Lakeland Industry & Community Association

AUGUST 2023

Monthly Ambient Air Quality Monitoring Report

LICA-202308

Operation and Maintenance:

Bureau Veritas Canada

Data Validation and Report:

Lakeland Industry & Community Association

September 19, 2023

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September 19, 2023

Alberta Environment and Protected Areas (EPA)
11th Floor, Oxbridge Place
9820 106 Street
Edmonton, AB, T5K 2J6

RE: LICA – August 2023 Monthly Ambient Air Quality Monitoring Report

Enclosed is the August 2023 Monthly Ambient Air Quality Monitoring Report for the continuous ambient air quality monitoring stations of the Lakeland Industry & Community Association (LICA) regional air quality monitoring network.

The representative of the Person Responsible for this monitoring program is

LICA Airshed
Michael Bisaga, Monitoring Programs Manager
5107 50 Street
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Phone #: 780-226-7068
E-mail: monitoring@lica.ca

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

Listing of Continuous Monitoring Stations and Integrated Sampling Stations

Station Name		Cold Lake South	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 2023

Cold Lake South

- 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. Twenty-nine 1-hour and nine 24-hour PM2.5 exceedances were recorded this month. Widespread smoke from wildfires burning throughout western Canada is the cause of the numerous exceedances of the PM2.5 objective and guideline.

Date	Time (MST)	Parameter	Average Period	Concentration (µg/m3)	Wind speed (km/hr)	Wind Direction	Reference #
2-Aug	-	PM2.5	24-Hour	33	2.0	72°(ENE)	419457
3-Aug	-	PM2.5	24-Hour	52	6.1	48°(NE)	419457
14-Aug	18	PM2.5	1-Hour	84	0.6	280°(W)	418115
14-Aug	19	PM2.5	1-Hour	82	0.2	236°(SW)	418115
14-Aug	20	PM2.5	1-Hour	86	0.4	215°(SSW)	418115
14-Aug	21	PM2.5	1-Hour	84	0.6	220°(SW)	418115
14-Aug	22	PM2.5	1-Hour	87	0.5	224°(SW)	418115
14-Aug	23	PM2.5	1-Hour	82	0.8	227°(SW)	418115

Date	Time (MST)	Parameter	Average Period	Concentration (µg/m3)	Wind speed (km/hr)	Wind Direction	Reference #
14-Aug	-	PM2.5	24-Hour	32	6.0	261°(W)	418115
18-Aug	18	PM2.5	1-Hour	94	8.6	2°(N)	418116
18-Aug	19	PM2.5	1-Hour	94	9.0	336°(NNW)	418116
18-Aug	-	PM2.5	24-Hour	30	6.8	300°(WNW)	418116
27-Aug	8	PM2.5	1-Hour	88	2.0	323°(NW)	418437
27-Aug	9	PM2.5	1-Hour	155	2.0	47°(NE)	418437
27-Aug	10	PM2.5	1-Hour	163	3.3	349°(NNW)	418437
27-Aug	11	PM2.5	1-Hour	170	4.1	24°(NNE)	418437
27-Aug	12	PM2.5	1-Hour	153	1.6	47°(NE)	418437
27-Aug	13	PM2.5	1-Hour	110	2.1	166°(SSE)	418437
27-Aug	14	PM2.5	1-Hour	94	1.5	289°(WNW)	418437
27-Aug	15	PM2.5	1-Hour	83	3.3	229°(SW)	418437
27-Aug	23	PM2.5	1-Hour	83	0.0	355°(N)	418437
27-Aug	-	PM2.5	24-Hour	75	1.8	265°(W)	418437
28-Aug	0	PM2.5	1-Hour	83	0.1	228°(SW)	418927
28-Aug	1	PM2.5	1-Hour	99	0.4	226°(SW)	418927
28-Aug	2	PM2.5	1-Hour	106	0.4	217°(SW)	418927
28-Aug	3	PM2.5	1-Hour	112	0.4	229°(SW)	418927
28-Aug	4	PM2.5	1-Hour	109	0.1	221°(SW)	418927
28-Aug	5	PM2.5	1-Hour	103	1.6	243°(WSW)	418927
28-Aug	6	PM2.5	1-Hour	89	1.8	262°(W)	418927
28-Aug	-	PM2.5	24-Hour	66	2.5	243°(WSW)	418927
29-Aug	-	PM2.5	24-Hour	40	2.7	131°(SE)	418927
30-Aug	-	PM2.5	24-Hour	41	3.7	71°(ENE)	418927
31-Aug	16	PM2.5	1-Hour	139	7.3	275°(W)	418927
31-Aug	17	PM2.5	1-Hour	141	8.1	293°(WNW)	418927
31-Aug	21	PM2.5	1-Hour	120	3.7	249°(WSW)	418927
31-Aug	22	PM2.5	1-Hour	203	3.9	268°(W)	418927
31-Aug	23	PM2.5	1-Hour	282	4.5	247°(WSW)	418927
31-Aug	-	PM2.5	24-Hour	72	3.7	292°(WNW)	418927

- **O3:** The Thermo 49iQ analyzer, s/n: 12208316585, failed due to power supply failure on August 15. The analyzer was replaced with the Thermo 49i analyzer, s/n: 1002240371, on August 17. Forty-two hours of downtime were recorded due to this event.

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 exceedance was recorded on August10. The exceedance was believed to be the result of local buildup of emissions. Eighteen 1-hour and six 24-hour PM2.5 exceedances were recorded this month. Widespread smoke from wildfires burning throughout western Canada is the cause of the numerous exceedances of the PM2.5 objective and guideline.

Date	Time (MST)	Parameter	Average Period	Concentration (ppb)	Wind speed (km/hr)	Wind Direction	Reference #
10-Aug	1	H2S	1-Hour	11	6.0	119° (ESE)	417687

Date	Time (MST)	Parameter	Average Period	Concentration (µg/m3)	Wind speed (km/hr)	Wind Direction	Reference #
2-Aug	-	PM2.5	24-Hour	38.8	3.0	316°(NW)	419459
3-Aug	-	PM2.5	24-Hour	29.8	4.7	58°(ENE)	419459
14-Aug	16	PM2.5	1-Hour	84.5	3.7	328°(NNW)	418117
27-Aug	6	PM2.5	1-Hour	93.1	0.2	43°(NE)	418440
27-Aug	7	PM2.5	1-Hour	102.5	1.4	223°(SW)	418440
27-Aug	8	PM2.5	1-Hour	126	2.3	25°(NNE)	418440
27-Aug	9	PM2.5	1-Hour	149.9	0.8	92°(E)	418440
27-Aug	10	PM2.5	1-Hour	127	1.3	336°(NNW)	418440
27-Aug	11	PM2.5	1-Hour	100.9	1.9	318°(NW)	418440
27-Aug	21	PM2.5	1-Hour	86	3.1	218°(SW)	418440
27-Aug	22	PM2.5	1-Hour	107.1	2.9	222°(SW)	418440
27-Aug	23	PM2.5	1-Hour	99.4	4.0	212°(SSW)	418440
27-Aug	-	PM2.5	24-Hour	71.1	2.8	233°(SW)	418440
28-Aug	0	PM2.5	1-Hour	90.6	3.8	213°(SSW)	418930
28-Aug	1	PM2.5	1-Hour	87.5	3.2	218°(SW)	418930
28-Aug	-	PM2.5	24-Hour	43.8	3.8	215°(SSW)	418930
29-Aug	-	PM2.5	24-Hour	29.8	2.8	134°(SE)	418930
31-Aug	15	PM2.5	1-Hour	95.7	5.5	287°(WNW)	418930
31-Aug	16	PM2.5	1-Hour	110.9	4.6	318°(NW)	418930
31-Aug	20	PM2.5	1-Hour	144.4	6.0	289°(WNW)	418930
31-Aug	21	PM2.5	1-Hour	181	3.9	322°(NW)	418930
31-Aug	22	PM2.5	1-Hour	209.4	4.1	313°(NW)	418930
31-Aug	23	PM2.5	1-Hour	228.6	5.3	291°(WNW)	418930
31-Aug	-	PM2.5	24-Hour	63.1	3.3	305°(WNW)	418930

- 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.
- Due to HVAC unit failure which affected station temperatures, most gas analyzers, including SO2, H2S, NOx/NO/NO2, O3 and THC/CH4/NMHC, did not meet the 90% operational uptime requirement in August. **AEPA reference #: 419572**.
- Measured parameters were below Alberta Ambient Air Quality Objectives (AAAQOs) and/or Alberta Ambient Air Quality Guidelines (AAAQGs) where applicable, except PM2.5. Twenty-one 1-hour and two24-hour PM2.5 exceedances were recorded this month. Widespread smoke from wildfires burning throughout western Canada is the cause of the numerous exceedances of the PM2.5 objective and guideline.

Date	Time (MST)	Parameter	Average Period	Concentration (µg/m3)	Wind speed (km/hr)	Wind Direction	Reference #
27-Aug	8	PM2.5	1-Hour	100	3.7	46°(NE)	418439
27-Aug	9	PM2.5	1-Hour	95	2.7	76°(ENE)	418439
27-Aug	10	PM2.5	1-Hour	86	2.9	163°(SSE)	418439
27-Aug	11	PM2.5	1-Hour	92	1.8	261°(W)	418439
27-Aug	12	PM2.5	1-Hour	90	1.5	252°(WSW)	418439
27-Aug	13	PM2.5	1-Hour	103	1.3	206°(SSW)	418439
27-Aug	14	PM2.5	1-Hour	125	1.9	217°(SW)	418439
27-Aug	15	PM2.5	1-Hour	104	2.3	252°(WSW)	418439
27-Aug	16	PM2.5	1-Hour	92	2.5	221°(SW)	418439
27-Aug	17	PM2.5	1-Hour	93	2.7	155°(SSE)	418439
27-Aug	18	PM2.5	1-Hour	89	4.9	169°(SSE)	418439
27-Aug	19	PM2.5	1-Hour	86	7.8	187°(S)	418439
27-Aug	20	PM2.5	1-Hour	83	8.2	199°(SSW)	418439
27-Aug	-	PM2.5	24-Hour	74	5.7	269°(W)	418439
31-Aug	8	PM2.5	1-Hour	108	8.3	334°(NNW)	418929
31-Aug	9	PM2.5	1-Hour	126	10.3	334°(NNW)	418929
31-Aug	10	PM2.5	1-Hour	131	9.1	325°(NW)	418929
31-Aug	11	PM2.5	1-Hour	123	10.3	315°(NW)	418929
31-Aug	12	PM2.5	1-Hour	114	11.4	322°(NW)	418929
31-Aug	13	PM2.5	1-Hour	132	10.8	320°(NW)	418929
31-Aug	14	PM2.5	1-Hour	88	10.4	302°(WNW)	418929
31-Aug	15	PM2.5	1-Hour	85	11.3	311°(NW)	418929
31-Aug	-	PM2.5	24-Hour	62	9.4	323°(NW)	418929

- **Station HVAC unit:** The main fan that cools the radiator stopped working leading the HVAC unit to fail. on August 25. The motor was replaced on September 9. Due to this issue, the station temperatures rose above the manufacturer's recommended operation temperature ranges. Data quality collected during this period could have been affected by the issue and therefore

were discarded. Downtime was variable among the instruments however, 128 hours to 150 hours of downtime were recorded in August as a result.

- **THC/CH4/NMHC:** Following the August 13's monthly calibration, significant NMHC noise was noted. On August 17, an investigation was completed, and maintenance was performed on the H2 generator. A repeat multi-point calibration was completed on August 18. However, the issue continued. Therefore, on August 25, the Thermo 55i analyzer, s/n: 1180030034, was removed for maintenance, and the Thermo 55i analyzer, s/n: 1236656107, analyzer was installed. The analyzer was put offline overnight for column conditioning. A successful post-repair calibration was completed on August 26. Thirty-five hours of downtime were recorded due to these maintenance activities.
- **AQHI values:** Due to the HVAC unit issue, data quality for data collected by the most gas analyzers between August 25 hour 18 and August 31 hour 23 (for PM2.5 data: between August 28 hour 15 and August 29 hour 12) were affected and were invalidated. As NO2, O3 and PM2.5 are the parameters used to calculate the AQHI value, the AQHI values during this period were affected. However, considering ambient air and wildfires conditions around the LICA region this season, PM2.5 was predominant parameter driving the AQHI values. As a result, AQHI values calculated during the period the PM2.5 data were invalidated were discarded. The rest of AQHI values were kept for *reference use.*

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. Twenty-six 1-hour and four 24-hour PM2.5 exceedances were recorded this month. Widespread smoke from wildfires burning throughout western Canada is the cause of the numerous exceedances of the PM2.5 objective and guideline.

Date	Time (MST)	Parameter	Average Period	Concentration (µg/m3)	Wind speed (km/hr)	Wind Direction	Reference #
27-Aug	6	PM2.5	1-Hour	90.2	1.8	16°(NNE)	418438
27-Aug	7	PM2.5	1-Hour	124.8	2.1	42°(NE)	418438
27-Aug	8	PM2.5	1-Hour	127	1.4	44°(NE)	418438
27-Aug	9	PM2.5	1-Hour	131.1	2.3	156°(SSE)	418438
27-Aug	10	PM2.5	1-Hour	126.8	2.2	192°(S)	418438
27-Aug	11	PM2.5	1-Hour	101.9	3.1	193°(S)	418438
27-Aug	12	PM2.5	1-Hour	106.2	2.6	194°(SSW)	418438
27-Aug	13	PM2.5	1-Hour	109.7	3.0	184°(S)	418438
27-Aug	14	PM2.5	1-Hour	126.3	3.0	149°(SSE)	418438
27-Aug	15	PM2.5	1-Hour	143.1	2.9	178°(S)	418438
27-Aug	16	PM2.5	1-Hour	129.7	3.9	146°(SE)	418438
27-Aug	17	PM2.5	1-Hour	132.7	3.4	126°(SE)	418438
27-Aug	18	PM2.5	1-Hour	138.8	4.0	143°(SE)	418438
27-Aug	19	PM2.5	1-Hour	125	3.5	153°(SSE)	418438

Date	Time (MST)	Parameter	Average Period	Concentration (µg/m3)	Wind speed (km/hr)	Wind Direction	Reference #
27-Aug	20	PM2.5	1-Hour	114.3	3.7	155°(SSE)	418438
27-Aug	21	PM2.5	1-Hour	111.1	4.8	153°(SSE)	418438
27-Aug	22	PM2.5	1-Hour	100.2	4.6	156°(SSE)	418438
27-Aug	23	PM2.5	1-Hour	84.2	4.8	164°(SSE)	418438
27-Aug	-	PM2.5	24-Hour	100.8	2.6	159°(SSE)	418438
28-Aug	-	PM2.5	24-Hour	40.6	3.0	189°(S)	418928
29-Aug	-	PM2.5	24-Hour	31.5	4.2	138°(SE)	418928
31-Aug	5	PM2.5	1-Hour	102.7	7.6	319°(NW)	418928
31-Aug	6	PM2.5	1-Hour	91.2	8.9	313°(NW)	418928
31-Aug	7	PM2.5	1-Hour	101.6	10.4	320°(NW)	418928
31-Aug	8	PM2.5	1-Hour	98.8	10.3	324°(NW)	418928
31-Aug	9	PM2.5	1-Hour	96.3	9.3	318°(NW)	418928
31-Aug	10	PM2.5	1-Hour	91.1	10.6	320°(NW)	418928
31-Aug	11	PM2.5	1-Hour	102.5	9.8	319°(NW)	418928
31-Aug	16	PM2.5	1-Hour	83.8	9.7	297°(WNW)	418928
31-Aug	-	PM2.5	24-Hour	64.2	7.3	310°(NW)	418928

- No major events were identified this month.

