar 16	22.7	22.7	22.7	22.6	22.7	22.7	22.7	22.7	22.8	23.3	23.9	23.9	24.1	24.3	24.4	25.0	24.9	24.2	24.2	24.1	24.1	24.0	24.0	24.0	22.6	25.0	23.6
Mar 17	23.9	24.0	24.0	24.0	24.0	23.9	23.7	23.9	24.0	24.2	24.3	24.4	24.4	24.6	24.5	24.5	24.5	24.4	24.3	24.2	24.2	24.1	24.1	24.0	23.7	24.6	24.2
Mar 18	24.0	24.0	24.1	24.0	24.1	24.0	24.1	24.0	24.1	24.2	24.4	24.5	24.4	24.5	24.8	25.1	25.3	24.9	24.3	24.2	24.2	24.2	24.1	24.1	24.0	25.3	24.3
Mar 19	24.1	24.1	24.0	24.0	24.0	23.9	24.0	24.0	24.1	24.3	24.5	24.9	25.3	25.7	25.5	25.5	25.6	**25.8**	25.3	24.7	24.1	24.1	24.0	24.0	23.9	**25.8**	24.6
Mar 20	23.9	23.9	23.9	23.8	23.8	23.8	23.8	23.8	23.9	24.1	24.3	24.3	24.3	24.5	24.6	24.7	24.9	24.8	24.1	23.7	23.8	23.8	23.6	23.2	23.2	24.9	24.1
Mar 21	23.0	22.8	22.5	22.3	22.4	22.4	22.4	22.4	22.8	23.4	23.9	24.0	24.0	24.1	24.1	24.1	24.1	24.0	24.0	23.9	23.9	23.9	24.0	23.9	22.3	24.1	23.4
Mar 22	24.0	24.0	24.0	23.9	23.9	23.9	23.9	24.0	23.9	23.9	23.9	23.8	23.7	23.6	23.9	24.6	23.9	23.8	23.9	23.9	23.7	23.6	23.2	22.7	22.7	24.6	23.8
Mar 23	22.5	22.5	22.5	22.5	22.5	22.4	22.4	22.5	22.6	22.7	22.8	23.1	23.4	23.8	24.1	24.2	24.2	24.1	24.0	24.2	24.1	24.1	24.0	24.1	22.4	24.2	23.3
Mar 24	24.1	24.0	24.1	24.1	24.1	24.1	24.1	24.1	24.1	24.1	24.1	24.1	24.2	24.1	24.2	24.1	24.1	24.1	24.1	24.1	24.0	24.0	24.1	23.9	23.9	24.2	24.1
Mar 25	23.7	23.6	23.2	22.9	22.6	22.6	22.6	22.6	22.6	22.6	22.9	23.2	23.8	24.0	24.1	24.1	24.1	24.1	23.7	23.5	23.1	22.8	22.5	22.5	22.5	24.1	23.2
Mar 26	22.6	22.7	22.6	22.5	22.6	22.6	22.6	22.5	23.0	23.6	24.0	24.1	24.0	23.3	23.3	23.4	23.3	23.3	23.4	23.3	23.5	23.3	23.4	23.3	22.5	24.1	23.2
Mar 27	23.1	22.9	22.6	22.4	22.1	21.9	21.9	21.8	22.4	23.1	23.3	23.5	23.5	23.7	23.7	23.7	23.7	23.7	23.6	23.5	23.5	23.5	23.5	23.5	21.8	23.7	23.1
Mar 28	23.4	23.4	23.4	23.4	23.4	23.4	23.3	23.4	23.4	23.5	23.5	23.7	23.7	23.8	24.2	24.4	24.1	23.7	23.6	23.6	23.5	23.5	23.4	23.2	23.2	24.4	23.6
Mar 29	23.2	23.2	23.0	22.4	22.0	22.1	22.0	21.9	21.9	21.9	21.9	22.1	22.0	22.0	22.0	21.9	22.0	22.0	22.0	22.0	21.9	21.9	21.9	21.9	21.9	23.2	22.1
Mar 30	21.9	21.9	21.9	21.9	21.9	21.9	21.9	21.8	21.8	**21.7**	22.1	22.7	23.0	23.2	23.2	23.4	23.4	23.4	23.3	23.1	22.8	22.3	22.0	21.9	**21.7**	23.4	22.4
Mar 31	21.8	21.8	21.8	21.9	21.8	21.8	21.8	**21.7**	22.0	22.6	23.0	23.2	23.4	23.4	23.5	23.5	23.5	23.6	23.6	23.6	23.5	23.5	23.4	23.4	**21.7**	23.6	22.8
Diurnal Maximum	25.1	25.1	25.1	25.2	25.1	25.1	25.1	25.1	25.1	25.2	25.3	25.3	25.3	25.7	25.5	25.6	25.6	25.8	25.4	25.4	25.4	25.4	25.1	25.1			
Daiurnal Average	23.6	23.6	23.5	23.4	23.4	23.4	23.3	23.3	23.4	23.6	23.8	24.0	24.1	24.2	24.3	24.4	24.4	24.3	24.1	24.0	23.9	23.8	23.7	23.6			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance	P Power Failure
X	InValid Data (Equipment Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)			

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for ST - St. Lina Site



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - March 2021

Summary of Hourly Averages

PRECIPITATION in mm

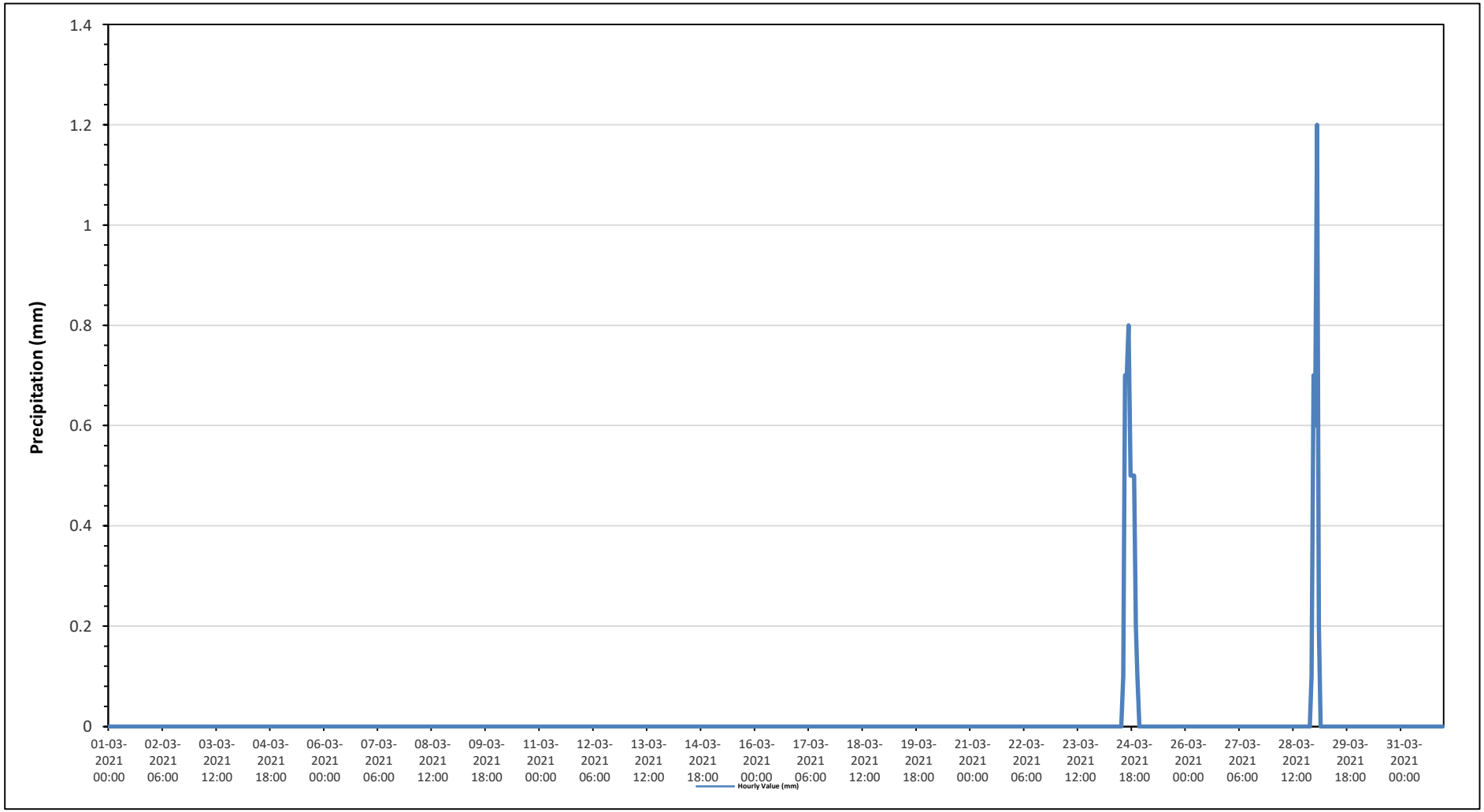
Maximum Hourly Value:	1.2	mm	on March 29 at hour 1	Hours in Service:	744
Maximum Daily Value:	4.1	mm	on March 24	Hours of Data:	744
Minimum Hourly Value:	0.0	mm	on March 1 at hour 0	Hours of Missing Data:	0
Minimum Daily Value:	0.0	mm	on March 1	Hours of Calibration:	0
Monthly Total:	6.9	mm		Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																								Daily	Daily	Daily
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Minimum	Maximum	Total
Mar 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Mar 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Mar 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Mar 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Mar 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Mar 6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Mar 7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Mar 8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Mar 9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Mar 10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Mar 11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Mar 12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Mar 13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Mar 14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Mar 15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Mar 16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Mar 17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Mar 18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Mar 19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Mar 20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Mar 21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Mar 22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Mar 23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Mar 24	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.7	0.7	0.8	0.5	0.5	0.5	0.2	0.1	0	0	0.0	0.8	**4.1**
Mar 25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Mar 26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Mar 27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Mar 28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.7	0.0	0.7	0.8
Mar 29	0.6	**1.2**	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	**1.2**	2.0
Mar 30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Mar 31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Diurnal Maximum	0.6	1.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.7	0.7	0.8	0.5	0.5	0.5	0.2	0.1	0.1	0.7			
Diurnal Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance	P Power Failure
X	InValid Data (Equipment Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)			

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for Precipitation - St. Lina Site



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - March 2021

Summary of Hourly Averages

VECTOR WIND SPEED (VWS) in km/hr

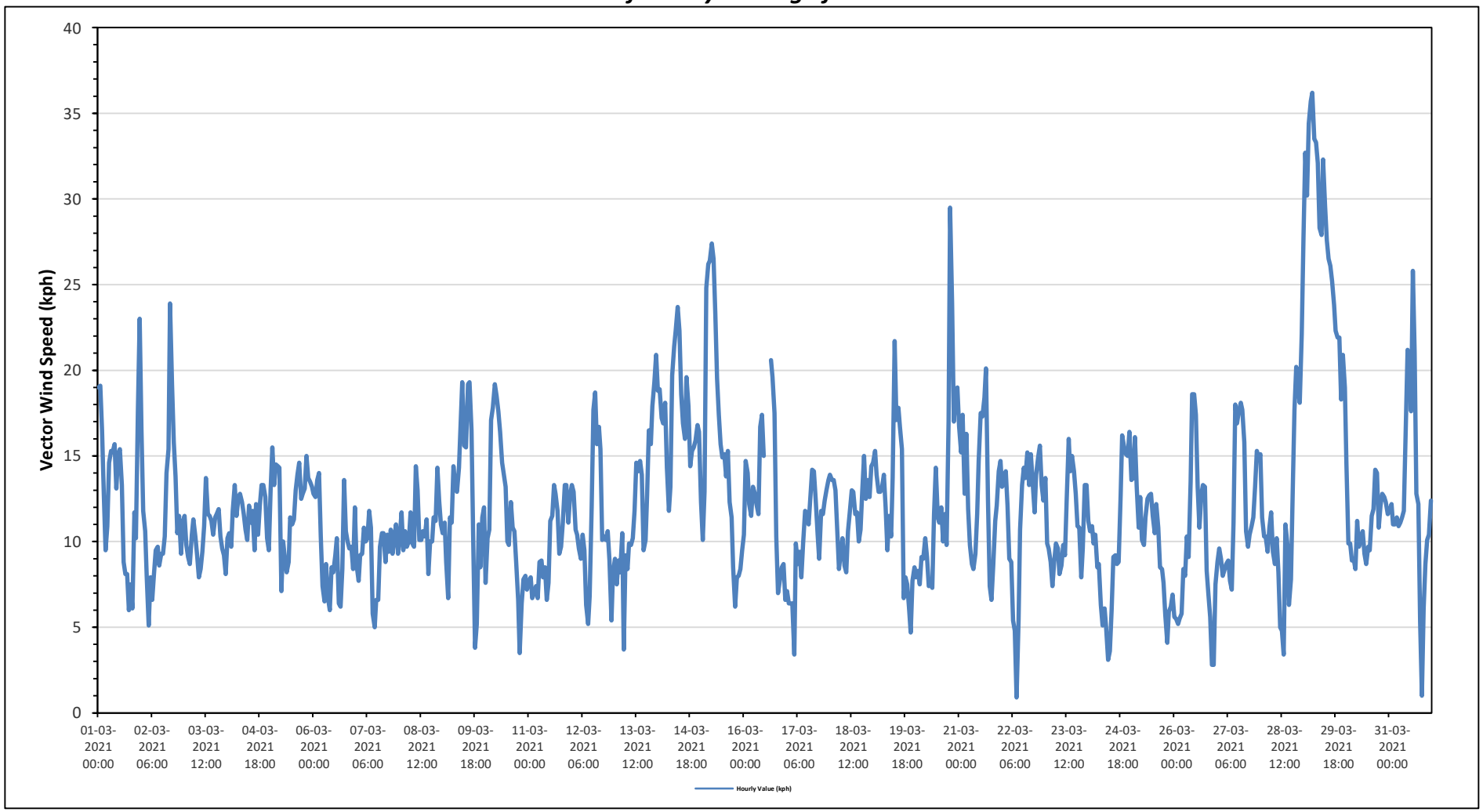
Maximum Hourly Value:	36.2	kph	on March 29 at hour 5	Hours in Service:	744
Maximum Daily Value:	27.7	kph	on March 29	Hours of Data:	741
Minimum Hourly Value:	0.9	kph	on March 22 at hour 8	Hours of Missing Data:	0
Minimum Daily Value:	2.2	kph	on March 24	Hours of Calibration:	3
Monthly Average:	3.9	kph		Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																								Daily	Daily	Daily
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Minimum	Maximum	Average
Mar 1	19.0	19.1	16.5	12.8	9.5	10.9	14.6	15.3	15.2	15.7	13.1	15.1	15.4	13.3	8.8	8.1	8.1	6.0	7.5	6.1	11.7	10.2	17.7	23.0	6.0	23.0	9.6
Mar 2	16.6	11.8	10.6	8.0	5.1	7.9	6.6	8.1	9.5	9.7	8.6	9.3	9.3	10.3	14.0	15.4	23.9	19.2	15.8	13.8	10.5	11.5	9.3	11.1	5.1	23.9	8.8
Mar 3	11.5	9.8	9.1	8.7	10.4	11.3	10.3	9.2	7.9	8.4	9.4	10.9	13.7	11.6	11.5	11.2	10.4	11.4	11.6	11.9	10.3	9.6	9.2	8.1	7.9	13.7	9.6
Mar 4	10.2	10.5	9.7	11.8	13.3	11.5	12.6	12.8	12.3	11.6	10.7	10.1	12.1	11.1	11.8	9.5	12.2	10.4	12.1	13.3	13.3	12.6	10.2	9.5	9.5	13.3	10.9
Mar 5	13.0	15.5	13.3	14.5	14.4	14.3	7.1	10.0	9.0	8.2	8.8	11.4	11.0	11.3	13.0	13.9	14.6	12.5	12.8	13.1	15.0	13.7	13.5	13.2	7.1	15.5	11.5
Mar 6	12.8	12.6	13.6	14.0	10.3	7.4	6.5	8.7	6.7	6.0	8.5	8.2	9.2	10.2	6.4	6.2	8.4	13.6	10.6	10.0	9.6	9.7	8.4	12.0	6.0	14.0	6.9
Mar 7	8.6	7.7	9.2	9.3	10.8	10.0	10.2	11.8	10.8	5.8	5.0	6.6	6.6	9.7	10.5	10.5	8.8	10.4	9.4	10.7	9.3	10.2	11.0	9.3	5.0	11.8	8.3
Mar 8	10.1	11.7	9.5	10.6	9.7	10.0	11.7	9.9	9.7	14.4	13.0	10.1	10.1	10.6	10.3	11.3	8.1	10.0	10.0	11.4	11.2	14.3	12.4	11.0	8.1	14.4	7.4
Mar 9	10.5	11.1	8.8	6.7	11.4	11.1	14.4	13.1	12.9	14.3	17.0	19.3	15.6	15.5	19.2	19.3	16.5	9.9	3.8	5.2	11.0	8.5	11.4	12.0	3.8	19.3	10.6
Mar 10	7.6	10.2	10.7	17.1	17.8	19.2	18.5	17.6	16.4	14.6	14.0	13.2	10.0	9.8	12.3	10.8	10.6	8.8	6.6	3.5	6.4	7.8	8.0	7.2	3.5	19.2	10.1
Mar 11	7.7	7.9	6.7	7.0	7.4	6.7	8.8	8.9	7.9	8.5	6.6	7.6	11.2	11.5	13.3	12.8	11.8	9.3	9.7	11.1	13.3	13.3	11.1	12.7	6.6	13.3	9.0
Mar 12	13.3	12.9	10.7	10.4	9.6	9.0	10.4	9.5	6.3	5.2	6.8	12.0	17.7	18.7	15.7	16.7	15.4	10.1	10.3	10.1	10.6	8.9	5.4	8.2	5.2	18.7	9.7
Mar 13	9.0	7.5	8.9	8.2	10.5	3.7	9.2	8.4	9.9	9.8	10.2	11.8	14.6	14.1	14.7	13.9	9.5	10.1	12.7	16.5	15.7	17.9	19.3	20.9	3.7	20.9	10.3
Mar 14	18.8	18.9	17.2	16.9	18.1	14.3	11.8	13.2	19.7	21.4	22.3	23.7	22.3	18.6	16.9	16.0	19.6	17.9	14.4	15.3	15.5	15.9	16.8	16.4	11.8	23.7	17.3
Mar 15	12.3	10.1	12.9	24.8	26.2	26.4	27.4	26.5	23.3	19.5	17.4	15.7	14.9	15.1	13.8	15.3	12.3	11.4	8.5	6.2	7.9	8.0	8.4	9.5	6.2	27.4	12.1
Mar 16	10.4	14.7	14.0	12.2	11.5	13.2	12.8	12.2	11.6	16.7	17.4	15.0	C	C	C	20.6	19.6	17.5	10.3	7.0	7.7	8.5	8.7	6.6	6.6	20.6	11.7
Mar 17	7.1	6.4	6.4	6.4	3.4	9.9	8.7	9.4	7.9	9.9	11.8	11.7	11.0	12.6	14.2	14.1	12.5	10.4	9.0	11.8	11.6	12.4	13.0	13.6	3.4	14.2	8.5
Mar 18	13.9	13.6	13.6	13.0	10.7	8.4	9.5	10.2	8.6	8.2	10.6	11.7	13.0	12.9	11.6	11.7	10.0	10.7	13.0	15.0	12.5	13.6	12.6	14.4	8.2	15.0	11.3
Mar 19	14.6	15.3	13.9	12.9	12.9	13.2	13.9	12.0	9.5	11.5	10.3	13.7	21.7	17.1	17.8	16.7	15.4	6.7	7.9	7.5	6.2	4.7	7.7	8.5	4.7	21.7	8.1
Mar 20	7.9	8.3	7.5	9.1	9.0	10.2	9.1	7.4	7.5	7.3	11.6	14.3	11.4	11.1	12.0	10.0	11.6	9.8	17.0	29.5	23.9	17.0	18.8	19.0	7.3	29.5	8.7
Mar 21	16.7	15.2	17.4	12.8	16.3	11.9	9.8	8.7	8.4	9.3	11.6	14.7	17.5	17.3	18.4	20.1	12.5	7.4	6.6	8.6	11.2	12.1	14.1	14.7	6.6	20.1	7.6
Mar 22	13.2	13.4	14.1	12.1	9.0	8.8	5.4	4.8	**0.9**	5.4	10.7	13.3	14.3	13.7	15.2	13.3	15.1	13.5	11.7	13.9	14.9	15.6	13.3	12.4	**0.9**	15.6	6.3
Mar 23	13.7	9.9	9.6	8.8	7.4	8.8	9.9	9.6	8.1	8.6	9.8	9.2	12.5	16.0	14.1	15.0	14.1	12.8	10.9	10.8	7.9	9.6	13.3	13.3	7.4	16.0	8.6
Mar 24	11.2	10.6	10.9	9.9	10.4	8.5	8.7	6.3	5.1	6.1	5.0	3.1	3.6	6.0	9.1	9.2	8.7	8.8	12.7	16.2	15.5	15.1	15.0	16.4	3.1	16.4	**2.2**
Mar 25	13.6	13.7	16.1	13.2	10.8	12.6	10.1	9.8	11.4	12.5	12.7	12.8	11.5	10.5	12.2	10.8	8.5	8.4	7.6	5.7	4.1	5.9	6.2	6.9	4.1	16.1	8.8
Mar 26	5.6	5.5	5.2	5.5	5.8	8.4	8.0	10.3	9.1	13.5	18.6	18.6	17.4	13.2	10.8	12.8	13.3	13.2	8.3	6.9	5.6	2.8	2.8	7.5	2.8	18.6	8.0
Mar 27	8.8	9.6	9.0	8.0	8.4	8.7	8.9	7.7	7.2	11.1	18.0	16.9	17.6	18.1	17.7	15.8	10.6	9.7	10.4	10.9	11.4	13.2	15.3	14.8	7.2	18.1	10.9
Mar 28	15.1	11.4	10.3	10.3	9.4	10.8	11.7	9.4	8.7	10.2	8.2	5.0	4.8	3.4	11.0	9.8	6.3	7.8	12.9	17.7	20.2	18.9	18.1	22.1	3.4	22.1	3.7
Mar 29	27.8	32.7	30.2	34.4	35.7	**36.2**	33.5	33.3	32.1	28.3	27.9	32.3	29.6	27.6	26.5	26.1	25.2	23.8	22.3	21.9	21.9	18.3	20.9	19.0	18.3	**36.2**	**27.7**
Mar 30	14.6	9.9	9.9	8.9	9.0	8.4	11.2	9.7	10.2	10.6	9.3	8.7	9.7	9.5	11.5	11.9	14.2	14.0	10.8	12.1	12.8	12.6	12.3	11.6	8.4	14.6	6.7
Mar 31	11.8	12.2	11.0	11.0	11.4	10.9	11.1	11.4	11.8	16.2	21.2	20.8	17.6	25.8	21.1	12.8	12.2	5.3	1.0	6.1	8.7	10.1	10.4	12.4	1.0	25.8	9.7
Diurnal Maximum	28	33	30	34	36	36	34	33	32	28	28	32	30	28	27	26	25	24	22	30	24	19	21	23			
Daiurnal Average	12.5	12.2	11.8	11.9	11.8	11.7	11.7	11.5	10.8	11.6	12.5	13.1	13.6	13.5	13.8	13.6	12.9	11.3	10.6	11.6	11.9	11.7	12.1	12.8			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance	P Power Failure
X	InValid Data (Equipment Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)			

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

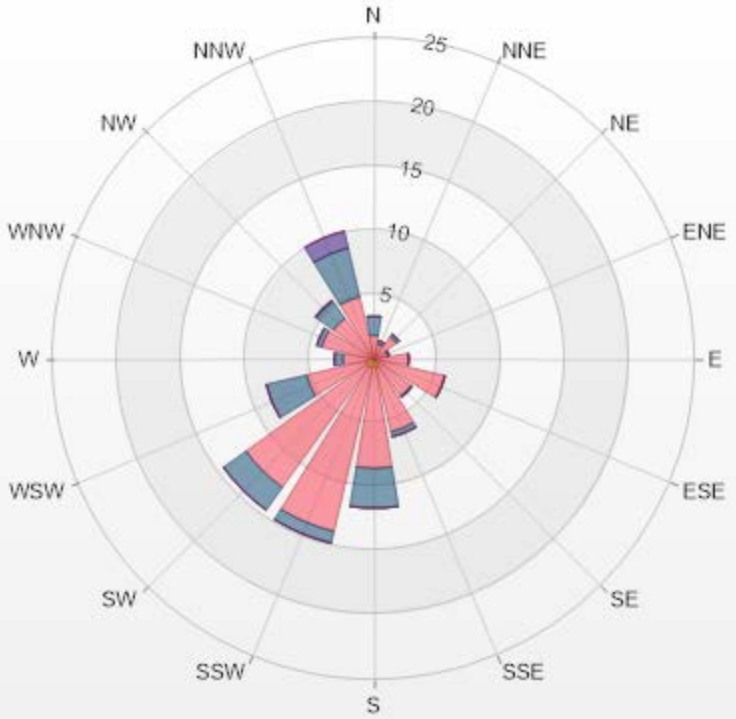
Timeseries Chart of Hourly Average for VWS - St. Lina Site



Wind: St. Lina Monitor: WDS [kph] Monthly: 03-2021 Type: WindRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
Calm: 0.27% Valid Data: 99.60%

Direction	1.8-6.0	6.0-15.0	15.0-29.0	29.0-39.0	>39.0	Total
N	0.13	1.75	1.48	0	0	3.36
NNE	0.4	0.81	0.27	0	0	1.48
NE	0	2.16	0.27	0	0	2.43
ENE	0.13	0.94	0.13	0	0	1.2
E	0	2.7	0	0	0	2.7
ESE	0.13	5.53	0	0	0	5.66
SE	0	3.51	0.13	0	0	3.64
SSE	0.67	5.13	0.4	0	0	6.2
S	0.54	7.96	3.1	0	0	11.6
SSW	0.67	13.09	0.94	0	0	14.7
SW	0.67	11.61	2.16	0	0	14.44
WSW	0.67	4.72	3.24	0	0	8.63
W	0	2.43	0.67	0	0	3.1
WNW	0	4.18	0.4	0	0	4.58
NW	0.13	3.78	1.62	0.13	0	5.66
NNW	0.54	4.45	3.91	1.35	0	10.25
Summary	4.68	74.75	18.72	1.48	0	100

St. Lina 01-03-2021 00:00 - 31-03-2021 23:00 Calm: 0.27% Calm Wind Avg Speed: 0.94(kph)



% Icon	Classes (kph)									
5	1.8-6.0	75	6.0-15.0	19	15.0-29.0	1	29.0-39.0	0	>39.0

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - March 2021

Summary of Hourly Averages

WIND DIRECTION (VWD) in sector

Monthly Average: 231 (SW) degree

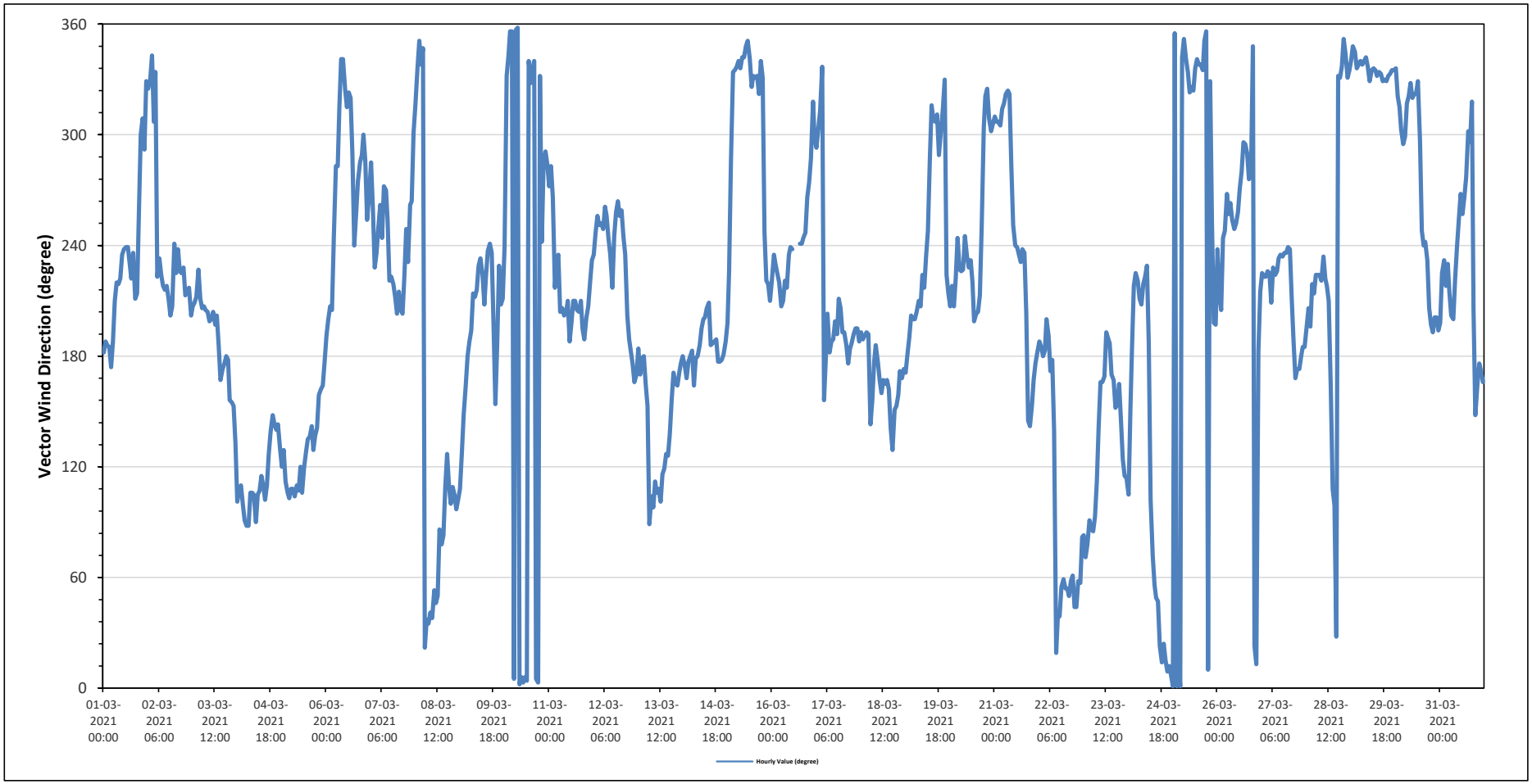
Hours in Service:	744
Hours of Data:	741
Hours of Missing Data:	0
Hours of Calibration:	3
Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																							Daily Average	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Degree	Quadrant
Mar 1	S	S	S	S	S	S	SSW	SW	SW	SW	SW	SW	WSW	WSW	SW	SW	SW	SSW	SSW	WSW	WNW	NW	WNW	NNW	228	SW
Mar 2	NW	NNW	NNW	NW	NNW	SW	SW	SW	SW	SW	SW	SSW	SSW	SSW	WSW	SW	SW	SW	SW	SW	SSW	SSW	SW	SSW	235	SW
Mar 3	SSW	SSW	SSW	SW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	S	SSE	S	S	S	S	SSE	SSE	SSE	SE	190	S
Mar 4	E	ESE	ESE	E	E	E	E	ESE	ESE	ESE	E	ESE	ESE	ESE	ESE	E	ESE	SE	SE	SE	SE	SE	SE	SE	113	ESE
Mar 5	ESE	SE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	SE	SE	SE	SE	SE	SE	SE	SSE	SSE	SSE	S	129	SE
Mar 6	S	SSW	SSW	SSW	WSW	W	W	NW	NNW	NNW	NW	NW	NW	NW	WNW	WSW	WSW	W	WNW	WNW	WNW	WNW	WSW	W	272	W
Mar 7	WNW	WSW	SW	SW	WSW	W	WSW	W	W	WSW	SW	SW	SW	SSW	SSW	SSW	SSW	SSW	SW	WSW	SW	W	W	WNW	242	WSW
Mar 8	NW	NNW	N	NNW	NNW	NNE	NE	NE	NE	NE	NE	NE	NE	E	ENE	E	ESE	SE	ESE	E	ESE	ESE	E	ESE	59	ENE
Mar 9	ESE	SE	SE	SSE	S	S	SSW	SSW	SSW	SW	SW	SW	SW	SSW	SW	SW	WSW	SW	SSW	SSE	S	SW	SSW	SSW	208	SSW
Mar 10	WSW	NNW	NNW	N	N	N	N	N	N	N	N	N	N	NNW	NNW	NNW	NNW	N	N	NNW	WSW	WNW	WNW	WNW	346	NNW
Mar 11	W	W	W	SW	SW	SW	SSW	SSW	SSW	SSW	SSW	S	SSW	SSW	SSW	SSW	SSW	SSW	SSW	S	SSW	SSW	SW	SW	213	SSW
Mar 12	SW	WSW	WSW	WSW	WSW	WSW	W	WSW	WSW	SW	SW	WSW	WSW	W	WSW	WSW	WSW	SW	SSW	S	S	S	SSE	SSE	238	SW
Mar 13	S	SSE	S	S	SSE	SSE	E	ESE	E	ESE	ESE	ESE	E	ESE	ESE	SE	SE	SE	SSE	S	SSE	SSE	S	S	143	SE
Mar 14	S	S	SSE	S	S	S	SSE	S	S	S	SSW	SSW	SSW	SSW	SSW	S	S	S	S	S	S	S	S	S	186	S
Mar 15	SSW	SW	WNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	N	NNW	NW	NNW	NNW	NNW	NW	NNW	NNW	WSW	SW	SW	SSW	326	NW
Mar 16	SW	SW	SW	SW	SW	SSW	SSW	SW	SW	SW	WSW	SW	C	C	C	WSW	WSW	WSW	WSW	W	W	WNW	NW	WNW	238	SW
Mar 17	WNW	WNW	NW	NNW	SSE	S	SSW	S	S	S	SSW	S	SSW	SSW	S	S	S	S	S	S	S	SSW	SSW	S	198	SSW
Mar 18	S	S	S	S	S	SE	SSE	S	S	S	SSE	SSE	SSE	SSE	SSE	SSE	SE	SE	SSE	SSE	SSE	S	SSE	S	169	SSE
Mar 19	S	S	S	SSW	SSW	SSW	SSW	SSW	SSW	SW	SW	SW	WSW	WNW	NW	NW	NW	NW	WNW	WNW	NW	NNW	SW	SSW	239	WSW
Mar 20	SSW	SW	SSW	SW	WSW	SW	SW	SW	WSW	SW	SW	SW	SW	SSW	SSW	SSW	SSW	WSW	WNW	NW	NW	NW	WNW	NW	258	WSW
Mar 21	NW	NW	NW	WNW	NW	NW	NW	NW	NW	W	WSW	WSW	WSW	SW	SW	SW	SW	SSW	SE	SE	SSE	SSE	S	S	255	WSW
Mar 22	S	S	S	S	SSW	S	S	S	SE	NNE	NE	NE	NE	ENE	NE	NE	NE	ENE	ENE	NE	NE	ENE	ENE	E	76	ENE
Mar 23	E	ENE	ENE	E	E	E	E	ESE	SE	SSE	SSE	SSE	S	S	S	SSE	SSE	SSE	SSE	SSE	SE	ESE	ESE	ESE	139	SE
Mar 24	ESE	SSE	S	SW	SW	SW	SSW	SSW	SW	SW	SW	S	E	ENE	NE	NE	NE	NNE	NNE	NNE	NNE	N	NNE	N	37	NE
Mar 25	N	N	N	NNE	N	NNW	N	NNW	NNW	NW	NW	NW	NNW	NNW	NNW	NNW	NNW	N	N	N	NNW	WSW	SSW	SSW	342	NNW
Mar 26	SW	SSW	SSW	WSW	WSW	W	WSW	W	WSW	WSW	WSW	WSW	W	W	WNW	WNW	WNW	W	W	NNW	NNE	NNE	S	SSW	267	W
Mar 27	SW	SW	SW	SW	SW	SSW	SW	SW	SW	SW	SW	SW	SW	SW	WSW	SW	SSW	S	SSE	S	S	S	S	S	215	SSW
Mar 28	SSW	SSW	SSW	SW	SSW	SW	SW	SW	SW	SW	SW	SW	SSW	SSE	ESE	E	NNE	NNW	NNW	NNW	N	NNW	NNW	NNW	274	W
Mar 29	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	336	NNW
Mar 30	NNW	NW	NW	WNW	WNW	WNW	NW	NW	NNW	NW	NW	NW	NNW	WNW	WSW	WSW	WSW	SW	SSW	SSW	S	SSW	SSW	SSW	272	W
Mar 31	SSW	SW	SW	SW	SW	SSW	SSW	SSW	SW	WSW	WSW	W	WSW	W	W	WNW	WNW	NW	SSW	SE	SSE	S	S	SSE	236	SW

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance		
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance	P	Power Failure
X	InValid Data (Machine Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)				

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for VWD - St. Lina Site



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - March 2021

Summary of Hourly Averages

VECTOR WIND SPEED (VWS) in km/hr & WIND DIRECTION (VWD) in sector

WIND SPEED

Maximum Hourly Value:	36.2	kph	on March 29 at hour 5	Hours in Service:	744
Maximum Daily Value:	27.7	kph	on March 29	Hours of Data:	741
Minimum Hourly Value:	0.9	kph	on March 22 at hour 8	Hours of Missing Data:	0
Minimum Daily Value:	2.2	kph	on March 24	Hours of Calibration:	3
Monthly Average:	3.9	kph		Operational Uptime:	100

