



Lakeland Industry & Community Association

AUGUST 2022

Monthly Ambient Air Quality Monitoring Report

LICA-202208

Operation and Maintenance:

Bureau Veritas Canada

Data Validation and Report:

Lakeland Industry & Community Association

September 23, 2022

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September 23, 2022

Alberta Environment and Parks (AEP)

11th Floor, Oxbridge Place

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Edmonton, AB, T5K 2J6

RE: LICA – August 2022 Monthly Ambient Air Quality Monitoring Report

Enclosed is the August 2022 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

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This report has been reviewed by Michael Bisaga of the LICA Airshed.

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LIST OF ACRONYMS

AAAQOs	Alberta Ambient Air Quality Objectives
AEP	Alberta Environment and Parks
AMD	Air Monitoring Directive
AT	Ambient Temperature
BP	Barometric Pressure
CH ₄	Methane
EPEA	Environmental Protection and Enhancement Act
H ₂ S	Hydrogen Sulphide
kph	kilometers per hour
LICA	Lakeland Industry & Community Association
mb	millibar
mm	millimeter
NMHC	Non-Methane Hydrocarbons
NO	Nitric Oxide
NO ₂	Nitrogen Dioxide
NO _x	Oxide of Nitrogen
PAC	Polycyclic Aromatic Compounds
ppb	parts per billion
ppm	parts per million
RH	Relative Humidity
SO ₂	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

NETWORK STATION SUMMARY

Listing of Continuous Monitoring Stations and Integrated Sampling Stations

Station Name		Cold Lake South	Tamarack	St. Lina	Lac La Biche
Station ID		1174	1248	1250	1690
Coordinates		54.41402	54.604935	54.215961	54.76516
		-110.23316	-110.452637	-111.503304	-111.9714490
Continuous Monitoring Parameter	SO2	√	√	√	√
	H2S		√	√	√
	TRS	√			
	NOX	√	√	√	√
	NOX	√	√	√	√
	NO2	√	√	√	√
	O3	√	√	√	√
	THC	√	√	√	√
	CH4	√	√	√	√
	NMHC	√	√	√	√
	RH	√	√	√	√
	BP	√	√	√	√
	AT	√	√	√	√
	ST	√	√	√	√
	PRECEIPITATION		√	√	
	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
NMHC Canister	Bureau Veritas Canada	InnoTech Alberta Inc	InnoTech Alberta Inc	Not Applicable

Monitoring Notes during the Month of August 2022

Cold Lake South

- All data collected this month were compliant with the requirements outlined in the AMD 2016.
- Measured parameters were below Alberta Ambient Air Quality Objectives (AAAQOs) and/or Alberta Ambient Air Quality Guidelines (AAAQGs) where applicable, except PM2.5. Seven 1-Hour and two 24-hour PM2.5 exceedances were recorded this month and were caused by smoke drifting into the area from wildfires burning in British Columbia and Northern Saskatchewan.

Date	Time (MST)	Parameter	Average Period	AAAQOs / AAAQGs	Concentration	Wind speed (km/hr)	Wind Direction	Reference #
Aug. 21	6	PM2.5	1-Hour	80 ug/m3	85 ug/m3	12.6	(NE)	403005
Aug. 21	12	PM2.5	1-Hour	80 ug/m3	81 ug/m3	6.3	(ENE)	403005
Aug. 21	13	PM2.5	1-Hour	80 ug/m3	90 ug/m3	3.3	(E)	403005
Aug. 21	14	PM2.5	1-Hour	80 ug/m3	105 ug/m3	4.9	(SE)	403005
Aug. 21	15	PM2.5	1-Hour	80 ug/m3	100 ug/m3	5.1	(SE)	403005
Aug. 21	16	PM2.5	1-Hour	80 ug/m3	93 ug/m3	6.7	(SE)	403005
Aug. 21	17	PM2.5	1-Hour	80 ug/m3	84 ug/m3	5.1	(SE)	403005
Aug. 21	-	PM2.5	24-Hour	29 ug/m3	67.4 ug/m3	4.2	(ENE)	403005
Aug. 21	-	PM2.5	24-Hour	29 ug/m3	51.5 ug/m3	1.2	(ENE)	403061

- All parameters met the 90% operational uptime requirement, except THC/CH4/NMHC (87.9%). **AEP reference #: 404741.**
- **THC/CH4/NMHC:** The Thermo 55i analyzer, s/n: 1180930025, failed on August 5. The replacement Thermo 55i analyzer, s/n: 1236656107, was installed on August 6. However, the analyzer registered NMHC noise at ambient concentrations. On August 8, the analyzer was removed, and the repaired Thermo 55i analyzer, s/n: 1180930025, was installed. A successful installation calibration was completed on August 9. Ninety hours of downtime were recorded.

Tamarack

- 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/or Alberta Ambient Air Quality Guidelines (AAAQGs) where applicable, except H2S and PM2.5. One 1-Hour H2S and one 24-Hour PM2.5 exceedances were recorded this month. The possible source for the H2S was believed to be the result of local buildup of emissions, given the low wind speeds recorded at the time. PM2.5 exceedances recorded this month were caused by smoke drifting into the area from wildfires burning in British Columbia and Northern Saskatchewan.

Date	Time (MST)	Parameter	Average Period	AAAQOs / AAAQGs	Concentration	Wind speed (km/hr)	Wind Direction	Reference #
Aug. 27	7	H2S	1-Hour	10 ppb	11 ppb	0.9	(WNW)	403392
Aug. 21	-	PM2.5	24-Hour	29 ug/m3	46.9 ug/m3	4.6	(NE)	404004

- No major events were identified this month.

St. Lina Station

- All data collected this month were compliant with the requirements outlined in the AMD 2016.
- Measured parameters were below Alberta Ambient Air Quality Objectives (AAAQOs) and/or Alberta Ambient Air Quality Guidelines (AAAQGs) where applicable, except PM2.5. Two 24-Hour exceedances were recorded this month. PM2.5 exceedances recorded this month were caused by smoke drifting into the area from wildfires burning in British Columbia and Northern Saskatchewan.

Date	Time (MST)	Parameter	Average Period	AAAQOs / AAAQGs	Concentration	Wind speed (km/hr)	Wind Direction	Reference #
Aug. 21	-	PM2.5	24-Hour	29 ug/m3	34.7 ug/m3	6.6	(ENE)	403008
Aug. 22	-	PM2.5	24-Hour	29 ug/m3	45.0 ug/m3	3.3	(E)	403063

- All parameters met the 90% operational uptime requirement, except THC/CH4/NMHC (85.6%). **AEP reference #: 404742.**
- **THC/CH4/NMHC:** Occasional noise/spikes were recorded since the Thermo 55i HC analyzer, s/n: 1180930026, was installed on April 12. The issue became progressively worse after the June 16

monthly calibration. As data are not believed to be real ambient concentrations, data collected from June 16 to August 4 hour 10 when the analyzer was replaced were considered invalid and were discarded. One hundred and seven hours of downtime were recorded in August.

Lac La Biche Station

- 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/or Alberta Ambient Air Quality Guidelines (AAAQGs) where applicable, except PM2.5. Two 24-Hour exceedances were recorded this month. PM2.5 exceedances recorded this month were caused by smoke drifting into the area from wildfires burning in British Columbia and Northern Saskatchewan.

Date	Time (MST)	Parameter	Average Period	AAAQOs / AAAQGs	Concentration	Wind speed (km/hr)	Wind Direction	Reference #
Aug. 21	-	PM2.5	24-Hour	29 ug/m3	34.5 ug/m3	3.6	(NNE)	403006
Aug. 22	-	PM2.5	24-Hour	29 ug/m3	40.9 ug/m3	0.7	(NE)	403062

- No major events were identified this month.

Integrated Sampling

All the integrated sampling analytical results are included in the August 2022 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 National Air Pollution Surveillance schedule (NAPS).
 - Measured parameters were below Alberta Ambient Air Quality Objectives (AAAQOs) where applicable.
 - Five samples were collected this month: on August 3, 9, 15, 21 and 27.
- **PAHs Sampling System:**
 - The PUF sampler is programed to collect a 24-hour sample of air every sixth day as per the National Air Pollution Surveillance schedule (NAPS).
 - Five samples were collected this month: on August 3, 9, 15, 21 and 27.
- **Partisol Sampling System:**
 - The Partisol sampler is programed to collect a 24-hour sample of air every sixth day as per National Air Pollution Surveillance schedule (NAPS).
 - Measured parameters were below Alberta Ambient Air Quality Objectives (AAAQOs) where applicable, except August 21 PM2.5 sample, concentration of 0.040 mg/m3. **AEP reference #: 404740.** The possible source for PM2.5 was the result of BC wildfires.
 - Five samples were collected this month: on August 3, 9, 15, 21 and 27.
- **Passive Sampling System:**
 - The passive sample filters were installed at the stations between May 31 and August 2, and were removed between August 28 and August 30.
 - A total of 9 duplicate samples were collected: 2 for H2S, 3 for SO2, 2 for NO2 and 2 for O3.

- The O3 sample media for station 18 was found damaged during sample collection on August 31. No analytical result could be reported.
- **PAC Sampling System:**
 - The PAC sampling program began in November 2019, and is designed to collect a 2-month integrated sample.
 - The media for July / August were installed between June 28 and June 30, and they are scheduled to be collected between August 30 and September 1. The media for September / October were installed at the same time.
- **NMHC canister Sampling System:**
 - The canister sampling program collects a 1-hour sample of air when the continuously non-methane hydrocarbon (NMHC) concentration reaches a specified trigger point. The current trigger point is 0.3 ppm and is based on real-time monitoring data that are averaged over a 5-minute period.
 - One triggered canister was collected this month: on August 18 at 05:45, at concentration of 0.50ppm.

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

No deviations from authorized monitoring methods were recorded this month.

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 Michael Bisaga in accordance with Chapter 9 of the Air Monitoring Directive (AMD 2016).

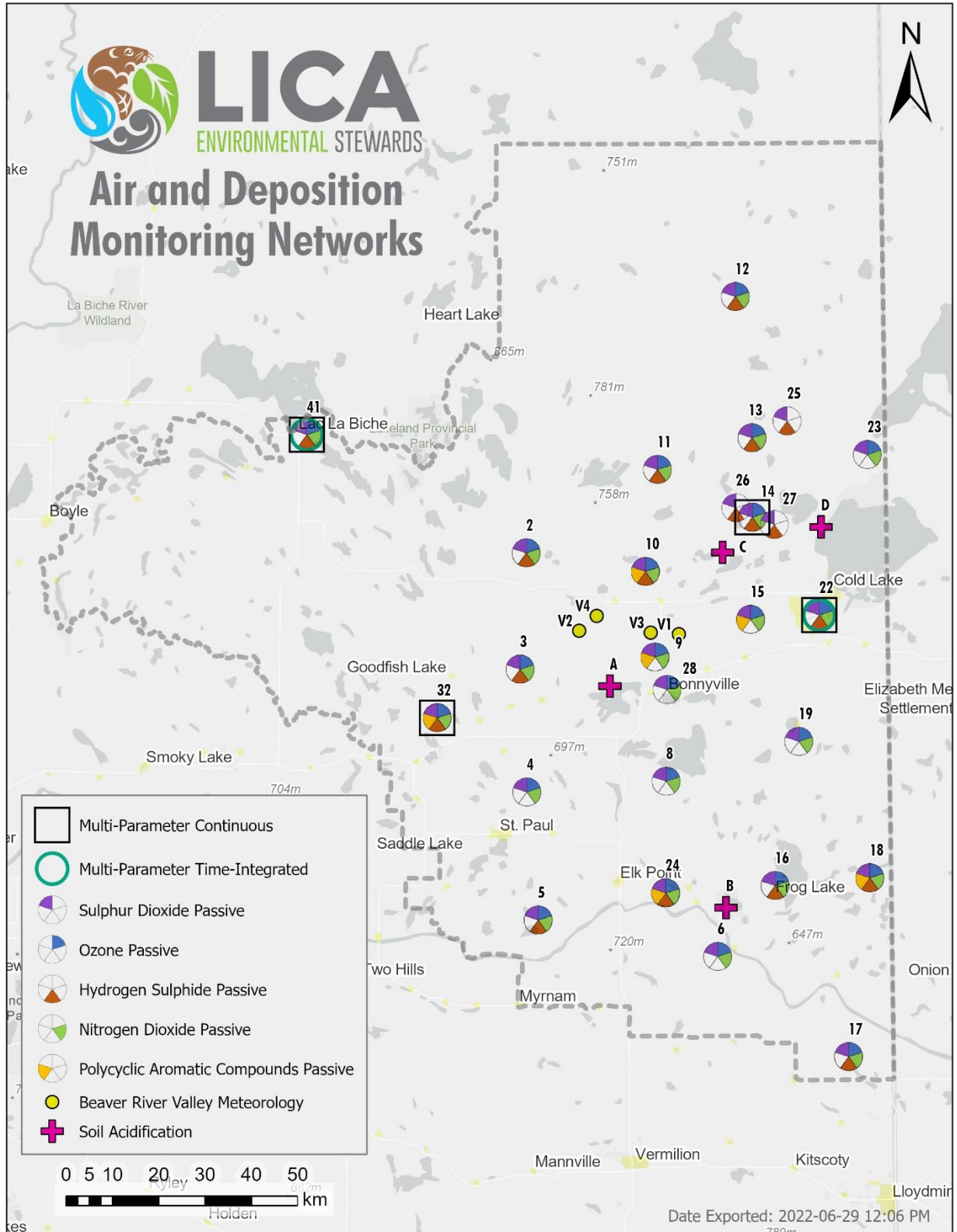
I certify that I have reviewed and verified this report and that the information is complete, accurate and representative of the monitoring results, reporting timeframe and the specified analysis, summarization and reporting requirements. I also certify that at the time of this report's submission, all 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 August 2022 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

September 23, 2022

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 (SO ₂)	Thermo / 43i-TLE	1180260018	August 9, 2022
<ul style="list-style-type: none"> No operational issues were recorded this month. 			
Total Reduced Sulphur (TRS)	Thermo / 450i	812728560	August 9, 2022
<ul style="list-style-type: none"> No operational issues were identified this month. 			
Total Hydrocarbons / Methane/ Non-methane Hydrocarbons (THC/CH ₄ /NMHC)	Thermo / 55i	1180930025	August 9, 2022
<ul style="list-style-type: none"> The Thermo 55i analyzer, s/n: 1180930025, failed on August 5 hour 13. The replacement Thermo 55i analyzer, s/n: 1236656107, was installed on August 6, and a successful installation calibration was completed on August 7. However, the analyzer registered NMHC noise at ambient concentrations. On August 8, the analyzer was removed, and the repaired The Thermo 55i analyzer, s/n: 1180930025, was installed. The analyzer was left offline overnight for column conditioning. A successful installation calibration was completed on August 9. Ninety hours of downtime were recorded due to this event. 			
Oxide of Nitrogen / Nitric Oxide/ Nitrogen Dioxide (NO _x /NO/NO ₂)	Thermo / 42i	1505664393	August 9, 2022
<ul style="list-style-type: none"> The analyzer showed span drift between August 4 and August 9. No issues were identified during the monthly calibration on August 9. It was concluded that the cause was due to incorrect expected span value entered after July's multi-point calibration. No data were discarded. 			
Ozone (O ₃)	Thermo / 49i	700419951	August 10, 2022
<ul style="list-style-type: none"> During the monthly data review in July, it was noticed that highly variable 1-minute data were recorded, starting July 27 hour 8. The issue remained after the July 27 calibration. The analyzer was reset to correct the issue on August 3. Data collected between August 27 and August 3 were considered invalid and were discarded. Sixty-six hours of downtime were recorded due to this event. 			

Parameter	Make / Model	Serial Number	Calibration Date
Particulate Matter 2.5 (PM2.5)	Teledyne T640	575	August 30, 2022
<ul style="list-style-type: none"> Unstable PM2.5 data were recorded, starting August 29 hour 16. On arrival at the station on August 30, the sample flow rate was found to be unstable. The analyzer was reset, and a successful audit was completed on August 30. Eighteen hours of downtime were recorded due to this event. 			
Parameter	Make / Model	Serial Number	System Check Date
Relative Humidity (RH)	Rotronic / HC2A-S3	20257103	August 10, 2022
<ul style="list-style-type: none"> No issues were identified this month. 			
Barometric Pressure (BP)	Met One / Part 092	Y23368	August 10, 2022
<ul style="list-style-type: none"> No issues were identified this month. 			
Ambient Temperature (AT)	Rotronic / HC2A-S3	20257103	August 10, 2022
<ul style="list-style-type: none"> No issues were identified this month. 			
Station Temperature (ST)	BV-supplied	n/a	August 10, 2022
<ul style="list-style-type: none"> No issues were identified this month. 			
Wind Speed (WS) / Wind Direction (WD)/ Stand Deviation Wind Direction (STDWD)	RM Young / 05305AQ	177354	August 10, 2022
<ul style="list-style-type: none"> Wind direction data contained in this report represents where the wind is coming from. An annual wind system calibration was completed on July 6, 2022. No issues were identified this month. 			

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	0.0	0	2	August 18 at hour 9	1.2	W	0.2	August 18	100.0	94.9
TRS (ppb)	-	-	-	-	-	-	0.4	0	3	August 15 at hour 6	2.7	WSW	1.0	August 19	100.0	94.9
NOx (ppb)	-	-	-	-	-	-	2.2	0	12	August 3 at hour 7	0.8	SW	3.8	August 18	100.0	94.7
NO (ppb)	-	-	-	-	-	-	0.3	0	8	August 22 at hour 7	0.3	NW	1.2	August 22	100.0	94.7
NO2 (ppb)	159	-	-	0	-	-	1.9	0	11	August 9 at hour 2	4.2	WSW	3.1	August 17	100.0	94.7
O3 (ppb)	76	-	-	0	-	-	21.6	0.2	52.6	August 27 at hour 13	9.2	WSW	31.9	August 14	91.1	86.7
THC (ppm)	-	-	-	-	-	-	2.05	1.82	2.82	August 1 at hour 5	0.1	ESE	2.20	August 26	87.9	83.7
CH4 (ppm)	-	-	-	-	-	-	2.05	1.82	2.82	August 1 at hour 5	0.1	ESE	2.20	August 26	87.9	83.7
NMHC (ppm)	-	-	-	-	-	-	0.00	0.00	0.06	August 9 at hour 22	0.1	E	0.00	August 10	87.9	83.7
PM2.5 (µg/m3)	80	29	-	7	2	-	12.7	1	105	August 21 at hour 14	4.9	SE	67.4	August 21	97.6	97.4
RH (%)	-	-	-	-	-	-	70.3	30	100	August 1 at hour 0	0.3	SW	87.0	August 2	100.0	100.0
BP (millibar)	-	-	-	-	-	-	950	931	959	August 10 at hour 0	0.7	ESE	958	August 24	100.0	100.0
Ext. Temp. (°C)	-	-	-	-	-	-	18.7	6.2	30.1	August 31 at hour 15	3.6	W	21.6	August 20	100.0	100.0
Stn. Temp. (°C)	-	-	-	-	-	-	21.3	19.9	22.6	August 6 at hour 0	3.9	SW	21.8	August 5	100.0	100.0
WSV (km/hr)	-	-	-	-	-	-	1.3	0.0	19.2	August 8 at hour 13	19.2	WNW	9.5	August 28	100.0	100.0
WDV (sector)	-	-	-	-	-	-	260 (WSW)	-	-	-	-	-	-	-	100.0	100.0

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

Alberta Ambient Air Quality Objectives (AAAQOs) and/or Alberta Ambient Air Quality Guidelines (AAAQGs) Exceedances

The following exceedances of AAAQOs were observed at the Cold Lake South Station.

Date	Time (MST)	Parameter	Average Period	AAAQOs / AAAQGs	Concentration	Wind speed	Wind Direction	Reference #
August 21	6	PM2.5	1-Hour	80 µg/m3	85 µg/m3	12.6 km/hr	56° (NE)	403005
August 21	12	PM2.5	1-Hour	80 µg/m3	81 µg/m3	6.3 km/hr	68° (ENE)	403005
August 21	13	PM2.5	1-Hour	80 µg/m3	90 µg/m3	3.3 km/hr	83° (E)	403005
August 21	14	PM2.5	1-Hour	80 µg/m3	105 µg/m3	4.9 km/hr	127° (SE)	403005
August 21	15	PM2.5	1-Hour	80 µg/m3	100 µg/m3	5.1 km/hr	141° (SE)	403005
August 21	16	PM2.5	1-Hour	80 µg/m3	93 µg/m3	6.7 km/hr	141° (SE)	403005
August 21	17	PM2.5	1-Hour	80 µg/m3	84 µg/m3	5.1 km/hr	142° (SE)	403005
August 21	-	PM2.5	24-Hour	29 µg/m3	67.4 µg/m3	4.2 km/hr	57° (ENE)	403005
August 22	-	PM2.5	24-Hour	29 µg/m3	51.5 µg/m3	1.2 km/hr	58° (ENE)	403061

- The exceedances of the PM2.5 objective and guideline recorded on August 21 and August were due to BC wildfires.

Tamarack Station

Equipment Operation Summary

Parameter	Make / Model	Serial Number	Calibration Date
Sulphur Dioxide (SO₂)	Thermo / 43i-TLE	1180930031	August 18, 2022
<ul style="list-style-type: none"> • A successful monthly calibration was completed on August 18. • The analyzer failed the daily span check on August 22 and August 23 due to change in sample flow rates. Following a successful shut-down calibration on August 23, the sample pump was rebuilt. The analyzer was allowed time to stabilize overnight. A successful post-repair calibration was completed on August 24. Because the analyzer passed the August 23's shut-down calibration, data collected on August 22 and 23 were considered valid. No data were discarded. However, twenty hours of downtime were recorded due to additional quality checks and maintenance. 			
Hydrogen Sulphide (H₂S)	Thermo / 450i	CM17360005	August 18, 2022
<ul style="list-style-type: none"> • No issues were identified this month. 			
Oxide of Nitrogen / Nitric Oxide/ Nitrogen Dioxide (NO_x/NO/NO₂)	Thermo / 42i	1180930028	August 18, 2022
<ul style="list-style-type: none"> • No issues were identified this month. 			
Ozone (O₃)	Thermo 49iQ	1202068570	August 19, 2022
<ul style="list-style-type: none"> • No issues were identified this month. 			
Total Hydrocarbons / Methane/ Non-methane Hydrocarbons (THC/CH₄/NMHC)	Thermo / 55i	1314057759	August 19, 2022
<ul style="list-style-type: none"> • No issues were identified this month. • A new span gas cylinder was installed during the monthly calibration on August 26. 			
Particulate Matter 2.5 (PM_{2.5})	Thermo / Sharp 5030	CM 2209	August 19, 2022
<ul style="list-style-type: none"> • No issues were identified this month. 			

Parameter	Make / Model	Serial Number	System Check Date
Relative Humidity (RH)	Rotronic / HC2A-S3	20433166	August 19, 2022
<ul style="list-style-type: none"> No issues were identified this month. 			
Ambient Temperature (AT)	Rotronic / HC2A-S3	20433166	August 19, 2022
<ul style="list-style-type: none"> No issues were identified this month. 			
Barometric Pressure (BP)	Met One / Part 090D	F4497	August 19, 2022
<ul style="list-style-type: none"> No issues were identified this month. 			
Station Temperature (ST)	BV-supplied	n/a	August 19, 2022
<ul style="list-style-type: none"> No issues were identified this month. 			
Precipitation (PRECIP)	Met One / Part 387	C13580	August 19, 2022
<ul style="list-style-type: none"> Sporadic signal noise was noted since mid-June 2022. This was evident as occasional hourly values of 0.1 mm. To improve the sensor's accuracy, maintenance was conducted on August 19, and additional work was completed on wiring connections on August 24. Data collected between mid-June and August 24 should be used with caution. 			
Wind Speed (WS) / Wind Direction (WD)/ Stand Deviation Wind Direction (STDWD)	RM Young / 05305VK	161465	August 19, 2022
<ul style="list-style-type: none"> Wind direction data contained in this report represents where the wind is coming from. An annual wind system calibration was completed on July 26, 2022. No issues were identified this month. 			

Monitored Data Summary for Tamarack 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	0.8	0	15	August 8 at hour 19	7.6	NW	5.3	August 28	97.3	92.4
H2S (ppb)	10	3	-	1	0	-	0.2	0	11	August 27 at hour 7	0.9	WNW	1.1	August 27	100.0	95.0
NOx (ppb)	-	-	-	-	-	-	3.2	0	24	August 28 at hour 6	9.1	NW	10.6	August 28	100.0	94.7
NO (ppb)	-	-	-	-	-	-	0.6	0	11	August 28 at hour 2	8.4	WNW	4.2	August 28	100.0	94.7
NO2 (ppb)	159	-	-	0	-	-	2.6	0	16	August 8 at hour 19	7.6	NW	6.3	August 28	100.0	94.7
O3 (ppb)	76	-	-	0	-	-	21.4	0.2	60.4	August 11 at hour 16	7.3	SSW	32.2	August 26	100.0	94.9
THC (ppm)	-	-	-	-	-	-	2.07	1.86	6.58	August 27 at hour 7	0.9	WNW	2.47	August 27	100.0	94.9
CH4 (ppm)	-	-	-	-	-	-	2.07	1.86	5.56	August 27 at hour 7	0.9	WNW	2.40	August 27	100.0	94.9
NMHC (ppm)	-	-	-	-	-	-	0.01	0.00	1.03	August 27 at hour 7	0.9	WNW	0.07	August 27	100.0	94.9
PM2.5 (µg/m3)	80	29	-	0	1	-	8.9	1	76	August 21 at hour 12	6.9	NE	46.9	August 21	100.0	99.7
RH (%)	-	-	-	-	-	-	72.6	27	100	August 1 at hour 0	1.5	E	95.9	August 4	100.0	100.0
BP (millibar)	-	-	-	-	-	-	938	920	948	August 24 at hour 9	1.1	NW	946	August 24	100.0	100.0
Ext. Temp. (°C)	-	-	-	-	-	-	18.2	7.3	29.5	August 11 at hour 16	7.3	SSW	21.4	August 16	100.0	100.0
Stn. Temp. (°C)	-	-	-	-	-	-	21.7	21.1	22.9	August 18 at hour 11	1.5	WSW	21.9	August 24	100.0	100.0
Precipitation (mm)*	-	-	-	-	-	-	33.2	0.0	4.3	August 23 at hour 14	6.1	SE	10.4	August 4	99.9	99.7
WSV (km/hr)	-	-	-	-	-	-	1.6	0.0	18.1	August 8 at hour 12	18.1	W	7.8	August 28	100.0	100.0
WDV (sector)	-	-	-	-	-	-	237 (SW)	-	-	-	-	-	-	-	100.0	100.0

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) and/or Alberta Ambient Air Quality Guidelines (AAAQGs) Exceedances

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

Date	Time (MST)	Parameter	Average Period	AAAQOs / AAAQGs	Concentration	Wind speed	Wind Direction	Reference #
August 27	7	H2S	1-Hour	10 ppb	11 ppb	0.9 km/hr	299° (WNW)	403392
August 21	-	PM2.5	24-Hour	29 µg/m3	46.9 µg/m3	4.6 km/hr	48° (NE)	404004

- The exceedance of the H2S objective on August 27 was likely to be the result of local buildup of emissions, given the low wind speeds recorded at the time.
- The exceedance of the PM2.5 objective on August 21 is believed to be the result of BC wildfires.

St. Lina Station

Equipment Operation Summary

Parameter	Make / Model	Serial Number	Calibration Date
Sulphur Dioxide (SO₂)	Thermo / 43i-TLE	1180930030	August 5, 2022
<ul style="list-style-type: none"> No issues were identified this month. 			
Hydrogen Sulphide (H₂S)	API 101A / Thermo 450i	324 / CM18010058	August 17, 2022
<ul style="list-style-type: none"> On August 4, the BV-supplied API 101A analyzer, s/n: 324, was removed following a shut-down calibration. The replacement analyzer was allowed to stabilize overnight. A successful post-repair calibration was completed on August 5. Twenty-hours of downtime were recorded due to this event. The analyzer showed unstable span results after the August 5's calibration. The permeation tube was exchanged on August 8 and again on August 11 to improve the stability of the span check result. A successful repeat multi-point calibration was completed on August 17 to correct the drift and obtain a new expected span value. Five hours of downtime were recorded due to this additional quality check. 			
Total Hydrocarbons / Methane/ Non-methane Hydrocarbons (THC/CH₄/NMHC)	Thermo / 55i	1180930026 / 1180030034	August 5, 2022
<ul style="list-style-type: none"> Apparent NMHC noise/spikes were recorded throughout the month. Occasional noise/spikes were recorded since the Thermo 55i HC analyzer, s/n: 1180930026, was installed on April 12. The issue became progressively worse after the June 16 monthly calibration. The analyzer passed the June and July monthly calibrations and the August 4 shut-down calibration. However, as data are not believed to be real ambient concentrations, data collected between June 16 and Aug 4 hour 10 were considered invalid and were discarded. One hundred and seven hours of downtime were recorded in August. Following a successful shut-down calibration on August 4, the Thermo 55i analyzer, s/n: 1180930026, was removed. The replacement Thermo 55i analyzer, s/n: 1180030034, was installed afterwards. The analyzer was left offline overnight for column conditioning. A successful installation calibration was completed on August 5. Twenty-hours of downtime were recorded due to this event. 			
Oxide of Nitrogen / Nitric Oxide/ Nitrogen Dioxide (NO_x/NO/NO₂)	Thermo / 42i	1180930029	August 5, 2022
<ul style="list-style-type: none"> No issues were identified this month. 			

Parameter	Make / Model	Serial Number	Calibration Date
Ozone (O3)	Thermo / 49i	1002240371	August 4, 2022
<ul style="list-style-type: none"> No issues were identified this month. 			
Particulate Matter 2.5 (PM2.5)	Thermo / Sharp 5030i	CM17091001	August 5, 2022
<ul style="list-style-type: none"> No issues were identified this month. 			
Parameter	Make / Model	Serial Number	System Check Date
Relative Humidity (RH)	Rotonic / HC2-S3	20221366	August 5, 2022
<ul style="list-style-type: none"> No issues were identified this month. 			
Ambient Temperature (AT)	Rotonic / HC2-S3	20221366	August 5, 2022
<ul style="list-style-type: none"> No issues were identified this month. 			
Barometric Pressure (BP)	Met One / Part 090D	F4998	August 5, 2022
<ul style="list-style-type: none"> No issues were identified this month. 			
Station Temperature (ST)	BV-supplied	n/a	August 5, 2022
<ul style="list-style-type: none"> No issues were identified this month. 			
Precipitation (PRECIP)	Met One / Part 387D	A23775	August 5, 2022
<ul style="list-style-type: none"> No issues were identified this month. 			
Wind Speed (WS) / Wind Direction (WD)/ Stand Deviation Wind Direction (STDWD)	RM Young / 05305VK	161466	August 5, 2022
<ul style="list-style-type: none"> Wind direction data contained in this report represents where the wind is coming from. An annual wind system calibration was completed on July 22, 2022. 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	0.0	0	2	August 13 at hour 14	7.9	SE	0.4	August 10	100.0	95.1
H2S (ppb)	10	3	-	0	0	-	0.7	0	4	August 15 at hour 6	4.8	SW	2.3	August 15	96.5	91.4
NOx (ppb)	-	-	-	-	-	-	1.3	0	9	August 22 at hour 6	6.5	ENE	2.6	August 22	100.0	94.9
NO (ppb)	-	-	-	-	-	-	0.0	0	5	August 1 at hour 12	12.2	S	0.3	August 8	100.0	94.9
NO2 (ppb)	159	-	-	0	-	-	1.3	0	8	August 22 at hour 6	6.5	ENE	2.5	August 22	100.0	94.9
O3 (ppb)	76	-	-	0	-	-	26.6	7.3	54.3	August 22 at hour 20	0.5	SE	40.8	August 26	100.0	94.9
THC (ppm)	-	-	-	-	-	-	2.04	1.86	2.55	August 24 at hour 6	4.6	ESE	2.16	August 27	85.6	81.0
CH4 (ppm)	-	-	-	-	-	-	2.04	1.86	2.55	August 24 at hour 6	4.6	ESE	2.16	August 27	85.6	81.0
NMHC (ppm)	-	-	-	-	-	-	0.00	0.00	0.01	August 7 at hour 9	14.3	W	0.00	August 7	85.6	81.0
PM2.5 (µg/m3)	80	29	-	0	2	-	7.9	1	80	August 22 at hour 7	5.4	ENE	45.0	August 22	100.0	99.9
RH (%)	-	-	-	-	-	-	73.5	30	100	August 1 at hour 0	2.7	WNW	98.6	August 4	100.0	100.0
BP (millibar)	-	-	-	-	-	-	918	903	927	August 24 at hour 1	7.1	ESE	925	August 24	100.0	100.0
Ext. Temp. (°C)	-	-	-	-	-	-	19.1	8.3	29.6	August 20 at hour 15	4	WNW	23.3	August 31	100.0	100.0
Stn. Temp. (°C)	-	-	-	-	-	-	22.7	21.7	24.6	August 5 at hour 15	12.1	NW	23.7	August 5	100.0	100.0
Precipitation (mm)*	-	-	-	-	-	-	33.9	0.0	10.1	August 4 at hour 10	4.5	N	18.0	August 4	100.0	100.0
WSV (km/hr)	-	-	-	-	-	-	3.0	0.5	21.0	August 8 at hour 14	21	NW	13.4	August 28	100.0	100.0
WDV (sector)	-	-	-	-	-	-	256 (WSW)	-	-	-	-	-	-	-	100.0	100.0

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) and/or Alberta Ambient Air Quality Guidelines (AAAQGs) Exceedances

The following exceedances of AAAQOs were observed at the St. Lina Site.

Date	Time (MST)	Parameter	Average Period	AAAQOs / AAAQGs	Concentration	Wind speed	Wind Direction	Reference #
August 21	-	PM2.5	24-Hour	29 µg/m3	34.7 µg/m3	6.6 km/hr	61° (ENE)	403008
August 22	-	PM2.5	24-Hour	29 µg/m3	45.0 µg/m3	3.3 km/hr	88° (E)	403063

- The exceedances of the PM2.5 objective on August 21 and August 22 were the result of BC wildfires.

Lac La Biche Station

Equipment Operation Summary

Parameter	Make / Model	Serial Number	Calibration Date
Sulphur Dioxide (SO2)	Thermo / 43i-TLE	1180320043	August 16, 2022
<ul style="list-style-type: none">No issues were identified this month.			
Hydrogen Sulphide (H2S)	Teledyne / T100	1014	August 16, 2022
<ul style="list-style-type: none">No issues were identified this month.			
Oxide of Nitrogen / Nitric Oxide/ Nitrogen Dioxide (NOx/NO/NO2)	Thermo / 42i	1180930027	August 16, 2022
<ul style="list-style-type: none">No issues were identified this month.			
Ozone (O3)	Thermo 49i	1002240372	August 15, 2022
<ul style="list-style-type: none">No issues were identified this month.			
Total Hydrocarbons / Methane/ Non-methane Hydrocarbons (THC/CH4/NMHC)	Thermo / 55i	1180320044	August 15, 2022
<ul style="list-style-type: none">No issues were identified this month.			
Particulate Matter 2.5 (PM2.5)	Thermo / Sharp 5030i	CM 17071016	August 16, 2022
<ul style="list-style-type: none">No issues were identified this month.			

Parameter	Make / Model	Serial Number	System Check Date
Relative Humidity (RH)	Rotronic / HC2A-S3	0020357518	August 16, 2022
<ul style="list-style-type: none"> No issues were identified this month. 			
Ambient Temperature (AT)	Rotronic / HC2A-S3	0020357518	August 16, 2022
<ul style="list-style-type: none"> No issues were identified this month. 			
Barometric Pressure (BP)	Met One / Part 092	Y23360	August 16, 2022
<ul style="list-style-type: none"> No issues were identified this month. 			
Station Temperature (ST)	BV-supplied	n/a	August 16, 2022
<ul style="list-style-type: none"> No issues were identified this month. 			
Wind Speed (WS) / Wind Direction (WD)/ Stand Deviation Wind Direction (STDWD)	RM Young / 05305VK	56778	August 16, 2022
<ul style="list-style-type: none"> Wind direction data contained in this report represents where the wind is coming from. The last annual wind system calibration was completed on May 9, 2022. No issues were identified this month. 			

Monitored Data Summary for Lac La Biche 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	0.1	0	3	August 1 at hour 10	10.4	SSE	0.6	August 18	100.0	95.0
H2S (ppb)	10	3	-	0	0	-	0.4	0	2	August 3 at hour 1	3.3	SSE	1.1	August 18	100.0	94.9
NOx (ppb)	-	-	-	-	-	-	2.5	0	26	August 22 at hour 21	1	SSE	5.8	August 22	100.0	94.7
NO (ppb)	-	-	-	-	-	-	0.2	0	10	August 22 at hour 7	1.3	S	1.4	August 22	100.0	94.7
NO2 (ppb)	159	-	-	0	-	-	2.2	0	18	August 22 at hour 21	1	SSE	4.4	August 22	100.0	94.7
O3 (ppb)	76	-	-	0	-	-	23.4	3.0	55.0	August 11 at hour 12	2.5	NNW	35.1	August 26	100.0	95.0
THC (ppm)	-	-	-	-	-	-	2.06	1.87	2.73	August 27 at hour 4	2.1	S	2.22	August 23	100.0	95.0
CH4 (ppm)	-	-	-	-	-	-	2.06	1.87	2.73	August 27 at hour 4	2.1	S	2.22	August 23	100.0	95.0
NMHC (ppm)	-	-	-	-	-	-	0.00	0.00	0.12	August 18 at hour 1	2.2	ESE	0.02	August 18	100.0	95.0
PM2.5 (µg/m3)	80	29	-	0	2	-	7.8	0	76	August 22 at hour 8	2.1	E	40.9	August 22	100.0	99.7
RH (%)	-	-	-	-	-	-	71.4	28	100	August 1 at hour 0	3.1	SSE	94.9	August 4	100.0	100.0
BP (millibar)	-	-	-	-	-	-	947	930	956	August 24 at hour 7	1.9	SSE	954	August 24	100.0	100.0
Ext. Temp. (°C)	-	-	-	-	-	-	19.2	8.8	30.1	August 30 at hour 16	9.7	WSW	23.1	August 19	100.0	100.0
Stn. Temp. (°C)	-	-	-	-	-	-	21.3	19.2	26.7	August 16 at hour 14	8.5	WSW	22.4	August 16	100.0	100.0
WSV (km/hr)	-	-	-	-	-	-	1.5	0.2	23.7	August 8 at hour 14	23.7	NW	12.3	August 28	100.0	100.0
WDV (sector)	-	-	-	-	-	-	246 (WSW)	-	-	-	-	-	-	-	100.0	100.0

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

Alberta Ambient Air Quality Objectives (AAAQOs) and/or Alberta Ambient Air Quality Guidelines (AAAQGs) Exceedances

The following exceedances of AAAQOs were observed at the Lac La Biche Station.

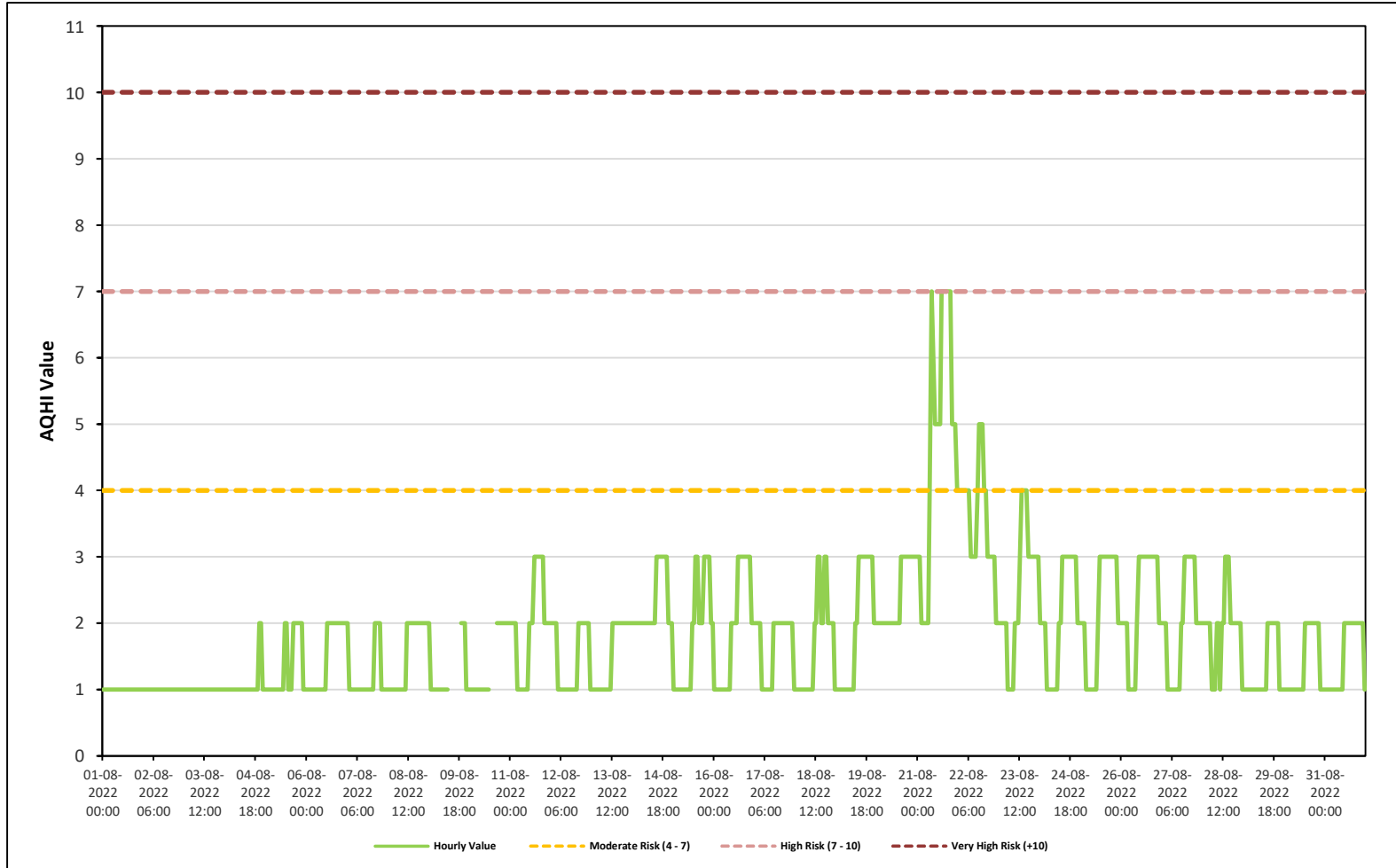
Date	Time (MST)	Parameter	Average Period	AAAQOs / AAAQGs	Concentration	Wind speed	Wind Direction	Reference #
August 21	-	PM2.5	24-Hour	29 µg/m3	34.5 µg/m3	3.6 km/hr	26° (NNE)	403006
August 22	-	PM2.5	24-Hour	29 µg/m3	40.9 µg/m3	0.7 km/hr	41° (NE)	403062

- The exceedances of the PM2.5 objective on August 21 and August 22 were the result of BC wildfires.

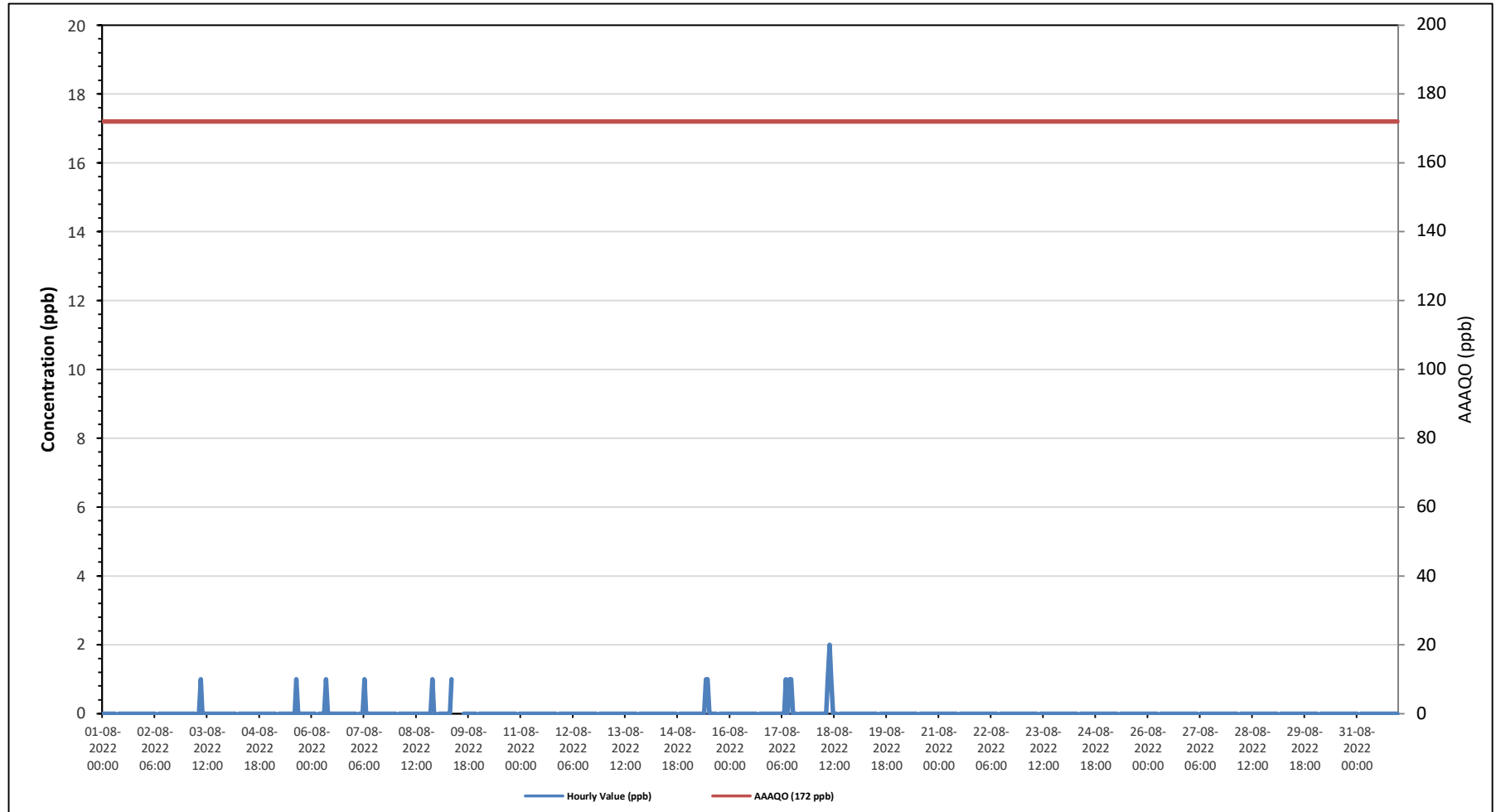
TABLES AND CHARTS

COLD LAKE SOUTH STATION

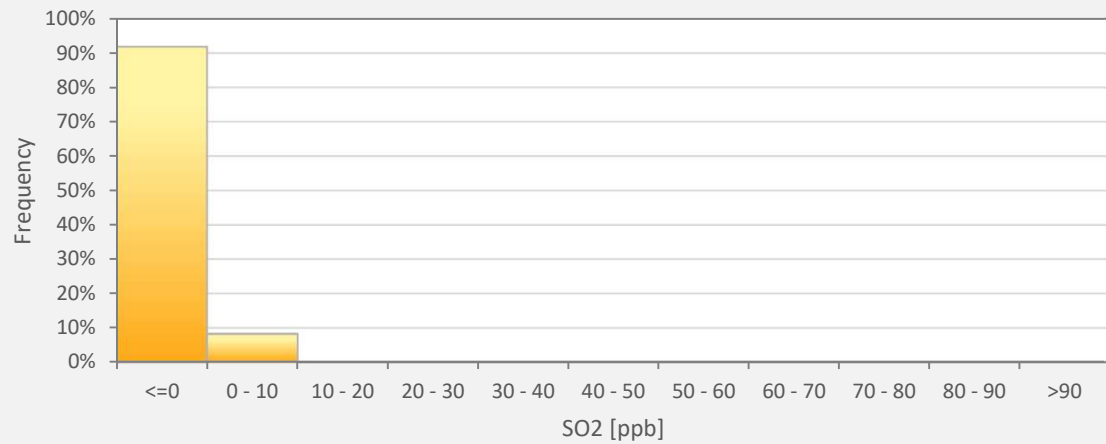
Timeseries Chart of Hourly Average for AQHI - Cold Lake South Station



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



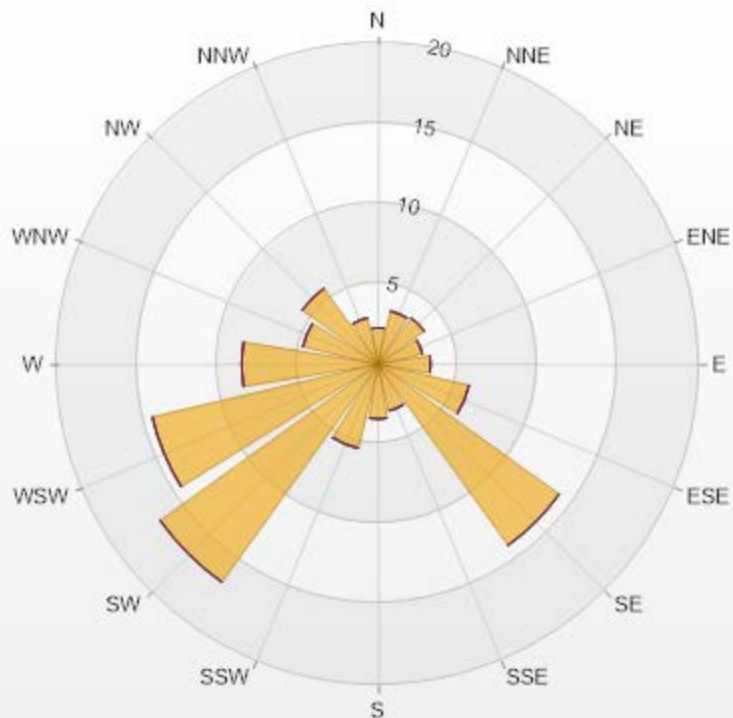
SO2[ppb] Histogram: Cold Lake South Monthly: 08-2022 1 Hr.



Classes	SO2
<=0	91.78%
0 - 10	8.22%
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: 08-2022 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.89% Calm Avg: 0.00 [ppb]

Direction	0-10	10-50	50-100	100-172	>172.0	Total
N	2.27	0	0	0	0	2.27
NNE	3.4	0	0	0	0	3.4
NE	3.54	0	0	0	0	3.54
ENE	2.83	0	0	0	0	2.83
E	3.26	0	0	0	0	3.26
ESE	5.81	0	0	0	0	5.81
SE	13.88	0	0	0	0	13.88
SSE	2.97	0	0	0	0	2.97
S	3.4	0	0	0	0	3.4
SSW	5.38	0	0	0	0	5.38
SW	16.71	0	0	0	0	16.71
WSW	14.45	0	0	0	0	14.45
W	8.5	0	0	0	0	8.5
WNW	4.82	0	0	0	0	4.82
NW	5.81	0	0	0	0	5.81
NNW	2.97	0	0	0	0	2.97
Summary	100	0	0	0	0	100



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% 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 - August 2022

Summary of Hourly Averages

TOTAL REDUCED SULPHUR (TRS) in ppb

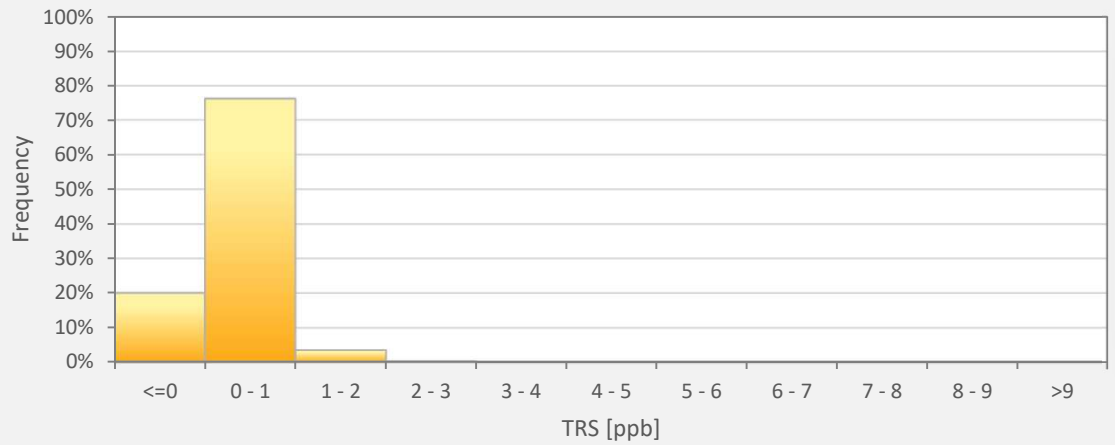
Maximum Hourly Value:	3 ppb on August 15 at hour 6	Hours in Service:	744
Maximum Daily Value:	1.0 ppb on August 19	Hours of Data:	706
Minimum Hourly Value:	0 ppb on August 1 at hour 0	Hours of Missing Data:	0
Minimum Daily Value:	0.0 ppb on August 5	Hours of Calibration:	38
Monthly Average:	0.4 ppb	Operational 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		
Aug 1	0	0	0	1	1	2	1	1	S	1	1	1	1	1	0	1	1	0	0	0	0	1	2	1	0	2	0.7		
Aug 2	1	0	0	0	1	1	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1		
Aug 3	0	0	0	0	0	0	S	1	2	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.3		
Aug 4	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0.0		
Aug 5	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		
Aug 6	1	0	1	S	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2		
Aug 7	0	1	S	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0.3		
Aug 8	1	S	1	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0.3		
Aug 9	S	1	1	1	1	0	0	1	0	C	C	C	C	C	C	0	0	0	0	0	0	0	0	0	S	0	-		
Aug 10	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	S	0	0	0.6		
Aug 11	1	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	0	1	0.9		
Aug 12	1	1	1	1	1	1	1	1	0	1	0	1	0	0	1	1	0	0	1	1	S	1	1	1	1	0	1	0.7	
Aug 13	1	1	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	S	1	0	1	0	0	1	0.3	
Aug 14	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	S	S	0	0	0	0	0	0	1	0.3	
Aug 15	0	0	0	0	1	1	3	3	2	1	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	3	0.5	
Aug 16	0	0	1	0	0	0	1	1	1	1	0	0	0	0	0	0	S	0	0	0	0	0	1	0	0	1	0	0.3	
Aug 17	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	1	0.1	
Aug 18	0	0	0	0	0	1	1	1	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	1	1	0	1	0.2	
Aug 19	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	
Aug 20	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	
Aug 21	1	1	0	1	1	1	1	1	1	0	1	S	1	1	1	0	0	0	1	0	1	0	0	1	0	1	0	0.7	
Aug 22	0	0	1	1	1	1	0	2	1	1	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.3	
Aug 23	0	0	0	0	0	1	1	2	1	S	1	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	2	0.5
Aug 24	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	
Aug 25	1	1	1	1	1	1	1	S	1	1	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0.5	
Aug 26	0	0	1	1	0	0	S	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2	
Aug 27	0	0	0	0	0	S	0	0	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2	
Aug 28	0	0	1	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	
Aug 29	0	0	0	S	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2	
Aug 30	1	1	S	1	1	1	1	2	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.5	
Aug 31	1	S	1	1	0	1	2	2	1	1	0	0	0	0	0	1	0	1	0	1	1	1	1	1	1	0	2	0.7	
Diurnal Maximum	1.00	1.00	1.00	1.00	1.00	2.00	3.00	3.00	2.00	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	2.00	1.00	1.00	1.00	1.00	
Diurnal Average	0.47	0.38	0.48	0.55	0.62	0.72	0.83	1.03	0.69	0.59	0.45	0.31	0.24	0.21	0.24	0.27	0.20	0.17	0.23	0.23	0.30	0.23	0.37	0.43					

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

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.

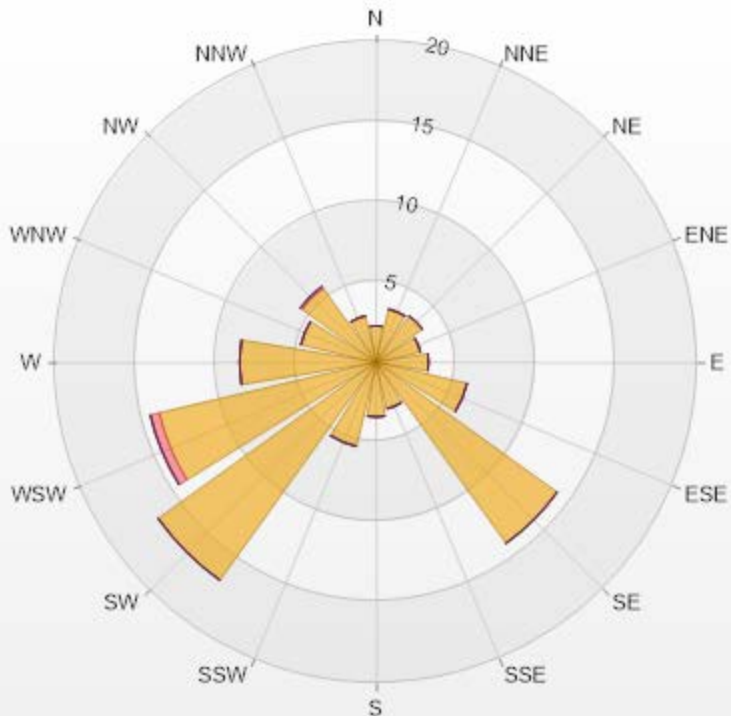
TRS[ppb] Histogram: Cold Lake South Monthly: 08-2022 1 Hr.



Classes	TRS
<=0	19.97%
0 - 1	76.20%
1 - 2	3.54%
2 - 3	0.28%
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: 08-2022 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.89% Calm Avg: 0.00 [ppb]

Direction	0-2	2-5	5-10	10-50	>50.0	Total
N	2.27	0	0	0	0	2.27
NNE	3.4	0	0	0	0	3.4
NE	3.54	0	0	0	0	3.54
ENE	2.83	0	0	0	0	2.83
E	3.26	0	0	0	0	3.26
ESE	5.81	0	0	0	0	5.81
SE	13.88	0	0	0	0	13.88
SSE	2.97	0	0	0	0	2.97
S	3.4	0	0	0	0	3.4
SSW	5.38	0	0	0	0	5.38
SW	16.71	0	0	0	0	16.71
WSW	13.88	0.57	0	0	0	14.45
W	8.5	0	0	0	0	8.5
WNW	4.82	0	0	0	0	4.82
NW	5.67	0.14	0	0	0	5.81
NNW	2.97	0	0	0	0	2.97
Summary	99.29	0.71	0	0	0	100



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% Icon Classes (ppb)

99 ■ 0-2

1 ■ 2-5

0 ■ 5-10

0 ■ 10-50

0 ■ >50.0



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - August 2022

Summary of Hourly Averages

OXIDES OF NITROGEN (NOx) in ppb

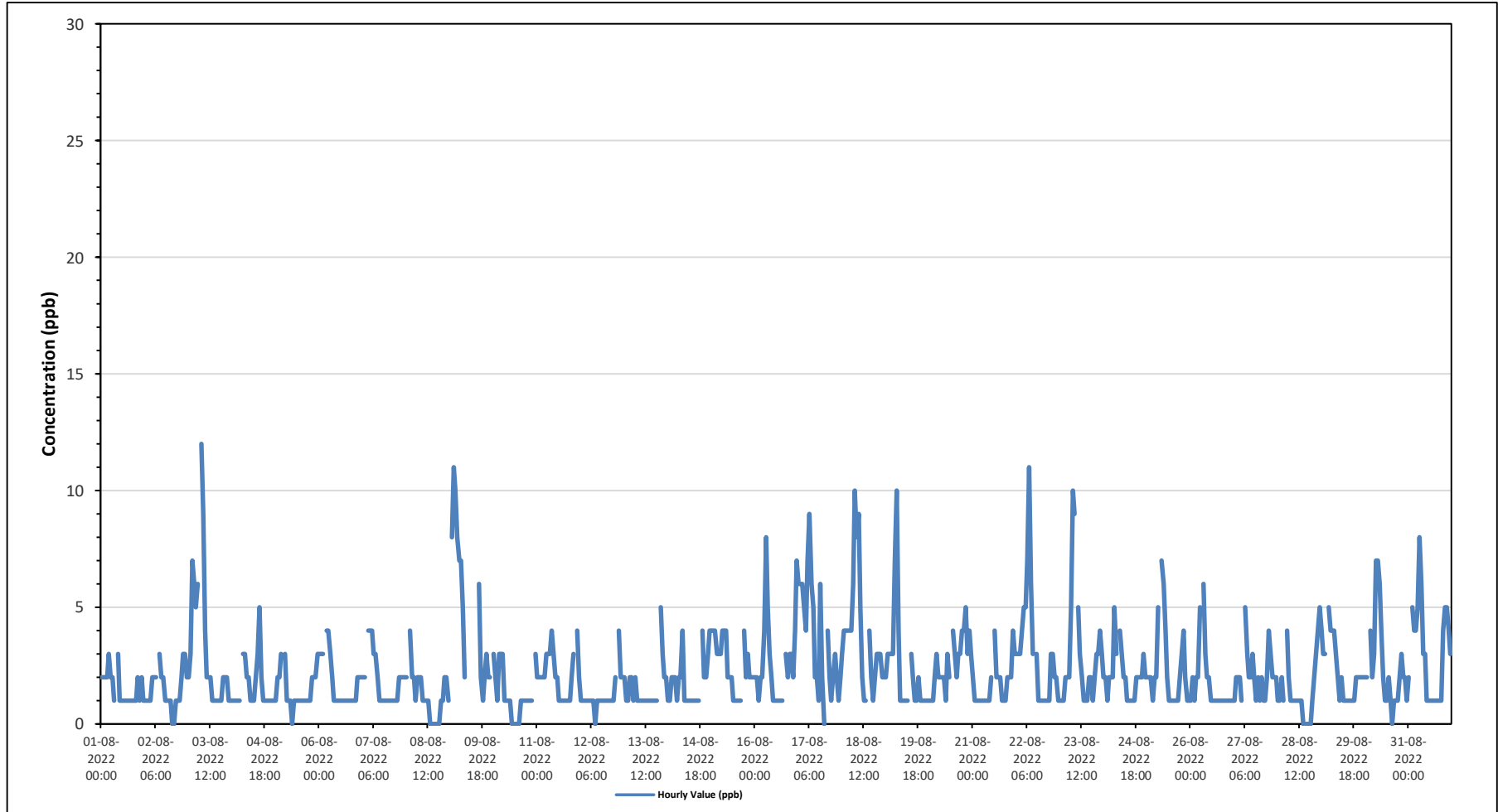
Maximum Hourly Value:	12 ppb on August 3 at hour 7	Hours in Service:	744
Maximum Daily Value:	3.8 ppb on August 18	Hours of Data:	705
Minimum Hourly Value:	0 ppb on August 2 at hour 15	Hours of Missing Data:	0
Minimum Daily Value:	1.2 ppb on August 8	Hours of Calibration:	39
Monthly Average:	2.2 ppb	Operational Uptime:	100.0

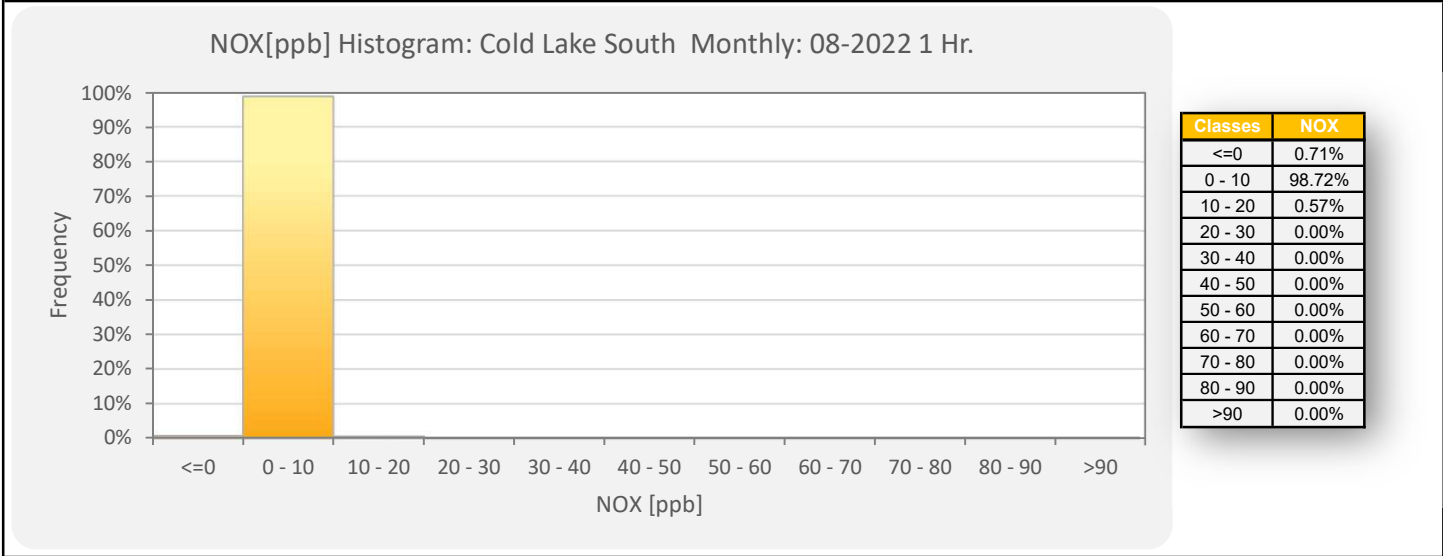
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average		
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23	
Aug 1	2	2	2	2	3	2	2	1	S	3	1	1	1	1	1	1	1	1	1	1	2	1	2	1	1	3	1.5	
Aug 2	1	1	1	1	2	2	2	S	3	2	2	1	1	1	1	1	0	0	1	1	1	2	3	3	2	0	3	1.5
Aug 3	2	3	7	6	5	6	S	12	9	4	2	2	2	1	1	1	1	1	1	2	2	2	1	1	1	12	3.2	
Aug 4	1	1	1	1	1	S	3	3	2	2	1	1	1	2	3	5	2	1	1	1	1	1	1	1	1	5	1.6	
Aug 5	1	2	2	3	S	4	3	1	1	0	1	1	1	1	1	1	1	1	1	1	1	2	2	2	3	0	3	1.4
Aug 6	3	3	3	S	4	4	3	2	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	1	4	1.8
Aug 7	2	2	S	4	4	4	3	3	2	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	1	4	1.9
Aug 8	2	S	4	2	2	1	2	2	2	1	1	1	0	0	0	0	0	0	0	0	1	2	2	2	1	0	4	1.2
Aug 9	S	8	11	10	8	7	7	5	2	C	C	C	C	C	C	C	6	2	1	2	3	2	2	S	1	11	-	
Aug 10	3	2	1	3	3	3	1	1	1	1	0	0	0	0	0	1	1	1	1	1	1	1	1	S	3	0	3	1.3
Aug 11	2	2	2	2	2	3	3	3	4	3	2	2	1	1	1	1	1	1	1	1	2	3	S	4	2	1	4	2.1
Aug 12	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	2	S	4	2	2	0	4	1.2
Aug 13	2	1	1	2	2	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	S	5	3	2	2	1	5	1.5
Aug 14	1	1	2	2	2	1	2	2	4	1	1	1	1	1	1	1	1	1	S	4	2	2	3	4	1	4	1.8	
Aug 15	4	4	4	3	3	3	4	4	4	2	2	2	1	1	1	1	1	S	4	2	3	2	2	2	2	1	4	2.6
Aug 16	2	2	1	2	2	4	8	5	3	2	1	1	1	1	1	1	S	3	2	3	3	2	4	7	1	8	2.7	
Aug 17	6	6	6	5	4	7	9	6	5	2	2	1	6	2	0	S	4	2	1	2	3	3	2	1	2	0	9	3.7
Aug 18	3	4	4	4	4	7	6	10	8	9	5	2	1	1	S	4	2	1	2	3	3	3	2	2	1	10	3.8	
Aug 19	2	3	3	3	3	4	7	10	4	1	1	1	1	1	S	3	2	1	1	2	1	1	1	1	1	1	10	2.3
Aug 20	1	1	1	2	3	2	2	2	2	1	3	2	S	4	3	2	3	3	4	4	5	3	4	3	1	5	2.6	
Aug 21	2	1	1	1	1	1	1	1	1	1	2	S	4	2	2	2	1	1	1	2	2	4	3	1	4	3	1	1.7
Aug 22	3	3	3	4	5	5	7	11	6	3	S	3	1	1	1	1	1	1	1	3	3	2	2	1	1	11	3.1	
Aug 23	1	1	1	2	2	2	5	10	9	S	5	3	2	1	1	1	2	2	1	2	3	3	4	3	1	10	2.9	
Aug 24	2	2	1	2	2	2	5	3	S	4	3	2	2	1	1	1	1	1	2	2	2	3	2	1	5	5	2.1	
Aug 25	2	2	2	1	2	2	5	S	7	6	4	2	1	1	1	1	1	1	2	3	4	2	1	1	1	7	2.3	
Aug 26	1	2	1	2	2	5	S	6	3	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	6	1.7	
Aug 27	1	2	2	2	1	S	5	3	2	2	3	2	1	2	1	2	1	1	2	4	3	2	2	2	1	5	2.1	
Aug 28	1	1	2	1	S	4	2	1	1	1	1	1	1	1	0	0	0	0	0	1	2	3	4	5	0	5	1.4	
Aug 29	4	3	3	S	5	4	4	4	3	2	1	2	1	1	1	1	1	1	1	2	2	2	2	2	1	5	2.3	
Aug 30	2	2	S	4	2	3	7	7	6	4	2	1	1	2	1	0	1	1	1	2	3	2	2	1	0	7	2.5	
Aug 31	2	S	5	4	4	5	8	6	3	3	1	1	1	1	1	1	1	1	1	4	5	5	4	3	1	8	3.0	
Diurnal Maximum	6	8	11	10	8	7	10	12	9	9	5	3	6	4	3	5	6	3	4	4	5	5	4	7				
Diurnal Average	2.1	2.3	2.7	2.8	2.9	3.4	4.1	4.1	3.3	2.3	1.8	1.4	1.3	1.2	1.1	1.2	1.3	1.2	1.3	2.0	2.5	2.2	2.4	2.2				

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

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.

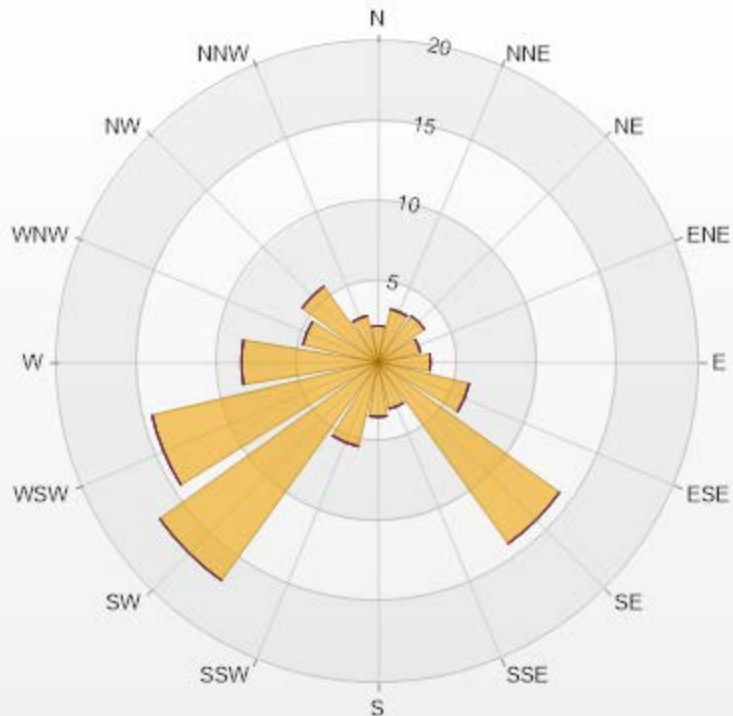
Timeseries Chart of Hourly Average for NOx - Cold Lake South Station





Wind: Cold Lake South Poll.: Cold Lake South-NOX[ppb] Monthly: 08-2022 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.76% Calm Avg: 0.00 [ppb]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	2.27	0	0	0	0	2.27
NNE	3.4	0	0	0	0	3.4
NE	3.55	0	0	0	0	3.55
ENE	2.7	0	0	0	0	2.7
E	3.26	0	0	0	0	3.26
ESE	5.82	0	0	0	0	5.82
SE	13.9	0	0	0	0	13.9
SSE	2.98	0	0	0	0	2.98
S	3.4	0	0	0	0	3.4
SSW	5.39	0	0	0	0	5.39
SW	16.74	0	0	0	0	16.74
WSW	14.47	0	0	0	0	14.47
W	8.51	0	0	0	0	8.51
WNW	4.82	0	0	0	0	4.82
NW	5.82	0	0	0	0	5.82
NNW	2.98	0	0	0	0	2.98
Summary	100	0	0	0	0	100



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% Icon Classes (ppb)

100  0-30

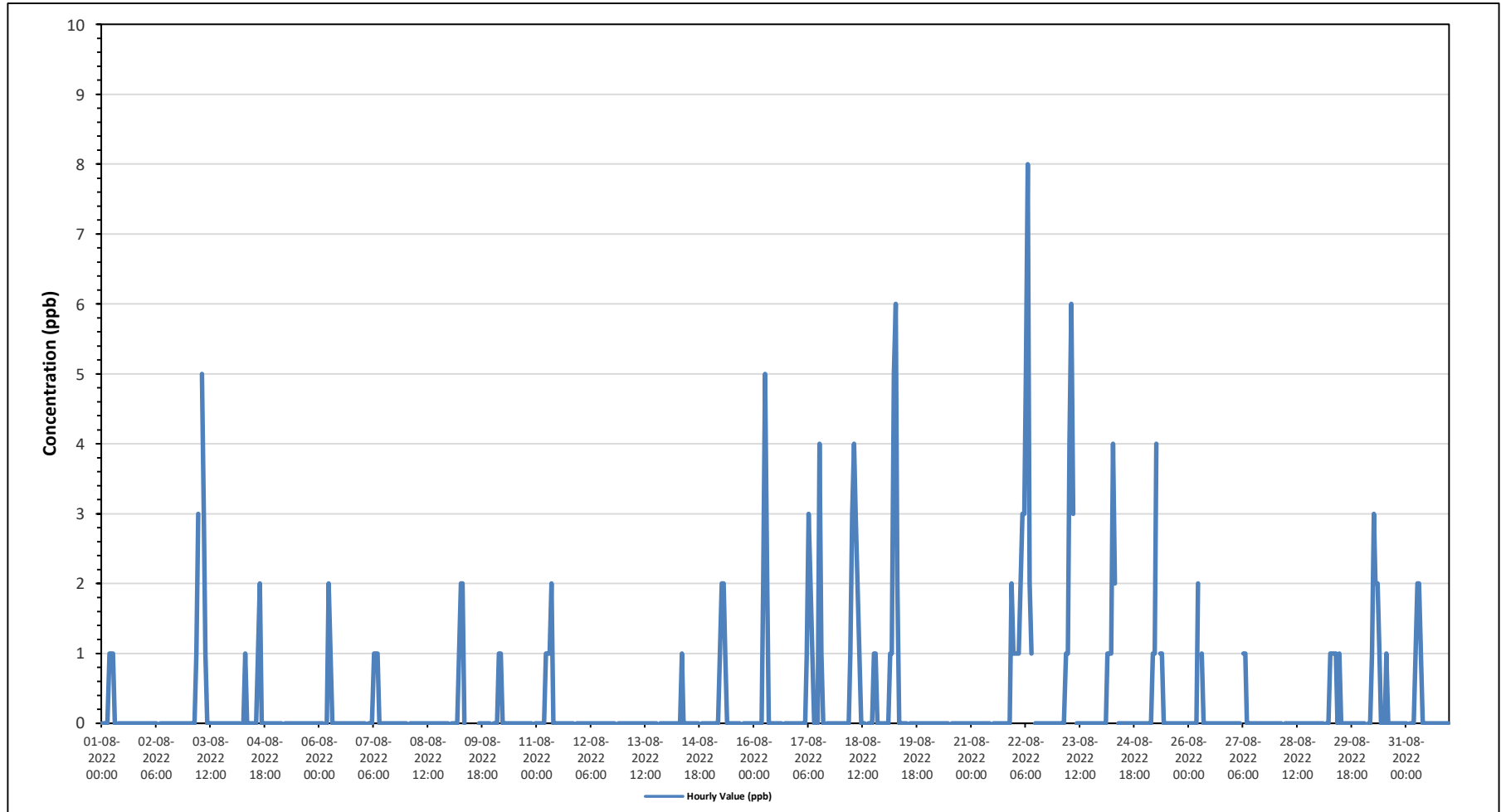
0  30-50

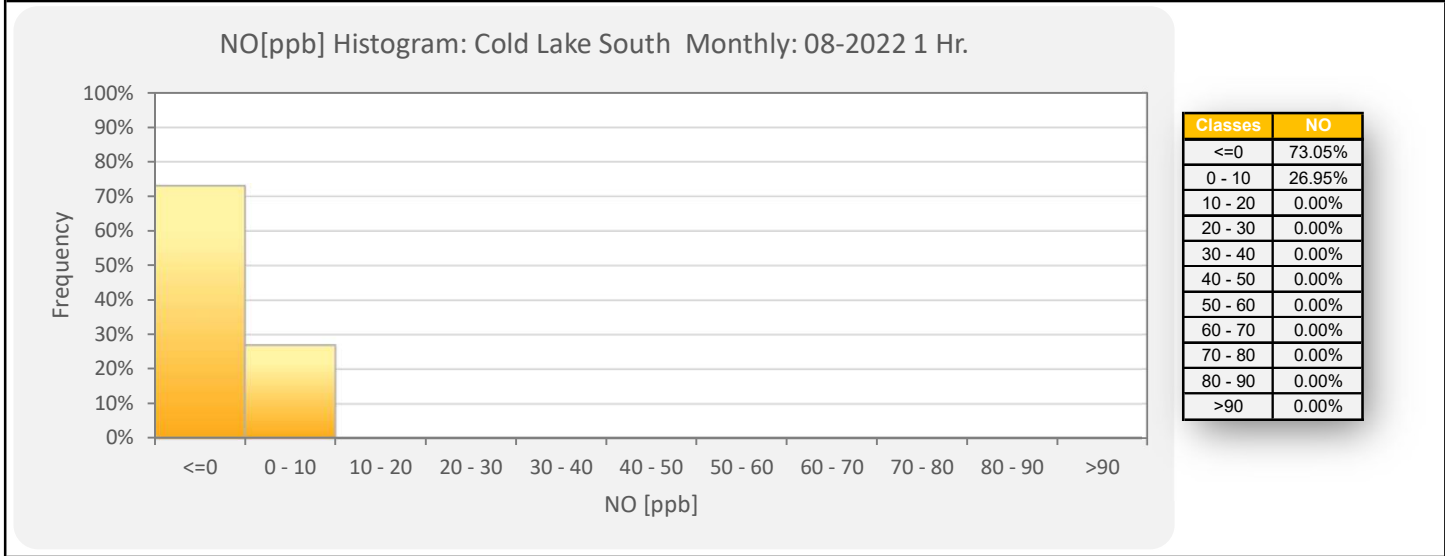
0  50-76

0  76-159

0  >159.0

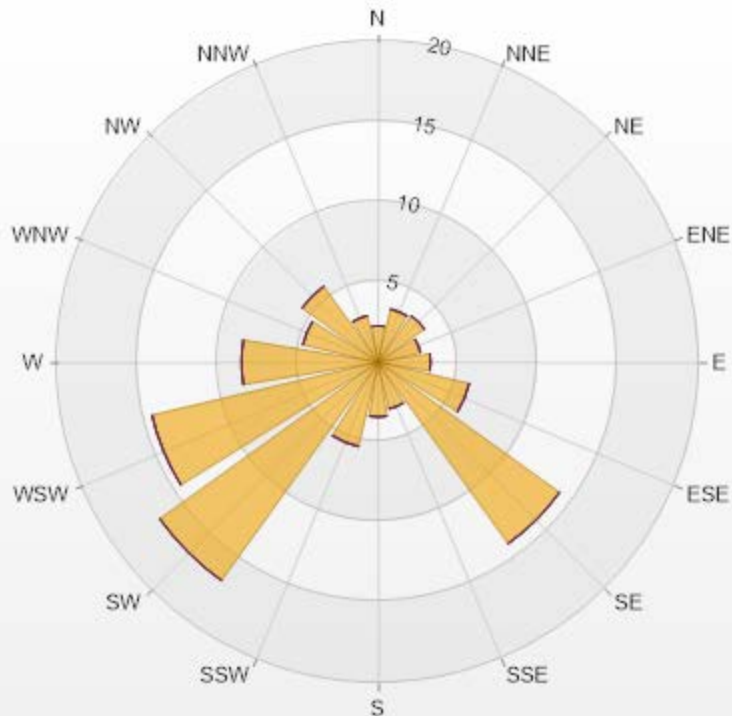
Timeseries Chart of Hourly Average for NO - Cold Lake South Station





Wind: Cold Lake South Poll.: Cold Lake South-NO[ppb] Monthly: 08-2022 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.76% Calm Avg: 0.00 [ppb]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	2.27	0	0	0	0	2.27
NNE	3.4	0	0	0	0	3.4
NE	3.55	0	0	0	0	3.55
ENE	2.7	0	0	0	0	2.7
E	3.26	0	0	0	0	3.26
ESE	5.82	0	0	0	0	5.82
SE	13.9	0	0	0	0	13.9
SSE	2.98	0	0	0	0	2.98
S	3.4	0	0	0	0	3.4
SSW	5.39	0	0	0	0	5.39
SW	16.74	0	0	0	0	16.74
WSW	14.47	0	0	0	0	14.47
W	8.51	0	0	0	0	8.51
WNW	4.82	0	0	0	0	4.82
NW	5.82	0	0	0	0	5.82
NNW	2.98	0	0	0	0	2.98
Summary	100	0	0	0	0	100



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% Icon Classes (ppb)

100

0-30

0

30-50

0

50-76

0

76-159

0

>159.0



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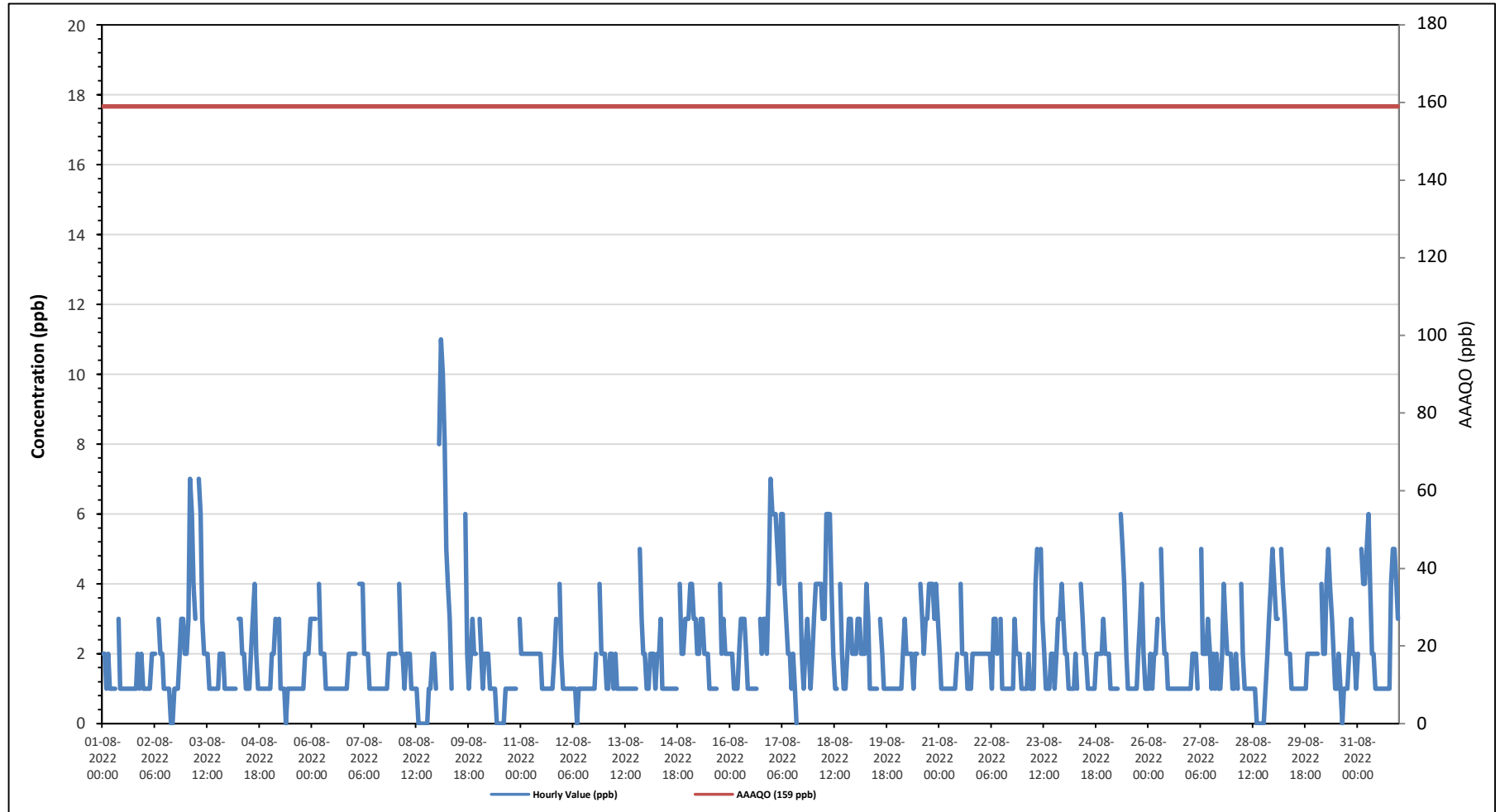
Cold Lake South Station - August 2022

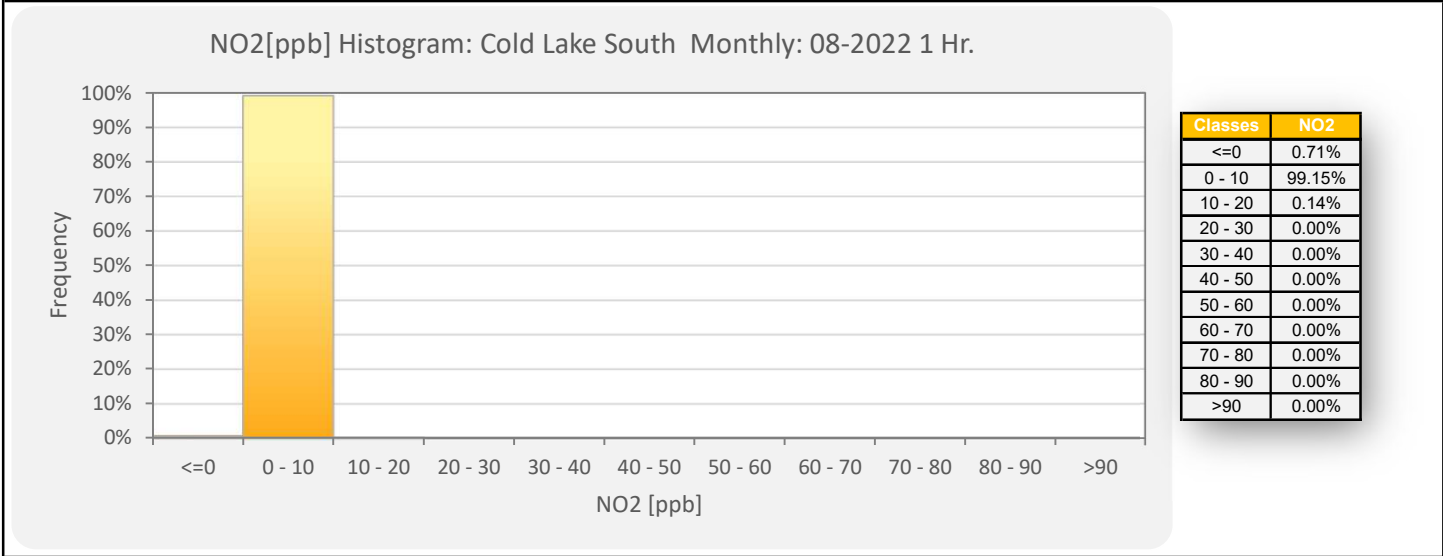
Summary of Hourly Averages

NITROGEN DIOXIDE (NO₂) in ppb

Alberta Ambient Air Quality Objectives (AAAQO): 1-Hour 159 ppb																															
Number of 1-Hour Exceedances: 0																															
Maximum Hourly Value: 11 ppb on August 9 at hour 2												Hours in Service: 744																			
Maximum Daily Value: 3.1 ppb on August 17												Hours of Data: 705																			
Minimum Hourly Value: 0 ppb on August 2 at hour 15												Hours of Missing Data: 0																			
Minimum Daily Value: 1.1 ppb on August 10												Hours of Calibration: 39																			
Monthly Average: 1.9 ppb												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				
Aug 1	2	2	1	2	1	1	1	1	S	3	1	1	1	1	1	1	1	1	1	2	1	2	1	1	3	1.3					
Aug 2	1	1	1	1	2	2	2	S	3	2	2	1	1	1	1	0	0	1	1	2	3	3	2	0	3	1.5					
Aug 3	2	3	7	6	4	3	S	7	6	3	2	2	2	1	1	1	1	1	2	2	2	1	1	1	7	2.7					
Aug 4	1	1	1	1	1	S	3	3	2	2	1	1	1	2	3	4	2	1	1	1	1	1	1	1	4	1.6					
Aug 5	1	2	2	3	S	3	1	1	1	0	1	1	1	1	1	1	1	1	1	2	2	2	3	0	3	1.4					
Aug 6	3	3	3	S	4	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	1	4	1.7					
Aug 7	2	2	S	4	4	4	2	2	2	1	1	1	1	1	1	1	1	1	1	2	2	2	2	1	4	1.8					
Aug 8	2	S	4	2	2	1	2	2	2	1	1	1	1	0	0	0	0	0	0	1	2	2	2	1	4	1.2					
Aug 9	S	8	11	10	8	5	4	3	1	C	C	C	C	C	C	C	6	2	1	2	3	2	2	S	1	-					
Aug 10	3	2	1	2	2	2	1	1	1	1	0	0	0	0	0	1	1	1	1	1	1	1	S	3	1.1						
Aug 11	2	2	2	2	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1	2	3	S	4	2	4	1.8					
Aug 12	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	2	S	4	2	2	0	4	1.2				
Aug 13	2	1	1	2	2	1	2	1	1	1	1	1	1	1	1	1	1	1	1	S	5	3	2	2	1	5	1.5				
Aug 14	1	1	2	2	2	1	2	2	3	1	1	1	1	1	1	1	1	1	S	4	2	2	3	3	1	4	1.7				
Aug 15	3	4	4	3	3	2	2	3	3	2	2	1	1	1	1	1	1	S	4	2	3	2	2	2	1	4	2.3				
Aug 16	2	2	1	1	1	2	3	3	3	2	1	1	1	1	1	1	S	3	2	3	3	2	4	7	1	7	2.2				
Aug 17	6	6	6	5	4	6	6	4	3	2	2	1	2	1	0	S	4	2	1	2	3	2	1	2	0	6	3.1				
Aug 18	3	4	4	4	4	3	3	6	6	4	2	1	1	S	4	2	1	1	1	2	3	3	2	2	1	6	3.1				
Aug 19	2	3	3	2	2	2	4	3	1	1	1	1	S	3	2	1	1	1	1	1	1	1	1	1	1	4	1.7				
Aug 20	1	1	1	2	3	2	2	2	2	1	2	2	S	4	3	2	3	3	4	4	4	3	4	3	1	4	2.5				
Aug 21	2	1	1	1	1	1	1	1	1	1	2	S	4	2	2	2	1	1	1	2	2	2	2	2	1	4	1.6				
Aug 22	2	2	2	2	2	2	1	3	3	2	S	3	1	1	1	1	1	1	1	3	2	2	2	1	1	3	1.8				
Aug 23	1	1	1	2	1	1	1	4	5	S	5	3	2	1	1	1	2	2	1	2	3	3	4	3	1	5	2.2				
Aug 24	2	2	1	1	1	1	2	1	S	4	3	2	2	1	1	1	1	1	2	2	2	2	3	2	1	4	1.7				
Aug 25	2	2	1	1	1	1	1	S	6	5	4	2	1	1	1	1	1	1	2	3	4	2	1	1	1	6	2.0				
Aug 26	1	2	1	2	2	3	S	5	3	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	5	1.6				
Aug 27	1	2	2	2	1	S	5	2	2	2	3	2	1	2	1	2	1	1	2	4	3	2	2	2	1	5	2.0				
Aug 28	1	1	2	1	S	4	2	1	1	1	1	1	1	1	0	0	0	0	0	1	2	3	4	5	0	5	1.4				
Aug 29	4	3	3	S	5	4	3	2	2	2	1	1	1	1	1	1	1	1	1	2	2	2	2	2	1	5	2.0				
Aug 30	2	2	S	4	2	2	4	5	4	3	2	1	1	2	1	0	1	1	1	2	3	2	2	1	0	5	2.1				
Aug 31	2	S	5	4	4	5	6	4	2	2	1	1	1	1	1	1	1	1	1	4	5	5	4	3	1	6	2.8				
Diurnal Maximum	6	8	11	10	8	6	6	7	6	6	5	3	4	4	3	4	6	3	4	4	5	5	4	7							
Diurnal Average	2.0	2.3	2.6	2.6	2.5	2.4	2.4	2.7	2.5	2.0	1.8	1.4	1.2	1.2	1.1	1.2	1.3	1.2	1.3	2.0	2.4	2.2	2.3	2.2							
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.																															

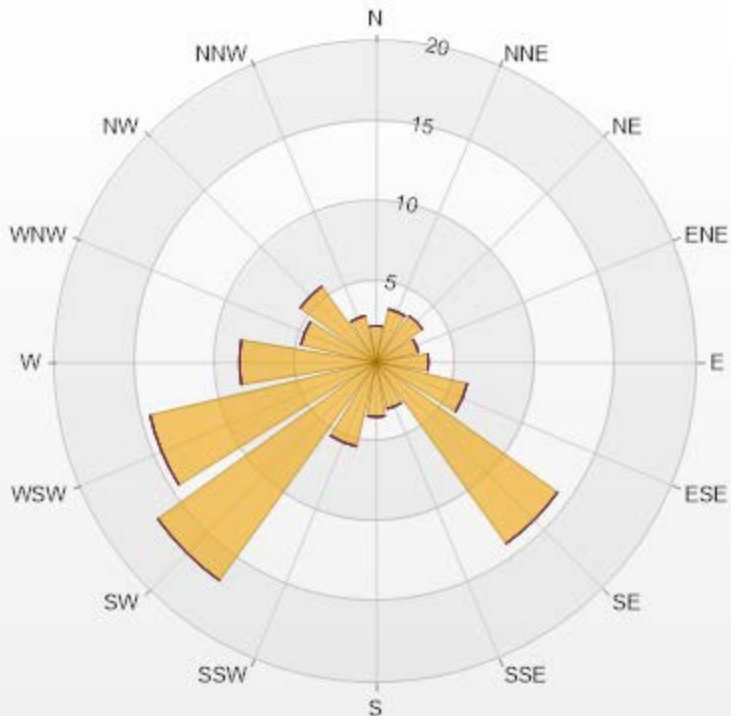
Timeseries Chart of Hourly Average for NO2 - Cold Lake South Station





Wind: Cold Lake South Poll.: Cold Lake South-NO2[ppb] Monthly: 08-2022 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.76% Calm Avg: 0.00 [ppb]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	2.27	0	0	0	0	2.27
NNE	3.4	0	0	0	0	3.4
NE	3.55	0	0	0	0	3.55
ENE	2.7	0	0	0	0	2.7
E	3.26	0	0	0	0	3.26
ESE	5.82	0	0	0	0	5.82
SE	13.9	0	0	0	0	13.9
SSE	2.98	0	0	0	0	2.98
S	3.4	0	0	0	0	3.4
SSW	5.39	0	0	0	0	5.39
SW	16.74	0	0	0	0	16.74
WSW	14.47	0	0	0	0	14.47
W	8.51	0	0	0	0	8.51
WNW	4.82	0	0	0	0	4.82
NW	5.82	0	0	0	0	5.82
NNW	2.98	0	0	0	0	2.98
Summary	100	0	0	0	0	100



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% Icon Classes (ppb)

100  0-30

0  30-50

0  50-76

0  76-159

0  >159.0



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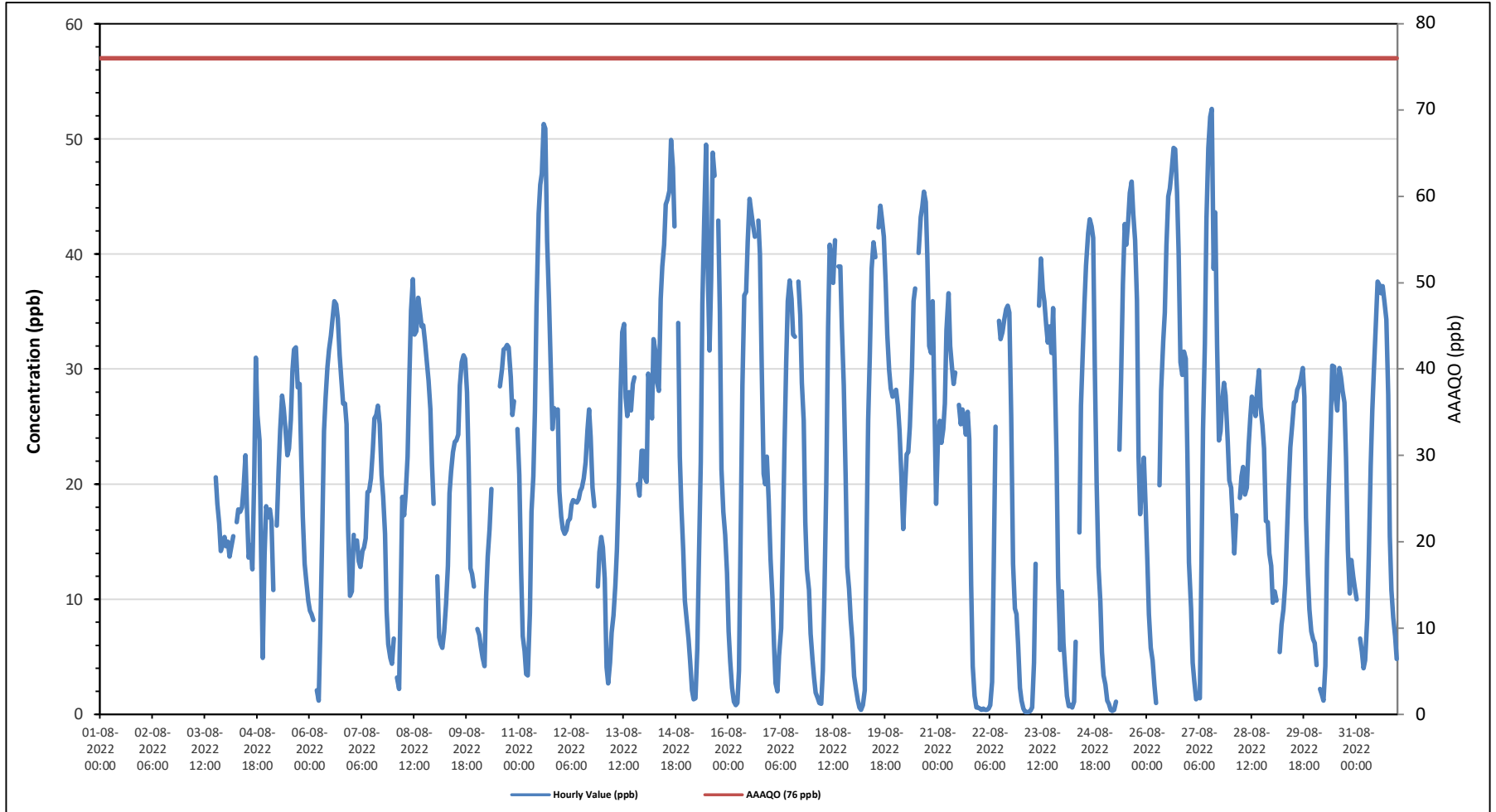
Cold Lake South Station - August 2022

Summary of Hourly Averages

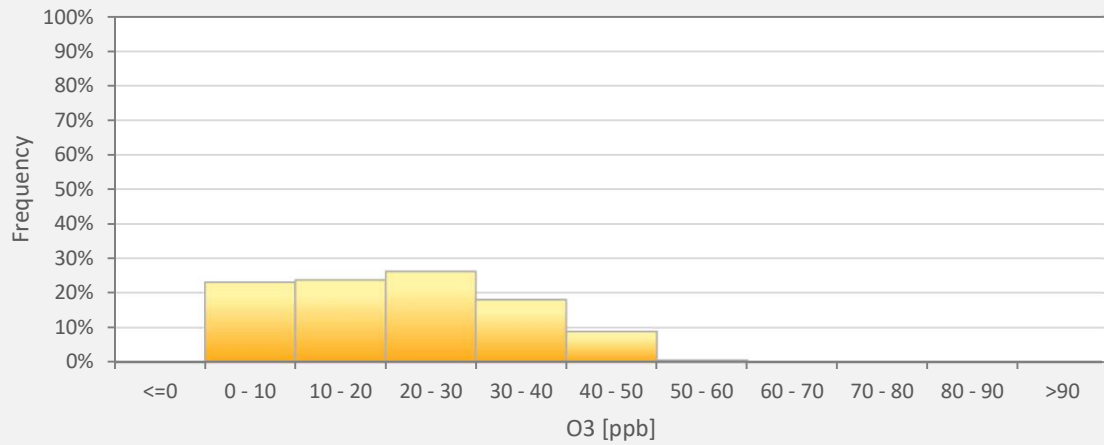
OZONE (O₃) in ppb

Alberta Ambient Air Quality Objectives (AAAQO): 1-Hour 76 ppb																																																
Number of 1-Hour Exceedances: 0																																																
Maximum Hourly Value: 52.6 ppb on August 27 at hour 13												Hours in Service: 744																																				
Maximum Daily Value: 31.9 ppb on August 14												Hours of Data: 645																																				
Minimum Hourly Value: 0.2 ppb on August 23 at hour 2												Hours of Missing Data: 66																																				
Minimum Daily Value: 15.2 ppb on August 22												Hours of Calibration: 33																																				
Monthly Average: 21.6 ppb												Operational Uptime: 91.1																																				
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																								
Aug 1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-																					
Aug 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	X	-	-	-																				
Aug 3	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	20.6	18.3	16.6	14.2	14.8	15.4	14.2	20.6	-																				
Aug 4	14.6	15	13.7	14.6	15.5	S	16.7	17.8	17.6	18	19.7	22.5	17.5	13.6	14.7	12.6	20.7	31	26	23.8	13.8	4.9	13.9	18.1	4.9	31.0	17.2																					
Aug 5	17.1	17.8	16.8	10.8	S	16.4	21.3	24.8	27.7	26.6	25	22.5	23.1	25.6	29.8	31.7	31.9	28.4	28.7	22.5	17.2	13.1	11.4	9.8	9.8	31.9	21.7																					
Aug 6	9	8.7	8.2	S	2.1	1.2	7.1	15.4	24.6	27.5	30.2	31.7	32.9	34.3	35.9	35.6	34.4	31.2	29.2	27	27	25.2	16	10.3	1.2	35.9	21.9																					
Aug 7	10.7	15.6	S	15.1	13.3	12.8	14.2	14.5	15.3	19.3	19.4	20.5	23	25.7	26	26.8	25.2	20.8	18.9	15.7	9	6.1	4.9	4.4	4.4	26.8	16.4																					
Aug 8	6.6	S	3.2	2.2	10.3	18.9	17.3	19.2	22.4	29.5	35.1	37.8	33	33.3	36.2	35.1	33.7	33.8	32.3	30.5	29	26.5	21.7	18.3	2.2	37.8	24.6																					
Aug 9	S	12	6.7	6.1	5.8	7.2	9.6	12.9	19.2	21.1	22.8	23.7	33	24.3	28.6	30.6	31.2	30.9	28	21.9	12.7	12.2	11.1	S	5.8	31.2	18.3																					
Aug 10	7.4	6.9	5.9	4.9	4.2	10.2	13.7	16.1	19.6	C	C	C	C	28.5	30	31.7	31.8	32.1	31.9	29.3	26	27.2	S	24.8	4.2	32.1	20.1																					
Aug 11	20.8	12.4	6.8	5.5	3.5	3.4	8.8	17.6	20.7	26.4	35.5	43.5	46	47	51.3	50.9	41.1	36	30.7	24.8	26.6	S	26.5	19.4	3.4	51.3	26.3																					
Aug 12	17.2	16.1	15.7	16	16.8	17	18.2	18.6	18.5	18.4	18.7	19.4	19.7	20.5	21.9	24.7	26.5	24.1	19.7	18.1	S	11.1	14.1	15.4	11.1	26.5	18.5																					
Aug 13	14.5	11.8	4.1	2.7	4.5	7.1	8.6	11.2	14.3	20	27.3	33.2	33.9	27.5	25.9	28	26.4	28.7	29.3	S	20	19	22.9	22.9	2.7	33.9	19.3																					
Aug 14	20.6	20.2	29.6	28.4	25.7	32.6	31.5	28.9	28.1	36.1	38.9	40.8	44.3	44.7	45.5	49.9	47.5	42.4	S	34	22.4	18	14.2	9.9	9.9	49.9	31.9																					
Aug 15	8.2	6.5	4.6	2.1	1.3	1.4	5.7	13.4	21.9	35.6	42.9	49.5	38.9	31.6	37.7	48.8	46.8	S	42.9	35	21.3	17.6	15.6	12.3	1.3	49.5	23.5																					
Aug 16	7.2	4.6	2.3	1.1	0.8	1	3.8	16.9	28.6	36.4	36.7	41.1	44.8	43.7	42.5	41.5	S	42.9	40	29.8	20.9	20	22.4	18.6	0.8	44.8	23.8																					
Aug 17	13.5	10.2	6.1	2.7	2	5.1	7.5	14.5	22.6	30.6	35.9	37.7	36.1	33	32.8	S	37.6	34.7	28.8	25.5	16.7	12.6	10.8	7	2.0	37.7	20.2																					
Aug 18	4.8	3.2	1.9	1.4	1	0.9	3.8	10.4	19.9	33.7	40.8	39.1	37.5	41.2	S	38.9	38.9	33.5	28.6	20.7	12.8	10.9	8.3	6.5	0.9	41.2	19.1																					
Aug 19	3.3	2.2	1.2	0.6	0.4	0.8	2.1	15.3	25.6	31.1	38.7	41	39.7	S	42.3	44.2	43	41.5	37.4	33	29.9	28.3	27.6	27.8	0.4	44.2	24.2																					
Aug 20	28.2	26.8	24.7	20.8	16.1	19.3	22.6	22.8	25	30.1	35.9	37	S	40.1	43.2	44.1	45.4	44.5	39.7	32	31.4	35.9	26.6	18.3	16.1	45.4	30.9																					
Aug 21	24	25.5	23.6	24.8	27	33.4	36.6	32	30.1	28.7	29.7	S	26.9	25.2	26.5	25.8	24.3	26.3	23.9	11.3	4.2	1.6	0.6	0.6	0.6	36.6	22.3																					
Aug 22	0.5	0.4	0.5	0.4	0.4	0.5	0.8	2.8	12.5	25	S	34.2	32.6	33.2	34.3	35.2	35.5	34.9	25.9	13.1	9.2	8.7	6.1	2.3	0.4	35.5	15.2																					
Aug 23	1.2	0.5	0.2	0.2	0.2	0.3	0.6	4.5	13.1	S	35.5	39.6	36.9	35.9	33.8	32.3	33.7	31.4	35.3	30	22.3	11.9	5.6	10.7	0.2	39.6	18.1																					
Aug 24	6.2	3.7	1.6	0.7	0.8	0.6	1.1	6.3	S	15.8	26.8	31.6	35.6	39	41.8	43	42.4	41.4	30.4	20.1	12.8	9.8	5.4	3.4	0.6	43.0	18.3																					
Aug 25	2.6	1.2	0.9	0.4	0.3	0.4	1.1	S	23	29	37.4	42.6	40.8	42.9	45.3	46.3	43.5	41.2	36	22.4	17.4	20.1	22.3	17.8	0.3	46.3	23.3																					
Aug 26	13.5	8.7	5.8	4.7	2.5	1	S	19.9	28.1	32.4	34.9	40.7	45	45.7	47.3	49.2	49.1	45.4	40.2	30.6	29.5	31.5	30.9	22.8	1.0	49.2	28.7																					
Aug 27	13.2	9.2	4.5	2.9	1.3	S	1.4	12.8	24.8	32.2	43.1	49.2	51.9	52.6	38.7	43.6	32.1	23.8	24.6	27.4	28.8	27.7	23.8	20.3	1.3	52.6	25.6																					
Aug 28	19.7	17	14	17.3	S	18.8	20.7	21.5	19.1	19.7	23.4	25.7	27.6	27.1	25.9	28.2	29.9	26.7	25.1	23.1	16.8	16.7	14	12.9	12.9	29.9	21.3																					
Aug 29	9.7	10.7	9.9	S	5.4	7.8	9.1	11.4	15.4	19.4	23.2	25.1	27.1	27.2	28.2	28.6	29.1	30.1	27.6	17.1	12.1	9.1	7.2	6.5	5.4	30.1	17.3																					
Aug 30	6.2	4.3	S	2.2	1.7	1.2	4.2	13.4	19	25.1	30.3	30.2	27.4	26.4	30.1	29.3	28.1	27.1	22.3	14.3	10.5	13.4	12	11	1.2	30.3	16.9																					
Aug 31	10	S	6.6	5.4	4	4.7	8.4	13.9	21.6	26.4	29.9	33.7	37.6	37.3	36.6	37.2	35.8	34.3	27.8	15.5	10.8	8.4	6.8	4.8	4.0	37.6	19.9																					
Diurnal Maximum	28	27	30	28	27	33	37	32	30	36	43	50	52	53	51	51	49	45	43	35	31	36	31	28																								
Diurnal Average	11.5	10.4	8.4	7.5	6.4	8.6	11.0	15.9	21.4	26.7	31.5	34.4	34.0	33.6	34.5	36.1	35.0	33.3	29.7	23.8	18.8	16.5	14.9	13.3																								
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 O3 - Cold Lake South Station



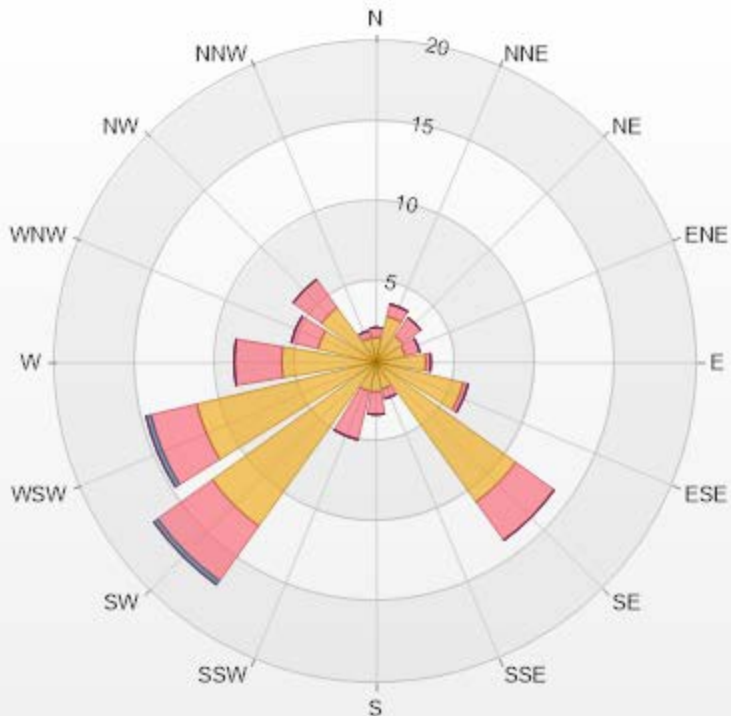
O3[ppb] Histogram: Cold Lake South Monthly: 08-2022 1 Hr.



Classes	O3
<=0	0.00%
0 - 10	22.95%
10 - 20	23.57%
20 - 30	26.05%
30 - 40	17.98%
40 - 50	8.84%
50 - 60	0.62%
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: 08-2022 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 86.69% Calm Avg: 0.00 [ppb]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	1.55	0.62	0	0	0	2.17
NNE	2.95	0.78	0	0	0	3.73
NE	2.02	1.4	0	0	0	3.42
ENE	1.86	0.93	0	0	0	2.79
E	3.1	0.31	0	0	0	3.41
ESE	5.58	0.31	0	0	0	5.89
SE	10.7	2.95	0	0	0	13.65
SSE	1.71	0.62	0	0	0	2.33
S	1.86	1.4	0	0	0	3.26
SSW	1.86	3.1	0	0	0	4.96
SW	12.56	4.19	0.31	0	0	17.06
WSW	11.47	2.95	0.31	0	0	14.73
W	5.89	2.95	0	0	0	8.84
WNW	3.72	1.71	0	0	0	5.43
NW	4.19	2.17	0	0	0	6.36
NNW	1.55	0.47	0	0	0	2.02
Summary	72.57	26.86	0.62	0	0	100



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% Icon Classes (ppb)	73	0-30	27	30-50	1	50-76	0	76-159	0	>159.0
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LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - August 2022

Summary of Hourly Averages

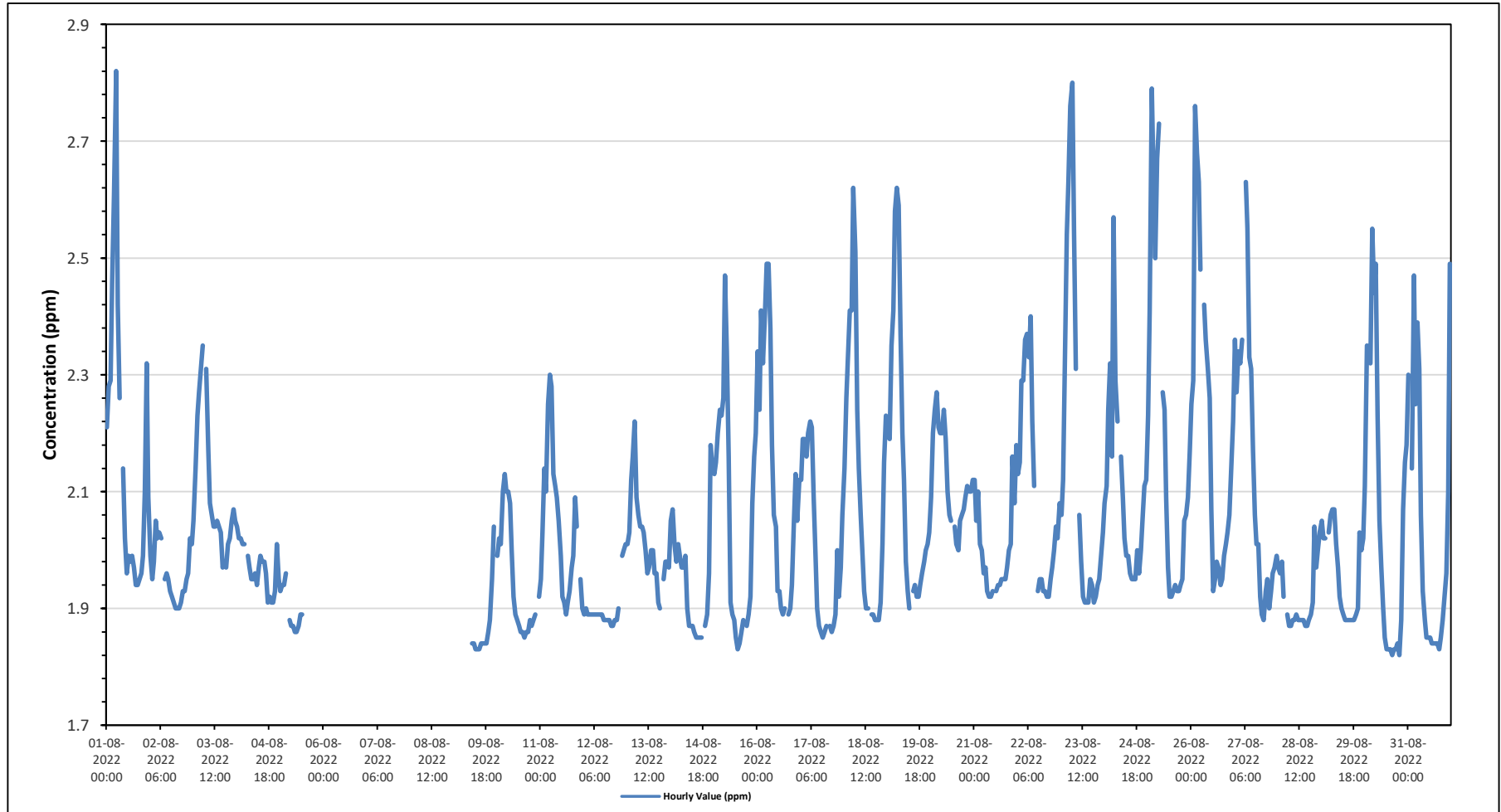
TOTAL HYDROCARBONS (THC) in ppm

Maximum Hourly Value:	2.82 ppm on August 1 at hour 5	Hours in Service:	744
Maximum Daily Value:	2.20 ppm on August 26	Hours of Data:	623
Minimum Hourly Value:	1.82 ppm on August 30 at hour 15	Hours of Missing Data:	90
Minimum Daily Value:	1.90 ppm on August 12	Hours of Calibration:	31
Monthly Average:	2.05 ppm	Operational Uptime:	87.9

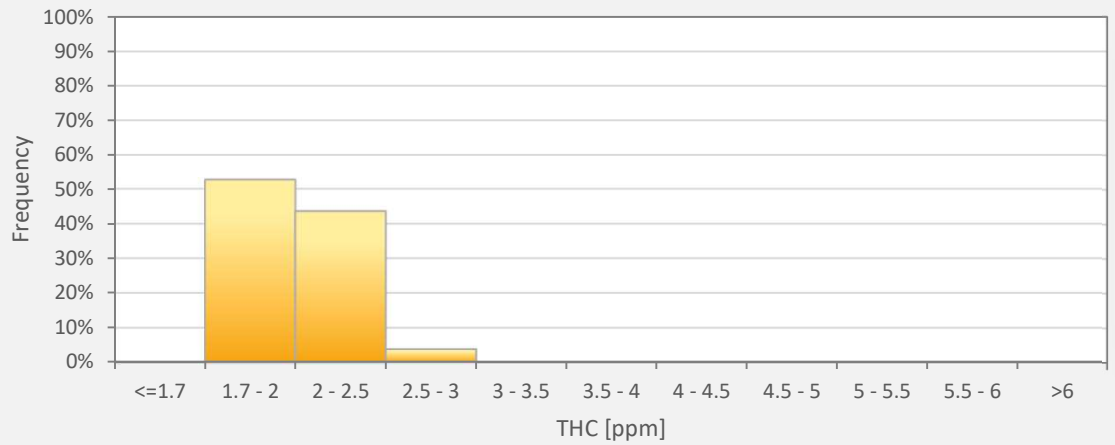
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average		
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23	
Aug 1	2.21	2.28	2.29	2.46	2.61	2.82	2.42	2.26	S	2.14	2.02	1.96	1.99	1.98	1.99	1.97	1.94	1.94	1.95	1.96	1.99	2.10	2.32	2.09	1.94	2.82	2.16	
Aug 2	1.99	1.95	1.98	2.05	2.02	2.03	2.02	S	1.95	1.96	1.95	1.93	1.92	1.91	1.90	1.90	1.90	1.91	1.93	1.93	1.95	1.96	2.02	2.01	1.90	2.05	1.96	
Aug 3	2.05	2.14	2.23	2.27	2.31	2.35	S	2.31	2.17	2.08	2.06	2.04	2.04	2.05	2.04	2.03	1.97	1.98	1.97	2.01	2.02	2.05	2.07	2.05	1.97	2.35	2.10	
Aug 4	2.04	2.02	2.02	2.01	2.01	S	1.99	1.97	1.95	1.95	1.96	1.94	1.97	1.99	1.98	1.98	1.96	1.91	1.92	1.91	1.91	1.93	2.01	1.95	1.91	2.04	1.97	
Aug 5	1.93	1.94	1.94	1.96	S	1.88	1.87	1.87	1.85	1.86	1.86	1.87	1.89	1.89	X	X	X	X	X	X	X	X	X	X	1.86	1.96	-	
Aug 6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-
Aug 7	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-
Aug 8	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-
Aug 9	X	X	X	X	X	X	X	C	C	C	1.84	1.84	1.83	1.83	1.83	1.84	1.84	1.84	1.84	1.86	1.88	1.95	2.04	S	1.83	2.04	-	
Aug 10	1.99	2.02	2.01	2.10	2.13	2.10	2.10	2.08	2.00	1.92	1.89	1.88	1.87	1.86	1.86	1.85	1.86	1.86	1.88	1.87	1.88	1.89	S	1.92	1.85	2.13	1.95	
Aug 11	1.95	2.03	2.14	2.10	2.25	2.30	2.28	2.13	2.11	2.09	2.05	1.99	1.92	1.91	1.89	1.91	1.93	1.97	1.99	2.09	2.04	S	1.95	1.90	1.89	2.30	2.04	
Aug 12	1.89	1.90	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.88	1.88	1.88	1.87	1.87	1.88	1.88	1.88	1.90	S	1.99	2.00	2.01	1.87	2.01	1.90	
Aug 13	2.01	2.03	2.12	2.16	2.22	2.09	2.06	2.04	2.04	2.03	2.00	1.96	1.97	2.00	2.00	1.96	1.96	1.91	1.90	S	1.95	1.98	1.98	1.97	1.90	2.22	2.01	
Aug 14	2.05	2.07	2.01	1.98	2.01	1.99	1.97	1.97	1.99	1.90	1.87	1.87	1.87	1.86	1.85	1.85	1.85	S	1.87	1.89	1.96	2.18	2.14	1.85	2.18	1.95		
Aug 15	2.13	2.15	2.20	2.24	2.23	2.26	2.47	2.34	2.16	1.91	1.89	1.88	1.85	1.83	1.84	1.86	1.88	S	1.87	1.89	1.92	2.08	2.16	2.20	1.83	2.47	2.05	
Aug 16	2.34	2.24	2.41	2.32	2.41	2.49	2.49	2.38	2.18	2.06	2.04	1.93	1.93	1.90	1.89	1.90	S	1.89	1.90	1.94	2.04	2.13	2.05	2.12	1.89	2.49	2.13	
Aug 17	2.12	2.19	2.19	2.16	2.20	2.22	2.21	2.09	1.99	1.90	1.87	1.86	1.85	1.86	1.87	S	1.87	1.86	1.87	1.89	2.00	1.92	1.97	2.06	1.85	2.22	2.00	
Aug 18	2.14	2.26	2.33	2.41	2.41	2.62	2.51	2.24	2.14	2.06	1.99	1.93	1.90	1.90	S	1.89	1.89	1.88	1.88	1.88	1.91	2.01	2.15	2.23	1.88	2.62	2.11	
Aug 19	2.20	2.19	2.35	2.41	2.58	2.62	2.59	2.37	2.20	2.12	1.98	1.93	1.90	S	1.93	1.94	1.92	1.92	1.94	1.96	1.98	2.00	2.01	2.03	1.90	2.62	2.13	
Aug 20	2.09	2.20	2.24	2.27	2.21	2.20	2.20	2.24	2.19	2.10	2.06	2.05	S	2.04	2.01	2.00	2.05	2.06	2.07	2.09	2.11	2.10	2.10	2.12	2.00	2.27	2.12	
Aug 21	2.12	2.05	2.10	2.01	2.00	1.96	1.97	1.93	1.92	1.92	1.93	S	1.93	1.94	1.94	1.95	1.95	1.95	1.97	2.00	2.01	2.16	2.08	2.18	1.92	2.18	2.00	
Aug 22	2.13	2.15	2.29	2.29	2.36	2.37	2.33	2.40	2.22	2.11	S	1.93	1.95	1.95	1.93	1.93	1.92	1.92	1.95	1.97	2.00	2.04	2.02	2.08	1.92	2.40	2.10	
Aug 23	2.06	2.12	2.33	2.54	2.63	2.76	2.80	2.55	2.31	S	2.06	1.98	1.92	1.91	1.91	1.91	1.95	1.94	1.91	1.92	1.94	1.95	1.99	2.03	1.91	2.80	2.15	
Aug 24	2.08	2.11	2.24	2.32	2.16	2.57	2.29	2.22	S	2.16	2.09	2.02	1.99	1.99	1.96	1.95	1.95	1.95	2.00	1.96	2.00	2.06	2.11	2.12	1.95	2.57	2.10	
Aug 25	2.23	2.41	2.79	2.62	2.50	2.67	2.73	S	2.27	2.24	2.09	1.97	1.92	1.92	1.93	1.94	1.93	1.93	1.94	1.95	2.05	2.06	2.09	2.17	1.92	2.79	2.19	
Aug 26	2.25	2.29	2.76	2.68	2.63	2.48	S	2.42	2.36	2.31	2.26	2.07	1.93	1.95	1.98	1.97	1.94	1.95	1.99	2.01	2.03	2.06	2.14	2.22	1.93	2.76	2.20	
Aug 27	2.36	2.27	2.34	2.32	2.36	S	2.63	2.55	2.33	2.31	2.17	2.06	2.01	2.01	1.92	1.89	1.88	1.93	1.95	1.90	1.93	1.96	1.97	1.99	1.88	2.63	2.13	
Aug 28	1.97	1.96	1.98	1.92	S	1.89	1.87	1.87	1.88	1.88	1.89	1.88	1.88	1.88	1.87	1.87	1.88	1.89	1.91	2.04	1.97	2.00	2.03	1.87	2.04	1.92		
Aug 29	2.05	2.02	2.02	S	2.03	2.06	2.07	2.07	2.01	1.97	1.92	1.90	1.89	1.88	1.88	1.88	1.88	1.88	1.88	1.88	1.89	1.90	2.03	2.00	1.88	2.07	1.96	
Aug 30	2.11	2.35	S	2.32	2.55	2.44	2.49	2.23	2.05	1.97	1.90	1.85	1.83	1.83	1.83	1.82	1.83	1.84	1.82	1.88	2.07	2.15	2.18	1.82	2.55	2.05		
Aug 31	2.30	S	2.14	2.47	2.25	2.39	2.31	2.06	1.93	1.88	1.85	1.85	1.85	1.84	1.84	1.84	1.83	1.85	1.88	1.92	1.96	2.10	2.49	1.83	2.49	2.03		
Diurnal Maximum	2.36	2.41	2.79	2.68	2.63	2.82	2.80	2.55	2.36	2.31	2.26	2.07	2.04	2.05	2.04	2.03	2.05	2.06	2.07	2.09	2.11	2.16	2.32	2.49				
Diurnal Average	2.10	2.13	2.21	2.24	2.28	2.30	2.26	2.18	2.08	2.03	1.98	1.94	1.91	1.92	1.91	1.91	1.91	1.91	1.92	1.93	1.97	2.01	2.06	2.09				
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



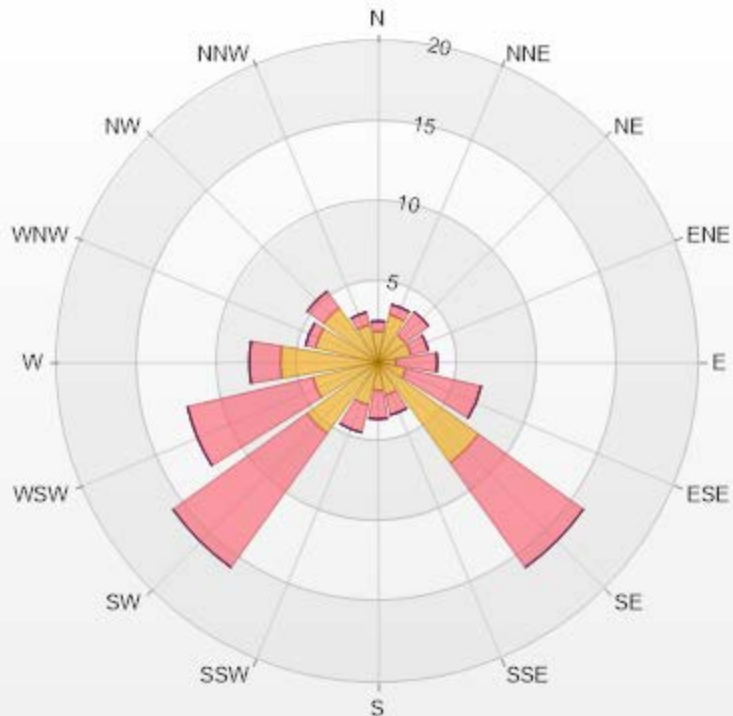
THC55[ppm] Histogram: Cold Lake South Monthly: 08-2022 1 Hr.



Classes	THC55
<=1.7	0.00%
1.7 - 2	52.65%
2 - 2.5	43.50%
2.5 - 3	3.85%
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: 08-2022 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 83.74% Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-40	>40.0	Total
N	1.93	0.64	0	0	0	2.57
NNE	3.05	0.64	0	0	0	3.69
NE	2.09	1.77	0	0	0	3.86
ENE	2.09	1.12	0	0	0	3.21
E	1.12	2.57	0	0	0	3.69
ESE	1.77	4.82	0	0	0	6.59
SE	7.7	8.03	0	0	0	15.73
SSE	2.09	1.28	0	0	0	3.37
S	1.77	1.77	0	0	0	3.54
SSW	2.73	1.77	0	0	0	4.5
SW	5.46	10.27	0	0	0	15.73
WSW	4.17	8.03	0	0	0	12.2
W	6.1	1.93	0	0	0	8.03
WNW	4.01	0.64	0	0	0	4.65
NW	4.17	1.28	0	0	0	5.45
NNW	2.41	0.8	0	0	0	3.21
Summary	52.66	47.36	0	0	0	100



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% Icon Classes (ppm)

53

0-2

47

2-5

0

5-10

0

10-40

0

>40.0



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Cold Lake South Station - August 2022

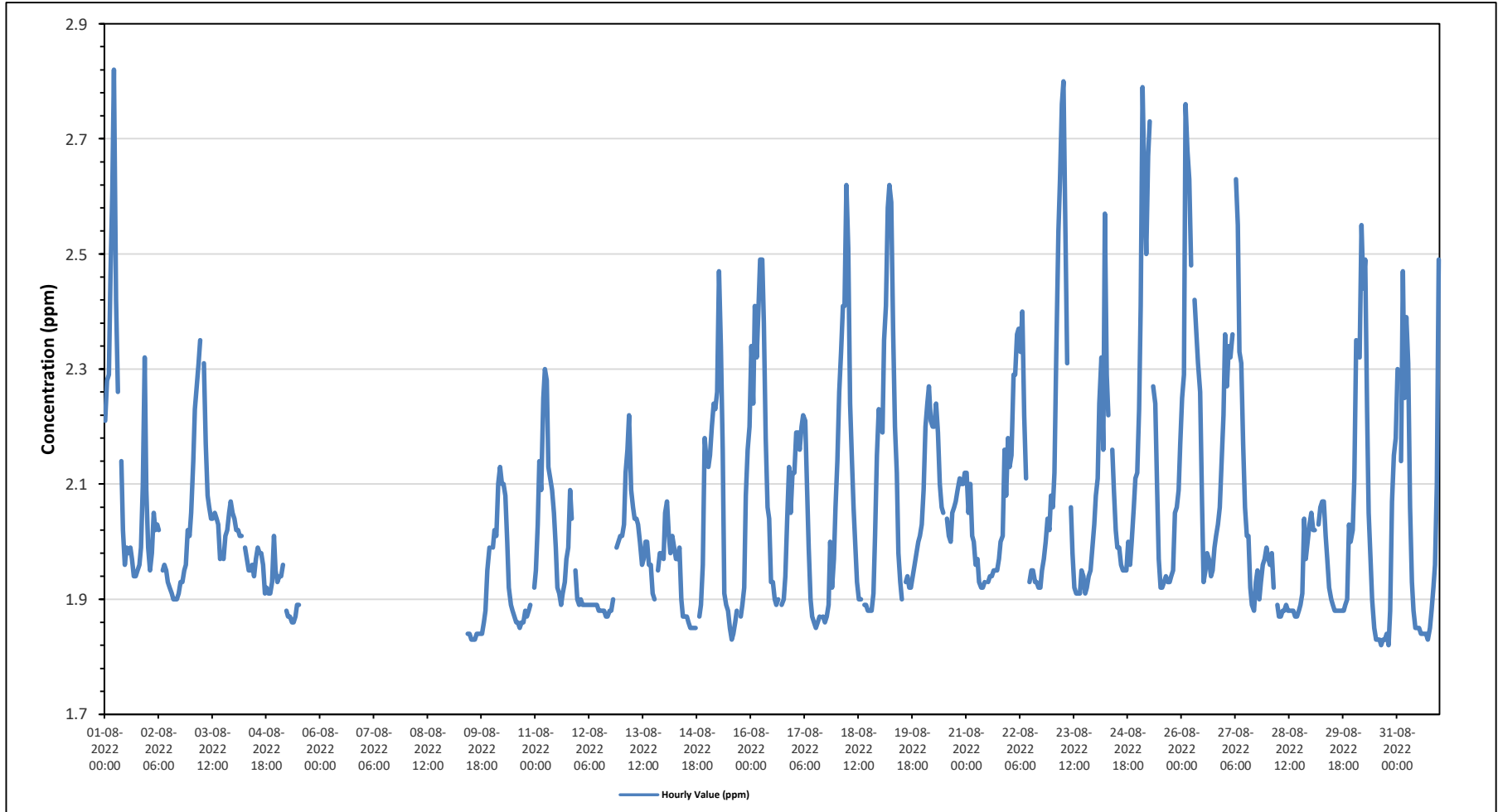
Summary of Hourly Averages

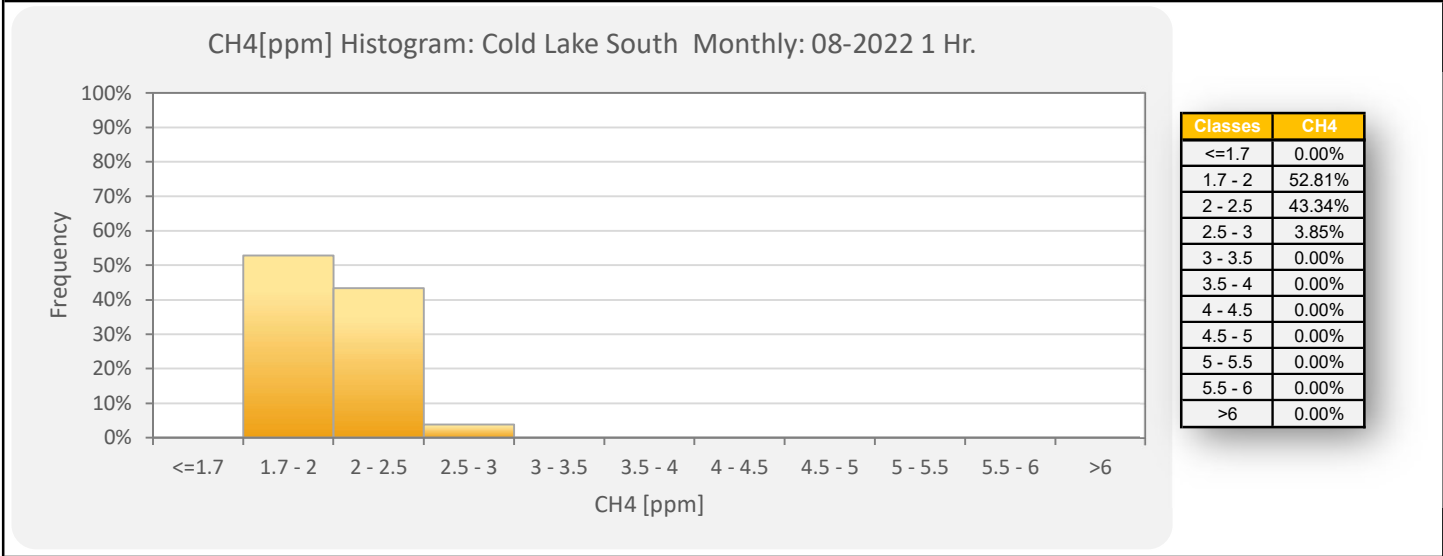
METHANE (CH4) in ppm

Maximum Hourly Value:	2.82 ppm on August 1 at hour 5	Hours in Service:	744
Maximum Daily Value:	2.20 ppm on August 26	Hours of Data:	623
Minimum Hourly Value:	1.82 ppm on August 30 at hour 15	Hours of Missing Data:	90
Minimum Daily Value:	1.90 ppm on August 12	Hours of Calibration:	31
Monthly Average:	2.05 ppm	Operational Uptime:	87.9

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				
Aug 1	2.21	2.28	2.29	2.46	2.61	2.82	2.42	2.26	S	2.14	2.02	1.96	1.99	1.98	1.99	1.97	1.94	1.94	1.95	1.96	1.99	2.10	2.32	2.09	1.94	2.82	2.16				
Aug 2	1.99	1.95	1.98	2.05	2.02	2.03	2.02	S	1.95	1.96	1.95	1.93	1.92	1.91	1.90	1.90	1.90	1.91	1.93	1.93	1.95	1.96	2.02	2.01	1.90	2.05	1.96				
Aug 3	2.05	2.14	2.23	2.27	2.31	2.35	S	2.31	2.17	2.08	2.06	2.04	2.04	2.05	2.04	2.03	1.97	1.98	1.97	2.01	2.02	2.05	2.07	2.05	1.97	2.35	2.10				
Aug 4	2.04	2.02	2.02	2.01	2.01	S	1.99	1.97	1.95	1.95	1.96	1.94	1.97	1.99	1.98	1.98	1.96	1.91	1.92	1.91	1.91	1.93	2.01	1.95	1.91	2.04	1.97				
Aug 5	1.93	1.94	1.94	1.96	S	1.88	1.87	1.87	1.85	1.86	1.86	1.87	1.89	1.89	X	X	X	X	X	X	X	X	X	X	1.86	1.96	-				
Aug 6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-				
Aug 7	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-				
Aug 8	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-				
Aug 9	X	X	X	X	X	X	X	X	C	C	C	1.84	1.84	1.83	1.83	1.83	1.84	1.84	1.84	1.84	1.86	1.88	1.95	1.99	S	1.83	1.99	-			
Aug 10	1.99	2.02	2.01	2.10	2.13	2.10	2.10	2.08	2.00	1.92	1.89	1.88	1.87	1.86	1.86	1.85	1.86	1.86	1.88	1.87	1.88	1.89	S	1.92	1.85	2.13	1.95				
Aug 11	1.95	2.03	2.14	2.09	2.25	2.30	2.28	2.13	2.11	2.09	2.05	1.99	1.92	1.91	1.89	1.91	1.93	1.97	1.99	2.09	2.04	S	1.95	1.90	1.89	2.30	2.04				
Aug 12	1.89	1.90	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.88	1.88	1.88	1.87	1.87	1.88	1.88	1.88	1.90	S	1.99	2.00	2.01	1.87	2.01	1.90				
Aug 13	2.01	2.03	2.12	2.16	2.22	2.09	2.06	2.04	2.04	2.03	2.00	1.96	1.97	2.00	2.00	1.96	1.96	1.91	1.90	S	1.95	1.98	1.98	1.97	1.90	2.22	2.01				
Aug 14	2.05	2.07	2.01	1.98	2.01	1.99	1.97	1.97	1.99	1.90	1.87	1.87	1.87	1.86	1.85	1.85	1.85	S	1.87	1.89	1.96	2.18	2.14	1.85	2.18	1.95					
Aug 15	2.13	2.15	2.20	2.24	2.23	2.26	2.47	2.34	2.16	1.91	1.89	1.88	1.85	1.83	1.84	1.86	1.88	S	1.87	1.89	1.92	2.08	2.16	2.20	1.83	2.47	2.05				
Aug 16	2.34	2.24	2.41	2.32	2.41	2.49	2.49	2.38	2.18	2.06	2.04	1.93	1.93	1.90	1.89	1.90	S	1.89	1.90	1.94	2.04	2.13	2.05	2.12	1.89	2.49	2.13				
Aug 17	2.12	2.19	2.19	2.16	2.20	2.22	2.21	2.09	1.99	1.90	1.87	1.86	1.85	1.86	1.87	S	1.87	1.86	1.87	1.89	2.00	1.92	1.97	2.06	1.85	2.22	2.00				
Aug 18	2.14	2.26	2.33	2.41	2.41	2.62	2.51	2.24	2.14	2.06	1.99	1.93	1.90	S	1.89	1.89	1.88	1.88	1.88	1.88	1.91	2.01	2.15	2.23	1.88	2.62	2.11				
Aug 19	2.20	2.19	2.35	2.41	2.58	2.62	2.59	2.37	2.20	2.12	1.98	1.93	1.90	S	1.93	1.94	1.92	1.92	1.94	1.96	1.98	2.00	2.01	2.03	1.90	2.62	2.13				
Aug 20	2.09	2.20	2.24	2.27	2.21	2.20	2.20	2.24	2.19	2.10	2.06	2.05	S	2.04	2.01	2.00	2.05	2.06	2.07	2.09	2.11	2.10	2.10	2.12	2.00	2.27	2.12				
Aug 21	2.12	2.05	2.10	2.01	2.00	1.96	1.97	1.93	1.92	1.92	1.93	S	1.93	1.94	1.94	1.95	1.95	1.95	1.97	2.00	2.01	2.16	2.08	2.18	1.92	2.18	2.00				
Aug 22	2.13	2.15	2.29	2.29	2.36	2.37	2.33	2.40	2.22	2.11	S	1.93	1.95	1.95	1.93	1.93	1.92	1.92	1.95	1.97	2.00	2.04	2.02	2.08	1.92	2.40	2.10				
Aug 23	2.06	2.12	2.33	2.54	2.63	2.76	2.80	2.55	2.31	S	2.06	1.98	1.92	1.91	1.91	1.91	1.95	1.94	1.91	1.92	1.94	1.95	1.99	2.03	1.91	2.80	2.15				
Aug 24	2.08	2.11	2.24	2.32	2.16	2.57	2.29	2.22	S	2.16	2.09	2.02	1.99	1.99	1.96	1.95	1.95	1.95	2.00	1.96	2.00	2.06	2.11	2.12	1.95	2.57	2.10				
Aug 25	2.23	2.41	2.79	2.62	2.50	2.67	2.73	S	2.27	2.24	2.09	1.97	1.92	1.92	1.93	1.94	1.93	1.93	1.94	1.95	2.05	2.06	2.09	2.17	1.92	2.79	2.19				
Aug 26	2.25	2.29	2.76	2.68	2.63	2.48	S	2.42	2.36	2.31	2.26	2.07	1.93	1.95	1.98	1.97	1.94	1.95	1.99	2.01	2.03	2.06	2.14	2.22	1.93	2.76	2.20				
Aug 27	2.36	2.27	2.34	2.32	2.36	S	2.63	2.55	2.33	2.31	2.17	2.06	2.01	2.01	1.92	1.89	1.88	1.93	1.95	1.90	1.93	1.96	1.97	1.99	1.88	2.63	2.13				
Aug 28	1.97	1.96	1.98	1.92	S	1.89	1.87	1.87	1.88	1.88	1.89	1.88	1.88	1.88	1.87	1.87	1.88	1.89	1.91	2.04	1.97	2.00	2.03	1.87	2.04	1.92					
Aug 29	2.05	2.02	2.02	S	2.03	2.06	2.07	2.07	2.01	1.97	1.92	1.90	1.89	1.88	1.88	1.88	1.88	1.88	1.88	1.89	1.90	2.03	2.00	2.02	1.88	2.07	1.96				
Aug 30	2.11	2.35	S	2.32	2.55	2.44	2.49	2.23	2.05	1.97	1.90	1.85	1.83	1.83	1.83	1.82	1.83	1.84	1.82	1.88	2.07	2.15	2.18	1.82	2.55	2.05					
Aug 31	2.30	S	2.14	2.47	2.25	2.39	2.31	2.06	1.93	1.88	1.85	1.85	1.85	1.84	1.84	1.84	1.83	1.85	1.88	1.92	1.96	2.10	2.49	1.83	2.49	2.03					
Diurnal Maximum	2.36	2.41	2.79	2.68	2.63	2.82	2.80	2.55	2.36	2.31	2.26	2.07	2.04	2.05	2.04	2.03	2.05	2.06	2.07	2.09	2.11	2.16	2.32	2.49							
Diurnal Average	2.10	2.13	2.21	2.24	2.28	2.30	2.26	2.18	2.08	2.03	1.98	1.94	1.91	1.92	1.91	1.91	1.91	1.91	1.92	1.93	1.97	2.01	2.06	2.09							
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.																															