Integrated Sampling

All the integrated sampling analytical results are included in the August 2023 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 4, 10, 16, 22 and 28.
- **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 4, 10, 16, 22 and 28.
- **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.
  - Five samples were collected this month: on August 4, 10, 16, 22 and 28.

- **Passive Sampling System:**
  - There were no exceedances of the AAAQOs for all monitored parameters at any of the passive stations during this month.
  - The passive sample filters were installed at the stations between July 29 and July 31, and were removed between August 31 and September 3.
  - A total of 13 duplicate samples were collected: 2 for H2S, 3 for SO2, 2 for NO2, 2 for O3, 2 for HNO3 and 2 for NH3.
  - Station 28: To address access issues and restrictions experienced over the last 3 months, the samplers were moved to the opposite side of the fence by LICA staff on August 25. The samplers are still mounted on the sample post at the same location, but instead of accessing to the fenced parking lot, they can be accessed from outside the compound. The sample media collected on September 1 contained samples collected from May 28 to September 1.
- **PAC Sampling System**:
  - The PAC sampling program began in December 2019, and is designed to collect a 2-month integrated sample.
  - The media for the July/August monitoring period were collected between August 31 and September 3. The media for the September/October monitoring period were installed during the time the media for the July/August monitoring period were collected.
- **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.
  - Four canister events were recorded this month. However, due to field operator errors, two canisters were not collected. To improve the reliability of the canister system, an automatic alarming system will be installed. When the NMHC concentration reaches to the triggered point, an automatic alarm notification will be generated and sent out.

Date	Time	Concentration (ppm)	Valid Sample Collection
02-Aug	10:25	0.65	Yes
05-Aug	6:50	0.44	Yes
12-Aug	13:55	0.75	No
30-Aug	8:35	0.37	No

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

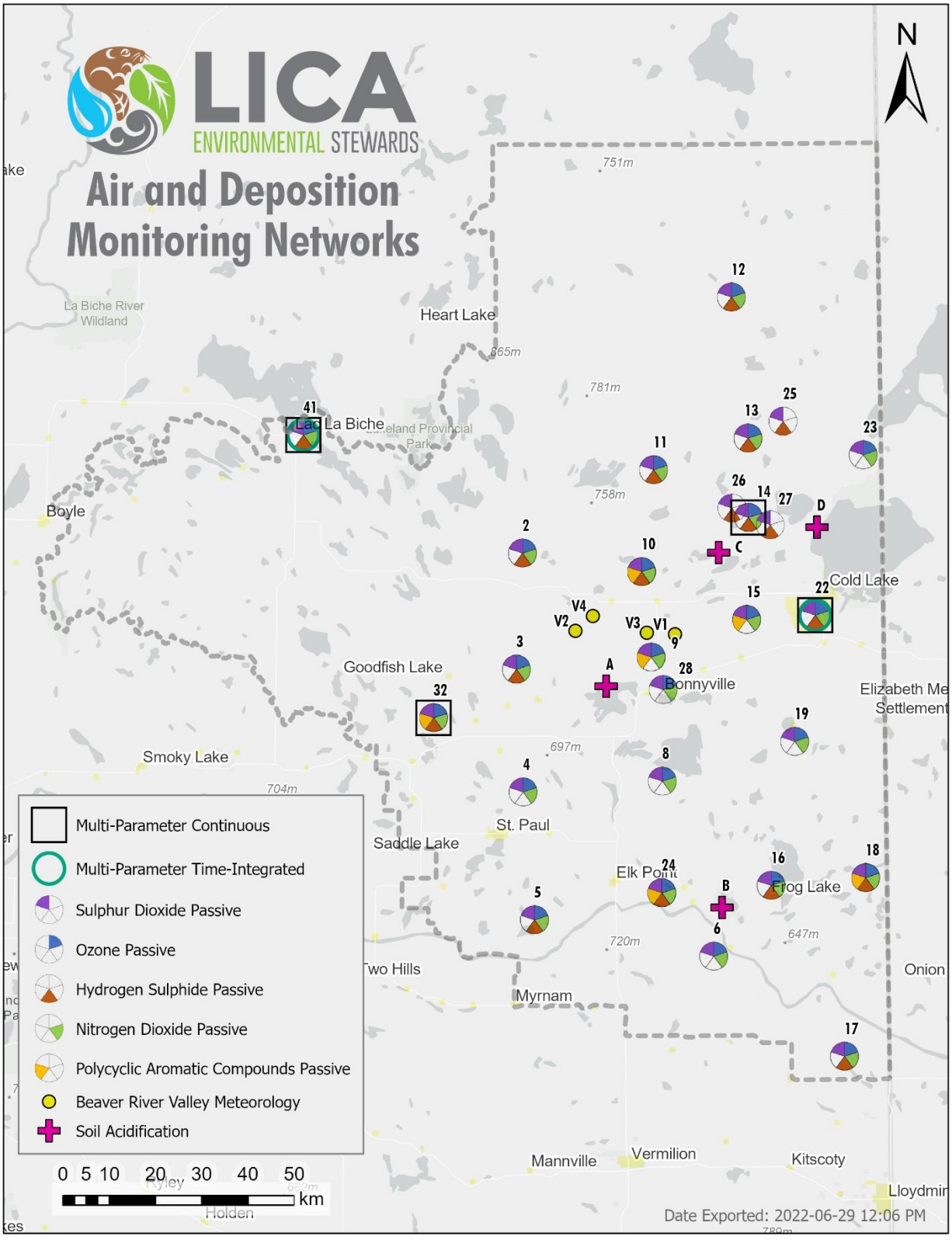
This report was reviewed by Michael Bisaga in accordance with Chapter 9 of the Air Monitoring Directive (AMD 2016).

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. 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 19, 2023

Map of LICA Continuous Monitoring Network



CONTINUOUS NETWORK EQUIPMENT AND MONITORING RESULTS SUMMARY

Cold Lake South Station

Equipment Operation Summary

Parameter	Calibration Date	Equipment Operational Summary
SO2 Thermo 43i-TLE #1180260018	August 9, 2023	• No operational issues were identified.
TRS Thermo 450i #812728560 **TRS convertor** CD Nova CDN-101 #501	August 9, 2023	• No operational issues were identified.
NOx/NO/NO2 Thermo 42i #1505664393	August 9, 2023	• No operational issues were identified.
O3 Thermo 49iQ #12208316585 Thermo 49i #1002240371	August 17, 2023	• The monthly calibration was completed on August 10. • The Thermo 49iQ analyzer, s/n: 12208316585, failed due to a power supply failure on August 15. The analyzer was replaced with the Thermo 49i analyzer, s/n: 1002240371, on August 17. Forty-two hours of downtime were recorded due to this event.
THC/CH4/NMHC Thermo 55i #1180930025 **H2 Generator** HG300 #210567071	August 10, 2023	• No operational issues were identified.
PM2.5 Teledyne T640 #575	August 10, 2023	• No operational issues were identified.
Parameter	**Verification Date**	**Equipment Operational Summary**
RH Rotronic HC2A-S3 #20257103	August 10, 2023	• No operational issues were identified.

Parameter	Verification Date	Equipment Operational Summary
BP Met One 092 #Y23368	August 10, 2023	• No operational issues were identified.
AT Rotronic HC2A-S3 #20257103	August 10, 2023	• No operational issues were identified.
ST COMET #NA	August 10, 2023	• No operational issues were identified.
WS/WD/STDWD RM Young 05305AQ #177354	August 10, 2023	• 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 operational issues were identified.

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	Aug 2 at hr 11	2.4	W	0.4	Aug 2	100.0	94.9
TRS (ppb)	-	-	-	-	-	-	0.2	0	2	Aug 6 at hr 3	4	WSW	1.0	Aug 31	100.0	94.9
NOx (ppb)	-	-	-	-	-	-	2.2	0	18	Aug 29 at hr 7	0.2	ESE	5.2	Aug 28	100.0	94.6
NO (ppb)	-	-	-	-	-	-	0.2	0	13	Aug 29 at hr 7	0.2	ESE	1.9	Aug 28	100.0	94.6
NO2 (ppb)	159	-	-	0	-	-	2.0	0	9	Aug 28 at hr 8	4.1	WSW	3.2	Aug 28	100.0	94.6
O3 (ppb)	76	-	-	0	-	-	22.3	0.2	63.8	Aug 2 at hr 15	2.7	E	31.9	Aug 2	94.4	89.6
THC (ppm)	-	-	-	-	-	-	2.12	1.95	2.98	Aug 19 at hr 22	1.3	WSW	2.35	Aug 29	100.0	95.0
CH4 (ppm)	-	-	-	-	-	-	2.12	1.95	2.98	Aug 19 at hr 22	1.3	WSW	2.35	Aug 29	100.0	95.0
NMHC (ppm)	-	-	-	-	-	-	0.00	0.00	0.19	Aug 10 at hr 8	5.4	SE	0.01	Aug 10	100.0	95.0
PM2.5 (µg/m3)	80	29	-	29	9	-	24.3	1	282	Aug 31 at hr 23	4.5	WSW	75.0	Aug 27	100.0	99.9
RH (%)	-	-	-	-	-	-	79.1	39	100	Aug 3 at hr 5	9	NE	98.7	Aug 18	100.0	100.0
BP (millibar)	-	-	-	-	-	-	951	936	961	Aug 25 at hr 6	3.2	SW	959	Aug 25	100.0	100.0
Ext. Temp. (°C)	-	-	-	-	-	-	16.5	3.2	29.2	Aug 29 at hr 15	5.9	SE	20.7	Aug 30	100.0	100.0
Stn. Temp. (°C)	-	-	-	-	-	-	23.7	22.4	25.2	Aug 8 at hr 4	0.2	SSW	24.6	Aug 19	100.0	100.0
WSV (km/hr)	-	-	-	-	-	-	1.1	0.0	14.8	Aug 18 at hr 17	14.8	N	7.4	Aug 9	100.0	100.0
WDV (sector)	-	-	-	-	-	-	269 (W)	-	-	-	-	-	-	-	100.0	100.0

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

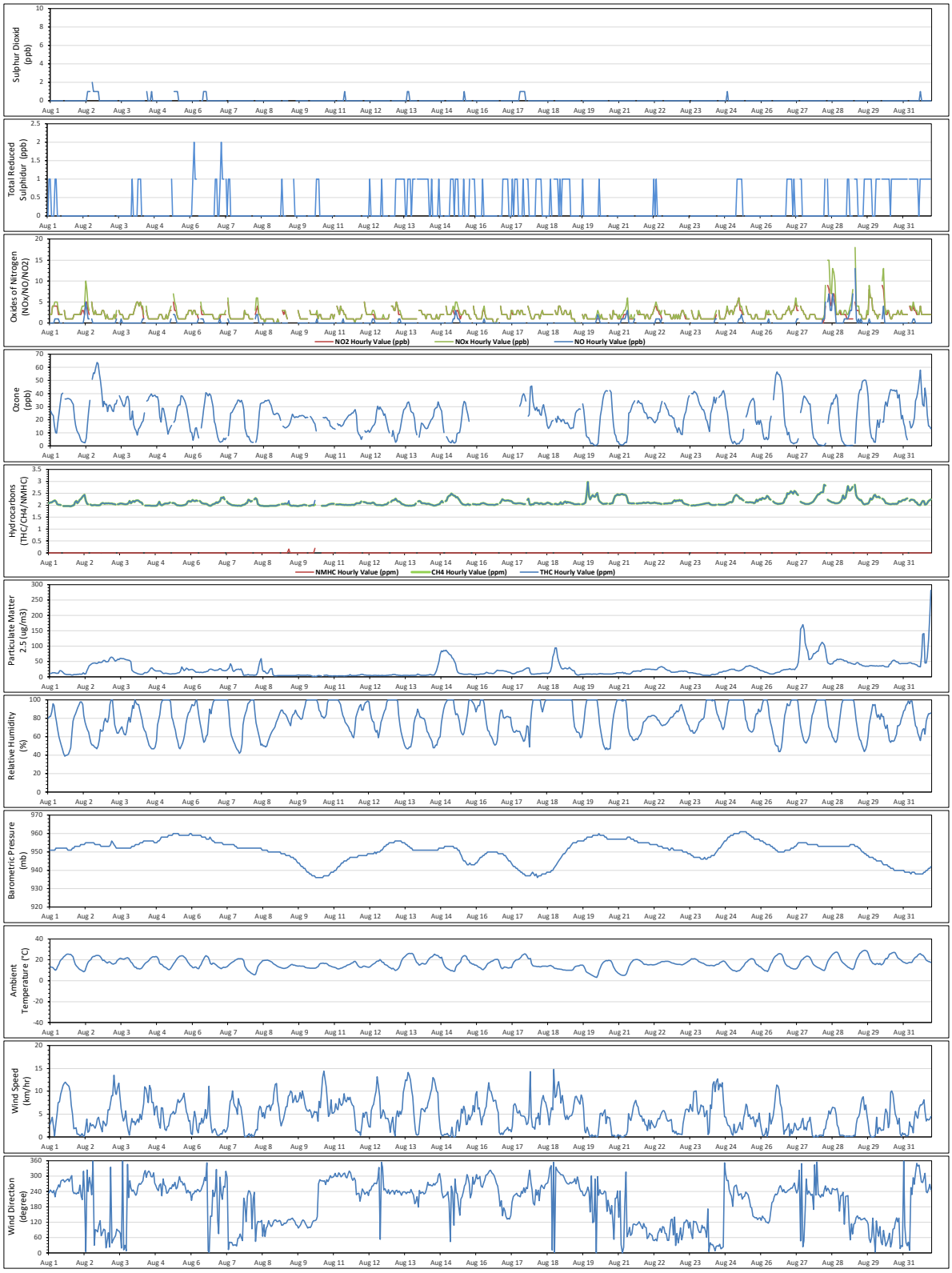
Alberta Ambient Air Quality Objectives (AAAQOs) and/or Alberta Ambient Air Quality Guidelines (AAAQGs) Exceedances

The following exceedances of AAAQO and AAAQG were observed at the Cold Lake South Station.