WIND DIRECTION

Monthly Average: 231 (SW) degree

Day	Hourly Period Starting at (MST)																								Daily	Daily	Daily
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Minimum	Maximum	Average
Mar 1	19.0	19.1	16.5	12.8	9.5	10.9	14.6	15.3	15.2	15.7	13.1	15.1	15.4	13.3	8.8	8.1	8.1	6.0	7.5	6.1	11.7	10.2	17.7	23.0	6.0	23.0	9.6
	S	S	S	S	S	S	SSW	SW	SW	SW	SW	SW	WSW	WSW	SW	SW	SW	SSW	SSW	WSW	WNW	NW	WNW	NNW			
Mar 2	16.6	11.8	10.6	8.0	5.1	7.9	6.6	8.1	9.5	9.7	8.6	9.3	9.3	10.3	14.0	15.4	23.9	19.2	15.8	13.8	10.5	11.5	9.3	11.1	5.1	23.9	8.8
	NW	NNW	NNW	NW	NNW	SW	SW	SW	SW	SW	SW	SSW	SSW	SSW	WSW	SW	SW	SW	SW	SW	SSW	SSW	SW	SSW			
Mar 3	11.5	9.8	9.1	8.7	10.4	11.3	10.3	9.2	7.9	8.4	9.4	10.9	13.7	11.6	11.5	11.2	10.4	11.4	11.6	11.9	10.3	9.6	9.2	8.1	7.9	13.7	9.6
	SSW	SSW	SSW	SW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	S	SSE	S	S	S	S	SSE	SSE	SSE	SE			
Mar 4	10.2	10.5	9.7	11.8	13.3	11.5	12.6	12.8	12.3	11.6	10.7	10.1	12.1	11.1	11.8	9.5	12.2	10.4	12.1	13.3	13.3	12.6	10.2	9.5	9.5	13.3	10.9
	E	ESE	ESE	E	E	E	E	ESE	ESE	ESE	E	ESE	ESE	ESE	ESE	E	ESE	SE	SE	SE	SE	SE	SE	SE			
Mar 5	13.0	15.5	13.3	14.5	14.4	14.3	7.1	10.0	9.0	8.2	8.8	11.4	11.0	11.3	13.0	13.9	14.6	12.5	12.8	13.1	15.0	13.7	13.5	13.2	7.1	15.5	11.5
	ESE	SE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	SE	SE	SE	SE	SE	SE	SE	SSE	SSE	SSE	S			
Mar 6	12.8	12.6	13.6	14.0	10.3	7.4	6.5	8.7	6.7	6.0	8.5	8.2	9.2	10.2	6.4	6.2	8.4	13.6	10.6	10.0	9.6	9.7	8.4	12.0	6.0	14.0	6.9
	S	SSW	SSW	SSW	WSW	W	W	NW	NNW	NNW	NW	NW	NW	NW	WNW	WSW	WSW	W	WNW	WNW	WNW	WNW	WSW	W			
Mar 7	8.6	7.7	9.2	9.3	10.8	10.0	10.2	11.8	10.8	5.8	5.0	6.6	6.6	9.7	10.5	10.5	8.8	10.4	9.4	10.7	9.3	10.2	11.0	9.3	5.0	11.8	8.3
	WNW	WSW	SW	SW	WSW	W	WSW	W	W	WSW	SW	SW	SW	SSW	SSW	SSW	SSW	SSW	SW	WSW	SW	W	W	WNW			
Mar 8	10.1	11.7	9.5	10.6	9.7	10.0	11.7	9.9	9.7	14.4	13.0	10.1	10.1	10.6	10.3	11.3	8.1	10.0	10.0	11.4	11.2	14.3	12.4	11.0	8.1	14.4	7.4
	NW	NNW	N	NNW	NNW	NNE	NE	NE	NE	NE	NE	NE	NE	E	ENE	E	ESE	SE	ESE	E	ESE	ESE	E	ESE			
Mar 9	10.5	11.1	8.8	6.7	11.4	11.1	14.4	13.1	12.9	14.3	17.0	19.3	15.6	15.5	19.2	19.3	16.5	9.9	3.8	5.2	11.0	8.5	11.4	12.0	3.8	19.3	10.6
	ESE	SE	SE	SSE	S	S	SSW	SSW	SSW	SW	SW	SW	SW	SSW	SW	SW	WSW	SW	SSW	SSE	S	SW	SSW	SSW			
Mar 10	7.6	10.2	10.7	17.1	17.8	19.2	18.5	17.6	16.4	14.6	14.0	13.2	10.0	9.8	12.3	10.8	10.6	8.8	6.6	3.5	6.4	7.8	8.0	7.2	3.5	19.2	10.1
	WSW	NNW	NNW	N	N	N	N	N	N	N	N	N	N	NNW	NNW	NNW	NNW	N	N	NNW	WSW	WNW	WNW	WNW			
Mar 11	7.7	7.9	6.7	7.0	7.4	6.7	8.8	8.9	7.9	8.5	6.6	7.6	11.2	11.5	13.3	12.8	11.8	9.3	9.7	11.1	13.3	13.3	11.1	12.7	6.6	13.3	9.0
	W	W	W	SW	SW	SW	SSW	SSW	SSW	SSW	SSW	S	SSW	SSW	SSW	SSW	SSW	SSW	SSW	S	SSW	SSW	SW	SW			
Mar 12	13.3	12.9	10.7	10.4	9.6	9.0	10.4	9.5	6.3	5.2	6.8	12.0	17.7	18.7	15.7	16.7	15.4	10.1	10.3	10.1	10.6	8.9	5.4	8.2	5.2	18.7	9.7
	SW	WSW	WSW	WSW	WSW	WSW	W	WSW	WSW	SW	SW	WSW	WSW	W	WSW	WSW	WSW	SW	SSW	S	S	S	SSE	SSE			
Mar 13	9.0	7.5	8.9	8.2	10.5	3.7	9.2	8.4	9.9	9.8	10.2	11.8	14.6	14.1	14.7	13.9	9.5	10.1	12.7	16.5	15.7	17.9	19.3	20.9	3.7	20.9	10.3
	S	SSE	S	S	SSE	SSE	E	ESE	E	ESE	ESE	ESE	E	ESE	ESE	SE	SE	SE	SSE	S	SSE	SSE	S	S			
Mar 14	18.8	18.9	17.2	16.9	18.1	14.3	11.8	13.2	19.7	21.4	22.3	23.7	22.3	18.6	16.9	16.0	19.6	17.9	14.4	15.3	15.5	15.9	16.8	16.4	11.8	23.7	17.3
	S	S	SSE	S	S	S	SSE	S	S	S	SSW	SSW	SSW	SSW	SSW	S	S	S	S	S	S	S	S	S			
Mar 15	12.3	10.1	12.9	24.8	26.2	26.4	27.4	26.5	23.3	19.5	17.4	15.7	14.9	15.1	13.8	15.3	12.3	11.4	8.5	6.2	7.9	8.0	8.4	9.5	6.2	27.4	12.1
	SSW	SW	WNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	N	NNW	NW	NNW	NNW	NNW	NW	NNW	NNW	WSW	SW	SW	SSW			
Mar 16	10.4	14.7	14.0	12.2	11.5	13.2	12.8	12.2	11.6	16.7	17.4	15.0	C	C	C	20.6	19.6	17.5	10.3	7.0	7.7	8.5	8.7	6.6	6.6	20.6	11.7
	SW	SW	SW	SW	SW	SSW	SSW	SW	SW	SW	WSW	SW	C	C	C	WSW	WSW	WSW	WSW	W	W	WNW	NW	WNW			
Mar 17	7.1	6.4	6.4	6.4	3.4	9.9	8.7	9.4	7.9	9.9	11.8	11.7	11.0	12.6	14.2	14.1	12.5	10.4	9.0	11.8	11.6	12.4	13.0	13.6	3.4	14.2	8.5
	WNW	WNW	NW	NNW	SSE	S	SSW	S	S	S	SSW	S	SSW	SSW	S	S	S	S	S	S	S	SSW	SSW	S			
Mar 18	13.9	13.6	13.6	13.0	10.7	8.4	9.5	10.2	8.6	8.2	10.6	11.7	13.0	12.9	11.6	11.7	10.0	10.7	13.0	15.0	12.5	13.6	12.6	14.4	8.2	15.0	11.3
	S	S	S	S	S	SE	SSE	S	S	S	SSE	SSE	SSE	SSE	SSE	SSE	SE	SE	SSE	SSE	SSE	S	SSE	S			
Mar 19	14.6	15.3	13.9	12.9	12.9	13.2	13.9	12.0	9.5	11.5	10.3	13.7	21.7	17.1	17.8	16.7	15.4	6.7	7.9	7.5	6.2	4.7	7.7	8.5	4.7	21.7	8.1
	S	S	S	SSW	SSW	SSW	SSW	SSW	SSW	SW	SW	SW	WSW	WNW	NW	NW	NW	NW	WNW	WNW	NW	NNW	SW	SSW			
Mar 20	7.9	8.3	7.5	9.1	9.0	10.2	9.1	7.4	7.5	7.3	11.6	14.3	11.4	11.1	12.0	10.0	11.6	9.8	17.0	29.5	23.9	17.0	18.8	19.0	7.3	29.5	8.7
	SSW	SW	SSW	SW	WSW	SW	SW	SW	WSW	SW	SW	SW	SW	SSW	SSW	SSW	SSW	WSW	WNW	NW	NW	NW	WNW	NW			

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - March 2021

Summary of Hourly Averages

VECTOR WIND SPEED (VWS) in km/hr & WIND DIRECTION (VWD) in sector

WIND SPEED

Maximum Hourly Value:	36.2	kph	on March 29 at hour 5	Hours in Service:	744
Maximum Daily Value:	27.7	kph	on March 29	Hours of Data:	741
Minimum Hourly Value:	0.9	kph	on March 22 at hour 8	Hours of Missing Data:	0
Minimum Daily Value:	2.2	kph	on March 24	Hours of Calibration:	3
Monthly Average:	3.9	kph		Operational Uptime:	100

WIND DIRECTION

Monthly Average: 231 (SW) degree

Day	Hourly Period Starting at (MST)																								Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Mar 21	16.7	15.2	17.4	12.8	16.3	11.9	9.8	8.7	8.4	9.3	11.6	14.7	17.5	17.3	18.4	20.1	12.5	7.4	6.6	8.6	11.2	12.1	14.1	14.7	6.6	20.1	7.6
	NW	NW	NW	WNW	NW	NW	NW	NW	NW	W	WSW	WSW	WSW	SW	SW	SW	SW	SSW	SE	SE	SSE	SSE	S	S			
Mar 22	13.2	13.4	14.1	12.1	9.0	8.8	5.4	4.8	**0.9**	5.4	10.7	13.3	14.3	13.7	15.2	13.3	15.1	13.5	11.7	13.9	14.9	15.6	13.3	12.4	**0.9**	15.6	6.3
	S	S	S	S	SSW	S	S	S	SE	NNE	NE	NE	NE	ENE	NE	NE	NE	ENE	ENE	NE	NE	ENE	ENE	E			
Mar 23	13.7	9.9	9.6	8.8	7.4	8.8	9.9	9.6	8.1	8.6	9.8	9.2	12.5	16.0	14.1	15.0	14.1	12.8	10.9	10.8	7.9	9.6	13.3	13.3	7.4	16.0	8.6
	E	ENE	ENE	E	E	E	E	ESE	SE	SSE	SSE	SSE	S	S	S	SSE	SSE	SSE	SSE	SSE	SE	ESE	ESE	ESE			
Mar 24	11.2	10.6	10.9	9.9	10.4	8.5	8.7	6.3	5.1	6.1	5.0	3.1	3.6	6.0	9.1	9.2	8.7	8.8	12.7	16.2	15.5	15.1	15.0	16.4	3.1	16.4	**2.2**
	ESE	SSE	S	SW	SW	SW	SSW	SSW	SW	SW	SW	S	E	ENE	NE	NE	NE	NNE	NNE	NNE	NNE	N	NNE	N			
Mar 25	13.6	13.7	16.1	13.2	10.8	12.6	10.1	9.8	11.4	12.5	12.7	12.8	11.5	10.5	12.2	10.8	8.5	8.4	7.6	5.7	4.1	5.9	6.2	6.9	4.1	16.1	8.8
	N	N	N	NNE	N	NNW	N	NNW	NNW	NW	NW	NW	NNW	NNW	NNW	NNW	NNW	N	N	N	NNW	WSW	SSW	SSW			
Mar 26	5.6	5.5	5.2	5.5	5.8	8.4	8.0	10.3	9.1	13.5	18.6	18.6	17.4	13.2	10.8	12.8	13.3	13.2	8.3	6.9	5.6	2.8	2.8	7.5	2.8	18.6	8.0
	SW	SSW	SSW	WSW	WSW	W	WSW	W	WSW	WSW	WSW	WSW	W	W	WNW	WNW	WNW	W	W	NNW	NNE	NNE	S	SSW			
Mar 27	8.8	9.6	9.0	8.0	8.4	8.7	8.9	7.7	7.2	11.1	18.0	16.9	17.6	18.1	17.7	15.8	10.6	9.7	10.4	10.9	11.4	13.2	15.3	14.8	7.2	18.1	10.9
	SW	SW	SW	SW	SW	SSW	SW	SW	SW	SW	SW	SW	SW	SW	WSW	SW	SSW	S	SSE	S	S	S	S	S			
Mar 28	15.1	11.4	10.3	10.3	9.4	10.8	11.7	9.4	8.7	10.2	8.2	5.0	4.8	3.4	11.0	9.8	6.3	7.8	12.9	17.7	20.2	18.9	18.1	22.1	3.4	22.1	3.7
	SSW	SSW	SSW	SW	SSW	SW	SW	SW	SW	SW	SW	SW	SSW	SSE	ESE	E	NNE	NNW	NNW	NNW	N	NNW	NNW	NNW			
Mar 29	27.8	32.7	30.2	34.4	35.7	**36.2**	33.5	33.3	32.1	28.3	27.9	32.3	29.6	27.6	26.5	26.1	25.2	23.8	22.3	21.9	21.9	18.3	20.9	19.0	18.3	**36.2**	**27.7**
	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW			
Mar 30	14.6	9.9	9.9	8.9	9.0	8.4	11.2	9.7	10.2	10.6	9.3	8.7	9.7	9.5	11.5	11.9	14.2	14.0	10.8	12.1	12.8	12.6	12.3	11.6	8.4	14.6	6.7
	NNW	NW	NW	WNW	WNW	WNW	NW	NW	NNW	NW	NW	NW	NNW	WNW	WSW	WSW	WSW	SW	SSW	SSW	S	SSW	SSW	SSW			
Mar 31	11.8	12.2	11.0	11.0	11.4	10.9	11.1	11.4	11.8	16.2	21.2	20.8	17.6	25.8	21.1	12.8	12.2	5.3	1.0	6.1	8.7	10.1	10.4	12.4	1.0	25.8	9.7
	SSW	SW	SW	SW	SW	SSW	SSW	SSW	SW	WSW	WSW	W	WSW	W	W	WNW	WNW	NW	SSW	SE	SSE	S	S	SSE			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance	P Power Failure
X	InValid Data (Equipment Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)			

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - March 2021

Summary of Hour Standard Deviations

STANDARD DEVIATION WIND DIRECTION (STDWD) in Degree

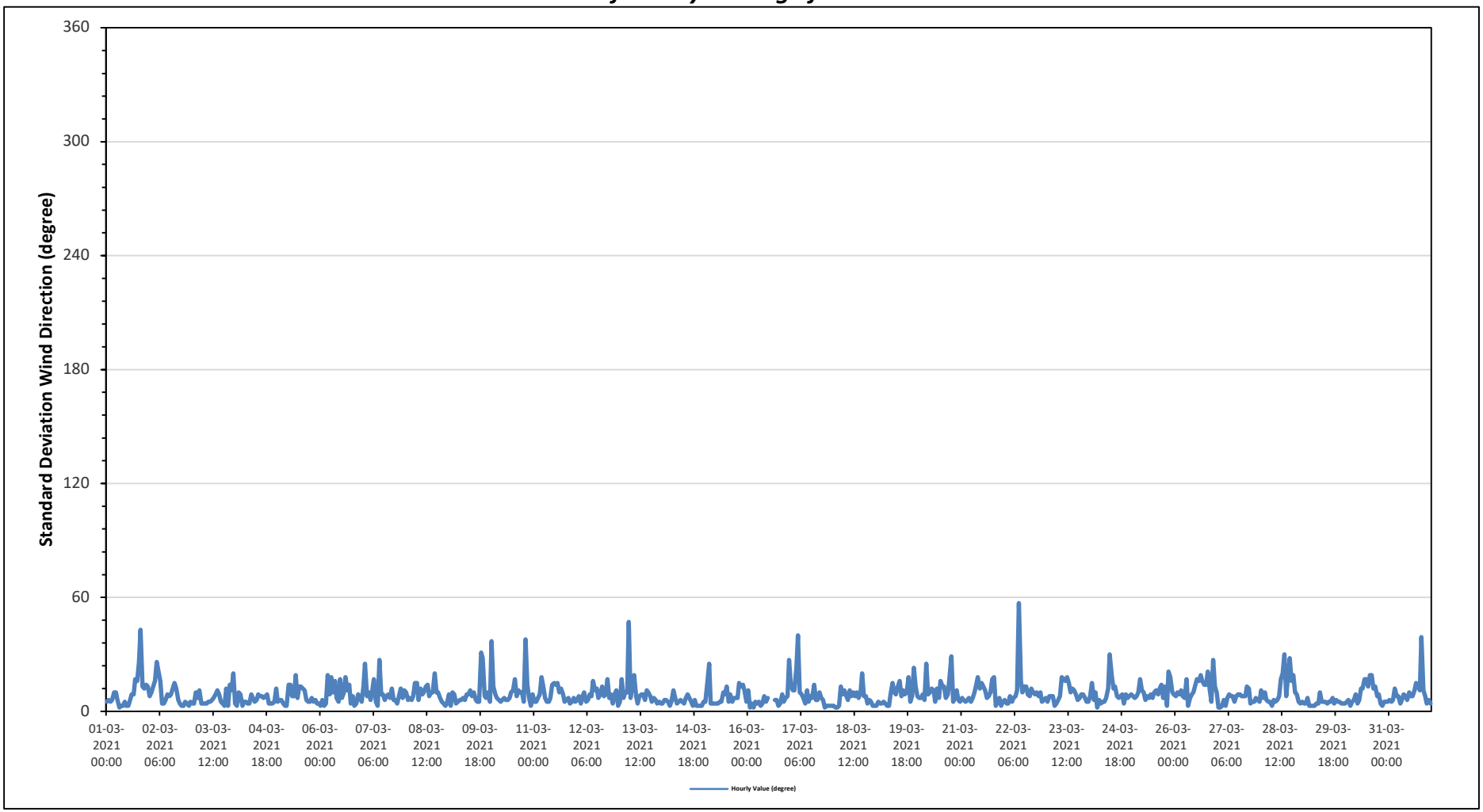
Maximum Hourly Value:	57	degree	on March 22 at hour 8	Hours in Service:	744
				Hours of Data:	741
Minimum Hourly Value:	2	degree	on March 1 at hour 7	Hours of Missing Data:	0
				Hours of Calibration:	3
				Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																								Daily Minimum	Daily Maximum
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
Mar 1	5	6	5	6	10	10	6	**2**	3	3	5	3	3	6	9	9	17	16	26	43	13	12	14	13	**2**	43
Mar 2	8	10	13	16	26	21	16	4	4	6	9	8	9	12	15	12	6	4	3	3	5	4	3	5	3	26
Mar 3	4	4	10	7	11	4	4	4	4	5	5	6	7	9	11	9	5	4	3	12	3	14	11	20	3	20
Mar 4	4	3	10	9	3	5	5	4	4	9	7	5	6	9	8	8	7	8	9	4	4	4	5	12	3	12
Mar 5	5	6	6	4	3	3	14	14	8	8	19	7	13	13	12	11	6	5	5	7	5	6	4	4	3	19
Mar 6	3	6	3	4	19	9	18	10	16	7	5	17	7	10	18	11	14	4	8	3	4	9	8	5	3	19
Mar 7	13	25	8	10	6	11	17	5	3	27	9	9	6	8	9	7	12	6	6	4	8	12	7	11	3	27
Mar 8	10	6	7	6	8	15	15	6	12	9	10	13	14	8	10	10	20	10	10	7	5	4	3	4	3	20
Mar 9	9	3	10	9	4	5	6	6	7	6	9	9	11	8	10	6	5	5	31	28	8	7	10	5	3	31
Mar 10	37	13	9	7	6	5	6	7	6	6	7	10	11	17	8	11	10	10	5	38	14	7	3	9	3	38
Mar 11	5	5	7	9	18	13	7	5	5	7	14	15	14	15	10	12	9	5	6	7	4	5	7	5	4	18
Mar 12	6	8	4	8	10	5	6	9	8	16	11	12	7	9	13	8	9	17	7	9	4	9	11	3	3	17
Mar 13	5	17	7	10	10	47	7	14	19	8	4	8	9	9	6	11	10	8	5	7	6	4	5	4	4	47
Mar 14	4	6	6	5	3	5	11	7	4	5	6	5	4	7	9	7	5	3	6	3	3	3	3	5	3	11
Mar 15	5	14	25	4	4	4	4	4	5	5	10	9	13	5	9	5	7	7	7	15	13	14	11	5	4	25
Mar 16	11	**2**	4	**2**	5	4	5	3	4	8	5	7	**C**	**C**	**C**	6	6	3	4	9	5	7	8	27	**2**	27
Mar 17	14	11	11	23	40	10	9	7	4	11	5	8	7	14	6	6	10	7	6	**2**	3	3	3	3	**2**	40
Mar 18	3	**2**	**2**	3	13	9	11	8	6	11	8	10	8	10	7	10	20	8	8	4	6	5	3	3	**2**	20
Mar 19	3	5	4	4	5	4	3	3	9	15	10	9	13	16	8	11	9	10	18	5	8	23	13	8	3	23
Mar 20	7	7	9	6	25	9	10	12	11	5	12	7	16	13	13	7	9	17	29	5	7	11	6	5	5	29
Mar 21	7	6	5	6	7	5	7	10	14	18	12	15	13	11	7	8	10	17	18	3	5	7	3	5	3	18
Mar 22	6	4	4	8	5	7	8	11	**57**	16	10	13	13	9	8	12	10	9	10	8	10	5	6	7	4	**57**
Mar 23	5	8	8	8	3	4	6	8	18	17	16	18	15	10	12	11	9	6	7	9	9	7	5	5	3	18
Mar 24	8	15	6	10	**2**	6	4	5	5	7	12	30	19	12	13	8	7	8	9	4	9	7	8	9	**2**	30
Mar 25	8	7	8	10	17	11	10	6	8	7	9	7	10	11	9	12	14	7	13	3	21	18	10	9	3	21
Mar 26	8	10	9	11	8	7	17	3	7	9	10	14	17	16	19	16	14	14	21	12	5	27	13	10	3	27
Mar 27	**2**	**2**	3	6	3	7	9	8	8	5	8	9	9	8	8	8	13	12	4	5	5	7	6	5	**2**	13
Mar 28	11	7	10	6	5	5	3	6	5	6	8	17	20	30	8	18	28	16	19	10	9	5	4	5	3	30
Mar 29	4	4	7	3	3	3	3	4	4	10	5	5	5	4	5	5	7	4	6	5	5	4	4	4	3	10
Mar 30	5	6	3	5	6	9	4	6	12	12	17	17	13	19	19	12	13	8	9	4	3	5	5	5	3	19
Mar 31	6	5	6	12	8	8	4	6	9	8	6	10	8	8	11	15	13	11	39	11	8	4	6	4	4	39
Diurnal Minimum	2	2	2	2	2	3	3	2	3	3	4	3	3	4	5	5	5	3	3	2	3	3	3	3		
Daiurnal Maximum	37	25	25	23	40	47	18	14	57	27	19	30	20	30	19	18	28	17	39	43	21	27	14	27		

C	Monthly Calibration	**S**	Daily Zero-Span Check	**Q**	Quality Assurance	
K	Collection Error	**N**	No Data (Machine Not in Service)	**Y**	Routine Maintenance	**P** Power Failure
X	InValid Data (Machine Malfunction /Recovery)	**NRM**	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)			

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for STDWD - St. Lina Site



END OF REPORT

This page, 243 of 243, ends the March 2021 Monthly Ambient Air Quality Monitoring Report.

Lakeland Industry & Community Association

MARCH 2021

Ambient Air Monitoring Calibration Report

- COLD LAKE SOUTH STATION-

CAL-LICA-202103-01174

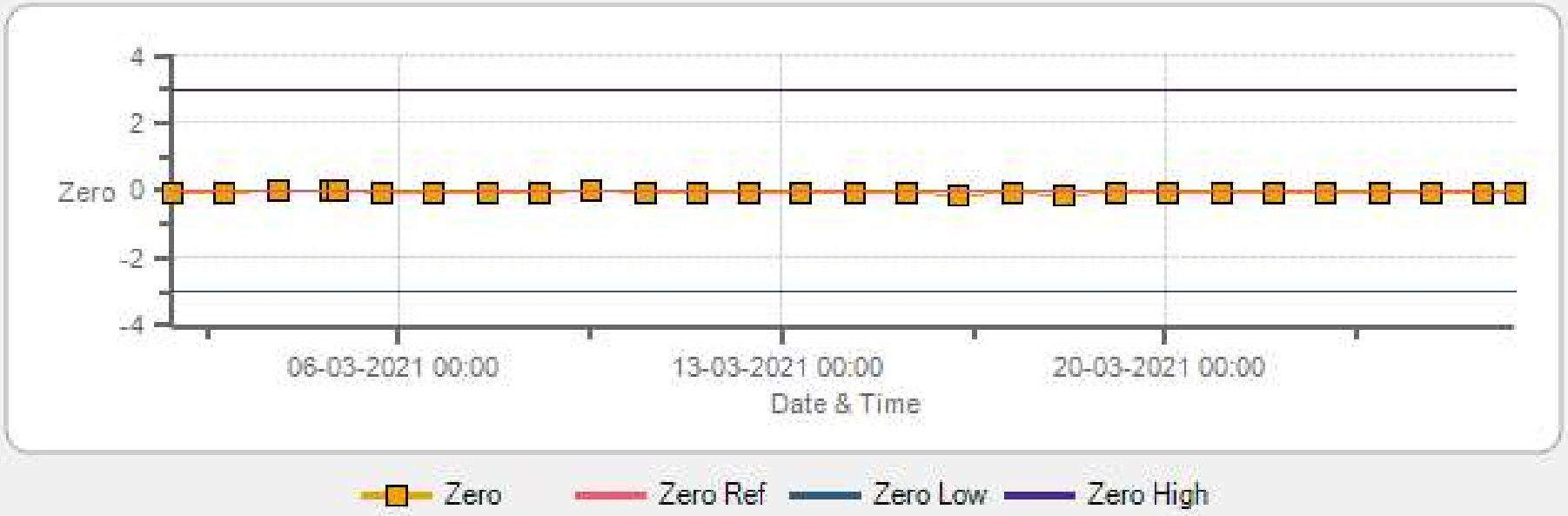
Station Operation and Maintenance:
Bureau Veritas Canada

Data Validation and Report:
LICA / Bureau Veritas Canada

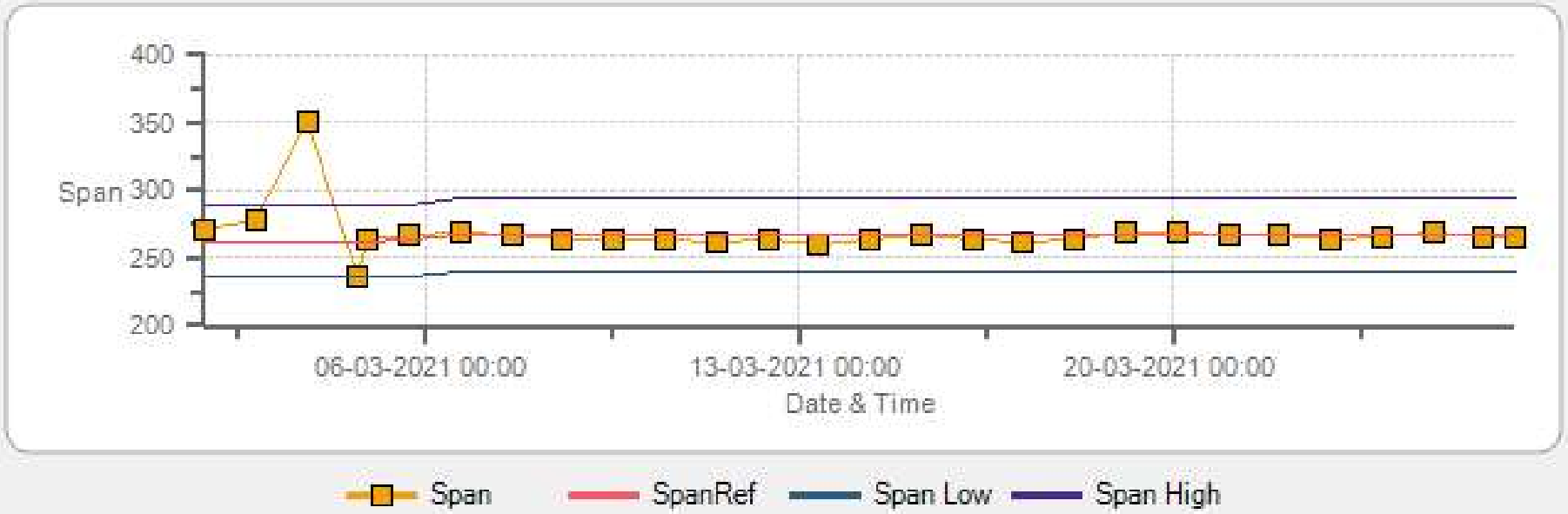
April 11, 2021

DAILY INTERNAL ZERO-SPAN CALIBRATION RECORDS

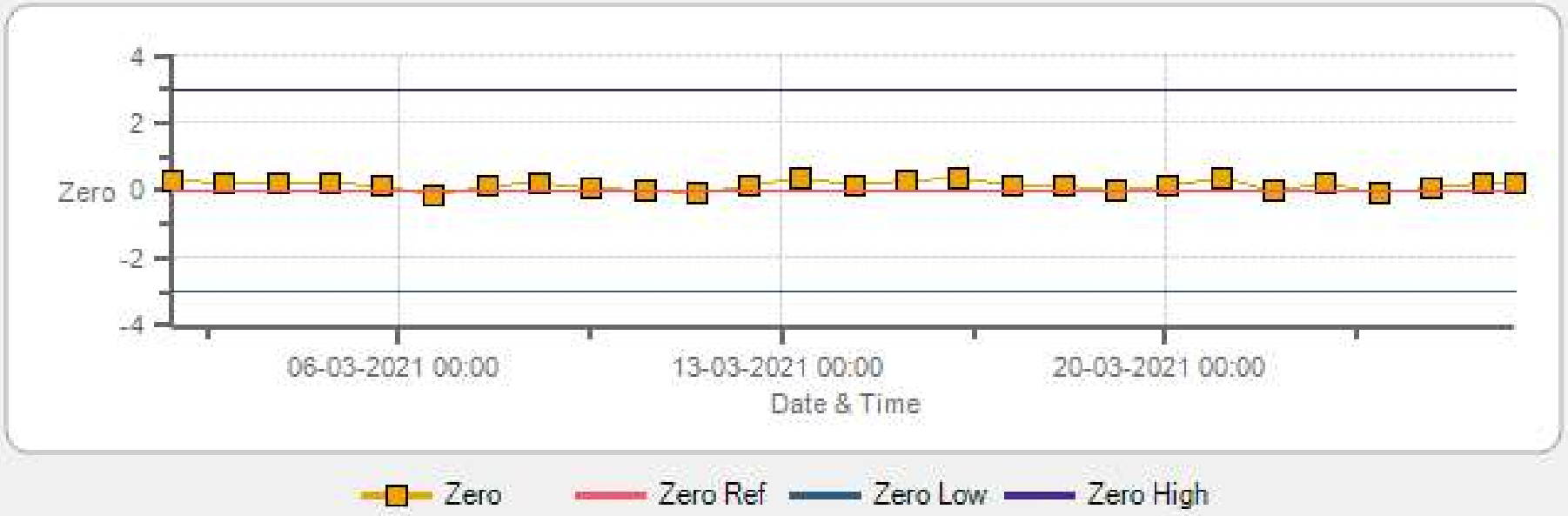
SO2[ppb] Calibration: Cold Lake South Monthly: 03-2021 Type: SpanAndZero - Zero



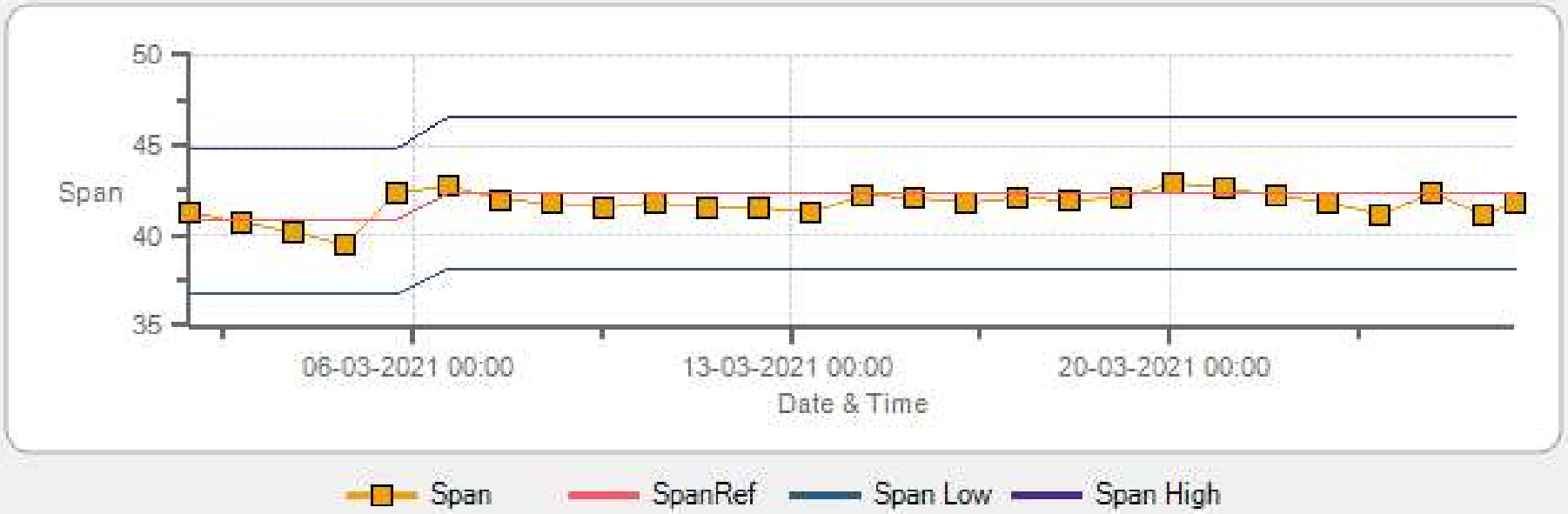
SO2[ppb] Calibration: Cold Lake South Monthly: 03-2021 Type: SpanAndZero - Span



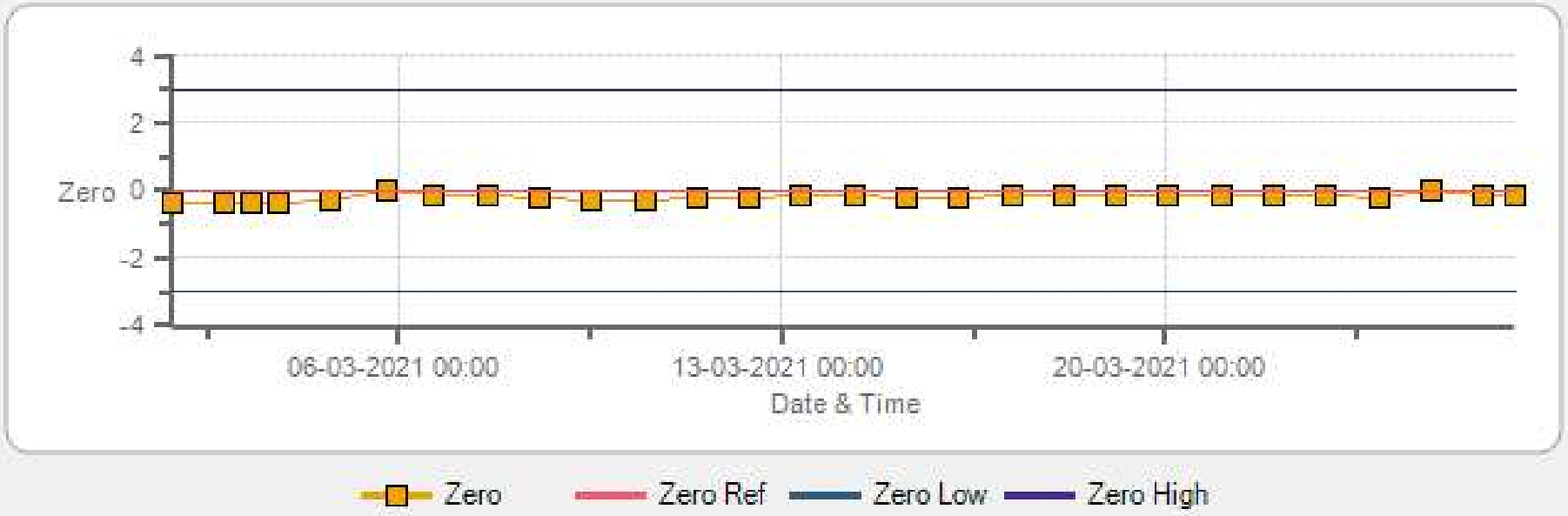
TRS[ppb] Calibration: Cold Lake South Monthly: 03-2021 Type: SpanAndZero - Zero