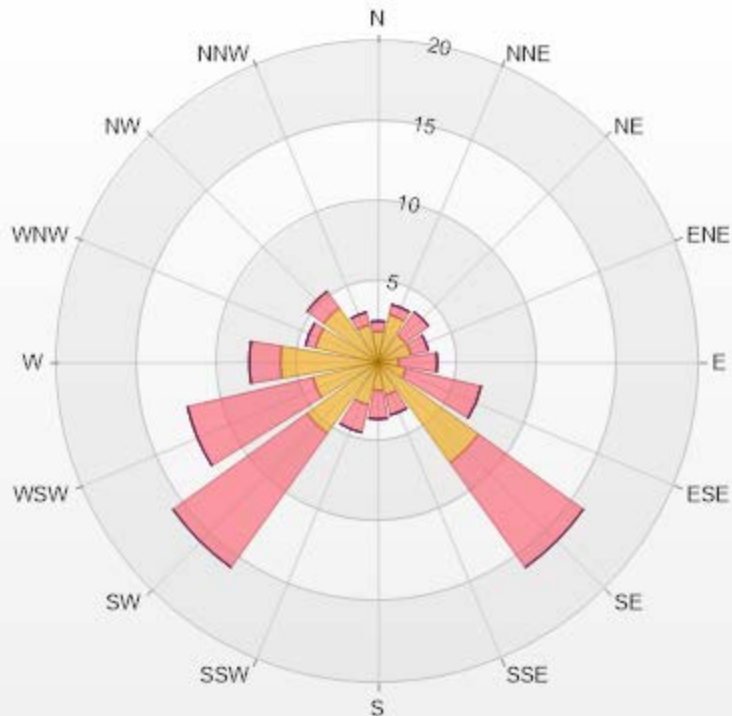
Timeseries Chart of Hourly Average for CH4 - Cold Lake South Station





Wind: Cold Lake South Poll.: Cold Lake South-CH4[ppm] Monthly: 08-2022 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 83.74% Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-20	>20.0	Total
N	1.93	0.64	0	0	0	2.57
NNE	3.05	0.64	0	0	0	3.69
NE	2.09	1.77	0	0	0	3.86
ENE	2.09	1.12	0	0	0	3.21
E	1.28	2.41	0	0	0	3.69
ESE	1.77	4.82	0	0	0	6.59
SE	7.7	8.03	0	0	0	15.73
SSE	2.09	1.28	0	0	0	3.37
S	1.77	1.77	0	0	0	3.54
SSW	2.73	1.77	0	0	0	4.5
SW	5.46	10.27	0	0	0	15.73
WSW	4.17	8.03	0	0	0	12.2
W	6.1	1.93	0	0	0	8.03
WNW	4.01	0.64	0	0	0	4.65
NW	4.17	1.28	0	0	0	5.45
NNW	2.41	0.8	0	0	0	3.21
Summary	52.82	47.2	0	0	0	100



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% Icon Classes (ppm)	53	0-2	47	2-5	0	5-10	0	10-20	0	>20.0
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Cold Lake South Station - August 2022

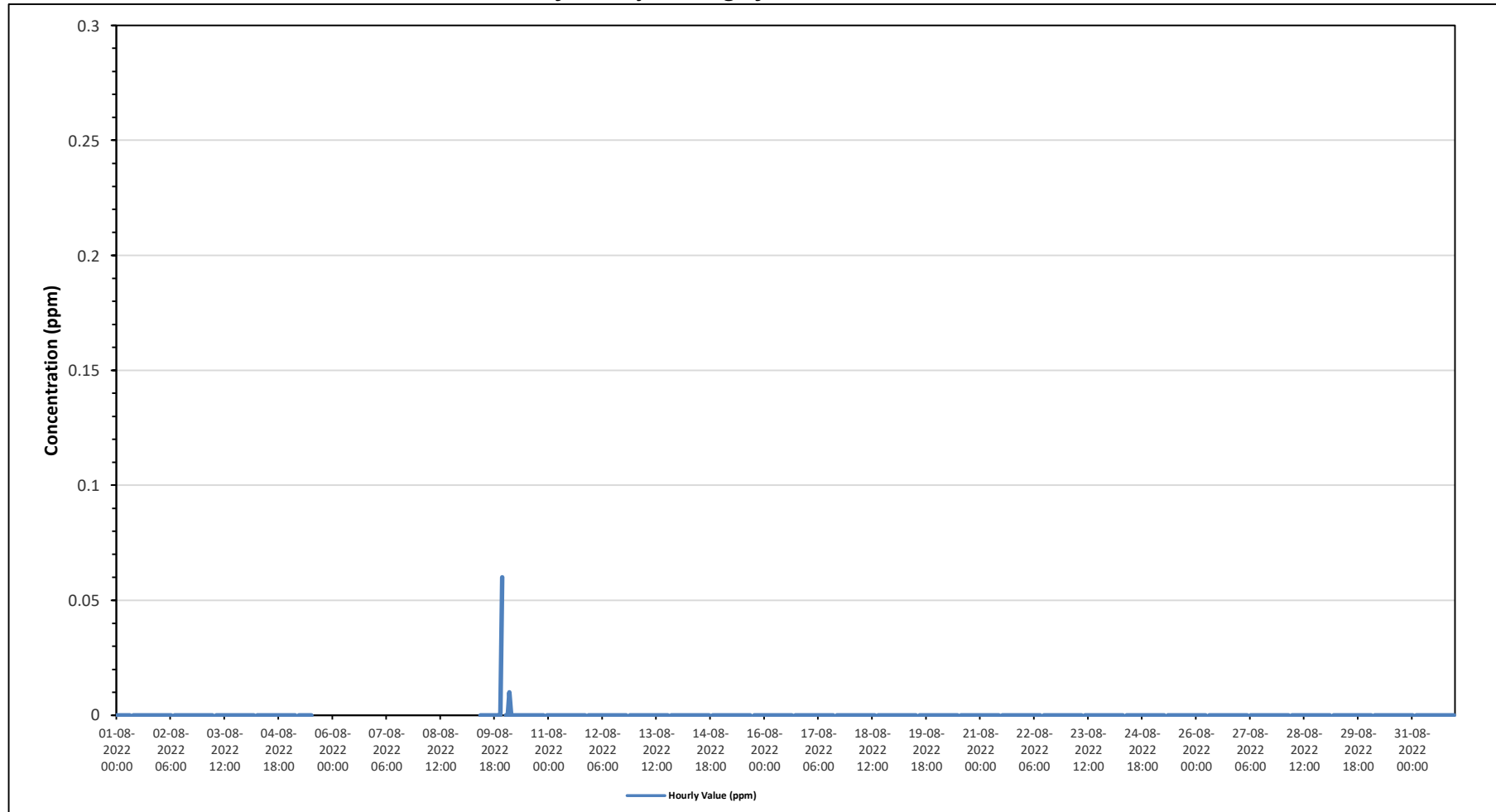
Summary of Hourly Averages

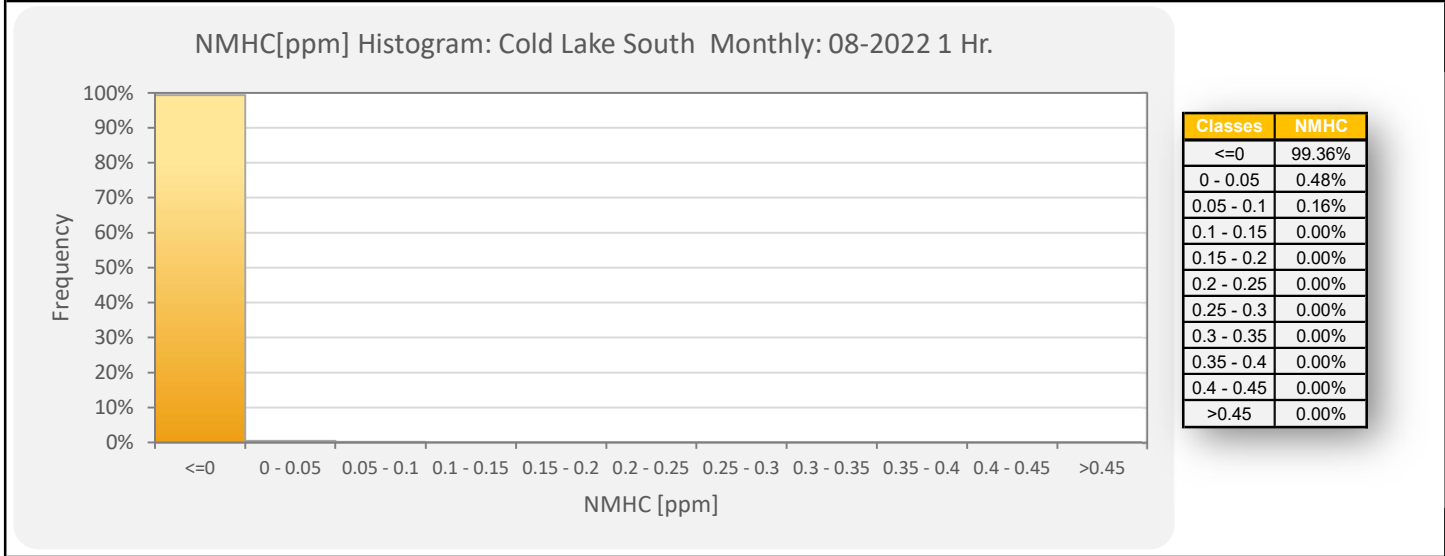
NON-METHANE HYDROCARBONS (NMHC) in ppm

Maximum Hourly Value:	0.06 ppm on August 9 at hour 22	Hours in Service:	744
Maximum Daily Value:	0.00 ppm on August 10	Hours of Data:	623
Minimum Hourly Value:	0.00 ppm on August 1 at hour 0	Hours of Missing Data:	90
Minimum Daily Value:	0.00 ppm on August 1	Hours of Calibration:	31
Monthly Average:	0.00 ppm	Operational Uptime:	87.9

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														
Aug 1	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
Aug 2	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
Aug 3	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
Aug 4	0.00	0.00	0.00	0.00	0.00	S	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	0.00	0.00	0.00	0.00					
Aug 5	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	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0.00	0.00	-				
Aug 6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-			
Aug 7	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-		
Aug 8	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	
Aug 9	X	X	X	X	X	X	X	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	S	0.00	0.06	-	
Aug 10	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	0.00	0.00	0.00	0.00	0.00	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	0.00			
Aug 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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			
Aug 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	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	
Aug 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	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	
Aug 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	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	0.00	
Aug 15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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	0.00	0.00	0.00	0.00	0.00	
Aug 16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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	0.00	0.00	0.00	0.00	0.00	
Aug 17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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	0.00	0.00	0.00	0.00	0.00	
Aug 18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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	0.00	0.00	0.00	0.00	0.00	
Aug 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	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
Aug 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	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	0.00	
Aug 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	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	0.00	0.00	
Aug 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	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	0.00	
Aug 23	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Aug 24	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Aug 25	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Aug 26	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Aug 27	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Aug 28	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Aug 29	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Aug 30	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Aug 31	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	0.00	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	0.00	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00			
Diurnal 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	0.00	0.00	0.00	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												
X	Invalid Data (Equipment Malfunction /Recovery)							NRM							UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)							P																			

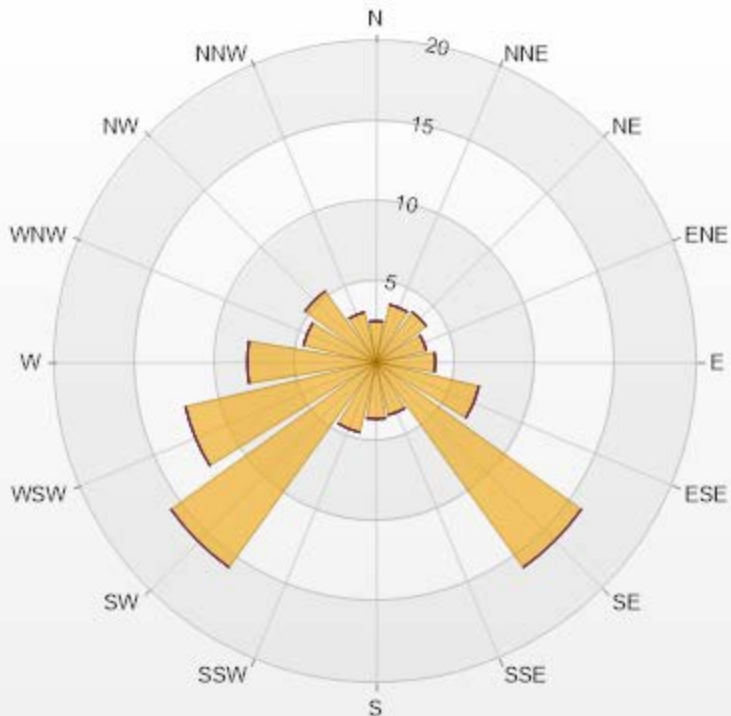
Timeseries Chart of Hourly Average for NMHC - Cold Lake South Station





Wind: Cold Lake South Poll.: Cold Lake South-NMHC[ppm] Monthly: 08-2022 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 83.74% Calm Avg: 0.00 [ppm]

Direction	0-0.1	0.1-0.3	0.3-1	1-2	>2.0	Total
N	2.57	0	0	0	0	2.57
NNE	3.69	0	0	0	0	3.69
NE	3.85	0	0	0	0	3.85
ENE	3.21	0	0	0	0	3.21
E	3.69	0	0	0	0	3.69
ESE	6.58	0	0	0	0	6.58
SE	15.73	0	0	0	0	15.73
SSE	3.37	0	0	0	0	3.37
S	3.53	0	0	0	0	3.53
SSW	4.49	0	0	0	0	4.49
SW	15.73	0	0	0	0	15.73
WSW	12.2	0	0	0	0	12.2
W	8.03	0	0	0	0	8.03
WNW	4.65	0	0	0	0	4.65
NW	5.46	0	0	0	0	5.46
NNW	3.21	0	0	0	0	3.21
Summary	100	0	0	0	0	100



LICA-202208

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% Icon Classes (ppm)

100 0-0.1

0 0.1-0.3

0 0.3-1

0 1-2

0 >2.0



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

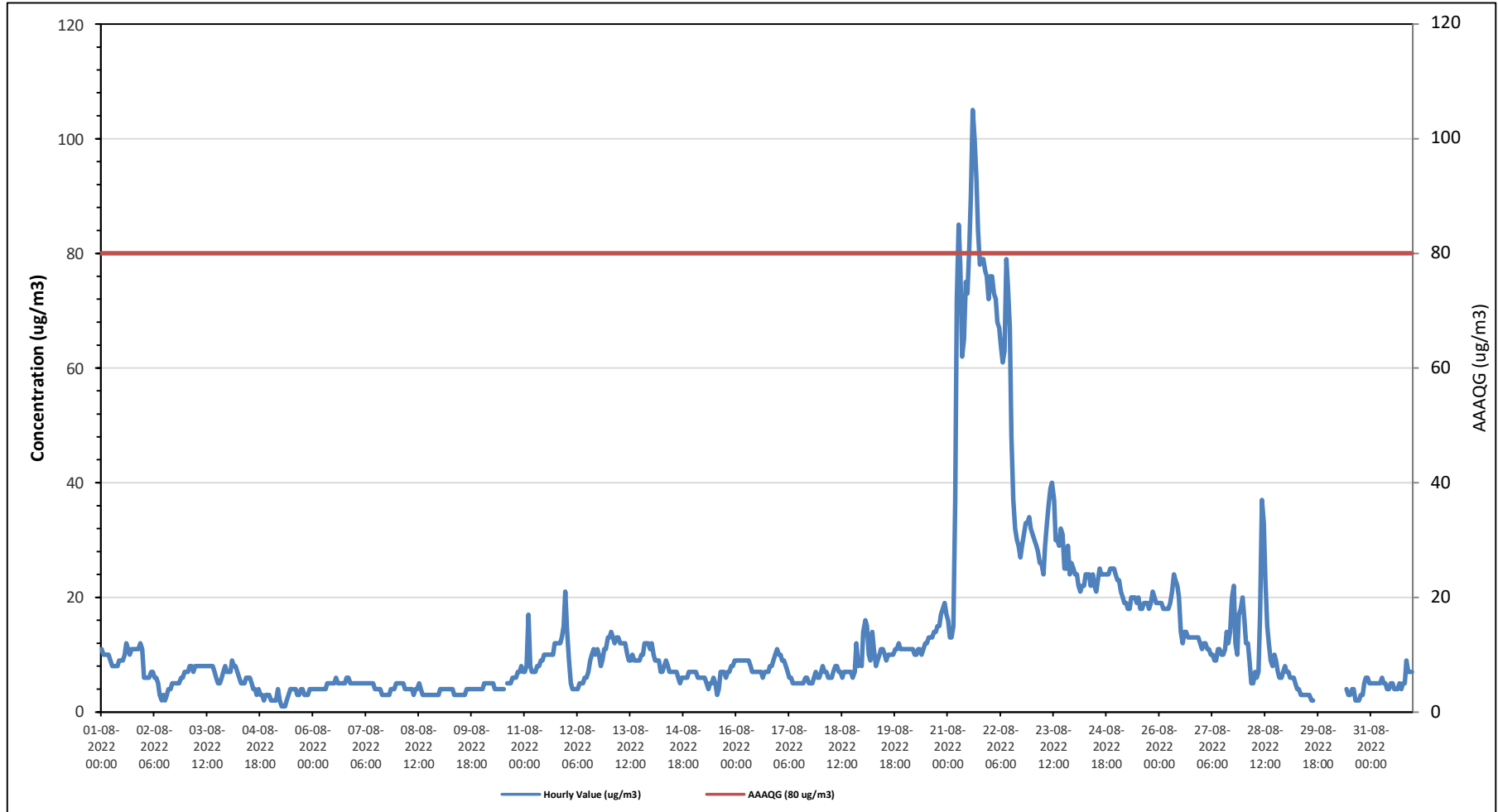
Cold Lake South Station - August 2022

Summary of Hourly Averages

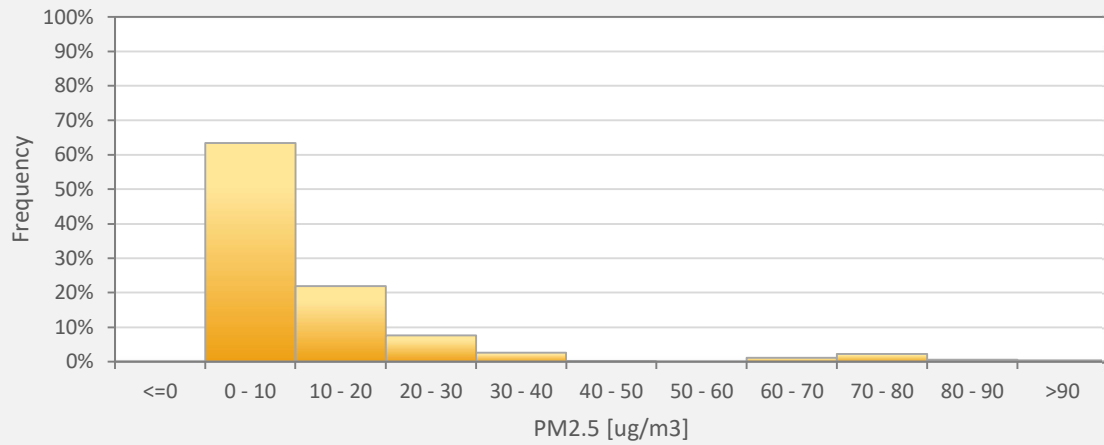
PARTICULATE MATTER 2.5 (PM_{2.5}) in µg/m³

Alberta Ambient Air Quality Guideline (AAQG): 1-Hour 80 µg/m ³ , Alberta Ambient Air Quality Objective (AAQO): 24-Hour 29 µg/m ³																																											
Number of 1-Hour Exceedances: 7										Number of 24-Hour Exceedances: 2																																	
Maximum Hourly Value: 105 µg/m ³ on August 21 at hour 14										Hours in Service: 744																																	
Maximum Daily Value: 67.4 µg/m ³ on August 21										Hours of Data: 725																																	
Minimum Hourly Value: 1 µg/m ³ on August 5 at hour 6										Hours of Missing Data: 18																																	
Minimum Daily Value: 3 µg/m ³ on August 5										Hours of Calibration: 1																																	
Monthly Average: 12.7 µg/m ³										Operational Uptime: 97.6																																	
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																
Aug 1	11	10	10	10	10	9	8	8	8	8	9	9	9	10	12	11	10	11	11	11	11	11	12	11	8	12	10.0																
Aug 2	6	6	6	6	7	7	6	6	5	3	2	3	2	3	4	4	5	5	5	5	5	6	6	7	2	7	5.0																
Aug 3	7	7	8	8	7	8	8	8	8	8	8	8	8	8	8	8	7	6	5	5	6	7	8	7	5	8	7.3																
Aug 4	7	7	9	8	8	7	6	5	5	5	6	6	6	5	4	4	3	4	3	3	2	3	3	3	2	9	5.1																
Aug 5	2	2	2	2	4	2	1	1	1	2	3	4	4	4	3	3	4	4	3	3	3	3	4	4	1	4	2.9																
Aug 6	4	4	4	4	4	4	4	4	5	5	5	5	6	5	5	5	5	5	5	6	6	5	5	5	4	6	4.8																
Aug 7	5	5	5	5	5	5	5	5	5	5	5	4	4	4	4	3	3	3	3	3	3	4	4	4	3	5	4.3																
Aug 8	5	5	5	5	4	4	4	4	4	3	4	4	5	4	3	3	3	3	3	3	3	3	3	3	3	5	3.8																
Aug 9	4	4	4	4	4	4	4	4	3	3	3	3	3	3	4	4	4	4	4	4	4	4	4	4	3	4	3.7																
Aug 10	4	5	5	5	5	5	5	4	4	4	4	4	4	Y	5	5	5	6	6	6	7	7	8	7	4	8	5.2																
Aug 11	7	8	17	8	7	7	7	8	8	9	9	10	10	10	10	10	10	12	12	12	12	13	15	21	7	21	10.5																
Aug 12	14	9	5	4	4	4	4	5	5	6	6	7	9	10	11	10	11	10	8	9	11	11	13	4	14	8.0																	
Aug 13	13	14	13	12	13	13	12	12	12	10	9	9	10	9	9	9	9	10	10	12	12	12	11	9	14	11.1																	
Aug 14	12	10	9	9	9	7	7	8	9	8	7	7	7	7	7	6	5	6	6	6	6	7	7	7	5	12	7.5																
Aug 15	7	7	6	6	6	6	6	5	4	5	5	6	5	3	4	7	7	7	6	7	7	8	8	9	3	9	6.1																
Aug 16	9	9	9	9	9	9	9	9	8	7	7	7	7	7	6	7	7	7	8	8	9	10	11	6	11	8.1																	
Aug 17	10	10	9	9	8	7	6	6	5	5	5	5	5	5	6	6	5	5	5	5	6	7	6	6	5	10	6.3																
Aug 18	7	8	7	7	6	6	6	7	8	8	7	7	6	7	7	7	7	6	7	6	7	12	8	9	6	12	7.3																
Aug 19	14	16	15	10	9	14	11	8	9	10	11	11	10	9	10	10	10	10	11	11	12	11	11	11	8	16	11.0																
Aug 20	11	11	11	11	11	10	11	11	11	10	11	12	12	13	13	13	14	14	15	15	17	18	19	17	10	19	12.9																
Aug 21	16	13	13	15	37	72	85	78	62	65	75	73	81	90	105	100	93	84	78	79	79	77	76	72	13	105	67.4																
Aug 22	76	76	73	72	68	67	64	61	63	79	74	67	48	37	32	30	29	27	29	31	33	33	34	32	27	79	51.5																
Aug 23	31	30	29	28	26	26	24	29	33	36	39	40	37	30	30	29	32	31	25	25	29	24	26	25	24	40	29.8																
Aug 24	24	24	22	21	22	22	24	24	24	22	24	22	21	23	25	24	24	24	24	24	25	25	25	24	21	25	23.5																
Aug 25	23	23	21	20	19	19	18	18	20	20	20	19	20	18	18	19	19	19	18	19	21	20	19	19	18	23	19.5																
Aug 26	19	19	18	18	18	18	19	21	24	23	22	20	14	12	14	14	13	13	13	13	13	13	12	12	24	16.5																	
Aug 27	11	12	12	11	11	10	10	9	9	11	11	10	10	11	14	12	14	20	22	12	10	17	18	20	9	22	12.8																
Aug 28	16	12	12	9	5	5	7	6	7	17	37	33	23	15	12	9	8	10	9	7	6	6	7	8	5	37	11.9																
Aug 29	7	7	6	6	6	5	4	4	3	3	3	3	3	2	2	X	X	X	X	X	X	X	X	2	7	-																	
Aug 30	X	X	X	X	X	X	X	X	X	C	4	3	3	4	4	2	2	2	3	3	5	6	6	5	2	6	-																
Aug 31	5	5	5	5	5	5	6	5	5	4	4	5	5	4	4	5	4	5	5	9	7	7	7	4	9	5.2																	
Diurnal Maximum	76	76	73	72	68	72	85	78	63	79	75	73	81	90	105	100	93	84	78	79	79	77	76	72																			
Diurnal Average	12.9	12.6	12.3	11.6	11.9	12.9	13.0	12.8	12.6	13.5	14.2	13.7	12.7	12.5	12.7	12.3	12.4	12.4	12.1	11.9	12.7	12.8	13.2	13.1																			
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 PM2.5 - Cold Lake South Station



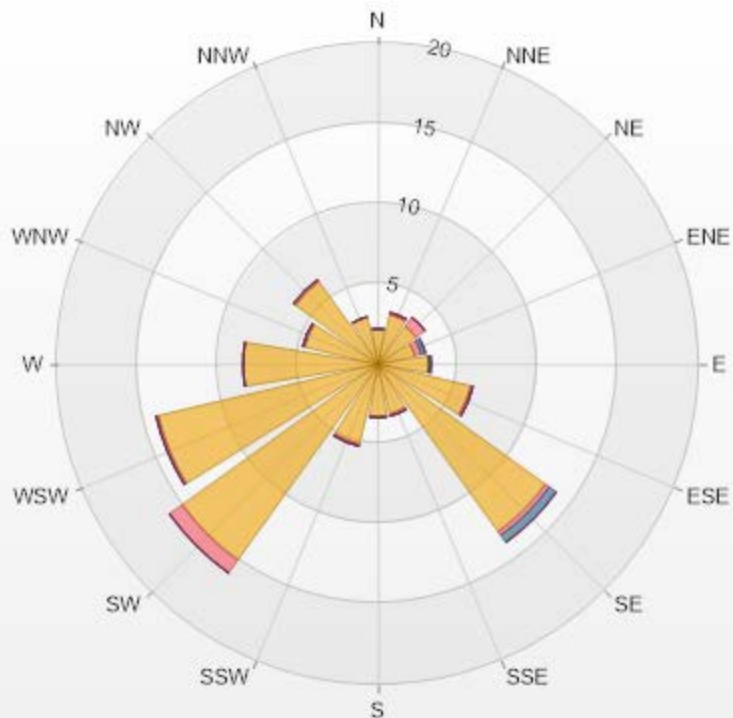
PM2.5[ug/m3(L)] Histogram: Cold Lake South Monthly: 08-2022 1 Hr.



Classes	PM2.5
<=0	0.00%
0 - 10	63.45%
10 - 20	21.93%
20 - 30	7.59%
30 - 40	2.62%
40 - 50	0.14%
50 - 60	0.00%
60 - 70	1.10%
70 - 80	2.21%
80 - 90	0.55%
>90	0.41%

Wind: Cold Lake South Poll.: Cold Lake South-PM2.5[ug/m3(L)] Monthly: 08-2022 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 97.45% Calm Avg: 0.00 [ug/m3(L)]

Direction	0-50	50-80	80-120	120-240	>240.0	Total
N	2.21	0	0	0	0	2.21
NNE	3.17	0.14	0	0	0	3.31
NE	2.9	0.69	0	0	0	3.59
ENE	2.34	0.41	0.28	0	0	3.03
E	3.17	0	0.14	0	0	3.31
ESE	5.93	0.14	0	0	0	6.07
SE	12.83	0.28	0.55	0	0	13.66
SSE	3.17	0.14	0	0	0	3.31
S	3.31	0	0	0	0	3.31
SSW	5.1	0.14	0	0	0	5.24
SW	15.03	0.97	0	0	0	16
WSW	14.07	0.14	0	0	0	14.21
W	8.41	0	0	0	0	8.41
WNW	4.69	0.14	0	0	0	4.83
NW	6.34	0.14	0	0	0	6.48
NNW	3.03	0	0	0	0	3.03
Summary	95.7	3.33	0.97	0	0	100



LICA-202208

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% Icon Classes (ug/m3(L))	96	3	1	0	0
0-50	96				
50-80		3			
80-120			1		
120-240				0	
>240.0					0



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - August 2022

Summary of Hourly Averages

RELATIVE HUMIDITY (RH) in %

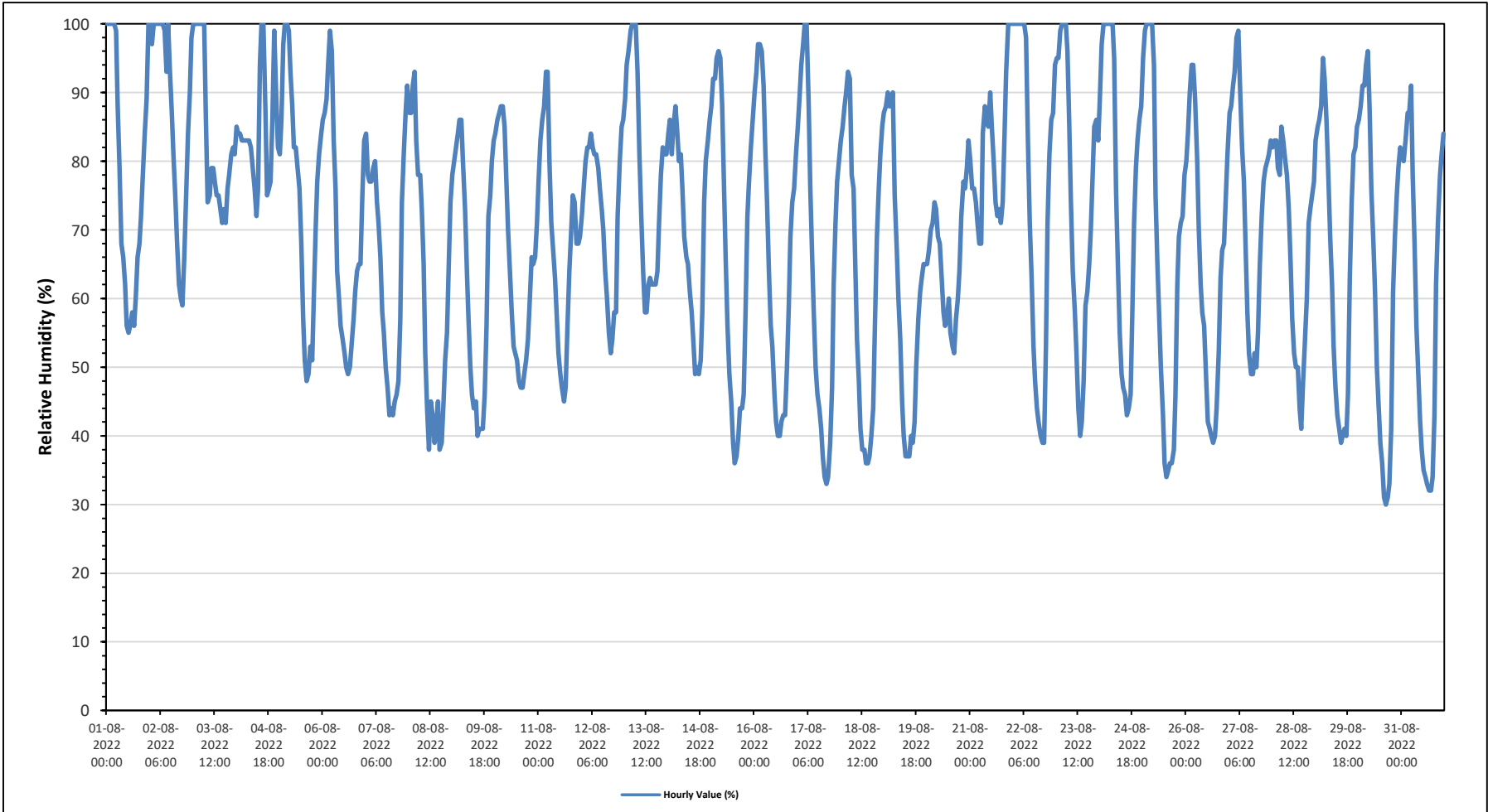
Maximum Hourly Value:	100 %	on August 1 at hour 0	Hours in Service:	744
Maximum Daily Value:	87.0 %	on August 2	Hours of Data:	744
Minimum Hourly Value:	30 %	on August 30 at hour 15	Hours of Missing Data:	0
Minimum Daily Value:	60.3 %	on August 8	Hours of Calibration:	0
Monthly Average:	70.3 %		Operational 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
Aug 1	100	100	100	100	100	99	88	79	68	66	62	56	55	56	58	56	60	66	68	72	79	84	89	100	55	100	77.5
Aug 2	100	97	100	100	100	100	100	100	99	93	100	93	87	81	75	68	62	60	59	66	75	84	90	98	59	100	87.0
Aug 3	100	100	100	100	100	100	100	87	74	75	79	79	77	75	75	73	71	73	71	76	78	81	82	81	71	100	83.6
Aug 4	85	84	84	83	83	83	83	83	82	79	76	72	76	94	100	100	87	75	76	77	86	99	90	82	72	100	84.1
Aug 5	81	86	97	100	100	99	93	88	82	82	79	76	68	57	51	48	49	53	51	60	70	77	81	84	48	100	75.5
Aug 6	86	87	89	94	99	96	83	76	64	60	56	54	52	50	49	50	53	57	61	64	65	65	75	83	49	99	69.5
Aug 7	84	78	77	77	79	80	74	71	66	58	55	50	47	43	44	43	45	46	48	57	74	81	87	91	43	91	64.8
Aug 8	87	87	91	93	83	78	78	73	65	52	44	38	45	43	39	41	45	38	39	45	51	55	64	74	38	93	60.3
Aug 9	78	80	82	84	86	86	80	73	64	57	50	46	44	45	40	41	41	41	46	56	72	75	80	83	40	86	63.8
Aug 10	84	86	87	88	88	85	78	70	64	58	53	52	51	48	47	47	49	51	54	59	66	65	66	71	47	88	65.3
Aug 11	77	83	86	88	93	93	80	71	67	63	58	52	49	47	45	47	56	64	69	75	74	68	68	69	45	93	68.4
Aug 12	72	76	80	82	82	84	82	81	81	79	76	73	70	64	60	55	52	54	58	58	72	80	85	86	52	86	72.6
Aug 13	89	94	96	99	100	100	100	93	81	72	64	58	58	62	63	62	62	62	64	71	78	82	81	81	58	100	78.0
Aug 14	84	86	81	85	88	84	80	81	76	69	66	65	61	58	54	49	50	49	51	58	74	80	83	86	49	88	70.8
Aug 15	88	92	92	95	96	95	88	76	66	56	49	45	39	36	37	40	44	44	46	58	72	77	82	86	36	96	66.6
Aug 16	90	93	97	97	96	91	81	74	64	56	53	46	42	40	40	42	43	43	50	59	69	74	76	81	40	97	66.5
Aug 17	85	89	94	97	100	100	88	76	66	58	50	46	44	41	37	34	33	34	39	47	62	71	77	80	33	100	64.5
Aug 18	83	85	88	90	93	92	78	76	64	54	48	41	38	38	36	36	37	40	44	57	69	76	81	85	36	93	63.7
Aug 19	87	88	90	88	88	90	75	67	60	54	45	40	37	37	37	40	39	42	50	57	61	63	65	65	37	90	61.0
Aug 20	65	67	70	71	74	73	69	68	63	58	56	57	60	55	53	52	57	60	64	72	77	76	79	83	52	83	65.8
Aug 21	80	76	76	74	71	68	68	84	88	86	85	90	85	80	74	72	73	71	74	84	93	100	100	100	68	100	81.3
Aug 22	100	100	100	100	100	100	100	98	83	71	63	53	48	44	42	40	39	39	53	71	81	86	87	94	39	100	74.7
Aug 23	95	95	99	100	100	100	96	85	74	64	58	52	44	40	42	48	59	61	65	70	78	85	86	83	40	100	74.1
Aug 24	89	97	100	100	100	100	100	100	95	76	65	55	49	47	46	43	44	46	57	71	79	83	86	88	43	100	75.7
Aug 25	95	99	100	100	100	100	94	75	65	57	50	43	36	34	35	36	36	38	46	62	69	71	72	78	34	100	66.3
Aug 26	80	84	90	94	94	89	80	70	62	58	56	49	42	41	40	39	40	44	52	63	67	68	74	81	39	94	64.9
Aug 27	87	88	91	93	98	99	90	82	77	68	58	52	49	49	52	50	55	65	72	77	79	80	81	83	49	99	74.0
Aug 28	82	83	83	79	78	85	83	80	78	73	65	57	52	50	50	44	41	48	53	60	71	73	75	77	41	85	67.5
Aug 29	83	85	86	88	95	92	86	78	69	62	53	47	43	41	39	40	41	40	46	63	74	81	82	85	39	95	66.6
Aug 30	86	88	91	91	94	96	87	76	68	61	50	44	39	36	31	30	31	33	41	61	69	75	79	82	30	96	64.1
Aug 31	81	80	83	87	87	91	78	68	56	49	42	38	35	34	33	32	32	34	43	62	71	78	81	84	32	91	60.8
Diurnal Maximum	100	100	100	100	100	100	100	100	99	93	100	93	87	81	75	68	62	60	59	66	75	84	90	98	59	100	87.0
Diurnal Average	85.9	87.5	89.7	90.9	91.8	91.2	85.2	79.3	72.0	65.3	60.1	55.5	52.3	50.5	49.2	48.3	49.2	50.7	55.2	64.1	72.7	77.2	80.1	83.4	43	100	75.7

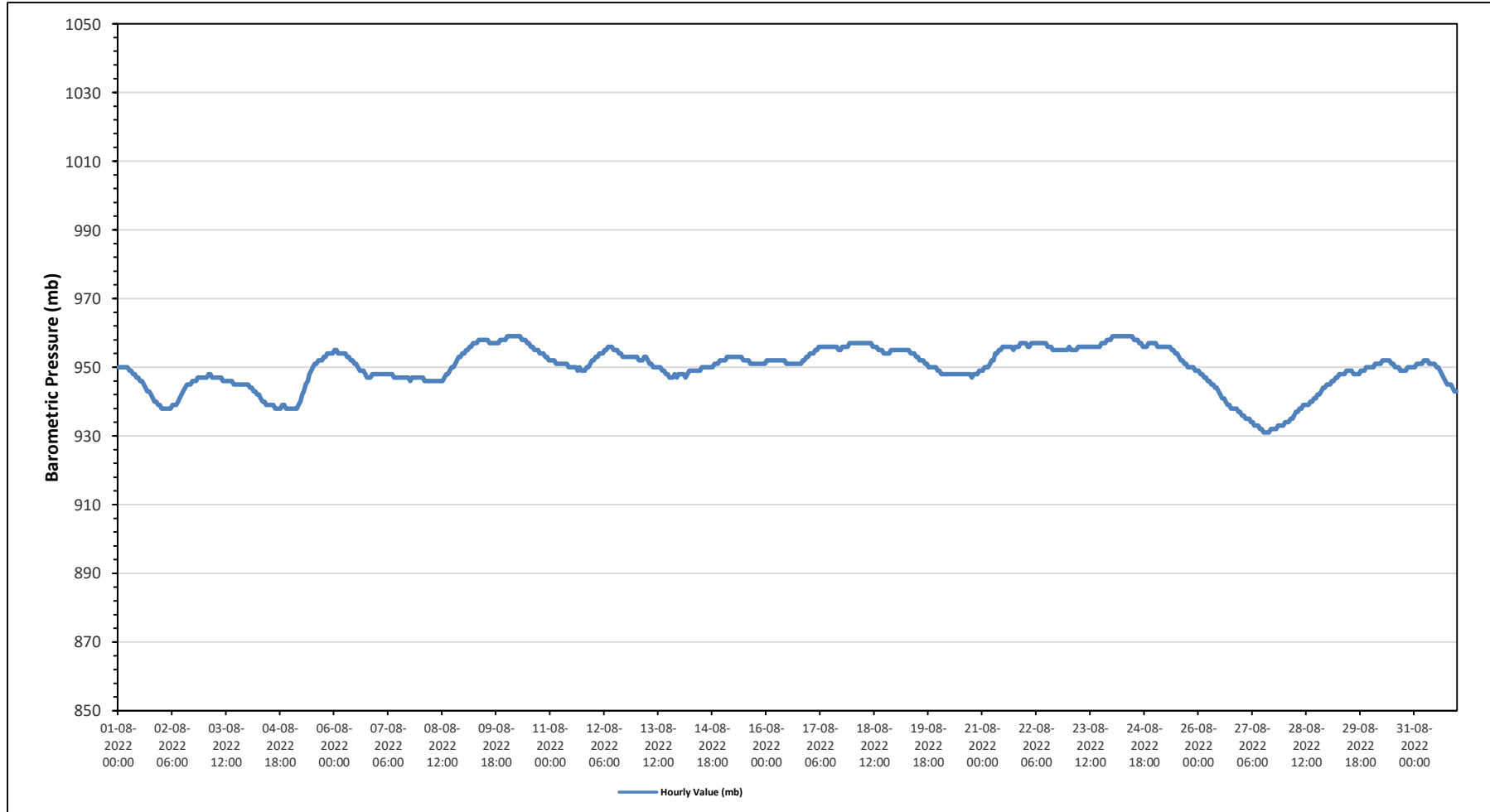
C Monthly Calibration	S Daily Zero-Span Check	Q Quality Assurance
K Collection Error	N No Data (Machine Not in Service)	Y Routine Maintenance
X InValid Data (Equipment Malfunction /Recovery)	NRM UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	P Power Failure

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



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





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - August 2022

Summary of Hourly Averages

AMBIENT TEMPERATURE (AT) in Degree Celsius

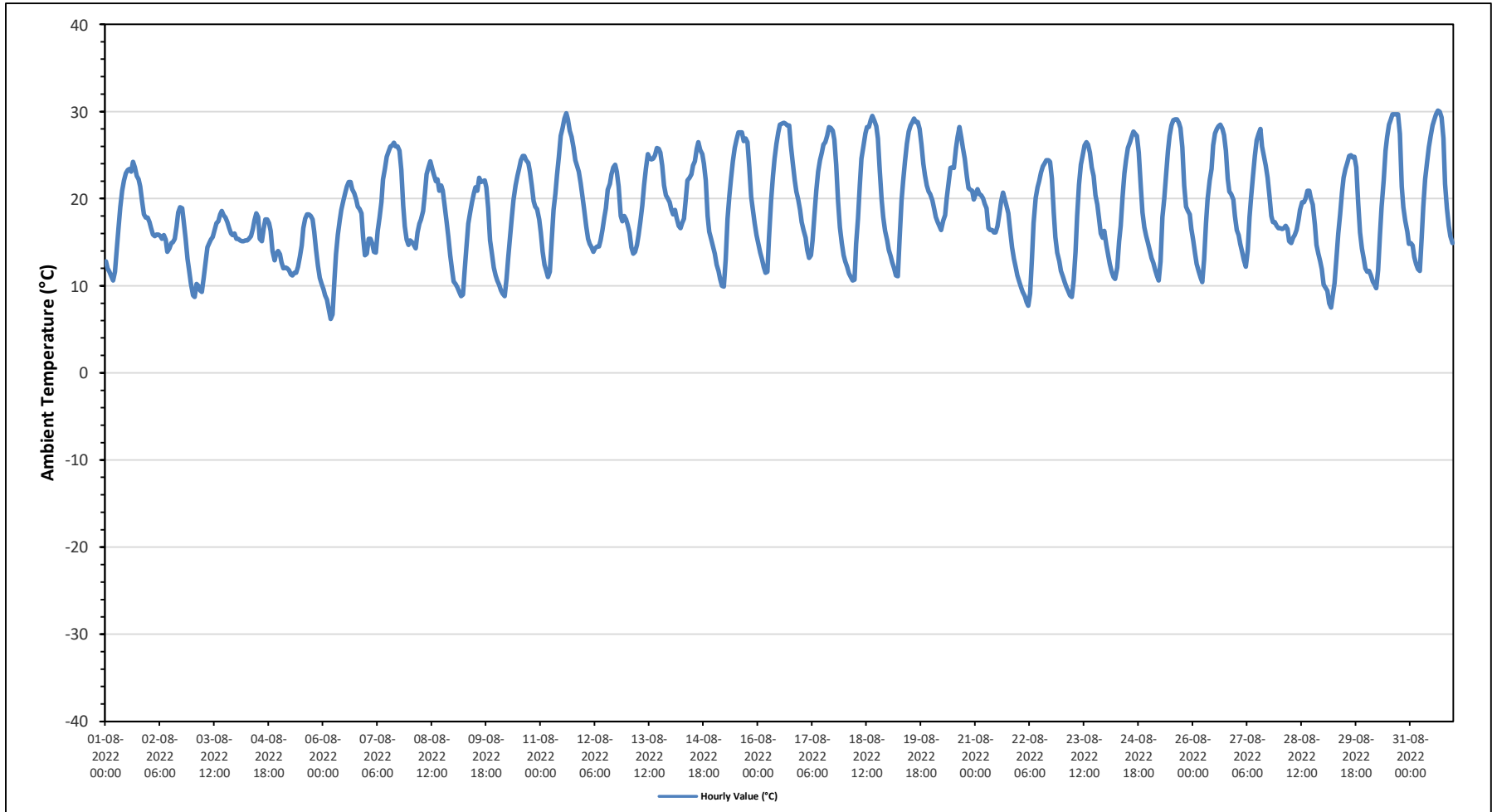
Maximum Hourly Value:	30.1 °C	on August 31 at hour 15	Hours in Service:	744
Maximum Daily Value:	21.6 °C	on August 20	Hours of Data:	744
Minimum Hourly Value:	6.2 °C	on August 6 at hour 4	Hours of Missing Data:	0
Minimum Daily Value:	13.7 °C	on August 5	Hours of Calibration:	0
Monthly Average:	18.7 °C		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
Aug 1	12.8	12	11.6	11.1	10.6	11.6	14.3	16.5	19	20.9	22.1	22.9	23.3	23.4	23.1	24.2	23.6	22.6	22.2	21.4	19.7	18.2	17.8	17.8	10.6	24.2	18.4
Aug 2	17.3	16.6	15.9	15.7	15.9	15.9	15.7	15.4	15.8	15.3	13.9	14.3	14.9	15	15.4	16.8	18.4	19	18.9	17.3	15.4	13.1	11.8	10.2	10.2	19.0	15.6
Aug 3	8.9	8.7	10.2	10	9.5	9.3	10.9	12.7	14.4	14.9	15.3	15.6	16.4	17.2	17.4	18.2	18.6	18.1	17.8	17.3	16.6	16	15.8	16	8.7	18.6	14.4
Aug 4	15.4	15.4	15.2	15.1	15.1	15.2	15.2	15.4	15.7	16.5	17.5	18.3	17.9	15.4	15.1	16.6	17.6	17.6	17.2	16.3	14	12.9	13.7	14	12.9	18.3	15.8
Aug 5	13.6	12.7	12	12.1	12	11.8	11.3	11.2	11.5	11.5	12.2	13.3	14.6	16.6	17.7	18.2	18.2	18	17.6	16.2	14.1	12.3	10.9	10.2	10.2	18.2	13.7
Aug 6	9.6	8.9	8.4	7.3	6.2	6.7	10.6	13.6	15.9	17.5	18.7	19.8	20.7	21.4	21.9	21.9	21.1	20.6	19.9	19.1	18.8	18.3	15.6	13.5	6.2	21.9	15.7
Aug 7	13.7	15.4	15.4	14.9	13.9	13.8	16.3	17.8	19.6	22.2	23.4	24.8	25.4	26	26.1	26.4	26	26	25.5	23.3	19.2	16.8	15.3	14.7	13.7	26.4	20.1
Aug 8	15.2	15	14.6	14.3	16.1	17.1	17.6	18.6	20.7	22.8	23.6	24.3	23.6	22.8	22	22.2	20.9	21.5	20.9	19.2	17.2	15.6	13.5	11.8	11.8	24.3	18.8
Aug 9	10.5	10.2	9.8	9.3	8.8	9	11.6	14.4	17.1	18.4	19.6	20.6	21.3	20.9	22.4	21.9	22	22.1	21.3	18.9	15.2	13.7	12.1	11.2	8.8	22.4	15.9
Aug 10	10.6	10.1	9.5	9.1	8.8	10.8	13.1	15.5	17.9	19.8	21.5	22.6	23.4	24.4	24.9	24.9	24.4	24.1	23.1	21.5	19.7	19.1	18.8	17.6	8.8	24.9	18.1
Aug 11	16.1	13.9	12.4	11.8	11	11.6	15.2	18.7	20.6	22.7	24.8	27.2	28.1	29.2	29.8	29.1	27.8	27.1	25.9	24.4	23.7	23.1	21.8	20.2	11.0	29.8	21.5
Aug 12	18.8	16.8	15.4	14.8	14.4	13.9	14.3	14.5	14.5	15.2	16.4	17.8	18.9	21	21.7	22.8	23.6	23.9	23.1	21.4	18	17.4	18	17.6	13.9	23.9	18.1
Aug 13	17	16.1	14.4	13.7	13.9	14.7	15.8	17.4	19.2	21.6	23.5	25.1	24.7	24.5	24.6	25	25.8	25.7	25.3	23.8	21.5	20.4	20	19.6	13.7	25.8	20.6
Aug 14	18.8	18.2	18.7	17.8	16.9	16.6	17.2	17.7	20	22.1	22.4	22.8	23.8	24.3	25.7	26.5	25.6	25.1	24	22.1	18	16.2	15.4	14.4	14.4	26.5	20.4
Aug 15	13.7	12.4	11.7	10.8	10	9.9	13	17.7	20.4	22.3	24.3	25.8	26.8	27.6	27.6	26.6	26.6	26.9	26.5	23.6	20.2	18.8	17.2	15.8	9.9	27.6	19.9
Aug 16	14.8	13.8	13	12.2	11.5	11.6	15.5	19.8	22.6	24.6	26.3	27.6	28.5	28.6	28.7	28.6	28.4	28.4	26.2	24.2	22.1	20.8	19.9	18.7	11.5	28.7	21.5
Aug 17	17.3	16.4	15.5	14.1	13.2	13.5	15.2	18.1	20.9	23.1	24.4	25.3	26.2	26.5	27.2	28.2	28.1	27.8	26.8	23.9	19.7	16.7	14.9	13.5	13.2	28.2	20.7
Aug 18	12.8	12.2	11.4	11	10.6	10.7	14.8	17.7	21.6	24.6	26.1	27.5	28.2	28.2	29	29.5	28.9	28.3	26.9	23.2	19.9	17.9	16.3	15.2	10.6	29.5	20.5
Aug 19	14.1	13.4	12.7	12	11.2	11.1	15.6	19.8	22	24.3	26.3	27.7	28.4	28.8	29.2	28.8	28.8	28	26.2	24	22.7	21.5	20.8	20.5	11.1	29.2	21.6
Aug 20	19.8	18.8	17.9	17.3	16.8	16.4	17.5	18.1	20	21.8	23.5	23.6	23.5	25.8	27.1	28.2	27	25.8	24.6	22.5	21.2	21	20.9	19.9	16.4	28.2	21.6
Aug 21	20.5	21.1	20.5	20.4	20	19.4	18.9	16.6	16.4	16.4	16.1	16.1	16.8	18.2	19.7	20.7	19.9	19.2	18.3	16.3	14.4	13.1	12.1	11.2	11.2	21.1	17.6
Aug 22	10.5	9.8	9.3	8.8	8.1	7.7	9.1	13.2	17.2	20.1	21.3	22	23	23.7	24	24.4	24.4	24.2	22.3	18.4	15.6	13.8	12.8	11.7	7.7	24.4	16.5
Aug 23	11.1	10.4	9.9	9.4	8.9	8.7	10.6	13.9	18	21.6	23.9	25	26.1	26.5	26.2	25.3	23.6	22.6	20.4	19.3	17.8	16	15.5	16.3	8.7	26.5	17.8
Aug 24	14.7	13.5	12.5	11.6	11	10.8	12.1	15.1	16.9	20.2	22.9	24.4	25.8	26.5	27.1	27.7	27.4	27.2	25.3	21.2	18.4	16.7	15.7	15	10.8	27.7	19.2
Aug 25	14.1	13.2	12.6	11.8	11.1	10.6	12.8	17.9	20	22.8	25.5	27.2	28.4	29	29.1	29.1	28.7	28.1	25.9	21.5	19.1	18.6	18.2	16.5	10.6	29.1	20.5
Aug 26	15.2	13.7	12.5	11.6	10.9	10.4	13	17.1	19.9	22.1	23.4	26.1	27.5	28	28.3	28.5	28	27.3	25.5	22.3	20.8	20.5	19.9	18	10.4	28.5	20.4
Aug 27	16.4	15.8	14.8	13.9	12.9	12.2	14	17.9	20.2	22.6	24.9	26.7	27.4	28	26	24.9	23.8	22.4	20.3	18	17.3	17.3	16.9	16.6	12.2	28.0	19.6
Aug 28	16.6	16.5	16.6	16.9	16.5	15.1	14.9	15.5	15.8	16.4	17.5	18.7	19.6	19.6	20	20.9	20.9	20	19.3	17	14.7	13.7	12.8	11.9	11.9	20.9	17.0
Aug 29	10.1	9.7	9.4	8	7.5	8.8	10.3	13.1	16	18.2	20.7	22.4	23.4	24.1	24.9	25	24.7	24.8	23.6	19.5	16.1	14.3	13.1	12	7.5	25.0	16.7
Aug 30	11.6	11.7	11.2	10.5	10.1	9.7	11.8	15.9	19	22.1	25.5	27.1	28.5	29.1	29.7	29.7	29.7	29.7	27.4	21.4	19	17.5	16.2	14.8	9.7	29.7	20.0
Aug 31	14.9	14.6	13.3	12.5	11.9	11.7	15.5	19.1	22.2	24.1	25.9	27.2	28.4	29	29.7	30.1	30	29.3	26.9	21.7	18.9	16.9	15.7	14.9	11.7	30.1	21.0
Diurnal Maximum	20.5	21.1	20.5	20.4	20.0	19.4	18.9	19.8	22.6	24.6	26.3	27.7	28.5	29.2	29.8	30.1	30.0	29.7	27.4	24.4	23.7	23.1	21.8	20.5			
Diurnal Average	14.4	13.8	13.2	12.6	12.1	12.1	14.0	16.3	18.4	20.3	21.7	22.9	23.7	24.2	24.6	24.9	24.6	24.2	23.1	20.7	18.4	17.0	16.1	15.2			

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

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 - Cold Lake South Station





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - August 2022

Summary of Hourly Averages

STATION TEMPERATURE (ST) in Degree Celsius

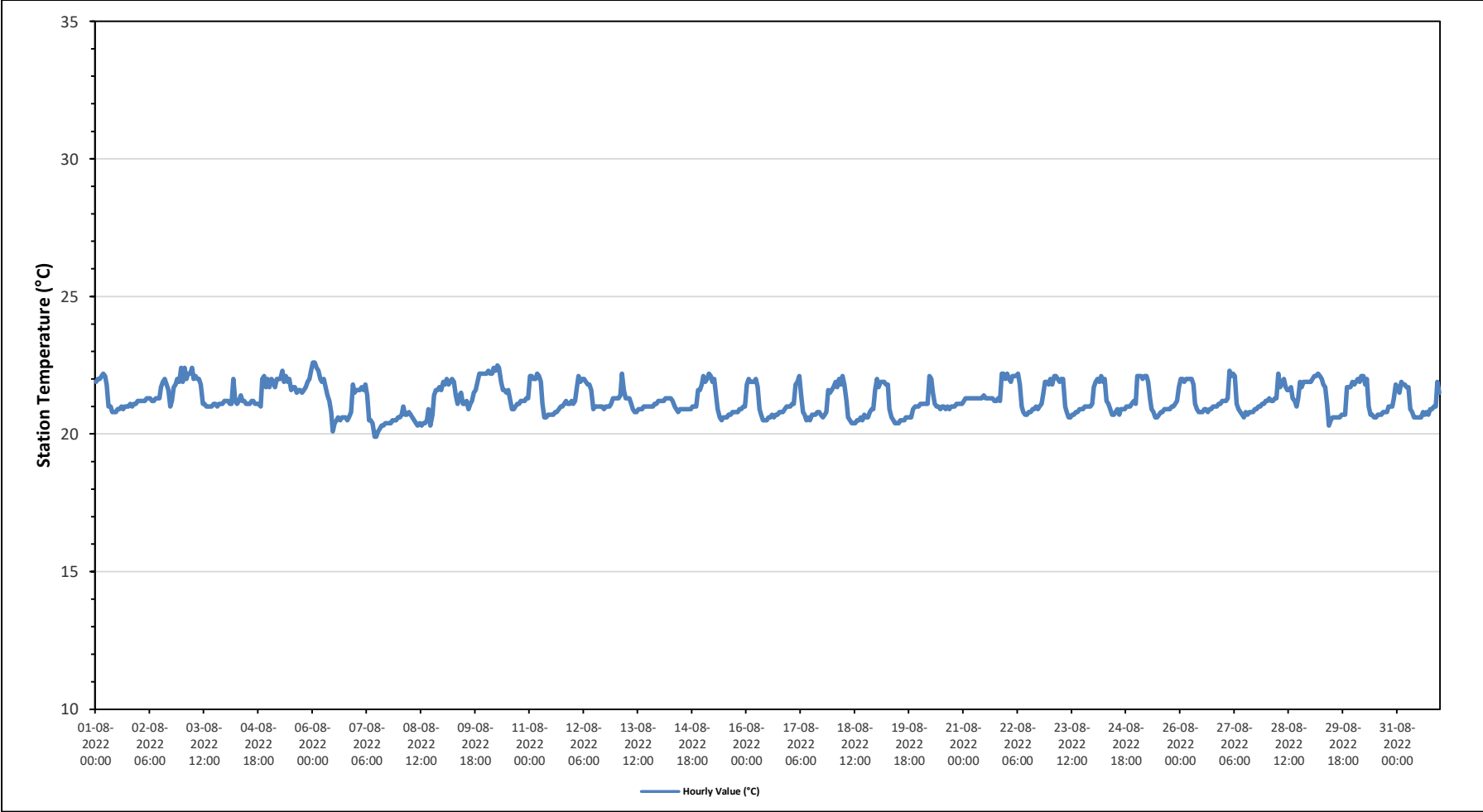
Maximum Hourly Value:	22.6 °C	on August 6 at hour 0	Hours in Service:	744
Maximum Daily Value:	21.8 °C	on August 5	Hours of Data:	744
Minimum Hourly Value:	19.9 °C	on August 7 at hour 10	Hours of Missing Data:	0
Minimum Daily Value:	20.7 °C	on August 7	Hours of Calibration:	0
Monthly Average:	21.3 °C		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
Aug 1	21.9	22.0	22.0	22.1	22.2	22.1	21.8	21.0	21.0	20.8	20.8	20.9	20.9	21.0	20.9	21.0	21.0	21.0	21.0	21.1	21.1	21.0	21.1	21.2	20.8	22.2	21.3
Aug 2	21.2	21.2	21.2	21.2	21.3	21.3	21.3	21.2	21.2	21.3	21.3	21.3	21.7	21.9	22.0	21.8	21.6	21.0	21.2	21.7	21.8	22.0	21.9	22.4	21.0	22.4	21.5
Aug 3	21.9	22.4	22.0	22.2	22.2	22.4	22.0	22.1	22.0	22.0	21.8	21.1	21.1	21.0	21.0	21.0	21.0	21.1	21.1	21.0	21.1	21.1	21.1	21.2	21.0	22.4	21.5
Aug 4	21.2	21.2	21.1	21.1	22.0	21.2	21.1	21.2	21.4	21.2	21.2	21.1	21.1	21.2	21.2	21.1	21.1	21.1	21.1	21.0	22.0	22.1	21.7	22.0	21.0	22.1	21.3
Aug 5	21.7	22.0	21.9	21.7	22.0	22.0	22.0	22.3	21.9	22.1	21.9	22.0	21.6	21.7	21.7	21.5	21.6	21.6	21.5	21.6	21.7	21.9	22.0	22.3	21.5	22.3	21.8
Aug 6	22.6	22.6	22.4	22.3	22.0	21.9	22.0	21.7	21.4	21.2	20.8	20.1	20.4	20.5	20.6	20.5	20.6	20.6	20.6	20.5	20.6	20.8	21.8	21.5	20.1	22.6	21.3
Aug 7	21.6	21.6	21.6	21.7	21.6	21.8	21.4	20.5	20.5	20.4	19.9	19.9	20.1	20.2	20.3	20.3	20.4	20.4	20.4	20.5	20.5	20.5	20.5	20.6	19.9	21.8	20.7
Aug 8	20.6	20.7	21.0	20.7	20.7	20.8	20.7	20.6	20.5	20.4	20.3	20.4	20.3	20.4	20.4	20.5	20.9	20.3	20.7	21.4	21.6	21.6	21.7	21.6	20.3	21.7	20.8
Aug 9	21.9	21.8	22.0	21.8	21.9	22.0	21.9	21.4	21.1	21.4	21.5	21.1	21.1	21.2	20.9	21.1	21.2	21.5	21.6	21.9	22.2	22.2	22.2	22.2	20.9	22.2	21.6
Aug 10	22.2	22.3	22.2	22.2	22.4	22.3	22.5	22.4	21.9	21.6	21.6	21.5	21.6	21.3	20.9	20.9	21.0	21.1	21.1	21.2	21.2	21.3	21.3	20.9	22.5	21.6	21.6
Aug 11	22.1	22.1	22.0	22.0	22.2	22.1	21.9	21.1	20.6	20.6	20.7	20.7	20.7	20.8	20.8	20.9	21.0	21.0	21.1	21.2	21.1	21.1	21.2	20.6	22.2	21.2	21.2
Aug 12	21.1	21.2	21.7	22.1	21.9	22.0	22.0	21.9	21.8	21.8	21.6	20.9	21.0	21.0	21.0	21.0	21.0	20.9	21.0	21.0	21.0	21.1	21.3	21.3	20.9	22.1	21.4
Aug 13	21.3	21.3	21.4	22.2	21.6	21.3	21.3	21.3	21.1	20.9	20.8	20.8	20.9	20.9	20.9	21.0	21.0	21.0	21.0	21.0	21.0	21.1	21.1	21.2	20.8	22.2	21.1
Aug 14	21.2	21.2	21.2	21.3	21.3	21.3	21.3	21.2	21.0	20.9	20.8	20.9	20.9	20.9	20.9	20.9	20.9	20.9	21.0	21.0	21.0	21.0	21.6	21.8	20.8	21.8	21.1
Aug 15	22.1	21.9	22.0	22.2	22.1	21.9	22.0	21.4	20.9	20.6	20.5	20.6	20.6	20.6	20.7	20.7	20.8	20.8	20.8	20.8	20.8	20.9	21.0	21.0	20.5	22.2	21.2
Aug 16	21.8	22.0	21.9	21.9	21.9	22.0	21.7	20.9	20.7	20.5	20.5	20.5	20.6	20.6	20.7	20.6	20.7	20.7	20.8	20.8	20.8	20.9	21.0	21.0	20.5	22.0	21.1
Aug 17	21.0	21.1	21.1	21.8	21.9	22.1	21.4	20.8	20.7	20.5	20.6	20.5	20.7	20.7	20.7	20.8	20.8	20.7	20.6	20.7	20.8	21.6	21.5	21.6	20.5	22.1	21.0
Aug 18	21.7	21.9	21.7	22.0	21.8	22.1	21.8	21.2	20.6	20.5	20.4	20.4	20.4	20.5	20.5	20.5	20.5	20.7	20.6	20.6	20.8	20.9	20.9	21.6	20.4	22.1	21.0
Aug 19	22.0	21.7	21.9	21.9	21.9	21.8	21.8	20.9	20.6	20.5	20.4	20.4	20.4	20.5	20.5	20.5	20.6	20.6	20.6	20.6	20.9	21.0	21.0	21.0	20.4	22.0	21.0
Aug 20	21.1	21.1	21.1	21.1	21.1	22.1	22.0	21.5	21.1	21.0	21.0	20.9	21.0	21.0	20.9	21.0	20.9	21.0	21.0	21.0	21.1	21.1	21.1	21.1	20.9	22.1	21.1
Aug 21	21.2	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.4	21.3	21.3	21.3	21.3	21.3	21.2	21.2	21.3	21.2	22.2	22.2	22.0	21.2	22.2	21.4
Aug 22	22.2	22.0	21.9	22.1	22.1	22.1	22.2	21.8	21.0	20.8	20.7	20.7	20.8	20.8	20.9	20.9	21.0	20.9	21.0	21.1	21.5	21.9	21.9	21.8	20.7	22.2	21.4
Aug 23	22.0	21.8	22.1	22.1	22.0	21.9	22.0	22.0	21.0	20.8	20.6	20.6	20.7	20.7	20.8	20.8	20.9	20.9	20.9	20.9	21.0	21.0	21.0	21.1	20.6	22.1	21.2
Aug 24	21.7	21.9	22.0	21.9	22.1	21.9	22.0	21.2	21.1	20.9	20.7	20.7	20.8	20.9	20.7	20.9	20.9	20.9	21.0	21.0	21.1	21.2	21.1	20.7	22.1	21.2	21.2
Aug 25	22.1	22.1	22.1	22.0	22.1	22.1	21.9	21.3	20.9	20.8	20.6	20.6	20.7	20.8	20.8	20.9	20.9	20.9	20.9	21.0	21.0	21.1	21.2	21.7	20.6	22.1	21.3
Aug 26	22.0	22.0	21.9	22.0	22.0	22.0	22.0	21.8	21.1	20.9	20.8	20.8	20.8	20.9	20.9	20.8	20.9	20.9	21.0	21.0	21.0	21.1	21.1	21.2	20.8	22.0	21.3
Aug 27	21.2	21.2	21.3	22.3	22.1	22.2	22.1	21.1	20.9	20.8	20.7	20.6	20.8	20.7	20.8	20.8	20.8	20.9	20.9	21.0	21.0	21.1	21.1	21.2	20.6	22.3	21.2
Aug 28	21.2	21.3	21.2	21.2	21.3	21.3	22.2	21.7	21.8	22.0	21.7	21.6	21.6	21.7	21.3	21.2	21.0	21.3	21.9	21.7	21.9	21.9	21.9	21.9	21.0	22.2	21.6
Aug 29	21.9	22.0	22.1	22.1	22.2	22.1	22.0	21.8	21.7	21.1	20.3	20.5	20.6	20.6	20.6	20.6	20.6	20.7	20.7	20.7	21.7	21.7	21.7	21.9	20.3	22.2	21.3
Aug 30	21.8	21.9	22.0	21.9	22.1	22.1	21.8	22.0	21.0	20.7	20.7	20.6	20.6	20.6	20.7	20.7	20.8	20.8	20.8	21.0	21.0	21.0	21.3	21.8	20.6	22.1	21.2
Aug 31	21.7	21.5	21.9	21.8	21.8	21.7	21.7	20.9	20.8	20.6	20.6	20.6	20.6	20.6	20.8	20.7	20.8	20.7	20.9	20.9	21.0	21.0	21.9	21.5	20.6	21.9	21.1
Diurnal Maximum	22.6	22.6	22.4	22.3	22.4	22.4	22.5	22.4	22.0	22.1	21.9	22.0	21.7	21.9	22.0	21.8	21.6	21.6	21.9	21.9	22.2	22.2	22.2	22.4			
Diurnal Average	21.7	21.7	21.7	21.8	21.8	21.8	21.8	21.4	21.1	21.0	20.9	20.8	20.9	20.9	20.9	20.9	20.9	20.9	21.0	21.0	21.2	21.3	21.4	21.5			

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

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 - August 2022

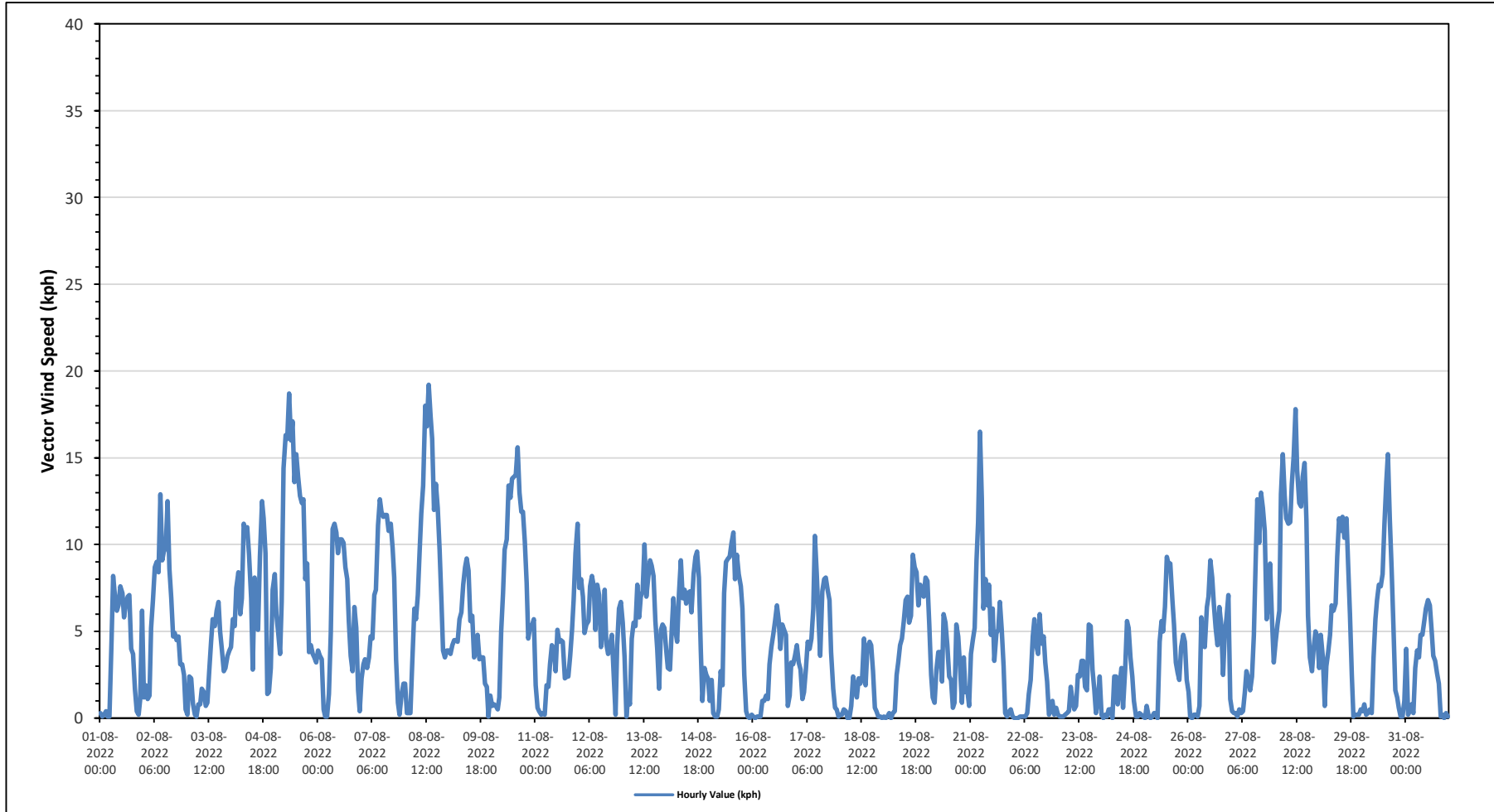
Summary of Hourly Averages

VECTOR WIND SPEED (VWS) in km/hr

Maximum Hourly Value:	19.2 kph on August 8 at hour 13	Hours in Service:	744
Maximum Daily Value:	9.5 kph on August 28	Hours of Data:	744
Minimum Hourly Value:	0.0 kph on August 15 at hour 22	Hours of Missing Data:	0
Minimum Daily Value:	0.6 kph on August 23	Hours of Calibration:	0
Monthly Average:	1.3 kph	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
Aug 1	0.3	0.1	0.2	0.4	0.1	0.1	4.5	8.2	7.0	6.2	6.5	7.6	7.2	5.8	6.6	7.0	7.1	4.0	3.7	1.7	0.4	0.2	1.1	6.2	0.1	8.2	3.4
Aug 2	1.2	1.9	1.1	1.3	5.2	6.8	8.7	9.0	8.4	12.9	9.1	9.6	9.8	12.5	8.6	6.9	4.7	4.9	4.5	4.7	3.1	3.1	2.5	0.5	0.5	12.9	5.1
Aug 3	0.2	2.4	2.3	0.8	0.2	0.1	0.8	0.8	1.7	1.5	0.7	0.9	2.7	4.4	5.7	5.3	6.2	6.7	5.0	3.9	2.7	2.9	3.6	3.9	0.1	6.7	1.8
Aug 4	4.1	5.7	5.3	7.5	8.4	6.0	6.9	11.2	10.7	11.0	9.4	6.9	2.8	8.1	5.2	5.1	9.3	12.5	11.5	9.5	1.4	1.5	2.9	7.4	1.4	12.5	1.0
Aug 5	8.3	6.0	4.9	3.7	6.7	14.4	16.3	16.1	18.7	16.0	17.1	13.6	15.2	13.9	12.8	12.4	12.6	8.0	8.9	3.8	4.2	3.7	3.5	3.2	3.2	18.7	8.4
Aug 6	3.9	3.6	3.4	0.5	0.1	0.1	1.4	4.9	10.9	11.2	10.7	9.5	10.3	10.3	10.1	8.7	8.0	5.6	3.6	2.7	6.4	5.2	1.6	0.4	0.1	11.2	5.3
Aug 7	2.3	3.1	3.4	2.9	3.5	4.7	4.6	7.1	7.4	11.1	12.6	11.9	11.6	11.7	11.7	10.8	11.2	9.8	8.1	3.4	0.9	0.2	1.4	2.0	0.2	12.6	6.4
Aug 8	2.0	0.3	0.3	0.3	3.2	6.3	5.7	7.1	9.7	11.8	13.4	18.0	16.8	19.2	17.4	16.1	12.0	13.5	12.1	9.7	6.7	3.9	3.5	3.9	0.3	19.2	7.9
Aug 9	3.9	3.7	4.2	4.5	4.5	4.4	5.7	6.1	7.7	8.7	9.2	8.5	5.6	5.9	3.5	3.8	4.8	3.4	3.5	3.5	2.0	1.8	0.1	1.3	0.1	9.2	2.4
Aug 10	0.7	0.8	0.7	0.5	1.2	5.0	7.2	9.7	10.3	13.4	12.7	13.8	13.9	14.0	15.6	13.0	11.9	11.9	10.2	7.8	4.6	5.3	5.4	5.7	0.5	15.6	8.1
Aug 11	1.9	0.6	0.4	0.2	0.3	0.2	1.9	1.8	3.1	4.2	4.0	2.7	5.1	4.4	4.5	4.4	2.3	2.4	2.4	3.6	5.1	6.8	9.5	11.2	0.2	11.2	1.2
Aug 12	7.5	8.0	7.0	4.9	5.4	5.6	7.6	8.2	7.6	5.1	7.7	7.1	4.1	5.3	7.4	4.3	3.7	4.2	4.8	2.5	0.2	4.2	6.3	6.7	0.2	8.2	4.7
Aug 13	5.5	3.5	0.1	1.3	0.8	4.6	5.5	5.3	7.7	5.8	7.0	7.3	10.0	7.0	8.1	9.1	8.8	8.2	5.6	4.0	1.7	5.1	5.4	5.2	0.1	10.0	5.4
Aug 14	3.9	2.9	2.8	5.2	6.9	5.1	4.4	7.2	9.1	6.9	7.4	6.6	7.2	7.3	6.1	8.3	9.3	9.6	8.1	4.0	1.0	2.9	2.5	2.3	1.0	9.6	4.8
Aug 15	1.0	2.2	0.3	0.1	0.1	0.5	2.7	1.9	7.2	9.0	9.2	9.3	10.1	10.7	8.0	9.4	8.3	7.6	6.3	2.5	0.4	0.1	0.0	0.2	0.0	10.7	4.4
Aug 16	0.1	0.0	0.1	0.1	0.1	1.0	1.0	1.3	1.1	3.1	4.1	4.8	5.6	6.5	5.6	4.0	5.4	5.1	4.8	0.7	1.3	3.2	3.1	3.6	0.0	6.5	2.1
Aug 17	4.2	3.2	2.8	1.1	1.5	2.8	4.4	4.0	4.6	6.3	10.5	8.3	5.7	3.6	7.3	8.0	8.1	7.4	6.8	3.8	1.7	0.6	0.5	0.1	0.1	10.5	3.7
Aug 18	0.2	0.2	0.5	0.4	0.0	0.0	0.7	2.4	1.9	1.2	2.3	2.0	2.3	4.6	1.9	4.1	4.4	4.2	2.7	0.6	0.4	0.1	0.1	0.0	0.0	4.6	0.9
Aug 19	0.1	0.0	0.1	0.3	0.0	0.3	0.4	2.5	3.2	4.2	4.6	5.6	6.8	7.0	5.5	5.9	9.4	8.7	8.4	6.5	7.7	7.2	7.0	8.1	0.0	9.4	4.2
Aug 20	7.9	5.4	2.5	1.2	0.9	2.8	3.8	3.8	2.1	6.0	5.5	4.2	2.4	2.2	0.6	0.9	5.4	4.7	3.2	0.9	3.5	1.5	1.7	0.7	0.6	7.9	1.0
Aug 21	3.7	4.5	5.2	9.1	11.3	16.5	12.6	6.3	8.0	6.5	7.7	4.8	6.3	3.3	4.9	5.1	6.7	5.1	3.0	0.3	0.1	0.4	0.5	0.1	0.1	16.5	4.2
Aug 22	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.3	1.4	2.2	4.7	5.7	4.2	3.7	6.0	4.3	4.7	3.2	2.1	0.2	0.4	1.0	0.2	0.6	0.0	6.0	1.2
Aug 23	0.2	0.1	0.1	0.1	0.2	0.3	0.4	1.8	1.1	0.5	0.7	2.5	2.4	3.3	3.3	1.8	1.6	5.4	5.3	2.8	1.6	0.3	1.0	2.4	0.1	5.4	0.6
Aug 24	0.2	0.0	0.2	0.1	0.5	0.5	0.0	2.4	2.4	0.8	1.9	2.9	0.6	2.8	5.6	5.2	3.5	2.4	1.0	0.1	0.1	0.3	0.2	0.1	0.0	5.6	1.0
Aug 25	0.0	0.7	0.1	0.0	0.1	0.3	0.0	0.0	4.4	5.6	5.0	6.4	9.3	8.9	8.9	6.8	5.4	3.2	2.6	2.2	4.1	4.8	4.4	2.2	0.0	9.3	2.9
Aug 26	1.5	0.1	0.0	0.2	0.2	0.1	0.7	5.8	4.6	4.1	6.4	7.0	9.1	8.1	6.6	5.2	4.2	6.4	5.4	2.5	4.7	5.8	7.1	1.1	0.0	9.1	3.4
Aug 27	0.4	0.3	0.3	0.1	0.5	0.3	0.4	1.5	2.7	2.3	1.6	2.4	4.8	9.2	12.6	10.1	13.0	12.1	10.8	5.7	6.7	8.9	5.8	3.2	0.1	13.0	4.3
Aug 28	4.4	5.4	6.2	12.9	15.2	12.8	11.5	11.2	11.3	13.5	15.1	17.8	14.3	12.4	12.2	13.9	14.7	11.4	5.9	3.5	2.7	4.0	5.0	4.7	2.7	17.8	9.5
Aug 29	2.9	4.8	3.5	0.7	3.0	3.8	4.8	6.5	6.2	6.6	9.3	11.5	10.8	11.6	10.4	11.5	8.9	6.0	2.5	0.1	0.2	0.2	0.2	0.5	0.1	11.6	4.8
Aug 30	0.4	0.8	0.2	0.3	0.5	0.3	3.5	5.7	6.8	7.7	7.6	8.3	11.2	13.6	15.2	11.5	8.6	5.2	1.6	1.2	0.6	0.1	0.1	1.0	0.1	15.2	4.4
Aug 31	4.0	0.2	0.4	0.8	0.3	2.9	3.9	3.5	4.8	4.8	5.6	6.3	6.8	6.5	5.0	3.6	3.3	2.6	2.0	0.1	0.2	0.0	0.3	0.1	0.0	6.8	2.4
Diurnal Maximum	8	8	7	13	15	17	16	16	19	16	17	18	17	19	17	16	15	14	12	10	8	9	10	11			
Diurnal Average	2.5	2.3	1.9	2.0	2.6	3.5	4.3	5.3	6.3	6.8	7.4	7.5	7.6	8.0	7.8	7.3	7.3	6.6	5.4	3.2	2.5	2.8	2.8	2.9			
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.																											

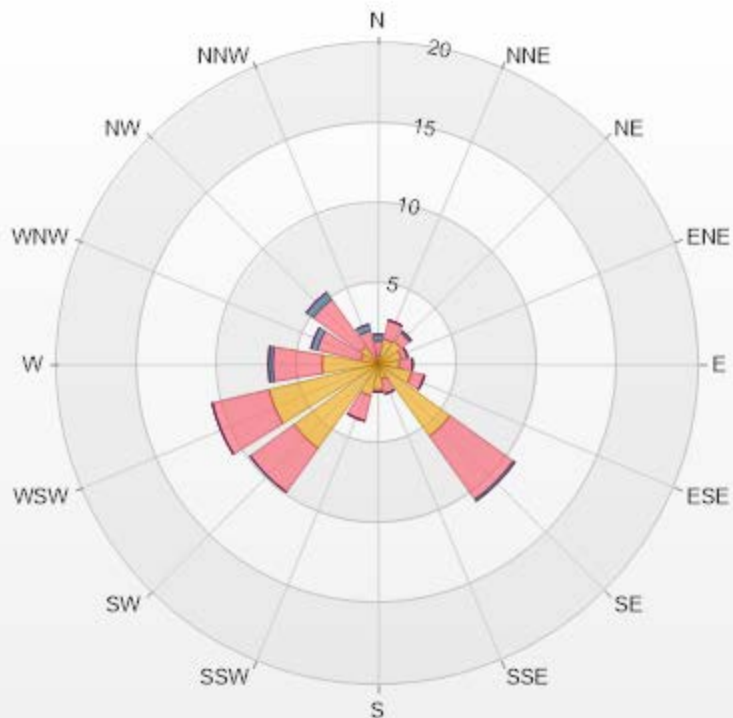
Timeseries Chart of Hourly Average for VWS - Cold Lake South Station



Wind: Cold Lake South Monitor: WDS [kph] Monthly: 08-2022 Type: WindRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.

Calm: 28.36% Valid Data: 100.00%

Direction	1.8-6.0	6.0-15.0	15.0-29.0	29.0-39.0	>39.0	Total
N	0.54	0.94	0.4	0	0	1.88
NNE	1.61	1.21	0	0	0	2.82
NE	1.75	0.67	0.13	0	0	2.55
ENE	1.48	0.4	0	0	0	1.88
E	1.34	0.81	0	0	0	2.15
ESE	2.15	0.81	0	0	0	2.96
SE	5.51	4.84	0.13	0	0	10.48
SSE	0.94	0.94	0	0	0	1.88
S	1.61	0.13	0	0	0	1.74
SSW	2.02	1.61	0	0	0	3.63
SW	6.45	3.36	0	0	0	9.81
WSW	6.99	3.63	0	0	0	10.62
W	3.49	3.09	0.27	0	0	6.85
WNW	1.08	2.82	0.4	0	0	4.3
NW	1.34	3.63	0.54	0	0	5.51
NNW	0.13	2.02	0.4	0	0	2.55
Summary	38.43	30.91	2.27	0	0	71.61



LICA-202208

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% Icon Classes (kph)

38  1.8-6.0

31  6.0-15.0

2  15.0-29.0

0  29.0-39.0

0  >39.0



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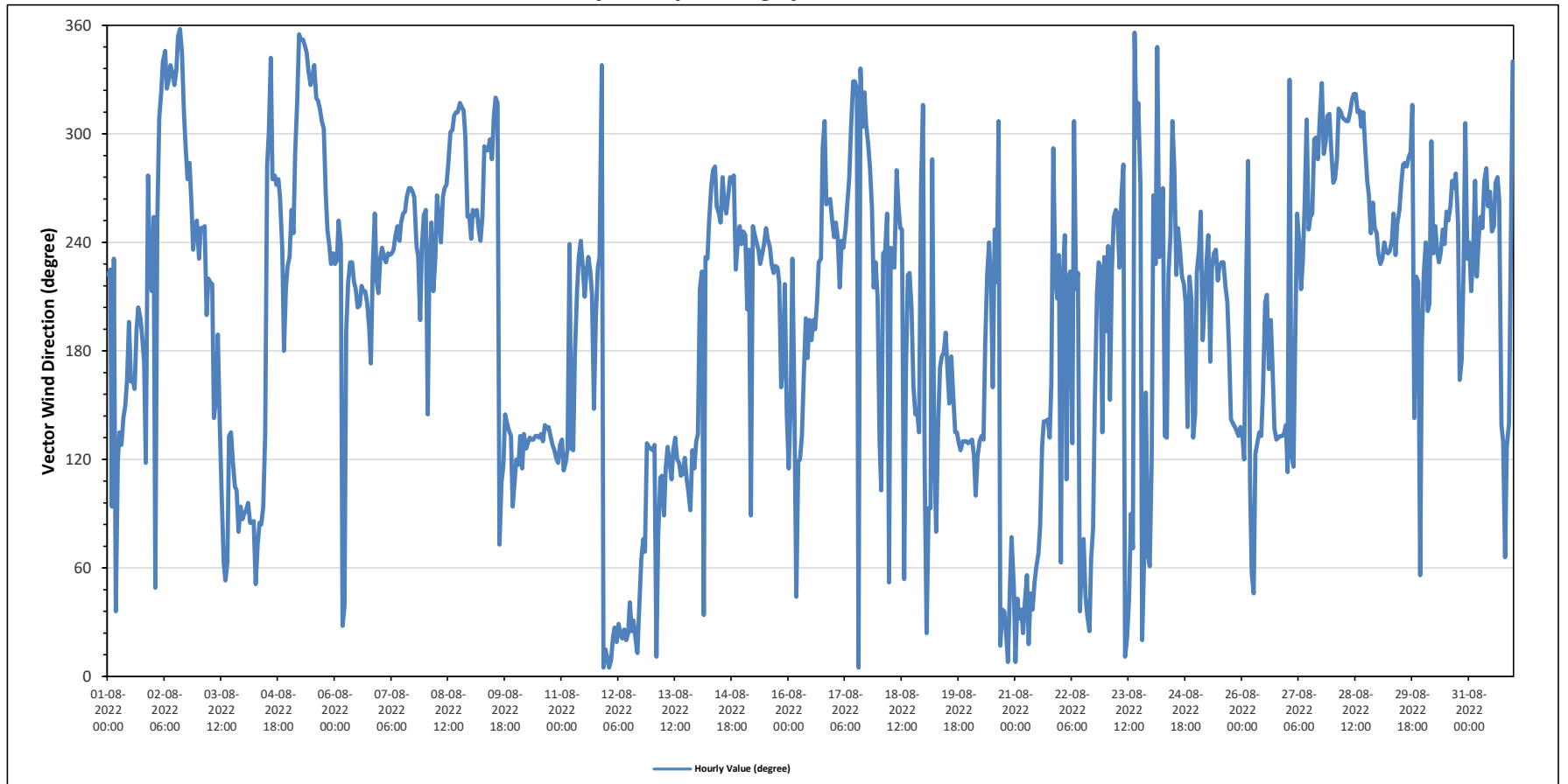
Cold Lake South Station - August 2022

Summary of Hourly Averages

WIND DIRECTION (VWD) in sector

Monthly Average: 260 (WSW) degree										Hours in Service: 744																	
										Hours of Data: 744																	
										Hours of Missing Data: 0																	
										Hours of Calibration: 0																	
										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	
Aug 1	SW	SW	E	SW	NE	ESE	SE	SE	SE	SSE	SSE	SSW	SSE	SSE	SSE	S	SSW	SSW	S	S	ESE	W	SW	SSW	171	S	
Aug 2	WSW	NE	WSW	NW	NW	NNW	NNW	NW	NNW	NNW	NNW	NW	NNW	N	N	NNW	NW	WNW	W	WNW	W	SW	WSW	WSW	327	NW	
Aug 3	SW	WSW	WSW	WSW	SSW	SW	SW	SW	SE	SSE	S	SE	ESE	ENE	NE	ENE	SE	SE	ESE	ESE	ESE	E	E	E	107	ESE	
Aug 4	E	E	E	E	E	E	NE	ENE	E	E	SE	W	WNW	NNW	W	W	W	W	W	W	SW	S	SSW	SW	71	ENE	
Aug 5	SW	WSW	WSW	WNW	NW	N	N	N	NNW	NNW	NNW	NW	NNW	NNW	NW	NW	NW	WNW	W	WSW	SW	SW	SW	323	NW		
Aug 6	SW	SW	WSW	WSW	NNE	NE	S	SW	SW	SW	SW	SSW	SSW	SSW	SW	SSW	SSW	SSW	S	S	SW	WSW	SW	SSW	218	SW	
Aug 7	SW	SW	SW	SW	SW	SW	SW	SW	WSW	WSW	WSW	WSW	WSW	WSW	W	W	W	W	W	SW	SW	SSW	SW	WSW	252	WSW	
Aug 8	WSW	SE	SW	WSW	SSW	SW	W	WSW	WSW	W	W	WNW	WNW	WNW	NW	NW	NW	NW	NW	NW	WNW	WNW	WSW	WSW	287	WNW	
Aug 9	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WNW	WNW	WNW	WNW	WNW	WNW	NW	NW	NW	ENE	ESE	ESE	SE	SE	SE	SE	E	ESE	275	W
Aug 10	ESE	ESE	SE	ESE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	ESE	ESE	SE	132	SE
Aug 11	SE	ESE	ESE	SE	WSW	SE	SE	S	SSW	SW	WSW	SW	SSW	SW	SW	SSW	SE	SSW	SW	SW	NNW	N	NNE	NNE	243	WSW	
Aug 12	NNE	N	N	NNE	NNE	NNE	NNE	NNE	NNE	NNE	NNE	NNE	NNE	NE	NNE	NNE	NNE	ENE	ENE	ENE	ENE	ENE	SE	SE	SE	33	NNE
Aug 13	SE	SE	NNE	ENE	ESE	ESE	E	ESE	SE	ESE	SE	ESE	ESE	SE	ESE	ESE	ESE	ESE	ESE	E	E	SE	ESE	SE	117	ESE	
Aug 14	SE	SSW	SW	NE	SW	WSW	W	W	W	WSW	WSW	WSW	W	W	WSW	W	W	WSW	W	W	W	SW	WSW	WSW	WSW	261	W
Aug 15	WSW	WSW	SSW	SW	E	WSW	WSW	WSW	SW	SW	SW	WSW	WSW	WSW	SW	SW	SW	SW	SW	SW	SW	SSE	S	SW	SE	234	SW
Aug 16	ESE	SSE	SW	SSE	NE	ESE	ESE	SE	SSE	SSW	S	SSW	S	SSW	S	SSW	SW	SW	WNW	NW	W	W	W	WSW	214	SSW	
Aug 17	WSW	WSW	WSW	SSW	WSW	SW	WSW	W	W	WNW	NNW	NNW	NW	N	NNW	WNW	NW	WNW	WNW	W	WSW	SSW	SW	SSW	299	WNW	
Aug 18	SE	ESE	SW	SW	WSW	NE	SW	SW	SW	W	W	WSW	WSW	NE	SSE	SW	SW	SSW	SSE	SE	SE	SE	W	NW	216	SW	
Aug 19	ESE	NNE	E	E	WNW	SE	E	SE	S	S	S	S	SSE	S	SSE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	146	SE
Aug 20	SE	SE	ESE	E	ESE	SE	SE	SE	S	SW	WSW	SW	SSE	WSW	SW	NW	NNE	NE	NE	NNE	N	NE	ENE	NE	130	SE	
Aug 21	N	NE	NNE	NE	NNE	NE	NE	NNE	NE	NE	NE	ENE	ENE	E	SE	SE	SE	SE	SE	SSE	WNW	SW	SSW	SW	57	ENE	
Aug 22	ENE	SW	WSW	ESE	SW	SW	SE	NW	SSW	SW	NE	ENE	ENE	NE	NNE	ENE	E	SSE	SSW	SW	SW	SE	SW	SE	SW	58	ENE
Aug 23	S	SW	SSE	SW	WSW	WSW	WSW	SW	W	W	NNE	NNE	NE	E	ENE	N	WNW	NW	W	NNE	ENE	SSE	ENE	ENE	ENE	360	N
Aug 24	ESE	W	SW	NNW	SW	SW	W	SE	SE	SW	WSW	NW	W	SW	WSW	SW	SW	SSW	SE	SW	SSW	SE	SE	SE	SE	227	SW
Aug 25	SW	SW	WSW	S	SSW	SW	WSW	S	SW	SW	SW	SW	SW	SW	SW	SSW	S	SE	SE	SE	SE	SE	SE	SE	SE	206	SSW
Aug 26	SE	ESE	SSW	WNW	ESE	ENE	NE	ESE	SE	SE	SE	SSE	SSW	SSW	SSE	SSW	S	SE	SE	SE	SE	SE	SE	SE	SE	154	SSE
Aug 27	ESE	NNW	ESE	ESE	S	WSW	WSW	SSW	SW	W	NW	WSW	WSW	WNW	WNW	WNW	WNW	NW	NNW	WNW	WNW	NW	NW	WNW	WNW	292	WNW
Aug 28	W	W	WNW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	WNW	W	WSW	W	WSW	W	WSW	WSW	304	WNW
Aug 29	SW	SW	SW	WSW	SW	SW	WSW	WSW	SW	WSW	SW	WSW	WSW	W	W	WNW	W	WNW	WNW	NW	SE	SW	NE	S	263	W	
Aug 30	SW	WSW	SSW	SSW	WNW	SW	WSW	SW	SW	SW	WSW	WSW	WSW	WSW	WSW	W	W	W	WSW	SSE	S	SW	NW	SW	252	WSW	
Aug 31	WSW	SSW	SW	W	SW	WSW	WSW	WSW	W	W	WSW	W	WSW	WSW	W	W	W	SE	SE	ENE	SE	SE	SW	NNW	255	WSW	
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 - August 2022

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 August 8 at hour 13										Hours in Service:		744													
Maximum Daily Value:		9.5 kph on August 28										Hours of Data:		744													
Minimum Hourly Value:		0.0 kph on August 15 at hour 22										Hours of Missing Data:		0													
Minimum Daily Value:		0.6 kph on August 23										Hours of Calibration:		0													
Monthly Average:		1.3 kph										Operational Uptime:		100													
WIND DIRECTION																											
Monthly Average:		260 (WSW, 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
Aug 1	0.3	0.1	0.2	0.4	0.1	0.1	4.5	8.2	7.0	6.2	6.5	7.6	7.2	5.8	6.6	7.0	7.1	4.0	3.7	1.7	0.4	0.2	1.1	6.2	0.1	8.2	3.4
Aug 2	1.2	1.9	1.1	1.3	5.2	6.8	8.7	9.0	8.4	12.9	9.1	9.6	9.8	12.5	8.6	6.9	4.7	4.9	4.5	4.7	3.1	3.1	2.5	0.5	0.5	12.9	5.1
Aug 3	0.2	2.4	2.3	0.8	0.2	0.1	0.8	0.8	1.7	1.5	0.7	0.9	2.7	4.4	5.7	5.3	6.2	6.7	5.0	3.9	2.7	2.9	3.6	3.9	0.1	6.7	1.8
Aug 4	4.1	5.7	5.3	7.5	8.4	6.0	6.9	11.2	10.7	11.0	9.4	6.9	2.8	8.1	5.2	5.1	9.3	12.5	11.5	9.5	1.4	1.5	2.9	7.4	1.4	12.5	1.0
Aug 5	8.3	6.0	4.9	3.7	6.7	14.4	16.3	16.1	18.7	16.0	17.1	13.6	15.2	13.9	12.8	12.4	12.6	8.0	8.9	3.8	4.2	3.7	3.5	3.2	3.2	18.7	8.4
Aug 6	3.9	3.6	3.4	0.5	0.1	0.1	1.4	4.9	10.9	11.2	10.7	9.5	10.3	10.3	10.1	8.7	8.0	5.6	3.6	2.7	6.4	5.2	1.6	0.4	0.1	11.2	5.3
Aug 7	2.3	3.1	3.4	2.9	3.5	4.7	4.6	7.1	7.4	11.1	12.6	11.9	11.6	11.7	11.7	10.8	11.2	9.8	8.1	3.4	0.9	0.2	1.4	2.0	0.2	12.6	6.4
Aug 8	2.0	0.3	0.3	0.3	3.2	6.3	5.7	7.1	9.7	11.8	13.4	18.0	16.8	19.2	17.4	16.1	12.0	13.5	12.1	9.7	6.7	3.9	3.5	3.9	0.3	19.2	7.9
Aug 9	3.9	3.7	4.2	4.5	4.5	4.4	5.7	6.1	7.7	8.7	9.2	8.5	5.6	5.9	3.5	3.8	4.8	3.4	3.5	3.5	2.0	1.8	0.1	1.3	0.1	9.2	2.4
Aug 10	0.7	0.8	0.7	0.5	1.2	5.0	7.2	9.7	10.3	13.4	12.7	13.8	13.9	14.0	15.6	13.0	11.9	11.9	10.2	7.8	4.6	5.3	5.4	5.7	0.5	15.6	8.1
Aug 11	1.9	0.6	0.4	0.2	0.3	0.2	1.9	1.8	3.1	4.2	4.0	2.7	5.1	4.4	4.5	4.4	2.3	2.4	2.4	3.6	5.1	6.8	9.5	11.2	0.2	11.2	1.2
Aug 12	7.5	8.0	7.0	4.9	5.4	5.6	7.6	8.2	7.6	5.1	7.7	7.1	4.1	5.3	7.4	4.3	3.7	4.2	4.8	2.5	0.2	4.2	6.3	6.7	0.2	8.2	4.7
Aug 13	5.5	3.5	0.1	1.3	0.8	4.6	5.5	5.3	7.7	5.8	7.0	7.3	10.0	7.0	8.1	9.1	8.8	8.2	5.6	4.0	1.7	5.1	5.4	5.2	0.1	10.0	5.4
Aug 14	3.9	2.9	2.8	5.2	6.9	5.1	4.4	7.2	9.1	6.9	7.4	6.6	7.2	7.3	6.1	8.3	9.3	9.6	8.1	4.0	1.0	2.9	2.5	2.3	1.0	9.6	4.8
Aug 15	1.0	2.2	0.3	0.1	0.1	0.5	2.7	1.9	7.2	9.0	9.2	9.3	10.1	10.7	8.0	9.4	8.3	7.6	6.3	2.5	0.4	0.1	0.0	0.2	0.0	10.7	4.4
Aug 16	0.1	0.0	0.1	0.1	0.1	1.0	1.0	1.3	1.1	3.1	4.1	4.8	5.6	6.5	5.6	4.0	5.4	5.1	4.8	0.7	1.3	3.2	3.1	3.6	0.0	6.5	2.1
Aug 17	4.2	3.2	2.8	1.1	1.5	2.8	4.4	4.0	4.6	6.3	10.5	8.3	5.7	3.6	7.3	8.0	8.1	7.4	6.8	3.8	1.7	0.6	0.5	0.1	0.1	10.5	3.7
Aug 18	0.2	0.2	0.5	0.4	0.0	0.0	0.7	2.4	1.9	1.2	2.3	2.0	2.3	4.6	1.9	4.1	4.4	4.2	2.7	0.6	0.4	0.1	0.1	0.0	0.0	4.6	0.9
Aug 19	0.1	0.0	0.1	0.3	0.0	0.3	0.4	2.5	3.2	4.2	4.6	5.6	6.8	7.0	5.5	5.9	9.4	8.7	8.4	6.5	7.7	7.2	7.0	8.1	0.0	9.4	4.2
Aug 20	7.9	5.4	2.5	1.2	0.9	2.8	3.8	3.8	2.1	6.0	5.5	4.2	2.4	2.2	0.6	0.9	5.4	4.7	3.2	0.9	3.5	1.5	1.7	0.7	0.6	7.9	1.0



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - August 2022

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 August 8 at hour 13	Hours in Service:	744																															
Maximum Daily Value:	9.5	kph	on August 28	Hours of Data:	744																															
Minimum Hourly Value:	0.0	kph	on August 15 at hour 22	Hours of Missing Data:	0																															
Minimum Daily Value:	0.6	kph	on August 23	Hours of Calibration:	0																															
Monthly Average:	1.3	kph		Operational Uptime:	100																															
WIND DIRECTION																																				
Monthly Average:	260 (WSW 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												
Aug 21	3.7	4.5	5.2	9.1	11.3	16.5	12.6	6.3	8.0	6.5	7.7	4.8	6.3	3.3	4.9	5.1	6.7	5.1	3.0	0.3	0.1	0.4	0.5	0.1	0.1	16.5	4.2									
	N	NE	NNE	NE	NNE	NE	NE	NNE	NE	NE	NE	ENE	ENE	E	SE	SE	SE	SE	SSE	WNW	SW	SSW	SW													
Aug 22	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.3	1.4	2.2	4.7	5.7	4.2	3.7	6.0	4.3	4.7	3.2	2.1	0.2	0.4	1.0	0.2	0.6	0.0	6.0	1.2									
	ENE	SW	WSW	ESE	SW	SW	SE	NW	SSW	SW	NE	ENE	ENE	NE	NE	NNE	ENE	E	SSE	SSW	SW	SW	SE	SW												
Aug 23	0.2	0.1	0.1	0.1	0.2	0.3	0.4	1.8	1.1	0.5	0.7	2.5	2.4	3.3	3.3	1.8	1.6	5.4	5.3	2.8	1.6	0.3	1.0	2.4	0.1	5.4	0.6									
	S	SW	SSE	SW	WSW	WSW	WSW	SW	W	W	NNE	NNE	NE	E	ENE	N	WNW	NW	W	NNE	ENE	SSE	ENE	ENE												
Aug 24	0.2	0.0	0.2	0.1	0.5	0.5	0.0	2.4	2.4	0.8	1.9	2.9	0.6	2.8	5.6	5.2	3.5	2.4	1.0	0.1	0.1	0.3	0.2	0.1	0.0	5.6	1.0									
	ESE	W	SW	NNW	SW	SW	W	SE	SE	SW	WSW	NW	W	SW	WSW	SW	SW	SSW	SE	SW	SSW	SE	SE													
Aug 25	0.0	0.7	0.1	0.0	0.1	0.3	0.3	0.0	4.4	5.6	5.0	6.4	9.3	8.9	8.9	6.8	5.4	3.2	2.6	2.2	4.1	4.8	4.4	2.2	0.0	9.3	2.9									
	SW	SW	WSW	S	SSW	SW	WSW	S	SW	SW	SW	SW	SW	SW	SW	SW	SSW	S	SE	SE	SE	SE	SE													
Aug 26	1.5	0.1	0.0	0.2	0.2	0.1	0.7	5.8	4.6	4.1	6.4	7.0	9.1	8.1	6.6	5.2	4.2	6.4	5.4	2.5	4.7	5.8	7.1	1.1	0.0	9.1	3.4									
	SE	ESE	SSW	WNW	ESE	ENE	NE	ESE	SE	SE	SE	SSE	SSW	SSW	SSE	SSW	S	SE	SE	SE	SE	SE	SE													
Aug 27	0.4	0.3	0.3	0.1	0.5	0.3	0.4	1.5	2.7	2.3	1.6	2.4	4.8	9.2	12.6	10.1	13.0	12.1	10.8	5.7	6.7	8.9	5.8	3.2	0.1	13.0	4.3									
	ESE	NNW	ESE	ESE	S	WSW	WSW	SSW	SW	W	NW	WSW	WSW	WSW	WNW	WNW	WNW	NW	NNW	WNW	WNW	NW	NW	WNW												
Aug 28	4.4	5.4	6.2	12.9	15.2	12.8	11.5	11.2	11.3	13.5	15.1	17.8	14.3	12.4	12.2	13.9	14.7	11.4	5.9	3.5	2.7	4.0	5.0	4.7	2.7	17.8	9.5									
	W	W	WNW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	WNW	NW	WNW	W	W	WSW	W	WSW	WSW												
Aug 29	2.9	4.8	3.5	0.7	3.0	3.8	4.8	6.5	6.2	6.6	9.3	11.5	10.8	11.6	10.4	11.5	8.9	6.0	2.5	0.1	0.2	0.2	0.5	0.5	0.1	11.6	4.8									
	SW	SW	SW	WSW	SW	SW	WSW	WSW	SW	WSW	WSW	W	W	WNW	W	WNW	W	WNW	NW	SE	SW	SW	NE	S												
Aug 30	0.4	0.8	0.2	0.3	0.5	0.3	3.5	5.7	6.8	7.7	7.6	8.3	11.2	13.6	15.2	11.5	8.6	5.2	1.6	1.2	0.6	0.1	0.1	1.0	0.1	15.2	4.4									
	SW	WSW	SSW	SSW	WNW	SW	WSW	SW	SW	SW	WSW	WSW	WSW	WSW	WSW	W	W	W	WSW	SSE	S	SW	NW	SW												
Aug 31	4.0	0.2	0.4	0.8	0.3	2.9	3.9	3.5	4.8	4.8	5.6	6.3	6.8	6.5	5.0	3.6	3.3	2.6	2.0	0.1	0.2	0.0	0.3	0.1	0.0	6.8	2.4									
	WSW	SSW	SW	W	SW	WSW	WSW	WSW	W	W	WSW	W	WSW	WSW	W	W	W	SE	SE	ENE	SE	SE	SW	NNW												
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

Cold Lake South Station - August 2022

Summary of Hour Standard Deviations

STANDARD DEVIATION WIND DIRECTION (STDWD) in Degree

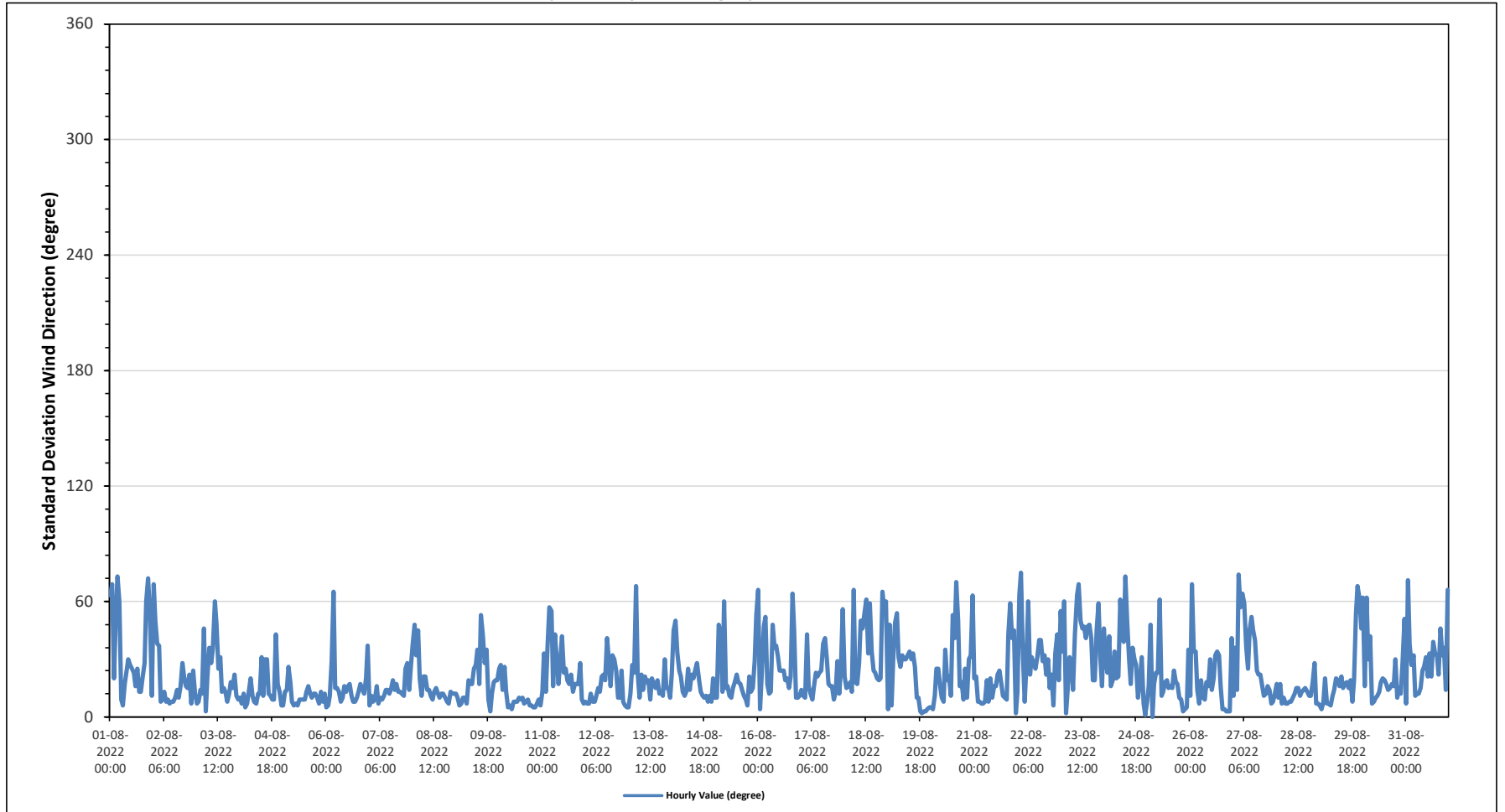
Maximum Hourly Value:	75 degree on August 22 at hour 2	Hours in Service:	744
Minimum Hourly Value:	0 degree on August 25 at hour 3	Hours of Data:	744
		Hours of Missing Data:	0
		Hours of Calibration:	0
		Operational Uptime:	100.0

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
Aug 1	63	69	20	53	73	60	9	6	17	23	30	27	25	23	16	25	13	13	21	28	60	72	53	11	6	73
Aug 2	69	50	38	37	8	9	13	8	9	7	8	8	10	14	10	16	28	21	16	15	22	7	24	12	7	69
Aug 3	7	8	14	12	46	3	21	36	28	35	60	48	25	31	13	15	13	8	12	18	15	22	11	9	3	60
Aug 4	10	7	12	5	7	14	20	11	8	7	12	12	31	11	30	30	12	11	9	9	43	17	13	6	5	43
Aug 5	6	13	14	26	18	8	6	7	6	9	9	9	9	13	16	12	10	12	12	10	7	13	8	12	6	26
Aug 6	5	6	11	29	65	15	15	13	8	10	16	13	16	17	11	8	8	10	13	17	14	12	20	37	5	65
Aug 7	6	11	8	9	16	7	10	9	11	14	14	12	15	19	14	17	13	13	12	11	25	28	14	26	6	28
Aug 8	38	48	32	45	20	11	21	21	14	14	11	9	13	15	12	10	12	12	10	8	7	13	12	12	7	48
Aug 9	12	10	6	7	10	10	7	19	17	17	25	27	35	17	53	43	28	35	9	3	12	18	19	19	3	53
Aug 10	25	27	14	26	13	5	6	4	8	8	8	10	9	10	7	8	9	6	6	5	5	7	9	6	4	27
Aug 11	13	33	13	36	57	55	16	43	29	17	30	42	23	25	19	17	22	13	17	17	17	28	9	7	7	57
Aug 12	8	7	7	12	8	8	11	15	13	21	22	19	41	29	16	32	30	24	10	10	24	8	6	5	5	41
Aug 13	5	12	27	23	68	23	10	22	14	21	18	19	9	20	17	15	19	12	13	11	30	15	15	10	5	68
Aug 14	22	45	50	33	24	21	13	11	13	25	14	22	20	24	28	19	13	11	10	11	8	11	8	20	8	50
Aug 15	10	10	48	44	13	60	15	16	11	10	15	18	22	18	17	14	11	9	6	21	13	15	29	53	6	60
Aug 16	66	4	24	47	52	17	12	13	48	36	37	31	24	24	24	19	20	15	21	64	45	10	10	11	4	66
Aug 17	14	11	10	43	16	12	9	16	23	21	23	24	38	41	30	17	16	16	9	13	29	12	24	56	9	56
Aug 18	21	15	16	18	13	66	18	17	28	50	46	54	61	33	59	34	24	23	20	19	20	65	57	60	13	66
Aug 19	4	48	6	30	49	54	31	26	32	30	30	32	34	30	33	26	10	10	3	2	3	3	4	5	2	54
Aug 20	5	4	11	25	25	16	10	8	35	19	21	11	53	41	70	50	16	18	9	25	10	30	32	63	4	70
Aug 21	20	21	8	8	7	7	8	19	8	20	10	16	16	22	24	17	11	10	9	43	59	41	45	2	2	59
Aug 22	13	63	75	33	8	26	60	22	31	28	25	31	40	40	29	32	22	30	15	22	6	33	43	19	6	75
Aug 23	55	34	60	2	16	31	29	14	43	63	69	50	46	47	41	47	48	41	19	19	45	59	30	16	2	69
Aug 24	46	30	23	42	16	19	34	20	21	61	44	39	73	49	30	17	36	30	27	10	18	31	7	1	1	73
Aug 25	8	16	48	0	17	23	23	61	11	13	18	19	15	16	15	24	18	17	10	9	3	4	5	35	0	61
Aug 26	11	69	34	34	14	7	19	10	9	18	16	30	14	20	32	34	32	16	4	4	3	3	3	41	3	69
Aug 27	11	36	14	74	57	64	59	37	25	45	52	45	40	24	22	22	16	11	12	16	14	7	8	12	7	74
Aug 28	17	10	17	7	10	7	7	8	8	10	12	15	15	11	13	14	15	13	11	11	18	28	7	7	7	28
Aug 29	6	4	8	20	7	7	6	11	14	20	19	16	21	15	17	18	15	19	8	19	53	68	62	46	4	68
Aug 30	62	16	62	30	42	7	8	10	11	13	18	20	19	17	14	15	17	16	30	10	15	12	29	51	7	62
Aug 31	7	71	38	27	32	11	12	12	15	24	26	31	21	33	21	39	33	32	22	46	32	36	14	66	7	71
Diurnal Minimum	4	4	6	0	7	3	6	4	6	7	8	8	9	10	7	8	8	6	3	2	3	3	3	1		
Diurnal Maximum	69	71	75	74	73	66	60	61	48	63	69	54	73	49	70	50	48	41	30	64	60	72	62	66		

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

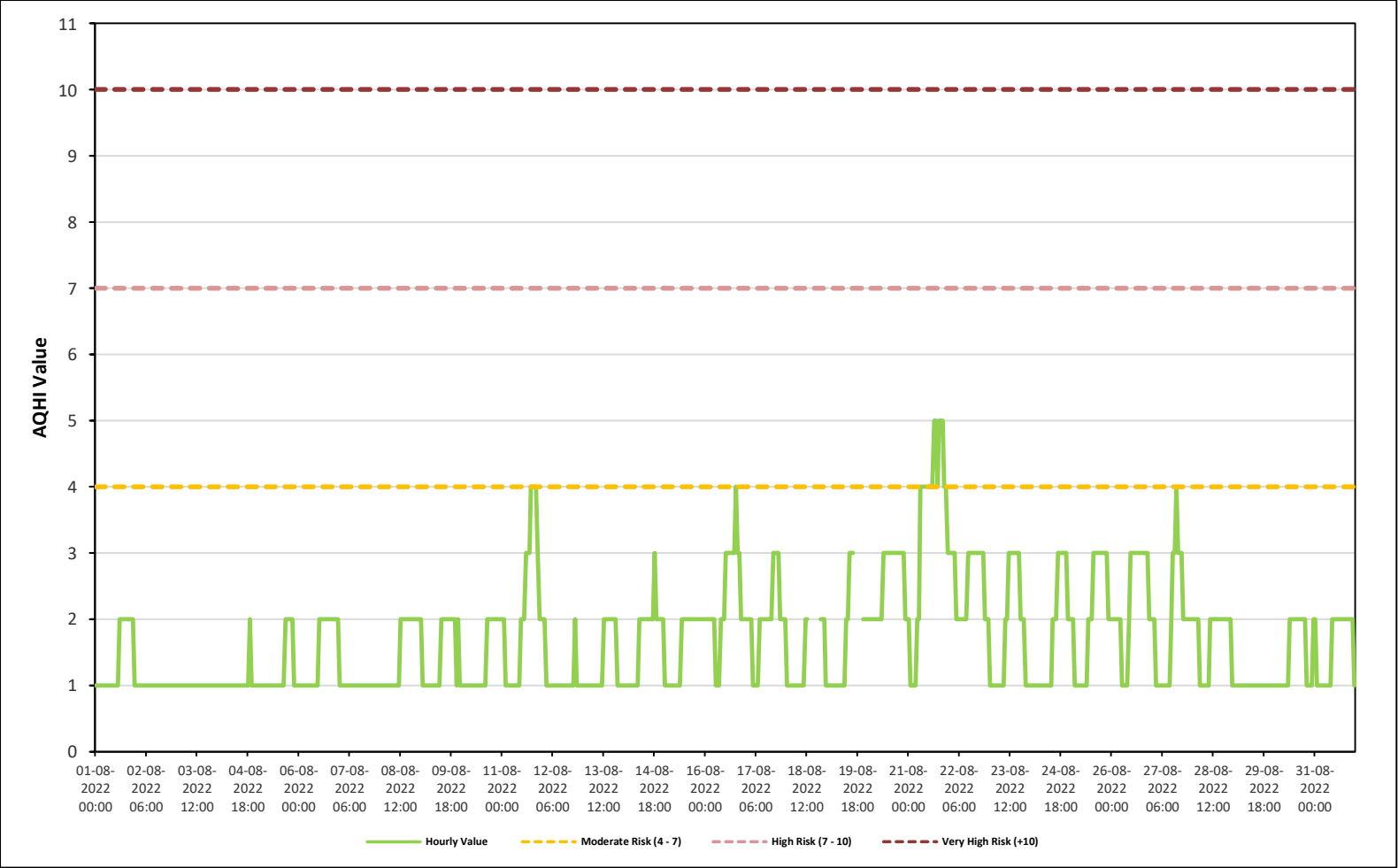
Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
 Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

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



TAMARACK STATION

Timeseries Chart of Hourly Average for AQHI - Tamarack Site





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Tamarack Site - August 2022

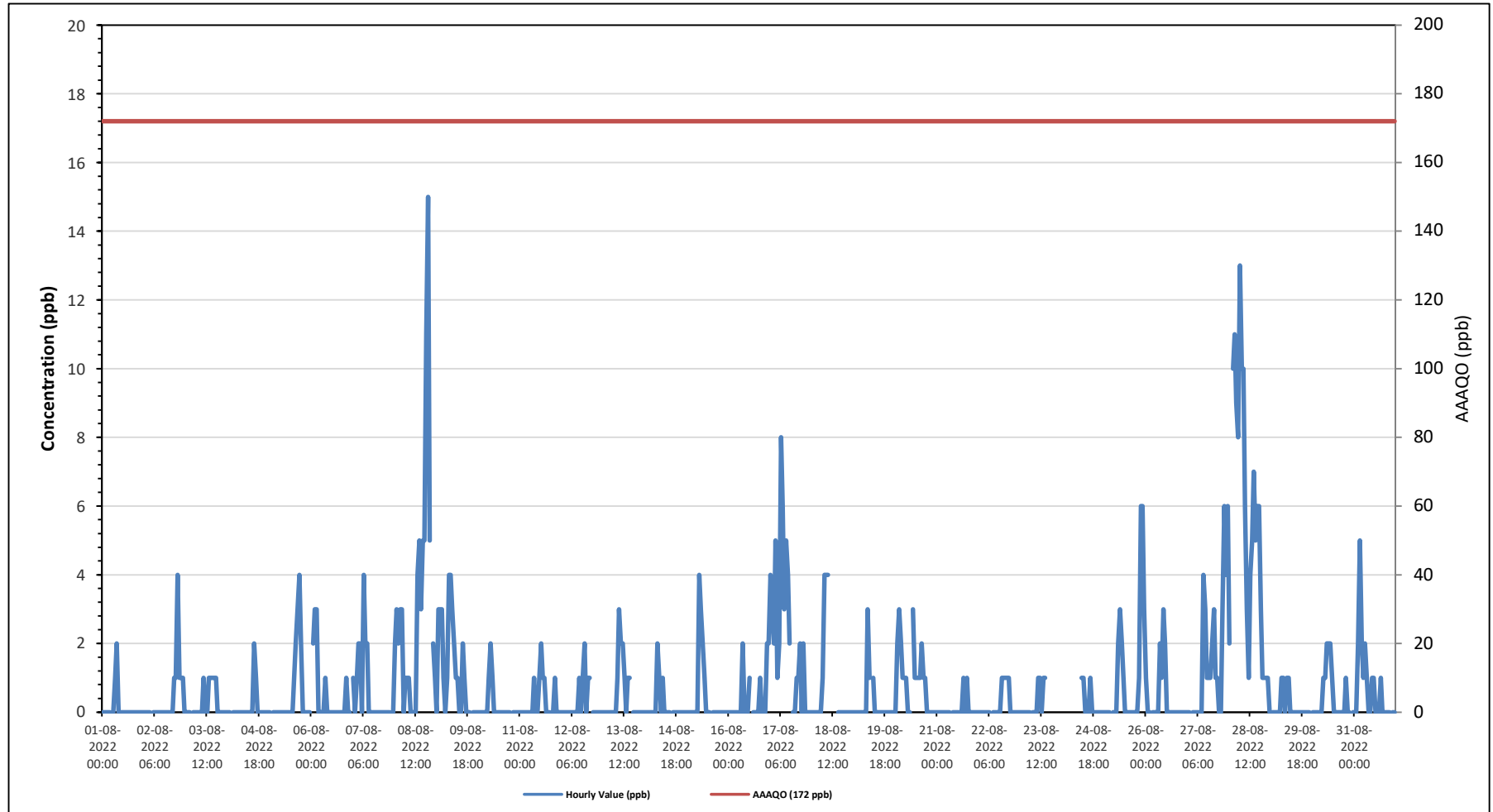
Summary of Hourly Averages

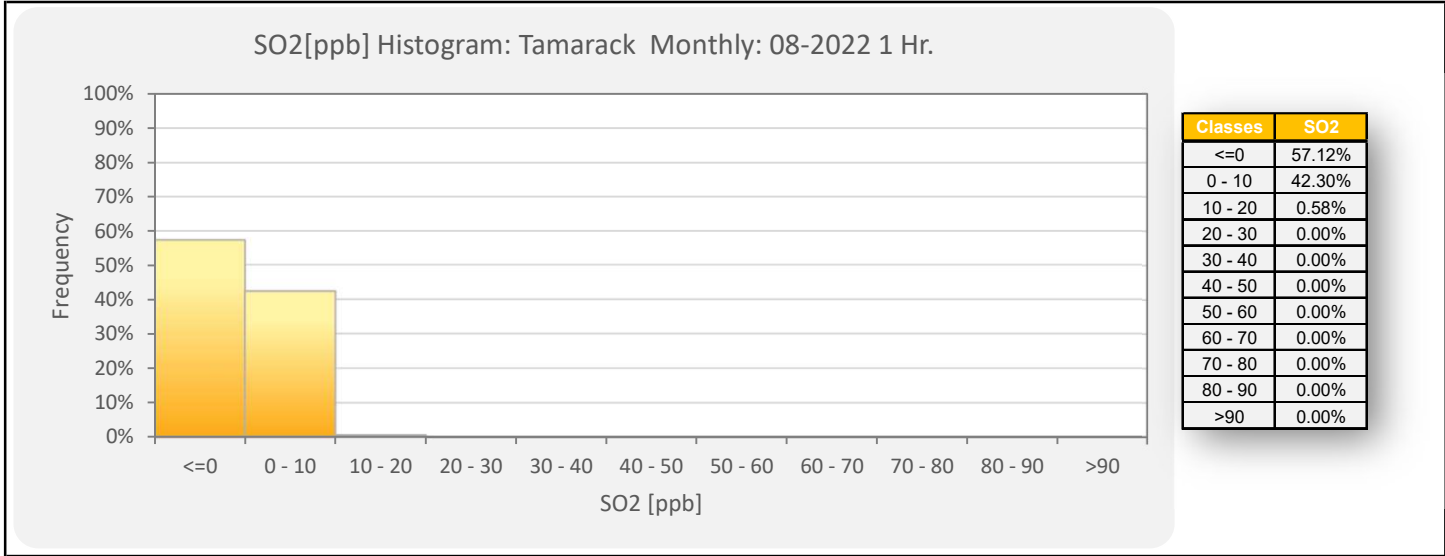
SULPHUR DIOXIDE (SO₂) in ppb

Alberta Ambient Air Quality Objectives (AAAQO): 1-Hour 172 ppb, 24-Hour 48 ppb, 30-Day 11 ppb																													
Number of 1-Hour Exceedances: 0					Number of 24-Hour Exceedances: 0					30-Day Exceedence: 0																			
Maximum Hourly Value: 15 ppb on August 8 at hour 19										Hours in Service: 744																			
Maximum Daily Value: 5.3 ppb on August 28										Hours of Data: 688																			
Minimum Hourly Value: 0 ppb on August 1 at hour 0										Hours of Missing Data: 20																			
Minimum Daily Value: 0.1 ppb on August 21										Hours of Calibration: 36																			
Monthly Average: 0.8 ppb										Operational Uptime: 97.3																			
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					
Aug 1	0	0	0	0	0	S	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.1
Aug 2	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	1	1	4	1	1	1	0	0	0	4	0.4	
Aug 3	0	0	0	S	0	0	0	0	0	0	1	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	1	0.3	
Aug 4	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	2	0.1	
Aug 5	0	S	0	0	0	0	0	0	0	0	0	0	0	0	1	2	3	4	2	0	0	0	0	0	0	0	4	0.5	
Aug 6	S	2	3	3	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	S	0	0	3	0.5	
Aug 7	1	0	1	2	2	0	4	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	4	0.6	
Aug 8	2	3	2	3	3	0	1	1	1	0	0	0	0	4	5	3	5	5	11	15	5	S	2	1	0	15	3.1		
Aug 9	0	3	3	3	1	0	1	4	4	3	2	1	1	0	0	2	1	0	0	0	S	0	0	0	0	0	4	1.3	
Aug 10	0	0	0	0	0	0	1	2	1	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	2	0.2	
Aug 11	0	0	0	0	0	0	0	0	1	0	0	1	2	1	1	0	0	0	S	0	1	0	0	0	0	0	2	0.3	
Aug 12	0	0	0	0	0	0	0	0	0	0	1	0	1	2	0	1	1	S	0	0	0	0	0	0	0	0	2	0.3	
Aug 13	0	0	0	0	0	0	0	0	1	3	2	2	1	0	1	1	S	0	0	0	0	0	0	0	0	0	3	0.5	
Aug 14	0	0	0	0	0	0	0	2	1	0	1	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	2	0.2	
Aug 15	0	0	0	0	0	0	0	4	3	2	1	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	4	0.4	
Aug 16	0	0	0	0	0	0	0	0	2	0	0	0	1	S	0	0	0	0	1	0	0	0	2	2	0	0	2	0.3	
Aug 17	4	3	2	5	1	2	8	6	3	5	4	2	S	0	0	1	1	2	0	2	0	0	0	0	0	0	8	2.2	
Aug 18	0	0	0	0	0	0	1	4	4	4	C	C	C	C	C	0	0	0	0	0	0	0	0	0	0	0	4	0.7	
Aug 19	0	0	0	0	0	0	0	0	3	1	S	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0.2	
Aug 20	0	2	3	2	1	1	1	0	0	S	3	1	1	1	1	2	1	1	0	0	0	0	0	0	0	0	3	0.9	
Aug 21	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1	0.1	
Aug 22	0	0	0	0	0	0	0	S	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	1	0.2	
Aug 23	0	0	0	0	0	S	0	0	0	1	1	0	1	1	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	0	1	-	
Aug 24	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	1	-	
Aug 25	0	0	0	0	S	0	0	0	0	2	3	2	1	0	0	0	0	0	0	0	1	6	6	3	0	6	1.0		
Aug 26	1	0	0	S	0	0	0	0	2	1	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0.4	
Aug 27	0	0	S	0	0	0	0	0	0	4	3	1	1	1	2	3	1	1	0	0	3	6	4	6	0	6	1.6		
Aug 28	2	S	10	11	9	8	13	10	10	6	3	1	4	5	7	5	6	6	3	1	1	1	1	0	0	13	5.3		
Aug 29	S	0	0	0	0	0	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	1	0.2	
Aug 30	0	0	0	0	0	0	1	1	2	2	2	1	0	0	0	0	0	0	0	1	0	0	S	0	0	0	2	0.4	
Aug 31	0	0	2	5	2	1	2	1	0	0	1	1	0	0	0	1	0	0	0	0	0	S	0	0	0	0	5	0.7	
Diurnal Maximum	4	3	10	11	9	8	13	10	10	6	4	2	4	5	7	5	6	6	11	15	5	6	6	6	6	6			
Diurnal Average	0.4	0.5	0.9	1.2	0.7	0.4	1.2	1.3	1.6	1.2	1.1	0.6	0.4	0.6	0.7	0.9	0.8	0.8	0.6	0.8	0.4	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.

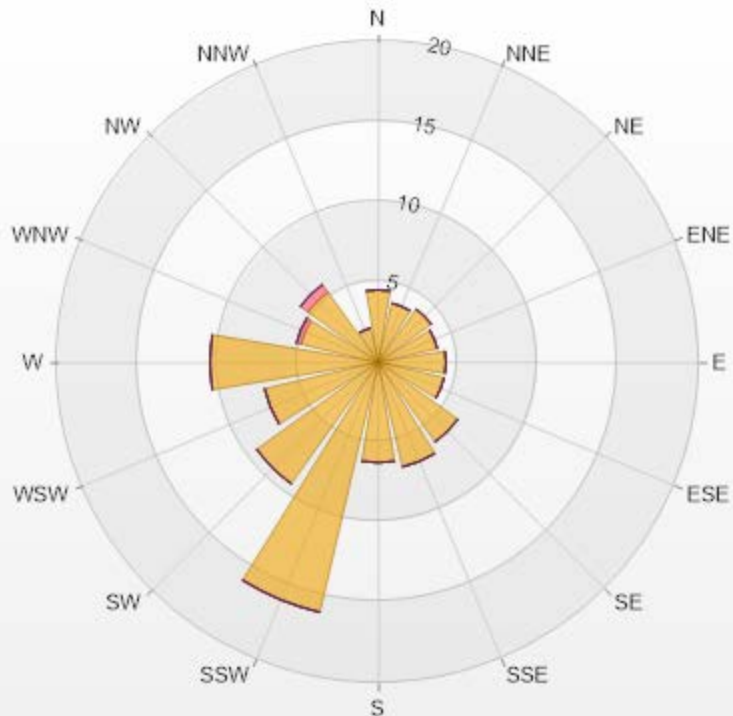
Timeseries Chart of Hourly Average for SO₂ - Tamarack Site





Wind: Tamarack Poll.: Tamarack-SO2[ppb] Monthly: 08-2022 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 92.47% Calm Avg: 0.00 [ppb]

Direction	0-10	10-50	50-100	100-172	>172.0	Total
N	4.51	0	0	0	0	4.51
NNE	3.78	0	0	0	0	3.78
NE	4.07	0	0	0	0	4.07
ENE	3.78	0	0	0	0	3.78
E	4.22	0	0	0	0	4.22
ESE	4.22	0	0	0	0	4.22
SE	6.1	0	0	0	0	6.1
SSE	6.69	0	0	0	0	6.69
S	6.25	0	0	0	0	6.25
SSW	15.99	0	0	0	0	15.99
SW	9.3	0	0	0	0	9.3
WSW	7.27	0	0	0	0	7.27
W	10.47	0	0	0	0	10.47
WNW	4.94	0.29	0	0	0	5.23
NW	5.38	0.58	0	0	0	5.96
NNW	2.18	0	0	0	0	2.18
Summary	99.15	0.87	0	0	0	100



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% Icon Classes (ppb)

99

0-10

1

10-50

0

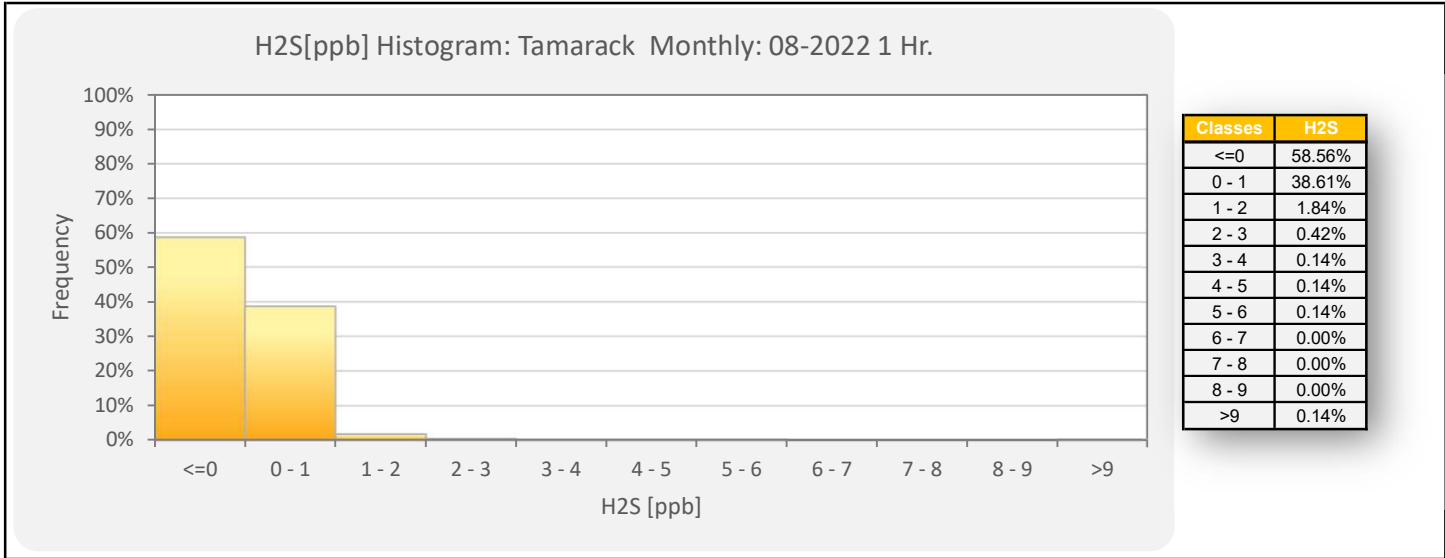
50-100

0

100-172

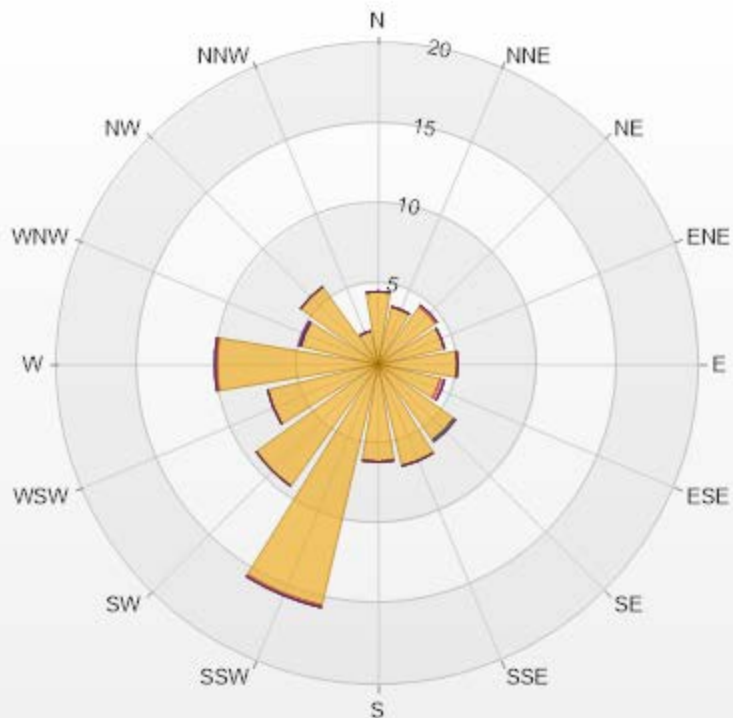
0

>172.0



Wind: Tamarack Poll.: Tamarack-H2S[ppb] Monthly: 08-2022 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 95.03% Calm Avg: 0.00 [ppb]

Direction	0-2	2-5	5-10	10-50	>50.0	Total
N	4.53	0	0	0	0	4.53
NNE	3.68	0	0	0	0	3.68
NE	4.38	0.14	0	0	0	4.52
ENE	4.24	0	0	0	0	4.24
E	4.95	0	0	0	0	4.95
ESE	3.96	0.28	0	0	0	4.24
SE	5.8	0	0.14	0	0	5.94
SSE	6.51	0	0	0	0	6.51
S	6.08	0	0	0	0	6.08
SSW	15.42	0.14	0	0	0	15.56
SW	9.34	0	0	0	0	9.34
WSW	7.07	0	0	0	0	7.07
W	10.04	0.14	0	0	0	10.18
WNW	4.95	0	0	0.14	0	5.09
NW	5.94	0	0	0	0	5.94
NNW	2.12	0	0	0	0	2.12
Summary	99.01	0.7	0.14	0.14	0	100



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% Icon Classes (ppb)

99 0-2

1 2-5

0 5-10

0 10-50

0 >50.0



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Tamarack Site - August 2022

Summary of Hourly Averages

OXIDES OF NITROGEN (NOx) in ppb

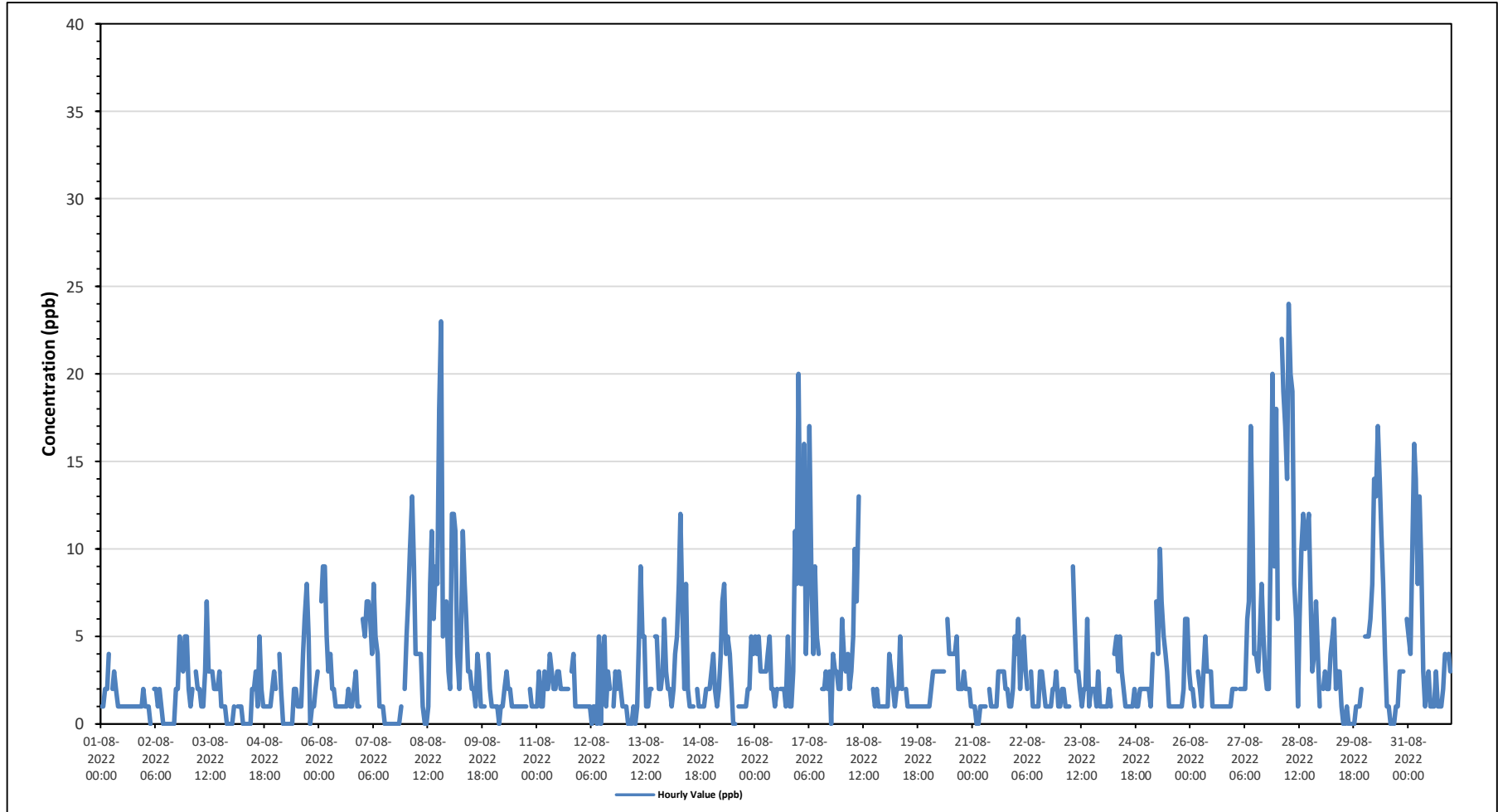
Maximum Hourly Value:	24 ppb on August 28 at hour 6	Hours in Service:	744
Maximum Daily Value:	10.6 ppb on August 28	Hours of Data:	705
Minimum Hourly Value:	0 ppb on August 2 at hour 3	Hours of Missing Data:	0
Minimum Daily Value:	1.2 ppb on August 10	Hours of Calibration:	39
Monthly Average:	3.2 ppb	Operational Uptime:	100.0

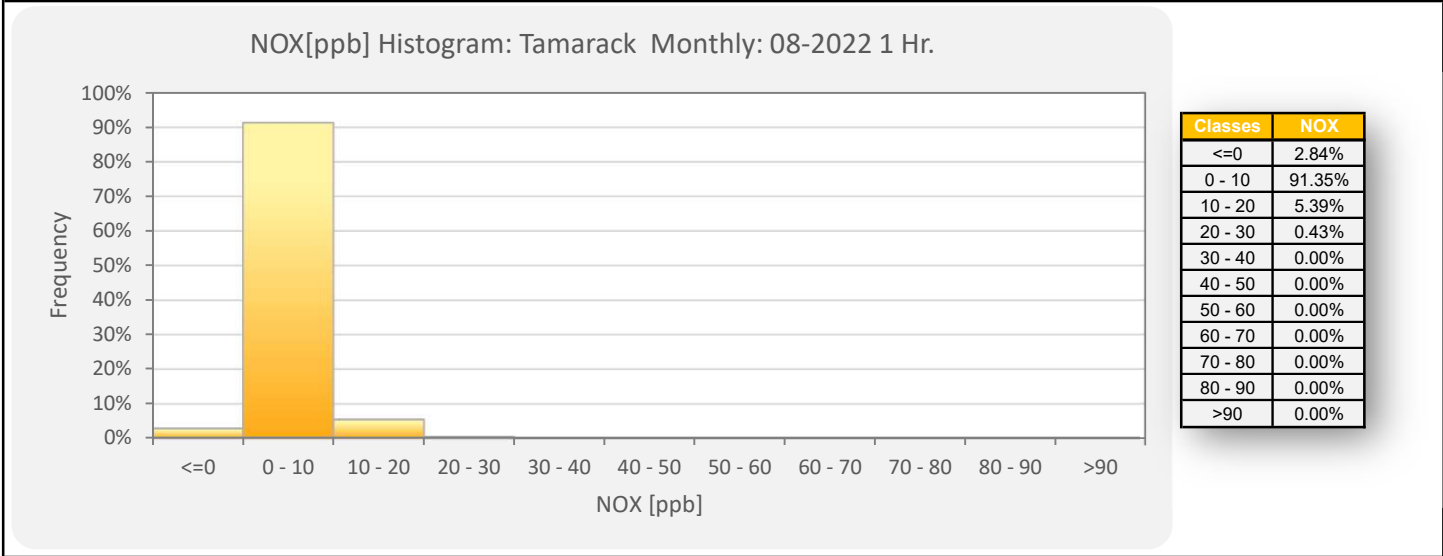
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average		
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23	
Aug 1	1	1	2	2	4	S	2	3	2	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	4	1.4		
Aug 2	1	1	1	0	S	2	2	1	2	1	0	0	0	0	0	0	0	2	2	5	4	3	5	5	0	5	1.6	
Aug 3	2	1	2	S	3	2	2	1	1	3	7	3	3	3	2	2	2	3	1	1	1	0	0	0	0	7	2.0	
Aug 4	0	1	S	1	1	1	0	0	0	0	0	2	2	3	1	5	2	1	1	1	1	1	2	3	0	5	1.3	
Aug 5	2	S	4	2	0	0	0	0	0	0	2	2	1	1	1	4	6	8	5	0	1	1	2	3	0	8	2.0	
Aug 6	S	7	9	9	5	3	4	2	2	1	1	1	1	1	1	2	1	1	2	3	1	1	S	1	9	2.7		
Aug 7	6	5	7	7	6	4	8	5	4	1	1	1	0	0	0	0	0	0	0	0	0	1	S	2	0	8	2.5	
Aug 8	5	7	10	13	9	4	4	4	4	1	0	0	1	8	11	6	9	8	18	23	5	S	7	3	0	23	7.0	
Aug 9	2	12	12	11	4	2	5	11	8	6	3	3	2	2	1	4	3	1	1	1	S	4	2	1	1	12	4.4	
Aug 10	1	1	1	0	1	1	2	3	2	2	1	1	1	1	1	1	1	1	1	S	2	1	1	1	0	3	1.2	
Aug 11	1	3	1	1	3	2	4	3	2	2	3	3	2	2	2	2	2	S	3	4	1	1	1	1	1	4	2.2	
Aug 12	1	1	1	1	1	1	0	1	1	0	5	0	4	5	1	3	2	S	1	3	2	3	2	1	0	5	1.7	
Aug 13	1	1	0	0	0	1	0	1	5	9	5	5	1	1	2	2	S	5	5	2	2	3	6	3	0	9	2.6	
Aug 14	2	2	1	2	4	5	8	12	6	2	8	2	1	1	1	S	2	1	1	1	1	2	2	2	1	12	3.0	
Aug 15	3	4	2	1	2	4	7	8	4	5	4	2	0	0	S	1	1	1	1	1	2	2	5	4	0	8	2.8	
Aug 16	5	4	5	3	3	3	3	4	5	2	2	1	2	S	2	2	2	1	5	1	1	3	11	8	1	11	3.4	
Aug 17	20	8	8	16	4	8	17	8	4	9	5	4	S	2	2	3	2	3	0	4	3	3	2	2	0	20	6.0	
Aug 18	6	4	3	4	2	3	5	10	7	13	C	C	C	C	C	C	C	2	1	2	1	1	1	1	1	13	-	
Aug 19	1	1	4	3	2	1	2	5	2	S	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	5	1.6
Aug 20	1	2	3	3	3	3	3	3	3	S	6	4	4	4	4	5	2	2	2	3	2	2	2	1	1	6	2.9	
Aug 21	1	1	0	0	1	1	1	1	S	2	1	1	1	1	3	3	3	3	2	2	2	1	2	5	0	5	1.6	
Aug 22	4	6	2	4	5	3	2	S	3	1	1	1	1	3	3	2	1	1	1	1	2	2	3	1	1	6	2.3	
Aug 23	1	2	2	1	1	1	S	9	6	3	3	2	1	2	2	6	1	2	2	2	2	1	3	1	1	9	2.4	
Aug 24	1	1	1	2	1	S	4	5	3	5	3	2	1	1	1	1	1	2	1	1	2	2	2	2	1	5	2.0	
Aug 25	2	2	1	4	S	7	4	10	7	5	4	3	1	1	1	1	1	1	1	1	2	6	6	3	1	10	3.2	
Aug 26	2	2	1	S	3	2	1	3	5	3	3	3	1	1	1	1	1	1	1	1	1	1	1	2	1	5	1.8	
Aug 27	2	2	S	2	2	2	2	6	7	17	11	4	4	3	5	8	5	3	2	2	10	20	9	18	2	20	6.3	
Aug 28	6	S	22	19	17	14	24	26	19	8	6	1	6	10	12	10	11	12	7	3	4	7	4	1	1	24	10.6	
Aug 29	S	2	3	2	2	4	5	6	2	3	3	1	0	0	1	0	0	0	0	1	1	1	2	S	0	6	1.8	
Aug 30	5	5	5	6	8	14	13	17	14	11	8	4	1	1	0	0	1	1	1	3	3	3	S	6	0	17	5.6	
Aug 31	5	4	10	16	14	8	13	9	3	1	2	3	1	1	3	1	1	1	2	4	S	4	3	1	16	4.8		
Diurnal Maximum	20	12	22	19	17	14	24	20	19	17	11	5	6	10	12	10	11	12	18	23	10	20	11	18				
Diurnal Average	3.1	3.2	4.2	4.7	3.8	3.7	4.8	5.6	4.6	4.0	3.4	2.1	1.6	2.1	2.2	2.7	2.2	2.4	2.2	2.5	2.3	2.8	3.0	3.0				

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

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.

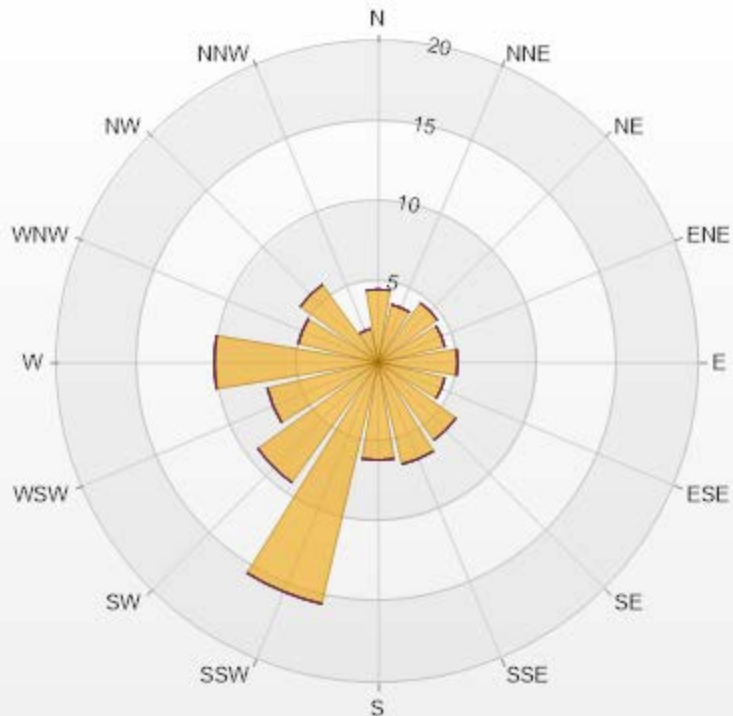
Timeseries Chart of Hourly Average for NOx - Tamarack Site





Wind: Tamarack Poll.: Tamarack-NOX[ppb] Monthly: 08-2022 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.76% Calm Avg: 0.00 [ppb]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	4.54	0	0	0	0	4.54
NNE	3.69	0	0	0	0	3.69
NE	4.54	0	0	0	0	4.54
ENE	4.26	0	0	0	0	4.26
E	4.96	0	0	0	0	4.96
ESE	4.26	0	0	0	0	4.26
SE	5.96	0	0	0	0	5.96
SSE	6.52	0	0	0	0	6.52
S	6.1	0	0	0	0	6.1
SSW	15.46	0	0	0	0	15.46
SW	9.22	0	0	0	0	9.22
WSW	7.09	0	0	0	0	7.09
W	10.21	0	0	0	0	10.21
WNW	5.11	0	0	0	0	5.11
NW	5.96	0	0	0	0	5.96
NNW	2.13	0	0	0	0	2.13
Summary	100	0	0	0	0	100




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% Icon Classes (ppb)

100  0-30

0  30-50

0  50-76

0  76-159

0  >159.0



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Tamarack Site - August 2022

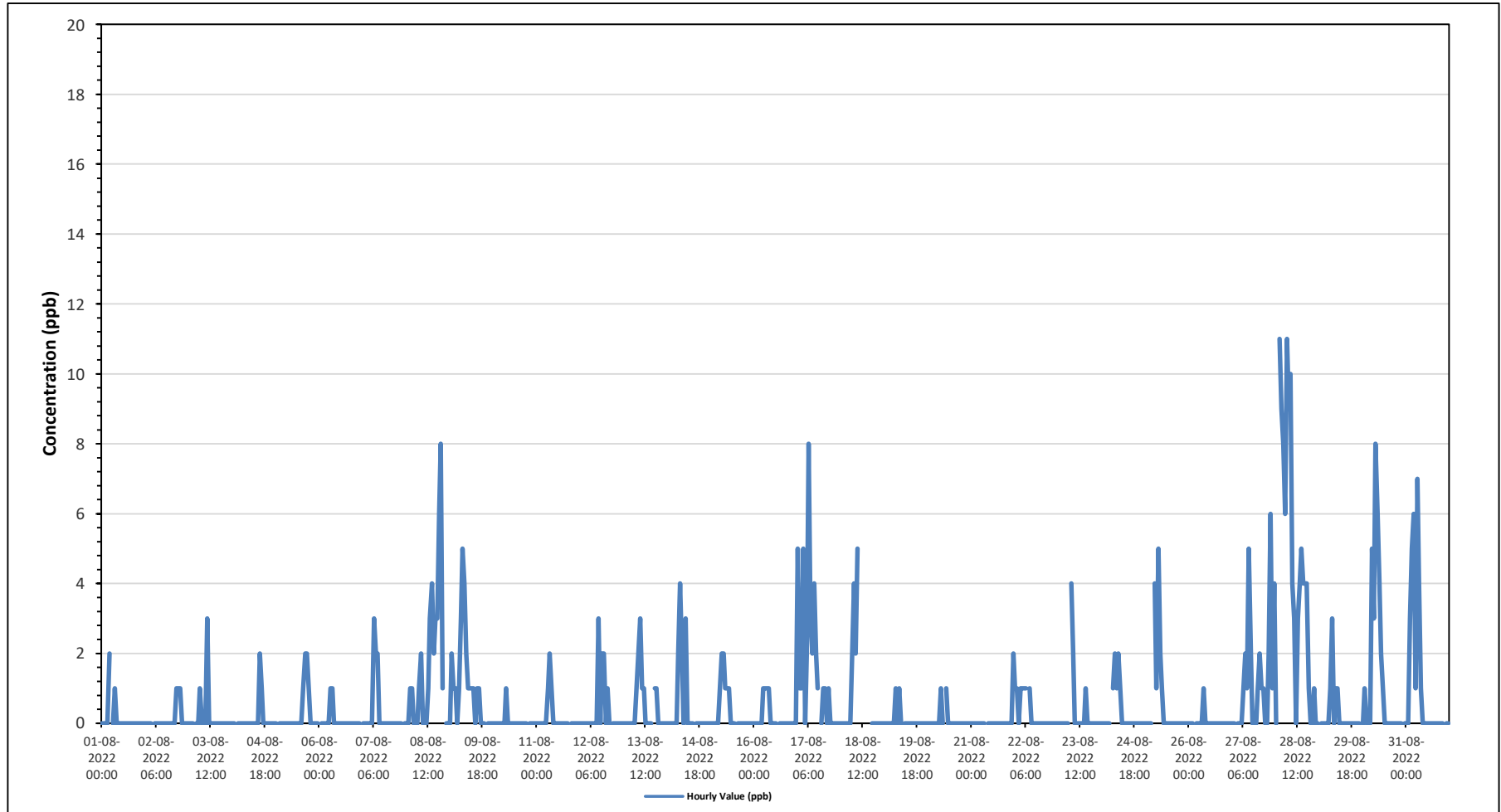
Summary of Hourly Averages

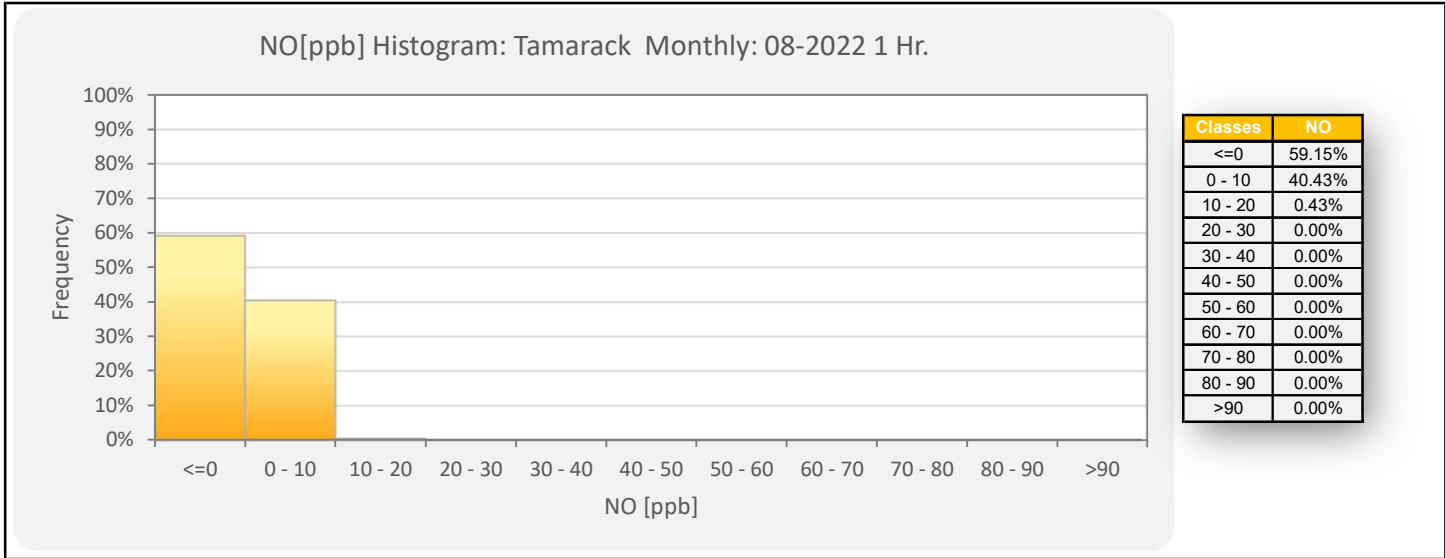
NITRIC OXIDE (NO) in ppb

Maximum Hourly Value:	11 ppb on August 28 at hour 2	Hours in Service:	744
Maximum Daily Value:	4.2 ppb on August 28	Hours of Data:	705
Minimum Hourly Value:	0 ppb on August 1 at hour 0	Hours of Missing Data:	0
Minimum Daily Value:	0.0 ppb on August 10	Hours of Calibration:	39
Monthly Average:	0.6 ppb	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		
Aug 1	0	0	0	0	2	S	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.1
Aug 2	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	0.1	
Aug 3	0	0	0	S	0	0	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0.2	
Aug 4	0	0	S	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	2	0.1	
Aug 5	0	S	0	0	0	0	0	0	0	0	0	0	0	0	1	2	2	1	0	0	0	0	0	0	0	0	2	0.3	
Aug 6	S	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	1	0.1	
Aug 7	0	0	0	0	0	0	3	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	3	0.3	
Aug 8	0	0	1	1	0	0	0	1	2	0	0	1	3	4	2	3	3	6	8	1	S	0	0	0	0	0	8	1.6	
Aug 9	0	2	1	1	0	1	3	5	4	2	1	1	1	1	0	1	1	0	0	0	S	0	0	0	0	0	5	1.1	
Aug 10	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	1	0.0	
Aug 11	0	0	0	0	0	0	1	2	1	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	2	0.2	
Aug 12	0	0	0	0	0	0	0	0	0	0	3	0	2	2	0	1	0	S	0	0	0	0	0	0	0	0	3	0.3	
Aug 13	0	0	0	0	0	0	0	1	2	3	1	1	0	0	0	0	S	1	1	0	0	0	0	0	0	0	3	0.4	
Aug 14	0	0	0	0	0	0	2	4	2	0	3	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	4	0.5	
Aug 15	0	0	0	0	0	1	2	2	1	1	1	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	2	0.3	
Aug 16	0	0	0	0	0	1	1	1	1	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2	
Aug 17	5	1	1	5	0	2	8	3	2	4	2	4	2	1	S	0	1	1	0	1	0	0	0	0	0	0	8	1.6	
Aug 18	0	0	0	0	0	0	2	4	2	5	C	C	C	C	C	C	C	0	0	0	0	0	0	0	0	0	5	-	
Aug 19	0	0	0	0	0	0	1	0	1	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	
Aug 20	0	0	0	0	0	0	0	1	0	S	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	
Aug 21	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	2	0.1		
Aug 22	1	1	0	1	1	1	1	S	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.3	
Aug 23	0	0	0	0	0	0	S	4	2	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	4	0.3	
Aug 24	0	0	0	0	0	S	1	2	1	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.3	
Aug 25	0	0	0	0	S	4	1	5	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0.6	
Aug 26	0	0	0	S	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	
Aug 27	0	0	S	0	0	0	0	1	2	1	5	2	0	0	0	1	2	1	1	0	0	2	6	1	4	0	6	1.3	
Aug 28	0	S	11	9	8	6	11	9	10	4	3	0	3	4	5	4	4	4	1	0	0	1	0	0	0	0	11	4.2	
Aug 29	S	0	0	0	0	0	1	3	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	3	0.3	
Aug 30	0	1	0	0	0	5	3	8	6	4	2	1	0	0	0	0	0	0	0	0	0	0	0	0	S	0	8	1.3	
Aug 31	0	0	3	5	6	1	7	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	7	1.2	
Diurnal Maximum	5	2	11	9	8	6	11	9	10	5	3	1	3	4	5	4	4	4	6	8	2	6	1	4					
Diurnal Average	0.2	0.2	0.6	0.8	0.6	0.8	1.7	2.2	1.5	1.1	0.8	0.1	0.2	0.3	0.4	0.5	0.4	0.4	0.3	0.3	0.1	0.2	0.0	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.																													