Date	Time (MST)	Parameter	Average Period	AAAQOs / AAAQGs	Concentration	Wind speed	Wind Direction	Reference #
Aug 2	-	PM2.5	24-Hour	29 µg/m3	33 µg/m3	2.0 km/hr	72° (ENE)	419457
Aug 3	-	PM2.5	24-Hour	29 µg/m3	52 µg/m3	6.1 km/hr	48° (NE)	419457
Aug 14	18	PM2.5	1-Hour	80 µg/m3	84 µg/m3	0.6 km/hr	280° (W)	418115
Aug 14	19	PM2.5	1-Hour	80 µg/m3	82 µg/m3	0.2 km/hr	236° (SW)	418115
Aug 14	20	PM2.5	1-Hour	80 µg/m3	86 µg/m3	0.4 km/hr	215° (SSW)	418115
Aug 14	21	PM2.5	1-Hour	80 µg/m3	84 µg/m3	0.6 km/hr	220° (SW)	418115
Aug 14	22	PM2.5	1-Hour	80 µg/m3	87 µg/m3	0.5 km/hr	224° (SW)	418115
Aug 14	23	PM2.5	1-Hour	80 µg/m3	82 µg/m3	0.8 km/hr	227° (SW)	418115
Aug 14	-	PM2.5	24-Hour	29 µg/m3	32 µg/m3	6.0 km/hr	261° (W)	418115
Aug 18	18	PM2.5	1-Hour	80 µg/m3	94 µg/m3	8.6 km/hr	2° (N)	418116
Aug 18	19	PM2.5	1-Hour	80 µg/m3	94 µg/m3	9.0 km/hr	336° (NNW)	418116
Aug 18	-	PM2.5	24-Hour	29 µg/m3	30 µg/m3	6.8 km/hr	300° (WNW)	418116
Aug 27	8	PM2.5	1-Hour	80 µg/m3	88 µg/m3	2.0 km/hr	323° (NW)	418437
Aug 27	9	PM2.5	1-Hour	80 µg/m3	155 µg/m3	2.0 km/hr	47° (NE)	418437
Aug 27	10	PM2.5	1-Hour	80 µg/m3	163 µg/m3	3.3 km/hr	349° (NNW)	418437
Aug 27	11	PM2.5	1-Hour	80 µg/m3	170 µg/m3	4.1 km/hr	24° (NNE)	418437
Aug 27	12	PM2.5	1-Hour	80 µg/m3	153 µg/m3	1.6 km/hr	47° (NE)	418437
Aug 27	13	PM2.5	1-Hour	80 µg/m3	110 µg/m3	2.1 km/hr	166° (SSE)	418437
Aug 27	14	PM2.5	1-Hour	80 µg/m3	94 µg/m3	1.5 km/hr	289° (WNW)	418437
Aug 27	15	PM2.5	1-Hour	80 µg/m3	83 µg/m3	3.3 km/hr	229° (SW)	418437
Aug 27	23	PM2.5	1-Hour	80 µg/m3	83 µg/m3	0.0 km/hr	355° (N)	418437
Aug 27	-	PM2.5	24-Hour	29 µg/m3	75 µg/m3	1.8 km/hr	265° (W)	418437
Aug 28	0	PM2.5	1-Hour	80 µg/m3	83 µg/m3	0.1 km/hr	228° (SW)	418927
Aug 28	1	PM2.5	1-Hour	80 µg/m3	99 µg/m3	0.4 km/hr	226° (SW)	418927
Aug 28	2	PM2.5	1-Hour	80 µg/m3	106 µg/m3	0.4 km/hr	217° (SW)	418927
Aug 28	3	PM2.5	1-Hour	80 µg/m3	112 µg/m3	0.4 km/hr	229° (SW)	418927
Aug 28	4	PM2.5	1-Hour	80 µg/m3	109 µg/m3	0.1 km/hr	221° (SW)	418927
Aug 28	5	PM2.5	1-Hour	80 µg/m3	103 µg/m3	1.6 km/hr	243° (WSW)	418927
Aug 28	6	PM2.5	1-Hour	80 µg/m3	89 µg/m3	1.8 km/hr	262° (W)	418927
Aug 28	-	PM2.5	24-Hour	29 µg/m3	66 µg/m3	2.5 km/hr	243° (WSW)	418927
Aug 29	-	PM2.5	24-Hour	29 µg/m3	40 µg/m3	2.7 km/hr	131° (SE)	418927
Aug 30	-	PM2.5	24-Hour	29 µg/m3	41 µg/m3	3.7 km/hr	71° (ENE)	418927
Aug 31	16	PM2.5	1-Hour	80 µg/m3	139 µg/m3	7.3 km/hr	275° (W)	418927
Aug 31	17	PM2.5	1-Hour	80 µg/m3	141 µg/m3	8.1 km/hr	293° (WNW)	418927
Aug 31	21	PM2.5	1-Hour	80 µg/m3	120 µg/m3	3.7 km/hr	249° (WSW)	418927
Aug 31	22	PM2.5	1-Hour	80 µg/m3	203 µg/m3	3.9 km/hr	268° (W)	418927
Aug 31	23	PM2.5	1-Hour	80 µg/m3	282 µg/m3	4.5 km/hr	247° (WSW)	418927
Aug 31	-	PM2.5	24-Hour	29 µg/m3	72 µg/m3	3.7 km/hr	292° (WNW)	418927

The cause for the exceedances of the PM2.5 objective and guideline was due to wildfire smoke.

Timeseries Chart of Hourly Average for the month of Aug 2023 - Cold Lake South Station



Tamarack Station

Equipment Operation Summary

Parameter	Calibration Date	Equipment Operational Summary
SO2 Thermo 43i-TLE #1180930031	August 19, 2023	• No operational issues were recorded.
H2S Thermo 450i #CM17360005	August 19, 2023	• No operational issues were recorded.
NOx/NO/NO2 Thermo 42i #1180930028	August 19, 2023	• No operational issues were recorded.
O3 Thermo 49iQ #1202068570	August 20, 2023	• No operational issues were recorded.
THC/CH4/NMHC Thermo 55i #1180930026	August 20, 2023	• No operational issues were recorded. • The analyzer was put offline while maintenance was being performed on the H2 generator on August 19. One hour of downtime was recorded as a result.
PM2.5 Thermo Sharp 5030 #CM2209	August 20, 2023	• No operational issues were recorded.
Parameter	**Verification Date**	**Equipment Operational Summary**
RH Rotronic HC2A-S3 #20433166	August 20, 2023	• No operational issues were recorded.
BP Met One 090D #F4497	August 20, 2023	• No operational issues were recorded.
AT Rotronic HC2A-S3 #20433166	August 20, 2023	• No operational issues were recorded.
ST COMET #NA	August 20, 2023	• No operational issues were recorded.

Parameter	Verification Date	Equipment Operational Summary
Precipitation MetOne 387 #C13580	August 20, 2023	• No operational issues were recorded.
WS/WD/STDWD RM Young 05305VK #161465	August 20, 2023	• 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 operational issues were recorded.

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	0.7	0	12	Aug 16 at hr 0	7	WNW	2.7	Aug 16	100.0	95.0
H2S (ppb)	10	3	-	1	0	-	0.2	0	11	Aug 10 at hr 1	6	ESE	1.0	Aug 9	100.0	95.0
NOx (ppb)	-	-	-	-	-	-	3.5	0	31	Aug 16 at hr 0	7	WNW	6.0	Aug 16	100.0	94.7
NO (ppb)	-	-	-	-	-	-	0.6	0	18	Aug 15 at hr 7	2.5	SSW	1.9	Aug 16	100.0	94.7
NO2 (ppb)	159	-	-	0	-	-	2.9	0	20	Aug 16 at hr 0	7	WNW	4.3	Aug 28	100.0	94.7
O3 (ppb)	76	-	-	0	-	-	21.7	0.0	53.5	Aug 27 at hr 14	4.5	SSW	32.4	Aug 2	100.0	95.1
THC (ppm)	-	-	-	-	-	-	2.09	1.96	2.71	Aug 29 at hr 8	0.5	NNE	2.28	Aug 29	99.9	95.0
CH4 (ppm)	-	-	-	-	-	-	2.09	1.96	2.68	Aug 8 at hr 5	1	ENE	2.28	Aug 28	99.9	95.0
NMHC (ppm)	-	-	-	-	-	-	0.00	0.00	0.20	Aug 29 at hr 8	0.5	NNE	0.02	Aug 31	99.9	95.0
PM2.5 (µg/m3)	80	29	-	18	6	-	17.9	1	229	Aug 31 at hr 23	5.3	WNW	71.1	Aug 27	100.0	99.9
RH (%)	-	-	-	-	-	-	80.9	33	100	Aug 2 at hr 4	2.5	WSW	98.4	Aug 10	100.0	100.0
BP (millibar)	-	-	-	-	-	-	938	923	949	Aug 25 at hr 9	5.3	SSW	947	Aug 5	100.0	100.0
Ext. Temp. (°C)	-	-	-	-	-	-	16.1	4.1	28.2	Aug 29 at hr 15	6.1	SSE	19.5	Aug 29	100.0	100.0
Stn. Temp. (°C)	-	-	-	-	-	-	22.5	21.6	23.2	Aug 20 at hr 13	7.8	S	22.6	Aug 5	100.0	100.0
Precipitation (mm)*	-	-	-	-	-	-	115.7	0.0	8.1	Aug 3 at hr 4	0.8	W	34.1	Aug 18	100.0	99.9
WSV (km/hr)	-	-	-	-	-	-	1.1	0.0	14.7	Aug 1 at hr 15	14.7	W	7.4	Aug 1	100.0	100.0
WDV (sector)	-	-	-	-	-	-	250 (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

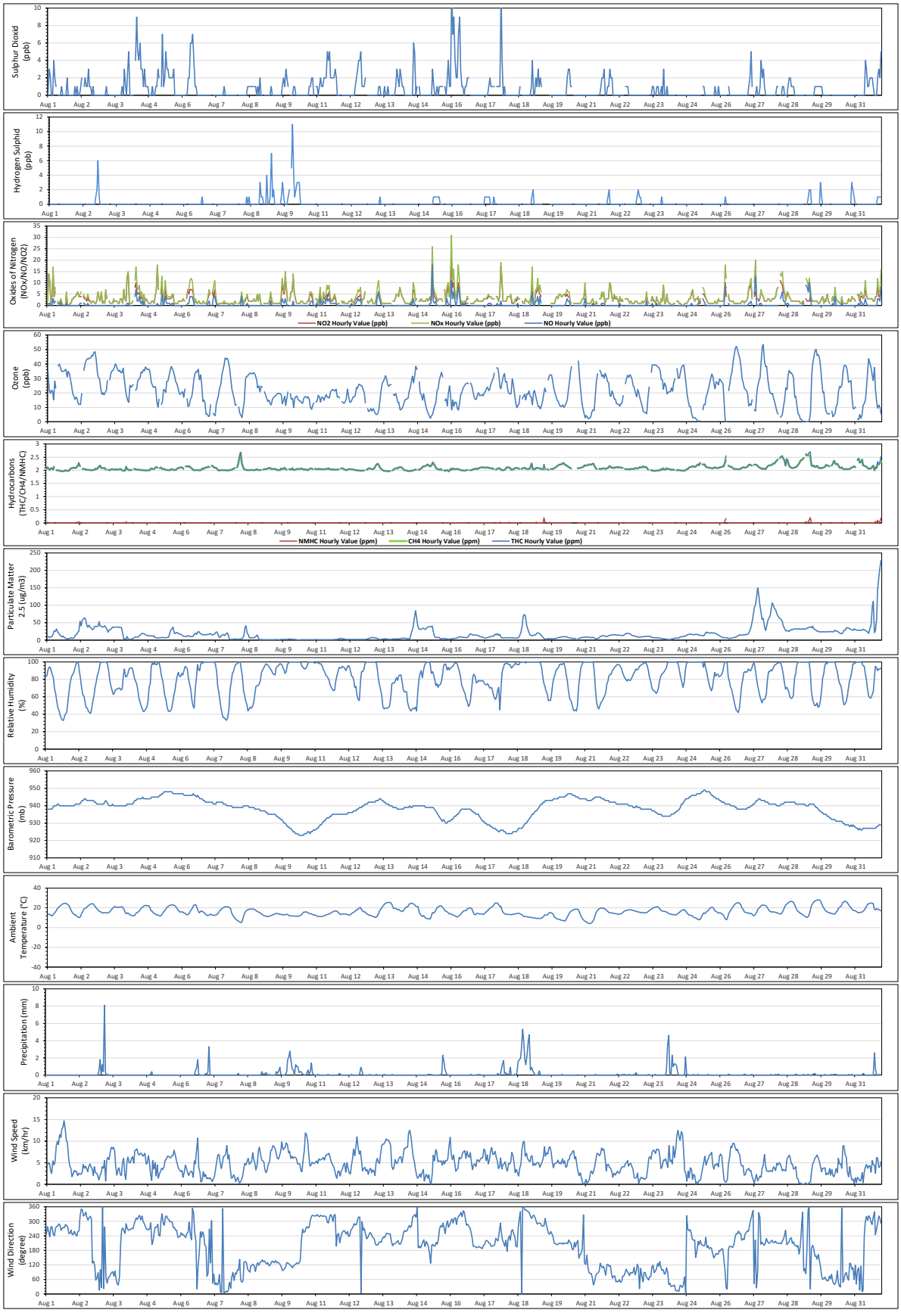
Alberta Ambient Air Quality Objectives (AAAQOs) and/or Alberta Ambient Air Quality Guidelines (AAAQGs) Exceedances