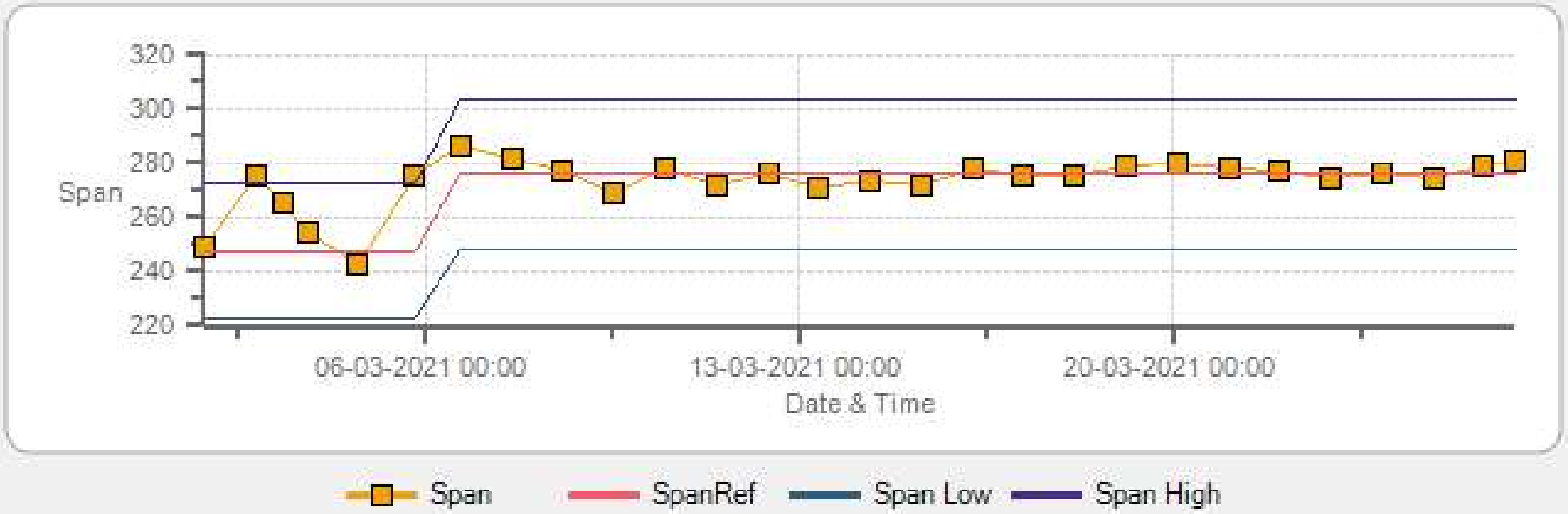
TRS[ppb] Calibration: Cold Lake South Monthly: 03-2021 Type: SpanAndZero - Span



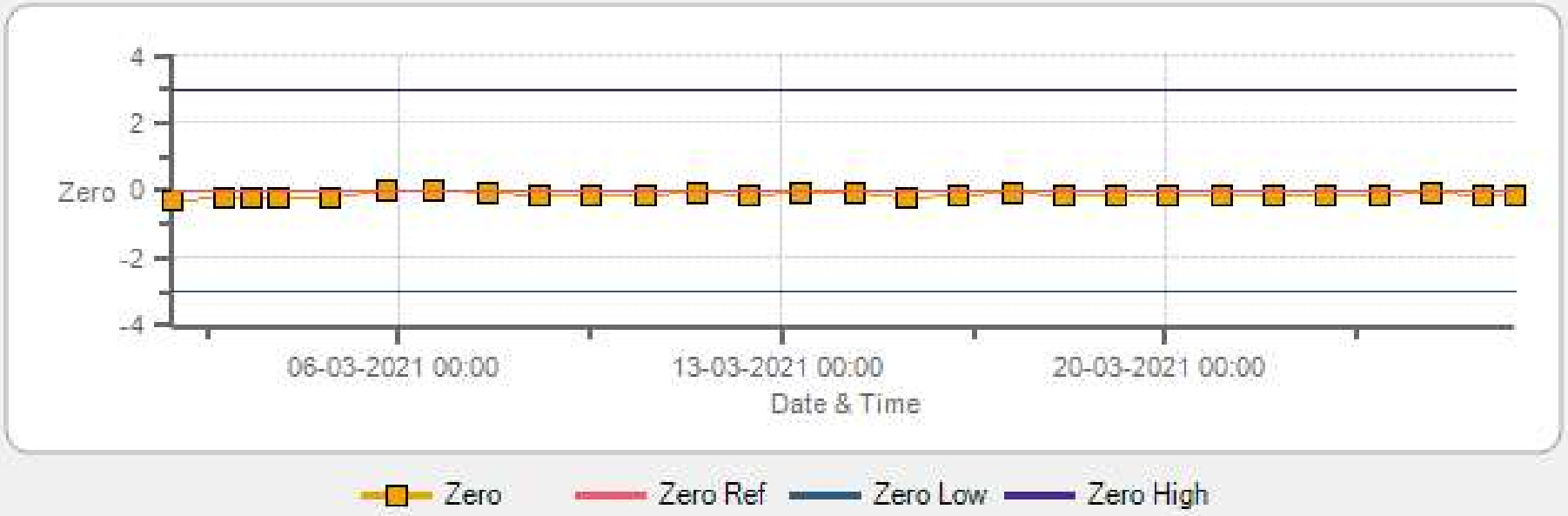
NOX[ppb] Calibration: Cold Lake South Monthly: 03-2021 Type: SpanAndZero - Zero



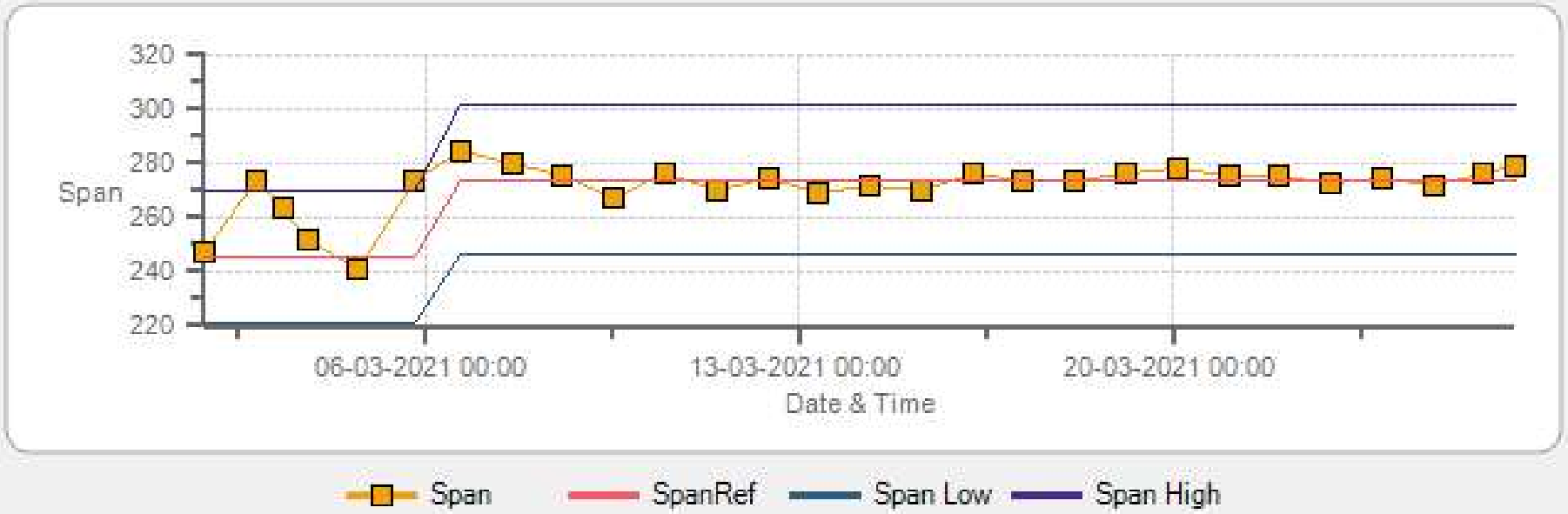
NOX[ppb] Calibration: Cold Lake South Monthly: 03-2021 Type: SpanAndZero - Span



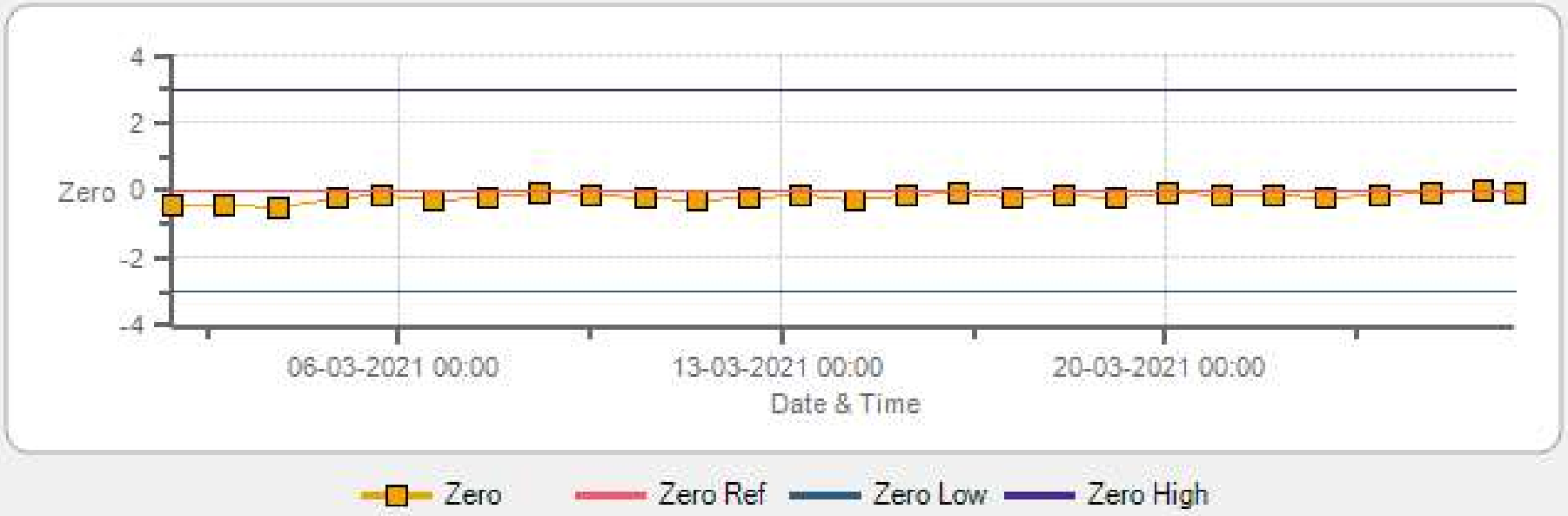
NO2[ppb] Calibration: Cold Lake South Monthly: 03-2021 Type: SpanAndZero - Zero



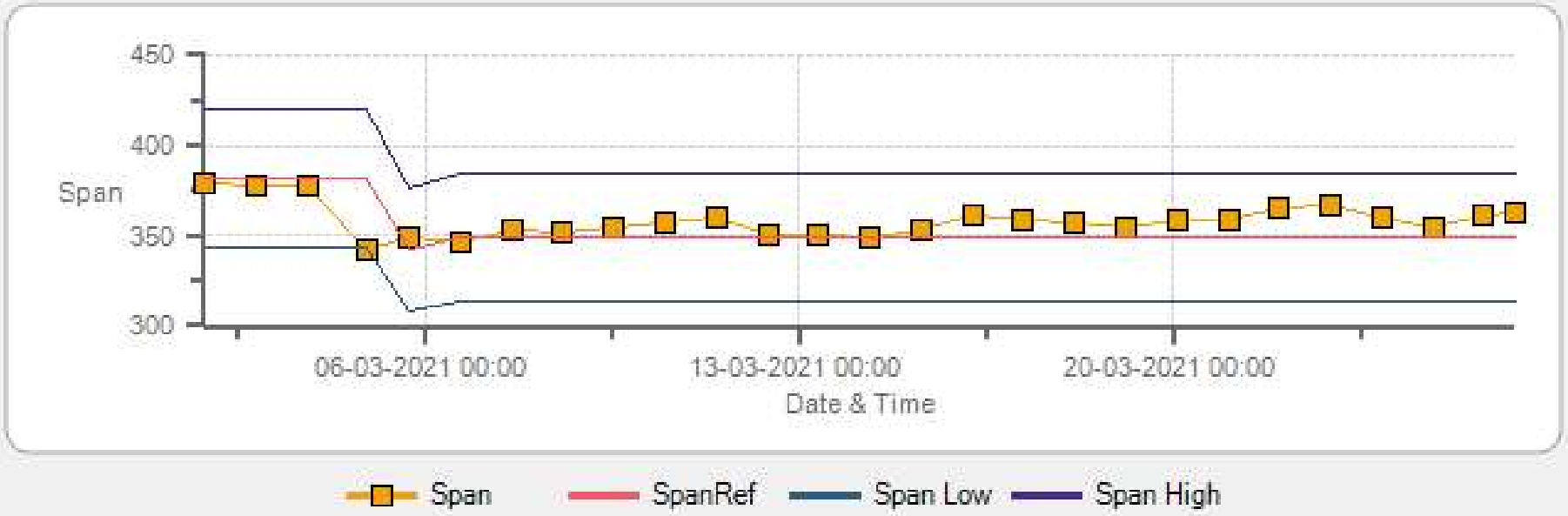
NO2[ppb] Calibration: Cold Lake South Monthly: 03-2021 Type: SpanAndZero - Span



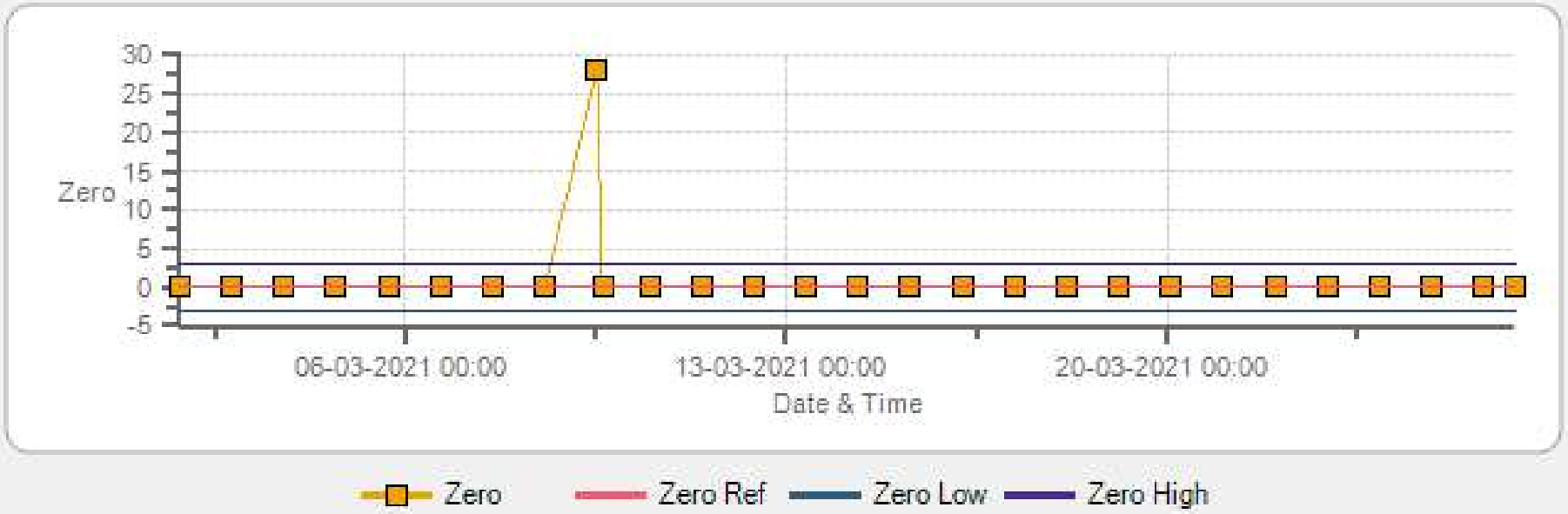
O3[ppb] Calibration: Cold Lake South Monthly: 03-2021 Type: SpanAndZero - Zero



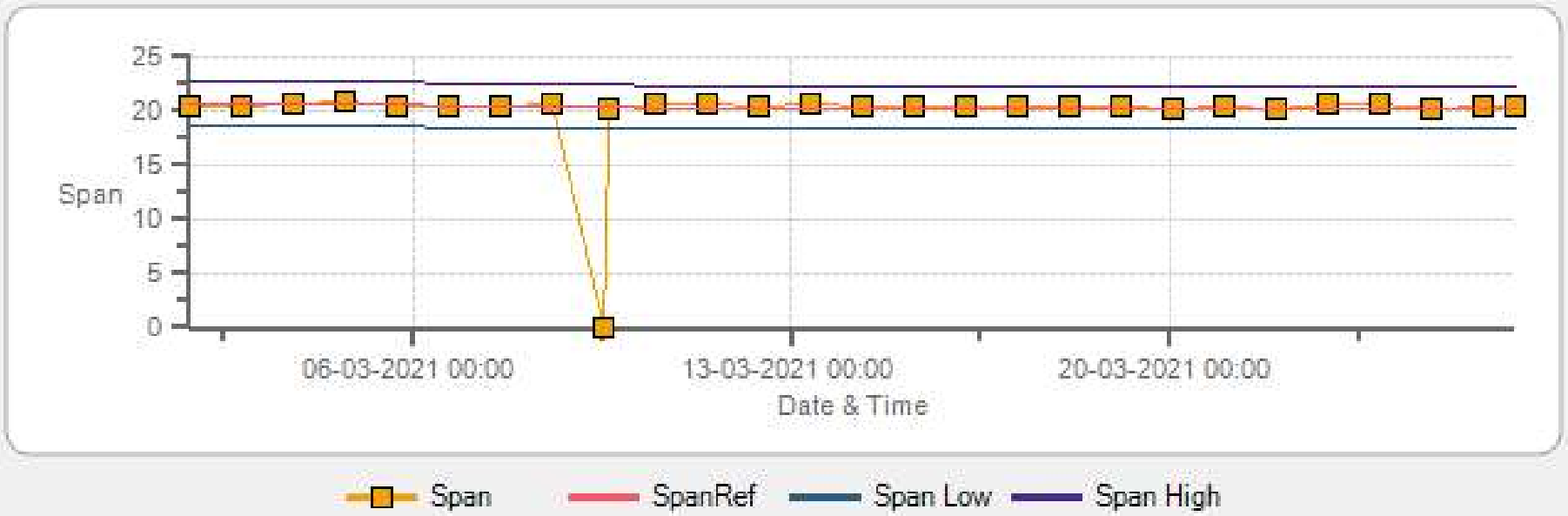
O3[ppb] Calibration: Cold Lake South Monthly: 03-2021 Type: SpanAndZero - Span

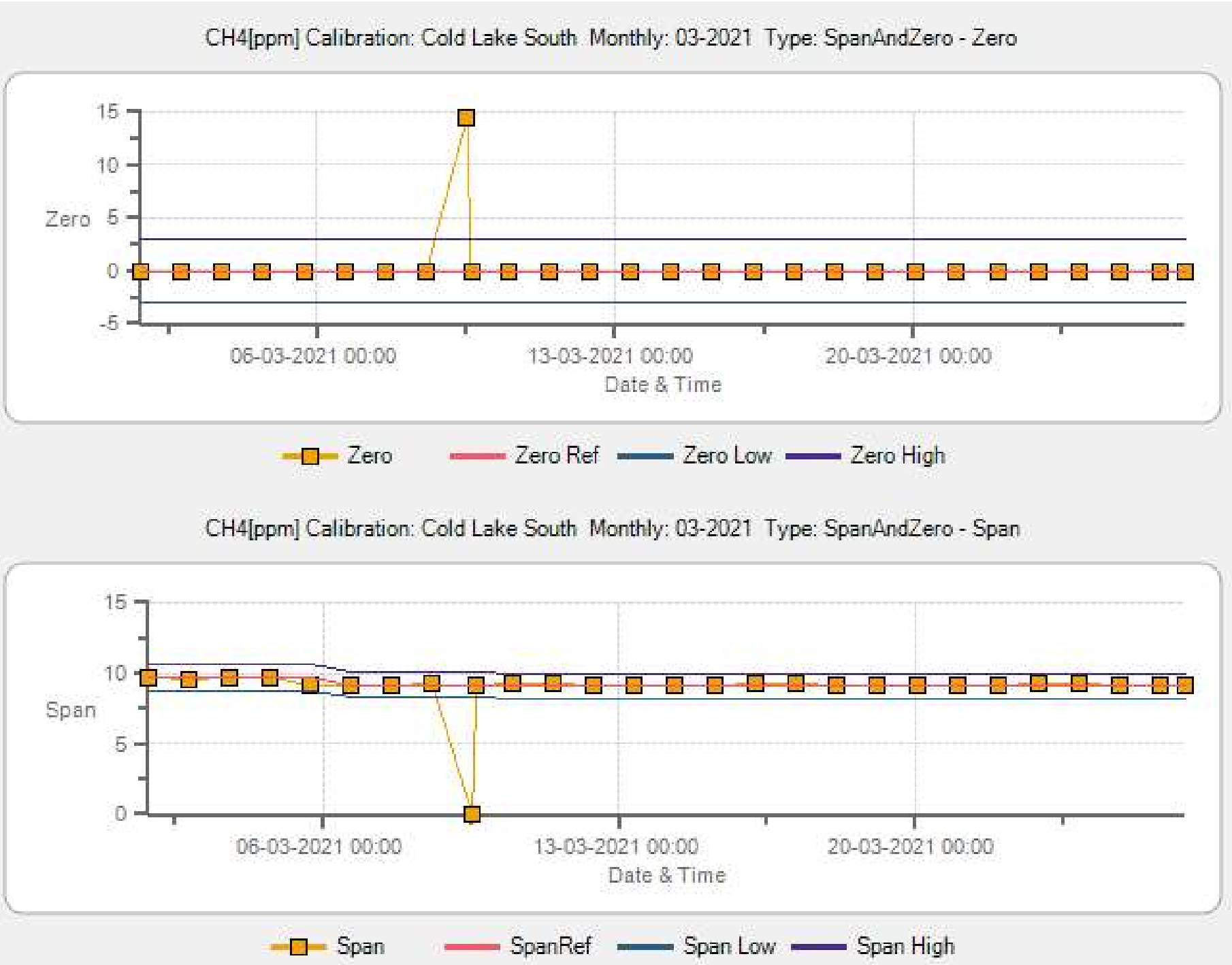


THC55[ppm] Calibration: Cold Lake South Monthly: 03-2021 Type: SpanAndZero - Zero

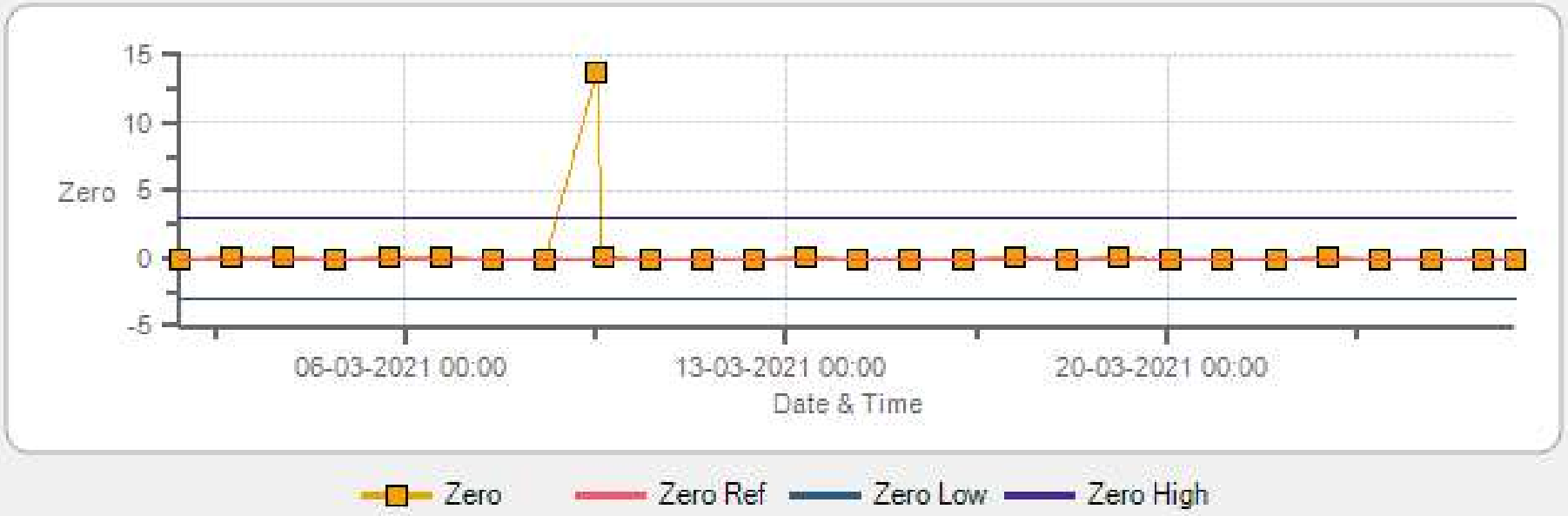


THC55[ppm] Calibration: Cold Lake South Monthly: 03-2021 Type: SpanAndZero - Span

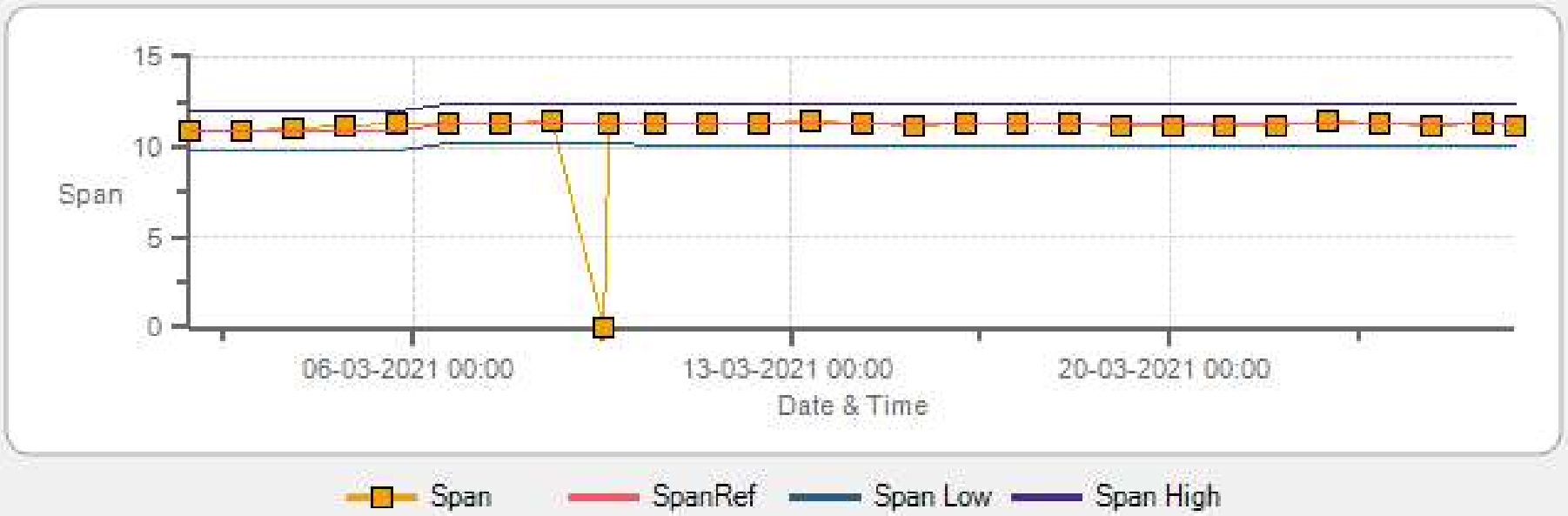



CH4[ppm] Calibration: Cold Lake South Monthly: 03-2021 Type: SpanAndZero - Zero
15
10
5
0
-5
Zero
06-03-2021 00:00
13-03-2021 00:00
20-03-2021 00:00
Date & Time
Zero
Zero Ref
Zero Low
Zero High
CH4[ppm] Calibration: Cold Lake South Monthly: 03-2021 Type: SpanAndZero - Span
15
10
5
0
Span
06-03-2021 00:00
13-03-2021 00:00
20-03-2021 00:00
Date & Time
Span
SpanRef
Span Low
Span High

NMHC[ppm] Calibration: Cold Lake South Monthly: 03-2021 Type: SpanAndZero - Zero



NMHC[ppm] Calibration: Cold Lake South Monthly: 03-2021 Type: SpanAndZero - Span



MULTI-POINT CALIBRATION RECORDS

SO2 Analyzer Calibration by Dilution

DATE:	04-Mar-2021	PREVIOUS CALIBRATION DATE:	04-Feb-2021
PARAMETER:	SO2	PREVIOUS CORRECTION FACTOR:	0.999
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	CLS	BAROMETRIC (mBar):	951
PURPOSE	Removal/Shut-down	START TIME (MST):	14:18
PERFORMED BY:	Alex Yakupov	END TIME (MST):	16:35

ANALYZER:

MAKE/MODEL	Thermo 43I-TLE	RANGE	500 ppb
SERIAL #	1180260018	FLOW (mL/min)	**280**
INITIAL		FINAL	
BKG/OFFSET	2.07	BKG/OFFSET	n/a
COEF/SLOPE	0.979	COEF/SLOPE	n/a
Expected (reference) Value	262	Expected (reference) Value	n/a

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010	MODEL:	T701
ID:	26801218	ID:	132
MFC CALIBRATION DATE:	13-Oct-2020	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	EY 0000851	HIGH ID	n/a
CONC (ppm):	51.60	EXPIRY DATE	n/a
CYLINDER (psi):	700	LOW ID	n/a
EXPIRY DATE	24-Feb-2028	EXPIRY DATE	n/a

CALIBRATION PARAMETERS:

POINT	HIGH	MID	LOW
TARGET	390	190	95
RANGE	300 - 400	150 - 200	50 - 100

SCRUBBER CHECK (15 MINS; TRS/H2S ONLY):

START TIME:	n/a	SO2 Conc (ppb)	n/a
END TIME:	n/a	Analyzer Response (ppb)	n/a

CALIBRATION:

FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
			ACTUAL	INDICATED		Initial	Final
DILUENT	GAS	TOTAL		Initial	Final		
4000		4000	0.00	-0.3	n/a		
3971	29.40	4000	379.26	375	n/a	1.011	n/a
3986	14.00	4000	180.60	177.6	n/a	1.015	n/a
3993	7.00	4000	90.30	89.1	n/a	1.010	n/a

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	0.989	-0.1%

COMMENTS:

Shutdown calibration to replace the sample pump (low sample flow)

SO2 Analyzer Calibration by Dilution

DATE:	04-Mar-2021	PREVIOUS CALIBRATION DATE:	n/a
PARAMETER:	SO2	PREVIOUS CORRECTION FACTOR:	n/a
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	CLS	BAROMETRIC (mBar):	951
PURPOSE	Install/Post-Repair	START TIME (MST):	18:40
PERFORMED BY:	Alex Yakupov	END TIME (MST):	21:26

ANALYZER:

MAKE/MODEL	Thermo 43I-TLE	RANGE	500 ppb
SERIAL #	1180260018	FLOW (mL/min)	454
INITIAL		FINAL	
BKG/OFFSET	n/a	BKG/OFFSET	2.1
COEF/SLOPE	n/a	COEF/SLOPE	0.997
Expected (reference) Value	n/a	Expected (reference) Value	267

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010	MODEL:	T701
ID:	26801218	ID:	132
MFC CALIBRATION DATE:	13-Oct-2020	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	EY 0000851	HIGH ID	n/a
CONC (ppm):	51.60	EXPIRY DATE	n/a
CYLINDER (psi):	700	LOW ID	n/a
EXPIRY DATE	24-Feb-2028	EXPIRY DATE	n/a

CALIBRATION PARAMETERS:

POINT	HIGH	MID	LOW
TARGET	390	190	95
RANGE	300 - 400	150 - 200	50 - 100

SCRUBBER CHECK (15 MINS; TRS/H2S ONLY):

START TIME:	n/a	SO2 Conc (ppb)	n/a
END TIME:	n/a	Analyzer Response (ppb)	n/a

CALIBRATION:

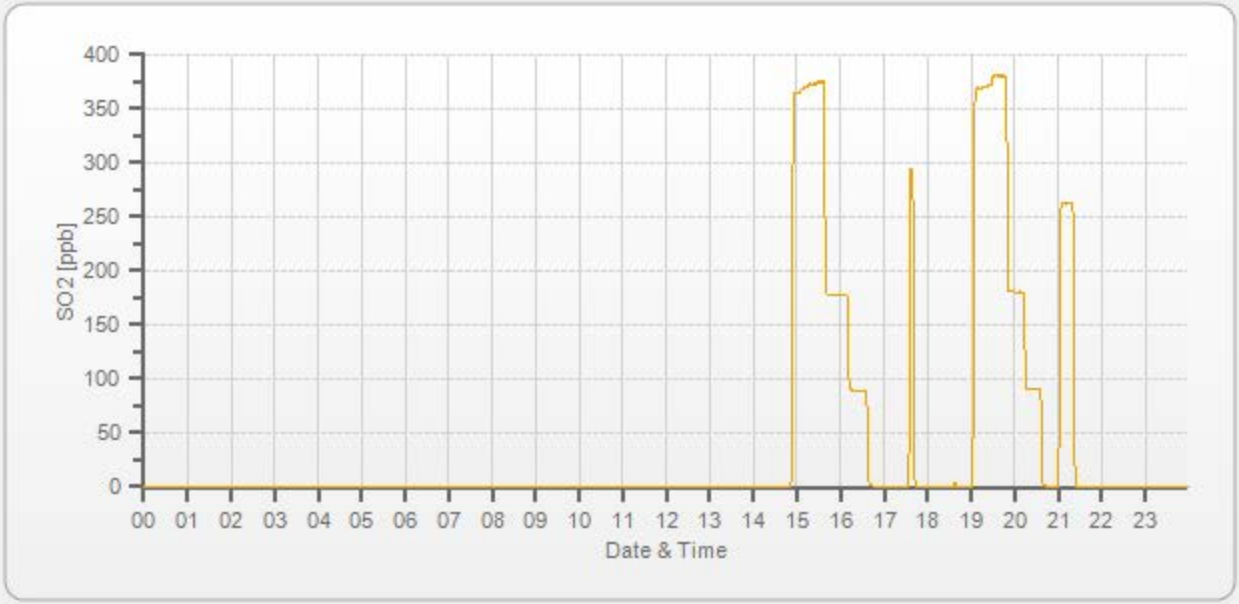
FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
			ACTUAL	INDICATED		Initial	Final
DILUENT	GAS	TOTAL		Initial	Final		
4000		4000	0.00	n/a	0		
3971	29.40	4000	379.26	n/a	380.4	n/a	0.997
3986	14.00	4000	180.60	n/a	180.3	n/a	1.002
3993	7.00	4000	90.30	n/a	90.1	n/a	1.002

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.003	-0.1%

COMMENTS:

Sample inlet filter was changed. Internal sample pump was rebuilt. Parts used: KNF Spares-KIT DIA Plate Flapper Part NO: 204142


SO2[ppb] Station: Cold Lake South Daily: 04-03-2021 Type: AVG 1 Min. [1 Min.]
SO2 [ppb]
400
350
300
250
200
150
100
50
0
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23
Date & Time
SO2 [ppb]

SO2 Analyzer Calibration by Dilution

DATE:	24-Mar-2021	PREVIOUS CALIBRATION DATE:	04-Mar-2021
PARAMETER:	SO2	PREVIOUS CORRECTION FACTOR:	0.997
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	CLS	BAROMETRIC (mBar):	938
PURPOSE	Removal/Shut-down	START TIME (MST):	10:28
PERFORMED BY:	Alex Yakupov	END TIME (MST):	12:34

ANALYZER:

MAKE/MODEL	Thermo 43I-TLE	RANGE	500 ppb
SERIAL #	1180260018	FLOW (mL/min)	445
INITIAL		FINAL	
BKG/OFFSET	2.1	BKG/OFFSET	n/a
COEF/SLOPE	0.997	COEF/SLOPE	n/a
Expected (reference) Value	267	Expected (reference) Value	n/a

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010	MODEL:	T701
ID:	26801218	ID:	132
MFC CALIBRATION DATE:	13-Oct-2020	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	EY 0000851	HIGH ID	n/a
CONC (ppm):	51.60	EXPIRY DATE	n/a
CYLINDER (psi):	700	LOW ID	n/a
EXPIRY DATE	24-Feb-2028	EXPIRY DATE	n/a

CALIBRATION PARAMETERS:

POINT	HIGH	MID	LOW
TARGET	390	190	95
RANGE	300 - 400	150 - 200	50 - 100

SCRUBBER CHECK (15 MINS; TRS/H2S ONLY):

START TIME:	n/a	SO2 Conc (ppb)	n/a
END TIME:	n/a	Analyzer Response (ppb)	n/a

CALIBRATION:

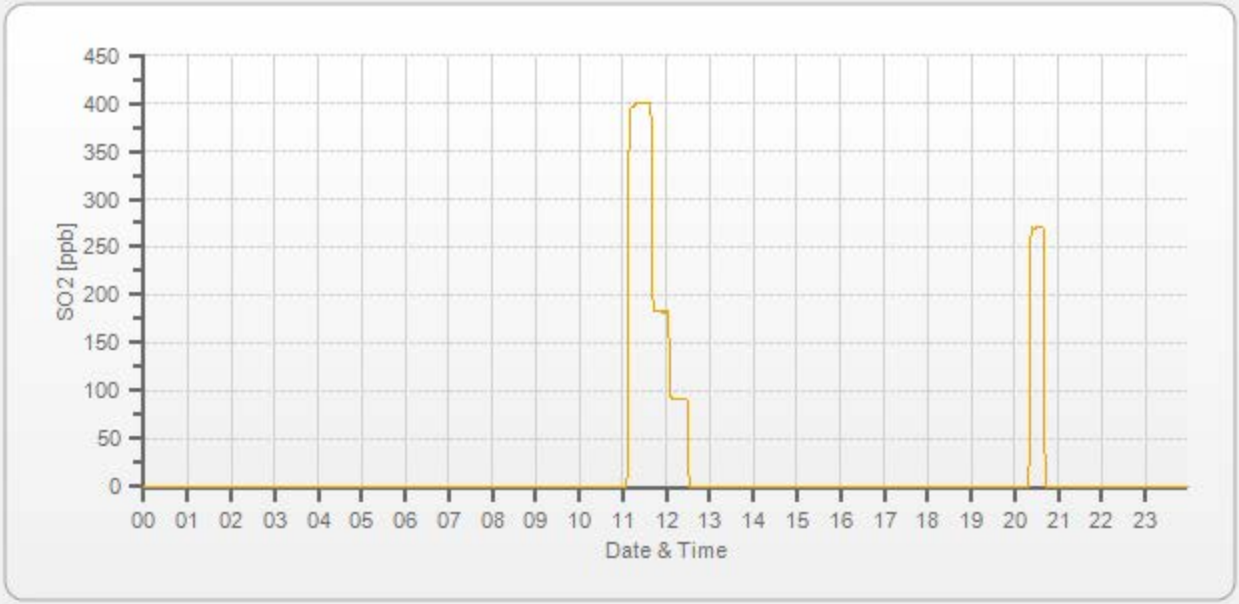
FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
			ACTUAL	INDICATED		Initial	Final
DILUENT	GAS	TOTAL		Initial	Final		
4000		4000	0.00	0	n/a		
3971	29.40	4000	379.26	400.6	n/a	0.947	n/a
3986	14.00	4000	180.60	182.3	n/a	0.991	n/a
3993	7.00	4000	90.30	91.5	n/a	0.987	n/a

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.058	-0.7%

COMMENTS:

Shutdown calibration was completed to move the station.
The analyzer was left sampling.