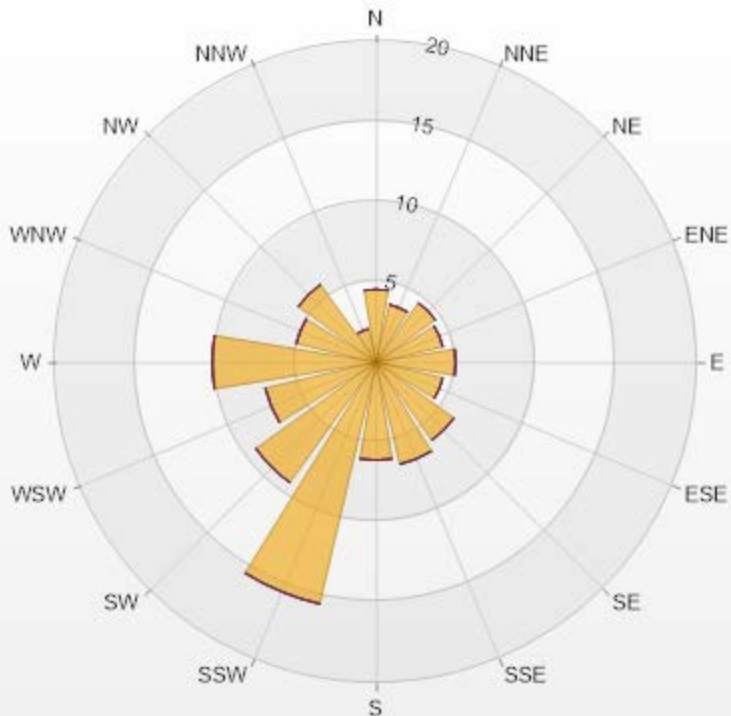
Timeseries Chart of Hourly Average for NO - Tamarack Site





Wind: Tamarack Poll.: Tamarack-NO[ppb] Monthly: 08-2022 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.76% Calm Avg: 0.00 [ppb]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	4.54	0	0	0	0	4.54
NNE	3.69	0	0	0	0	3.69
NE	4.54	0	0	0	0	4.54
ENE	4.26	0	0	0	0	4.26
E	4.96	0	0	0	0	4.96
ESE	4.26	0	0	0	0	4.26
SE	5.96	0	0	0	0	5.96
SSE	6.52	0	0	0	0	6.52
S	6.1	0	0	0	0	6.1
SSW	15.46	0	0	0	0	15.46
SW	9.22	0	0	0	0	9.22
WSW	7.09	0	0	0	0	7.09
W	10.21	0	0	0	0	10.21
WNW	5.11	0	0	0	0	5.11
NW	5.96	0	0	0	0	5.96
NNW	2.13	0	0	0	0	2.13
Summary	100	0	0	0	0	100



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% Icon Classes (ppb)	100	0-30	0	30-50	0	50-76	0	76-159	0	>159.0
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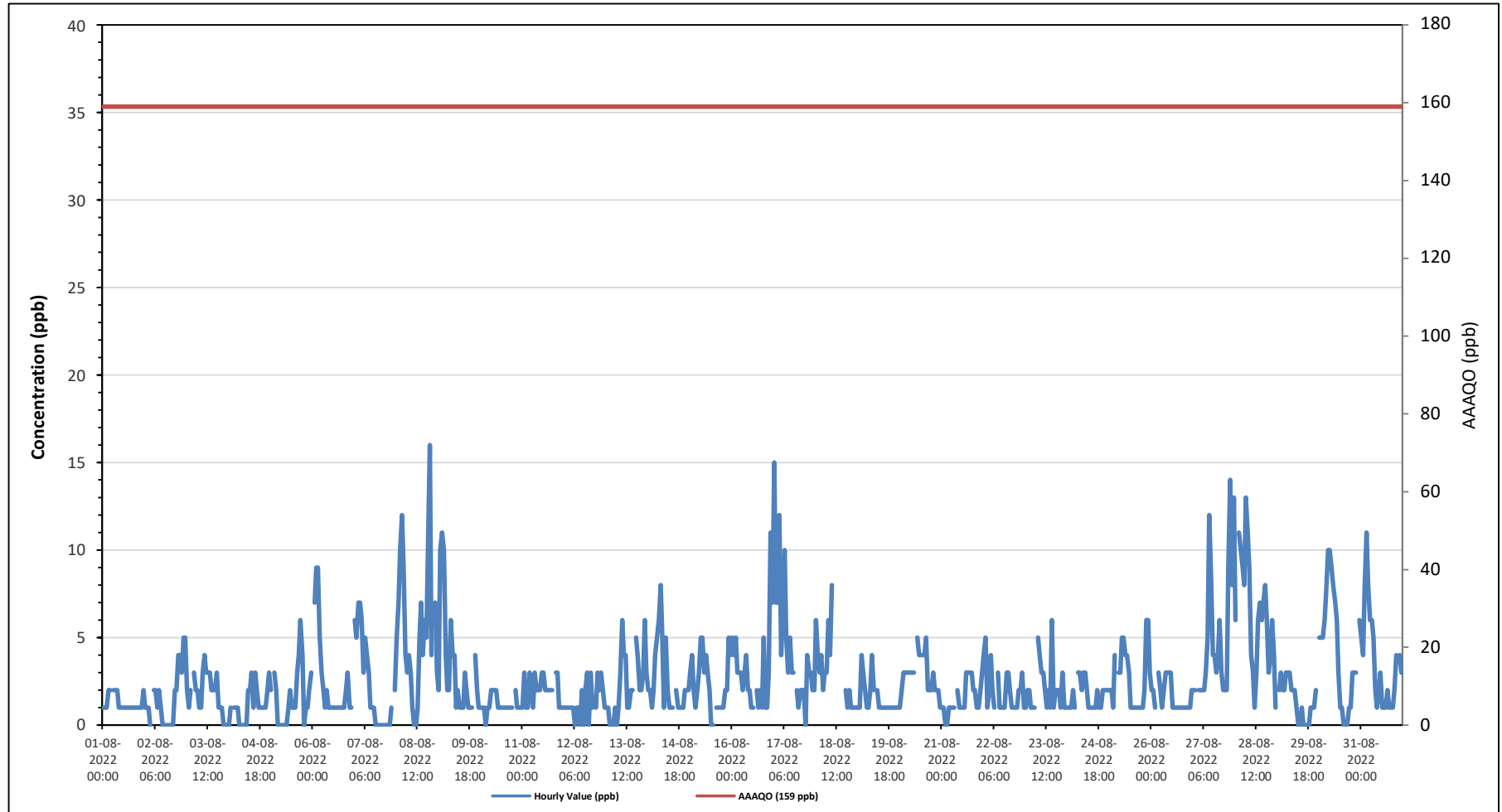
Tamarack Site - August 2022

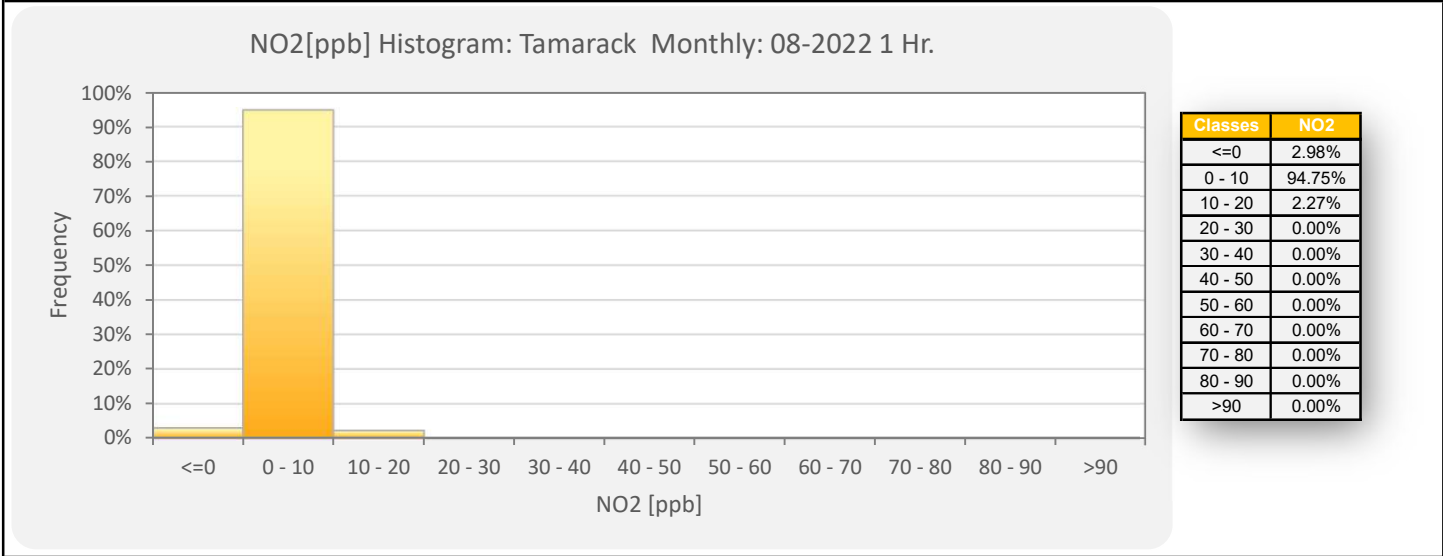
Summary of Hourly Averages

NITROGEN DIOXIDE (NO₂) in ppb

Alberta Ambient Air Quality Objectives (AAAQO): 1-Hour 159 ppb																														
Number of 1-Hour Exceedances: 0																														
Maximum Hourly Value: 16 ppb on August 8 at hour 19												Hours in Service: 744																		
Maximum Daily Value: 6.3 ppb on August 28												Hours of Data: 705																		
Minimum Hourly Value: 0 ppb on August 2 at hour 3												Hours of Missing Data: 0																		
Minimum Daily Value: 1.2 ppb on August 4												Hours of Calibration: 39																		
Monthly Average: 2.6 ppb												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			
Aug 1	1	1	1	2	2	S	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	2	1	2	1	1	1.3
Aug 2	1	1	1	0	S	2	2	1	2	1	0	0	0	0	0	0	0	0	2	2	4	4	3	5	5	0	5	1.6		
Aug 3	2	1	2	S	3	2	2	1	1	3	4	3	3	3	2	2	2	3	1	1	1	0	0	0	0	4	1.8			
Aug 4	0	1	S	1	1	1	0	0	0	0	0	2	2	3	1	3	2	1	1	1	1	1	2	3	0	3	1.2			
Aug 5	2	S	3	2	0	0	0	0	0	1	2	1	1	1	3	4	6	4	0	1	1	2	3	0	6	1.6				
Aug 6	S	7	9	9	5	3	2	1	2	1	1	1	1	1	1	1	1	1	2	3	1	1	S	1	9	2.5				
Aug 7	6	5	7	7	6	3	5	4	3	1	1	1	0	0	0	0	0	0	0	0	0	1	S	2	0	7	2.3			
Aug 8	5	7	10	12	9	4	3	4	3	1	0	0	1	5	7	4	6	5	11	16	4	S	7	3	0	16	5.5			
Aug 9	2	10	11	10	4	2	2	6	4	4	1	2	1	1	1	3	2	1	1	1	S	4	2	1	1	11	3.3			
Aug 10	1	1	1	0	1	1	2	2	2	2	1	1	1	1	1	1	1	1	1	S	2	1	1	1	0	2	1.2			
Aug 11	1	3	1	1	3	2	1	3	2	2	2	3	3	2	2	2	2	S	S	3	3	1	1	1	1	3	2.0			
Aug 12	1	1	1	1	1	0	1	1	0	2	0	2	3	0	3	1	S	1	3	2	3	2	1	0	3	1.3				
Aug 13	1	1	0	0	0	1	0	1	3	6	4	4	1	1	2	2	S	5	4	2	2	3	6	3	0	6	2.3			
Aug 14	2	2	1	2	4	5	6	8	5	1	5	2	1	1	1	S	2	1	1	1	1	2	2	2	1	8	2.5			
Aug 15	3	4	2	1	2	3	5	5	3	4	3	2	0	0	S	1	1	1	1	1	1	2	2	5	4	0	5	2.4		
Aug 16	5	4	5	3	3	3	2	3	4	2	2	1	1	S	2	1	2	1	5	1	2	3	11	7	1	11	3.1			
Aug 17	15	7	7	12	4	7	10	5	3	5	3	3	S	2	1	2	2	2	0	4	3	3	2	2	0	15	4.5			
Aug 18	6	4	3	4	2	3	3	6	4	8	C	C	C	C	C	C	C	2	1	2	1	1	1	1	1	8	-			
Aug 19	1	1	4	3	2	1	1	2	4	2	S	2	1	1	1	1	1	1	1	1	1	1	1	1	1	4	1.5			
Aug 20	1	2	3	3	3	3	3	3	3	S	5	4	4	4	4	5	2	2	2	3	2	2	2	1	1	5	2.9			
Aug 21	1	1	0	0	1	1	1	1	S	2	1	1	1	1	3	3	3	3	3	2	2	1	2	3	0	3	1.5			
Aug 22	4	5	1	2	4	2	1	S	3	1	1	1	1	3	3	2	1	1	1	1	2	2	3	1	1	5	2.0			
Aug 23	1	2	2	1	1	1	S	5	4	3	3	2	1	2	1	6	1	2	2	2	1	3	1	1	1	6	2.1			
Aug 24	1	1	1	2	1	S	3	3	2	3	3	2	1	1	1	1	2	1	1	2	2	2	2	2	1	3	1.7			
Aug 25	2	2	1	4	S	3	3	5	5	4	4	3	1	1	1	1	1	1	1	1	2	6	6	3	1	6	2.7			
Aug 26	2	2	1	S	3	2	1	2	3	3	3	3	1	1	1	1	1	1	1	1	1	1	1	2	1	3	1.7			
Aug 27	2	2	S	2	2	2	2	3	5	12	9	4	4	3	4	6	3	2	2	2	9	14	8	13	2	14	5.0			
Aug 28	6	S	11	10	9	8	13	11	9	4	3	1	3	6	7	6	7	8	6	3	4	6	4	1	1	13	6.3			
Aug 29	S	2	3	2	2	3	3	3	2	2	2	1	0	0	1	0	0	0	0	1	1	1	2	S	0	3	1.4			
Aug 30	5	5	5	6	8	10	10	9	8	7	6	3	1	1	0	0	1	1	3	3	3	S	6	0	10	4.4				
Aug 31	5	4	8	11	8	6	6	5	2	1	2	3	1	1	2	1	1	2	4	S	4	3	1	11	11	3.6				
Diurnal Maximum	15	10	11	12	9	10	13	11	9	12	9	4	4	6	7	6	7	8	11	16	9	14	11	13						
Diurnal Average	2.9	3.1	3.6	3.9	3.2	2.9	3.1	3.5	3.1	2.9	2.5	1.9	1.3	1.7	1.8	2.2	1.8	2.0	1.9	2.2	2.2	2.5	3.0	2.7						
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.																														

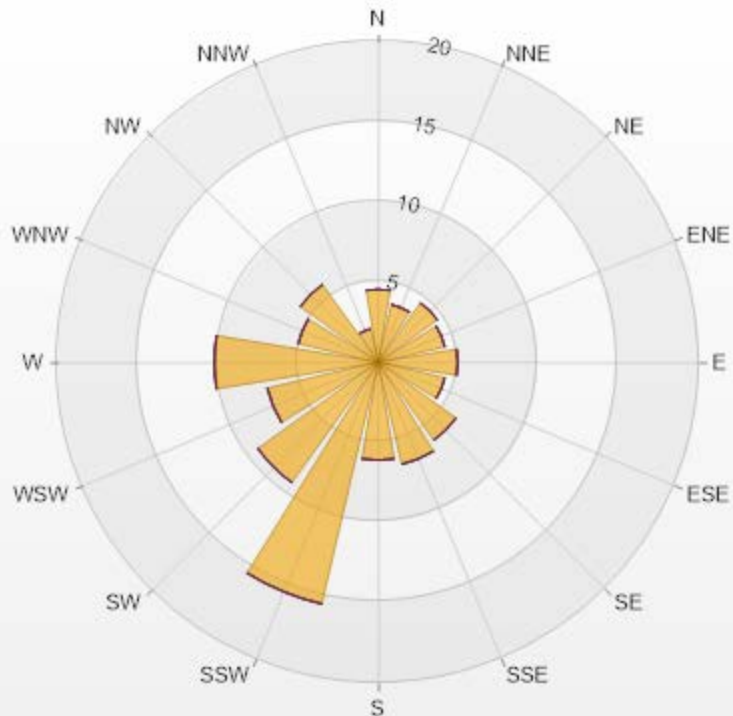
Timeseries Chart of Hourly Average for NO2 - Tamarack Site





Wind: Tamarack Poll.: Tamarack-NO2[ppb] Monthly: 08-2022 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.76% Calm Avg: 0.00 [ppb]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	4.54	0	0	0	0	4.54
NNE	3.69	0	0	0	0	3.69
NE	4.54	0	0	0	0	4.54
ENE	4.26	0	0	0	0	4.26
E	4.96	0	0	0	0	4.96
ESE	4.26	0	0	0	0	4.26
SE	5.96	0	0	0	0	5.96
SSE	6.52	0	0	0	0	6.52
S	6.1	0	0	0	0	6.1
SSW	15.46	0	0	0	0	15.46
SW	9.22	0	0	0	0	9.22
WSW	7.09	0	0	0	0	7.09
W	10.21	0	0	0	0	10.21
WNW	5.11	0	0	0	0	5.11
NW	5.96	0	0	0	0	5.96
NNW	2.13	0	0	0	0	2.13
Summary	100	0	0	0	0	100




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% Icon Classes (ppb)

100  0-30

0  30-50

0  50-76

0  76-159

0  >159.0



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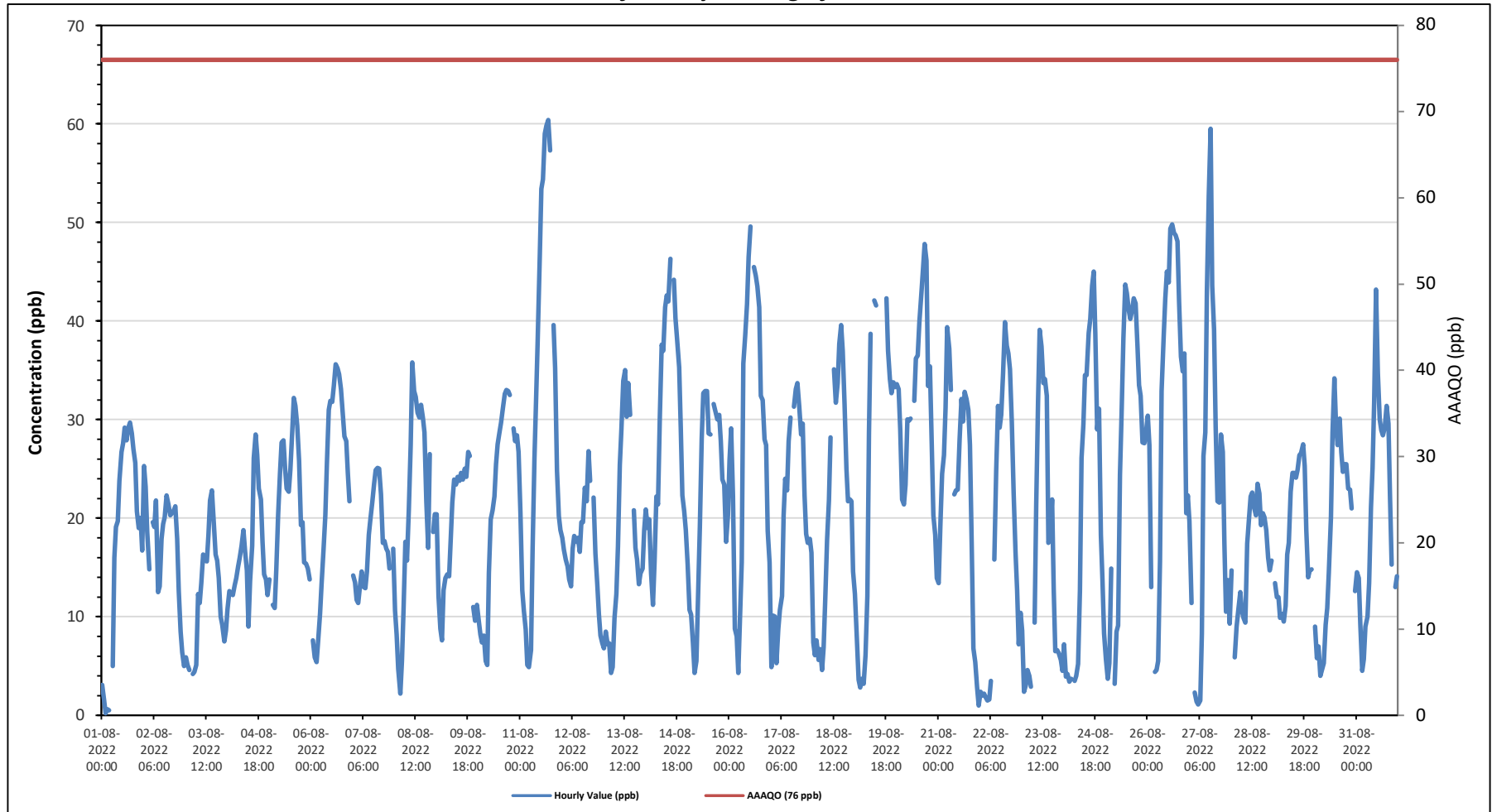
Tamarack Site - August 2022

Summary of Hourly Averages

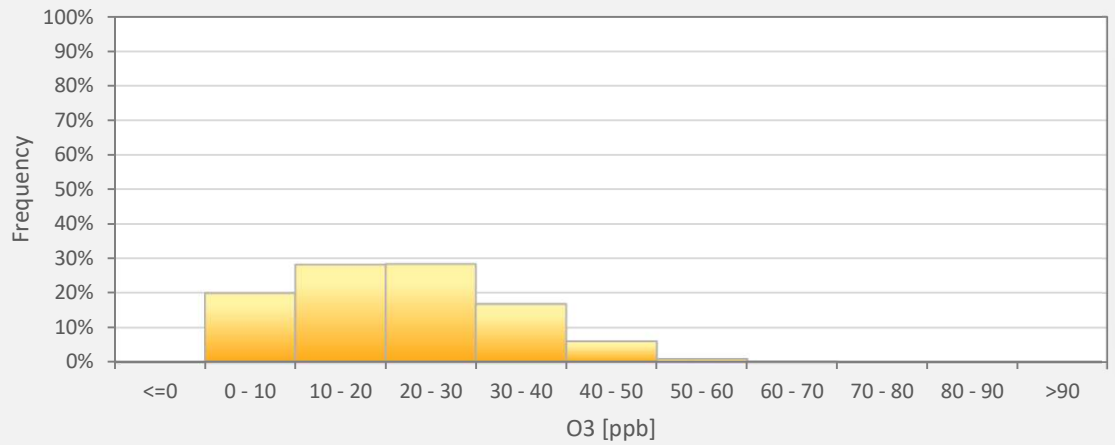
OZONE (O₃) in ppb

Alberta Ambient Air Quality Objectives (AAAQO): 1-Hour 76 ppb																																								
Number of 1-Hour Exceedances: 0																																								
Maximum Hourly Value: 60.4 ppb on August 11 at hour 16												Hours in Service: 744																												
Maximum Daily Value: 32.2 ppb on August 26												Hours of Data: 706																												
Minimum Hourly Value: 0.2 ppb on August 1 at hour 2												Hours of Missing Data: 0																												
Minimum Daily Value: 12.1 ppb on August 3												Hours of Calibration: 38																												
Monthly Average: 21.4 ppb												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																
Aug 1	3.1	1.6	0.2	0.6	0.5	S	5	16	19.1	19.7	23.8	26.7	27.6	29.2	27.9	29.1	29.7	28.6	27	25.6	20.7	19	20	16.7	0.2	29.7	18.1													
Aug 2	25.3	23.2	18.6	14.8	S	19.6	19.1	21.8	12.5	13.1	17.9	19.4	20.1	22.3	21.4	20.3	20.5	20.7	21.2	17.9	12.6	8.5	6.4	5	5.0	25.3	17.5													
Aug 3	5.9	5.1	4.6	S	4.2	4.4	5.1	12.3	11.4	13.4	16.3	15.7	15.6	18.3	21.8	22.8	19.6	16.3	15.7	13.9	10	9.2	7.5	8.6	4.2	22.8	12.1													
Aug 4	10.8	12.6	S	12.2	13.2	13.9	15.1	16	17.2	18.8	16.7	14.7	9	13.6	17.2	26.1	28.5	26.4	23	21.9	17.6	14.3	13.8	12.2	9.0	28.5	16.7													
Aug 5	13.8	S	11.2	10.9	14.8	20.4	24.6	27.7	27.9	25.1	23	22.7	24.9	28.7	32.2	31.4	29.4	25.8	19.3	19.6	15.5	15.4	14.9	13.8	10.9	32.2	21.4													
Aug 6	S	7.6	5.9	5.4	7.6	10.3	13.4	16.7	20.3	25.6	31	31.9	31.8	33.4	35.6	35.2	34.6	33.1	30.9	28.3	27.8	24.5	21.7	S	5.4	35.6	23.3													
Aug 7	14.2	13.5	11.7	11.4	13.2	14.6	13	12.9	14.6	18.3	19.9	21.6	23.5	24.9	25.1	25	22.4	17.5	17.7	16.9	16.6	14.9	S	16.9	11.4	25.1	17.4													
Aug 8	10.6	8.2	4.7	2.2	5.5	10.7	17.6	15.7	20.9	27.4	35.8	32.9	32.3	30.7	30.2	31.5	30.2	28.7	21.7	17	26.5	S	18.6	20.4	2.2	35.8	20.9													
Aug 9	20.4	12.1	8.8	7.6	12.7	13.9	14.3	14.1	17.8	21.6	23.9	23.4	24.2	23.8	24.6	23.9	25	24.2	26.7	26.3	S	11	9.6	11.2	7.6	26.7	18.3													
Aug 10	9.8	8.2	7.4	8.1	5.5	5.1	14.4	19.9	20.8	22.2	25.5	27.5	28.7	29.7	31.4	32.6	33	32.9	32.5	S	29.1	27.8	28.4	26.7	5.1	33.0	22.1													
Aug 11	20.6	12.7	10.6	8.7	5.1	4.9	6.6	16.9	26.1	31.9	37.9	46.5	53.4	54.4	59	59.8	60.4	57.3	S	39.6	35.2	24.8	20.2	18.8	4.9	60.4	30.9													
Aug 12	18	16.8	15.8	15.1	13.8	13.1	16.9	18.2	17.6	18	16.6	19.6	19.6	23.1	21.7	26.8	23.8	S	22.1	16.4	13.3	10.3	8.1	7.3	7.3	26.8	17.0													
Aug 13	6.8	8.5	7.2	7.3	4.3	4.9	9.9	12.3	17.1	25.4	29	33.9	35	30.3	33.7	30.5	S	20.8	17	15.8	13.3	14.4	14.9	18.8	4.3	35.0	17.9													
Aug 14	20.9	19	19.9	14.4	11.2	15.5	22.2	21.4	30.3	37.6	37	41.4	42.6	42	46.3	S	44.2	40.3	38.2	35.3	29.1	22.3	20.7	18.8	11.2	46.3	29.2													
Aug 15	15.3	10.7	10.2	7.3	4.3	5.5	12.9	19.1	28.1	32.7	32.9	32.9	28.6	28.5	S	31.6	30.8	30	30.5	27.8	23.9	23.4	17.6	20.3	4.3	32.9	22.0													
Aug 16	25.9	29.1	22.2	8.8	8	4.3	9.5	15.5	35.7	38.5	41.7	46.5	49.6	S	45.5	44.6	43.5	41.4	32.4	32	28	27.4	18.7	15.5	4.3	49.6	28.9													
Aug 17	4.9	10.1	10	5.3	8.8	10.7	12.1	20.3	24	22.8	27.8	30.2	S	31.3	33.1	33.7	31.3	28.5	29.6	22.3	18.4	17.5	17.9	16.5	4.9	33.7	20.3													
Aug 18	7.4	6.1	7.6	5.6	6.7	4.6	6.9	11.7	17.8	21.8	28.2	S	35.1	31.7	33.7	37.7	39.6	37	31.5	25	21.7	21.9	21.7	14.6	4.6	39.6	20.7													
Aug 19	12.3	8	3.6	2.8	3.7	3.2	6.1	12.1	28.6	38.7	S	42.1	41.6	C	C	C	C	C	42.3	37	34.1	32.7	33.8	33.3	2.8	42.3	23.1													
Aug 20	33.6	33.1	29	21.9	21.4	23.4	30	29.9	30.1	S	31.9	36.2	36.5	39.8	42.9	45.3	47.8	46.1	33.4	35.4	27.3	20.3	18.3	13.9	13.9	47.8	31.6													
Aug 21	13.4	19.8	24.5	26.4	31.2	39.4	37.2	33	S	22.4	22.8	22.9	28	32.1	29.8	32.8	32.1	31	27.4	16.7	6.8	5.4	2.8	1	1.0	39.4	23.4													
Aug 22	2.4	2	2.2	1.8	1.5	1.6	3.5	S	15.8	24.8	31.4	29.2	30.5	34.7	39.9	37.5	36.7	35.1	29.7	22.4	16.5	12.7	7.2	10.4	1.5	39.9	18.7													
Aug 23	8.6	2.4	3.1	4.6	4	2.9	S	9.4	21.3	31.9	39.1	37.4	33.7	34.1	32.4	17.5	17.9	21.9	12.8	6.5	6.6	6.3	5.6	4.5	2.4	39.1	15.8													
Aug 24	7.2	3.9	4.2	3.4	3.7	S	3.5	4	5.2	12.7	26.1	29.5	34.5	34.5	38.8	40.2	43.6	45	38.7	29	31.1	18.3	13.7	8.3	3.4	45.0	20.8													
Aug 25	5.7	3.7	5.3	14.9	S	3.2	8.5	9.1	24.4	30.5	38.3	43.7	42.8	41.1	40.2	41.1	42.3	41.8	37.5	33.5	32.4	27.7	27.6	28.9	3.2	43.7	27.1													
Aug 26	30.4	27.4	13	S	4.4	4.6	5.5	15.6	32.9	38.5	42.3	45	43.9	49.4	49.8	48.9	48.7	48.1	42	36.4	34.9	36.7	20.5	22.3	4.4	49.8	32.2													
Aug 27	19.7	11.4	S	2.3	1.4	1.1	1.5	8.3	26.3	28.7	43	52.7	59.5	43.6	39.1	29.3	21.7	21.6	28.5	26.7	17.4	10.5	13.7	9.3	1.1	59.5	22.5													
Aug 28	14.7	S	5.9	9	10.8	12.5	10.6	9.9	9.4	17.4	20	22.2	22.6	21.1	20.3	23.5	22.5	19.3	20.5	20.1	18.8	16	14.7	15.7	5.9	23.5	16.4													
Aug 29	S	13.4	12	12	9.9	10.3	9.5	11.1	16.3	17.5	22.7	24.6	24.6	24.1	24.9	26.4	26.6	27.5	25.3	18.8	14	14.7	14.8	S	9.5	27.5	18.2													
Aug 30	9	5.8	7	4	4.7	5.3	9.2	10.9	14.5	20.1	28.7	34.2	29.5	27.4	30.1	26.7	24.7	25.5	25.5	23	22.9	21	S	12.6	4.0	34.2	18.4													
Aug 31	14.5	13.9	9.1	4.5	5.7	9	10	13.4	21.1	25.1	31.7	43.2	34.7	30	28.9	28.4	29.2	31.4	29.6	22	15.3	S	13	14.1	4.5	43.2	20.8													
Diurnal Maximum	34	33	29	26	31	39	37	33	36	39	43	53	60	54	59	60	60	57	42	40	35	37	34	33																
Diurnal Average	14.0	12.1	10.2	8.7	8.3	10.1	12.5	15.8	20.8	24.7	28.8	31.7	32.1	31.3	33.0	32.4	32.4	31.2	27.7	24.3	21.2	18.2	16.1	15.0																
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 - Tamarack Site



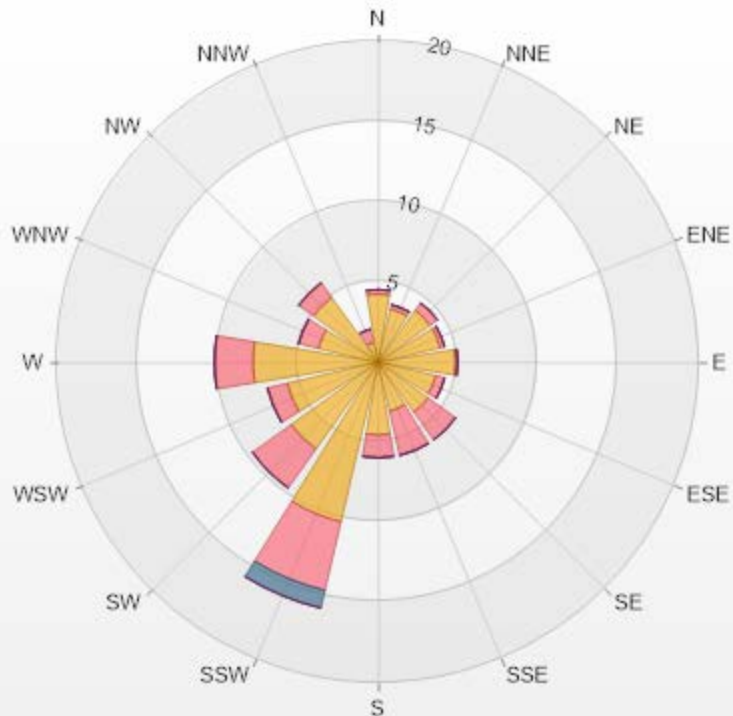
O3[ppb] Histogram: Tamarack Monthly: 08-2022 1 Hr.



Classes	O3
<=0	0.00%
0 - 10	19.83%
10 - 20	28.05%
20 - 30	28.19%
30 - 40	16.71%
40 - 50	6.09%
50 - 60	0.99%
60 - 70	0.14%
70 - 80	0.00%
80 - 90	0.00%
>90	0.00%

Wind: Tamarack Poll.: Tamarack-O3[ppb] Monthly: 08-2022 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.89% Calm Avg: 0.00 [ppb]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	4.25	0.28	0	0	0	4.53
NNE	3.4	0.28	0	0	0	3.68
NE	3.97	0.57	0	0	0	4.54
ENE	3.97	0.28	0	0	0	4.25
E	4.82	0.14	0	0	0	4.96
ESE	3.68	0.57	0	0	0	4.25
SE	3.82	2.12	0	0	0	5.94
SSE	3.12	2.83	0	0	0	5.95
S	4.53	1.42	0	0	0	5.95
SSW	10.2	4.39	1.13	0	0	15.72
SW	6.66	2.97	0	0	0	9.63
WSW	5.81	1.27	0	0	0	7.08
W	7.79	2.41	0	0	0	10.2
WNW	3.82	1.27	0	0	0	5.09
NW	4.96	1.13	0	0	0	6.09
NNW	1.27	0.85	0	0	0	2.12
Summary	76.07	22.78	1.13	0	0	100



LICA-202208

% Icon Classes (ppb)

76 0-30

23 30-50

1 50-76

0 76-159

0 >159.0



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Tamarack Site - August 2022

Summary of Hourly Averages

TOTAL HYDROCARBONS (THC) in ppm

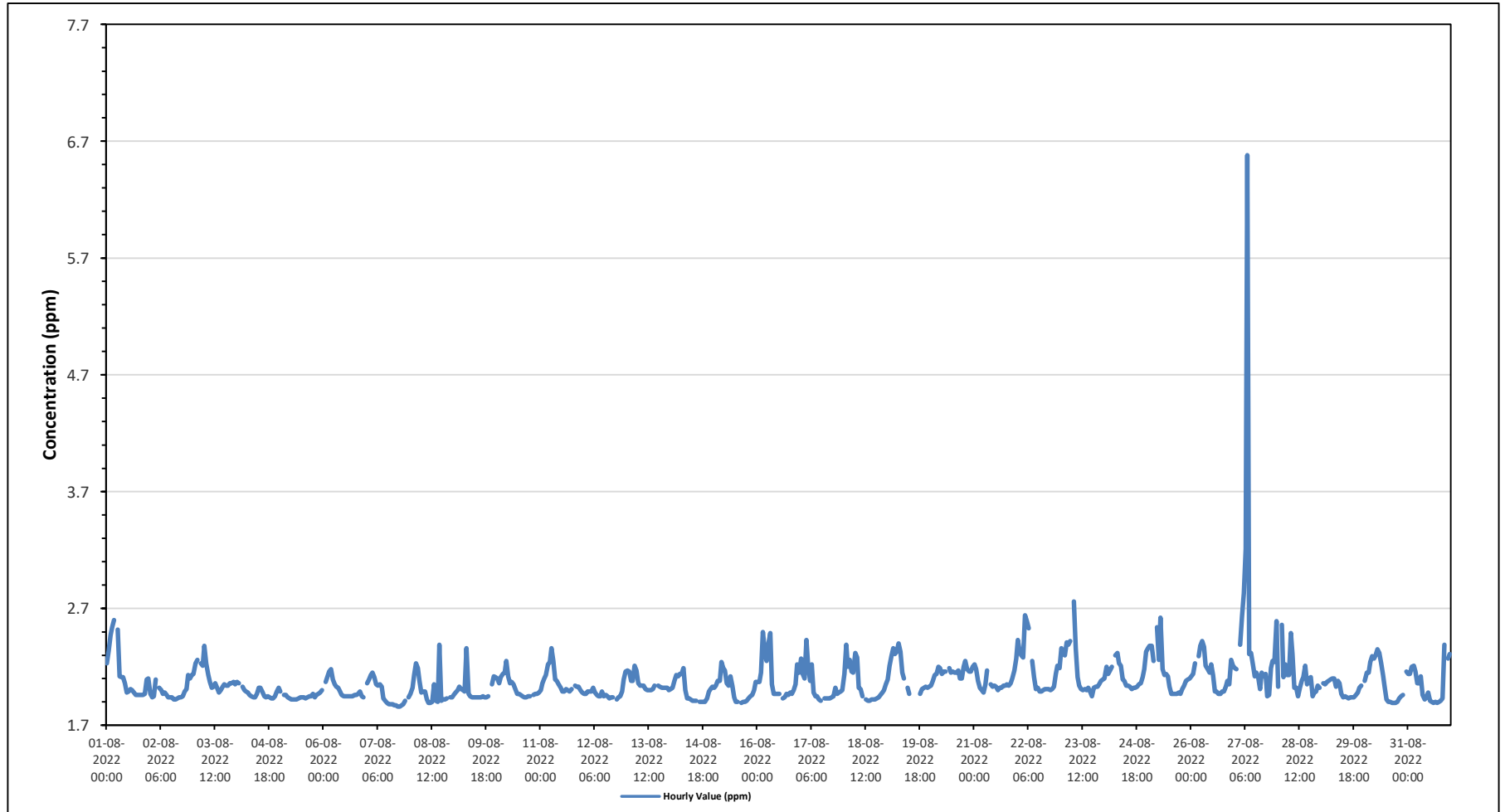
Maximum Hourly Value:	6.58 ppm on August 27 at hour 7	Hours in Service:	744
Maximum Daily Value:	2.47 ppm on August 27	Hours of Data:	706
Minimum Hourly Value:	1.86 ppm on August 7 at hour 17	Hours of Missing Data:	0
Minimum Daily Value:	1.95 ppm on August 5	Hours of Calibration:	38
Monthly Average:	2.07 ppm	Operational Uptime:	100.0

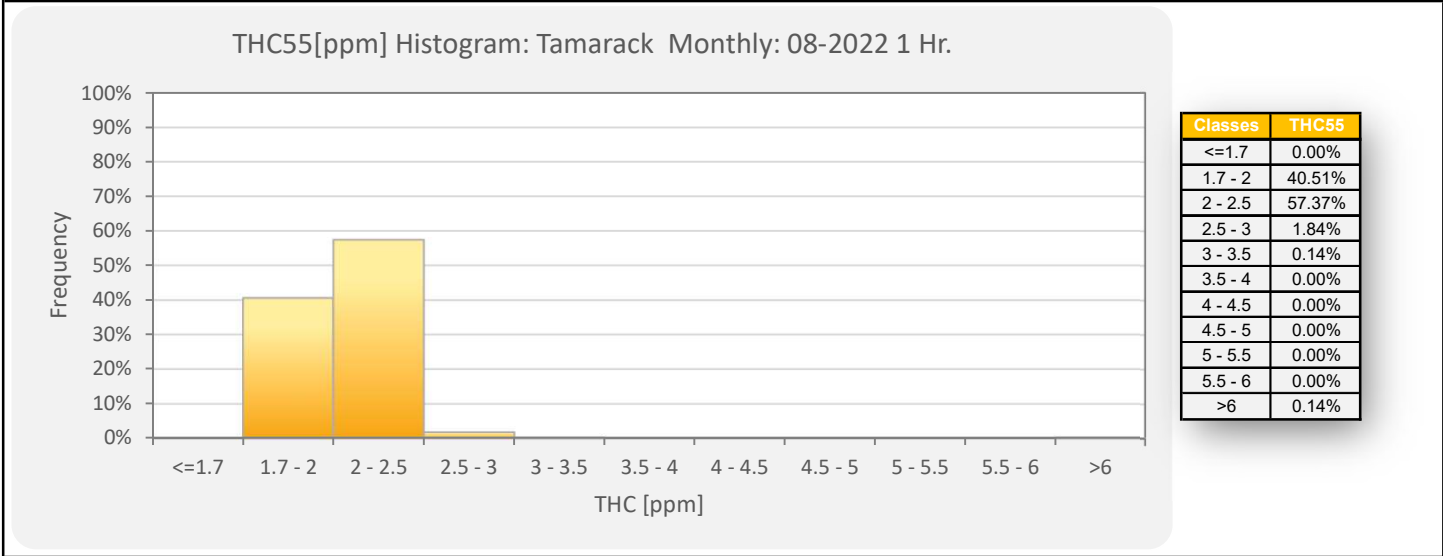
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average			
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23		
Aug 1	2.23	2.34	2.47	2.54	2.60	S	2.52	2.12	2.11	2.11	2.06	1.98	1.99	2.01	2.00	1.98	1.96	1.96	1.96	1.96	1.96	1.97	2.09	2.10	1.96	2.60	2.13		
Aug 2	1.97	1.94	1.95	2.09	S	2.02	2.00	1.97	1.98	1.96	1.94	1.94	1.94	1.92	1.92	1.93	1.94	1.94	1.95	1.99	2.01	2.13	2.10	2.13	1.92	2.13	1.99		
Aug 3	2.14	2.23	2.26	S	2.23	2.21	2.38	2.23	2.13	2.07	2.02	2.03	2.06	2.02	1.98	2.00	2.03	2.05	2.04	2.04	2.06	2.06	2.07	2.05	1.98	2.38	2.10		
Aug 4	2.07	2.06	S	2.03	2.00	1.99	1.98	1.96	1.95	1.94	1.94	1.97	2.02	2.02	1.99	1.95	1.94	1.95	1.94	1.93	1.93	1.95	1.99	2.02	1.93	2.07	1.98		
Aug 5	1.99	S	1.96	1.96	1.94	1.93	1.92	1.92	1.92	1.92	1.93	1.94	1.94	1.94	1.93	1.94	1.95	1.95	1.97	1.94	1.96	1.97	1.98	2.00	1.92	2.00	1.95		
Aug 6	S	2.07	2.11	2.16	2.18	2.09	2.05	2.03	2.02	1.99	1.96	1.95	1.95	1.95	1.95	1.95	1.95	1.96	1.96	1.97	1.99	1.95	1.94	S	1.94	2.18	2.01		
Aug 7	2.06	2.09	2.13	2.15	2.11	2.05	2.04	2.05	2.03	1.93	1.91	1.89	1.88	1.88	1.88	1.87	1.87	1.86	1.86	1.87	1.88	1.91	S	1.94	1.86	2.15	1.96		
Aug 8	1.97	2.02	2.13	2.23	2.19	2.08	1.98	1.99	1.99	1.92	1.89	1.89	1.90	2.05	1.91	1.90	2.39	1.91	1.92	1.92	1.93	S	1.94	1.94	1.89	2.39	2.00		
Aug 9	1.96	1.98	2.00	2.03	2.01	2.00	1.99	2.36	1.97	1.95	1.94	1.94	1.94	1.94	1.94	1.95	1.94	1.94	1.94	1.95	S	2.05	2.12	2.11	1.94	2.36	2.00		
Aug 10	2.10	2.06	2.11	2.14	2.15	2.25	2.12	2.06	2.07	2.05	2.01	1.97	1.97	1.96	1.95	1.94	1.94	1.95	1.95	S	1.96	1.97	1.97	1.98	1.94	2.25	2.03		
Aug 11	2.00	2.06	2.10	2.13	2.22	2.24	2.36	2.25	2.09	2.08	2.05	2.02	1.99	1.99	2.01	2.00	1.99	2.01	S	2.04	2.03	2.00	2.00	1.98	1.98	2.36	2.07		
Aug 12	1.97	1.97	1.99	1.99	1.99	2.02	1.98	1.96	1.95	1.95	1.95	1.99	1.95	1.96	1.95	1.93	1.94	1.94	S	1.92	1.94	1.95	2.09	2.09	1.92	2.16	1.98		
Aug 13	2.17	2.16	2.08	2.08	2.21	2.17	2.06	2.04	2.04	2.04	2.01	2.00	2.00	2.00	2.01	2.04	S	2.04	2.03	2.02	2.02	2.02	2.02	2.02	2.00	2.21	2.05		
Aug 14	2.01	2.02	2.08	2.13	2.12	2.14	2.14	2.19	2.00	1.93	1.93	1.92	1.91	1.91	1.91	S	1.90	1.90	1.90	1.90	1.90	1.93	1.99	2.01	2.03	1.90	2.19	2.00	
Aug 15	2.02	2.04	2.08	2.08	2.24	2.19	2.17	2.06	2.04	2.12	2.04	1.94	1.90	1.90	S	1.89	1.90	1.90	1.91	1.93	1.95	1.96	2.00	2.07	1.89	2.24	2.01		
Aug 16	2.07	2.07	2.15	2.50	2.32	2.25	2.40	2.49	2.05	1.97	1.97	1.97	1.97	S	1.93	1.94	1.97	1.96	1.98	1.97	2.00	2.05	2.22	2.15	1.93	2.50	2.10		
Aug 17	2.27	2.14	2.10	2.43	2.22	2.08	2.22	1.98	1.95	1.95	1.92	1.91	S	1.93	1.93	1.93	1.93	1.94	1.95	2.02	1.97	1.98	1.99	2.00	1.91	2.43	2.03		
Aug 18	2.14	2.39	2.20	2.26	2.16	2.15	2.32	2.28	2.02	2.01	1.95	S	1.92	1.91	1.91	1.92	1.92	1.92	1.93	1.94	1.96	1.98	2.00	2.05	1.91	2.39	2.05		
Aug 19	2.09	2.21	2.29	2.36	2.31	2.33	2.40	2.33	2.15	2.10	S	2.02	1.97	C	C	C	C	C	1.97	2.01	2.02	2.03	2.02	2.03	1.97	2.40	2.15		
Aug 20	2.04	2.08	2.13	2.14	2.20	2.19	2.14	2.16	2.16	S	2.19	2.15	2.16	2.15	2.15	2.17	2.10	2.10	2.20	2.25	2.18	2.16	2.16	2.20	2.04	2.25	2.15		
Aug 21	2.22	2.18	2.08	2.02	2.00	1.98	2.05	2.17	S	2.05	2.03	2.04	2.03	2.00	2.02	2.02	2.04	2.04	2.05	2.04	2.06	2.10	2.17	2.27	1.98	2.27	2.07		
Aug 22	2.43	2.33	2.30	2.28	2.64	2.59	2.53	S	2.25	2.11	2.01	2.02	1.99	1.99	2.00	2.01	2.01	2.01	2.00	2.01	2.03	2.14	2.21	2.19	1.99	2.64	2.18		
Aug 23	2.36	2.32	2.30	2.41	2.39	2.42	S	2.76	2.36	2.11	2.04	2.01	2.00	2.01	2.00	2.01	2.00	2.02	1.99	1.95	2.02	2.03	2.03	2.05	2.08	2.09	1.95	2.76	2.16
Aug 24	2.10	2.20	2.14	2.17	2.20	S	2.30	2.32	2.23	2.21	2.09	2.08	2.04	2.04	2.03	2.01	2.02	2.02	2.03	2.05	2.06	2.11	2.18	2.33	2.01	2.33	2.13		
Aug 25	2.36	2.38	2.38	2.25	S	2.54	2.26	2.62	2.18	2.13	2.14	2.12	2.03	1.97	1.97	1.97	1.97	1.98	1.97	2.01	2.04	2.08	2.09	2.10	1.97	2.62	2.15		
Aug 26	2.12	2.14	2.23	S	2.29	2.38	2.42	2.37	2.21	2.18	2.15	2.22	2.13	1.99	1.99	1.97	1.97	1.99	1.99	2.03	2.08	2.05	2.26	2.21	1.97	2.42	2.15		
Aug 27	2.19	2.18	S	2.39	2.63	2.83	3.21	6.58	2.31	2.32	2.22	2.12	2.15	2.11	2.01	2.15	2.12	2.14	1.95	1.96	2.19	2.25	2.24	2.59	1.95	6.58	2.47		
Aug 28	2.03	S	2.56	2.11	2.22	2.13	2.13	2.49	2.31	2.02	2.02	1.95	2.02	2.08	2.11	2.21	2.05	2.09	2.11	1.95	1.98	1.99	2.04	2.02	1.95	2.56	2.11		
Aug 29	S	2.06	2.05	2.07	2.08	2.09	2.10	2.10	2.03	2.08	2.06	1.97	1.94	1.95	1.94	1.93	1.94	1.94	1.94	1.96	1.98	2.02	2.04	S	1.93	2.10	2.01		
Aug 30	2.08	2.15	2.15	2.24	2.29	2.27	2.30	2.35	2.32	2.23	2.13	2.03	1.92	1.90	1.90	1.89	1.89	1.89	1.90	1.93	1.95	1.96	S	2.16	1.89	2.35	2.08		
Aug 31	2.14	2.14	2.20	2.21	2.16	2.06	2.06	2.12	1.96	1.92	1.94	1.98	1.91	1.90	1.89	1.90	1.89	1.90	1.91	1.93	2.39	S	2.27	2.31	1.89	2.39	2.05		
Diurnal Maximum	2.43	2.39	2.56	2.54	2.64	2.83	3.21	6.58	2.36	2.32	2.22	2.22	2.16	2.15	2.21	2.39	2.14	2.20	2.25	2.39	2.25	2.27	2.59						
Diurnal Average	2.11	2.14	2.16	2.19	2.22	2.20	2.22	2.34	2.09	2.05	2.02	2.00	1.98	1.98	1.97	1.98	1.98	1.97	1.97	1.98	2.02	2.03	2.08	2.11					

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

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.

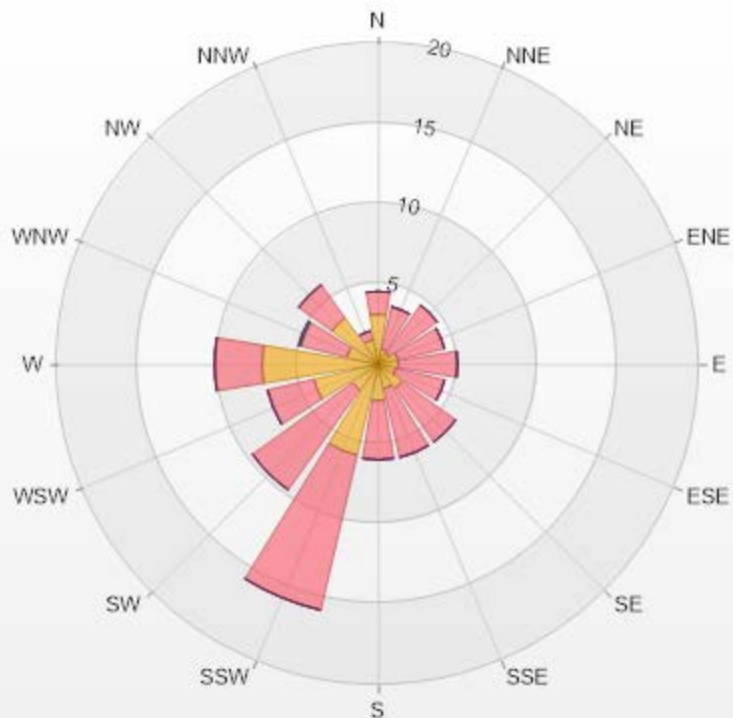
Timeseries Chart of Hourly Average for THC - Tamarack Site





Wind: Tamarack Poll.: Tamarack-THC55[ppm] Monthly: 08-2022 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.89% Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-40	>40.0	Total
N	3.12	1.42	0	0	0	4.54
NNE	0.99	2.69	0	0	0	3.68
NE	0.85	3.68	0	0	0	4.53
ENE	1.27	2.97	0	0	0	4.24
E	1.27	3.68	0	0	0	4.95
ESE	1.13	3.12	0	0	0	4.25
SE	1.84	4.11	0	0	0	5.95
SSE	1.56	4.39	0	0	0	5.95
S	2.27	3.68	0	0	0	5.95
SSW	5.81	9.92	0	0	0	15.73
SW	1.98	7.65	0	0	0	9.63
WSW	4.11	2.97	0	0	0	7.08
W	7.22	2.97	0	0	0	10.19
WNW	1.98	2.97	0.14	0	0	5.09
NW	3.54	2.55	0	0	0	6.09
NNW	1.56	0.57	0	0	0	2.13
Summary	40.5	59.34	0.14	0	0	100



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% Icon Classes (ppm)

41

0-2

59

2-5

0

5-10

0

10-40

0

>40.0



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Tamarack Site - August 2022

Summary of Hourly Averages

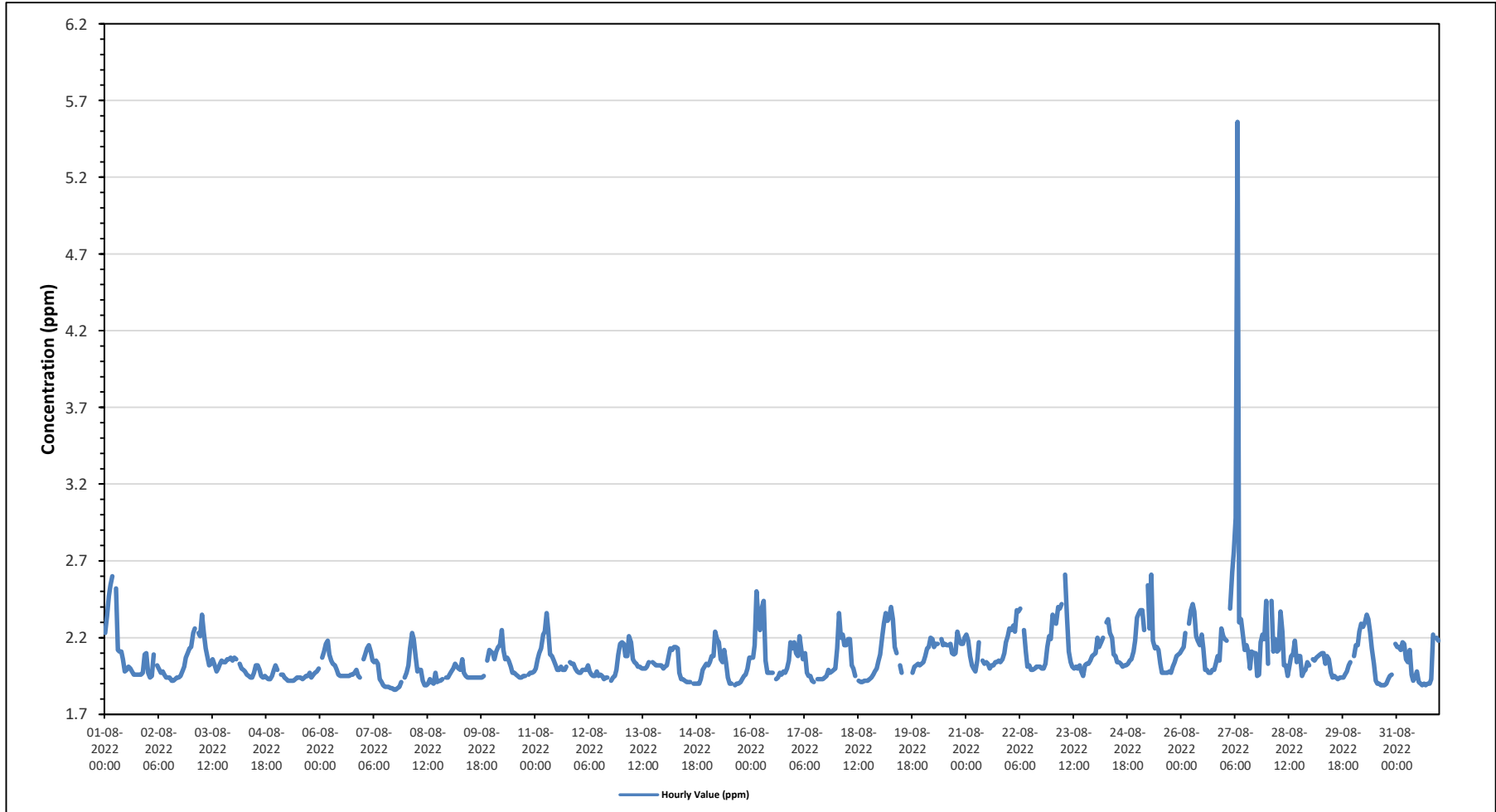
METHANE (CH4) in ppm

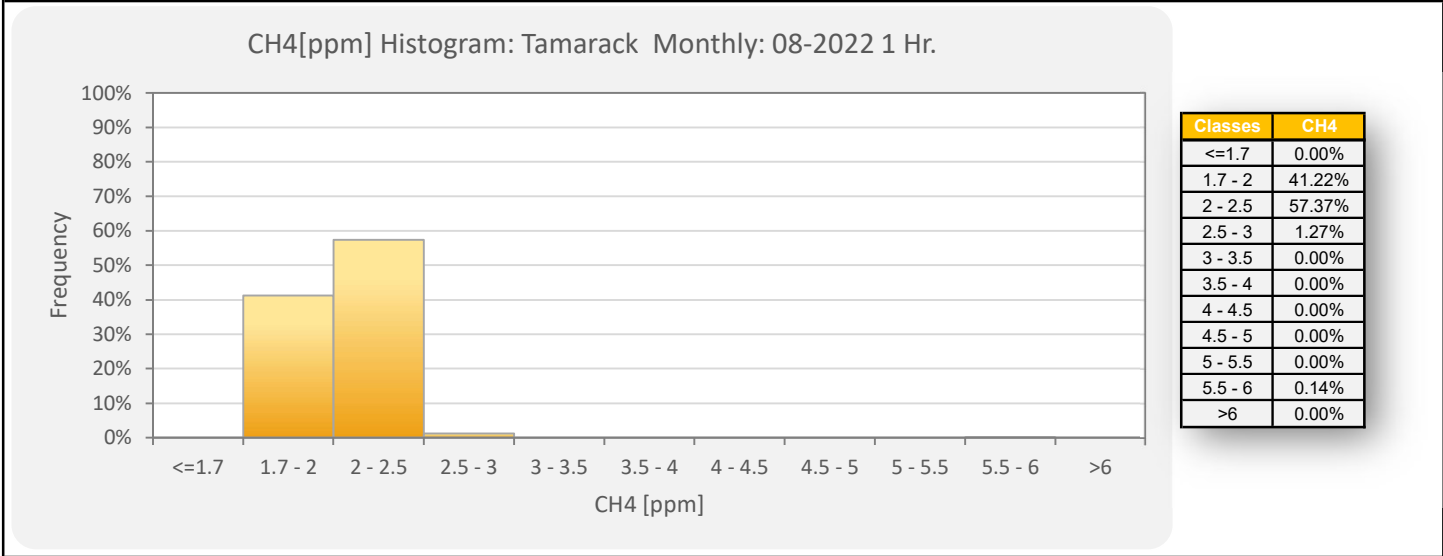
Maximum Hourly Value:	5.56 ppm on August 27 at hour 7	Hours in Service:	744
Maximum Daily Value:	2.40 ppm on August 27	Hours of Data:	706
Minimum Hourly Value:	1.86 ppm on August 7 at hour 17	Hours of Missing Data:	0
Minimum Daily Value:	1.95 ppm on August 5	Hours of Calibration:	38
Monthly Average:	2.07 ppm	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																
Aug 1	2.23	2.34	2.47	2.54	2.60	S	2.52	2.12	2.11	2.11	2.06	1.98	1.99	2.01	2.00	1.98	1.96	1.96	1.96	1.96	1.96	1.97	2.09	2.10	1.96	2.60	2.13																
Aug 2	1.97	1.94	1.95	2.09	S	2.02	2.00	1.97	1.98	1.96	1.94	1.94	1.94	1.92	1.92	1.93	1.94	1.94	1.95	1.98	2.01	2.07	2.10	2.13	1.92	2.13	1.98																
Aug 3	2.14	2.23	2.26	S	2.23	2.21	2.35	2.23	2.13	2.07	2.02	2.03	2.06	2.02	1.98	2.00	2.03	2.05	2.04	2.04	2.06	2.06	2.07	2.05	1.98	2.35	2.10																
Aug 4	2.07	2.06	S	2.03	2.00	1.99	1.98	1.96	1.95	1.94	1.94	1.97	2.02	2.02	1.99	1.95	1.94	1.95	1.94	1.93	1.93	1.95	1.99	2.02	1.93	2.07	1.98																
Aug 5	1.99	S	1.96	1.96	1.94	1.93	1.92	1.92	1.92	1.92	1.93	1.94	1.94	1.94	1.93	1.94	1.95	1.95	1.97	1.94	1.96	1.97	1.98	2.00	1.92	2.00	1.95																
Aug 6	S	2.07	2.11	2.16	2.18	2.09	2.05	2.03	2.02	1.99	1.96	1.95	1.95	1.95	1.95	1.95	1.95	1.96	1.96	1.97	1.99	1.95	1.94	S	1.94	2.18	2.01																
Aug 7	2.06	2.09	2.13	2.15	2.11	2.05	2.04	2.05	2.03	1.93	1.91	1.89	1.88	1.88	1.88	1.87	1.87	1.86	1.86	1.87	1.88	1.91	S	1.94	1.86	2.15	1.96																
Aug 8	1.97	2.02	2.13	2.23	2.19	2.08	1.98	1.99	1.99	1.92	1.89	1.89	1.90	1.93	1.91	1.90	1.97	1.91	1.92	1.92	1.93	S	1.94	1.94	1.89	2.23	1.98																
Aug 9	1.96	1.98	2.00	2.03	2.01	2.00	1.99	2.06	1.97	1.95	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.95	S	2.05	2.12	2.11	1.94	2.12	1.98																
Aug 10	2.10	2.06	2.11	2.14	2.15	2.25	2.12	2.06	2.07	2.05	2.01	1.97	1.97	1.96	1.95	1.94	1.94	1.95	1.95	S	1.96	1.97	1.97	1.98	1.94	2.25	2.03																
Aug 11	2.00	2.06	2.10	2.13	2.22	2.24	2.36	2.25	2.09	2.08	2.05	2.02	1.99	1.99	2.01	1.99	1.99	2.01	S	2.04	2.03	2.03	2.00	1.98	1.98	2.36	2.07																
Aug 12	1.97	1.97	1.99	1.99	1.99	2.02	1.98	1.96	1.95	1.95	1.98	1.95	1.96	1.95	1.93	1.94	1.94	S	1.92	1.94	1.95	1.99	2.09	2.16	1.92	2.16	1.98																
Aug 13	2.17	2.16	2.08	2.08	2.21	2.17	2.06	2.04	2.03	2.01	2.01	2.00	2.00	2.00	2.01	2.04	S	2.04	2.03	2.02	2.02	2.02	2.02	2.02	2.00	2.21	2.05																
Aug 14	2.01	2.02	2.08	2.13	2.12	2.14	2.14	2.13	1.97	1.93	1.93	1.92	1.91	1.91	1.91	S	1.90	1.90	1.90	1.90	1.90	1.93	1.99	2.01	2.03	1.90	2.14	1.99															
Aug 15	2.02	2.04	2.08	2.08	2.24	2.19	2.17	2.06	2.04	2.12	2.04	1.94	1.90	1.90	S	1.89	1.90	1.90	1.91	1.93	1.95	1.96	2.00	2.07	1.89	2.24	2.01																
Aug 16	2.07	2.07	2.15	2.50	2.32	2.25	2.40	2.44	2.05	1.97	1.97	1.97	1.97	S	1.93	1.94	1.97	1.96	1.98	1.97	2.00	2.05	2.17	2.13	1.93	2.50	2.10																
Aug 17	2.17	2.10	2.08	2.21	2.12	2.06	2.10	1.97	1.95	1.95	1.92	1.91	S	1.93	1.93	1.93	1.93	1.94	1.95	1.99	1.97	1.98	1.99	2.00	1.91	2.21	2.00																
Aug 18	2.13	2.36	2.20	2.22	2.15	2.15	2.19	2.19	2.02	2.00	1.95	S	1.92	1.91	1.91	1.92	1.92	1.92	1.93	1.94	1.96	1.98	2.00	2.05	1.91	2.36	2.04																
Aug 19	2.09	2.21	2.29	2.36	2.31	2.33	2.40	2.32	2.14	2.10	S	2.02	1.97	C	C	C	C	C	1.97	2.01	2.02	2.03	2.02	2.03	1.97	2.40	2.15																
Aug 20	2.04	2.08	2.13	2.14	2.20	2.19	2.14	2.16	2.16	S	2.19	2.15	2.16	2.15	2.15	2.16	2.10	2.09	2.10	2.24	2.18	2.16	2.16	2.20	2.04	2.24	2.15																
Aug 21	2.22	2.18	2.08	2.02	2.00	1.98	2.05	2.17	S	2.05	2.03	2.04	2.03	2.00	2.02	2.02	2.04	2.04	2.05	2.04	2.06	2.10	2.17	2.21	1.98	2.22	2.07																
Aug 22	2.26	2.25	2.28	2.24	2.38	2.37	2.39	S	2.25	2.11	2.01	2.02	1.99	1.99	2.00	2.01	2.01	2.01	2.00	2.00	2.03	2.14	2.21	2.19	1.99	2.39	2.14																
Aug 23	2.35	2.32	2.29	2.40	2.39	2.42	S	2.61	2.34	2.11	2.04	2.01	2.00	2.01	2.00	2.02	1.98	1.95	2.02	2.03	2.03	2.05	2.08	2.09	1.95	2.61	2.15																
Aug 24	2.10	2.20	2.14	2.17	2.20	S	2.30	2.32	2.23	2.20	2.09	2.08	2.04	2.04	2.03	2.01	2.02	2.02	2.03	2.05	2.06	2.11	2.18	2.33	2.01	2.33	2.13																
Aug 25	2.36	2.38	2.38	2.25	S	2.54	2.26	2.61	2.18	2.13	2.14	2.12	2.03	1.97	1.97	1.97	1.98	1.97	2.01	2.04	2.08	2.09	2.10	1.97	2.61	2.15																	
Aug 26	2.12	2.14	2.23	S	2.29	2.38	2.42	2.37	2.21	2.18	2.15	2.22	2.13	1.99	1.99	1.97	1.97	1.99	1.99	2.03	2.08	2.05	2.26	2.21	1.97	2.42	2.15																
Aug 27	2.19	2.18	S	2.39	2.63	2.76	2.98	5.56	2.30	2.32	2.22	2.12	2.15	2.11	2.00	2.11	2.10	2.10	1.95	1.96	2.17	2.22	2.19	2.44	1.95	5.56	2.40																
Aug 28	2.03	S	2.44	2.11	2.19	2.11	2.12	2.37	2.24	2.02	2.02	1.95	2.02	2.08	2.09	2.18	2.04	2.08	2.08	1.95	1.98	1.99	2.04	2.02	1.95	2.44	2.09																
Aug 29	S	2.06	2.05	2.07	2.08	2.09	2.10	2.10	2.03	2.08	2.06	1.97	1.94	1.95	1.94	1.93	1.94	1.94	1.94	1.96	1.98	2.02	2.04	S	1.93	2.10	2.01																
Aug 30	2.08	2.15	2.15	2.24	2.29	2.27	2.30	2.35	2.32	2.23	2.13	2.03	1.92	1.90	1.90	1.89	1.89	1.89	1.90	1.93	1.95	1.96	S	2.16	1.89	2.35	2.08																
Aug 31	2.14	2.14	2.12	2.17	2.16	2.06	2.04	2.12	1.96	1.92	1.94	1.98	1.91	1.90	1.89	1.90	1.89	1.90	1.90	1.93	2.22	S	2.20	2.18	1.89	2.22	2.02																
Diurnal Maximum	2.36	2.38	2.47	2.54	2.63	2.76	2.98	5.56	2.34	2.32	2.22	2.22	2.16	2.15	2.15	2.18	2.10	2.10	2.10	2.24	2.22	2.22	2.26	2.44																			
Diurnal Average	2.10	2.13	2.15	2.18	2.20	2.18	2.20	2.28	2.09	2.04	2.02	2.00	1.98	1.97	1.97	1.97	1.97	1.97	1.97	1.98	2.01	2.03	2.07	2.10																			
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.

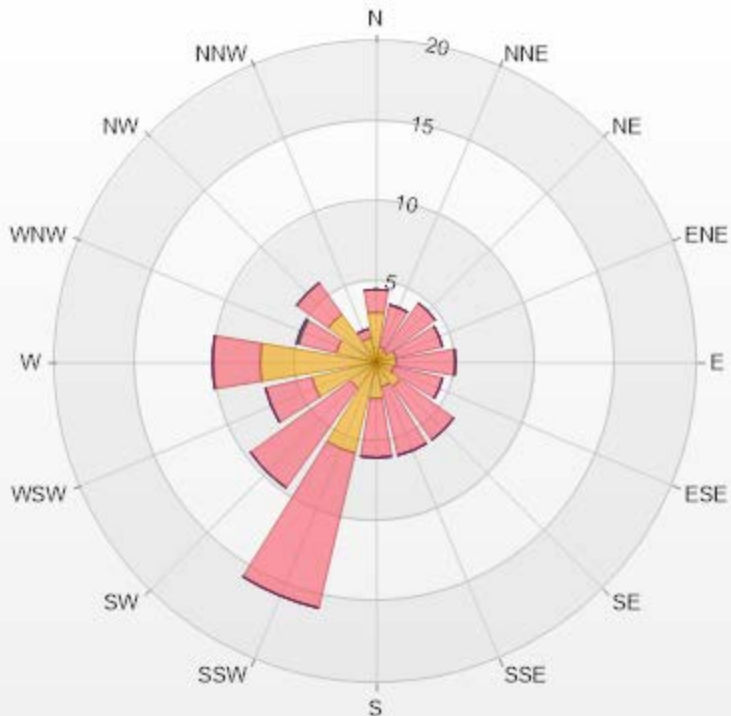
Timeseries Chart of Hourly Average for CH4 - Tamarack Site





Wind: Tamarack Poll.: Tamarack-CH4[ppm] Monthly: 08-2022 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.89% Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-20	>20.0	Total
N	3.12	1.42	0	0	0	4.54
NNE	0.99	2.69	0	0	0	3.68
NE	0.85	3.68	0	0	0	4.53
ENE	1.27	2.97	0	0	0	4.24
E	1.27	3.68	0	0	0	4.95
ESE	1.13	3.12	0	0	0	4.25
SE	1.84	4.11	0	0	0	5.95
SSE	1.56	4.39	0	0	0	5.95
S	2.27	3.68	0	0	0	5.95
SSW	5.81	9.92	0	0	0	15.73
SW	1.98	7.65	0	0	0	9.63
WSW	4.11	2.97	0	0	0	7.08
W	7.22	2.97	0	0	0	10.19
WNW	2.55	2.41	0.14	0	0	5.1
NW	3.68	2.41	0	0	0	6.09
NNW	1.56	0.57	0	0	0	2.13
Summary	41.21	58.64	0.14	0	0	100



LICA-202208

% Icon Classes (ppm)

41

0-2

59

2-5

0

5-10

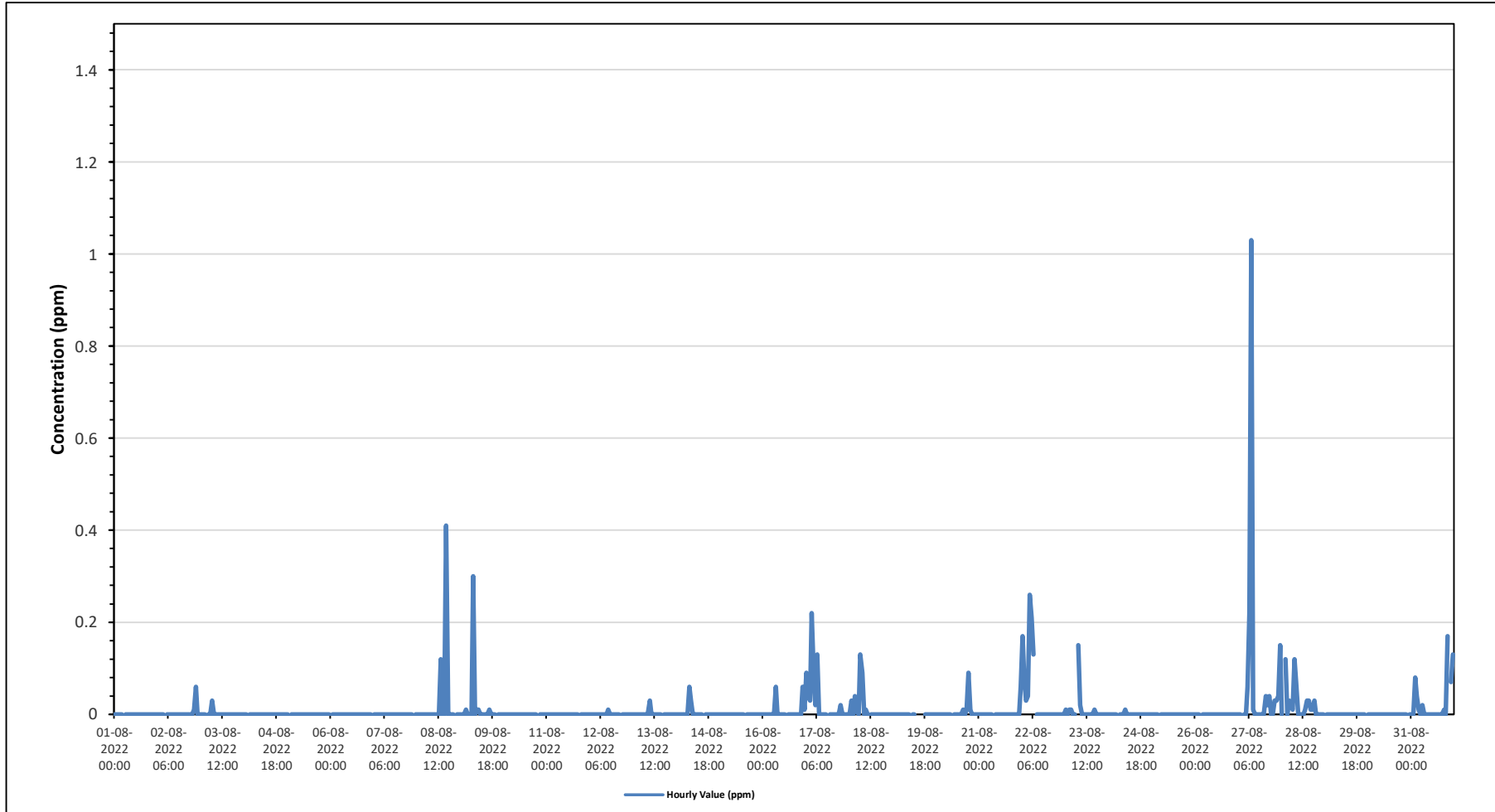
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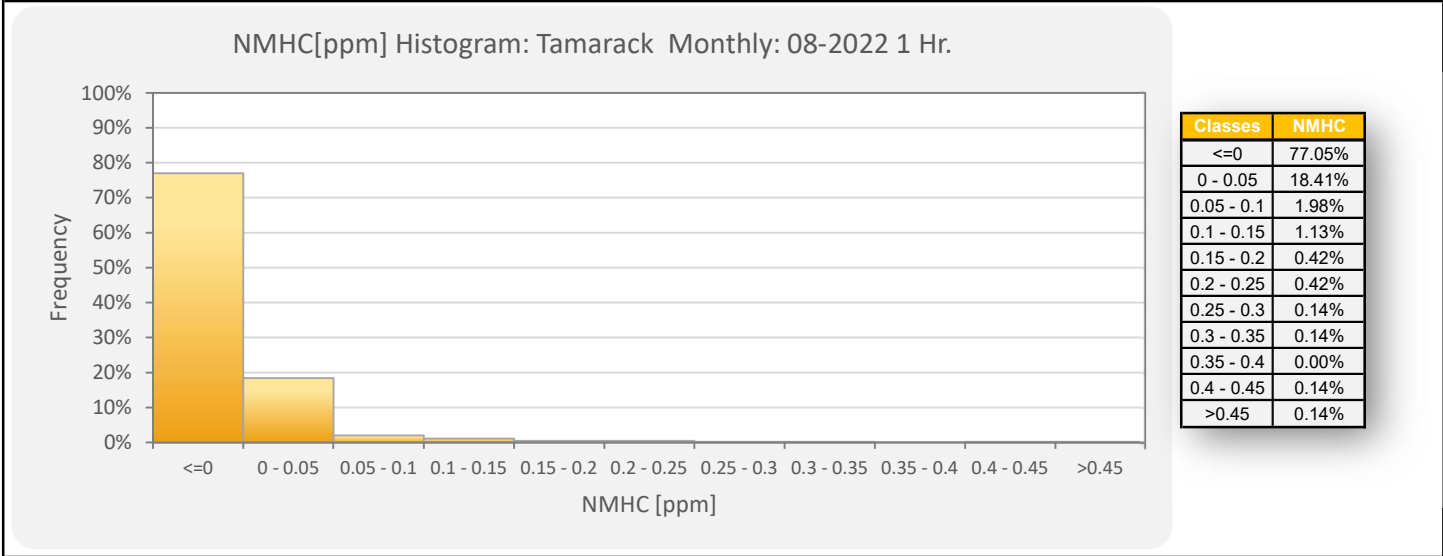
10-20

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>20.0

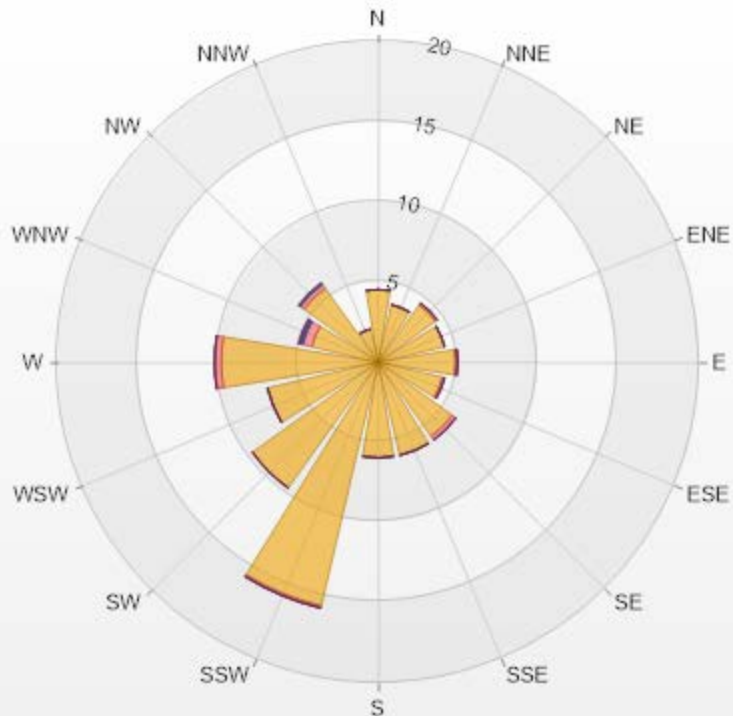
Timeseries Chart of Hourly Average for NMHC - Tamarack Site





Wind: Tamarack Poll.: Tamarack-NMHC[ppm] Monthly: 08-2022 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.89% Calm Avg: 0.00 [ppm]

Direction	0-0.1	0.1-0.3	0.3-1	1-2	>2.0	Total
N	4.53	0	0	0	0	4.53
NNE	3.68	0	0	0	0	3.68
NE	4.39	0.14	0	0	0	4.53
ENE	4.25	0	0	0	0	4.25
E	4.82	0.14	0	0	0	4.96
ESE	4.11	0.14	0	0	0	4.25
SE	5.67	0.28	0	0	0	5.95
SSE	5.95	0	0	0	0	5.95
S	5.95	0	0	0	0	5.95
SSW	15.58	0.14	0	0	0	15.72
SW	9.63	0	0	0	0	9.63
WSW	7.08	0	0	0	0	7.08
W	9.77	0.42	0	0	0	10.19
WNW	4.25	0.57	0.14	0.14	0	5.1
NW	5.67	0.28	0.14	0	0	6.09
NNW	2.12	0	0	0	0	2.12
Summary	97.45	2.11	0.28	0.14	0	100



LICA-202208

% Icon Classes (ppm)

97  0-0.1

2  0.1-0.3

0  0.3-1

0  1-2

0  >2.0



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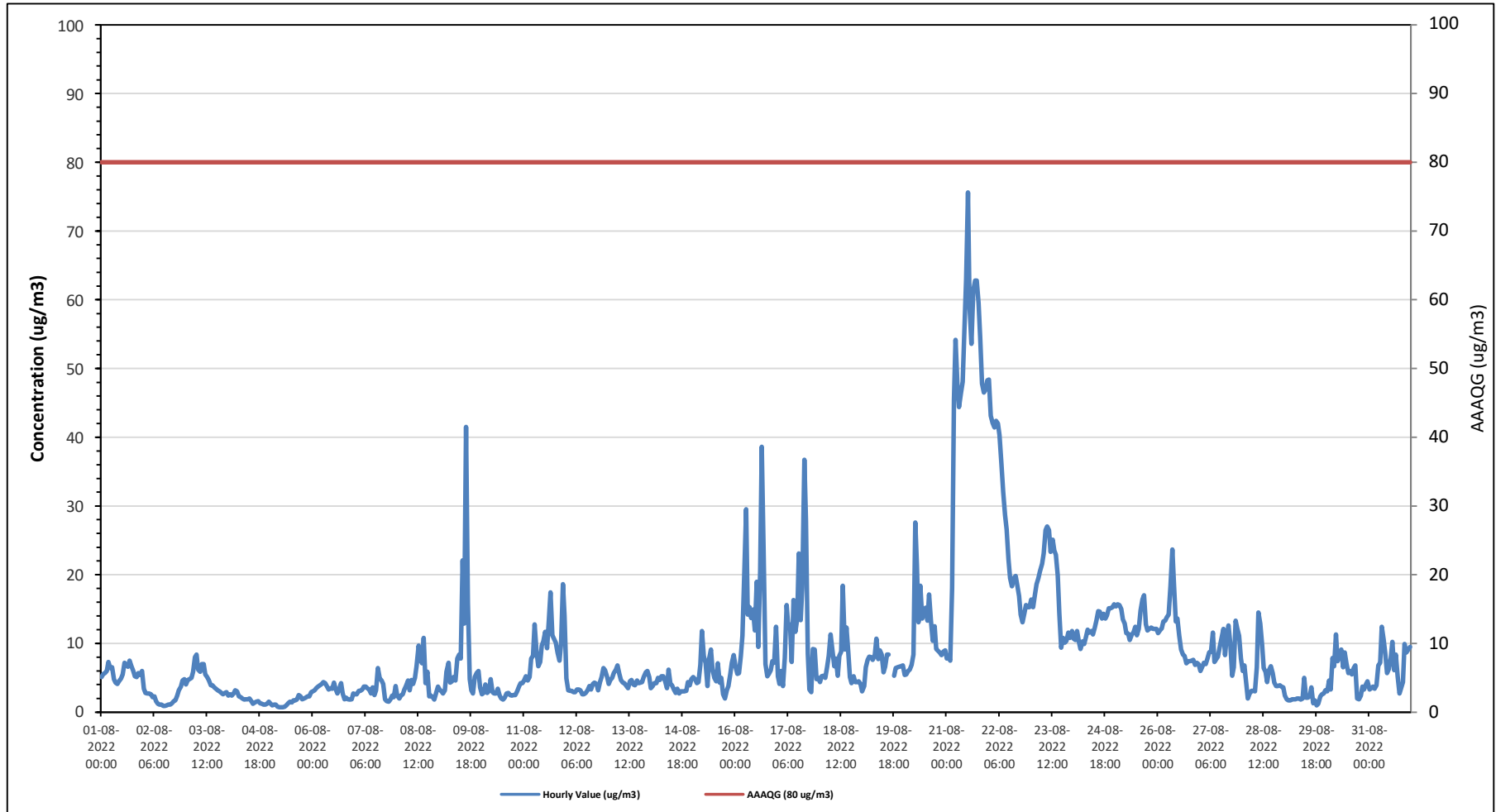
Tamarack Site - August 2022

Summary of Hourly Averages

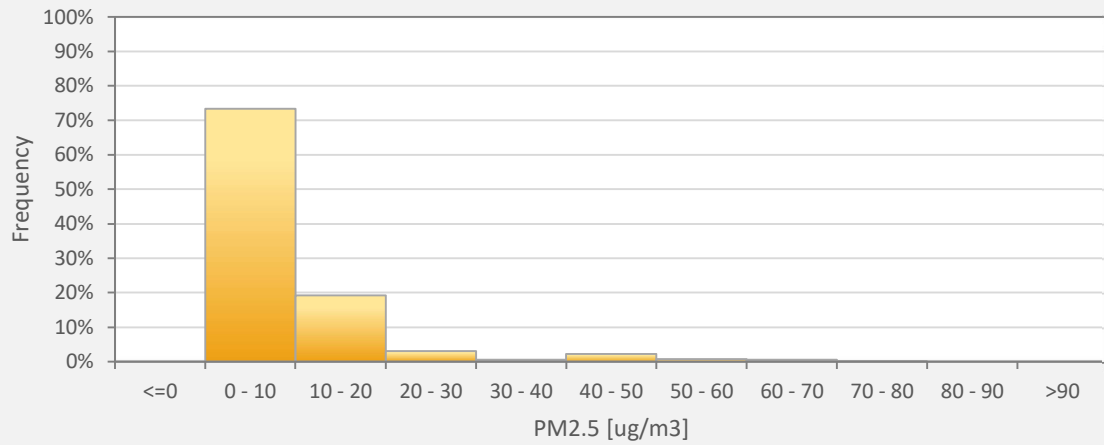
PARTICULATE MATTER 2.5 (PM_{2.5}) in µg/m³

Alberta Ambient Air Quality Guideline (AAQG): 1-Hour 80 µg/m ³ , Alberta Ambient Air Quality Objective (AAQO): 24-Hour 29 µg/m ³																															
Number of 1-Hour Exceedances: 0													Number of 24-Hour Exceedances: 1																		
Maximum Hourly Value: 76 µg/m ³ on August 21 at hour 12													Hours in Service: 744																		
Maximum Daily Value: 46.9 µg/m ³ on August 21													Hours of Data: 742																		
Minimum Hourly Value: 1 µg/m ³ on August 5 at hour 5													Hours of Missing Data: 0																		
Minimum Daily Value: 2 µg/m ³ on August 5													Hours of Calibration: 2																		
Monthly Average: 8.9 µg/m ³													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				
Aug 1	5	6	6	6	7	6	7	5	4	4	5	5	6	7	7	7	8	7	6	5	5	6	5	6	4	8	5.8				
Aug 2	3	3	3	3	3	2	2	2	1	1	1	1	1	1	1	1	1	2	2	2	3	4	5	5	1	5	2.2				
Aug 3	4	5	5	5	6	8	8	6	6	7	7	6	5	4	4	4	3	3	3	3	3	3	3	3	3	8	4.8				
Aug 4	2	3	2	3	3	3	2	2	2	2	2	2	2	2	1	1	2	2	1	1	1	1	1	2	1	3	1.9				
Aug 5	1	1	1	1	1	1	1	1	1	1	1	2	1	2	2	2	3	2	2	2	2	2	2	3	1	3	1.5				
Aug 6	3	3	4	4	4	4	4	4	4	3	4	3	4	3	3	3	4	3	2	2	2	2	2	3	2	4	3.2				
Aug 7	3	3	3	3	3	4	4	4	3	3	4	3	3	6	5	5	4	2	2	2	2	2	2	4	2	6	3.2				
Aug 8	2	2	2	3	3	4	5	3	5	4	5	7	10	8	7	11	4	6	2	2	2	2	3	4	2	11	4.4				
Aug 9	3	3	3	3	6	7	4	5	5	5	8	8	8	22	13	42	16	5	3	3	5	6	6	4	3	42	8.0				
Aug 10	3	3	4	3	3	5	3	3	3	3	2	2	2	2	3	3	3	2	3	3	3	4	4	4	2	5	2.9				
Aug 11	5	5	5	5	8	8	13	9	7	7	10	10	12	9	14	17	11	11	10	9	8	10	19	14	5	19	9.7				
Aug 12	5	3	3	3	3	3	3	3	3	3	3	3	3	4	3	4	4	4	3	4	5	6	6	5	3	6	3.8				
Aug 13	4	5	5	6	6	7	6	5	4	4	4	4	5	5	4	4	5	4	4	4	5	6	6	5	4	7	4.8				
Aug 14	4	4	4	4	5	5	5	5	5	4	6	4	4	3	3	3	3	3	3	3	3	3	4	4	5	3	6	4.0			
Aug 15	5	5	4	4	7	12	8	7	4	8	9	6	5	5	7	4	5	3	2	3	4	6	7	8	2	12	5.7				
Aug 16	7	6	6	8	11	20	30	14	15	14	15	12	19	10	21	39	23	7	5	6	6	7	7	12	5	39	13.3				
Aug 17	5	4	6	4	8	16	13	13	7	16	12	14	23	13	18	37	28	9	3	3	9	9	5	5	3	37	11.6				
Aug 18	4	5	5	5	7	8	11	9	7	8	5	8	9	18	9	12	9	5	4	5	4	4	5	4	4	18	7.2				
Aug 19	3	4	7	8	8	8	8	11	8	9	8	6	7	8	8	C	C	5	6	7	7	7	7	7	3	11	7.1				
Aug 20	5	6	6	6	7	8	28	21	13	18	14	14	15	13	17	13	10	13	9	9	9	8	9	9	5	28	11.7				
Aug 21	8	8	8	18	45	54	48	44	46	48	56	63	76	59	54	61	63	63	60	55	48	47	47	48	8	76	46.9				
Aug 22	48	43	42	41	42	42	40	36	32	29	27	22	20	18	20	20	19	17	14	13	14	16	15	15	13	48	26.9				
Aug 23	16	15	17	19	20	21	22	23	27	27	27	23	25	24	23	20	14	9	11	10	10	12	11	12	9	27	18.2				
Aug 24	11	11	12	10	9	10	10	11	12	12	12	11	12	13	15	15	14	14	14	14	15	15	15	16	9	16	12.6				
Aug 25	15	16	16	15	14	13	12	11	11	11	12	12	11	12	15	16	17	13	12	12	12	12	12	12	11	17	13.1				
Aug 26	12	12	12	13	13	14	14	18	24	19	13	14	11	9	8	8	7	7	7	8	8	7	7	7	7	24	11.4				
Aug 27	6	7	7	7	8	9	9	12	7	8	8	10	11	12	8	11	13	10	5	7	13	12	11	8	5	13	9.0				
Aug 28	6	7	4	2	3	3	3	3	7	15	13	10	6	6	4	6	7	6	4	4	4	4	4	4	2	15	5.5				
Aug 29	2	2	2	2	2	2	2	2	2	2	2	5	2	2	2	4	1	2	1	1	2	3	3	3	1	5	2.2				
Aug 30	3	5	3	8	7	11	7	9	9	7	9	7	6	6	6	6	7	2	2	2	4	3	4	5	2	11	5.7				
Aug 31	3	4	4	3	4	7	7	12	11	9	6	8	10	6	8	5	3	4	4	10	9	9	10	3	12	6.7					
Diurnal Maximum	48	43	42	41	45	54	48	44	46	48	56	63	76	59	54	61	63	63	60	55	48	47	47	48							
Diurnal Average	6.7	6.6	6.8	7.2	8.9	10.5	10.9	10.0	9.5	9.9	9.9	9.8	10.6	10.2	10.0	12.8	10.4	7.9	6.7	6.7	7.4	7.7	7.9	8.0							
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 PM2.5 - Tamarack Site



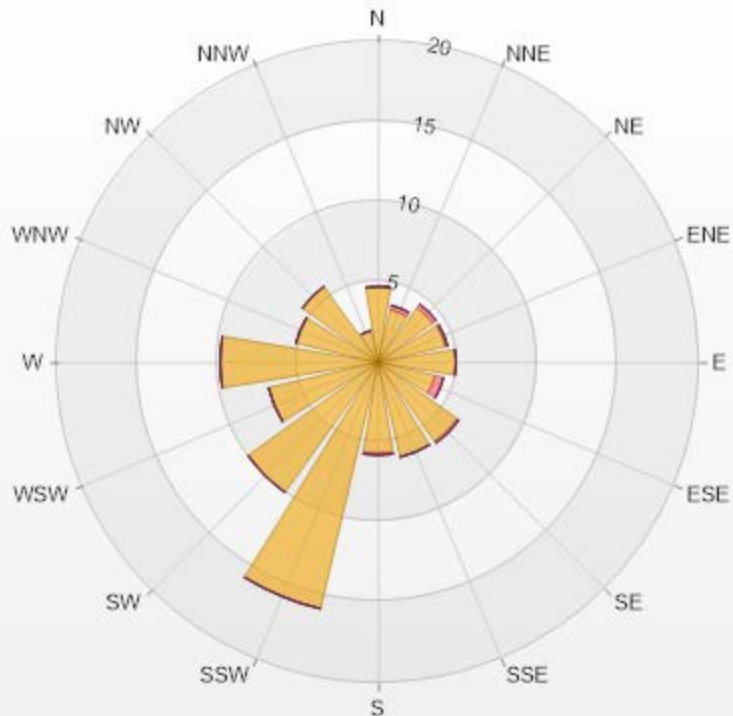
PM2.5[ug/m3(L)] Histogram: Tamarack Monthly: 08-2022 1 Hr.



Classes	PM2.5
<=0	0.00%
0 - 10	73.32%
10 - 20	19.27%
20 - 30	3.10%
30 - 40	0.54%
40 - 50	2.29%
50 - 60	0.81%
60 - 70	0.54%
70 - 80	0.13%
80 - 90	0.00%
>90	0.00%

Wind: Tamarack Poll.: Tamarack-PM2.5[ug/m3(L)] Monthly: 08-2022 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 99.73% Calm Avg: 0.00 [ug/m3(L)]

Direction	0-50	50-80	80-120	120-240	>240.0	Total
N	4.72	0	0	0	0	4.72
NNE	3.37	0.27	0	0	0	3.64
NE	4.18	0.27	0	0	0	4.45
ENE	4.31	0.13	0	0	0	4.44
E	4.85	0	0	0	0	4.85
ESE	3.64	0.54	0	0	0	4.18
SE	6.06	0.13	0	0	0	6.19
SSE	6.06	0	0	0	0	6.06
S	5.66	0.13	0	0	0	5.79
SSW	15.77	0	0	0	0	15.77
SW	9.97	0	0	0	0	9.97
WSW	7.01	0	0	0	0	7.01
W	9.84	0	0	0	0	9.84
WNW	5.26	0	0	0	0	5.26
NW	5.8	0	0	0	0	5.8
NNW	2.02	0	0	0	0	2.02
Summary	98.52	1.47	0	0	0	100



LICA-202208



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Tamarack Site - August 2022

Summary of Hourly Averages

RELATIVE HUMIDITY (RH) in %

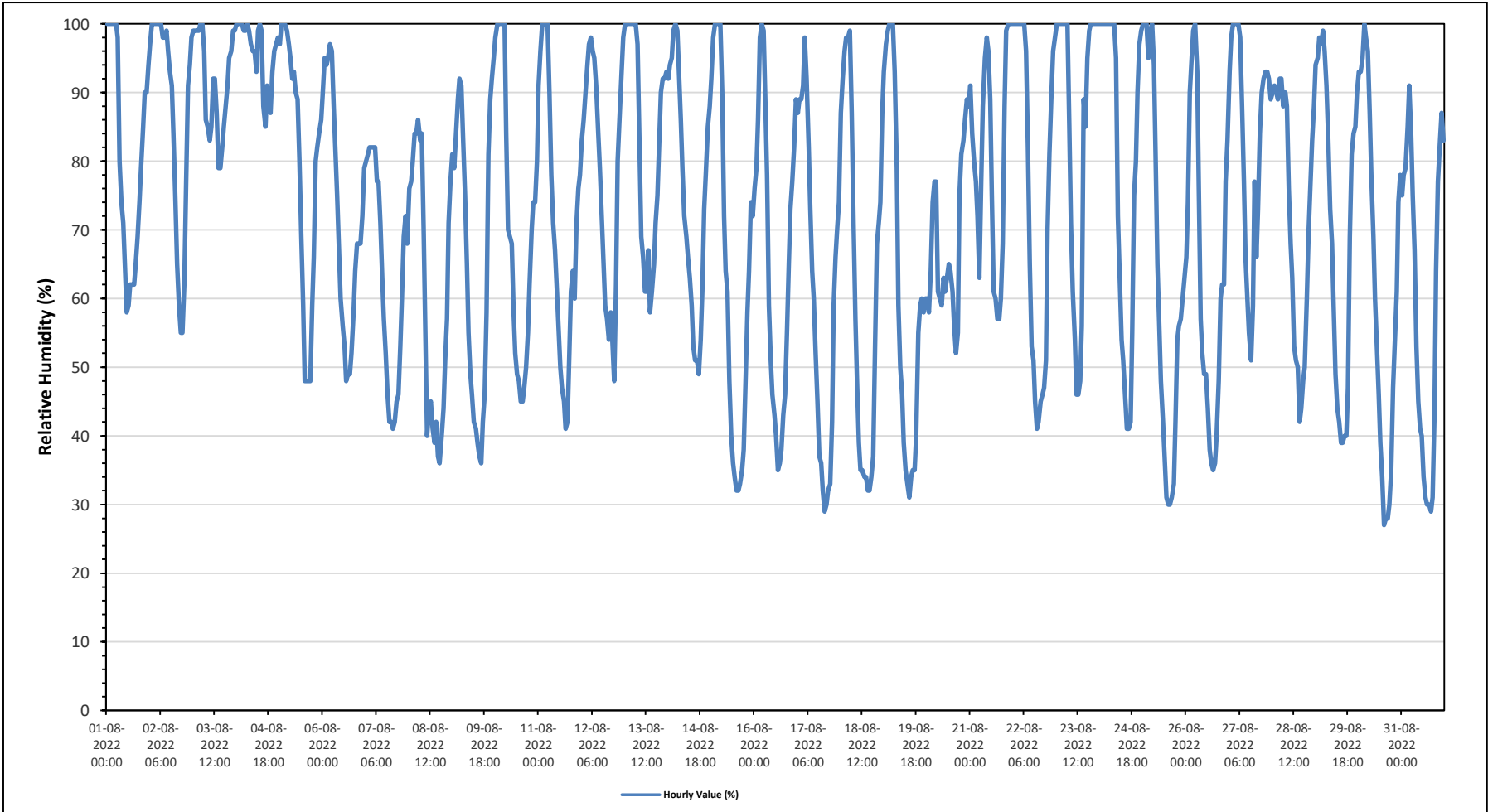
Maximum Hourly Value:	100 %	on August 1 at hour 0	Hours in Service:	744
Maximum Daily Value:	95.9 %	on August 4	Hours of Data:	744
Minimum Hourly Value:	27 %	on August 30 at hour 14	Hours of Missing Data:	0
Minimum Daily Value:	59.8 %	on August 31	Hours of Calibration:	0
Monthly Average:	72.6 %		Operational 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	
Aug 1	100	100	100	100	100	100	98	80	74	71	64	58	59	62	62	62	65	69	74	79	85	90	90	94	58	100	80.7	
Aug 2	97	100	100	100	100	100	100	98	98	99	96	93	91	84	75	65	59	55	62	77	91	94	98	55	100	87.0		
Aug 3	99	99	99	99	100	100	96	86	85	83	85	92	92	87	79	79	82	85	88	91	95	96	99	99	79	100	91.5	
Aug 4	100	100	100	100	99	99	100	99	97	96	96	93	99	100	99	88	85	91	89	87	93	96	97	98	85	100	95.9	
Aug 5	97	100	100	100	99	97	95	92	93	90	89	80	69	59	48	48	48	59	66	80	82	84	86	48	100	79.5		
Aug 6	90	95	94	95	97	96	88	81	75	67	60	56	53	48	49	49	52	58	64	68	68	68	72	79	48	97	71.8	
Aug 7	80	81	82	82	82	82	77	77	71	63	57	52	46	42	42	41	42	45	46	53	60	69	72	68	41	82	63.0	
Aug 8	76	77	80	84	84	86	83	84	70	56	40	44	45	41	39	42	37	36	40	44	51	57	71	77	36	86	60.2	
Aug 9	81	79	84	89	92	91	84	75	65	55	49	46	42	41	39	37	36	42	46	58	81	89	92	95	36	95	66.2	
Aug 10	98	100	100	100	100	100	84	70	69	68	58	52	49	48	45	45	47	50	55	62	70	74	74	80	45	100	70.8	
Aug 11	91	96	100	100	100	100	90	78	71	67	62	56	50	47	45	41	42	52	61	64	60	71	76	78	41	100	70.8	
Aug 12	83	86	90	94	97	98	96	95	91	84	79	72	66	59	57	54	58	54	48	62	80	87	93	98	48	98	78.4	
Aug 13	100	100	100	100	100	100	100	97	83	69	66	61	61	67	58	61	65	71	75	82	90	92	92	93	58	100	82.6	
Aug 14	92	94	95	99	100	99	93	86	79	72	69	66	63	59	53	51	51	49	54	61	73	78	85	88	49	100	75.4	
Aug 15	92	98	100	100	100	100	90	72	64	61	48	40	36	34	32	32	33	35	38	48	58	64	74	72	32	100	63.4	
Aug 16	76	79	86	98	100	99	88	78	59	51	46	43	40	35	36	38	43	46	55	65	73	77	82	89	35	100	65.9	
Aug 17	87	89	89	91	98	92	82	73	64	60	52	45	37	36	32	29	30	32	33	42	59	66	70	74	29	98	60.9	
Aug 18	87	92	96	98	98	99	87	71	57	48	39	35	35	34	34	32	32	34	37	53	68	71	74	87	32	99	62.4	
Aug 19	93	97	99	100	100	100	93	79	59	50	46	39	35	33	31	34	35	35	40	55	59	60	58	60	31	100	62.1	
Aug 20	60	58	64	74	77	77	61	60	59	63	61	63	65	64	61	56	52	55	75	81	83	86	89	88	52	89	68.0	
Aug 21	91	84	80	77	72	63	77	88	95	98	96	89	75	61	60	57	57	60	68	88	99	100	100	100	57	100	80.6	
Aug 22	100	100	100	100	100	100	100	96	82	65	53	51	45	41	42	45	46	47	51	70	81	89	96	98	41	100	74.9	
Aug 23	100	100	100	100	100	100	100	85	71	61	54	46	46	48	56	89	85	95	99	100	100	100	100	100	46	100	84.8	
Aug 24	100	100	100	100	100	100	100	100	100	95	72	63	54	51	46	41	41	42	55	75	80	90	97	99	41	100	79.2	
Aug 25	100	100	100	95	99	100	94	81	65	56	48	42	37	31	30	31	33	42	54	56	57	60	63	30	100	62.7		
Aug 26	66	74	90	95	99	100	93	76	57	52	49	49	44	38	36	35	36	40	48	60	62	62	77	83	35	100	63.4	
Aug 27	93	98	100	100	100	100	98	88	77	66	60	55	51	59	77	66	73	84	90	92	93	93	92	89	51	100	83.1	
Aug 28	90	91	90	89	92	92	88	90	88	76	68	63	53	51	50	42	44	48	50	60	70	76	83	88	42	92	72.2	
Aug 29	94	95	98	97	99	96	91	83	73	68	59	49	44	42	39	39	40	40	47	69	81	84	85	90	39	99	70.9	
Aug 30	93	93	95	100	98	96	87	78	69	60	53	46	39	34	27	28	28	30	35	47	54	61	74	78	27	100	62.6	
Aug 31	75	78	79	85	91	84	75	67	53	45	41	40	34	31	30	30	29	31	43	64	77	83	87	83	29	91	59.8	
Diurnal Maximum	100	100	100	100	100	100	100	100	100	99	96	93	99	100	99	89	85	95	99	100	100	100	100	100	100			
Diurnal Average	89.7	91.4	93.2	94.9	95.9	95.0	89.9	82.7	74.6	68.2	61.8	57.4	53.4	50.5	48.7	47.9	48.5	51.4	56.8	66.5	74.7	79.3	83.5	86.2				

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

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 - Tamarack Site





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Tamarack Site - August 2022

Summary of Hourly Averages

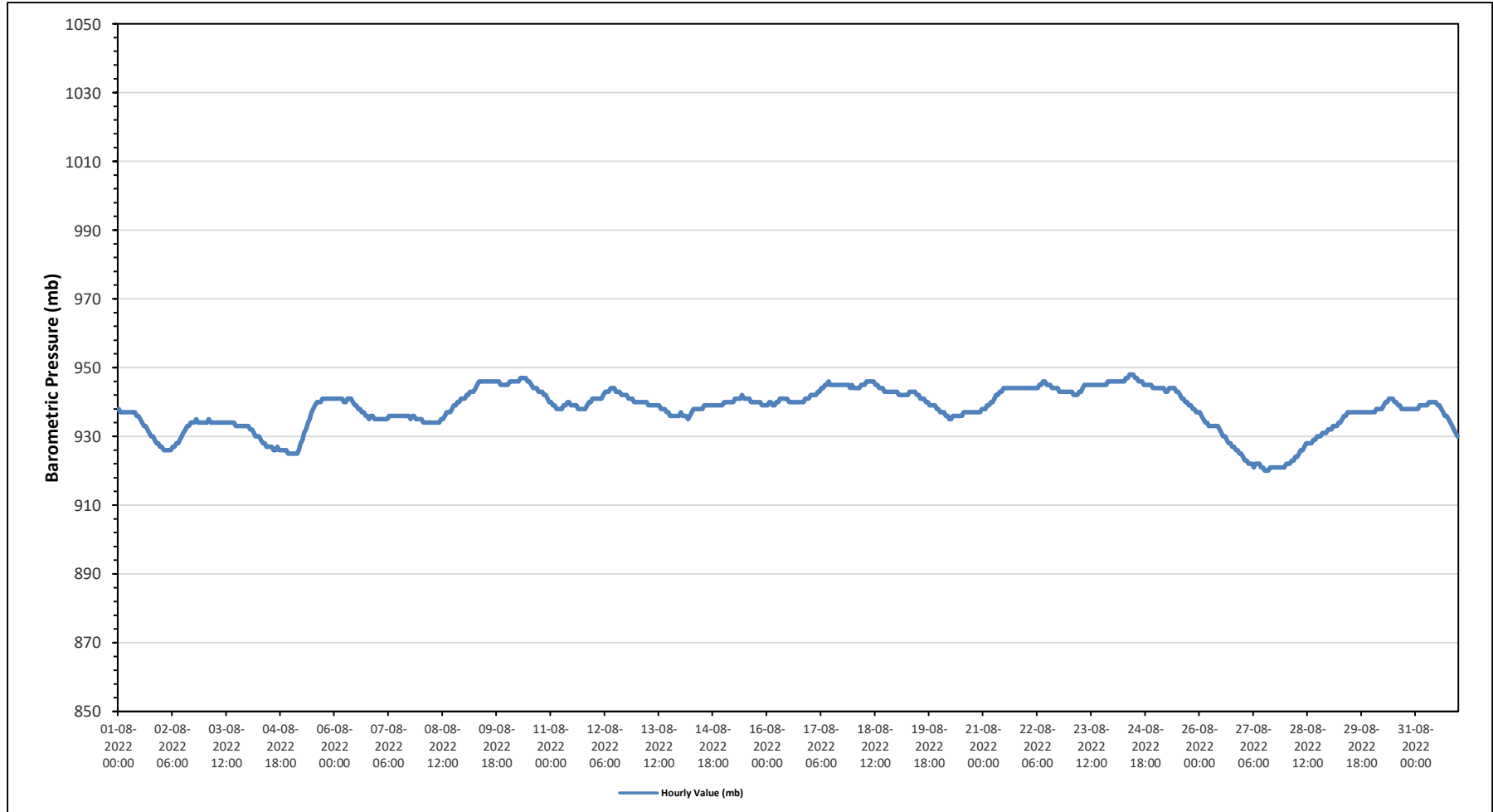
BAROMETRIC PRESSURE (BP) in millibar

Maximum Hourly Value:	948 mb	on August 24 at hour 9	Hours in Service:	744
Maximum Daily Value:	946 mb	on August 24	Hours of Data:	744
Minimum Hourly Value:	920 mb	on August 27 at hour 12	Hours of Missing Data:	0
Minimum Daily Value:	921 mb	on August 27	Hours of Calibration:	0
Monthly Average:	938 mb		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
Aug 1	938	937	937	937	937	937	937	937	937	937	936	936	935	934	933	933	932	931	930	929	928	928	927	927	938	934	
Aug 2	927	926	926	926	926	926	927	927	928	928	929	930	931	932	933	933	934	934	934	935	934	934	934	934	926	935	930
Aug 3	934	934	935	934	934	934	934	934	934	934	934	934	934	934	934	934	933	933	933	933	933	933	933	933	935	934	
Aug 4	933	932	932	931	930	930	930	929	928	928	927	927	927	927	926	926	927	926	926	926	926	926	925	925	925	933	928
Aug 5	925	925	925	925	926	928	929	931	932	934	935	937	938	939	940	940	940	941	941	941	941	941	941	941	925	941	935
Aug 6	941	941	941	941	941	940	940	941	941	941	940	939	939	938	938	937	937	936	936	935	936	936	935	935	935	941	939
Aug 7	935	935	935	935	935	935	936	936	936	936	936	936	936	936	936	936	936	935	936	936	935	935	935	935	935	936	936
Aug 8	935	934	934	934	934	934	934	934	934	934	934	935	935	936	937	937	938	939	939	940	940	940	941	941	934	941	936
Aug 9	941	942	942	943	943	944	944	945	946	946	946	946	946	946	946	946	946	946	946	945	945	945	945	941	946	945	
Aug 10	945	946	946	946	946	946	946	947	947	947	947	946	946	945	944	944	944	943	943	943	942	942	941	940	947	945	
Aug 11	940	939	939	938	938	938	938	939	939	940	940	939	939	939	938	938	938	938	938	939	940	940	941	938	941	939	
Aug 12	941	941	941	941	941	942	943	943	943	944	944	944	943	943	943	942	942	942	941	941	941	940	940	940	940	944	942
Aug 13	940	940	940	940	940	940	939	939	939	939	939	939	939	938	938	938	937	937	936	936	936	936	936	936	936	940	938
Aug 14	937	936	936	936	935	936	937	938	938	938	938	938	938	939	939	939	939	939	939	939	939	939	939	939	935	939	938
Aug 15	940	940	940	940	940	940	941	941	941	941	942	941	941	941	941	940	940	940	940	940	940	939	939	939	939	942	940
Aug 16	939	940	940	939	939	940	940	941	941	941	941	941	940	940	940	940	940	940	940	940	940	941	941	941	939	941	940
Aug 17	942	942	942	942	943	943	944	944	945	945	946	945	945	945	945	945	945	945	945	945	945	945	944	945	946	944	944
Aug 18	944	944	944	944	945	945	945	946	946	946	946	945	945	945	944	944	944	943	943	943	943	943	943	943	943	946	944
Aug 19	943	942	942	942	942	942	942	943	943	943	943	942	942	941	941	941	940	940	939	939	939	939	938	938	938	943	941
Aug 20	937	937	937	936	936	935	935	936	936	936	936	936	936	937	937	937	937	937	937	937	937	937	937	937	935	938	937
Aug 21	938	938	939	939	940	940	941	942	942	943	943	944	944	944	944	944	944	944	944	944	944	944	944	944	938	944	942
Aug 22	944	944	944	944	944	944	944	945	945	946	946	946	945	945	945	944	944	944	943	943	943	943	943	943	943	946	944
Aug 23	943	943	942	942	942	943	943	944	945	945	945	945	945	945	945	945	945	945	945	945	945	946	946	946	942	946	944
Aug 24	946	946	946	946	946	946	946	947	947	948	948	948	947	947	946	946	945	945	945	945	945	944	944	944	944	948	946
Aug 25	944	944	944	944	944	943	943	944	944	944	944	943	943	942	941	941	940	940	939	939	938	938	937	937	937	944	942
Aug 26	937	936	935	934	934	933	933	933	933	933	933	932	931	930	930	929	928	928	927	927	926	926	925	925	925	937	931
Aug 27	924	923	923	922	922	922	921	922	922	922	921	921	920	920	920	921	921	921	921	921	921	921	921	921	920	924	921
Aug 28	922	922	922	923	923	924	924	925	926	926	927	928	928	928	929	929	929	930	930	930	931	931	931	932	922	932	927
Aug 29	932	932	933	933	933	934	934	935	936	936	937	937	937	937	937	937	937	937	937	937	937	937	937	937	932	937	936
Aug 30	937	937	938	938	938	938	939	940	940	941	941	941	940	940	939	939	938	938	938	938	938	938	938	938	937	941	939
Aug 31	938	938	939	939	939	939	939	940	940	940	940	940	939	939	938	937	936	936	935	934	933	932	931	930	930	940	937
Diurnal Maximum	946	946	946	946	946	946	946	947	947	948	948	948	947	947	946	946	946	946	946	945	946	946	946	946	946	946	946
Diurnal Average	937	937	937	937	937	937	938	938	939	939	939	939	939	939	938	938	938	938	938	937	937	937	937	937	937	937	937
C	Monthly Calibration						S	Daily Zero-Span Check						Q	Quality Assurance												
K	Collection Error						N	No Data (Machine Not in Service)						Y	Routine Maintenance												
X	Invalid Data (Equipment Malfunction /Recovery)						NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)						P	Power Failure												

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 - Tamarack Site





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Tamarack Site - August 2022

Summary of Hourly Averages

AMBIENT TEMPERATURE (AT) in Degree Celsius

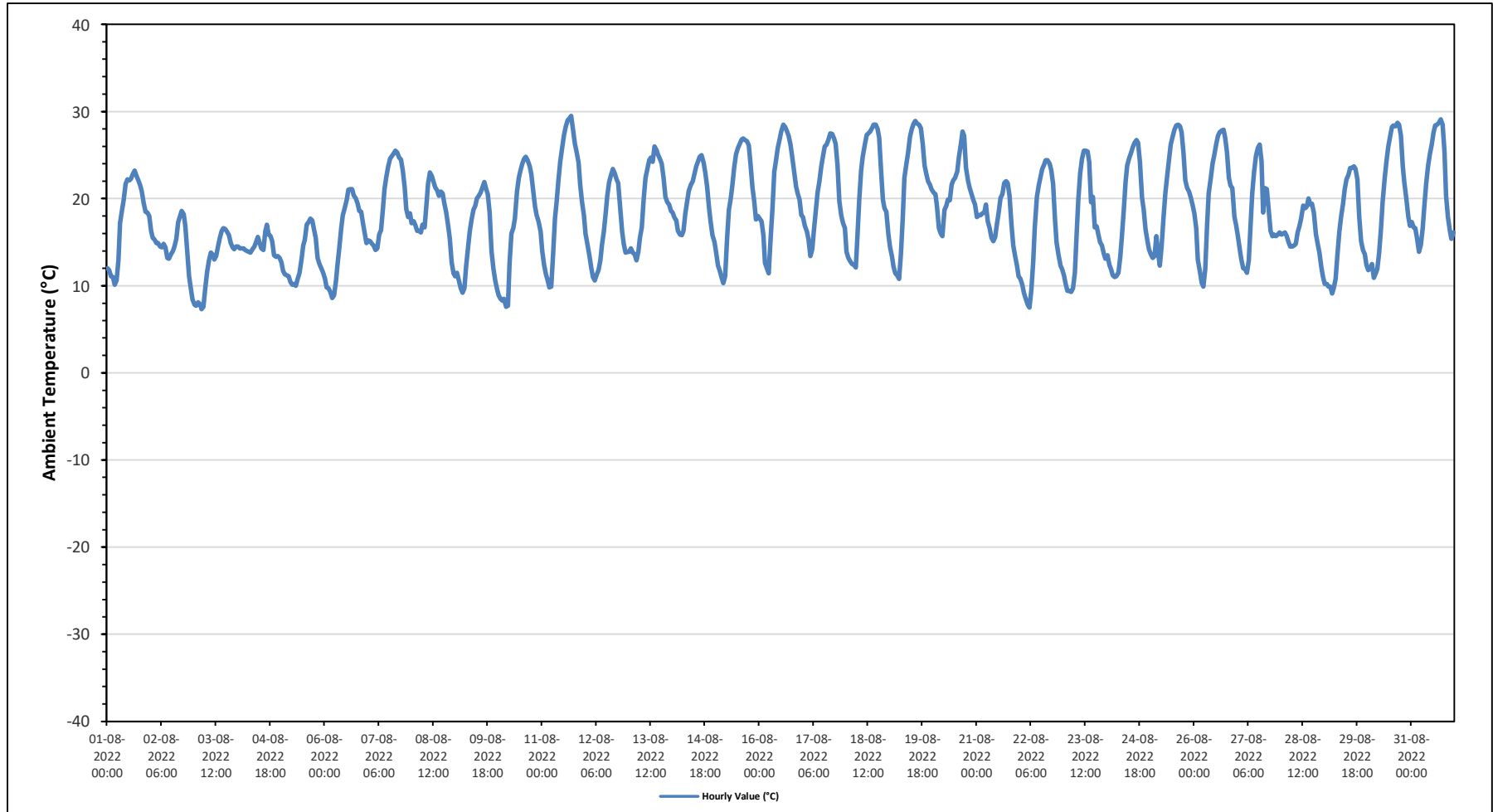
Maximum Hourly Value:	29.5 °C	on August 11 at hour 16	Hours in Service:	744
Maximum Daily Value:	21.4 °C	on August 16	Hours of Data:	744
Minimum Hourly Value:	7.3 °C	on August 3 at hour 4	Hours of Missing Data:	0
Minimum Daily Value:	12.7 °C	on August 3	Hours of Calibration:	0
Monthly Average:	18.2 °C		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
Aug 1	12	11.8	11.1	11	10.1	10.6	12.9	17.2	18.6	19.9	21.7	22.2	22.1	22.3	22.8	23.2	22.6	22.1	21.5	20.8	19.5	18.5	18.4	18	10.1	23.2	18.0
Aug 2	16.3	15.5	15.3	14.9	14.9	14.5	14.4	14.8	14.4	13.2	13.1	13.6	14	14.5	15.4	17.3	17.9	18.6	18.2	16.8	14	11.1	9.8	8.4	8.4	18.6	14.6
Aug 3	7.8	7.7	8.1	7.9	7.3	7.6	9.7	11.6	12.9	13.8	13.6	13	13.4	14.5	15.5	16.3	16.6	16.5	16.2	15.8	14.9	14.4	14.2	14.5	7.3	16.6	12.7
Aug 4	14.5	14.3	14.3	14.3	14.1	14	13.9	13.8	14.2	14.5	15	15.6	14.9	14.3	14.1	16.2	17	15.9	15.7	15.1	13.5	13.3	13.4	13.2	13.2	17.0	14.5
Aug 5	12.7	11.7	11.3	11.2	11.1	10.4	10.1	10.2	10	10.8	11.5	12.9	14.6	15.3	17	17.3	17.7	17.5	16.4	15.5	13.2	12.5	12	11.5	10.0	17.7	13.1
Aug 6	10.8	9.8	9.7	9.3	8.6	8.9	10.5	12.4	14.4	16.6	18.1	19	19.9	21	21.1	21.1	20.4	20	19.4	18.6	18.5	17.2	16.1	14.9	8.6	21.1	15.7
Aug 7	15.2	15.1	14.8	14.6	14.1	14.3	15.9	16.4	18.8	21.1	22.5	23.7	24.6	24.9	25.2	25.5	25.3	24.7	24.5	23.2	21.3	18.8	17.9	18.3	14.1	25.5	20.0
Aug 8	17.2	17.4	16.9	16.3	16.3	16.1	17	16.7	19.3	21.7	23	22.6	22	21.3	20.9	20.3	20.8	20.6	19.5	18.5	16.8	15.4	12.7	11.4	11.4	23.0	18.4
Aug 9	11.1	11.5	10.6	9.7	9.2	9.7	12.1	14.2	16.2	17.6	18.7	19.2	20	20.3	20.7	21.3	21.9	21.1	20.5	18.4	14	12	10.6	9.6	9.2	21.9	15.4
Aug 10	8.9	8.5	8.3	8.5	7.6	7.7	12.6	16	16.6	17.7	20.8	22.4	23.2	24	24.6	24.8	24.4	23.7	22.8	20.9	19.1	18.1	17.4	16.2	7.6	24.8	17.3
Aug 11	14	12.4	11.3	10.7	9.8	9.9	13.6	17.7	19.9	22.1	24.3	25.8	27.3	28.3	29	29.2	29.5	27.9	26.3	25.3	24.1	21.6	19.6	18.1	9.8	29.5	20.7
Aug 12	16	14.6	13.4	12.2	11	10.6	11.2	11.8	12.9	14.7	16.2	18.3	20.3	21.9	22.8	23.4	22.9	22.2	21.8	19.2	16.2	14.8	13.8	13.9	10.6	23.4	16.5
Aug 13	13.9	14.3	13.8	13.6	12.9	13.9	15.5	16.7	19.9	22.4	23.4	24.4	24.7	24.2	26	25.6	25	24.5	24	22.4	20.2	19.6	19.3	18.6	12.9	26.0	20.0
Aug 14	18.4	17.8	17.5	16.3	15.9	15.8	16.3	18.3	19.7	20.9	21.6	22	22.8	23.7	24.3	24.8	25	24.1	23	21.4	19	17.4	15.8	15	15.0	25.0	19.9
Aug 15	13.8	12.3	11.7	11	10.3	11.1	15.3	18.7	20	21.5	23.6	25.1	25.8	26.3	26.8	26.9	26.7	26.6	26.1	23.8	21.2	19.8	17.6	18	10.3	26.9	20.0
Aug 16	17.7	17.4	15.8	12.6	12	11.4	14.8	18.8	23.1	24.3	25.8	26.8	27.7	28.5	28.2	27.8	27.2	26.2	24.9	23.3	21.4	20.6	19.9	18.1	11.4	28.5	21.4
Aug 17	17.9	16.9	16.2	15.3	13.4	14.2	16.3	18.5	20.7	22	23.7	25	26	26.2	26.8	27.5	27.4	26.9	26.3	23.9	19.7	18.1	17.2	16.6	13.4	27.5	20.9
Aug 18	13.9	13.2	12.8	12.5	12.4	12.1	15.6	19.9	23.2	24.8	26.2	27.3	27.5	27.7	28.1	28.5	28.5	28	27	23.3	19.9	18.9	18.5	15.8	12.1	28.5	21.1
Aug 19	14.4	13.4	12.2	11.4	11.2	10.8	13.7	17.9	22.4	23.9	25.3	27.1	28	28.6	28.9	28.6	28.5	28.1	26.3	23.8	22.9	22	21.6	21.1	10.8	28.9	21.3
Aug 20	20.7	20.5	19	16.6	16	15.7	18.7	19.2	19.9	19.8	21.6	22.1	22.4	23.1	24.7	26.1	27.7	27.2	23.5	22	21.2	20.5	19.8	19.3	15.7	27.7	21.1
Aug 21	17.9	18.1	18.1	18.3	18.4	19.3	17.4	16.6	15.5	15.1	15.6	17	18.4	20.1	20.5	21.8	22	21.8	20.3	17.1	14.6	13.4	12.3	11.1	11.1	22.0	17.5
Aug 22	10.8	10.1	9.2	8.4	7.8	7.5	9.5	12.7	16.7	20.2	21.5	22.4	23.4	23.9	24.4	24.4	24	23.3	21.7	17.7	15	13.6	12.3	11.9	7.5	24.4	16.4
Aug 23	11.2	10.1	9.4	9.4	9.3	9.7	11.5	16.1	19.9	22.9	24.6	25.5	25.5	25.4	24.2	19.6	20.2	16.7	16.8	15.8	15	14.6	13.7	13.1	9.3	25.5	16.7
Aug 24	13.5	12.4	11.9	11.2	11	11.1	11.5	13.3	15.6	18.6	21.9	23.8	24.6	25.3	25.9	26.4	26.7	26.4	24.2	20.1	18.8	16.5	15.2	14.2	11.0	26.7	18.3
Aug 25	13.6	13.2	13.4	15.7	13.6	12.3	14.7	17.9	20.7	22.7	24.6	26.2	27.1	27.9	28.4	28.5	28.3	27.6	25.3	22.1	21.2	20.8	20.1	19.3	12.3	28.5	21.1
Aug 26	18.3	16.6	13	11.6	10.3	9.9	11.9	17	20.6	22.4	24.1	25	26.2	27.2	27.6	27.8	27.9	27	25.3	22.4	21.5	21.2	17.9	17	9.9	27.9	20.4
Aug 27	15.7	14.2	13	12	11.9	11.5	12.9	17.1	20.6	23.1	24.9	25.8	26.2	24.3	18.4	21.2	21.1	18.7	16.3	15.7	15.9	15.7	15.9	16.1	11.5	26.2	17.8
Aug 28	15.9	16	16.1	15.7	15	14.5	14.5	14.6	14.8	16.1	16.9	17.7	19.2	18.9	19.1	20	19.3	19.4	18.4	15.9	14.9	13.8	12.2	11.1	11.1	20.0	16.3
Aug 29	10.2	10.2	9.9	9.9	9.1	9.7	10.8	13.6	16.2	18	19.4	21	22.2	22.7	23.5	23.5	23.7	23.4	22.2	17.9	15.1	14.1	13.6	12.4	9.1	23.7	16.3
Aug 30	11.8	12	12.5	10.9	11.4	11.9	13.8	16.6	19.6	22.4	24.4	25.9	27.1	28.2	28.4	28.3	28.7	28.5	27.2	23.7	21.8	20.1	17.9	16.9	10.9	28.7	20.4
Aug 31	17.3	16.7	16.6	15.4	13.9	14.7	16.6	19.1	21.7	23.7	25.1	26.2	27.6	28.4	28.5	28.7	29.1	28.5	25.4	20.3	17.9	16.4	15.4	16.1	13.9	29.1	21.2
Diurnal Maximum	20.7	20.5	19.0	18.3	18.4	19.3	18.7	19.9	23.2	24.8	26.2	27.3	28.0	28.6	29.0	29.2	29.5	28.5	27.2	25.3	24.1	22.0	21.6	21.1			
Diurnal Average	14.3	13.7	13.1	12.5	11.9	12.0	13.7	16.0	18.0	19.6	21.1	22.1	22.9	23.3	23.6	23.9	24.0	23.3	22.2	20.0	18.1	16.9	15.9	15.2			

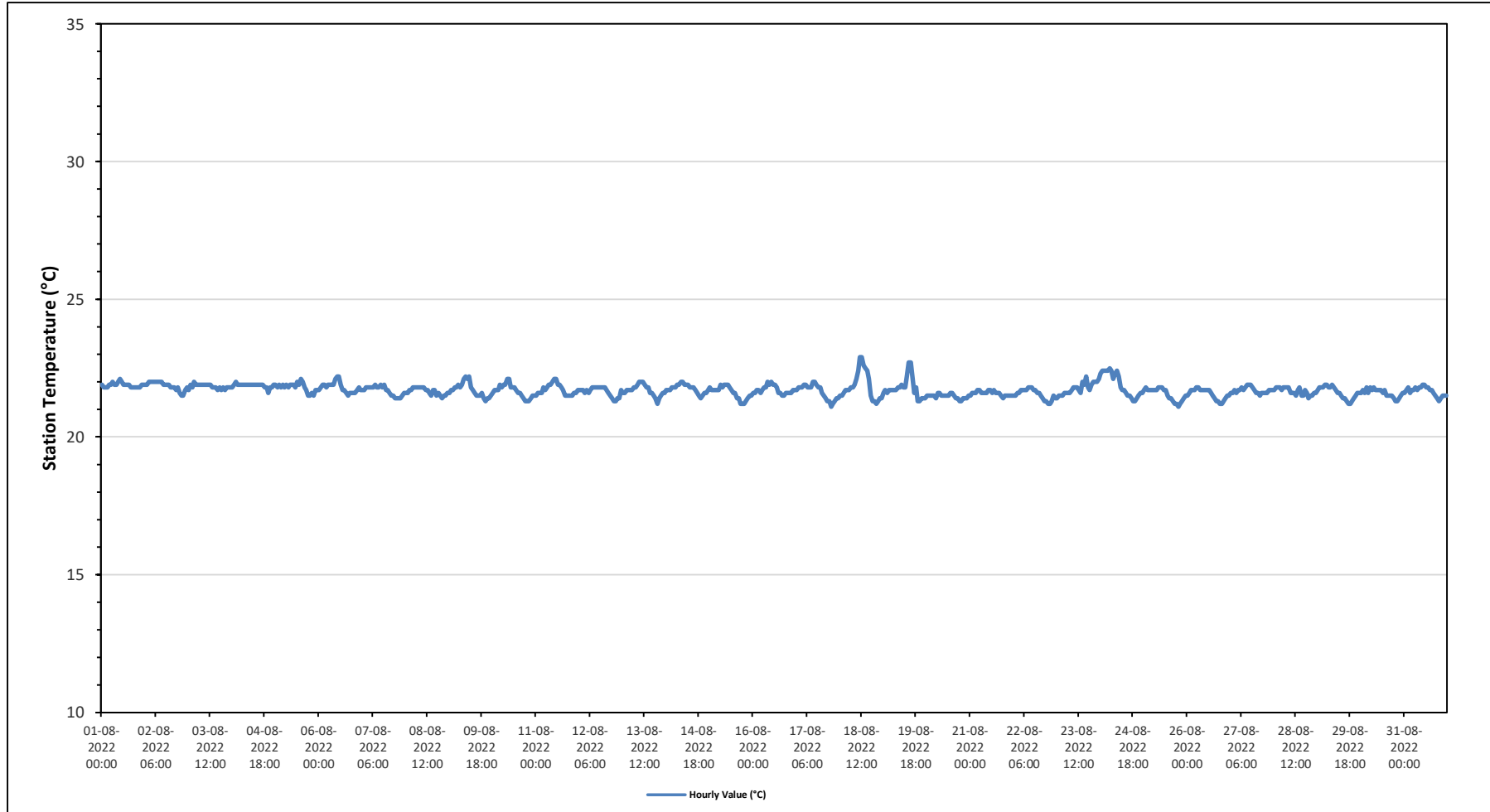
C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance
X	InValid Data (Equipment Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	P	Power Failure

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 - Tamarack Site



Timeseries Chart of Hourly Average for ST - Tamarack Site





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Tamarack Site - August 2022

Summary of Hourly Averages

PRECIPITATION in mm

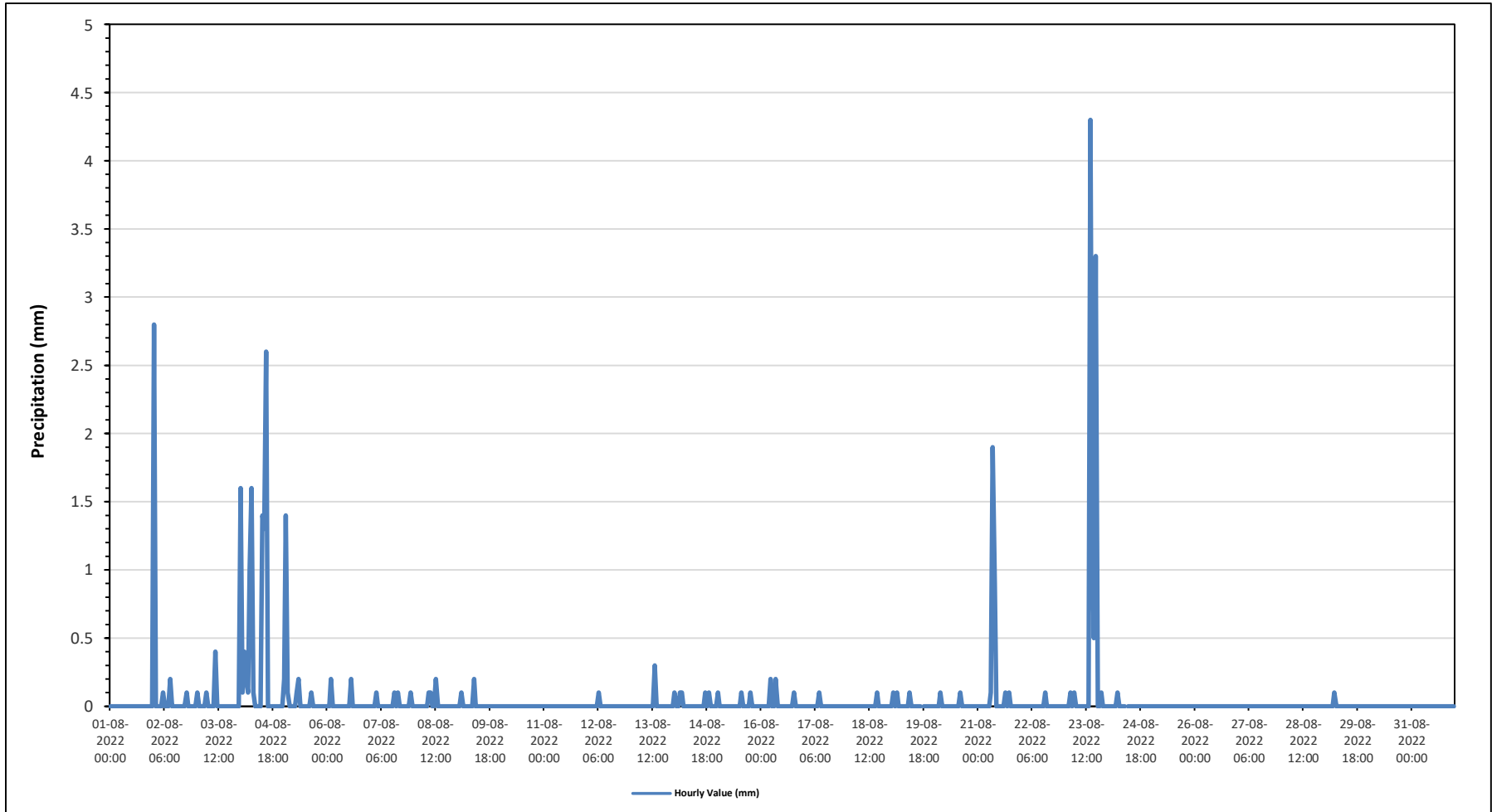
Maximum Hourly Value:	4.3 mm on August 23 at hour 14	Hours in Service:	744
Maximum Daily Value:	10.4 mm on August 4	Hours of Data:	742
Minimum Hourly Value:	0.0 mm on August 1 at hour 0	Hours of Missing Data:	1
Minimum Daily Value:	0.0 mm on August 1	Hours of Calibration:	1
Monthly Total:	33.2 mm	Operational Uptime:	99.9

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Total	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23
Aug 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
Aug 2	2.8	0	0	0	0	0.1	0	0	0	0.2	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0.0	2.8	3.2
Aug 3	0.1	0	0	0	0	0.1	0	0	0	0	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.4	0.6
Aug 4	1.6	0.1	0.4	0.2	0.1	1	1.6	0.1	0	0	0	0	1.4	1.3	2.6	0	0	0	0	0	0	0	0	0	0.0	2.6	10.4
Aug 5	0.2	1.4	0.1	0	0	0	0	0.1	0.2	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0.0	1.4	2.1
Aug 6	0	0	0.2	0	0	0	0	0	0	0	0	0	0.2	0	0	0	0	0	0	0	0	0	0	0	0.0	0.2	0.4
Aug 7	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0.1	0	0.1	0	0	0	0	0	0	0.1	0	0.0	0.1	0.4
Aug 8	0	0	0	0	0	0	0	0	0.1	0.1	0	0	0.2	0	0	0	0	0	0	0	0	0	0	0	0.0	0.2	0.4
Aug 9	0	0	0.1	0	0	0	0	0	0	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.2	0.3
Aug 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
Aug 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
Aug 12	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1	0.1
Aug 13	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0	0	0	0	0	0	0	0	0	0	0	0.0	0.3	0.3
Aug 14	0.1	0	0	0.1	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0.1	0.1	0	0	0	0.0	0.1	0.5
Aug 15	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0.1	0	0	0	0	0	0.0	0.1	0.3
Aug 16	0	0	0	0	0	0.2	0	0	0.2	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0.0	0.2	0.5
Aug 17	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1	0.1
Aug 18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0.0	0.1	0.1
Aug 19	0	0.1	0	0.1	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	C	0	0	0	0	0	0.0	0.1	0.3
Aug 20	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0.0	0.1	0.2
Aug 21	0	0	0	0	0	0	0	0.1	1.9	0.9	0	0	0	0	0.1	0	0	0.1	0	0	0	0	0	0	0.0	1.9	3.1
Aug 22	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1	0.1
Aug 23	0	0	0	0.1	0	0.1	0	0	0	0	0	0	0	4.3	1.2	0.5	3.3	0	0	0.1	0	0	0	0	0.0	4.3	9.6
Aug 24	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1	0.1
Aug 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
Aug 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
Aug 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
Aug 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
Aug 29	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1	0.1
Aug 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
Aug 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	2.8	1.4	0.4	0.2	0.1	1.0	1.6	0.1	1.9	0.9	0.4	0.0	1.4	1.3	4.3	1.2	0.5	3.3	0.1	0.1	0.1	0.0	0.1	0.0			
Diurnal Average	0.2	0.1	0.0	0.0	0.0	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.1	0.2	0.0	0.0	0.1	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
X	InValid Data (Equipment Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	P	Power Failure

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 - Tamarack Site





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Tamarack Site - August 2022

Summary of Hourly Averages

VECTOR WIND SPEED (VWS) in km/hr

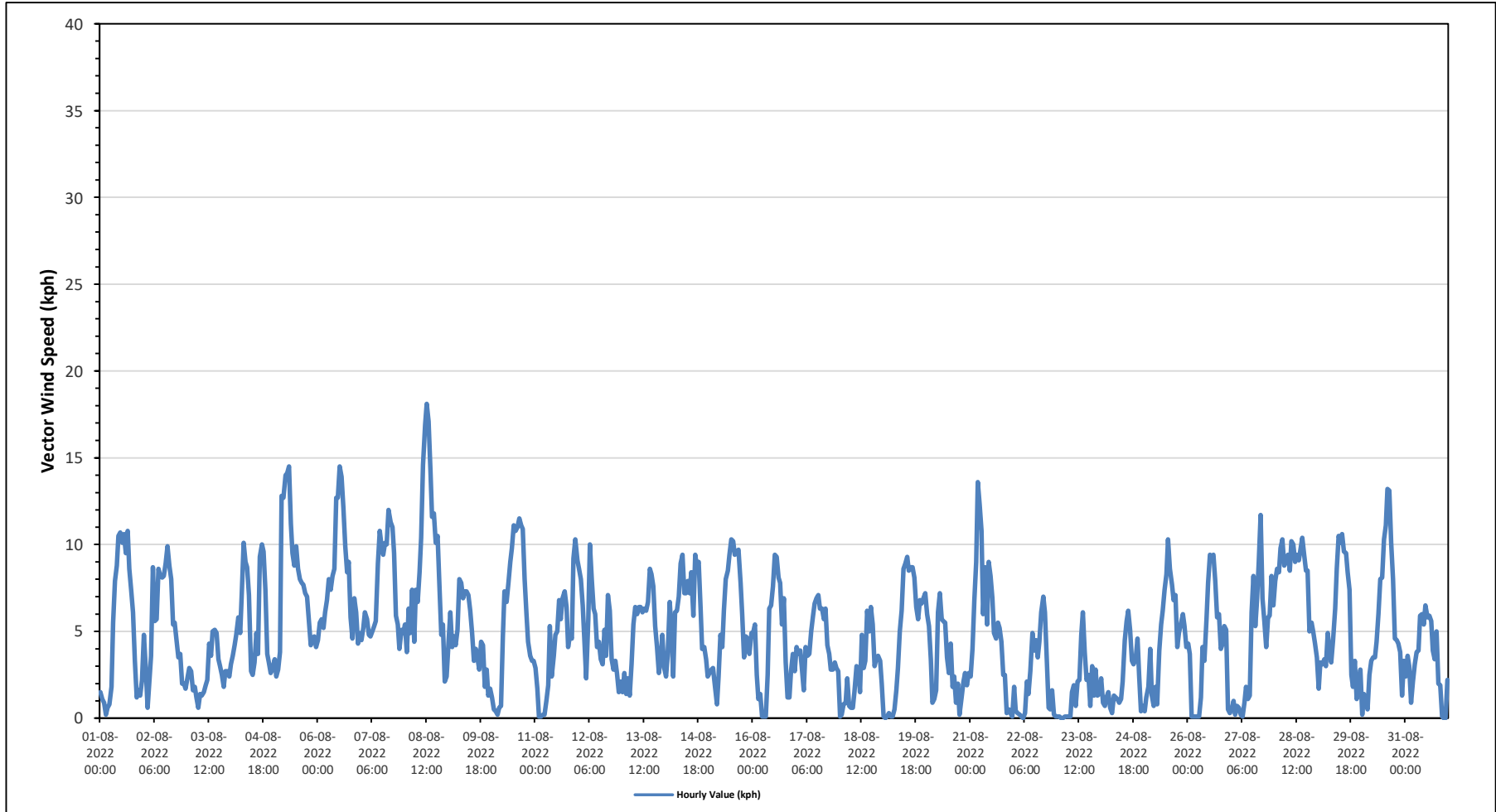
Maximum Hourly Value:	18.1 kph	on August 8 at hour 12	Hours in Service:	744
Maximum Daily Value:	7.8 kph	on August 28	Hours of Data:	744
Minimum Hourly Value:	0.0 kph	on August 19 at hour 1	Hours of Missing Data:	0
Minimum Daily Value:	0.9 kph	on August 23	Hours of Calibration:	0
Monthly Average:	1.6 kph		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
Aug 1	1.5	1.1	0.9	0.2	0.6	0.8	1.8	5.5	7.9	8.8	10.5	10.7	10.1	10.6	9.5	10.8	8.6	7.4	6.1	3.3	1.2	1.6	1.3	2.2	0.2	10.8	4.9
Aug 2	4.8	2.9	0.6	2.2	3.6	8.7	5.6	5.7	8.6	8.2	8.1	8.2	8.9	9.9	8.8	8.0	5.4	5.5	4.5	3.5	3.7	2.0	2.0	1.7	0.6	9.9	4.6
Aug 3	2.3	2.9	2.7	1.6	1.8	1.2	0.6	1.4	1.3	1.5	1.9	2.2	4.3	3.6	5.0	5.1	4.9	3.4	3.0	2.5	1.8	2.7	2.7	2.4	0.6	5.1	1.7
Aug 4	3.1	3.6	4.2	4.8	5.8	4.9	7.2	10.1	9.0	8.7	7.1	2.7	2.5	3.2	4.9	3.7	9.3	10.0	9.6	7.4	3.7	3.2	2.6	2.9	2.5	10.1	1.0
Aug 5	3.4	2.4	2.8	3.8	12.8	12.7	14.0	14.1	14.5	11.2	9.5	8.8	9.9	8.6	8.0	7.8	7.7	7.2	7.0	5.6	4.2	4.6	4.7	4.1	2.4	14.5	6.2
Aug 6	4.5	5.5	5.7	5.2	6.1	6.8	8.0	7.4	8.2	8.6	12.7	12.7	14.5	13.9	12.1	9.9	8.4	9.0	5.8	4.6	6.9	6.1	4.3	4.9	4.3	14.5	7.7
Aug 7	4.5	5.2	6.1	5.7	4.8	4.7	5.0	5.3	5.6	8.9	10.8	10.0	9.4	10.1	10.0	12.0	11.3	11.0	9.5	5.9	5.4	4.0	5.1	4.9	4.0	12.0	6.8
Aug 8	5.4	3.8	6.3	4.9	7.4	4.4	7.4	6.7	8.4	10.4	14.6	16.9	18.1	17.1	14.3	11.6	11.8	10.1	10.5	7.6	4.8	5.4	2.1	2.4	2.1	18.1	7.3
Aug 9	4.6	6.1	4.1	4.7	4.2	5.1	8.0	7.8	6.9	7.3	7.3	6.2	4.9	3.3	4.0	3.5	2.8	4.4	4.2	1.8	2.8	1.3	1.7	1.3	8.0	3.3	
Aug 10	1.2	0.5	0.4	0.2	0.6	0.7	4.7	7.3	6.7	7.8	9.0	9.8	11.1	10.8	11.0	11.5	11.1	10.9	8.0	6.0	4.4	3.6	3.3	3.3	0.2	11.5	5.7
Aug 11	2.9	1.7	0.1	0.1	0.2	0.2	1.0	1.9	5.3	2.4	3.6	4.8	5.0	6.8	5.7	6.9	7.3	6.4	4.1	4.8	4.6	9.2	10.3	9.1	0.1	10.3	1.3
Aug 12	8.6	8.0	6.5	4.6	2.3	5.7	10.0	8.0	6.3	6.0	4.1	4.4	3.4	3.1	5.1	3.6	7.1	6.2	3.4	2.8	3.3	2.6	1.5	2.1	1.5	10.0	3.7
Aug 13	1.5	2.6	1.4	2.3	1.3	3.1	5.4	6.4	6.0	6.4	6.4	6.1	6.3	6.2	6.7	8.6	8.3	7.6	5.3	4.1	2.6	3.5	4.8	2.9	1.3	8.6	4.4
Aug 14	2.4	3.6	6.7	4.9	2.4	6.1	6.2	7.0	8.9	9.4	7.2	7.2	7.9	7.2	8.4	5.9	9.4	8.8	9.0	6.4	4.0	4.1	3.4	2.4	2.4	9.4	5.0
Aug 15	2.6	2.8	2.9	1.9	0.8	2.4	4.8	4.1	6.2	8.0	8.5	9.4	10.3	10.2	9.4	9.5	9.7	7.8	6.0	3.5	4.7	4.6	3.7	4.9	0.8	10.3	5.3
Aug 16	4.9	5.4	2.5	1.1	1.4	0.1	0.1	0.1	2.5	6.3	6.5	7.6	9.4	9.3	8.1	7.8	5.4	6.9	3.2	1.2	1.2	2.7	3.7	2.7	0.1	9.4	3.5
Aug 17	4.1	3.7	3.9	2.7	1.6	4.1	3.6	3.7	5.0	5.9	6.6	6.9	7.1	6.3	6.3	5.7	6.3	4.2	3.7	2.8	2.8	3.2	2.9	2.7	1.6	7.1	3.7
Aug 18	0.1	0.2	0.8	0.9	2.3	0.7	0.6	0.6	1.5	3.0	2.8	1.5	4.8	2.9	3.3	6.2	5.0	6.4	5.4	3.0	3.4	3.6	3.3	2.0	0.1	6.4	2.1
Aug 19	0.1	0.0	0.1	0.3	0.1	0.1	0.5	1.6	2.9	5.0	6.2	8.6	8.9	9.3	8.5	8.7	8.7	8.1	6.4	5.7	6.8	6.6	6.9	7.2	0.0	9.3	4.6
Aug 20	6.0	5.3	3.4	0.9	1.1	1.6	6.1	7.2	5.7	5.6	5.5	3.5	2.6	4.3	1.8	2.4	0.9	2.0	0.2	1.2	2.1	2.6	1.9	2.6	0.2	7.2	1.7
Aug 21	2.4	4.0	6.8	9.0	13.6	12.3	10.8	6.0	8.7	5.4	9.0	8.2	6.9	4.9	4.6	5.5	5.2	4.4	2.5	2.5	0.3	0.5	0.3	0.1	0.1	13.6	4.6
Aug 22	1.8	0.4	0.3	0.2	0.1	0.0	0.3	2.1	1.4	2.7	4.9	3.9	4.5	3.5	4.4	6.1	7.0	6.1	3.4	0.6	0.5	1.6	0.2	0.1	0.0	7.0	1.8
Aug 23	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.1	1.5	1.9	0.7	2.1	2.2	4.8	6.1	3.8	2.2	2.5	0.7	3.0	1.3	2.8	1.3	1.4	0.0	6.1	0.9
Aug 24	2.3	0.9	0.7	1.2	1.5	0.6	0.3	1.3	1.2	1.1	0.9	1.1	2.1	4.5	5.6	6.2	5.1	3.3	3.1	3.4	4.6	2.5	0.4	0.7	0.3	6.2	1.4
Aug 25	0.4	1.2	1.8	4.0	1.3	0.7	1.8	0.8	3.9	5.4	6.2	7.4	8.3	10.3	8.6	7.7	6.8	7.1	4.1	4.9	5.4	6.0	5.3	4.1	0.4	10.3	4.4
Aug 26	4.3	3.7	0.1	0.1	0.1	0.1	0.1	1.2	4.1	3.3	5.7	7.8	9.4	9.3	9.4	7.9	5.8	6.0	4.0	4.3	5.3	5.1	0.5	0.3	0.1	9.4	3.8
Aug 27	0.5	1.0	0.2	0.7	0.6	0.2	0.1	0.9	1.8	1.1	1.3	6.1	8.2	5.3	6.7	9.0	11.7	6.9	5.6	4.1	5.8	5.9	8.2	6.5	0.1	11.7	3.0
Aug 28	7.9	8.6	8.4	9.8	10.3	8.8	9.1	9.4	8.5	10.2	10.0	9.0	9.4	9.1	9.8	10.4	9.4	8.5	8.5	5.0	5.5	5.0	4.3	3.5	3.5	10.4	7.8
Aug 29	1.7	3.2	3.1	3.4	3.0	4.9	3.8	3.2	4.5	6.3	8.6	10.5	10.1	10.6	9.6	9.5	8.4	7.4	2.5	1.8	3.3	1.1	1.8	2.8	1.1	10.6	4.6
Aug 30	0.2	1.4	1.1	0.5	2.5	3.3	3.5	3.5	4.4	6.0	8.0	8.1	10.3	11.1	13.2	13.1	10.1	8.0	4.6	4.5	4.3	3.8	1.3	3.3	0.2	13.2	4.9
Aug 31	2.4	3.6	3.0	0.9	2.1	3.1	3.8	3.9	5.9	6.0	5.4	6.5	5.8	5.9	5.6	3.9	3.4	5.0	2.0	1.9	0.1	0.0	0.0	2.2	0.0	6.5	2.7
Diurnal Maximum	9	9	8	10	14	13	14	14	15	11	15	17	18	17	14	13	12	11	11	8	7	9	10	9			
Diurnal Average	3.0	3.1	2.8	2.7	3.1	3.5	4.3	4.7	5.6	6.1	6.8	7.1	7.7	7.7	7.5	7.5	7.3	6.7	5.0	3.9	3.5	3.6	3.1	3.0			