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

Date	Time (MST)	Parameter	Average Period	AAAQOs / AAAQGs	Concentration	Wind speed	Wind Direction	Reference #
Aug 10	1	H2S	1-Hour	10 ppb	11 ppb	6.0 km/hr	119° (ESE)	417687
Aug 2	-	PM2.5	24-Hour	29 µg/m3	38.8 µg/m3	3.0 km/hr	316° (NW)	419459
Aug 3	-	PM2.5	24-Hour	29 µg/m3	29.8 µg/m3	4.7 km/hr	58° (ENE)	419459
Aug 14	16	PM2.5	1-Hour	80 µg/m3	84.5 µg/m3	3.7 km/hr	328° (NNW)	418117
Aug 27	6	PM2.5	1-Hour	80 µg/m3	93.1 µg/m3	0.2 km/hr	43° (NE)	418440
Aug 27	7	PM2.5	1-Hour	80 µg/m3	102.5 µg/m3	1.4 km/hr	223° (SW)	418440
Aug 27	8	PM2.5	1-Hour	80 µg/m3	126 µg/m3	2.3 km/hr	25° (NNE)	418440
Aug 27	9	PM2.5	1-Hour	80 µg/m3	149.9 µg/m3	0.8 km/hr	92° (E)	418440
Aug 27	10	PM2.5	1-Hour	80 µg/m3	127 µg/m3	1.3 km/hr	336° (NNW)	418440
Aug 27	11	PM2.5	1-Hour	80 µg/m3	100.9 µg/m3	1.9 km/hr	318° (NW)	418440
Aug 27	21	PM2.5	1-Hour	80 µg/m3	86 µg/m3	3.1 km/hr	218° (SW)	418440
Aug 27	22	PM2.5	1-Hour	80 µg/m3	107.1 µg/m3	2.9 km/hr	222° (SW)	418440
Aug 27	23	PM2.5	1-Hour	80 µg/m3	99.4 µg/m3	4.0 km/hr	212° (SSW)	418440
Aug 27	-	PM2.5	24-Hour	29 µg/m3	71.1 µg/m3	2.8 km/hr	233° (SW)	418440
Aug 28	0	PM2.5	1-Hour	80 µg/m3	90.6 µg/m3	3.8 km/hr	213° (SSW)	418930
Aug 28	1	PM2.5	1-Hour	80 µg/m3	87.5 µg/m3	3.2 km/hr	218° (SW)	418930
Aug 28	-	PM2.5	24-Hour	29 µg/m3	43.8 µg/m3	3.8 km/hr	215° (SSW)	418930
Aug 29	-	PM2.5	24-Hour	29 µg/m3	29.8 µg/m3	2.8 km/hr	134° (SE)	418930
Aug 31	15	PM2.5	1-Hour	80 µg/m3	95.7 µg/m3	5.5 km/hr	287° (WNW)	418930
Aug 31	16	PM2.5	1-Hour	80 µg/m3	110.9 µg/m3	4.6 km/hr	318° (NW)	418930
Aug 31	20	PM2.5	1-Hour	80 µg/m3	144.4 µg/m3	6.0 km/hr	289° (WNW)	418930
Aug 31	21	PM2.5	1-Hour	80 µg/m3	181 µg/m3	3.9 km/hr	322° (NW)	418930
Aug 31	22	PM2.5	1-Hour	80 µg/m3	209.4 µg/m3	4.1 km/hr	313° (NW)	418930
Aug 31	23	PM2.5	1-Hour	80 µg/m3	228.6 µg/m3	5.3 km/hr	291° (WNW)	418930
Aug 31	-	PM2.5	24-Hour	29 µg/m3	63.1 µg/m3	3.3 km/hr	305° (WNW)	418930

- The exceedance of the H2S objective on August 10 is believed to be the result of local buildup of emissions.
- The cause for the exceedance of the PM2.5 objective and guideline was due to wildfire smoke.

Timeseries Chart of Hourly Average for the month of Aug 2023 - Tamarack Site



St. Lina Station

Equipment Operation Summary

Parameter	Calibration Date	Equipment Operational Summary
SO2 Thermo 43i-TLE #1180930030	August 12, 2023	• The station's HVAC system failed on August 25. The motor was replaced on September 9. Due to this issue, the station temperatures rose above the manufacture's recommend operation temperature ranges. Data quality collected during this period could have been affected and therefore were discarded. One hundred-fifty hours of downtime were recorded in August as a result.
H2S Teledyne T100 #1014	August 12, 2023	• The station's HVAC system failed on August 25. The motor was replaced on September 9. Due to this issue, the station temperatures rose above the manufacture's recommend operation temperature ranges. Data quality collected during this period could have been affected and therefore were discarded. One hundred-fifty hours of downtime were recorded in August as a result.
NOx/NO/NO2 Thermo 42i #1180930029	August 12, 2023	• The station's HVAC system failed on August 25. The motor was replaced on September 9. Due to this issue, the station temperatures rose above the manufacture's recommend operation temperature ranges. Data quality collected during this period could have been affected and therefore were discarded. One hundred-fifty hours of downtime were recorded in August as a result.
THC/CH4/NMHC Thermo 55i #1180030034 #1236656107	August 26, 2023	• A successful monthly calibration was completed on August 13. Following the monthly calibration, NMHC noise was noted. On August 17, an investigation was completed, and maintenance was performed on the H2 generator. A repeat multi-point calibration was completed on August 18. However, the issue continued. On August 25, the Thermo 55i, s/n: 1180030034, was removed for maintenance, and the Thermo 55i, s/n: 1236656107, analyzer was installed. The analyzer was put offline overnight for column conditioning. A post-repair calibration was completed on August 26. Thirty-five hours of downtime were recorded due to these maintenance activities. • The station's HVAC system failed on August 25. The motor was replaced on September 9. Due to this issue, the station temperatures rose above the manufacture's recommend operation temperature ranges. Data quality collected during this period could have been affected and therefore were discarded. One hundred-fifty hours of downtime were recorded in August as a result.

Parameter	Calibration Date	Equipment Operational Summary
O3 Thermo 49iQ #12208316586	August 13, 2023	• The station's HVAC system failed on August 25. The motor was replaced on September 9. Due to this issue, the station temperatures rose above the manufacture's recommend operation temperature ranges. Data quality collected during this period could have been affected and therefore were discarded. One hundred-fifty hours of downtime were recorded in August as a result.
PM2.5 Thermo Sharp 5030i #CM17091001	August 13, 2023	• The station's HVAC system failed on August 25. The motor was replaced on September 9. Due to this issue, the station temperatures rose above the manufacture's recommend operation temperature ranges. Data quality collected during this period could have been affected and therefore were discarded. Twenty-two hours of downtime were recorded in August as a result.
RH Rotronic HC2A-S3 #20404750	August 13, 2023	• No operational issues were recorded.

Parameter	Verification Date	Equipment Operational Summary
BP Met One 090D #F4498	August 13, 2023	• No operational issues were recorded.
AT Rotronic HC2A-S3 #20404750	August 13, 2023	• No operational issues were recorded.
ST COMET #NA	August 13, 2023	• No operational issues were recorded.
Precipitation MetOne 387D #A23775	August 13, 2023	• No operational issues were recorded.
WS/WD/STDWD RM Young 05305VK #161466	August 13, 2023	• 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 operational issues were recorded.

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	3	Aug 13 at hr 11	19.4	WSW	0.3	Aug 13	79.8	75.5
H2S (ppb)	10	3	-	0	0	-	0.0	0	1	Aug 1 at hr 5	6.7	WSW	0.0	Aug 1	79.8	75.5
NOx (ppb)	-	-	-	-	-	-	1.3	0	9	Aug 21 at hr 6	7.9	ENE	2.4	Aug 21	79.8	75.2
NO (ppb)	-	-	-	-	-	-	0.0	0	1	Aug 6 at hr 13	9	W	0.2	Aug 21	79.8	75.2
NO2 (ppb)	159	-	-	0	-	-	1.3	0	8	Aug 21 at hr 5	8.2	ENE	2.2	Aug 21	79.8	75.2
O3 (ppb)	76	-	-	0	-	-	27.7	7.5	52.6	Aug 17 at hr 21	8.8	NNW	36.8	Aug 3	79.8	75.6
THC (ppm)	-	-	-	-	-	-	2.06	1.95	2.42	Aug 21 at hr 6	7.9	ENE	2.16	Aug 21	78.1	74.0
CH4 (ppm)	-	-	-	-	-	-	2.06	1.95	2.40	Aug 21 at hr 6	7.9	ENE	2.15	Aug 21	78.1	74.0
NMHC (ppm)	-	-	-	-	-	-	0.01	0.00	0.07	Aug 13 at hr 15	17	W	0.03	Aug 14	78.1	74.0
PM2.5 (µg/m3)	80	29	-	21	2	-	14.8	1	132	Aug 31 at hr 13	10.8	NW	73.9	Aug 27	97.0	96.8
RH (%)	-	-	-	-	-	-	76.9	41	99	Aug 23 at hr 6	4.1	E	94.8	Aug 18	100.0	100.0
BP (millibar)	-	-	-	-	-	-	920	906	929	Aug 5 at hr 8	6.6	NW	928	Aug 5	100.0	100.0
Ext. Temp. (°C)	-	-	-	-	-	-	16.6	5.2	29.1	Aug 29 at hr 16	6.1	SSE	22.4	Aug 29	100.0	100.0
Stn. Temp. (°C)	-	-	-	-	-	-	26.0	20.2	53.5	Aug 29 at hr 11	5.7	SE	48.5	Aug 29	100.0	100.0
Precipitation (mm)*	-	-	-	-	-	-	86.6	0.0	9.4	Aug 3 at hr 3	13.7	NNE	29.7	Aug 18	100.0	99.9
WSV (km/hr)	-	-	-	-	-	-	2.3	0.7	20.6	Aug 10 at hr 12	20.6	W	13.6	Aug 10	100.0	100.0
WDV (sector)	-	-	-	-	-	-	281 (W)	-	-	-	-	-	-	-	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

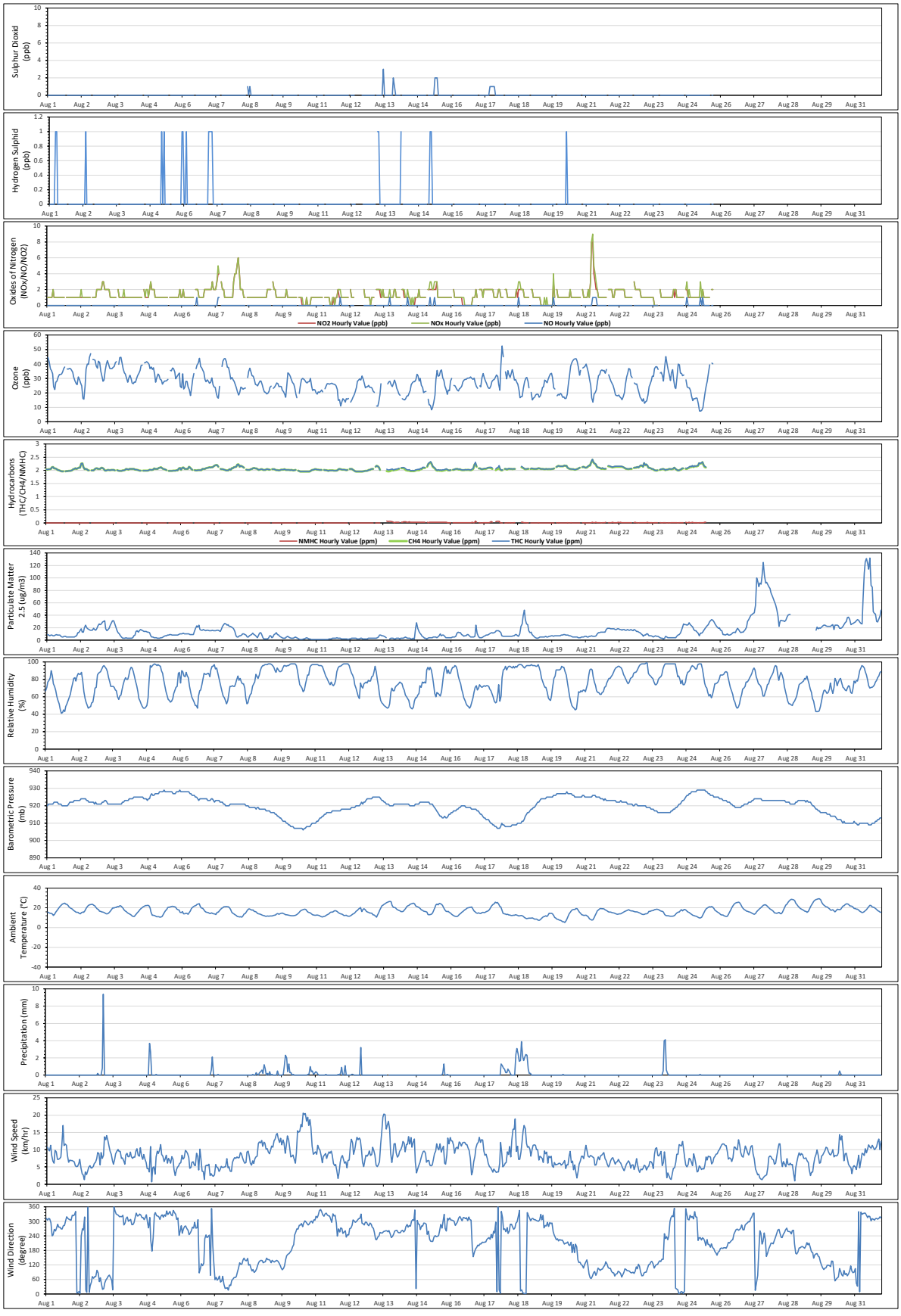
Alberta Ambient Air Quality Objectives (AAAQOs) and/or Alberta Ambient Air Quality Guidelines (AAAQGs) Exceedances

The following exceedances of AAAQO and AAAQG were observed at the St. Lina Site.