SO2[ppb] Station: Cold Lake South Daily: 24-03-2021 Type: AVG 1 Min. [1 Min.]
SO2 [ppb]
450
400
350
300
250
200
150
100
50
0
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23
Date & Time
SO2 [ppb]

TRS Analyzer Calibration by Dilution

DATE:	05-Mar-2021	PREVIOUS CALIBRATION DATE:	05-Feb-2021
PARAMETER:	TRS	PREVIOUS CORRECTION FACTOR:	1.000
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	CLS	BAROMETRIC (mBar):	950
PURPOSE	Routine	START TIME (MST):	11:40
PERFORMED BY:	Alex Yakupov	END TIME (MST):	15:20

ANALYZER:

MAKE/MODEL	Thermo 450i	RANGE	100 ppb
SERIAL #	812728560	FLOW (mL/min)	476
INITIAL		FINAL	
BKG/OFFSET	18.4	BKG/OFFSET	20.1
COEF/SLOPE	0.963	COEF/SLOPE	1.053
Expected (reference) Value	40.8	Expected (reference) Value	42.3

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010 D	MODEL:	T701
ID:	11900613	ID:	132
MFC CALIBRATION DATE:	10-Dec-2020	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	LL 19174	HIGH ID	n/a
CONC (ppm):	10.00	EXPIRY DATE	n/a
CYLINDER (psi):	500	LOW ID	n/a
EXPIRY DATE	16-Jul-2022	EXPIRY DATE	n/a

CALIBRATION PARAMETERS:

POINT	HIGH	MID	LOW
TARGET	78	38	19
RANGE	60 - 80	30 - 40	10 - 20

SCRUBBER CHECK (15 MINS; TRS/H2S ONLY):

START TIME:	11:52	SO2 Conc (ppb)	380
END TIME:	12:07	Analyzer Response (ppb)	0.0

CALIBRATION:

FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
			ACTUAL	INDICATED		Initial	Final
DILUENT	GAS	TOTAL		Initial	Final		
7500		7500	0.00	0.2	0		
7442	58.50	7500	78.00	73.7	77.9	1.061	1.001
7472	28.50	7500	38.00	n/a	38.2	n/a	0.995
7486	14.20	7500	18.93	n/a	19.2	n/a	0.986

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	0.998	0.2%

COMMENTS:

Sample inlet filter was changed.

TRS[ppb] Station: Cold Lake South Daily: 05-03-2021 Type: AVG 1 Min. [1 Min.]

TRS Analyzer Calibration by Dilution

DATE:	24-Mar-2021	PREVIOUS CALIBRATION DATE:	05-Mar-2021
PARAMETER:	TRS	PREVIOUS CORRECTION FACTOR:	1.001
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	CLS	BAROMETRIC (mBar):	938
PURPOSE	Removal/Shut-down	START TIME (MST):	10:30
PERFORMED BY:	Alex Yakupov	END TIME (MST):	12:34

ANALYZER:

MAKE/MODEL	Thermo 450i	RANGE	100 ppb
SERIAL #	812728560	FLOW (mL/min)	475
INITIAL		FINAL	
BKG/OFFSET	20.1	BKG/OFFSET	n/a
COEF/SLOPE	1.053	COEF/SLOPE	n/a
Expected (reference) Value	42.3	Expected (reference) Value	n/a

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010 D	MODEL:	T701
ID:	11900613	ID:	132
MFC CALIBRATION DATE:	10-Dec-2020	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	LL 19174	HIGH ID	n/a
CONC (ppm):	10.00	EXPIRY DATE	n/a
CYLINDER (psi):	500	LOW ID	n/a
EXPIRY DATE	16-Jul-2022	EXPIRY DATE	n/a

CALIBRATION PARAMETERS:

POINT	HIGH	MID	LOW
TARGET	78	38	19
RANGE	60 - 80	30 - 40	10 - 20

SCRUBBER CHECK (15 MINS; TRS/H2S ONLY):

START TIME:	n/a	SO2 Conc (ppb)	n/a
END TIME:	n/a	Analyzer Response (ppb)	n/a

CALIBRATION:

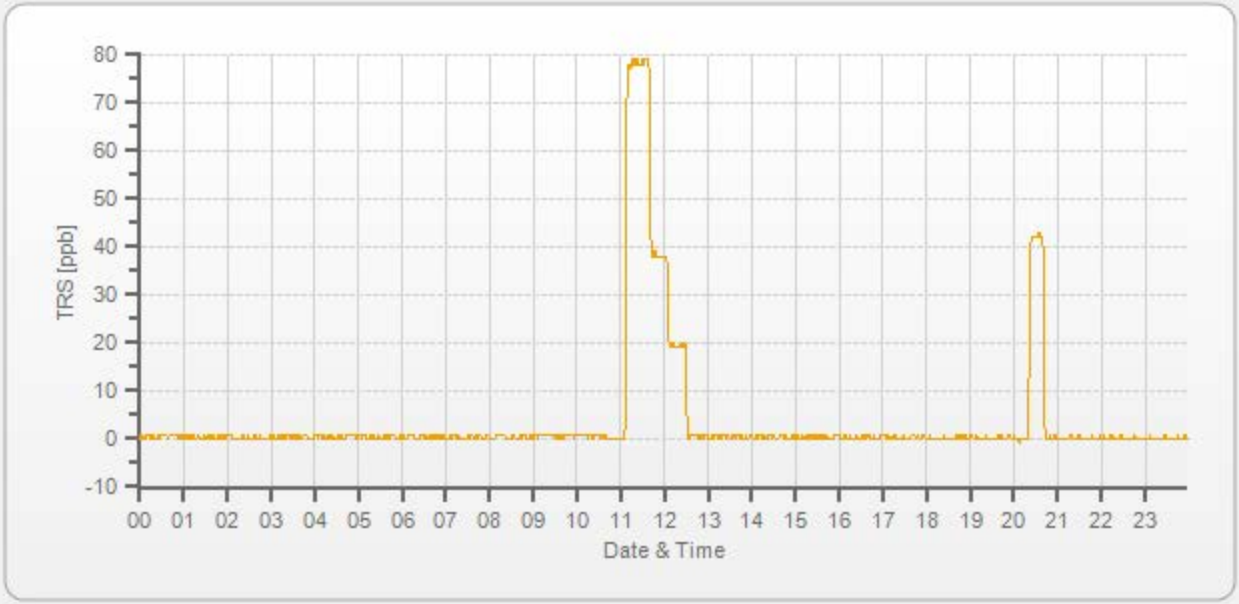
FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
			ACTUAL	INDICATED		Initial	Final
DILUENT	GAS	TOTAL		Initial	Final		
7500		7500	0.00	0	n/a		
7442	58.50	7500	78.00	78.6	n/a	0.992	n/a
7472	28.50	7500	38.00	37.9	n/a	1.003	n/a
7486	14.20	7500	18.93	19.4	n/a	0.976	n/a

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.006	0.0%

COMMENTS:

Shutdown calibration was completed to move the station.
The analyzer was left sampling.


TRS[ppb] Station: Cold Lake South Daily: 24-03-2021 Type: AVG 1 Min. [1 Min.]
TRS [ppb]
80
70
60
50
40
30
20
10
0
-10
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23
Date & Time
TRS [ppb]

NOx Calibration by Dilution/Gas-Phase Titration

CALIBRATION:

				ANALYZER:			
DATE:	05-Mar-2021	PREVIOUS CALIBRATION DATE:	04-Feb-2021	MAKE/MODEL:	Thermo 42i	PREVIOUS CF.	
CLIENT:	LICA	TEMPERATURE (°C):	22.0	SERIAL #:	1505664393	NOx	1.001
LOCATION:	CLS	BAROMETRIC (mBar):	950	FLOW (mL/min)	577	NO	0.999
PURPOSE	Routine	START TIME (MST):	11:42	RANGE (ppb)	500	NO2	1.000
PERFORMED BY:	Alex Yakupov	END TIME (MST):	19:17	GPT FOR O3?		No	

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:		CALIBRATION GAS:			FLOWMETERS (if applicable):	
MAKE:	SABIO	MAKE:	Teledyne	CYLINDER ID:	EY 0000851		HIGH ID:	n/a
MODEL:	2010	MODEL:	T701	NO/NOx (PPM):	50.9	51.1	HIGH EXPIRY:	n/a
ID:	26801218	ID:	132	CYLINDER (psi):	700		LOW ID:	n/a
MFC CALIBRATION DATE:	13-Oct-2020	OXIDIZER ID:	n/a	EXPIRY DATE	24-Feb-2028		LOW EXPIRY:	n/a

CALIBRATION SETTINGS:

INITIAL	NOx	NO	NO2	FINAL	NOx	NO	NO2
BKG/OFFSET:	5.6	5.2	n/a	BKG/OFFSET:	5.9	5.6	n/a
SLOPE/COEF/CE:	1.003	1.199	0.998	SLOPE/COEF/CE:	1.004	1.298	0.998

EXPECTED (REFERENCE) VALUE:

INITIAL	NOx	NO	NO2	FINAL	NOx	NO	NO2
	247.6	2.4	245.2		276.0	2.0	274.0

CALIBRATION PARAMETERS:

POINT	NO TARGET (PPB)	NO2 TARGET (PPB)	NO2 RANGE	O3 POINT
HIGH	380	250	230-265	n/a
MID	180	125	115-150	n/a
LOW	90	45	40-55	n/a
EXTRA 1	n/a	n/a	n/a	n/a

NO/NOx CALIBRATION:

FLOW RATE (mL/min)			CONCENTRATION (ppb)									CORRECTION FACTOR (CF.)					
			CALCULATED			INITIAL INDICATED			FINAL INDICATED			INITIAL			FINAL		
DILUENT	GAS	TOTAL	NO	NOx	NO2	NO	NOx	NO2	NO	NOx	NO2	NO	NOx	NO2	NO	NOx	NO2
5000		5000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0						
4959	38.70	4998	394.1	395.7	1.5	362.1	364.6	2.5	394.5	396.9	2.3	1.088	1.085		0.999	0.997	
4980	17.60	4998	179.2	179.9	0.7	n/a	n/a	n/a	180.4	181.5	1.1	n/a	n/a		0.994	0.991	
4989	8.80	4998	89.6	90.0	0.4	n/a	n/a	n/a	91.0	91.4	0.4	n/a	n/a		0.985	0.984	

GPT CALIBRATION:

Point	CALIBRATOR			INDICATED (ppb)			NO DROP / O3 Conc (ppb)	NO2 GAIN (ppb)	NO2 Corr. FACTOR	CONV. EFFICIENCY
	GAS	TOTAL	O3 SETPOINT	NO	NOx	NO2				
REFERENCE	38.70	4997	0	396.7	399.0	2.3				
AS-FOUND HIGH	38.70	4997	250	139.2	399.6	260.3	257.5	258	0.998	100.19%
ADJUSTED HIGH	n/a	n/a	n/a	n/a	n/a	n/a	n/a	**n/a**	**n/a**	n/a
MID	38.70	4997	125	263.6	399.2	135.5	133.1	133.2	0.999	100.08%
LOW	38.70	4997	45	352.0	399.7	47.6	44.7	45.3	0.987	101.34%
NO2 adjustment not required.									AVERAGE:	100.54%

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
NO	1.000	1.000	0.15%
NOx	1.000	1.002	0.14%
NO2	1.000	1.000	0.09%

COMMENTS:

Sample inlet filter was changed.
16:00 dailyZS check interfered with the calibration. GPT restarted from beginning.

Station: Cold Lake South Daily: 05-03-2021 Type: AVG 1 Min. [1 Min.]

NOx Calibration by Dilution/Gas-Phase Titration

CALIBRATION:

				ANALYZER:			
DATE:	24-Mar-2021	PREVIOUS CALIBRATION DATE:	05-Mar-2021	MAKE/MODEL:	Thermo 42i	PREVIOUS CF.	
CLIENT:	LICA	TEMPERATURE (°C):	22.0	SERIAL #:	1505664393	NOx	0.997
LOCATION:	CLS	BAROMETRIC (mBar):	938	FLOW (mL/min)	578	NO	0.999
PURPOSE	Removal/Shut-down	START TIME (MST):	10:31	RANGE (ppb)	500	NO2	0.998
PERFORMED BY:	Alex Yakupov	END TIME (MST):	14:20	GPT FOR O3?		No	

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:		CALIBRATION GAS:			FLOWMETERS (if applicable):	
MAKE:	SABIO	MAKE:	Teledyne	CYLINDER ID:	EY 0000851		HIGH ID:	n/a
MODEL:	2010	MODEL:	T701	NO/NOx (PPM):	50.9	51.1	HIGH EXPIRY:	n/a
ID:	26801218	ID:	132	CYLINDER (psi):	700		LOW ID:	n/a
MFC CALIBRATION DATE:	13-Oct-2020	OXIDIZER ID:	n/a	EXPIRY DATE	24-Feb-2028		LOW EXPIRY:	n/a

CALIBRATION SETTINGS:

INITIAL	NOx	NO	NO2	FINAL	NOx	NO	NO2
BKG/OFFSET:	5.9	5.6	n/a	BKG/OFFSET:	n/a	n/a	n/a
SLOPE/COEF/CE:	1.004	1.298	0.998	SLOPE/COEF/CE:	n/a	n/a	n/a

EXPECTED (REFERENCE) VALUE:

INITIAL	NOx	NO	NO2	FINAL	NOx	NO	NO2
	276.0	2.0	274.0		276.0	2.0	274.0

CALIBRATION PARAMETERS:

POINT	NO TARGET (PPB)	NO2 TARGET (PPB)	NO2 RANGE	O3 POINT
HIGH	380	250	230-265	n/a
MID	180	125	115-150	n/a
LOW	90	45	40-55	n/a
EXTRA 1	n/a	n/a	n/a	n/a

NO/NOx CALIBRATION:

FLOW RATE (mL/min)			CONCENTRATION (ppb)									CORRECTION FACTOR (CF.)					
			CALCULATED			INITIAL INDICATED			FINAL INDICATED			INITIAL			FINAL		
DILUENT	GAS	TOTAL	NO	NOx	NO2	NO	NOx	NO2	NO	NOx	NO2	NO	NOx	NO2	NO	NOx	NO2
5000		5000	0.0	0.0	0.0	0.0	0.1	0.0	n/a	n/a	n/a						
4959	38.70	4998	394.1	395.7	1.5	395.7	398.5	2.7	n/a	n/a	n/a	0.996	0.993		n/a	n/a	
4980	17.60	4998	179.2	179.9	0.7	180.5	181.5	0.9	n/a	n/a	n/a	0.993	0.992		n/a	n/a	
4989	8.80	4998	89.6	90.0	0.4	91.2	91.7	0.5	n/a	n/a	n/a	0.983	0.982		n/a	n/a	

GPT CALIBRATION:

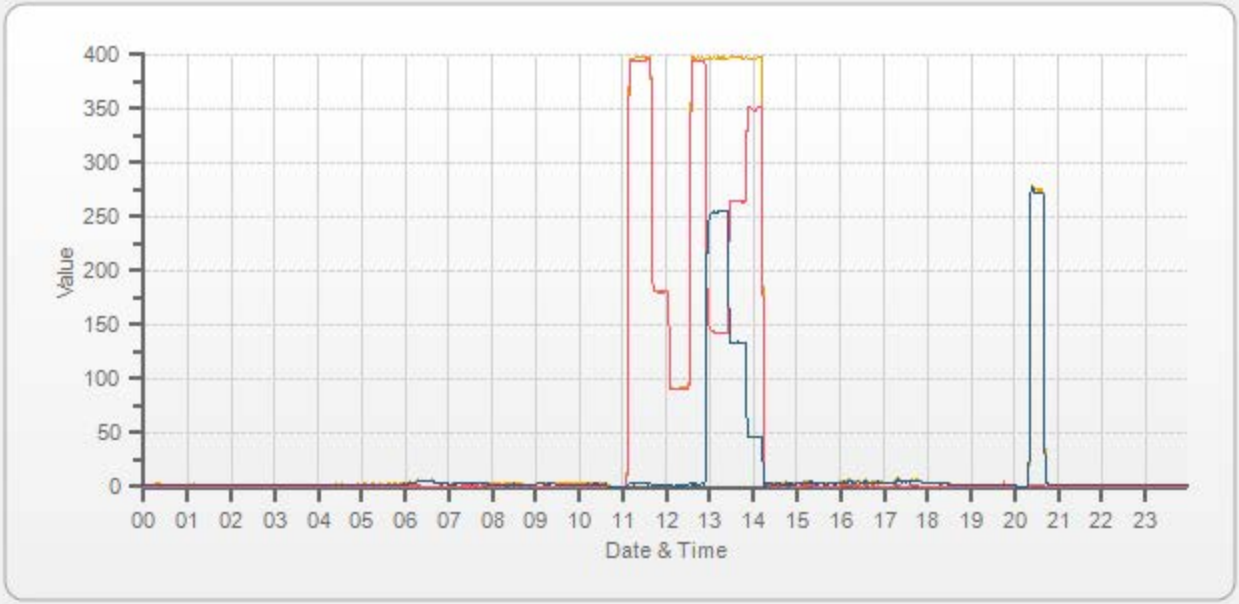
Point	CALIBRATOR			INDICATED (ppb)			NO DROP / O3 Conc (ppb)	NO2 GAIN (ppb)	NO2 Corr. FACTOR	CONV. EFFICIENCY
	GAS	TOTAL	O3 SETPOINT	NO	NOx	NO2				
REFERENCE	38.70	4997	0	394.9	397.3	2.3				
AS-FOUND HIGH	38.70	4997	250	142.0	397.4	255.4	252.9	253.1	0.999	100.08%
ADJUSTED HIGH	n/a	n/a	n/a	n/a	n/a	n/a	n/a	**n/a**	**n/a**	n/a
MID	38.70	4997	125	263.9	397.8	133.8	131	131.5	0.996	100.38%
LOW	38.70	4997	45	351.0	397.7	46.7	43.9	44.4	0.989	101.14%
NO2 adjustment not required.									AVERAGE:	100.53%

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
NO	1.000	1.003	0.12%
NOx	1.000	1.006	0.11%
NO2	1.000	0.998	0.12%

COMMENTS:

Shutdown calibration was completed to move the station.
The analyer was left sampling.


Station: Cold Lake South Daily: 24-03-2021 Type: AVG 1 Min. [1 Min.]
400
350
300
250
200
150
100
50
0
Value
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23
Date & Time
NOX [ppb]
NO [ppb]
NO2 [ppb]

Ozone Calibration by Photometer (Varying UV Lamp)

DATE:	04-Mar-2021	PREVIOUS CALIBRATION DATE:	04-Feb-2021
PARAMETER:	O3	PREVIOUS CORRECTION FACTOR:	1.001
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	CLS	BAROMETRIC (mBar):	951
PURPOSE	Removal/Shut-down	START TIME (MST):	14:20
PERFORMED BY:	Alex Yakupov	END TIME (MST):	16:22

ANALYZER:

MAKE/MODEL	Thermo 49i	RANGE	500 ppb
SERIAL #	700419951	FLOW (mL/min)	1446
INITIAL		FINAL	
BKG/OFFSET	0.3	BKG/OFFSET	n/a
COEF/SLOPE	1.117	COEF/SLOPE	n/a
Expected (reference) Value	381.8	Expected (reference) Value	n/a

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Thermo-Electron
MODEL:	2010 D	MODEL:	111
ID:	11900613	ID:	111-22449-204
MFC CALIBRATION DATE:	10-Dec-2020	OXIDIZER ID:	n/a
	CALIBRATION METHOD:	Photometer (Varying UV Lamp)	
GPT DATE:	n/a	GPT END TIME:	n/a

CALIBRATION PARAMETERS:

POINT	HIGH	MID	LOW
RANGE	300 - 400	150 - 200	50 - 100

CALIBRATION:

FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
			ACTUAL	INDICATED		Initial	Final
DILUENT	GAS	TOTAL		Initial	Final		
5000		5000	0.0	0.0	n/a		
5000		5000	380.0	395.4	n/a	0.961	n/a
5000		5000	180.0	189.1	n/a	0.952	n/a
5000		5000	61.0	65.4	n/a	0.933	n/a

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.039	0.2%

COMMENTS:

Shutdown calibration to replace the sample pump and complete annual maintenance

Ozone Calibration by Photometer (Varying UV Lamp)

DATE:	04-Mar-2021	PREVIOUS CALIBRATION DATE:	n/a
PARAMETER:	O3	PREVIOUS CORRECTION FACTOR:	n/a
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	CLS	BAROMETRIC (mBar):	951
PURPOSE	Install/Post-Repair	START TIME (MST):	18:39
PERFORMED BY:	Alex Yakupov	END TIME (MST):	21:26

ANALYZER:

MAKE/MODEL	Thermo 49i	RANGE	500 ppb
SERIAL #	700419951	FLOW (mL/min)	1451
INITIAL		FINAL	
BKG/OFFSET	n/a	BKG/OFFSET	0
COEF/SLOPE	n/a	COEF/SLOPE	1.09
Expected (reference) Value	n/a	Expected (reference) Value	349

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Thermo-Electron
MODEL:	2010 D	MODEL:	111
ID:	11900613	ID:	111-22449-204
MFC CALIBRATION DATE:	10-Dec-2020	OXIDIZER ID:	n/a
	CALIBRATION METHOD:	Photometer (Varying UV Lamp)	
GPT DATE:	n/a	GPT END TIME:	n/a

CALIBRATION PARAMETERS:

POINT	HIGH	MID	LOW
RANGE	300 - 400	150 - 200	50 - 100

CALIBRATION:

FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
			ACTUAL	INDICATED		Initial	Final
DILUENT	GAS	TOTAL		Initial	Final		
5000		5000	0.0	n/a	0.0		
5000		5000	380.0	n/a	380.1	n/a	1.000
5000		5000	180.0	n/a	181.8	n/a	0.990
5000		5000	60.0	n/a	61.8	n/a	0.971

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	0.999	0.2%

COMMENTS:

Sample inlet filter was changed.
New Zero Air and Sample pumps installed.
Optical bench was cleaned.


O3[ppb] Station: Cold Lake South Daily: 04-03-2021 Type: AVG 1 Min. [1 Min.]
O3 [ppb]
450
400
350
300
250
200
150
100
50
0
-50
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23
Date & Time
O3 [ppb]

Ozone Calibration by Photometer (Varying UV Lamp)

DATE:	24-Mar-2021	PREVIOUS CALIBRATION DATE:	04-Mar-2021
PARAMETER:	O3	PREVIOUS CORRECTION FACTOR:	1.000
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	CLS	BAROMETRIC (mBar):	938
PURPOSE	Removal/Shut-down	START TIME (MST):	12:35
PERFORMED BY:	Alex Yakupov	END TIME (MST):	15:00

ANALYZER:

MAKE/MODEL	Thermo 49i	RANGE	500 ppb
SERIAL #	700419951	FLOW (mL/min)	1452
INITIAL		FINAL	
BKG/OFFSET	0	BKG/OFFSET	0
COEF/SLOPE	1.09	COEF/SLOPE	1.09
Expected (reference) Value	349	Expected (reference) Value	349

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Thermo-Electron
MODEL:	2010 D	MODEL:	111
ID:	11900613	ID:	111-22449-204
MFC CALIBRATION DATE:	10-Dec-2020	OXIDIZER ID:	n/a
	CALIBRATION METHOD:	Photometer (Varying UV Lamp)	
GPT DATE:	n/a	GPT END TIME:	n/a

CALIBRATION PARAMETERS:

POINT	HIGH	MID	LOW
RANGE	300 - 400	150 - 200	50 - 100

CALIBRATION:

FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
			ACTUAL	INDICATED		Initial	Final
DILUENT	GAS	TOTAL		Initial	Final		
5000		5000	0.0	0.7	n/a		
5000		5000	380.0	397.4	n/a	0.958	n/a
5000		5000	180.0	188.7	n/a	0.957	n/a
5000		5000	61.0	64.8	n/a	0.952	n/a

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.044	0.2%

COMMENTS:

Shutdown calibration was competed to move the station.
The analyzer was left sampling.


O3[ppb] Station: Cold Lake South Daily: 24-03-2021 Type: AVG 1 Min. [1 Min.]
O3 [ppb]
450
400
350
300
250
200
150
100
50
0
-50
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23
Date & Time
O3 [ppb]

Methane/Non-Methane Analyzer Calibration by Dilution

CALIBRATION:

DATE:	09-Mar-2021	PREVIOUS CALIBRATION DATE:	04-Feb-2021
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	CLS	BAROMETRIC (mBar):	949
PURPOSE	Routine	START TIME (MST):	11:23
PERFORMED BY:	Alex Yakupov	END TIME (MST):	15:06

ANALYZER:

VALUE	MAKE/MODEL	SERIAL	FLOW (mL/min)
	Thermo 55i	1180030034	1050
PARAMETER:	CH4	NMHC	THC
RANGE (ppm):	20	20	40
PREVIOUS CF:	0.999	1.003	1.001

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:		CALIBRATION GAS:			FLOWMETERS (if applicable):	
MAKE:	SABIO	MAKE:	Teledyne	CYLINDER ID:	LL 119576		HIGH ID:	n/a
MODEL:	2010	MODEL:	T701	CH_4/C_3H_8 (ppm):	870.0	299.0	HIGH EXPIRY:	n/a
ID:	26801218	ID:	132	CYLINDER (psi):	2000		LOW ID:	n/a
MFC CALIBRATION DATE:	13-Oct-2020	OXIDIZER ID:	115	EXPIRY DATE	22-Dec-2028		LOW EXPIRY:	n/a

CALIBRATION PARAMETERS:

POINT (CH4/NMHC)	HIGH	MID	LOW	CH4 EQUIVILANCE	
TARGET	14	7	3.5	C_3H_8 as CH_4	822.3
RANGE	12 - 16	6 - 8	2 - 4	THC as CH_4	1692.3

EXPECTED (REFERENCE) VALUE:

INITIAL	CH4	NMHC	THC	FINAL	CH4	NMHC	THC
	9.67	10.93	20.59		9.09	11.25	20.34

CALIBRATION:

FLOW RATE (mL/min)			CONCENTRATION (PPM)									CORRECTION FACTOR (CF.)					
			CALCULATED			INITIAL INDICATED			FINAL INDICATED			INITIAL			FINAL		
DILUENT	GAS	TOTAL	CH4	NMHC	THC	CH4	NMHC	THC	CH4	NMHC	THC	CH4	NMHC	THC	CH4	NMHC	THC
3100		3100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						
3050	51.30	3101	14.39	13.60	27.99	14.42	13.77	28.19	14.41	13.61	28.02	0.998	0.988	0.993	0.999	0.999	0.999
3073	25.60	3099	7.19	6.79	13.98	n/a	n/a	n/a	7.19	6.79	13.99	n/a	n/a	n/a	1.000	1.000	0.999
3087	12.80	3100	3.59	3.40	6.99	n/a	n/a	n/a	3.57	3.38	6.95	n/a	n/a	n/a	1.006	1.004	1.005

LINEAR REGRESSION ANALYSIS:

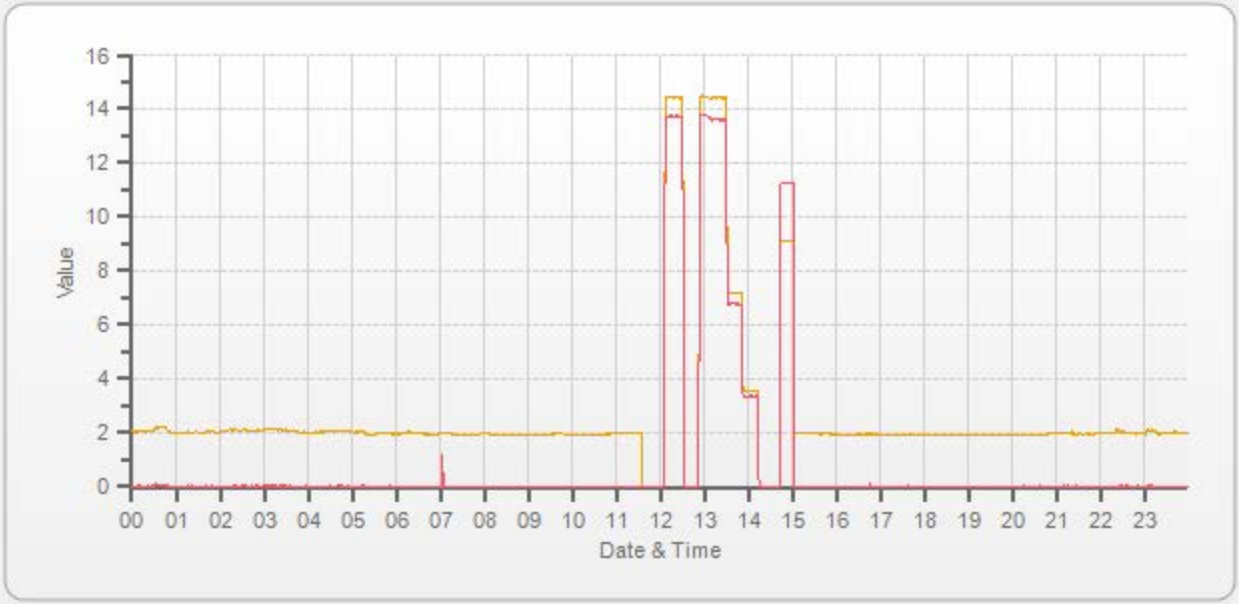
	CORRELATION	SLOPE	INTERCEPT
CH4	1.000	1.002	-0.1%
NMHC	1.000	1.001	0.0%
THC	1.000	1.001	0.0%

Comments:

Sample inlet filter was changed.

Use Zero Chrom? **Yes**

Station: Cold Lake South Daily: 09-03-2021 Type: AVG 1 Min. [1 Min.]



Methane/Non-Methane Analyzer Calibration by Dilution

CALIBRATION:

DATE:	24-Mar-2021	PREVIOUS CALIBRATION DATE:	09-Mar-2021
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	CLS	BAROMETRIC (mBar):	938
PURPOSE	Removal/Shut-down	START TIME (MST):	14:27
PERFORMED BY:	Alex Yakupov	END TIME (MST):	16:31

ANALYZER:

VALUE	MAKE/MODEL	SERIAL	FLOW (mL/min)
	Thermo 55i	1180030034	1050
PARAMETER:	CH4	NMHC	THC
RANGE (ppm):	20	20	40
PREVIOUS CF:	n/a	n/a	n/a

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:		CALIBRATION GAS:			FLOWMETERS (if applicable):	
MAKE:	SABIO	MAKE:	Teledyne	CYLINDER ID:	LL 119576		HIGH ID:	n/a
MODEL:	2010	MODEL:	T701	CH_4/C_3H_8 (ppm):	870.0	299.0	HIGH EXPIRY:	n/a
ID:	26801218	ID:	132	CYLINDER (psi):	2000		LOW ID:	n/a
MFC CALIBRATION DATE:	13-Oct-2020	OXIDIZER ID:	115	EXPIRY DATE	22-Dec-2028		LOW EXPIRY:	n/a

CALIBRATION PARAMETERS:

POINT (CH4/NMHC)	HIGH	MID	LOW	CH4 EQUIVILANCE	
TARGET	14	7	3.5	C_3H_8 as CH_4	822.3
RANGE	12 - 16	6 - 8	2 - 4	THC as CH_4	1692.3

EXPECTED (REFERENCE) VALUE:

INITIAL	CH4	NMHC	THC	FINAL	CH4	NMHC	THC
	9.09	11.25	20.34		9.09	11.25	20.34

CALIBRATION:

FLOW RATE (mL/min)			CONCENTRATION (PPM)									CORRECTION FACTOR (CF.)					
			CALCULATED			INITIAL INDICATED			FINAL INDICATED			INITIAL			FINAL		
DILUENT	GAS	TOTAL	CH4	NMHC	THC	CH4	NMHC	THC	CH4	NMHC	THC	CH4	NMHC	THC	CH4	NMHC	THC
3100		3100	0.00	0.00	0.00	0.00	0.00	0.00	n/a	n/a	n/a						
3050	51.30	3101	14.39	13.60	27.99	14.04	13.43	27.47	n/a	n/a	n/a	1.025	1.013	1.019	n/a	n/a	n/a
3073	25.60	3099	7.19	6.79	13.98	7.02	6.69	13.71	n/a	n/a	n/a	1.024	1.015	1.020	n/a	n/a	n/a
3087	12.80	3100	3.59	3.40	6.99	3.51	3.32	6.83	n/a	n/a	n/a	1.023	1.023	1.023	n/a	n/a	n/a

LINEAR REGRESSION ANALYSIS:

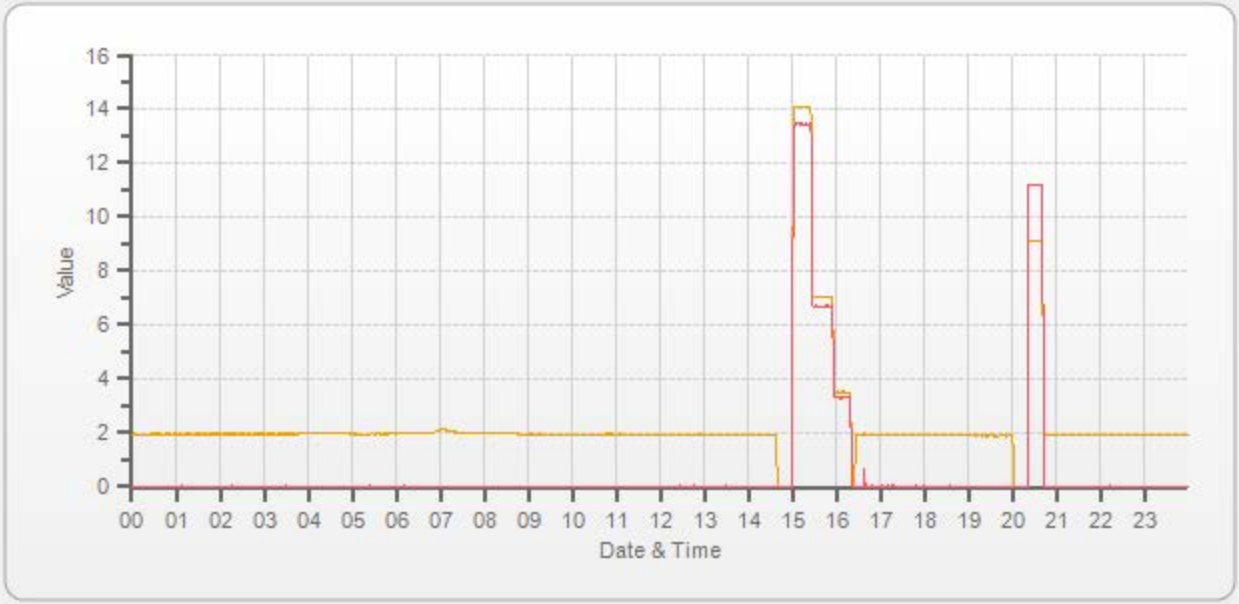
	CORRELATION	SLOPE	INTERCEPT
CH4	1.000	0.975	0.0%
NMHC	1.000	0.988	-0.1%
THC	1.000	0.982	0.0%

Comments:

Shutdown calibration was completed to move the station.

Use Zero Chrom? **Yes**

Station: Cold Lake South Daily: 24-03-2021 Type: AVG 1 Min. [1 Min.]