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

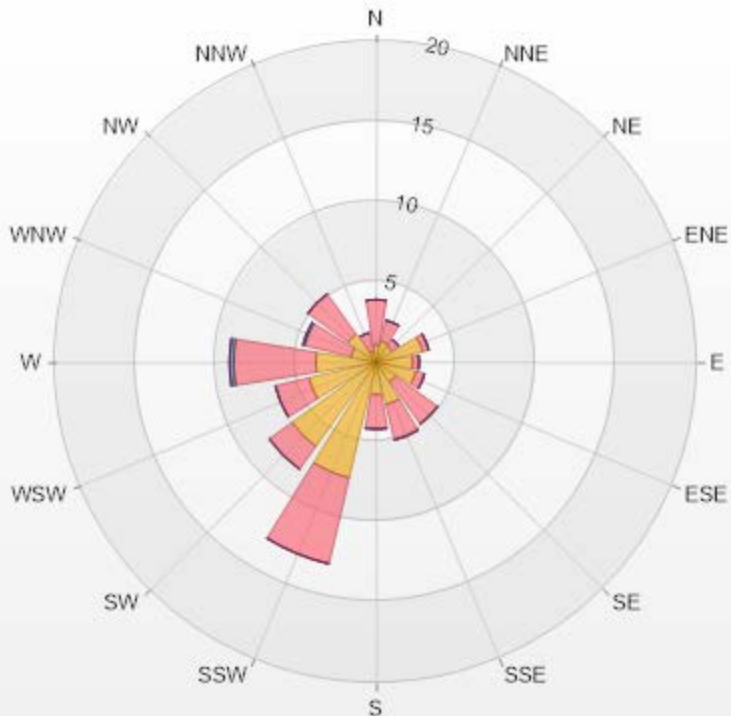
Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for VWS - Tamarack Site



Wind: Tamarack Monitor: WDS [kph] Monthly: 08-2022 Type: WindRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 20.16% Valid Data: 100.00%

Direction	1.8-6.0	6.0-15.0	15.0-29.0	29.0-39.0	>39.0	Total
N	1.08	2.82	0	0	0	3.9
NNE	1.34	1.34	0	0	0	2.68
NE	1.21	0.54	0	0	0	1.75
ENE	2.96	0.4	0	0	0	3.36
E	2.28	0.4	0	0	0	2.68
ESE	2.55	0.54	0	0	0	3.09
SE	1.48	3.23	0	0	0	4.71
SSE	2.69	2.28	0	0	0	4.97
S	2.02	2.15	0	0	0	4.17
SSW	7.39	5.51	0	0	0	12.9
SW	6.45	1.75	0	0	0	8.2
WSW	4.3	2.15	0	0	0	6.45
W	3.76	5.11	0.27	0	0	9.14
WNW	1.61	2.96	0.13	0	0	4.7
NW	2.15	3.09	0	0	0	5.24
NNW	0.67	1.21	0	0	0	1.88
Summary	43.94	35.48	0.4	0	0	79.82



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% Icon Classes (kph)	44	1.8-6.0	35	6.0-15.0	0	15.0-29.0	0	29.0-39.0	0	>39.0
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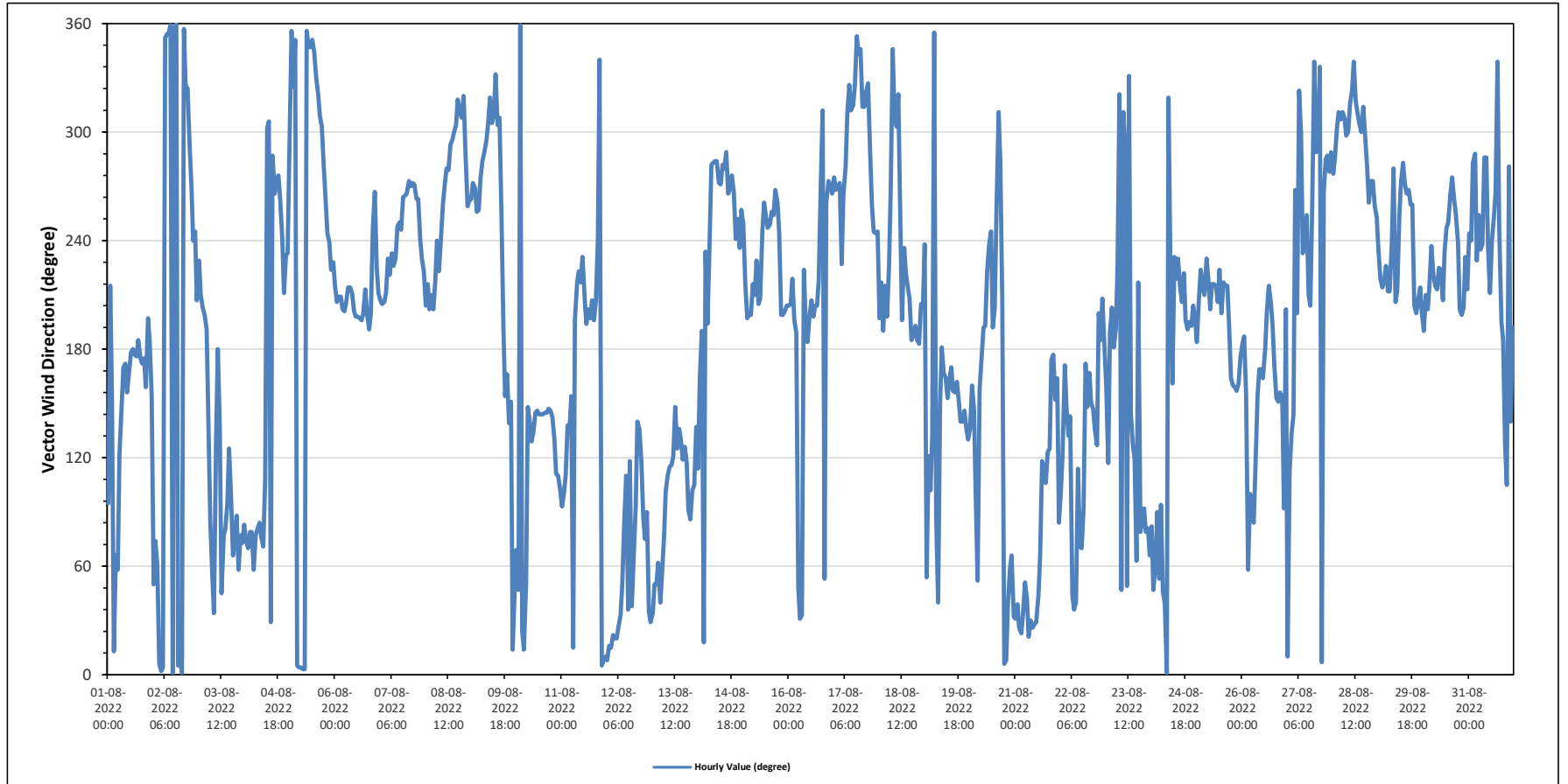
Tamarack Site - August 2022

Summary of Hourly Averages

WIND DIRECTION (VWD) in sector

Monthly Average: 237 (SW) degree										Hours in Service: 744										Daily Average								
										Hours of Data: 744										Degree		Quadrant						
										Hours of Missing Data: 0																		
										Hours of Calibration: 0																		
										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		
Aug 1	E	SSW	SSE	NNE	ENE	ENE	ESE	SE	SSE	S	SSE	SSE	S	S	S	S	S	S	S	S	SSE	SSW	S	SSE	170	SSE		
Aug 2	NE	ENE	ENE	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	NW	WNW	W	WSW	WSW	SSW	355	N
Aug 3	SW	SSW	SSW	SSW	S	SE	E	NE	NE	SE	S	SE	NE	ENE	E	E	SE	E	ENE	ENE	E	ENE	ENE	ENE	101	E		
Aug 4	E	ENE	ENE	ENE	ENE	ENE	ENE	E	E	ENE	ENE	ESE	WNW	NW	NNE	WNW	W	W	W	W	WSW	SSW	SW	SW	47	NE		
Aug 5	WNW	N	NW	N	N	N	N	N	N	N	NNW	NNW	N	NNW	NNW	NW	NW	WNW	W	W	WSW	WSW	SW	SW	337	NNW		
Aug 6	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	S	SSW	WSW	W	SW	SSW	207	SSW		
Aug 7	SSW	SSW	SSW	SSW	SW	SW	SW	SW	SW	WSW	WSW	WSW	W	W	W	W	W	W	W	W	WSW	SW	SW	SW	249	WSW		
Aug 8	SSW	SW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	WSW	WSW	W	W	W	WNW	WNW	WNW	WNW	NW	NW	NW	WSW	WSW	W	274	W		
Aug 9	W	W	W	WSW	WSW	W	WNW	WNW	WNW	WNW	NW	WNW	NW	NNW	WNW	NW	WSW	S	SSE	SSE	E	SSE	NNE	NE	284	WNW		
Aug 10	ENE	NE	N	NNE	NNE	NE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	ESE	ESE	ESE	139	SE		
Aug 11	E	E	ESE	SE	SE	SSE	NNE	SSW	SW	SW	SW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	NNW	N	N	226	SW		
Aug 12	N	NNE	NNE	NNE	NNE	NNE	NNE	NNE	NE	E	ESE	NE	ESE	NE	ENE	E	SE	SE	ESE	E	ENE	E	NE	NNE	54	NE		
Aug 13	NE	NE	NE	ENE	NE	ENE	E	ESE	ESE	ESE	ESE	SE	SE	SE	SE	SE	ESE	ESE	E	E	E	ESE	SE	ESE	111	ESE		
Aug 14	ESE	SSE	S	NNE	SW	SSW	SW	W	W	WNW	WNW	W	W	W	W	WNW	W	W	W	W	WSW	WSW	SW	WSW	265	W		
Aug 15	WSW	SW	SSW	SSW	SSW	SW	SSW	SW	SSW	SSW	WSW	W	WSW	WSW	WSW	WSW	WSW	W	W	WSW	SSW	SSW	SSW	SSW	237	SW		
Aug 16	SSW	SSW	SW	SSW	S	NE	NNE	NNE	SW	S	S	SSW	SSW	SSW	SSW	SSW	SSW	SW	W	NW	NE	W	W	W	215	SSW		
Aug 17	W	W	W	W	SW	W	W	NW	NW	NW	NW	NW	N	NNW	NNW	NW	NW	NW	NW	WNW	WSW	WSW	WSW	WSW	305	WNW		
Aug 18	SSW	SW	S	SSW	SSW	SW	W	NNW	NW	WNW	NW	WSW	SSW	SW	SSW	SSW	SSW	S	S	S	S	SSW	SSW	SSW	211	SSW		
Aug 19	SW	NE	ESE	E	SE	N	E	NE	SSW	S	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SE	SE	SE	SE	SE	153	SSE		
Aug 20	SE	SSE	SE	E	NE	SSE	S	S	S	SW	SW	WSW	S	SSW	W	NW	W	SSW	N	N	NE	ENE	ENE	NNE	186	S		
Aug 21	NNE	NE	NNE	NNE	NE	NE	NE	NNE	NNE	NNE	NNE	NNE	NE	ENE	ESE	ESE	ESE	ESE	SE	S	S	SSE	SSE	E	48	NE		
Aug 22	E	ESE	S	SE	SE	SE	NE	NE	NE	ESE	ENE	ENE	E	S	SE	SSE	SSE	SE	SE	SSW	S	SSW	S	128	SE			
Aug 23	SSE	ESE	S	SSW	S	S	SW	NW	NE	NW	WNW	NE	NNW	SE	SE	ESE	ENE	SW	ENE	E	E	ENE	E	ENE	99	E		
Aug 24	E	NE	ENE	E	NE	E	NE	NE	N	NW	SW	SSE	SW	SW	SW	SSW	SSW	SSW	SSW	S	SSW	S	SSW	SSW	204	SSW		
Aug 25	S	SSW	SW	SSW	SSW	SW	SW	SSW	SW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSE	SSE	SSE	SSE	SSE	S	199	SSW		
Aug 26	S	S	SSE	ENE	E	E	E	ESE	SSE	SSE	SSE	SSE	S	SSW	SSW	SSW	SSW	SSE	SSE	SSE	SSE	SSE	E	SSW	178	S		
Aug 27	N	ESE	SE	SE	W	SSW	NW	WNW	SW	WSW	SSW	SSW	SSW	W	NNW	WNW	WNW	NNW	N	W	WNW	WNW	W	WNW	283	W		
Aug 28	W	WNW	WNW	NW	NW	NW	NW	WNW	WNW	NW	NW	NNW	NW	NW	WNW	WNW	NW	NNW	W	W	W	W	WSW	WSW	301	WNW		
Aug 29	SW	SW	SSW	SW	SW	SSW	SSW	WSW	W	SSW	SSW	WSW	W	W	W	W	WSW	WSW	SSW	SSW	SSW	SSW	SSW	SSW	246	WSW		
Aug 30	S	SSW	SSW	SSW	SW	SSW	SSW	SW	SSW	SSW	SSW	SSW	SSW	WSW	W	W	W	WSW	WSW	SSW	SSW	SSW	SSW	SSW	239	WSW		
Aug 31	WSW	WSW	W	WNW	SW	WSW	SW	WNW	WNW	SW	SSW	WSW	WSW	W	NNW	WSW	SSW	S	SE	ESE	W	SE	S	246	WSW			
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 - Tamarack Site





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Tamarack Site - August 2022

Summary of Hourly Averages

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

WIND SPEED																												
Maximum Hourly Value: 18.1 kph on August 8 at hour 12													Hours in Service: 744															
Maximum Daily Value: 7.8 kph on August 28													Hours of Data: 744															
Minimum Hourly Value: 0.0 kph on August 19 at hour 1													Hours of Missing Data: 0															
Minimum Daily Value: 0.9 kph on August 23													Hours of Calibration: 0															
Monthly Average: 1.6 kph													Operational Uptime: 100															
WIND DIRECTION																												
Monthly Average: 237 (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	
Aug 1	1.5	1.1	0.9	0.2	0.6	0.8	1.8	5.5	7.9	8.8	10.5	10.7	10.1	10.6	9.5	10.8	8.6	7.4	6.1	3.3	1.2	1.6	1.3	2.2	0.2	10.8	4.9	
	E	SSW	SSE	NNE	ENE	ENE	ESE	SE	SSE	S	SSE	SSE	S	S	S	S	S	S	SSE	SSW	S	SSE	S	SSE				
Aug 2	4.8	2.9	0.6	2.2	3.6	8.7	5.6	5.7	8.6	8.2	8.1	8.2	8.9	9.9	8.8	8.0	5.4	5.5	4.5	3.5	3.7	2.0	2.0	1.7	0.6	9.9	4.6	
	NE	ENE	ENE	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	NW	NW	WNW	W	WSW	WSW	SSW		
Aug 3	2.3	2.9	2.7	1.6	1.8	1.2	0.6	1.4	1.3	1.5	1.9	2.2	4.3	3.6	5.0	5.1	4.9	3.4	3.0	2.5	1.8	2.7	2.7	2.4	0.6	5.1	1.7	
	SW	SSW	SSW	SSW	S	SE	E	NE	NE	SE	S	SE	NE	ENE	E	E	SE	E	ENE	ENE	E	ENE	ENE	ENE				
Aug 4	3.1	3.6	4.2	4.8	5.8	4.9	7.2	10.1	9.0	8.7	7.1	2.7	2.5	3.2	4.9	3.7	9.3	10.0	9.6	7.4	3.7	3.2	2.6	2.9	2.5	10.1	1.0	
	E	ENE	ENE	ENE	ENE	ENE	E	E	ENE	ENE	ESE	WNW	NW	NNE	WNW	W	W	W	W	W	WSW	SSW	SW	SW				
Aug 5	3.4	2.4	2.8	3.8	12.8	12.7	14.0	14.1	14.5	11.2	9.5	8.8	9.9	8.6	8.0	7.8	7.7	7.2	7.0	5.6	4.2	4.6	4.7	4.1	2.4	14.5	6.2	
	WNW	N	NW	N	N	N	N	N	N	NNW	NNW	N	NNW	NNW	NW	NW	WNW	W	W	WSW	WSW	SW	SW					
Aug 6	4.5	5.5	5.7	5.2	6.1	6.8	8.0	7.4	8.2	8.6	12.7	14.5	13.9	12.1	9.9	8.4	9.0	5.8	4.6	6.9	6.1	4.3	4.9	4.3	14.5	7.7		
	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	S	SSW	WSW	W	SW	SSW				
Aug 7	4.5	5.2	6.1	5.7	4.8	4.7	5.0	5.3	5.6	8.9	10.8	10.0	9.4	10.1	10.0	12.0	11.3	11.0	9.5	5.9	5.4	4.0	5.1	4.9	4.0	12.0	6.8	
	SSW	SSW	SSW	SSW	SW	SW	SW	SW	SW	WSW	WSW	WSW	W	W	W	W	W	W	W	W	W	WSW	SW	SW				
Aug 8	5.4	3.8	6.3	4.9	7.4	4.4	7.4	6.7	8.4	10.4	14.6	16.9	18.1	17.1	14.3	11.6	11.8	10.1	10.5	7.6	4.8	5.4	2.1	2.4	2.1	18.1	7.3	
	SSW	SW	SSW	SSW	SSW	SW	WSW	SW	WSW	SW	WSW	W	W	W	WNW	WNW	WNW	WNW	NW	NW	NW	NW	WNW	WSW	W			
Aug 9	4.6	6.1	4.1	4.7	4.2	5.1	8.0	7.8	6.9	7.3	7.3	7.1	6.2	4.9	3.3	4.0	3.5	2.8	4.4	4.2	1.8	2.8	1.3	1.7	1.3	8.0	3.3	
	W	W	W	WSW	WSW	W	WNW	WNW	WNW	WNW	NW	WNW	NW	WNW	WNW	NW	WSW	S	SSE	SSE	SE	SSE	NNE	NE				
Aug 10	1.2	0.5	0.4	0.2	0.6	0.7	4.7	7.3	6.7	7.8	9.0	9.8	11.1	10.8	11.0	11.5	11.1	10.9	8.0	6.0	4.4	3.6	3.3	3.3	0.2	11.5	5.7	
	ENE	NE	N	NNE	NNE	NE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	ESE	ESE	ESE				
Aug 11	2.9	1.7	0.1	0.1	0.2	0.2	1.0	1.9	5.3	2.4	3.6	4.8	5.0	6.8	5.7	6.9	7.3	6.4	4.1	4.8	4.6	9.2	10.3	9.1	0.1	10.3	1.3	
	E	E	ESE	SE	SE	SSE	NNE	SSW	SW	SW	SW	SW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	WSW	NNW	N	N	N				
Aug 12	8.6	8.0	6.5	4.6	2.3	5.7	10.0	8.0	6.3	6.0	4.1	4.4	3.4	3.1	5.1	3.6	7.1	6.2	3.4	2.8	3.3	2.6	1.5	2.1	1.5	10.0	3.7	
	N	NNE	NNE	NNE	NNE	NNE	NNE	NNE	NE	E	ESE	NE	ESE	NE	ENE	E	SE	SE	ESE	E	ENE	E	NE	NNE				
Aug 13	1.5	2.6	1.4	2.3	1.3	3.1	5.4	6.4	6.0	6.4	6.4	6.1	6.3	6.2	6.7	8.6	8.3	7.6	5.3	4.1	2.6	3.5	4.8	2.9	1.3	8.6	4.4	
	NE	NE	NE	ENE	NE	ENE	E	ESE	ESE	ESE	ESE	SE	SE	SE	SE	ESE	SE	ESE	E	E	E	ESE	SE					
Aug 14	2.4	3.6	6.7	4.9	2.4	6.1	6.2	7.0	8.9	9.4	7.2	7.2	7.9	7.2	8.4	5.9	9.4	8.8	9.0	6.4	4.0	4.1	3.4	2.4	2.4	9.4	5.0	
	ESE	SSE	S	NNE	SW	SSW	SW	W	W	WNW	WNW	W	W	W	W	WNW	W	W	W	W	W	WSW	WSW	SW	WSW			
Aug 15	2.6	2.8	2.9	1.9	0.8	2.4	4.8	4.1	6.2	8.0	8.5	9.4	10.3	10.2	9.4	9.5	9.7	7.8	6.0	3.5	4.7	4.6	3.7	4.9	0.8	10.3	5.3	
	WSW	SW	SSW	SSW	SSW	SW	SSW	SW	SSW	SSW	WSW	W	WSW	WSW	WSW	WSW	WSW	WSW	W	W	WSW	SSW	SSW	SSW				
Aug 16	4.9	5.4	2.5	1.1	1.4	0.1	0.1	0.1	2.5	6.3	6.5	7.6	9.4	9.3	8.1	7.8	5.4	6.9	3.2	1.2	1.2	2.7	3.7	2.7	0.1	9.4	3.5	
	SSW	SSW	SW	SSW	S	NE	NNE	NNE	SW	S	S	SSW	SSW	SSW	SSW	SSW	SSW	SW	NW	NE	W	W	W	W				
Aug 17	4.1	3.7	3.9	2.7	1.6	4.1	3.6	3.7	5.0	5.9	6.6	6.9	7.1	6.3	6.3	5.7	6.3	4.2	3.7	2.8	2.8	3.2	2.9	2.7	1.6	7.1	3.7	
	W	W	W	W	SW	W	W	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	WNW	WSW	WSW	WSW	WSW				
Aug 18	0.1	0.2	0.8	0.9	2.3	0.7	0.6	0.6	1.5	3.0	2.8	1.5	4.8	2.9	3.3	6.2	5.0	6.4	5.4	3.0	3.4	3.6	3.3	2.0	0.1	6.4	2.1	
	SSW	SW	S	SSW	SSW	SW	W	NNW	NW	WNW	NW	WSW	SSW	SW	SSW	SSW	S	S	S	S	S	SSW	SSW					
Aug 19	0.1	0.0	0.1	0.3	0.1	0.1	0.5	1.6	2.9	5.0	6.2	8.6	8.9	9.3	8.5	8.7	8.7	8.1	6.4	5.7	6.8	6.6	6.9	7.2	0.0	9.3	4.6	
	SW	NE	ESE	E	SE	N	E	NE	SSE	S	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SE	SE	SE	SE				
Aug 20	6.0	5.3	3.4	0.9	1.1	1.6	6.1	7.2	5.7	5.6	5.5	3.5	2.6	4.3	1.8	2.4	0.9	2.0	0.2	1.2	2.1	2.6	1.9	2.6	0.2	7.2	1.7	
	SE	SSE	SE	E	NE	SSE	S	S	S	SW	SW	WSW	S	SSW	W	NW	W	SSW	N	N	NE	ENE	ENE	NNE				



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Tamarack Site - August 2022

Summary of Hourly Averages

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

WIND SPEED		Maximum Hourly Value: 18.1 kph on August 8 at hour 12		Hours in Service: 744																																											
		Maximum Daily Value: 7.8 kph on August 28		Hours of Data: 744																																											
		Minimum Hourly Value: 0.0 kph on August 19 at hour 1		Hours of Missing Data: 0																																											
		Minimum Daily Value: 0.9 kph on August 23		Hours of Calibration: 0																																											
		Monthly Average: 1.6 kph		Operational Uptime: 100																																											
WIND DIRECTION		Monthly Average: 237 (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																							
Aug 21	2.4	4.0	6.8	9.0	13.6	12.3	10.8	6.0	8.7	5.4	9.0	8.2	6.9	4.9	4.6	5.5	5.2	4.4	2.5	2.5	0.3	0.5	0.3	0.1	0.1	13.6	4.6																				
Aug 22	1.8	0.4	0.3	0.2	0.1	0.0	0.3	2.1	1.4	2.7	4.9	3.9	4.5	3.5	4.4	6.1	7.0	6.1	3.4	0.6	0.5	1.6	0.2	0.1	0.0	7.0	1.8																				
Aug 23	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.1	1.5	1.9	0.7	2.1	2.2	4.8	6.1	3.8	2.2	2.5	0.7	3.0	1.3	2.8	1.3	1.4	0.0	6.1	0.9																				
Aug 24	2.3	0.9	0.7	1.2	1.5	0.6	0.3	1.3	1.2	1.1	0.9	1.1	2.1	4.5	5.6	6.2	5.1	3.3	3.1	3.4	4.6	2.5	0.4	0.7	0.3	6.2	1.4																				
Aug 25	0.4	1.2	1.8	4.0	1.3	0.7	1.8	0.8	3.9	5.4	6.2	7.4	8.3	10.3	8.6	7.7	6.8	7.1	4.1	4.9	5.4	6.0	5.3	4.1	0.4	10.3	4.4																				
Aug 26	4.3	3.7	0.1	0.1	0.1	0.1	0.1	1.2	4.1	3.3	5.7	7.8	9.4	9.3	9.4	7.9	5.8	6.0	4.0	4.3	5.3	5.1	0.5	0.3	0.1	9.4	3.8																				
Aug 27	0.5	1.0	0.2	0.7	0.6	0.2	0.1	0.9	1.8	1.1	1.3	6.1	8.2	5.3	6.7	9.0	11.7	6.9	5.6	4.1	5.8	5.9	8.2	6.5	0.1	11.7	3.0																				
Aug 28	7.9	8.6	8.4	9.8	10.3	8.8	9.1	9.4	8.5	10.2	10.0	9.0	9.4	9.1	9.8	10.4	9.4	8.5	8.5	5.0	5.5	5.0	4.3	3.5	3.5	10.4	7.8																				
Aug 29	1.7	3.2	3.1	3.4	3.0	4.9	3.8	3.2	4.5	6.3	8.6	10.5	10.1	10.6	9.6	9.5	8.4	7.4	2.5	1.8	3.3	1.1	1.8	2.8	1.1	10.6	4.6																				
Aug 30	0.2	1.4	1.1	0.5	2.5	3.3	3.5	3.5	4.4	6.0	8.0	8.1	10.3	11.1	13.2	13.1	10.1	8.0	4.6	4.5	4.3	3.8	1.3	3.3	0.2	13.2	4.9																				
Aug 31	2.4	3.6	3.0	0.9	2.1	3.1	3.8	3.9	5.9	6.0	5.4	6.5	5.8	5.9	5.6	3.9	3.4	5.0	2.0	1.9	0.1	0.0	0.0	2.2	0.0	6.5	2.7																				
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.



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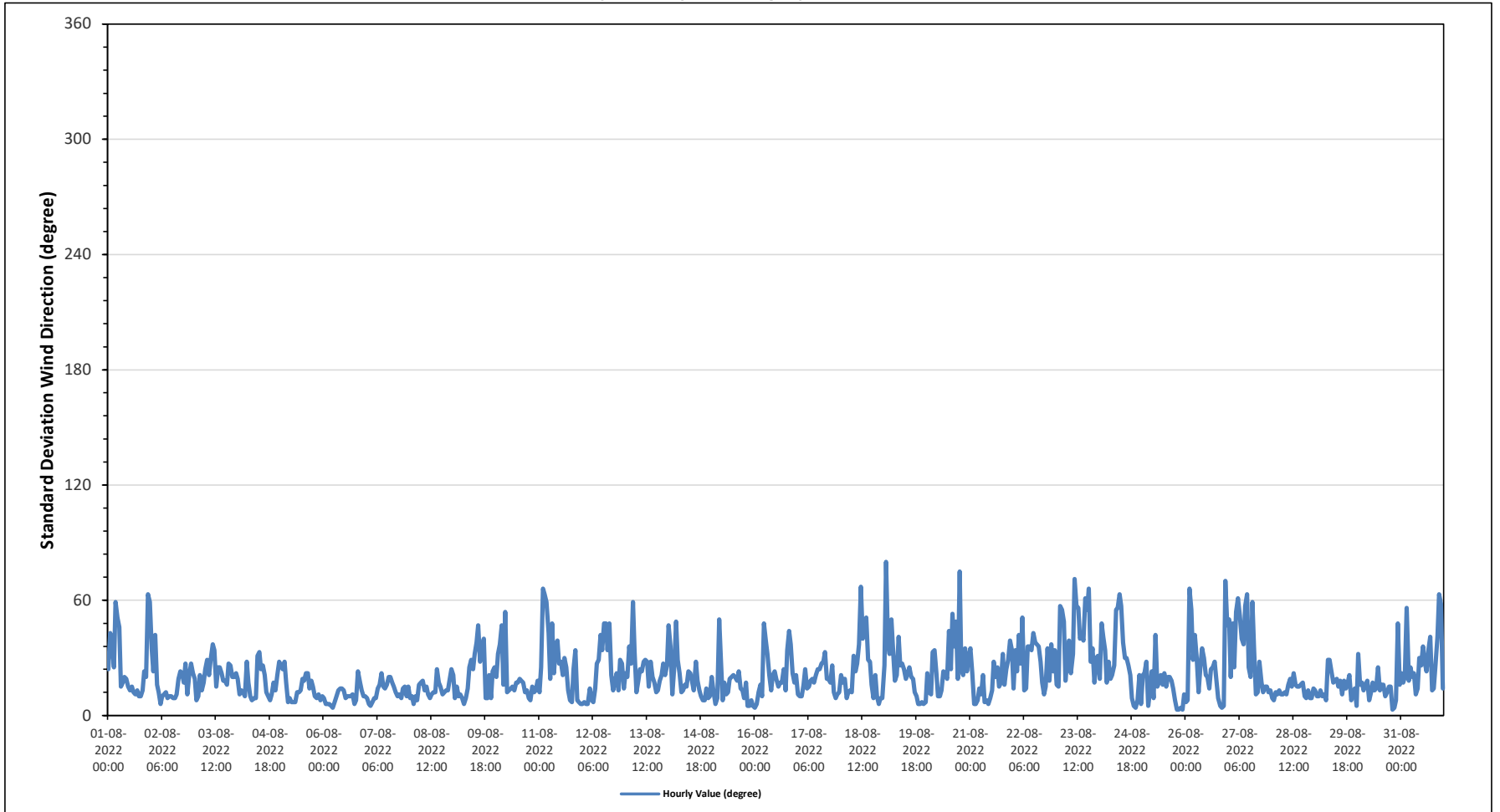
Tamarack Site - August 2022

Summary of Hour Standard Deviations

STANDARD DEVIATION WIND DIRECTION (STDWD) in Degree

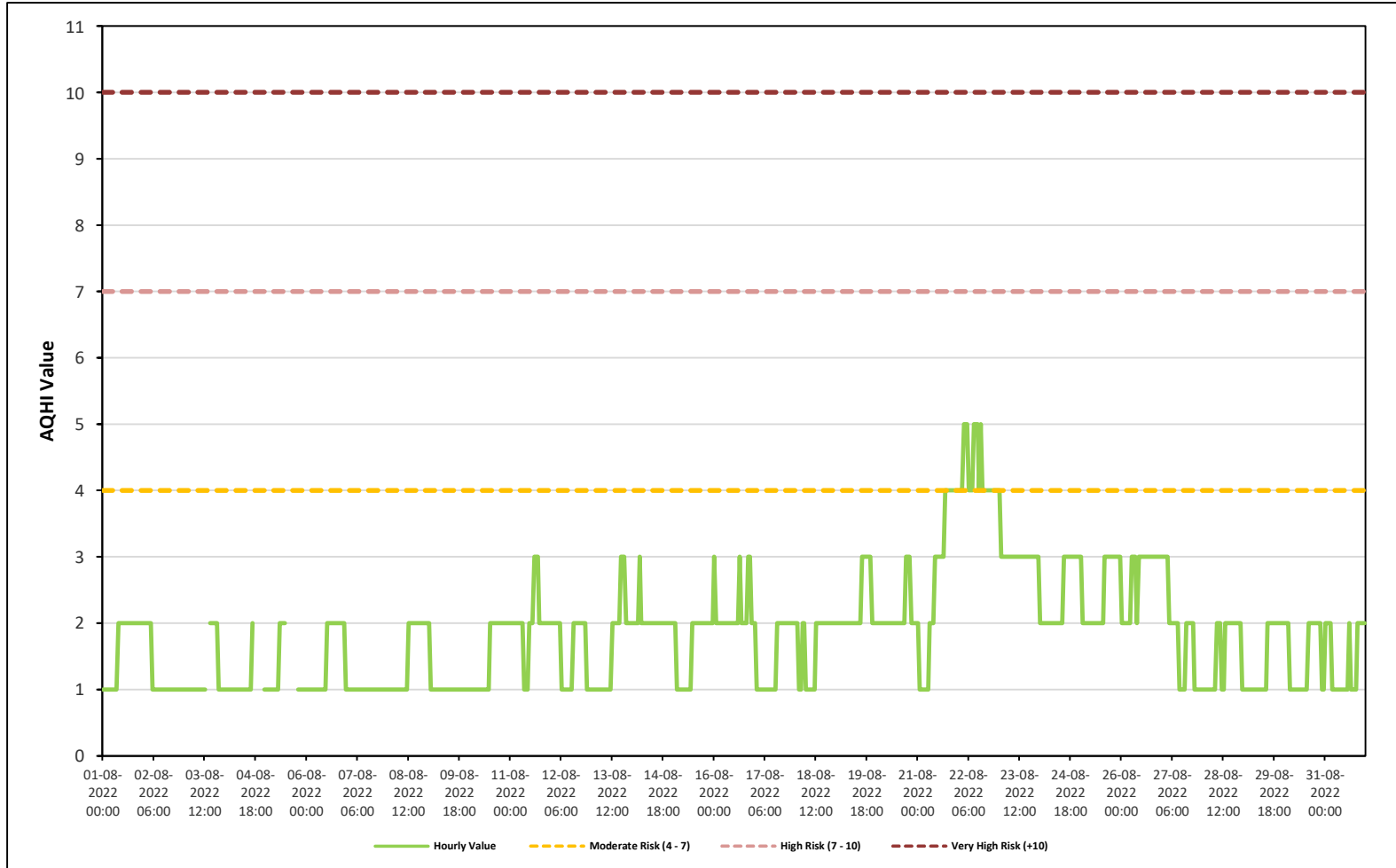
Maximum Hourly Value:		80 degree on August 19 at hour 1														Hours in Service:		744															
Minimum Hourly Value:		3 degree on August 25 at hour 19														Hours of Data:		744															
																Hours of Missing Data:		0															
																Hours of Calibration:		0															
																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							
Aug 1	24	43	37	25	59	51	46	15	17	20	19	15	13	15	12	11	13	10	10	13	23	20	63	59	10	63							
Aug 2	35	23	42	16	12	6	10	11	12	9	10	10	9	9	11	19	23	22	17	27	11	21	27	22	6	42							
Aug 3	19	8	10	21	13	17	24	29	21	29	37	34	15	25	25	22	18	18	16	27	26	20	20	22	8	37							
Aug 4	19	11	13	12	10	28	17	10	8	9	9	31	33	24	26	21	12	10	8	11	17	13	21	28	8	33							
Aug 5	26	24	28	17	7	9	7	7	7	12	12	13	19	18	22	22	14	18	15	10	9	11	8	10	7	28							
Aug 6	9	6	6	6	5	4	7	10	13	14	14	13	9	10	10	10	11	6	8	23	17	13	10	10	4	23							
Aug 7	9	6	5	7	9	9	14	16	22	15	14	16	20	20	17	15	12	10	11	9	14	15	10	15	5	22							
Aug 8	9	10	6	10	8	16	17	18	13	15	11	9	11	12	12	24	17	15	11	12	13	13	19	24	6	24							
Aug 9	21	9	15	10	11	9	6	9	14	25	29	24	32	38	47	28	35	40	9	9	21	9	23	25	6	47							
Aug 10	20	32	37	47	16	54	12	13	14	15	13	17	17	19	18	17	12	13	9	8	15	12	13	18	8	54							
Aug 11	12	25	66	63	59	43	19	48	22	36	39	27	28	21	30	25	13	8	7	24	34	8	7	6	6	66							
Aug 12	6	7	6	6	14	8	7	14	27	29	42	34	48	48	34	48	21	13	18	22	13	29	27	14	6	48							
Aug 13	22	20	36	27	59	33	12	18	24	23	28	29	28	15	28	20	17	12	13	18	21	27	21	26	12	59							
Aug 14	47	36	11	25	49	29	22	12	13	16	15	23	22	18	13	28	18	13	10	8	8	14	9	10	8	49							
Aug 15	20	12	6	9	50	30	8	17	11	12	19	20	21	20	18	23	14	13	9	17	5	5	8	5	5	50							
Aug 16	4	6	12	16	10	48	39	32	21	13	21	23	19	15	17	17	24	13	34	44	37	22	17	21	4	48							
Aug 17	11	10	10	16	24	14	15	18	19	17	21	24	24	27	28	33	19	19	17	26	12	9	11	12	9	33							
Aug 18	21	17	19	9	12	13	12	31	23	27	37	67	40	49	51	29	28	16	9	21	10	6	9	9	6	67							
Aug 19	26	80	38	32	50	32	18	21	41	26	27	24	19	22	25	20	19	12	10	6	6	7	6	7	6	80							
Aug 20	22	12	11	33	34	22	10	10	13	23	22	19	44	24	53	36	49	19	75	24	21	35	23	31	10	75							
Aug 21	35	22	6	6	8	14	11	21	7	8	6	9	13	28	20	25	15	17	32	16	24	29	39	34	6	39							
Aug 22	14	34	23	42	27	51	13	14	36	36	34	43	38	37	36	28	17	11	15	35	18	37	23	34	11	51							
Aug 23	16	15	57	55	49	18	30	39	22	32	71	57	56	40	42	39	61	55	66	28	35	17	30	31	15	71							
Aug 24	19	48	41	34	17	28	19	21	26	55	56	63	57	38	30	30	26	21	9	5	4	8	21	6	4	63							
Aug 25	21	22	28	5	12	23	9	42	15	17	21	16	22	15	20	20	18	14	8	3	3	4	3	11	3	42							
Aug 26	7	8	66	55	29	42	30	12	26	35	30	21	20	14	24	25	28	19	9	5	4	5	70	47	4	70							
Aug 27	50	20	48	25	54	61	52	40	37	57	63	25	20	59	35	11	12	28	17	12	15	15	12	13	11	63							
Aug 28	9	8	12	11	13	11	11	12	11	16	19	15	22	16	15	15	16	17	10	9	13	9	9	14	8	22							
Aug 29	13	10	10	13	10	11	8	29	29	23	17	18	19	15	18	11	18	14	17	21	8	11	14	5	5	29							
Aug 30	32	16	17	13	16	18	8	12	17	13	14	25	13	16	16	10	12	15	15	3	4	8	48	16	3	48							
Aug 31	22	17	20	56	18	25	20	22	11	14	30	26	36	28	23	34	41	13	14	27	41	63	58	14	11	63							
Diurnal Minimum	4	6	5	5	5	4	6	7	7	8	6	9	9	9	10	10	11	6	7	3	3	4	3	5									
Diurnal Maximum	50	80	66	63	59	61	52	48	41	57	71	67	57	59	53	48	61	55	75	44	41	63	70	59									
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 - Tamarack Site



ST. LINA STATION

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



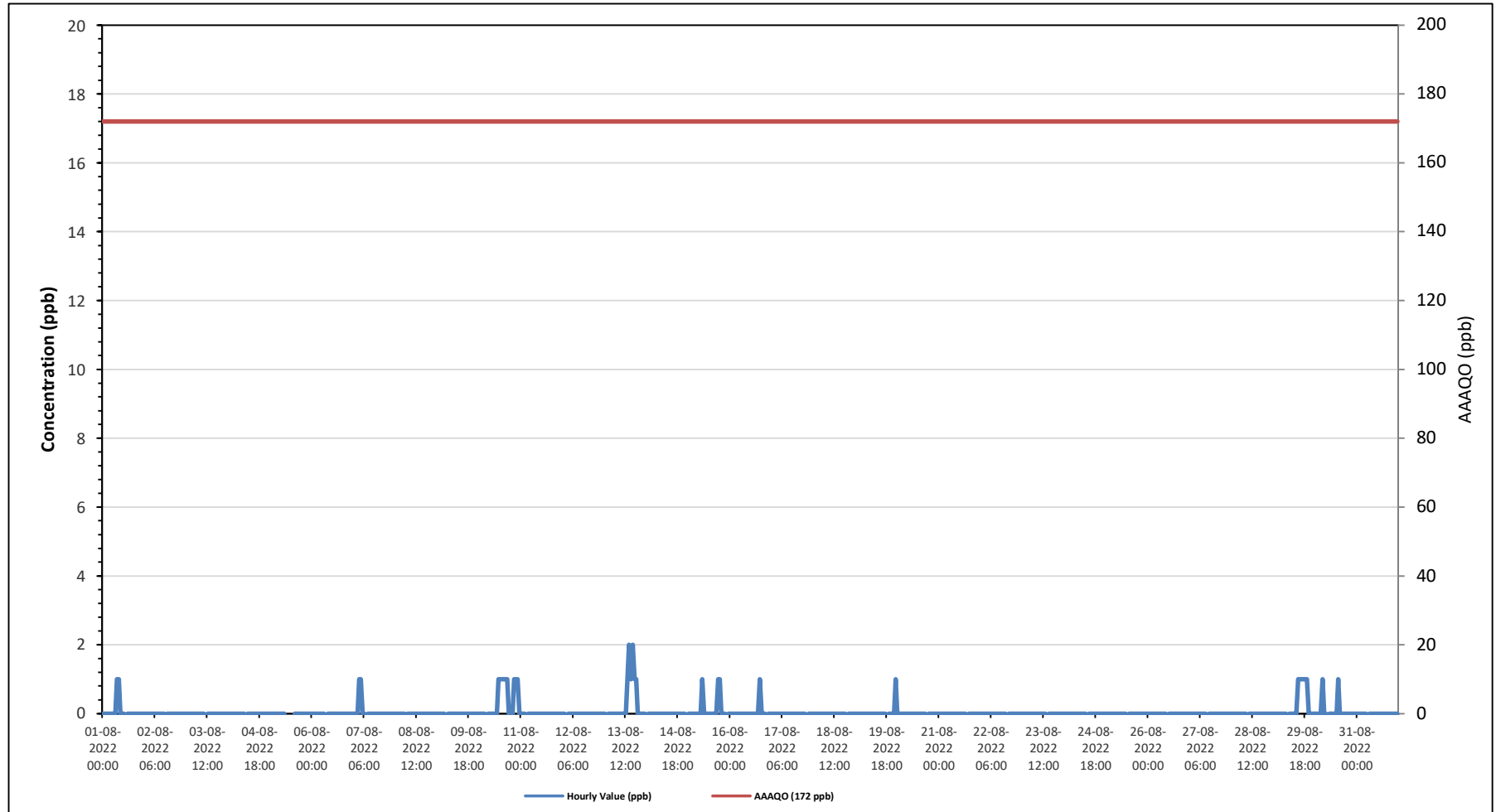


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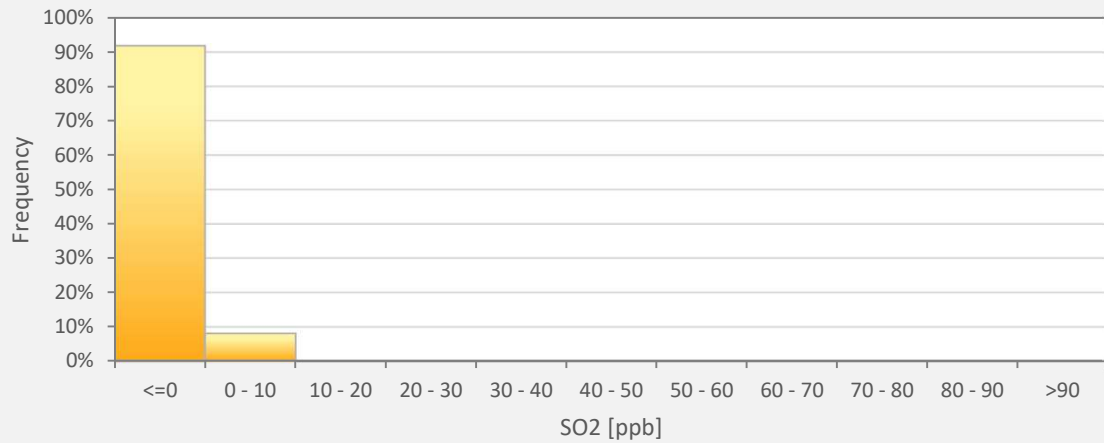
St. Lina Site - August 2022
 Summary of Hourly Averages
 SULPHUR DIOXIDE (SO₂) in ppb

Alberta Ambient Air Quality Objectives (AAAQO): 1-Hour 172 ppb, 24-Hour 48 ppb, 30-Day 11 ppb																																								
Number of 1-Hour Exceedances: 0					Number of 24-Hour Exceedances: 0					30-Day Exceedence: 0																														
Maximum Hourly Value: 2 ppb on August 13 at hour 14										Hours in Service: 744																														
Maximum Daily Value: 0.4 ppb on August 10										Hours of Data: 708																														
Minimum Hourly Value: 0 ppb on August 1 at hour 0										Hours of Missing Data: 0																														
Minimum Daily Value: 0.0 ppb on August 2										Hours of Calibration: 36																														
Monthly Average: 0.0 ppb										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																
Aug 1	0	0	0	0	0	0	0	0	1	1	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1											
Aug 2	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	0.0											
Aug 3	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	0.0											
Aug 4	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	0.0											
Aug 5	0	0	0	0	0	0	0	0	0	S	C	C	C	C	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0											
Aug 6	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	0.0											
Aug 7	0	0	0	1	1	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1											
Aug 8	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	0.0											
Aug 9	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	0.0											
Aug 10	0	0	0	0	S	0	0	0	0	0	0	1	1	1	1	1	1	0	0	0	1	1	1	0	0	0	1	0.4												
Aug 11	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	0.0											
Aug 12	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	0.0											
Aug 13	0	S	0	0	0	0	0	0	0	0	0	0	0	1	2	1	2	1	1	0	0	0	0	0	0	0	2	0.3												
Aug 14	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	S	0	0.0												
Aug 15	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0.1												
Aug 16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	S	0	0	0	0	1	0.0												
Aug 17	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	0.0											
Aug 18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	S	0	0	0	0	0	0	0	0.0											
Aug 19	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	1	0	1	0.0											
Aug 20	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	0.0											
Aug 21	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	0.0											
Aug 22	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	0.0											
Aug 23	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	0.0											
Aug 24	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	0.0											
Aug 25	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	0.0											
Aug 26	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	0.0											
Aug 27	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	0.0											
Aug 28	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	0.0											
Aug 29	0	0	0	0	0	0	0	S	0	0	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	1	0.3											
Aug 30	0	0	0	0	1	0	0	S	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1											
Aug 31	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	0.0											
Diurnal Maximum	0	0	0	1	1	0	0	0	1	1	0	1	1	1	2	1	2	1	1	1	1	1	1	1	1	1	1	1												
Diurnal Average	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	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 SO2 - St. Lina Site



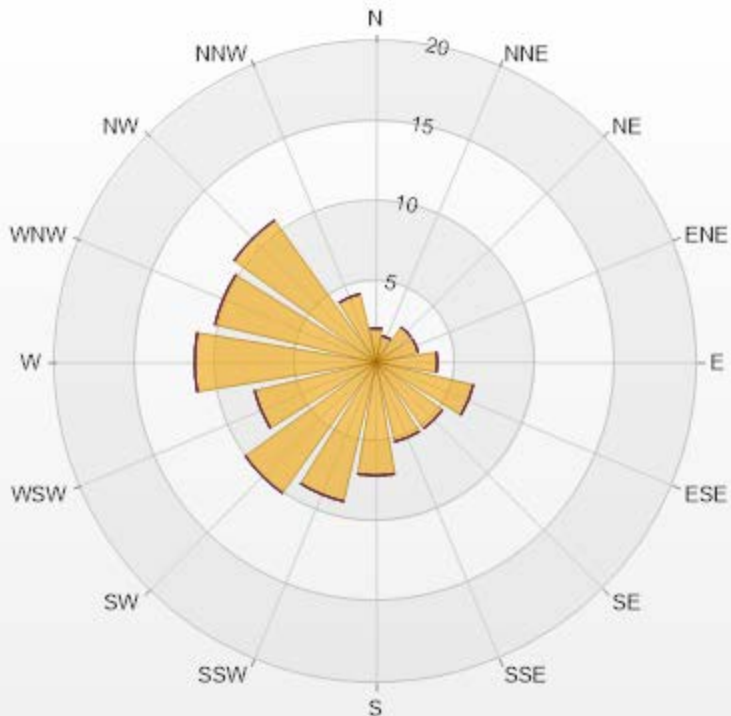
SO2[ppb] Histogram: St. Lina Monthly: 08-2022 1 Hr.



Classes	SO2
<=0	91.81%
0 - 10	8.19%
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: 08-2022 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 95.16% Calm Avg: 0.00 [ppb]

Direction	0-10	10-50	50-100	100-172	>172.0	Total
N	2.12	0	0	0	0	2.12
NNE	1.69	0	0	0	0	1.69
NE	2.68	0	0	0	0	2.68
ENE	2.68	0	0	0	0	2.68
E	3.81	0	0	0	0	3.81
ESE	6.21	0	0	0	0	6.21
SE	5.08	0	0	0	0	5.08
SSE	5.08	0	0	0	0	5.08
S	7.06	0	0	0	0	7.06
SSW	8.9	0	0	0	0	8.9
SW	10.03	0	0	0	0	10.03
WSW	7.77	0	0	0	0	7.77
W	11.3	0	0	0	0	11.3
WNW	10.31	0	0	0	0	10.31
NW	10.88	0	0	0	0	10.88
NNW	4.38	0	0	0	0	4.38
Summary	100	0	0	0	0	100



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% Icon Classes (ppb)

100 0-10

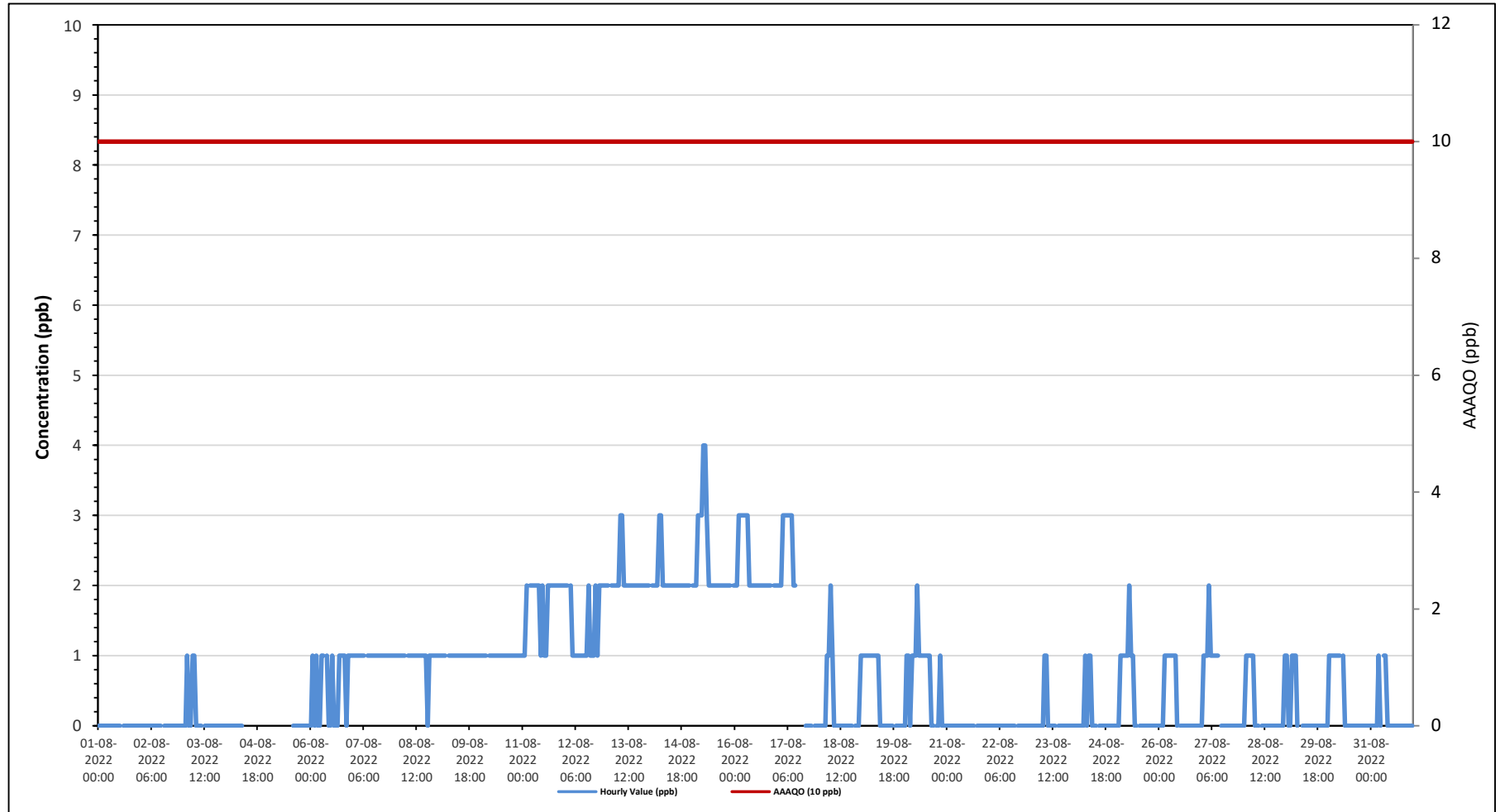
0 10-50

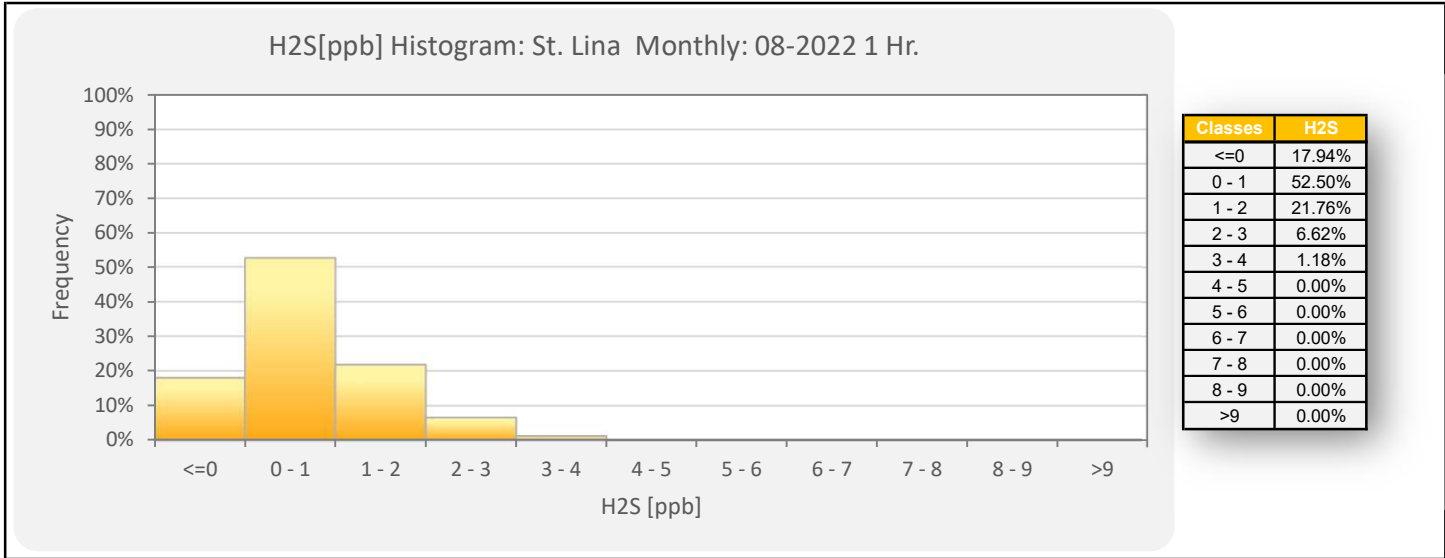
0 50-100

0 100-172

0 >172.0

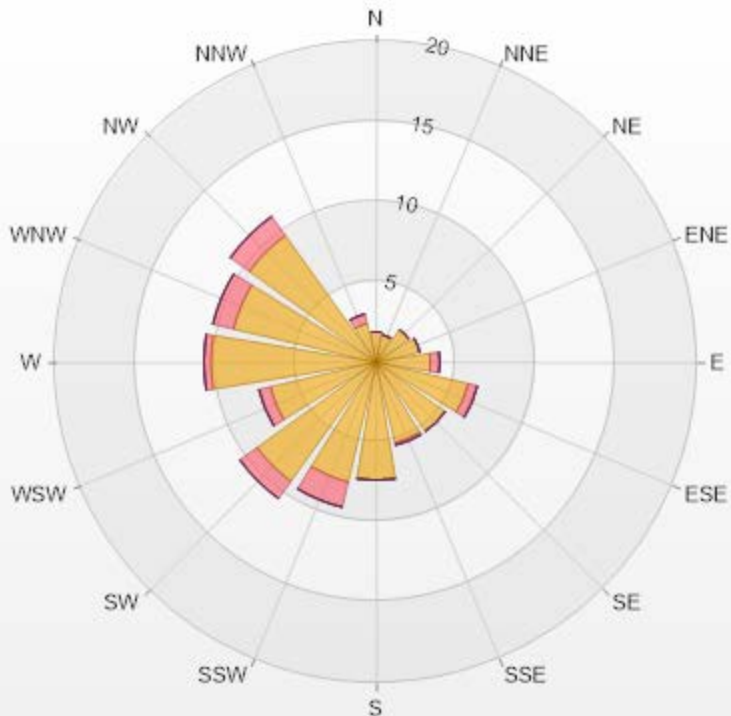
Timeseries Chart of Hourly Average for H2S - St. Lina Site





Wind: St. Lina Poll.: St. Lina-H2S[ppb] Monthly: 08-2022 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 91.40% Calm Avg: 0.00 [ppb]

Direction	0-2	2-5	5-10	10-50	>50.0	Total
N	1.91	0	0	0	0	1.91
NNE	1.76	0	0	0	0	1.76
NE	2.5	0	0	0	0	2.5
ENE	2.79	0	0	0	0	2.79
E	3.38	0.59	0	0	0	3.97
ESE	5.88	0.59	0	0	0	6.47
SE	5.29	0	0	0	0	5.29
SSE	5.15	0.15	0	0	0	5.3
S	7.35	0	0	0	0	7.35
SSW	7.65	1.62	0	0	0	9.27
SW	9.12	1.32	0	0	0	10.44
WSW	6.76	0.74	0	0	0	7.5
W	10.29	0.44	0	0	0	10.73
WNW	9.12	1.32	0	0	0	10.44
NW	9.71	1.47	0	0	0	11.18
NNW	2.5	0.59	0	0	0	3.09
Summary	91.16	8.83	0	0	0	100



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% Icon Classes (ppb)

91 0-2

9 2-5

0 5-10

0 10-50

0 >50.0



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St. Lina Site - August 2022

Summary of Hourly Averages

OXIDES OF NITROGEN (NOx) in ppb

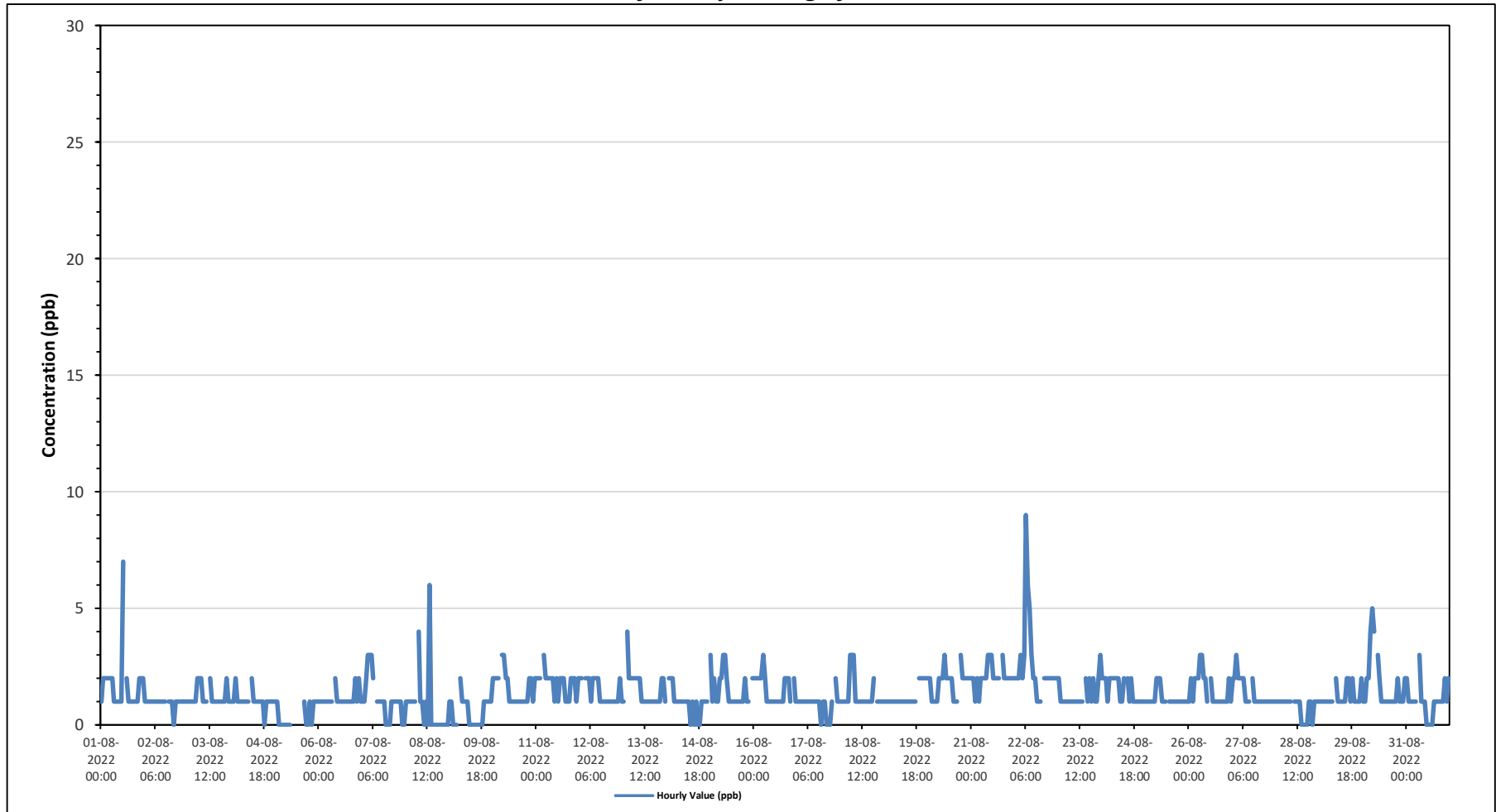
Maximum Hourly Value:	9 ppb on August 22 at hour 6	Hours in Service:	744
Maximum Daily Value:	2.6 ppb on August 22	Hours of Data:	706
Minimum Hourly Value:	0 ppb on August 2 at hour 16	Hours of Missing Data:	0
Minimum Daily Value:	0.6 ppb on August 9	Hours of Calibration:	38
Monthly Average:	1.3 ppb	Operational Uptime:	100.0

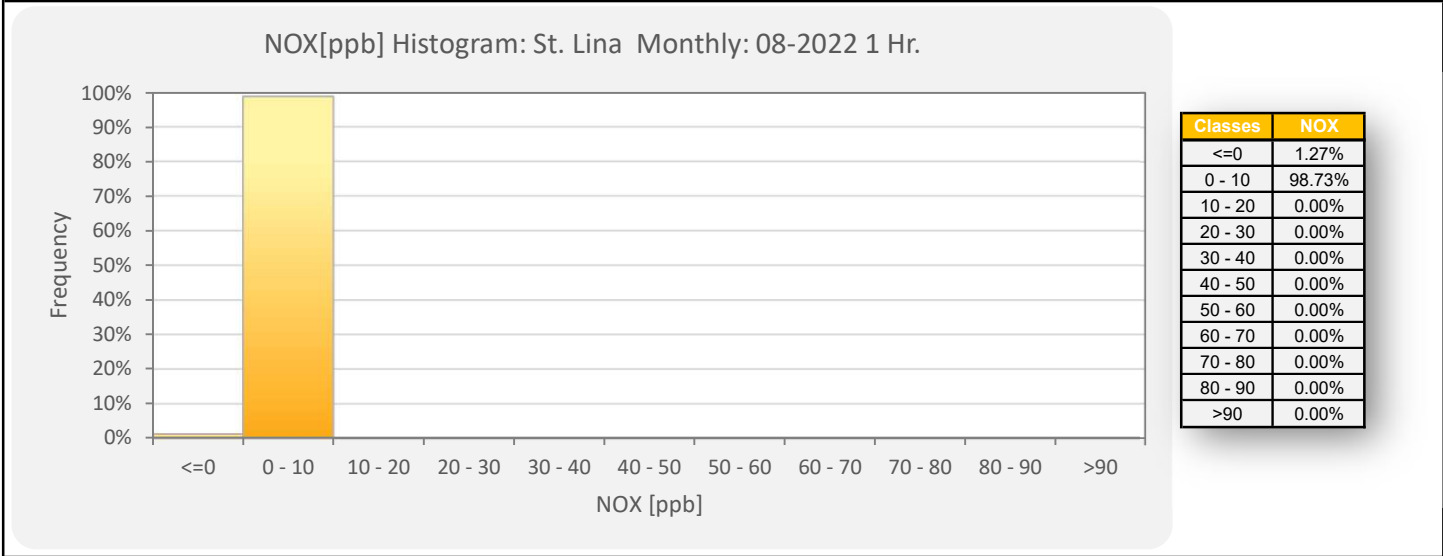
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23
Aug 1	1	2	2	2	2	2	2	1	1	1	1	1	7	S	2	1	1	1	1	1	2	2	2	1	7	1.7	
Aug 2	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	0	1	1	1	1	1	1	1	0	1	1.0
Aug 3	1	1	1	1	1	2	2	2	1	1	1	S	2	1	1	1	1	1	1	1	1	2	1	1	1	2	1.2
Aug 4	1	1	2	1	1	1	1	1	1	1	S	2	1	1	1	1	1	0	1	1	1	1	1	1	0	2	1.0
Aug 5	1	1	0	0	0	0	0	0	0	S	C	C	C	C	C	C	1	0	0	1	0	1	1	1	0	1	-
Aug 6	1	1	1	1	1	1	1	1	S	2	1	1	1	1	1	1	1	1	1	1	2	1	2	1	1	2	1.1
Aug 7	1	1	2	3	3	3	2	S	1	1	1	1	1	0	0	0	1	1	1	1	1	1	0	0	0	3	1.1
Aug 8	1	1	1	1	1	1	S	4	1	1	0	1	0	6	0	0	0	0	0	0	0	0	0	0	0	6	0.8
Aug 9	1	1	0	0	0	S	2	1	1	1	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	0.6
Aug 10	2	2	2	2	S	3	3	2	2	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	2	1	1.6
Aug 11	2	2	2	S	3	2	2	2	2	2	1	2	1	2	2	2	1	1	1	1	2	2	1	2	1	2	1.8
Aug 12	2	2	S	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	2	1	1	2	1.4
Aug 13	1	S	4	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1.5
Aug 14	S	2	2	2	1	1	1	1	1	1	1	1	0	1	0	1	0	0	0	1	1	1	1	1	S	0	1.0
Aug 15	3	1	2	1	1	2	2	3	3	2	1	1	1	1	1	1	1	1	1	1	2	1	1	S	2	1	1.5
Aug 16	2	2	2	2	2	3	2	1	1	1	1	1	1	1	1	1	1	2	2	2	1	S	2	1	1	3	1.5
Aug 17	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	0	0	0	0	S	2	1	1	0	2	0.9
Aug 18	1	1	1	1	1	3	3	3	1	1	1	1	1	1	1	1	1	1	1	2	S	1	1	1	1	1	1.3
Aug 19	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	2	2	2	2	2	2	1	1.2
Aug 20	2	2	1	1	1	1	2	2	2	2	3	2	2	2	2	1	1	S	3	2	2	2	2	2	2	1	1.8
Aug 21	2	2	1	2	1	2	2	2	2	3	3	3	2	2	2	S	3	2	2	2	2	2	2	2	2	2	2.1
Aug 22	2	2	2	3	2	3	9	6	5	3	2	2	1	1	S	2	2	2	2	2	2	2	2	2	2	1	2.6
Aug 23	2	1	1	1	1	1	1	1	1	1	1	1	1	1	S	2	1	2	1	2	1	1	2	3	1	3	1.3
Aug 24	2	2	2	1	2	2	2	2	2	2	1	1	2	S	2	1	2	1	1	1	1	1	1	1	1	1	1.5
Aug 25	1	1	1	1	1	1	2	2	2	2	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1.1
Aug 26	1	2	1	2	2	2	3	3	2	2	1	S	2	1	1	1	1	1	1	1	1	1	1	1	2	1	1.5
Aug 27	2	2	3	2	2	2	2	1	1	1	S	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.4
Aug 28	1	1	1	1	1	1	1	1	1	S	1	1	1	1	0	0	0	0	1	1	0	1	1	1	0	1	0.8
Aug 29	1	1	1	1	1	1	1	1	S	2	1	1	1	1	1	2	2	1	2	1	1	1	1	2	1	2	1.2
Aug 30	1	1	2	2	4	5	4	S	3	2	1	1	1	1	1	1	1	1	1	1	2	1	1	2	1	5	1.7
Aug 31	2	1	1	1	1	1	S	3	1	1	1	0	0	0	0	1	1	1	1	1	2	1	2	1	2	0	1.0
Diurnal Maximum	3	2	4	3	4	5	9	6	5	3	3	3	7	6	2	2	2	3	3	2	2	2	2	3	3	3	
Diurnal Average	1.4	1.4	1.5	1.4	1.4	1.8	2.0	1.8	1.6	1.5	1.1	1.2	1.3	1.1	1.0	1.0	0.9	1.0	1.0	1.3	1.1	1.3	1.3	1.4			

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

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.

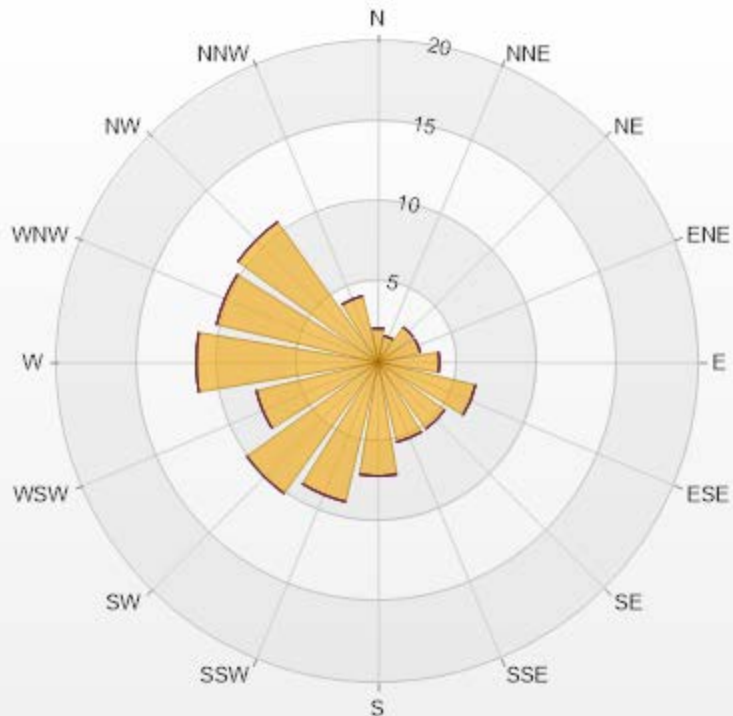
Timeseries Chart of Hourly Average for NOx - St. Lina Site





Wind: St. Lina Poll.: St. Lina-NOX[ppb] Monthly: 08-2022 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.89% Calm Avg: 0.00 [ppb]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	2.12	0	0	0	0	2.12
NNE	1.7	0	0	0	0	1.7
NE	2.69	0	0	0	0	2.69
ENE	2.69	0	0	0	0	2.69
E	3.82	0	0	0	0	3.82
ESE	6.23	0	0	0	0	6.23
SE	5.1	0	0	0	0	5.1
SSE	5.1	0	0	0	0	5.1
S	7.08	0	0	0	0	7.08
SSW	8.92	0	0	0	0	8.92
SW	10.06	0	0	0	0	10.06
WSW	7.79	0	0	0	0	7.79
W	11.33	0	0	0	0	11.33
WNW	10.34	0	0	0	0	10.34
NW	10.76	0	0	0	0	10.76
NNW	4.25	0	0	0	0	4.25
Summary	100	0	0	0	0	100




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% Icon Classes (ppb)

100  0-30

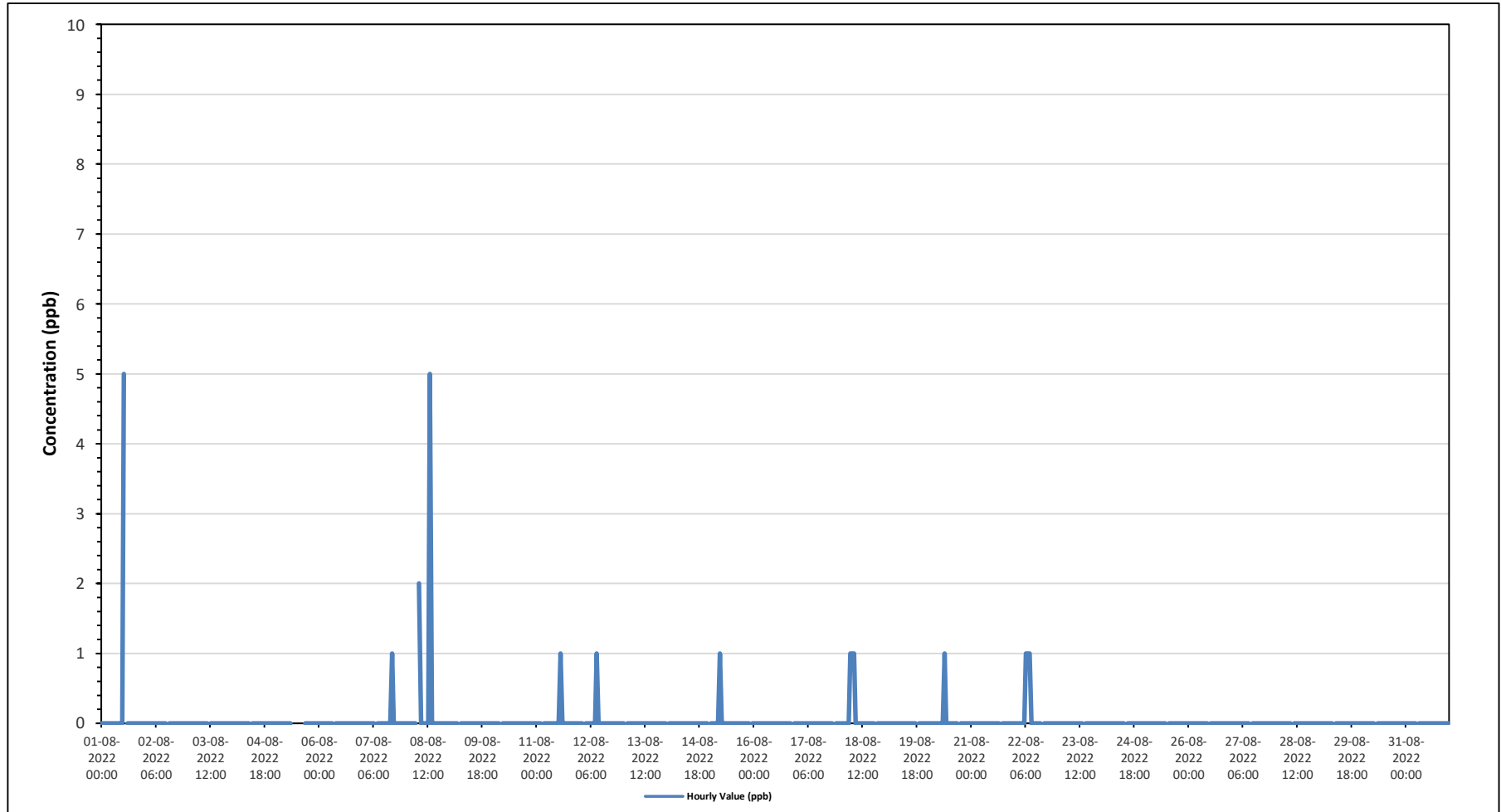
0  30-50

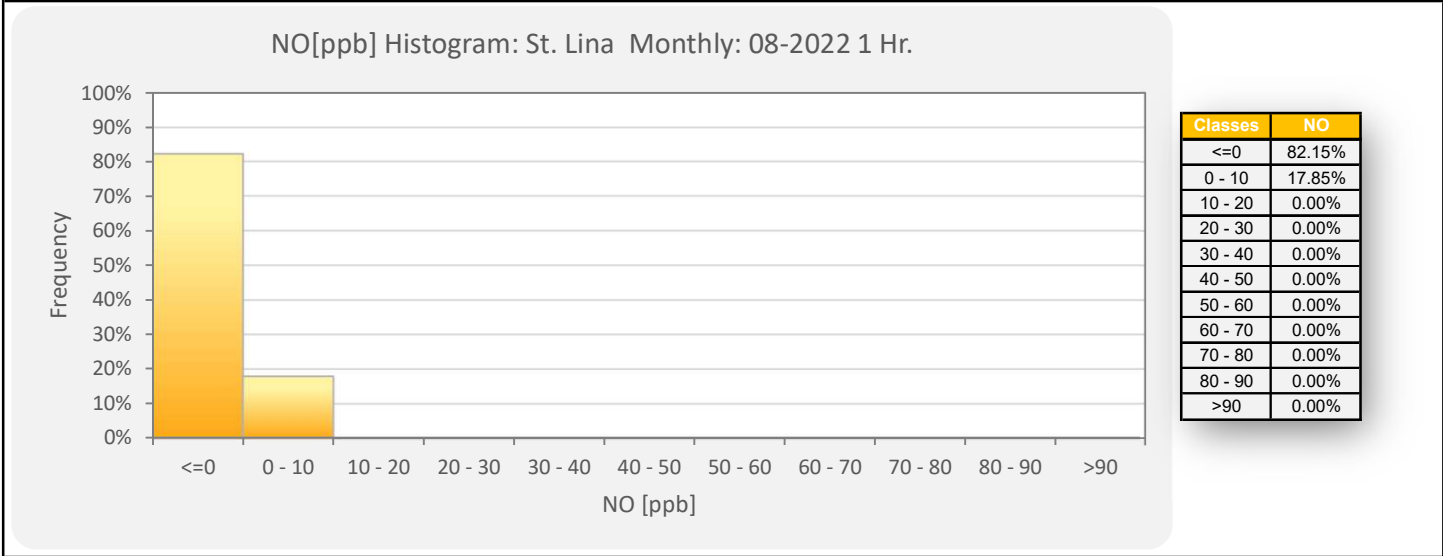
0  50-76

0  76-159

0  >159.0

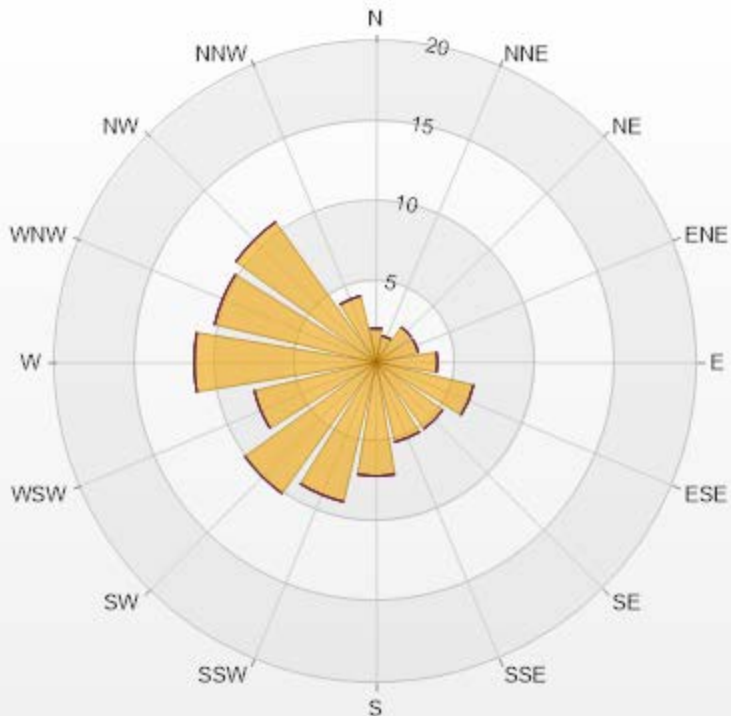
Timeseries Chart of Hourly Average for NO - St. Lina Site





Wind: St. Lina Poll.: St. Lina-NO[ppb] Monthly: 08-2022 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.89% Calm Avg: 0.00 [ppb]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	2.12	0	0	0	0	2.12
NNE	1.7	0	0	0	0	1.7
NE	2.69	0	0	0	0	2.69
ENE	2.69	0	0	0	0	2.69
E	3.82	0	0	0	0	3.82
ESE	6.23	0	0	0	0	6.23
SE	5.1	0	0	0	0	5.1
SSE	5.1	0	0	0	0	5.1
S	7.08	0	0	0	0	7.08
SSW	8.92	0	0	0	0	8.92
SW	10.06	0	0	0	0	10.06
WSW	7.79	0	0	0	0	7.79
W	11.33	0	0	0	0	11.33
WNW	10.34	0	0	0	0	10.34
NW	10.76	0	0	0	0	10.76
NNW	4.25	0	0	0	0	4.25
Summary	100	0	0	0	0	100



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% Icon Classes (ppb)

100  0-30

0  30-50

0  50-76

0  76-159

0  >159.0



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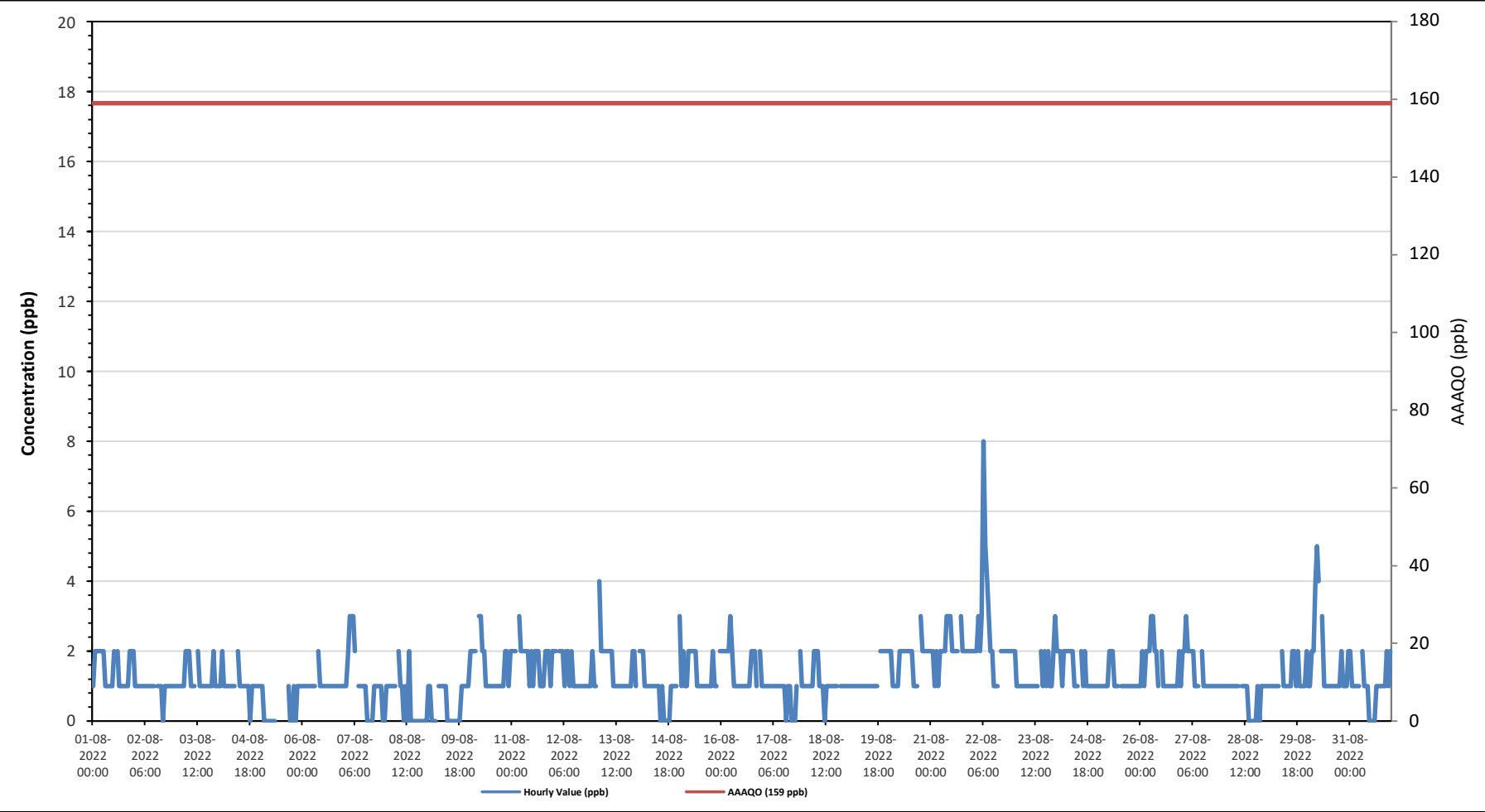
St. Lina Site - August 2022

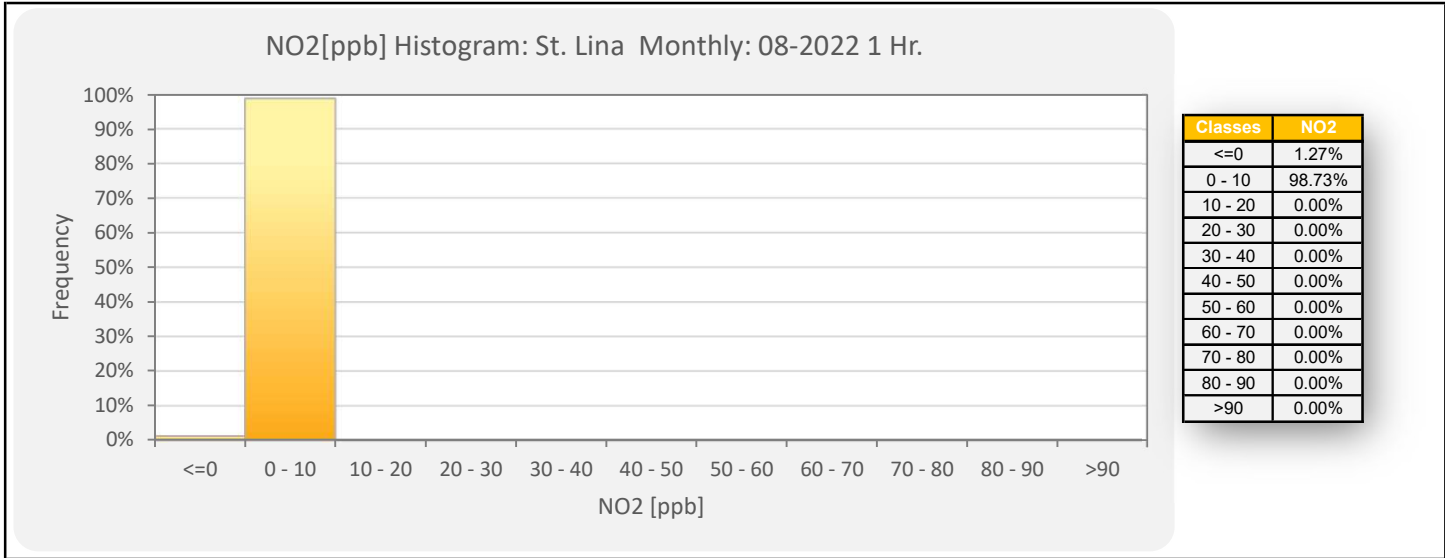
Summary of Hourly Averages

NITROGEN DIOXIDE (NO₂) in ppb

Alberta Ambient Air Quality Objectives (AAAQO): 1-Hour 159 ppb																																	
Number of 1-Hour Exceedances: 0																																	
Maximum Hourly Value: 8 ppb on August 22 at hour 6												Hours in Service: 744																					
Maximum Daily Value: 2.5 ppb on August 22												Hours of Data: 706																					
Minimum Hourly Value: 0 ppb on August 2 at hour 16												Hours of Missing Data: 0																					
Minimum Daily Value: 0.5 ppb on August 9												Hours of Calibration: 38																					
Monthly Average: 1.3 ppb												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						
Aug 1	1	2	2	2	2	2	2	1	1	1	1	1	2	S	2	1	1	1	1	1	2	2	2	1	2	2	1.5						
Aug 2	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	0	1	1	1	1	1	1	1	1	1.0						
Aug 3	1	1	1	1	1	2	2	2	1	1	1	S	2	1	1	1	1	1	1	1	1	2	1	1	1	1	1.2						
Aug 4	1	1	2	1	1	1	1	1	1	1	S	2	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1.0						
Aug 5	1	1	0	0	0	0	0	0	0	S	C	C	C	C	C	C	1	0	0	1	0	1	1	1	1	-							
Aug 6	1	1	1	1	1	1	1	1	S	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0						
Aug 7	1	1	2	3	3	3	2	S	1	1	1	1	1	0	0	0	0	1	1	1	1	1	0	0	0	0	1.1						
Aug 8	1	1	1	1	1	1	S	2	1	1	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0.6						
Aug 9	1	1	0	0	0	S	1	1	1	1	1	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0.5						
Aug 10	2	2	2	2	S	3	3	2	2	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	2	1	1.6						
Aug 11	2	2	2	S	3	2	2	2	2	2	2	1	2	2	2	2	1	1	1	2	2	2	1	2	1	2	1.8						
Aug 12	2	2	S	2	2	2	1	2	2	1	2	1	1	1	1	1	1	1	1	1	1	1	2	1	1	2	1.4						
Aug 13	1	S	4	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1.5						
Aug 14	S	2	2	2	1	1	1	1	1	1	1	1	1	0	1	0	0	0	0	1	1	1	1	S	2	0	0.9						
Aug 15	3	1	2	1	1	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	2	1	1	S	2	1	1.4						
Aug 16	2	2	2	2	2	3	2	1	1	1	1	1	1	1	1	1	1	2	2	2	1	S	2	1	1	3	1.5						
Aug 17	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	0	0	0	1	S	2	1	1	0	2	0.9						
Aug 18	1	1	1	1	1	2	2	2	1	1	1	0	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1.1						
Aug 19	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	2	2	2	2	2	2	1	1.2						
Aug 20	2	2	1	1	1	1	2	2	2	2	2	2	2	2	2	1	1	S	3	2	2	2	2	2	2	2	1.7						
Aug 21	2	2	1	2	1	2	2	2	2	3	3	2	2	2	2	S	3	2	2	2	2	2	2	2	2	1	3	2.1					
Aug 22	2	2	2	3	2	3	8	5	4	3	2	2	1	1	1	S	2	2	2	2	2	2	2	2	2	1	8	2.5					
Aug 23	2	1	1	1	1	1	1	1	1	1	1	1	1	1	S	2	1	2	1	2	1	2	1	1	2	3	1.3						
Aug 24	2	2	2	1	2	2	2	2	2	2	1	1	1	S	2	1	2	1	1	1	1	1	1	1	1	1	2	1.5					
Aug 25	1	1	1	1	1	1	2	2	2	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1.1					
Aug 26	1	2	1	2	2	2	3	3	2	2	1	S	2	1	1	1	1	1	1	1	1	1	1	2	1	1	3	1.5					
Aug 27	2	2	3	2	2	2	2	1	1	1	S	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	1.4					
Aug 28	1	1	1	1	1	1	1	1	1	S	1	1	1	1	0	0	0	0	0	1	0	1	0	1	1	0	1	0.7					
Aug 29	1	1	1	1	1	1	1	1	S	2	1	1	1	1	1	2	2	1	2	1	1	1	1	2	1	2	1	1.2					
Aug 30	1	1	2	2	4	5	4	S	3	1	1	1	1	1	1	1	1	1	1	2	1	1	1	2	1	5	1.7						
Aug 31	2	1	1	1	1	1	S	2	1	1	0	0	0	0	0	1	1	1	1	1	1	2	1	2	1	2	1.0						
Diurnal Maximum	3	2	4	3	4	5	8	5	4	3	3	3	2	2	2	2	2	3	3	2	2	2	2	2	3	3	3						
Diurnal Average	1.4	1.4	1.5	1.4	1.4	1.7	1.9	1.6	1.5	1.4	1.1	1.1	1.1	1.0	1.0	1.0	0.9	1.0	1.0	1.3	1.1	1.3	1.3	1.4	1.4	1.4							
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.																																	

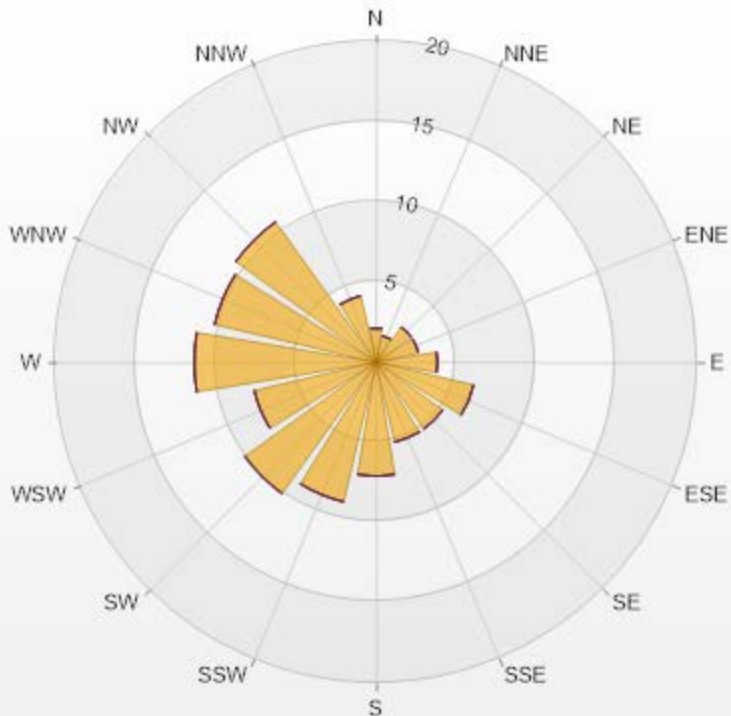
Timeseries Chart of Hourly Average for NO2 - St. Lina Site





Wind: St. Lina Poll.: St. Lina-NO2[ppb] Monthly: 08-2022 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.89% Calm Avg: 0.00 [ppb]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	2.12	0	0	0	0	2.12
NNE	1.7	0	0	0	0	1.7
NE	2.69	0	0	0	0	2.69
ENE	2.69	0	0	0	0	2.69
E	3.82	0	0	0	0	3.82
ESE	6.23	0	0	0	0	6.23
SE	5.1	0	0	0	0	5.1
SSE	5.1	0	0	0	0	5.1
S	7.08	0	0	0	0	7.08
SSW	8.92	0	0	0	0	8.92
SW	10.06	0	0	0	0	10.06
WSW	7.79	0	0	0	0	7.79
W	11.33	0	0	0	0	11.33
WNW	10.34	0	0	0	0	10.34
NW	10.76	0	0	0	0	10.76
NNW	4.25	0	0	0	0	4.25
Summary	100	0	0	0	0	100



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% Icon Classes (ppb)	100	0-30	0	30-50	0	50-76	0	76-159	0	>159.0
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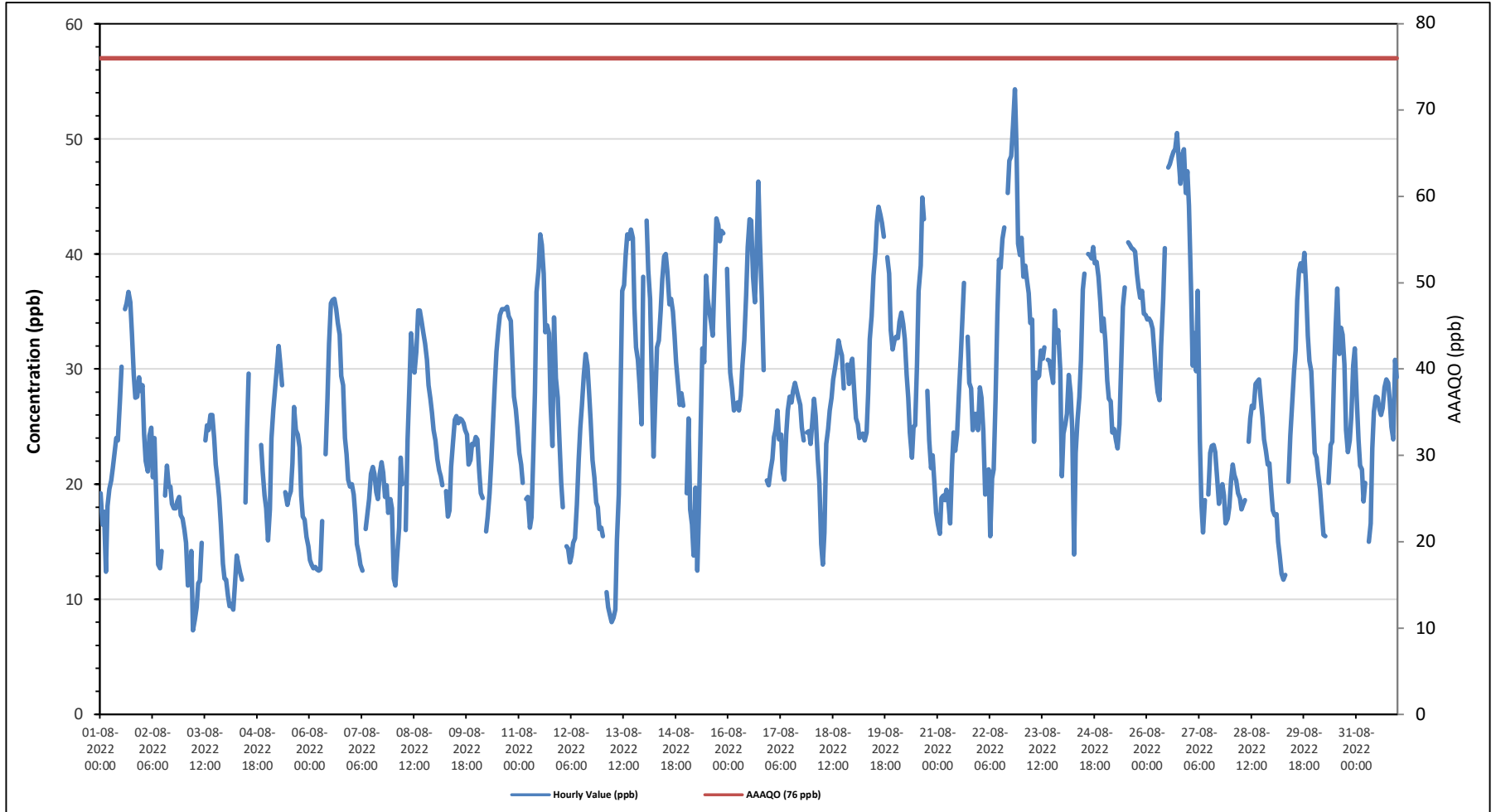
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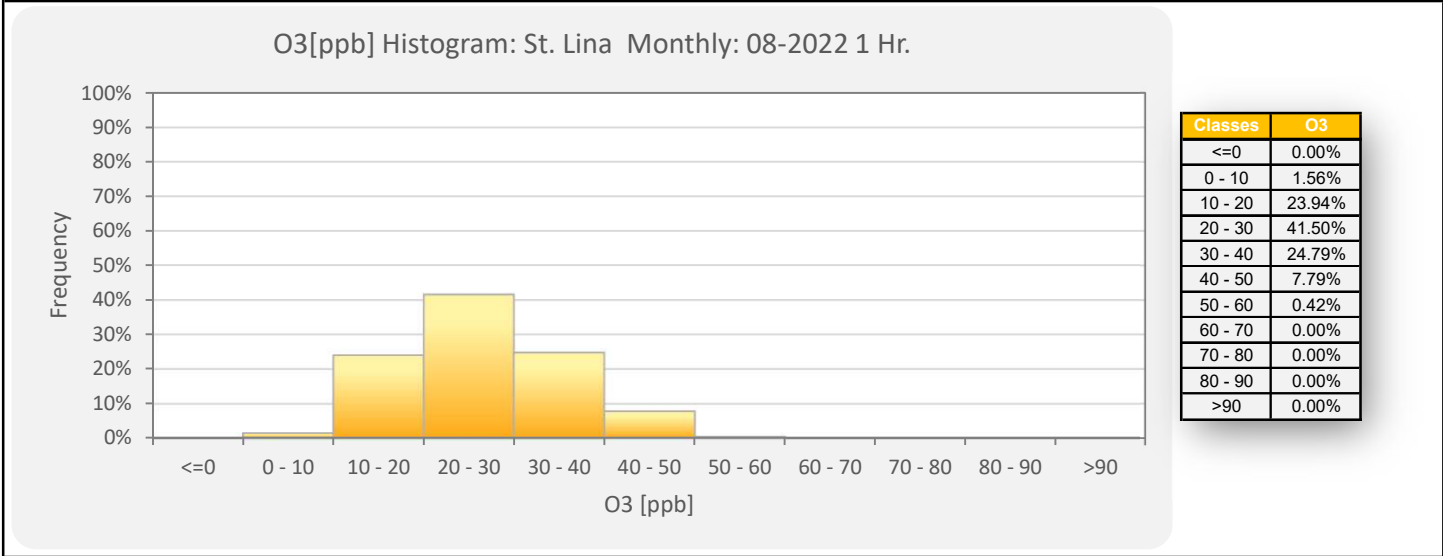
St. Lina Site - August 2022
Summary of Hourly Averages

OZONE (O₃) in ppb

Alberta Ambient Air Quality Objectives (AAAQO): 1-Hour 76 ppb																																																																													
Number of 1-Hour Exceedances: 0																																																																													
Maximum Hourly Value: 54.3 ppb on August 22 at hour 20												Hours in Service: 744																																																																	
Maximum Daily Value: 40.8 ppb on August 26												Hours of Data: 706																																																																	
Minimum Hourly Value: 7.3 ppb on August 3 at hour 5												Hours of Missing Data: 0																																																																	
Minimum Daily Value: 16.6 ppb on August 3												Hours of Calibration: 38																																																																	
Monthly Average: 26.6 ppb												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																																																					
Aug 1	19.2	16.5	17.6	12.4	18.1	19.6	20.3	21.4	22.6	24	23.8	27.3	30.2	S	35.2	35.7	36.7	35.8	33.1	29.5	27.5	27.6	29.3	28.1	12.4	36.7	25.7																																																		
Aug 2	28.6	24.3	22	21.1	24.2	24.9	20.6	24	17.9	13	12.7	14.2	S	19	21.6	19.8	19.8	18.3	17.9	17.9	18.5	18.9	17.3	17	12.7	28.6	19.7																																																		
Aug 3	16	14.9	11.2	11.3	14.2	7.3	8.2	9.3	11.4	11.6	14.9	S	23.8	25.1	24.7	26	26	24	21.7	20.5	18.8	16.6	13.1	11.8	7.3	26.0	16.6																																																		
Aug 4	11.7	10.3	9.4	9.6	9.1	11.2	13.8	13.1	12.3	11.7	S	18.4	24.8	29.6	C	C	C	C	C	C	23.4	21.1	19	17.9	9.1	29.6	-																																																		
Aug 5	15.1	17.8	24	26.5	28.1	30	32	30.5	28.6	S	19.3	18.2	18.9	19.4	21.8	26.7	24.7	24.3	23.2	19	17.2	16.9	15.4	14.6	14.6	32.0	22.3																																																		
Aug 6	13.4	13	12.7	12.8	12.6	12.5	12.6	16.8	S	22.6	27.4	32.2	35.7	36	36.1	35.2	34	33	29.4	28.6	24	22.6	20.4	19.8	12.5	36.1	23.6																																																		
Aug 7	20	19.1	17.3	14.8	14	13	12.5	S	16.1	17.5	18.7	20.9	21.5	20.9	19.3	18.7	20.9	21.9	21	18.9	19.9	17.5	18.7	17.9	12.5	21.9	18.3																																																		
Aug 8	11.8	11.2	13.5	16.2	22.3	20	S	16	23.9	28.6	33.1	30.7	29.7	31.5	35.1	35.1	34.1	33.2	32.2	30.8	28.6	27.4	26.2	24.7	11.2	35.1	25.9																																																		
Aug 9	23.8	22.2	21.2	20.7	19.9	S	19.4	17.2	17.7	21.5	23.6	25.6	25.9	25.3	25.7	25.6	25.3	24.7	24.3	21.7	22.1	23.5	23.4	24.1	17.2	25.9	22.8																																																		
Aug 10	23.9	21.1	19.2	18.8	S	15.9	17.2	19.2	22.2	25.8	28.8	31.5	33.4	34.7	35.2	35.2	35.2	35.4	34.6	34.2	30.7	27.6	26.5	24.9	15.9	35.4	27.4																																																		
Aug 11	22.7	21.7	20.1	S	18.7	18.9	16.2	17.1	22.7	28	36.7	38.7	41.7	40.8	38.3	33.2	33.8	33.1	27	23.3	34.5	29.2	27.5	24	16.2	41.7	28.2																																																		
Aug 12	20.1	18	S	14.6	14.4	13.2	13.8	14.9	15.3	18.2	22.2	24.9	26.8	29.4	31.3	30.3	28	25.5	22.1	20.6	18.4	18	16.1	16.2	13.2	31.3	20.5																																																		
Aug 13	15.5	S	10.6	9.3	8.6	8	8.4	9.1	15.1	19.1	27.1	36.8	37.3	39.9	41.7	41.3	42.1	41.4	35.3	31.9	30.8	28.7	25.2	38	8.0	42.1	26.1																																																		
Aug 14	S	42.9	38.6	36.1	28.5	22.4	27.6	31.9	32.5	35.1	37.8	39.8	40	38.5	35.6	36.1	35	33	30.6	28.5	26.9	27.9	26.8	S	22.4	42.9	33.3																																																		
Aug 15	19.2	25.7	17.8	16.5	13.8	19.7	12.5	17.6	25.3	31.8	30.6	38.1	36.1	34.9	34	32.9	38.1	43.1	42.5	41.1	42	41.8	S	38.7	12.5	43.1	30.2																																																		
Aug 16	33.7	29.7	28.3	26.4	26.7	27.1	26.4	27.7	30.3	32.5	36.4	40.6	43	42.9	38	35.8	39.8	46.3	41.1	36.2	29.9	S	20.3	19.9	19.9	46.3	33.0																																																		
Aug 17	21.2	22.2	24.1	24.7	26.4	23.9	24.3	21	20.4	24.3	26.4	27.6	27.1	28.1	28.8	28.2	27.5	26.9	24.9	23.8	S	24.5	24.6	23.5	20.4	28.8	25.0																																																		
Aug 18	25.6	27.4	25.9	22.2	20.1	14.8	13	15.8	23.5	24.8	26.4	27.5	29.1	30.1	31.2	32.5	31.7	31.2	28.3	S	30.4	28.7	30.4	30.9	13.0	32.5	26.2																																																		
Aug 19	28.2	25.7	25.2	24	24.2	24.4	23.8	24.5	27.9	32.6	34.6	38.1	40.1	42.8	44.1	43.4	42.7	41.5	S	39.7	38.3	33.4	31.7	32.5	23.8	44.1	33.2																																																		
Aug 20	32.8	32.7	34.1	34.9	33.9	32.6	29.5	27.5	24.5	22.3	25	25.1	30.4	36.8	39	44.9	43	S	28.1	23.8	21.4	22.5	19.9	17.5	17.5	44.9	29.7																																																		
Aug 21	16.5	15.7	18.8	19	18.6	19.5	18.3	16.6	21.6	24.5	22.9	24.3	27.9	31.1	34.3	37.5	S	32.8	28.8	28.3	24.7	26.1	26.1	24.7	15.7	37.5	24.3																																																		
Aug 22	28.4	27.5	24.6	19.1	19.9	21.3	15.5	20.5	21.3	27.3	34.8	39.5	38.8	41.3	42.3	S	45.3	48.1	48.5	51.2	54.3	49.2	40.9	39.9	15.5	54.3	34.8																																																		
Aug 23	41.4	38	39	37.8	36.6	34	34.3	23.7	29.7	29.2	29.4	31.6	30.9	31.9	S	30.8	30.7	29.6	28.8	35.1	32.3	33.4	29.9	20.7	20.7	41.4	32.1																																																		
Aug 24	24.4	25.2	26.1	29.5	27.9	24.8	13.9	22.7	25.6	27.6	30.8	36.9	38.3	S	40	39.9	39.6	40.6	39.2	39.3	38	35.8	33.3	34.4	13.9	40.6	31.9																																																		
Aug 25	32.4	29	27.4	27.2	24.5	24.8	23.8	23.1	25.2	29.9	35.4	37.1	S	41	40.8	40.5	40.4	40.2	38.3	37.1	36.2	36.8	34.8	34.7	23.1	41.0	33.1																																																		
Aug 26	34.3	34.4	34.1	33.5	31.3	29.3	28	27.3	32	36.1	40.5	S	47.5	47.8	48.4	48.9	49.1	50.5	48.3	46.1	48.6	49.1	45.3	47.2	27.3	50.5	40.8																																																		
Aug 27	44.2	36.8	30.3	33.1	29.8	36.8	23.9	18.3	15.8	18.6	S	19.1	22.7	23.3	23.4	22.8	20.6	18.3	19.5	20	19	16.6	17	18	15.8	44.2	23.8																																																		
Aug 28	20.4	21.7	20.8	20.3	19.2	18.8	17.8	18.2	18.6	S	23.7	25.7	26.8	26.6	28.7	28.9	29.1	27.5	25.8	23.9	22.9	21.7	21.8	19.5	17.8	29.1	23.0																																																		
Aug 29	17.7	17.3	17.4	15	13.8	12.2	11.7	12.1	S	20.2	24.2	27	29.8	31.6	36	38.6	39.2	38.5	40.1	37.4	32.9	30.7	29.8	26.1	11.7	40.1	26.1																																																		
Aug 30	22.7	22.3	20.9	19.6	17.4	15.6	15.5	S	20.1	23.4	23.7	29.7	33.7	37	31.3	33.6	33	30.4	24.7	22.8	23.8	25.9	30.3	31.8	15.5	37.0	25.6																																																		
Aug 31	27.6	23.9	21.6	21.3	18.5	20.1	S	15	16.6	23.1	26.3	27.6	27.5	26.5	26	26.6	28.4	29.1	28.8	27.2	25	23.9	30.8	29.3	15.0	30.8	24.8																																																		
Diurnal Maximum	44	43	39	38	37	34	32	33	36	41	41	48	48	48	49	49	51	49	51	54	49	45	47																																																						
Diurnal Average	23.8	23.6	22.5	21.6	21.2	20.6	19.1	19.7	22.0	24.3	27.5	29.5	31.7	32.5	33.4	33.3	33.6	33.0	30.6	29.6	28.7	27.5	25.7	25.6																																																					
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.																																																																													

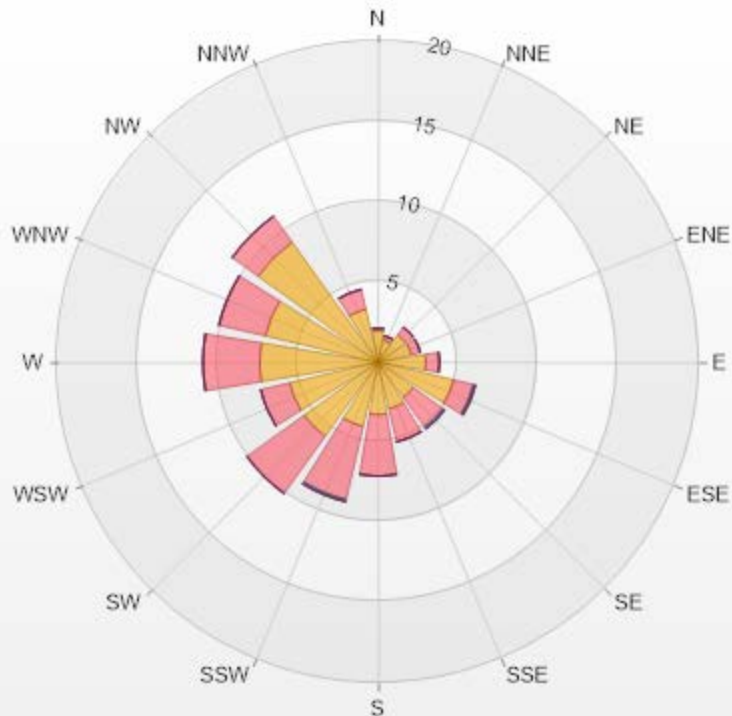
Timeseries Chart of Hourly Average for O3 - St. Lina Site





Wind: St. Lina Poll.: St. Lina-O3[ppb] Monthly: 08-2022 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.89% Calm Avg: 0.00 [ppb]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	1.98	0.14	0	0	0	2.12
NNE	1.42	0.28	0	0	0	1.7
NE	2.12	0.57	0	0	0	2.69
ENE	2.12	0.57	0	0	0	2.69
E	2.97	0.85	0	0	0	3.82
ESE	4.82	1.27	0.14	0	0	6.23
SE	2.69	2.27	0.14	0	0	5.1
SSE	2.97	2.12	0	0	0	5.09
S	3.26	3.82	0	0	0	7.08
SSW	4.11	4.67	0.14	0	0	8.92
SW	5.67	4.39	0	0	0	10.06
WSW	5.67	1.84	0	0	0	7.51
W	7.37	3.54	0	0	0	10.91
WNW	7.22	2.97	0	0	0	10.19
NW	9.21	1.98	0	0	0	11.19
NNW	3.4	1.27	0	0	0	4.67
Summary	67	32.55	0.42	0	0	100



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% Icon Classes (ppb)	67	0-30	33	30-50	0	50-76	0	76-159	0	>159.0
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LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - August 2022

Summary of Hourly Averages

TOTAL HYDROCARBONS (THC) in ppm

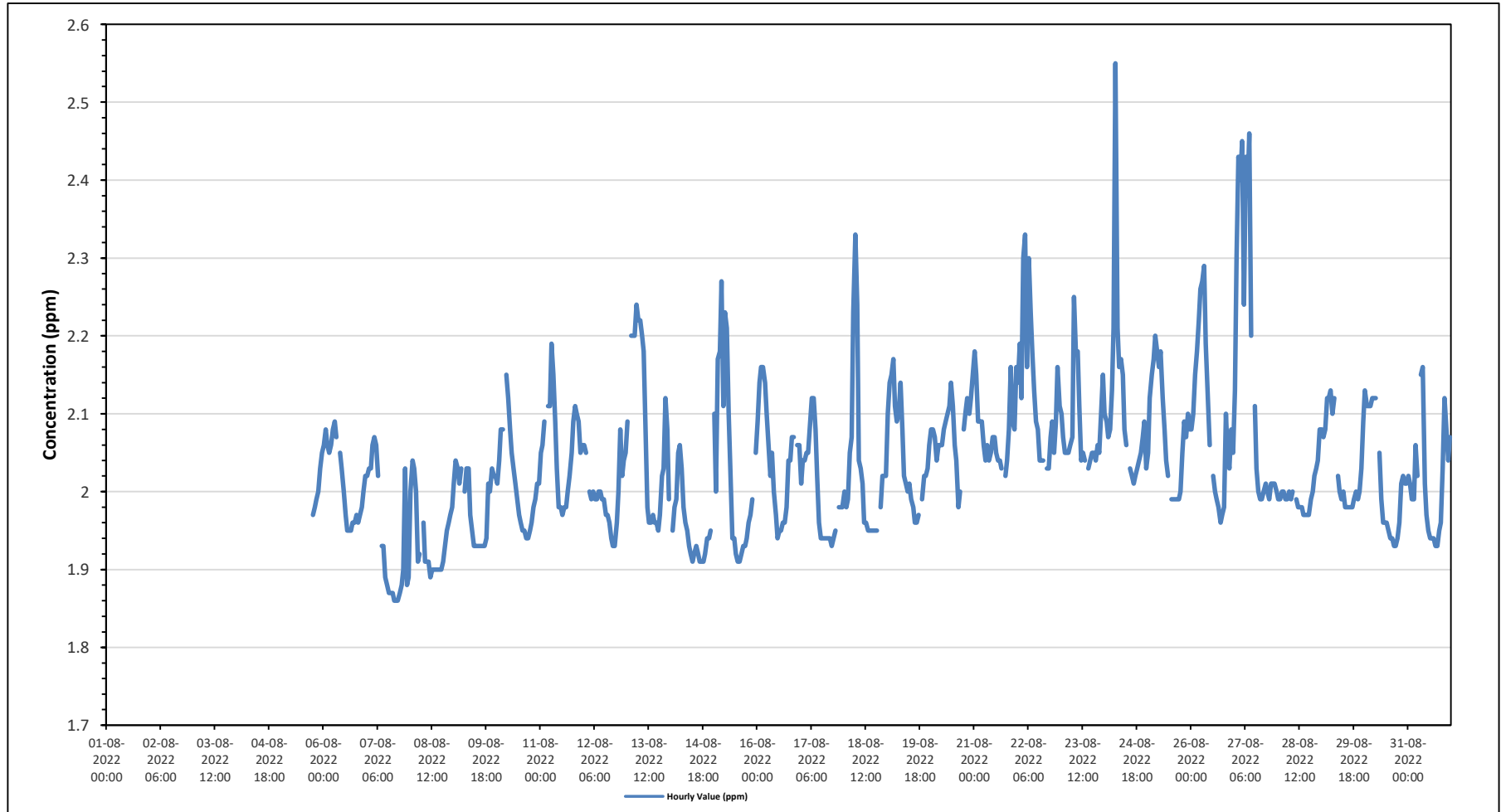
Maximum Hourly Value:	2.55 ppm on August 24 at hour 6	Hours in Service:	744
Maximum Daily Value:	2.16 ppm on August 27	Hours of Data:	603
Minimum Hourly Value:	1.86 ppm on August 7 at hour 15	Hours of Missing Data:	107
Minimum Daily Value:	1.94 ppm on August 7	Hours of Calibration:	34
Monthly Average:	2.04 ppm	Operational Uptime:	85.6

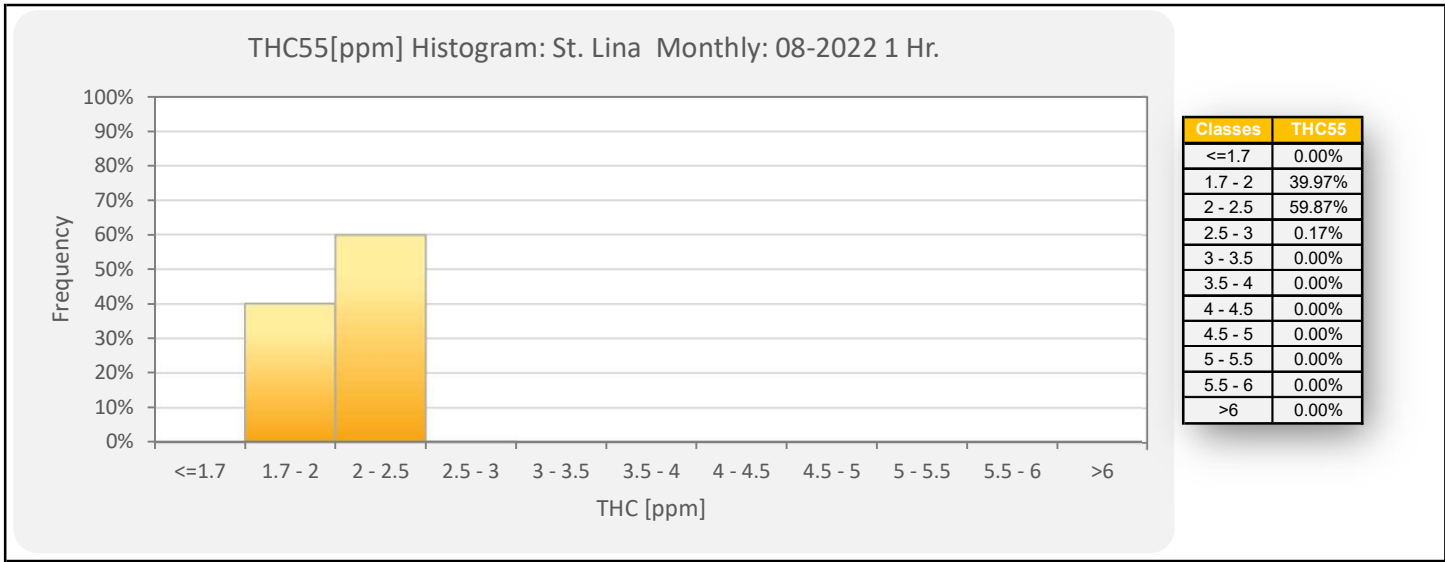
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average										
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23									
Aug 1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-										
Aug 2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-							
Aug 3	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-					
Aug 4	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-				
Aug 5	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM			
Aug 6	2.06	2.08	2.06	2.05	2.06	2.08	2.09	2.07	S	2.05	2.03	2.00	1.97	1.95	1.95	1.95	1.96	1.96	1.97	1.96	1.97	1.98	1.99	2.00	2.03	2.05	1.97	1.98	2.05	-	-	-				
Aug 7	2.02	2.03	2.03	2.06	2.07	2.06	2.02	S	1.93	1.93	1.89	1.88	1.87	1.87	1.87	1.86	1.86	1.86	1.87	1.88	1.90	2.03	1.88	1.89	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86			
Aug 8	2.00	2.04	2.03	2.00	1.91	1.92	S	1.96	1.91	1.91	1.91	1.89	1.90	1.90	1.90	1.90	1.90	1.90	1.91	1.93	1.95	1.96	1.97	1.98	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89			
Aug 9	2.01	2.04	2.03	2.01	2.03	S	2.00	2.03	2.03	2.03	1.97	1.95	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.94	2.01	2.00	2.03	2.02	2.02	1.93	1.93	2.04	1.98	1.93	2.04	1.98	1.93	2.04	1.98	
Aug 10	2.01	2.04	2.08	2.08	S	2.15	2.12	2.08	2.05	2.03	2.01	1.99	1.97	1.96	1.95	1.95	1.94	1.94	1.95	1.96	1.98	1.99	2.01	2.01	1.94	2.15	2.01	1.94	2.15	2.01	1.94	2.15	2.01	1.94	2.15	2.01
Aug 11	2.05	2.06	2.09	S	2.11	2.11	2.19	2.15	2.09	2.03	1.98	1.98	1.97	1.98	1.98	2.00	2.02	2.05	2.09	2.11	2.10	2.09	2.05	2.06	1.97	2.19	2.06	1.97	2.19	2.06	1.97	2.19	2.06	1.97	2.19	2.06
Aug 12	2.06	2.05	S	2.00	1.99	2.00	1.99	1.99	2.00	2.00	1.99	1.99	1.97	1.97	1.96	1.94	1.93	1.93	1.96	2.00	2.08	2.02	2.04	2.05	1.93	2.08	2.00	1.93	2.08	2.00	1.93	2.08	2.00	1.93	2.08	2.00
Aug 13	2.09	S	2.20	2.20	2.20	2.24	2.22	2.22	2.20	2.18	2.08	1.98	1.96	1.96	1.97	1.96	1.96	1.95	1.97	2.02	2.03	2.12	2.08	1.99	1.95	2.24	2.08	1.95	2.24	2.08	1.95	2.24	2.08	1.95	2.24	2.08
Aug 14	S	1.95	1.98	1.99	2.05	2.06	2.03	1.98	1.96	1.95	1.93	1.92	1.91	1.92	1.93	1.92	1.91	1.91	1.91	1.92	1.94	1.94	1.95	S	1.91	2.06	1.95	1.91	2.06	1.95	1.91	2.06	1.95	1.91	2.06	1.95
Aug 15	2.10	2.00	2.17	2.18	2.27	2.11	2.23	2.21	2.10	2.02	1.94	1.94	1.92	1.91	1.91	1.92	1.93	1.93	1.94	1.96	1.97	1.99	S	2.05	1.91	2.27	2.03	1.91	2.27	2.03	1.91	2.27	2.03	1.91	2.27	2.03
Aug 16	2.09	2.14	2.16	2.16	2.14	2.10	2.06	2.02	2.05	2.00	1.97	1.94	1.95	1.95	1.96	1.96	1.98	2.04	2.04	2.07	2.07	S	2.06	2.06	1.94	2.16	2.06	1.94	2.16	2.06	1.94	2.16	2.06	1.94	2.16	2.06
Aug 17	2.01	2.04	2.04	2.05	2.05	2.09	2.12	2.12	2.08	2.02	1.96	1.94	1.94	1.94	1.94	1.94	1.94	1.93	1.94	1.95	S	1.98	1.98	1.98	1.93	2.12	2.00	1.93	2.12	2.00	1.93	2.12	2.00	1.93	2.12	2.00
Aug 18	2.00	1.98	1.99	2.05	2.07	2.23	2.33	2.24	2.04	2.03	2.01	1.96	1.96	1.95	1.95	1.95	1.95	1.95	1.95	1.95	S	1.98	2.02	2.02	1.95	2.33	2.02	1.95	2.33	2.02	1.95	2.33	2.02	1.95	2.33	2.02
Aug 19	2.10	2.14	2.15	2.17	2.11	2.09	2.10	2.14	2.08	2.02	2.01	2.00	1.91	1.99	1.98	1.96	1.96	1.97	S	1.99	2.02	2.02	2.03	2.06	1.96	2.17	2.06	1.96	2.17	2.06	1.96	2.17	2.06	1.96	2.17	2.06
Aug 20	2.08	2.08	2.07	2.04	2.06	2.06	2.06	2.08	2.09	2.10	2.11	2.14	2.11	2.06	2.04	1.98	2.00	S	2.08	2.10	2.12	2.10	2.12	2.15	1.98	2.15	2.08	1.98	2.15	2.08	1.98	2.15	2.08	1.98	2.15	2.08
Aug 21	2.18	2.15	2.09	2.09	2.09	2.06	2.04	2.06	2.04	2.05	2.07	2.07	2.05	2.04	2.04	2.04	2.03	S	2.02	2.04	2.08	2.16	2.09	2.08	2.16	2.02	2.18	2.02	2.18	2.02	2.18	2.02	2.18	2.02	2.18	2.02
Aug 22	2.14	2.19	2.12	2.30	2.33	2.16	2.30	2.23	2.18	2.13	2.09	2.08	2.04	2.04	2.04	S	2.03	2.03	2.07	2.09	2.05	2.09	2.16	2.11	2.03	2.33	2.11	2.03	2.33	2.11	2.03	2.33	2.11	2.03	2.33	2.11
Aug 23	2.10	2.07	2.05	2.05	2.05	2.06	2.07	2.25	2.18	2.18	2.11	2.04	2.05	2.04	S	2.03	2.04	2.05	2.05	2.04	2.06	2.05	2.10	2.15	2.03	2.25	2.08	2.03	2.25	2.08	2.03	2.25	2.08	2.03	2.25	2.08
Aug 24	2.10	2.09	2.07	2.08	2.13	2.21	2.55	2.21	2.16	2.17	2.15	2.08	2.06	S	2.03	2.02	2.01	2.02	2.03	2.04	2.05	2.07	2.09	2.03	2.01	2.55	2.11	2.01	2.55	2.11	2.01	2.55	2.11	2.01	2.55	2.11
Aug 25	2.05	2.12	2.15	2.17	2.20	2.18	2.16	2.18	2.12	2.08	2.04	2.02	S	1.99	1.99	1.99	1.99	1.99	2.00	2.05	2.09	2.07	2.10	2.08	1.99	2.20	2.08	1.99	2.20	2.08	1.99	2.20	2.08	1.99	2.20	2.08
Aug 26	2.08	2.10	2.15	2.18	2.22	2.26	2.27	2.29	2.19	2.12	2.06	S	2.02	2.00	1.99	1.98	1.96	1.97	1.98	2.10	2.05	2.03	2.08	2.05	1.96	2.29	2.09	1.96	2.29	2.09	1.96	2.29	2.09	1.96	2.29	2.09
Aug 27	2.13	2.30	2.43	2.40	2.45	2.24	2.43	2.38	2.46	2.20	S	2.11	2.03	2.00	1.99	1.99	2.00	2.01	2.00	1.99	2.01	2.01	2.01	2.00	1.99	2.46	2.00	1.99	2.46	2.00	1.99	2.46	2.00	1.99	2.46	2.00
Aug 28	1.99	1.99	2.00	2.00	1.99	1.99	2.00	1.99	2.00	S	1.99	1.98	1.98	1.98	1.97	1.97	1.97	1.97	1.99	2.00	2.02	2.03	2.04	2.08	1.97	2.08	2.00	1.97	2.08	2.00	1.97	2.08	2.00	1.97	2.08	2.00
Aug 29	2.08	2.07	2.08	2.12	2.12	2.13	2.10	2.12	S	2.02	2.00	1.99	2.00	1.98	1.98	1.98	1.98	1.98	1.98	1.99	2.00	1.99	2.00	2.03	1.98	2.13	2.00	1.98	2.13	2.00	1.98	2.13	2.00	1.98	2.13	2.00
Aug 30	2.13	2.11	2.11	2.11	2.12	2.12	2.12	S	2.05	1.99	1.96	1.96	1.96	1.95	1.94	1.94	1.93	1.93	1.94	1.96	2.01	2.02	2.01	2.01	1.93	2.13	2.01	1.93	2.13	2.01	1.93	2.13	2.01	1.93	2.13	2.01
Aug 31	2.02	2.01	1.99	1.99	2.06	2.02	S	2.15	2.16	2.01	1.97	1.95	1.94	1.94	1.94	1.93	1.93	1.95	1.96	2.03	2.12	2.08	2.04	2.07	1.93	2.16	2.01	1.93	2.16	2.01	1.93	2.16	2.01	1.93	2.16	2.01
Diurnal Maximum	2.18	2.30	2.43	2.40	2.45	2.26	2.55	2.38	2.46	2.20	2.15	2.14	2.11	2.06	2.04	2.03	2.04	2.05	2.09	2.11	2.16	2.12	2.16	2.16	2.18	2.16	2.18	2.16	2.18	2.16	2.18	2.16	2.18	2.16	2.18	2.16
Diurnal Average	2.07	2.07	2.09	2.10	2.12	2.11	2.15	2.13	2.09	2.05	2.01	1.99	1.98	1.97	1.96	1.96	1.97	1.98	2.01	2.03	2.03	2.04	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05

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

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.

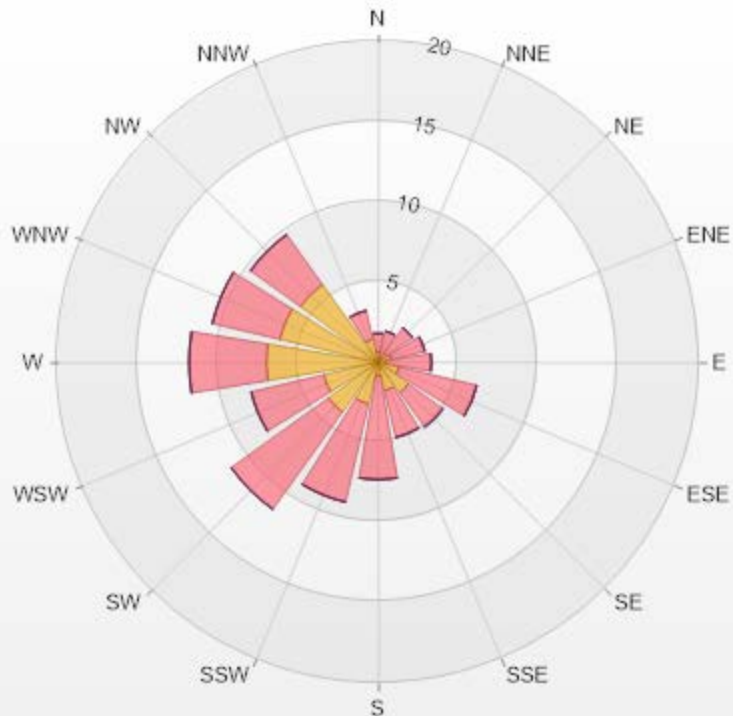
Timeseries Chart of Hourly Average for THC - St. Lina Site





Wind: St. Lina Poll.: St. Lina-THC55[ppm] Monthly: 08-2022 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 81.05% Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-40	>40.0	Total
N	0.66	1.16	0	0	0	1.82
NNE	0.17	1.82	0	0	0	1.99
NE	0.66	1.99	0	0	0	2.65
ENE	0.83	2.16	0	0	0	2.99
E	0.5	2.82	0	0	0	3.32
ESE	1.33	4.98	0	0	0	6.31
SE	2.32	2.65	0	0	0	4.97
SSE	1.82	2.99	0	0	0	4.81
S	0.83	6.47	0	0	0	7.3
SSW	2.65	6.3	0	0	0	8.95
SW	3.81	7.46	0	0	0	11.27
WSW	3.48	4.64	0	0	0	8.12
W	6.97	4.81	0	0	0	11.78
WNW	6.3	4.31	0	0	0	10.61
NW	5.97	3.81	0	0	0	9.78
NNW	1.49	1.82	0	0	0	3.31
Summary	39.79	60.19	0	0	0	100



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% Icon Classes (ppm)

40 0-2

60 2-5

0 5-10

0 10-40

0 >40.0



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - August 2022

Summary of Hourly Averages

METHANE (CH4) in ppm

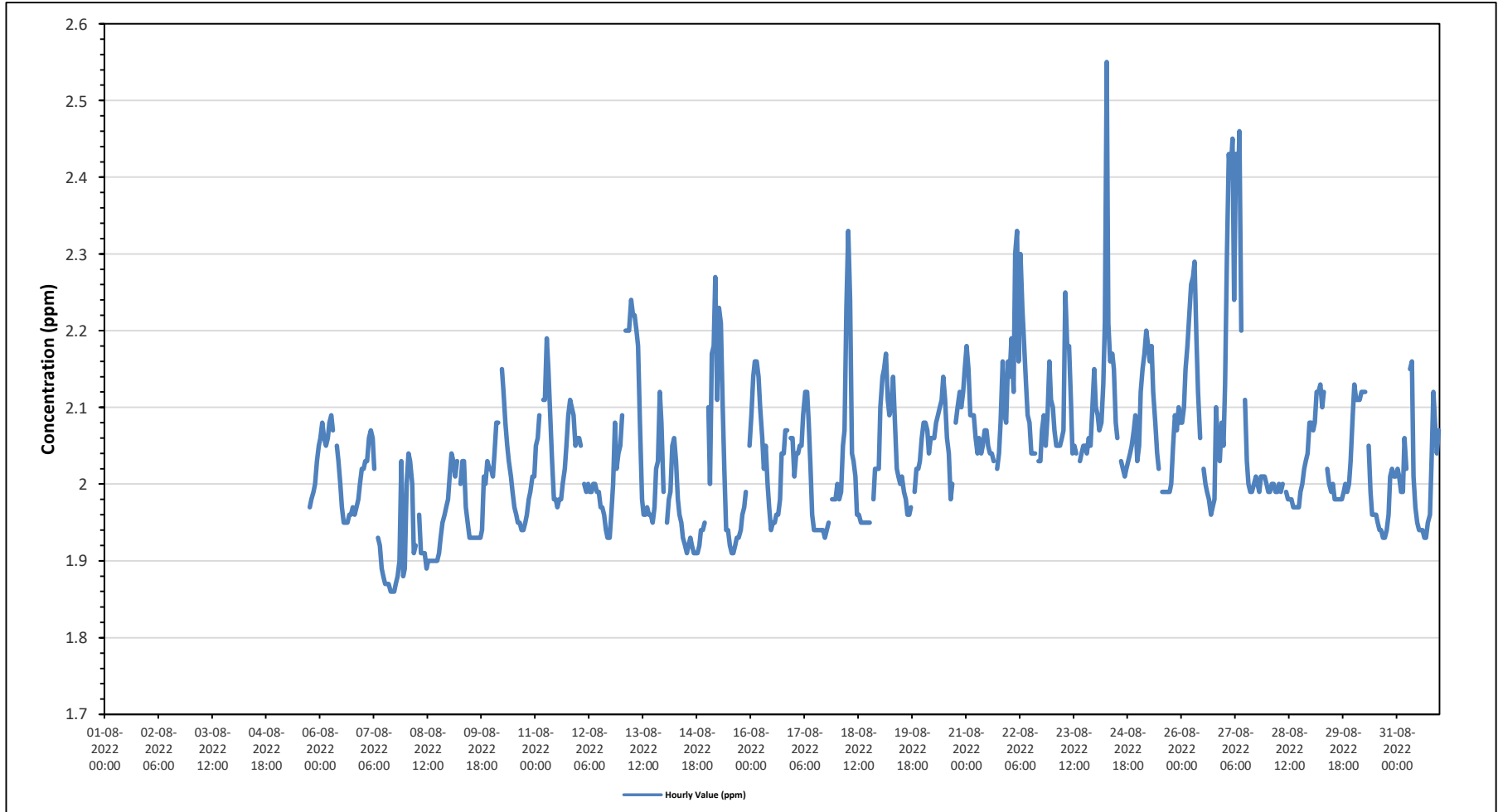
Maximum Hourly Value:	2.55 ppm on August 24 at hour 6	Hours in Service:	744
Maximum Daily Value:	2.16 ppm on August 27	Hours of Data:	603
Minimum Hourly Value:	1.86 ppm on August 7 at hour 15	Hours of Missing Data:	107
Minimum Daily Value:	1.94 ppm on August 7	Hours of Calibration:	34
Monthly Average:	2.04 ppm	Operational Uptime:	85.6

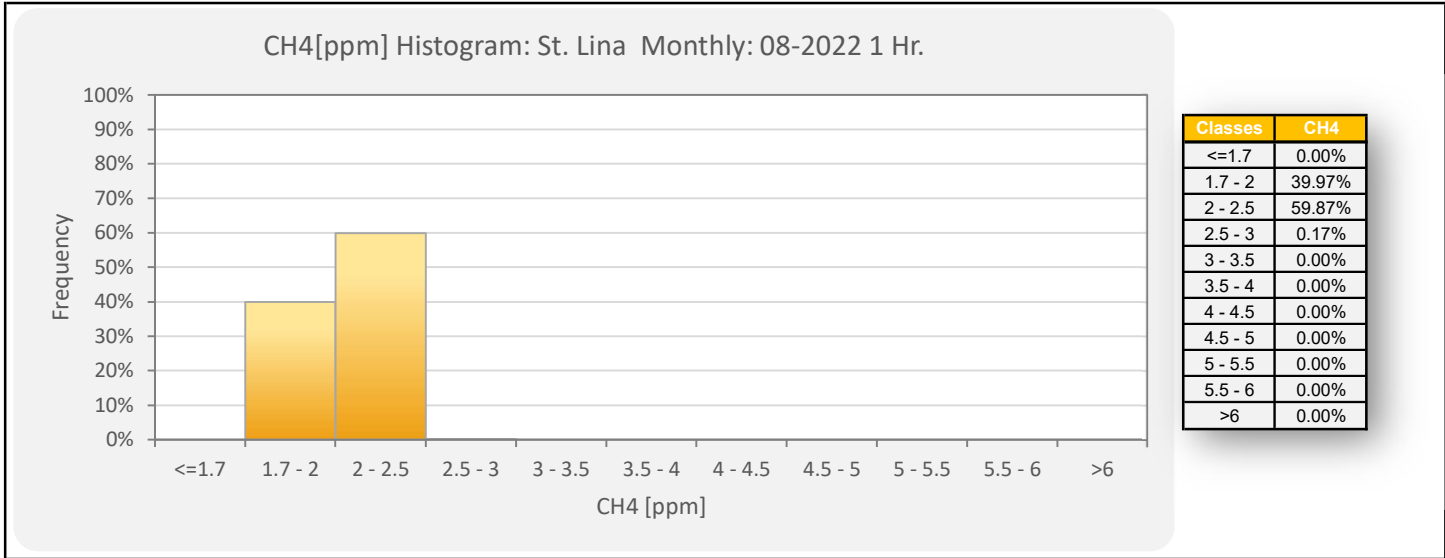
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average								
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23							
Aug 1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-								
Aug 2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-					
Aug 3	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-			
Aug 4	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-		
Aug 5	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	
Aug 6	2.06	2.08	2.06	2.05	2.06	2.08	2.09	2.07	S	2.05	2.03	2.00	1.97	1.95	1.95	1.95	1.96	1.96	1.97	1.96	1.97	1.98	1.99	2.00	2.03	2.05	1.97	1.98	2.05	-	-	-		
Aug 7	2.02	2.03	2.03	2.06	2.07	2.06	2.02	S	1.93	1.92	1.89	1.88	1.87	1.87	1.87	1.86	1.86	1.86	1.87	1.88	1.90	2.03	1.88	1.89	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	
Aug 8	2.00	2.04	2.03	2.00	1.91	1.92	S	1.96	1.91	1.91	1.91	1.89	1.90	1.90	1.90	1.90	1.90	1.90	1.91	1.93	1.95	1.96	1.97	1.98	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	
Aug 9	2.01	2.04	2.03	2.01	2.03	S	2.00	2.03	2.03	1.97	1.95	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.94	2.01	2.00	2.03	2.02	2.02	1.93	2.04	1.98	1.93	2.04	1.98	1.93	2.04	1.98
Aug 10	2.01	2.04	2.08	2.08	S	2.15	2.12	2.08	2.05	2.03	2.01	1.99	1.97	1.96	1.95	1.95	1.94	1.94	1.95	1.96	1.98	1.99	2.01	2.01	1.94	2.15	2.01	1.94	2.15	2.01	1.94	2.15	2.01	
Aug 11	2.05	2.06	2.09	S	2.11	2.11	2.19	2.15	2.09	2.03	1.98	1.98	1.97	1.98	1.98	2.00	2.02	2.05	2.09	2.11	2.10	2.09	2.05	2.06	1.97	2.19	2.06	1.97	2.19	2.06	1.97	2.19	2.06	
Aug 12	2.06	2.05	S	2.00	1.99	2.00	1.99	1.99	2.00	2.00	1.99	1.99	1.97	1.97	1.96	1.94	1.93	1.93	1.96	2.00	2.08	2.02	2.04	2.05	1.93	2.08	2.00	1.93	2.08	2.00	1.93	2.08	2.00	
Aug 13	2.09	S	2.20	2.20	2.20	2.24	2.22	2.22	2.20	2.18	2.08	1.98	1.96	1.96	1.97	1.96	1.96	1.95	1.97	2.02	2.03	2.12	2.08	1.99	1.95	2.24	2.08	1.95	2.24	2.08	1.95	2.24	2.08	
Aug 14	S	1.95	1.98	1.99	2.05	2.06	2.03	1.98	1.96	1.95	1.93	1.92	1.91	1.92	1.93	1.92	1.91	1.91	1.91	1.92	1.94	1.94	1.95	S	1.91	2.06	1.95	1.91	2.06	1.95	1.91	2.06	1.95	
Aug 15	2.10	2.00	2.17	2.18	2.27	2.11	2.23	2.21	2.10	2.02	1.94	1.94	1.92	1.91	1.91	1.92	1.93	1.93	1.94	1.96	1.97	1.99	S	2.05	1.91	2.27	2.03	1.91	2.27	2.03	1.91	2.27	2.03	
Aug 16	2.09	2.14	2.16	2.16	2.14	2.10	2.06	2.02	2.05	2.00	1.97	1.94	1.95	1.95	1.96	1.96	1.98	2.04	2.04	2.07	2.07	S	2.06	2.06	1.94	2.16	2.04	1.94	2.16	2.04	1.94	2.16	2.04	
Aug 17	2.01	2.04	2.04	2.05	2.05	2.09	2.12	2.12	2.08	2.02	1.96	1.94	1.94	1.94	1.94	1.94	1.94	1.93	1.94	1.95	S	1.98	1.98	1.98	1.93	2.12	2.00	1.93	2.12	2.00	1.93	2.12	2.00	
Aug 18	2.00	1.98	1.99	2.05	2.07	2.23	2.33	2.24	2.04	2.03	2.01	1.96	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	S	1.98	2.02	2.02	1.95	2.33	2.03	1.95	2.33	2.03	1.95	2.33	2.03	
Aug 19	2.10	2.14	2.15	2.17	2.11	2.09	2.10	2.14	2.08	2.02	2.01	2.00	1.96	1.99	1.98	1.96	1.96	1.97	S	1.99	2.02	2.02	2.03	2.06	1.96	2.17	2.05	1.96	2.17	2.05	1.96	2.17	2.05	
Aug 20	2.08	2.08	2.07	2.04	2.06	2.06	2.06	2.08	2.09	2.10	2.11	2.14	2.11	2.06	2.04	1.98	2.00	S	2.08	2.10	2.12	2.10	2.12	2.15	1.98	2.15	2.08	1.98	2.15	2.08	1.98	2.15	2.08	
Aug 21	2.18	2.15	2.09	2.09	2.09	2.06	2.04	2.06	2.04	2.05	2.07	2.07	2.05	2.04	2.04	2.03	S	2.02	2.04	2.08	2.16	2.09	2.08	2.16	2.02	2.18	2.08	2.02	2.18	2.08	2.02	2.18	2.08	
Aug 22	2.14	2.19	2.12	2.30	2.33	2.16	2.30	2.23	2.18	2.13	2.09	2.08	2.04	2.04	2.04	S	2.03	2.03	2.07	2.09	2.05	2.09	2.16	2.11	2.03	2.33	2.13	2.03	2.33	2.13	2.03	2.33	2.13	
Aug 23	2.10	2.07	2.05	2.05	2.05	2.06	2.07	2.25	2.18	2.18	2.11	2.04	2.05	2.04	S	2.03	2.04	2.05	2.05	2.04	2.06	2.05	2.10	2.15	2.03	2.25	2.08	2.03	2.25	2.08	2.03	2.25	2.08	
Aug 24	2.10	2.09	2.07	2.08	2.13	2.21	2.55	2.21	2.16	2.17	2.15	2.08	2.06	S	2.03	2.02	2.01	2.02	2.03	2.04	2.05	2.07	2.09	2.03	2.01	2.55	2.11	2.01	2.55	2.11	2.01	2.55	2.11	
Aug 25	2.05	2.12	2.15	2.17	2.20	2.18	2.16	2.18	2.12	2.08	2.04	2.02	S	1.99	1.99	1.99	1.99	1.99	2.00	2.05	2.09	2.07	2.10	2.08	1.99	2.20	2.08	1.99	2.20	2.08	1.99	2.20	2.08	
Aug 26	2.08	2.10	2.15	2.18	2.22	2.26	2.27	2.29	2.19	2.12	2.06	S	2.02	2.00	1.99	1.98	1.96	1.97	1.98	2.10	2.05	2.03	2.08	2.05	1.96	2.29	2.09	1.96	2.29	2.09	1.96	2.29	2.09	
Aug 27	2.13	2.30	2.43	2.40	2.45	2.24	2.43	2.38	2.46	2.20	S	2.11	2.03	2.00	1.99	1.99	2.00	2.01	2.00	1.99	2.01	2.01	2.01	2.00	1.99	2.46	2.16	1.99	2.46	2.16	1.99	2.46	2.16	
Aug 28	1.99	1.99	2.00	2.00	1.99	1.99	2.00	1.99	2.00	S	1.99	1.98	1.98	1.98	1.97	1.97	1.97	1.97	1.99	2.00	2.02	2.03	2.04	2.08	1.97	2.08	2.00	1.97	2.08	2.00	1.97	2.08	2.00	
Aug 29	2.08	2.07	2.08	2.12	2.12	2.13	2.10	2.12	S	2.02	2.00	1.99	2.00	1.98	1.98	1.98	1.98	1.98	1.99	2.00	1.99	2.00	2.03	2.09	1.98	2.13	2.04	1.98	2.13	2.04	1.98	2.13	2.04	
Aug 30	2.13	2.11	2.11	2.11	2.12	2.12	2.12	S	2.05	1.99	1.96	1.96	1.96	1.95	1.94	1.94	1.93	1.93	1.94	1.96	2.01	2.02	2.01	2.01	1.93	2.13	2.02	1.93	2.13	2.02	1.93	2.13	2.02	
Aug 31	2.02	2.01	1.99	1.99	2.06	2.02	S	2.15	2.16	2.01	1.97	1.95	1.94	1.94	1.94	1.93	1.93	1.95	1.96	2.03	2.12	2.08	2.04	2.07	1.93	2.16	2.01	1.93	2.16	2.01	1.93	2.16	2.01	
Diurnal Maximum	2.18	2.30	2.43	2.40	2.45	2.26	2.55	2.38	2.46	2.20	2.15	2.14	2.11	2.06	2.04	2.03	2.04	2.05	2.09	2.11	2.16	2.12	2.16	2.16	2.18	2.30	2.16	2.18	2.30	2.16	2.18	2.30	2.16	
Diurnal Average	2.07	2.07	2.09	2.10	2.12	2.11	2.15	2.13	2.09	2.05	2.01	1.99	1.98	1.97	1.96	1.96	1.97	1.98	2.01	2.03	2.03	2.04	2.05	2.05	2.07	2.10	2.05	2.07	2.10	2.05	2.07	2.10	2.05	

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

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.