Date	Time (MST)	Parameter	Average Period	AAAQOs / AAAQGs	Concentration	Wind speed	Wind Direction	Reference #
Aug 27	8	PM2.5	1-Hour	80 µg/m3	100 µg/m3	3.7 km/hr	46° (NE)	418439
Aug 27	9	PM2.5	1-Hour	80 µg/m3	95 µg/m3	2.7 km/hr	76° (ENE)	418439
Aug 27	10	PM2.5	1-Hour	80 µg/m3	86 µg/m3	2.9 km/hr	163° (SSE)	418439
Aug 27	11	PM2.5	1-Hour	80 µg/m3	92 µg/m3	1.8 km/hr	261° (W)	418439
Aug 27	12	PM2.5	1-Hour	80 µg/m3	90 µg/m3	1.5 km/hr	252° (WSW)	418439
Aug 27	13	PM2.5	1-Hour	80 µg/m3	103 µg/m3	1.3 km/hr	206° (SSW)	418439
Aug 27	14	PM2.5	1-Hour	80 µg/m3	125 µg/m3	1.9 km/hr	217° (SW)	418439
Aug 27	15	PM2.5	1-Hour	80 µg/m3	104 µg/m3	2.3 km/hr	252° (WSW)	418439
Aug 27	16	PM2.5	1-Hour	80 µg/m3	92 µg/m3	2.5 km/hr	221° (SW)	418439
Aug 27	17	PM2.5	1-Hour	80 µg/m3	93 µg/m3	2.7 km/hr	155° (SSE)	418439
Aug 27	18	PM2.5	1-Hour	80 µg/m3	89 µg/m3	4.9 km/hr	169° (SSE)	418439
Aug 27	19	PM2.5	1-Hour	80 µg/m3	86 µg/m3	7.8 km/hr	187° (S)	418439
Aug 27	20	PM2.5	1-Hour	80 µg/m3	83 µg/m3	8.2 km/hr	199° (SSW)	418439
Aug 27	-	PM2.5	24-Hour	29 µg/m3	74 µg/m3	5.7 km/hr	269° (W)	418439
Aug 31	8	PM2.5	1-Hour	80 µg/m3	108 µg/m3	8.3 km/hr	334° (NNW)	418929
Aug 31	9	PM2.5	1-Hour	80 µg/m3	126 µg/m3	10.3 km/hr	334° (NNW)	418929
Aug 31	10	PM2.5	1-Hour	80 µg/m3	131 µg/m3	9.1 km/hr	325° (NW)	418929
Aug 31	11	PM2.5	1-Hour	80 µg/m3	123 µg/m3	10.3 km/hr	315° (NW)	418929
Aug 31	12	PM2.5	1-Hour	80 µg/m3	114 µg/m3	11.4 km/hr	322° (NW)	418929
Aug 31	13	PM2.5	1-Hour	80 µg/m3	132 µg/m3	10.8 km/hr	320° (NW)	418929
Aug 31	14	PM2.5	1-Hour	80 µg/m3	88 µg/m3	10.4 km/hr	302° (WNW)	418929
Aug 31	15	PM2.5	1-Hour	80 µg/m3	85 µg/m3	11.3 km/hr	311° (NW)	418929
Aug 31	-	PM2.5	24-Hour	29 µg/m3	62 µg/m3	9.4 km/hr	323° (NW)	418929

The cause for the exceedance of the PM2.5 objective and guideline was due to wildfire smoke.

Timeseries Chart of Hourly Average for the month of Aug 2023 - St. Lina Site



Lac La Biche Station

Equipment Operation Summary

Parameter	Calibration Date	Equipment Operational Summary
SO2 Thermo 43i-TLE #1180320043	August 2, 2023	• No operational issues were identified this month.
H2S Thermo 450i #CM17360002	August 2, 2023	• The analyzer spanned high on both August 10 and 11 due to unstable permeation oven temperature. The station thermostat was adjusted on August 11 to lower the station temperature to correct the issue. The span issue was corrected afterwards. As the issue was only affected the daily zero-span system, data quality was not affected. No data were invalidated due to this event.
NOx/NO/NO2 Thermo 42i #1180930027	August 2, 2023	• No operational issues were identified this month.
O3 Thermo 49i #1002240372	August 3, 2023	• No operational issues were identified this month.
THC/CH4/NMHC Thermo 55i #1180030044	August 3, 2023	• No operational issues were identified this month.
PM2.5 Thermo Sharp 5030i #CM17071016	August 3, 2023	• No operational issues were identified this month.
Parameter	**Verification Date**	**Equipment Operational Summary**
RH Rotronic HC2A-S3 #0020357518	August 3, 2023	• No operational issues were recorded this month.
BP Met One 092 #Y23360	August 3, 2023	• No operational issues were recorded this month.
AT Rotronic HC2A-S3 #0020357518	August 3, 2023	• No operational issues were recorded this month.

Parameter	Verification Date	Equipment Operational Summary
ST COMET #NA	August 3, 2023	• No operational issues were recorded this month.
WS/WD/STDWD RM Young 05305VK #56778	August 3, 2023	• 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 operational issues were recorded 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	0.0	0	5	Aug 20 at hr 8	4.7	S	0.4	Aug 20	100.0	95.1
H2S (ppb)	10	3	-	0	0	-	0.2	0	2	Aug 1 at hr 17	7.8	W	1.0	Aug 1	100.0	95.1
NOx (ppb)	-	-	-	-	-	-	2.8	0	19	Aug 21 at hr 6	0.8	SSW	6.8	Aug 30	100.0	94.9
NO (ppb)	-	-	-	-	-	-	0.2	0	11	Aug 21 at hr 6	0.8	SSW	1.0	Aug 21	100.0	94.9
NO2 (ppb)	159	-	-	0	-	-	2.5	0	12	Aug 30 at hr 22	0.5	SE	5.9	Aug 30	100.0	94.9
O3 (ppb)	76	-	-	0	-	-	24.5	3.3	51.0	Aug 4 at hr 20	6.8	N	35.1	Aug 4	100.0	95.1
THC (ppm)	-	-	-	-	-	-	2.09	1.93	2.48	Aug 6 at hr 6	3.6	S	2.23	Aug 28	100.0	95.1
CH4 (ppm)	-	-	-	-	-	-	2.09	1.93	2.48	Aug 6 at hr 6	3.6	S	2.23	Aug 28	100.0	95.1
NMHC (ppm)	-	-	-	-	-	-	0.00	0.00	0.11	Aug 5 at hr 6	4.4	WNW	0.01	Aug 12	100.0	95.1
PM2.5 (µg/m3)	80	29	-	26	4	-	17.4	0	143	Aug 27 at hr 15	2.9	S	100.8	Aug 27	100.0	99.7
RH (%)	-	-	-	-	-	-	80.5	37	100	Aug 3 at hr 2	4.5	WNW	98.9	Aug 10	100.0	100.0
BP (millibar)	-	-	-	-	-	-	947	933	958	Aug 5 at hr 9	7.6	NNW	957	Aug 5	100.0	100.0
Ext. Temp. (°C)	-	-	-	-	-	-	17.0	7.1	28.9	Aug 29 at hr 15	5.7	SE	21.7	Aug 29	100.0	100.0
Stn. Temp. (°C)	-	-	-	-	-	-	21.9	18.6	24.6	Aug 5 at hr 23	3.7	SSE	24.2	Aug 10	100.0	100.0
WSV (km/hr)	-	-	-	-	-	-	1.1	0.0	16.0	Aug 16 at hr 9	16	NW	12.2	Aug 9	100.0	100.0
WDV (sector)	-	-	-	-	-	-	269 (W)	-	-	-	-	-	-	-	100.0	100.0

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

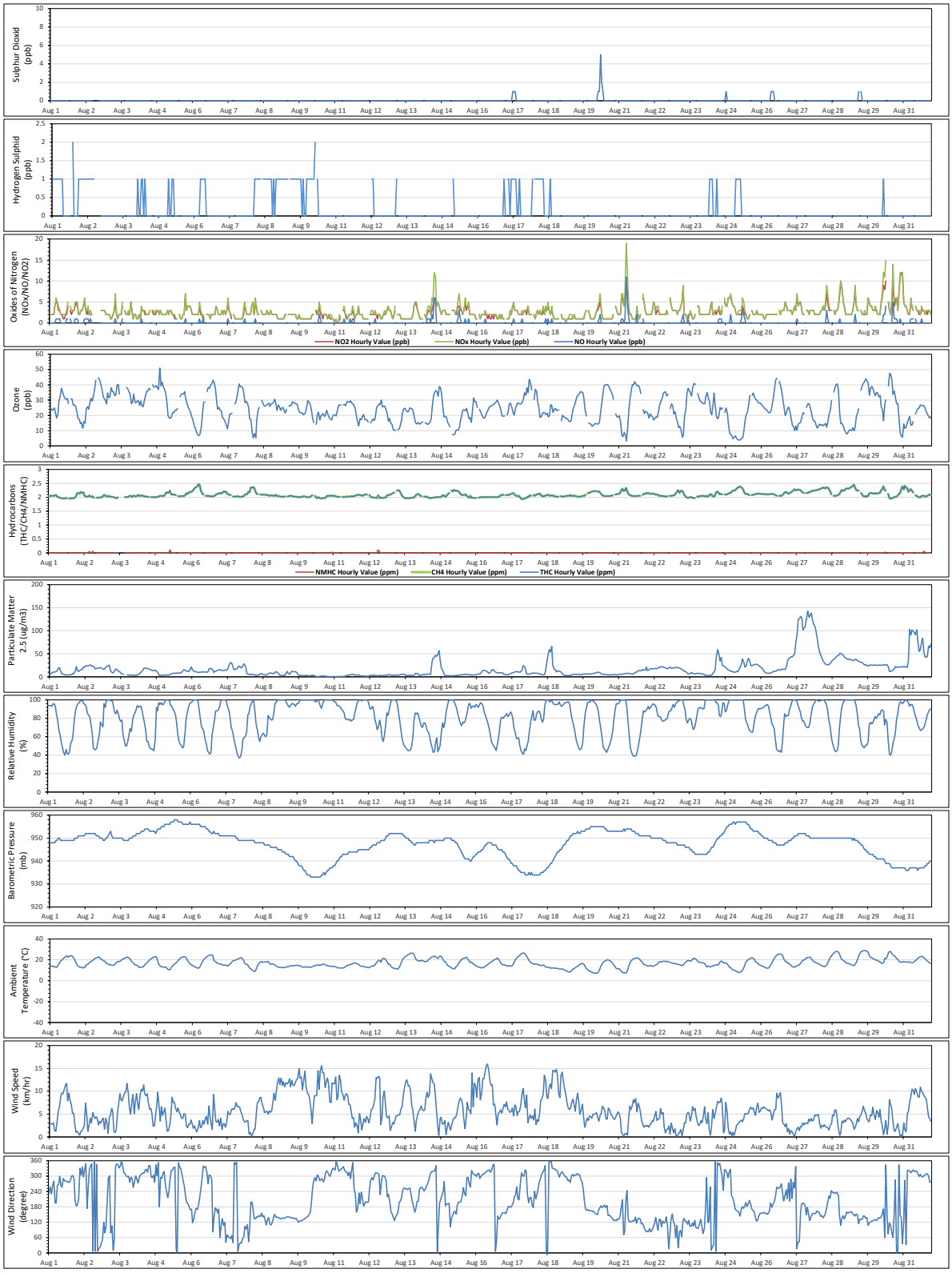
Alberta Ambient Air Quality Objectives (AAAQOs) and/or Alberta Ambient Air Quality Guidelines (AAAQGs) Exceedances

The following exceedances of AAAQO and AAAQG were observed at the Lac La Biche Station.

Date	Time (MST)	Parameter	Average Period	AAAQOs / AAAQGs	Concentration	Wind speed	Wind Direction	Reference #
Aug 27	6	PM2.5	1-Hour	80 µg/m3	90.2 µg/m3	1.8 km/hr	16° (NNE)	418438
Aug 27	7	PM2.5	1-Hour	80 µg/m3	124.8 µg/m3	2.1 km/hr	42° (NE)	418438
Aug 27	8	PM2.5	1-Hour	80 µg/m3	127 µg/m3	1.4 km/hr	44° (NE)	418438
Aug 27	9	PM2.5	1-Hour	80 µg/m3	131.1 µg/m3	2.3 km/hr	156° (SSE)	418438
Aug 27	10	PM2.5	1-Hour	80 µg/m3	126.8 µg/m3	2.2 km/hr	192° (S)	418438
Aug 27	11	PM2.5	1-Hour	80 µg/m3	101.9 µg/m3	3.1 km/hr	193° (S)	418438
Aug 27	12	PM2.5	1-Hour	80 µg/m3	106.2 µg/m3	2.6 km/hr	194° (SSW)	418438
Aug 27	13	PM2.5	1-Hour	80 µg/m3	109.7 µg/m3	3.0 km/hr	184° (S)	418438
Aug 27	14	PM2.5	1-Hour	80 µg/m3	126.3 µg/m3	3.0 km/hr	149° (SSE)	418438
Aug 27	15	PM2.5	1-Hour	80 µg/m3	143.1 µg/m3	2.9 km/hr	178° (S)	418438
Aug 27	16	PM2.5	1-Hour	80 µg/m3	129.7 µg/m3	3.9 km/hr	146° (SE)	418438
Aug 27	17	PM2.5	1-Hour	80 µg/m3	132.7 µg/m3	3.4 km/hr	126° (SE)	418438
Aug 27	18	PM2.5	1-Hour	80 µg/m3	138.8 µg/m3	4.0 km/hr	143° (SE)	418438
Aug 27	19	PM2.5	1-Hour	80 µg/m3	125 µg/m3	3.5 km/hr	153° (SSE)	418438
Aug 27	20	PM2.5	1-Hour	80 µg/m3	114.3 µg/m3	3.7 km/hr	155° (SSE)	418438
Aug 27	21	PM2.5	1-Hour	80 µg/m3	111.1 µg/m3	4.8 km/hr	153° (SSE)	418438
Aug 27	22	PM2.5	1-Hour	80 µg/m3	100.2 µg/m3	4.6 km/hr	156° (SSE)	418438
Aug 27	23	PM2.5	1-Hour	80 µg/m3	84.2 µg/m3	4.8 km/hr	164° (SSE)	418438
Aug 27	-	PM2.5	24-Hour	29 µg/m3	100.8 µg/m3	2.6 km/hr	159° (SSE)	418438
Aug 28	-	PM2.5	24-Hour	29 µg/m3	40.6 µg/m3	3.0 km/hr	189° (S)	418928
Aug 29	-	PM2.5	24-Hour	29 µg/m3	31.5 µg/m3	4.2 km/hr	138° (SE)	418928
Aug 31	5	PM2.5	1-Hour	80 µg/m3	102.7 µg/m3	7.6 km/hr	319° (NW)	418928
Aug 31	6	PM2.5	1-Hour	80 µg/m3	91.2 µg/m3	8.9 km/hr	313° (NW)	418928
Aug 31	7	PM2.5	1-Hour	80 µg/m3	101.6 µg/m3	10.4 km/hr	320° (NW)	418928
Aug 31	8	PM2.5	1-Hour	80 µg/m3	98.8 µg/m3	10.3 km/hr	324° (NW)	418928
Aug 31	9	PM2.5	1-Hour	80 µg/m3	96.3 µg/m3	9.3 km/hr	318° (NW)	418928
Aug 31	10	PM2.5	1-Hour	80 µg/m3	91.1 µg/m3	10.6 km/hr	320° (NW)	418928
Aug 31	11	PM2.5	1-Hour	80 µg/m3	102.5 µg/m3	9.8 km/hr	319° (NW)	418928
Aug 31	16	PM2.5	1-Hour	80 µg/m3	83.8 µg/m3	9.7 km/hr	297° (WNW)	418928
Aug 31	-	PM2.5	24-Hour	29 µg/m3	64.2 µg/m3	7.3 km/hr	310° (NW)	418928

The cause for the exceedance of the PM2.5 objective and guidelilne was due to wildfire smoke.