Teledyne T640 Audit/Calibration

Date/Previous Audit Date:	March 9, 2021	February 19, 2021	**Weather Conditions:**	Mainly sunny	
Company:	LICA		**Start Time (mst):**	14:53	
Station:	Cold Lake South		**End Time (mst):**	15:28	
Parameter:	PM 2.5		**Performed By/Reviewer:**	Alex Yakupov	Chris Wesson

Instrument Data:

Make/Model:	Teledyne T640	**Serial Number:**	575
Owner:	LICA	**Alarms (detail in comments):**	No

Reference Standards/I.D./Expiry Date:

Flow Standard: DeltaCal DC1 S/N177246 Mar 17, 2021 **Temperature:** DeltaCal DC1 S/N177246 Mar 17, 2021

Digital Manometer: DeltaCal DC1 S/N177246 Mar 17, 2021 **Pressure:** DeltaCal DC1 S/N177246 Mar 17, 2021

DIAGNOSTICS:

Ambient Pressure (mmHg)	708.0	Ambient Temp (°C)	1.3	ASC Heater Duty (%)	0.0
Box Temp (°C)	29.2	Current PMT HV (V)	1440	LED Temp (°C)	38.20
P3 Value	47	PMT Setting (V)	1442	Pump PWM (%)	40
Sample Flow (L/min)	5.00	Sample RH (%RH)	11.4	Sample Temp (°C)	26.3

Monthly Audit/Calibration:

Item:	As-found		As-left		Tolerance
	Reference	T640x	Reference	T640x	
Zero Test (Leak Check)	PM10	0.0	PM10	0.0	0.0 to 0.2
	PM2.5	0.0	PM2.5	0.0	
Ambient Pressure (mmHg)	708.0	708.0	n/a	n/a	+/- 10 mm Hg
Ambient Temperature (°C)	1.50	1.3	n/a		+/- 2°C
Sample Flow (L/min)	5.00	5	n/a	n/a	+/-5% of T640x (e.g., 4.75 – 5.25 lpm)

Additional Monthly Maintenance :	***Completed***
Inlet cleaned?	Yes
Sample tubing inspected (inner and outer)?	Yes

Comments:

No issues.

Teledyne T640 Audit/Calibration

Date/Previous Audit Date:	March 24, 2021	March 9, 2021	**Weather Conditions:**	Light snow	
Company:	LICA		**Start Time (mst):**	17:14	
Station:	Cold Lake South		**End Time (mst):**	17:56	
Parameter:	PM 2.5		**Performed By/Reviewer:**	Alex Yakupov	Chris Wesson
Instrument Data:					
Make/Model:	Teledyne T640		**Serial Number:**	575	
Owner:	LICA		**Alarms (detail in comments):**	No	
Reference Standards/I.D./Expiry Date:					
Flow Standard:	DeltaCal DC1 S/N177246 Mar 27, 2021		**Temperature:**	DeltaCal DC1 S/N177246 Mar 27, 2021	
Digital Manometer:	DeltaCal DC1 S/N177246 Mar 27, 2021		**Pressure:**	DeltaCal DC1 S/N177246 Mar 27, 2021	

DIAGNOSTICS:					
Ambient Pressure (mmHg)	701.8	Ambient Temp (°C)	0.7	ASC Heater Duty (%)	0.0
Box Temp (°C)	30.5	Current PMT HV (V)	1442	LED Temp (°C)	39.71
P3 Value	47	PMT Setting (V)	1442	Pump PWM (%)	40
Sample Flow (L/min)	5.00	Sample RH (%RH)	15.3	Sample Temp (°C)	27.6

Monthly Audit/Calibration:

Item:	**As-found**		**As-left**		**Tolerance**
	Reference	**T640x**	**Reference**	**T640x**	
Zero Test (Leak Check)	PM10	0.0	PM10	0.0	0.0 to 0.2
	PM2.5	0.0	PM2.5	0.0	
Ambient Pressure (mmHg)	702.0	701.8	n/a	n/a	+/- 10 mm Hg
Ambient Temperature (°C)	0.50	0.7	n/a		+/- 2°C
Sample Flow (L/min)	5.00	5	n/a	n/a	+/-5% of T640x (e.g., 4.75 – 5.25 lpm)
Additional Monthly Maintenance :					***Completed***
				Inlet cleaned?	Yes
				Sample tubing inspected (inner and outer)?	Yes

Comments:

No issues.

Meteorological Sensor Audit/Calibration

Location Information

Company:	LICA	**Performed By:**	Alex Yakupov
Audit Location:	Cold Lake South	**Reviewed By:**	Chris Wesson
Audit Date:	September 25, 2020	**Start/End Time (mst):**	13:38 / 14:40
Calibration Purpose:	installation	**Weather Conditions:**	Mainly sunny

Wind Sensor Information

Sensor ID Data:		**Sensor Outputs:**	
Sensor Make:	RM Young	**Velocity Voltage Output Range:**	n/a
Sensor Model:	05305AQ	**Velocity Unit Output Range:**	0-180
Serial #:	177354	**Direction Voltage Output Range:**	0-1
Previous Cal/Audit Date:	n/a	**Direction Unit Output Range:**	0-360

Wind Calibrator Information

Calibrator I.D. and Expiry Date: RM Young 18802 id# CA4744 expires Aug 6, 2022

Wind Speed Audit Data **+/- 2% of the average correction factor is the limit**

RPM	Wind Speed Generated kph	Clockwise Wind Speed kph	Counter Clockwise Wind Speed kph	Correction Factor
0	0	0.0	0.0	-
1000	18.4	18.2	18.2	1.013
2000	36.9	36.6	36.6	1.007
3000	55.3	55.1	55.1	1.003
4000	73.7	73.6	73.5	1.002
5000	92.2	92.0	92.0	1.002
6000	110.6	110.4	110.4	1.002
7000	129.0	128.8	128.8	1.002
8000	147.4	147.3	147.3	1.001
9000	165.9	165.7	165.7	1.001
10000	184.3	184.2	184.2	1.001
		The audit meets AMD requirements.	**Average Correction Factor=**	**1.003**

Wind Direction Audit Data **+/- 3° of the absolute average degrees difference for all points is the limit**

Generated Wind Direction 0-360 (Up)	Generated Wind Direction 360-0 (Down)	Indicated Wind Direction 0-360 (Up)	Indicated Wind Direction 360-0 (Down)	Degrees Difference 0-360 (Up)	Degrees Difference 360-0 (Down)	Average Absolute Degrees Difference
0	355	0	354	0.1	1.5	0.8
30	330	30	328	0.3	1.7	1.0
60	300	61	298	-0.6	2.0	1.3
90	270	91	268	-1.0	2.1	1.6
120	240	122	239	-1.5	1.1	1.3
150	210	152	210	-1.5	0.4	1.0
180	180	180	180	-0.2	-0.2	0.2
210	150	209	151	0.6	-0.8	0.7
240	120	239	121	1.0	-1.4	1.2
270	90	268	91	2.0	-1.2	1.6
300	60	298	60	2.5	-0.1	1.3
330	30	328	30	1.7	0.4	1.0
355	0	354	0	1.5	0.1	0.8
The audit meets AMD requirements.			**Average Absolute Degrees Difference=**			**1.1**

Comments:

No issues.

End of Report

Lakeland Industry & Community Association

MARCH 2021

Ambient Air Monitoring Calibration Report

- MASKWA STATION-

CAL-LICA-202103-01248

Station Operation and Maintenance:
Bureau Veritas Canada

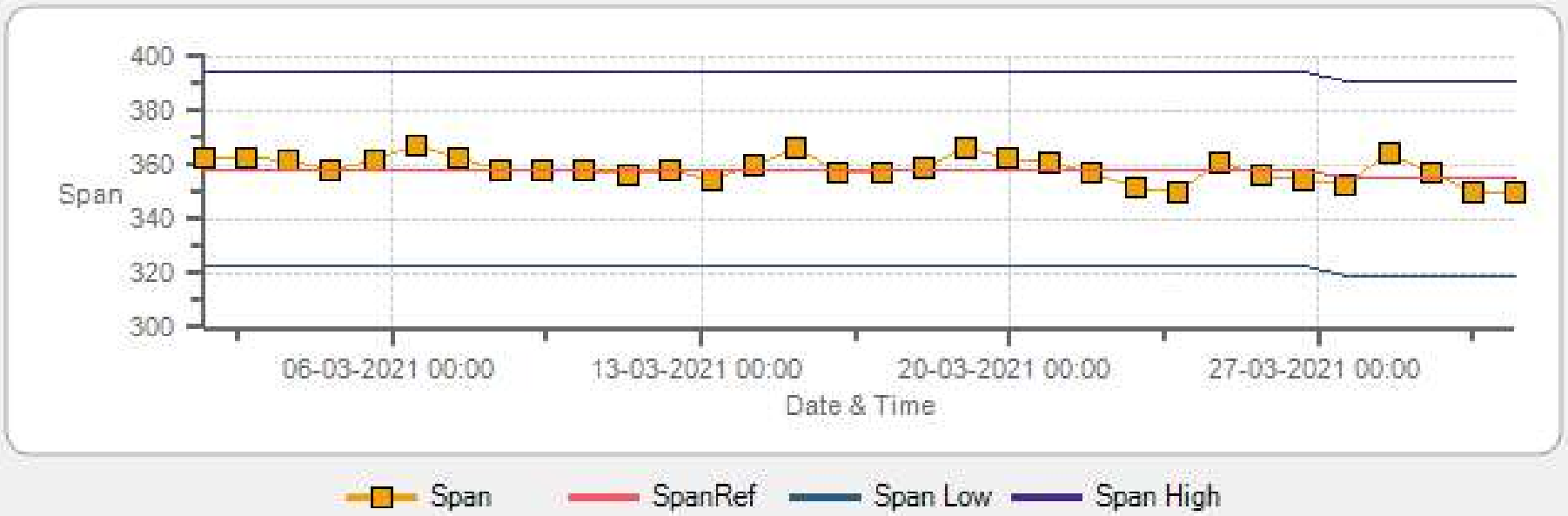
Data Validation and Report:
LICA / Bureau Veritas Canada

April 11, 2021

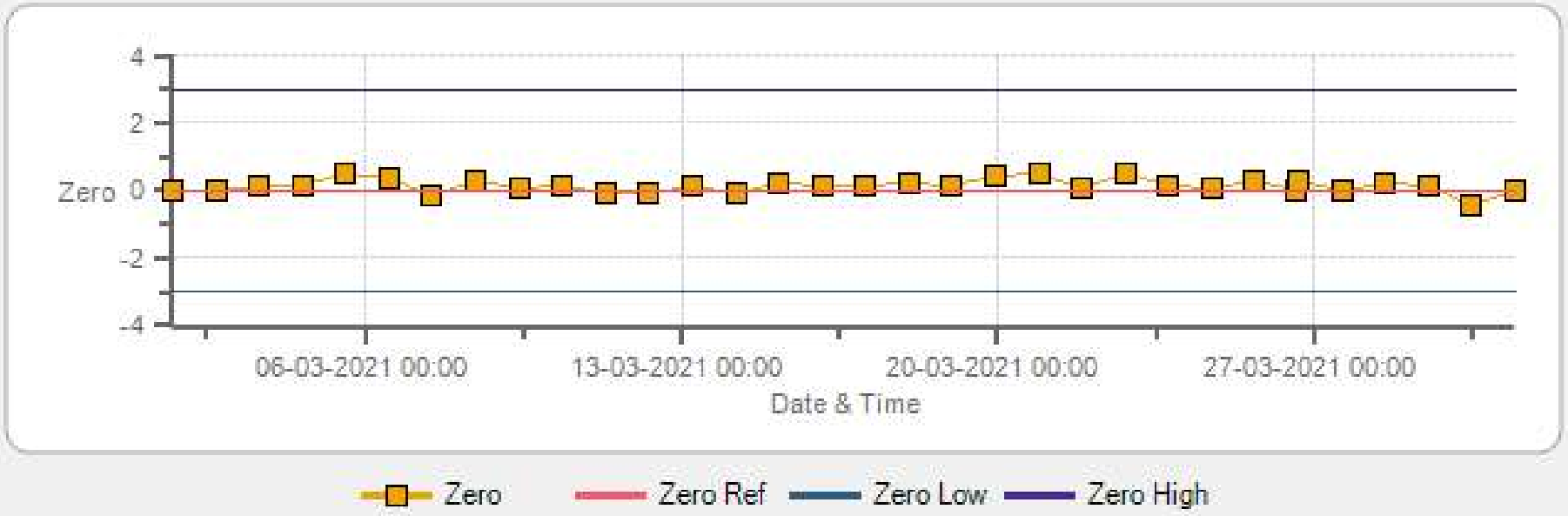
DAILY INTERNAL ZERO-SPAN CALIBRATION RECORDS

SO2[ppb] Calibration: Maskwa Monthly: 03-2021 Type: SpanAndZero - Zero

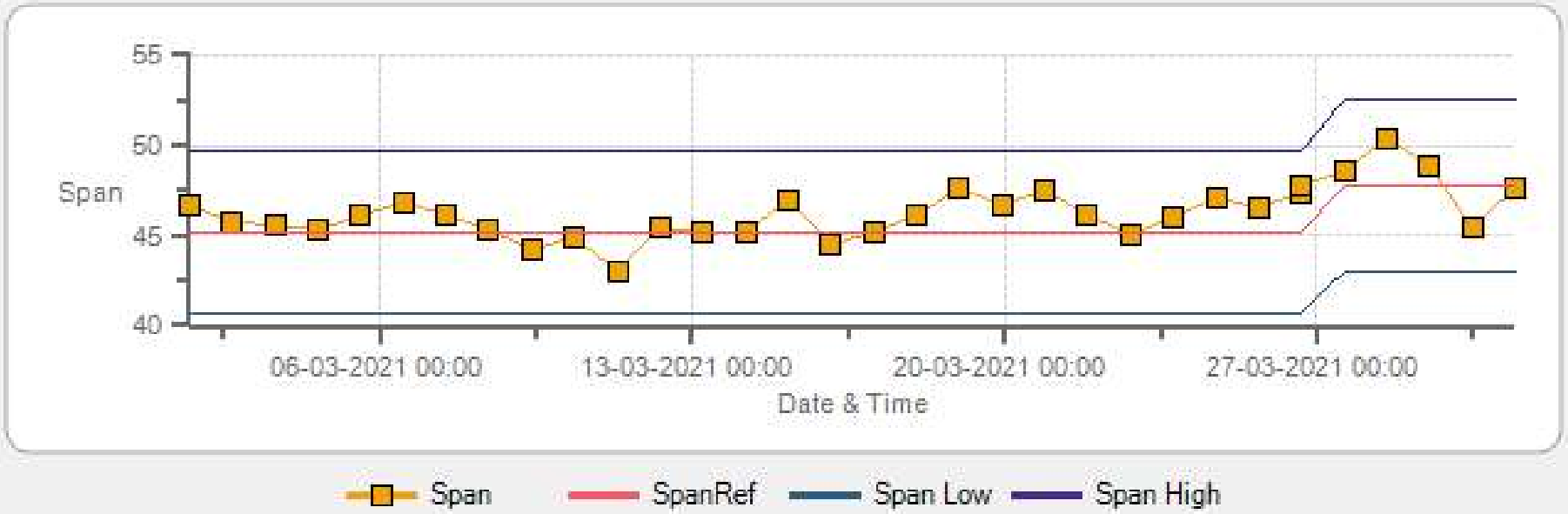
SO2[ppb] Calibration: Maskwa Monthly: 03-2021 Type: SpanAndZero - Span



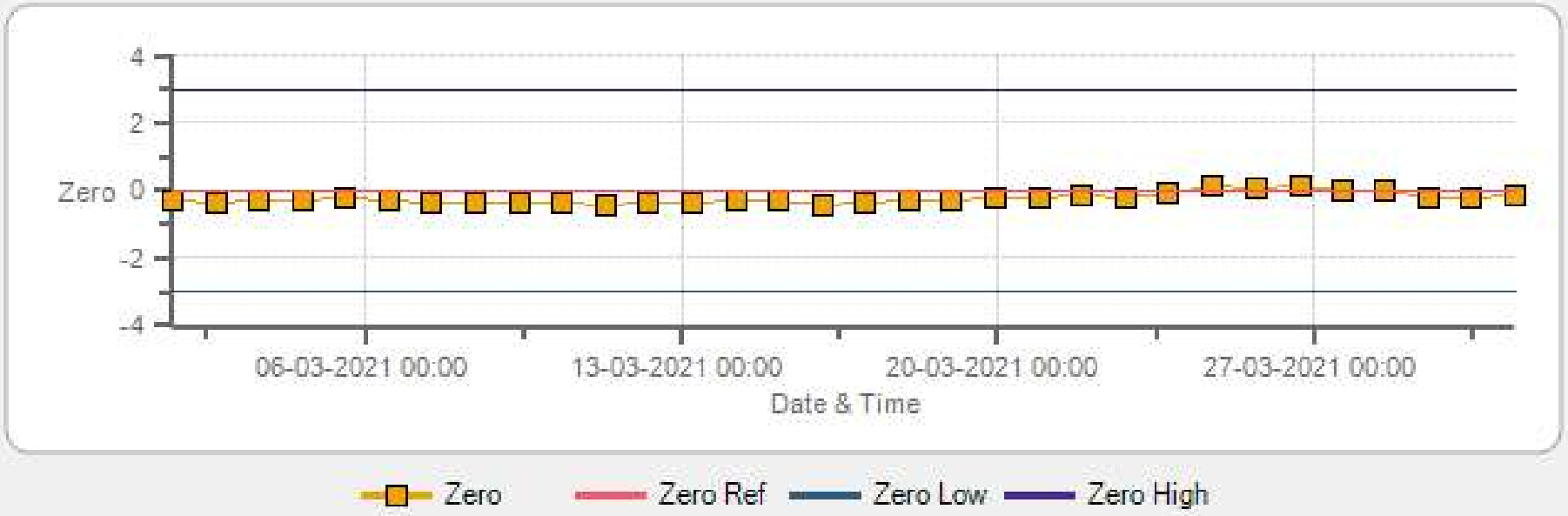
H2S[ppb] Calibration: Maskwa Monthly: 03-2021 Type: SpanAndZero - Zero



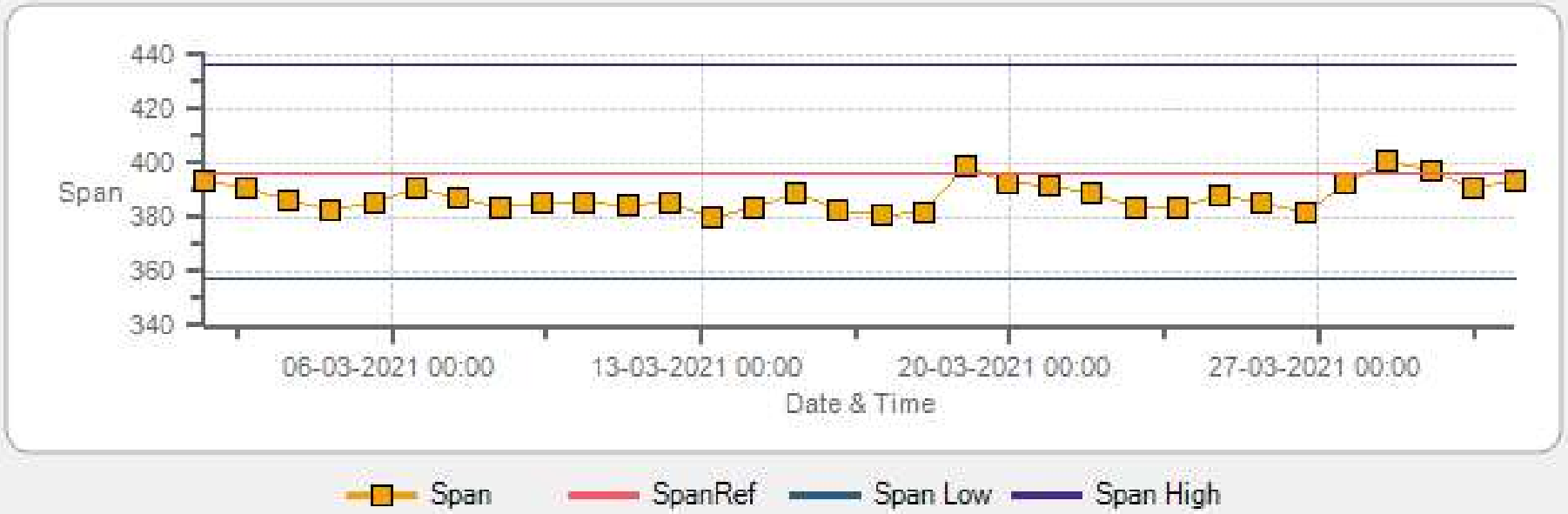
H2S[ppb] Calibration: Maskwa Monthly: 03-2021 Type: SpanAndZero - Span



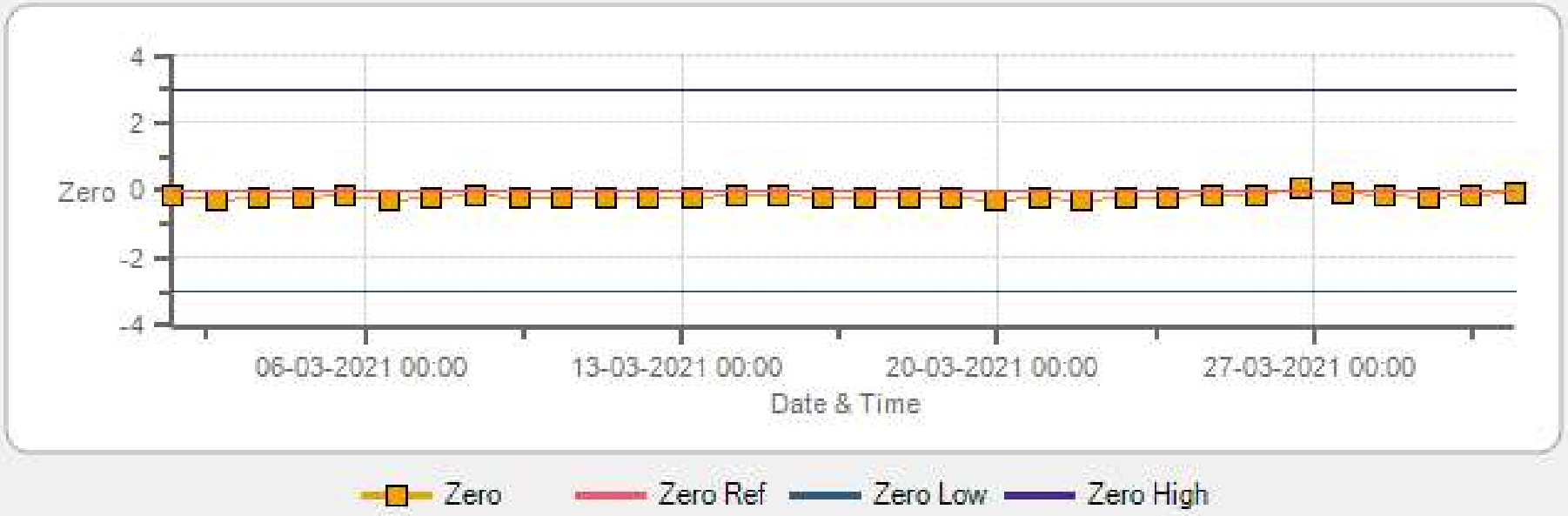
NOX[ppb] Calibration: Maskwa Monthly: 03-2021 Type: SpanAndZero - Zero



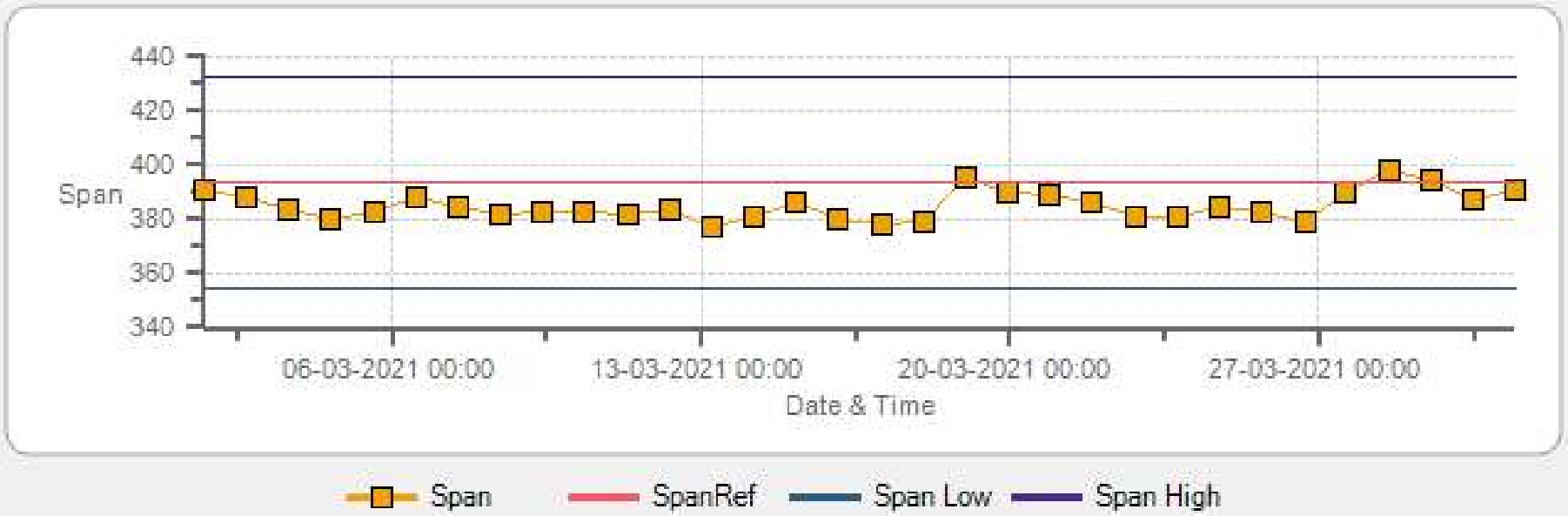
NOX[ppb] Calibration: Maskwa Monthly: 03-2021 Type: SpanAndZero - Span



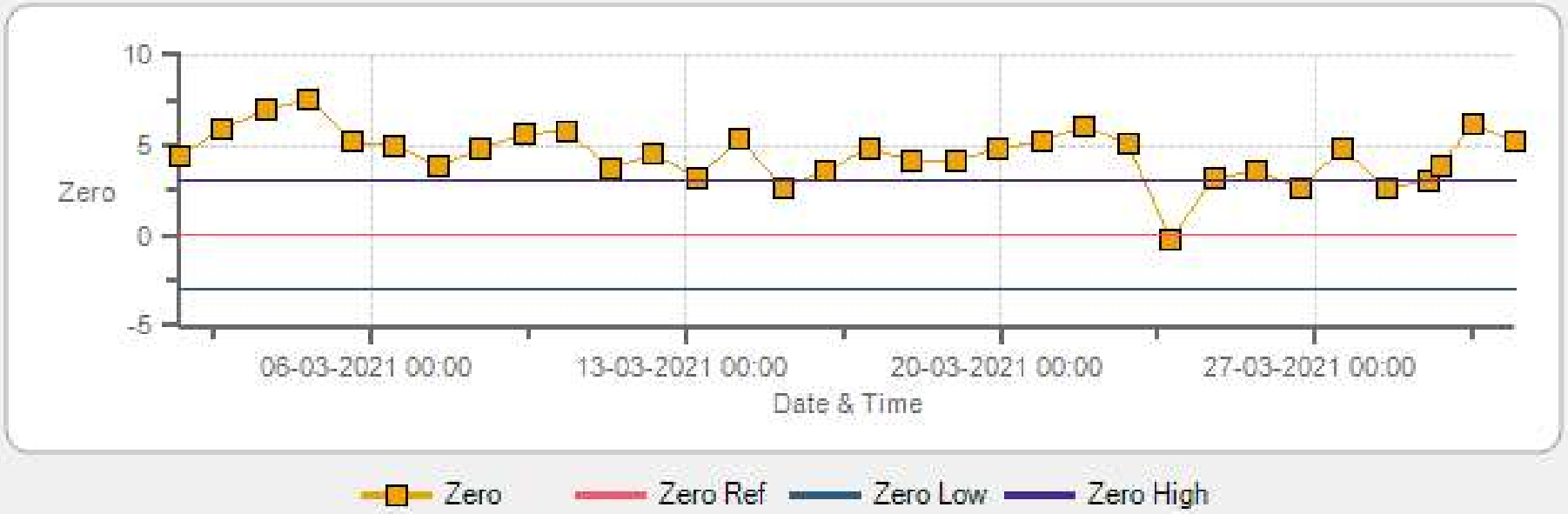
NO2[ppb] Calibration: Maskwa Monthly: 03-2021 Type: SpanAndZero - Zero



NO2[ppb] Calibration: Maskwa Monthly: 03-2021 Type: SpanAndZero - Span

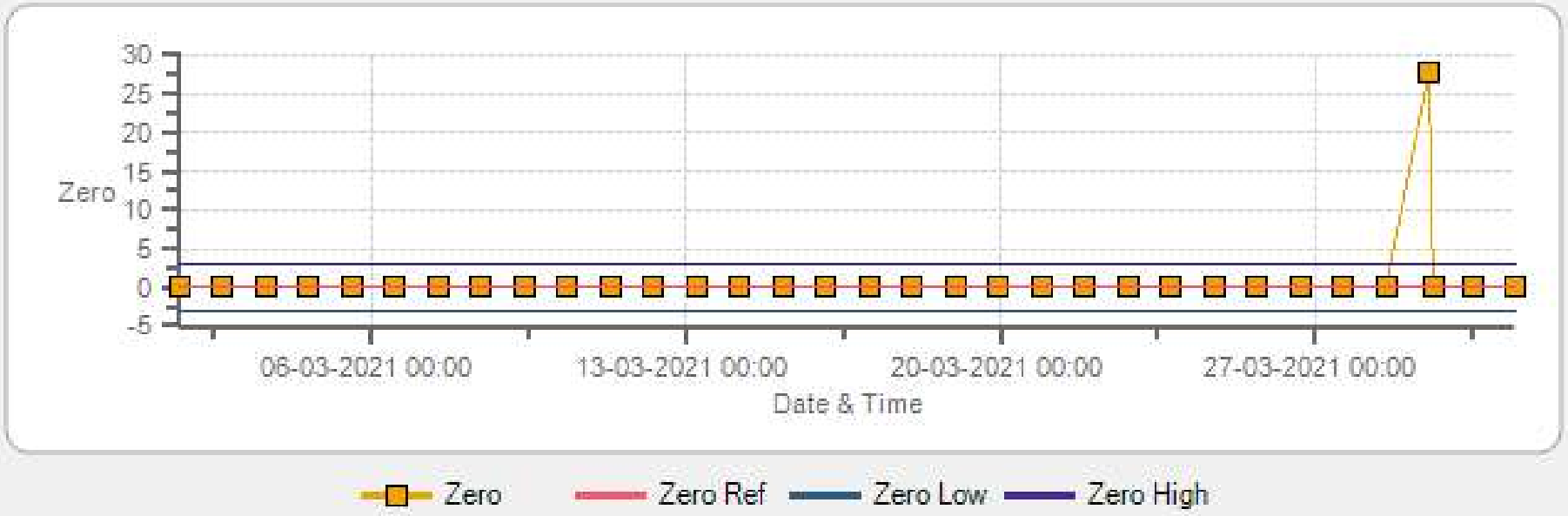


O3[ppb] Calibration: Maskwa Monthly: 03-2021 Type: SpanAndZero - Zero

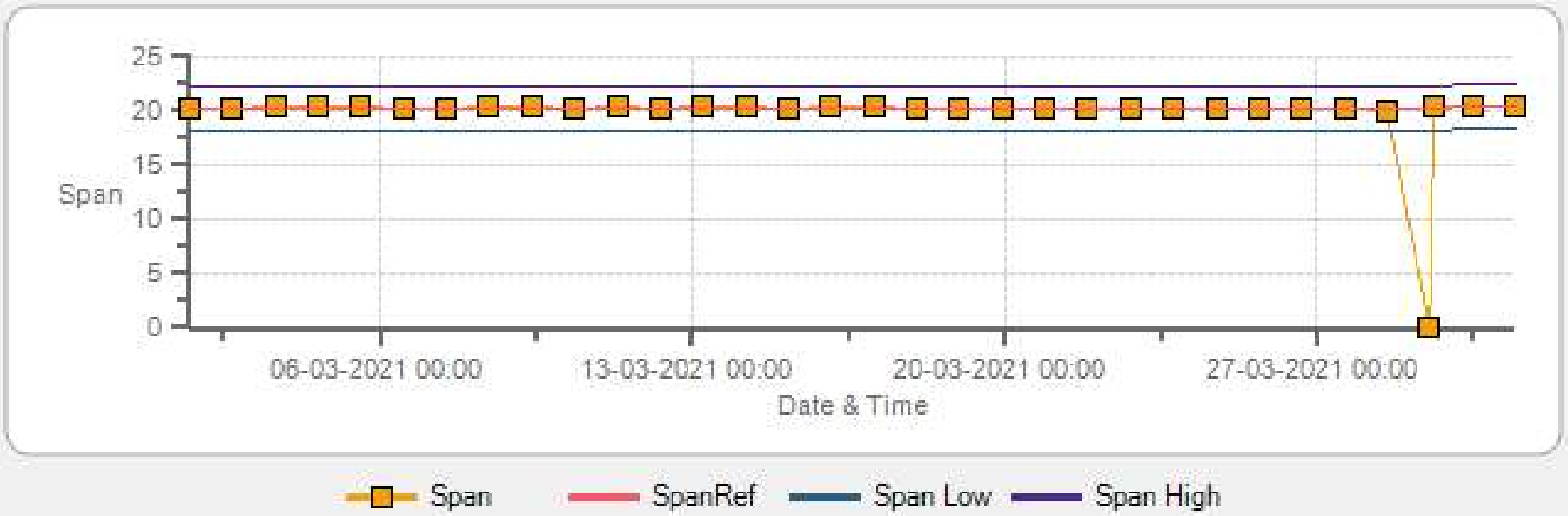


O3[ppb] Calibration: Maskwa Monthly: 03-2021 Type: SpanAndZero - Span

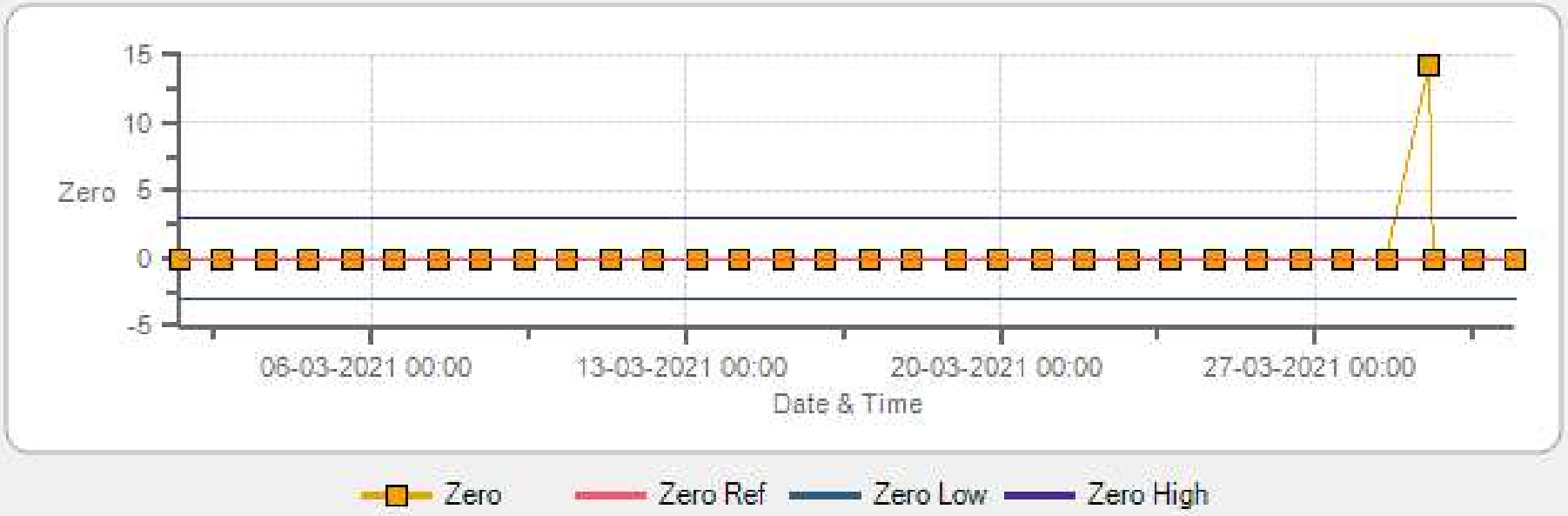
THC55[ppm] Calibration: Maskwa Monthly: 03-2021 Type: SpanAndZero - Zero