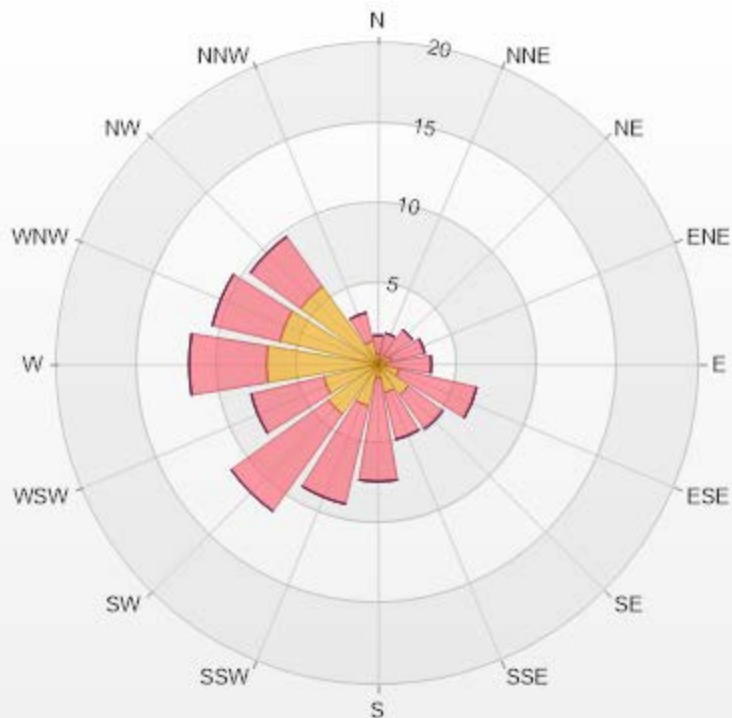
Timeseries Chart of Hourly Average for CH4 - St. Lina Site





Wind: St. Lina Poll.: St. Lina-CH4[ppm] Monthly: 08-2022 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 81.05% Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-20	>20.0	Total
N	0.66	1.16	0	0	0	1.82
NNE	0.17	1.82	0	0	0	1.99
NE	0.66	1.99	0	0	0	2.65
ENE	0.83	2.16	0	0	0	2.99
E	0.5	2.82	0	0	0	3.32
ESE	1.33	4.98	0	0	0	6.31
SE	2.32	2.65	0	0	0	4.97
SSE	1.82	2.99	0	0	0	4.81
S	0.83	6.47	0	0	0	7.3
SSW	2.65	6.3	0	0	0	8.95
SW	3.81	7.46	0	0	0	11.27
WSW	3.48	4.64	0	0	0	8.12
W	6.97	4.81	0	0	0	11.78
WNW	6.3	4.31	0	0	0	10.61
NW	5.97	3.81	0	0	0	9.78
NNW	1.49	1.82	0	0	0	3.31
Summary	39.79	60.19	0	0	0	100



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% Icon Classes (ppm)

40 0-2

60 2-5

0 5-10

0 10-20

0 >20.0



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - August 2022

Summary of Hourly Averages

NON-METHANE HYDROCARBONS (NMHC) in ppm

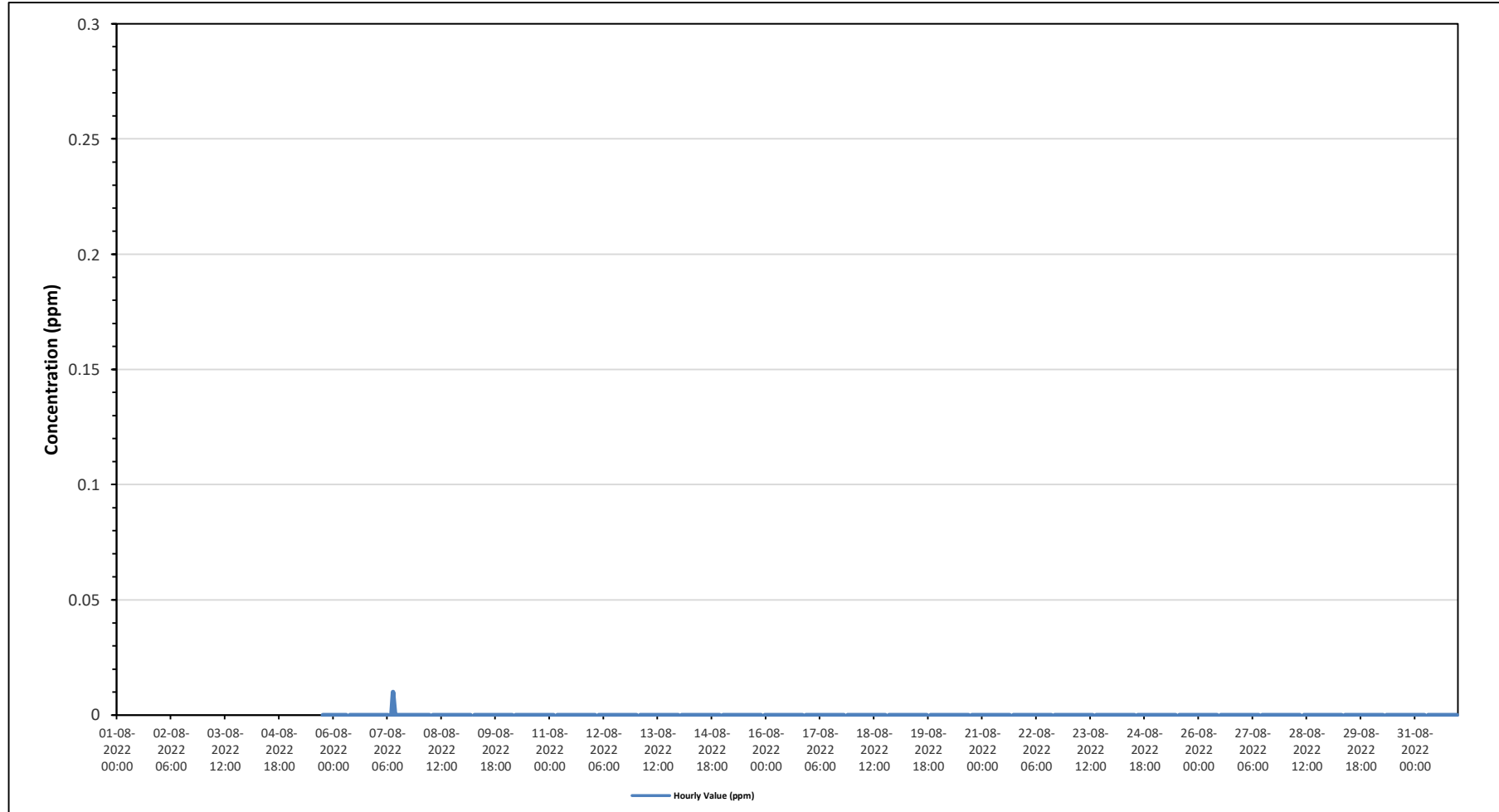
Maximum Hourly Value:	0.01 ppm on August 7 at hour 9	Hours in Service:	744
Maximum Daily Value:	0.00 ppm on August 7	Hours of Data:	603
Minimum Hourly Value:	0.00 ppm on August 5 at hour 18	Hours of Missing Data:	107
Minimum Daily Value:	0.00 ppm on August 6	Hours of Calibration:	34
Monthly Average:	0.00 ppm	Operational Uptime:	85.6

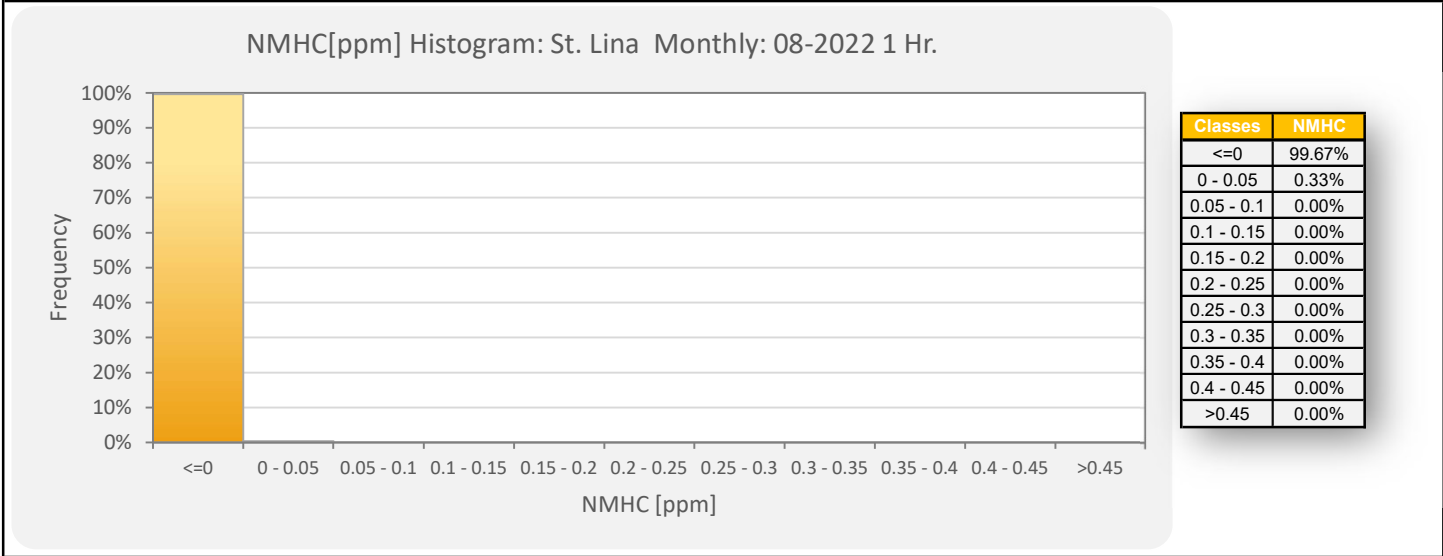
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23
Aug 1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	
Aug 2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Aug 3	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Aug 4	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Aug 5	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM
Aug 6	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
Aug 7	0.00	0.00	0.00	0.00	0.00	0.00	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Aug 8	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
Aug 9	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
Aug 10	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
Aug 11	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
Aug 12	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
Aug 13	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
Aug 14	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	S	0.00
Aug 15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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
Aug 16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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
Aug 17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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
Aug 18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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
Aug 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	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Aug 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	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Aug 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	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Aug 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	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Aug 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	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Aug 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	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
Aug 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	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
Aug 26	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
Aug 27	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
Aug 28	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
Aug 29	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
Aug 30	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
Aug 31	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
Diurnal Maximum	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diurnal 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	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
X	InValid Data (Equipment Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	P	Power Failure

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.

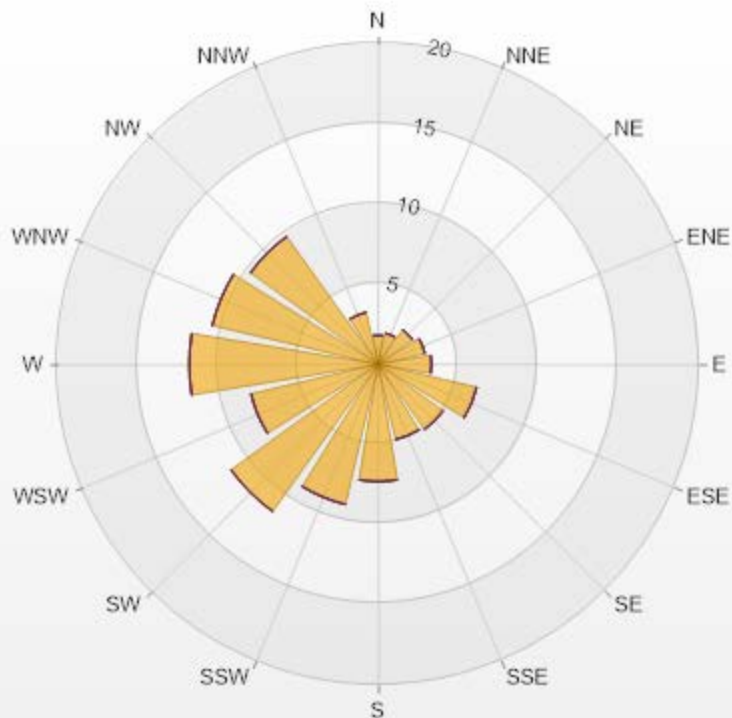
Timeseries Chart of Hourly Average for NMHC - St. Lina Site





Wind: St. Lina Poll.: St. Lina-NMHC[ppm] Monthly: 08-2022 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 81.05% Calm Avg: 0.00 [ppm]

Direction	0-0.1	0.1-0.3	0.3-1	1-2	>2.0	Total
N	1.82	0	0	0	0	1.82
NNE	1.99	0	0	0	0	1.99
NE	2.65	0	0	0	0	2.65
ENE	2.99	0	0	0	0	2.99
E	3.32	0	0	0	0	3.32
ESE	6.3	0	0	0	0	6.3
SE	4.98	0	0	0	0	4.98
SSE	4.81	0	0	0	0	4.81
S	7.3	0	0	0	0	7.3
SSW	8.96	0	0	0	0	8.96
SW	11.28	0	0	0	0	11.28
WSW	8.13	0	0	0	0	8.13
W	11.77	0	0	0	0	11.77
WNW	10.61	0	0	0	0	10.61
NW	9.78	0	0	0	0	9.78
NNW	3.32	0	0	0	0	3.32
Summary	100	0	0	0	0	100



LICA-202208

% Icon Classes (ppm)

100  0-0.1

0  0.1-0.3

0  0.3-1

0  1-2

0  >2.0



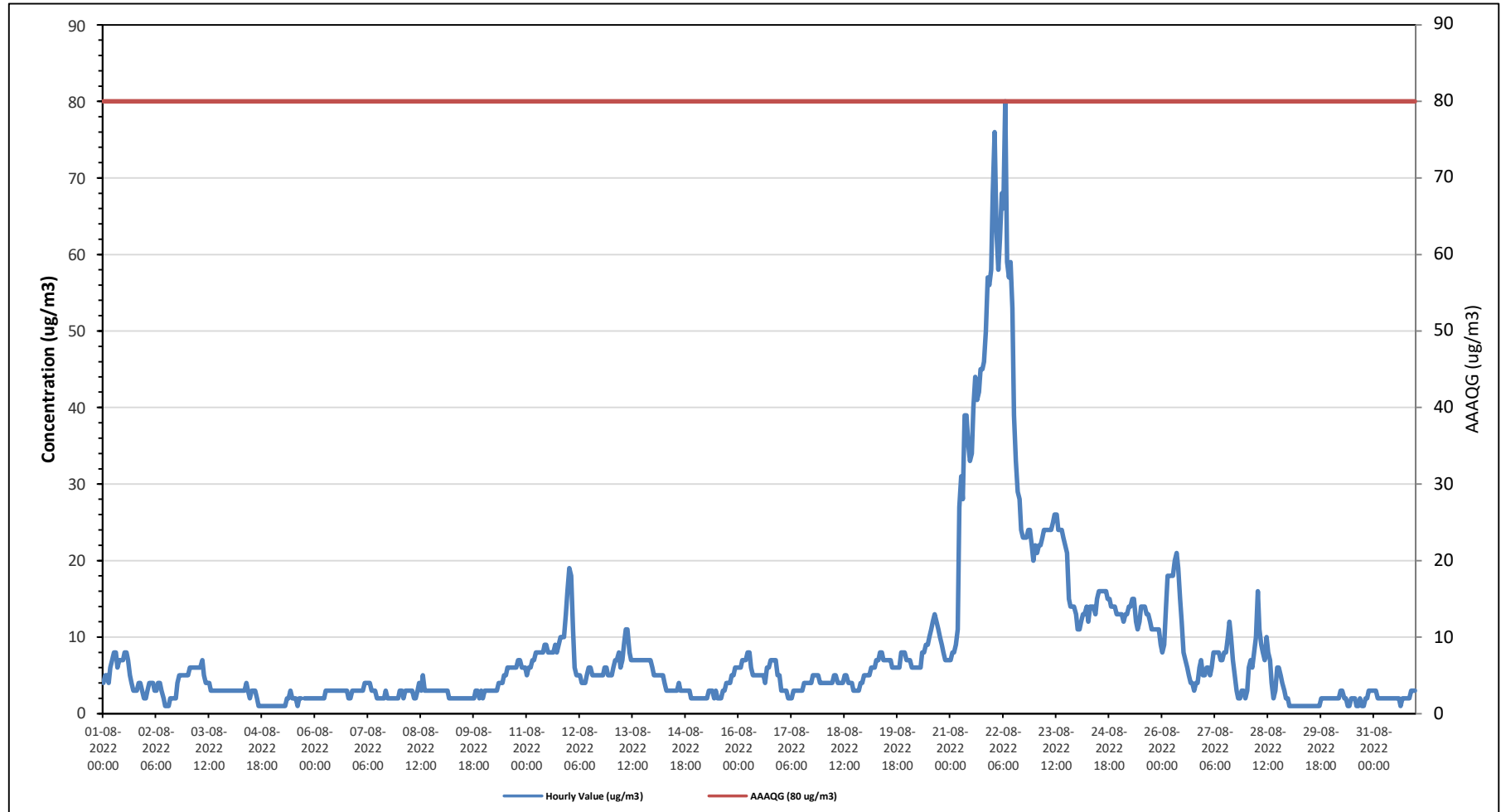
LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - August 2022
Summary of Hourly Averages

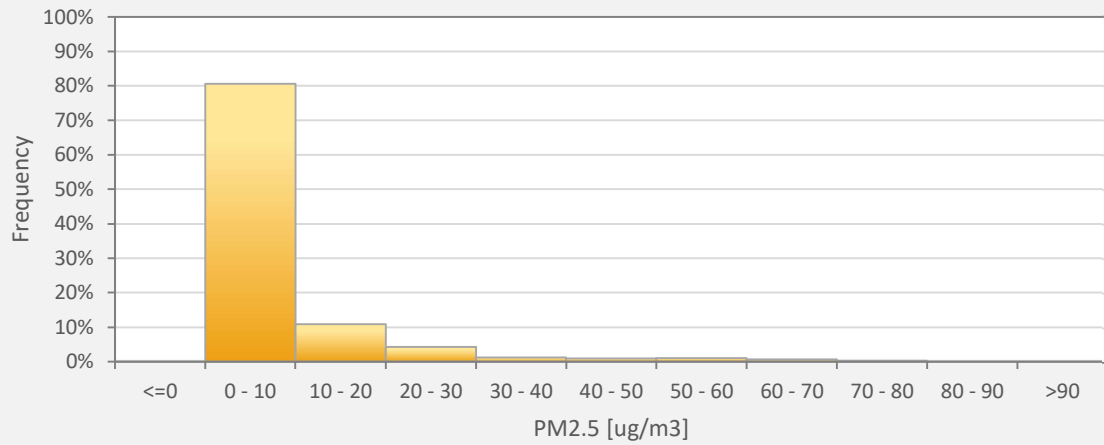
PARTICULATE MATTER 2.5 (PM_{2.5}) in µg/m³

Alberta Ambient Air Quality Guideline (AAAQG): 1-Hour 80 µg/m ³ , Alberta Ambient Air Quality Objective (AAAQO): 24-Hour 29 µg/m ³																																																			
Number of 1-Hour Exceedances: 0												Number of 24-Hour Exceedances: 2																																							
Maximum Hourly Value: 80 µg/m ³ on August 22 at hour 7												Hours in Service: 744																																							
Maximum Daily Value: 45.0 µg/m ³ on August 22												Hours of Data: 743																																							
Minimum Hourly Value: 1 µg/m ³ on August 2 at hour 11												Hours of Missing Data: 0																																							
Minimum Daily Value: 1 µg/m ³ on August 29												Hours of Calibration: 1																																							
Monthly Average: 7.9 µg/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																								
Aug 1	4	5	5	4	6	7	8	8	6	7	7	7	8	8	7	5	4	3	3	3	4	4	3	2	2	8	5.3																								
Aug 2	2	3	4	4	4	3	3	4	4	3	2	1	1	1	2	2	2	2	4	5	5	5	5	5	1	5	3.2																								
Aug 3	5	6	6	6	6	6	6	6	7	5	4	4	4	3	3	3	3	3	3	3	3	3	3	3	3	3	7	4.3																							
Aug 4	3	3	3	3	3	3	3	3	3	4	3	2	3	3	3	2	1	1	1	1	1	1	1	1	1	1	4	2.3																							
Aug 5	1	1	1	1	1	1	1	1	2	2	3	2	2	2	1	2	2	C	2	2	2	2	2	2	1	3	1.7																								
Aug 6	2	2	2	2	2	2	3	3	3	3	3	3	3	3	3	3	3	3	3	2	2	3	3	3	2	3	2.7																								
Aug 7	3	3	3	3	4	4	4	4	3	3	3	2	2	2	2	2	3	2	2	2	2	2	2	2	2	4	2.7																								
Aug 8	3	3	2	3	3	3	3	3	2	2	3	4	3	5	3	3	3	3	3	3	3	3	3	3	3	5	3.0																								
Aug 9	3	3	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	2	3	2	3	2.3																								
Aug 10	3	3	3	3	3	3	3	3	4	4	4	5	5	6	6	6	6	6	6	7	7	6	6	6	3	7	4.8																								
Aug 11	5	6	6	7	7	8	8	8	8	8	9	9	8	8	8	9	8	9	8	9	10	10	10	13	16	5	16	8.6																							
Aug 12	19	18	11	6	5	5	5	4	4	5	6	6	5	5	5	5	5	5	5	5	6	6	5	5	4	19	6.5																								
Aug 13	5	6	7	7	8	6	7	9	11	11	8	7	7	7	7	7	7	7	7	7	7	7	7	6	5	11	7.3																								
Aug 14	5	5	5	5	5	5	4	3	3	3	3	3	3	3	4	3	3	3	3	3	3	3	2	2	2	5	3.5																								
Aug 15	2	2	2	2	2	2	2	3	3	3	2	3	2	2	2	3	3	4	4	4	5	5	6	6	2	6	3.1																								
Aug 16	6	6	7	7	7	8	8	6	5	5	5	5	5	5	4	6	6	7	7	7	7	5	5	4	8	6.0																									
Aug 17	3	3	3	3	2	2	2	3	3	3	3	3	3	4	4	4	4	4	5	5	5	5	4	4	2	5	3.5																								
Aug 18	4	4	4	4	4	4	5	4	4	4	4	4	5	5	4	4	3	3	3	3	4	4	5	3	5	4.0																									
Aug 19	5	5	5	6	6	6	7	8	8	7	7	7	7	7	6	6	6	6	6	8	8	8	7	5	8	6.6																									
Aug 20	7	7	6	6	6	6	6	6	8	8	9	9	10	11	12	13	12	11	10	9	8	7	7	6	13	8.4																									
Aug 21	7	8	8	9	11	27	31	28	39	39	35	33	34	40	44	41	42	45	45	46	50	57	56	58	7	58	34.7																								
Aug 22	68	76	63	58	62	68	66	80	59	57	59	53	39	33	29	28	24	23	23	23	24	24	22	20	20	80	45.0																								
Aug 23	22	21	22	22	23	24	24	24	24	24	25	26	26	24	24	24	23	22	21	15	14	14	14	13	13	26	21.5																								
Aug 24	11	11	12	13	13	14	12	14	14	14	13	15	16	16	16	16	16	15	15	14	14	14	13	13	11	16	13.9																								
Aug 25	13	13	12	13	13	14	14	15	15	12	11	12	14	14	13	13	12	11	11	11	11	11	9	9	9	15	12.5																								
Aug 26	8	9	14	18	18	18	18	20	21	19	15	12	8	7	6	5	4	4	3	4	4	6	7	5	3	21	10.5																								
Aug 27	5	6	6	5	6	8	8	8	8	7	7	8	8	10	12	10	7	5	3	2	2	3	3	2	2	12	6.2																								
Aug 28	3	6	7	6	8	10	16	11	9	8	7	10	8	7	4	2	3	6	5	4	3	2	2	2	16	6.4																									
Aug 29	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	1	2	1.3																									
Aug 30	2	2	2	2	2	3	3	2	2	1	1	2	2	2	1	1	2	1	1	2	2	3	3	3	1	3	2.0																								
Aug 31	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	1	2	2	2	2	2	3	3	3	1	3	2.2																								
Diurnal Maximum	68	76	63	58	62	68	66	80	59	57	59	53	39	40	44	41	42	45	45	46	50	57	56	58																											
Diurnal Average	7.5	8.1	7.6	7.5	7.9	8.9	9.2	9.5	9.3	8.9	8.5	8.5	8.0	8.0	7.8	7.4	7.3	7.3	7.1	7.0	7.2	7.5	7.4	7.2																											
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 PM2.5 - St. Lina Site



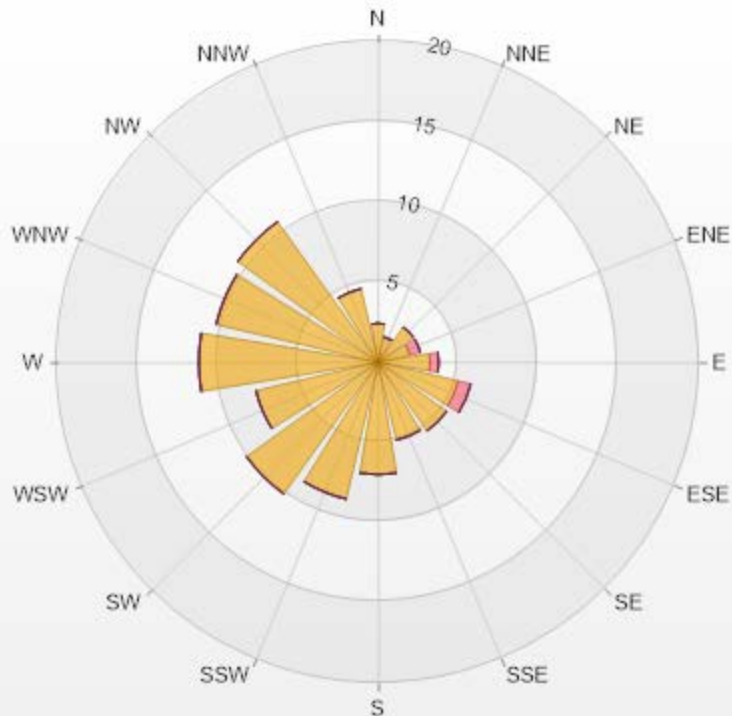
PM2.5[ug/m3(L)] Histogram: St. Lina Monthly: 08-2022 1 Hr.



Classes	PM2.5
<=0	0.00%
0 - 10	80.62%
10 - 20	10.90%
20 - 30	4.31%
30 - 40	1.21%
40 - 50	0.94%
50 - 60	1.08%
60 - 70	0.67%
70 - 80	0.27%
80 - 90	0.00%
>90	0.00%

Wind: St. Lina Poll.: St. Lina-PM2.5[ug/m3(L)] Monthly: 08-2022 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 99.87% Calm Avg: 0.00 [ug/m3(L)]

Direction	0-50	50-80	80-120	120-240	>240.0	Total
N	2.42	0	0	0	0	2.42
NNE	1.62	0	0	0	0	1.62
NE	2.69	0	0	0	0	2.69
ENE	2.02	0.67	0	0	0	2.69
E	3.23	0.54	0	0	0	3.77
ESE	5.11	0.81	0	0	0	5.92
SE	5.25	0	0	0	0	5.25
SSE	4.98	0	0	0	0	4.98
S	7	0	0	0	0	7
SSW	8.75	0	0	0	0	8.75
SW	10.09	0	0	0	0	10.09
WSW	7.81	0	0	0	0	7.81
W	11.17	0	0	0	0	11.17
WNW	10.36	0	0	0	0	10.36
NW	10.77	0	0	0	0	10.77
NNW	4.71	0	0	0	0	4.71
Summary	97.98	2.02	0	0	0	100



LICA-202208

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% Icon Classes (ug/m3(L))

98 0-50

2 50-80

0 80-120

0 120-240

0 >240.0



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - August 2022

Summary of Hourly Averages

RELATIVE HUMIDITY (RH) in %

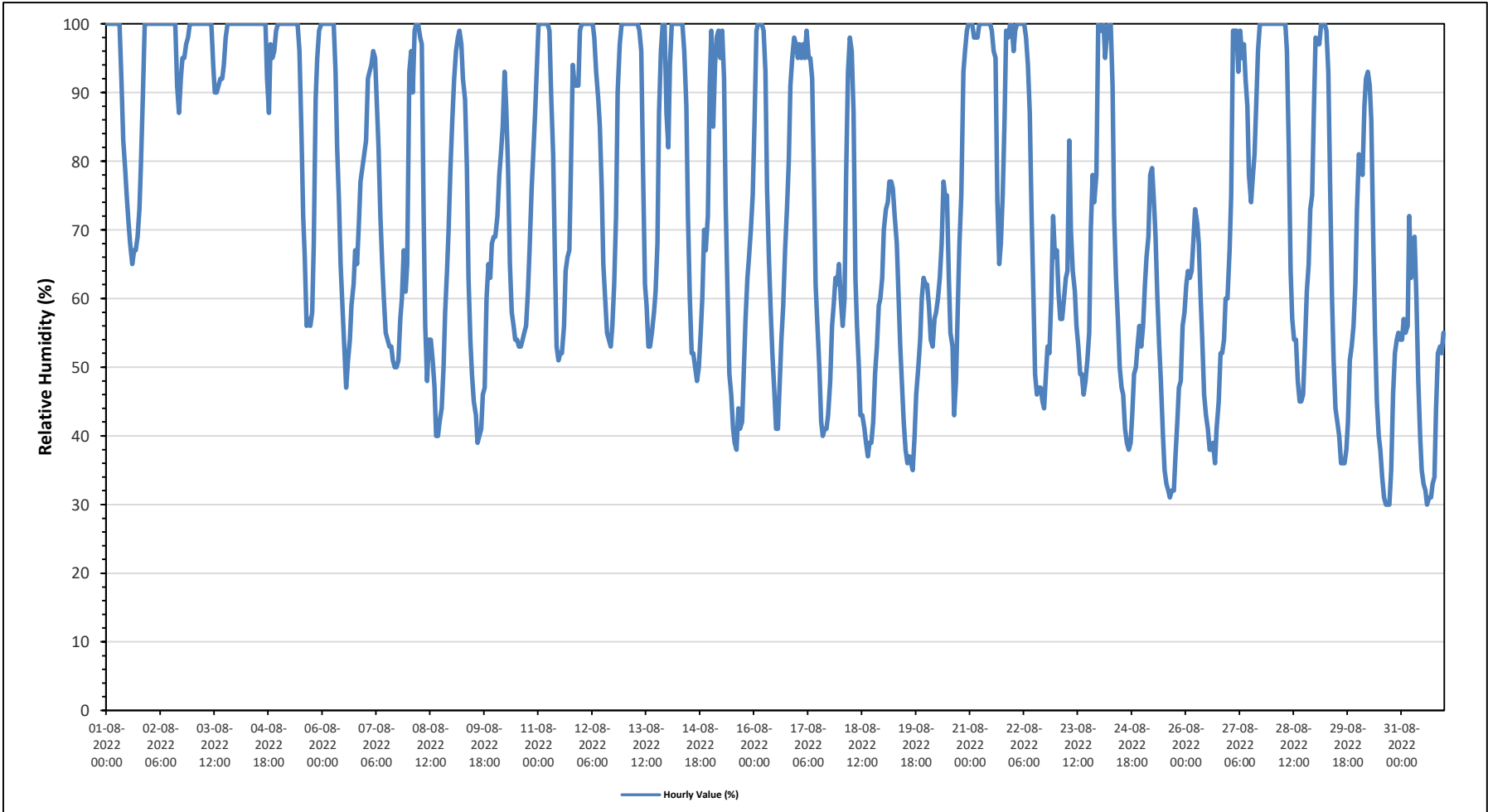
Maximum Hourly Value:	100 %	on August 1 at hour 0	Hours in Service:	744
Maximum Daily Value:	98.6 %	on August 4	Hours of Data:	744
Minimum Hourly Value:	30 %	on August 30 at hour 15	Hours of Missing Data:	0
Minimum Daily Value:	48.2 %	on August 31	Hours of Calibration:	0
Monthly Average:	73.5 %		Operational 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	
Aug 1	100	100	100	100	100	100	100	100	100	92	83	79	75	71	68	65	67	67	69	73	80	91	100	100	100	65	100	86.7
Aug 2	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	91	87	92	95	95	97	98	100	100	87	100	98.1
Aug 3	100	100	100	100	100	100	100	100	100	100	100	100	94	90	90	91	92	92	94	98	100	100	100	100	100	90	100	97.5
Aug 4	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	92	87	97	95	96	99	100	87	100	98.6
Aug 5	100	100	100	100	100	100	100	100	100	100	100	100	96	85	72	66	56	57	56	58	68	89	95	99	100	56	100	87.4
Aug 6	100	100	100	100	100	100	100	93	82	74	65	58	52	47	51	54	59	62	67	65	71	77	79	81	47	100	76.5	
Aug 7	83	92	93	94	96	95	88	82	72	65	60	55	54	53	53	51	50	50	51	57	60	67	61	65	50	96	68.6	
Aug 8	93	96	90	99	100	100	98	97	72	56	48	54	54	51	47	40	40	42	44	50	58	64	70	79	40	100	68.4	
Aug 9	86	92	96	98	99	97	92	89	79	63	54	49	45	43	39	40	41	46	47	60	65	63	68	69	39	99	67.5	
Aug 10	69	72	78	81	85	93	88	79	65	58	56	54	54	53	53	54	55	56	61	67	76	81	87	94	53	94	69.5	
Aug 11	100	100	100	100	100	100	99	89	81	65	53	51	52	52	56	64	66	67	79	94	91	91	91	99	51	100	80.8	
Aug 12	100	100	100	100	100	100	100	100	98	93	89	85	76	65	60	55	54	53	56	62	72	90	97	100	100	53	100	83.5
Aug 13	100	100	100	100	100	100	100	100	99	96	78	62	59	53	53	55	58	61	68	87	96	100	100	87	53	100	83.8	
Aug 14	82	94	100	100	100	100	100	100	100	96	88	72	60	52	50	48	50	55	60	70	67	72	91	48	100	77.5		
Aug 15	99	85	94	98	99	95	99	92	74	61	49	46	41	39	38	44	41	42	49	57	63	66	70	75	38	99	67.3	
Aug 16	86	99	100	100	100	99	93	76	66	58	52	46	41	41	48	54	59	67	73	80	91	95	98	97	41	100	75.8	
Aug 17	95	97	95	97	95	99	95	95	92	79	62	56	50	42	40	41	41	43	48	56	59	63	62	65	40	99	69.5	
Aug 18	60	56	60	78	93	98	96	87	63	56	50	43	43	41	39	37	39	39	42	49	53	59	60	63	37	98	58.5	
Aug 19	70	73	74	77	77	76	72	68	61	53	47	42	38	36	37	36	35	40	46	50	54	60	63	62	35	77	56.1	
Aug 20	62	59	54	53	57	58	60	63	68	77	75	75	63	55	53	43	48	59	68	75	93	96	99	100	43	100	67.2	
Aug 21	100	100	98	98	98	100	100	100	100	100	100	100	99	96	95	74	65	68	75	86	99	98	100	100	65	100	93.7	
Aug 22	96	99	100	100	100	100	100	98	94	87	72	60	49	46	47	47	45	44	49	53	52	60	72	66	44	100	72.3	
Aug 23	67	61	57	57	60	63	64	83	70	64	61	56	53	49	49	46	48	51	55	70	78	74	78	100	46	100	63.1	
Aug 24	99	99	100	95	99	100	100	91	72	63	57	50	47	46	41	39	38	39	43	49	50	53	56	53	38	100	65.8	
Aug 25	56	62	66	69	78	79	74	69	60	53	48	40	35	33	32	31	32	32	37	42	47	48	56	58	31	79	51.5	
Aug 26	62	64	63	64	68	73	71	68	60	54	46	43	41	38	38	39	36	41	45	52	52	54	60	60	36	73	53.8	
Aug 27	67	75	99	99	99	93	99	95	97	92	88	78	74	78	81	89	96	100	100	100	100	100	100	100	67	100	91.6	
Aug 28	100	100	100	100	100	100	100	100	96	82	64	57	54	54	48	45	45	46	52	61	65	73	75	88	45	100	75.2	
Aug 29	98	97	97	100	100	100	99	93	76	60	51	44	42	40	36	36	36	38	42	51	53	56	62	73	36	100	65.8	
Aug 30	81	80	78	88	92	93	91	86	67	55	45	40	38	34	31	30	30	30	35	46	52	54	55	54	30	93	57.7	
Aug 31	54	57	55	56	72	63	68	69	60	48	40	35	33	32	30	31	31	33	34	44	52	53	52	55	30	72	48.2	
Diurnal Maximum	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Diurnal Average	86.0	87.4	88.6	90.4	92.5	92.7	91.8	89.0	81.0	73.8	66.9	61.5	57.5	54.6	53.7	52.6	52.8	55.0	59.3	66.9	73.0	76.1	78.8	81.7				

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

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 - August 2022

Summary of Hourly Averages

BAROMETRIC PRESSURE (BP) in millibar

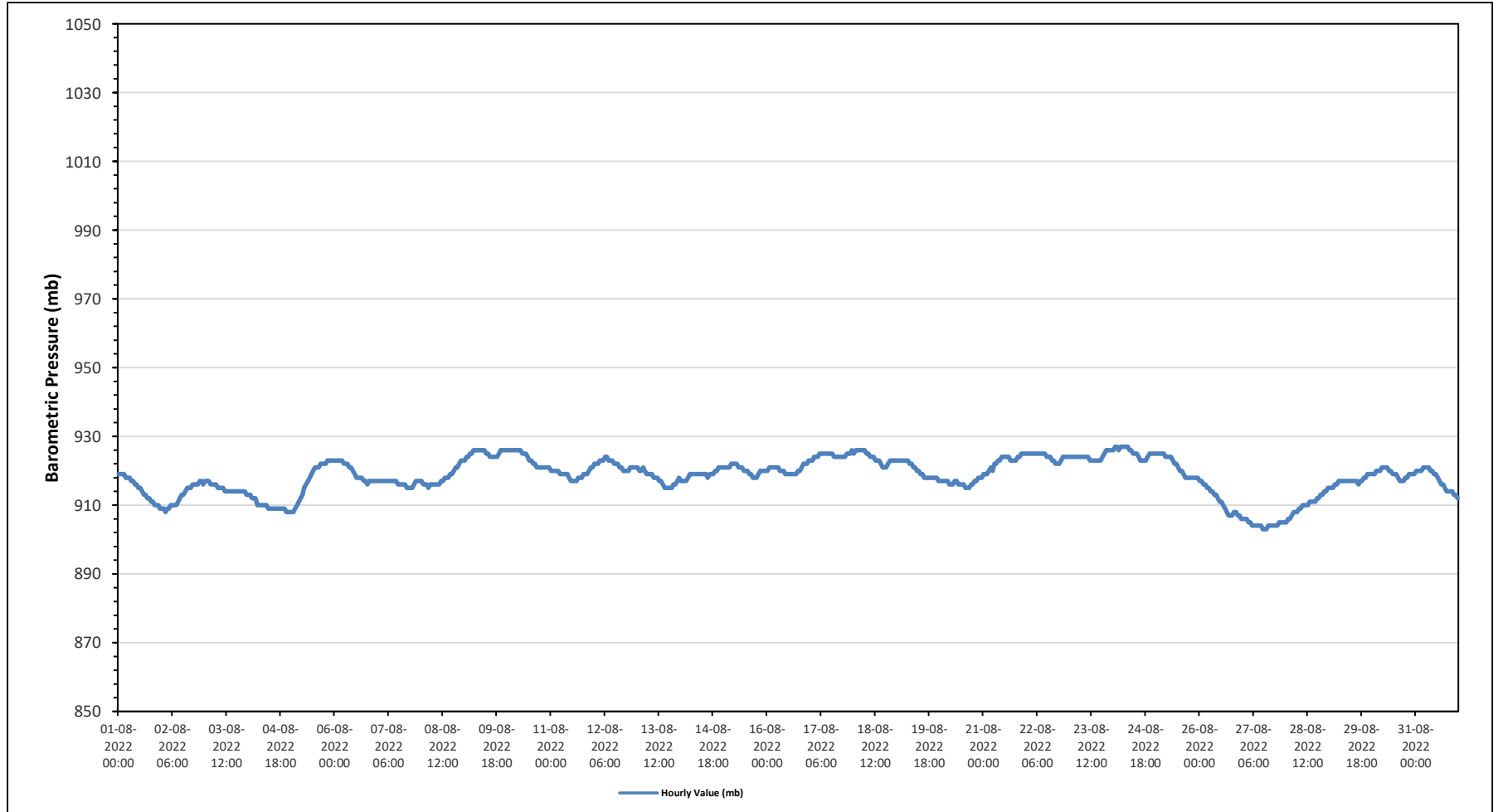
Maximum Hourly Value:	927 mb on August 24 at hour 1	Hours in Service:	744
Maximum Daily Value:	925 mb on August 24	Hours of Data:	744
Minimum Hourly Value:	903 mb on August 27 at hour 11	Hours of Missing Data:	0
Minimum Daily Value:	904 mb on August 27	Hours of Calibration:	0
Monthly Average:	918 mb	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	
Aug 1	919	919	919	919	918	918	918	917	917	916	916	915	915	914	913	913	912	912	911	910	910	909	909	909	909	919	919	915
Aug 2	909	909	908	909	909	910	910	910	910	911	912	913	913	914	915	915	915	916	916	916	916	917	917	916	908	917	913	
Aug 3	917	917	917	916	916	916	916	915	915	915	915	914	914	914	914	914	914	914	914	914	914	914	913	913	917	915		
Aug 4	913	913	912	912	912	910	910	910	910	910	910	909	909	909	909	909	909	909	909	909	909	908	908	908	908	913	910	
Aug 5	908	908	909	910	911	912	913	915	916	917	918	919	920	921	921	922	922	922	922	923	923	923	923	923	908	923	917	
Aug 6	923	923	923	923	923	922	922	922	921	921	920	919	918	918	918	918	917	917	916	917	917	917	917	917	916	923	920	
Aug 7	917	917	917	917	917	917	917	917	917	917	917	916	916	916	916	916	915	915	915	915	915	916	917	917	917	915	916	
Aug 8	917	916	916	916	915	916	916	916	916	916	916	917	917	918	918	918	919	919	920	921	921	922	923	923	915	923	918	
Aug 9	923	924	924	925	925	926	926	926	926	926	926	926	926	925	925	924	924	924	924	924	924	925	926	926	926	923	926	
Aug 10	926	926	926	926	926	926	926	926	926	925	925	925	924	923	923	922	922	921	921	921	921	921	921	921	921	921	924	
Aug 11	920	920	920	920	920	919	919	919	919	919	918	917	917	917	917	918	918	918	919	919	919	920	921	921	917	921	919	
Aug 12	922	922	922	923	923	923	924	924	923	923	923	922	922	922	921	921	920	920	920	920	921	921	921	921	920	924	922	
Aug 13	921	920	920	921	920	919	919	919	919	918	918	918	917	917	916	915	915	915	915	915	916	916	917	918	915	921	918	
Aug 14	917	917	917	917	918	919	919	919	919	919	919	919	919	919	919	919	919	919	919	920	920	921	921	921	917	921	919	
Aug 15	921	921	921	921	922	922	922	922	921	921	921	920	920	920	919	919	918	918	918	919	920	920	920	920	918	922	920	
Aug 16	920	921	921	921	921	921	921	920	920	920	919	919	919	919	919	919	919	920	920	921	922	922	922	923	919	923	920	
Aug 17	923	923	924	924	924	925	925	925	925	925	925	925	925	924	924	924	924	924	924	924	925	925	925	926	923	926	924	
Aug 18	925	926	926	926	926	926	926	925	925	924	924	924	923	923	922	921	921	921	922	923	923	923	923	921	926	924		
Aug 19	923	923	923	923	923	923	923	922	922	921	921	920	920	919	919	918	918	918	918	918	918	918	917	917	923	920		
Aug 20	917	917	917	917	917	916	916	916	917	917	916	916	916	915	915	915	916	916	917	917	918	918	918	915	918	917		
Aug 21	919	919	919	920	921	920	922	922	923	923	924	924	924	924	924	923	923	923	923	924	924	925	925	919	925	923		
Aug 22	925	925	925	925	925	925	925	925	925	925	925	924	924	924	923	923	922	922	922	923	924	924	924	922	925	924		
Aug 23	924	924	924	924	924	924	924	924	924	924	924	923	923	923	923	923	923	923	924	925	926	926	926	923	926	924		
Aug 24	926	927	927	926	927	927	927	927	927	926	926	925	925	925	924	923	923	923	923	924	925	925	925	923	927	925		
Aug 25	925	925	925	925	925	924	924	924	924	923	922	922	921	920	920	919	918	918	918	918	918	918	918	918	923	925	921	
Aug 26	917	917	916	916	915	915	914	914	913	913	912	911	911	910	909	908	907	907	907	908	908	907	906	906	917	911		
Aug 27	906	906	906	905	905	904	904	904	904	904	904	903	903	903	904	904	904	904	904	905	905	905	905	903	906	904		
Aug 28	905	906	906	907	908	908	908	909	909	910	910	910	910	911	911	911	912	912	913	913	914	915	905	905	915	910		
Aug 29	915	915	915	916	916	917	917	917	917	917	917	917	917	917	917	917	916	917	917	918	918	919	919	915	919	917		
Aug 30	919	919	920	920	920	921	921	921	921	920	920	919	919	919	918	917	917	918	918	919	919	919	919	917	921	919		
Aug 31	920	920	920	920	921	921	921	921	920	920	919	919	918	917	916	915	914	914	914	914	913	913	912	912	921	917		
Diurnal Maximum	926	927	927	926	927	927	927	927	927	926	926	926	925	925	924	924	924	924	924	925	926	926	926	926	923	927	925	
Diurnal Average	919	919	919	919	919	919	919	919	919	919	919	918	918	918	918	918	917	917	917	918	918	919	919	919	919	919	919	

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

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 - August 2022

Summary of Hourly Averages

AMBIENT TEMPERATURE (AT) in Degree Celsius

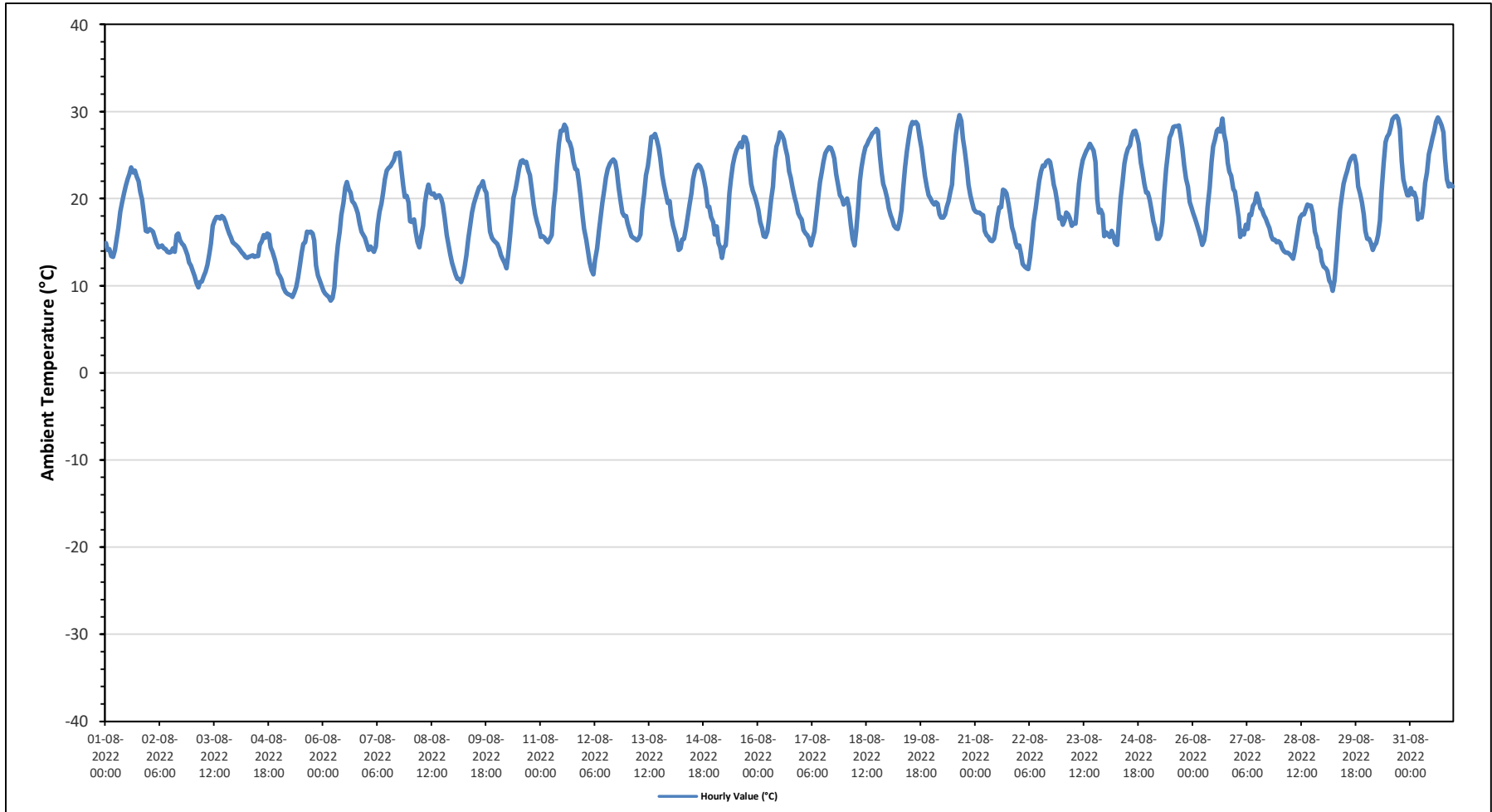
Maximum Hourly Value:	29.6 °C	on August 20 at hour 15	Hours in Service:	744
Maximum Daily Value:	23.3 °C	on August 31	Hours of Data:	744
Minimum Hourly Value:	8.3 °C	on August 6 at hour 4	Hours of Missing Data:	0
Minimum Daily Value:	11.9 °C	on August 5	Hours of Calibration:	0
Monthly Average:	19.1 °C		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
Aug 1	14.9	14.1	14.2	13.4	13.3	14.1	15.5	16.7	18.5	19.6	20.6	21.5	22.3	22.8	23.6	23	23.2	22.5	22	20.8	19.9	18.2	16.3	16.2	13.3	23.6	18.6
Aug 2	16.5	16.4	16.2	15.5	14.9	14.4	14.5	14.6	14.3	14.2	13.9	13.8	13.9	14.3	13.9	15.8	16	15.2	14.8	14.6	14.1	13.5	12.7	12.3	12.3	16.5	14.6
Aug 3	11.6	11.1	10.3	9.8	10.4	10.5	11.1	11.6	12.4	13.6	14.8	16.9	17.5	17.9	17.9	17.7	18	17.8	17.3	16.6	16	15.5	15	14.8	9.8	18.0	14.4
Aug 4	14.6	14.4	14.1	13.8	13.6	13.3	13.2	13.3	13.4	13.5	13.3	13.4	13.4	14.7	15.1	15.8	15.5	16	15.9	14.4	13.9	13.1	12.4	11.4	11.4	16.0	14.0
Aug 5	11.1	10.7	9.8	9.3	9.1	9	8.9	8.7	9.2	9.8	10.9	12.3	13.8	14.8	15	16.2	16.1	16.2	16	15.2	12.3	11.2	10.6	10	8.7	16.2	11.9
Aug 6	9.4	9.1	8.9	8.7	8.3	8.6	9.8	12.5	14.7	16.2	18.1	19.5	21.3	21.9	21.1	20.7	19.7	19.4	18.9	18.3	17.1	16.2	15.9	15.5	8.3	21.9	15.4
Aug 7	14.8	14.1	14.5	14.2	13.9	14.5	17	18.5	19.4	20.6	22.2	23.2	23.5	23.7	24.1	24.4	25.2	25.2	25.3	23.4	21.5	20.2	20.3	19.6	13.9	25.3	20.1
Aug 8	17.4	17.3	17.6	16.2	15	14.4	15.6	16.9	19.5	20.7	21.6	20.7	20.5	20.6	20.1	20.3	20.4	20	19.3	17.8	15.8	14.8	13.6	12.6	12.6	21.6	17.9
Aug 9	12	11.3	10.8	10.8	10.4	11.1	12.1	13.5	15.4	16.9	18.4	19.4	20	20.7	21.3	21.5	22	21	20.7	18.5	16.2	15.5	15.2	15	10.4	22.0	16.2
Aug 10	14.8	14.3	13.5	13.1	12.6	12	13.5	15.6	18	20.1	21.1	22.3	23.4	24.3	24.4	24.1	24.2	23.2	22.7	21.1	19.3	18.2	17.3	16.5	12.0	24.4	18.7
Aug 11	15.6	15.7	15.5	15.2	15	15.4	15.8	19	21	23.8	26.3	27.8	28.5	28.1	26.7	26.4	25.7	24.2	23.4	23.3	22	20.2	18.1	15.0	28.5	21.7	
Aug 12	16.5	15.3	13.9	12.7	11.8	11.3	12.9	14.3	16.3	17.8	19.6	21	22.4	23.4	24	24.3	24.5	24.2	23.2	21.3	19.6	18.4	18	18	11.3	24.5	18.5
Aug 13	17.1	16.4	15.7	15.5	15.4	15.2	15.4	15.9	18.8	20.5	22.7	23.7	25.1	27.1	27.1	27.4	26.7	25.8	24.6	22.7	21.5	20.5	19.5	19.7	15.2	27.4	20.8
Aug 14	18	16.9	16.1	15.4	14.1	14.3	15.3	15.4	16.5	17.7	19.3	20.6	22.2	23.2	23.7	23.9	23.7	23.1	22.2	21.1	19.1	19.1	17.9	17.3	14.1	23.9	19.0
Aug 15	15.9	16.8	14.9	14.4	13.2	14.4	14.6	17.2	20.6	22.3	23.9	24.9	25.6	26	26.4	25.9	27.1	27	26.3	23.7	21.7	20.9	20.3	19.6	13.2	27.1	21.0
Aug 16	18.7	17.3	16.6	15.7	15.6	16.2	17.6	19.9	21.4	24.3	26	26.6	27.6	27.3	26.8	25.8	24.9	23.1	22.4	21.2	20.1	19.4	18.3	17.9	15.6	27.6	21.3
Aug 17	17.6	16.4	16	15.8	15.4	14.6	15.4	16.2	18.1	20.1	21.9	23.1	24.2	25.2	25.6	25.9	25.8	25.3	24.6	22.8	21.6	20.4	20.1	19.3	14.6	25.9	20.5
Aug 18	19.6	20	19	17	15.4	14.6	16.2	18.8	22	23.5	25	25.9	26.2	26.7	27.1	27.5	27.7	28	27.8	25.1	23	21.7	21	20	14.6	28.0	22.5
Aug 19	18.9	18.1	17.6	16.9	16.6	16.5	17.4	18.7	21.1	23.5	25.4	26.9	28.2	28.8	28.6	28.8	28.5	27	25.8	24.1	22.6	21.4	20.4	20.1	16.5	28.8	22.6
Aug 20	19.6	19.3	19.6	19.4	18.2	17.8	17.8	18.2	19	19.7	20.8	21.6	24.9	27.4	28.6	29.6	28.9	26.9	25.5	23.5	21.6	20.4	19.5	18.8	17.8	29.6	21.9
Aug 21	18.5	18.4	18.4	18.2	18.1	16.3	15.8	15.6	15.2	15.1	15.4	16.3	17.9	19	19	21	20.9	20.6	19.5	18.2	16.7	16	14.9	14.4	14.4	21.0	17.5
Aug 22	14.6	13.6	12.5	12.2	12	11.9	13.3	15.3	17.3	18.9	20.6	22	23.1	23.8	23.7	24.2	24.4	24.2	23.1	21.6	20.9	19.6	17.7	17.9	11.9	24.4	18.7
Aug 23	17	17.5	18.4	18.2	17.7	16.9	17.2	17.1	19.2	21.7	23.3	24.4	25	25.5	25.8	26.3	25.9	25.5	24.2	19.9	18.4	18.7	18.2	15.7	15.7	26.3	20.7
Aug 24	16.1	15.8	15.6	16.3	15.7	14.9	14.7	17.7	20.1	21.9	24	25	25.7	26.1	27.1	27.7	27.8	27.2	26.3	24.1	23.1	21.7	20.7	20.7	14.7	27.8	21.5
Aug 25	19.9	18.7	17.4	16.6	15.4	15.4	15.8	17.3	20.7	23.4	25.3	27	27.5	28.2	28.3	28.3	28.4	27.3	25.8	23.8	22.3	21.4	19.6	19	15.4	28.4	22.2
Aug 26	18.3	17.7	17.1	16.3	15.5	14.7	15.2	16.5	19	21.3	24.2	26	26.8	27.8	28	27.7	29.2	27.4	26.4	24.1	23.1	22.6	21.1	20.8	14.7	29.2	22.0
Aug 27	19.3	17.8	15.6	16.3	15.9	17	16.5	18.2	18.1	19.2	19.5	20.6	19.9	18.9	18.7	18.1	17.7	17.1	16.6	15.7	15.3	15.3	15	15.1	15.0	20.6	17.4
Aug 28	14.9	14.3	14	13.8	13.8	13.7	13.4	13.1	14	15.4	16.8	17.8	18.2	18.2	18.7	19.3	19.2	19.2	18.3	16.2	15.6	14.4	14.1	12.8	12.8	19.3	15.8
Aug 29	12.2	12	11.7	10.6	10.2	9.4	10.6	13.2	16.1	18.8	20.4	21.7	22.5	23.2	24.1	24.6	24.9	24.9	23.9	21.4	20.6	19.6	18.2	16.3	9.4	24.9	18.0
Aug 30	15.4	15.4	14.9	14.1	14.6	14.9	15.8	17.5	20.8	24.1	26.5	27.1	27.4	28.2	29.1	29.4	29.5	29.2	28	24.3	22.2	21.3	20.4	20.4	14.1	29.5	22.1
Aug 31	21.2	20.5	20.7	20	17.6	18.2	17.8	19.2	21.8	23	25.1	26	27	27.7	28.8	29.3	28.9	28.4	27.6	24.6	22.2	21.4	21.7	21.4	17.6	29.3	23.3
Diurnal Maximum	21.2	20.5	20.7	20.0	18.2	18.2	17.8	19.9	22.0	24.3	26.5	27.8	28.2	28.8	29.1	29.6	29.5	29.2	28.0	25.1	23.3	22.6	21.7	21.4			
Diurnal Average	16.2	15.7	15.2	14.7	14.2	14.0	14.7	16.0	17.8	19.4	20.9	21.9	22.7	23.4	23.7	23.9	23.9	23.3	22.6	20.8	19.4	18.5	17.6	17.0			

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

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 - August 2022

Summary of Hourly Averages

STATION TEMPERATURE (ST) in Degree Celsius

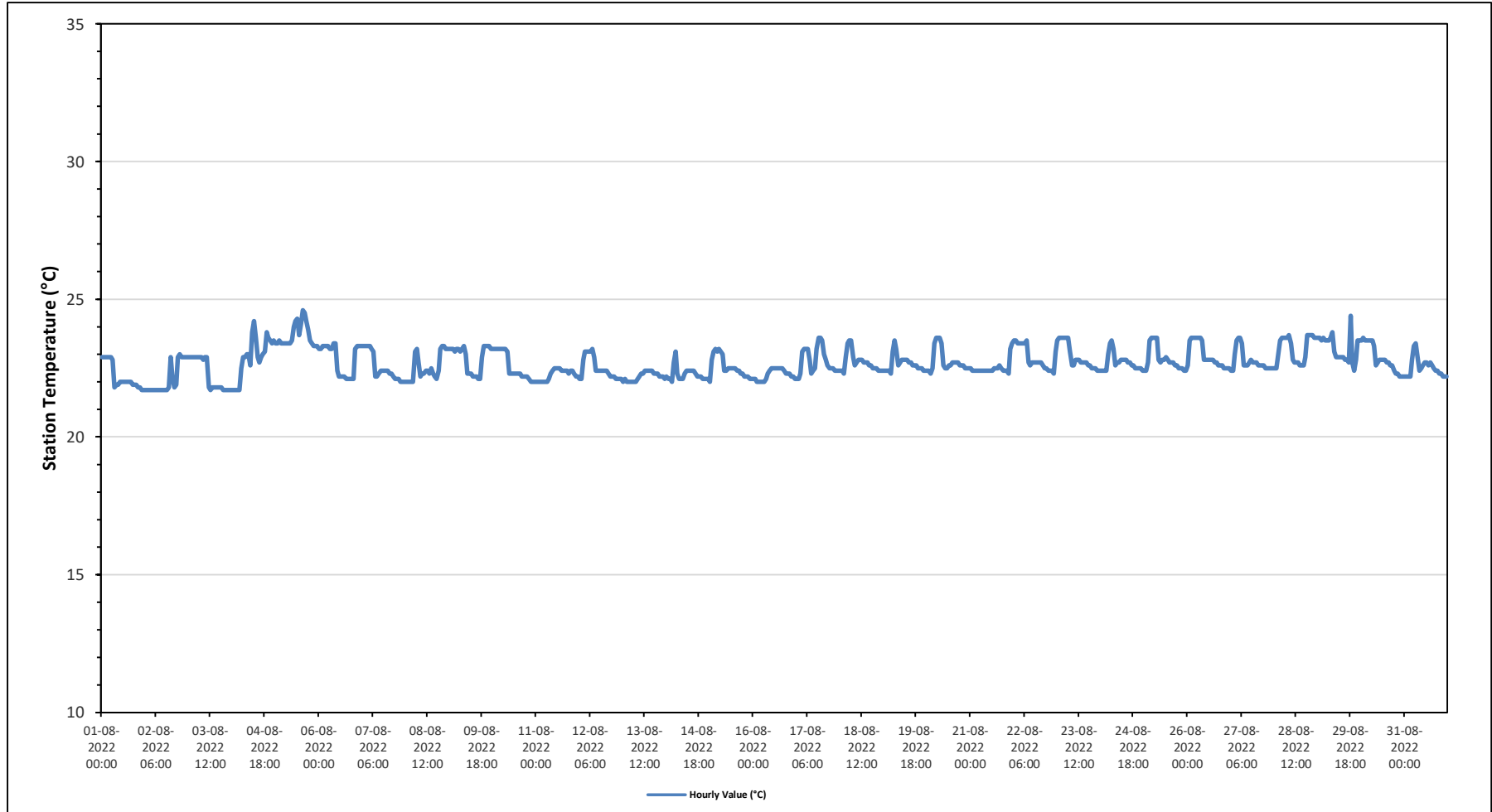
Maximum Hourly Value:	24.6 °C	on August 5 at hour 15	Hours in Service:	744
Maximum Daily Value:	23.7 °C	on August 5	Hours of Data:	744
Minimum Hourly Value:	21.7 °C	on August 1 at hour 22	Hours of Missing Data:	0
Minimum Daily Value:	22.1 °C	on August 2	Hours of Calibration:	0
Monthly Average:	22.7 °C		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	
Aug 1	22.9	22.9	22.9	22.9	22.9	22.9	22.8	21.8	21.9	21.9	22.0	22.0	22.0	22.0	22.0	22.0	22.0	21.9	21.9	21.9	21.8	21.8	21.7	21.7	21.7	22.9	22.2	
Aug 2	21.7	21.7	21.7	21.7	21.7	21.7	21.7	21.7	21.7	21.7	21.7	21.7	21.7	21.7	21.8	22.9	22.1	21.8	21.9	22.9	23.0	22.9	22.9	22.9	22.9	21.7	23.0	22.1
Aug 3	22.9	22.9	22.9	22.9	22.9	22.9	22.9	22.9	22.8	22.9	22.9	21.8	21.7	21.8	21.8	21.8	21.8	21.8	21.8	21.7	21.7	21.7	21.7	21.7	21.7	22.9	22.3	
Aug 4	21.7	21.7	21.7	21.7	21.7	22.5	22.9	22.9	23.0	23.0	22.6	23.8	24.2	23.6	22.9	22.7	22.9	23.0	23.1	23.8	23.6	23.5	23.4	23.5	21.7	24.2	22.9	
Aug 5	23.4	23.4	23.5	23.4	23.4	23.4	23.4	23.4	23.4	23.5	24.0	24.2	24.3	23.7	24.1	24.6	24.5	24.2	23.9	23.5	23.4	23.3	23.3	23.3	23.3	23.3	24.6	23.7
Aug 6	23.2	23.2	23.3	23.3	23.3	23.3	23.2	23.2	23.4	23.4	22.4	22.2	22.2	22.2	22.2	22.1	22.1	22.1	22.1	22.1	23.2	23.3	23.3	23.3	22.1	23.4	22.8	
Aug 7	23.3	23.3	23.3	23.3	23.3	23.2	23.1	22.2	22.2	22.3	22.4	22.4	22.4	22.4	22.4	22.3	22.3	22.2	22.1	22.1	22.1	22.1	22.0	22.0	22.0	23.3	22.5	
Aug 8	22.0	22.0	22.0	22.0	22.0	23.1	23.2	22.7	22.2	22.3	22.3	22.4	22.4	22.3	22.5	22.3	22.2	22.1	22.4	23.2	23.3	23.3	23.2	23.2	22.0	23.3	22.5	
Aug 9	23.2	23.2	23.2	23.1	23.2	23.2	23.1	22.7	23.3	23.0	22.3	22.3	22.3	22.2	22.2	22.1	22.1	22.1	22.9	23.3	23.3	23.3	23.3	22.1	23.3	22.9		
Aug 10	23.2	23.2	23.2	23.2	23.2	23.2	23.2	23.2	23.1	22.3	22.3	22.3	22.3	22.3	22.3	22.3	22.2	22.2	22.2	22.2	22.1	22.0	22.0	22.0	22.0	23.2	22.6	
Aug 11	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.1	22.3	22.4	22.5	22.5	22.5	22.5	22.4	22.4	22.4	22.4	22.3	22.4	22.4	22.3	22.2	22.2	22.0	22.5	22.3	
Aug 12	22.1	22.1	22.8	23.1	23.1	23.1	23.1	23.2	22.9	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.3	22.2	22.2	22.2	22.1	22.1	22.1	22.1	22.1	23.2	22.5	
Aug 13	22.0	22.1	22.0	22.0	22.0	22.0	22.0	22.0	22.1	22.2	22.3	22.3	22.4	22.4	22.4	22.4	22.4	22.3	22.3	22.3	22.2	22.2	22.2	22.1	22.0	22.4	22.2	
Aug 14	22.2	22.1	22.1	22.0	22.7	23.1	22.3	22.1	22.1	22.1	22.3	22.4	22.4	22.4	22.4	22.4	22.3	22.2	22.2	22.2	22.1	22.1	22.1	22.1	22.0	23.1	22.3	
Aug 15	22.0	22.8	23.1	23.2	23.1	23.2	23.1	23.0	22.4	22.4	22.5	22.5	22.5	22.5	22.5	22.4	22.4	22.3	22.3	22.2	22.2	22.2	22.1	22.1	22.0	23.2	22.5	
Aug 16	22.1	22.1	22.0	22.0	22.0	22.0	22.0	22.1	22.3	22.4	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.4	22.3	22.3	22.3	22.2	22.2	22.1	22.0	22.5	22.3	
Aug 17	22.1	22.1	22.3	23.1	23.2	23.2	23.2	22.8	22.3	22.4	22.5	23.2	23.6	23.6	23.5	23.0	22.8	22.6	22.5	22.5	22.5	22.4	22.4	22.4	22.1	23.6	22.8	
Aug 18	22.4	22.4	22.3	22.9	23.4	23.5	23.5	22.9	22.6	22.7	22.8	22.8	22.8	22.7	22.7	22.6	22.6	22.6	22.5	22.5	22.4	22.4	22.4	22.4	22.3	23.5	22.7	
Aug 19	22.4	22.4	22.4	22.4	22.3	23.1	23.5	23.2	22.6	22.7	22.8	22.8	22.8	22.8	22.7	22.7	22.6	22.6	22.6	22.6	22.5	22.5	22.4	22.4	22.3	23.5	22.7	
Aug 20	22.4	22.4	22.3	22.5	23.4	23.6	23.6	23.6	23.4	22.6	22.5	22.5	22.6	22.6	22.7	22.7	22.7	22.6	22.6	22.6	22.6	22.6	22.5	22.5	22.3	23.6	22.8	
Aug 21	22.5	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.5	22.5	22.5	22.6	22.5	22.4	22.4	22.4	22.3	23.2	23.4	22.3	23.4	22.5	
Aug 22	23.5	23.5	23.4	23.4	23.4	23.4	23.4	23.5	22.7	22.6	22.7	22.7	22.7	22.7	22.7	22.7	22.6	22.5	22.5	22.4	22.4	22.4	22.3	23.1	22.3	23.5	22.9	
Aug 23	23.5	23.6	23.6	23.6	23.6	23.6	23.6	23.1	22.6	22.6	22.8	22.8	22.8	22.7	22.7	22.7	22.6	22.6	22.5	22.5	22.5	22.4	22.4	22.4	22.4	23.6	22.9	
Aug 24	22.4	22.4	22.4	22.4	23.0	23.4	23.5	23.2	22.6	22.7	22.7	22.8	22.8	22.8	22.8	22.7	22.7	22.6	22.6	22.5	22.5	22.5	22.5	22.4	22.4	23.5	22.7	
Aug 25	22.4	22.4	22.7	23.5	23.6	23.6	23.6	23.6	22.8	22.7	22.8	22.8	22.9	22.8	22.7	22.7	22.6	22.6	22.5	22.5	22.5	22.4	22.4	22.4	22.4	23.6	22.8	
Aug 26	22.6	23.5	23.6	23.6	23.6	23.6	23.6	23.6	23.5	22.8	22.8	22.8	22.8	22.8	22.7	22.7	22.6	22.6	22.6	22.5	22.5	22.5	22.5	22.5	22.5	23.6	23.0	
Aug 27	22.4	22.4	23.0	23.5	23.6	23.6	23.4	22.6	22.6	22.6	22.7	22.8	22.7	22.7	22.7	22.6	22.6	22.6	22.6	22.5	22.5	22.5	22.5	22.4	23.6	22.8		
Aug 28	22.5	22.5	23.0	23.5	23.6	23.6	23.6	23.6	23.7	23.4	22.8	22.7	22.7	22.7	22.6	22.6	22.6	22.9	23.7	23.7	23.7	23.6	23.6	22.5	23.7	23.2		
Aug 29	23.6	23.6	23.5	23.6	23.5	23.5	23.5	23.6	23.8	23.1	22.9	22.9	22.9	22.9	22.9	22.8	22.8	22.7	24.4	22.7	22.4	22.8	23.5	23.5	22.4	24.4	23.2	
Aug 30	23.5	23.6	23.5	23.5	23.5	23.5	23.5	23.3	22.6	22.7	22.8	22.8	22.8	22.7	22.7	22.6	22.6	22.6	22.4	22.3	22.3	22.2	22.2	22.2	22.2	23.6	22.9	
Aug 31	22.2	22.2	22.2	22.2	22.8	23.3	23.4	22.9	22.4	22.5	22.6	22.7	22.7	22.6	22.7	22.6	22.5	22.4	22.4	22.3	22.2	22.2	22.2	22.2	22.2	23.4	22.5	
Diurnal Maximum	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.8	23.5	24.0	24.2	24.3	23.7	24.1	24.6	24.5	24.2	24.4	23.8	23.7	23.7	23.6	23.6				
Diurnal Average	22.6	22.6	22.7	22.8	22.9	23.1	23.1	22.9	22.7	22.6	22.6	22.6	22.7	22.6	22.6	22.6	22.5	22.5	22.6	22.5	22.5	22.5	22.6	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
X	InValid Data (Equipment Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	P	Power Failure

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 - August 2022
Summary of Hourly Averages

PRECIPITATION in mm

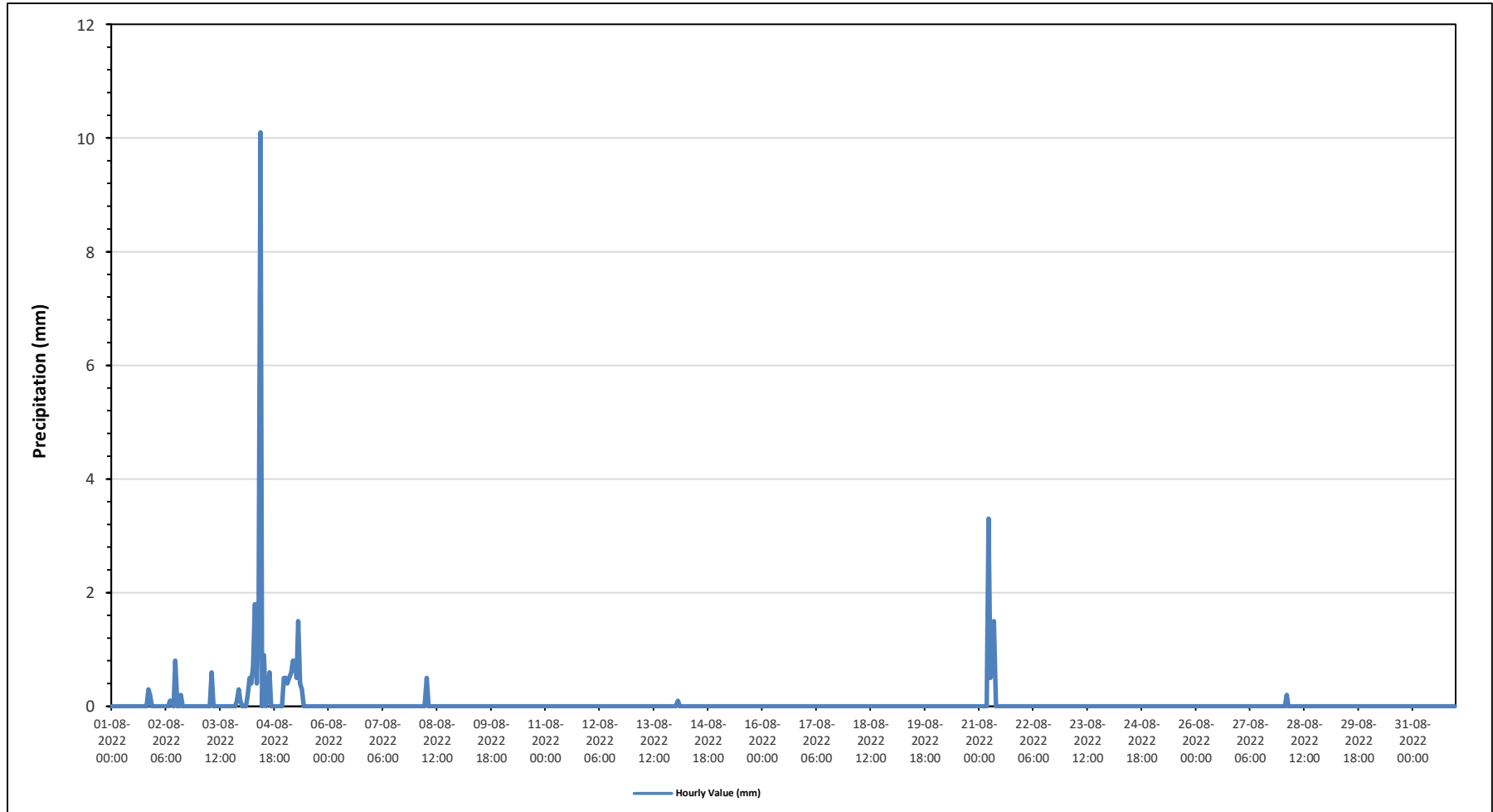
Maximum Hourly Value:	10.1 mm on August 4 at hour 10	Hours in Service:	744
Maximum Daily Value:	18.0 mm on August 4	Hours of Data:	744
Minimum Hourly Value:	0.0 mm on August 1 at hour 0	Hours of Missing Data:	0
Minimum Daily Value:	0.0 mm on August 6	Hours of Calibration:	0
Monthly Total:	33.9 mm	Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Total		
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23	
Aug 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.2	0	0	0.0	0.3	0.5	
Aug 2	0	0	0	0	0	0	0	0	0.1	0.1	0	0.8	0	0	0.2	0	0	0	0	0	0	0	0	0	0	0.0	0.8	1.2
Aug 3	0	0	0	0	0	0	0	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3	0.1	0.0	0.6	1.1	
Aug 4	0	0	0	0.2	0.5	0.4	0.7	1.8	0.4	1.7	10.1	0	0.9	0	0.2	0.6	0	0	0	0	0	0	0	0	0.5	0.0	10.1	18.0
Aug 5	0.5	0.4	0.5	0.6	0.8	0.8	0.5	1.5	0.4	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	1.5	6.3
Aug 6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Aug 7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Aug 8	0	0	0	0	0	0	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.5	0.5
Aug 9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Aug 10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Aug 11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Aug 12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Aug 13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Aug 14	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1	0.1
Aug 15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Aug 16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Aug 17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Aug 18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Aug 19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Aug 20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Aug 21	0	0	0	0	0	3.3	0.5	0.7	1.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	3.3	6.0
Aug 22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Aug 23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Aug 24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Aug 25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Aug 26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Aug 27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Aug 28	0	0	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.2	0.2
Aug 29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Aug 30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Aug 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	0.0
Diurnal Maximum	0.5	0.4	0.5	0.6	0.8	3.3	0.7	1.8	1.5	1.7	10.1	0.8	0.9	0.0	0.2	0.6	0.0	0.0	0.0	0.0	0.0	0.3	0.2	0.3	0.5			
Diurnal Average	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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
X	InValid Data (Equipment Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	P	Power Failure

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 - August 2022

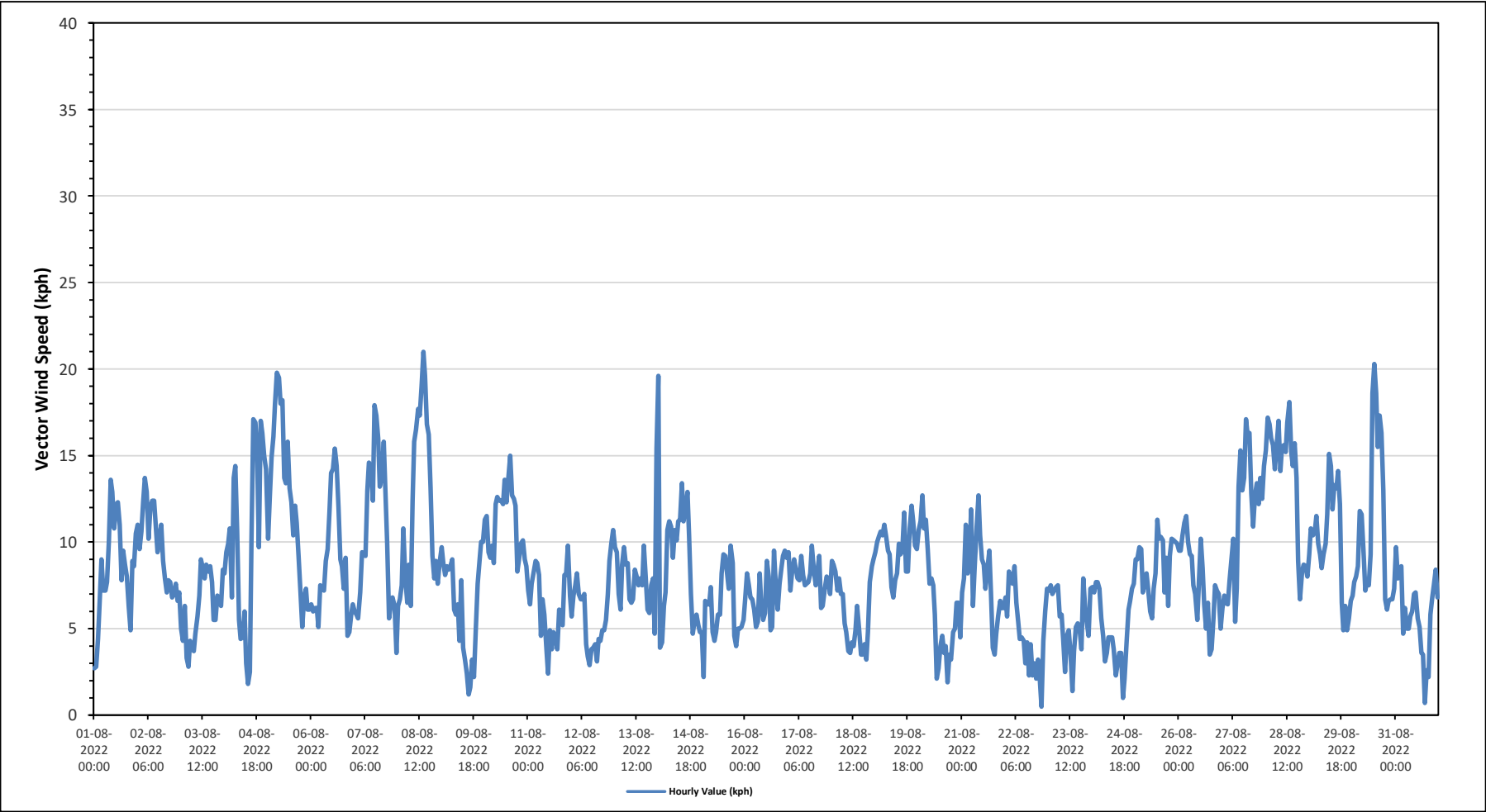
Summary of Hourly Averages

VECTOR WIND SPEED (VWS) in km/hr

Maximum Hourly Value:	21.0 kph on August 8 at hour 14	Hours in Service:	744
Maximum Daily Value:	13.4 kph on August 28	Hours of Data:	744
Minimum Hourly Value:	0.5 kph on August 22 at hour 20	Hours of Missing Data:	0
Minimum Daily Value:	1.9 kph on August 4	Hours of Calibration:	0
Monthly Average:	3.0 kph	Operational Uptime:	100.0

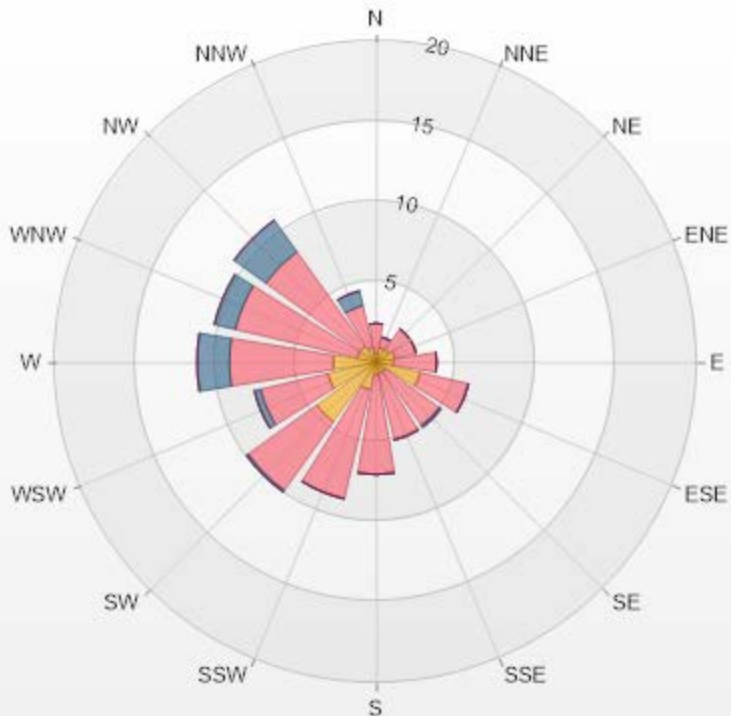
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23
Aug 1	2.7	2.8	4.4	6.8	9.0	7.2	7.2	7.7	10.0	13.6	12.9	10.8	12.2	12.3	11.0	7.8	9.5	8.7	8.0	6.3	4.9	8.9	8.6	10.5	2.7	13.6	7.2
Aug 2	11.0	9.6	10.6	12.4	13.7	12.9	10.2	12.0	12.4	12.4	10.8	9.4	10.3	11.0	8.9	7.9	7.1	7.8	7.7	6.8	7.0	7.6	6.6	7.1	6.6	13.7	9.1
Aug 3	5.0	4.3	6.3	3.3	2.8	4.3	4.0	3.7	4.7	5.7	6.9	9.0	8.5	7.9	8.7	8.3	8.6	7.7	5.5	5.5	6.9	6.7	6.3	8.4	2.8	9.0	4.2
Aug 4	8.2	9.4	9.9	10.8	6.8	13.7	14.4	10.6	5.5	4.4	4.5	6.0	3.0	1.8	2.5	10.1	17.1	16.9	15.3	9.7	17.0	16.3	15.0	14.2	1.8	17.1	1.9
Aug 5	10.2	12.5	14.9	16.1	18.0	19.8	19.5	18.0	18.2	13.7	13.4	15.8	13.1	12.3	10.4	12.1	11.1	9.2	7.2	5.1	6.8	7.3	6.1	6.1	5.1	19.8	10.9
Aug 6	6.4	6.0	6.2	6.2	5.1	7.5	7.3	7.2	8.9	9.6	11.8	14.0	14.2	15.4	14.4	12.0	9.0	8.6	7.3	9.1	4.6	4.8	5.8	6.4	4.6	15.4	8.3
Aug 7	6.0	5.8	5.6	7.1	9.4	9.3	9.2	13.0	14.6	14.3	12.4	17.9	17.3	16.0	13.2	13.7	15.8	12.6	9.9	5.6	6.4	6.8	6.3	3.6	3.6	17.9	9.4
Aug 8	6.3	6.7	7.5	10.8	8.0	6.5	8.7	6.3	12.4	15.8	16.5	17.7	17.3	19.0	21.0	19.6	16.8	16.2	13.1	9.2	7.9	8.9	7.6	8.8	6.3	21.0	9.9
Aug 9	9.7	8.8	8.1	8.6	8.4	8.6	9.0	6.1	5.8	6.4	4.3	7.8	3.9	3.2	2.4	1.2	1.6	3.2	2.2	5.0	7.6	8.9	10.0	10.0	1.2	10.0	2.2
Aug 10	11.3	11.5	9.4	9.1	9.8	8.8	12.2	12.6	12.4	12.4	12.2	13.6	12.3	13.7	15.0	12.7	12.5	12.1	8.3	9.1	9.9	10.1	9.0	8.6	8.3	15.0	10.9
Aug 11	7.2	6.4	7.6	8.3	8.9	8.8	8.1	4.6	6.7	5.8	3.8	2.4	4.9	3.8	4.8	4.6	3.8	6.1	5.4	5.2	8.1	8.1	9.8	6.9	2.4	9.8	3.0
Aug 12	5.7	6.9	7.5	8.2	7.0	6.7	6.7	7.0	4.1	3.4	2.9	3.8	3.9	4.1	3.1	4.4	4.3	4.9	4.9	5.5	7.0	8.9	9.9	10.7	2.9	10.7	4.7
Aug 13	9.7	9.4	7.0	6.1	8.7	9.7	8.7	8.8	6.7	6.5	6.7	8.4	8.0	7.5	7.9	7.5	9.8	8.0	6.1	5.9	7.5	7.9	4.7	15.4	4.7	15.4	6.7
Aug 14	19.6	3.9	4.2	6.3	7.1	10.7	11.2	10.9	9.1	10.7	10.1	11.2	11.3	13.4	11.2	12.0	12.9	10.4	7.0	4.7	5.4	5.8	5.2	4.8	3.9	19.6	8.6
Aug 15	4.8	2.2	6.6	6.4	6.4	7.4	4.8	4.3	4.8	5.8	5.8	8.2	9.3	9.2	8.3	7.3	9.8	8.8	4.6	4.0	5.0	5.0	5.1	5.5	2.2	9.8	5.7
Aug 16	6.7	8.2	7.5	6.8	6.7	6.1	5.1	5.4	8.2	6.3	5.5	5.9	8.9	8.0	4.9	5.1	9.5	7.4	6.1	7.6	8.5	9.2	9.5	9.1	4.9	9.5	4.7
Aug 17	9.4	7.2	8.4	9.0	8.5	7.9	7.8	9.2	8.1	7.5	7.6	7.7	8.2	9.8	8.3	7.5	8.3	9.2	6.2	6.3	7.3	8.0	7.8	7.0	6.2	9.8	7.5
Aug 18	8.9	8.7	8.3	7.2	7.9	7.0	7.0	5.3	4.8	3.7	3.6	4.2	4.0	4.9	6.3	5.1	3.5	3.5	4.1	3.2	4.8	7.7	8.6	9.0	3.2	9.0	4.2
Aug 19	9.4	10.0	10.3	10.6	10.4	11.0	10.3	9.5	9.3	7.4	6.8	7.8	8.2	9.9	9.3	9.5	11.7	8.3	8.3	10.8	12.1	11.2	9.8	9.6	6.8	12.1	9.0
Aug 20	10.7	11.2	12.7	10.8	11.3	9.6	7.6	7.9	7.5	5.8	2.1	2.7	4.0	4.6	3.6	4.0	1.9	3.5	3.2	4.8	5.0	6.5	6.5	4.5	1.9	12.7	2.9
Aug 21	7.1	7.9	11.0	8.2	8.6	11.9	6.3	8.4	10.9	12.7	10.4	9.0	8.7	7.3	8.5	9.5	7.1	3.9	3.5	4.7	5.7	6.6	6.2	6.2	3.5	12.7	6.6
Aug 22	6.8	5.7	8.3	7.7	7.6	8.6	6.5	5.4	4.4	4.5	4.3	3.0	4.2	2.3	4.1	2.3	3.0	2.1	3.2	2.0	0.5	4.3	6.0	7.3	0.5	8.6	3.3
Aug 23	7.2	7.5	7.0	7.2	7.4	7.5	5.7	5.8	4.4	2.5	4.6	4.9	3.5	1.4	3.7	5.1	5.3	5.0	3.8	7.9	6.2	5.4	4.6	7.3	1.4	7.9	2.5
Aug 24	7.4	7.1	7.7	7.7	7.3	5.6	4.6	3.1	3.6	4.5	4.5	4.5	3.8	2.3	3.0	3.6	3.6	1.0	2.1	4.3	6.1	6.6	7.3	7.6	1.0	7.7	3.2
Aug 25	9.0	9.0	9.7	9.6	7.1	7.6	8.2	7.3	6.0	5.6	7.3	8.2	11.3	10.2	10.3	10.1	7.1	9.1	6.3	9.2	10.2	10.1	10.0	9.9	5.6	11.3	8.1
Aug 26	9.5	9.5	10.4	11.1	11.5	10.0	9.3	9.2	7.5	7.0	5.5	7.7	10.2	8.5	6.4	5.0	6.5	3.5	3.8	5.6	7.5	7.2	7.0	5.0	3.5	11.5	7.3
Aug 27	6.2	6.9	6.5	6.4	7.8	9.0	10.2	5.4	7.3	13.2	15.3	13.0	13.7	17.1	16.2	16.3	12.8	10.9	12.7	13.4	12.2	13.7	12.5	14.4	5.4	17.1	10.1
Aug 28	15.3	17.2	16.8	16.0	15.6	14.2	15.4	17.0	14.1	15.5	15.6	15.2	16.9	18.1	15.2	14.4	15.7	13.7	8.9	6.7	8.3	8.7	8.6	8.0	6.7	18.1	13.4
Aug 29	9.3	10.8	10.4	10.6	11.5	9.9	9.3	8.5	9.3	9.9	11.6	15.1	14.4	11.9	13.3	13.1	14.1	12.2	6.5	4.9	6.3	4.9	5.6	6.6	4.9	15.1	9.7
Aug 30	6.9	7.7	8.0	8.6	11.8	11.6	9.5	7.2	7.7	7.5	9.3	18.6	20.3	18.6	15.5	17.3	16.3	13.0	6.7	6.1	6.6	6.7	6.7	7.3	6.1	20.3	10.2
Aug 31	9.7	7.9	8.5	8.6	4.7	6.2	5.0	5.0	5.7	6.0	7.0	7.1	5.6	5.1	3.6	3.5	0.7	2.6	2.2	5.8	6.8	7.5	8.4	6.8	0.7	9.7	2.3
Diurnal Maximum	20	17	17	16	18	20	20	18	18	16	17	19	20	19	21	20	17	17	15	13	17	16	15	15			
Diurnal Average	8.5	8.0	8.6	8.8	8.9	9.2	8.7	8.1	8.2	8.4	8.3	9.4	9.5	9.4	8.9	8.8	8.9	8.1	6.5	6.5	7.3	7.9	7.8	8.1			
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 - St. Lina Site



Wind: St. Lina Monitor: WDS [kph] Monthly: 08-2022 Type: WindRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.81% Valid Data: 100.00%

Direction	1.8-6.0	6.0-15.0	15.0-29.0	29.0-39.0	>39.0	Total
N	0.54	1.88	0	0	0	2.42
NNE	0.94	0.67	0	0	0	1.61
NE	0.94	1.61	0	0	0	2.55
ENE	1.21	1.34	0	0	0	2.55
E	1.08	2.69	0	0	0	3.77
ESE	2.82	3.09	0	0	0	5.91
SE	0.67	4.17	0.13	0	0	4.97
SSE	0.67	4.3	0	0	0	4.97
S	0.81	6.18	0	0	0	6.99
SSW	1.75	6.99	0	0	0	8.74
SW	4.57	5.24	0.13	0	0	9.94
WSW	3.09	4.3	0.4	0	0	7.79
W	2.69	6.45	2.02	0	0	11.16
WNW	1.21	7.8	1.34	0	0	10.35
NW	1.21	7.26	2.42	0	0	10.89
NNW	0.94	2.69	0.94	0	0	4.57
Summary	25.14	66.66	7.38	0	0	99.18



LICA-202208

% Icon Classes (kph)

25

1.8-6.0

67

5.0-15.0

7

15.0-29.0

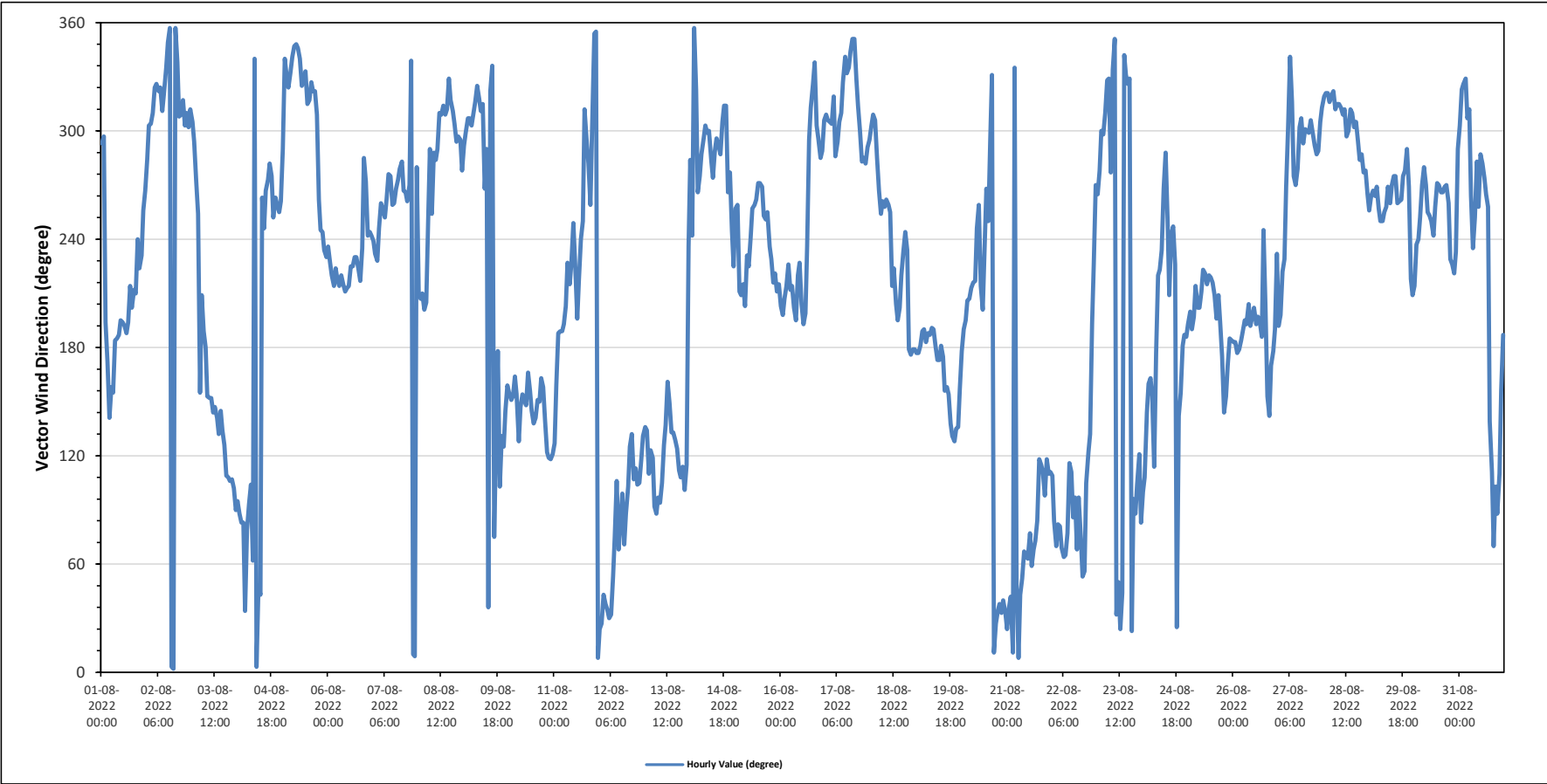
0

29.0-39.0

0

>39.0

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





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - August 2022

Summary of Hourly Averages

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

WIND SPEED																											
Maximum Hourly Value:		21.0 kph on August 8 at hour 14										Hours in Service:		744													
Maximum Daily Value:		13.4 kph on August 28										Hours of Data:		744													
Minimum Hourly Value:		0.5 kph on August 22 at hour 20										Hours of Missing Data:		0													
Minimum Daily Value:		1.9 kph on August 4										Hours of Calibration:		0													
Monthly Average:		3.0 kph										Operational Uptime:		100													
WIND DIRECTION																											
Monthly Average:		256 (WSW 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
Aug 1	2.7	2.8	4.4	6.8	9.0	7.2	7.7	10.0	13.6	12.9	10.8	12.2	12.3	11.0	7.8	9.5	8.7	8.0	6.3	4.9	8.9	8.6	10.5	2.7	13.6	7.2	
Aug 2	11.0	9.6	10.6	12.4	13.7	12.9	10.2	12.0	12.4	10.8	9.4	10.3	11.0	8.9	7.9	7.1	7.8	7.7	6.8	7.0	7.6	6.6	7.1	6.6	13.7	9.1	
Aug 3	5.0	4.3	6.3	3.3	2.8	4.3	4.0	3.7	4.7	5.7	6.9	9.0	8.5	7.9	8.7	8.3	8.6	7.7	5.5	5.5	6.9	6.7	6.3	8.4	2.8	9.0	4.2
Aug 4	8.2	9.4	9.9	10.8	6.8	13.7	14.4	10.6	5.5	4.4	4.5	6.0	3.0	1.8	2.5	10.1	17.1	16.9	15.3	9.7	17.0	16.3	15.0	14.2	1.8	17.1	1.9
Aug 5	10.2	12.5	14.9	16.1	18.0	19.8	19.5	18.0	18.2	13.7	13.4	15.8	13.1	12.3	10.4	12.1	11.1	9.2	7.2	5.1	6.8	7.3	6.1	6.1	5.1	19.8	10.9
Aug 6	6.4	6.0	6.2	6.2	5.1	7.5	7.3	7.2	8.9	9.6	11.8	14.0	14.2	15.4	14.4	12.0	9.0	8.6	7.3	9.1	4.6	4.8	5.8	6.4	4.6	15.4	8.3
Aug 7	6.0	5.8	5.6	7.1	9.4	9.3	9.2	13.0	14.6	14.3	12.4	17.9	17.3	16.0	13.2	13.7	15.8	12.6	9.9	5.6	6.4	6.8	6.3	3.6	3.6	17.9	9.4
Aug 8	6.3	6.7	7.5	10.8	8.0	6.5	8.7	6.3	12.4	15.8	16.5	17.7	17.3	19.0	21.0	19.6	16.8	16.2	13.1	9.2	7.9	8.9	7.6	8.8	6.3	21.0	9.9
Aug 9	9.7	8.8	8.1	8.6	8.4	8.6	9.0	6.1	5.8	6.4	4.3	7.8	3.9	3.2	2.4	1.2	1.6	3.2	2.2	5.0	7.6	8.9	10.0	10.0	1.2	10.0	2.2
Aug 10	11.3	11.5	9.4	9.1	9.8	8.8	12.2	12.6	12.4	12.2	13.6	12.3	13.7	15.0	12.7	12.5	12.1	8.3	9.1	9.9	10.1	9.0	8.6	8.3	15.0	10.9	
Aug 11	7.2	6.4	7.6	8.3	8.9	8.8	8.1	4.6	6.7	5.8	3.8	2.4	4.9	3.8	4.8	4.6	3.8	6.1	5.4	5.2	8.1	8.1	9.8	6.9	2.4	9.8	3.0
Aug 12	5.7	6.9	7.5	8.2	7.0	6.7	6.7	7.0	4.1	3.4	2.9	3.8	3.9	4.1	3.1	4.4	4.3	4.9	4.9	5.5	7.0	8.9	9.9	10.7	2.9	10.7	4.7
Aug 13	9.7	9.4	7.0	6.1	8.7	9.7	8.7	8.8	6.7	6.5	6.7	8.4	8.0	7.5	7.9	7.5	9.8	8.0	6.1	5.9	7.5	7.9	4.7	15.4	4.7	15.4	6.7
Aug 14	19.6	3.9	4.2	6.3	7.1	10.7	11.2	10.9	9.1	10.7	10.1	11.2	11.3	13.4	11.2	12.0	12.9	10.4	7.0	4.7	5.4	5.8	5.2	4.8	3.9	19.6	8.6
Aug 15	4.8	2.2	6.6	6.4	6.4	7.4	4.8	4.3	4.8	5.8	8.2	9.3	9.2	8.3	7.3	9.8	8.8	4.6	4.0	5.0	5.0	5.1	5.5	2.2	9.8	5.7	
Aug 16	6.7	8.2	7.5	6.8	6.7	6.1	5.1	5.4	8.2	6.3	5.5	5.9	8.9	8.0	4.9	5.1	9.5	7.4	6.1	7.6	8.5	9.2	9.5	9.1	4.9	9.5	4.7
Aug 17	9.4	7.2	8.4	9.0	8.5	7.9	7.8	9.2	8.1	7.5	7.6	7.7	8.2	9.8	8.3	7.5	8.3	9.2	6.2	6.3	7.3	8.0	7.8	7.0	6.2	9.8	7.5
Aug 18	8.9	8.7	8.3	7.2	7.9	7.0	7.0	5.3	4.8	3.7	3.6	4.2	4.0	4.9	6.3	5.1	3.5	3.5	4.1	3.2	4.8	7.7	8.6	9.0	3.2	9.0	4.2
Aug 19	9.4	10.0	10.3	10.6	10.4	11.0	10.3	9.5	9.3	7.4	6.8	7.8	8.2	9.9	9.3	9.5	11.7	8.3	8.3	10.8	12.1	11.2	9.8	9.6	6.8	12.1	9.0
Aug 20	10.7	11.2	12.7	10.8	11.3	9.6	7.6	7.9	7.5	5.8	2.1	2.7	4.0	4.6	3.6	4.0	1.9	3.5	3.2	4.8	5.0	6.5	6.5	4.5	1.9	12.7	2.9



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - August 2022
Summary of Hourly Averages

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

WIND SPEED					
Maximum Hourly Value:	21.0 kph on August 8 at hour 14				
Maximum Daily Value:	13.4 kph on August 28				
Minimum Hourly Value:	0.5 kph on August 22 at hour 20				
Minimum Daily Value:	1.9 kph on August 4				
Monthly Average:	3.0 kph				
Hours in Service:	744				
Hours of Data:	744				
Hours of Missing Data:	0				
Hours of Calibration:	0				
Operational Uptime:	100				
WIND DIRECTION					
Monthly Average:	256 (WSW degree)				
Day	Hourly Period Starting at (MST)	Daily Minimum	Daily Maximum	Daily Average	
Aug 21	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	3.5	12.7	6.6	
Aug 22	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	0.5	8.6	3.3	
Aug 23	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	1.4	7.9	2.5	
Aug 24	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	1.0	7.7	3.2	
Aug 25	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	5.6	11.3	8.1	
Aug 26	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	3.5	11.5	7.3	
Aug 27	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	5.4	17.1	10.1	
Aug 28	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	6.7	18.1	13.4	
Aug 29	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	4.9	15.1	9.7	
Aug 30	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	6.1	20.3	10.2	
Aug 31	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	0.7	9.7	2.3	
C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance
X	Invalid Data (Equipment Malfunction/Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	P	Power Failure
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 - August 2022

Summary of Hour Standard Deviations

STANDARD DEVIATION WIND DIRECTION (STDWD) in Degree

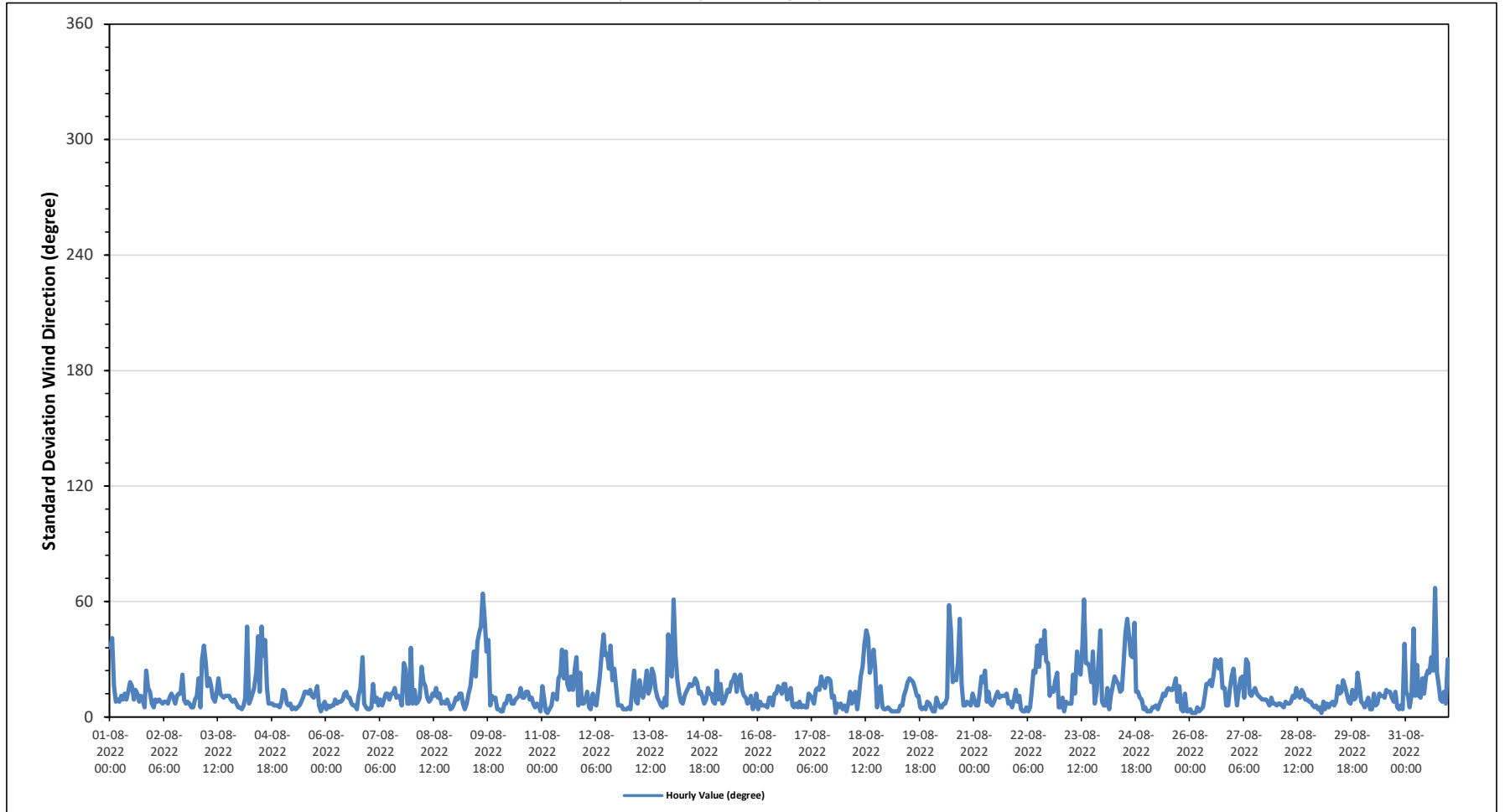
Maximum Hourly Value:	67 degree on August 31 at hour 16	Hours in Service:	744
Minimum Hourly Value:	2 degree on August 11 at hour 3	Hours of Data:	744
		Hours of Missing Data:	0
		Hours of Calibration:	0
		Operational Uptime:	100.0

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
Aug 1	36	41	16	8	9	8	11	9	12	9	13	18	16	9	14	12	8	11	9	5	24	15	13	7	5	41
Aug 2	5	9	8	9	8	7	8	8	7	10	12	10	7	11	12	12	22	9	7	8	7	5	5	9	5	22
Aug 3	11	20	5	30	37	28	16	20	16	10	8	12	20	12	11	10	11	11	11	9	8	9	7	5	5	37
Aug 4	5	4	6	10	47	7	9	12	15	23	42	13	47	32	40	15	7	7	7	6	6	6	5	8	4	47
Aug 5	14	13	7	6	7	4	5	4	5	6	8	10	13	13	12	14	11	10	12	16	6	3	6	8	3	16
Aug 6	4	6	5	6	6	9	7	8	8	9	12	13	10	10	7	6	6	4	11	15	31	7	5	4	4	31
Aug 7	4	5	17	8	10	6	9	6	9	12	12	9	12	12	15	10	11	10	6	28	25	7	7	36	4	36
Aug 8	7	14	7	8	10	26	18	16	10	8	9	12	11	15	10	12	7	8	7	9	7	4	5	7	4	26
Aug 9	10	9	12	12	7	4	7	12	16	24	34	21	39	44	47	64	51	34	40	6	11	9	10	4	4	64
Aug 10	4	3	3	7	7	11	11	7	7	9	10	11	15	10	10	13	13	9	10	7	5	7	6	3	3	15
Aug 11	16	10	3	2	4	6	12	11	9	20	22	35	20	34	17	14	21	14	25	31	6	23	7	7	2	35
Aug 12	9	13	5	4	12	7	6	14	21	33	43	32	33	25	37	19	25	15	6	6	4	4	4	4	4	43
Aug 13	5	4	15	24	8	7	19	12	10	16	24	12	15	25	22	14	10	8	6	5	10	6	43	24	4	43
Aug 14	21	61	32	19	12	8	7	11	13	15	17	16	17	20	18	12	13	10	7	9	15	12	12	8	7	61
Aug 15	7	24	9	17	7	8	11	14	13	18	19	22	13	20	22	14	11	10	7	8	11	4	6	12	4	24
Aug 16	4	8	6	6	6	5	10	10	6	12	12	16	15	12	17	17	9	10	15	6	5	7	5	8	4	17
Aug 17	5	6	5	5	12	11	9	7	14	15	14	21	17	15	20	20	19	10	11	2	7	5	7	4	2	21
Aug 18	6	3	7	13	7	9	13	4	12	21	26	38	45	41	23	29	35	25	5	12	16	5	4	4	3	45
Aug 19	5	4	3	3	3	3	3	6	6	11	14	18	20	19	18	15	11	11	5	4	5	4	8	7	3	20
Aug 20	5	3	3	10	7	5	5	7	7	10	58	45	18	21	19	29	51	17	6	6	8	7	6	12	3	58
Aug 21	9	6	6	12	21	18	24	8	13	7	6	8	11	13	10	11	11	12	7	8	5	9	14	5	24	
Aug 22	8	11	4	3	3	5	3	5	13	24	23	37	26	40	33	45	29	28	11	15	13	19	23	5	3	45
Aug 23	5	10	3	8	7	7	7	22	12	34	25	22	37	61	28	28	26	18	34	7	13	29	45	8	3	61
Aug 24	6	6	15	4	11	16	21	19	17	13	14	29	43	51	42	32	31	49	13	13	10	9	4	5	4	51
Aug 25	3	3	3	5	5	6	4	7	9	12	11	14	15	14	14	16	20	8	16	4	3	12	3	3	3	20
Aug 26	4	2	2	2	5	3	4	5	11	17	17	19	16	22	30	29	25	30	15	15	6	6	14	21	2	30
Aug 27	25	16	6	13	20	21	10	30	28	12	11	13	15	12	11	10	9	9	9	8	6	10	7	7	6	30
Aug 28	6	7	7	6	5	8	7	7	8	11	10	15	11	10	14	12	9	9	8	8	6	5	6	4	4	15
Aug 29	5	2	8	4	7	5	7	8	6	8	16	12	13	19	16	12	8	7	14	9	10	23	16	8	2	23
Aug 30	7	5	8	10	4	4	12	6	7	12	11	11	10	14	13	13	10	8	13	5	4	6	4	38	4	38
Aug 31	13	11	5	11	46	11	27	11	10	20	12	21	24	23	31	24	67	23	17	9	8	13	7	30	5	67
Diurnal Minimum	3	2	2	2	3	3	3	4	5	6	6	8	7	9	7	6	6	4	5	2	3	3	3	3	3	3
Diurnal Maximum	36	61	32	30	47	28	27	30	28	34	58	45	47	61	47	64	67	49	40	31	31	29	45	38	38	38

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

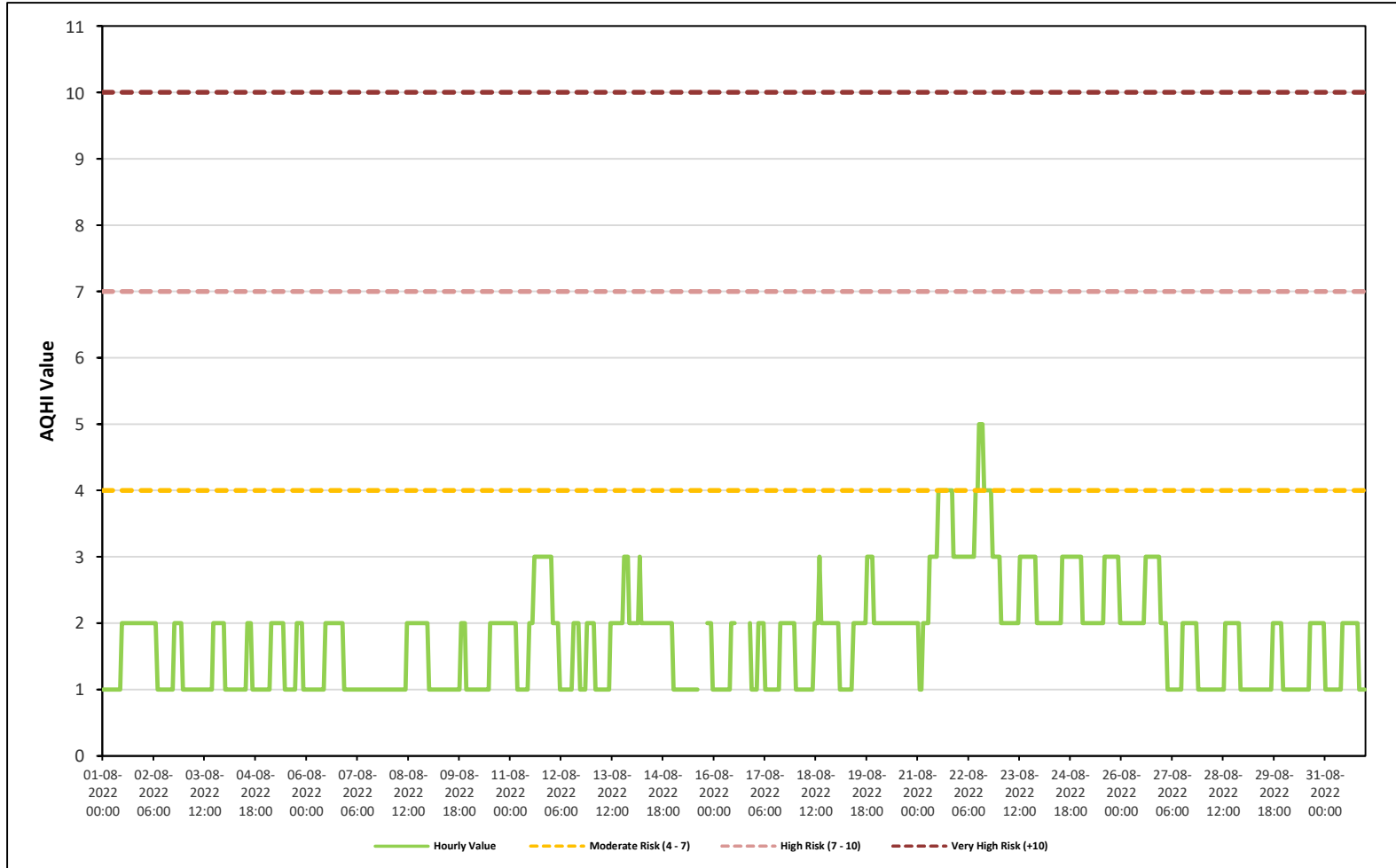
Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

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

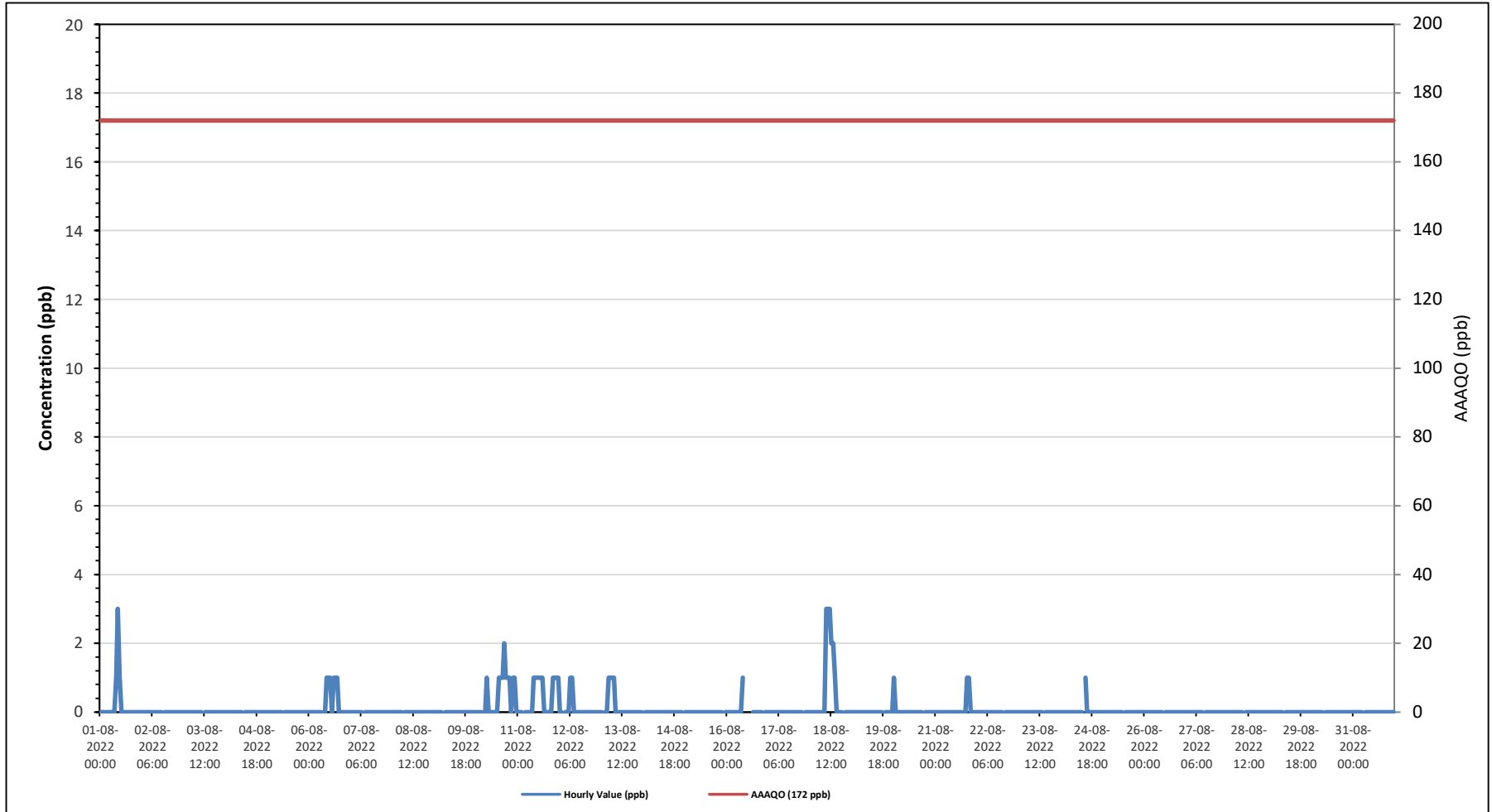


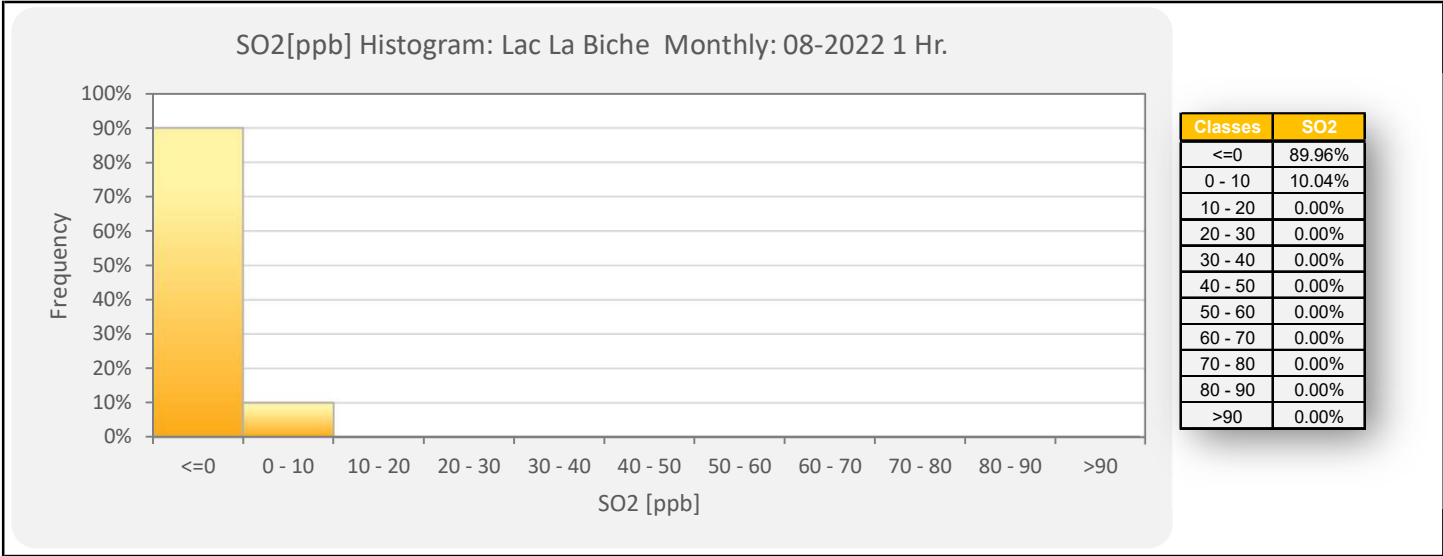
LAC LA BICHE STATION

Timeseries Chart of Hourly Average for AQHI - Lac La Biche Station



Timeseries Chart of Hourly Average for SO2 - Lac La Biche Station

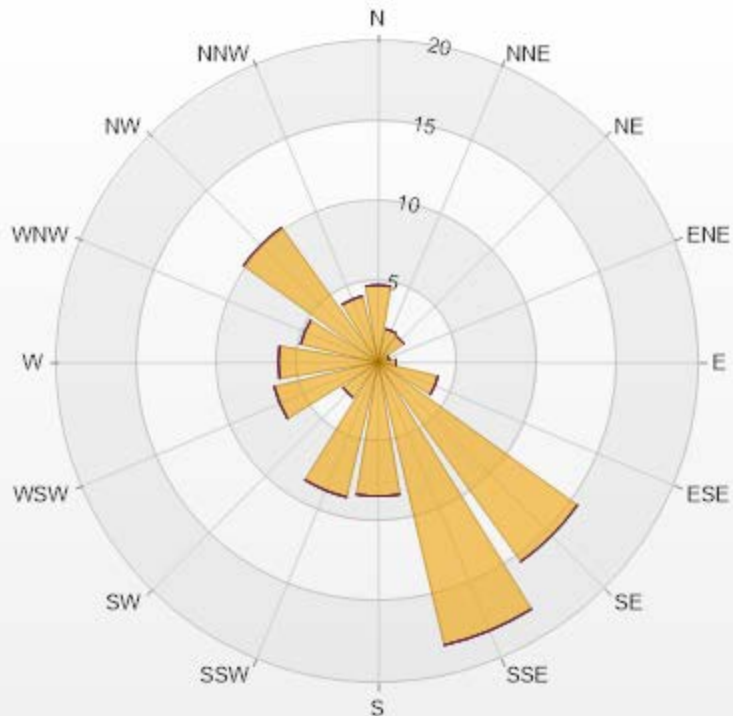




Wind: Lac La Biche Poll.: Lac La Biche-SO2[ppb] Monthly: 08-2022 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.

Calm: 0.00% Valid Data: 95.03% Calm Avg: 0.00 [ppb]

Direction	0-10	10-50	50-100	100-172	>172.0	Total
N	4.81	0	0	0	0	4.81
NNE	2.12	0	0	0	0	2.12
NE	1.98	0	0	0	0	1.98
ENE	0.71	0	0	0	0	0.71
E	1.13	0	0	0	0	1.13
ESE	3.82	0	0	0	0	3.82
SE	15.28	0	0	0	0	15.28
SSE	18.1	0	0	0	0	18.1
S	8.35	0	0	0	0	8.35
SSW	8.63	0	0	0	0	8.63
SW	2.69	0	0	0	0	2.69
WSW	6.65	0	0	0	0	6.65
W	6.22	0	0	0	0	6.22
WNW	4.95	0	0	0	0	4.95
NW	10.33	0	0	0	0	10.33
NNW	4.24	0	0	0	0	4.24
Summary	100	0	0	0	0	100



LICA-202208

% Icon Classes (ppb)

100 0-10

0 10-50

0 50-100

0 100-172

0 >172.0



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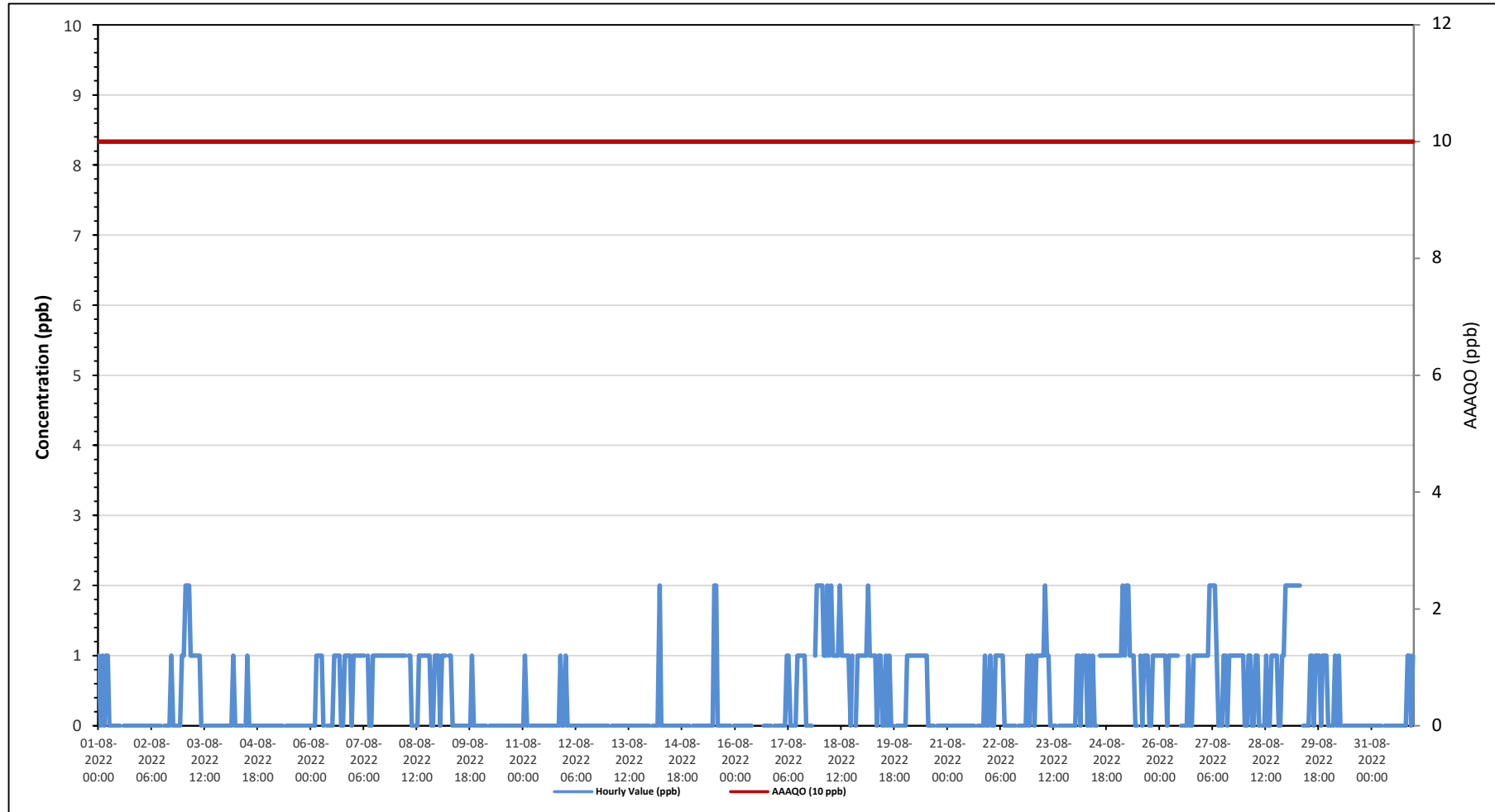
Lac La Biche Station - August 2022

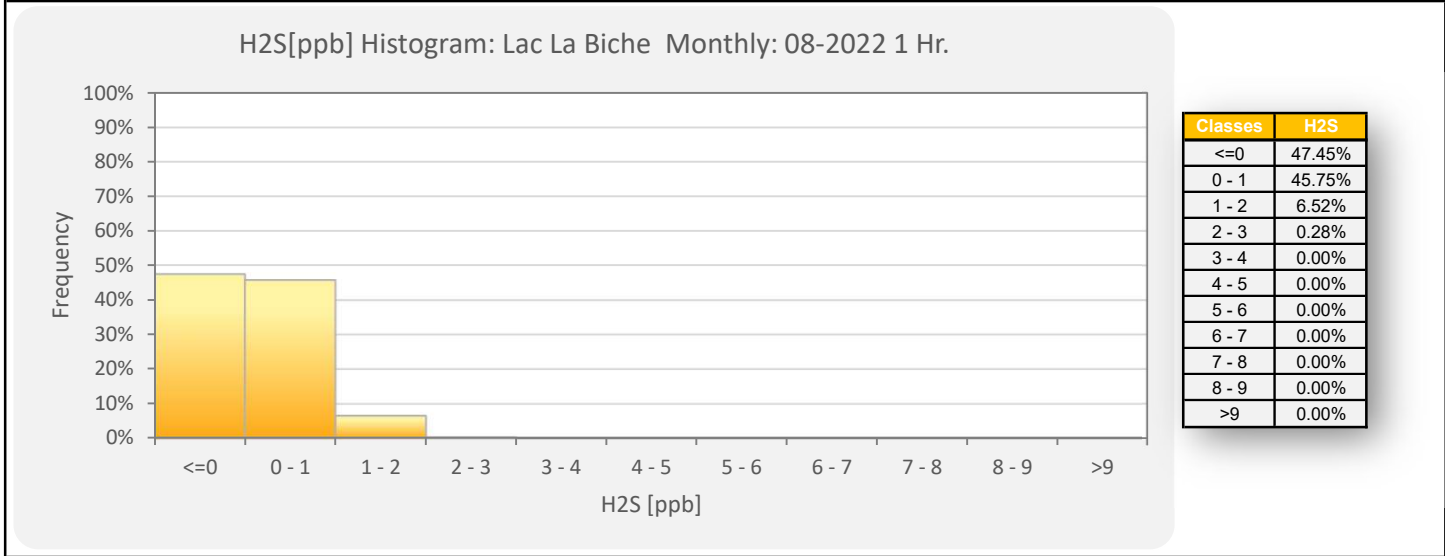
Summary of Hourly Averages

HYDROGEN SULPHIDE (H₂S) 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 August 3 at hour 1	Hours in Service:	744																										
Maximum Daily Value:	1.1 ppb on August 18	Hours of Data:	706																										
Minimum Hourly Value:	0 ppb on August 1 at hour 1	Hours of Missing Data:	0																										
Minimum Daily Value:	0.0 ppb on August 5	Hours of Calibration:	38																										
Monthly Average:	0.4 ppb	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					
Aug 1	1	0	1	0	1	1	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2	
Aug 2	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	1	0	0	0	0	0	1	0	1	0.1	
Aug 3	1	2	2	2	1	1	1	1	1	1	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.6	
Aug 4	0	0	0	0	1	0	0	0	0	0	S	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	
Aug 5	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	0.0	
Aug 6	0	0	0	1	1	1	1	0	S	0	0	0	0	1	1	1	1	1	0	1	1	1	1	0	0	0	1	0.5	
Aug 7	1	1	1	1	1	1	1	S	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0.9	
Aug 8	1	1	1	1	1	1	S	1	1	0	0	0	0	1	1	1	1	1	1	1	0	0	1	1	1	0	1	0.7	
Aug 9	1	0	1	1	1	S	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0.3	
Aug 10	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	0.0	
Aug 11	0	1	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0.1	
Aug 12	1	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	1	0.0	
Aug 13	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	0.0	
Aug 14	S	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	2	0.1	
Aug 15	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	2	0.2	
Aug 16	0	0	0	0	0	0	0	0	0	0	C	C	C	C	C	C	0	0	0	0	0	S	0	0	0	0	0	-	
Aug 17	0	0	0	0	0	1	1	0	0	0	0	1	1	1	1	1	0	0	0	0	S	1	2	2	0	0	2	0.5	
Aug 18	2	2	1	1	2	1	2	1	1	1	1	2	1	1	1	1	1	1	1	0	1	S	0	1	1	1	0	2	1.1
Aug 19	1	1	1	2	1	1	1	1	0	1	1	0	0	1	0	1	0	0	0	S	0	0	0	0	0	0	0	2	0.6
Aug 20	0	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	S	0	0	0	0	0	0	0	1	0.5
Aug 21	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	1	0.0
Aug 22	1	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	S	0	0	0	0	0	1	0	1	0	0	1	0.3
Aug 23	1	0	1	1	1	1	1	2	1	1	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	2	0.4
Aug 24	0	1	1	0	1	1	1	0	1	0	1	0	0	S	1	1	1	1	1	1	1	1	1	1	1	0	0	1	0.7
Aug 25	1	1	1	2	1	2	2	1	1	1	0	0	S	1	0	1	1	1	1	0	0	1	1	1	1	0	0	2	0.9
Aug 26	1	1	1	1	0	1	1	1	1	1	1	S	0	0	0	0	1	0	0	1	1	1	1	1	1	0	0	1	0.7
Aug 27	1	1	1	1	2	2	2	2	1	0	S	0	1	1	0	1	1	1	1	1	1	1	1	1	1	0	0	2	1.0
Aug 28	0	0	1	1	0	1	1	0	S	0	0	1	0	0	1	0	1	1	1	0	0	1	1	2	0	0	0	2	0.6
Aug 29	2	2	2	2	2	2	2	2	S	0	0	0	0	1	1	0	1	1	1	1	0	1	1	1	0	0	0	2	1.0
Aug 30	0	0	0	1	0	1	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1
Aug 31	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	1	0.1
Diurnal Maximum	2	2	2	2	2	2	2	2	1	1	1	2	2	2	1	1	1	1	1	1	1	1	2	2	2				
Diurnal Average	0.5	0.5	0.6	0.7	0.6	0.7	0.7	0.6	0.3	0.2	0.2	0.2	0.3	0.4	0.2	0.3	0.3	0.3	0.3	0.2	0.2	0.3	0.5	0.4	0.5				
C	Monthly Calibration							S	Daily Zero-Span Check							Q	Quality Assurance												
K	Collection Error							N	No Data (Machine Not in Service)							Y	Routine Maintenance												
X	Invalid Data (Equipment Malfunction /Recovery)							NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)							P	Power Failure												
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.																													

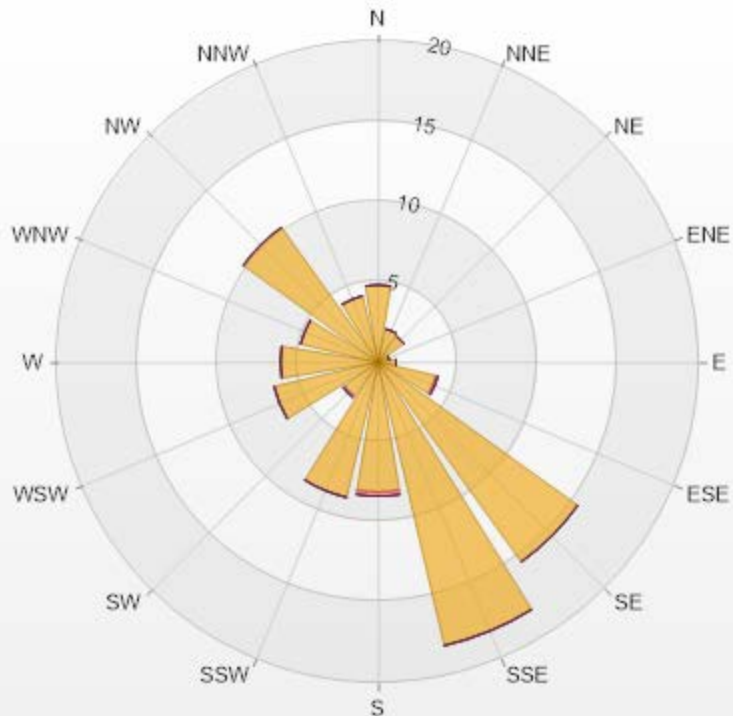
Timeseries Chart of Hourly Average for H2S - Lac La Biche Station





Wind: Lac La Biche Poll.: Lac La Biche-H2S[ppb] Monthly: 08-2022 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.89% Calm Avg: 0.00 [ppb]

Direction	0-2	2-5	5-10	10-50	>50.0	Total
N	4.82	0	0	0	0	4.82
NNE	2.12	0	0	0	0	2.12
NE	1.98	0	0	0	0	1.98
ENE	0.71	0	0	0	0	0.71
E	1.13	0	0	0	0	1.13
ESE	3.68	0.14	0	0	0	3.82
SE	15.3	0	0	0	0	15.3
SSE	18.13	0	0	0	0	18.13
S	8.07	0.28	0	0	0	8.35
SSW	8.64	0	0	0	0	8.64
SW	2.55	0.14	0	0	0	2.69
WSW	6.66	0	0	0	0	6.66
W	6.09	0	0	0	0	6.09
WNW	4.96	0	0	0	0	4.96
NW	10.34	0	0	0	0	10.34
NNW	4.25	0	0	0	0	4.25
Summary	99.43	0.56	0	0	0	100



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% Icon Classes (ppb)

99 0-2

1 2-5

0 5-10

0 10-50

0 >50.0



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Lac La Biche Station - August 2022

Summary of Hourly Averages

OXIDES OF NITROGEN (NOx) in ppb

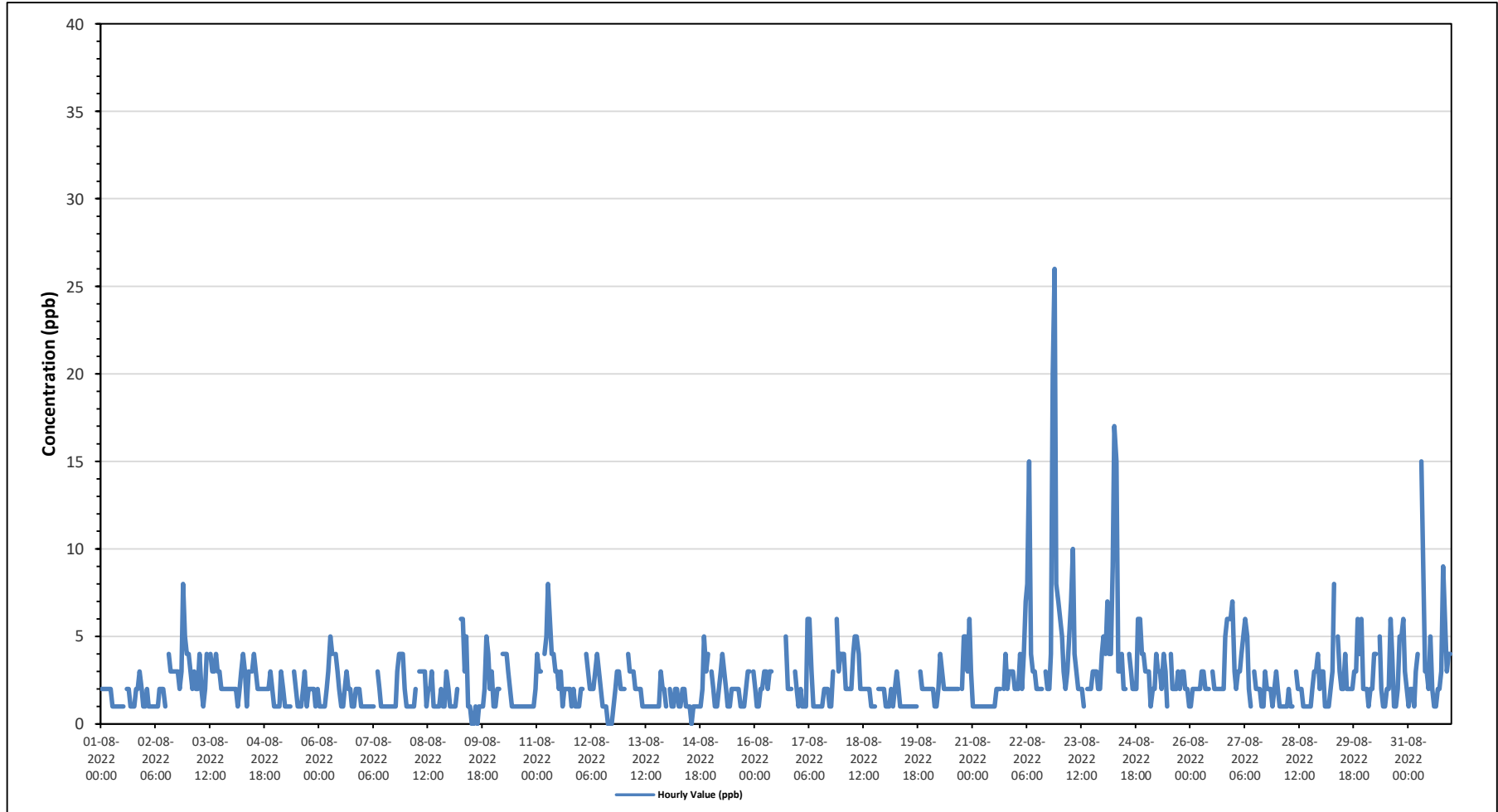
Maximum Hourly Value:	26 ppb on August 22 at hour 21	Hours in Service:	744
Maximum Daily Value:	5.8 ppb on August 22	Hours of Data:	705
Minimum Hourly Value:	0 ppb on August 9 at hour 12	Hours of Missing Data:	0
Minimum Daily Value:	1.5 ppb on August 19	Hours of Calibration:	39
Monthly Average:	2.5 ppb	Operational Uptime:	100.0

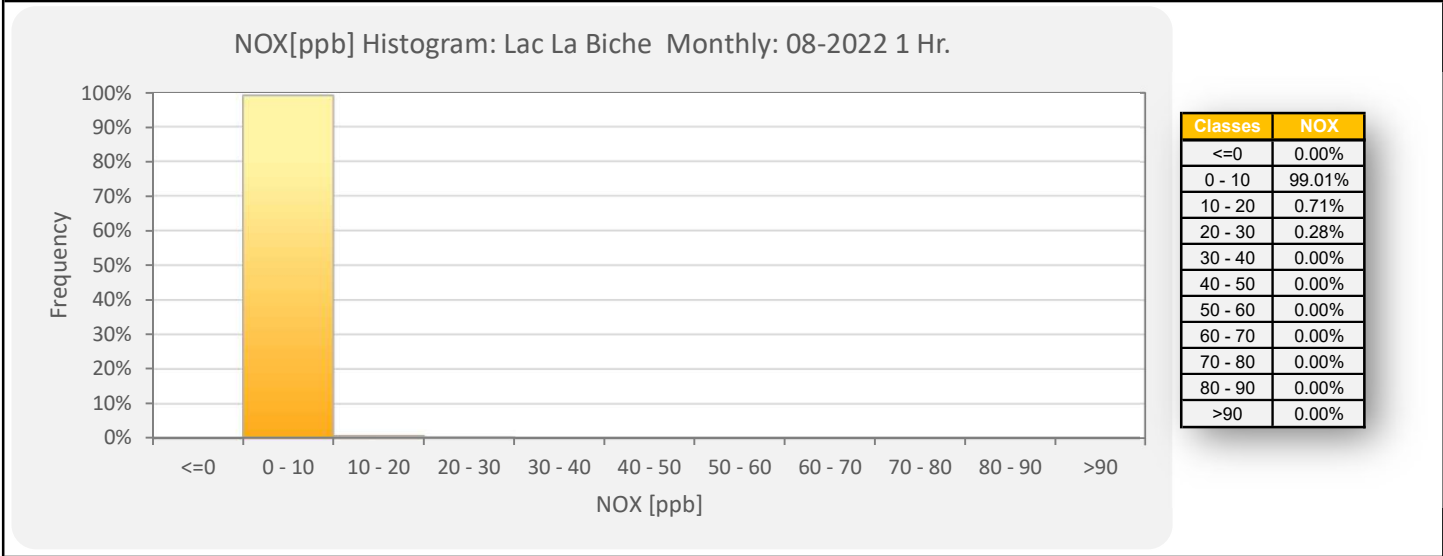
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average		
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23	
Aug 1	2	2	2	2	2	2	1	1	1	1	1	1	1	S	2	2	1	1	1	2	2	3	2	1	1	3	1.6	
Aug 2	1	2	1	1	1	1	1	1	2	2	2	2	1	S	4	3	3	3	3	3	2	3	8	5	4	1	8	2.5
Aug 3	4	3	2	3	2	2	4	2	1	2	4	S	4	3	3	4	3	3	2	2	2	2	2	2	1	4	2.7	
Aug 4	2	2	2	1	2	3	4	3	1	3	S	3	4	3	2	2	2	2	2	2	2	3	2	1	1	4	2.3	
Aug 5	1	1	1	3	2	1	1	1	3	S	3	2	1	1	1	2	3	1	2	2	2	2	1	2	1	3	1.6	
Aug 6	1	1	1	1	2	3	5	4	S	4	3	2	1	1	2	3	2	2	1	1	2	2	2	1	1	5	2.0	
Aug 7	1	1	1	1	1	1	1	S	3	2	1	1	1	1	1	1	1	1	1	3	4	4	4	2	1	4	1.7	
Aug 8	1	1	1	1	1	2	S	3	3	3	3	1	2	2	3	1	1	1	1	2	1	1	3	2	1	3	1.7	
Aug 9	1	1	1	1	2	S	6	3	3	5	1	1	0	0	1	0	1	1	1	2	5	4	2	3	0	6	2.1	
Aug 10	1	1	2	2	S	4	4	4	3	2	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	4	1.7	
Aug 11	4	3	3	S	4	5	8	6	4	4	3	3	2	3	1	2	2	2	2	2	1	2	1	1	1	8	2.9	
Aug 12	2	2	S	4	3	2	2	2	3	4	3	2	1	1	1	0	0	0	1	2	3	3	2	2	0	4	2.0	
Aug 13	2	S	4	3	3	3	2	2	2	2	1	1	1	1	1	1	1	1	1	1	3	2	2	1	1	4	1.8	
Aug 14	S	2	1	1	2	2	1	1	2	2	1	1	1	0	1	1	1	1	1	1	2	5	3	4	S	0	5	1.6
Aug 15	3	2	1	1	2	3	4	3	2	1	1	2	2	2	2	2	1	1	1	2	3	3	S	3	1	4	2.0	
Aug 16	2	1	1	2	2	3	3	2	3	3	C	C	C	C	C	C	C	5	2	2	2	S	3	2	1	5	-	
Aug 17	1	2	1	1	1	6	6	3	1	1	1	1	1	1	2	2	2	1	1	1	3	S	6	3	4	1	6	2.2
Aug 18	4	4	2	2	2	4	5	5	4	2	2	2	2	2	2	2	1	1	1	S	S	2	2	2	2	1	5	2.5
Aug 19	1	1	1	2	1	2	3	2	1	1	1	1	1	1	1	1	1	1	1	S	3	2	2	2	2	1	3	1.5
Aug 20	2	2	2	1	1	2	4	3	2	2	2	2	2	2	2	2	2	S	2	5	5	3	6	3	1	6	2.6	
Aug 21	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	S	2	4	2	3	3	3	2	1	4	1.7	
Aug 22	2	2	4	2	4	7	8	15	4	3	3	2	2	2	2	S	3	2	2	4	20	26	8	7	2	26	5.8	
Aug 23	6	5	3	2	3	5	7	10	4	3	2	2	2	1	S	2	2	2	3	3	3	2	2	4	1	10	3.4	
Aug 24	5	4	7	4	4	9	17	15	3	3	4	2	2	S	4	3	2	2	2	6	6	4	4	3	2	17	5.0	
Aug 25	3	3	1	2	2	4	3	2	4	3	1	S	4	2	2	2	3	2	3	3	2	2	2	1	1	4	2.5	
Aug 26	1	2	2	2	2	2	3	3	2	2	2	S	3	2	2	2	2	2	2	5	6	6	6	7	1	7	3.0	
Aug 27	3	2	3	3	4	5	6	5	2	1	S	3	2	2	2	1	1	3	2	2	2	1	2	3	1	6	2.6	
Aug 28	2	1	1	1	1	2	1	1	1	S	3	2	2	2	1	1	1	1	1	2	3	3	4	2	1	4	1.7	
Aug 29	3	3	1	1	1	2	3	8	S	5	3	2	2	4	2	2	2	3	3	6	4	6	2	1	8	3.0		
Aug 30	2	2	1	2	2	4	4	S	5	2	1	1	2	2	6	4	1	1	2	5	5	6	3	2	1	6	2.8	
Aug 31	1	2	2	1	3	4	S	15	9	3	3	2	5	2	1	2	2	3	9	6	3	4	4	1	15	3.8		
Diurnal Maximum	6	5	7	4	4	9	17	15	9	5	4	3	5	4	6	4	3	5	4	9	20	26	8	7				
Diurnal Average	2.2	2.0	1.9	1.8	2.1	3.1	4.1	4.5	2.6	2.6	2.1	1.6	1.8	1.9	1.9	1.8	1.6	1.7	1.8	2.8	3.8	3.8	3.1	2.6				

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

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.