Timeseries Chart of Hourly Average for the month of Aug 2023 - Lac La Biche Station



TABLES AND CHARTS

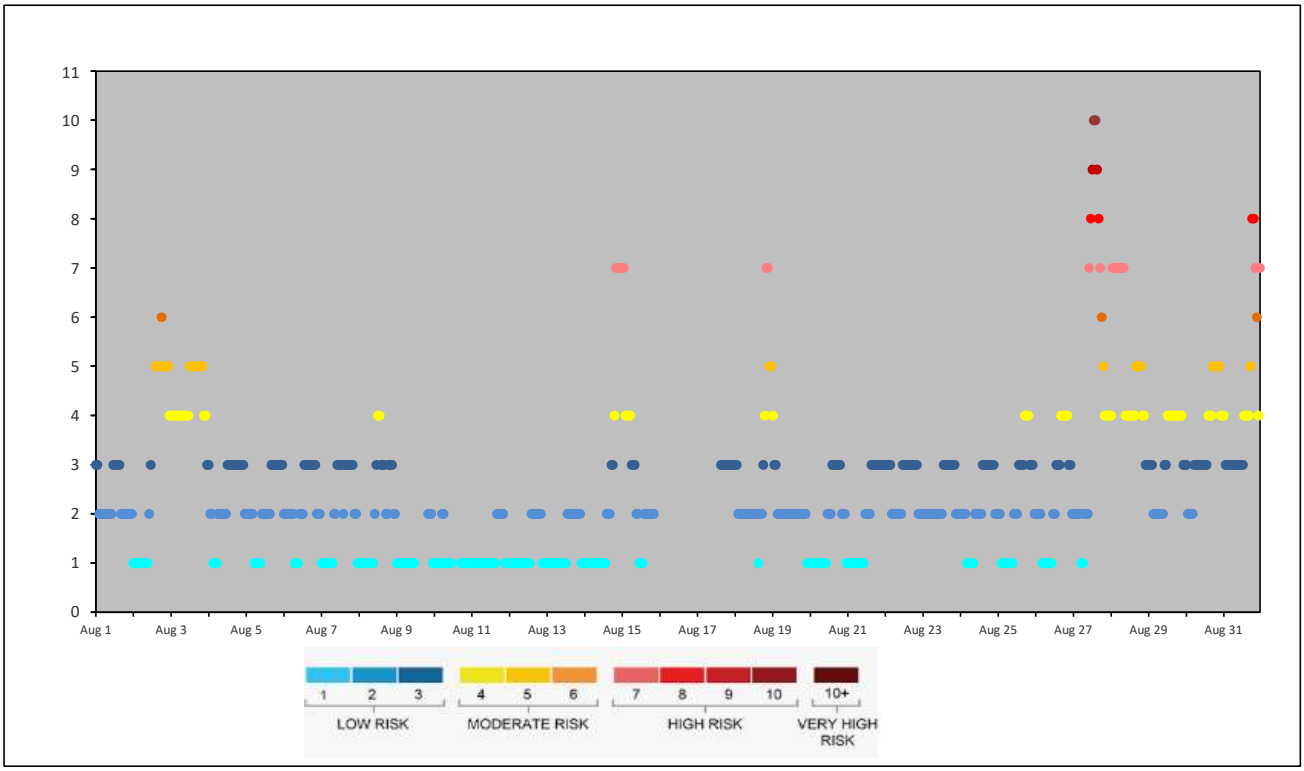
COLD LAKE SOUTH STATION

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - August 2023

AIR QUALITY HEALTH INDEX

Day	Hourly Period Starting at (MST)																							
	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	3	2	2	2	2	2	2	2	2	2	3	3	3	3	3	2	2	2	2	2	2	2	2
Aug 2	1	1	1	1	1	1	1	1	1	1	2	3			5	5	5	5	6	5	5	5	5	4
Aug 3	4	4	4	4	4	4	4	4	4	4	4	4	5	5	5	5	5	5	5	5	5	4	4	3
Aug 4	3	2	2	1	1	1	2	2	2	2	2	2	3	3	3	3	3	3	3	3	3	3	3	2
Aug 5	2	2	2	2	2	1	1	1	1	1	2	2	2	2	2	2	3	3	3	3	3	3	3	3
Aug 6	2	2	2	2	2	2	2	1	1	1	2	2	2	3	3	3	3	3	3	3	3	2	2	1
Aug 7	1	1	1	1	1	1	1	1	2	2	3	3	3	3	2	3	3	3	3	3	3	2	2	1
Aug 8	1	1	1	1	1	1	1	1	1	1	2	3	4	4	3	3	3	2	2	3	3	3	2	2
Aug 9	1	1	1	1	1	1	1	1	1	1	1	1									2	2	2	1
Aug 10	1	1	1	1	1	2	2	1	1	1	1	1						1	1	1	1	1	1	1
Aug 11	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	1	1	1
Aug 12	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	1	1	1
Aug 13	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	1	1
Aug 14	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	3	3	4	7	7	7	7
Aug 15	7	7	4	4	4	4	3	3	3	2	2	1	1	1	2	2	2	2	2	2	2			
Aug 16																								
Aug 17																3	3	3	3	3	3	3	3	3
Aug 18	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	1	2	2	3	4	7	7	5	5
Aug 19	4	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1
Aug 20	1	1	1	1	1	1	1	1	1	1	1	2	2	2	3	3	3	3	3	3	2	2	2	1
Aug 21	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	3	3	3	3	3	3	3	3	3
Aug 22	3	3	3	3	2	2	2	2	2	2	2	3	3	3	3	3	3	3	3	3	3	2	2	2
Aug 23	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3	3	3	3	2	2	2
Aug 24	2	2	2	2	1	1	1	1	1	2	2	2	2	2	3	3	3	3	3	3	3	3	2	2
Aug 25	2	2	1	1	1	1	1	1	1	1	2	2	2	3	3	3	3	4	4	4	3	3	3	2
Aug 26	2	2	2	2	1	1	1	1	1	1	1	2	2	3	3	3	4	4	4	4	4	3	3	2
Aug 27	2	2	2	2	2	1	1	2	2	2	7	8	9	10	10	9	8	7	6	5	4	4	4	4
Aug 28	4	7	7	7	7	7	7	7	7	4	4	4	4	4	4	4	5	5	5	5	4	4	3	3
Aug 29	3	3	3	2	2	2	2	2	2	2	3	3	4	4	4	4	4	4	4	4	4	4	3	3
Aug 30	3	2	2	2	2	3	3	3	3	3	3	3	3	3	4	4	4	5	5	5	5	5	4	4
Aug 31	4	3	3	3	3	3	3	3	3	3	3	3	3	4	4	4	4	5	8	8	7	6	4	7



Lakeland Industry & Community Association

Cold Lake South Station - August 2023

Summary of Hourly Averages

SULPHUR DIOXIDE (SO_2) in ppb

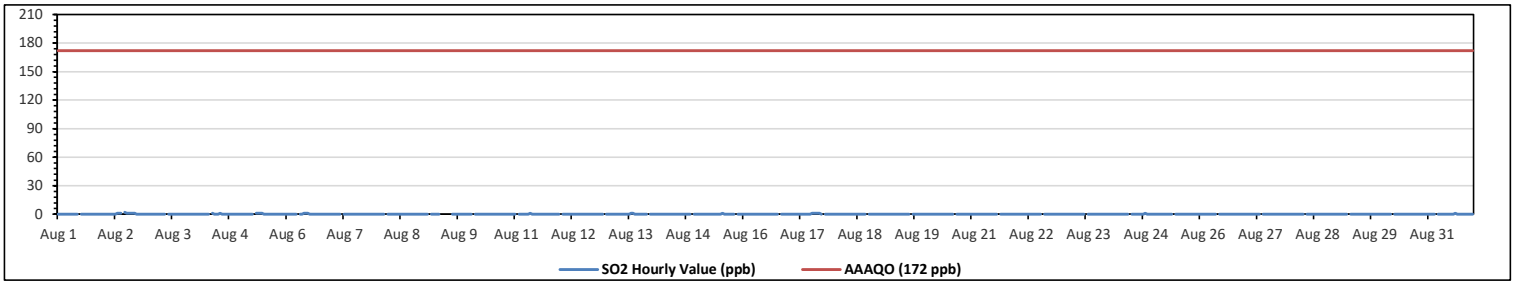
Alberta Ambient Air Quality Objectives (AAAQO): 1-Hour 172 ppb, 24-Hour 48 ppb, 30-Day 11 ppb

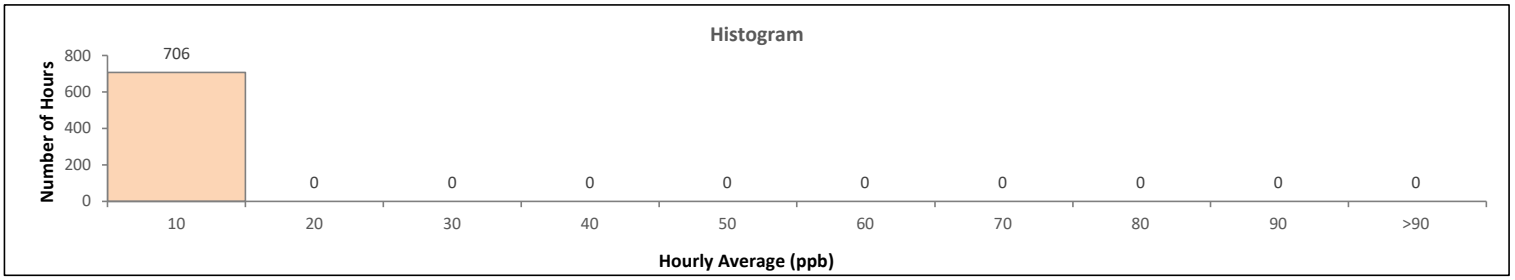
Number of 1-Hour Exceedances:	0	Number of 24-Hour Exceedances:	0	30-Day Exceedence:	0	
Maximum Hourly Value:	2	ppb	on Aug 2 at hr 11	Hours in Service:	744	
Maximum Daily Value:	0.4	ppb	on Aug 2	Hours of Data:	706	
Minimum Hourly Value:	0	ppb	on Aug 1 at hr 0	Hours of Missing Data:	0	
Minimum Daily Value:	0.0	ppb	on Aug 1	Hours of Calibration:	38	
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	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Aug 2	0	0	0	0	0	0	0	1	1	1	S	2	1	1	1	1	1	0	0	0	0	0	0	0	0	**2**	**0.4**
Aug 3	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	S	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0.1
Aug 5	0	0	0	0	0	0	0	S	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2
Aug 6	0	0	0	0	0	0	S	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1
Aug 7	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
Aug 8	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	S	0	0	0	0	0	C	C	C	C	C	C	0	0	0	0	0	0	0	0	0	0	0	NA
Aug 10	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
Aug 11	0	S	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0
Aug 12	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0.0
Aug 13	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	S	0	0	1	0.1
Aug 14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0.0
Aug 15	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	S	0	0	0	0	1	0.0
Aug 16	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
Aug 17	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	S	0	0	0	0	0	0	1	0.2
Aug 18	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
Aug 19	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
Aug 20	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	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	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	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	S	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0.0
Aug 25	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	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	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	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	S	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	S	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	S	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0.0
Diurnal Maximum	0	0	0	0	0	0	0	1	1	1	1	2	1	1	1	1	1	0	0	1	0	0	0	0			
Diurnal Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	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	ND	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.



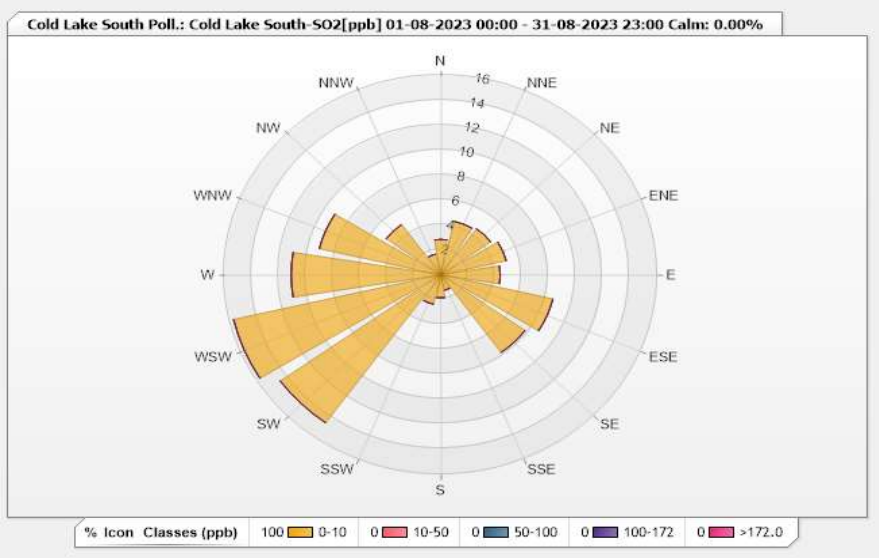


Station: Cold Lake South Poll.: Cold Lake South-SO2[ppb] Monthly: 08-2023

Type: Pollution Rose
Direction: Blowing From (Wind Frequency)
Time Base: 1 - Hour

Calm: 0.00% Valid Data: 94.89% Calm Avg: 0.00 [ppm]

Direction	0-10	10-50	50-100	100-172	>172.0	Total
N	2.83	0	0	0	0	2.83
NNE	4.39	0	0	0	0	4.39
NE	4.53	0	0	0	0	4.53
ENE	4.96	0	0	0	0	4.96
E	4.39	0	0	0	0	4.39
ESE	8.5	0	0	0	0	8.5
SE	7.65	0	0	0	0	7.65
SSE	1.27	0	0	0	0	1.27
S	1.84	0	0	0	0	1.84
SSW	2.41	0	0	0	0	2.41
SW	14.59	0	0	0	0	14.59
WSW	15.72	0	0	0	0	15.72
W	11.05	0	0	0	0	11.05
WNW	9.21	0	0	0	0	9.21
NW	4.96	0	0	0	0	4.96
NNW	1.7	0	0	0	0	1.7
Summary	100	0	0	0	0	100