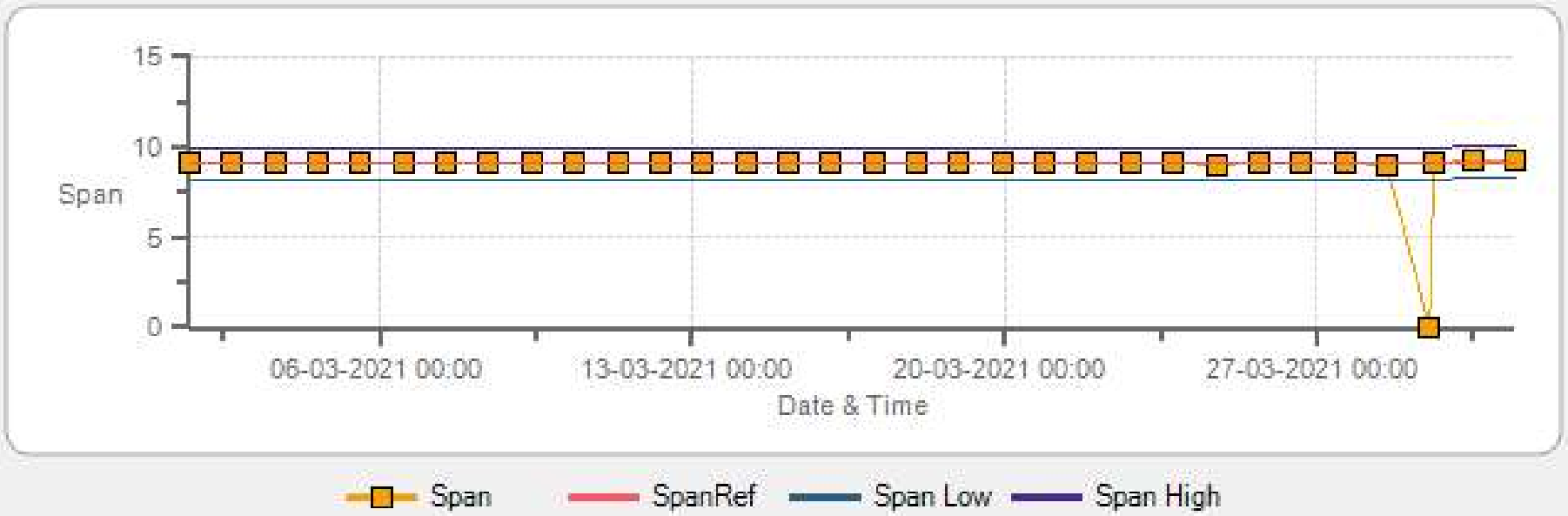
THC55[ppm] Calibration: Maskwa Monthly: 03-2021 Type: SpanAndZero - Span



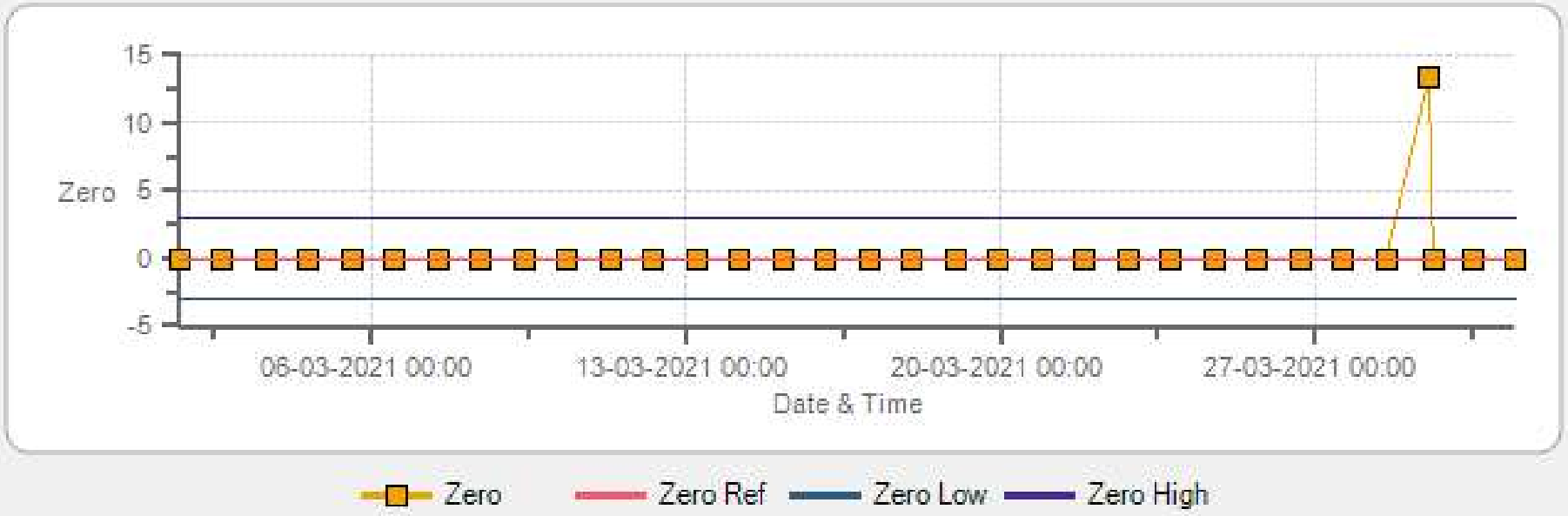
CH4[ppm] Calibration: Maskwa Monthly: 03-2021 Type: SpanAndZero - Zero



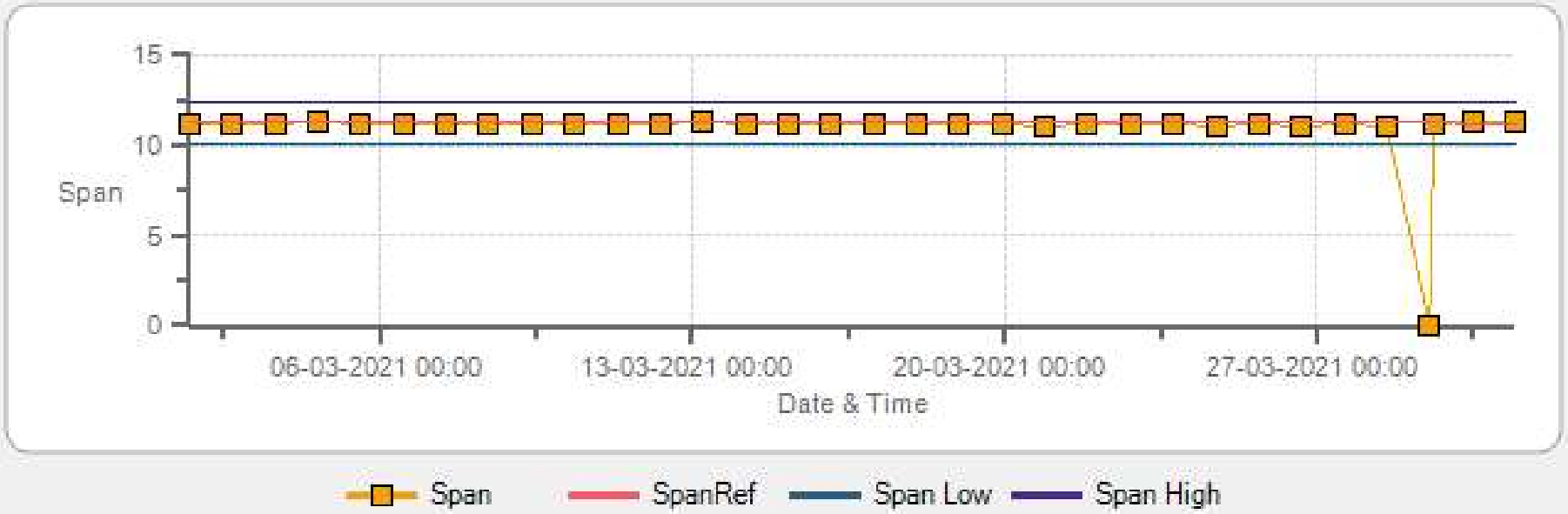
CH4[ppm] Calibration: Maskwa Monthly: 03-2021 Type: SpanAndZero - Span



NMHC[ppm] Calibration: Maskwa Monthly: 03-2021 Type: SpanAndZero - Zero



NMHC[ppm] Calibration: Maskwa Monthly: 03-2021 Type: SpanAndZero - Span



MULTI-POINT CALIBRATION RECORDS

SO2 Analyzer Calibration by Dilution

DATE:	26-Mar-2021	PREVIOUS CALIBRATION DATE:	02-Feb-2021
PARAMETER:	SO2	PREVIOUS CORRECTION FACTOR:	0.978
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	Maskwa	BAROMETRIC (mBar):	932
PURPOSE	Routine	START TIME (MST):	10:16
PERFORMED BY:	Alex Yakupov	END TIME (MST):	14:57

ANALYZER:

MAKE/MODEL	Thermo 43I-TLE	RANGE	500 ppb
SERIAL #	1180930031	FLOW (mL/min)	443
INITIAL		FINAL	
BKG/OFFSET	2.67	BKG/OFFSET	2.6
COEF/SLOPE	0.991	COEF/SLOPE	0.982
Expected (reference) Value	358.6	Expected (reference) Value	355

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010	MODEL:	T701
ID:	26801218	ID:	132
MFC CALIBRATION DATE:	13-Oct-2020	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	EY 0000851	HIGH ID	n/a
CONC (ppm):	51.60	EXPIRY DATE	n/a
CYLINDER (psi):	600	LOW ID	n/a
EXPIRY DATE	24-Feb-2028	EXPIRY DATE	n/a

CALIBRATION PARAMETERS:

POINT	HIGH	MID	LOW
TARGET	390	190	95
RANGE	300 - 400	150 - 200	50 - 100

SCRUBBER CHECK (15 MINS; TRS/H2S ONLY):

START TIME:	n/a	SO2 Conc (ppb)	n/a
END TIME:	n/a	Analyzer Response (ppb)	n/a

CALIBRATION:

FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
			ACTUAL	INDICATED		Initial	Final
DILUENT	GAS	TOTAL		Initial	Final		
5000		5000	0.00	-0.1	0		
4959	38.70	4998	399.54	400.3	398.3	0.998	1.003
4980	17.60	4998	181.70	n/a	181.3	n/a	1.002
4989	8.80	4998	90.85	n/a	90.9	n/a	0.999

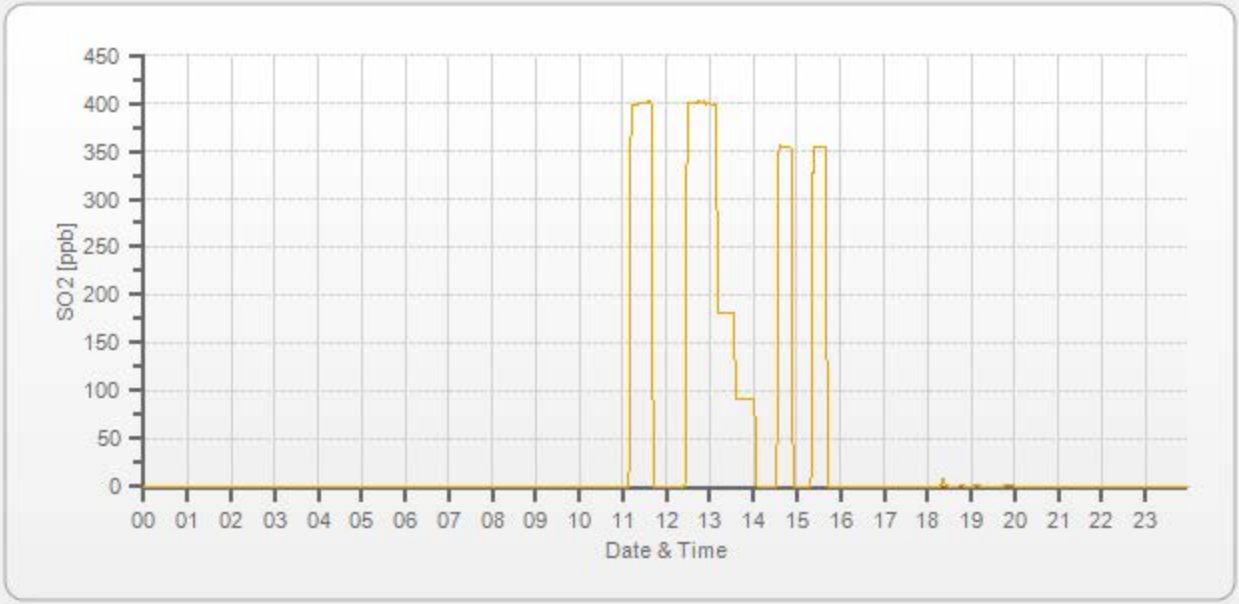
LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	0.997	0.0%

COMMENTS:

Sample inlet filter was changed.

SO2[ppb] Station: Maskwa Daily: 26-03-2021 Type: AVG 1 Min. [1 Min.]



H2S Analyzer Calibration by Dilution

DATE:	26-Mar-2021	PREVIOUS CALIBRATION DATE:	02-Feb-2021
PARAMETER:	H2S	PREVIOUS CORRECTION FACTOR:	1.000
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	Maskwa	BAROMETRIC (mBar):	932
PURPOSE	Routine	START TIME (MST):	10:16
PERFORMED BY:	Alex Yakupov	END TIME (MST):	14:57

ANALYZER:

MAKE/MODEL	Thermo 450i	RANGE	100 ppb
SERIAL #	CM 17360005	FLOW (mL/min)	882
INITIAL		FINAL	
BKG/OFFSET	25.9	BKG/OFFSET	27.1
COEF/SLOPE	0.79	COEF/SLOPE	0.824
Expected (reference) Value	45.2	Expected (reference) Value	47.8

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010 D	MODEL:	T701
ID:	11900613	ID:	132
MFC CALIBRATION DATE:	10-Dec-2020	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	LL 19174	HIGH ID	n/a
CONC (ppm):	10.00	EXPIRY DATE	n/a
CYLINDER (psi):	600	LOW ID	n/a
EXPIRY DATE	16-Jul-2022	EXPIRY DATE	n/a

CALIBRATION PARAMETERS:

POINT	HIGH	MID	LOW
TARGET	78	38	19
RANGE	60 - 80	30 - 40	10 - 20

SCRUBBER CHECK (15 MINS; TRS/H2S ONLY):

START TIME:	10:24	SO2 Conc (ppb)	380
END TIME:	10:39	Analyzer Response (ppb)	0.0

CALIBRATION:

FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
			ACTUAL	INDICATED		Initial	Final
DILUENT	GAS	TOTAL		Initial	Final		
7500		7500	0.00	0.1	0		
7442	58.50	7500	78.00	75.7	78.1	1.032	0.999
7472	28.50	7500	38.00	n/a	37.8	n/a	1.005
7486	14.20	7500	18.93	n/a	18.9	n/a	1.002

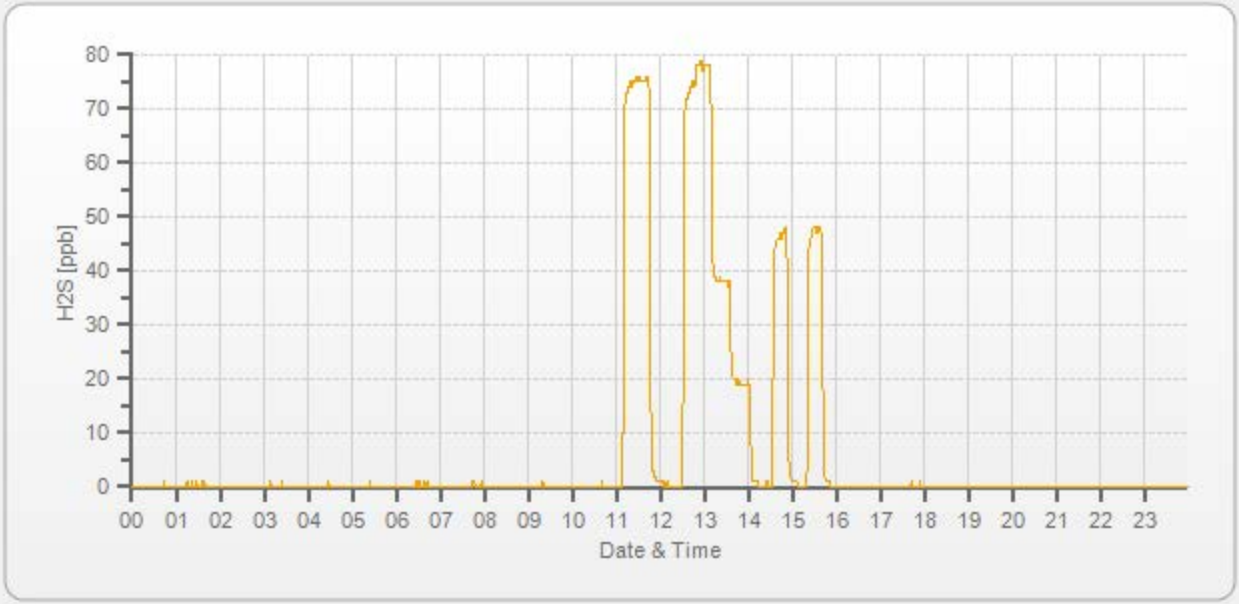
LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.001	-0.1%

COMMENTS:

Sample inlet filter was changed.

H2S[ppb] Station: Maskwa Daily: 26-03-2021 Type: AVG 1 Min. [1 Min.]



NOx Calibration by Dilution/Gas-Phase Titration

CALIBRATION:

				ANALYZER:			
DATE:	26-Mar-2021	PREVIOUS CALIBRATION DATE:	02-Feb-2021	MAKE/MODEL:	Thermo 42i	PREVIOUS CF.	
CLIENT:	LICA	TEMPERATURE (°C):	22.0	SERIAL #:	1180930028	NOx	1.001
LOCATION:	Maskwa	BAROMETRIC (mBar):	932	FLOW (mL/min)	508	NO	0.999
PURPOSE	Routine	START TIME (MST):	10:13	RANGE (ppb)	500	NO2	1.000
PERFORMED BY:	Alex Yakupov	END TIME (MST):	16:42	GPT FOR O3?		No	

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:		CALIBRATION GAS:			FLOWMETERS (if applicable):	
MAKE:	SABIO	MAKE:	Teledyne	CYLINDER ID:	EY 0000851		HIGH ID:	n/a
MODEL:	2010	MODEL:	T701	NO/NOx (PPM):	50.9	51.1	HIGH EXPIRY:	n/a
ID:	26801218	ID:	132	CYLINDER (psi):	600		LOW ID:	n/a
MFC CALIBRATION DATE:	13-Oct-2020	OXIDIZER ID:	n/a	EXPIRY DATE	24-Feb-2028		LOW EXPIRY:	n/a

CALIBRATION SETTINGS:

INITIAL	NOx	NO	NO2	FINAL	NOx	NO	NO2
BKG/OFFSET:	3.1	2.8	n/a	BKG/OFFSET:	3.3	3.1	n/a
SLOPE/COEF/CE:	1.004	1.001	1	SLOPE/COEF/CE:	1.003	1.025	1

EXPECTED (REFERENCE) VALUE:

INITIAL	NOx	NO	NO2	FINAL	NOx	NO	NO2
	396.7	3.0	393.7		382.0	3.0	379.0

CALIBRATION PARAMETERS:

POINT	NO TARGET (PPB)	NO2 TARGET (PPB)	NO2 RANGE	O3 POINT
HIGH	380	250	230-265	n/a
MID	180	125	115-150	n/a
LOW	90	45	40-55	n/a
EXTRA 1	n/a	n/a	n/a	n/a

NO/NOx CALIBRATION:

FLOW RATE			CONCENTRATION (ppb)									CORRECTION FACTOR (CF.)					
(mL/min)			CALCULATED			INITIAL INDICATED			FINAL INDICATED			INITIAL			FINAL		
DILUENT	GAS	TOTAL	NO	NOx	NO2	NO	NOx	NO2	NO	NOx	NO2	NO	NOx	NO2	NO	NOx	NO2
5000		5000	0.0	0.0	0.0	0.1	0.2	0.1	0.0	0.0	0.0						
4959	38.70	4998	394.1	395.7	1.5	383.7	385.3	1.7	394.2	395.6	1.4	1.027	1.027		1.000	1.000	
4980	17.60	4998	179.2	179.9	0.7	n/a	n/a	n/a	181.2	181.8	0.6	n/a	n/a		0.989	0.990	
4989	8.80	4998	89.6	90.0	0.4	n/a	n/a	n/a	91.4	91.6	0.2	n/a	n/a		0.981	0.982	

GPT CALIBRATION:

Point	CALIBRATOR			INDICATED (ppb)			NO DROP / O3 Conc (ppb)	NO2 GAIN (ppb)	NO2 Corr. FACTOR	CONV. EFFICIENCY
	GAS	TOTAL	O3 SETPOINT	NO	NOx	NO2				
REFERENCE	38.70	4997	0	395.1	395.7	0.5				
AS-FOUND HIGH	38.70	4997	240	141.3	395.9	254.6	253.8	254.1	0.999	100.12%
ADJUSTED HIGH	n/a	n/a	n/a	n/a	n/a	n/a	n/a	**n/a**	**n/a**	n/a
MID	38.70	4997	125	263.3	396.3	132.9	131.8	132.4	0.995	100.46%
LOW	38.70	4997	45	350.3	396.0	45.7	44.8	45.2	0.991	100.89%
NO2 adjustment not required.									AVERAGE:	100.49%

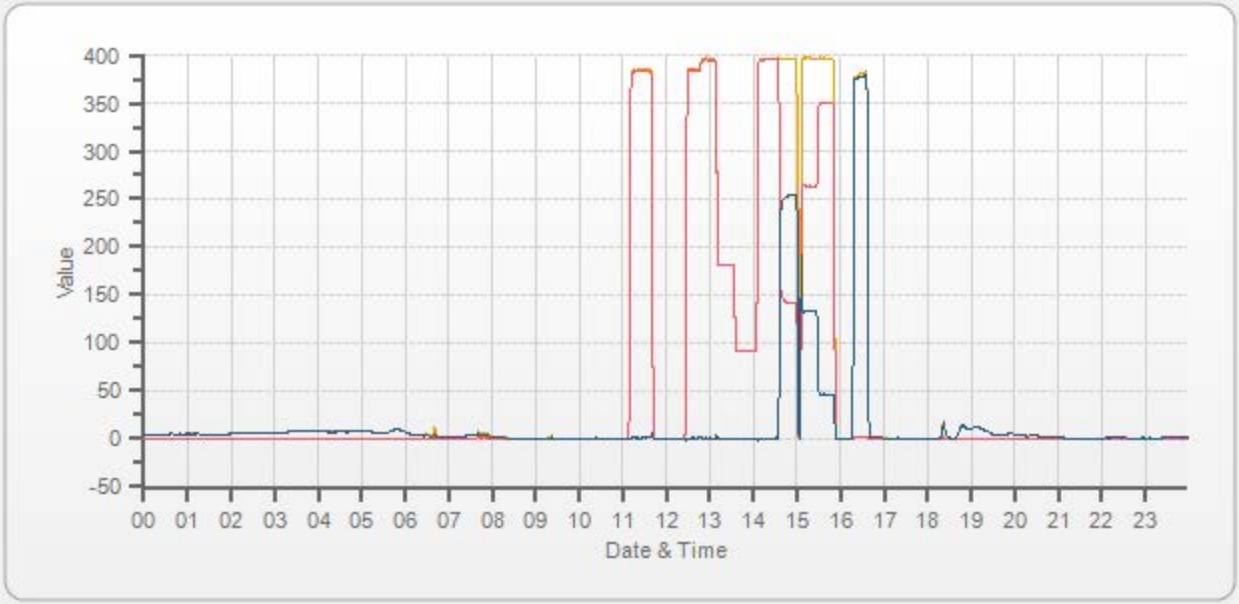
LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
NO	1.000	0.999	0.23%
NOx	1.000	0.999	0.22%
NO2	1.000	0.999	0.10%

COMMENTS:

Sample inlet filter was changed.
15:00 - daily ZS check

Station: Maskwa Daily: 26-03-2021 Type: AVG 1 Min. [1 Min.]



Ozone Calibration by Photometer (Varying UV Lamp)

DATE:	29-Mar-2021	PREVIOUS CALIBRATION DATE:	02-Feb-2021
PARAMETER:	O3	PREVIOUS CORRECTION FACTOR:	1.000
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	Maskwa	BAROMETRIC (mBar):	925
PURPOSE	Routine	START TIME (MST):	11:06
PERFORMED BY:	Alex Yakupov	END TIME (MST):	18:58

ANALYZER:

MAKE/MODEL	Thermo 49iQ	RANGE	500 ppb
SERIAL #	1202068570	FLOW (mL/min)	1340
INITIAL		FINAL	
BKG/OFFSET	2.9	BKG/OFFSET	2.3
COEF/SLOPE	1.002	COEF/SLOPE	1.033
Expected (reference) Value	411.3	Expected (reference) Value	426

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Thermo-Electron
MODEL:	2010 D	MODEL:	111
ID:	11900613	ID:	111-22449-204
MFC CALIBRATION DATE:	10-Dec-2020	OXIDIZER ID:	n/a
	CALIBRATION METHOD:	Photometer (Varying UV Lamp)	
GPT DATE:	n/a	GPT END TIME:	n/a

CALIBRATION PARAMETERS:

POINT	HIGH	MID	LOW
RANGE	300 - 400	150 - 200	50 - 100

CALIBRATION:

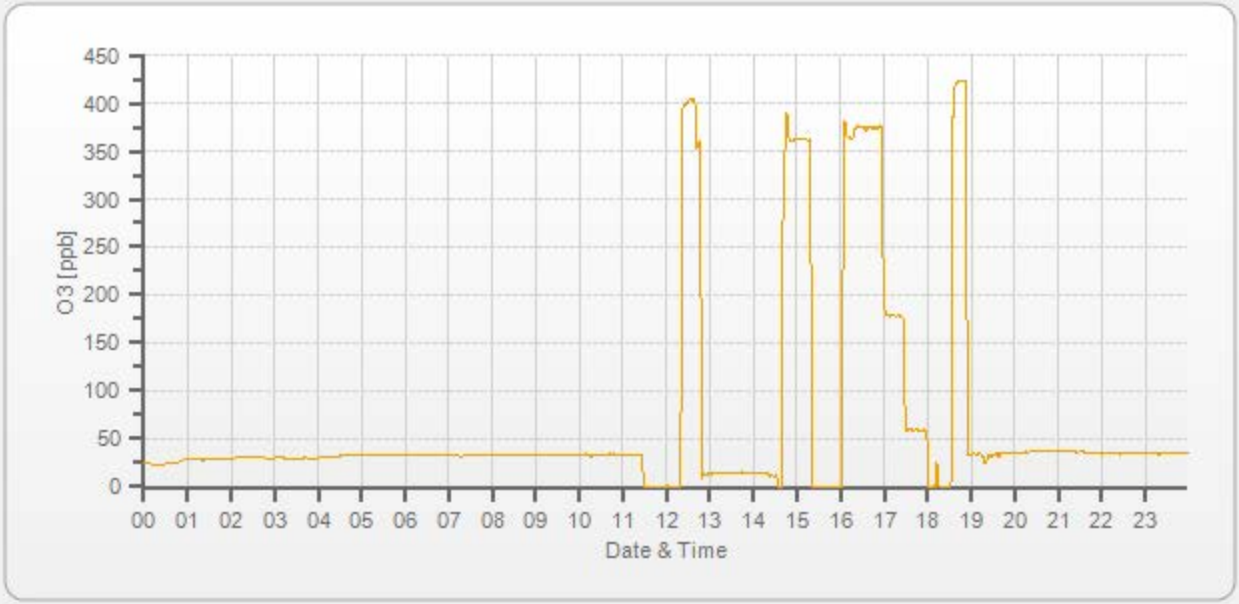
FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
			ACTUAL	INDICATED		Initial	Final
DILUENT	GAS	TOTAL		Initial	Final		
5000		5000	0.0	-0.8	0.0		
5000		5000	378.0	365.5	377.5	1.032	1.001
5000		5000	180.0	n/a	181.8	n/a	0.990
5000		5000	61.0	n/a	62.9	n/a	0.970

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	0.997	0.3%

COMMENTS:

Sample inlet filter was changed.
12:00 12:45 Daily ZS check,
12:45-14:34 User error. AF High point starts at 14:38


O3[ppb] Station: Maskwa Daily: 29-03-2021 Type: AVG 1 Min. [1 Min.]
O3 [ppb]
450
400
350
300
250
200
150
100
50
0
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23
Date & Time
O3 [ppb]

Methane/Non-Methane Analyzer Calibration by Dilution

CALIBRATION:

DATE:	29-Mar-2021	PREVIOUS CALIBRATION DATE:	06-Feb-2021
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	Maskwa	BAROMETRIC (mBar):	925
PURPOSE	Routine	START TIME (MST):	11:07
PERFORMED BY:	Alex Yakupov	END TIME (MST):	15:04

ANALYZER:

VALUE	MAKE/MODEL	SERIAL	FLOW (mL/min)
	Thermo 55i	1314057759	1015
PARAMETER:	CH4	NMHC	THC
RANGE (ppm):	20	20	40
PREVIOUS CF:	0.999	0.999	0.999

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:		CALIBRATION GAS:			FLOWMETERS (if applicable):	
MAKE:	SABIO	MAKE:	Teledyne	CYLINDER ID:	LL 119576		HIGH ID:	n/a
MODEL:	2010	MODEL:	T701	CH_4/C_3H_8 (ppm):	870.0	299.0	HIGH EXPIRY:	n/a
ID:	26801218	ID:	132	CYLINDER (psi):	2000		LOW ID:	n/a
MFC CALIBRATION DATE:	13-Oct-2020	OXIDIZER ID:	115	EXPIRY DATE	22-Dec-2028		LOW EXPIRY:	n/a

CALIBRATION PARAMETERS:

POINT (CH4/NMHC)	HIGH	MID	LOW	CH4 EQUIVILANCE	
TARGET	14	7	3.5	C_3H_8 as CH_4	822.3
RANGE	12 - 16	6 - 8	2 - 4	THC as CH_4	1692.3

EXPECTED (REFERENCE) VALUE:

INITIAL	CH4	NMHC	THC	FINAL	CH4	NMHC	THC
	9.07	11.25	20.32		9.18	11.23	20.41

CALIBRATION:

FLOW RATE (mL/min)			CONCENTRATION (PPM)									CORRECTION FACTOR (CF.)					
			CALCULATED			INITIAL INDICATED			FINAL INDICATED			INITIAL			FINAL		
DILUENT	GAS	TOTAL	CH4	NMHC	THC	CH4	NMHC	THC	CH4	NMHC	THC	CH4	NMHC	THC	CH4	NMHC	THC
3097		3097	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						
3050	51.30	3101	14.39	13.60	27.99	14.29	13.45	27.74	14.39	13.62	28.00	1.007	1.011	1.009	1.000	0.999	1.000
3073	25.60	3099	7.19	6.79	13.98	n/a	n/a	n/a	7.20	6.79	13.99	n/a	n/a	n/a	0.998	1.000	0.999
3087	12.80	3100	3.59	3.40	6.99	n/a	n/a	n/a	3.60	3.38	6.98	n/a	n/a	n/a	0.998	1.004	1.001

LINEAR REGRESSION ANALYSIS:

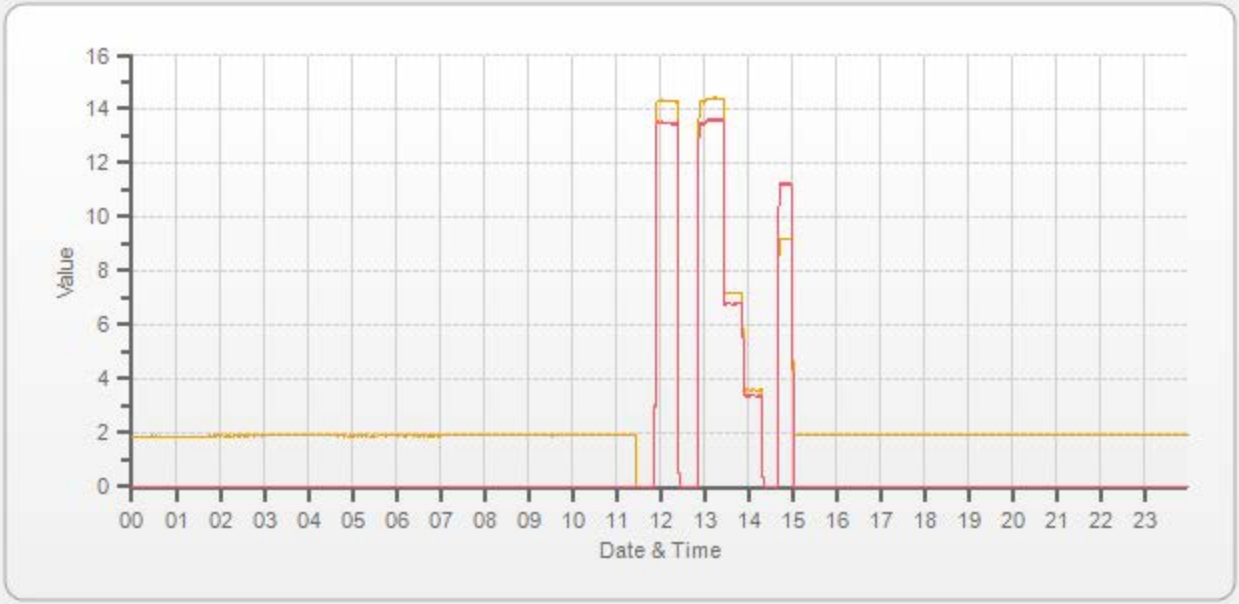
	CORRELATION	SLOPE	INTERCEPT
CH4	1.000	1.000	0.0%
NMHC	1.000	1.002	-0.1%
THC	1.000	1.000	0.0%

Comments:

Sample inlet filter was changed.

Use Zero Chrom? **Yes**

Station: Maskwa Daily: 29-03-2021 Type: AVG 1 Min. [1 Min.]



Thermo 5030 SHARP Monitor Calibration

Date:	March 26, 2021	**Performed By/Reviewer:**	Alex Yakupov / Chris Wesson
Company:	LICA	**Start Time (mst):**	16:02
Station Name/Location:	Maskwa	**End Time (mst):**	17:14
Previous Audit Date:	February 17, 2021	**Calibration Purpose:**	quarterly
Parameter:	PM 2.5	**Weather Conditions:**	Mix of sun and clouds

SHARP Information and Status:

Serial Number/Owner:	CM - 2209 / LICA	**Status Code**	0
Approx. % Tape Reaming	1/10	**Error Code**	0

Reference Standards/I.D./Cert. Date:

High Flow:	DeltaCal DC-1, s/n 177256, March 27, 2020
Digital Manometer:	DeltaCal DC-1, s/n 177256, March 27, 2020
Temperature:	DeltaCal DC-1, s/n 177256, March 27, 2020
Pressure:	DeltaCal DC-1, s/n 177256, March 27, 2020

As Found Temperatures, Pressure, Humidity:

	T1 (°C)	T2 (°C)	T3 (°C)	T4 (°C)	P3 (hPa)	RH (%)
SHARP:	0	22	22	23	934	33
Reference:	-0.3	22.6	22.6	22.6	932.0	33.0
Difference:	0.3	0.6	0.6	0.4	2.0	0.0

Temp Limit: ± 4 °C
Pressure Limit: ± 13.33 hPa
RH Limit: ± 2%

As Left Temperature and Pressure (same as above if as found adequate):

	T1 (°C)	T2 (°C)	T3 (°C)	T4 (°C)	P3 (hPa)	RH (%)
SHARP:	0	22	22	23	934	33
Reference:	-0.3	22.6	22.6	22.6	932.0	33.0
Difference:	0.3	0.6	0.6	0.4	2.0	0.0%

Temp Limit: ± 4 °C
Pressure Limit: ± 13.33 hPa
RH Limit: ± 2%

Mass Foil Calibration:

	Mass Foil:		ZERO:		Span Sensitivity
Mass Foil ID:	9015	**QLF:**	-12	**OLD:**	7004
Spanfoil Value (µg):	1294	**CONFID:**	9	**NEW:**	6981

Nephalometer Zero:

	As Found		As Left
Analog	162.00	**Analog**	163.00
NEPH	0.80	**NEPH**	-0.60
C14	1.90	**C14**	1.90
Conc	36.90	**Conc**	36.90

Flow rate:

	As Found		As Left
SHARP AirFlow l/hr	1000	**SHARP AirFlow l/hr**	1000
Reference AirFlow (l/min)	16.66	**Reference AirFlow (l/min)**	16.66
Reference AirFlow (l/hr)	1000	**Reference AirFlow (l/hr)**	1000
% Difference:	0.0%	**Difference:**	0.0%

$$\%D = 100 \times \frac{Qm - Qi}{Qi}$$

Tolerance +/- 5%

Inlet Assembly:

	Yes/No?	If no, explain:
PM10 Inlet Cleaned	yes	
PM2.5 Cyclone Cleaned	yes	

Pump Assembly:

	Yes/No?	If no, explain:
Pump Inspected / Cleaned	yes	
Pump Vanes Replaced	no	Not required

Comments:

Leak check: 16.66 vs 16.54, 0.12< 0.80 lpm, passed.