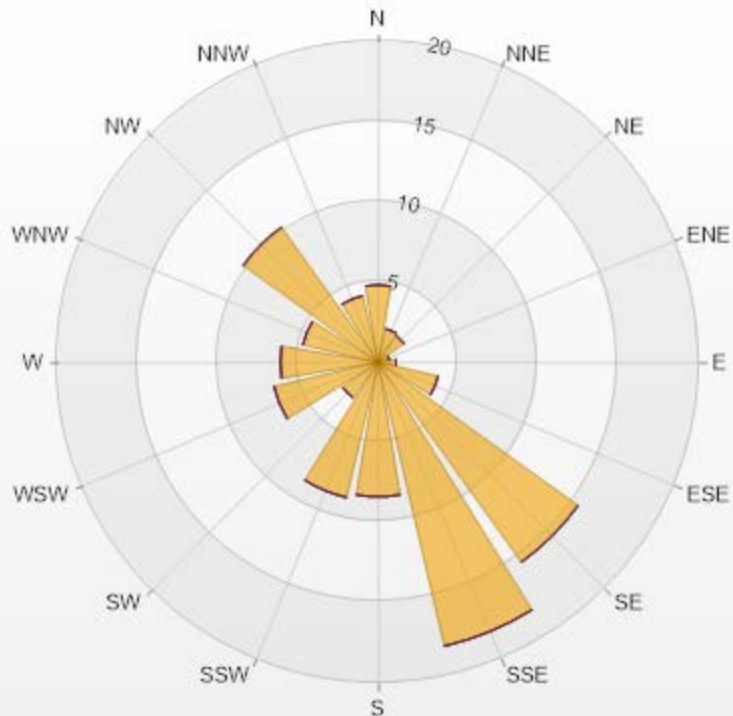
Timeseries Chart of Hourly Average for NOx - Lac La Biche Station





Wind: Lac La Biche Poll.: Lac La Biche-NOX[ppb] Monthly: 08-2022 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.76% Calm Avg: 0.00 [ppb]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	4.82	0	0	0	0	4.82
NNE	2.13	0	0	0	0	2.13
NE	1.99	0	0	0	0	1.99
ENE	0.71	0	0	0	0	0.71
E	1.13	0	0	0	0	1.13
ESE	3.83	0	0	0	0	3.83
SE	15.32	0	0	0	0	15.32
SSE	18.16	0	0	0	0	18.16
S	8.37	0	0	0	0	8.37
SSW	8.65	0	0	0	0	8.65
SW	2.7	0	0	0	0	2.7
WSW	6.67	0	0	0	0	6.67
W	6.1	0	0	0	0	6.1
WNW	4.82	0	0	0	0	4.82
NW	10.35	0	0	0	0	10.35
NNW	4.26	0	0	0	0	4.26
Summary	100	0	0	0	0	100



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% Icon Classes (ppb)

100

0-30

0

30-50

50-76

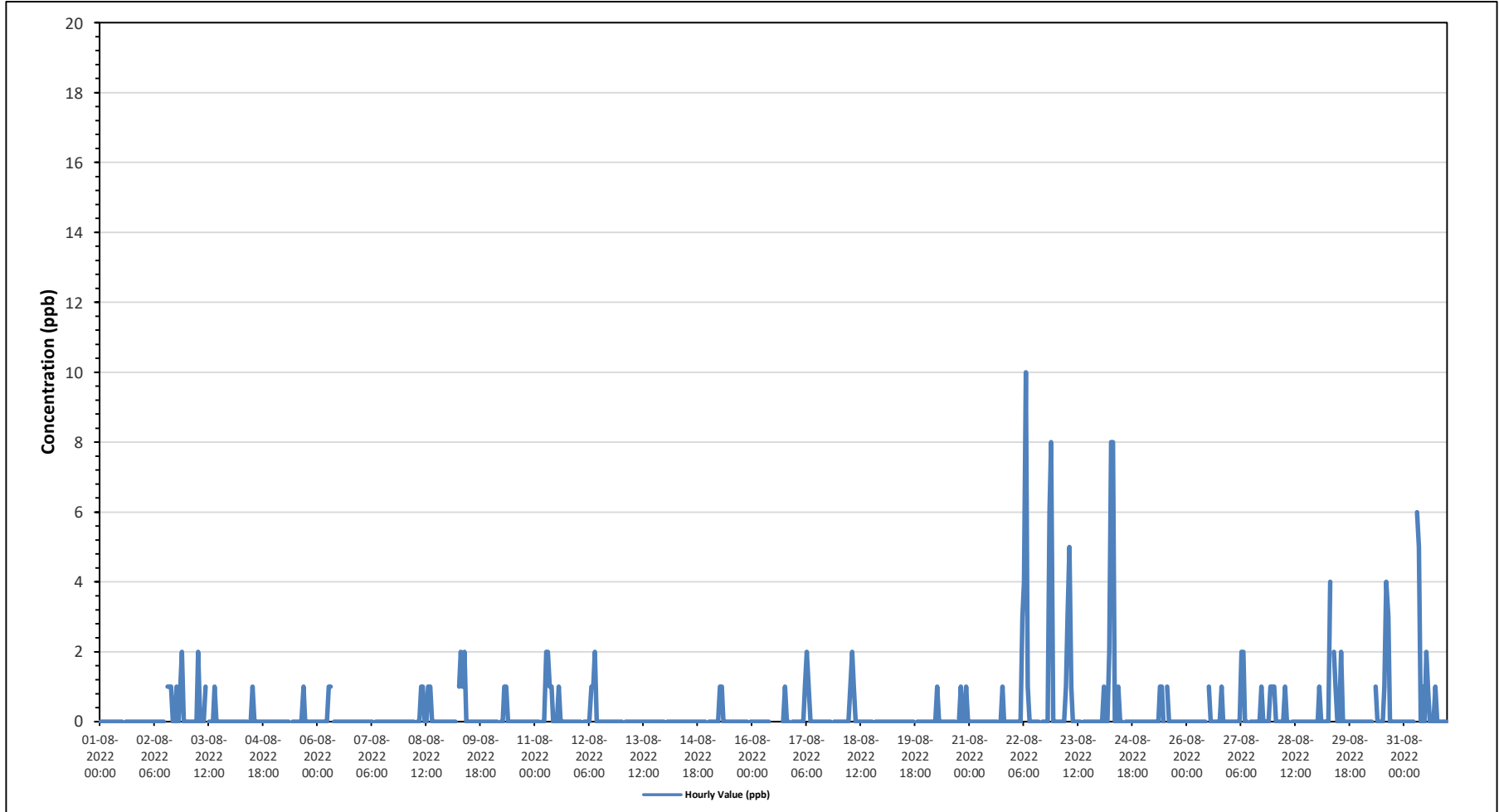
0

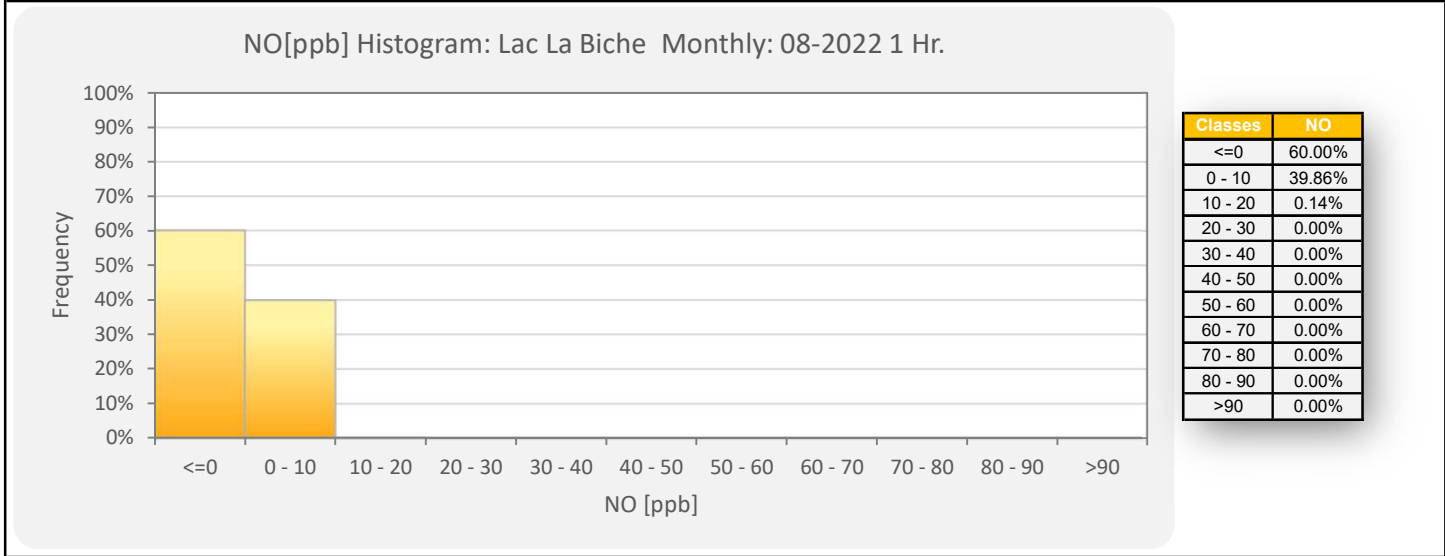
76-159

0

>159.0

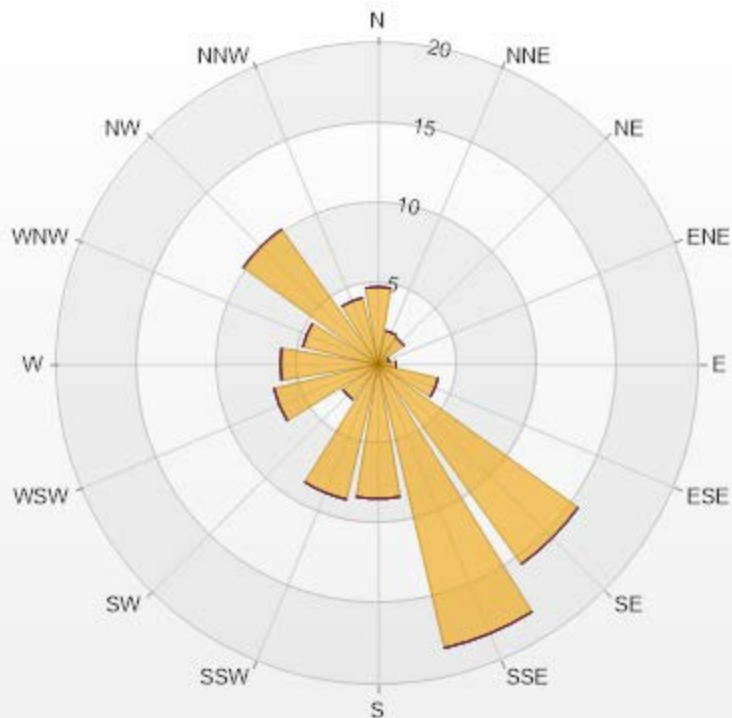
Timeseries Chart of Hourly Average for NO - Lac La Biche Station





Wind: Lac La Biche Poll.: Lac La Biche-NO[ppb] Monthly: 08-2022 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.76% Calm Avg: 0.00 [ppb]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	4.82	0	0	0	0	4.82
NNE	2.13	0	0	0	0	2.13
NE	1.99	0	0	0	0	1.99
ENE	0.71	0	0	0	0	0.71
E	1.13	0	0	0	0	1.13
ESE	3.83	0	0	0	0	3.83
SE	15.32	0	0	0	0	15.32
SSE	18.16	0	0	0	0	18.16
S	8.37	0	0	0	0	8.37
SSW	8.65	0	0	0	0	8.65
SW	2.7	0	0	0	0	2.7
WSW	6.67	0	0	0	0	6.67
W	6.1	0	0	0	0	6.1
WNW	4.82	0	0	0	0	4.82
NW	10.35	0	0	0	0	10.35
NNW	4.26	0	0	0	0	4.26
Summary	100	0	0	0	0	100



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% Icon Classes (ppb)

100

0-30

0

30-50

0

50-76

0

76-159

0

>159.0



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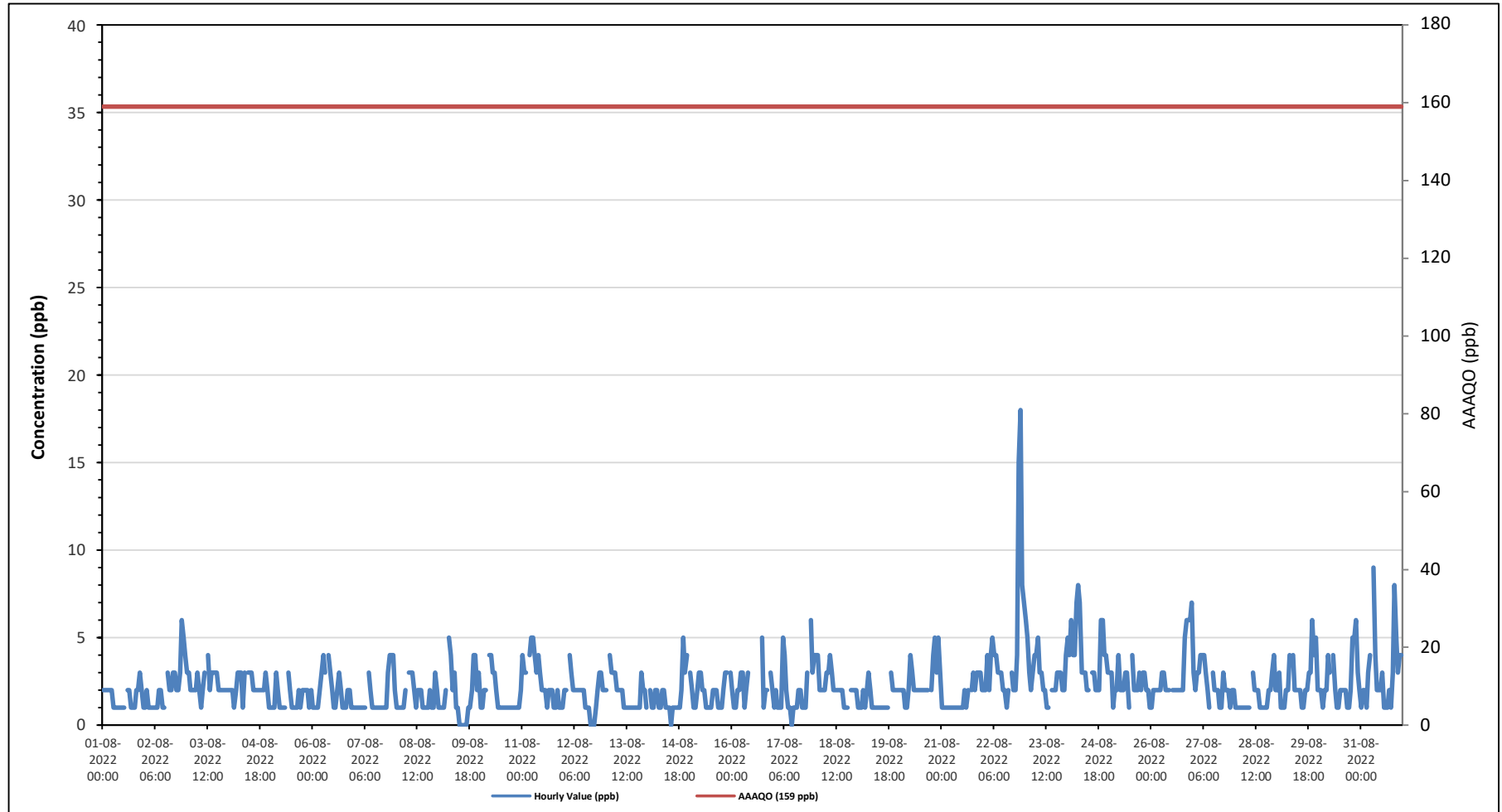
Lac La Biche Station - August 2022

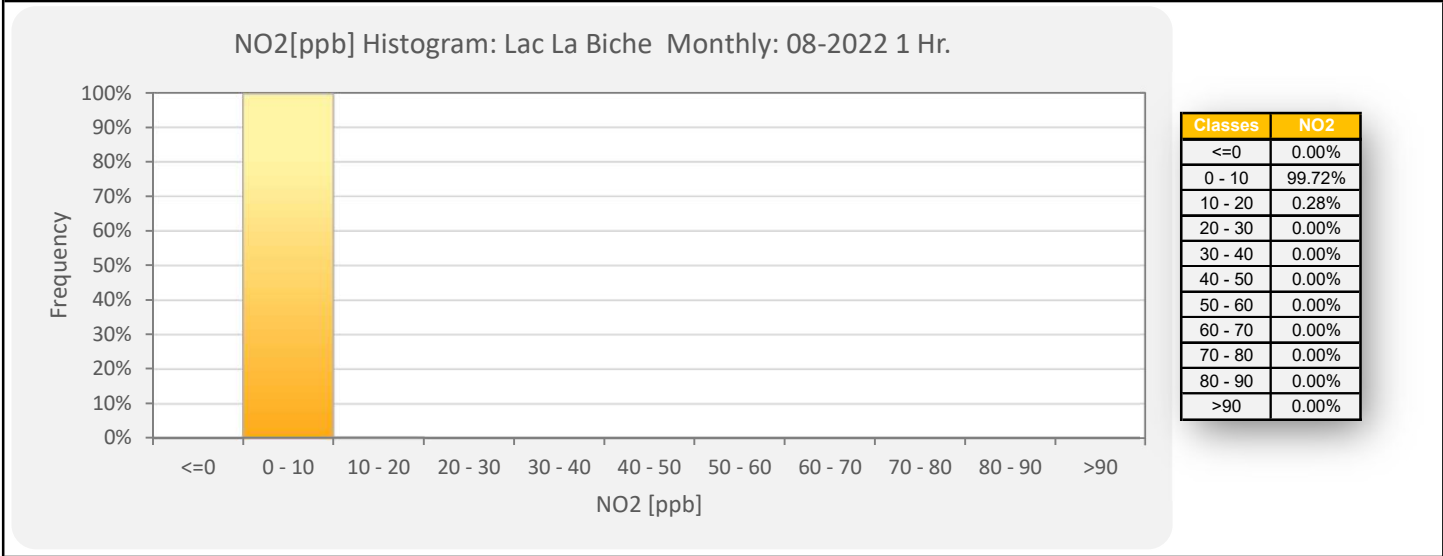
Summary of Hourly Averages

NITROGEN DIOXIDE (NO₂) in ppb

Alberta Ambient Air Quality Objectives (AAAQO): 1-Hour 159 ppb																																											
Number of 1-Hour Exceedances: 0																																											
Maximum Hourly Value: 18 ppb on August 22 at hour 21												Hours in Service: 744																															
Maximum Daily Value: 4.4 ppb on August 22												Hours of Data: 705																															
Minimum Hourly Value: 0 ppb on August 9 at hour 12												Hours of Missing Data: 0																															
Minimum Daily Value: 1.5 ppb on August 19												Hours of Calibration: 39																															
Monthly Average: 2.2 ppb												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																
Aug 1	2	2	2	2	2	2	1	1	1	1	1	1	1	S	2	2	1	1	1	2	2	3	2	1	1	3	2	1	1	3	1.6												
Aug 2	1	2	1	1	1	1	1	1	2	2	1	1	S	3	2	2	3	3	2	2	3	6	5	4	1	6	2.2																
Aug 3	3	3	2	2	2	2	3	2	1	2	3	S	4	2	3	3	3	2	2	2	2	2	2	2	1	3	2.2																
Aug 4	2	2	2	1	2	3	3	3	1	3	S	3	3	3	2	2	2	2	2	2	2	3	2	1	1	3	2.2																
Aug 5	1	1	1	3	2	1	1	1	1	S	3	2	1	1	1	1	2	1	2	2	2	2	1	2	1	3	1.5																
Aug 6	1	1	1	1	2	3	4	3	S	4	3	2	1	1	2	3	2	1	1	2	2	1	1	1	1	4	1.9																
Aug 7	1	1	1	1	1	1	1	S	3	2	1	1	1	1	1	1	1	1	3	4	4	4	4	2	1	4	1.7																
Aug 8	1	1	1	1	1	2	S	3	3	2	1	2	2	2	1	1	1	1	2	1	1	3	2	1	3	2	1	3	1.7														
Aug 9	1	1	1	1	2	S	5	4	2	3	3	1	1	0	0	0	0	1	1	2	4	4	2	3	0	5	1.7																
Aug 10	1	1	2	2	S	4	4	3	3	2	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	4	1.6																
Aug 11	4	3	3	S	4	5	5	4	3	4	3	2	2	2	1	2	2	2	1	1	2	1	1	1	1	5	2.5																
Aug 12	2	2	S	4	3	2	2	2	2	2	2	2	1	1	1	0	0	0	1	2	3	3	2	2	0	4	1.8																
Aug 13	2	S	4	3	3	3	2	2	2	2	1	1	1	1	1	1	1	1	1	1	3	2	2	1	1	4	1.8																
Aug 14	S	2	1	1	2	2	1	1	2	2	1	1	1	0	1	1	1	1	1	2	5	3	4	S	0	5	1.6																
Aug 15	3	2	1	1	2	3	3	2	2	1	1	1	1	2	2	2	1	1	1	2	3	3	S	3	1	3	1.9																
Aug 16	2	1	1	2	2	3	3	1	2	3	C	C	C	C	C	C	C	5	1	2	2	S	3	2	1	5	-																
Aug 17	1	2	1	1	1	5	4	2	1	1	0	1	1	1	2	2	1	1	1	3	S	6	3	4	0	6	2.0																
Aug 18	4	4	2	2	2	2	3	4	3	2	2	2	2	2	2	1	1	1	3	S	2	2	2	2	1	4	2.3																
Aug 19	1	1	1	2	1	2	3	2	1	1	1	1	1	1	1	1	1	1	1	S	3	2	2	2	2	1	3	1.5															
Aug 20	2	2	2	1	1	2	4	3	2	2	2	2	2	2	2	2	2	S	2	4	5	3	5	3	1	5	2.5																
Aug 21	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	2	S	2	3	2	3	3	2	1	3	1.6																	
Aug 22	2	2	4	2	4	5	4	4	3	3	3	2	2	1	2	S	3	2	2	4	15	18	8	7	1	18	4.4																
Aug 23	6	5	3	2	3	4	4	5	3	3	2	2	1	1	S	2	2	2	3	3	3	2	2	4	1	6	2.9																
Aug 24	5	4	6	4	4	7	8	7	3	3	3	2	2	S	3	3	2	2	2	6	6	4	4	3	2	8	4.0																
Aug 25	3	3	1	2	2	4	2	2	3	3	1	2	S	4	2	2	2	3	2	3	3	2	2	1	1	4	2.3																
Aug 26	1	2	2	2	2	2	3	3	2	2	2	S	2	2	2	2	2	2	2	5	6	6	6	7	1	7	2.9																
Aug 27	3	2	3	3	4	4	4	4	3	2	1	S	3	2	2	2	1	1	3	2	2	1	2	2	1	4	2.3																
Aug 28	1	1	1	1	1	1	1	1	1	S	3	2	2	2	1	1	1	1	1	2	2	3	4	2	1	4	1.6																
Aug 29	2	3	1	1	1	2	2	4	S	4	2	2	2	2	1	1	2	2	3	3	6	4	5	2	1	6	2.5																
Aug 30	2	2	1	2	2	4	3	S	4	2	1	1	2	2	2	1	1	2	5	5	6	3	2	1	6	2.5																	
Aug 31	1	2	2	1	3	4	S	9	4	2	2	2	3	1	1	2	1	3	8	5	3	4	4	1	9	3.0																	
Diurnal Maximum	6	5	6	4	4	7	8	9	4	4	3	3	4	4	3	3	3	5	3	8	15	18	8	7																			
Diurnal Average	2.1	2.0	1.8	1.8	2.1	2.9	2.9	2.8	2.2	2.3	1.8	1.6	1.6	1.6	1.6	1.6	1.5	1.6	1.6	2.7	3.5	3.5	3.0	2.5																			
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 NO2 - Lac La Biche Station

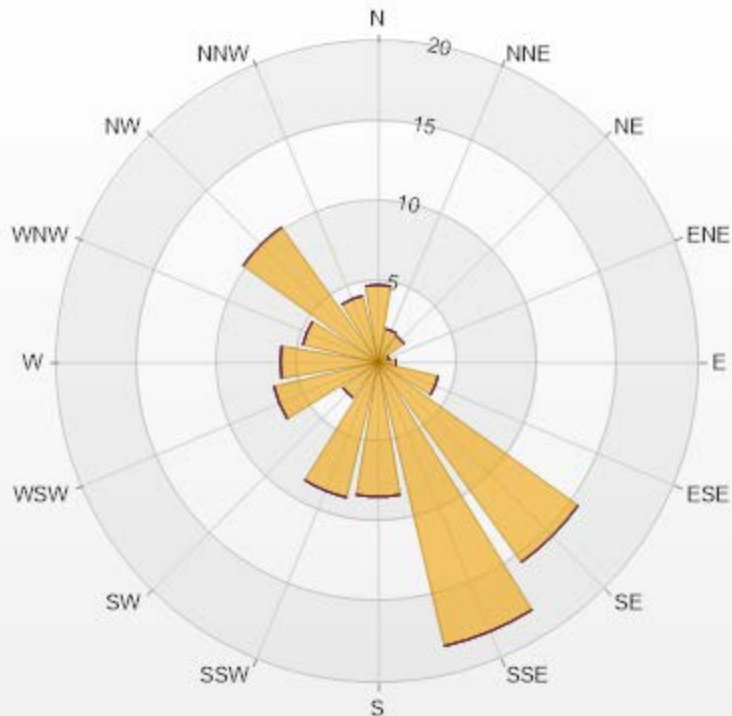




Wind: Lac La Biche Poll.: Lac La Biche-NO2[ppb] Monthly: 08-2022 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.

Calm: 0.00% Valid Data: 94.76% Calm Avg: 0.00 [ppb]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	4.82	0	0	0	0	4.82
NNE	2.13	0	0	0	0	2.13
NE	1.99	0	0	0	0	1.99
ENE	0.71	0	0	0	0	0.71
E	1.13	0	0	0	0	1.13
ESE	3.83	0	0	0	0	3.83
SE	15.32	0	0	0	0	15.32
SSE	18.16	0	0	0	0	18.16
S	8.37	0	0	0	0	8.37
SSW	8.65	0	0	0	0	8.65
SW	2.7	0	0	0	0	2.7
WSW	6.67	0	0	0	0	6.67
W	6.1	0	0	0	0	6.1
WNW	4.82	0	0	0	0	4.82
NW	10.35	0	0	0	0	10.35
NNW	4.26	0	0	0	0	4.26
Summary	100	0	0	0	0	100



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% Icon Classes (ppb)

100

0-30

0

30-50

0

50-76

0

76-159

0

>159.0



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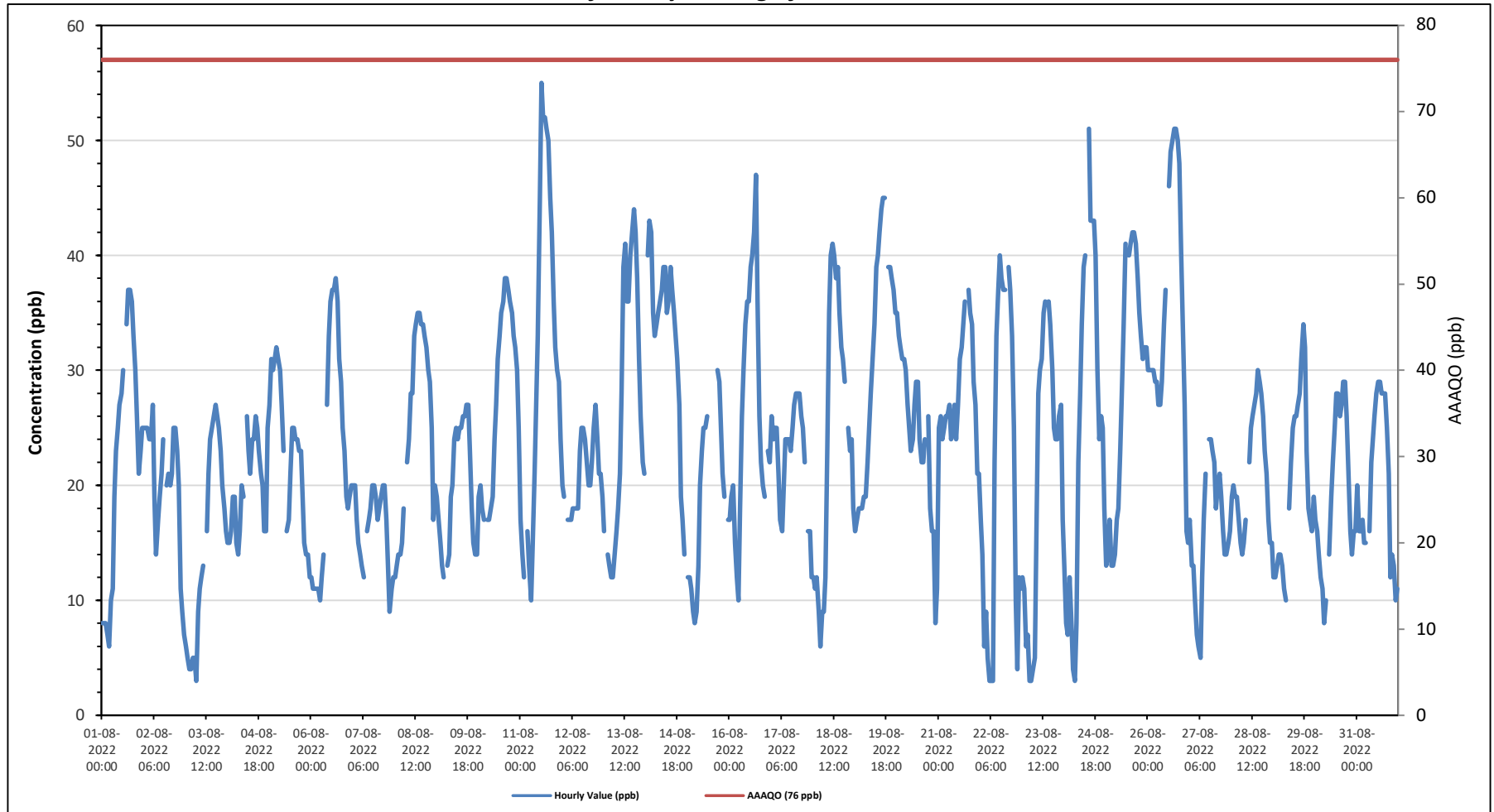
Lac La Biche Station - August 2022

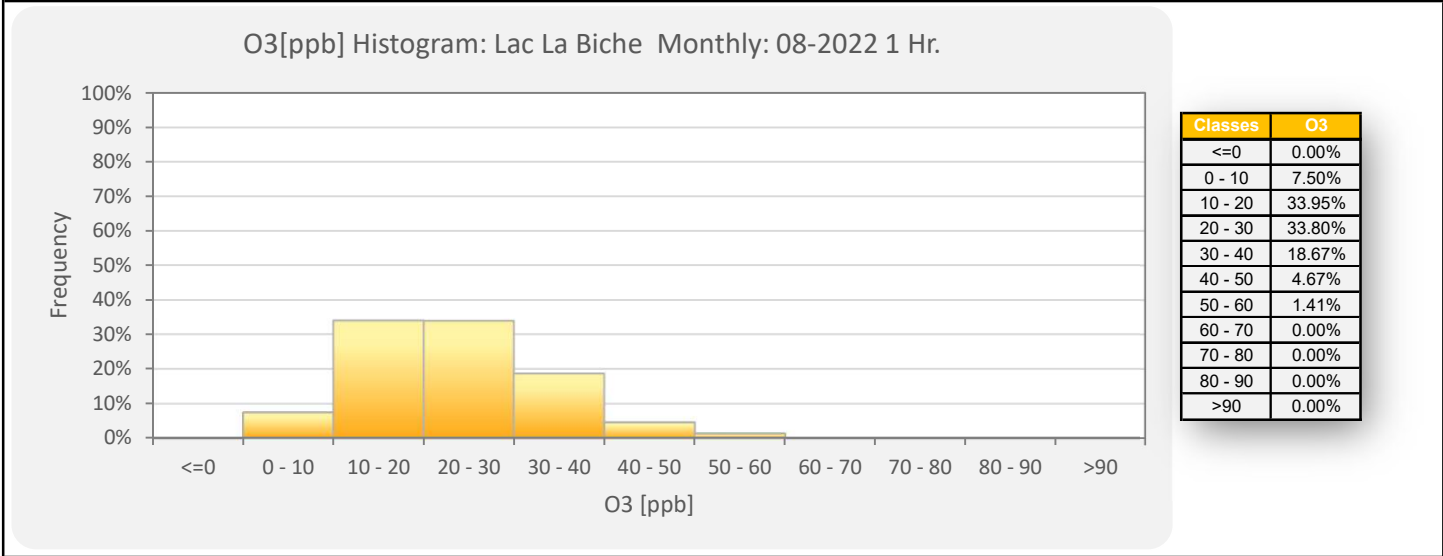
Summary of Hourly Averages

OZONE (O₃) in ppb

Alberta Ambient Air Quality Objectives (AAAQO): 1-Hour 76 ppb																													
Number of 1-Hour Exceedances: 0																													
Maximum Hourly Value: 55.0 ppb on August 11 at hour 12													Hours in Service: 744																
Maximum Daily Value: 35.1 ppb on August 26													Hours of Data: 707																
Minimum Hourly Value: 3.0 ppb on August 3 at hour 6													Hours of Missing Data: 0																
Minimum Daily Value: 15.0 ppb on August 3													Hours of Calibration: 37																
Monthly Average: 23.4 ppb													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		
Aug 1	8	8	8	7	6	10	11	19	23	25	27	28	30	S	34	37	37	36	33	30	26	21	23	25	6.0	37.0	22.3		
Aug 2	25	25	25	24	24	27	19	14	17	19	21	24	S	20	21	20	21	25	25	23	20	11	9	7	7.0	27.0	20.3		
Aug 3	6	5	4	4	5	5	3	9	11	12	13	S	16	21	24	25	26	27	26	25	23	20	18	16	3.0	27.0	15.0		
Aug 4	15	15	16	19	19	15	14	16	20	19	S	26	23	21	24	24	26	25	23	21	20	16	16	25	14.0	26.0	19.9		
Aug 5	27	31	30	31	32	31	30	27	23	S	16	17	21	25	25	24	24	23	23	19	15	14	14	12	12.0	32.0	23.2		
Aug 6	12	11	11	11	11	10	12	14	S	27	33	36	37	37	38	36	31	29	25	23	19	18	19	20	10.0	38.0	22.6		
Aug 7	20	20	17	15	14	13	12	S	16	17	18	20	20	19	17	18	19	20	20	17	13	9	11	12	9.0	20.0	16.4		
Aug 8	12	13	14	14	15	18	S	22	24	28	28	33	34	35	35	34	34	33	32	30	29	25	17	20	12.0	35.0	25.2		
Aug 9	19	17	15	13	12	S	13	14	19	20	24	25	24	25	25	26	26	27	27	23	18	15	14	14	12.0	27.0	19.8		
Aug 10	19	20	18	17	S	17	17	18	19	24	27	31	33	35	36	38	38	37	36	35	33	32	30	25	17.0	38.0	27.6		
Aug 11	17	14	12	S	16	13	10	15	21	27	33	45	55	52	52	51	50	45	42	36	32	30	29	24	10.0	55.0	31.3		
Aug 12	20	19	S	17	17	17	18	18	18	18	23	25	25	24	22	20	20	22	25	27	24	21	21	19	17.0	27.0	20.9		
Aug 13	16	S	14	13	12	12	14	16	18	21	28	39	41	36	36	40	42	44	42	38	31	26	22	21	12.0	44.0	27.0		
Aug 14	S	40	43	42	35	33	34	35	36	37	39	39	35	36	39	37	35	33	31	27	19	17	14	S	14.0	43.0	33.5		
Aug 15	12	12	11	9	8	9	13	20	23	25	25	26	C	C	C	C	C	30	29	25	21	19	S	17	8.0	30.0	18.6		
Aug 16	17	19	20	15	12	10	18	26	30	34	36	36	39	40	42	47	36	26	22	20	19	S	23	22	10.0	47.0	26.5		
Aug 17	26	24	25	25	21	17	16	20	24	24	24	23	25	27	28	28	28	26	25	22	S	16	16	12	12.0	28.0	22.7		
Aug 18	12	11	12	9	6	9	9	12	23	35	40	41	40	38	39	35	32	31	29	S	25	23	24	18	6.0	41.0	24.0		
Aug 19	16	17	18	18	18	19	19	22	25	28	31	34	39	40	42	44	45	45	S	39	39	38	37	35	16.0	45.0	30.8		
Aug 20	35	33	32	31	31	30	27	25	23	24	27	29	29	24	22	22	24	S	26	18	16	16	8	11	8.0	35.0	24.5		
Aug 21	25	26	24	25	26	26	27	24	25	27	24	27	31	32	34	36	S	37	35	34	29	27	21	21	21.0	37.0	28.0		
Aug 22	17	14	6	9	5	3	3	3	22	33	37	40	38	37	37	S	39	37	33	25	10	4	12	11	3.0	40.0	20.7		
Aug 23	12	11	6	7	3	3	4	5	16	28	30	31	35	36	S	36	34	30	25	24	24	26	27	17	3.0	36.0	20.4		
Aug 24	13	8	7	12	8	4	3	8	22	28	34	39	40	S	51	43	43	43	40	30	24	26	25	18	3.0	51.0	24.7		
Aug 25	13	14	17	13	13	14	17	18	23	28	34	41	S	40	41	42	42	41	38	35	33	31	32	32	13.0	42.0	28.3		
Aug 26	30	30	30	30	29	29	27	27	29	34	37	S	46	49	50	51	51	50	48	40	33	27	16	15	15.0	51.0	35.1		
Aug 27	17	13	13	10	7	6	5	12	17	21	S	24	24	23	22	18	20	21	19	16	14	14	15	16	5.0	24.0	16.0		
Aug 28	19	20	19	19	17	15	14	15	17	S	22	25	26	27	28	30	29	28	26	23	21	17	15	15	14.0	30.0	21.2		
Aug 29	12	12	13	14	14	13	11	10	S	18	22	25	26	26	27	28	31	34	32	23	18	17	16	19	10.0	34.0	20.0		
Aug 30	17	16	14	12	11	8	10	S	14	19	22	25	28	28	26	27	29	29	26	21	16	14	16	16	8.0	29.0	19.3		
Aug 31	20	16	16	17	15	15	S	16	22	24	26	28	29	28	28	28	25	21	12	14	13	10	11	10.0	29.0	20.1			
Diurnal Maximum	35	40	43	42	35	33	34	35	36	37	40	45	55	52	52	51	51	50	48	40	39	38	37	35					
Diurnal Average	17.6	17.8	17.0	16.7	15.4	15.0	14.8	17.2	21.4	25.0	27.6	30.4	31.8	31.5	32.6	32.6	32.4	32.0	29.5	26.0	22.6	20.1	19.0	18.2					
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.																													

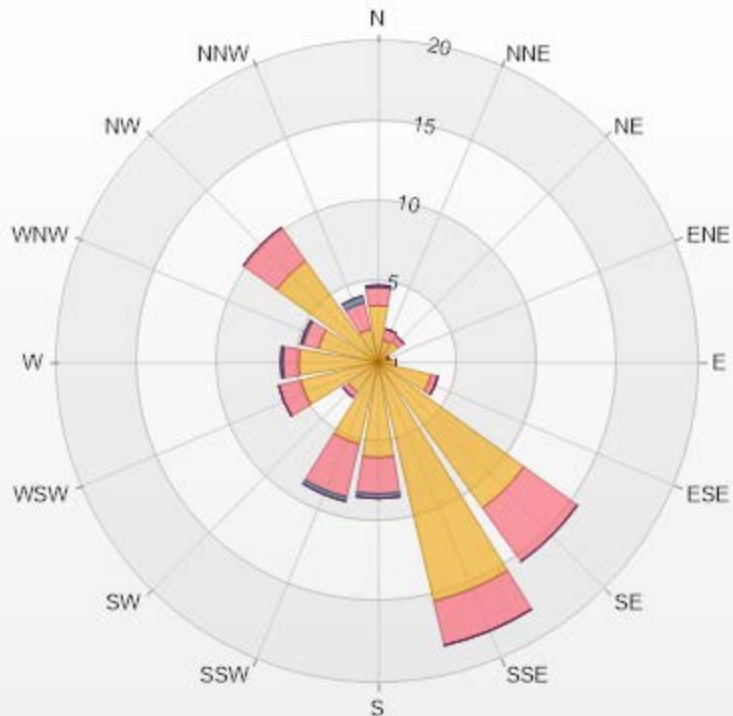
Timeseries Chart of Hourly Average for O3 - Lac La Biche Station





Wind: Lac La Biche Poll.: Lac La Biche-O3[ppb] Monthly: 08-2022 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 95.03% Calm Avg: 0.00 [ppb]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	3.54	1.13	0.14	0	0	4.81
NNE	1.41	0.71	0	0	0	2.12
NE	1.56	0.42	0	0	0	1.98
ENE	0.57	0.14	0	0	0	0.71
E	1.13	0	0	0	0	1.13
ESE	3.39	0.42	0	0	0	3.81
SE	11.17	4.1	0	0	0	15.27
SSE	15.28	2.83	0	0	0	18.11
S	5.94	2.26	0.28	0	0	8.48
SSW	5.23	3.39	0.28	0	0	8.9
SW	2.26	0.42	0	0	0	2.68
WSW	4.95	1.41	0	0	0	6.36
W	4.95	0.99	0.14	0	0	6.08
WNW	3.82	0.99	0.14	0	0	4.95
NW	7.78	2.55	0	0	0	10.33
NNW	2.12	1.7	0.42	0	0	4.24
Summary	75.1	23.46	1.4	0	0	100



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% Icon Classes (ppb)

75 0-30

23 30-50

1 50-76

0 76-159

0 >159.0



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Lac La Biche Station - August 2022

Summary of Hourly Averages

TOTAL HYDROCARBONS (THC) in ppm

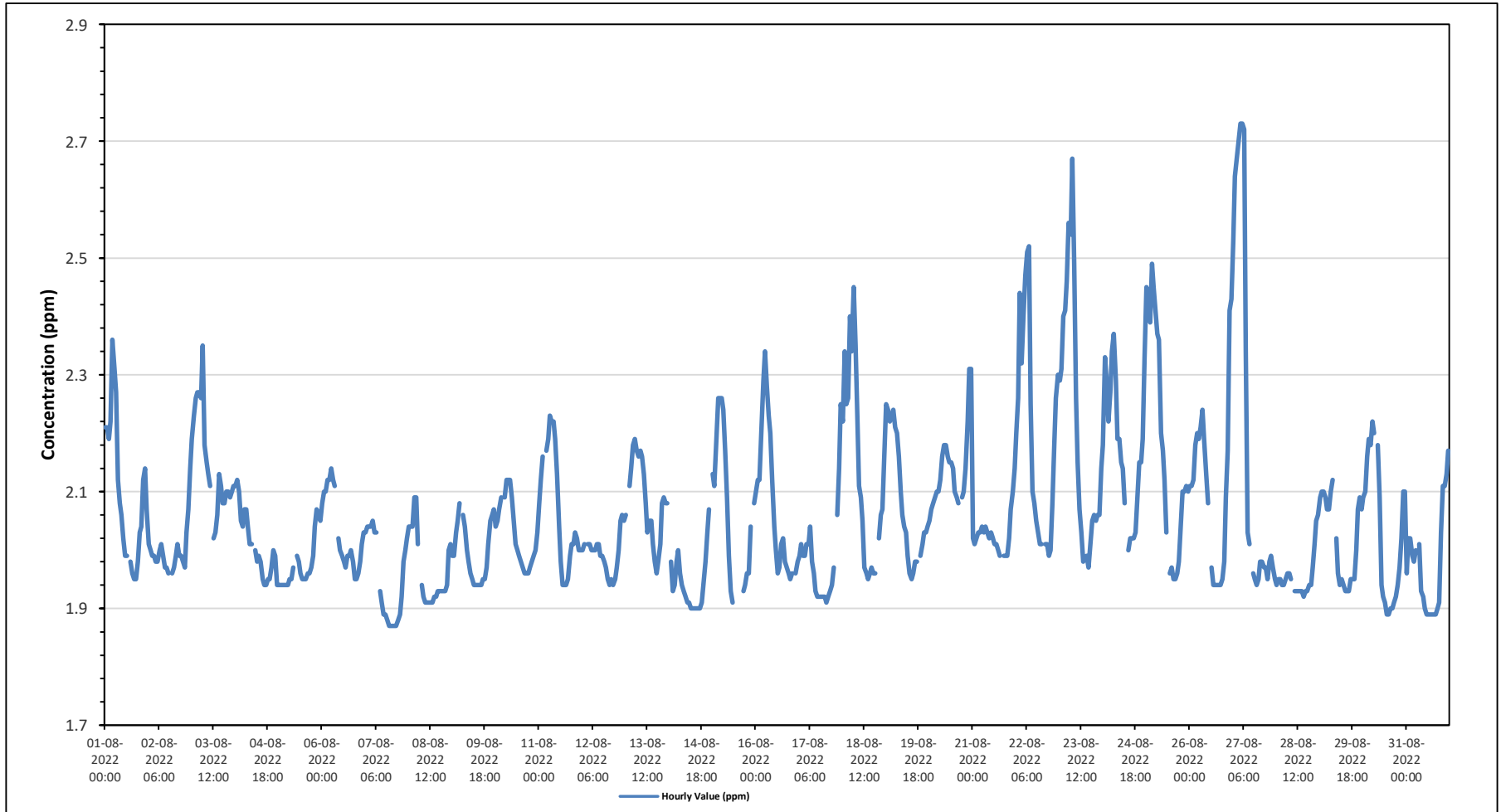
Maximum Hourly Value:	2.73 ppm on August 27 at hour 4	Hours in Service:	744
Maximum Daily Value:	2.22 ppm on August 23	Hours of Data:	707
Minimum Hourly Value:	1.87 ppm on August 7 at hour 13	Hours of Missing Data:	0
Minimum Daily Value:	1.94 ppm on August 14	Hours of Calibration:	37
Monthly Average:	2.06 ppm	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
Aug 1	2.21	2.21	2.19	2.22	2.36	2.31	2.27	2.12	2.08	2.06	2.02	1.99	1.99	S	1.98	1.96	1.95	1.95	1.98	2.03	2.04	2.12	2.14	2.07	1.95	2.36	2.10
Aug 2	2.01	2.00	1.99	1.99	1.98	1.98	2.00	2.01	1.99	1.97	1.97	1.96	S	1.96	1.97	1.99	2.01	1.99	1.99	1.98	1.97	2.03	2.07	2.14	1.96	2.14	2.00
Aug 3	2.19	2.23	2.26	2.27	2.27	2.26	2.35	2.18	2.15	2.13	2.11	S	2.02	2.03	2.06	2.13	2.11	2.08	2.08	2.10	2.10	2.09	2.10	2.11	2.02	2.35	2.15
Aug 4	2.11	2.12	2.10	2.05	2.04	2.07	2.07	2.04	2.01	2.01	S	2.00	1.98	1.99	1.98	1.95	1.94	1.94	1.95	1.95	1.97	2.00	1.99	1.94	1.94	2.12	2.01
Aug 5	1.94	1.94	1.94	1.94	1.94	1.94	1.95	1.95	1.97	S	1.99	1.98	1.96	1.95	1.95	1.95	1.96	1.96	1.97	1.99	2.04	2.07	2.06	2.05	1.94	2.07	1.97
Aug 6	2.08	2.10	2.10	2.12	2.12	2.14	2.12	2.11	S	2.02	2.00	1.99	1.98	1.97	1.99	1.99	2.00	1.98	1.95	1.95	1.96	1.98	2.01	2.03	1.95	2.14	2.03
Aug 7	2.03	2.04	2.04	2.04	2.05	2.03	2.03	S	1.93	1.91	1.89	1.89	1.88	1.87	1.87	1.87	1.87	1.87	1.88	1.89	1.92	1.98	2.00	2.02	1.87	2.05	1.95
Aug 8	2.04	2.04	2.04	2.09	2.09	2.01	S	1.94	1.92	1.91	1.91	1.91	1.91	1.91	1.92	1.92	1.93	1.93	1.93	1.93	1.93	1.94	2.00	2.01	1.91	2.09	1.96
Aug 9	1.99	1.99	2.03	2.05	2.08	S	2.06	2.04	2.00	1.98	1.96	1.95	1.94	1.94	1.94	1.94	1.95	1.95	1.95	1.97	2.01	2.05	2.06	2.07	1.94	2.08	2.00
Aug 10	2.04	2.05	2.07	2.09	S	2.09	2.12	2.12	2.12	2.09	2.05	2.01	2.00	1.99	1.98	1.97	1.96	1.96	1.96	1.97	1.98	1.99	2.00	2.03	1.96	2.12	2.03
Aug 11	2.08	2.12	2.16	S	2.17	2.19	2.23	2.22	2.22	2.19	2.13	2.04	1.98	1.94	1.94	1.94	1.95	1.99	2.01	2.01	2.03	2.02	2.00	2.00	1.94	2.23	2.07
Aug 12	2.00	2.01	S	2.01	2.01	2.00	2.00	2.00	2.01	2.01	1.99	1.99	1.98	1.97	1.95	1.94	1.95	1.94	1.95	1.97	2.00	2.05	2.06	2.05	1.94	2.06	1.99
Aug 13	2.06	S	2.11	2.14	2.18	2.19	2.17	2.16	2.17	2.16	2.13	2.08	2.03	2.05	2.05	2.01	1.98	1.96	1.98	2.01	2.08	2.09	2.08	2.08	1.96	2.19	2.08
Aug 14	S	1.98	1.93	1.94	1.98	2.00	1.96	1.94	1.93	1.92	1.91	1.91	1.90	1.90	1.90	1.90	1.90	1.90	1.91	1.94	1.98	2.03	2.07	S	1.90	2.07	1.94
Aug 15	2.13	2.11	2.18	2.26	2.26	2.26	2.24	2.17	2.09	1.99	1.93	1.91	C	C	C	C	C	1.93	1.94	1.96	1.96	2.04	S	2.08	1.91	2.26	2.08
Aug 16	2.10	2.12	2.12	2.20	2.29	2.34	2.28	2.23	2.20	2.12	2.04	2.00	1.96	1.97	2.01	2.02	1.98	1.97	1.96	1.95	1.96	S	1.96	1.98	1.95	2.34	2.08
Aug 17	1.99	2.01	1.99	1.99	2.01	2.01	2.04	1.98	1.96	1.93	1.92	1.92	1.92	1.92	1.92	1.91	1.92	1.93	1.94	1.97	S	2.06	2.14	2.25	1.91	2.25	1.98
Aug 18	2.22	2.34	2.25	2.26	2.40	2.34	2.45	2.35	2.24	2.11	2.09	2.05	1.97	1.96	1.95	1.96	1.97	1.96	1.96	S	2.02	2.06	2.07	2.16	1.95	2.45	2.14
Aug 19	2.25	2.24	2.22	2.23	2.24	2.21	2.20	2.16	2.10	2.06	2.04	2.03	1.99	1.96	1.95	1.96	1.98	1.98	S	1.99	2.01	2.03	2.03	2.04	1.95	2.25	2.08
Aug 20	2.05	2.07	2.08	2.09	2.10	2.10	2.12	2.16	2.18	2.18	2.16	2.15	2.15	2.14	2.10	2.09	2.08	S	2.09	2.10	2.14	2.22	2.31	2.31	2.05	2.31	2.14
Aug 21	2.02	2.01	2.02	2.03	2.03	2.04	2.03	2.04	2.03	2.02	2.03	2.02	2.01	2.01	2.00	1.99	S	1.99	1.99	1.99	2.02	2.07	2.10	2.14	1.99	2.14	2.03
Aug 22	2.20	2.26	2.44	2.32	2.40	2.47	2.51	2.52	2.25	2.10	2.08	2.05	2.03	2.01	2.01	S	2.01	2.01	1.99	2.00	2.08	2.18	2.26	2.30	1.99	2.52	2.19
Aug 23	2.29	2.31	2.40	2.41	2.46	2.56	2.54	2.67	2.49	2.26	2.15	2.07	2.03	1.98	S	1.99	1.97	2.01	2.05	2.06	2.05	2.06	2.06	2.14	1.97	2.67	2.22
Aug 24	2.18	2.33	2.29	2.22	2.27	2.34	2.37	2.29	2.19	2.19	2.15	2.14	2.08	S	1.96	2.00	2.02	2.02	2.03	2.09	2.15	2.15	2.19	2.33	2.00	2.37	2.18
Aug 25	2.45	2.44	2.39	2.49	2.45	2.41	2.37	2.36	2.20	2.17	2.12	2.03	S	1.96	1.97	1.95	1.95	1.96	1.98	2.04	2.10	2.10	2.11	2.10	1.95	2.49	2.18
Aug 26	2.11	2.11	2.12	2.18	2.20	2.19	2.21	2.24	2.19	2.13	2.08	S	1.97	1.94	1.94	1.94	1.94	1.94	1.95	1.98	2.09	2.17	2.41	2.43	1.94	2.43	2.11
Aug 27	2.53	2.64	2.67	2.70	2.73	2.73	2.72	2.34	2.03	2.01	S	1.96	1.95	1.94	1.95	1.98	1.98	1.97	1.97	1.95	1.98	1.99	1.97	1.95	1.94	2.73	2.20
Aug 28	1.94	1.95	1.95	1.94	1.94	1.95	1.96	1.96	1.95	S	1.93	1.93	1.93	1.93	1.92	1.93	1.93	1.94	1.94	1.97	2.01	2.05	2.06	1.92	1.92	2.06	1.95
Aug 29	2.09	2.10	2.10	2.09	2.07	2.07	2.10	2.12	S	2.02	1.96	1.94	1.95	1.94	1.93	1.93	1.93	1.93	1.95	1.95	2.00	2.07	2.09	2.07	1.93	2.12	2.02
Aug 30	2.09	2.10	2.16	2.19	2.18	2.22	2.20	S	2.18	2.09	1.94	1.92	1.91	1.89	1.89	1.90	1.90	1.91	1.92	1.94	1.97	2.02	2.10	2.10	1.89	2.22	2.03
Aug 31	1.96	2.02	2.02	1.99	1.98	2.00	S	2.01	1.93	1.92	1.90	1.89	1.89	1.89	1.89	1.89	1.89	1.90	1.91	2.03	2.11	2.11	2.13	2.17	1.89	2.17	1.98
Diurnal Maximum	2.53	2.64	2.67	2.70	2.73	2.73	2.72	2.67	2.49	2.26	2.16	2.15	2.15	2.14	2.10	2.13	2.11	2.08	2.09	2.10	2.15	2.22	2.41	2.43			
Diurnal Average	2.11	2.13	2.15	2.15	2.18	2.18	2.20	2.15	2.09	2.06	2.02	1.99	1.97	1.96	1.96	1.96	1.96	1.96	1.97	1.99	2.02	2.06	2.09	2.11			

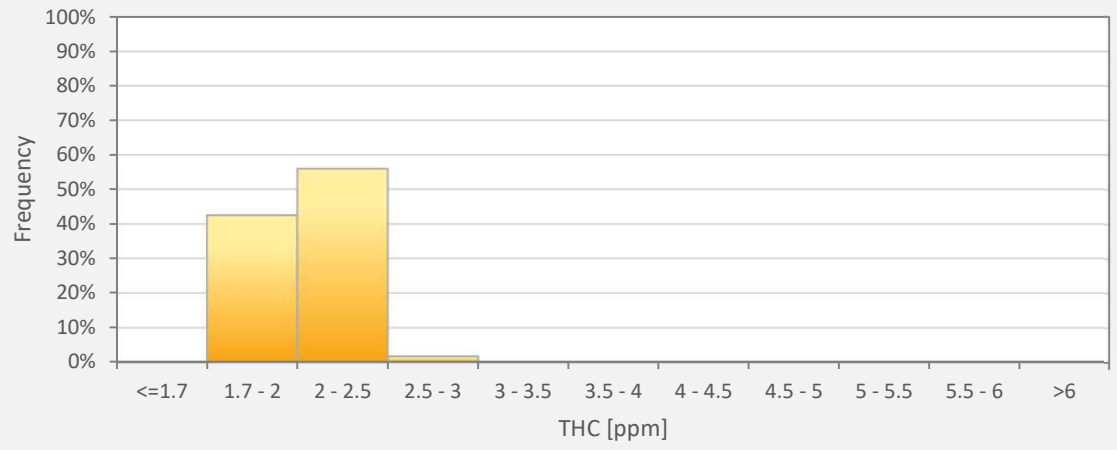
C Monthly Calibration	S Daily Zero-Span Check	Q Quality Assurance
K Collection Error	N No Data (Machine Not in Service)	Y Routine Maintenance
X InValid Data (Equipment Malfunction /Recovery)	NRM UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	P Power Failure

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 - Lac La Biche Station



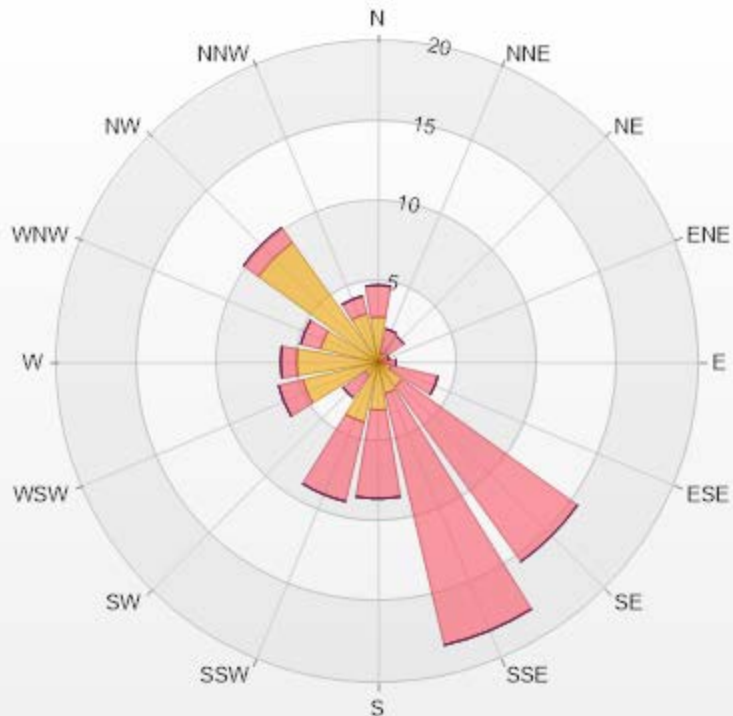
THC55[ppm] Histogram: Lac La Biche Monthly: 08-2022 1 Hr.



Classes	THC55
<=1.7	0.00%
1.7 - 2	42.43%
2 - 2.5	55.87%
2.5 - 3	1.70%
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: Lac La Biche Poll.: Lac La Biche-THC55[ppm] Monthly: 08-2022 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 95.03% Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-40	>40.0	Total
N	2.83	1.98	0	0	0	4.81
NNE	0.57	1.56	0	0	0	2.13
NE	0.71	1.27	0	0	0	1.98
ENE	0	0.71	0	0	0	0.71
E	0	1.13	0	0	0	1.13
ESE	0.85	2.97	0	0	0	3.82
SE	1.84	13.44	0	0	0	15.28
SSE	1.98	16.12	0	0	0	18.1
S	2.97	5.52	0	0	0	8.49
SSW	3.82	5.09	0	0	0	8.91
SW	0.99	1.7	0	0	0	2.69
WSW	4.81	1.56	0	0	0	6.37
W	5.09	0.99	0	0	0	6.08
WNW	3.68	1.27	0	0	0	4.95
NW	9.19	1.13	0	0	0	10.32
NNW	3.11	1.13	0	0	0	4.24
Summary	42.44	57.57	0	0	0	100



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Lac La Biche Station - August 2022

Summary of Hourly Averages

METHANE (CH4) in ppm

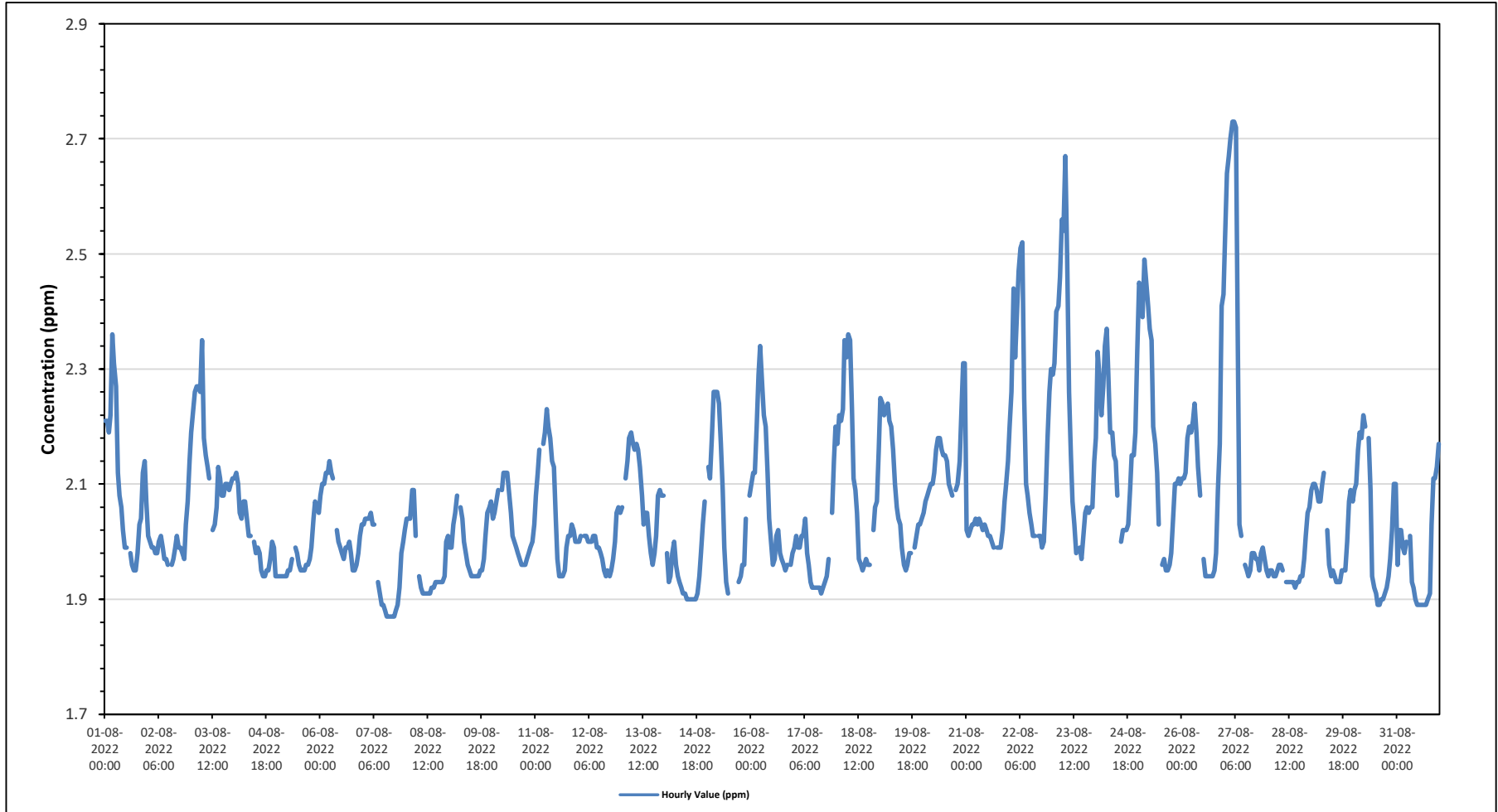
Maximum Hourly Value:	2.73 ppm on August 27 at hour 4	Hours in Service:	744
Maximum Daily Value:	2.22 ppm on August 23	Hours of Data:	707
Minimum Hourly Value:	1.87 ppm on August 7 at hour 13	Hours of Missing Data:	0
Minimum Daily Value:	1.94 ppm on August 14	Hours of Calibration:	37
Monthly Average:	2.06 ppm	Operational Uptime:	100.0

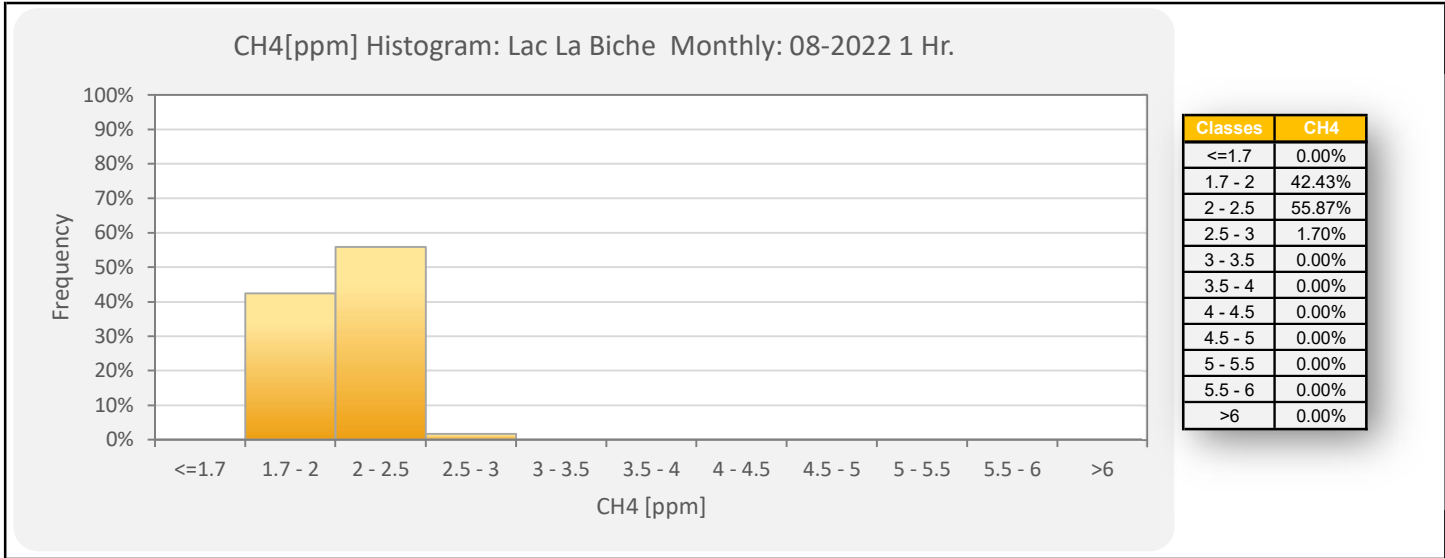
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23
Aug 1	2.21	2.21	2.19	2.22	2.36	2.31	2.27	2.12	2.08	2.06	2.02	1.99	1.99	S	1.98	1.96	1.95	1.95	1.98	2.03	2.04	2.12	2.14	2.07	1.95	2.36	2.10
Aug 2	2.01	2.00	1.99	1.99	1.98	1.98	2.00	2.01	1.99	1.97	1.97	1.96	S	1.96	1.97	1.99	2.01	1.99	1.99	1.98	1.97	2.03	2.07	2.14	1.96	2.14	2.00
Aug 3	2.19	2.23	2.26	2.27	2.27	2.26	2.35	2.18	2.15	2.13	2.11	S	2.02	2.03	2.06	2.13	2.11	2.08	2.08	2.10	2.10	2.09	2.10	2.11	2.02	2.35	2.15
Aug 4	2.11	2.12	2.10	2.05	2.04	2.07	2.07	2.04	2.01	2.01	S	2.00	1.98	1.99	1.98	1.95	1.94	1.94	1.95	1.95	1.97	2.00	1.99	1.94	1.94	2.12	2.01
Aug 5	1.94	1.94	1.94	1.94	1.94	1.94	1.95	1.95	1.97	S	1.99	1.98	1.96	1.95	1.95	1.95	1.96	1.96	1.97	1.99	2.04	2.07	2.06	2.05	1.94	2.07	1.97
Aug 6	2.08	2.10	2.10	2.12	2.12	2.14	2.12	2.11	S	2.02	2.00	1.99	1.98	1.97	1.99	1.99	2.00	1.98	1.95	1.95	1.96	1.98	2.01	2.03	1.95	2.14	2.03
Aug 7	2.03	2.04	2.04	2.04	2.05	2.03	2.03	S	1.93	1.91	1.89	1.89	1.88	1.87	1.87	1.87	1.87	1.87	1.88	1.89	1.92	1.98	2.00	2.02	1.87	2.05	1.95
Aug 8	2.04	2.04	2.04	2.09	2.09	2.01	S	1.94	1.92	1.91	1.91	1.91	1.91	1.91	1.92	1.92	1.93	1.93	1.93	1.93	1.93	1.94	2.00	2.01	1.91	2.09	1.96
Aug 9	1.99	1.99	2.03	2.05	2.08	S	2.06	2.04	2.00	1.98	1.96	1.95	1.94	1.94	1.94	1.94	1.95	1.95	1.95	1.97	2.01	2.05	2.06	2.07	1.94	2.08	2.00
Aug 10	2.04	2.05	2.07	2.09	S	2.09	2.12	2.12	2.12	2.09	2.05	2.01	2.00	1.99	1.98	1.97	1.96	1.96	1.96	1.97	1.98	1.99	2.00	2.03	1.96	2.12	2.03
Aug 11	2.08	2.12	2.16	S	2.17	2.19	2.23	2.20	2.18	2.14	2.13	2.04	1.97	1.94	1.94	1.94	1.95	1.99	2.01	2.01	2.03	2.02	2.00	2.00	1.94	2.23	2.06
Aug 12	2.00	2.01	S	2.01	2.01	2.00	2.00	2.00	2.01	2.01	1.99	1.99	1.98	1.97	1.95	1.94	1.95	1.94	1.95	1.97	2.00	2.05	2.06	2.05	1.94	2.06	1.99
Aug 13	2.06	S	2.11	2.14	2.18	2.19	2.17	2.16	2.17	2.16	2.13	2.08	2.03	2.05	2.05	2.01	1.98	1.96	1.98	2.01	2.08	2.09	2.08	2.08	1.96	2.19	2.08
Aug 14	S	1.98	1.93	1.94	1.98	2.00	1.96	1.94	1.93	1.92	1.91	1.91	1.90	1.90	1.90	1.90	1.90	1.90	1.91	1.94	1.98	2.03	2.07	S	1.90	2.07	1.94
Aug 15	2.13	2.11	2.18	2.26	2.26	2.26	2.24	2.17	2.09	1.99	1.93	1.91	C	C	C	C	C	1.93	1.94	1.96	1.96	2.04	S	2.08	1.91	2.26	2.08
Aug 16	2.10	2.12	2.12	2.20	2.29	2.34	2.27	2.22	2.20	2.12	2.04	2.00	1.96	1.97	2.01	2.02	1.98	1.97	1.96	1.95	1.96	S	1.96	1.98	1.95	2.34	2.08
Aug 17	1.99	2.01	1.99	1.99	2.01	2.01	2.04	1.98	1.96	1.93	1.92	1.92	1.92	1.92	1.92	1.91	1.92	1.93	1.94	1.97	S	2.05	2.14	2.20	1.91	2.20	1.98
Aug 18	2.17	2.22	2.21	2.23	2.35	2.32	2.36	2.35	2.23	2.11	2.09	2.05	1.97	1.96	1.95	1.96	1.97	1.96	1.96	S	2.02	2.06	2.07	2.16	1.95	2.36	2.12
Aug 19	2.25	2.24	2.22	2.23	2.24	2.21	2.20	2.16	2.10	2.06	2.04	2.03	1.99	1.96	1.95	1.96	1.98	1.98	S	1.99	2.01	2.03	2.03	2.04	1.95	2.25	2.08
Aug 20	2.05	2.07	2.08	2.09	2.10	2.10	2.12	2.16	2.18	2.18	2.16	2.15	2.15	2.14	2.10	2.09	2.08	S	2.09	2.10	2.14	2.22	2.31	2.31	2.05	2.31	2.14
Aug 21	2.02	2.01	2.02	2.03	2.03	2.04	2.03	2.04	2.03	2.02	2.03	2.02	2.01	2.01	2.00	1.99	S	1.99	1.99	1.99	2.02	2.07	2.10	2.14	1.99	2.14	2.03
Aug 22	2.20	2.26	2.44	2.32	2.40	2.47	2.51	2.52	2.25	2.10	2.08	2.05	2.03	2.01	2.01	S	2.01	2.01	1.99	2.00	2.08	2.18	2.26	2.30	1.99	2.52	2.19
Aug 23	2.29	2.31	2.40	2.41	2.46	2.56	2.54	2.67	2.49	2.26	2.15	2.07	2.03	1.98	S	1.99	1.97	2.01	2.05	2.06	2.05	2.06	2.06	2.14	1.97	2.67	2.22
Aug 24	2.18	2.33	2.29	2.22	2.27	2.34	2.37	2.29	2.19	2.19	2.15	2.14	2.08	S	1.96	2.00	2.02	2.02	2.03	2.09	2.15	2.15	2.19	2.33	2.00	2.37	2.18
Aug 25	2.45	2.44	2.39	2.49	2.45	2.41	2.37	2.35	2.20	2.17	2.12	2.03	S	1.96	1.97	1.95	1.95	1.96	1.98	2.04	2.10	2.10	2.11	2.10	1.95	2.49	2.18
Aug 26	2.11	2.11	2.12	2.18	2.20	2.19	2.21	2.24	2.19	2.13	2.08	S	1.97	1.94	1.94	1.94	1.94	1.94	1.95	1.98	2.09	2.17	2.41	2.43	1.94	2.43	2.11
Aug 27	2.53	2.64	2.67	2.70	2.73	2.73	2.72	2.34	2.03	2.01	S	1.96	1.95	1.94	1.95	1.98	1.98	1.97	1.97	1.95	1.98	1.99	1.97	1.95	1.94	2.73	2.20
Aug 28	1.94	1.95	1.95	1.94	1.94	1.95	1.96	1.96	1.95	S	1.93	1.93	1.93	1.93	1.92	1.93	1.93	1.94	1.94	1.97	2.01	2.05	2.06	1.92	1.92	2.06	1.95
Aug 29	2.09	2.10	2.10	2.09	2.07	2.07	2.10	2.12	S	2.02	1.96	1.94	1.95	1.94	1.93	1.93	1.93	1.93	1.95	1.95	2.00	2.07	2.09	2.07	1.93	2.12	2.02
Aug 30	2.09	2.10	2.16	2.19	2.18	2.22	2.20	S	2.18	2.09	1.94	1.92	1.91	1.89	1.89	1.90	1.90	1.91	1.92	1.94	1.97	2.02	2.10	2.10	1.89	2.22	2.03
Aug 31	1.96	2.02	2.02	1.99	1.98	2.00	S	2.01	1.93	1.92	1.90	1.89	1.89	1.89	1.89	1.89	1.89	1.90	1.91	2.03	2.11	2.11	2.13	2.17	1.89	2.17	1.98
Diurnal Maximum	2.53	2.64	2.67	2.70	2.73	2.73	2.72	2.67	2.49	2.26	2.16	2.15	2.15	2.14	2.10	2.13	2.11	2.08	2.09	2.10	2.15	2.22	2.41	2.43			
Diurnal Average	2.11	2.13	2.14	2.15	2.17	2.18	2.19	2.15	2.09	2.06	2.02	1.99	1.97	1.96	1.96	1.96	1.96	1.96	1.97	1.99	2.02	2.06	2.09	2.11			

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

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.

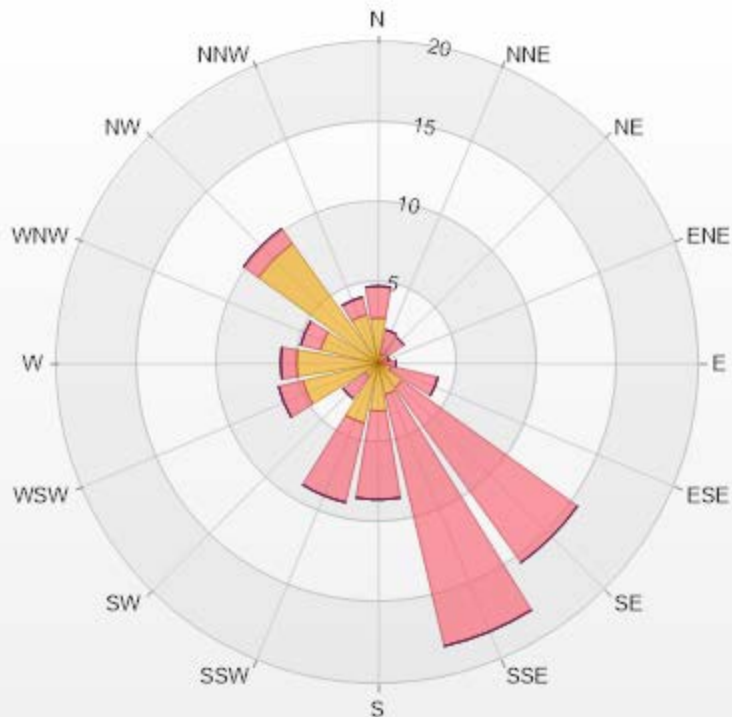
Timeseries Chart of Hourly Average for CH4 - Lac La Biche Station





Wind: Lac La Biche Poll.: Lac La Biche-CH4[ppm] Monthly: 08-2022 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 95.03% Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-20	>20.0	Total
N	2.83	1.98	0	0	0	4.81
NNE	0.57	1.56	0	0	0	2.13
NE	0.71	1.27	0	0	0	1.98
ENE	0	0.71	0	0	0	0.71
E	0	1.13	0	0	0	1.13
ESE	0.85	2.97	0	0	0	3.82
SE	1.84	13.44	0	0	0	15.28
SSE	1.98	16.12	0	0	0	18.1
S	2.97	5.52	0	0	0	8.49
SSW	3.82	5.09	0	0	0	8.91
SW	0.99	1.7	0	0	0	2.69
WSW	4.81	1.56	0	0	0	6.37
W	5.09	0.99	0	0	0	6.08
WNW	3.68	1.27	0	0	0	4.95
NW	9.19	1.13	0	0	0	10.32
NNW	3.11	1.13	0	0	0	4.24
Summary	42.44	57.57	0	0	0	100



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% Icon Classes (ppm)

42

0-2

58

2-5

0

5-10

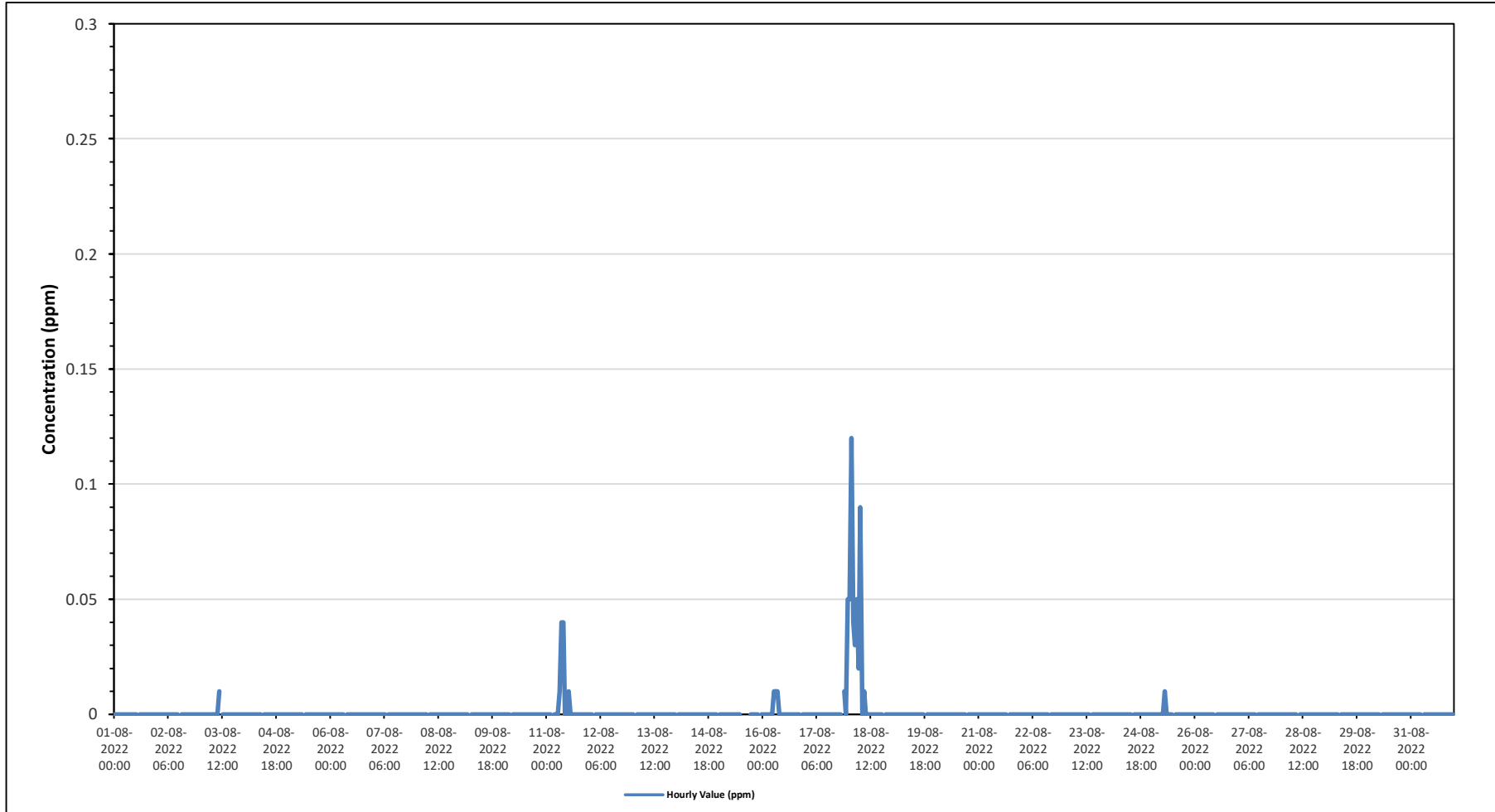
0

10-20

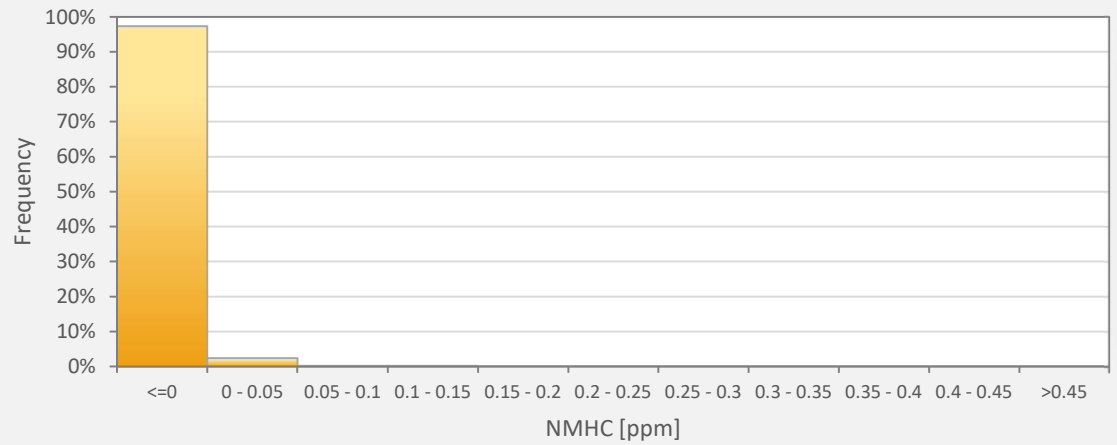
0

>20.0

Timeseries Chart of Hourly Average for NMHC - Lac La Biche Station



NMHC[ppm] Histogram: Lac La Biche Monthly: 08-2022 1 Hr.

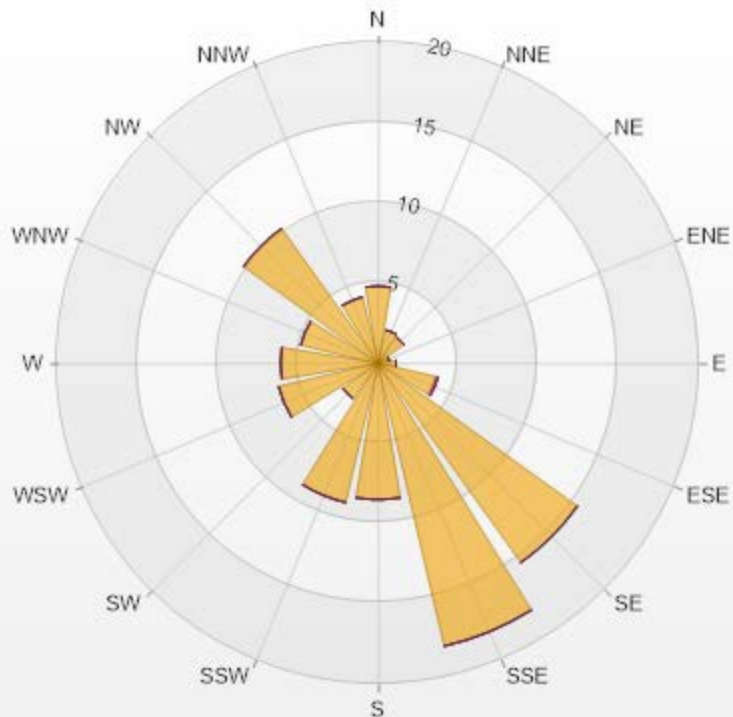


Classes	NMHC
<=0	97.31%
0 - 0.05	2.40%
0.05 - 0.1	0.14%
0.1 - 0.15	0.14%
0.15 - 0.2	0.00%
0.2 - 0.25	0.00%
0.25 - 0.3	0.00%
0.3 - 0.35	0.00%
0.35 - 0.4	0.00%
0.4 - 0.45	0.00%
>0.45	0.00%

Wind: Lac La Biche Poll.: Lac La Biche-NMHC[ppm] Monthly: 08-2022 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.

Calm: 0.00% Valid Data: 95.03% Calm Avg: 0.00 [ppm]

Direction	0-0.1	0.1-0.3	0.3-1	1-2	>2.0	Total
N	4.81	0	0	0	0	4.81
NNE	2.12	0	0	0	0	2.12
NE	1.98	0	0	0	0	1.98
ENE	0.71	0	0	0	0	0.71
E	1.13	0	0	0	0	1.13
ESE	3.68	0.14	0	0	0	3.82
SE	15.28	0	0	0	0	15.28
SSE	18.1	0	0	0	0	18.1
S	8.49	0	0	0	0	8.49
SSW	8.91	0	0	0	0	8.91
SW	2.69	0	0	0	0	2.69
WSW	6.36	0	0	0	0	6.36
W	6.08	0	0	0	0	6.08
WNW	4.95	0	0	0	0	4.95
NW	10.33	0	0	0	0	10.33
NNW	4.24	0	0	0	0	4.24
Summary	100	0.14	0	0	0	100



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% Icon Classes (ppm)

100  0-0.1

 0.1-0.3

0  0.3-1

0  1-2

0  >2.0



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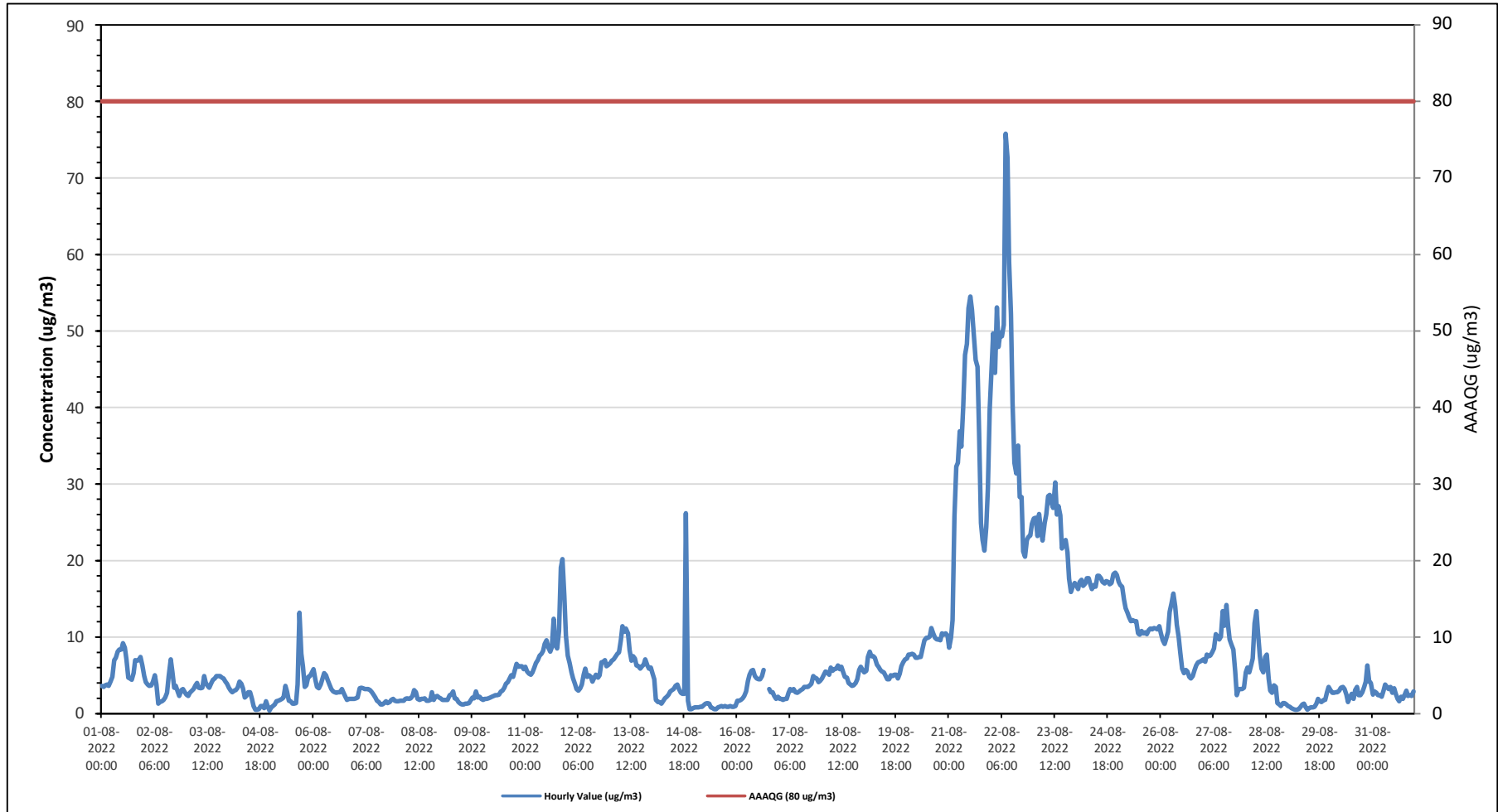
Lac La Biche Station - August 2022

Summary of Hourly Averages

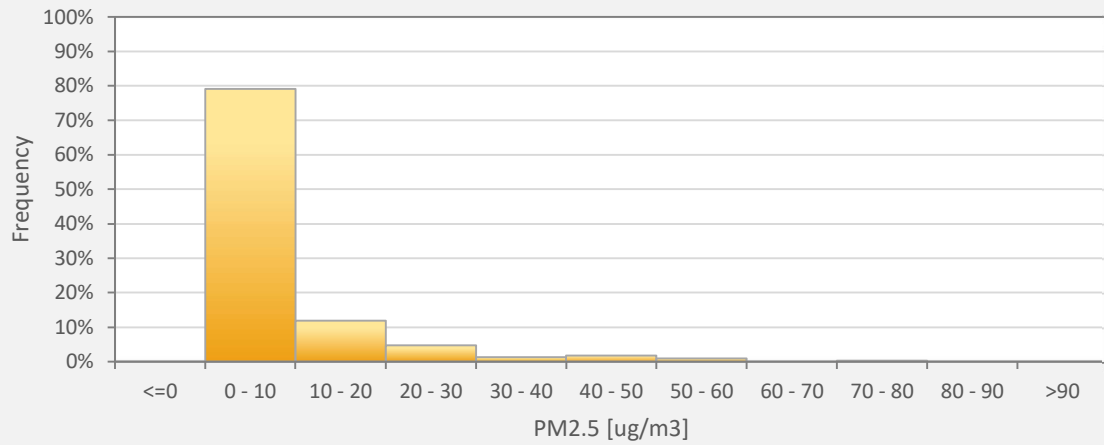
PARTICULATE MATTER 2.5 (PM_{2.5}) in µg/m³

Alberta Ambient Air Quality Guideline (AAAQG): 1-Hour 80 µg/m ³ , Alberta Ambient Air Quality Objective (AAAQO): 24-Hour 29 µg/m ³																															
Number of 1-Hour Exceedances: 0										Number of 24-Hour Exceedances: 2																					
Maximum Hourly Value: 76 µg/m ³ on August 22 at hour 8										Hours in Service: 744																					
Maximum Daily Value: 40.9 µg/m ³ on August 22										Hours of Data: 742																					
Minimum Hourly Value: 0 µg/m ³ on August 4 at hour 23										Hours of Missing Data: 0																					
Minimum Daily Value: 1 µg/m ³ on August 15										Hours of Calibration: 2																					
Monthly Average: 7.8 µg/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				
Aug 1	4	4	4	4	4	4	5	7	7	8	8	8	9	9	7	5	5	4	5	7	7	7	7	6	4	9	6.0				
Aug 2	5	4	4	4	4	4	5	4	1	2	2	2	2	3	5	7	6	3	4	3	2	3	3	3	1	7	3.5				
Aug 3	3	2	3	3	3	4	4	3	3	3	5	4	4	3	4	4	5	5	5	5	5	4	4	2	5	3.9					
Aug 4	3	3	3	3	3	3	4	4	3	2	2	3	3	2	1	1	1	1	1	1	1	2	1	0	0	4	2.1				
Aug 5	1	1	1	2	2	2	2	2	4	3	2	2	1	1	1	4	13	8	6	4	4	5	5	1	13	3.3					
Aug 6	6	4	4	3	4	5	5	5	4	4	3	3	3	3	3	3	3	2	2	2	2	2	2	2	2	6	3.3				
Aug 7	2	2	3	3	3	3	3	3	3	3	3	2	2	2	1	1	1	2	1	2	2	2	2	2	1	3	2.2				
Aug 8	2	2	2	2	2	2	2	2	2	3	3	2	2	2	2	2	2	2	2	3	2	2	2	2	2	3	2.0				
Aug 9	2	2	2	2	2	2	3	3	2	2	2	1	1	1	1	1	1	2	2	2	3	2	2	2	1	3	1.9				
Aug 10	2	2	2	2	2	2	2	2	2	3	3	3	3	4	4	5	5	5	6	7	6	6	6	6	2	7	3.7				
Aug 11	6	6	5	5	5	6	7	7	8	8	8	9	10	9	8	9	12	9	9	11	19	20	15	10	5	20	9.2				
Aug 12	8	7	5	5	4	3	3	4	5	6	5	5	5	4	5	5	5	5	5	7	7	7	6	6	3	8	5.2				
Aug 13	7	7	7	7	8	8	10	11	11	11	11	8	7	8	7	6	6	6	6	6	7	6	6	6	6	6	11	7.6			
Aug 14	5	5	2	2	2	1	2	2	2	3	3	3	3	4	4	3	3	3	3	26	2	1	1	1	1	26	3.4				
Aug 15	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				
Aug 16	2	2	2	2	2	3	4	5	6	6	5	5	5	5	6	C	C	3	3	3	2	2	2	2	2	6	3.5				
Aug 17	2	2	2	2	2	3	3	3	3	3	3	3	3	3	4	4	4	4	4	5	5	5	4	4	2	5	3.2				
Aug 18	5	5	6	5	5	6	6	6	6	6	6	6	5	5	4	4	4	4	4	4	5	6	6	6	4	6	5.1				
Aug 19	5	6	7	8	8	8	7	6	6	6	6	5	5	5	5	5	5	5	5	5	6	7	7	5	8	5.9					
Aug 20	7	8	8	8	8	7	7	7	7	9	10	10	10	10	11	11	10	10	10	10	10	11	10	11	7	11	9.1				
Aug 21	9	10	12	26	32	33	37	35	40	47	48	53	55	53	50	46	45	37	25	23	21	24	29	40	9	55	34.5				
Aug 22	44	50	45	53	48	50	49	51	76	73	59	52	41	33	31	35	28	28	21	21	23	23	25	21	76	40.9					
Aug 23	26	26	23	26	24	23	25	26	28	29	28	27	30	26	27	26	22	22	23	21	18	16	17	17	16	30	23.9				
Aug 24	17	16	17	18	17	18	18	17	16	17	17	18	18	18	17	17	17	17	17	17	17	18	18	18	16	18	17.3				
Aug 25	17	17	17	15	14	13	13	12	12	12	11	10	11	11	11	10	11	11	11	11	11	11	11	11	10	17	12.3				
Aug 26	11	10	9	10	11	13	14	16	14	12	10	8	6	5	6	6	5	5	6	6	7	7	7	5	16	8.6					
Aug 27	7	7	8	8	8	8	9	10	10	10	10	13	12	14	12	10	9	8	6	2	3	3	3	2	14	8.0					
Aug 28	5	6	5	6	7	12	13	11	8	6	5	7	8	5	3	3	4	4	1	1	1	1	1	1	13	5.2					
Aug 29	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	3	4	1	4	1.2					
Aug 30	3	3	3	3	3	3	3	4	3	3	2	2	3	2	3	4	2	2	3	4	4	6	4	2	6	3.1					
Aug 31	3	3	3	2	2	2	3	4	4	3	3	3	3	2	2	2	2	2	3	2	2	2	3	2	4	2.7					
Diurnal Maximum	44	50	45	53	48	50	49	51	76	73	59	53	55	53	50	46	45	37	25	26	23	24	29	40							
Diurnal Average	7.0	7.1	6.9	7.7	7.7	8.1	8.7	8.9	9.7	9.6	9.1	9.0	8.7	8.1	7.9	7.9	7.2	6.4	7.1	6.6	6.9	6.9	7.1								
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 PM2.5 - Lac La Biche Station



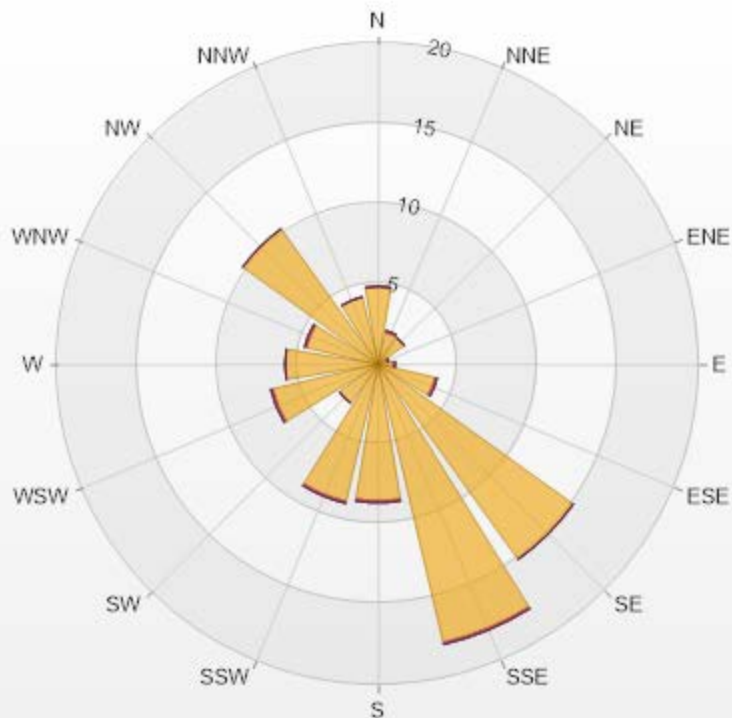
PM2.5[ug/m3(L)] Histogram: Lac La Biche Monthly: 08-2022 1 Hr.



Classes	PM2.5
<=0	0.00%
0 - 10	79.11%
10 - 20	11.86%
20 - 30	4.72%
30 - 40	1.35%
40 - 50	1.75%
50 - 60	0.94%
60 - 70	0.00%
70 - 80	0.27%
80 - 90	0.00%
>90	0.00%

Wind: Lac La Biche Poll.: Lac La Biche-PM2.5[ug/m3(L)] Monthly: 08-2022 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 99.73% Calm Avg: 0.00 [ug/m3(L)]

Direction	0-50	50-80	80-120	120-240	>240.0	Total
N	4.85	0	0	0	0	4.85
NNE	2.02	0.13	0	0	0	2.15
NE	2.02	0	0	0	0	2.02
ENE	0.54	0.13	0	0	0	0.67
E	0.94	0.13	0	0	0	1.07
ESE	3.64	0.13	0	0	0	3.77
SE	14.96	0	0	0	0	14.96
SSE	17.79	0.13	0	0	0	17.92
S	8.49	0.13	0	0	0	8.62
SSW	8.76	0.13	0	0	0	8.89
SW	2.96	0	0	0	0	2.96
WSW	6.74	0.13	0	0	0	6.87
W	5.8	0	0	0	0	5.8
WNW	4.58	0.13	0	0	0	4.71
NW	10.38	0	0	0	0	10.38
NNW	4.31	0	0	0	0	4.31
Summary	98.78	1.17	0	0	0	100



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% Icon Classes (ug/m3(L))	99	0-50	1	50-80	0	80-120	0	120-240	0	>240.0
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LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Lac La Biche Station - August 2022

Summary of Hourly Averages

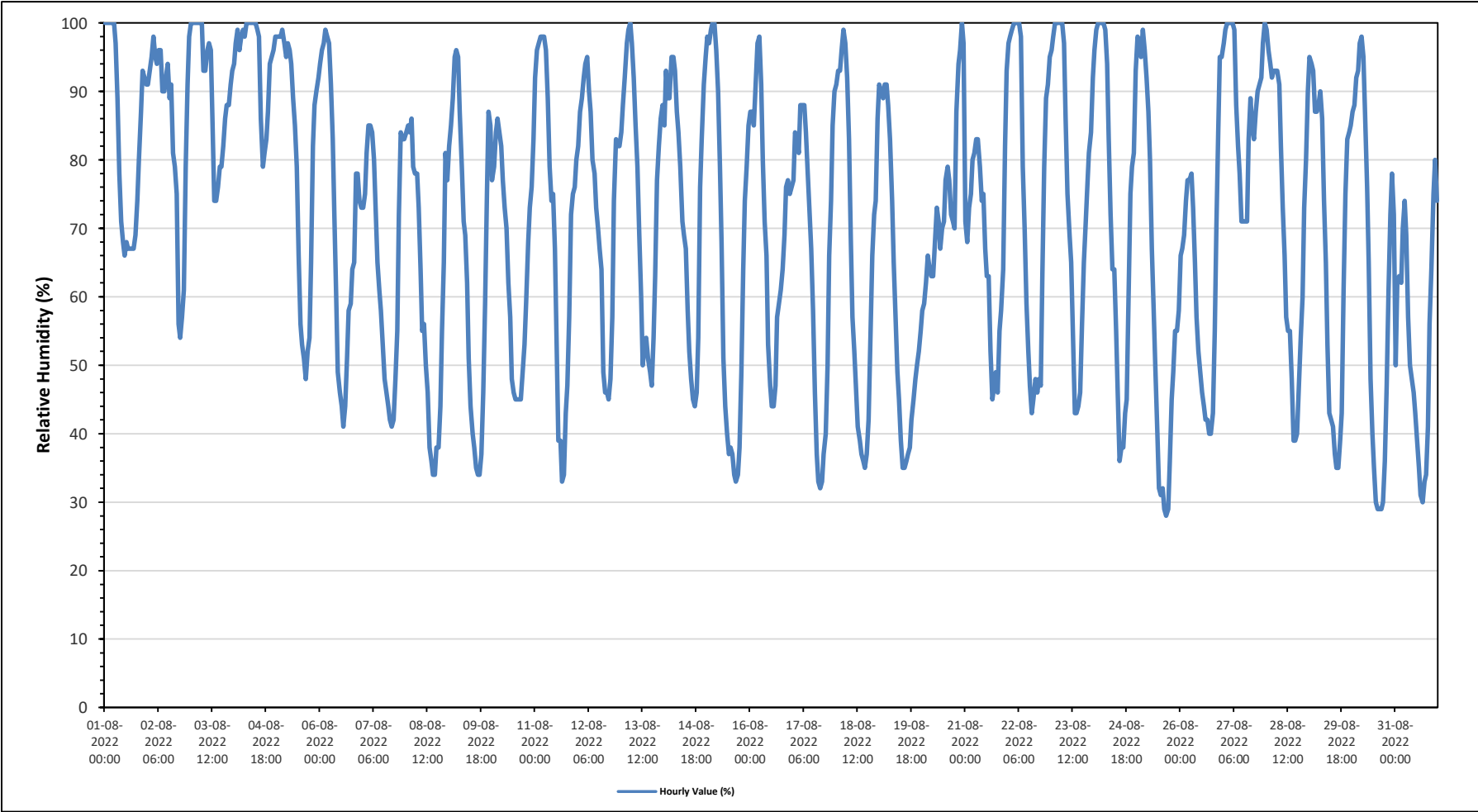
RELATIVE HUMIDITY (RH) in %

Maximum Hourly Value:	100 %	on August 1 at hour 0	Hours in Service:	744
Maximum Daily Value:	94.9 %	on August 4	Hours of Data:	744
Minimum Hourly Value:	28 %	on August 25 at hour 16	Hours of Missing Data:	0
Minimum Daily Value:	53.6 %	on August 31	Hours of Calibration:	0
Monthly Average:	71.4 %		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
Aug 1	100	100	100	100	100	100	97	89	78	71	68	66	68	67	67	67	69	74	80	87	93	92	91	66	100	83.0	
Aug 2	91	93	95	98	95	94	96	96	90	90	92	94	89	91	81	79	75	56	54	57	61	79	91	98	54	98	84.8
Aug 3	100	100	100	100	100	100	100	93	93	96	97	96	86	74	74	76	79	79	82	86	88	88	91	93	74	100	90.5
Aug 4	94	97	99	96	98	99	98	100	100	100	100	100	100	99	98	86	79	81	83	87	94	95	96	98	79	100	94.9
Aug 5	98	98	98	99	97	95	97	96	94	89	85	79	66	56	53	51	48	52	54	65	82	88	90	92	48	99	80.1
Aug 6	94	96	97	99	98	97	91	83	72	60	49	46	44	41	44	51	58	59	64	65	78	78	74	73	41	99	71.3
Aug 7	73	75	81	85	85	84	80	73	65	61	58	53	48	46	44	42	41	42	48	55	72	84	83	83	41	85	65.0
Aug 8	84	85	84	86	79	78	73	64	55	56	50	46	38	36	34	34	38	38	44	55	65	81	77	34	86	60.8	
Aug 9	82	85	89	95	96	95	87	79	71	69	62	51	44	40	38	35	34	34	37	46	59	75	87	85	34	96	65.6
Aug 10	77	79	84	86	84	82	77	73	70	62	57	48	46	45	45	45	49	53	59	68	73	76	83	45	86	65.3	
Aug 11	92	96	97	98	98	98	96	89	79	74	75	67	52	39	39	33	34	43	47	57	72	75	76	80	33	98	71.1
Aug 12	82	87	89	92	94	95	90	87	80	78	73	70	67	64	49	46	46	45	48	57	74	83	82	82	45	95	73.3
Aug 13	84	88	92	97	99	100	97	92	85	79	69	60	50	53	54	51	49	47	54	63	77	82	86	88	47	100	74.8
Aug 14	85	93	89	89	95	95	93	87	84	79	71	69	67	58	52	48	45	44	46	54	76	83	91	95	44	95	74.5
Aug 15	98	97	99	100	100	96	90	79	68	51	44	40	37	38	37	34	33	34	38	49	64	74	79	85	33	100	65.2
Aug 16	87	87	85	91	97	98	91	80	71	66	53	47	44	44	47	57	59	61	64	69	76	77	75	76	44	98	70.9
Aug 17	77	84	83	81	88	88	88	84	78	73	67	58	46	37	33	32	33	37	40	50	66	74	85	90	32	90	65.5
Aug 18	91	93	93	96	99	97	92	83	68	57	52	47	41	39	37	36	35	37	42	54	66	72	74	86	35	99	66.1
Aug 19	91	90	89	91	91	88	83	74	65	57	49	45	39	35	35	36	37	38	42	45	48	50	52	55	35	91	59.4
Aug 20	58	59	62	66	64	63	63	68	73	71	67	70	71	77	79	77	72	71	70	87	94	96	100	97	58	100	74.0
Aug 21	71	68	73	75	80	81	83	83	79	74	75	67	63	63	52	45	47	49	46	55	58	64	82	93	45	93	67.8
Aug 22	97	98	99	100	100	100	100	98	79	70	59	52	47	43	45	48	46	48	47	63	79	89	91	95	43	100	74.7
Aug 23	96	98	100	100	100	100	100	97	86	75	69	65	54	43	43	44	46	56	65	70	76	81	84	92	43	100	76.7
Aug 24	96	99	100	100	100	100	99	94	83	72	64	64	55	46	36	38	38	43	45	60	75	79	81	93	36	100	73.3
Aug 25	98	97	95	99	96	92	87	80	67	58	50	40	32	31	32	29	28	29	36	45	49	55	55	58	28	99	59.9
Aug 26	66	67	69	74	77	77	78	73	65	57	52	49	46	44	42	42	40	40	43	55	70	84	95	95	40	95	62.5
Aug 27	97	99	100	100	100	100	99	88	82	78	71	71	71	83	89	85	83	87	90	91	92	97	100	71	100	88.5	
Aug 28	99	96	94	92	93	93	91	82	73	66	57	55	55	48	39	39	40	46	54	60	73	80	90	39	99	71.2	
Aug 29	95	94	93	87	87	88	90	86	74	65	53	43	42	41	37	35	35	39	43	61	75	83	84	85	35	95	67.3
Aug 30	87	88	92	93	97	98	95	87	76	65	48	40	35	30	29	29	29	30	36	47	61	72	78	72	29	98	63.1
Aug 31	50	62	63	62	70	74	69	57	50	48	46	43	39	35	31	30	33	34	41	56	64	75	80	74	30	80	53.6
Diurnal Maximum	100	100	100	100	100	100	100	100	100	100	100	100	100	99	98	89	85	83	87	90	94	96	100	100			
Diurnal Average	86.8	88.6	89.8	91.2	92.2	91.8	89.6	84.3	76.5	70.1	64.4	59.6	54.5	51.1	49.0	47.9	47.4	48.6	52.0	60.8	71.5	78.4	82.8	85.6			
C	Monthly Calibration		S	Daily Zero-Span Check		Q	Quality Assurance																				
K	Collection Error		N	No Data (Machine Not in Service)		Y	Routine Maintenance																				
X	Invalid Data (Equipment Malfunction /Recovery)		NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)		P	Power Failure																				

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 - Lac La Biche Station





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Lac La Biche Station - August 2022

Summary of Hourly Averages

BAROMETRIC PRESSURE (BP) in millibar

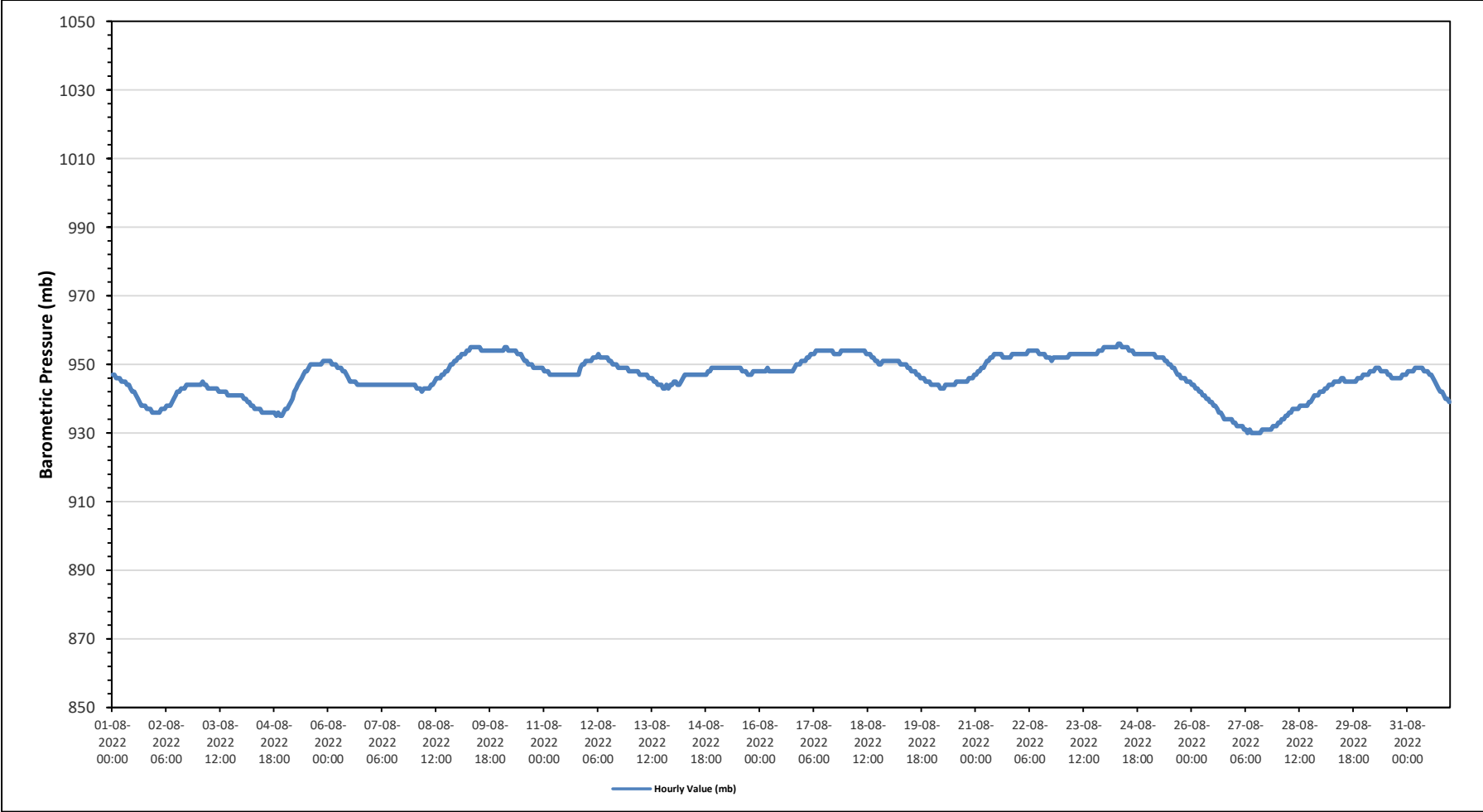
Maximum Hourly Value:	956 mb on August 24 at hour 7	Hours in Service:	744
Maximum Daily Value:	954 mb on August 24	Hours of Data:	744
Minimum Hourly Value:	930 mb on August 27 at hour 7	Hours of Missing Data:	0
Minimum Daily Value:	931 mb on August 27	Hours of Calibration:	0
Monthly Average:	947 mb	Operational 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		
Aug 1	947	947	946	946	946	945	945	945	944	944	943	942	942	941	940	939	938	938	938	937	937	936	936	936	936	947	942		
Aug 2	936	936	936	937	937	937	938	938	938	938	939	940	941	942	942	943	943	943	944	944	944	944	944	944	944	944	941	941	
Aug 3	944	944	945	944	944	943	943	943	943	943	943	942	942	942	942	942	941	941	941	941	941	941	941	941	941	941	945	942	
Aug 4	941	940	940	939	939	938	938	937	937	937	937	936	936	936	936	936	936	936	936	935	936	935	935	935	935	935	941	937	
Aug 5	937	937	938	939	940	942	943	944	945	946	947	948	948	949	950	950	950	950	950	950	950	951	951	951	951	951	951	946	946
Aug 6	951	951	950	950	950	949	949	949	948	948	947	946	945	945	945	944	944	944	944	944	944	944	944	944	944	944	944	947	947
Aug 7	944	944	944	944	944	944	944	944	944	944	944	944	944	944	944	944	944	944	944	944	944	944	944	944	944	944	944	944	944
Aug 8	944	943	943	943	942	943	943	943	943	944	944	945	946	946	946	947	947	948	948	949	950	950	951	951	951	951	951	946	946
Aug 9	952	952	953	953	953	954	954	955	955	955	955	955	955	954	954	954	954	954	954	954	954	954	954	954	954	954	954	954	954
Aug 10	954	954	955	955	954	954	954	954	954	953	953	953	952	951	951	950	950	950	949	949	949	949	949	949	949	949	949	949	949
Aug 11	948	948	948	947	947	947	947	947	947	947	947	947	947	947	947	947	947	947	947	947	947	949	950	950	951	947	948	948	
Aug 12	951	951	951	952	952	952	953	952	952	952	952	952	951	951	950	950	950	949	949	949	949	949	949	949	949	949	949	948	948
Aug 13	948	948	948	948	948	947	947	947	947	947	946	946	946	945	945	944	944	944	943	943	944	943	944	944	944	944	944	944	946
Aug 14	945	945	944	944	945	946	947	947	947	947	947	947	947	947	947	947	947	947	947	948	948	949	949	949	949	949	949	947	947
Aug 15	949	949	949	949	949	949	949	949	949	949	949	949	949	949	949	948	948	948	947	947	947	948	948	948	948	948	948	948	948
Aug 16	948	948	948	948	949	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948	949	950	950	950	951	948	948	948	
Aug 17	951	951	952	952	953	953	953	954	954	954	954	954	954	954	954	954	954	953	953	953	953	953	954	954	954	954	954	954	954
Aug 18	954	954	954	954	954	954	954	954	954	954	954	953	953	953	953	952	952	951	951	950	950	951	951	951	951	951	951	951	953
Aug 19	951	951	951	951	951	951	950	950	950	950	949	949	948	948	948	947	947	946	946	946	945	945	945	944	944	944	944	944	948
Aug 20	944	944	944	944	943	943	943	944	944	944	944	944	944	945	945	945	945	945	945	945	945	946	946	946	947	943	947	945	945
Aug 21	947	948	948	949	949	950	951	951	952	952	953	953	953	953	953	952	952	952	952	952	952	953	953	953	953	947	953	951	951
Aug 22	953	953	953	953	953	954	954	954	954	954	954	953	953	953	953	952	952	952	952	951	952	952	952	952	951	954	953	953	
Aug 23	952	952	952	952	953	953	953	953	953	953	953	953	953	953	953	953	953	953	953	953	953	954	954	954	955	952	955	953	953
Aug 24	955	955	955	955	955	955	955	956	956	955	955	955	955	954	954	954	953	953	953	953	953	953	953	953	953	953	953	953	954
Aug 25	953	953	953	953	952	952	952	952	952	951	951	950	950	949	949	948	947	947	946	946	946	945	945	945	945	945	945	949	949
Aug 26	944	944	943	943	942	942	941	941	940	940	939	939	938	938	937	936	936	935	934	934	934	934	934	934	933	933	944	938	938
Aug 27	933	932	932	932	932	931	931	930	931	930	930	930	930	930	930	931	931	931	931	931	931	932	932	932	932	930	933	931	931
Aug 28	933	933	934	934	935	935	936	936	937	937	937	937	938	938	938	938	938	939	939	940	941	941	941	942	933	942	937	937	
Aug 29	942	942	943	943	944	944	944	945	945	945	945	946	946	945	945	945	945	945	945	945	946	946	946	946	947	942	947	945	945
Aug 30	947	947	947	948	948	948	949	949	949	948	948	948	948	947	947	946	946	946	946	946	946	947	947	947	946	949	947	947	947
Aug 31	948	948	948	948	949	949	949	949	948	948	948	947	947	947	946	945	944	943	942	942	941	940	940	939	939	949	949	946	946
Diurnal Maximum	955	955	955	955	955	955	955	956	956	955	955	955	955	954	954	954	954	954	954	954	954	954	954	955	955	955	955	955	955
Diurnal Average	947	947	947	947	947	947	947	947	947	947	947	947	947	947	946	946	946	946	946	946	946	946	946	946	946	946	946	946	946

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

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 - Lac La Biche Station





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Lac La Biche Station - August 2022

Summary of Hourly Averages

AMBIENT TEMPERATURE (AT) in Degree Celsius

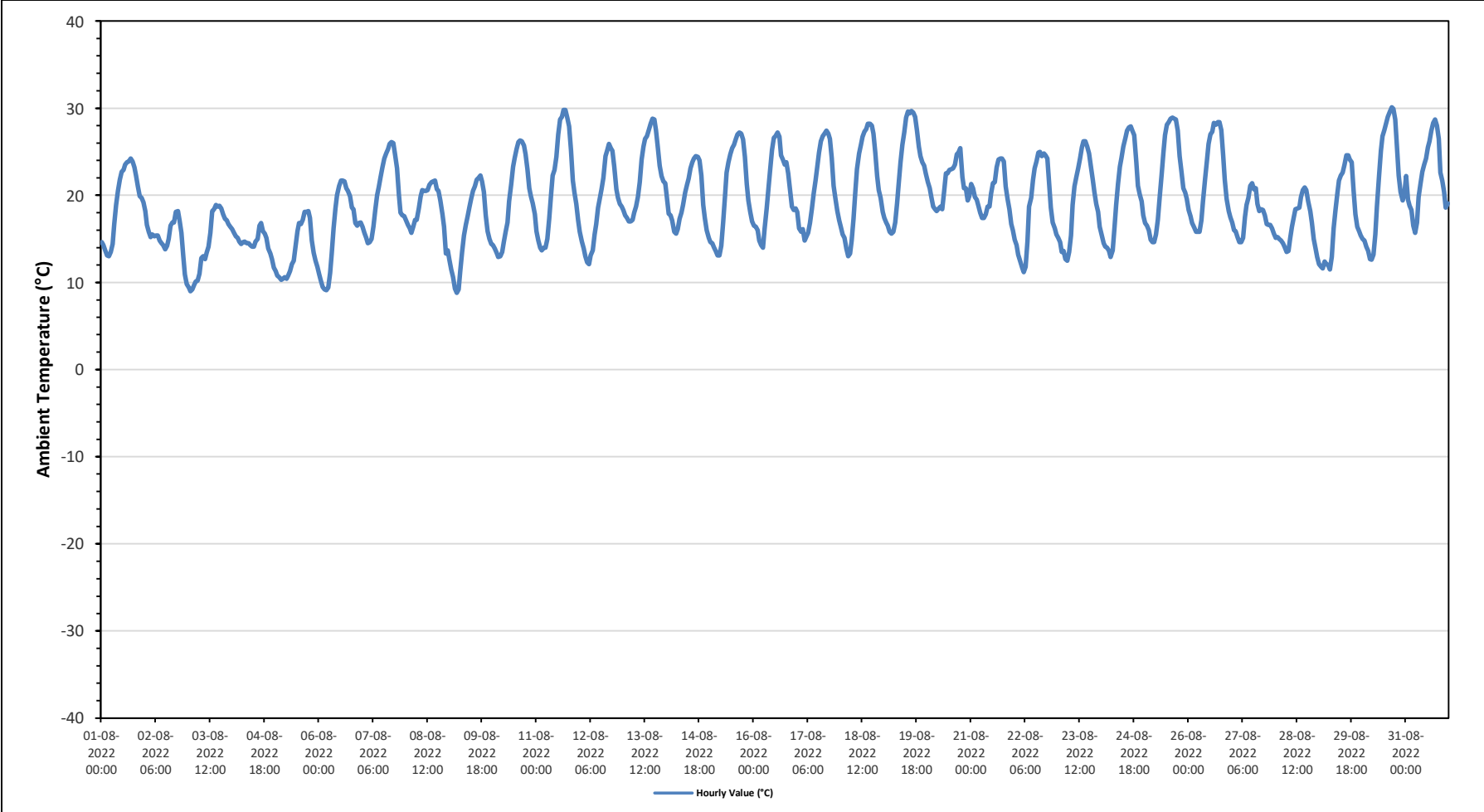
Maximum Hourly Value:	30.1 °C	on August 30 at hour 16	Hours in Service:	744
Maximum Daily Value:	23.1 °C	on August 19	Hours of Data:	744
Minimum Hourly Value:	8.8 °C	on August 9 at hour 4	Hours of Missing Data:	0
Minimum Daily Value:	13.6 °C	on August 5	Hours of Calibration:	0
Monthly Average:	19.2 °C		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
Aug 1	14.6	14.3	13.7	13.1	13	13.5	14.4	16.7	18.9	20.5	21.8	22.7	22.9	23.5	23.8	23.9	24.2	23.9	23.2	22.3	21	19.9	19.7	19.2	13.0	24.2	19.4
Aug 2	18.2	16.6	15.8	15.2	15.5	15.3	15.4	15.4	14.8	14.5	14.3	13.8	14.2	15	16.5	16.9	16.9	18.1	18.2	17.1	15.7	13	10.9	9.8	9.8	18.2	15.3
Aug 3	9.4	9	9.2	9.7	10.1	10.2	11	12.8	13	12.7	13.4	14.1	15.7	18.2	18.4	18.9	18.7	18.8	18.5	17.8	17.3	17.1	16.7	16.4	9.0	18.9	14.5
Aug 4	16.1	15.7	15.3	15.1	14.7	14.4	14.6	14.7	14.5	14.5	14.3	14.1	14.1	14.7	15	16.5	16.8	15.9	15.6	15.1	13.9	13.3	12.7	11.7	11.7	16.8	14.7
Aug 5	11.3	10.8	10.6	10.3	10.4	10.6	10.4	10.8	11.3	12.1	12.5	14.2	15.9	16.8	16.7	17.2	18.1	18.1	18.2	17.4	14.8	13.4	12.5	11.8	10.3	18.2	13.6
Aug 6	10.9	10.2	9.5	9.2	9.1	9.4	11.1	13.3	16.2	18.5	20	21.1	21.7	21.7	21.6	20.8	20.5	19.9	18.6	18.4	16.8	16.5	16.8	16.9	9.1	21.7	16.2
Aug 7	16.4	15.7	15.1	14.5	14.6	15	16.4	18.3	20	20.9	22.1	23.2	24.2	24.8	25.3	25.9	26.1	26	24.6	23.1	20.1	18	17.7	17.6	14.5	26.1	20.2
Aug 8	17.2	16.6	16.2	15.7	16.4	17.2	17.2	18.5	19.9	20.6	20.5	20.5	20.6	21.2	21.5	21.6	21.7	20.7	20.5	19.4	17.8	16.4	13.3	13.7	13.3	21.7	18.5
Aug 9	12.6	11.5	10.6	9.3	8.8	9.2	11.3	13.5	15.4	16.6	17.6	18.7	19.6	20.5	21	21.8	22	22.3	21.6	20.4	17.7	15.9	15	14.4	8.8	22.3	16.1
Aug 10	14.3	13.9	13.4	12.9	13	13.5	14.6	15.8	16.9	19.3	21.3	23.3	24.3	25.3	26.1	26.3	26.2	25.7	24.7	23	20.8	19.9	19.1	17.8	12.9	26.3	19.6
Aug 11	15.9	14.8	14	13.7	14	14	15	17.3	20.1	22.3	22.9	24.4	27	28.7	29	29.8	29.8	28.9	27.9	25.2	21.7	20.3	19	17.1	13.7	29.8	21.4
Aug 12	15.8	14.7	13.9	13	12.3	12.1	13.1	13.7	15.5	16.7	18.6	19.7	20.7	22	24.5	25.1	25.9	25.4	25.1	23.3	20.7	19.7	19	18.7	12.1	25.9	18.7
Aug 13	18.3	17.7	17.4	17	17	17.2	18	18.7	19.8	21.5	24.1	25.6	26.5	26.8	27.5	28.2	28.8	28.7	27.5	25.5	23.4	22.2	21.6	21.4	17.0	28.8	22.5
Aug 14	19.8	17.9	17.7	17.1	15.8	15.6	16.1	17.3	18	18.9	20.3	21.2	21.9	23.1	23.8	24.2	24.5	24.4	24	22.3	18.9	17.4	16	15.1	15.1	24.5	19.6
Aug 15	14.6	14.5	14	13.6	13.1	13.1	14.2	16.9	19.9	22.6	23.8	24.7	25.4	25.8	26.5	27	27.2	27.1	26.4	24.4	21.3	19.4	18.1	17	13.1	27.2	20.4
Aug 16	16.5	16.4	16	14.8	14.3	14	16.1	18.5	20.9	22.9	25.2	26.6	26.8	27.2	26.7	24.6	24.1	23.5	23.8	22.5	20.3	18.7	18.3	18.5	14.0	27.2	20.7
Aug 17	18.1	16.2	15.8	16.1	14.8	15.3	15.7	16.8	18.4	20.2	21.7	23.4	24.9	26.2	26.8	27.1	27.4	27.1	26.5	24.3	21.1	19.6	18.2	17.1	14.8	27.4	20.8
Aug 18	16.4	15.5	15.1	13.9	13	13.3	14.8	17.3	20.5	23	24.8	25.8	26.7	27.3	27.6	28.2	28.2	28	27.1	24.9	22.2	20.6	19.7	18.1	13.0	28.2	21.3
Aug 19	17.4	16.9	16.5	15.8	15.6	15.8	16.9	19.1	21.3	23.8	25.8	27.2	28.9	29.6	29.4	29.7	29.5	29	27.4	25.6	24.5	23.8	23.4	22.5	15.6	29.7	23.1
Aug 20	21.5	20.8	19.8	18.7	18.4	18.2	18.5	18.7	18.4	20.4	22.5	22.5	22.9	23	23.1	23.5	24.7	24.9	25.4	22.1	20.8	20.8	19.4	19.9	18.2	25.4	21.2
Aug 21	21.3	20.8	19.8	19.5	18.7	18	17.4	17.4	18.7	18.7	18.7	20.2	21.4	21.5	23.2	24.1	24.2	24.2	23.9	21	19.6	18.4	16.7	16	16.0	24.2	20.1
Aug 22	14.9	14.3	13.2	12.4	11.7	11.2	11.8	14.7	18.7	19.7	21.8	23.1	23.9	24.9	25	24.5	24.8	24.6	24.2	21.2	18.6	16.9	16.2	15.5	11.2	25.0	18.7
Aug 23	15.1	14.6	13.5	13.6	12.7	12.5	13.5	15.4	18.9	21	22.1	23.1	24.2	25.5	26.2	26.2	25.6	24.8	23.3	21.8	20.4	19	18.1	16.4	12.5	26.2	19.5
Aug 24	15.4	14.5	14.1	14	13.6	12.9	13.7	16.4	18.9	21.3	23.3	24.3	25.6	26.6	27.4	27.8	27.9	27.4	26.9	23.8	21.1	20.1	19.3	17.7	12.9	27.9	20.6
Aug 25	16.8	16.5	16	14.9	14.6	14.6	15.5	17.2	19.8	22.3	24.9	26.9	28.1	28.4	28.8	28.9	28.8	28.7	27.4	24.5	22.7	20.8	20.3	19.6	14.6	28.9	22.0
Aug 26	18.3	17.6	16.8	16.3	15.8	15.8	15.8	17.1	19.3	21.9	24	25.9	27	27.3	28.3	28.1	28.4	28.4	27.5	24.6	21.8	19.6	18.2	17.5	15.8	28.4	21.7
Aug 27	16.9	16	15.9	15.2	14.6	14.6	15.1	17.5	18.9	19.7	21.1	21.4	20.7	20.8	19	18.2	18.4	18.3	17.7	16.7	16.6	16.6	16.2	15.6	14.6	21.4	17.6
Aug 28	15.1	15.2	15	14.8	14.5	14.1	13.5	13.6	15	16.4	17.5	18.4	18.5	18.6	19.8	20.6	20.9	20.6	19.3	18.2	16.9	15	13.9	12.9	12.9	20.9	16.6
Aug 29	12.1	11.8	11.6	12.4	12.1	12	11.5	12.9	16.2	18.3	20.2	21.7	22.3	22.6	23.5	24.6	24.6	24.1	23.8	20.6	17.8	16.4	15.9	15.4	11.5	24.6	17.7
Aug 30	15	14.8	14.1	13.6	12.7	12.6	13.2	15.5	18.7	22.2	25.1	26.8	27.5	28.3	29	29.6	30.1	29.9	28.7	25.3	22.3	20.4	19.4	20.1	12.6	30.1	21.5
Aug 31	22.2	19.5	18.8	18.3	16.5	15.7	16.9	19.8	21.3	22.7	23.5	24.2	25.5	26.2	27.4	28.3	28.7	28	26.5	22.6	21.7	20.4	18.6	19.1	15.7	28.7	22.2
Diurnal Maximum	22.2	20.8	19.8	19.5	18.7	18.2	18.5	19.8	21.3	23.8	25.8	27.2	28.9	29.6	29.4	29.8	30.1	29.9	28.7	25.6	24.5	23.8	23.4	22.5			
Diurnal Average	16.1	15.3	14.8	14.3	13.9	13.9	14.6	16.2	18.0	19.6	21.0	22.0	22.9	23.6	24.1	24.5	24.6	24.4	23.7	21.8	19.7	18.4	17.4	16.8			

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

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 - Lac La Biche Station





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Lac La Biche Station - August 2022

Summary of Hourly Averages

STATION TEMPERATURE (ST) in Degree Celsius

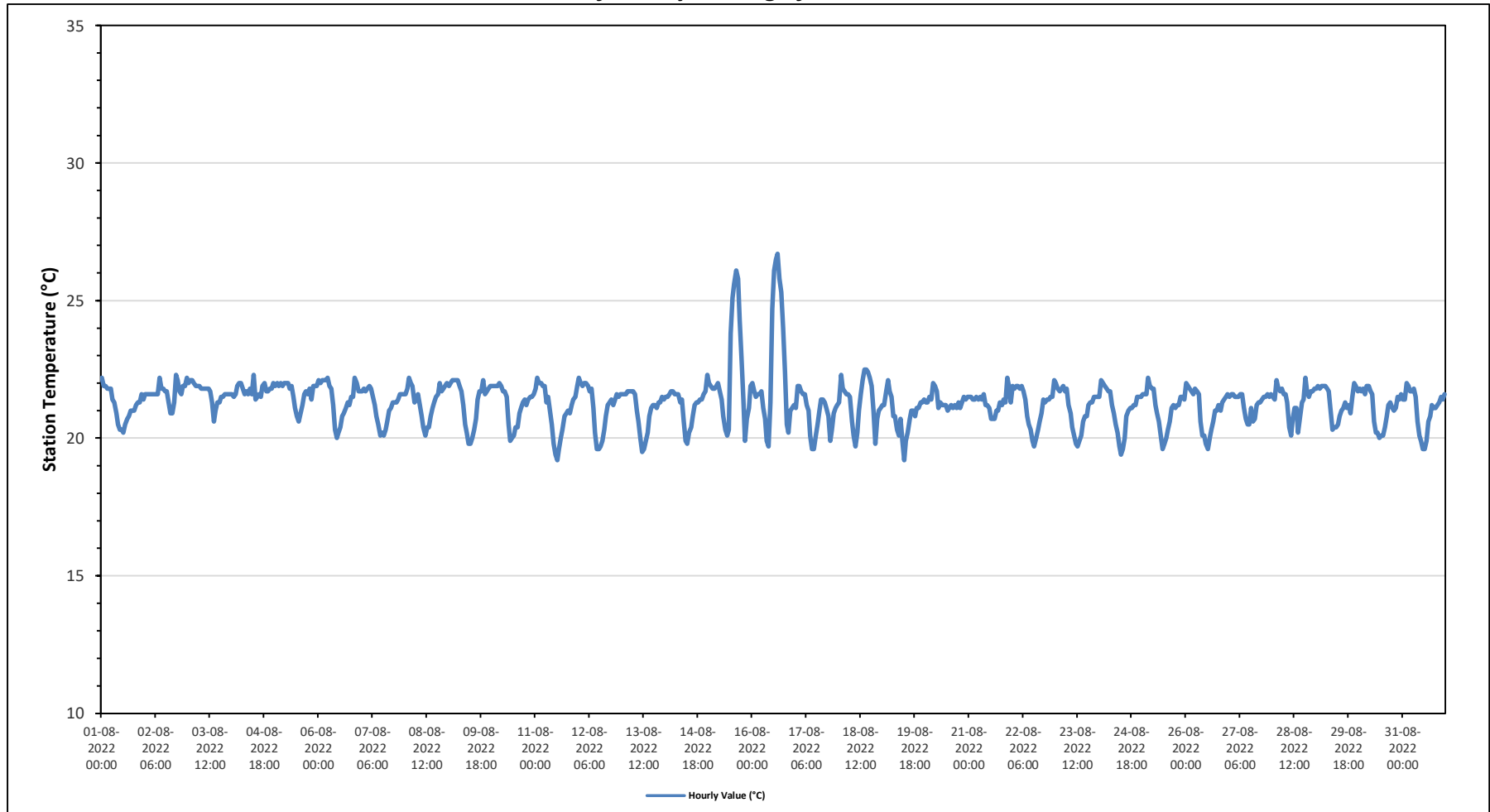
Maximum Hourly Value:	26.7 °C	on August 16 at hour 14	Hours in Service:	744
Maximum Daily Value:	22.4 °C	on August 16	Hours of Data:	744
Minimum Hourly Value:	19.2 °C	on August 11 at hour 12	Hours of Missing Data:	0
Minimum Daily Value:	20.9 °C	on August 19	Hours of Calibration:	0
Monthly Average:	21.3 °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
Aug 1	22.2	21.9	21.9	21.8	21.8	21.8	21.4	21.3	20.9	20.5	20.3	20.3	20.2	20.5	20.7	20.8	21.0	21.0	21.0	21.2	21.3	21.3	21.6	21.4	20.2	22.2	21.2
Aug 2	21.6	21.6	21.6	21.6	21.6	21.6	21.6	21.6	22.2	21.8	21.8	21.7	21.7	21.3	20.9	20.9	21.3	22.3	22.1	21.7	21.6	21.9	21.9	22.2	20.9	22.3	21.7
Aug 3	22.0	22.1	22.1	22.0	21.9	21.9	21.9	21.8	21.8	21.8	21.8	21.8	21.7	21.3	20.6	21.0	21.3	21.3	21.5	21.5	21.6	21.6	21.6	21.6	20.6	22.1	21.6
Aug 4	21.6	21.5	21.6	21.9	22.0	22.0	21.8	21.6	21.7	21.6	21.8	21.6	22.3	21.4	21.5	21.6	21.5	21.9	22.0	21.7	21.7	21.8	21.8	22.0	21.4	22.3	21.7
Aug 5	21.9	22.0	21.9	22.0	21.9	22.0	22.0	21.8	21.9	21.9	21.5	21.1	20.8	20.6	20.9	21.2	21.6	21.7	21.6	21.8	21.4	21.9	21.9	21.9	20.6	22.0	21.6
Aug 6	22.1	22.0	22.1	22.1	22.1	22.2	21.9	21.8	21.2	20.3	20.0	20.2	20.4	20.8	20.9	21.1	21.3	21.2	21.5	21.5	22.2	22.0	21.7	21.7	20.0	22.2	21.4
Aug 7	21.7	21.8	21.7	21.8	21.9	21.8	21.5	21.2	20.8	20.5	20.1	20.2	20.1	20.3	20.6	21.0	21.1	21.3	21.3	21.3	21.4	21.6	21.6	21.6	20.1	21.9	21.2
Aug 8	21.6	21.8	22.2	22.0	21.9	21.3	21.4	21.6	21.2	20.8	20.4	20.1	20.4	20.4	20.8	21.1	21.3	21.5	21.6	22.0	21.7	21.8	21.9	22.0	20.1	22.2	21.4
Aug 9	21.9	22.0	22.1	22.1	22.1	22.1	21.9	21.7	21.2	20.5	20.2	19.8	19.8	20.0	20.3	20.7	21.4	21.7	21.7	22.1	21.6	21.7	21.8	21.9	19.8	22.1	21.3
Aug 10	21.9	21.9	21.9	21.9	22.0	21.9	21.7	21.7	21.5	20.5	19.9	20.0	20.1	20.4	20.4	20.9	21.1	21.3	21.4	21.2	21.4	21.5	21.5	21.6	19.9	22.0	21.2
Aug 11	21.8	22.2	22.0	22.0	21.9	21.9	21.3	21.5	21.0	20.5	19.8	19.4	19.2	19.6	20.0	20.3	20.8	20.9	21.0	20.9	21.2	21.4	21.5	21.9	19.2	22.2	21.0
Aug 12	22.2	22.0	21.9	22.0	22.0	21.9	21.7	21.8	21.1	20.2	19.6	19.6	19.7	19.9	20.3	20.8	21.2	21.3	21.4	21.2	21.4	21.6	21.5	21.6	19.6	22.2	21.2
Aug 13	21.6	21.6	21.6	21.7	21.7	21.7	21.7	21.6	21.0	20.6	20.0	19.5	19.6	19.9	20.2	20.8	21.1	21.2	21.2	21.1	21.3	21.3	21.5	21.4	19.5	21.7	21.0
Aug 14	21.5	21.5	21.6	21.7	21.7	21.6	21.6	21.6	21.3	21.4	20.6	19.9	19.8	20.2	20.4	20.8	21.2	21.3	21.3	21.4	21.4	21.6	21.7	22.3	19.8	22.3	21.2
Aug 15	22.0	21.9	21.8	21.8	21.9	22.0	21.7	21.4	20.8	20.3	20.1	20.3	23.8	25.1	25.6	26.1	25.8	24.3	22.9	21.4	19.9	20.7	21.1	19.9	19.9	26.1	22.3
Aug 16	22.0	21.7	21.5	21.6	21.6	21.7	21.1	20.7	19.9	19.7	21.3	24.7	26.1	26.5	26.7	25.8	25.3	24.0	22.4	20.5	20.2	21.0	21.1	21.2	19.7	26.7	22.4
Aug 17	21.1	21.9	21.9	21.7	21.6	21.6	21.2	21.0	20.1	19.6	19.6	20.0	20.5	21.0	21.4	21.4	21.3	21.1	20.8	19.9	20.3	20.9	21.1	21.2	19.6	21.9	20.9
Aug 18	21.3	22.3	21.8	21.7	21.6	21.6	21.5	20.6	20.1	19.7	20.2	21.0	21.6	22.1	22.5	22.5	22.4	22.2	21.9	21.0	19.8	20.7	21.0	21.1	19.7	22.5	21.3
Aug 19	21.2	21.2	21.7	22.1	21.7	21.5	20.8	20.8	20.3	20.1	20.7	19.9	19.2	19.9	20.2	20.7	21.0	21.0	20.8	21.1	21.1	21.3	21.4	21.4	19.2	22.1	20.9
Aug 20	21.3	21.3	21.5	21.4	22.0	21.9	21.7	21.1	21.3	21.2	21.2	21.2	21.0	21.1	21.2	21.1	21.2	21.1	21.3	21.1	21.3	21.5	21.4	21.5	21.0	22.0	21.3
Aug 21	21.5	21.5	21.4	21.4	21.5	21.4	21.5	21.4	21.6	21.2	21.2	21.1	20.7	20.7	20.7	21.0	21.0	21.3	21.2	21.4	21.3	22.2	21.9	21.3	20.7	22.2	21.3
Aug 22	21.9	21.8	21.9	21.9	21.8	21.9	21.7	21.4	20.8	20.5	20.3	19.9	19.7	20.0	20.3	20.6	20.9	21.4	21.3	21.4	21.4	21.5	21.5	22.1	19.7	22.1	21.2
Aug 23	22.0	21.8	21.7	21.8	21.9	21.7	21.8	21.2	20.9	20.4	20.1	19.8	19.7	19.9	20.1	20.6	20.8	20.8	21.2	21.3	21.3	21.5	21.5	21.5	19.7	22.0	21.1
Aug 24	21.5	22.1	22.0	21.9	21.8	21.7	21.7	21.2	20.9	20.5	20.2	19.7	19.4	19.6	20.0	20.8	21.0	21.1	21.1	21.2	21.2	21.5	21.5	21.5	19.4	22.1	21.0
Aug 25	21.6	21.6	21.6	22.2	21.9	21.8	21.8	21.2	20.9	20.6	20.1	19.6	19.8	20.0	20.3	20.6	21.1	21.2	21.1	21.2	21.2	21.5	21.5	21.4	19.6	22.2	21.1
Aug 26	22.0	21.9	21.8	21.7	21.6	21.8	21.7	21.6	20.6	20.1	20.1	19.8	19.6	20.0	20.3	20.6	21.0	21.0	21.2	21.0	21.3	21.4	21.5	21.6	19.6	22.0	21.1
Aug 27	21.5	21.6	21.6	21.5	21.5	21.5	21.6	21.6	21.1	20.7	20.5	20.5	21.1	20.6	20.7	21.2	21.3	21.3	21.4	21.5	21.5	21.6	21.5	21.6	20.5	21.6	21.3
Aug 28	21.5	21.4	22.1	21.8	21.7	21.8	21.6	21.6	21.3	20.4	20.1	20.7	21.1	21.1	20.2	20.8	21.3	21.4	22.2	21.7	21.5	21.7	21.7	21.8	20.1	22.2	21.4
Aug 29	21.8	21.9	21.8	21.9	21.9	21.8	21.7	21.0	20.3	20.4	20.4	20.5	20.8	21.0	21.1	21.3	21.1	21.2	20.9	21.5	22.0	21.9	21.7	21.8	20.3	22.0	21.3
Aug 30	21.8	21.7	21.8	21.6	21.9	21.9	21.7	21.6	20.6	20.2	20.2	20.0	20.1	20.1	20.4	20.8	21.2	21.3	21.1	21.0	21.1	21.5	21.4	21.6	20.0	21.9	21.1
Aug 31	21.4	21.4	22.0	21.9	21.7	21.7	21.8	21.5	20.6	20.1	19.9	19.6	19.6	19.9	20.6	20.8	21.2	21.1	21.2	21.3	21.5	21.4	21.6	21.6	19.6	22.0	21.0
Diurnal Maximum	22.2	22.3	22.2	22.2	22.1	22.2	22.0	22.0	22.2	21.9	21.8	24.7	26.1	26.5	26.7	26.1	25.8	24.3	22.9	22.1	22.2	22.2	21.9	22.3			
Diurnal Average	21.7	21.8	21.8	21.8	21.8	21.8	21.6	21.4	21.0	20.6	20.5	20.4	20.6	20.8	21.0	21.3	21.5	21.5	21.4	21.3	21.2	21.5	21.6				

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

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 - Lac La Biche Station





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Lac La Biche Station - August 2022