Lakeland Industry & Community Association

Cold Lake South Station - August 2023

Summary of Hourly Averages

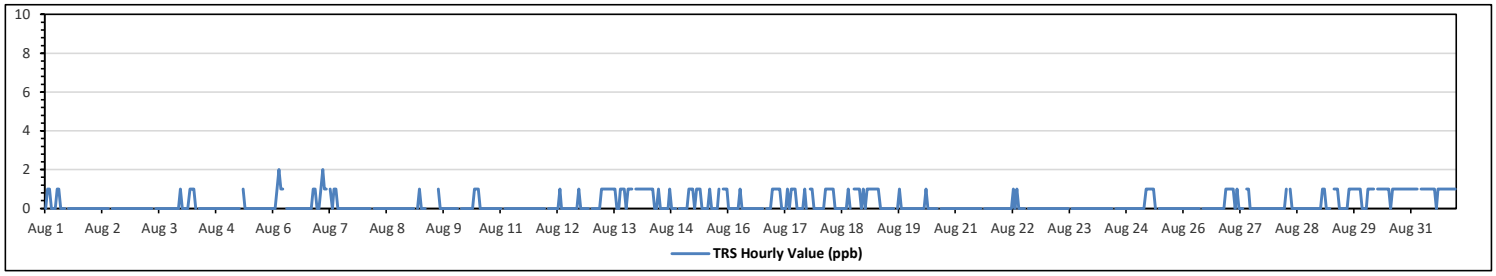
TOTAL REDUCED SULPHUR (TRS) in ppb

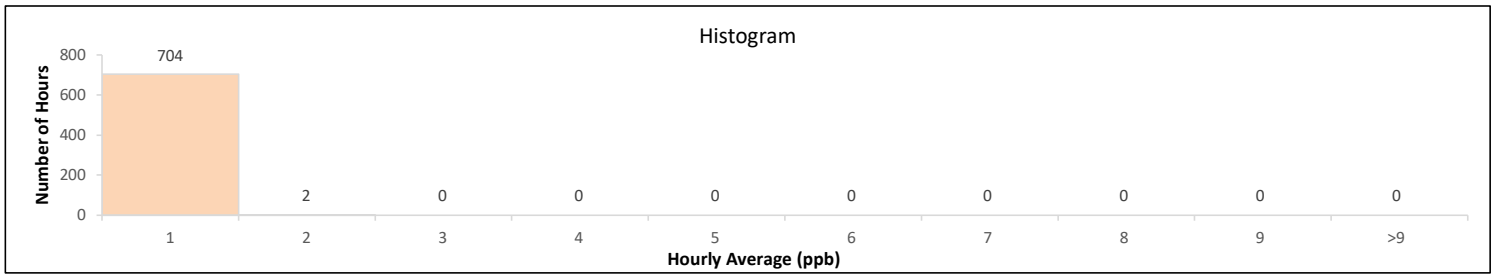
Maximum Hourly Value:	2	ppb	on Aug 6 at hr 3	Hours in Service:	744	
Maximum Daily Value:	1.0	ppb	on Aug 31	Hours of Data:	706	
Minimum Hourly Value:	0	ppb	on Aug 1 at hr 0	Hours of Missing Data:	0	
Minimum Daily Value:	0.0	ppb	on Aug 2	Hours of Calibration:	38	
Monthly Average:	0.2	ppb		Operational Uptime:	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	0	1	1	0	0	0	1	1	0	0	0	S	0	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	S	0	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	S	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0.0
Aug 4	0	0	0	0	1	1	1	0	S	0	0	0	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	S	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0
Aug 6	0	0	1	2	1	1	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	0.3
Aug 7	0	1	2	1	1	S	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.3
Aug 8	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	S	0	1	0	0	0	C	C	C	C	C	C	1	0	0	0	0	0	0	0	0	0	1	NA
Aug 10	0	0	S	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1
Aug 11	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	S	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	S	0	1	0.1
Aug 13	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0	1	1	1	0	1	1	1	S	1	0	1	0.7
Aug 14	1	1	1	1	1	1	1	1	1	0	0	1	0	0	0	0	0	1	0	0	0	S	0	0	0	1	0.5
Aug 15	0	0	0	1	1	1	0	1	1	1	0	0	0	0	1	0	0	0	0	1	S	1	1	1	0	1	0.5
Aug 16	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	1	0	1	0.1
Aug 17	1	1	1	1	0	0	0	1	0	1	1	1	0	0	0	0	1	0	S	1	1	0	0	0	0	1	0.5
Aug 18	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	1	0	S	1	1	1	0	0	1	0	1	0.5
Aug 19	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	S	0	1	0	0	0	0	0	0	1	0.3
Aug 20	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	1	0.0
Aug 21	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	1	0	1	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	1	0.1
Aug 23	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	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Aug 25	0	0	0	0	1	1	1	1	1	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2
Aug 26	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0.1
Aug 27	1	1	1	0	1	0	0	0	S	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.3
Aug 28	0	0	0	0	0	0	1	S	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1
Aug 29	0	1	1	0	0	0	S	1	1	1	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0	1	0.5
Aug 30	0	1	1	1	1	S	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	0	1	0.9
Aug 31	1	1	1	1	S	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	0	1	1.0
Diurnal Maximum	1	1	2	2	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1			
Diurnal Average	0.1	0.3	0.4	0.3	0.3	0.3	0.4	0.4	0.4	0.3	0.2	0.2	0.1	0.0	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	ND	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.



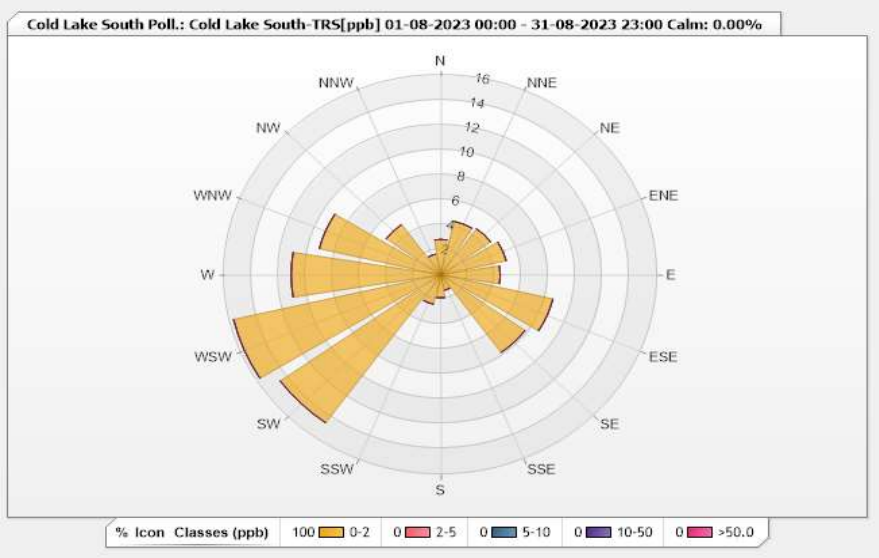


Station: Cold Lake South Poll.: Cold Lake South-TRS[ppb] Monthly: 08-2023

Type: Pollution Rose
Direction: Blowing From (Wind Frequency)
Time Base: 1 - Hour

Calm: 0.00% Valid Data: 94.89% Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-50	>50.0	Total
N	2.83	0	0	0	0	2.83
NNE	4.39	0	0	0	0	4.39
NE	4.53	0	0	0	0	4.53
ENE	4.96	0	0	0	0	4.96
E	4.39	0	0	0	0	4.39
ESE	8.5	0	0	0	0	8.5
SE	7.65	0	0	0	0	7.65
SSE	1.27	0	0	0	0	1.27
S	1.84	0	0	0	0	1.84
SSW	2.41	0	0	0	0	2.41
SW	14.59	0	0	0	0	14.59
WSW	15.72	0	0	0	0	15.72
W	11.05	0	0	0	0	11.05
WNW	9.21	0	0	0	0	9.21
NW	4.96	0	0	0	0	4.96
NNW	1.7	0	0	0	0	1.7
Summary	100	0	0	0	0	100



Lakeland Industry & Community Association

Cold Lake South Station - August 2023

Summary of Hourly Averages

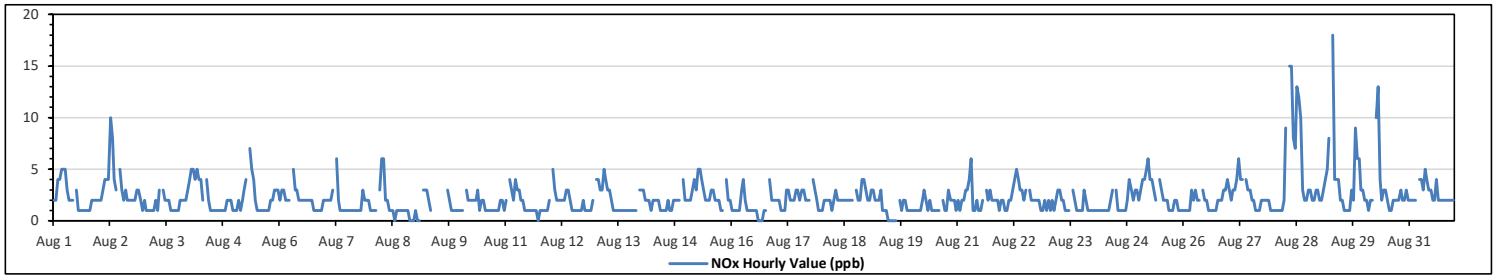
OXIDES OF NITROGEN (NOx) in ppb

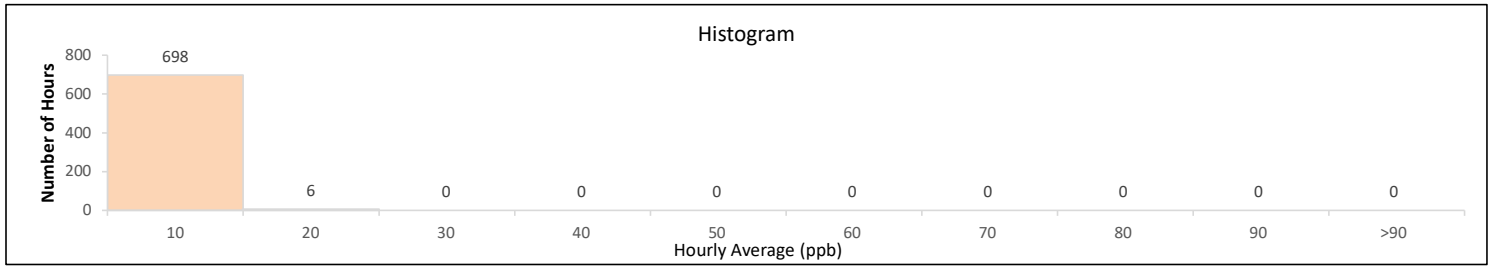
Maximum Hourly Value:	18	ppb	on Aug 29 at hr 7	Hours in Service:	744
Maximum Daily Value:	5.2	ppb	on Aug 28	Hours of Data:	704
Minimum Hourly Value:	0	ppb	on Aug 8 at hr 13	Hours of Missing Data:	0
Minimum Daily Value:	1.4	ppb	on Aug 16	Hours of Calibration:	40
Monthly Average:	2.2	ppb		Operational Uptime:	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	4	4	5	5	5	3	2	2	2	S	3	1	1	1	1	1	1	1	2	2	2	2	1	5	2.3
Aug 2	2	2	3	4	4	4	10	8	4	3	S	5	3	2	3	2	2	2	2	2	3	3	2	1	1	10	3.3
Aug 3	2	1	1	1	1	1	2	1	3	S	3	2	2	2	1	1	1	1	1	2	2	2	2	3	1	3	1.7
Aug 4	4	5	5	4	5	4	4	2	S	4	2	1	1	1	1	1	1	1	1	1	2	2	2	1	1	5	2.4
Aug 5	1	1	2	1	2	3	4	S	7	5	4	2	1	1	1	1	1	1	1	2	2	3	3	3	1	7	2.3
Aug 6	2	3	3	2	2	2	S	5	3	3	2	2	2	2	2	2	2	2	1	1	1	1	1	2	1	5	2.1
Aug 7	2	2	2	2	3	S	6	2	1	1	1	1	1	1	1	1	1	1	1	1	3	2	2	2	1	6	1.7
Aug 8	1	1	1	1	S	3	6	6	2	2	1	1	1	0	1	1	1	1	1	1	1	0	0	0	**0**	6	1.4
Aug 9	1	0	0	S	3	3	3	2	1	C	C	C	C	C	C	C	C	3	2	1	1	1	1	1	**0**	3	NA
Aug 10	1	1	S	3	2	2	2	2	2	3	1	2	2	1	1	1	1	1	1	1	1	2	2	1	1	3	1.6
Aug 11	2	S	4	3	2	4	3	3	2	2	1	1	1	1	1	1	1	0	1	1	1	1	1	2	**0**	4	1.7
Aug 12	S	5	3	2	2	2	2	2	3	3	2	1	1	1	1	1	1	2	1	1	1	1	2	S	1	5	1.8
Aug 13	4	4	3	3	5	4	3	3	2	1	1	1	1	1	1	1	1	1	1	1	1	1	S	3	1	5	2.0
Aug 14	3	3	2	2	2	1	2	2	2	2	1	1	1	1	2	1	1	2	2	2	2	S	4	2	1	4	1.9
Aug 15	2	2	2	3	4	3	5	5	4	3	2	2	2	3	3	2	2	2	1	1	S	4	2	2	1	5	2.7
Aug 16	1	1	1	1	1	3	4	2	1	1	1	1	1	1	0	0	0	1	1	S	4	2	2	2	**0**	4	**1.4**
Aug 17	2	2	1	1	1	3	3	2	2	2	3	3	2	3	3	2	2	2	S	4	3	2	1	1	1	4	2.2
Aug 18	1	2	2	2	2	1	2	3	2	2	2	2	2	2	2	2	2	S	3	2	2	4	4	3	1	4	2.2
Aug 19	2	2	3	3	2	2	2	3	1	1	1	0	0	0	0	0	S	2	1	1	2	2	1	1	**0**	3	**1.4**
Aug 20	1	1	1	1	1	2	3	2	1	2	1	1	1	1	1	S	2	1	1	3	2	2	2	1	1	3	1.5
Aug 21	2	1	2	2	3	3	4	6	1	1	2	1	1	2	S	3	2	3	2	2	2	2	1	2	1	6	2.2
Aug 22	2	1	1	2	2	3	4	5	4	3	3	2	3	S	3	2	2	2	2	2	1	1	2	1	1	5	2.3
Aug 23	2	1	2	1	2	3	3	2	2	1	1	1	S	3	2	1	1	1	1	3	2	1	1	1	1	3	1.7
Aug 24	1	1	1	1	1	1	1	1	1	2	3	S	3	1	1	1	1	1	2	4	3	2	3	3	1	4	1.7
Aug 25	2	3	4	4	5	6	4	4	3	2	S	4	3	2	2	2	1	1	1	2	2	1	1	1	1	6	2.6
Aug 26	1	1	1	1	3	2	3	2	2	S	3	2	2	1	1	1	1	1	2	2	2	3	3	4	1	4	1.9
Aug 27	3	2	3	3	4	6	4	4	S	4	3	3	2	2	1	1	1	2	2	2	2	2	1	1	1	6	2.5
Aug 28	1	1	1	1	1	2	9	S	15	15	8	7	13	12	10	3	2	2	3	3	2	2	3	3	1	15	**5.2**
Aug 29	2	2	3	4	5	8	S	**18**	4	4	4	2	2	1	1	1	1	3	2	9	6	6	3	3	1	**18**	4.1
Aug 30	2	2	1	2	2	S	10	13	4	2	3	3	2	1	1	2	2	2	2	3	2	2	3	2	1	13	3.0
Aug 31	2	2	2	2	S	4	4	3	5	4	3	3	2	2	4	2	2	2	2	2	2	2	2	2	2	5	2.6
Diurnal Maximum	4	5	5	4	5	8	10	18	15	15	8	7	13	12	10	3	2	3	3	9	6	6	4	4			
Diurnal Average	1.9	1.9	2.1	2.2	2.7	3.1	4.0	4.0	3.0	2.9	2.3	2.0	2.1	1.8	1.8	1.4	1.3	1.6	1.5	2.1	2.1	2.0	2.0	1.9			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	ND	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.