Meteorological Sensor Audit/Calibration

Location Information

Company:	LICA	**Performed By:**	Alex Yakupov
Audit Location:	Maskwa	**Reviewed By:**	Chris Wesson
Audit Date:	September 10, 2020	**Start/End Time (mst):**	14:51 / 17:06
Calibration Purpose:	routine annual	**Weather Conditions:**	Mix of sun and clouds

Wind Sensor Information

Sensor ID Data:		**Sensor Outputs:**	
Sensor Make:	RM Young	**Velocity Voltage Output Range:**	0-1
Sensor Model:	05305VK	**Velocity Unit Output Range:**	0-200
Serial #:	161465	**Direction Voltage Output Range:**	0-1
Previous Cal/Audit Date:	September 19, 2019	**Direction Unit Output Range:**	0-360

Wind Calibrator Information

Calibrator I.D. and Expiry Date: Model 18860-90/18802 SN: CA 4744, expires - Aug 6, 2022

Wind Speed Audit Data **+/- 2% of the average correction factor is the limit**

RPM	Wind Speed Generated kph	Clockwise Wind Speed kph	Counter Clockwise Wind Speed kph	Correction Factor
0	0	0.0	0.0	-
1000	18.4	18.5	18.5	0.996
2000	36.9	36.9	36.9	0.999
3000	55.3	55.4	55.4	0.998
4000	73.7	73.9	73.9	0.998
5000	92.2	92.4	92.5	0.997
6000	110.6	111.0	111.0	0.996
7000	129.0	129.5	129.5	0.996
8000	147.4	148.1	148.1	0.996
9000	165.9	166.7	166.7	0.995
10000	184.3	185.2	185.2	0.995
		The audit meets AMD requirements.	**Average Correction Factor=**	**0.997**

Wind Direction Audit Data **+/- 3° of the absolute average degrees difference for all points is the limit**

Generated Wind Direction 0-360 (Up)	Generated Wind Direction 360-0 (Down)	Indicated Wind Direction 0-360 (Up)	Indicated Wind Direction 360-0 (Down)	Degrees Difference 0-360 (Up)	Degrees Difference 360-0 (Down)	Average Absolute Degrees Difference
0	355	1	355	1.1	-0.1	0.6
30	330	32	330	-2.1	-0.4	1.2
60	300	64	301	-3.8	-1.0	2.4
90	270	93	272	-3.0	-1.9	2.4
120	240	123	243	-2.7	-2.7	2.7
150	210	152	213	-2.0	-3.2	2.6
180	180	183	183	-3.3	-3.1	3.2
210	150	212	153	-1.8	-3.2	2.5
240	120	241	124	-1.3	-3.7	2.5
270	90	271	94	-0.8	-4.0	2.4
300	60	300	65	0.1	-4.6	2.4
330	30	330	34	-0.4	-4.1	2.2
355	0	355	2	-0.1	1.5	0.8
The audit meets AMD requirements.			**Average Absolute Degrees Difference=**			**2.2**

Comments:

n/a

End of Report

Lakeland Industry & Community Association

MARCH 2021

Ambient Air Monitoring Calibration Report

- ST. LINA STATION-

CAL-LICA-202103-01250

Station Operation and Maintenance:
Bureau Veritas Canada

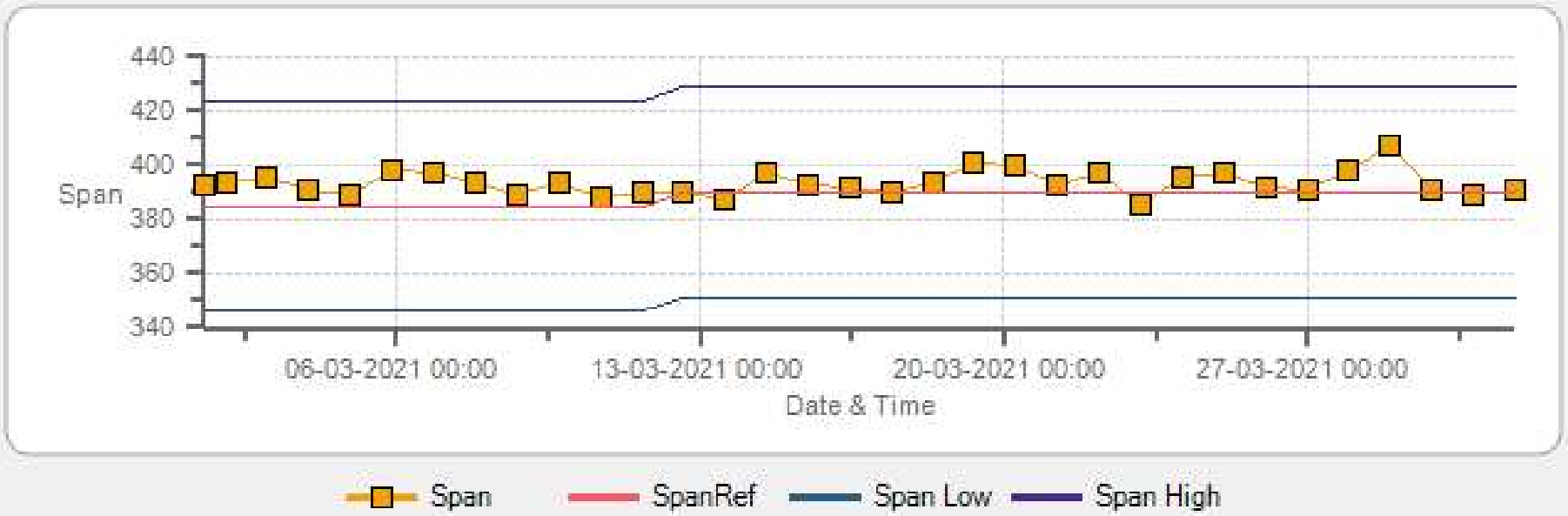
Data Validation and Report:
LICA / Bureau Veritas Canada

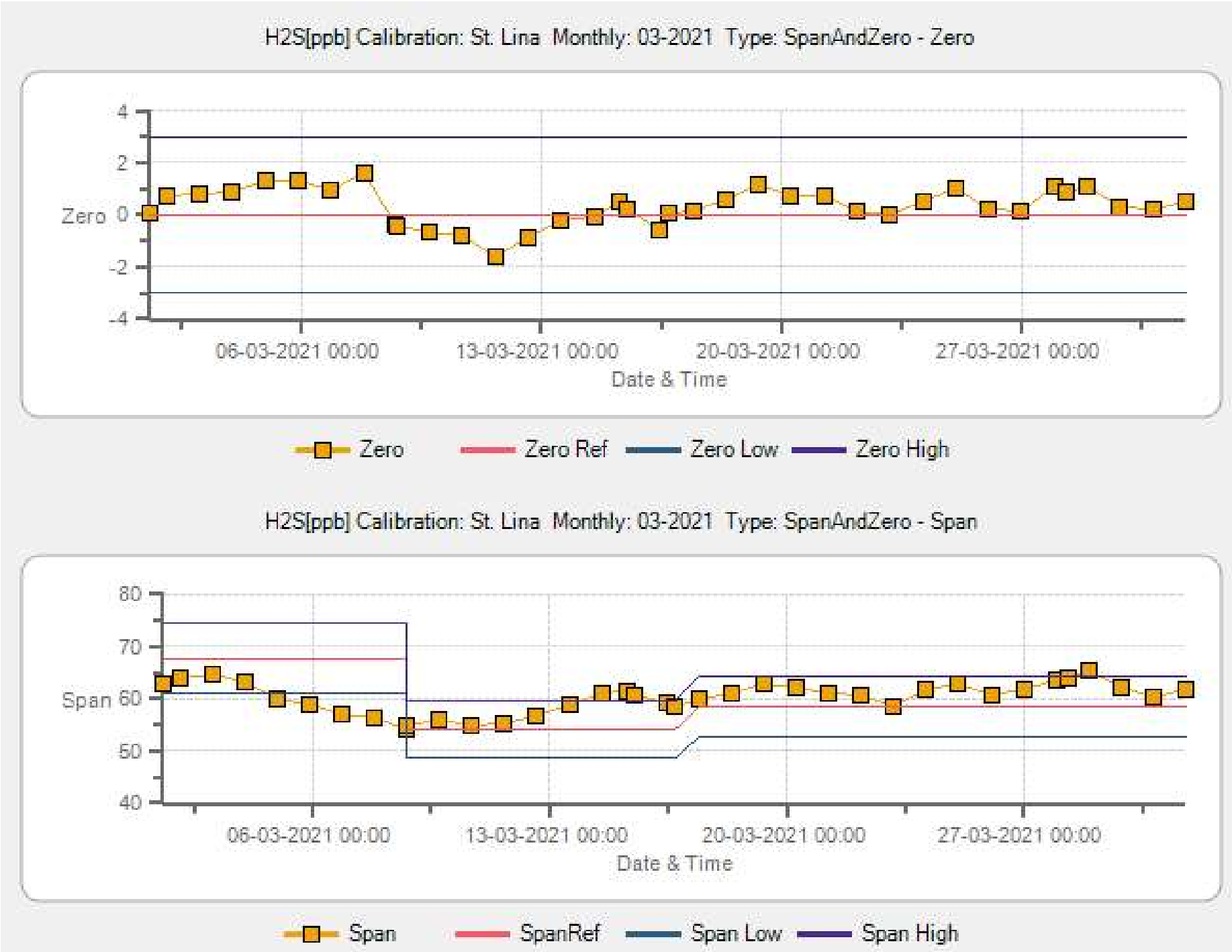
April 11, 2021

DAILY INTERNAL ZERO-SPAN CALIBRATION RECORDS

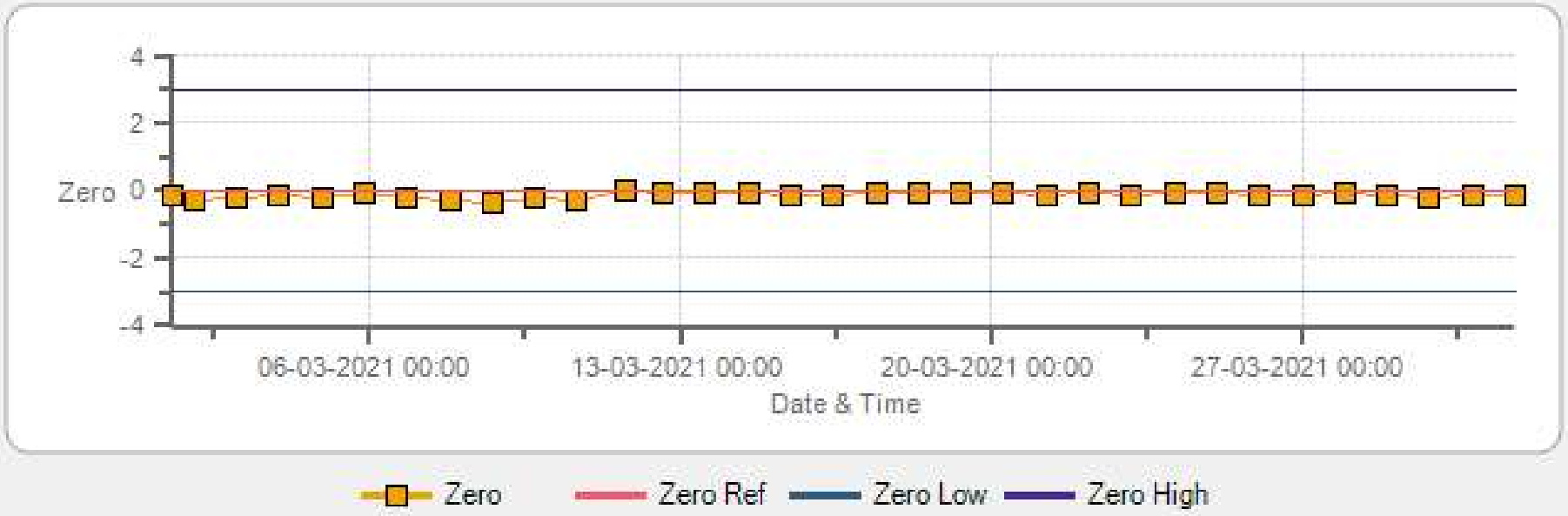
SO2[ppb] Calibration: St. Lina Monthly: 03-2021 Type: SpanAndZero - Zero

SO2[ppb] Calibration: St. Lina Monthly: 03-2021 Type: SpanAndZero - Span

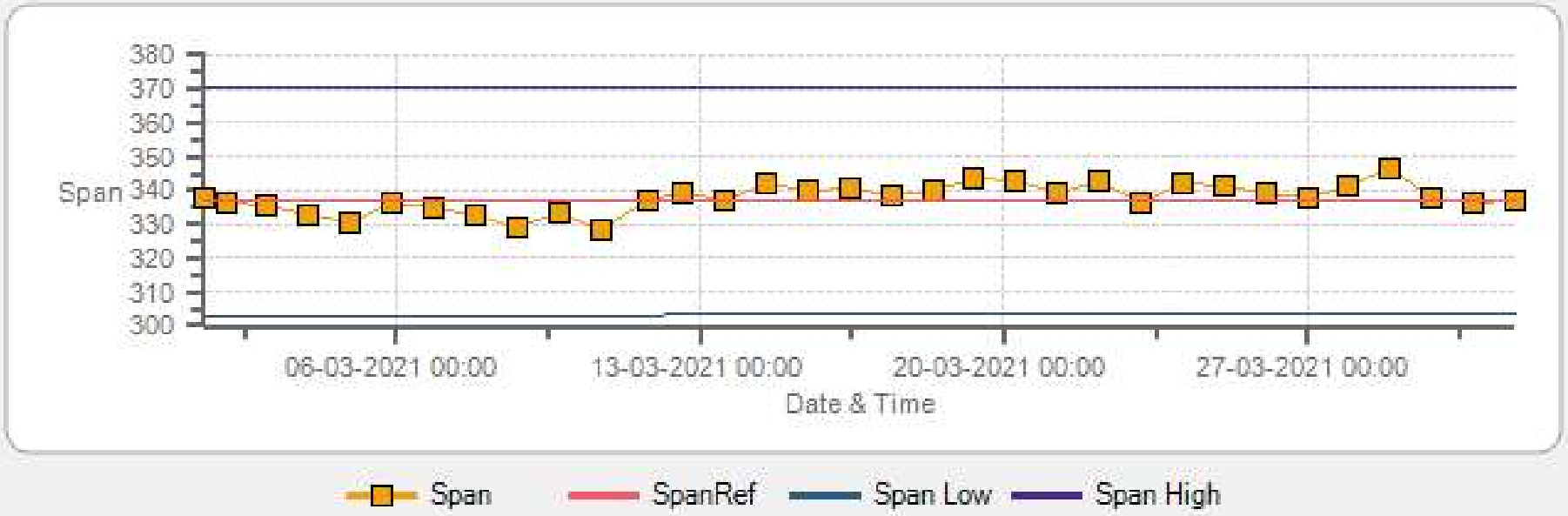



H2S[ppb] Calibration: St. Lina Monthly: 03-2021 Type: SpanAndZero - Zero
4
2
Zero 0
-2
-4
06-03-2021 00:00
13-03-2021 00:00
20-03-2021 00:00
27-03-2021 00:00
Date & Time
Zero
Zero Ref
Zero Low
Zero High
H2S[ppb] Calibration: St. Lina Monthly: 03-2021 Type: SpanAndZero - Span
80
70
Span 60
50
40
06-03-2021 00:00
13-03-2021 00:00
20-03-2021 00:00
27-03-2021 00:00
Date & Time
Span
SpanRef
Span Low
Span High

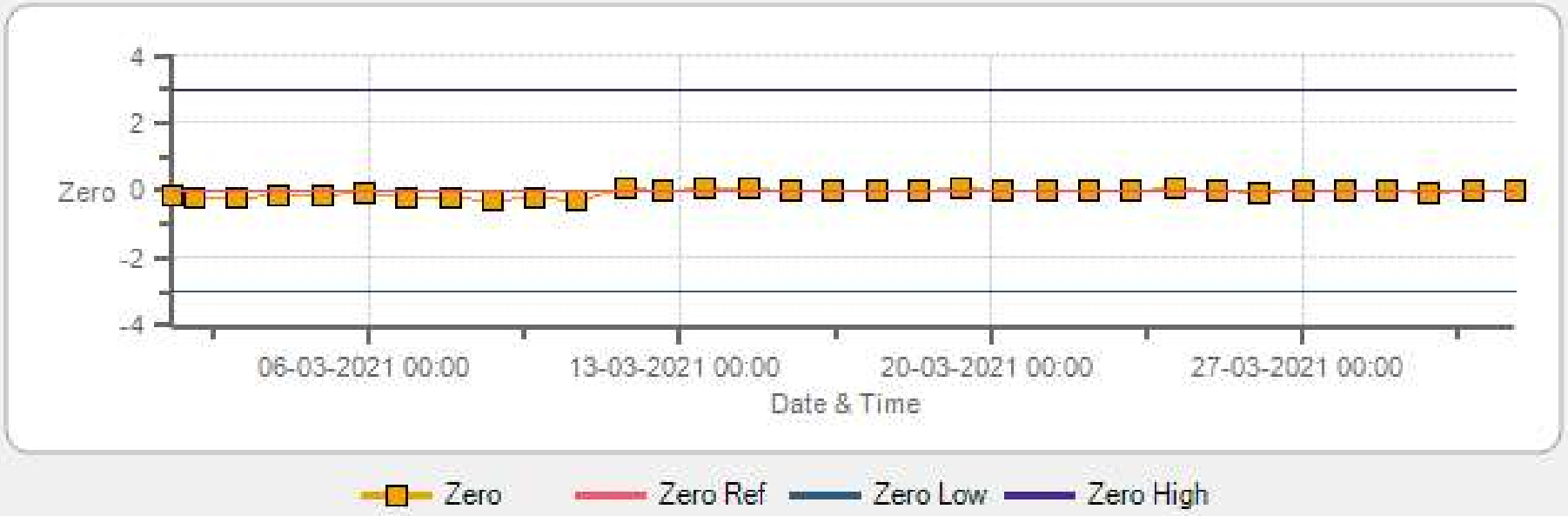
NOX[ppb] Calibration: St. Lina Monthly: 03-2021 Type: SpanAndZero - Zero



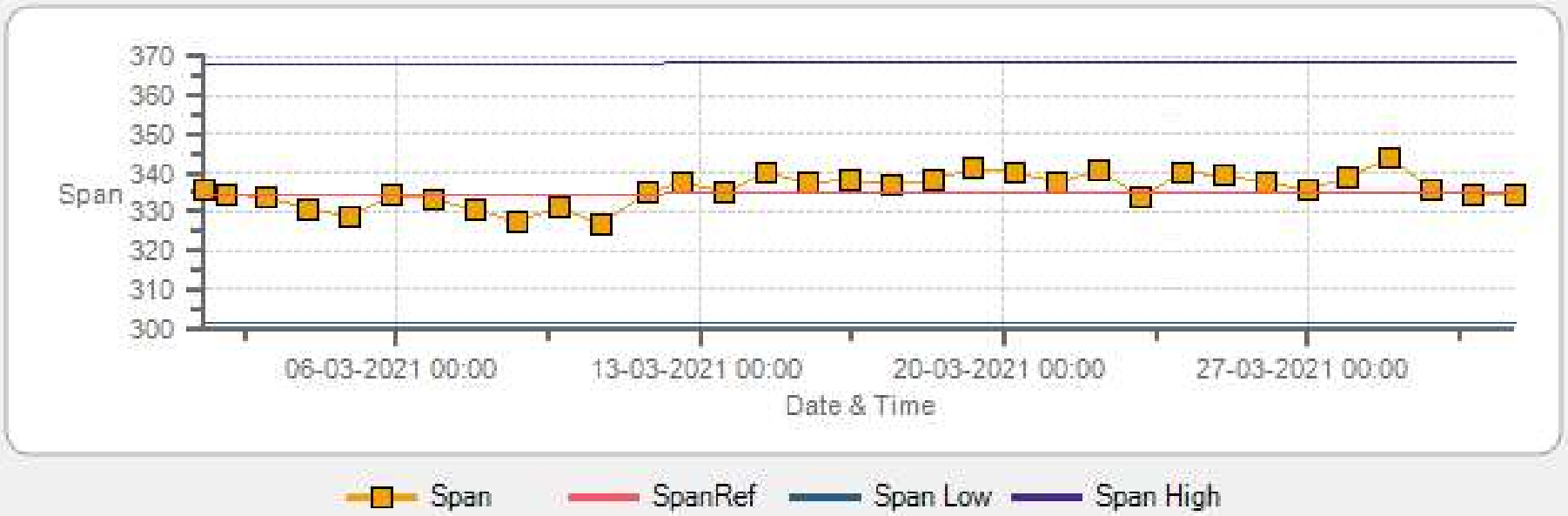
NOX[ppb] Calibration: St. Lina Monthly: 03-2021 Type: SpanAndZero - Span



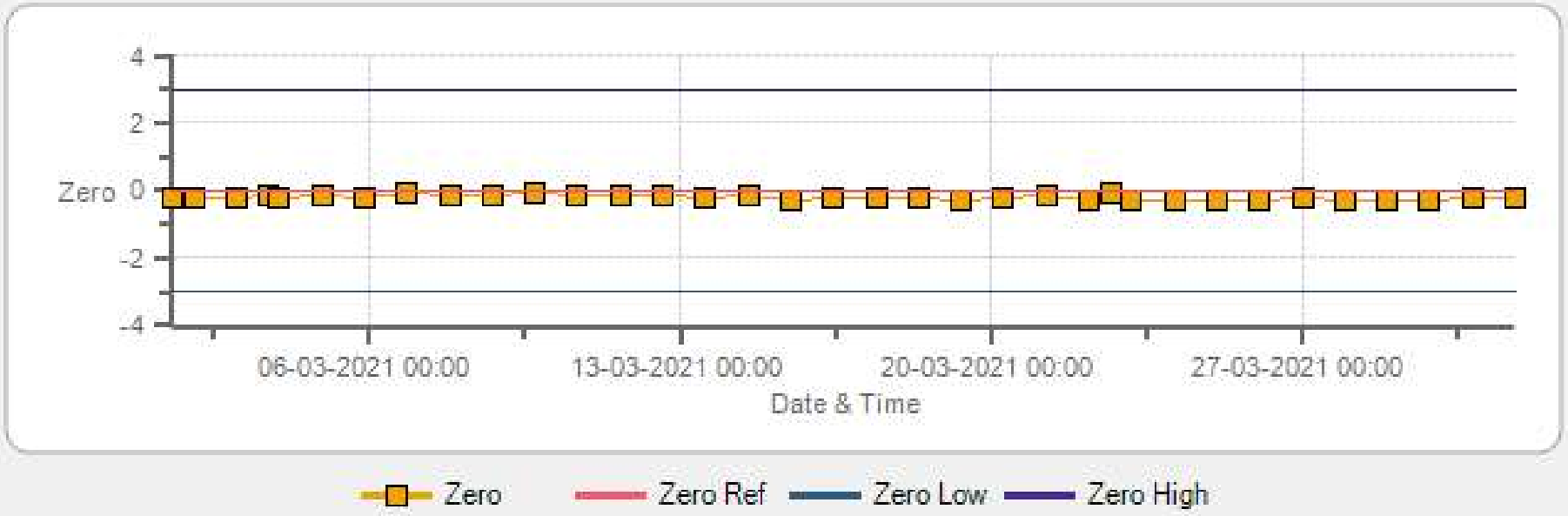
NO2[ppb] Calibration: St. Lina Monthly: 03-2021 Type: SpanAndZero - Zero



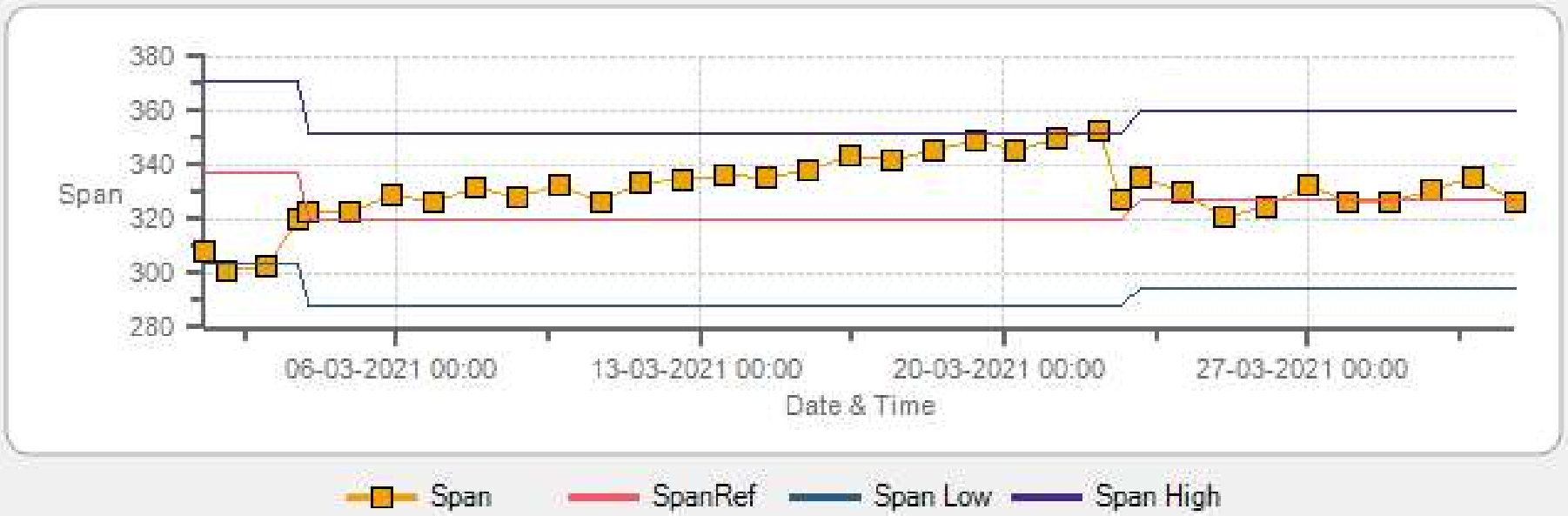
NO2[ppb] Calibration: St. Lina Monthly: 03-2021 Type: SpanAndZero - Span



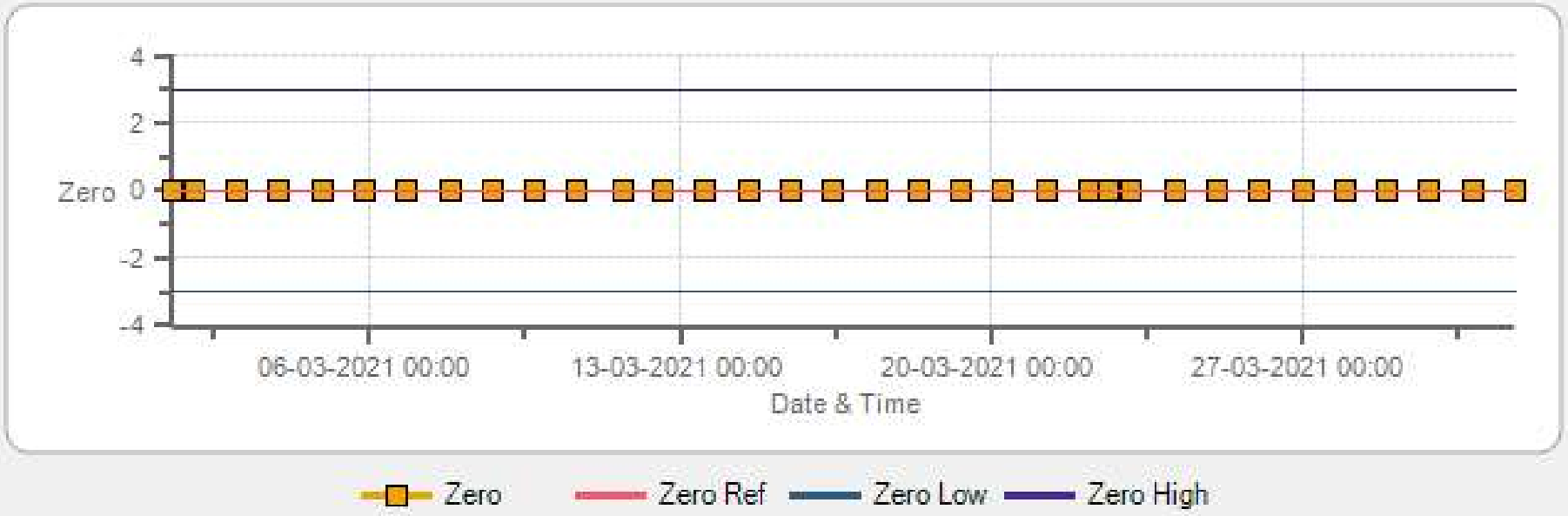
O3[ppb] Calibration: St. Lina Monthly: 03-2021 Type: SpanAndZero - Zero



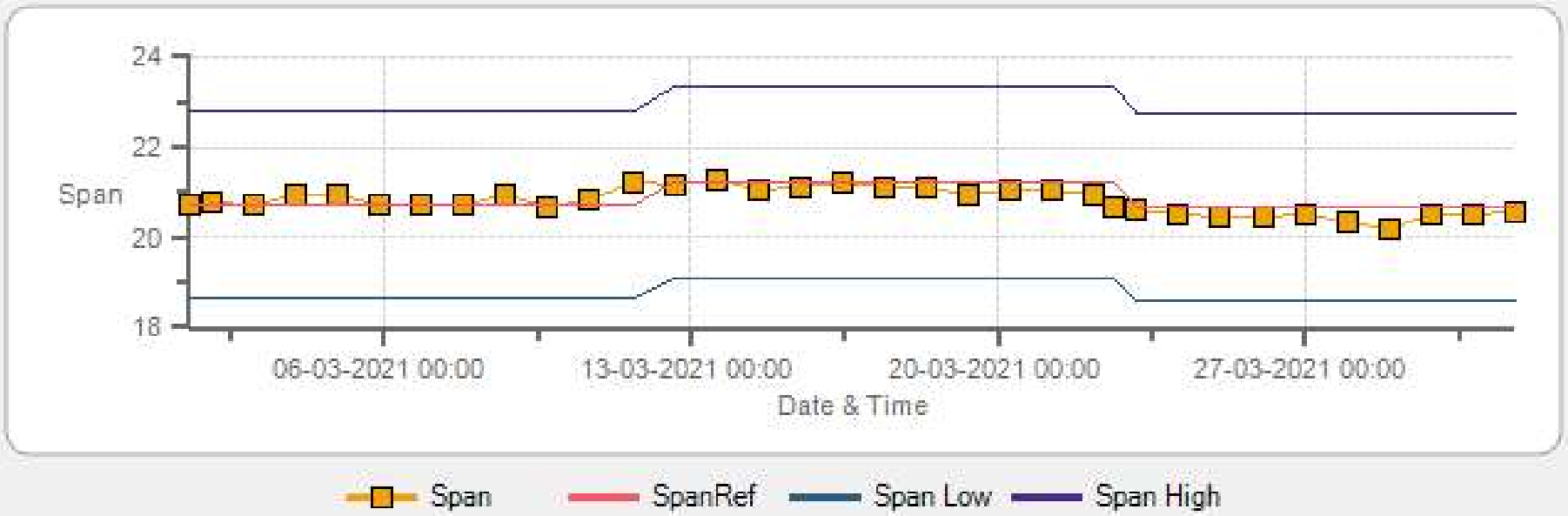
O3[ppb] Calibration: St. Lina Monthly: 03-2021 Type: SpanAndZero - Span



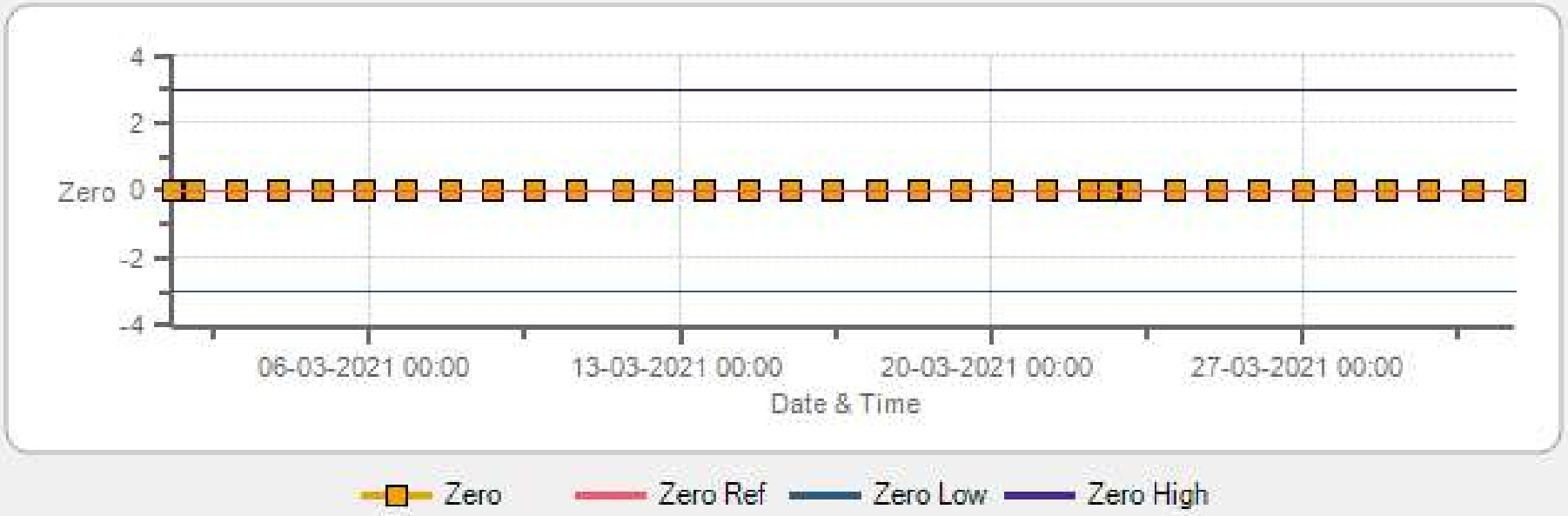
THC55[ppm] Calibration: St. Lina Monthly: 03-2021 Type: SpanAndZero - Zero



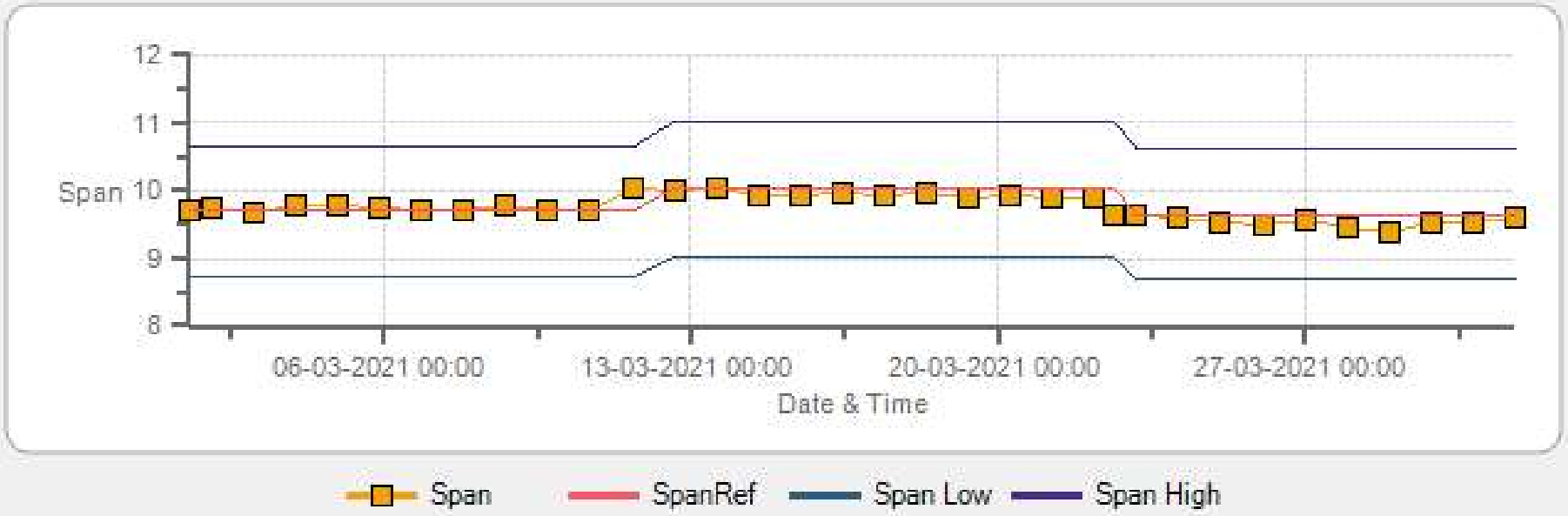
THC55[ppm] Calibration: St. Lina Monthly: 03-2021 Type: SpanAndZero - Span



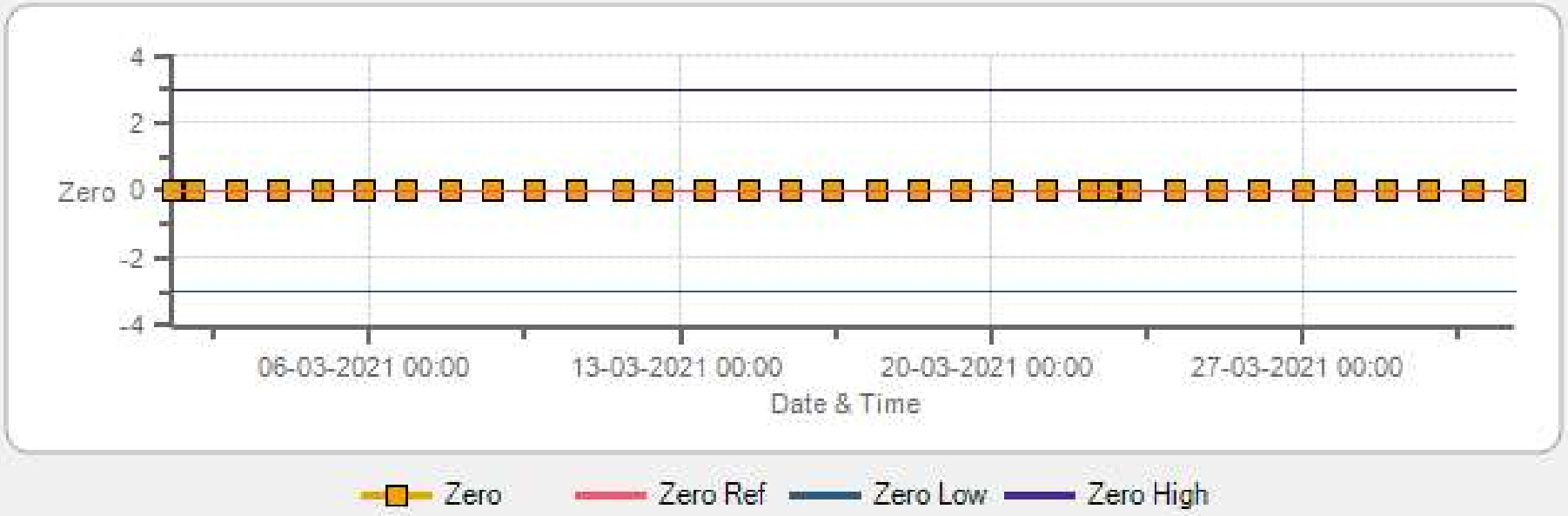
CH4[ppm] Calibration: St. Lina Monthly: 03-2021 Type: SpanAndZero - Zero