Summary of Hourly Averages

VECTOR WIND SPEED (VWS) in km/hr

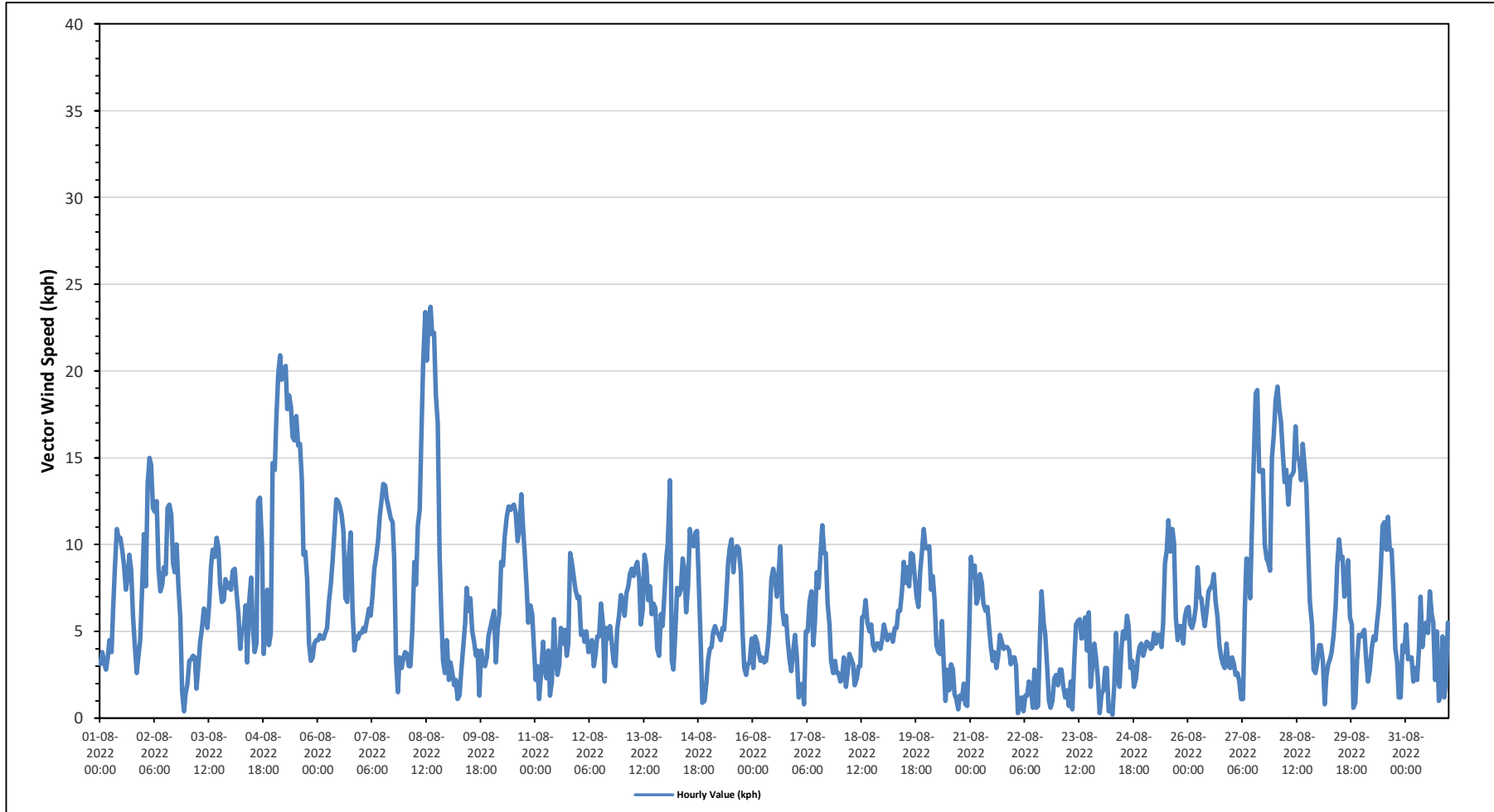
Maximum Hourly Value:	23.7 kph on August 8 at hour 14	Hours in Service:	744
Maximum Daily Value:	12.3 kph on August 28	Hours of Data:	744
Minimum Hourly Value:	0.2 kph on August 24 at hour 6	Hours of Missing Data:	0
Minimum Daily Value:	0.7 kph on August 22	Hours of Calibration:	0
Monthly Average:	1.5 kph	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
Aug 1	3.1	3.8	3.2	2.8	3.4	4.5	3.8	6.3	8.8	10.9	10.4	10.4	9.6	8.8	7.4	8.1	9.4	8.5	5.8	4.1	2.6	3.7	4.5	7.4	2.6	10.9	5.3
Aug 2	10.6	7.6	13.5	15.0	14.6	12.1	11.9	12.5	8.6	7.3	7.7	8.7	8.3	12.1	12.3	11.7	8.9	8.4	10.0	7.6	5.8	1.5	0.4	1.4	0.4	15.0	8.4
Aug 3	2.0	3.3	3.4	3.6	3.5	1.7	3.0	4.4	5.1	6.3	5.9	5.2	6.6	8.8	9.7	9.3	10.4	9.8	7.7	6.7	6.8	8.0	7.5	7.8	1.7	10.4	5.9
Aug 4	7.4	8.5	8.6	7.4	6.0	4.0	5.1	5.1	6.5	3.2	6.6	8.1	5.3	3.8	4.3	12.5	12.7	9.9	3.7	5.3	7.4	4.2	4.9	14.7	3.2	14.7	1.0
Aug 5	14.3	17.3	19.8	20.9	19.5	20.0	20.3	17.8	18.6	17.9	16.2	16.0	17.4	15.7	15.8	13.7	9.4	9.6	8.0	4.3	3.3	3.5	4.3	4.5	3.3	20.9	12.2
Aug 6	4.5	4.8	4.6	4.6	4.9	5.2	6.7	7.7	9.1	10.8	12.6	12.5	12.2	11.7	10.7	6.9	6.7	9.3	10.7	6.2	3.9	4.7	4.6	4.9	3.9	12.6	6.7
Aug 7	4.9	5.2	5.0	5.7	6.3	5.9	7.0	8.6	9.2	10.2	11.7	12.5	13.5	13.4	12.6	12.1	11.5	11.3	9.2	3.3	1.5	3.5	2.9	3.5	1.5	13.5	6.6
Aug 8	3.8	3.7	3.0	3.0	5.0	9.0	7.7	11.1	12.0	16.0	20.4	23.4	20.6	23.0	23.7	22.1	22.2	18.6	17.0	9.4	5.7	3.3	2.6	4.5	2.6	23.7	10.5
Aug 9	2.2	3.2	2.6	1.9	2.2	1.1	1.3	2.8	4.1	5.4	7.5	6.2	6.9	5.0	4.4	3.6	3.9	1.3	3.9	3.2	3.0	3.5	4.7	5.2	1.1	7.5	0.8
Aug 10	5.7	6.2	3.2	5.2	6.0	9.0	8.8	10.4	11.6	12.2	12.0	12.2	12.3	11.8	10.2	10.9	12.9	11.1	9.4	7.5	5.5	6.5	6.0	4.2	3.2	12.9	8.8
Aug 11	2.2	3.0	1.1	2.7	4.4	2.8	2.3	3.9	1.3	2.1	5.7	3.7	2.5	3.1	5.2	4.3	5.1	3.6	4.3	9.5	8.9	8.2	7.4	6.9	1.1	9.5	1.8
Aug 12	7.0	4.8	5.0	4.4	5.0	3.8	4.1	4.5	3.0	3.6	4.7	4.7	6.6	5.5	2.1	5.2	4.6	5.3	4.3	3.2	3.0	5.1	5.9	7.1	2.1	7.1	2.5
Aug 13	6.8	5.9	7.2	7.6	8.3	8.6	8.2	8.7	9.0	8.0	5.4	6.2	9.4	8.8	6.8	7.6	6.0	6.6	6.3	4.0	3.6	6.0	5.3	7.1	3.6	9.4	6.8
Aug 14	9.2	10.1	13.7	3.3	2.8	4.9	7.5	7.1	7.4	9.2	8.5	6.1	7.6	10.9	10.0	9.9	10.7	10.8	7.6	4.2	0.9	1.0	2.0	3.3	0.9	13.7	5.6
Aug 15	4.0	4.1	5.0	5.3	4.9	4.8	4.5	5.2	5.1	6.6	8.9	9.8	10.3	8.4	9.6	9.9	9.8	8.4	5.1	2.9	2.5	3.1	3.2	4.6	2.5	10.3	4.5
Aug 16	2.9	4.7	4.4	3.8	3.3	3.5	3.2	3.3	4.3	5.5	8.0	8.6	8.0	7.0	8.5	9.9	6.3	5.4	5.9	4.4	3.3	2.7	3.8	4.8	2.7	9.9	3.3
Aug 17	3.5	1.2	1.8	2.0	0.8	5.0	5.0	6.7	7.3	4.2	5.5	8.4	7.5	9.2	11.1	9.5	9.5	6.6	5.4	3.3	2.6	3.3	2.6	2.6	0.8	11.1	4.0
Aug 18	2.1	2.2	3.5	1.8	2.6	3.7	3.4	3.1	1.9	2.3	3.0	3.0	5.8	5.9	6.8	5.5	5.0	5.4	4.2	3.9	4.3	4.3	4.0	4.5	1.8	6.8	3.5
Aug 19	5.4	4.9	4.5	4.8	4.8	4.4	5.2	5.2	6.2	6.2	7.3	9.0	7.8	8.7	7.6	9.5	9.4	8.2	7.0	6.4	8.5	9.5	10.9	9.8	4.4	10.9	7.1
Aug 20	9.8	9.9	7.4	8.2	6.8	4.2	3.8	3.7	5.6	3.3	1.0	2.8	1.6	3.1	2.8	1.4	1.1	0.5	1.3	1.1	2.0	0.8	0.7	4.7	0.5	9.9	2.5
Aug 21	9.3	8.1	8.8	6.6	6.9	8.3	7.8	6.6	6.2	6.4	5.3	4.1	3.3	3.8	2.9	3.6	4.8	4.4	4.0	4.1	4.1	3.9	3.1	3.5	2.9	9.3	3.6
Aug 22	3.5	3.0	0.3	0.7	1.2	0.4	1.3	1.3	2.1	2.0	0.6	2.8	0.6	0.7	4.2	7.3	5.5	4.8	3.0	1.0	0.6	1.0	2.3	2.5	0.3	7.3	0.7
Aug 23	1.9	2.8	2.8	1.8	1.2	1.6	0.7	2.1	0.5	3.2	5.4	5.6	5.7	4.6	4.9	5.8	3.9	6.1	1.8	3.1	4.3	3.5	2.3	0.3	0.3	6.1	1.0
Aug 24	1.4	1.6	2.9	2.9	0.4	0.7	0.2	1.9	4.9	2.4	1.8	4.0	5.0	4.6	5.9	5.3	2.9	3.3	1.8	2.3	3.5	4.1	4.3	3.6	0.2	5.9	0.9
Aug 25	4.0	4.4	4.3	4.0	4.1	4.9	4.3	4.8	4.8	4.1	5.4	8.9	9.7	11.4	9.6	10.9	10.1	5.8	4.5	5.3	5.3	4.3	5.8	6.3	4.0	11.4	5.6
Aug 26	6.4	5.4	5.2	5.6	6.4	8.7	7.0	6.9	6.1	5.3	6.3	7.3	7.5	7.7	8.3	6.7	5.8	4.2	3.5	3.1	2.9	4.3	3.0	2.9	2.9	8.7	5.3
Aug 27	3.5	3.1	2.5	2.6	2.1	1.1	1.1	6.3	9.2	9.1	6.9	11.2	15.1	18.7	18.9	14.2	14.2	14.3	10.0	9.2	8.9	8.5	15.0	16.3	1.1	18.9	7.8
Aug 28	18.3	19.1	17.8	17.1	15.3	13.6	14.3	12.3	13.9	14.0	14.2	16.8	15.0	14.9	13.7	15.8	14.5	13.3	10.0	6.7	5.4	2.8	2.6	3.2	2.6	19.1	12.3
Aug 29	4.2	4.2	3.3	0.8	2.4	3.1	3.4	3.8	4.7	6.4	8.8	10.3	9.2	9.3	7.0	8.1	9.1	5.8	5.4	0.6	0.9	3.4	4.8	4.7	0.6	10.3	3.9
Aug 30	4.9	5.1	3.4	2.1	2.8	4.0	4.7	4.5	5.5	6.5	8.5	11.1	11.3	9.7	11.6	9.7	9.7	7.3	4.0	3.2	1.2	1.2	4.2	3.8	1.2	11.6	4.3
Aug 31	5.4	3.4	3.5	3.5	2.1	2.9	2.2	4.0	7.0	4.1	5.2	5.5	4.9	7.3	6.0	5.5	2.2	5.0	1.0	1.4	4.7	1.2	2.2	5.5	1.0	7.3	2.0
Diurnal Maximum	18	19	20	21	20	20	20	18	19	18	20	23	21	23	24	22	22	19	17	10	9	10	15	16			
Diurnal Average	5.6	5.6	5.7	5.2	5.2	5.4	5.5	6.2	6.8	6.9	7.7	8.6	8.6	8.9	8.9	8.9	8.3	7.5	6.0	4.5	4.1	4.0	4.4	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
X InValid Data (Equipment Malfunction /Recovery)	NRM UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	P Power Failure

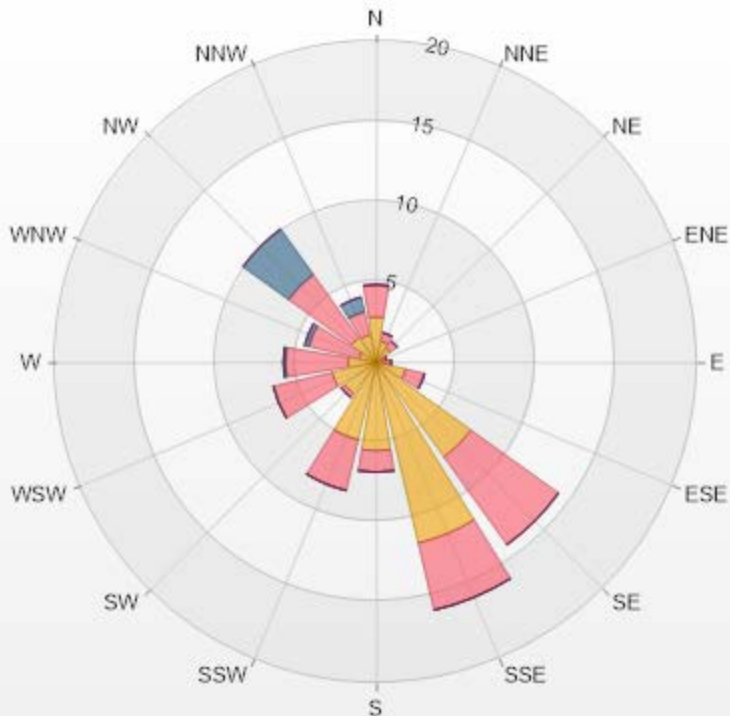
Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for VWS - Lac La Biche Station



Wind: Lac La Biche Monitor: WDS [kph] Monthly: 08-2022 Type: WindRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 8.06% Valid Data: 100.00%

Direction	1.8-6.0	6.0-15.0	15.0-29.0	29.0-39.0	>39.0	Total
N	2.82	2.02	0	0	0	4.84
NNE	1.34	0.54	0	0	0	1.88
NE	1.08	0.54	0	0	0	1.62
ENE	0.4	0.27	0	0	0	0.67
E	0.54	0.4	0	0	0	0.94
ESE	1.88	1.21	0	0	0	3.09
SE	7.26	6.72	0	0	0	13.98
SSE	11.56	4.3	0	0	0	15.86
S	5.51	1.34	0	0	0	6.85
SSW	4.97	3.23	0	0	0	8.2
SW	2.42	0.27	0	0	0	2.69
WSW	2.82	3.76	0	0	0	6.58
W	1.75	3.9	0.13	0	0	5.78
WNW	1.08	3.23	0.27	0	0	4.58
NW	1.88	4.84	3.49	0	0	10.21
NNW	1.75	1.48	0.94	0	0	4.17
Summary	49.06	38.05	4.83	0	0	91.94



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% Icon Classes (kph)

49 1.8-6.0

38 6.0-15.0

5 15.0-29.0

0 29.0-39.0

0 >39.0



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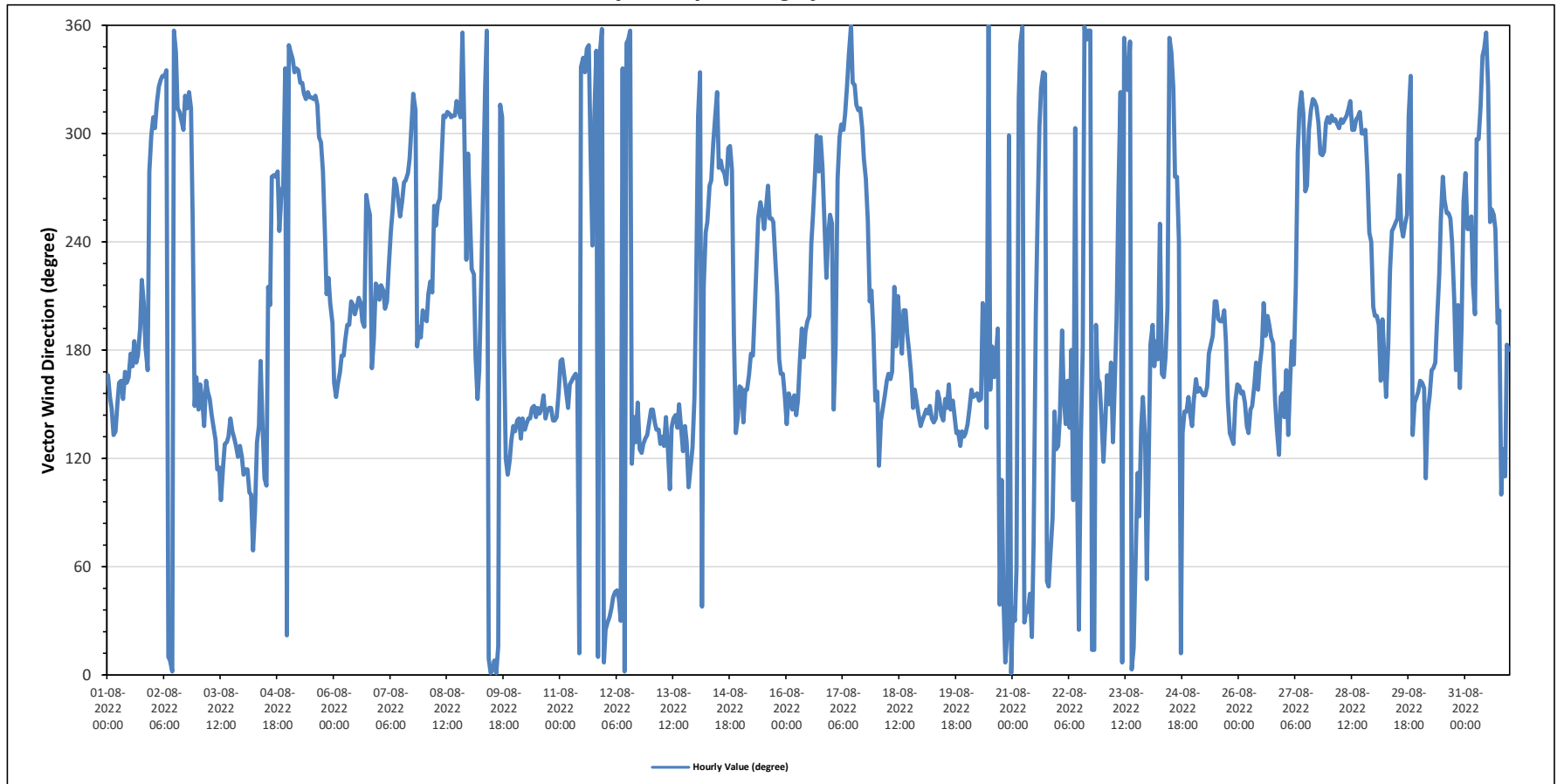
Lac La Biche Station - August 2022

Summary of Hourly Averages

WIND DIRECTION (VWD) in sector

Monthly Average:		246 (WSW) degree																Hours in Service:		744																																															
																		Hours of Data:		744																																															
																		Hours of Missing Data:		0																																															
																		Hours of Calibration:		0																																															
																		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																																									
Aug 1	SSE	SSE	SE	SE	SE	SSE	SSE	SSE	SSE	SSE	SSE	S	S	S	S	S	S	SW	SSW	S	SSE	W	WNW	175	S																																										
Aug 2	NW	WNW	NW	NW	NNW	NNW	NNW	NNW	N	N	N	N	NNW	NW	NW	NW	WNW	NW	NW	NW	WSW	SSE	SSE	326	NW																																										
Aug 3	SE	SSE	SSE	SE	SSE	SSE	SSE	SE	SE	SE	ESE	ESE	E	ESE	SE	SE	SE	SE	SE	SE	ESE	SE	ESE	130	SE																																										
Aug 4	ESE	ESE	ESE	E	E	ENE	E	SE	SE	S	SE	ESE	ESE	SSW	SSW	W	W	W	W	WSW	W	W	NNW	NNE	140	SE																																									
Aug 5	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NW	NW	NW	NW	NW	NW	NW	NW	WNW	WNW	W	WSW	SSW	SW	SSW	SSW	322	NW																																									
Aug 6	SSE	SSE	SSE	SSE	S	S	S	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	S	W	WSW	WSW	SSE	S	SW	SSW	203	SSW																																									
Aug 7	SSW	SW	SSW	SSW	SSW	SW	WSW	WSW	W	W	W	WSW	W	W	W	W	WNW	WNW	NW	NW	S	S	S	SSW	260	WSW																																									
Aug 8	SSW	SSW	SSW	SW	SSW	WSW	WSW	W	W	WNW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	N	NW	SW	WNW	298	WNW																																									
Aug 9	WSW	SW	SW	S	SSE	SSE	SW	W	NW	N	N	N	N	N	N	N	NNE	NW	NW	S	ESE	ESE	ESE	SE	SE	11	NNE																																								
Aug 10	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SSE	SE	SE	SE	SE	SSE	SE	SE	SE	SE	SE	SE	SE	SSE	144	SE																																									
Aug 11	S	S	SSE	SSE	SE	SSE	SSE	SSE	SSE	SSE	SSE	NNE	NNW	NNW	NNW	NNW	NNW	SW	NW	NNW	N	NNW	N	N	347	NNW																																									
Aug 12	NNE	NNE	NNE	NE	NE	NE	NE	NE	NE	NNE	NNW	N	N	N	N	N	ESE	SE	SE	SSE	SE	ESE	SE	SE	63	ENE																																									
Aug 13	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	ESE	SE	SE	SE	SE	SSE	SE	SE	SE	SE	ESE	SE	ESE	SE	SSE	135	SE																																								
Aug 14	SSW	NW	NNW	NE	SSW	WSW	WSW	W	W	WNW	NW	NW	W	WNW	W	W	W	WNW	WNW	W	S	SE	SE	SSE	283	W																																									
Aug 15	SSE	SE	SSE	SSE	SSE	S	S	SSW	SW	WSW	W	WSW	WSW	WSW	W	WSW	WSW	WSW	SW	SSW	S	SSE	SSE	SSE	225	SW																																									
Aug 16	SE	SSE	SSE	SE	SSE	SE	SSE	S	S	S	S	S	SSW	SSW	WSW	WSW	W	WNW	W	WNW	W	WSW	SW	WSW	220	SW																																									
Aug 17	WSW	SE	S	W	WNW	WNW	WNW	NW	NW	NNW	N	NNW	NW	NW	NW	NW	WNW	WNW	W	WSW	SSW	SSW	S	SSE	304	WNW																																									
Aug 18	SSE	ESE	SE	SE	SSE	SSE	SSE	SSE	SSE	SSW	S	SSW	SSW	S	SSW	SSW	S	S	SSE	SE	SSE	SSE	SE	SE	171	S																																									
Aug 19	SE	SE	SE	SE	SSE	SE	SE	SE	SSE	SSE	SE	SE	SSE	SE	SSE	SE	SSE	SE	SE	SE	SE	SE	SE	SE	143	SE																																									
Aug 20	SE	SE	SSE	SSE	SSE	SSE	SSE	SSE	SSW	SSW	SE	N	SSE	S	SSE	S	S	NE	ESE	NE	N	NNE	WNW	N	154	SSE																																									
Aug 21	NE	NNE	ENE	NW	N	N	NNE	NE	NE	NE	NNE	ENE	ENE	SSW	WSW	WNW	NW	NNW	NNW	NE	NE	ENE	E	SE	SE	26	NNE																																								
Aug 22	SE	SE	S	SSE	SE	SSE	SE	S	E	WNW	ESE	NNE	SE	S	N	N	N	N	NNE	NNE	SSW	SSE	SSE	SE	41	NE																																									
Aug 23	ESE	SE	SSE	SSE	S	SE	SSE	SSW	W	NW	N	N	NNW	NW	N	N	NNE	ENE	ESE	E	SE	SSE	SE	NE	37	NE																																									
Aug 24	ESE	S	SSW	S	S	S	WSW	SSE	SSE	S	S	S	SSW	N	NNW	NW	W	W	WSW	NNE	SE	SE	SE	SSE	SE	192	S																																								
Aug 25	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	S	S	S	SSW	SSW	SSW	SSW	SSW	SSW	S	SSE	SE	SE	SE	SSE	SSE	176	S																																									
Aug 26	SSE	SSE	SSE	SSE	SE	SE	SE	SSE	SSE	S	SSE	S	S	SSW	S	SSW	SSW	S	S	SSE	SE	ESE	SSE	SSE	165	SSE																																									
Aug 27	SE	SSE	SE	SSE	S	S	SSW	WNW	NW	NW	NW	NW	W	W	WNW	NW	NW	NW	NW	WNW	WNW	WNW	WNW	NW	300	WNW																																									
Aug 28	NW	NW	NW	NW	WNW	WNW	NW	NW	NW	NW	NW	NW	NW	WNW	WNW	NW	NW	NW	WNW	WNW	W	WSW	WSW	SSW	305	WNW																																									
Aug 29	SSW	SSW	SSW	SSE	SSW	S	SSE	S	SW	WSW	WSW	WSW	WSW	W	WSW	WSW	WSW	WSW	NW	NNW	SE	SSE	SSE	SSE	232	SW																																									
Aug 30	SSE	SSE	SSE	ESE	SE	SSE	SSE	SSE	S	SSW	SW	WSW	W	W	WSW	WSW	WSW	SSW	SSW	SSE	SSW	SSE	S	W	223	SW																																									
Aug 31	W	WSW	WSW	WSW	SW	SSW	WNW	WNW	NW	NNW	NNW	N	NW	WSW	WSW	WSW	WSW	SSW	SSW	E	SE	ESE	S	S	266	W																																									
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 - Lac La Biche Station





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Lac La Biche Station - August 2022

Summary of Hourly Averages

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

WIND SPEED																											
Maximum Hourly Value:	23.7	kph	on August 8 at hour 14	Hours in Service:	744																						
Maximum Daily Value:	12.3	kph	on August 28	Hours of Data:	744																						
Minimum Hourly Value:	0.2	kph	on August 24 at hour 6	Hours of Missing Data:	0																						
Minimum Daily Value:	0.7	kph	on August 22	Hours of Calibration:	0																						
Monthly Average:	1.5	kph		Operational Uptime:	100																						
WIND DIRECTION																											
Monthly Average:	246 (WSW, 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
Aug 1	3.1	3.8	3.2	2.8	3.4	4.5	3.8	6.3	8.8	10.9	10.4	10.4	9.6	8.8	7.4	8.1	9.4	8.5	5.8	4.1	2.6	3.7	4.5	7.4	2.6	10.9	5.3
Aug 2	10.6	7.6	13.5	15.0	14.6	12.1	11.9	12.5	8.6	7.3	7.7	8.7	8.3	12.1	12.3	11.7	8.9	8.4	10.0	7.6	5.8	1.5	0.4	1.4	0.4	15.0	8.4
Aug 3	2.0	3.3	3.4	3.6	3.5	1.7	3.0	4.4	5.1	6.3	5.9	5.2	6.6	8.8	9.7	9.3	10.4	9.8	7.7	6.7	6.8	8.0	7.5	7.8	1.7	10.4	5.9
Aug 4	7.4	8.5	8.6	7.4	6.0	4.0	5.1	5.1	6.5	3.2	6.6	8.1	5.3	3.8	4.3	12.5	12.7	9.9	3.7	5.3	7.4	4.2	4.9	14.7	3.2	14.7	1.0
Aug 5	14.3	17.3	19.8	20.9	19.5	20.0	20.3	17.8	18.6	17.9	16.2	16.0	17.4	15.7	15.8	13.7	9.4	9.6	8.0	4.3	3.3	3.5	4.3	4.5	3.3	20.9	12.2
Aug 6	4.5	4.8	4.6	4.6	4.9	5.2	6.7	7.7	9.1	10.8	12.6	12.5	12.2	11.7	10.7	6.9	6.7	9.3	10.7	6.2	3.9	4.7	4.6	4.9	3.9	12.6	6.7
Aug 7	4.9	5.2	5.0	5.7	6.3	5.9	7.0	8.6	9.2	10.2	11.7	12.5	13.5	13.4	12.6	12.1	11.5	11.3	9.2	3.3	1.5	3.5	2.9	3.5	1.5	13.5	6.6
Aug 8	3.8	3.7	3.0	3.0	5.0	9.0	7.7	11.1	12.0	16.0	20.4	20.6	23.0	23.7	22.1	22.2	18.6	17.0	9.4	5.7	3.3	2.6	4.5	2.6	23.7	10.5	
Aug 9	2.2	3.2	2.6	1.9	2.2	1.1	1.3	2.8	4.1	5.4	7.5	6.2	6.9	5.0	4.4	3.6	3.9	1.3	3.9	3.2	3.0	3.5	4.7	5.2	1.1	7.5	0.8
Aug 10	5.7	6.2	3.2	5.2	6.0	9.0	8.8	10.4	11.6	12.2	12.0	12.2	12.3	11.8	10.2	10.9	12.9	11.1	9.4	7.5	5.5	6.5	6.0	4.2	3.2	12.9	8.8
Aug 11	2.2	3.0	1.1	2.7	4.4	2.8	2.3	3.9	1.3	2.1	5.7	3.7	2.5	3.1	5.2	4.3	5.1	3.6	4.3	9.5	8.9	8.2	7.4	6.9	1.1	9.5	1.8
Aug 12	7.0	4.8	5.0	4.4	5.0	3.8	4.1	4.5	3.0	3.6	4.7	4.7	6.6	5.5	2.1	5.2	4.6	5.3	4.3	3.2	3.0	5.1	5.9	7.1	2.1	7.1	2.5
Aug 13	6.8	5.9	7.2	7.6	8.3	8.6	8.2	8.7	9.0	8.0	5.4	6.2	9.4	8.8	6.8	7.6	6.0	6.6	6.3	4.0	3.6	6.0	5.3	7.1	3.6	9.4	6.8
Aug 14	9.2	10.1	13.7	3.3	2.8	4.9	7.5	7.1	7.4	9.2	8.5	6.1	7.6	10.9	10.0	9.9	10.7	10.8	7.6	4.2	0.9	1.0	2.0	3.3	0.9	13.7	5.6
Aug 15	4.0	4.1	5.0	5.3	4.9	4.8	4.5	5.2	5.1	6.6	8.9	9.8	10.3	8.4	9.6	9.9	9.8	8.4	5.1	2.9	2.5	3.1	3.2	4.6	2.5	10.3	4.5
Aug 16	2.9	4.7	4.4	3.8	3.3	3.5	3.2	3.3	4.3	5.5	8.0	8.6	8.0	7.0	8.5	9.9	6.3	5.4	5.9	4.4	3.3	2.7	3.8	4.8	2.7	9.9	3.3
Aug 17	3.5	1.2	1.8	2.0	0.8	5.0	5.0	6.7	7.3	4.2	5.5	8.4	7.5	9.2	11.1	9.5	9.5	6.6	5.4	3.3	2.6	3.3	2.6	2.6	0.8	11.1	4.0
Aug 18	2.1	2.2	3.5	1.8	2.6	3.7	3.4	3.1	1.9	2.3	3.0	3.0	5.8	5.9	6.8	5.5	5.0	5.4	4.2	3.9	4.3	4.0	4.5	1.8	6.8	3.5	
Aug 19	5.4	4.9	4.5	4.8	4.8	4.4	5.2	5.2	6.2	6.2	7.3	9.0	7.8	8.7	7.6	9.5	9.4	8.2	7.0	6.4	8.5	9.5	10.9	9.8	4.4	10.9	7.1
Aug 20	9.8	9.9	7.4	8.2	6.8	4.2	3.8	3.7	5.6	3.3	1.0	2.8	1.6	3.1	2.8	1.4	1.1	0.5	1.3	1.1	2.0	0.8	0.7	4.7	0.5	9.9	2.5



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Lac La Biche Station - August 2022

Summary of Hourly Averages

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

WIND SPEED					
Maximum Hourly Value:	23.7 kph on August 8 at hour 14				
Maximum Daily Value:	12.3 kph on August 28				
Minimum Hourly Value:	0.2 kph on August 24 at hour 6				
Minimum Daily Value:	0.7 kph on August 22				
Monthly Average:	1.5 kph				
Hours in Service:	744				
Hours of Data:	744				
Hours of Missing Data:	0				
Hours of Calibration:	0				
Operational Uptime:	100				
WIND DIRECTION					
Monthly Average:	246 (WSW degree)				
Day	Hourly Period Starting at (MST)	Daily Minimum	Daily Maximum	Daily Average	
Aug 21	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	2.9	9.3	3.6	
Aug 22	0.3 0.3	0.3	7.3	0.7	
Aug 23	0.3 0.3	0.3	6.1	1.0	
Aug 24	0.2 0.2	0.2	5.9	0.9	
Aug 25	4.0 4.0	4.0	11.4	5.6	
Aug 26	2.9 2.9	2.9	8.7	5.3	
Aug 27	1.1 1.1	1.1	18.9	7.8	
Aug 28	2.6 2.6	2.6	19.1	12.3	
Aug 29	0.6 0.6	0.6	10.3	3.9	
Aug 30	1.2 1.2	1.2	11.6	4.3	
Aug 31	1.0 1.0	1.0	7.3	2.0	
C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance
X	Invalid Data (Equipment Malfunction/Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	P	Power Failure

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

Lac La Biche Station - August 2022

Summary of Hour Standard Deviations

STANDARD DEVIATION WIND DIRECTION (STDWD) in Degree

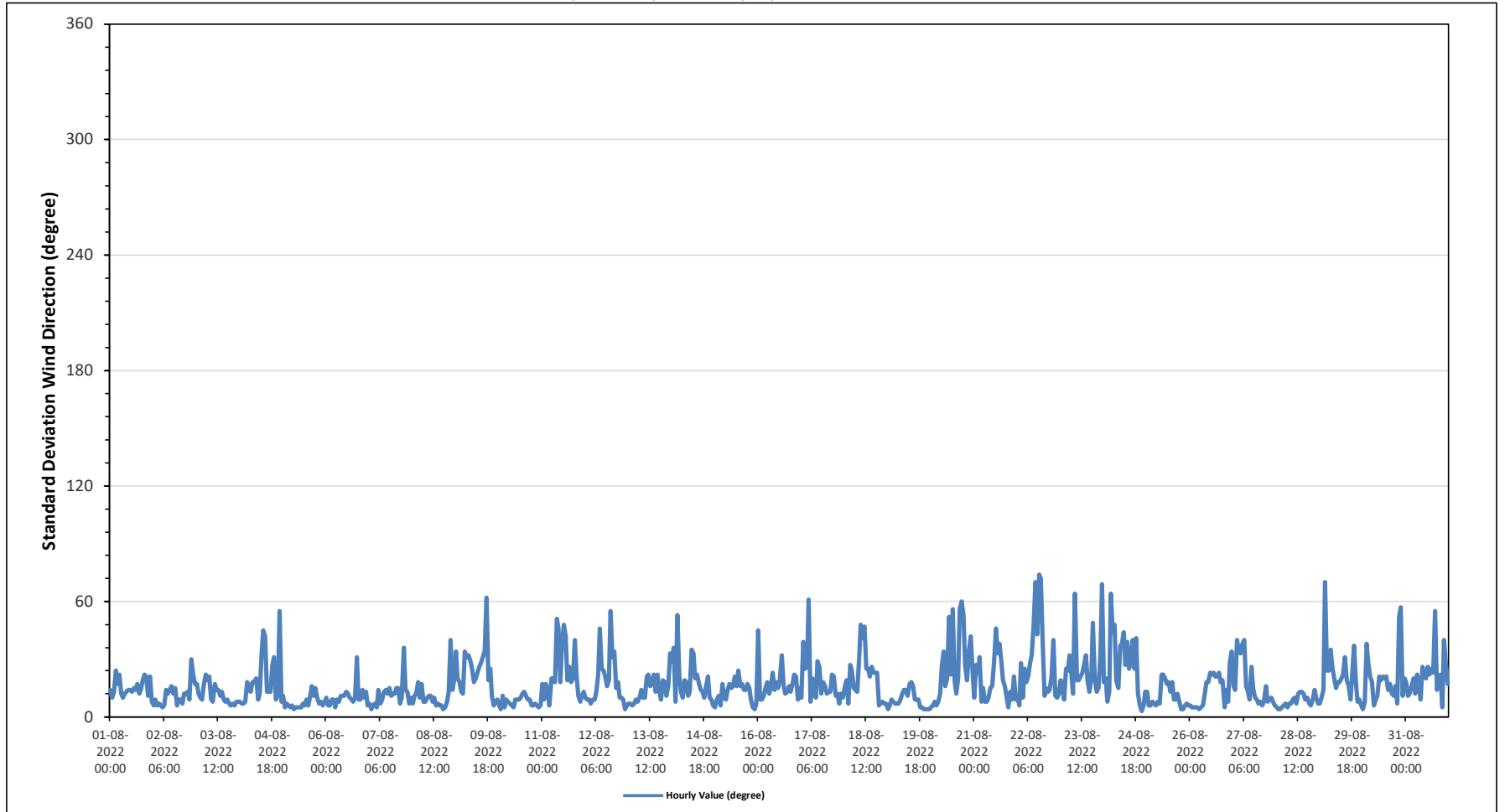
Maximum Hourly Value:	74 degree on August 22 at hour 12	Hours in Service:	744
Minimum Hourly Value:	3 degree on August 24 at hour 21	Hours of Data:	744
		Hours of Missing Data:	0
		Hours of Calibration:	0
		Operational Uptime:	100.0

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
Aug 1	14	10	13	24	17	22	12	10	12	13	14	14	13	15	14	17	12	14	19	22	21	11	21	8	8	24
Aug 2	6	9	6	7	6	5	6	14	12	14	16	12	15	6	9	9	7	12	12	13	9	30	22	17	5	30
Aug 3	17	12	10	9	17	22	19	21	9	8	17	14	14	11	13	9	8	9	7	6	7	6	8	8	6	22
Aug 4	8	7	7	8	18	16	13	18	18	20	9	12	33	45	42	13	13	13	27	31	9	11	55	8	7	55
Aug 5	11	5	7	6	5	6	4	5	5	5	7	6	9	6	11	16	11	15	10	7	8	6	8	4	4	16
Aug 6	10	6	6	9	9	5	9	8	11	11	11	13	12	10	9	8	10	31	9	9	14	10	13	6	5	31
Aug 7	7	4	6	7	5	14	7	9	13	14	12	15	11	12	12	15	15	7	10	36	14	13	7	10	4	36
Aug 8	7	11	12	18	10	17	8	8	10	11	11	8	10	6	7	6	4	5	8	13	40	14	19	4	4	40
Aug 9	34	20	18	13	12	34	31	32	29	25	18	20	23	26	28	31	34	62	19	25	11	6	8	9	6	62
Aug 10	6	4	11	5	9	8	7	6	5	9	9	10	12	13	11	9	9	6	6	7	6	5	6	4	4	13
Aug 11	17	9	17	14	6	20	20	18	51	46	18	37	48	42	19	26	18	20	40	22	11	8	11	13	6	51
Aug 12	10	9	9	7	9	9	13	22	46	25	24	21	16	19	55	31	34	15	18	10	10	9	4	6	4	55
Aug 13	7	7	6	7	9	8	10	14	10	10	21	22	16	17	22	13	22	13	9	19	18	11	16	33	6	33
Aug 14	29	36	8	53	22	13	10	19	18	11	13	35	33	20	22	17	14	13	10	16	21	10	9	6	6	53
Aug 15	5	9	11	6	17	10	9	14	17	15	16	21	16	24	16	17	14	14	17	15	9	5	4	7	4	24
Aug 16	45	9	9	11	15	18	12	15	23	14	18	15	18	32	16	12	13	16	13	17	22	21	9	15	9	45
Aug 17	10	39	25	26	61	8	20	14	10	29	26	12	18	16	12	13	13	22	21	11	12	7	12	10	7	61
Aug 18	15	19	7	27	24	15	14	13	30	48	41	47	25	25	21	26	23	23	23	6	7	8	7	7	6	48
Aug 19	4	6	9	8	7	7	7	9	12	14	14	11	17	18	16	9	9	9	5	5	4	4	4	4	4	18
Aug 20	5	6	8	6	8	12	26	34	16	20	52	22	56	19	12	20	56	60	53	27	19	34	42	23	5	60
Aug 21	10	27	23	31	8	15	8	8	10	15	16	29	46	33	38	29	19	16	10	5	13	9	21	9	5	46
Aug 22	10	6	28	10	25	18	21	28	32	47	70	43	74	72	39	11	15	13	14	21	40	11	10	12	6	74
Aug 23	19	13	9	25	24	32	22	12	64	19	19	21	23	27	32	19	13	20	49	20	13	15	32	69	9	69
Aug 24	18	20	8	13	64	44	48	19	15	37	38	44	27	39	25	30	40	25	41	12	6	3	6	13	3	64
Aug 25	13	6	6	8	7	6	8	7	22	22	20	17	18	13	18	9	9	12	8	4	4	6	7	6	4	22
Aug 26	6	5	5	5	5	4	5	6	12	18	18	23	22	23	21	21	23	18	19	5	14	8	28	34	4	34
Aug 27	16	14	40	35	33	38	40	16	13	9	26	15	10	9	7	8	6	8	16	8	9	10	8	6	6	40
Aug 28	5	4	4	5	6	7	5	7	7	9	10	7	12	13	13	12	9	10	7	6	9	14	10	7	4	14
Aug 29	7	10	14	70	24	24	35	25	20	15	18	18	20	22	31	19	16	9	24	37	18	8	9	6	6	70
Aug 30	4	8	38	28	21	18	6	9	11	21	19	21	20	21	14	17	12	11	16	7	52	57	11	20	4	57
Aug 31	18	11	12	16	20	12	22	17	9	26	23	20	26	22	25	23	55	14	18	22	5	40	28	17	5	55
Diurnal Minimum	4	4	4	5	5	4	4	5	5	5	5	7	6	6	6	6	6	4	5	4	4	3	4	4		
Diurnal Maximum	45	39	40	70	64	44	48	34	64	48	70	47	74	72	55	31	56	62	53	37	52	57	55	69		

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

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 - Lac La Biche Station



END OF REPORT

This page, 314 of 314, ends the August 2022 Monthly Ambient Air Quality Monitoring Report.



Lakeland Industry & Community Association

AUGUST 2022

Ambient Air Monitoring Calibration Report

- COLD LAKE SOUTH STATION-

CAL-LICA-202208-01174

Station Operation and Maintenance:

Bureau Veritas Canada

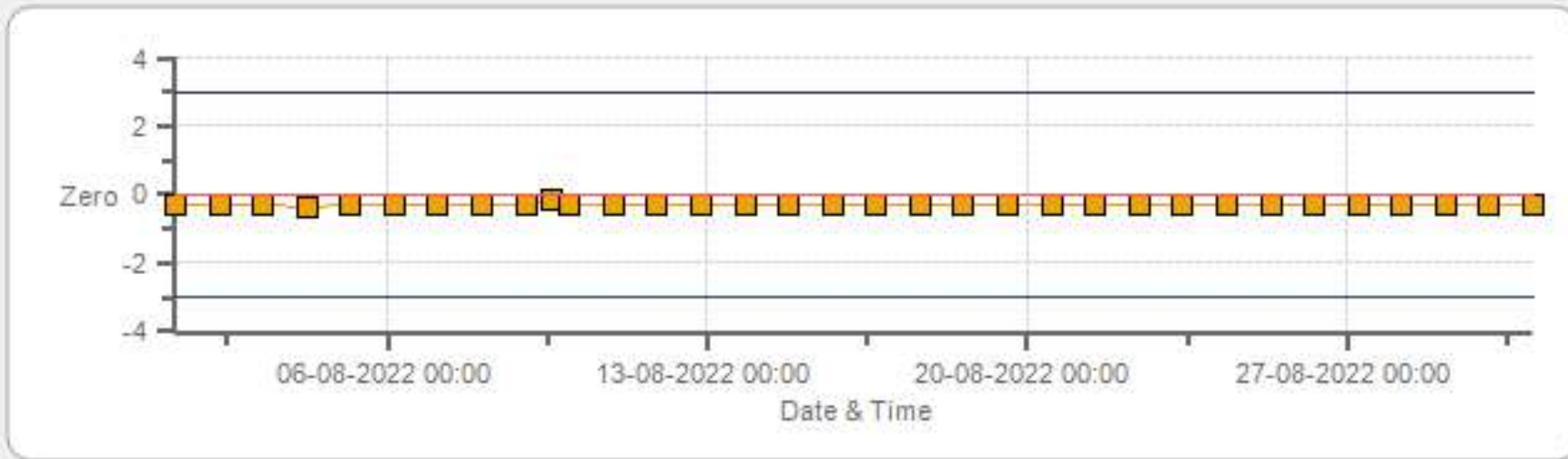
Data Validation and Report:

LICA / Bureau Veritas Canada

September 23, 2022

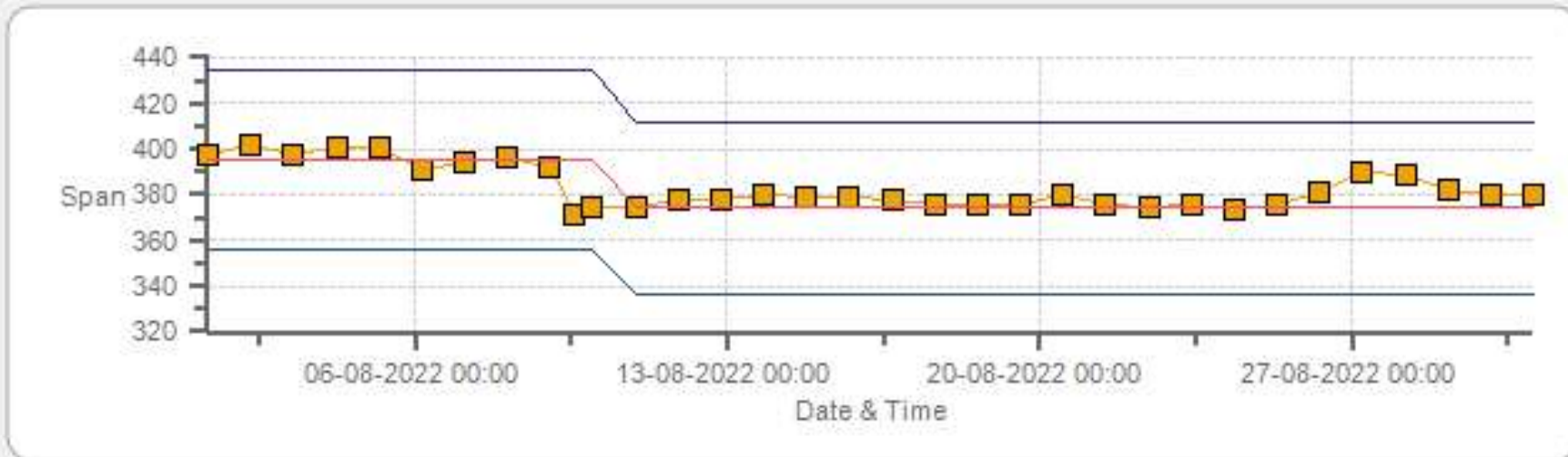
DAILY INTERNAL ZERO-SPAN CALIBRATION RECORDS

SO2[ppb] Calibration: Cold Lake South Monthly: 08-2022 Type: SpanAndZero - Zero



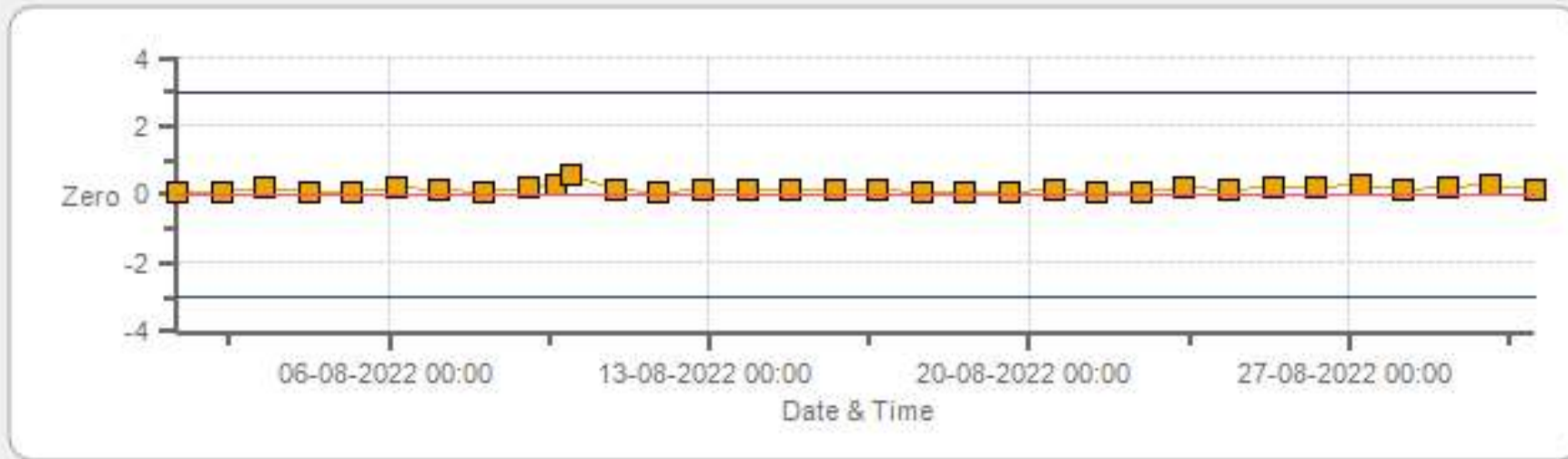
Zero Zero Ref Zero Low Zero High

SO2[ppb] Calibration: Cold Lake South Monthly: 08-2022 Type: SpanAndZero - Span



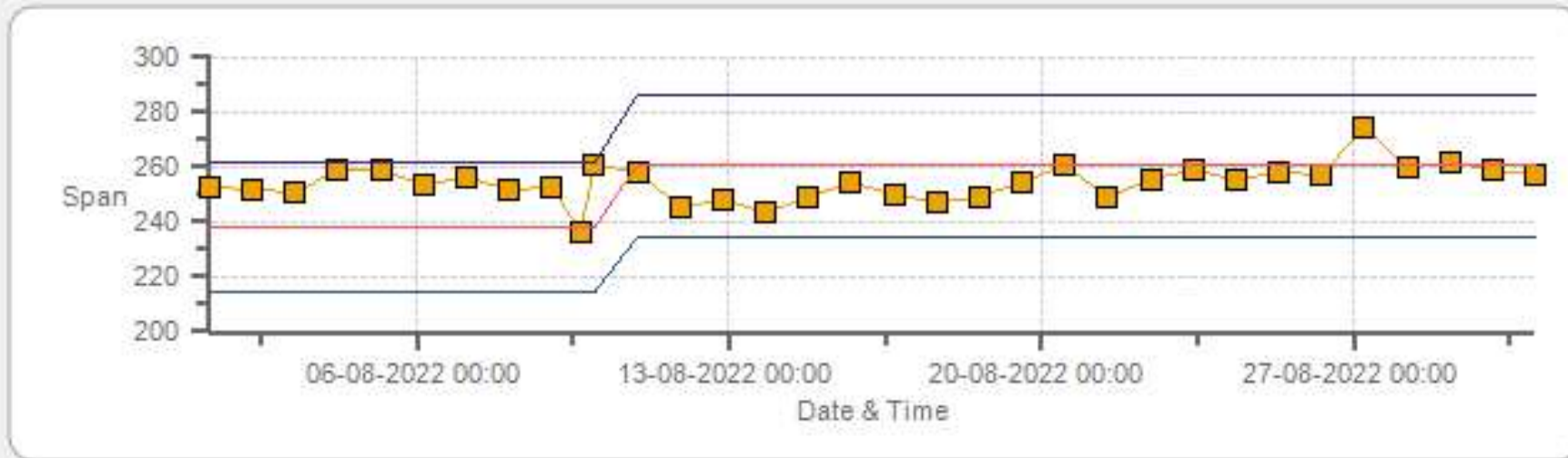
Span Span Ref Span Low Span High

NO2[ppb] Calibration: Cold Lake South Monthly: 08-2022 Type: SpanAndZero - Zero



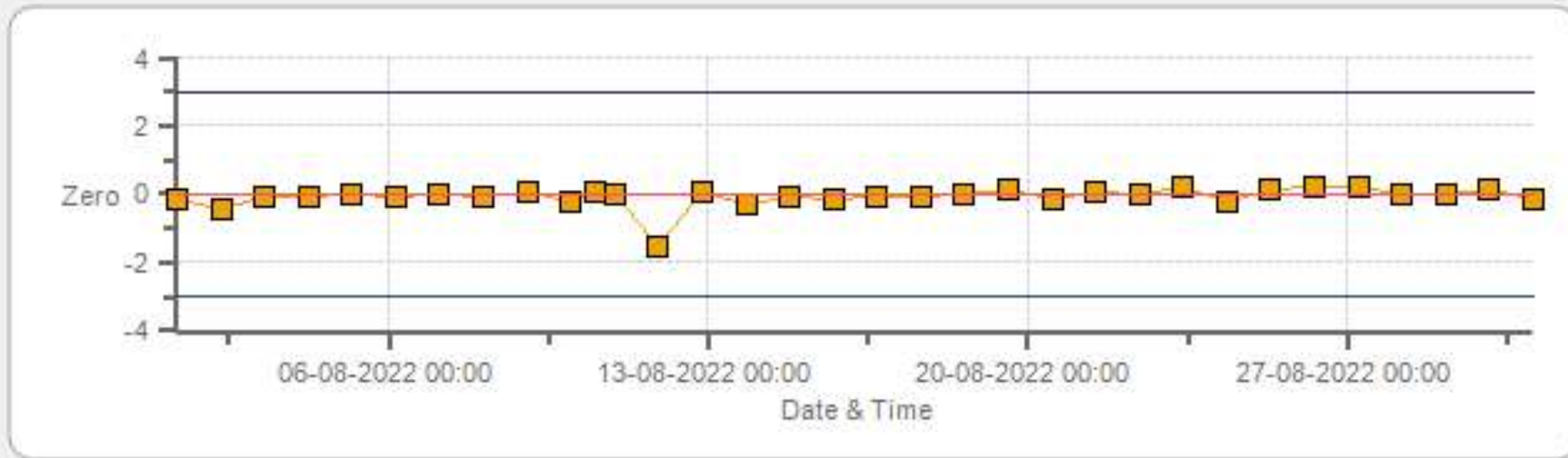
Zero Zero Ref Zero Low Zero High

NO2[ppb] Calibration: Cold Lake South Monthly: 08-2022 Type: SpanAndZero - Span



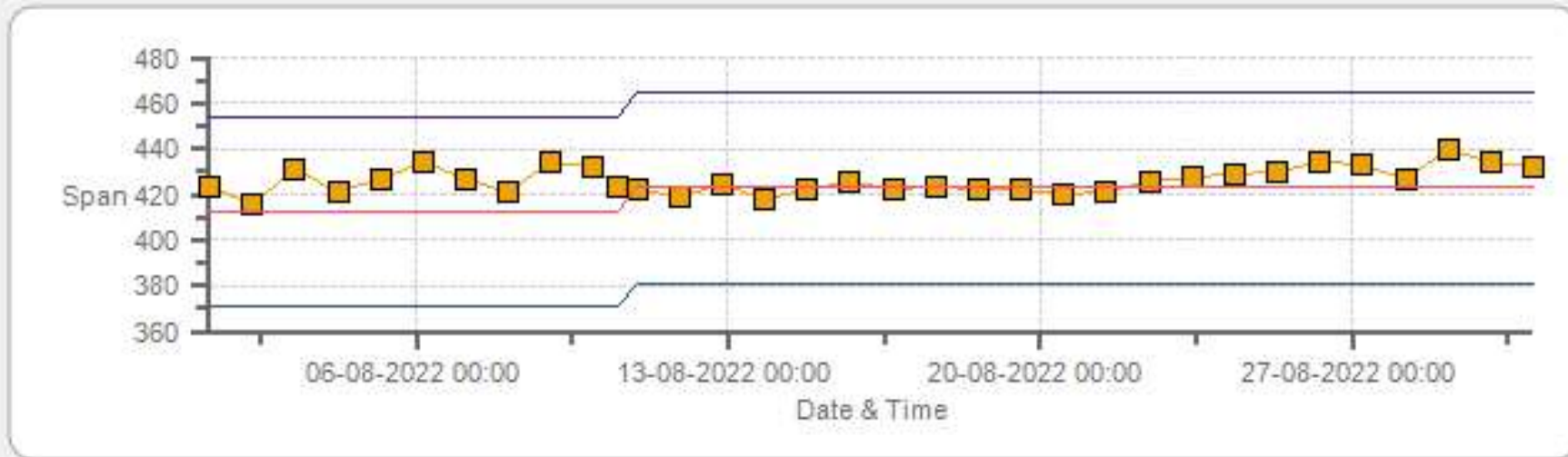
Span SpanRef Span Low Span High

O3[ppb] Calibration: Cold Lake South Monthly: 08-2022 Type: SpanAndZero - Zero

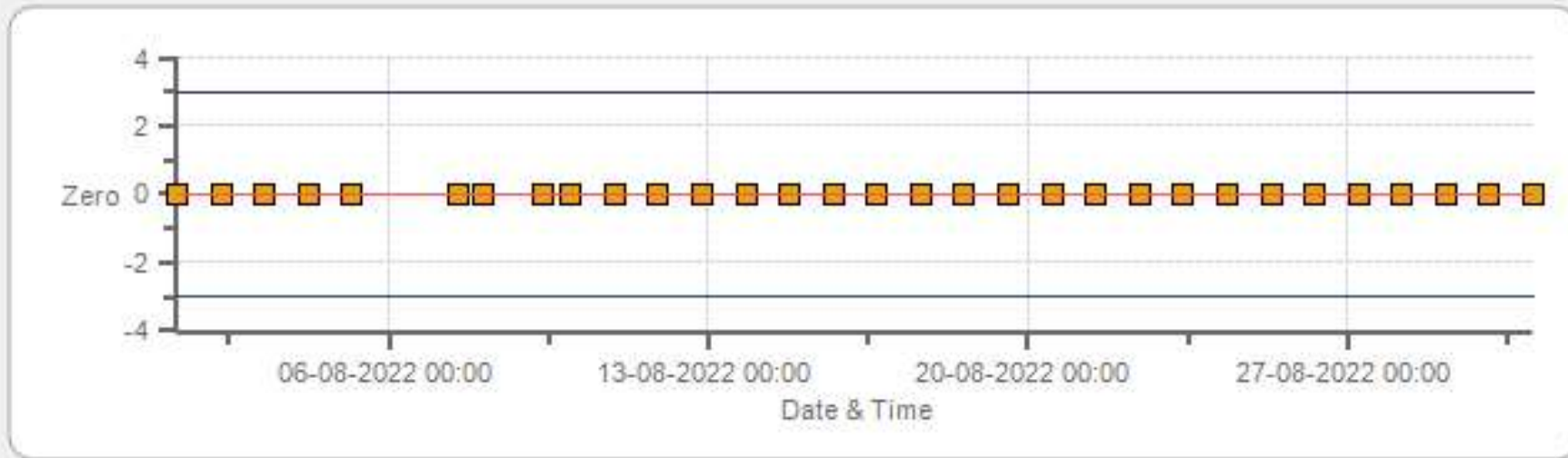


Zero Zero Ref Zero Low Zero High

O3[ppb] Calibration: Cold Lake South Monthly: 08-2022 Type: SpanAndZero - Span

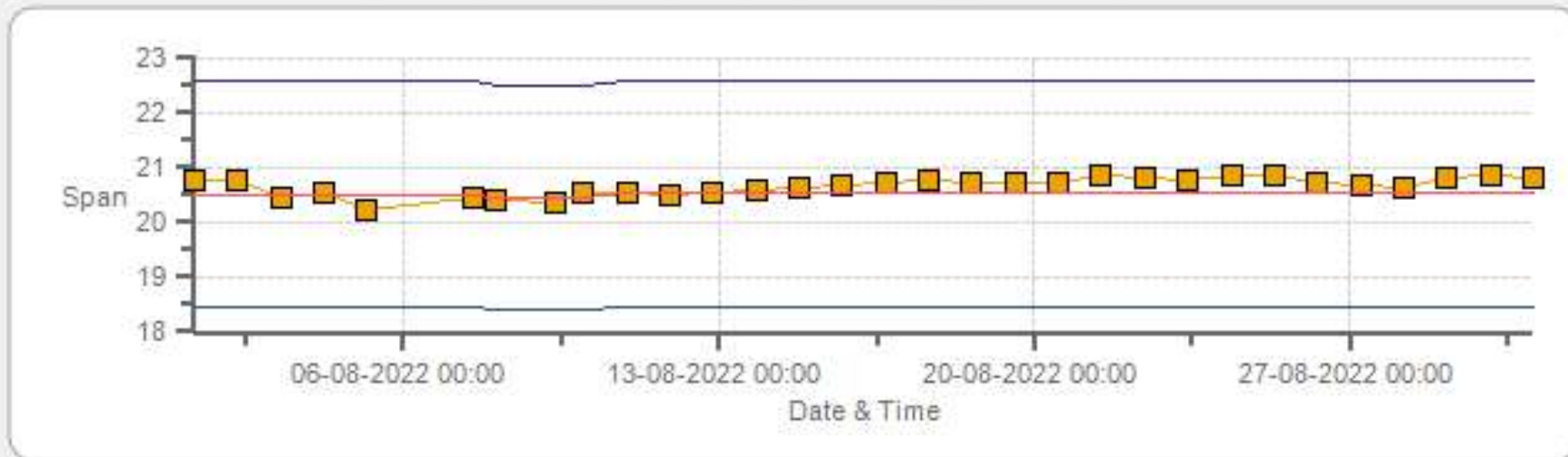


THC55[ppm] Calibration: Cold Lake South Monthly: 08-2022 Type: SpanAndZero - Zero



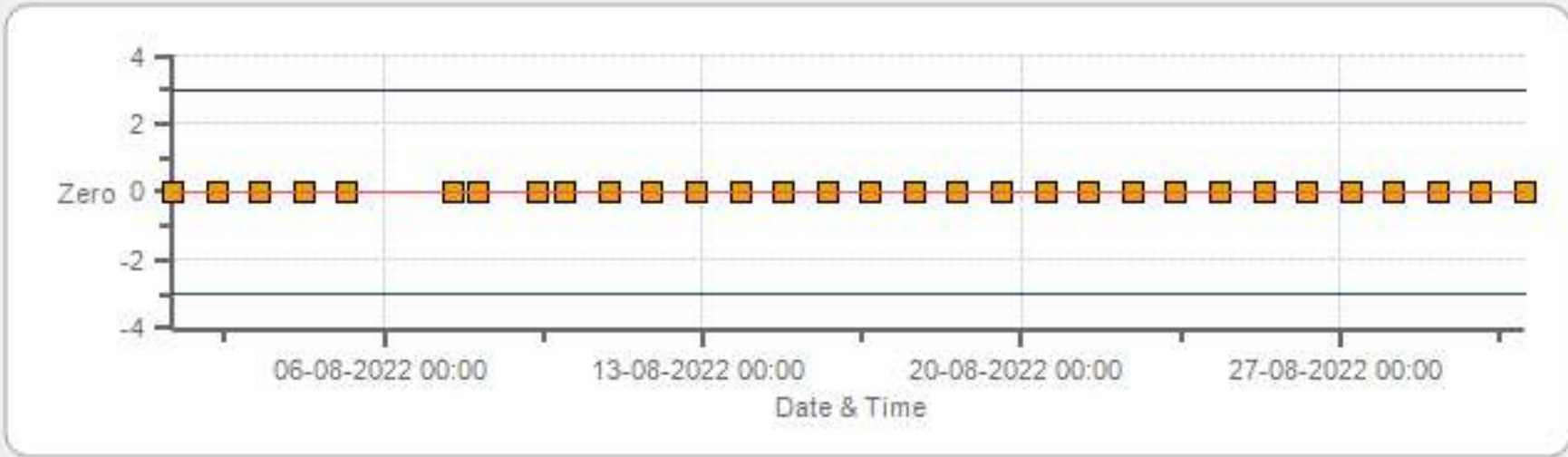
Zero Zero Ref Zero Low Zero High

THC55[ppm] Calibration: Cold Lake South Monthly: 08-2022 Type: SpanAndZero - Span



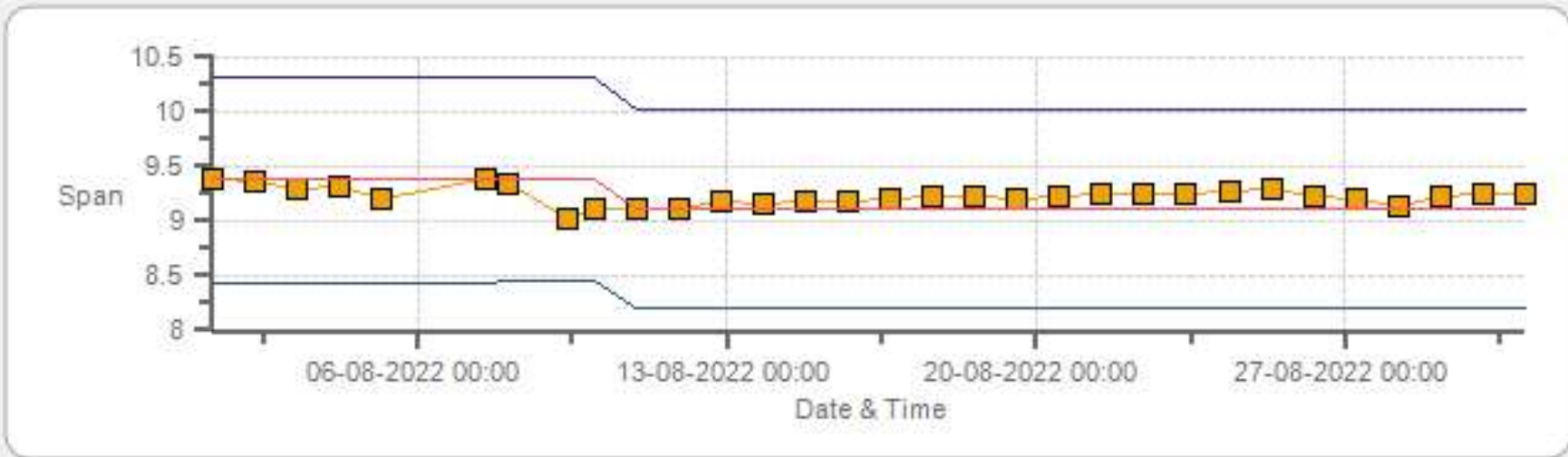
Span SpanRef Span Low Span High

CH4[ppm] Calibration: Cold Lake South Monthly: 08-2022 Type: SpanAndZero - Zero



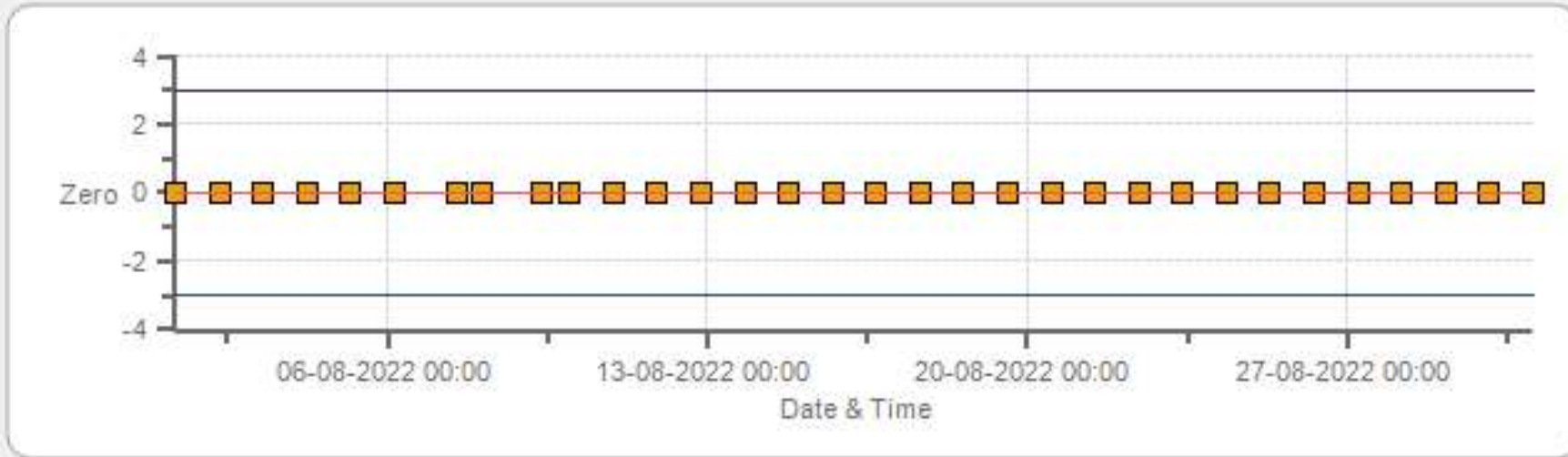
Zero Zero Ref Zero Low Zero High

CH4[ppm] Calibration: Cold Lake South Monthly: 08-2022 Type: SpanAndZero - Span



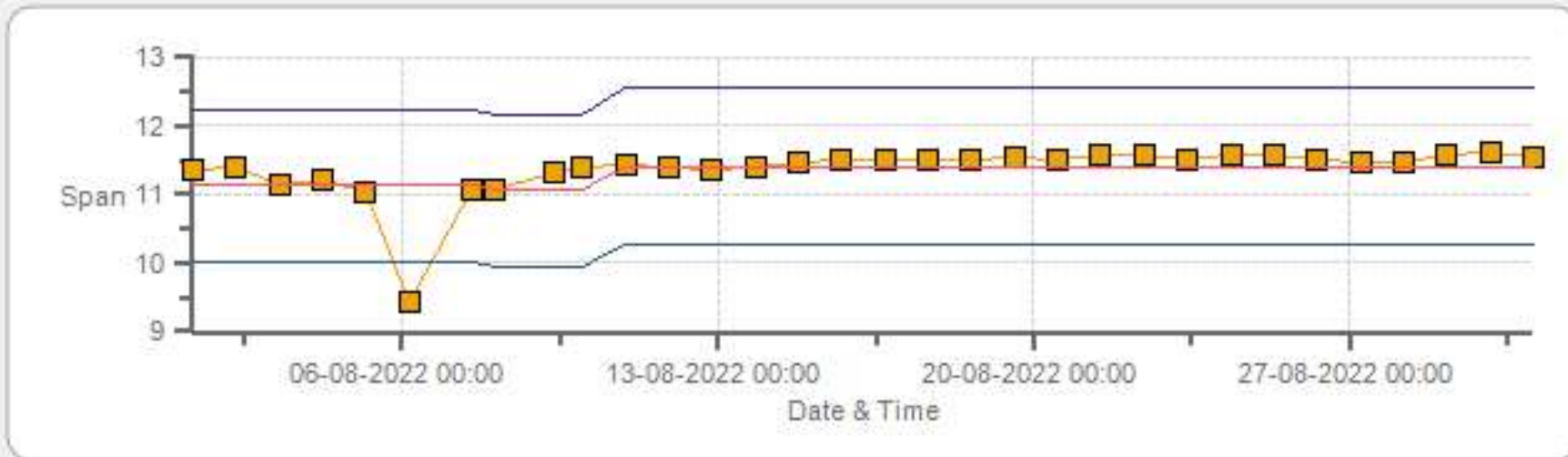
Span SpanRef Span Low Span High

NMHC[ppm] Calibration: Cold Lake South Monthly: 08-2022 Type: SpanAndZero - Zero



Zero Zero Ref Zero Low Zero High

NMHC[ppm] Calibration: Cold Lake South Monthly: 08-2022 Type: SpanAndZero - Span



Span SpanRef Span Low Span High

MULTI-POINT CALIBRATION RECORDS

SO2 Analyzer Calibration by Dilution



DATE:	09-Aug-2022	PREVIOUS CALIBRATION DATE:	27-Jul-2022
PARAMETER:	SO2	PREVIOUS CORRECTION FACTOR:	0.998
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	CLS	BAROMETRIC (mBar):	957
PURPOSE:	Routine	START TIME (MST):	09:37
PERFORMED BY:	Alex Yakupov	END TIME (MST):	14:17

ANALYZER:

MAKE/MODEL	Thermo 43I-TLE	RANGE	500 ppb
SERIAL #	1180260018	FLOW (mL/min)	442
INITIAL		FINAL	
BKG/OFFSET	2.15	BKG/OFFSET	2.21
COEF/SLOPE	0.97	COEF/SLOPE	0.961
Expected (reference) Value	251	Expected (reference) Value	374.1

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010	MODEL:	T701
ID:	26801218	ID:	132
MFC CALIBRATION DATE:	20-Apr-2022	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	LL 105146	HIGH ID	n/a
CONC (ppm):	50.80	EXPIRY DATE	n/a
CYLINDER (psi):	500	LOW ID	n/a
EXPIRY DATE	09-Jun-2029	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:

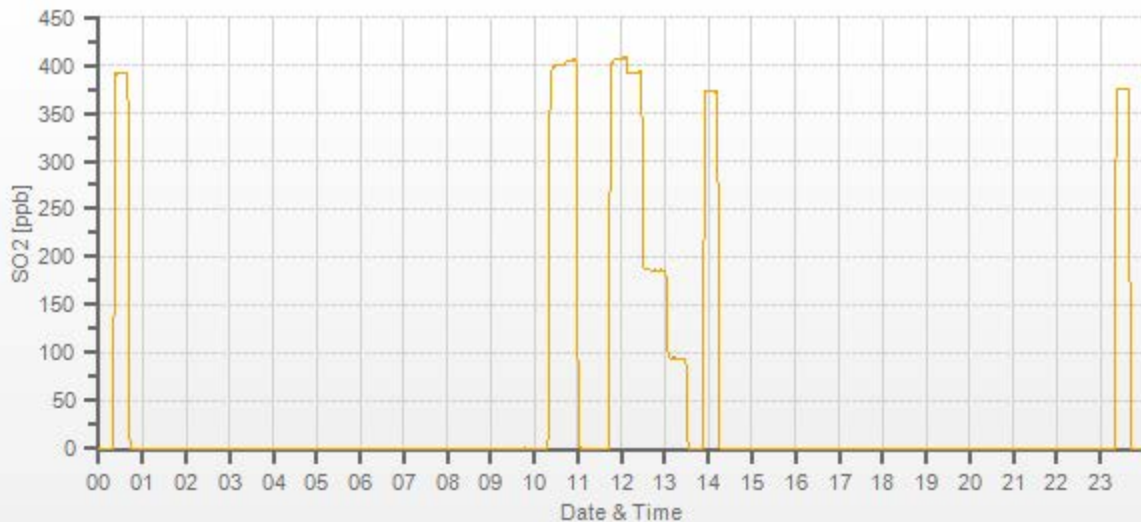
FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
DILUENT	GAS	TOTAL	ACTUAL	INDICATED		Initial	Final
				Initial	Final		
5000	38.50	5000	0.00	0	0	0.966	0.999
4962	38.50	5000	391.16	405.1	391.5	0.966	0.999
4982	18.00	5000	182.88	n/a	185.7	n/a	0.985
4991	9.00	5000	91.44	n/a	94	n/a	0.973

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	0.999	0.3%

COMMENTS:

Sample inlet filter was changed.



TRS Analyzer Calibration by Dilution



DATE:	09-Aug-2022	PREVIOUS CALIBRATION DATE:	05-Jul-2022
PARAMETER:	TRS	PREVIOUS CORRECTION FACTOR:	0.998
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	CLS	BAROMETRIC (mBar):	957
PURPOSE:	Routine	START TIME (MST):	09:35
PERFORMED BY:	Alex Yakupov	END TIME (MST):	14:17

ANALYZER:

MAKE/MODEL	Thermo 450i	RANGE	100 ppb
SERIAL #	812728560	FLOW (mL/min)	502
INITIAL		FINAL	
BKG/OFFSET	23.9	BKG/OFFSET	24
COEF/SLOPE	1.088	COEF/SLOPE	1.099
Expected (reference) Value	38	Expected (reference) Value	40.6

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010 D	MODEL:	T701
ID:	11900613	ID:	132
MFC CALIBRATION DATE:	20-Apr-2022	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	EY 0002287	HIGH ID	n/a
CONC (ppm):	10.10	EXPIRY DATE	n/a
CYLINDER (psi):	2000	LOW ID	n/a
EXPIRY DATE	14-Sep-2024	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:	09:42	SO2 Conc (ppb)	380
END TIME:	09:57	Analyzer Response (ppb)	0.0

CALIBRATION:

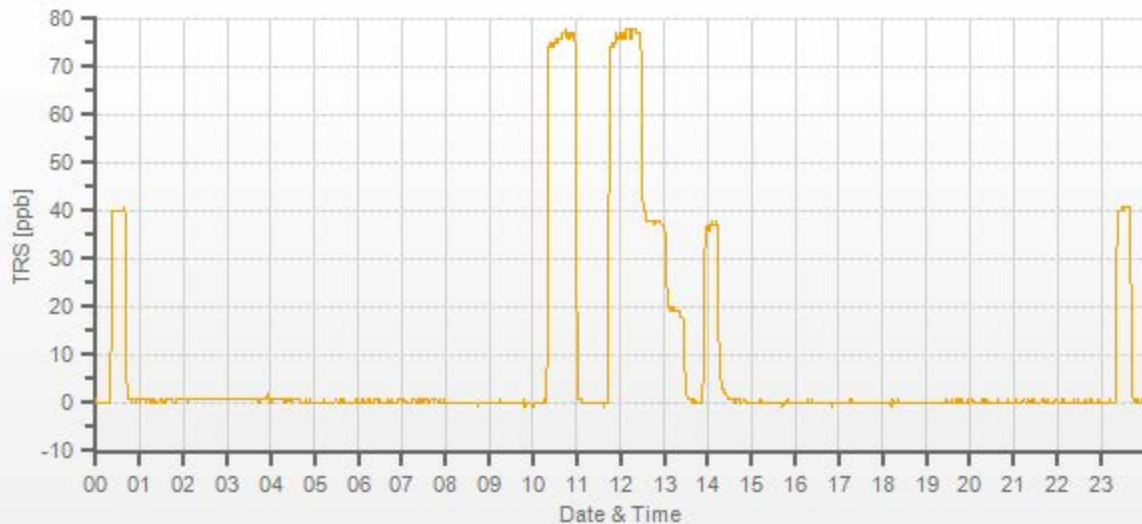
FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
DILUENT	GAS	TOTAL	ACTUAL	INDICATED		Initial	Final
				Initial	Final		
7500	7500	7500	0.00	0.1	0	1.015	1.004
7442	57.90	7500	77.97	76.9	77.7	1.015	1.004
7472	28.20	7500	37.98	n/a	37.7	n/a	1.007
7486	14.10	7500	18.99	n/a	19	n/a	0.999

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	0.996	0.0%

COMMENTS:

Sample inlet filter was changed.



NOx Calibration by Dilution/Gas-Phase Titration



CALIBRATION:				ANALYZER:			
DATE:	09-Aug-2022	PREVIOUS CALIBRATION DATE:	05-Jul-2022	MAKE/MODEL:	Thermo 42i	PREVIOUS CF.	
CLIENT:	LICA	TEMPERATURE (°C):	22.0	SERIAL #:	1505664393	NOx	1.000
LOCATION:	CLS	BAROMETRIC (mBar):	954	FLOW (mL/min)	740	NO	1.001
PURPOSE:	Routine	START TIME (MST):	09:38	RANGE (ppb)	500	NO2	0.999
PERFORMED BY:	Alex Yakupov	END TIME (MST):	16:10	GPT FOR O3?		No	

CALIBRATION SYSTEM:							
CALIBRATOR:		ZERO AIR:		CALIBRATION GAS:		FLOWMETERS (if applicable):	
MAKE:	SABIO	MAKE:	Teledyne	CYLINDER ID:	LL 105146	HIGH ID:	n/a
MODEL:	2010	MODEL:	T701	NO/NOx (PPM):	50.0 50.1	HIGH EXPIRY:	n/a
ID:	26801218	ID:	132	CYLINDER (psi):	700	LOW ID:	n/a
MFC CALIBRATION DATE:	20-Apr-2022	OXIDIZER ID:	n/a	EXPIRY DATE	09-Jun-2029	LOW EXPIRY:	n/a

CALIBRATION SETTINGS:							
INITIAL	NOx	NO	NO2	FINAL	NOx	NO	NO2
BKG/OFFSET:	4.5	4.4	n/a	BKG/OFFSET:	4.5	4.4	n/a
SLOPE/COEF/CE:	1.002	0.988	0.999	SLOPE/COEF/CE:	1.002	0.994	0.999

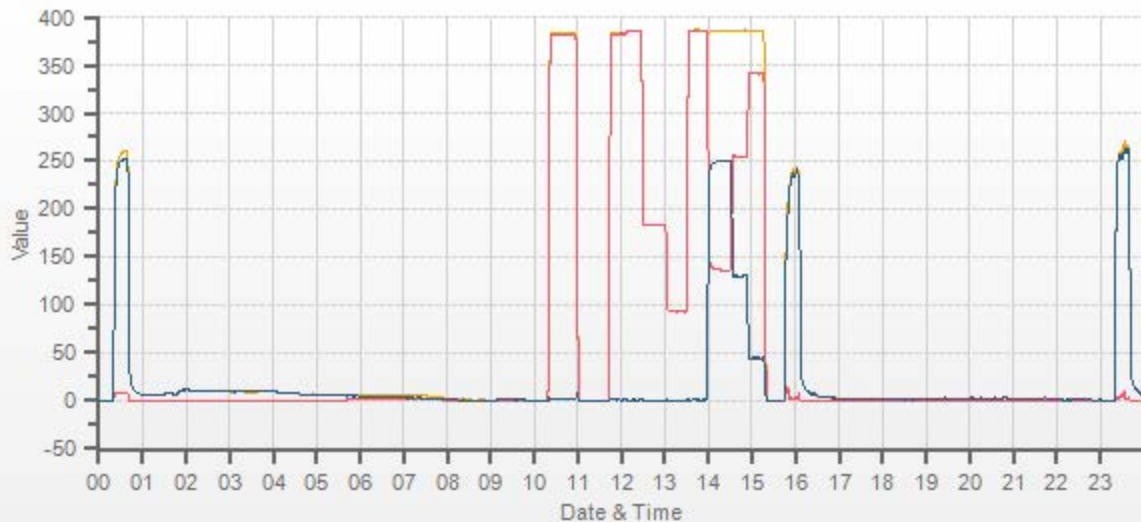
EXPECTED (REFERENCE) VALUE:							
INITIAL	NOx	NO	NO2	FINAL	NOx	NO	NO2
	241.3	2.9	238.4		263.9	260.5	3.3

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

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	38.50	5000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.008	1.005	0.998	1.000	0.998	0.999
4962	38.50	5000	385.0	385.8	0.8	382.0	383.7	1.7	384.9	386.4	1.4	1.008	1.005	0.998	1.000	0.998	0.999
4982	18.00	5000	180.0	180.4	0.4	n/a	n/a	n/a	183.2	184.0	0.7	n/a	n/a	0.983	0.980	0.998	0.999
4991	9.00	5000	90.0	90.2	0.2	n/a	n/a	n/a	92.8	93.0	0.2	n/a	n/a	0.970	0.970	0.998	0.999

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	38.50	5000	0	385.0	386.4	1.4	249	248	1.004	99.60%
AS-FOUND HIGH	38.50	5000	240	136.0	385.5	249.4	249	248	1.004	99.60%
ADJUSTED HIGH	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
MID	38.50	5000	125	255.2	385.8	130.5	129.8	129.1	1.005	99.46%
LOW	38.50	5000	45	340.7	385.3	44.6	44.3	43.2	1.025	97.52%
NO2 adjustment not required.									AVERAGE:	98.86%

LINEAR REGRESSION ANALYSIS:				COMMENTS:
	CORRELATION	SLOPE	INTERCEPT	
NO	1.000	0.998	0.37%	
NOx	1.000	1.000	0.36%	
NO2	1.000	1.000	-0.20%	



CAL-LICA-202208-01174

Ozone Calibration by Photometer (Varying UV Lamp)



DATE:	10-Aug-2022	PREVIOUS CALIBRATION DATE:	28-Jul-2022
PARAMETER:	O3	PREVIOUS CORRECTION FACTOR:	0.999
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	CLS	BAROMETRIC (mBar):	958
PURPOSE:	Routine	START TIME (MST):	08:55
PERFORMED BY:	Alex Yakupov	END TIME (MST):	12:50

ANALYZER:

MAKE/MODEL	Thermo 49i	RANGE	500 ppb
SERIAL #	700419951	FLOW (mL/min)	1478
INITIAL		FINAL	
BKG/OFFSET	-0.2	BKG/OFFSET	-0.2
COEF/SLOPE	1.058	COEF/SLOPE	1.046
Expected (reference) Value	412.7	Expected (reference) Value	422.9

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010 D	MODEL:	T701
ID:	11900613	ID:	132
MFC CALIBRATION DATE:	20-Apr-2022	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	
DILUENT	GAS	TOTAL	ACTUAL	INDICATED		Initial	Final
				Initial	Final		
5000	XXXX	5000	0.0	-0.1	0.0	XXXX	XXXX
5000	XXXX	5000	378.0	380.5	376.9	0.993	1.003
5000	XXXX	5000	180.0	n/a	179.7	n/a	1.002
5000	XXXX	5000	60.0	n/a	59.9	n/a	1.002

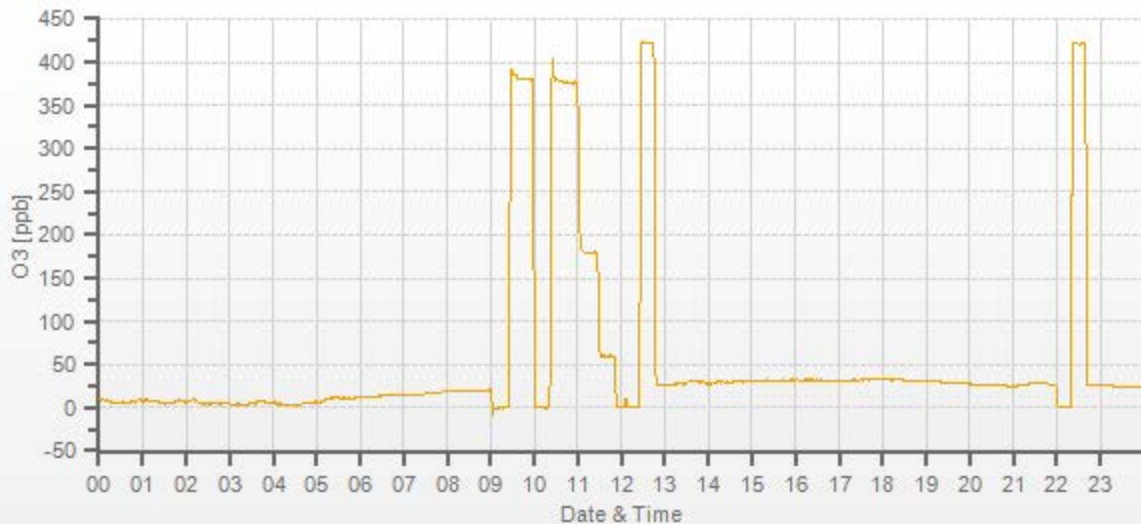
LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	0.997	0.0%

COMMENTS:

Sample inlet filter was changed.

O3[ppb] Station: Cold Lake South Daily: 10-08-2022 Type: AVG 1 Min. [1 Min.]



CAL-LICA-202208-01174

Methane/Non-Methane Analyzer Calibration by Dilution



CALIBRATION:				ANALYZER:			
DATE:	09-Aug-2022	PREVIOUS CALIBRATION DATE:	n/a	VALUE	MAKE/MODEL	SERIAL	FLOW (mL/min)
CLIENT:	LICA	TEMPERATURE (°C):	22.2		Thermo 55i	1180930025	1103
LOCATION:	CLS	BAROMETRIC (mBar):	958	PARAMETER:	CH4	NMHC	THC
PURPOSE:	Install/Post-Repair	START TIME (MST):	06:56	RANGE (ppm):	20	20	40
PERFORMED BY:	Limin Li	END TIME (MST):	09:27	PREVIOUS CF:	n/a	n/a	n/a

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:		CALIBRATION GAS:		FLOWMETERS (if applicable):	
MAKE:	SABIO	MAKE:	API	CYLINDER ID:	LL 70331	HIGH ID:	n/a
MODEL:	2010	MODEL:	701	CH ₄ /C ₃ H ₈ (ppm):	909.0 308.0	HIGH EXPIRY:	n/a
ID:	17200415	ID:	1105	CYLINDER (psi):	1100	LOW ID:	n/a
MFC CALIBRATION DATE:	23-Mar-2022	OXIDIZER ID:	111	EXPIRY DATE:	21-Jan-2028	LOW EXPIRY:	n/a

CALIBRATION PARAMETERS:

POINT (CH ₄ /NMHC)	HIGH	MID	LOW	CH ₄ EQUIVILANCE	
TARGET	14	7	3.5	C ₃ H ₈ as CH ₄	847.0
RANGE	12 - 16	6 - 8	2 - 4	THC as CH ₄	1756.0

EXPECTED (REFERENCE) VALUE:

INITIAL	CH ₄	NMHC	THC	FINAL	CH ₄	NMHC	THC
	n/a	n/a	n/a		n/a	9.03	11.34

CALIBRATION:

FLOW RATE			CONCENTRATION (PPM)									CORRECTION FACTOR (CF.)					
(mL/min)			CALCULATED			INITIAL INDICATED			FINAL INDICATED			INITIAL			FINAL		
DILUENT	GAS	TOTAL	CH ₄	NMHC	THC	CH ₄	NMHC	THC	CH ₄	NMHC	THC	CH ₄	NMHC	THC	CH ₄	NMHC	THC
3500	X	3500	0.00	0.00	0.00	n/a	n/a	n/a	0.00	0.00	0.00	X	X	X	X	X	X
3444	55.80	3500	14.49	13.50	28.00	n/a	n/a	n/a	14.53	13.50	28.03	n/a	n/a	n/a	0.997	1.000	0.999
3472	27.90	3500	7.25	6.75	14.00	n/a	n/a	n/a	7.18	6.80	13.98	n/a	n/a	n/a	1.009	0.993	1.001
3486	14.00	3500	3.64	3.39	7.02	n/a	n/a	n/a	3.58	3.49	7.07	n/a	n/a	n/a	1.016	0.971	0.993

LINEAR REGRESSION ANALYSIS:

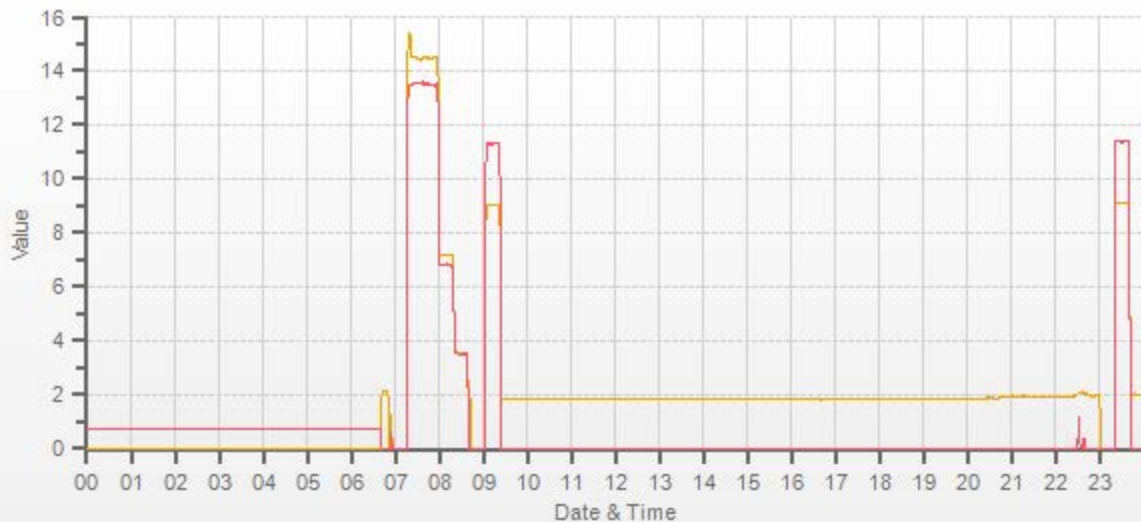
	CORRELATION	SLOPE	INTERCEPT
CH ₄	1.000	1.003	-0.2%
NMHC	1.000	0.998	0.3%
THC	1.000	1.001	0.0%

Comments:

Install calibration.

Use Zero Chrom?

Yes



CAL-LICA-202208-01174



Teledyne T640 Audit/Calibration

Date/Previous Audit Date:	August 30, 2022	July 6, 2022	Weather Conditions:	Mainly sunny	
Company:	LICA		Start Time (mst):	8:50	
Station:	Cold Lake South		End Time (mst):	9:31	
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/N 201587 / Oct 27, 2022			Temperature: Vaisala / HM70 / #T1640130/ Jun 14, 2023		
Digital Manometer: DeltaCal DC1 S/N 201587 / Oct 27, 2022			Pressure: Fisher Scientific / FB 61291 / #130168457/ Feb 17, 2023		
DIAGNOSTICS:					
Ambient Pressure (mmHg)	713.0	Ambient Temp (°C)	20.5	ASC Heater Duty (%)	0.0
Box Temp (°C)	27.5	Current PMT HV (V)	1440	LED Temp (°C)	36.64
P3 Value	48	PMT Setting (V)	1444	Pump PWM (%)	59
Sample Flow (L/min)	5.03	Sample RH (%RH)	34.3	Sample Temp (°C)	29.9
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)	715.0	715.0	715	715	+/- 10 mm Hg
Ambient Temperature (°C)	20.30	20.4	n/a		+/- 2°C
Sample Flow (L/min)	4.99	5.06	4.99	5.06	+/- 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:					
Flow was fluctuating (4.77 - 5.22 lpm). Software issue is suspected. The instrument was reset.					

Meteorological System Checklist



Date:	August 10, 2022		
Technician:	Alex Yakupov		
Station:	Cold Lake South		
Unit:	Make:	Model:	Serial #:
Temperature Sensor:	Rotronic	HC2A-S3	20257103
Barometric Pressure Sensor:	MetOne	92	Y23368
Relative Humidity Sensor:	Rotronic	HC2A-S3	20257103
Anemometer:	RM Young	05305AQ	177354
AMBIENT TEMPERATURE SENSOR CHECK			
Parameter:	Temperature @ 2 metres		
Reference Thermometer ID:	Vaisala / HM70 / #T1640130/ Jun 14, 2023		
Reference Temperature (°C):	24.4		
Station - Ambient Temperature (°C):	24.7		
Temperature Difference (°C):	0.3		
BAROMETRIC PRESSURE SENSOR CHECK			
Reference Barometer ID:	Fisher Scientific / FB 61291 / #130168457/ Feb 17, 2023		
Reference Pressure - Units/Reading:	millibar	956	
Station Pressure - Units/Reading:	millibar	955	
Pressure Tolerance +/- 15% of error:	813 - 1099	0.10%	
ANEMOMETER - WIND SPEED & WIND DIRECTION SENSOR CHECK			
WIND SPEED		WIND DIRECTION	
Previous check date:	July 6, 2022	Previous check date:	July 6, 2022
Wind Speed Observed (kph):	10-20	Wind Direction Observed:	SE
Wind speed on Data Logger (kph):	14.1	Wind Direction on Data Logger:	SE
	Annual audit: Jul 6, 2022	Wind Direction Pass/Fail?:	Pass
Comments			
Station (Trailer) temperature vs Reference gauge: 21.7 vs 22.4, passed. Wind system: Model 05305AQ. Signal box # 32400			



Meteorological Sensor Audit/Calibration

Location Information

Company: LICA
 Audit Location: Cold Lake South
 Audit Date: July 6, 2022
 Calibration Purpose: routine annual

Performed By: Alex Yakupov
 Reviewed By: Chris Wesson
 Start/End Time (mst): 15:54 / 17:48
 Weather Conditions: A few clouds

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:	0-200
Serial #:	177354	Direction Voltage Output Range:	n/a
Previous Cal/Audit Date:	April 20, 2021	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	73.5	73.5	1.003
5000	92.2	92.1	92.0	1.001
6000	110.6	110.4	110.3	1.002
7000	129.0	128.8	128.8	1.002
8000	147.4	147.3	147.3	1.001
9000	165.9	165.6	165.6	1.002
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	355	0.1	0.0	0.1
30	330	27	329	2.7	1.4	2.0
60	300	58	298	2.4	1.9	2.1
90	270	89	268	1.1	2.1	1.6
120	240	119	239	0.9	1.1	1.0
150	210	148	208	1.6	2.1	1.8
180	180	178	180	2.4	-0.2	1.3
210	150	208	149	2.3	1.1	1.7
240	120	239	119	1.3	0.6	1.0
270	90	268	91	2.2	-1.2	1.7
300	60	298	58	2.3	1.9	2.1
330	30	329	28	1.3	2.5	1.9
355	0	355	0	-0.1	0.1	0.1
The audit meets AMD requirements.				Average Absolute Degrees Difference=		1.4

Comments:

Output via RMY32400 Serial Interface

End of Report



Lakeland Industry & Community Association

AUGUST 2022

Ambient Air Monitoring Calibration Report

- TAMARACK STATION-

CAL-LICA-202208-01248

Station Operation and Maintenance:

Bureau Veritas Canada

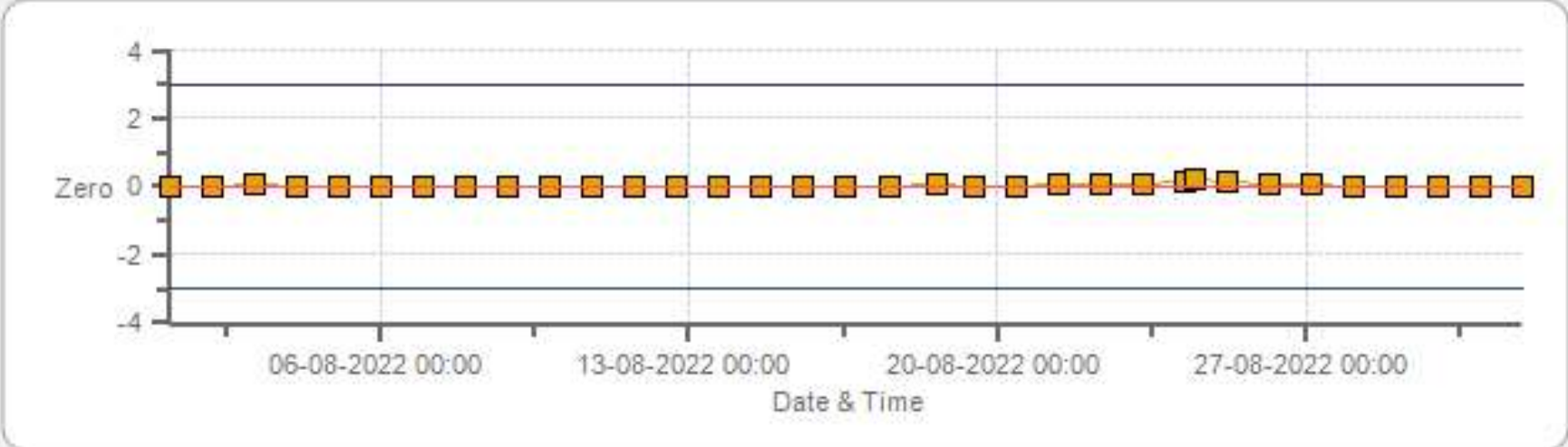
Data Validation and Report:

LICA / Bureau Veritas Canada

September 23, 2022

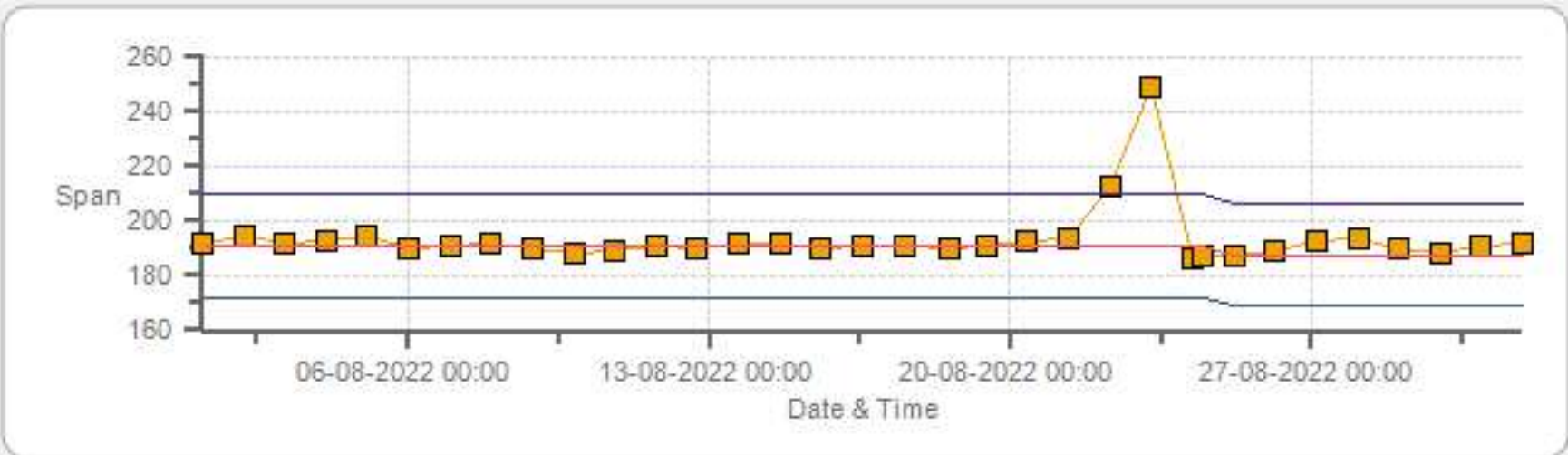
DAILY INTERNAL ZERO-SPAN CALIBRATION RECORDS

SO2[ppb] Calibration: Tamarack Monthly: 08-2022 Type: SpanAndZero - Zero



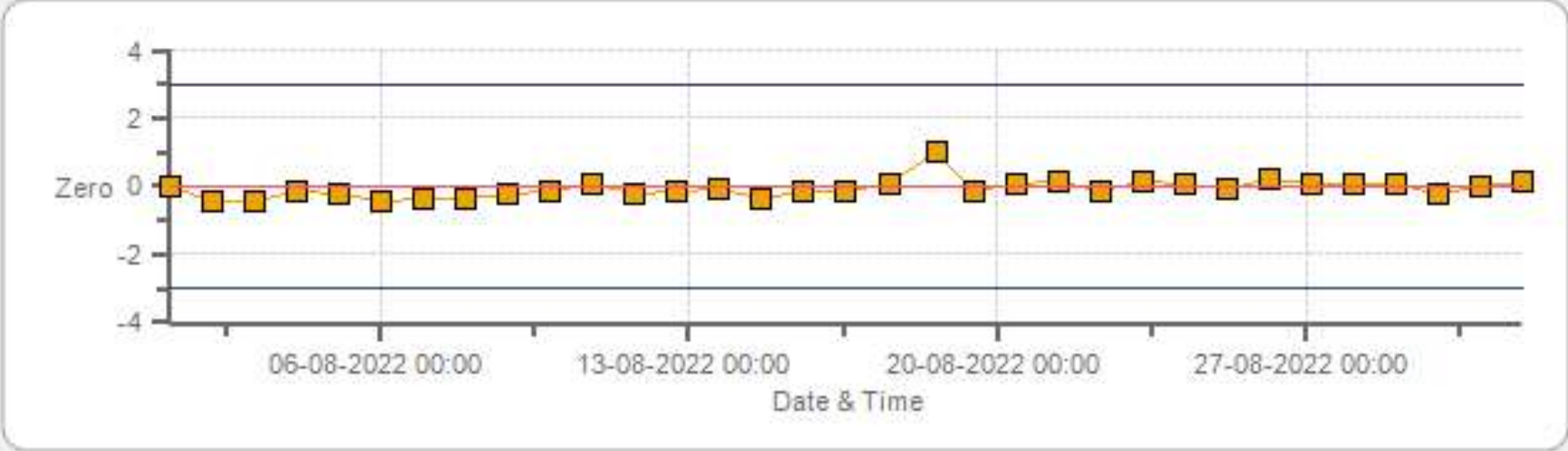
Zero Zero Ref Zero Low Zero High

SO2[ppb] Calibration: Tamarack Monthly: 08-2022 Type: SpanAndZero - Span



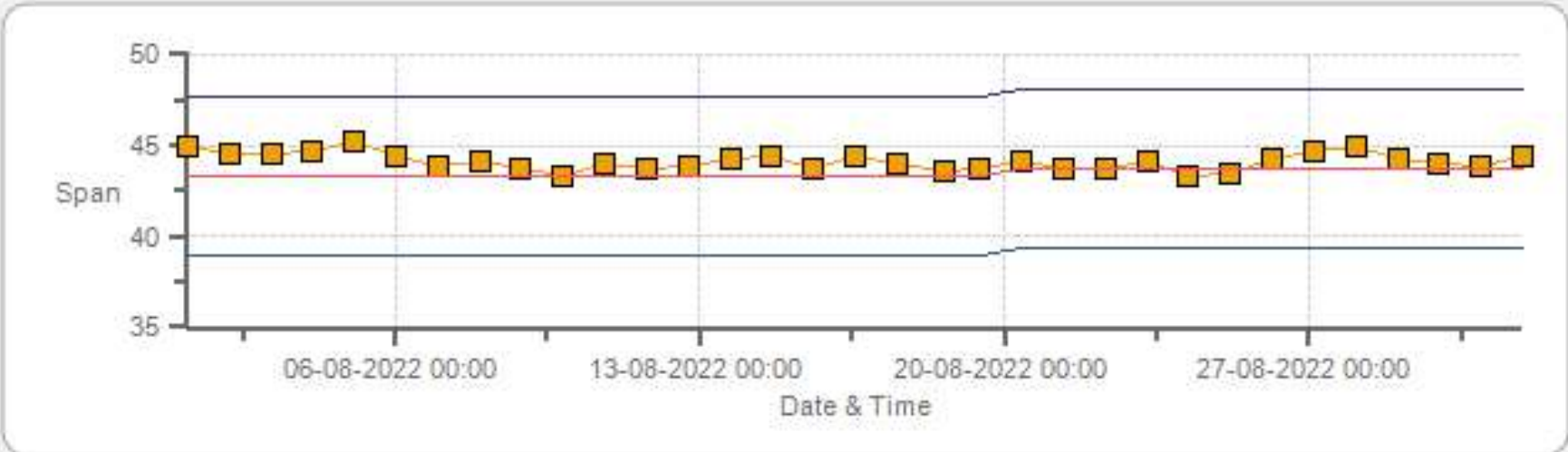
Span SpanRef Span Low Span High

H2S[ppb] Calibration: Tamarack Monthly: 08-2022 Type: SpanAndZero - Zero



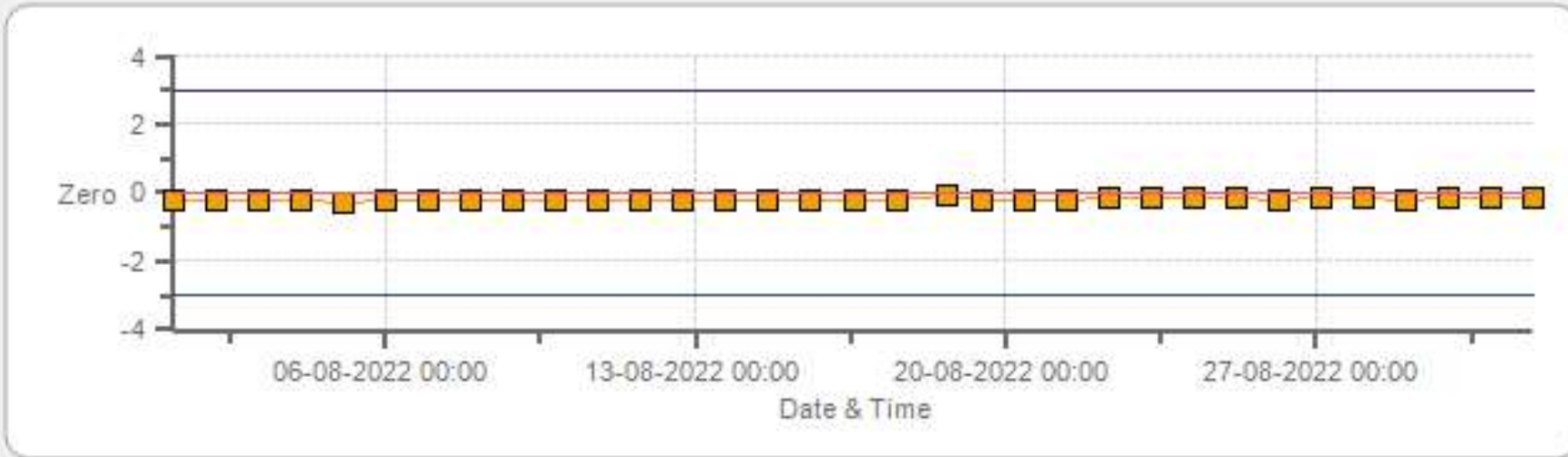
Zero Zero Ref Zero Low Zero High

H2S[ppb] Calibration: Tamarack Monthly: 08-2022 Type: SpanAndZero - Span



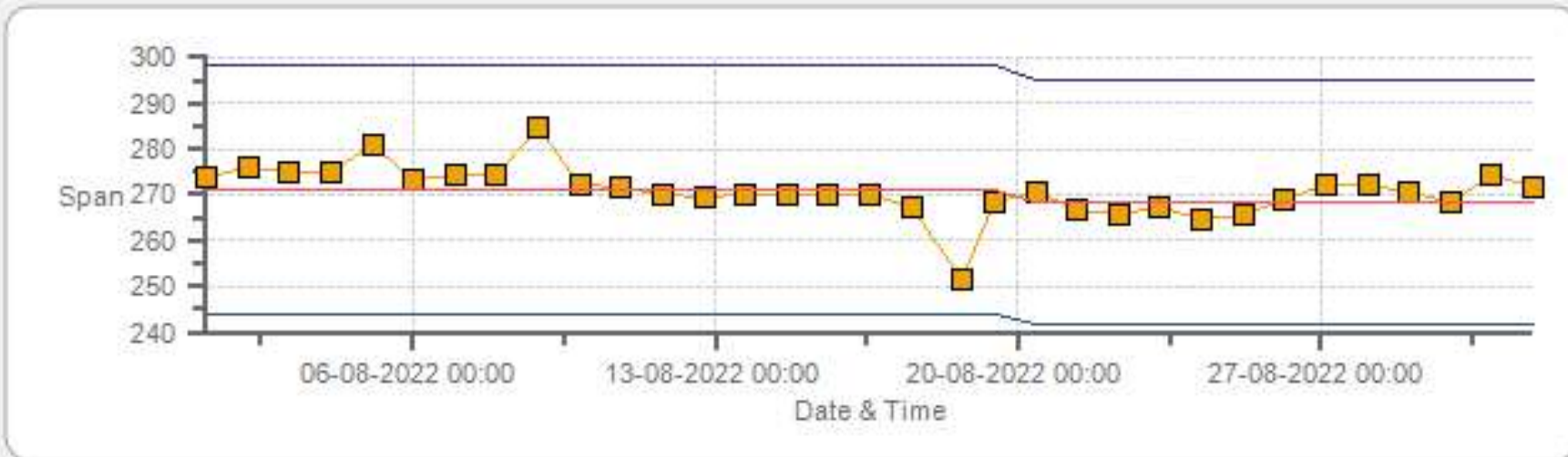
Span SpanRef Span Low Span High

NOX[ppb] Calibration: Tamarack Monthly: 08-2022 Type: SpanAndZero - Zero



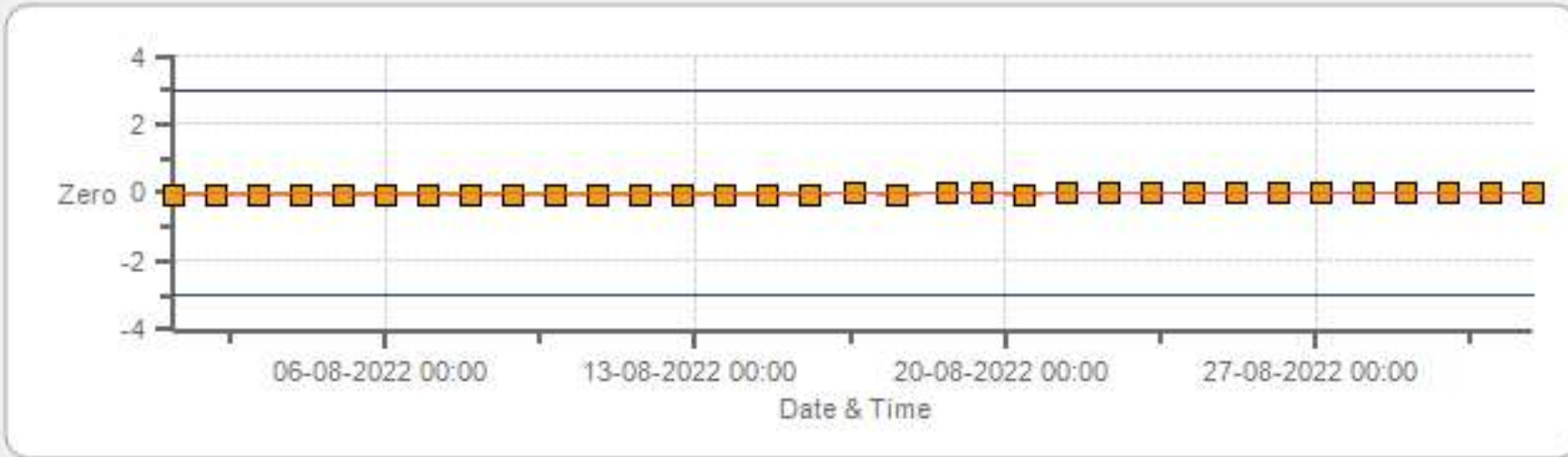
Zero Zero Ref Zero Low Zero High

NOX[ppb] Calibration: Tamarack Monthly: 08-2022 Type: SpanAndZero - Span



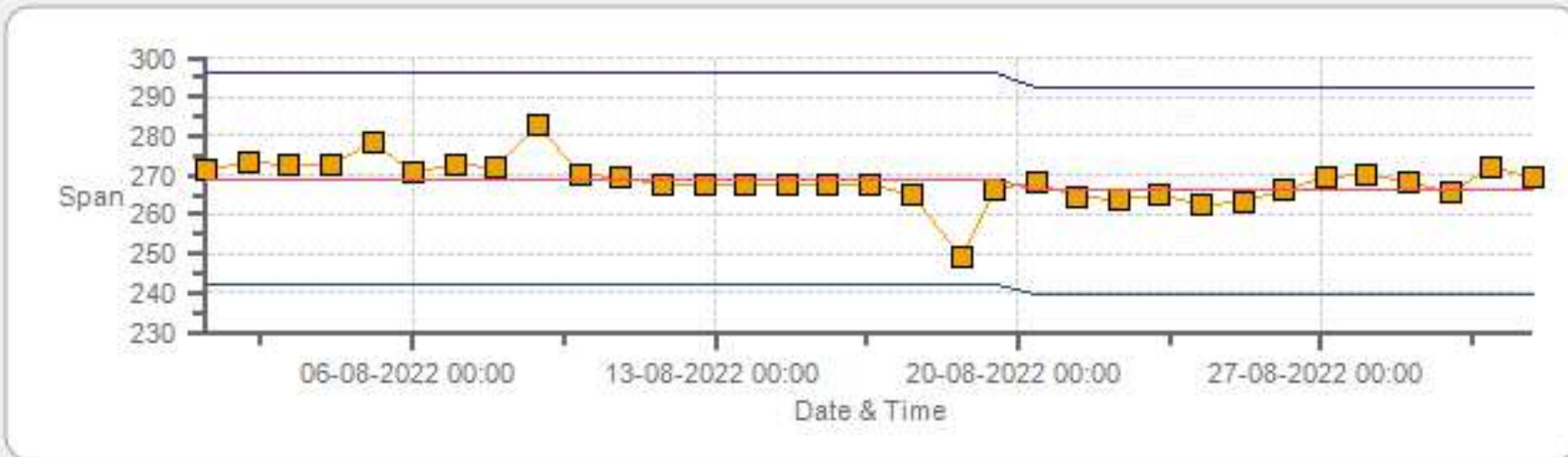
Span SpanRef Span Low Span High

NO2[ppb] Calibration: Tamarack Monthly: 08-2022 Type: SpanAndZero - Zero



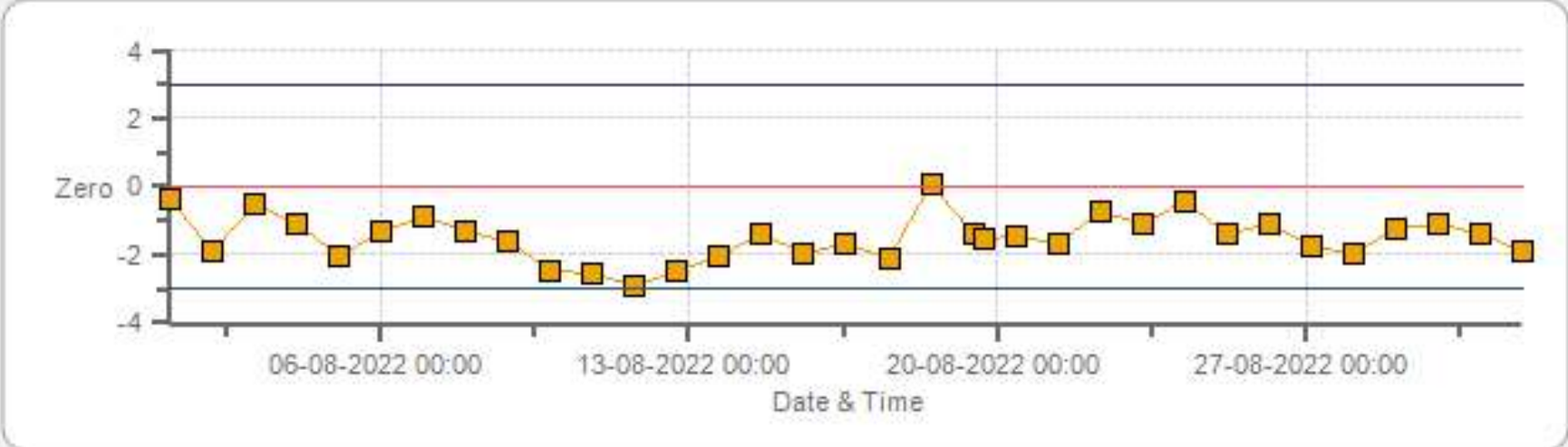
Zero Zero Ref Zero Low Zero High

NO2[ppb] Calibration: Tamarack Monthly: 08-2022 Type: SpanAndZero - Span



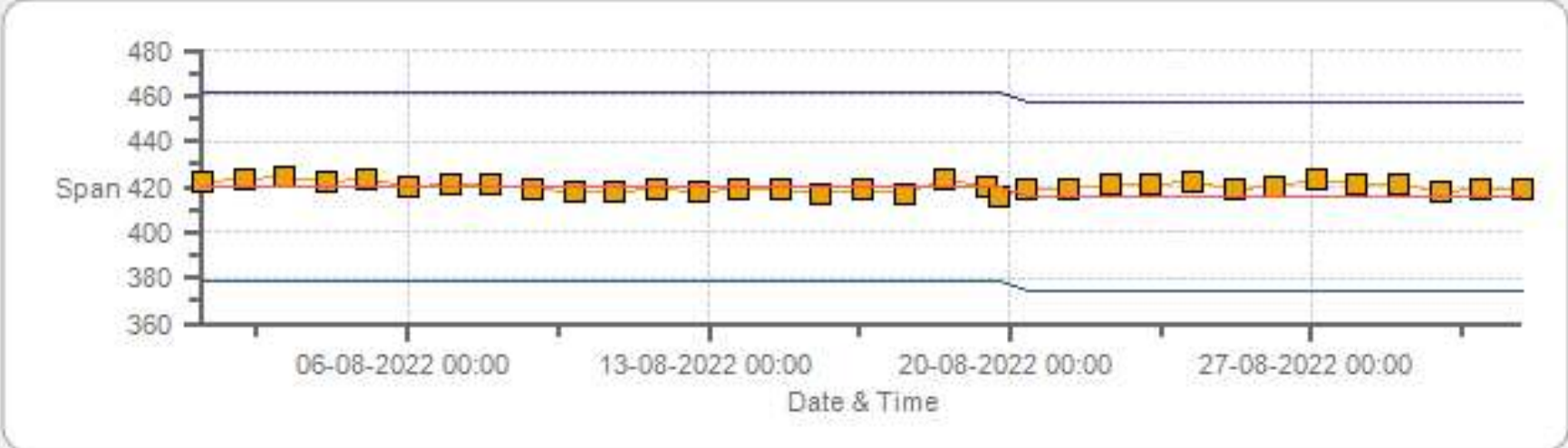
Span Span Ref Span Low Span High

O3[ppb] Calibration: Tamarack Monthly: 08-2022 Type: SpanAndZero - Zero



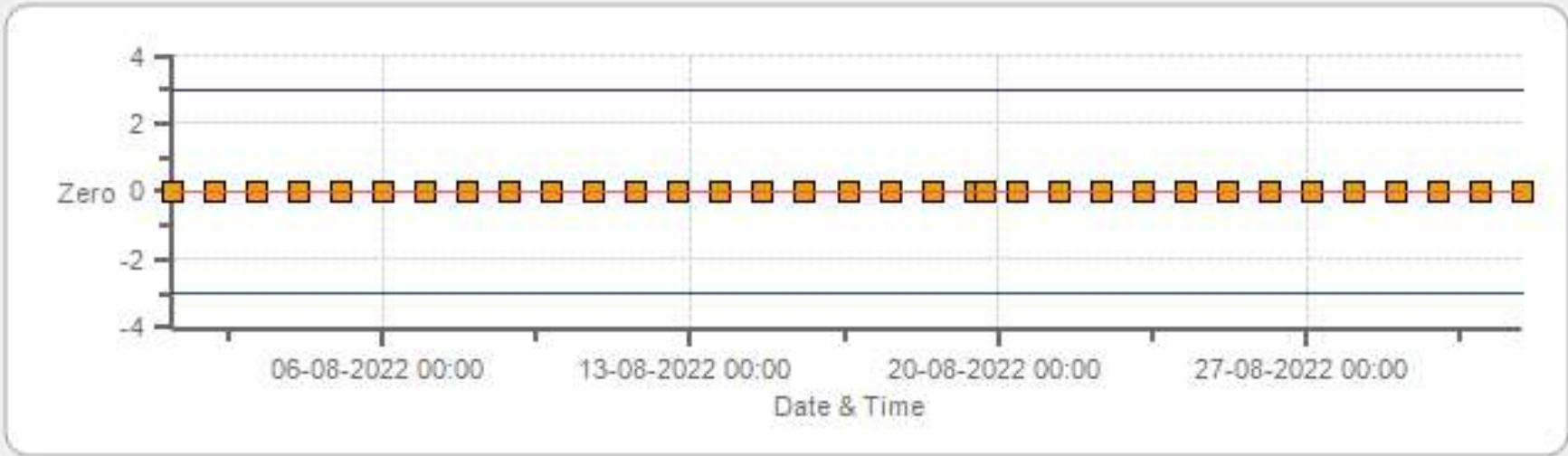
■ Zero
 — Zero Ref
 — Zero Low
 — Zero High

O3[ppb] Calibration: Tamarack Monthly: 08-2022 Type: SpanAndZero - Span



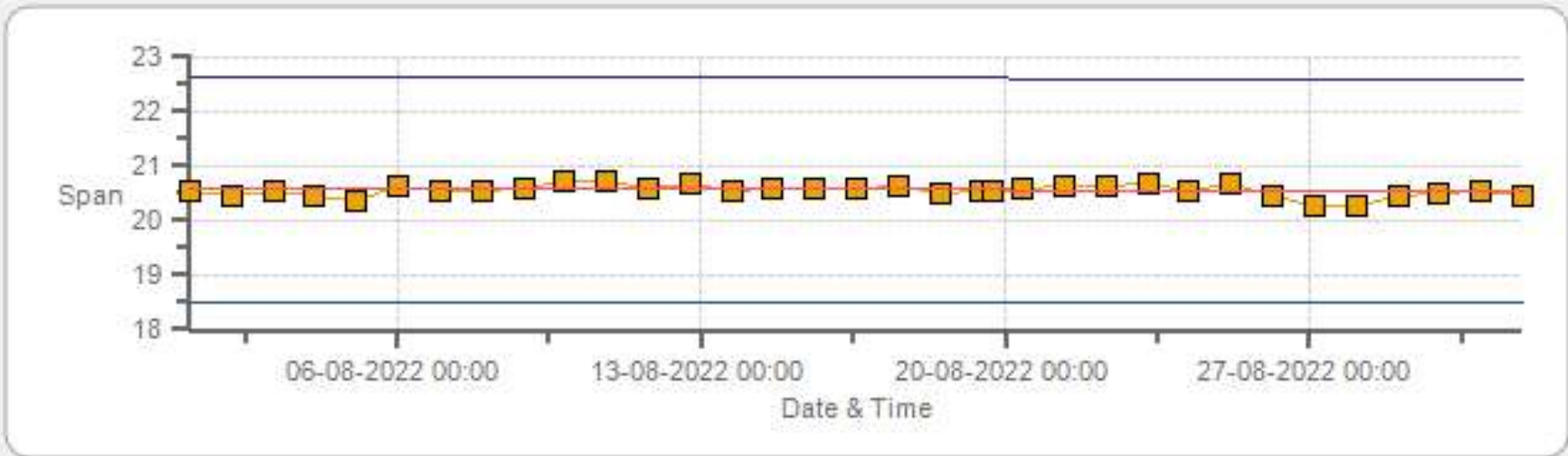
■ Span
 — SpanRef
 — Span Low
 — Span High

THC55[ppm] Calibration: Tamarack Monthly: 08-2022 Type: SpanAndZero - Zero



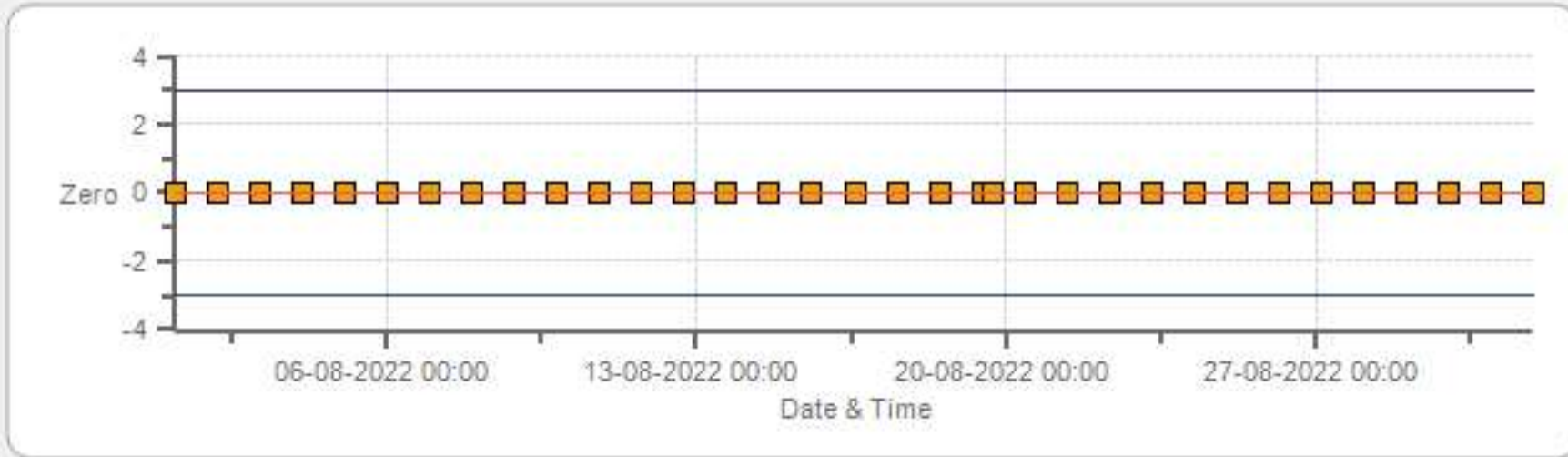
Zero Zero Ref Zero Low Zero High

THC55[ppm] Calibration: Tamarack Monthly: 08-2022 Type: SpanAndZero - Span



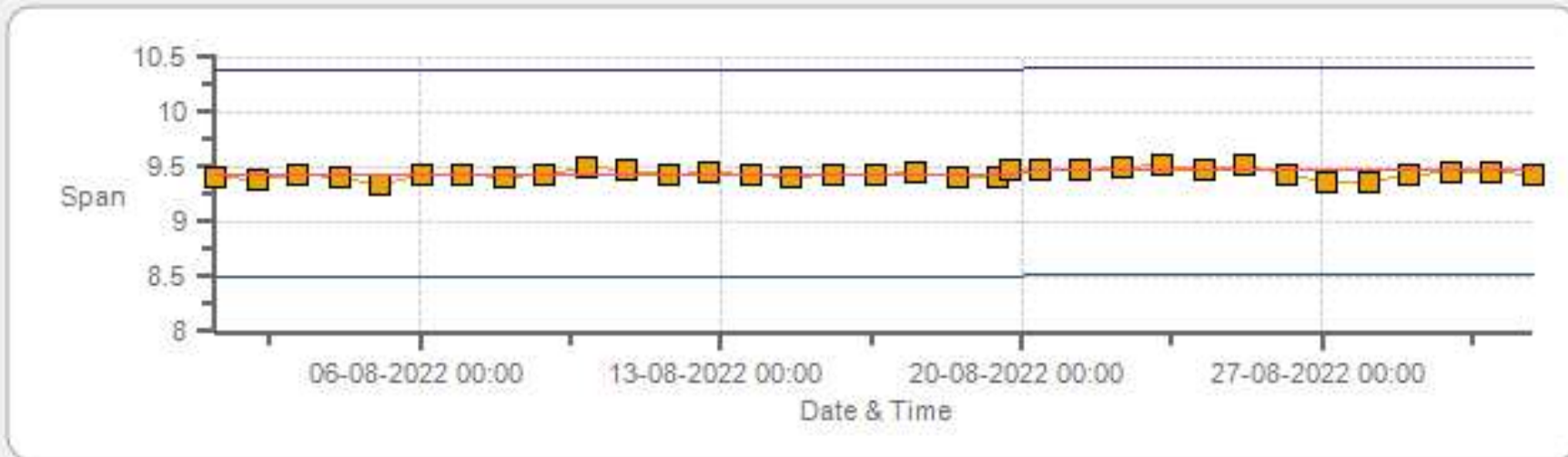
Span Span Ref Span Low Span High

CH4[ppm] Calibration: Tamarack Monthly: 08-2022 Type: SpanAndZero - Zero



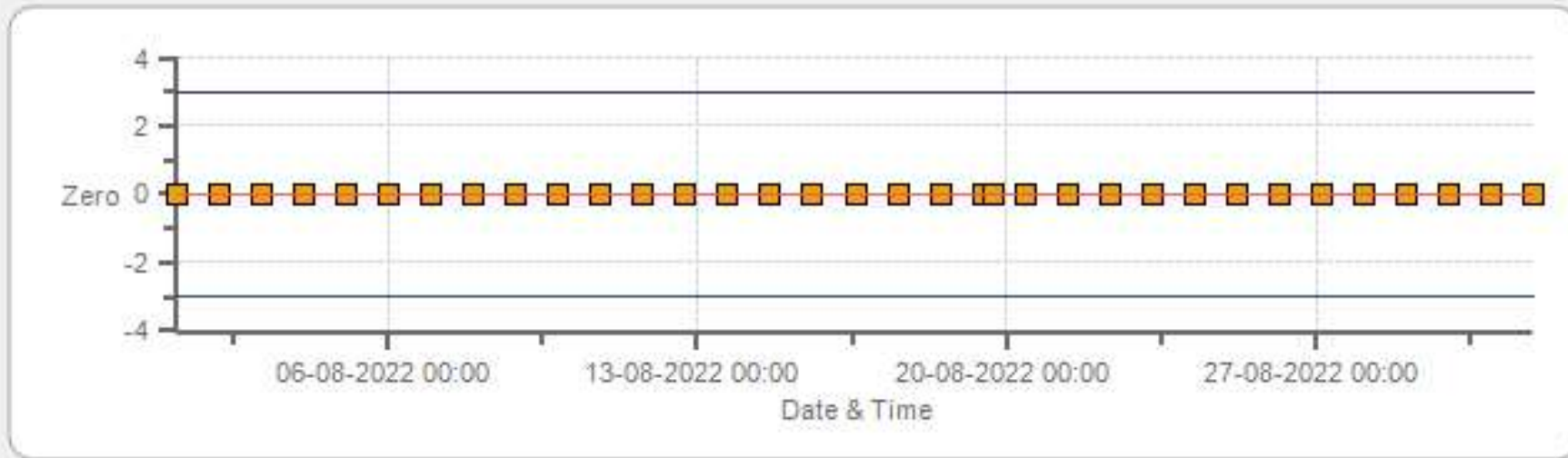
Zero Zero Ref Zero Low Zero High

CH4[ppm] Calibration: Tamarack Monthly: 08-2022 Type: SpanAndZero - Span



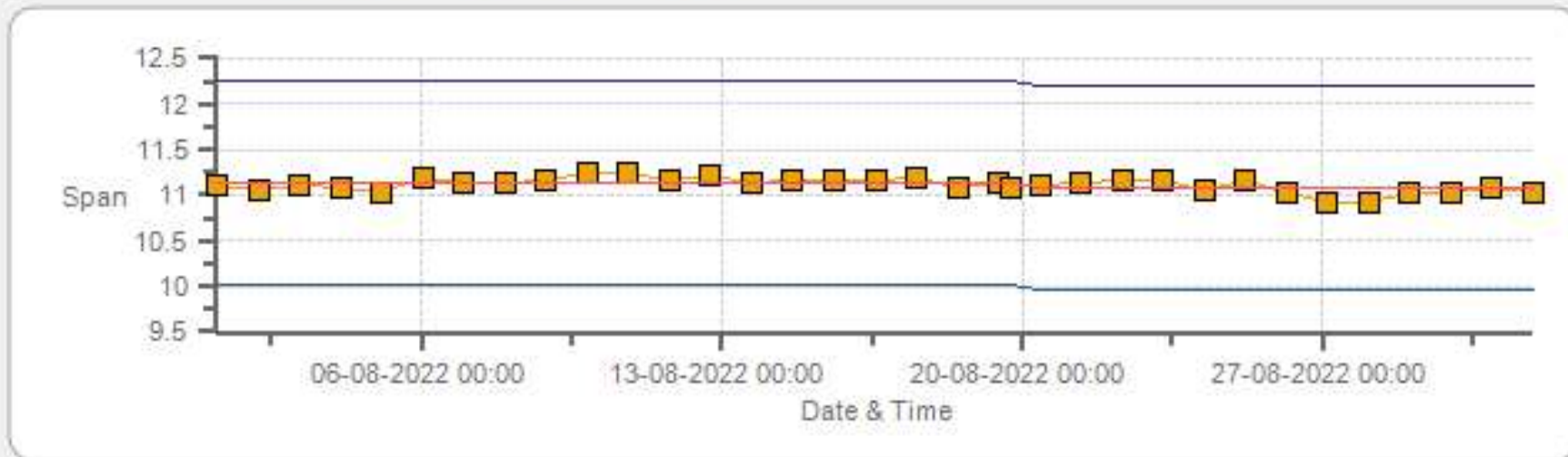
Span SpanRef Span Low Span High

NMHC[ppm] Calibration: Tamarack Monthly: 08-2022 Type: SpanAndZero - Zero



Zero Zero Ref Zero Low Zero High

NMHC[ppm] Calibration: Tamarack Monthly: 08-2022 Type: SpanAndZero - Span



MULTI-POINT CALIBRATION RECORDS

SO2 Analyzer Calibration by Dilution



DATE:	18-Aug-2022	PREVIOUS CALIBRATION DATE:	25-Jul-2022
PARAMETER:	SO2	PREVIOUS CORRECTION FACTOR:	0.998
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	Tamarack	BAROMETRIC (mBar):	946
PURPOSE:	Routine	START TIME (MST):	10:08
PERFORMED BY:	Alex Yakupov	END TIME (MST):	14:45

ANALYZER:

MAKE/MODEL	Thermo 43I-TLE	RANGE	500 ppb
SERIAL #	1180930031	FLOW (mL/min)	436
INITIAL		FINAL	
BKG/OFFSET	2.47	BKG/OFFSET	2.46
COEF/SLOPE	0.958	COEF/SLOPE	0.956
Expected (reference) Value	190.9	Expected (reference) Value	190.7

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010	MODEL:	T701
ID:	26801218	ID:	132
MFC CALIBRATION DATE:	20-Apr-2022	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	LL 105146	HIGH ID	n/a
CONC (ppm):	50.80	EXPIRY DATE	n/a
CYLINDER (psi):	500	LOW ID	n/a
EXPIRY DATE	09-Jun-2029	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:

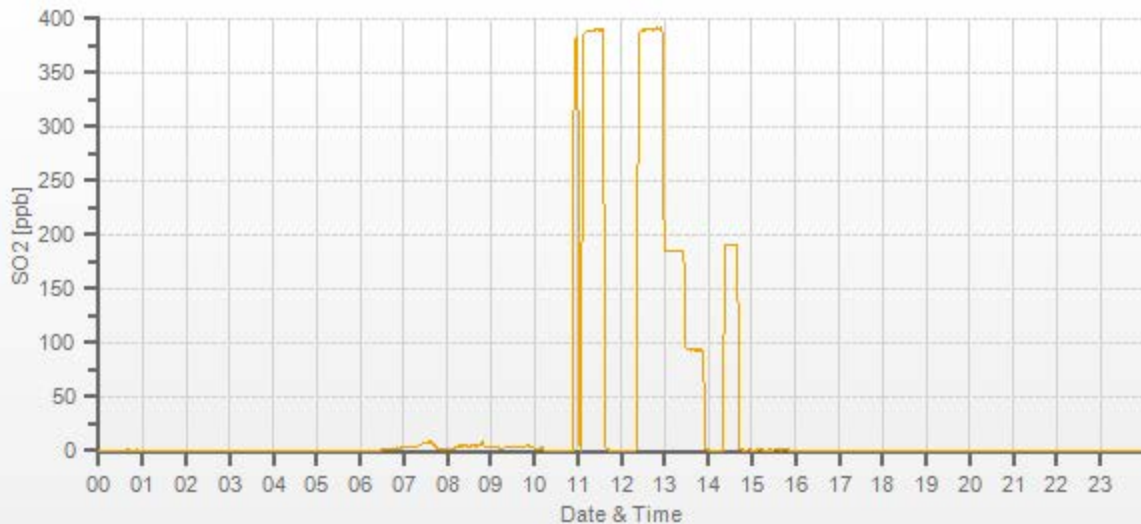
FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
DILUENT	GAS	TOTAL	ACTUAL	INDICATED		Initial	Final
				Initial	Final		
5000	38.50	5000	0.00	0	0	1.003	1.000
4962	38.50	5000	391.16	390	391	1.003	1.000
4982	18.00	5000	182.88	n/a	185.2	n/a	0.987
4991	9.00	5000	91.44	n/a	93.6	n/a	0.977

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	0.998	0.3%

COMMENTS:

Sample inlet filter was changed.
11:00 - daily ZS check. As Found high point restarted.



SO2 Analyzer Calibration by Dilution



DATE:	23-Aug-2022	PREVIOUS CALIBRATION DATE:	18-Aug-2022
PARAMETER:	SO2	PREVIOUS CORRECTION FACTOR:	1.000
CLIENT:	LICA	TEMPERATURE (°C):	22.1
LOCATION:	Tamarack	BAROMETRIC (mBar):	948
PURPOSE:	Removal/Shut-down	START TIME (MST):	14:47
PERFORMED BY:	Ferdinand Roy	END TIME (MST):	16:49

ANALYZER:

MAKE/MODEL	Thermo 43I-TLE	RANGE	500 ppb
SERIAL #	1180930031	FLOW (mL/min)	298
INITIAL		FINAL	
BKG/OFFSET	2.44	BKG/OFFSET	n/a
COEF/SLOPE	0.956	COEF/SLOPE	n/a
Expected (reference) Value	190.7	Expected (reference) Value	n/a

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	Sabio	MAKE:	API
MODEL:	2010	MODEL:	M701
ID:	17100415	ID:	916
MFC CALIBRATION DATE:	28-Mar-2022	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	LL107286	HIGH ID	n/a
CONC (ppm):	25.10	EXPIRY DATE	n/a
CYLINDER (psi):	1500	LOW ID	n/a
EXPIRY DATE	02-Nov-2025	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:

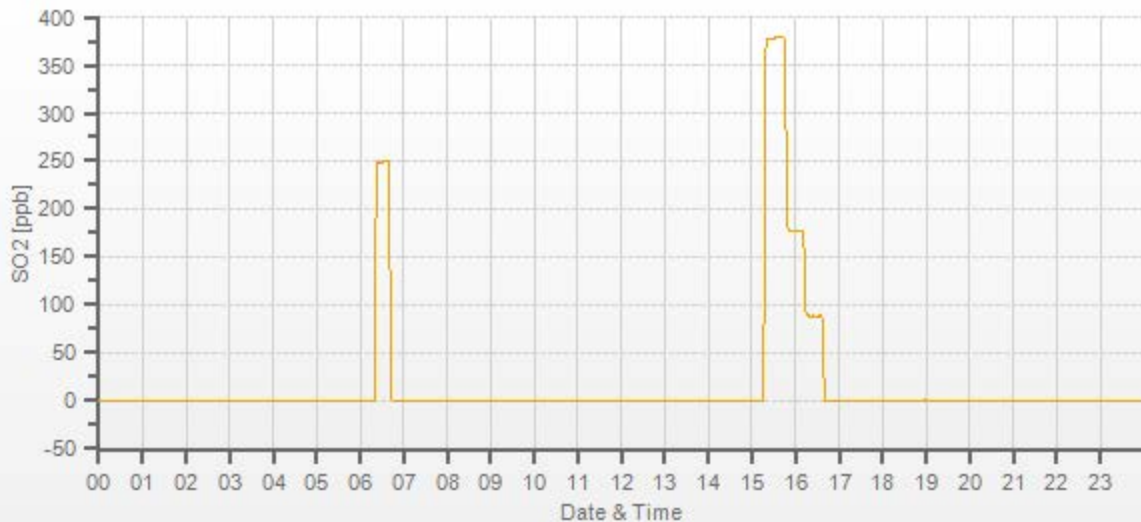
FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
DILUENT	GAS	TOTAL	ACTUAL	INDICATED		Initial	Final
				Initial	Final		
3999	60.50	3999	0.00	0	n/a	1.000	n/a
3940	60.50	4000	379.64	379.7	n/a	1.000	n/a
3972	28.70	4001	180.05	177.7	n/a	1.013	n/a
3986	14.30	4000	89.73	88.7	n/a	1.012	n/a

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.001	-0.2%

COMMENTS:

Alarm: Sample Flow - Low. Shutdown - no issues.



SO2 Analyzer Calibration by Dilution



DATE:	24-Aug-2022	PREVIOUS CALIBRATION DATE:	n/a
PARAMETER:	SO2	PREVIOUS CORRECTION FACTOR:	n/a
CLIENT:	LICA	TEMPERATURE (°C):	22.1
LOCATION:	Tamarack	BAROMETRIC (mBar):	951
PURPOSE:	Install/Post-Repair	START TIME (MST):	08:05
PERFORMED BY:	Ferdinand Roy	END TIME (MST):	10:54

ANALYZER:

MAKE/MODEL	Thermo 43I-TLE	RANGE	500 ppb
SERIAL #	1180930031	FLOW (mL/min)	456
INITIAL		FINAL	
BKG/OFFSET	n/a	BKG/OFFSET	2.4
COEF/SLOPE	n/a	COEF/SLOPE	0.965
Expected (reference) Value	n/a	Expected (reference) Value	187.5

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	Sabio	MAKE:	API
MODEL:	2010	MODEL:	M701
ID:	17100415	ID:	916
MFC CALIBRATION DATE:	28-Mar-2022	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	LL107286	HIGH ID	n/a
CONC (ppm):	25.10	EXPIRY DATE	n/a
CYLINDER (psi):	1490	LOW ID	n/a
EXPIRY DATE	02-Nov-2025	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:

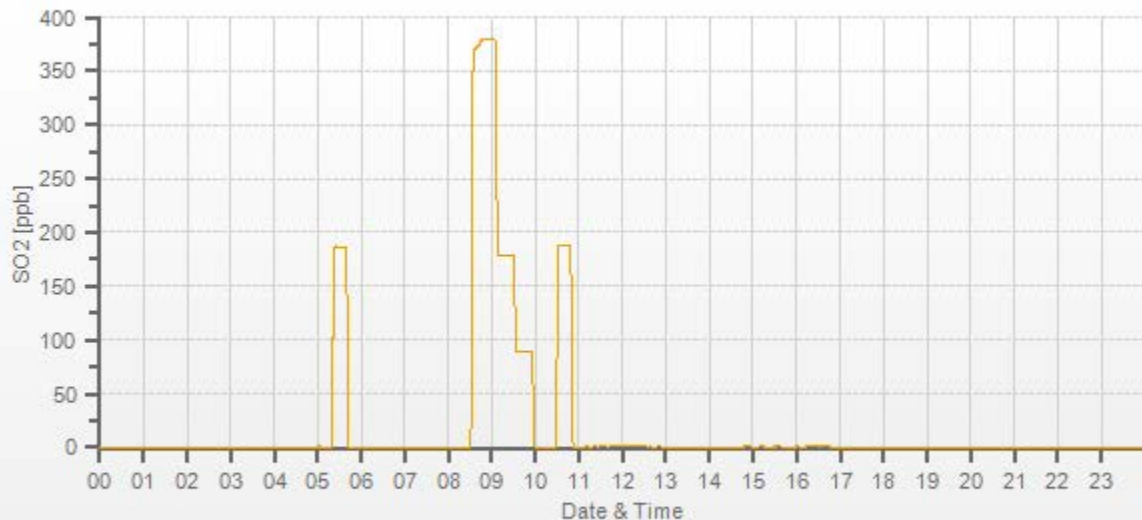
FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
DILUENT	GAS	TOTAL	ACTUAL	INDICATED		Initial	Final
				Initial	Final		
3999	60.60	3999	0.00	n/a	0	n/a	1.000
3939	60.60	4000	380.27	n/a	380.2	n/a	1.000
3971	28.70	4000	180.09	n/a	178.5	n/a	1.009
3986	14.30	4000	89.73	n/a	89	n/a	1.008

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.000	-0.1%

COMMENTS:

Rebuilt pump. Post-Repair calibration - no issues.



H2S Analyzer Calibration by Dilution



DATE:	18-Aug-2022	PREVIOUS CALIBRATION DATE:	25-Jul-2022
PARAMETER:	H2S	PREVIOUS CORRECTION FACTOR:	0.995
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	Tamarack	BAROMETRIC (mBar):	946
PURPOSE:	Routine	START TIME (MST):	10:07
PERFORMED BY:	Alex Yakupov	END TIME (MST):	14:45

ANALYZER:

MAKE/MODEL	Thermo 450i	RANGE	100 ppb
SERIAL #	CM 17360005	FLOW (mL/min)	928
INITIAL		FINAL	
BKG/OFFSET	31	BKG/OFFSET	30.8
COEF/SLOPE	0.785	COEF/SLOPE	0.784
Expected (reference) Value	43.3	Expected (reference) Value	43.7

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010 D	MODEL:	T701
ID:	11900613	ID:	132
MFC CALIBRATION DATE:	20-Apr-2022	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	EY 0002287	HIGH ID	n/a
CONC (ppm):	10.10	EXPIRY DATE	n/a
CYLINDER (psi):	1900	LOW ID	n/a
EXPIRY DATE	14-Sep-2024	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:	10:12	SO2 Conc (ppb)	380
END TIME:	10:17	Analyzer Response (ppb)	0.0

CALIBRATION:

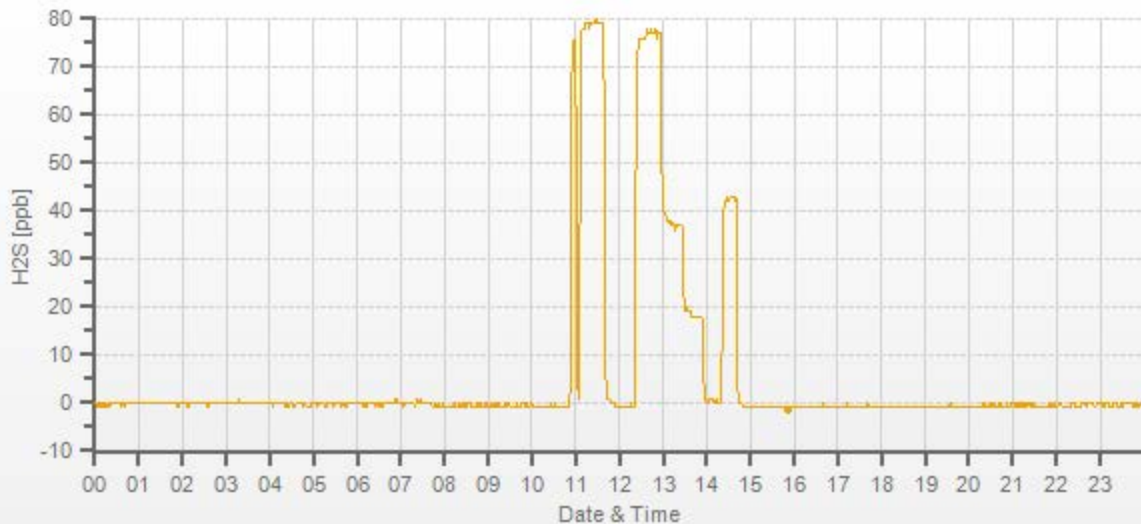
FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
DILUENT	GAS	TOTAL	ACTUAL	INDICATED		Initial	Final
				Initial	Final		
7500	7500	7500	0.00	0	0	0.995	1.000
7442	57.90	7500	77.97	80.2	77.8	0.972	1.002
7472	28.20	7500	37.98	n/a	37.8	n/a	1.005
7486	14.10	7500	18.99	n/a	19	n/a	0.999

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	0.997	0.0%

COMMENTS:

Sample inlet filter was changed.
11:00 - daily ZS check. As Found high point restarted.