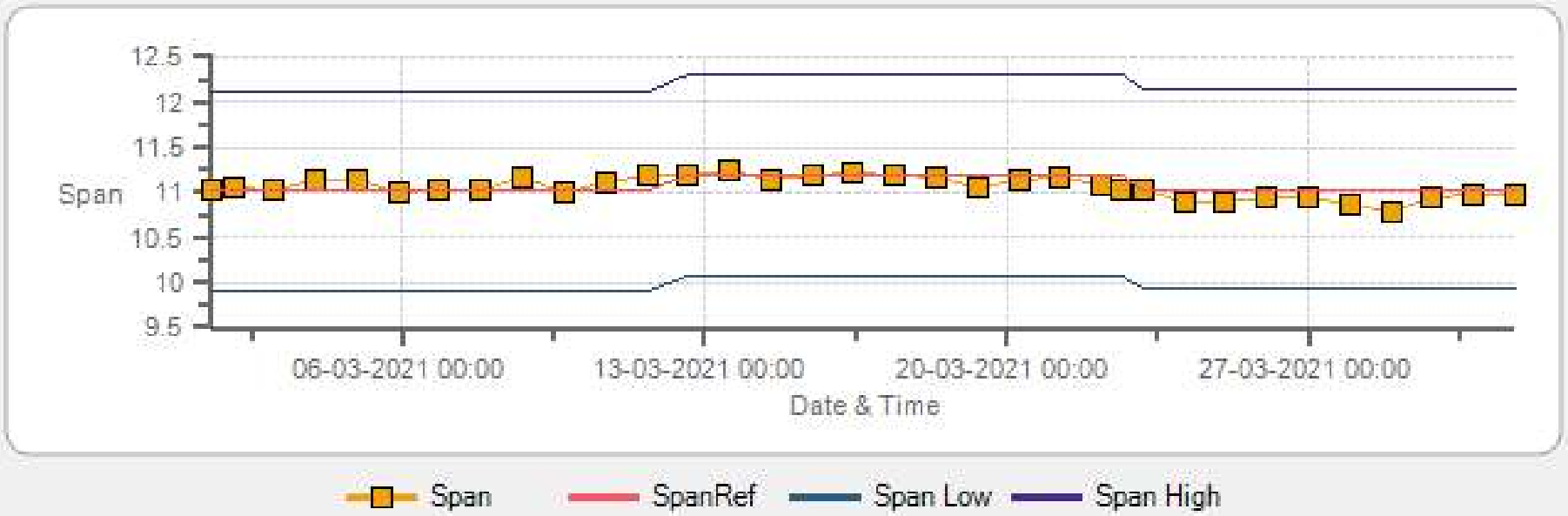
CH4[ppm] Calibration: St. Lina Monthly: 03-2021 Type: SpanAndZero - Span



NMHC[ppm] Calibration: St. Lina Monthly: 03-2021 Type: SpanAndZero - Zero



NMHC[ppm] Calibration: St. Lina Monthly: 03-2021 Type: SpanAndZero - Span



MULTI-POINT CALIBRATION RECORDS

SO2 Analyzer Calibration by Dilution

DATE:	11-Mar-2021	PREVIOUS CALIBRATION DATE:	03-Feb-2021
PARAMETER:	SO2	PREVIOUS CORRECTION FACTOR:	0.999
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	St. Lina	BAROMETRIC (mBar):	920
PURPOSE	Routine	START TIME (MST):	12:43
PERFORMED BY:	Alex Yakupov	END TIME (MST):	17:05

ANALYZER:

MAKE/MODEL	Thermo 43I-TLE	RANGE	500 ppb
SERIAL #	1180930030	FLOW (mL/min)	433
INITIAL		FINAL	
BKG/OFFSET	4.47	BKG/OFFSET	4.48
COEF/SLOPE	1.16	COEF/SLOPE	1.168
Expected (reference) Value	385	Expected (reference) Value	390

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010	MODEL:	T701
ID:	26801218	ID:	132
MFC CALIBRATION DATE:	13-Oct-2020	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	EY 0000851	HIGH ID	n/a
CONC (ppm):	51.60	EXPIRY DATE	n/a
CYLINDER (psi):	700	LOW ID	n/a
EXPIRY DATE	24-Feb-2028	EXPIRY DATE	n/a

CALIBRATION PARAMETERS:

POINT	HIGH	MID	LOW
TARGET	390	190	95
RANGE	300 - 400	150 - 200	50 - 100

SCRUBBER CHECK (15 MINS; TRS/H2S ONLY):

START TIME:	n/a	SO2 Conc (ppb)	n/a
END TIME:	n/a	Analyzer Response (ppb)	n/a

CALIBRATION:

FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
			ACTUAL	INDICATED		Initial	Final
DILUENT	GAS	TOTAL		Initial	Final		
5000		5000	0.00	0	0		
4959	38.70	4998	399.54	394.7	399	1.012	1.001
4981	17.60	4999	181.67	n/a	181.2	n/a	1.003
4989	8.80	4998	90.85	n/a	90.3	n/a	1.006

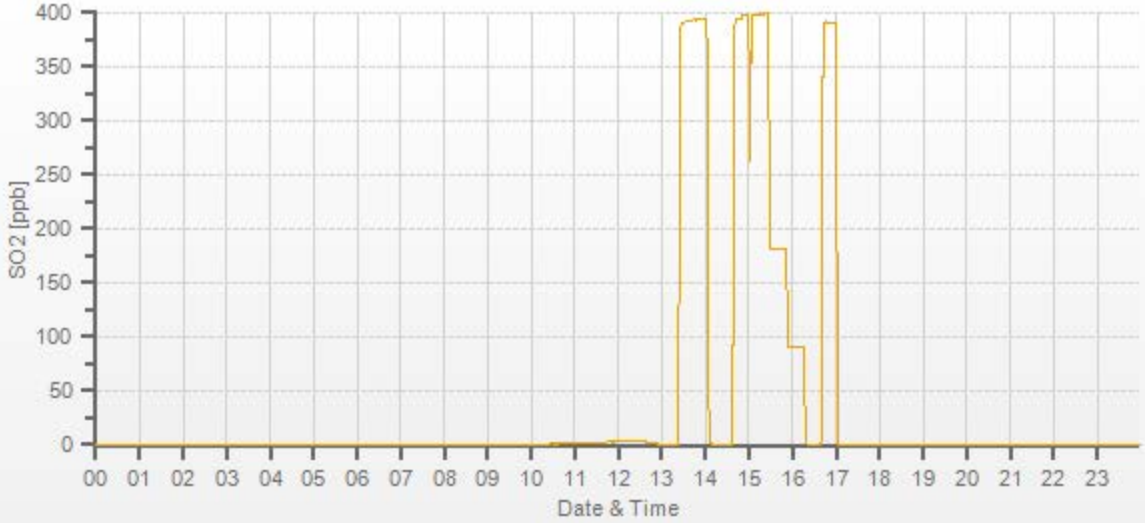
LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	0.999	0.0%

COMMENTS:

Sample inlet filter was changed.
15:00 - Daily ZS check.

SO2[ppb] Station: St. Lina Daily: 11-03-2021 Type: AVG 1 Min. [1 Min.]



H2S Analyzer Calibration by Dilution

DATE:	08-Mar-2021	PREVIOUS CALIBRATION DATE:	03-Feb-2021
PARAMETER:	H2S	PREVIOUS CORRECTION FACTOR:	0.999
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	St. Lina	BAROMETRIC (mBar):	922
PURPOSE	Routine	START TIME (MST):	13:05
PERFORMED BY:	Alex Yakupov	END TIME (MST):	17:55

ANALYZER:

MAKE/MODEL	Thermo 450i	RANGE	100 ppb
SERIAL #	CM 18010058	FLOW (mL/min)	820
INITIAL		FINAL	
BKG/OFFSET	49.9	BKG/OFFSET	53
COEF/SLOPE	0.854	COEF/SLOPE	0.878
Expected (reference) Value	67.7	Expected (reference) Value	54.3

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010	MODEL:	T701
ID:	26801218	ID:	132
MFC CALIBRATION DATE:	13-Oct-2020	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	LL 19174	HIGH ID	n/a
CONC (ppm):	10.00	EXPIRY DATE	n/a
CYLINDER (psi):	600	LOW ID	n/a
EXPIRY DATE	16-Jul-2022	EXPIRY DATE	n/a

CALIBRATION PARAMETERS:

POINT	HIGH	MID	LOW
TARGET	78	38	19
RANGE	60 - 80	30 - 40	10 - 20

SCRUBBER CHECK (15 MINS; TRS/H2S ONLY):

START TIME:	13:12	SO2 Conc (ppb)	380
END TIME:	13:27	Analyzer Response (ppb)	0.0

CALIBRATION:

FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
			ACTUAL	INDICATED		Initial	Final
DILUENT	GAS	TOTAL		Initial	Final		
6000		6000	0.00	1.3	0		
5953	46.80	6000	78.00	77.9	78.4	1.018	0.995
5977	22.80	6000	38.00	n/a	37.6	n/a	1.011
5989	11.40	6000	19.00	n/a	18.2	n/a	1.044

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.008	-0.5%

COMMENTS:

Sample inlet filter was changed.
13:49-14:01 Calibrator reprogramed. High point (As Found) starts at 14:02.

H2S[ppb] Station: St. Lina Daily: 08-03-2021 Type: AVG 1 Min. [1 Min.]

H2S Analyzer Calibration by Dilution

DATE:	16-Mar-2021	PREVIOUS CALIBRATION DATE:	08-Mar-2021
PARAMETER:	H2S	PREVIOUS CORRECTION FACTOR:	0.995
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	St. Lina	BAROMETRIC (mBar):	919
PURPOSE	Repeat	START TIME (MST):	11:54
PERFORMED BY:	Alex Yakupov	END TIME (MST):	18:02

ANALYZER:

MAKE/MODEL	Thermo 450i	RANGE	100 ppb
SERIAL #	CM 18010058	FLOW (mL/min)	817
INITIAL		FINAL	
BKG/OFFSET	53	BKG/OFFSET	53.1
COEF/SLOPE	0.878	COEF/SLOPE	0.885
Expected (reference) Value	54.3	Expected (reference) Value	58.6

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010	MODEL:	T701
ID:	26801218	ID:	132
MFC CALIBRATION DATE:	13-Oct-2020	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	LL 19174	HIGH ID	n/a
CONC (ppm):	10.00	EXPIRY DATE	n/a
CYLINDER (psi):	600	LOW ID	n/a
EXPIRY DATE	16-Jul-2022	EXPIRY DATE	n/a

CALIBRATION PARAMETERS:

POINT	HIGH	MID	LOW
TARGET	78	38	19
RANGE	60 - 80	30 - 40	10 - 20

SCRUBBER CHECK (15 MINS; TRS/H2S ONLY):

START TIME:	n/a	SO2 Conc (ppb)	n/a
END TIME:	n/a	Analyzer Response (ppb)	n/a

CALIBRATION:

FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
			ACTUAL	INDICATED		Initial	Final
DILUENT	GAS	TOTAL		Initial	Final		
4000		4000	0.00	-0.6	0		
3969	31.20	4000	78.00	78.6	78.3	0.985	0.996
3985	15.20	4000	38.00	n/a	37.9	n/a	1.003
3992	7.60	4000	19.00	n/a	18.6	n/a	1.022

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.006	-0.2%

COMMENTS:

Repeat calibration was completed due to span drift.

H2S[ppb] Station: St. Lina Daily: 16-03-2021 Type: AVG 1 Min. [1 Min.]

NOx Calibration by Dilution/Gas-Phase Titration

CALIBRATION:

				ANALYZER:			
DATE:	11-Mar-2021	PREVIOUS CALIBRATION DATE:	03-Feb-2021	MAKE/MODEL:	Thermo 42i	PREVIOUS CF.	
CLIENT:	LICA	TEMPERATURE (°C):	22.0	SERIAL #:	1180930029	NOx	1.001
LOCATION:	St. Lina	BAROMETRIC (mBar):	920	FLOW (mL/min)	477	NO	0.999
PURPOSE	Routine	START TIME (MST):	12:42	RANGE (ppb)	500	NO2	1.000
PERFORMED BY:	Alex Yakupov	END TIME (MST):	19:00	GPT FOR O3?		No	

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:		CALIBRATION GAS:			FLOWMETERS (if applicable):	
MAKE:	SABIO	MAKE:	Teledyne	CYLINDER ID:	EY 0000851		HIGH ID:	n/a
MODEL:	2010	MODEL:	T701	NO/NOx (PPM):	50.9	51.1	HIGH EXPIRY:	n/a
ID:	26801218	ID:	132	CYLINDER (psi):	700		LOW ID:	n/a
MFC CALIBRATION DATE:	13-Oct-2020	OXIDIZER ID:	n/a	EXPIRY DATE	24-Feb-2028		LOW EXPIRY:	n/a

CALIBRATION SETTINGS:

INITIAL	NOx	NO	NO2	FINAL	NOx	NO	NO2
BKG/OFFSET:	6.3	6	n/a	BKG/OFFSET:	6.3	6.2	n/a
SLOPE/COEF/CE:	1.005	1.28	0.999	SLOPE/COEF/CE:	1.005	1.322	0.999

EXPECTED (REFERENCE) VALUE:

INITIAL	NOx	NO	NO2	FINAL	NOx	NO	NO2
	336.8	2.4	334.5		337.0	2.1	335.0

CALIBRATION PARAMETERS:

POINT	NO TARGET (PPB)	NO2 TARGET (PPB)	NO2 RANGE	O3 POINT
HIGH	380	250	230-265	n/a
MID	180	125	115-150	n/a
LOW	90	45	40-55	n/a
EXTRA 1	n/a	n/a	n/a	n/a

NO/NOx CALIBRATION:

FLOW RATE (mL/min)			CONCENTRATION (ppb)									CORRECTION FACTOR (CF.)					
			CALCULATED			INITIAL INDICATED			FINAL INDICATED			INITIAL			FINAL		
DILUENT	GAS	TOTAL	NO	NOx	NO2	NO	NOx	NO2	NO	NOx	NO2	NO	NOx	NO2	NO	NOx	NO2
5000		5000	0.0	0.0	0.0	-0.1	-0.1	0.0	0.0	0.0	0.0						
4959	38.70	4998	394.1	395.7	1.5	382.2	383.9	1.7	394.4	396.6	2.2	1.031	1.030		0.999	0.998	
4981	17.60	4999	179.2	179.9	0.7	n/a	n/a	n/a	179.8	180.5	0.6	n/a	n/a		0.997	0.997	
4989	8.80	4998	89.6	90.0	0.4	n/a	n/a	n/a	90.1	90.5	0.5	n/a	n/a		0.995	0.994	

GPT CALIBRATION:

Point	CALIBRATOR			INDICATED (ppb)			NO DROP / O3 Conc (ppb)	NO2 GAIN (ppb)	NO2 Corr. FACTOR	CONV. EFFICIENCY
	GAS	TOTAL	O3 SETPOINT	NO	NOx	NO2				
REFERENCE	38.70	4998	0	394.8	397.0	2.2				
AS-FOUND HIGH	38.70	4998	240	142.5	397.1	254.6	252.3	252.4	1.000	100.04%
ADJUSTED HIGH	n/a	n/a	n/a	n/a	n/a	n/a	n/a	**n/a**	**n/a**	n/a
MID	38.70	4998	125	263.6	397.2	133.6	131.2	131.4	0.998	100.15%
LOW	38.70	4998	45	350.2	396.7	46.5	44.6	44.3	1.007	99.33%
NO2 adjustment not required.									AVERAGE:	99.84%

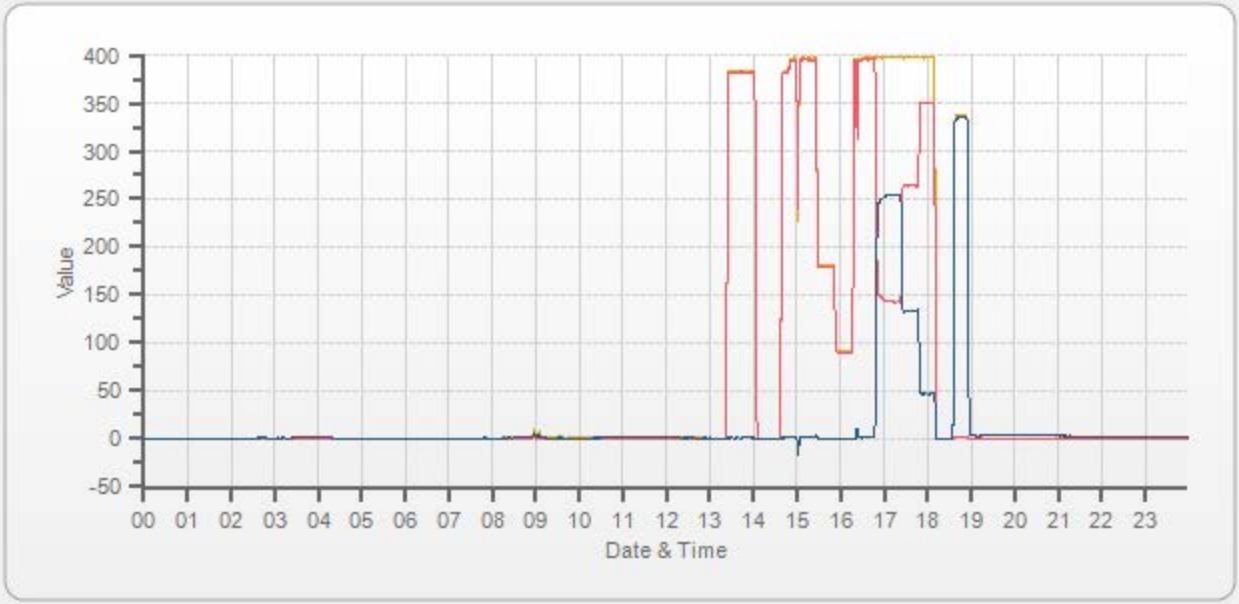
LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
NO	1.000	1.000	0.05%
NOx	1.000	1.002	0.03%
NO2	1.000	1.002	-0.05%

COMMENTS:

Sample inlet filter was changed
15:00 - daily ZS check.
16:22 - the calibration line was disconnected in error.

Station: St. Lina Daily: 11-03-2021 Type: AVG 1 Min. [1 Min.]



Ozone Calibration by Photometer (Varying UV Lamp)

DATE:	03-Mar-2021	PREVIOUS CALIBRATION DATE:	n/a
PARAMETER:	O3	PREVIOUS CORRECTION FACTOR:	n/a
CLIENT:	LICA	TEMPERATURE (°C):	24.7
LOCATION:	St Lina	BAROMETRIC (mBar):	914
PURPOSE	Install/Post-Repair	START TIME (MST):	14:48
PERFORMED BY:	Chris Wesson	END TIME (MST):	17:30

ANALYZER:

MAKE/MODEL	Thermo 49i	RANGE	500 ppb
SERIAL #	1002240371	FLOW (mL/min)	1488
INITIAL		FINAL	
BKG/OFFSET	0.2	BKG/OFFSET	0.2
COEF/SLOPE	0.979	COEF/SLOPE	1.103
Expected (reference) Value	337.2	Expected (reference) Value	319.7

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	Sabio	MAKE:	Thermo
MODEL:	2010D	MODEL:	111
ID:	1190613	ID:	111-22449-204
MFC CALIBRATION DATE:	23-Sep-2020	OXIDIZER ID:	n/a
	CALIBRATION METHOD:	Photometer (Varying UV Lamp)	
GPT DATE:	n/a	GPT END TIME:	n/a

CALIBRATION PARAMETERS:

POINT	HIGH	MID	LOW
RANGE	300 - 400	150 - 200	50 - 100

CALIBRATION:

FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
			ACTUAL	INDICATED		Initial	Final
DILUENT	GAS	TOTAL		Initial	Final		
4998		4998	0.0	n/a	0.0		
4999		4999	368.0	n/a	368.0	n/a	1.000
4999		4999	174.0	n/a	176.7	n/a	0.985
4999		4999	88.0	n/a	90.5	n/a	0.972

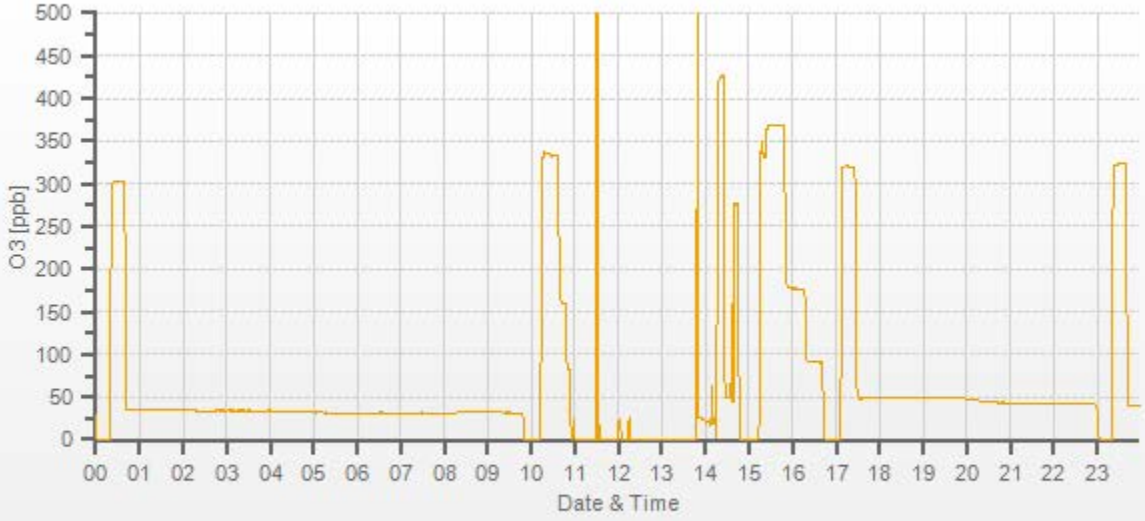
LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	0.998	0.3%

COMMENTS:

Post-repair following cleaning and lamp adjustment

O3[ppb] Station: St. Lina Daily: 03-03-2021 Type: AVG 1 Min. [1 Min.]



Ozone Calibration by Photometer (Varying UV Lamp)

DATE:	22-Mar-2021	PREVIOUS CALIBRATION DATE:	03-Mar-2021
PARAMETER:	O3	PREVIOUS CORRECTION FACTOR:	1.000
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	St. Lina	BAROMETRIC (mBar):	915
PURPOSE	Repeat	START TIME (MST):	13:12
PERFORMED BY:	Alex Yakupov	END TIME (MST):	16:40

ANALYZER:

MAKE/MODEL	Thermo 49i	RANGE	500 ppb
SERIAL #	1002240371	FLOW (mL/min)	1490
INITIAL		FINAL	
BKG/OFFSET	0.2	BKG/OFFSET	0.2
COEF/SLOPE	1.103	COEF/SLOPE	1.006
Expected (reference) Value	319.7	Expected (reference) Value	327.4

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Thermo-Electron
MODEL:	2010 D	MODEL:	111
ID:	11900613	ID:	111-22449-204
MFC CALIBRATION DATE:	12-Dec-2020	OXIDIZER ID:	n/a
	CALIBRATION METHOD:	Photometer (Varying UV Lamp)	
GPT DATE:	n/a	GPT END TIME:	n/a

CALIBRATION PARAMETERS:

POINT	HIGH	MID	LOW
RANGE	300 - 400	150 - 200	50 - 100

CALIBRATION:

FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
			ACTUAL	INDICATED		Initial	Final
DILUENT	GAS	TOTAL		Initial	Final		
5000		5000	0.0	0.1	0.0		
5000		5000	378.0	401.0	378.3	0.943	0.999
5000		5000	180.0	n/a	180.3	n/a	0.998
5000		5000	61.0	n/a	61.8	n/a	0.987

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.000	0.1%

COMMENTS:

Repeat calibration due to span drift


O3[ppb] Station: St. Lina Daily: 22-03-2021 Type: AVG 1 Min. [1 Min.]
O3 [ppb]
450
400
350
300
250
200
150
100
50
0
-50
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23
Date & Time
O3 [ppb]

Methane/Non-Methane Analyzer Calibration by Dilution

CALIBRATION:

DATE:	11-Mar-2021	PREVIOUS CALIBRATION DATE:	03-Feb-2021
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	St. Lina	BAROMETRIC (mBar):	920
PURPOSE	Routine	START TIME (MST):	12:40
PERFORMED BY:	Alex Yakupov	END TIME (MST):	17:05

ANALYZER:

VALUE	MAKE/MODEL	SERIAL	FLOW (mL/min)
	Thermo 55i	1180930025	1050
PARAMETER:	CH4	NMHC	THC
RANGE (ppm):	20	20	40
PREVIOUS CF:	1.001	1.002	1.001

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:		CALIBRATION GAS:			FLOWMETERS (if applicable):	
MAKE:	SABIO	MAKE:	Teledyne	CYLINDER ID:	LL 119576		HIGH ID:	n/a
MODEL:	2010 D	MODEL:	T701	CH_4/C_3H_8 (ppm):	870.0	299.0	HIGH EXPIRY:	n/a
ID:	11900613	ID:	132	CYLINDER (psi):	2000		LOW ID:	n/a
MFC CALIBRATION DATE:	10-Dec-2020	OXIDIZER ID:	115	EXPIRY DATE	17-Jul-2027		LOW EXPIRY:	n/a

CALIBRATION PARAMETERS:

POINT (CH4/NMHC)	HIGH	MID	LOW	CH4 EQUIVILANCE	
TARGET	14	7	3.5	C_3H_8 as CH_4	822.3
RANGE	12 - 16	6 - 8	2 - 4	THC as CH_4	1692.3

EXPECTED (REFERENCE) VALUE:

INITIAL	CH4	NMHC	THC	FINAL	CH4	NMHC	THC
	9.70	11.02	20.71		10.03	11.18	21.21

CALIBRATION:

FLOW RATE (mL/min)			CONCENTRATION (PPM)									CORRECTION FACTOR (CF.)					
			CALCULATED			INITIAL INDICATED			FINAL INDICATED			INITIAL			FINAL		
DILUENT	GAS	TOTAL	CH4	NMHC	THC	CH4	NMHC	THC	CH4	NMHC	THC	CH4	NMHC	THC	CH4	NMHC	THC
3000		3000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						
2954	46.10	3000	13.37	12.64	26.00	12.94	12.41	25.35	13.38	12.62	26.00	1.033	1.018	1.026	0.999	1.001	1.000
2975	24.80	3000	7.19	6.80	13.99	n/a	n/a	n/a	7.17	6.79	13.95	n/a	n/a	n/a	1.003	1.001	1.003
2989	10.60	3000	3.07	2.91	5.98	n/a	n/a	n/a	3.08	2.90	5.98	n/a	n/a	n/a	0.998	1.002	1.000

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
CH4	1.000	1.000	0.0%
NMHC	1.000	0.999	0.0%
THC	1.000	1.000	0.0%

Comments:

Sample filter was changed.

Use Zero Chrom? **Yes**

Station: St. Lina Daily: 11-03-2021 Type: AVG 1 Min. [1 Min.]

Thermo 5030i SHARP Monitor Calibration

Date:	March 10, 2021	**Performed By/Reviewer:**	Alex Yakupov / Chris Wesson
Company:	LICA	**Start Time (mst):**	12:55
Station Name/Location:	St. Lina	**End Time (mst):**	15:10
Previous Audit Date:	February 17, 2021	**Calibration Purpose:**	Quarterly
Parameter:	PM 2.5	**Weather Conditions:**	Mainly sunny

SHARP 5030i Information and Status:

Serial Number: CM 17091001 **Filter Tape Counter** 65

Reference Standards: **Air Flow**

	Manometer	Orifice	Pressure:		Temp / RH:	
Make:	DeltaCal	DeltaCal	DeltaCal		DeltaCal	
Model:	DC1	DC1	DC1		DC1	
Serial Number:	177246	177246	177246		177246	
Expiry Date:	March 27, 2021	March 27, 2021	March 27, 2021		March 27, 2021	

Ambient Temperature (°C)

	As Found:			As Left: (same as found if acceptable)			
	Reference	SHARP	Difference	Reference	SHARP	Difference	
#1	-7.60	-8.4	0.8	-7.60	-7.6	0.0	*Temp Limit: ± 2°C*
#2	-7.60	-8.4	0.8	-7.60	-7.6	0.0	
#3	-7.60	-8.4	0.8	-7.60	-7.6	0.0	
Average	-7.6	-8.4	0.8	-7.6	-7.6	0.0	

Ambient Relative Humidity (%RH)

	As Found:			As Left: (same as found if acceptable)			
	Reference	SHARP	Offset (ZERO)	Reference	SHARP	Offset (ZERO)	
#1	43.50	41.8	1.7	43.50	43.5	0.0	*RH Limit: ± 2 %RH*
#2	43.30	41.7	1.6	43.50	43.5	0.0	
#3	43.50	41.8	1.7	43.50	43.5	0.0	
Average	43.4	41.8	1.7	43.5	43.5	0.0	

Flow Temperature (°C)

	As Found:			As Left: (same as found if acceptable)			
	Reference	SHARP	Difference	Reference	SHARP	Difference	
#1	23.40	23.6	-0.2	23.40	23.6	-0.2	*Temp Limit: ± 2°C*
#2	23.40	23.6	-0.2	23.40	23.6	-0.2	
#3	23.60	23.7	-0.1	23.60	23.7	-0.1	
Average	23.5	23.6	-0.2	23.5	23.6	-0.2	

Barometric Pressure (mmHg)

	As Found:			As Left: (same as found if acceptable)			
	Reference	SHARP	Difference	Reference	SHARP	Difference	
#1	701.0	699.5	1.5	701.0	701.0	0.0	*BP Limit: ± 2 mmHg*

Nephelometer Relative Humidity (%RH)

	As Found:			As Left: (same as found if acceptable)			
	Reference	SHARP	Difference	Reference	SHARP	Difference	
#1	11.50	11.2	0.3	11.50	11.1	0.4	*RH Limit: ± 2 %RH*

Nephelometer Temperature (%RH)

	As Found:			As Left: (same as found if acceptable)			
	Reference	SHARP	Difference	Reference	SHARP	Difference	
#1	22.10	21.4	0.7	22.10	21.4	0.7	*Temp Limit: ± 2°C*

Nephelometer Source Level

As Found:		As Left: (same as found if acceptable)		
Variable	Value	Variable	Value	
IRED	66	IRED	66	*IRED Limit (as found): 60-70 mA*
SRC LEVEL	47	SRC LEVEL	47	Adjusted IRED Limit (as left): *65 mA*

Detector Calibration (Auto)

Detector Auto Calibration Completed:	As Left: Variable	Value
YES	HIGH VOLT	1370
	BETA REF TH	270
	ALPHA TH	710
	DIFF HV	0

Mass Coefficient (Auto)

Zero		Span		
Variable	Value	Variable	Value	
MASS COEF	7100.4	MASS COEF	7100.3	**Foil Set: CM1597**
FOIL VALUE	1045	FOIL VALUE	1045	
Beta Avg	9255	Beta Avg	7988	
difference	Foil set # 4804	difference	0.0	

Flow Calibration (L/min)

	As Found:			As Left: (same as found if acceptable)			
	Reference	SHARP	Difference	Reference	SHARP	Difference	
#1	16.59	16.66	-0.07	16.67	16.67	0.00	*Flow Limit: 16.67 ± 0.33 L/min*
#2	16.59	16.66	-0.07	16.67	16.67	0.00	
#3	16.60	16.67	-0.07	16.67	16.67	0.00	
Average	16.59	16.66	-0.07	16.67	16.67	0.00	

Leak Check (L/min)

	Without Leak Check Adapter			With leak Check Adapter			
	Reference	SHARP	Difference	Reference	SHARP	Difference	
#1	16.67	16.67	0.00	16.51	16.62	-0.11	*Leak Limit: 0.08 L/min*
					LEAK RATE:	**-0.11**	

Meteorological Sensor Audit/Calibration

Location Information

Company:	LICA	**Performed By:**	Alex Yakupov
Audit Location:	St. Lina	**Reviewed By:**	Chris Wesson
Audit Date:	26/02/2020	**Start/End Time (mst):**	12:38 / 15:06
Calibration Purpose:	installation	**Weather Conditions:**	Mainly sunny

Wind Sensor Information

Sensor ID Data:		**Sensor Outputs:**	
Sensor Make:	RM Young	**Velocity Voltage Output Range:**	0-1 V
Sensor Model:	05305VK	**Velocity Unit Output Range:**	0-200 km/h
Serial #:	161466	**Direction Voltage Output Range:**	0-1 V
Previous Cal/Audit Date:	October 9, 2019	**Direction Unit Output Range:**	0-360 degrees

Wind Calibrator Information

Calibrator I.D. and Expiry Date: : Model 18860-90/18802 SN: CA 4744, expires - June 19, 2020 (ownership - LICA).

Wind Speed Audit Data **+/- 2% of the average correction factor is the limit**

RPM	Wind Speed Generated kph	Clockwise Wind Speed kph	Counter Clockwise Wind Speed kph	Correction Factor
0	0	0.1	0.0	-
1000	18.4	18.5	18.5	0.995
2000	36.9	37.0	37.0	0.997
3000	55.3	55.5	55.5	0.996
4000	73.7	74.0	74.0	0.996
5000	92.2	92.6	92.6	0.996
6000	110.6	111.1	111.1	0.995
7000	129.0	129.7	129.7	0.995
8000	147.4	148.3	148.3	0.994
9000	165.9	166.9	166.9	0.994
10000	184.3	185.5	185.5	0.994
		The audit meets AMD requirements.	**Average Correction Factor=**	**0.995**

Wind Direction Audit Data **+/- 3° of the absolute average degrees difference for all points is the limit**

Generated Wind Direction 0-360 (Up)	Generated Wind Direction 360-0 (Down)	Indicated Wind Direction 0-360 (Up)	Indicated Wind Direction 360-0 (Down)	Degrees Difference 0-360 (Up)	Degrees Difference 360-0 (Down)	Average Absolute Degrees Difference
0	355	0	354	0.0	0.7	0.3
30	330	32	331	-2.0	-0.5	1.3
60	300	62	300	-2.2	0.0	1.1
90	270	93	271	-3.3	-0.6	2.0
120	240	124	242	-3.6	-1.8	2.7
150	210	153	212	-2.9	-2.4	2.7
180	180	182	183	-2.3	-2.8	2.6
210	150	212	154	-1.9	-3.6	2.8
240	120	242	124	-1.5	-4.4	3.0
270	90	270	94	0.0	-4.2	2.1
300	60	300	63	0.5	-3.1	1.8
330	30	330	33	0.5	-2.5	1.5
355	0	354	1	0.7	1.4	1.0
The audit meets AMD requirements.			**Average Absolute Degrees Difference=**			**1.9**

Comments:

The audit was completed to install LICA RM Young Wind System.

Meteorological Sensor Audit/Calibration

Location Information

Company:	LICA	**Performed By:**	Alex Yakupov
Audit Location:	St. Lina	**Reviewed By:**	Chris Wesson
Audit Date:	March 16, 2021	**Start/End Time (mst):**	12:17 / 14:32
Calibration Purpose:	routine annual	**Weather Conditions:**	Mainly sunny

Wind Sensor Information

Sensor ID Data:		**Sensor Outputs:**	
Sensor Make:	RM Young	**Velocity Voltage Output Range:**	0-1
Sensor Model:	05305VK	**Velocity Unit Output Range:**	0-200
Serial #:	161466	**Direction Voltage Output Range:**	0-1
Previous Cal/Audit Date:	February 26, 2020	**Direction Unit Output Range:**	0-360

Wind Calibrator Information

Calibrator I.D. and Expiry Date: Model 18860-90/18802 SN: CA 4744, expires - Aug 6, 2022

Wind Speed Audit Data **+/- 2% of the average correction factor is the limit**

RPM	Wind Speed Generated kph	Clockwise Wind Speed kph	Counter Clockwise Wind Speed kph	Correction Factor
0	0	0.1	0.1	-
1000	18.4	18.5	18.5	0.996
2000	36.9	37.0	37.0	0.996
3000	55.3	55.5	55.5	0.996
4000	73.7	74.0	74.1	0.996
5000	92.2	92.6	92.6	0.995
6000	110.6	111.2	111.2	0.994
7000	129.0	129.7	129.7	0.995
8000	147.4	148.3	148.3	0.994
9000	165.9	167.0	167.0	0.993
10000	184.3	185.6	185.6	0.993
		The audit meets AMD requirements.	**Average Correction Factor=**	**0.995**

Wind Direction Audit Data **+/- 3° of the absolute average degrees difference for all points is the limit**

Generated Wind Direction 0-360 (Up)	Generated Wind Direction 360-0 (Down)	Indicated Wind Direction 0-360 (Up)	Indicated Wind Direction 360-0 (Down)	Degrees Difference 0-360 (Up)	Degrees Difference 360-0 (Down)	Average Absolute Degrees Difference
0	355	1	355	0.8	0.0	0.4
30	330	31	331	-0.6	-0.9	0.7
60	300	61	300	-1.4	-0.4	0.9
90	270	93	270	-2.8	0.0	1.4
120	240	123	242	-3.2	-1.8	2.5
150	210	153	212	-2.7	-2.3	2.5
180	180	183	183	-2.6	-2.9	2.8
210	150	212	154	-1.7	-3.8	2.8
240	120	241	124	-1.2	-4.1	2.6
270	90	270	94	-0.1	-4.0	2.1
300	60	301	64	-0.6	-3.6	2.1
330	30	330	32	0.3	-2.2	1.3
355	0	355	1	0.0	1.3	0.7
The audit meets AMD requirements.			**Average Absolute Degrees Difference=**			**1.7**

Comments:

n/a

End of Report