NOx Calibration by Dilution/Gas-Phase Titration



CALIBRATION:				ANALYZER:			
DATE:	18-Aug-2022	PREVIOUS CALIBRATION DATE:	25-Jul-2022	MAKE/MODEL:	Thermo 42i	PREVIOUS CF.	
CLIENT:	LICA	TEMPERATURE (°C):	22.0	SERIAL #:	1180930028	NOx	0.999
LOCATION:	Tamarack	BAROMETRIC (mBar):	946	FLOW (mL/min)	850	NO	1.000
PURPOSE:	Routine	START TIME (MST):	10:09	RANGE (ppb)	500	NO2	1.001
PERFORMED BY:	Alex Yakupov	END TIME (MST):	16:47	GPT FOR O3?		No	

CALIBRATION SYSTEM:							
CALIBRATOR:		ZERO AIR:		CALIBRATION GAS:		FLOWMETERS (if applicable):	
MAKE:	SABIO	MAKE:	Teledyne	CYLINDER ID:	LL 105146	HIGH ID:	n/a
MODEL:	2010	MODEL:	T701	NO/NOx (PPM):	50.0 50.1	HIGH EXPIRY:	n/a
ID:	26801218	ID:	132	CYLINDER (psi):	500	LOW ID:	n/a
MFC CALIBRATION DATE:	20-Apr-2022	OXIDIZER ID:	n/a	EXPIRY DATE	09-Jun-2029	LOW EXPIRY:	n/a

CALIBRATION SETTINGS:							
INITIAL	NOx	NO	NO2	FINAL	NOx	NO	NO2
BKG/OFFSET:	1.8	1.7	n/a	BKG/OFFSET:	1.8	1.7	n/a
SLOPE/COEF/CE:	1	1.007	1	SLOPE/COEF/CE:	1.001	1.006	1

EXPECTED (REFERENCE) VALUE:							
INITIAL	NOx	NO	NO2	FINAL	NOx	NO	NO2
	271.1	2.1	269.0		268.3	2.3	266.0

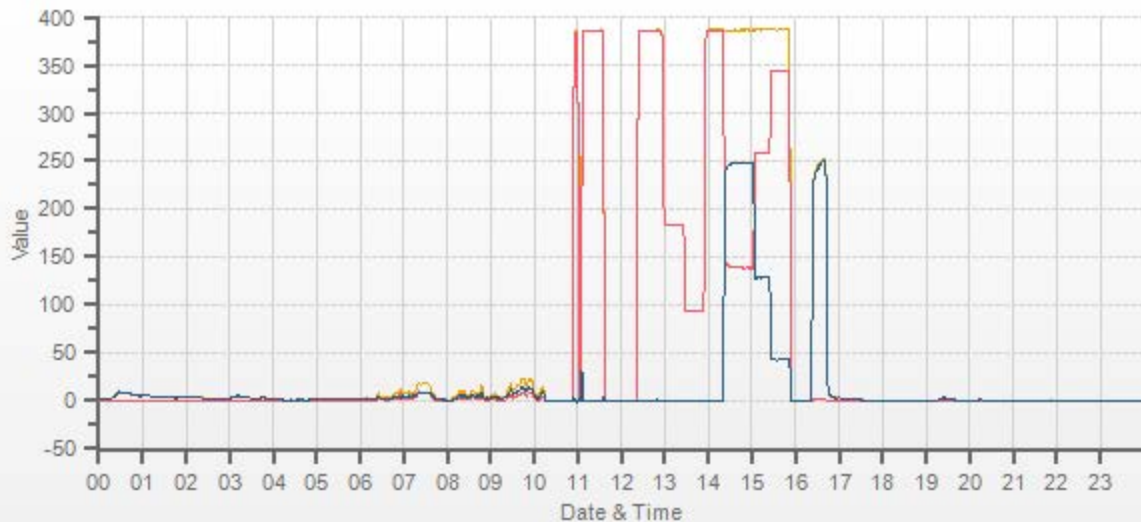
CALIBRATION PARAMETERS:					
POINT	NO TARGET (PPB)	NO2 TARGET (PPB)	NO2 RANGE	O3 POINT	
HIGH	380	250	230-265	n/a	
MID	180	125	115-150	n/a	
LOW	90	45	40-55	n/a	
EXTRA 1	n/a	n/a	n/a	n/a	

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	38.50	5000	0.0	0.0	0.0	-0.1	-0.1	0.0	0.0	0.0	0.0	0.999	0.999	0.999	0.999	0.999	0.999	
4962	38.50	5000	385.0	385.8	0.8	385.2	386.0	0.7	385.2	386.2	1.0	0.999	0.999	0.999	0.999	0.999	0.999	
4982	18.00	5000	180.0	180.4	0.4	n/a	n/a	n/a	183.5	183.5	0.3	n/a	n/a	0.981	0.981	0.983	0.983	
4991	9.00	5000	90.0	90.2	0.2	n/a	n/a	n/a	93.3	93.5	0.2	n/a	n/a	0.965	0.965	0.964	0.964	

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	38.50	5000	0	386.0	386.7	0.6	247.5	247.2	1.001	99.88%
AS-FOUND HIGH	38.50	5000	240	138.5	386.3	247.8	247.5	247.2	1.001	99.88%
ADJUSTED HIGH	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
MID	38.50	5000	125	257.8	386.8	129.0	128.2	128.4	0.998	100.16%
LOW	38.50	5000	45	343.6	386.6	43.1	42.4	42.5	0.998	100.24%
NO2 adjustment not required.									AVERAGE:	100.09%

LINEAR REGRESSION ANALYSIS:				COMMENTS:
	CORRELATION	SLOPE	INTERCEPT	
NO	1.000	0.998	0.41%	
NOx	1.000	0.999	0.38%	
NO2	1.000	0.998	0.06%	

Sample inlet filter was changed.
11:00 - daily ZS check. As Found high point restarted



CAL-LICA-202208-01248

Ozone Calibration by Photometer (Varying UV Lamp)



DATE:	19-Aug-2022	PREVIOUS CALIBRATION DATE:	26-Jul-2022
PARAMETER:	O3	PREVIOUS CORRECTION FACTOR:	1.001
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	Tamarack	BAROMETRIC (mBar):	941
PURPOSE:	Routine	START TIME (MST):	13:23
PERFORMED BY:	Alex Yakupov	END TIME (MST):	17:19

ANALYZER:

MAKE/MODEL	Thermo 49iQ	RANGE	500 ppb
SERIAL #	1202068570	FLOW (mL/min)	1360
INITIAL		FINAL	
BKG/OFFSET	3.7	BKG/OFFSET	3.4
COEF/SLOPE	1.035	COEF/SLOPE	1.035
Expected (reference) Value	420	Expected (reference) Value	415.7

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010 D	MODEL:	T701
ID:	11900613	ID:	132
MFC CALIBRATION DATE:	20-Apr-2022	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	
DILUENT	GAS	TOTAL	ACTUAL	INDICATED		Initial	Final
				Initial	Final		
5000	XXXX	5000	0.0	-0.5	0.0	XXXX	XXXX
5000	XXXX	5000	378.0	376.9	377.6	1.002	1.001
5000	XXXX	5000	180.0	n/a	178.5	n/a	1.008
5000	XXXX	5000	61.0	n/a	61.4	n/a	0.993

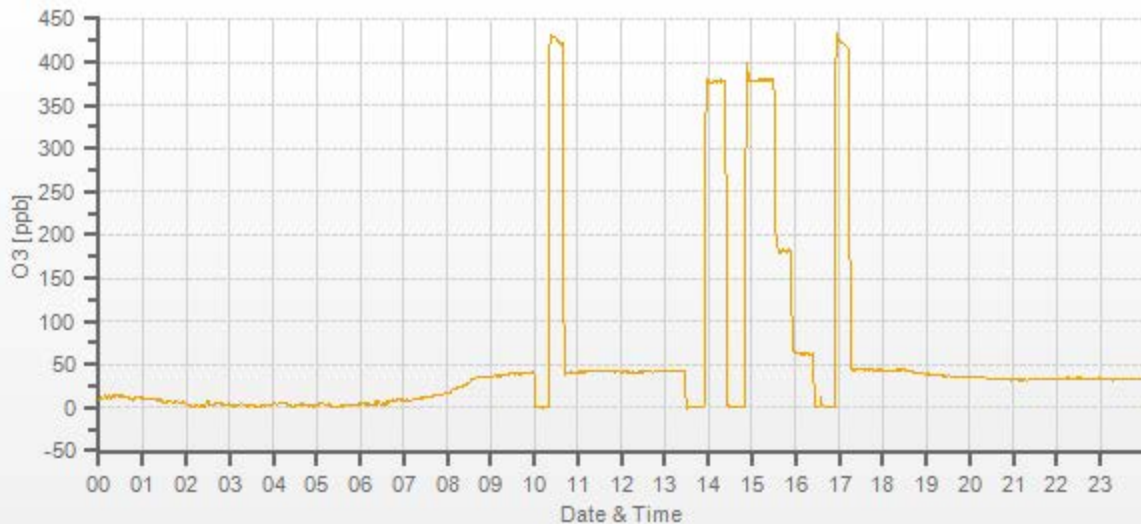
LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	0.998	0.0%

COMMENTS:

Sample inlet filter was changed.

O3[ppb] Station: Tamarack Daily: 19-08-2022 Type: AVG 1 Min. [1 Min.]



CAL-LICA-202208-01248

Methane/Non-Methane Analyzer Calibration by Dilution



CALIBRATION:				ANALYZER:			
DATE:	19-Aug-2022	PREVIOUS CALIBRATION DATE:	26-Jul-2022	VALUE	MAKE/MODEL	SERIAL	FLOW (mL/min)
CLIENT:	LICA	TEMPERATURE (°C):	22.0		Thermo 55i	1314057759	1006
LOCATION:	Tamarack	BAROMETRIC (mBar):	941	PARAMETER:	CH4	NMHC	THC
PURPOSE:	Routine	START TIME (MST):	13:25	RANGE (ppm):	20	20	40
PERFORMED BY:	Alex Yakupov	END TIME (MST):	17:19	PREVIOUS CF:	1.001	0.999	1.000

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:		CALIBRATION GAS:		FLOWMETERS (if applicable):	
MAKE:	SABIO	MAKE:	Teledyne	CYLINDER ID:	LL 23593	HIGH ID:	n/a
MODEL:	2010	MODEL:	T701	CH ₄ /C ₃ H ₈ (ppm):	603.0 204.0	HIGH EXPIRY:	n/a
ID:	26801218	ID:	132	CYLINDER (psi):	1900	LOW ID:	n/a
MFC CALIBRATION DATE:	20-Apr-2022	OXIDIZER ID:	115	EXPIRY DATE	18-Aug-2029	LOW EXPIRY:	n/a

CALIBRATION PARAMETERS:

POINT (CH ₄ /NMHC)	HIGH	MID	LOW	CH ₄ EQUIVILANCE	
TARGET	14	7	3.5	C ₃ H ₈ as CH ₄	561.0
RANGE	12 - 16	6 - 8	2 - 4	THC as CH ₄	1164.0

EXPECTED (REFERENCE) VALUE:

INITIAL	CH ₄	NMHC	THC	FINAL	CH ₄	NMHC	THC
	9.44	11.13	20.57		9.47	11.08	20.54

CALIBRATION:

FLOW RATE			CONCENTRATION (PPM)									CORRECTION FACTOR (CF.)					
(mL/min)			CALCULATED			INITIAL INDICATED			FINAL INDICATED			INITIAL			FINAL		
DILUENT	GAS	TOTAL	CH ₄	NMHC	THC	CH ₄	NMHC	THC	CH ₄	NMHC	THC	CH ₄	NMHC	THC	CH ₄	NMHC	THC
3100	X	3100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	X	X	X	X	X	X
3025	74.60	3100	14.51	13.50	28.01	14.35	13.39	27.74	14.48	13.48	27.96	1.011	1.008	1.010	1.002	1.001	1.002
3063	37.30	3100	7.26	6.75	14.01	n/a	n/a	n/a	7.22	6.73	13.95	n/a	n/a	n/a	1.005	1.003	1.004
3081	18.60	3100	3.62	3.37	6.98	n/a	n/a	n/a	3.60	3.37	6.98	n/a	n/a	n/a	1.005	0.999	1.001

LINEAR REGRESSION ANALYSIS:

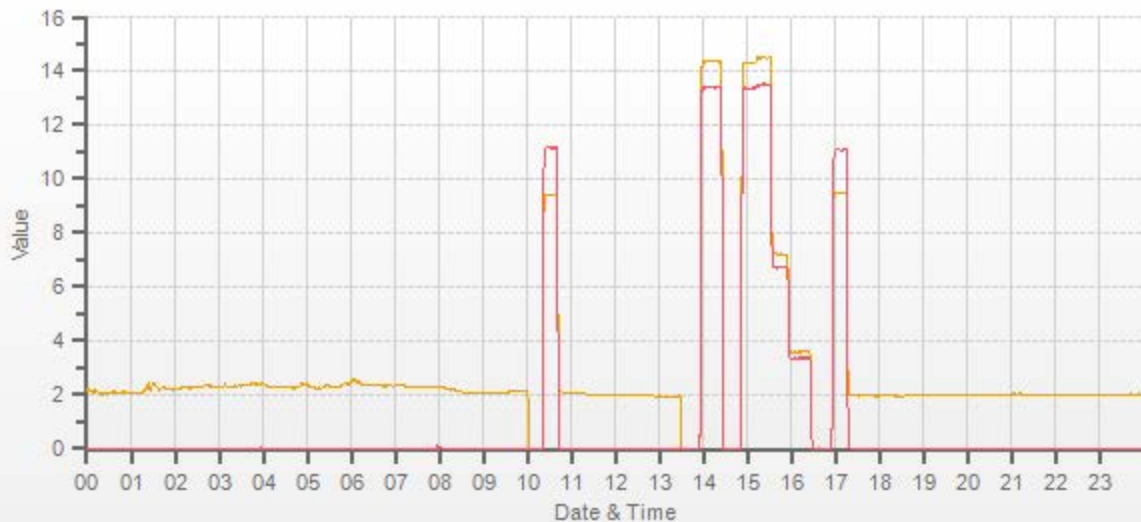
	CORRELATION	SLOPE	INTERCEPT
CH ₄	1.000	0.998	0.0%
NMHC	1.000	0.998	0.0%
THC	1.000	0.998	0.0%

Comments:

Sample inlet filter was changed.

Use Zero Chrom?

Yes



CAL-LICA-202208-01248

Meteorological System Checklist



Date:	August 19, 2022
Technician:	Alex Yakupov
Station:	Tamarack / Audit time: 17:40 - 18:16

Unit:	Make:	Model:	Serial #:
Precipitation Sampler:	Met One	387 D	C 13580
Temperature Sensor:	Rotronic	HC2A-S3	20433166
Barometric Pressure Sensor:	MetOne	Part 090D	F4497
Relative Humidity Sensor:	Rotronic	HC2A-S3	20433166
Anemometer:	RM Young	05305VK	161465

PRECIPITATION SENSOR CHECK

Checklist:	Reply:	Comments:
Is the sensor Level?	yes	
Is the heater operating properly?	yes	
Are the bucket drain holes clean?	yes	
Is the screen on the housing? (screen should be on between July and September)	yes	Reed gap was increased. Multiple water tests. No issues.
Is the housing clean?	yes	
Is the area around the housing clean and free from obstacles?	yes	Water testing and maintenance: 17:40 - 18:02. Response is timely and accurate. 1 m

TIP TEST - Slowly pour water until 10 tip are heard. (10 tips = 1 ml)

# of Tips	Data Logger Response (ml):	Manual Specification = +/- 0.2 ml
10	1.00	0.00

AMBIENT TEMPERATURE SENSOR CHECK

Parameter:	Temperature @ 2 metres
Reference Thermometer ID:	Vaisala HMP76B #T1640130, Exp. Date: Jun 14, 2023
Reference Temperature (°C):	27.6
Station - Ambient Temperature (°C):	27.4
Temperature Difference (°C):	0.2

BAROMETRIC PRESSURE SENSOR CHECK

Reference Barometer ID:	Fisher Scientific / FB 61291 / #130168457 / Exp. Date: Feb 17, 2023	
Reference Pressure - Units/Reading:	millibar	939
Station Pressure - Units/Reading:	millibar	940
Pressure Tolerance +/- 15% of error:	798 - 1080	-0.11%

RELATIVE HUMIDITY (HYGROMETER) SENSOR CHECK

Reference Hygrometer ID:	Vaisala HMP76B #T1640130, Exp. Date: April 22, 2022	
Reference Hygrometer % RH- Reading:	36.90	
Station Hygrometer % RH- Reading:	36.10	
RH Tolerance +/- 15% of difference:	31.37 - 42.44	2.2%

ANEMOMETER - WIND SPEED & WIND DIRECTION SENSOR CHECK

WIND SPEED		WIND DIRECTION	
Previous check date:	July 26, 2022	Previous check date:	July 26, 2022
Wind Speed Observed (kph):	1 to 10	Wind Direction Observed:	SE
Wind speed on Data Logger (kph):	8.1	Wind Direction on Data Logger:	SE
	Annual audit: Jul 26, 2022	Wind Direction Pass/Fail?:	Pass

Comments

Station (Trailer) temperature vs Reference gauge temperature: 21.1 vs 21.6, difference = 0.5 => Passed.



Meteorological Sensor Audit/Calibration

Location Information

Company: LICA
 Audit Location: Tamarack
 Audit Date: July 26, 2022
 Calibration Purpose: routine annual

Performed By: Alex Yakupov
 Reviewed By: Chris Wesson
 Start/End Time (mst): 16:01 / 17:14
 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 20, 2021	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	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	92.5	92.4	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	3	355	2.7	-0.1	1.4
30	330	34	331	-4.1	-1.3	2.7
60	300	64	301	-4.3	-1.0	2.7
90	270	95	272	-4.7	-1.5	3.1
120	240	125	242	-4.6	-2.2	3.4
150	210	154	213	-4.4	-3.4	3.9
180	180	184	185	-4.4	-4.6	4.5
210	150	213	153	-2.7	-3.2	2.9
240	120	242	125	-1.6	-4.6	3.1
270	90	270	94	-0.1	-4.0	2.1
300	60	300	63	0.2	-3.3	1.7
330	30	330	32	-0.4	-1.6	1.0
355	0	355	3	-0.1	2.7	1.4
The audit meets AMD requirements.				Average Absolute Degrees Difference=		2.6

Comments:

n/a

End of Report



Lakeland Industry & Community Association

AUGUST 2022

Ambient Air Monitoring Calibration Report

- ST. LINA STATION-

CAL-LICA-202208-01250

Station Operation and Maintenance:

Bureau Veritas Canada

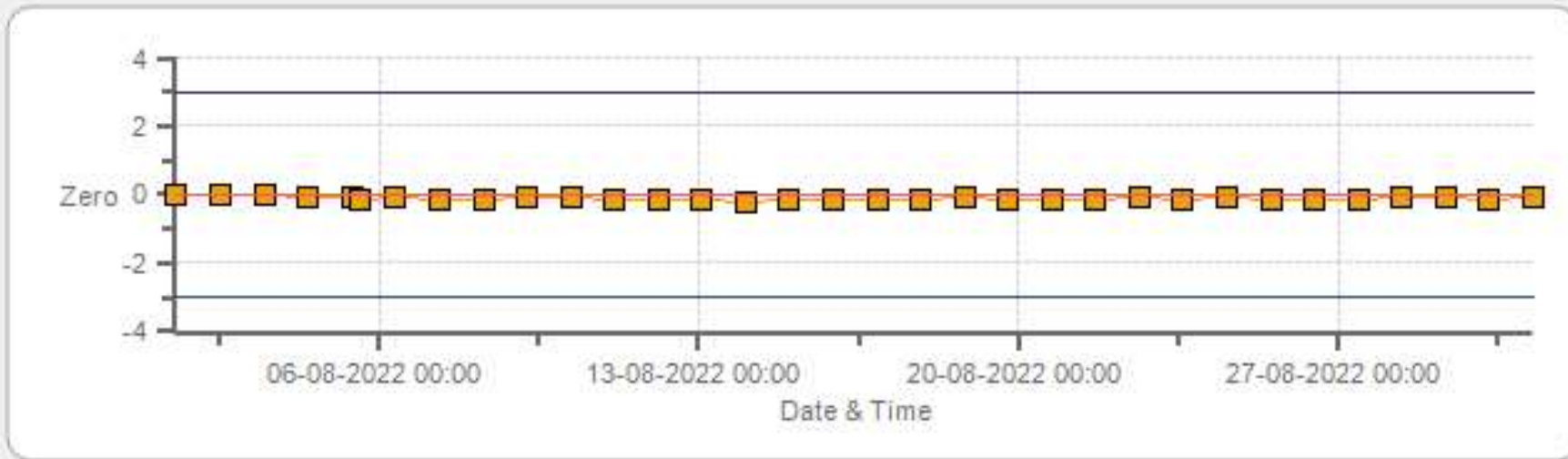
Data Validation and Report:

LICA / Bureau Veritas Canada

September 23, 2022

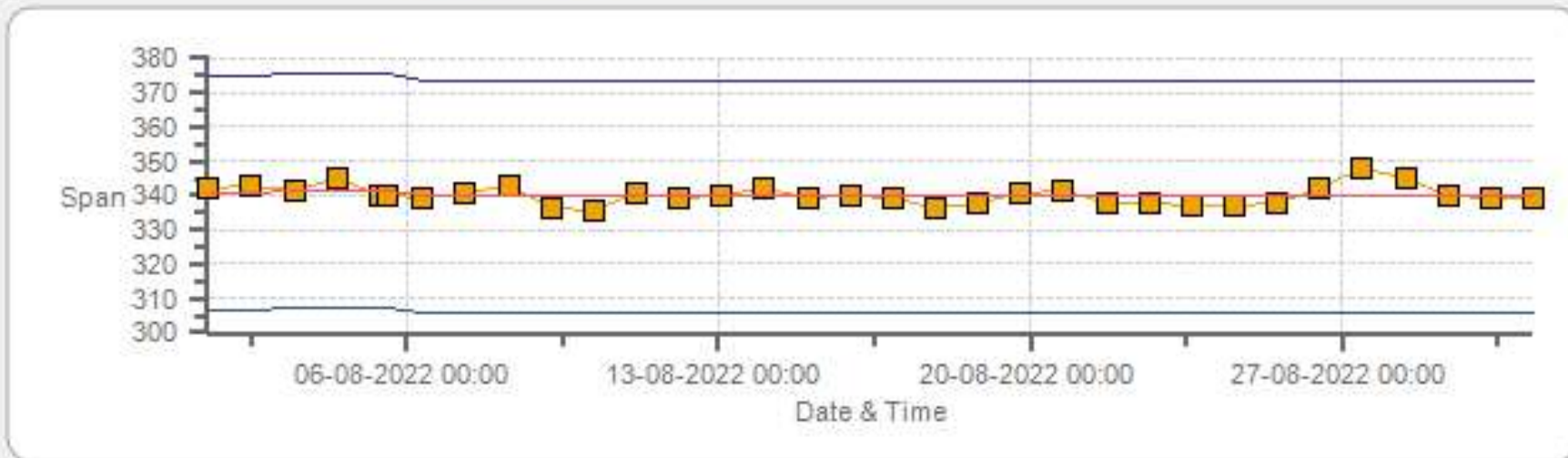
DAILY INTERNAL ZERO-SPAN CALIBRATION RECORDS

SO2[ppb] Calibration: St. Lina Monthly: 08-2022 Type: SpanAndZero - Zero



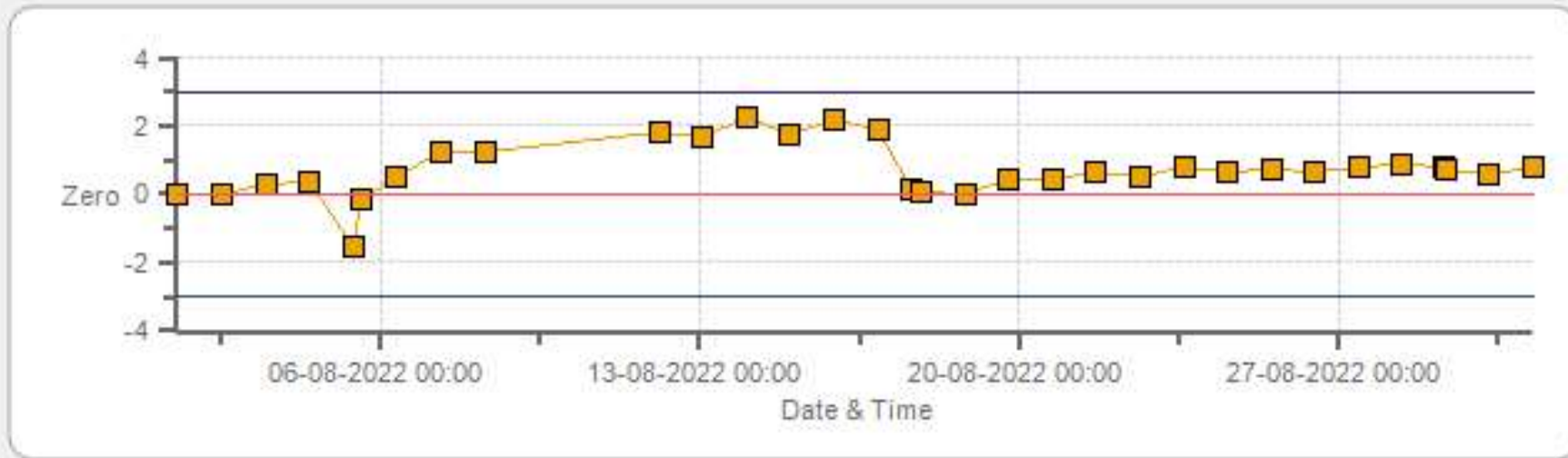
Zero Zero Ref Zero Low Zero High

SO2[ppb] Calibration: St. Lina Monthly: 08-2022 Type: SpanAndZero - Span



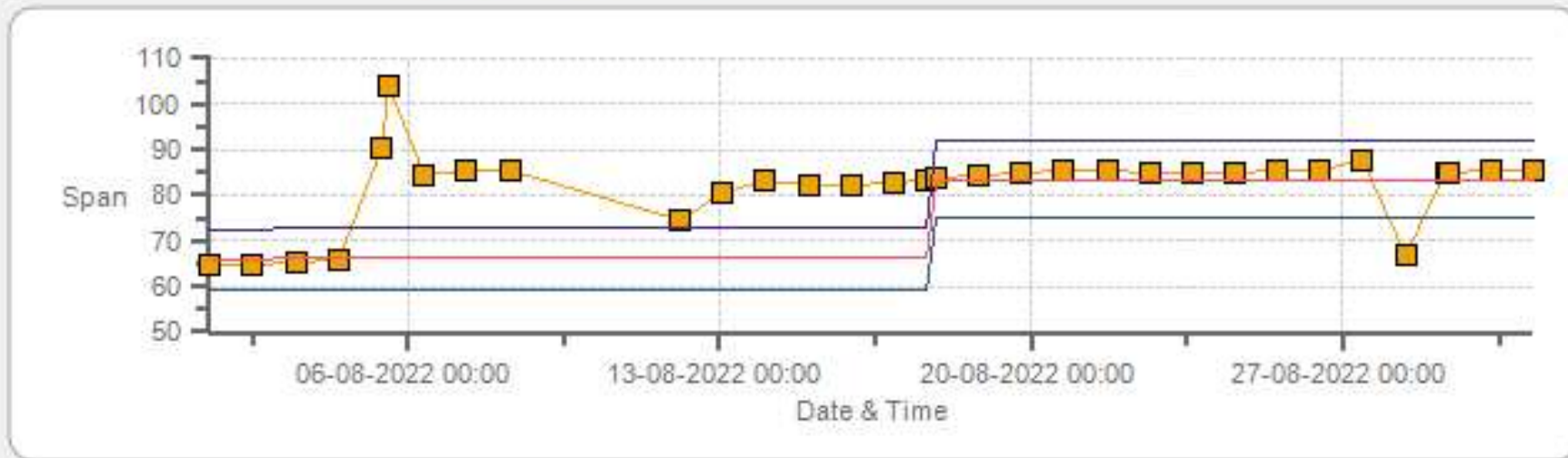
Span Span Ref Span Low Span High

H2S[ppb] Calibration: St. Lina Monthly: 08-2022 Type: SpanAndZero - Zero



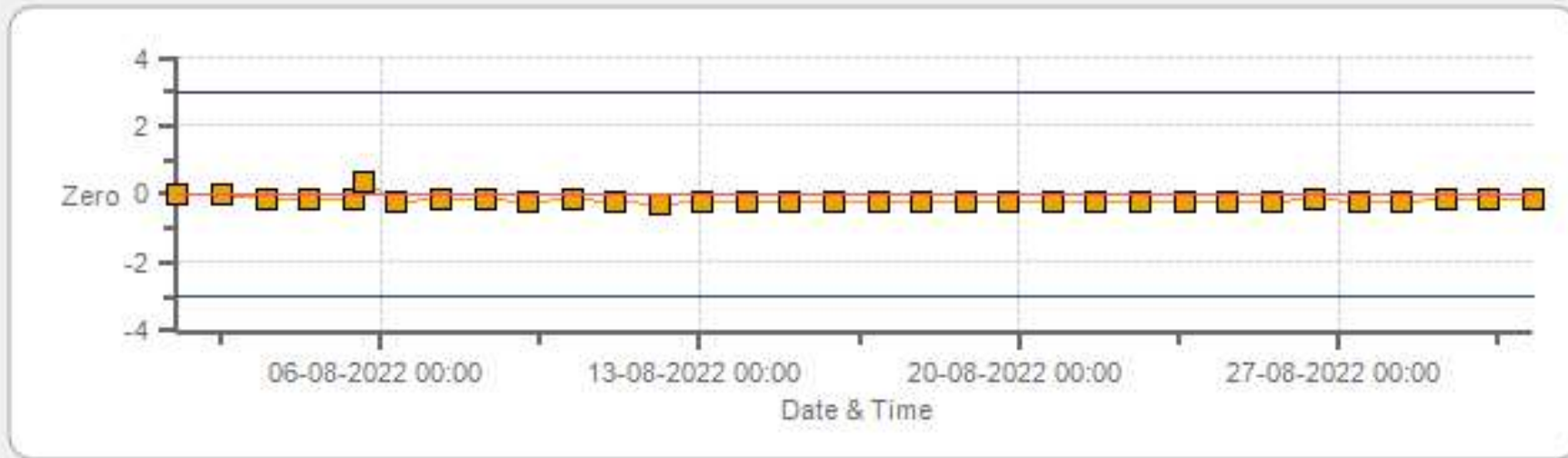
Zero Zero Ref Zero Low Zero High

H2S[ppb] Calibration: St. Lina Monthly: 08-2022 Type: SpanAndZero - Span



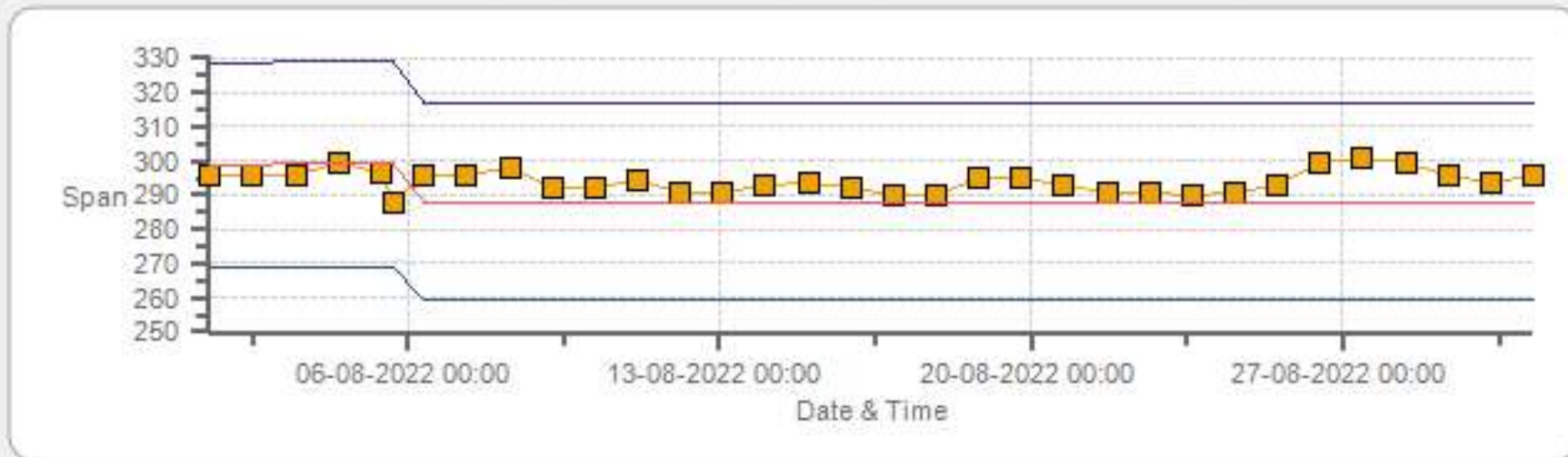
Span SpanRef Span Low Span High

NOX[ppb] Calibration: St. Lina Monthly: 08-2022 Type: SpanAndZero - Zero



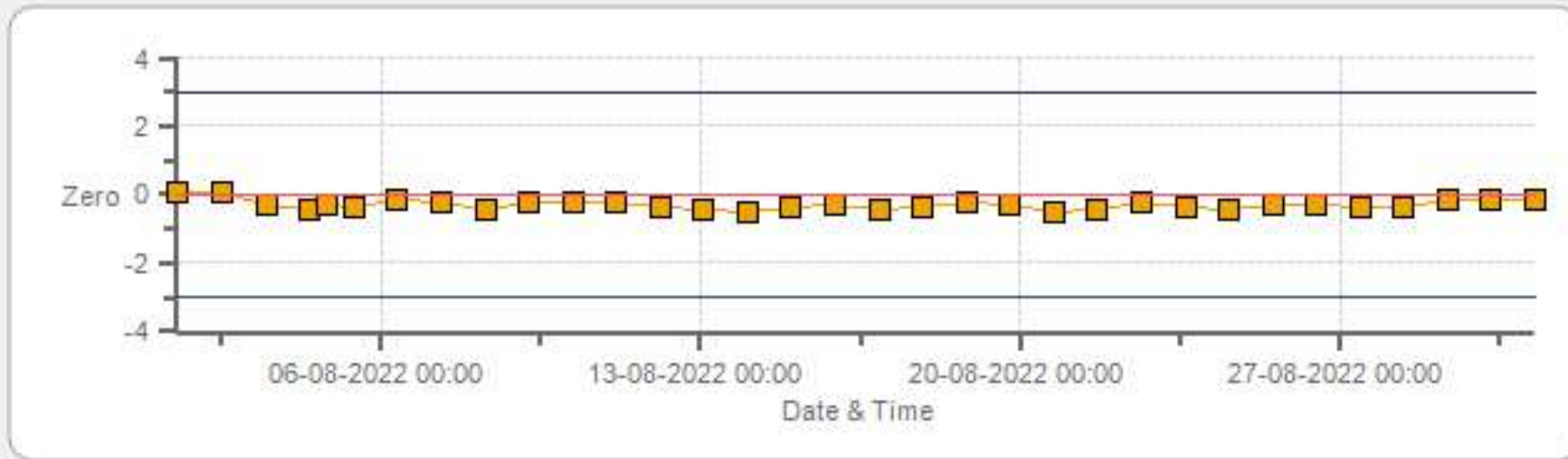
Zero Zero Ref Zero Low Zero High

NOX[ppb] Calibration: St. Lina Monthly: 08-2022 Type: SpanAndZero - Span



Span SpanRef Span Low Span High

O3[ppb] Calibration: St. Lina Monthly: 08-2022 Type: SpanAndZero - Zero



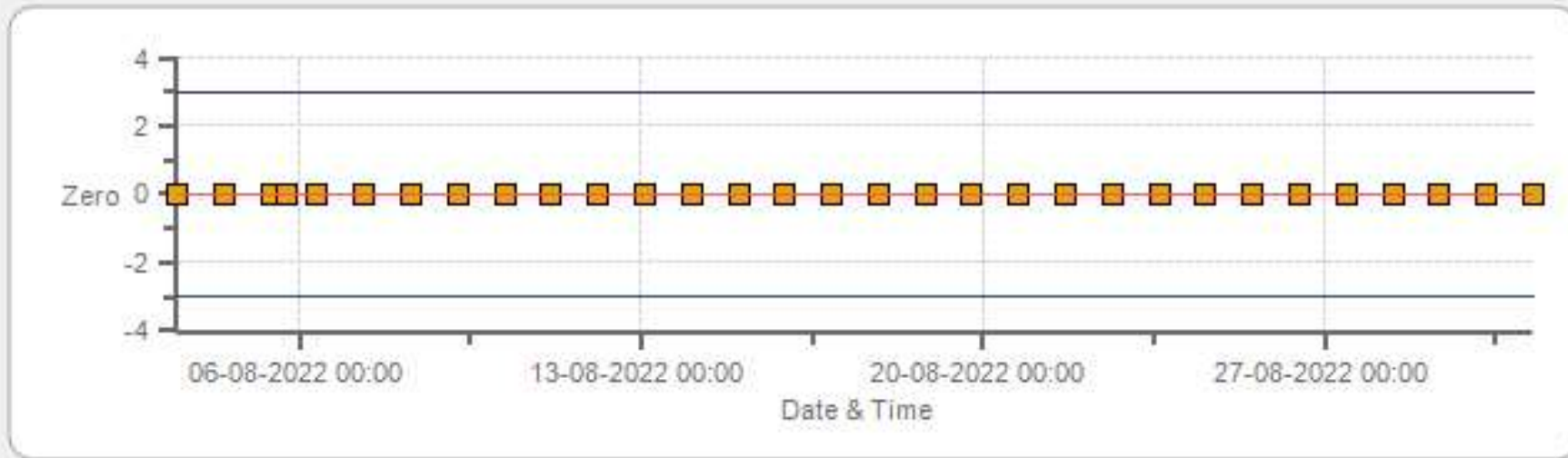
Zero Zero Ref Zero Low Zero High

O3[ppb] Calibration: St. Lina Monthly: 08-2022 Type: SpanAndZero - Span



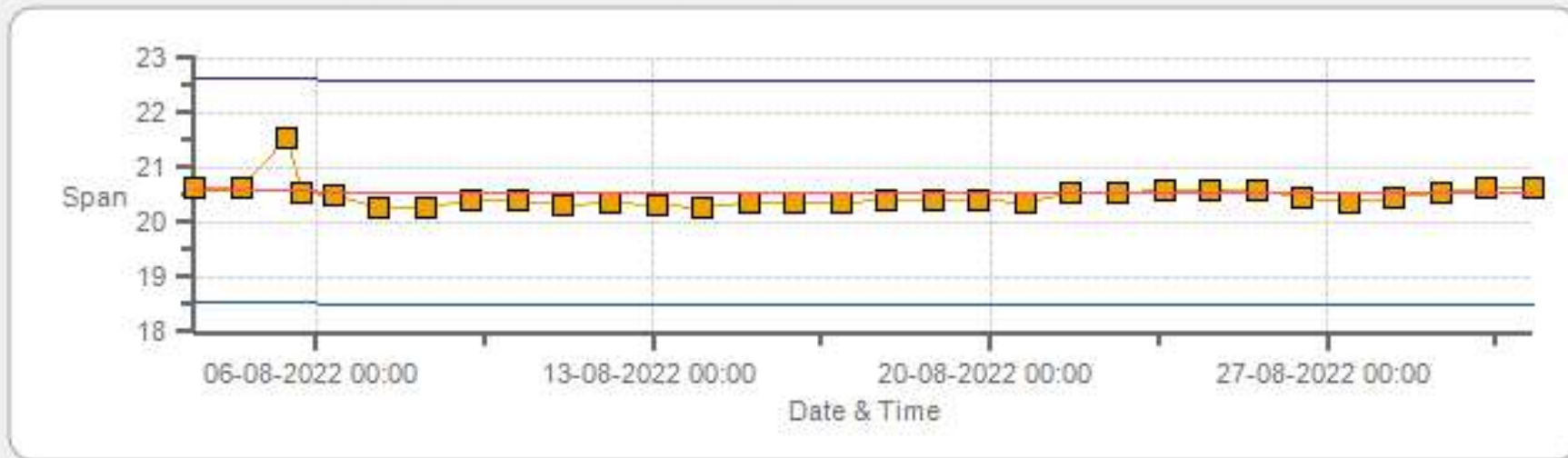
Span SpanRef Span Low Span High

THC55[ppm] Calibration: St. Lina Monthly: 08-2022 Type: SpanAndZero - Zero



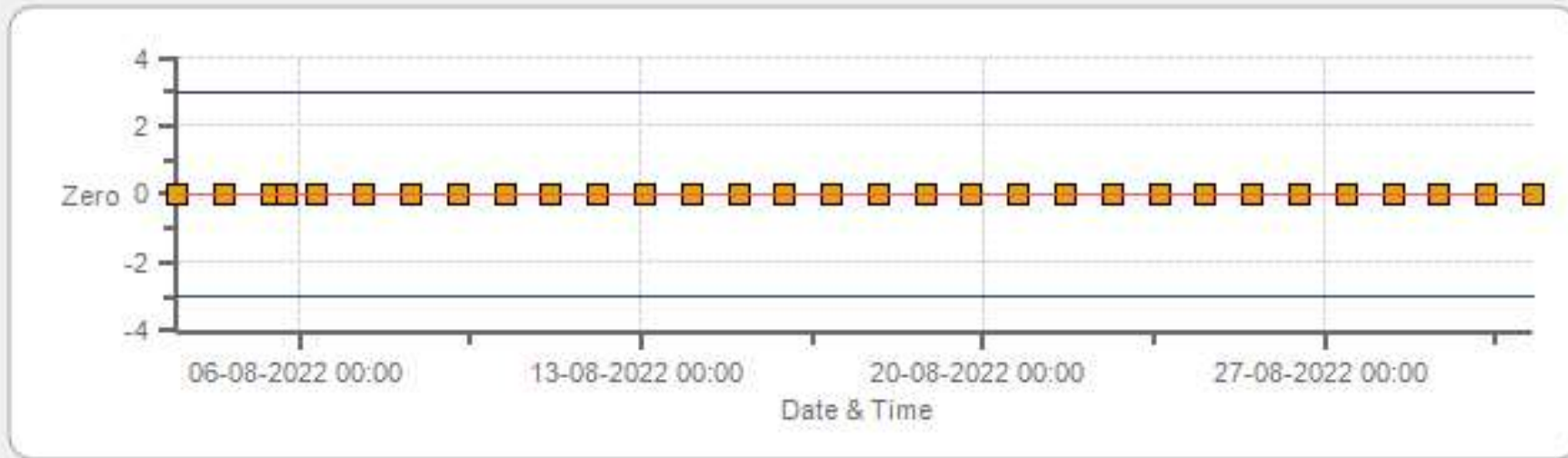
Zero Zero Ref Zero Low Zero High

THC55[ppm] Calibration: St. Lina Monthly: 08-2022 Type: SpanAndZero - Span



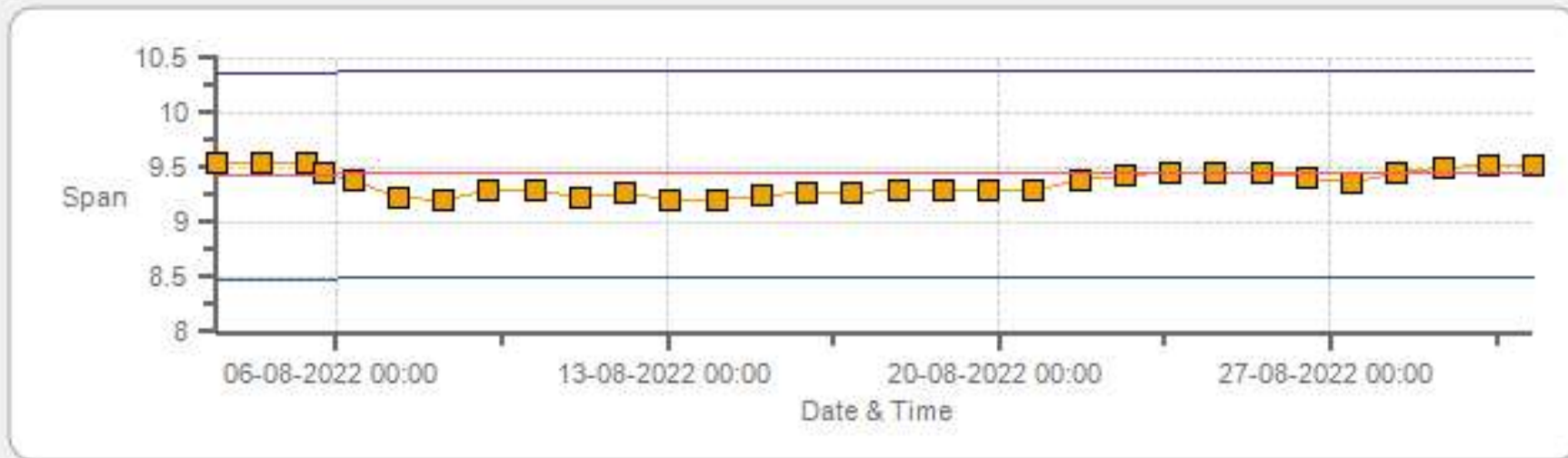
Span SpanRef Span Low Span High

CH4[ppm] Calibration: St. Lina Monthly: 08-2022 Type: SpanAndZero - Zero



Zero Zero Ref Zero Low Zero High

CH4[ppm] Calibration: St. Lina Monthly: 08-2022 Type: SpanAndZero - Span



Span SpanRef Span Low Span High

MULTI-POINT CALIBRATION RECORDS

SO2 Analyzer Calibration by Dilution



DATE:	05-Aug-2022	PREVIOUS CALIBRATION DATE:	21-Jul-2022
PARAMETER:	SO2	PREVIOUS CORRECTION FACTOR:	0.999
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	St. Lina	BAROMETRIC (mBar):	917
PURPOSE:	Routine	START TIME (MST):	09:56
PERFORMED BY:	Alex Yakupov	END TIME (MST):	13:56

ANALYZER:

MAKE/MODEL	Thermo 43I-TLE	RANGE	500 ppb
SERIAL #	1180930030	FLOW (mL/min)	442
INITIAL		FINAL	
BKG/OFFSET	4.36	BKG/OFFSET	4.44
COEF/SLOPE	1.14	COEF/SLOPE	1.144
Expected (reference) Value	341.2	Expected (reference) Value	339.7

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010	MODEL:	T701
ID:	26801218	ID:	132
MFC CALIBRATION DATE:	20-Apr-2022	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	LL 105146	HIGH ID	n/a
CONC (ppm):	50.80	EXPIRY DATE	n/a
CYLINDER (psi):	700	LOW ID	n/a
EXPIRY DATE	09-Jun-2029	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:

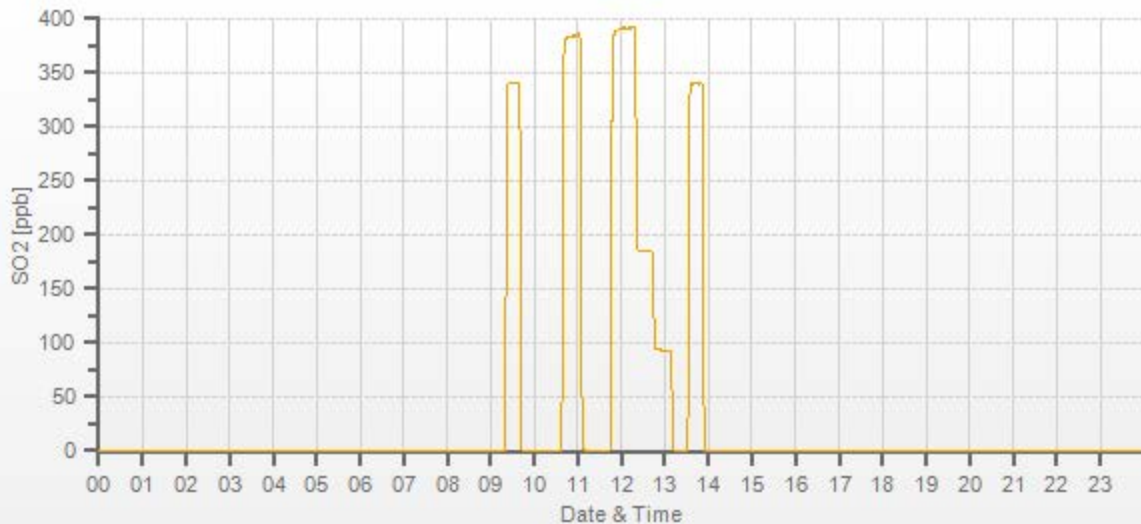
FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
DILUENT	GAS	TOTAL	ACTUAL	INDICATED		Initial	Final
				Initial	Final		
5000	38.50	5000	0.00	0	0	1.015	1.001
4959	38.50	4997	391.39	385.6	391.1	1.015	1.001
4981	18.00	4999	182.92	n/a	185.4	n/a	0.987
4990	9.00	4999	91.46	n/a	93.1	n/a	0.982

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	0.998	0.3%

COMMENTS:

Sample inlet filter was changed.



H2S Analyzer Calibration by Dilution



DATE:	04-Aug-2022	PREVIOUS CALIBRATION DATE:	21-Jul-2022
PARAMETER:	H2S	PREVIOUS CORRECTION FACTOR:	1.000
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	St. Lina	BAROMETRIC (mBar):	909
PURPOSE:	Removal/Shut-down	START TIME (MST):	11:37
PERFORMED BY:	Alex Yakupov	END TIME (MST):	14:07

ANALYZER:

MAKE/MODEL	API 101A	RANGE	100 ppb
SERIAL #	324	FLOW (mL/min)	500
INITIAL		FINAL	
BKG/OFFSET	30.8	BKG/OFFSET	n/a
COEF/SLOPE	1.033	COEF/SLOPE	n/a
Expected (reference) Value	66.1	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:	20-Apr-2022	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	EY 0002287	HIGH ID	n/a
CONC (ppm):	10.10	EXPIRY DATE	n/a
CYLINDER (psi):	2000	LOW ID	n/a
EXPIRY DATE	14-Sep-2024	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:	11:42	SO2 Conc (ppb)	380
END TIME:	11:57	Analyzer Response (ppb)	0.0

CALIBRATION:

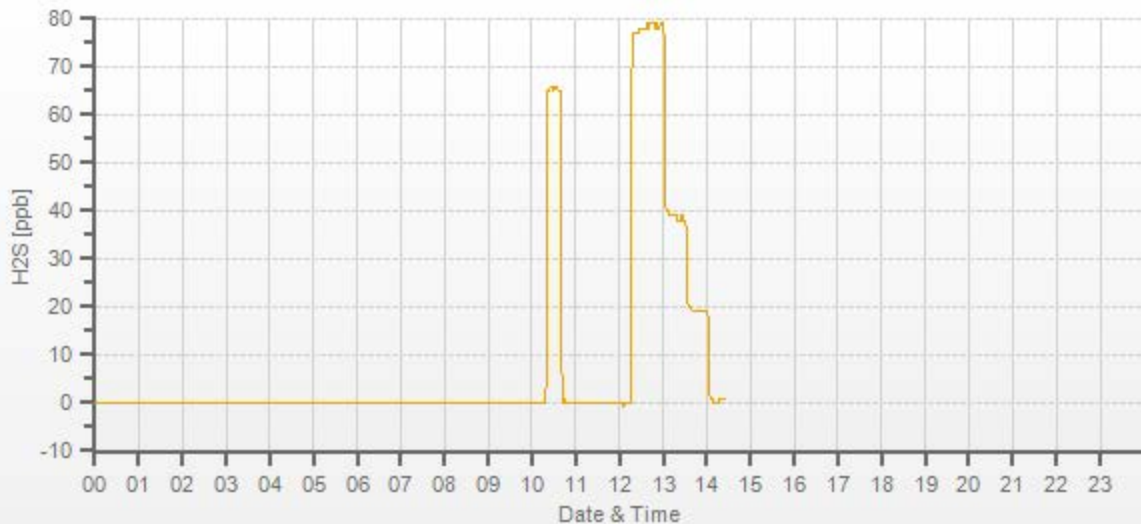
FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
DILUENT	GAS	TOTAL	ACTUAL	INDICATED		Initial	Final
				Initial	Final		
7500	7500	7500	0.00	0.2	n/a	0.991	n/a
7442	57.90	7500	77.97	78.9	n/a	0.991	n/a
7472	28.20	7500	37.98	38.8	n/a	0.984	n/a
7486	14.10	7500	18.99	19.6	n/a	0.979	n/a

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.009	0.3%

COMMENTS:

Shutdown calibration was completed to install LICA analyzer after repair.



H2S Analyzer Calibration by Dilution



DATE:	05-Aug-2022	PREVIOUS CALIBRATION DATE:	n/a
PARAMETER:	H2S	PREVIOUS CORRECTION FACTOR:	n/a
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	St. Lina	BAROMETRIC (mBar):	917
PURPOSE:	Install/Post-Repair	START TIME (MST):	09:54
PERFORMED BY:	Alex Yakupov	END TIME (MST):	13:40

ANALYZER:

MAKE/MODEL	Thermo 450i	RANGE	100 ppb
SERIAL #	CM18010058	FLOW (mL/min)	827
INITIAL		FINAL	
BKG/OFFSET	n/a	BKG/OFFSET	48.2
COEF/SLOPE	n/a	COEF/SLOPE	0.897
Expected (reference) Value	n/a	Expected (reference) Value	66

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010 D	MODEL:	T701
ID:	11900613	ID:	132
MFC CALIBRATION DATE:	20-Apr-2022	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	EY 0002287	HIGH ID	n/a
CONC (ppm):	10.10	EXPIRY DATE	n/a
CYLINDER (psi):	2000	LOW ID	n/a
EXPIRY DATE	14-Sep-2024	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:	10:02	SO2 Conc (ppb)	380
END TIME:	10:17	Analyzer Response (ppb)	0.0

CALIBRATION:

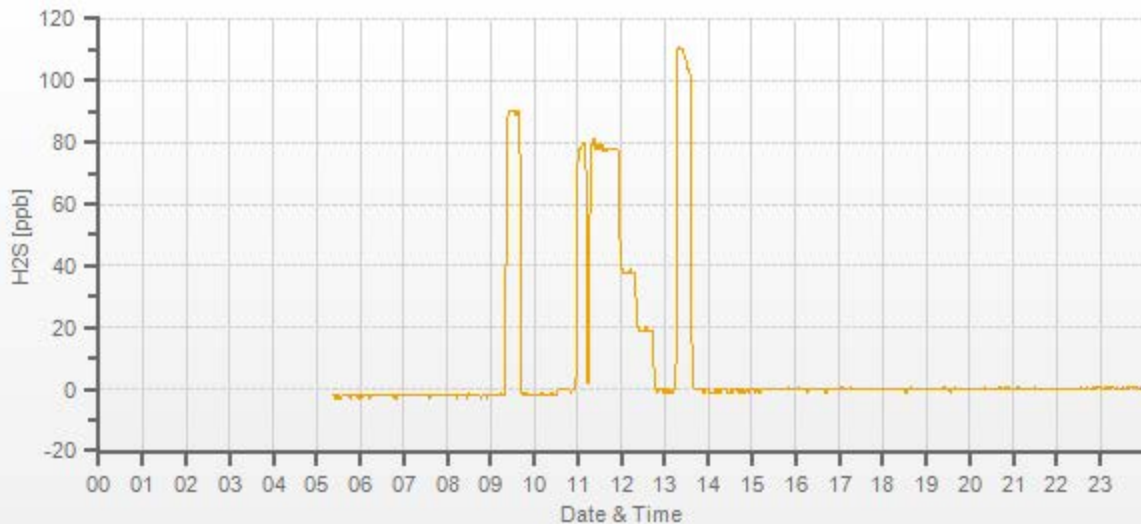
FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
DILUENT	GAS	TOTAL	ACTUAL	INDICATED		Initial	Final
				Initial	Final		
7500	7500	7500	0.00	n/a	0	n/a	n/a
7442	57.90	7500	77.97	n/a	78.1	n/a	0.998
7472	28.20	7500	37.98	n/a	38.8	n/a	0.979
7486	14.10	7500	18.99	n/a	19.7	n/a	0.964

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.000	0.4%

COMMENTS:

Sample inlet filter was changed.
11:12 - calibrator froze. It was reset, high-point restarted.



H2S Analyzer Calibration by Dilution



DATE:	17-Aug-2022	PREVIOUS CALIBRATION DATE:	05-Aug-2022
PARAMETER:	H2S	PREVIOUS CORRECTION FACTOR:	0.998
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	St. Lina	BAROMETRIC (mBar):	924
PURPOSE:	Repeat	START TIME (MST):	11:32
PERFORMED BY:	Alex Yakupov	END TIME (MST):	15:30

ANALYZER:

MAKE/MODEL	Thermo 450i	RANGE	100 ppb
SERIAL #	CM18010058	FLOW (mL/min)	816
INITIAL		FINAL	
BKG/OFFSET	48.2	BKG/OFFSET	52.2
COEF/SLOPE	0.897	COEF/SLOPE	0.936
Expected (reference) Value	66.1	Expected (reference) Value	83.4

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010 D	MODEL:	T701
ID:	11900613	ID:	132
MFC CALIBRATION DATE:	20-Apr-2022	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	EY 0002287	HIGH ID	n/a
CONC (ppm):	10.10	EXPIRY DATE	n/a
CYLINDER (psi):	2000	LOW ID	n/a
EXPIRY DATE	14-Sep-2024	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:

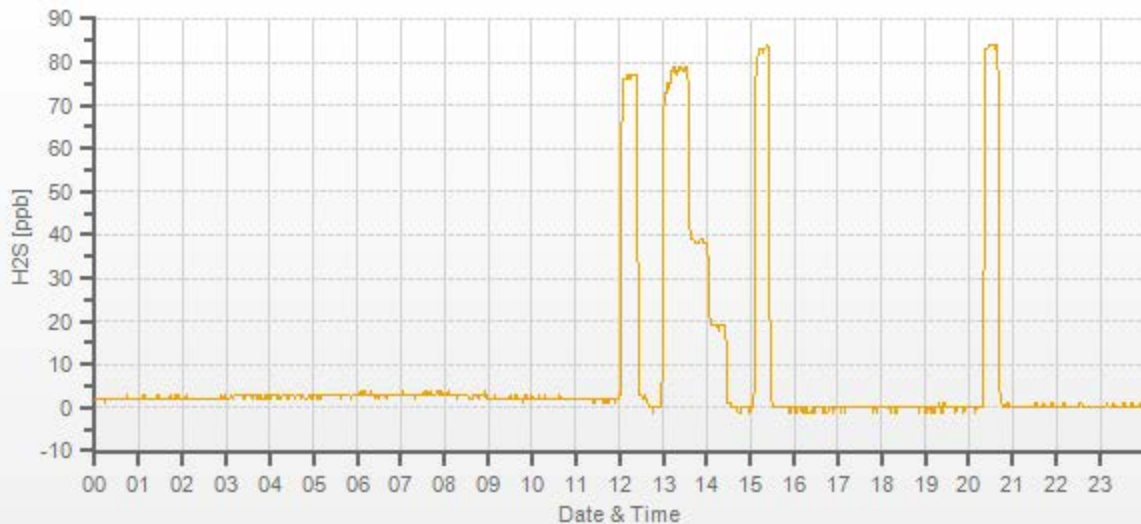
FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
DILUENT	GAS	TOTAL	ACTUAL	INDICATED		Initial	Final
				Initial	Final		
7500	7500	7500	0.00	1.9	0	1.047	0.995
7442	57.90	7500	77.97	76.4	78.4	1.047	0.995
7472	28.20	7500	37.98	n/a	38.2	n/a	0.994
7486	14.10	7500	18.99	n/a	19.1	n/a	0.994

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.005	0.0%

COMMENTS:

Repeat calibration was completed to adjust the EV. Reason: a new permeation device stabilized.



NOx Calibration by Dilution/Gas-Phase Titration



CALIBRATION:				ANALYZER:			
DATE:	05-Aug-2022	PREVIOUS CALIBRATION DATE:	21-Jul-2022	MAKE/MODEL:	Thermo 42i	PREVIOUS CF.	
CLIENT:	LICA	TEMPERATURE (°C):	22.0	SERIAL #:	1180930029	NOx	0.999
LOCATION:	St. Lina	BAROMETRIC (mBar):	917	FLOW (mL/min)	819	NO	1.001
PURPOSE:	Routine	START TIME (MST):	10:07	RANGE (ppb)	500	NO2	1.000
PERFORMED BY:	Alex Yakupov	END TIME (MST):	15:45	GPT FOR O3?		No	

CALIBRATION SYSTEM:							
CALIBRATOR:		ZERO AIR:		CALIBRATION GAS:		FLOWMETERS (if applicable):	
MAKE:	SABIO	MAKE:	Teledyne	CYLINDER ID:	LL 105146	HIGH ID:	n/a
MODEL:	2010	MODEL:	T701	NO/NOx (PPM):	50.0 50.1	HIGH EXPIRY:	n/a
ID:	26801218	ID:	132	CYLINDER (psi):	700	LOW ID:	n/a
MFC CALIBRATION DATE:	20-Apr-2022	OXIDIZER ID:	n/a	EXPIRY DATE	09-Jun-2029	LOW EXPIRY:	n/a

CALIBRATION SETTINGS:							
INITIAL	NOx	NO	NO2	FINAL	NOx	NO	NO2
BKG/OFFSET:	4.1	4	n/a	BKG/OFFSET:	4.2	4	n/a
SLOPE/COEF/CE:	1.003	0.867	1	SLOPE/COEF/CE:	1.003	0.872	1

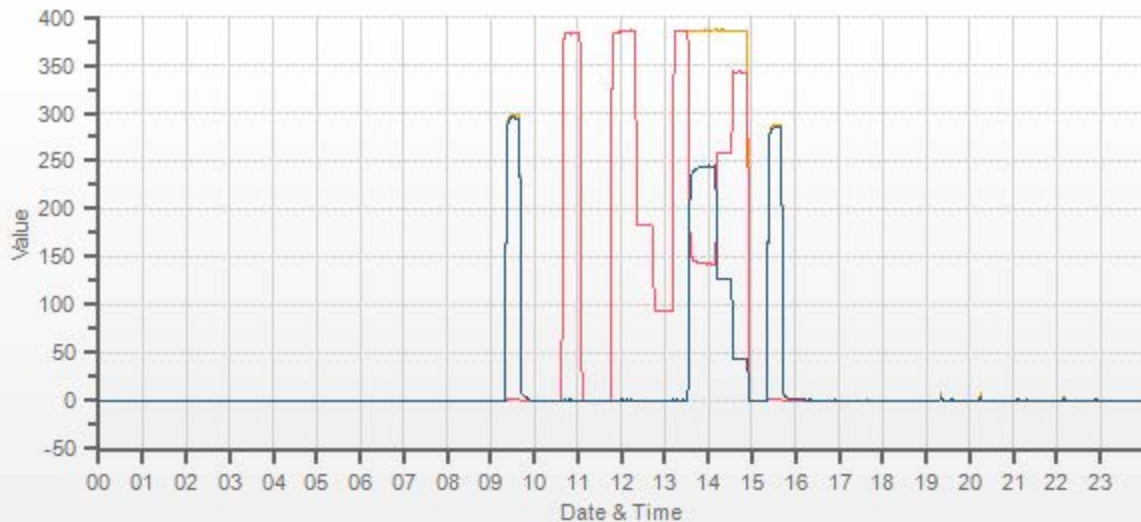
EXPECTED (REFERENCE) VALUE:							
INITIAL	NOx	NO	NO2	FINAL	NOx	NO	NO2
	229.1	2.4	296.7		288.0	2.5	285.5

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	38.50	5000	0.0	0.0	0.0	-0.1	0.0	0.0	0.0	0.0	0.0	1.005	1.005	0.999	1.001	0.999	1.001
4959	38.50	4997	385.2	386.0	0.8	383.1	384.1	1.0	385.0	386.2	1.2	1.005	1.005	0.999	1.001	0.999	1.001
4981	18.00	4999	180.0	180.4	0.4	n/a	n/a	n/a	183.2	183.7	0.5	n/a	n/a	0.983	0.982	n/a	n/a
4990	9.00	4999	90.0	90.2	0.2	n/a	n/a	n/a	93.0	93.2	0.2	n/a	n/a	0.968	0.968	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	38.50	4997	0	385.1	386.1	1.0	242.7	243.2	0.998	100.21%
AS-FOUND HIGH	38.50	4997	240	142.4	386.7	244.2	242.7	243.2	0.998	100.21%
ADJUSTED HIGH	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
MID	38.50	4997	125	258.5	386.1	127.6	126.6	126.6	1.000	100.00%
LOW	38.50	4997	45	342.2	385.7	43.4	42.9	42.4	1.012	98.83%
NO2 adjustment not required.									AVERAGE:	99.68%

LINEAR REGRESSION ANALYSIS:				COMMENTS:
	CORRELATION	SLOPE	INTERCEPT	
NO	1.000	0.997	0.38%	
NOx	1.000	0.998	0.38%	
NO2	1.000	1.005	-0.14%	



CAL-LICA-202208-01250

Ozone Calibration by Photometer (Varying UV Lamp)



DATE:	04-Aug-2022	PREVIOUS CALIBRATION DATE:	22-Jul-2022
PARAMETER:	O3	PREVIOUS CORRECTION FACTOR:	0.999
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	St. Lina	BAROMETRIC (mBar):	909
PURPOSE:	Routine	START TIME (MST):	14:19
PERFORMED BY:	Alex Yakupov	END TIME (MST):	19:33

ANALYZER:

MAKE/MODEL	Thermo 49i	RANGE	500 ppb
SERIAL #	1002240371	FLOW (mL/min)	1481
INITIAL		FINAL	
BKG/OFFSET	0.1	BKG/OFFSET	0.1
COEF/SLOPE	1.012	COEF/SLOPE	1.01
Expected (reference) Value	215.7	Expected (reference) Value	220

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010 D	MODEL:	T701
ID:	11900613	ID:	132
MFC CALIBRATION DATE:	20-Apr-2022	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:

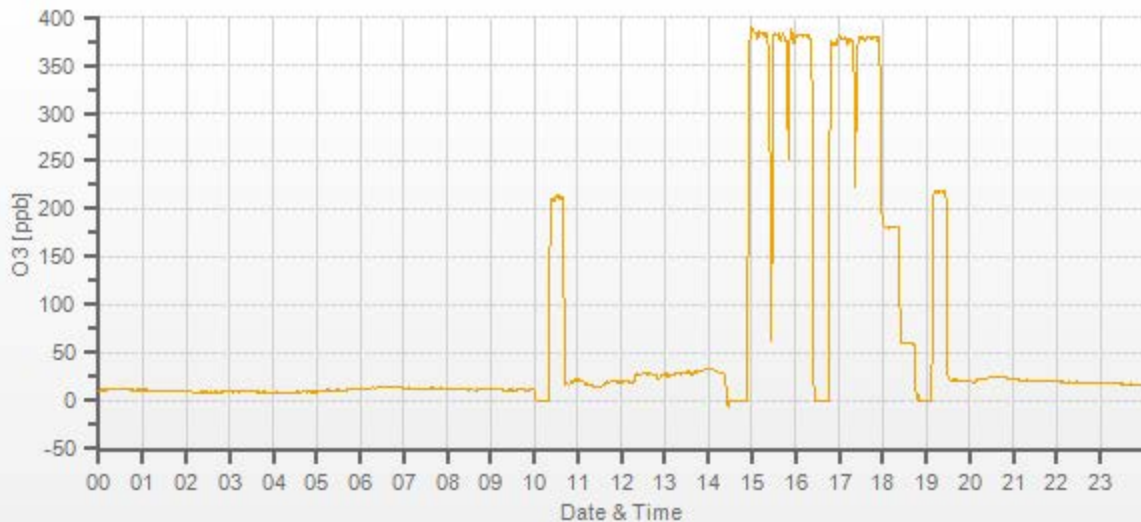
FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
DILUENT	GAS	TOTAL	ACTUAL	INDICATED		Initial	Final
				Initial	Final		
5000	XXXX	5000	0.0	0.0	0.0	XXXX	XXXX
5000	XXXX	5000	378.0	380.0	377.7	0.995	1.001
5000	XXXX	5000	180.0	n/a	181.0	n/a	0.994
5000	XXXX	5000	60.0	n/a	59.9	n/a	1.002

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.000	0.0%

COMMENTS:

Sample inlet filter was changed.
 15:24, 15:50 and 17:22 - High point started from beginning after the calibrator was reset. Reason: unstable readings.



Methane/Non-Methane Analyzer Calibration by Dilution



CALIBRATION:				ANALYZER:			
DATE:	04-Aug-2022	PREVIOUS CALIBRATION DATE:	22-Jul-2022	VALUE	MAKE/MODEL	SERIAL	FLOW (mL/min)
CLIENT:	LICA	TEMPERATURE (°C):	22.0		Thermo 55i	1180930026	1138
LOCATION:	St. Lina	BAROMETRIC (mBar):	909	PARAMETER:	CH4	NMHC	THC
PURPOSE:	Removal/Shut-down	START TIME (MST):	11:39	RANGE (ppm):	20	20	40
PERFORMED BY:	Alex Yakupov	END TIME (MST):	14:13	PREVIOUS CF:	1.004	1.002	1.003

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:		CALIBRATION GAS:		FLOWMETERS (if applicable):	
MAKE:	SABIO	MAKE:	Teledyne	CYLINDER ID:	LL 23593	HIGH ID:	n/a
MODEL:	2010	MODEL:	T701	CH ₄ /C ₃ H ₈ (ppm):	603.0 204.0	HIGH EXPIRY:	n/a
ID:	26801218	ID:	132	CYLINDER (psi):	2000	LOW ID:	n/a
MFC CALIBRATION DATE:	20-Apr-2022	OXIDIZER ID:	115	EXPIRY DATE	18-Aug-2029	LOW EXPIRY:	n/a

CALIBRATION PARAMETERS:

POINT (CH ₄ /NMHC)	HIGH	MID	LOW	CH ₄ EQUIVILANCE		
TARGET	14	7	3.5	C ₃ H ₈ as CH ₄		561.0
RANGE	12 - 16	6 - 8	2 - 4	THC as CH ₄		1164.0

EXPECTED (REFERENCE) VALUE:

INITIAL	CH ₄	NMHC	THC	FINAL	CH ₄	NMHC	THC
	9.43	11.16	20.59		n/a	n/a	n/a

CALIBRATION:

FLOW RATE			CONCENTRATION (PPM)									CORRECTION FACTOR (CF.)					
(mL/min)			CALCULATED			INITIAL INDICATED			FINAL INDICATED			INITIAL			FINAL		
DILUENT	GAS	TOTAL	CH ₄	NMHC	THC	CH ₄	NMHC	THC	CH ₄	NMHC	THC	CH ₄	NMHC	THC	CH ₄	NMHC	THC
3100	X	3100	0.00	0.00	0.00	0.00	0.00	0.00	n/a	n/a	n/a	X	X	X	X	X	X
3025	74.60	3100	14.51	13.50	28.01	14.43	13.29	27.68	n/a	n/a	n/a	1.006	1.016	1.012	n/a	n/a	n/a
3063	37.30	3100	7.26	6.75	14.01	7.23	6.70	13.93	n/a	n/a	n/a	1.004	1.007	1.005	n/a	n/a	n/a
3081	18.60	3100	3.62	3.37	6.98	3.61	3.43	7.05	n/a	n/a	n/a	1.002	0.981	0.991	n/a	n/a	n/a

LINEAR REGRESSION ANALYSIS:

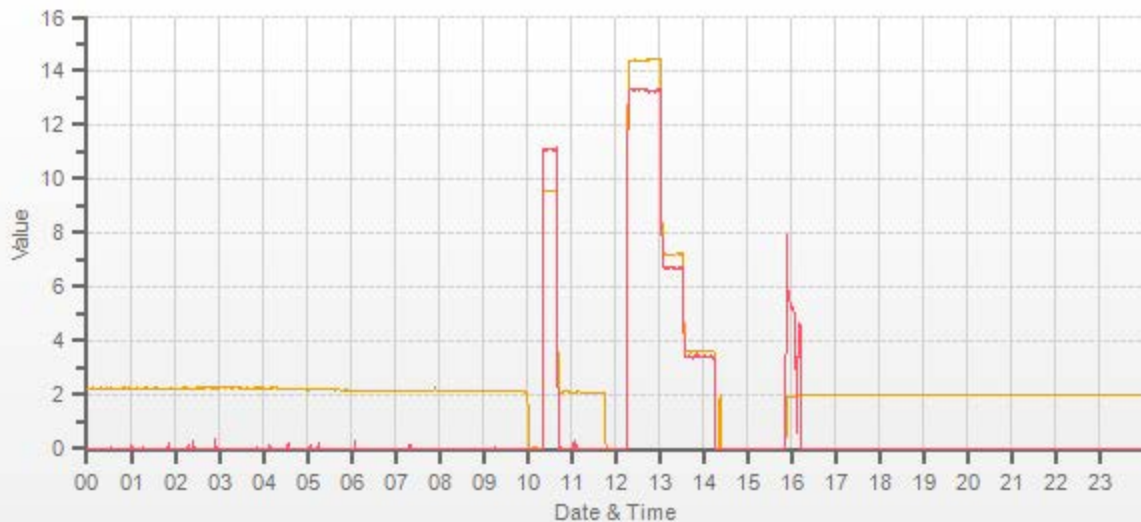
	CORRELATION	SLOPE	INTERCEPT
CH ₄	1.000	0.994	0.0%
NMHC	1.000	0.982	0.3%
THC	1.000	0.987	0.2%

Comments:

Shutdown calibration was completed to remove the analyzer for repair.
Reason: NMHC noise at ambient

Use Zero Chrom?

Yes



CAL-LICA-202208-01250

Methane/Non-Methane Analyzer Calibration by Dilution



CALIBRATION:				ANALYZER:			
DATE:	05-Aug-2022	PREVIOUS CALIBRATION DATE:	n/a	VALUE	MAKE/MODEL	SERIAL	FLOW (mL/min)
CLIENT:	LICA	TEMPERATURE (°C):	22.0		Thermo 55i	1180030034	1008
LOCATION:	St. Lina	BAROMETRIC (mBar):	917	PARAMETER:	CH4	NMHC	THC
PURPOSE:	Install/Post-Repair	START TIME (MST):	14:59	RANGE (ppm):	20	20	40
PERFORMED BY:	Alex Yakupov	END TIME (MST):	17:37	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 23593	HIGH ID:	n/a
MODEL:	2010	MODEL:	T701	CH ₄ /C ₃ H ₈ (ppm):	603.0 204.0	HIGH EXPIRY:	n/a
ID:	26801218	ID:	132	CYLINDER (psi):	2000	LOW ID:	n/a
MFC CALIBRATION DATE:	20-Apr-2022	OXIDIZER ID:	115	EXPIRY DATE:	18-Aug-2029	LOW EXPIRY:	n/a

CALIBRATION PARAMETERS:

POINT (CH ₄ /NMHC)	HIGH	MID	LOW	CH ₄ EQUIVILANCE	
TARGET	14	7	3.5	C ₃ H ₈ as CH ₄	561.0
RANGE	12 - 16	6 - 8	2 - 4	THC as CH ₄	1164.0

EXPECTED (REFERENCE) VALUE:

INITIAL	CH ₄	NMHC	THC	FINAL	CH ₄	NMHC	THC
	n/a	n/a	n/a		n/a	9.45	11.09

CALIBRATION:

FLOW RATE			CONCENTRATION (PPM)									CORRECTION FACTOR (CF.)					
(mL/min)			CALCULATED			INITIAL INDICATED			FINAL INDICATED			INITIAL			FINAL		
DILUENT	GAS	TOTAL	CH ₄	NMHC	THC	CH ₄	NMHC	THC	CH ₄	NMHC	THC	CH ₄	NMHC	THC	CH ₄	NMHC	THC
3100	X	3100	0.00	0.00	0.00	n/a	n/a	n/a	0.00	0.00	0.00	X	X	X	X	X	X
3025	74.60	3100	14.51	13.50	28.01	n/a	n/a	n/a	14.50	13.50	28.00	n/a	n/a	n/a	1.001	1.000	1.000
3063	37.30	3100	7.26	6.75	14.01	n/a	n/a	n/a	7.27	6.83	14.10	n/a	n/a	n/a	0.998	0.988	0.993
3081	18.60	3100	3.62	3.37	6.98	n/a	n/a	n/a	3.64	3.47	7.11	n/a	n/a	n/a	0.994	0.970	0.982

LINEAR REGRESSION ANALYSIS:

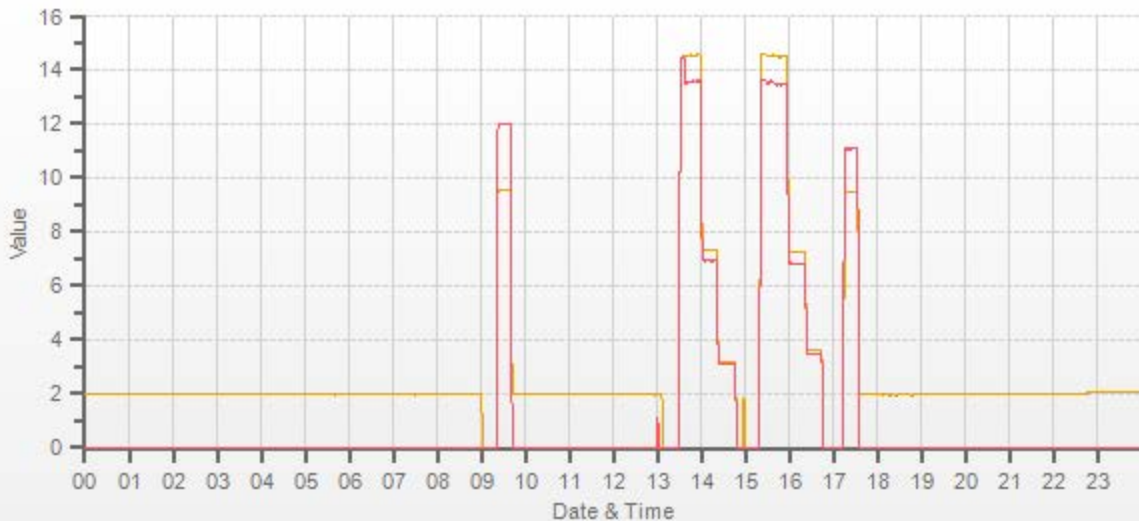
	CORRELATION	SLOPE	INTERCEPT
CH ₄	1.000	0.999	0.1%
NMHC	1.000	0.998	0.3%
THC	1.000	0.998	0.2%

Comments:

No issues

Use Zero Chrom?

Yes



CAL-LICA-202208-01250

Thermo 5030i SHARP Monitor Monthly Check

Date: August 5, 2022	Performed By/Reviewer: Alex Yakupov Chris Wesson
Company: LICA	Start Time (mst): 16:53
Station Name/Location: St. Lina	End Time (mst): 17:32
Previous Audit Date: July 22, 2022	Calibration Purpose: routine monthly
Parameter: PM 2.5	Weather Conditions: Mix of sun and clouds

SHARP 5030i Information and Status:

Serial Number: CM 17091001 **Filter Tape Counter:** 414

Reference Standards:

Air Flow

	Manometer	Orifice	Pressure:	Temp / RH:
Make:	Dwyer	FTS Chinook	Fisher Scientific	Vaisala HMP76B
Model:	Mark III	#5792966	FB 61291	HMP 76B
Serial Number:	ID # 3	ID # 4	130168457	T1640130
Calibration Expiration Date:	February 27, 2023	December 5, 2022	February 17, 2023	June 14, 2023

Ambient Temperature (°C)				Range	Action
	Reference	SHARP	Difference	< ± 2°C	OK
#1	15.50	15.6	-0.1	2-3 °C	Recalibrate
				> 3°C	Fail

Ambient Relative Humidity (%RH)				Range	Action
As Found:				< ± 2 %RH	OK
	Reference	SHARP	Difference	2-5 %RH	Recalibrate
#1	54.50	55.8	-1.3	> 5 %RH	Fail

Barometric Pressure (mmHg)				Range	Action
As Found:				< ± 10 mmHg	OK
	Reference	SHARP	Difference	10-12 mmHg	Recalibrate
#1	692.0	692.0	0.0	> 12 mmHg	Fail

Flow Audit (L/min)						Range	Action
As Found:						< ± 4%	OK
	Reference	SHARP		% Difference		4-5%	Recalibrate
#1	16.66	16.67		0.10%		>5%	Fail
#2	16.65	16.67					
#3	16.65	16.67					
Average	16.65	16.67					

Leak Check (L/min)						
Without Leak Check Adapter			With leak Check Adapter			
	Reference	SHARP	Difference	Reference	SHARP	Difference
#1	16.65	16.67	-0.02	16.57	16.62	-0.05
						LEAK RATE: -0.03

Leak Limit: 0.80 L/min

Meteorological System Checklist



Date:	August 5, 2022
Technician:	Alex Yakupov / Audit time: 15:32 - 16:47
Reviewer:	Chris Wesson
Station:	St. Lina

Unit:	Make:	Model:	Serial #:
Temperature Sensor:	Rotronic	HC2-S3	20221366
Barometric Pressure Sensor:	Met One	O90D	F4498
Relative Humidity Sensor:	Rotronic	HC2-S3	20221366
Anemometer:	RM Young	05305VK	161466

PRECIPITATION SENSOR CHECK

Checklist:	Reply:	Comments:
Is the sensor Level?	yes	
Is the heater operating properly?	yes	
Are the bucket drain holes clean?	yes	
Is the screen on the housing? (screen should be on between July and September)	yes	
Is the housing clean?	yes	
Is the area around the housing clean and free from obstacles?	yes	

TIP TEST - Slowly pour water until 10 tip are heard. (10 tips = 1 ml)

# of Tips	Data Logger Response (ml):	Manual Specification = +/- 0.2 ml
10	1.00	TRUE

AMBIENT TEMPERATURE SENSOR CHECK

Parameter:	Temperature @ 2 metres		
Reference Thermometer ID:	Vaisala / HM70 / #T1640130/ Jun 14, 2023		
Reference Temperature (°C):	16.8		
Station - Ambient Temperature (°C):	16.4		
Temperature Difference (°C):	0.4		

BAROMETRIC PRESSURE SENSOR CHECK

Previous check date:	April 11, 2022		
Reference Barometer ID:	Fisher Scientific #130168457, Exp. Date: Feb 17, 2023		
Reference Pressure - Units/Reading:	millibar	923	
Station Pressure - Units/Reading:	millibar	921	
Pressure Tolerance +/- 15% of error:	785 - 1061	0.22%	

RELATIVE HUMIDITY (HYGROMETER) SENSOR CHECK

Reference Hygrometer ID:	Vaisala / HM70 / #T1640130/ Jun 14, 2023		
Reference Hygrometer % RH- Reading:	54.90		
Station Hygrometer % RH- Reading:	53.30		
RH Tolerance +/- 15% of difference:	46.67 - 63.14	2.9%	

ANEMOMETER - WIND SPEED & WIND DIRECTION SENSOR CHECK

WIND SPEED		WIND DIRECTION	
Previous check date:	July 22, 2022	Previous check date:	July 22, 2022
Wind Speed Observed (kph):	10-20	Wind Direction Observed:	NW
Wind speed on Data Logger (kph):	17.1	Wind Direction on Data Logger:	NW
	Annual audit: Jul 22, 2022	Wind Direction Pass/Fail?:	Pass

Comments

Station (Trailer) temperature vs Reference gauge temperature: 24.6 vs 23.7 , passed.



Meteorological Sensor Audit/Calibration

Location Information

Company: LICA
 Audit Location: St. Lina
 Audit Date: July 22, 2022
 Calibration Purpose: routine annual

Performed By: Alex Yakupov
 Reviewed By: Chris Wesson
 Start/End Time (mst): 15:07 / 16:23
 Weather Conditions: A few 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 #:	161466	Direction Voltage Output Range:	0-1
Previous Cal/Audit Date:	March 16, 2021	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	36.9	37.0	0.998
3000	55.3	55.4	55.5	0.997
4000	73.7	74.1	74.1	0.995
5000	92.2	92.5	92.4	0.997
6000	110.6	111.0	111.0	0.996
7000	129.0	129.4	129.4	0.997
8000	147.4	148.1	148.1	0.996
9000	165.9	166.6	166.6	0.996
10000	184.3	185.1	185.1	0.996
The audit meets AMD requirements.			Average Correction Factor=	0.996

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	355	0.4	0.0	0.2
30	330	31	331	-0.6	-0.8	0.7
60	300	62	301	-2.1	-0.6	1.4
90	270	93	270	-2.7	-0.1	1.4
120	240	123	241	-2.9	-1.2	2.1
150	210	152	212	-2.1	-2.1	2.1
180	180	182	183	-2.0	-2.9	2.5
210	150	211	153	-1.2	-2.8	2.0
240	120	241	123	-0.8	-3.1	2.0
270	90	270	93	-0.3	-3.0	1.7
300	60	301	62	-0.8	-2.3	1.6
330	30	331	30	-0.5	-0.4	0.4
355	0	355	1	0.0	0.5	0.3
The audit meets AMD requirements.				Average Absolute Degrees Difference=		1.4

Comments:

n/a

End of Report



Lakeland Industry & Community Association

AUGUST 2022

Ambient Air Monitoring Calibration Report

- LAC LA BICHE STATION-

CAL-LICA-202208-01690

Station Operation and Maintenance:

Bureau Veritas Canada

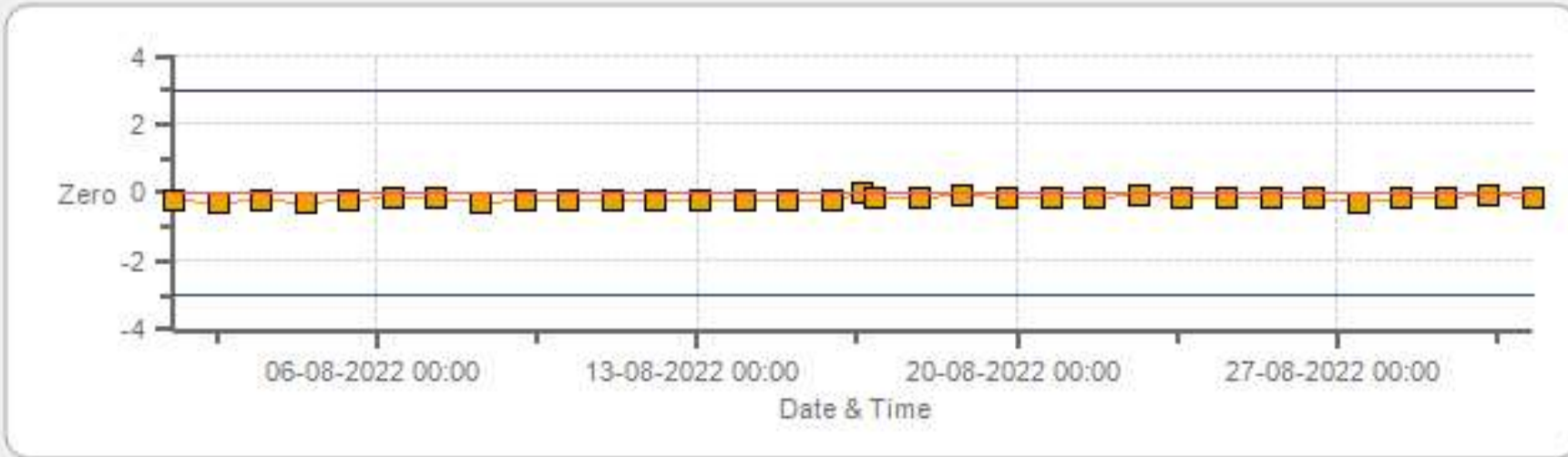
Data Validation and Report:

LICA / Bureau Veritas Canada

September 23, 2022

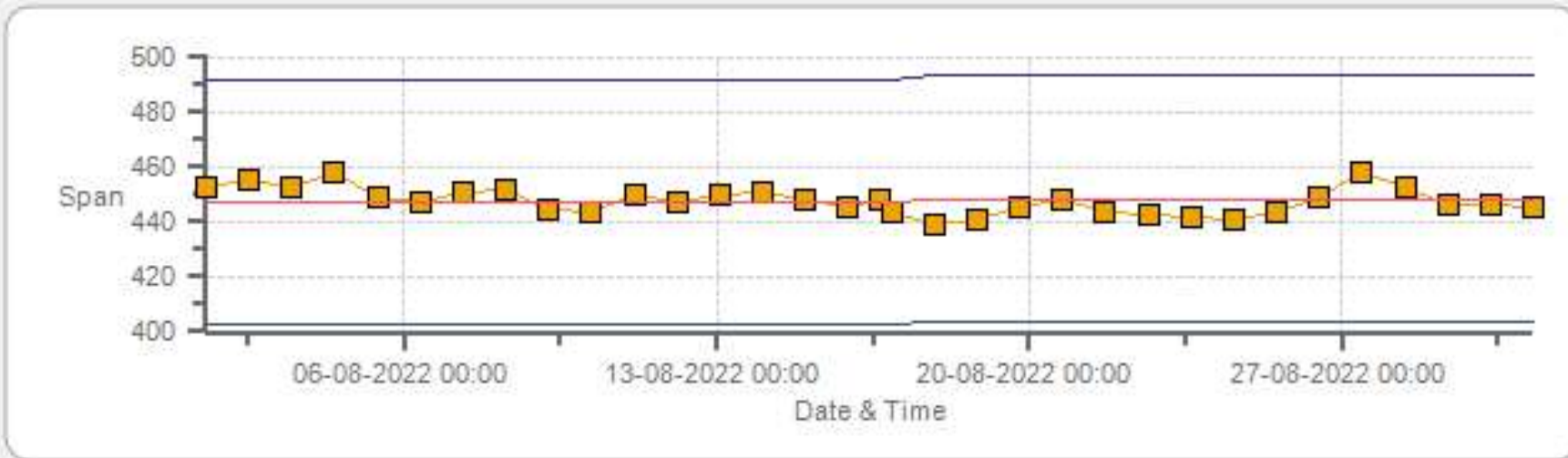
DAILY INTERNAL ZERO-SPAN CALIBRATION RECORDS

SO2[ppb] Calibration: Lac La Biche Monthly: 08-2022 Type: SpanAndZero - Zero



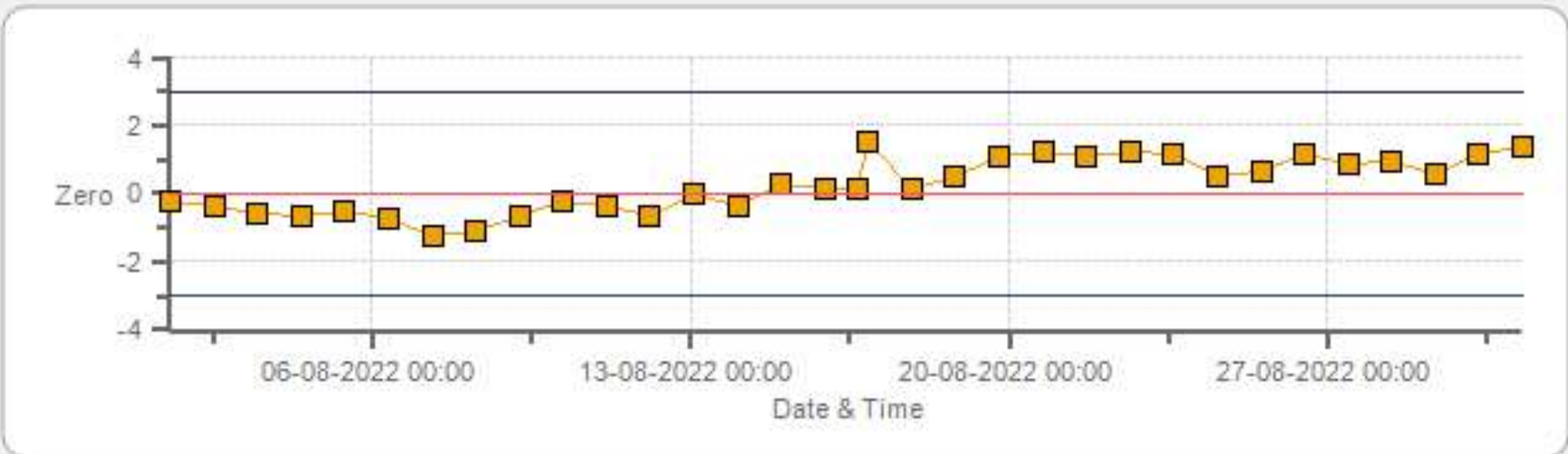
Zero Zero Ref Zero Low Zero High

SO2[ppb] Calibration: Lac La Biche Monthly: 08-2022 Type: SpanAndZero - Span

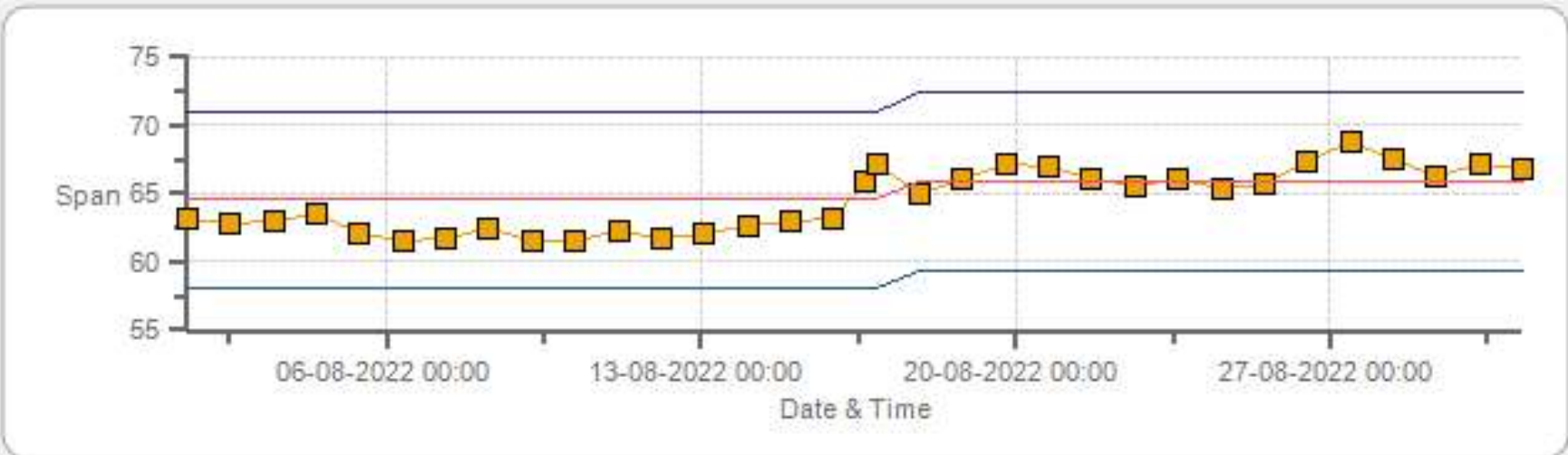


Span SpanRef Span Low Span High

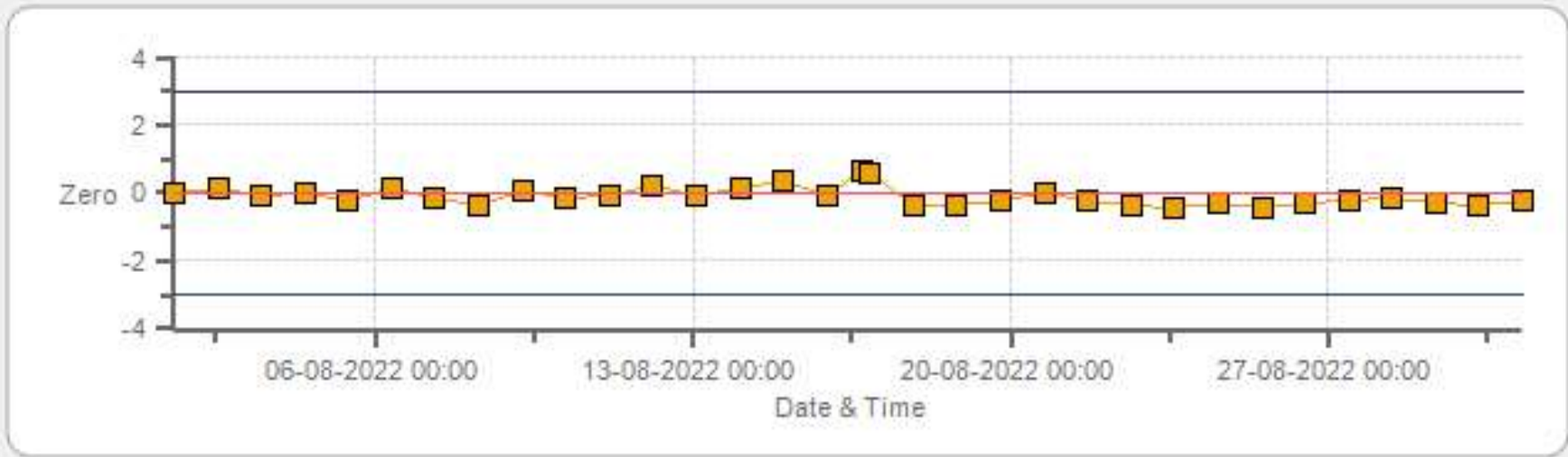
H2S[ppb] Calibration: Lac La Biche Monthly: 08-2022 Type: SpanAndZero - Zero



H2S[ppb] Calibration: Lac La Biche Monthly: 08-2022 Type: SpanAndZero - Span

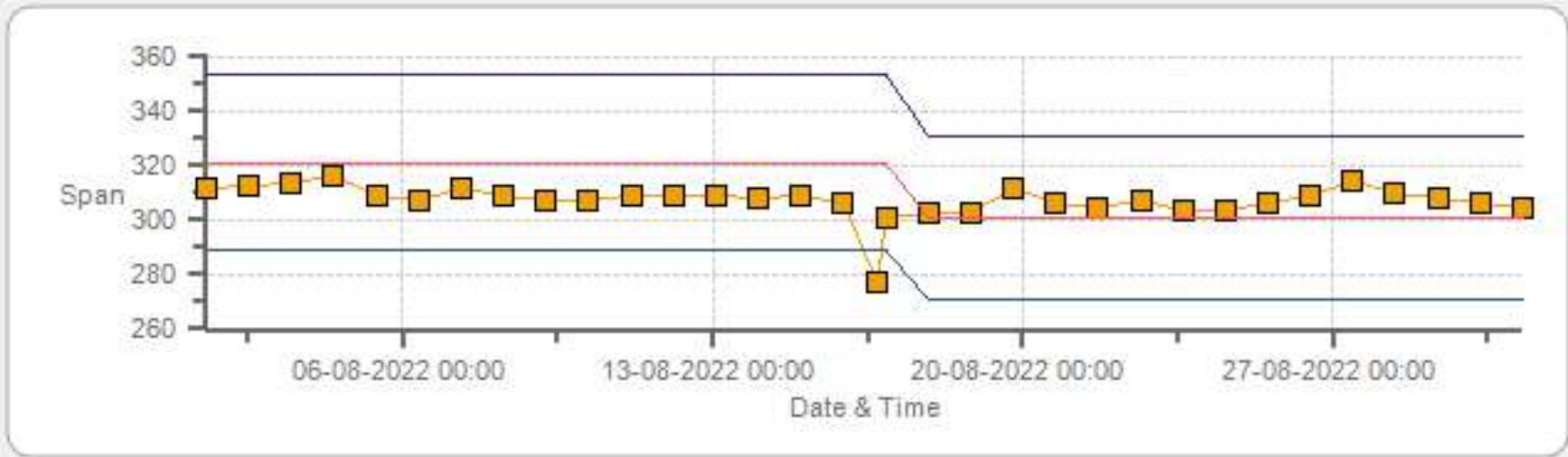


NOX[ppb] Calibration: Lac La Biche Monthly: 08-2022 Type: SpanAndZero - Zero



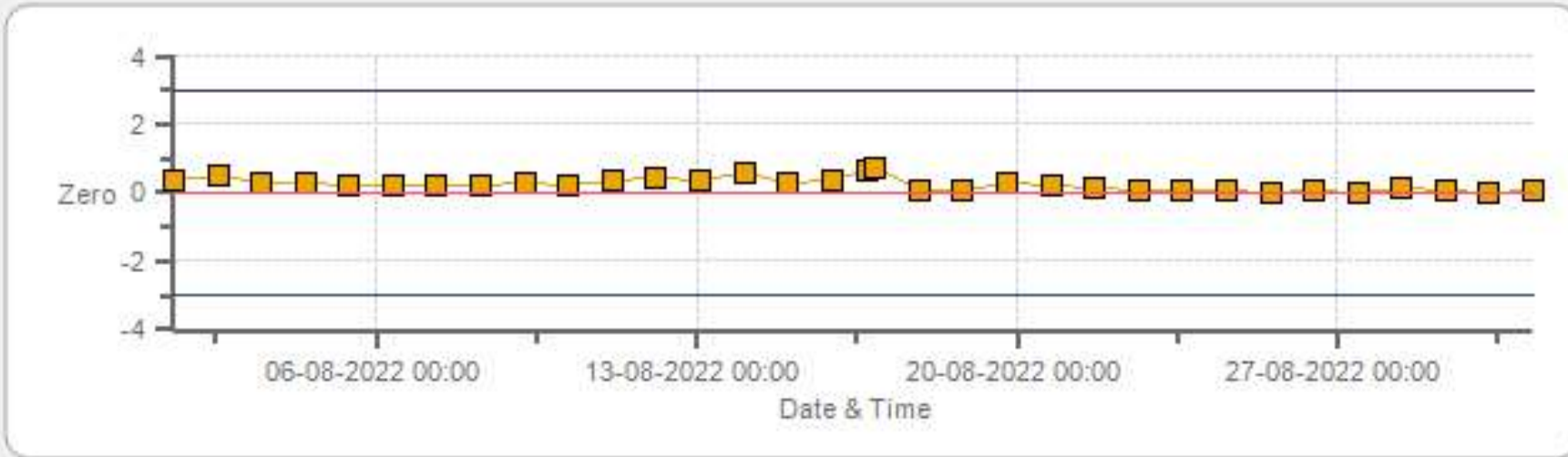
Zero Zero Ref Zero Low Zero High

NOX[ppb] Calibration: Lac La Biche Monthly: 08-2022 Type: SpanAndZero - Span



Span SpanRef Span Low Span High

NO2[ppb] Calibration: Lac La Biche Monthly: 08-2022 Type: SpanAndZero - Zero



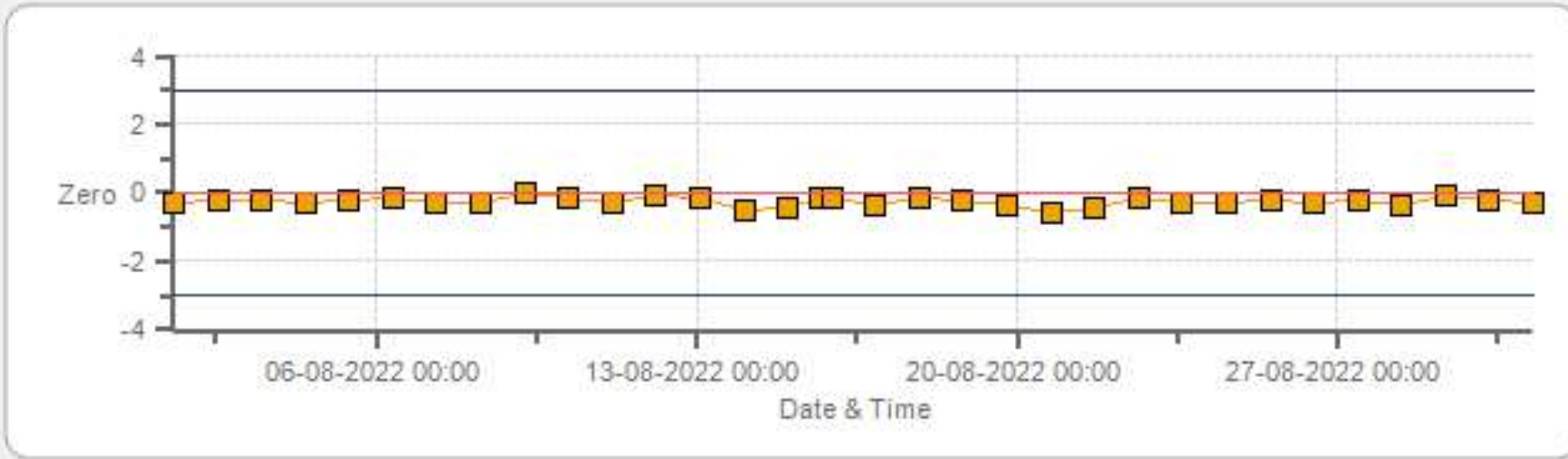
Zero Zero Ref Zero Low Zero High

NO2[ppb] Calibration: Lac La Biche Monthly: 08-2022 Type: SpanAndZero - Span

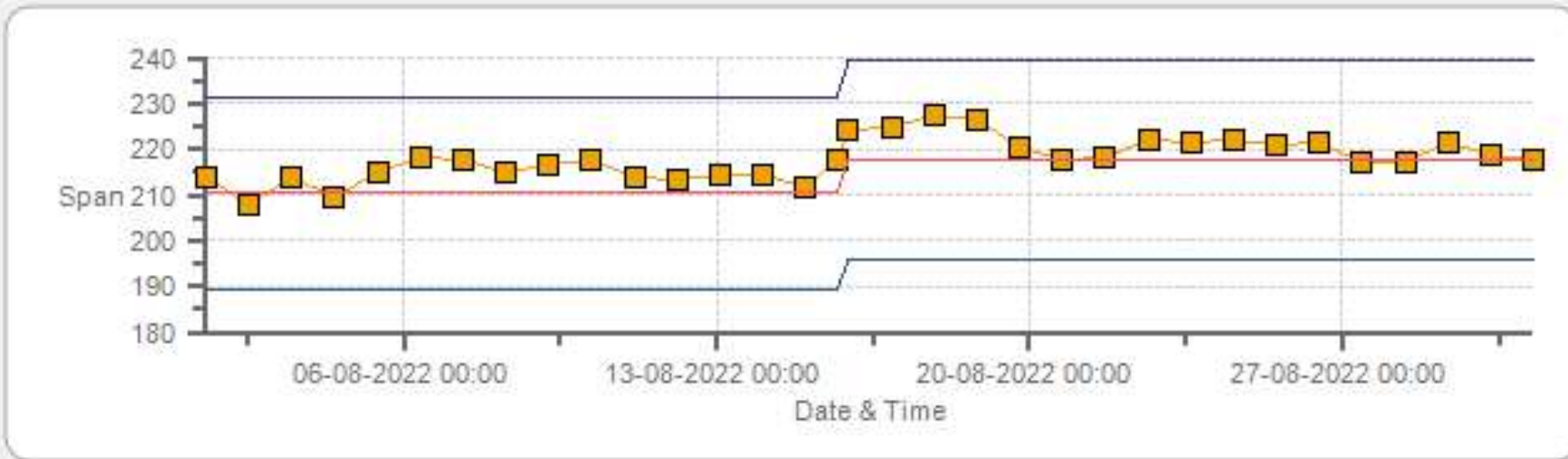


Span SpanRef Span Low Span High

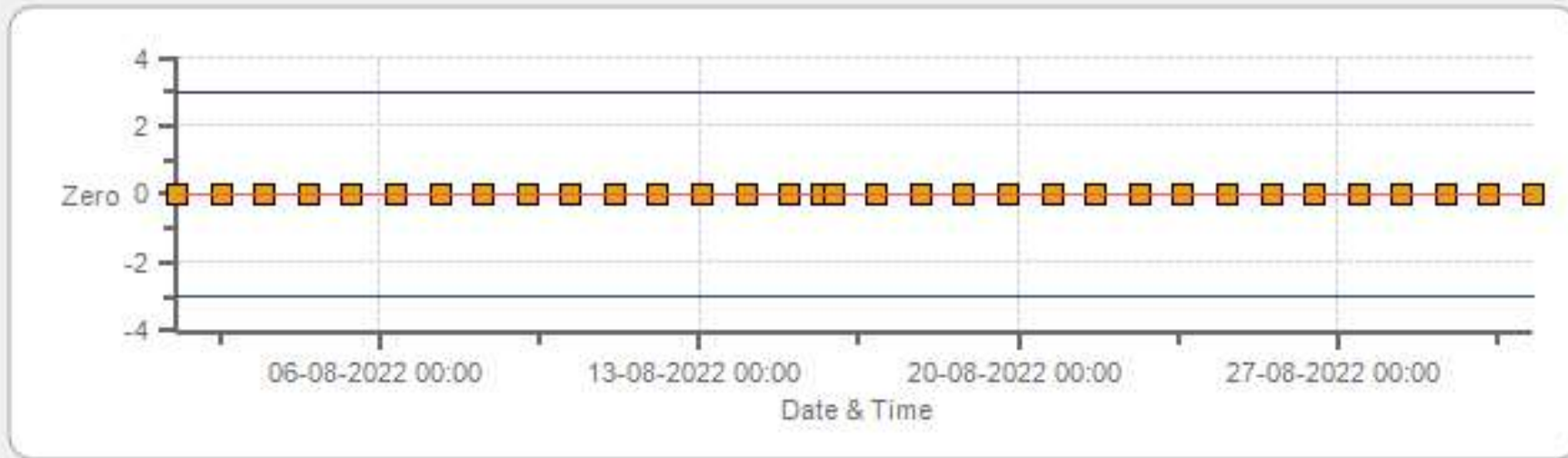
O3[ppb] Calibration: Lac La Biche Monthly: 08-2022 Type: SpanAndZero - Zero



O3[ppb] Calibration: Lac La Biche Monthly: 08-2022 Type: SpanAndZero - Span

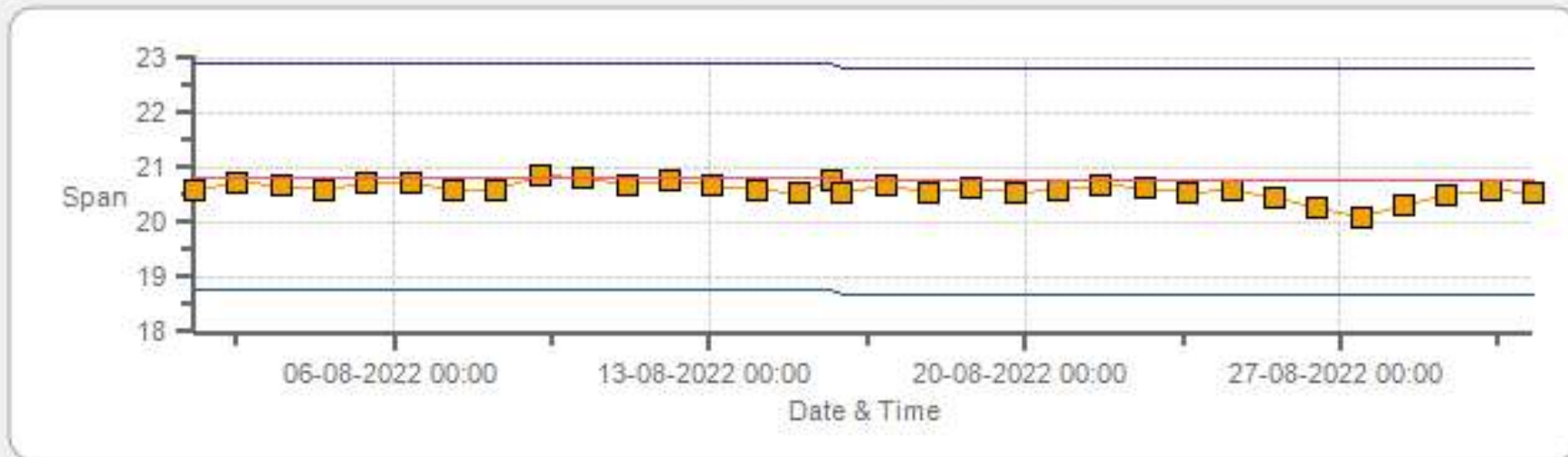


THC55[ppm] Calibration: Lac La Biche Monthly: 08-2022 Type: SpanAndZero - Zero



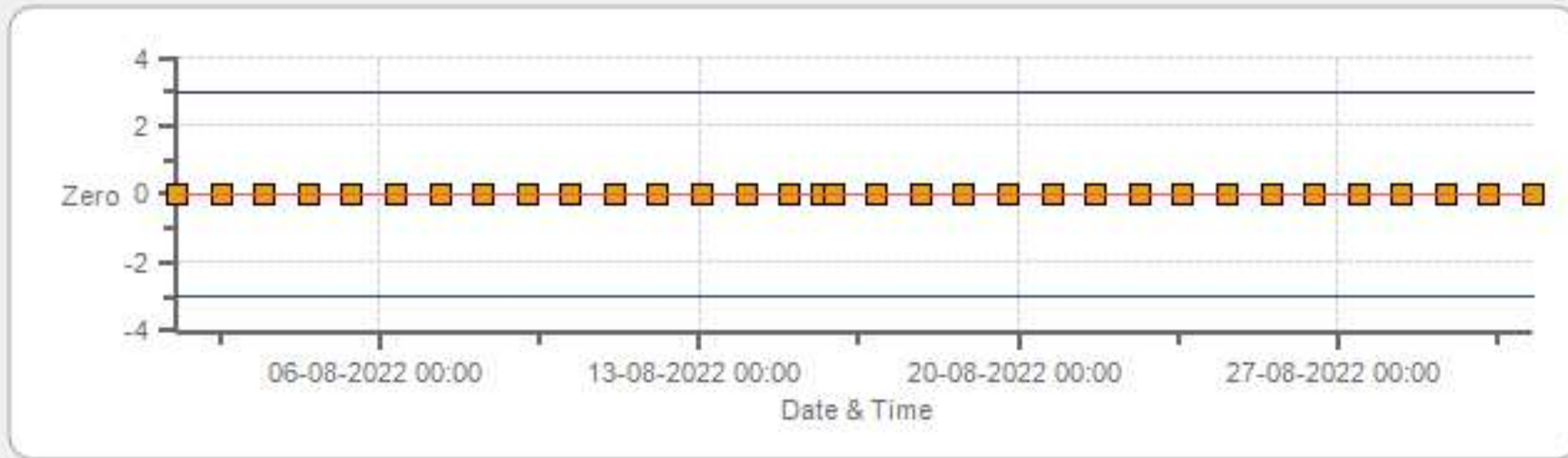
Zero Zero Ref Zero Low Zero High

THC55[ppm] Calibration: Lac La Biche Monthly: 08-2022 Type: SpanAndZero - Span



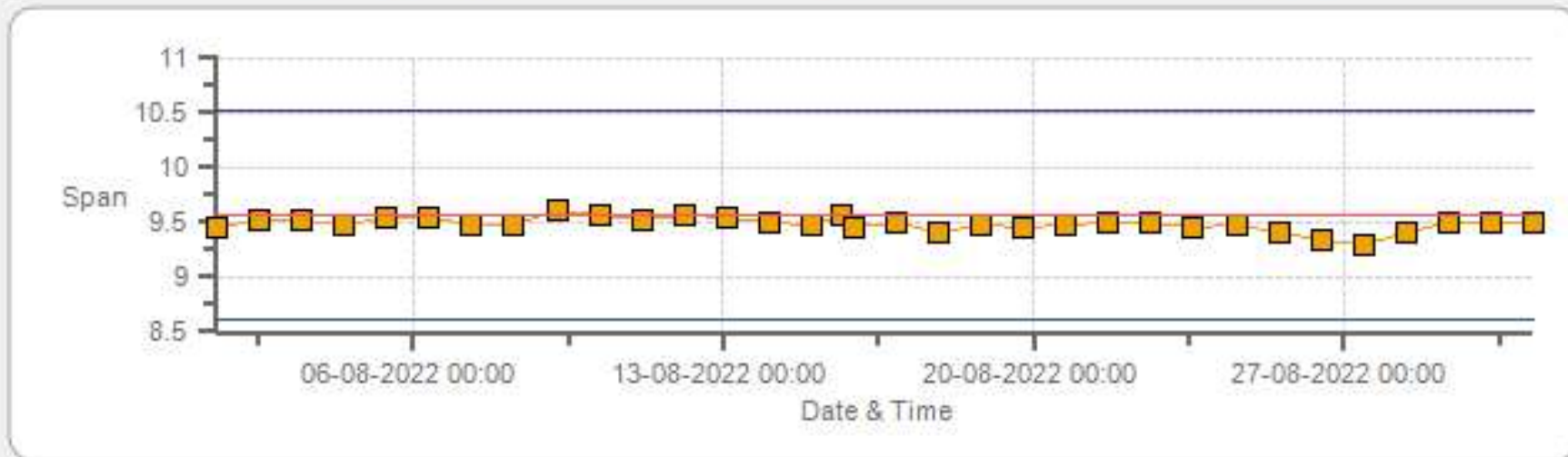
Span SpanRef Span Low Span High

CH4[ppm] Calibration: Lac La Biche Monthly: 08-2022 Type: SpanAndZero - Zero



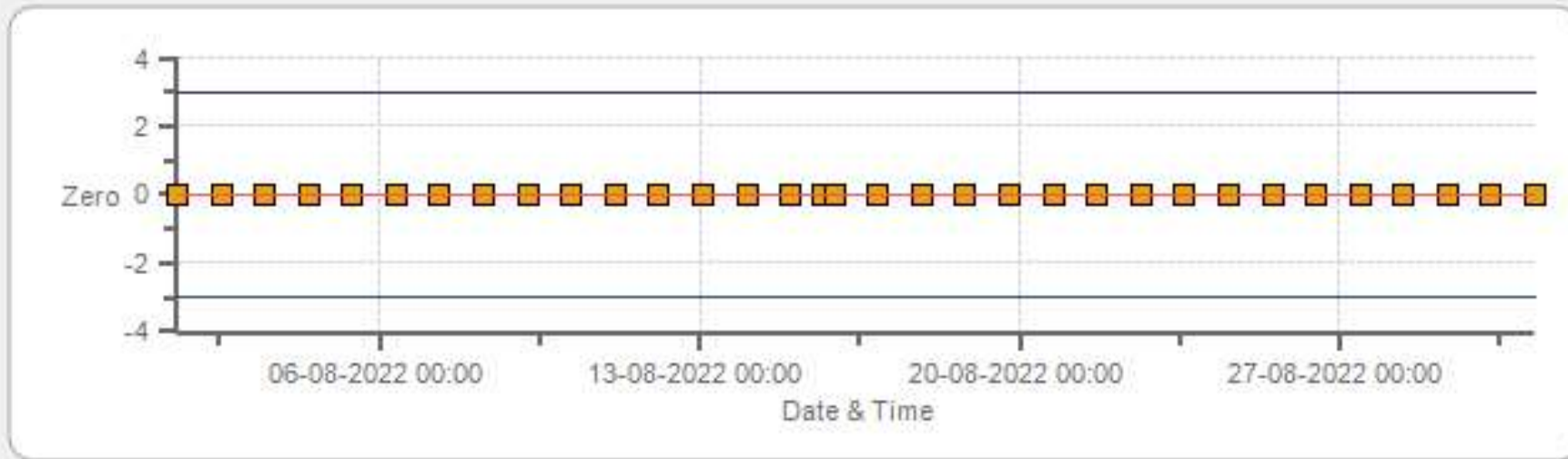
Zero Zero Ref Zero Low Zero High

CH4[ppm] Calibration: Lac La Biche Monthly: 08-2022 Type: SpanAndZero - Span



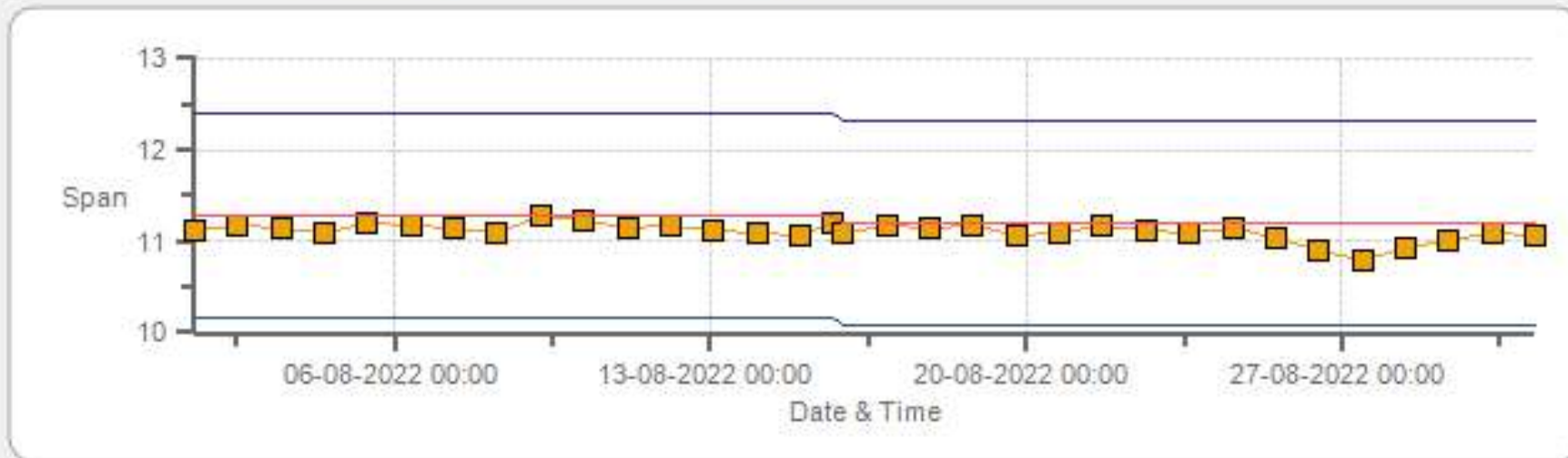
Span SpanRef Span Low Span High

NMHC[ppm] Calibration: Lac La Biche Monthly: 08-2022 Type: SpanAndZero - Zero



Zero Zero Ref Zero Low Zero High

NMHC[ppm] Calibration: Lac La Biche Monthly: 08-2022 Type: SpanAndZero - Span



Span SpanRef Span Low Span High

MULTI-POINT CALIBRATION RECORDS

SO2 Analyzer Calibration by Dilution



DATE:	16-Aug-2022	PREVIOUS CALIBRATION DATE:	07-Jul-2022
PARAMETER:	SO2	PREVIOUS CORRECTION FACTOR:	0.997
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	Lac La Biche	BAROMETRIC (mBar):	947
PURPOSE:	Routine	START TIME (MST):	10:41
PERFORMED BY:	Alex Yakupov	END TIME (MST):	15:10

ANALYZER:

MAKE/MODEL	Thermo 43I-TLE	RANGE	500 ppb
SERIAL #	1180320043	FLOW (mL/min)	459
INITIAL		FINAL	
BKG/OFFSET	6.03	BKG/OFFSET	5.91
COEF/SLOPE	1.085	COEF/SLOPE	1.083
Expected (reference) Value	447.4	Expected (reference) Value	448.5

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010	MODEL:	T701
ID:	26801218	ID:	132
MFC CALIBRATION DATE:	20-Apr-2022	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	LL 105146	HIGH ID	n/a
CONC (ppm):	50.80	EXPIRY DATE	n/a
CYLINDER (psi):	500	LOW ID	n/a
EXPIRY DATE	09-Jun-2029	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:

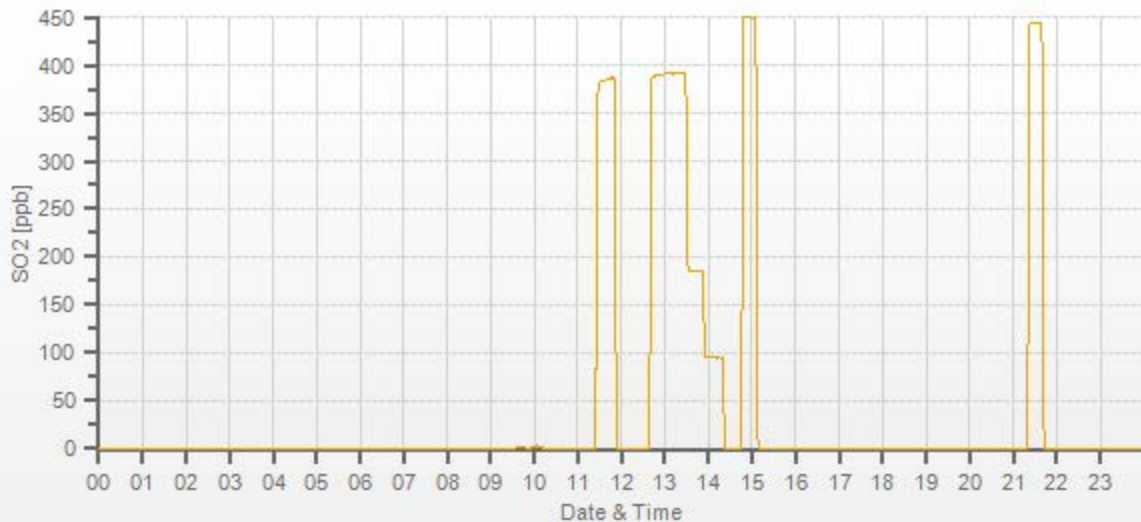
FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
DILUENT	GAS	TOTAL	ACTUAL	INDICATED		Initial	Final
				Initial	Final		
5000	38.50	5000	0.00	-0.18	0	1.013	1.000
4962	38.50	5000	391.16	386.04	391.26	1.013	1.000
4982	18.00	5000	182.88	n/a	185.95	n/a	0.983
4991	9.00	5000	91.44	n/a	94.91	n/a	0.963

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	0.998	0.4%

COMMENTS:

Sample inlet filter was changed.



H2S Analyzer Calibration by Dilution



DATE:	16-Aug-2022	PREVIOUS CALIBRATION DATE:	12-Jul-2022
PARAMETER:	H2S	PREVIOUS CORRECTION FACTOR:	0.996
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	Lac La Biche	BAROMETRIC (mBar):	947
PURPOSE:	Routine	START TIME (MST):	10:40
PERFORMED BY:	Alex Yakupov	END TIME (MST):	15:40

ANALYZER:

MAKE/MODEL	Teledyne T100	RANGE	100 ppb
SERIAL #	1014	FLOW (mL/min)	556
INITIAL		FINAL	
BKG/OFFSET	15.9	BKG/OFFSET	15.9
COEF/SLOPE	0.998	COEF/SLOPE	0.998
Expected (reference) Value	64.2	Expected (reference) Value	65.9

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010 D	MODEL:	T701
ID:	11900613	ID:	132
MFC CALIBRATION DATE:	22-Apr-2022	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	EY 0002287	HIGH ID	n/a
CONC (ppm):	10.10	EXPIRY DATE	n/a
CYLINDER (psi):	1800	LOW ID	n/a
EXPIRY DATE	14-Sep-2024	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:	10:43	SO2 Conc (ppb)	380
END TIME:	10:58	Analyzer Response (ppb)	0.0

CALIBRATION:

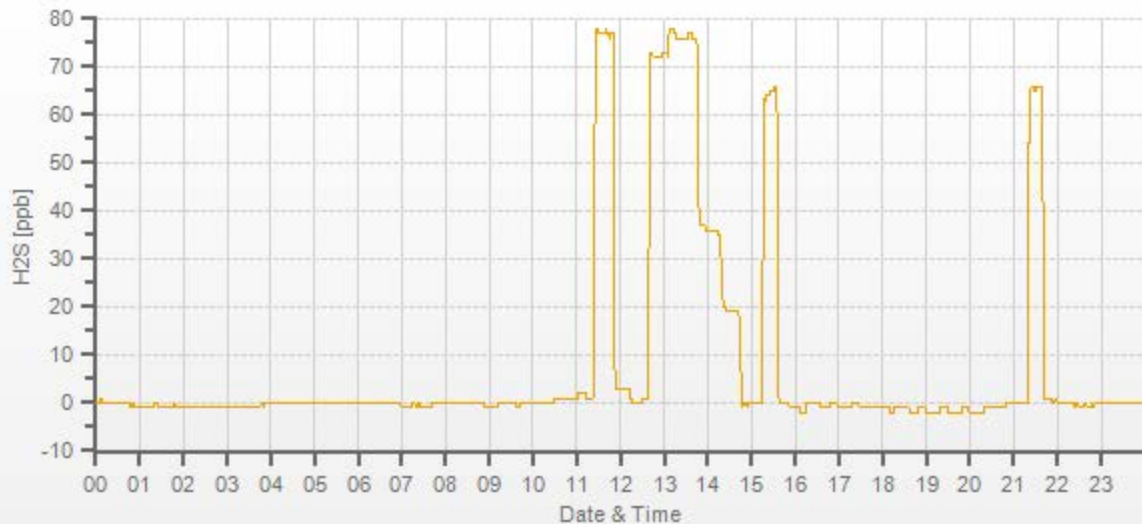
FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
DILUENT	GAS	TOTAL	ACTUAL	INDICATED		Initial	Final
				Initial	Final		
7500	7500	7500	0.00	1.1	0	1.021	1.018
7442	57.90	7500	77.97	77.5	76.6	1.021	1.018
7472	28.20	7500	37.98	n/a	36.3	n/a	1.046
7486	14.10	7500	18.99	n/a	19.3	n/a	0.984

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	0.978	0.0%

COMMENTS:

Sample inlet filter was changed.



NOx Calibration by Dilution/Gas-Phase Titration



CALIBRATION:				ANALYZER:			
DATE:	16-Aug-2022	PREVIOUS CALIBRATION DATE:	07-Jul-2022	MAKE/MODEL:	Thermo 42i	PREVIOUS CF.	
CLIENT:	LICA	TEMPERATURE (°C):	22.0	SERIAL #:	1180930027	NOx	0.999
LOCATION:	Lac La Biche	BAROMETRIC (mBar):	947	FLOW (mL/min)	722	NO	0.999
PURPOSE:	Routine	START TIME (MST):	10:42	RANGE (ppb)	500	NO2	1.000
PERFORMED BY:	Alex Yakupov	END TIME (MST):	17:09	GPT FOR O3?		No	

CALIBRATOR:		ZERO AIR:		CALIBRATION GAS:		FLOWMETERS (if applicable):	
MAKE:	SABIO	MAKE:	Teledyne	CYLINDER ID:	LL 105146	HIGH ID:	n/a
MODEL:	2010	MODEL:	T701	NO/NOx (PPM):	50.0 50.1	HIGH EXPIRY:	n/a
ID:	26801218	ID:	132	CYLINDER (psi):	500	LOW ID:	n/a
MFC CALIBRATION DATE:	20-Apr-2022	OXIDIZER ID:	n/a	EXPIRY DATE	09-Jun-2029	LOW EXPIRY:	n/a

CALIBRATION SETTINGS:							
INITIAL	NOx	NO	NO2	FINAL	NOx	NO	NO2
BKG/OFFSET:	8.5	8.4	n/a	BKG/OFFSET:	8.8	8.4	n/a
SLOPE/COEF/CE:	1	0.893	1	SLOPE/COEF/CE:	1	0.89	1

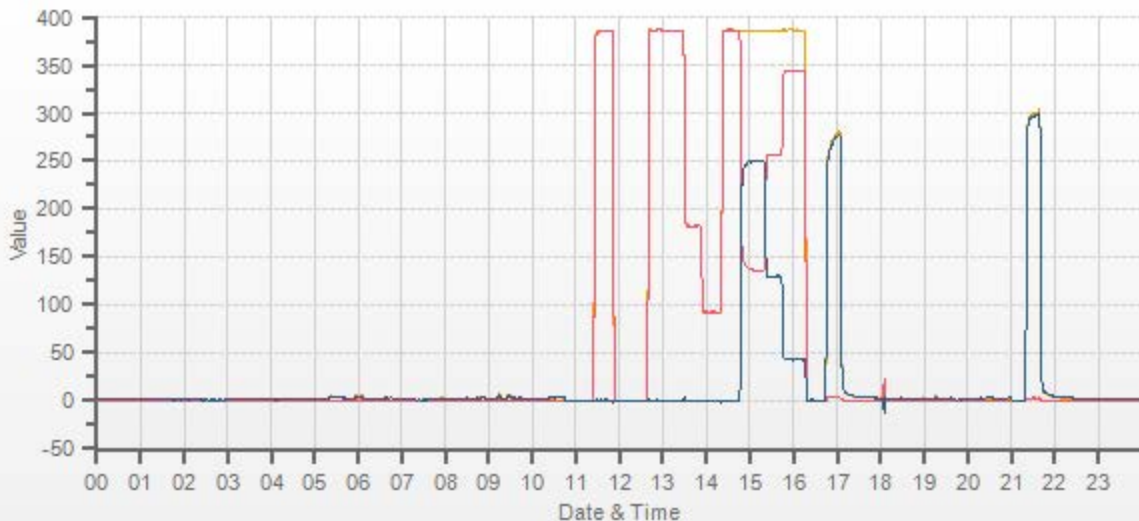
EXPECTED (REFERENCE) VALUE:							
INITIAL	NOx	NO	NO2	FINAL	NOx	NO	NO2
	321.2	3.3	317.9		321.2	3.3	317.9

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

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	38.50	5000	0.0	0.0	0.0	-0.2	0.1	0.3	0.0	0.0	0.0	0.999	0.999	0.999	0.998	0.999	0.999
4962	38.50	5000	385.0	385.8	0.8	385.2	386.4	1.3	385.6	386.2	0.6	0.999	0.999	0.999	0.998	0.999	0.999
4982	18.00	5000	180.0	180.4	0.4	n/a	n/a	n/a	182.5	182.8	0.2	n/a	n/a	0.999	0.986	0.987	0.999
4991	9.00	5000	90.0	90.2	0.2	n/a	n/a	n/a	92.4	92.5	0.2	n/a	n/a	0.999	0.974	0.975	0.999

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	386.0	386.5	0.5	249.7	249.2	1.002	99.80%
AS-FOUND HIGH	38.70	4998	240	136.3	386.0	249.7	249.7	249.2	1.002	99.80%
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	255.8	386.1	130.3	130.2	129.8	1.003	99.69%
LOW	38.70	4998	45	343.2	386.6	43.3	42.8	42.8	1.000	100.00%
NO2 adjustment not required.									AVERAGE:	99.83%

LINEAR REGRESSION ANALYSIS:				COMMENTS:
	CORRELATION	SLOPE	INTERCEPT	
NO	1.000	1.000	0.28%	
NOx	1.000	1.000	0.27%	
NO2	1.000	0.998	0.01%	



CAL-LICA-202208-01690

Ozone Calibration by Photometer (Varying UV Lamp)



DATE:	15-Aug-2022	PREVIOUS CALIBRATION DATE:	08-Jul-2022
PARAMETER:	O3	PREVIOUS CORRECTION FACTOR:	0.998
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	Lac La Biche	BAROMETRIC (mBar):	948
PURPOSE:	Routine	START TIME (MST):	12:18
PERFORMED BY:	Alex Yakupov	END TIME (MST):	16:35

ANALYZER:

MAKE/MODEL	Thermo 49i	RANGE	500 ppb
SERIAL #	1002240372	FLOW (mL/min)	753
INITIAL		FINAL	
BKG/OFFSET	0	BKG/OFFSET	0
COEF/SLOPE	1.033	COEF/SLOPE	1.035
Expected (reference) Value	210.3	Expected (reference) Value	217.8

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010 D	MODEL:	T701
ID:	11900613	ID:	132
MFC CALIBRATION DATE:	20-Apr-2022	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:

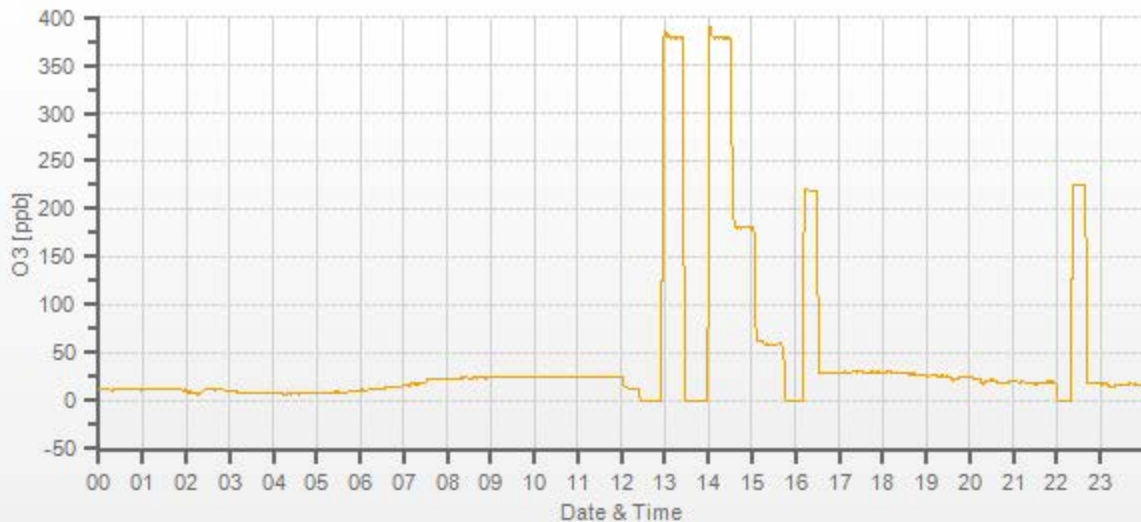
FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
DILUENT	GAS	TOTAL	ACTUAL	INDICATED		Initial	Final
				Initial	Final		
5000	XXXX	5000	0.0	0.1	0.0	XXXX	XXXX
5000	XXXX	5000	378.0	379.0	378.7	0.998	0.998
5000	XXXX	5000	180.0	n/a	180.9	n/a	0.995
5000	XXXX	5000	60.0	n/a	59.4	n/a	1.010

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.003	0.0%

COMMENTS:

Sample inlet filter was changed.



Methane/Non-Methane Analyzer Calibration by Dilution



CALIBRATION:				ANALYZER:			
DATE:	15-Aug-2022	PREVIOUS CALIBRATION DATE:	08-Jul-2022	VALUE	MAKE/MODEL	SERIAL	FLOW (mL/min)
CLIENT:	LICA	TEMPERATURE (°C):	22.0		Thermo 55i	1180320044	1022
LOCATION:	Lac La Biche	BAROMETRIC (mBar):	948	PARAMETER:	CH4	NMHC	THC
PURPOSE:	Routine	START TIME (MST):	12:19	RANGE (ppm):	20	20	40
PERFORMED BY:	Alex Yakupov	END TIME (MST):	16:35	PREVIOUS CF:	0.999	0.995	0.997

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:		CALIBRATION GAS:		FLOWMETERS (if applicable):	
MAKE:	SABIO	MAKE:	Teledyne	CYLINDER ID:	LL 23593	HIGH ID:	n/a
MODEL:	2010	MODEL:	T701	CH ₄ /C ₃ H ₈ (ppm):	603.0 204.0	HIGH EXPIRY:	n/a
ID:	26801218	ID:	132	CYLINDER (psi):	1800	LOW ID:	n/a
MFC CALIBRATION DATE:	20-Apr-2022	OXIDIZER ID:	115	EXPIRY DATE	18-Aug-2029	LOW EXPIRY:	n/a

CALIBRATION PARAMETERS:

POINT (CH ₄ /NMHC)	HIGH	MID	LOW	CH ₄ EQUIVILANCE		
TARGET	14	7	3.5	C ₃ H ₈ as CH ₄		561.0
RANGE	12 - 16	6 - 8	2 - 4	THC as CH ₄		1164.0

EXPECTED (REFERENCE) VALUE:

INITIAL	CH ₄	NMHC	THC	FINAL	CH ₄	NMHC	THC
	9.56	11.28	20.84		9.56	11.20	20.76

CALIBRATION:

FLOW RATE			CONCENTRATION (PPM)									CORRECTION FACTOR (CF.)					
(mL/min)			CALCULATED			INITIAL INDICATED			FINAL INDICATED			INITIAL			FINAL		
DILUENT	GAS	TOTAL	CH ₄	NMHC	THC	CH ₄	NMHC	THC	CH ₄	NMHC	THC	CH ₄	NMHC	THC	CH ₄	NMHC	THC
3100	X	3100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	X	X	X	X	X	X
3025	74.60	3100	14.51	13.50	28.01	14.54	13.35	27.89	14.52	13.56	28.08	0.998	1.011	1.004	0.999	0.996	0.998
3063	37.30	3100	7.26	6.75	14.01	n/a	n/a	n/a	7.22	6.77	14.00	n/a	n/a	n/a	1.005	0.997	1.000
3081	18.60	3100	3.62	3.37	6.98	n/a	n/a	n/a	3.58	3.36	6.94	n/a	n/a	n/a	1.011	1.002	1.006

LINEAR REGRESSION ANALYSIS:

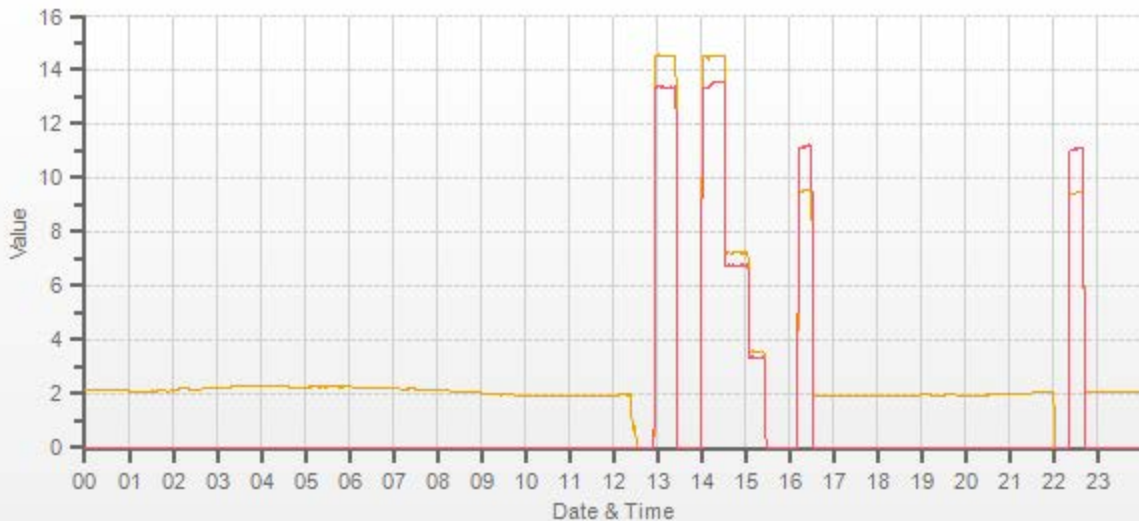
	CORRELATION	SLOPE	INTERCEPT
CH ₄	1.000	1.001	-0.1%
NMHC	1.000	1.005	-0.1%
THC	1.000	1.003	-0.1%

Comments:

Sample inlet filter was changed.

Use Zero Chrom?

Yes



CAL-LICA-202208-01690

Thermo 5030i SHARP Monitor Monthly Check

Date: August 16, 2022	Performed By/Reviewer: Alex Yakupov Chris Wesson
Company: LICA	Start Time (mst): 16:27
Station Name/Location: Lac La Biche	End Time (mst): 17:29
Previous Audit Date: July 8, 2022	Calibration Purpose: routine monthly
Parameter: PM 2.5	Weather Conditions: A few clouds

SHARP 5030i Information and Status:

Serial Number: CM 17071016	Filter Tape Counter	55
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Reference Standards:

Air Flow				
	Manometer	Orifice	Pressure:	Temp / RH:
Make:	Dwyer	FTS Chinook	Fisher Scientific	Vaisala HMP76B
Model:	Mark III	#5792966	FB 61291	HMP 76B
Serial Number:	ID # 3	ID # 4	130168457	T1640130
Calibration Expiration Date:	February 27, 2023	December 5, 2022	February 17, 2023	June 14, 2023

Ambient Temperature (°C)				Range	Action
	Reference	SHARP	Difference	< ± 2°C	OK
#1	24.10	24.0	0.1	2-3 °C	Recalibrate
				> 3°C	Fail

Ambient Relative Humidity (%RH)				Range	Action
As Found:					
	Reference	SHARP	Difference	< ± 2 %RH	OK
#1	62.20	60.6	1.6	2-5 %RH	Recalibrate
				> 5 %RH	Fail

Barometric Pressure (mmHg)				Range	Action
As Found:					
	Reference	SHARP	Difference	< ± 10 mmHg	OK
#1	711.0	711.0	0.0	10-12 mmHg	Recalibrate
				> 12 mmHg	Fail

Flow Audit (L/min)						Range	Action
As Found:						< ± 4%	OK
	Reference	SHARP		% Difference	0.18%	4-5%	Recalibrate
#1	16.64	16.67				>5%	Fail
#2	16.64	16.67					
#3	16.64	16.67					
Average	16.64	16.67					

Leak Check (L/min)						
Without Leak Check Adapter				With leak Check Adapter		
	Reference	SHARP	Difference	Reference	SHARP	Difference
#1	16.64	16.67	-0.03	16.59	16.61	-0.02
LEAK RATE:						0.01

Leak Limit: 0.80 L/min

Meteorological System Checklist



Date:	August 16, 2022		
Technician:	Alex Yakupov		
Station:	Lac La Biche		
Unit:	Make:	Model:	Serial #:
Temperature Sensor:	Rotronic	HC2A-S3	20357518
Barometric Pressure Sensor:	MetOne	92	Y23360
Relative Humidity Sensor:	Rotronic	HC2A-S3	20357518
Anemometer:	RM Young	05305VK	56778

PRECIPITATION SENSOR CHECK

Checklist:	Reply:	Comments:
Previous check date:	September 20, 2021	
Is the sensor Level?	no	
Is the heater operating properly?	no	
Are the bucket drain holes clean?	no	
Is the screen on the housing? (screen should be on between July and September)	no	
Is the housing clean?	no	
Is the area around the housing clean and free from obstacles?	no	

TIP TEST - Slowly pour water until 10 tip are heard. (10 tips = 1 ml)

# of Tips	Data Logger Response (ml):	Manual Specification = +/- 0.2 ml
10	n/a	#VALUE!

AMBIENT TEMPERATURE SENSOR CHECK

Previous check date:	n/a	
Parameter:	Temperature @ 2 metres	
Reference Thermometer ID:	Vaisala / HM70 / #T1640130/ Jun 14, 2023	
Reference Temperature (°C):	24.1	
Station - Ambient Temperature (°C):	24.0	
Temperature Difference (°C):	0.1	

BAROMETRIC PRESSURE SENSOR CHECK

Previous check date:	n/a	
Reference Barometer ID:	Fisher Scientific / FB 61291 / #130168457/ Feb 17, 2023	
Reference Pressure - Units/Reading:	millibar	948
Station Pressure - Units/Reading:	millibar	951
Pressure Tolerance +/- 15% of error:	806 - 1090	-0.32%

ANEMOMETER - WIND SPEED & WIND DIRECTION SENSOR CHECK

WIND SPEED		WIND DIRECTION	
Previous check date:	July 6, 2022	Previous check date:	July 6, 2022
Wind Speed Observed (kph):	1 - 10	Wind Direction Observed:	NW
Wind speed on Data Logger (kph):	8.1	Wind Direction on Data Logger:	NW
	Annual audit: May 22, 2022	Wind Direction Pass/Fail?:	Pass

Comments

Station (Trailer) temperature vs Reference gauge: 24.8 vs 25.0, passed.



Meteorological Sensor Audit/Calibration

Location Information

Company: LICA
 Audit Location: Lac La Biche
 Audit Date: May 9, 2022
 Calibration Purpose: installation

Performed By: Alex Yakupov
 Reviewed By: Chris Wesson
 Start/End Time (mst): 17:47/18:45
 Weather Conditions: A few 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 #:	56778	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# CA 4744 expires August 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	18.4	18.4	1.002
2000	36.9	36.9	36.9	0.999
3000	55.3	55.3	55.3	1.000
4000	73.7	73.8	73.8	0.999
5000	92.2	92.2	92.2	0.999
6000	110.6	110.6	110.6	1.000
7000	129.0	129.1	129.1	0.999
8000	147.4	147.5	147.5	1.000
9000	165.9	165.9	166.0	1.000
10000	184.3	184.3	184.4	1.000
The audit meets AMD requirements.			Average Correction Factor=	1.000

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	356	1.0	-1.0	1.0
30	330	30	331	-0.4	-1.4	0.9
60	300	61	301	-1.1	-1.2	1.2
90	270	92	272	-2.1	-1.7	1.9
120	240	121	240	-1.4	-0.2	0.8
150	210	152	211	-2.1	-1.3	1.7
180	180	182	181	-2.0	-1.3	1.7
210	150	212	153	-2.1	-2.5	2.3
240	120	241	122	-1.4	-2.3	1.9
270	90	271	92	-1.4	-2.1	1.7
300	60	300	61	-0.1	-1.2	0.7
330	30	330	31	-0.2	-1.2	0.7
355	0	356	1	-1.0	0.6	0.8
The audit meets AMD requirements.				Average Absolute Degrees Difference=		1.3

Comments:

No issues.

End of Report

Parameter	Method & Procedure
SULPHUR DIOXIDE (SO₂)	Bureau Veritas EMS SOP-00209: Ambient Sulphur Monitoring
HYDROGEN SULPHIDE (H₂S)	Bureau Veritas EMS SOP-00209: Ambient Sulphur Monitoring
TOTAL HYDROCARBONS (THC), METHANE (CH₄), NON-METHANE(NMHC)	Bureau Veritas EMS SOP-00001: Methane, Non-Methane HydrcarbonAnalyzer Monitoring
OXIDES OF NITROGEN (NO_x), NITRIC OXIDE (NO) & NITROGEN DIOXIDE (NO₂)	Bureau Veritas EMS SOP-00213: Ambient NO/NO₂/NO_x Monitoring
OZONE (O₃)	Bureau Veritas EMS SOP-00212: Ambient O₃ Monitoring
PARTICULATE MATTER < 2.5 MICRONS (PM_{2.5})	Bureau Veritas EMS SOP-00010: Thermo Model 5030 SHARP Monitor & EMS SOP-00015: Teledyne API PM Monitor Model T640
WIND SPEED (WS) & WIND DIRECTION (WD)	Bureau Veritas EMS SOP-00013: RM Young Wind Monitor Calibration
RELATIVE HUMIDITY (RH)	Operation Manual
BAROMETRIC PRESSURE (BP)	Operation Manual
AMBIENT TEMPERATURE (AmbTPX)	Operation Manual
STATION TEMPERATURE (StnTPX)	Operation Manual
PRECIPITATION	Bureau Veritas EMS SOP-00242: Precipitation Collector Installation / Maintenance