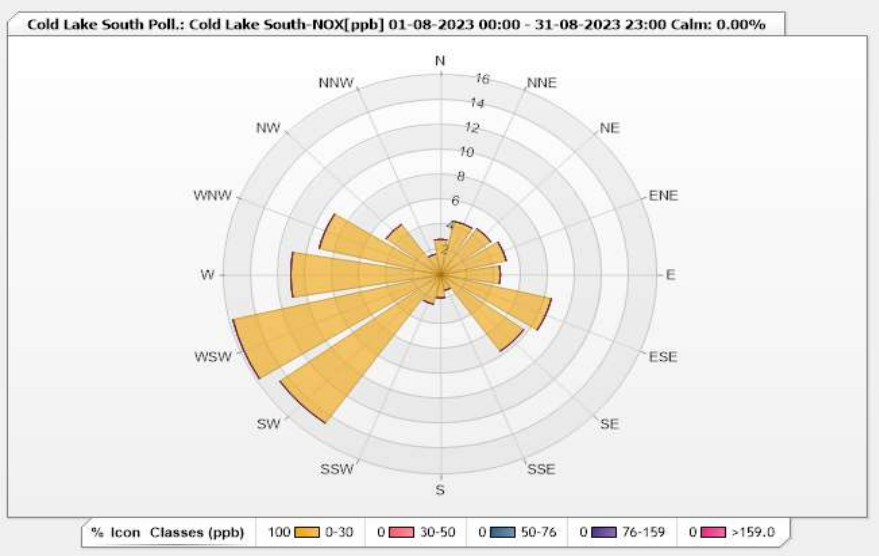


Station: Cold Lake South Poll.: Cold Lake South-NOX[ppb] Monthly: 08-2023

Type: Pollution Rose
Direction: Blowing From (Wind Frequency)
Time Base: 1 - Hour

Calm: 0.00% Valid Data: 94.62% Calm Avg: 0.00 [ppm]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	2.84	0	0	0	0	2.84
NNE	4.4	0	0	0	0	4.4
NE	4.55	0	0	0	0	4.55
ENE	4.97	0	0	0	0	4.97
E	4.4	0	0	0	0	4.4
ESE	8.38	0	0	0	0	8.38
SE	7.53	0	0	0	0	7.53
SSE	1.28	0	0	0	0	1.28
S	1.85	0	0	0	0	1.85
SSW	2.41	0	0	0	0	2.41
SW	14.63	0	0	0	0	14.63
WSW	15.77	0	0	0	0	15.77
W	11.08	0	0	0	0	11.08
WNW	9.23	0	0	0	0	9.23
NW	4.97	0	0	0	0	4.97
NNW	1.7	0	0	0	0	1.7
Summary	100	0	0	0	0	100



Lakeland Industry & Community Association

Cold Lake South Station - August 2023

Summary of Hourly Averages

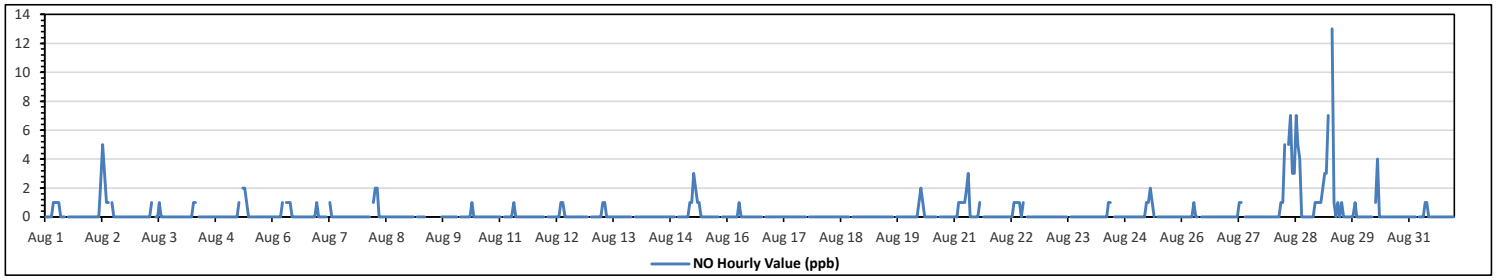
NITRIC OXIDE (NO) in ppb

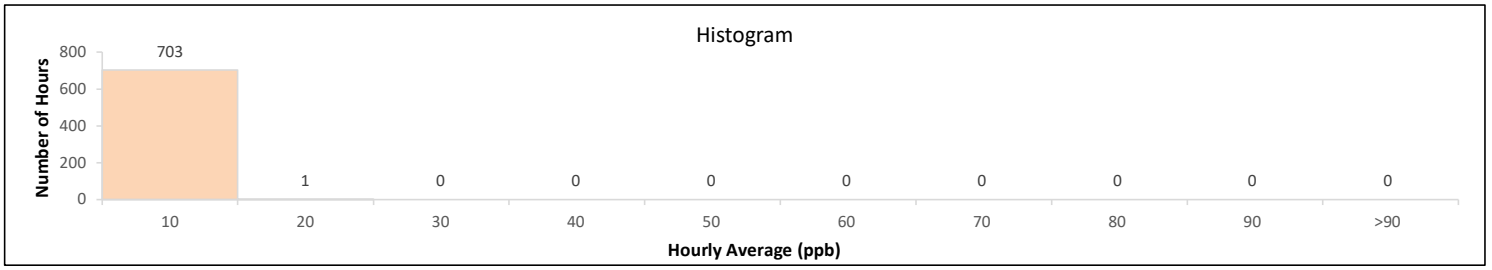
Maximum Hourly Value:	13	ppb	on Aug 29 at hr 7	Hours in Service:	744
Maximum Daily Value:	1.9	ppb	on Aug 28	Hours of Data:	704
Minimum Hourly Value:	0	ppb	on Aug 1 at hr 0	Hours of Missing Data:	0
Minimum Daily Value:	0.0	ppb	on Aug 14	Hours of Calibration:	40
Monthly Average:	0.2	ppb		Operational Uptime:	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	0	0	0	0	1	1	1	1	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2
Aug 2	0	0	0	0	0	2	5	3	1	1	S	1	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0.6
Aug 3	0	0	0	0	0	0	0	0	1	S	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1
Aug 4	0	0	0	0	0	0	1	1	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1
Aug 5	0	0	0	0	0	0	1	S	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.3
Aug 6	0	0	0	0	0	1	S	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0.2
Aug 7	0	0	0	0	0	S	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0
Aug 8	0	0	0	0	S	1	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.2
Aug 9	0	0	0	S	0	0	0	0	0	C	C	C	C	C	C	C	C	0	0	0	0	0	0	0	0	0	NA
Aug 10	0	0	S	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0
Aug 11	0	S	0	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 12	S	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	1	0.1
Aug 13	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	1	0.1
Aug 14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0.0
Aug 15	0	0	0	0	1	1	3	2	1	1	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	3	0.4
Aug 16	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 17	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	S	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	S	0	0	0	0	0	0	0	0	0	0.0
Aug 20	0	0	0	0	0	1	2	1	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	2	0.2
Aug 21	0	0	1	1	1	1	2	3	0	0	0	0	0	1	S	0	0	0	0	0	0	0	0	0	0	3	0.4
Aug 22	0	0	0	0	0	0	0	1	1	1	1	0	1	S	0	0	0	0	0	0	0	0	0	0	0	1	0.2
Aug 23	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	1	1	S	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1
Aug 25	0	0	0	0	0	1	1	2	1	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.2
Aug 26	0	0	0	0	0	0	1	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0
Aug 27	0	0	0	0	0	0	1	1	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1
Aug 28	0	0	0	0	1	1	5	S	5	7	3	3	7	5	4	0	0	0	0	0	0	0	1	1	0	7	**1.9**
Aug 29	1	1	2	3	3	7	S	**13**	1	0	1	0	1	0	0	0	0	0	0	1	0	0	0	0	0	**13**	1.5
Aug 30	0	0	0	0	0	S	1	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0.2
Aug 31	0	0	0	0	S	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1
Diurnal Maximum	1	1	2	3	3	7	5	13	5	7	3	3	7	5	4	0	0	0	0	1	0	0	1	1			
Diurnal Average	0.0	0.0	0.1	0.1	0.2	0.6	1.0	1.3	0.6	0.6	0.3	0.1	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	ND	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.



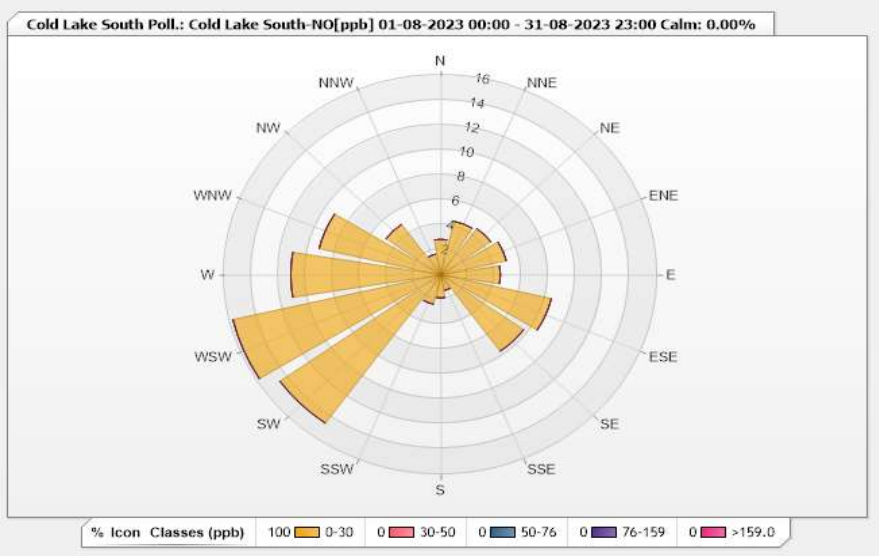


Station: Cold Lake South Poll.: Cold Lake South-NO[ppb] Monthly: 08-2023

Type: Pollution Rose
Direction: Blowing From (Wind Frequency)
Time Base: 1 - Hour

Calm: 0.00% Valid Data: 94.62% Calm Avg: 0.00 [ppm]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	2.84	0	0	0	0	2.84
NNE	4.4	0	0	0	0	4.4
NE	4.55	0	0	0	0	4.55
ENE	4.97	0	0	0	0	4.97
E	4.4	0	0	0	0	4.4
ESE	8.38	0	0	0	0	8.38
SE	7.53	0	0	0	0	7.53
SSE	1.28	0	0	0	0	1.28
S	1.85	0	0	0	0	1.85
SSW	2.41	0	0	0	0	2.41
SW	14.63	0	0	0	0	14.63
WSW	15.77	0	0	0	0	15.77
W	11.08	0	0	0	0	11.08
WNW	9.23	0	0	0	0	9.23
NW	4.97	0	0	0	0	4.97
NNW	1.7	0	0	0	0	1.7
Summary	100	0	0	0	0	100



Lakeland Industry & Community Association

Cold Lake South Station - August 2023

Summary of Hourly Averages

NITROGEN DIOXIDE (NO_2) in ppb

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

Number of 1-Hour Exceedances: 0

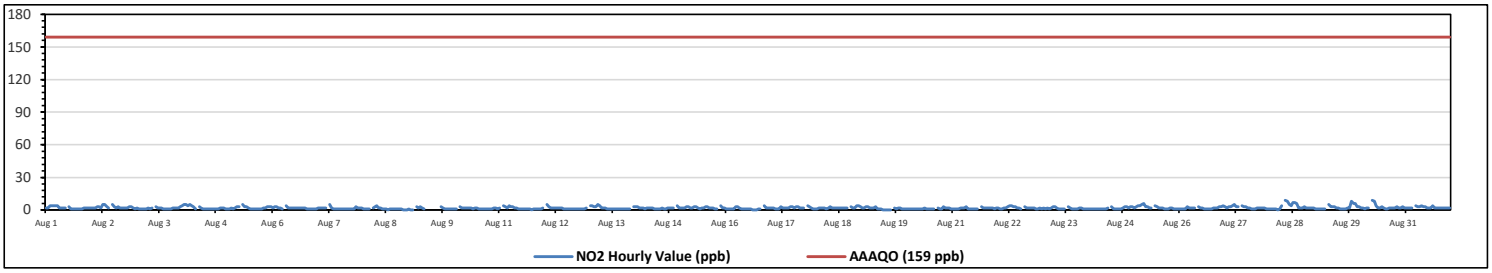
Maximum Hourly Value:	9	ppb	on Aug 28 at hr 8	Hours in Service:	744
Maximum Daily Value:	3.2	ppb	on Aug 28	Hours of Data:	704
Minimum Hourly Value:	0	ppb	on Aug 8 at hr 13	Hours of Missing Data:	0
Minimum Daily Value:	1.2	ppb	on Aug 8	Hours of Calibration:	40
Monthly Average:	2.0	ppb		Operational Uptime:	100.0

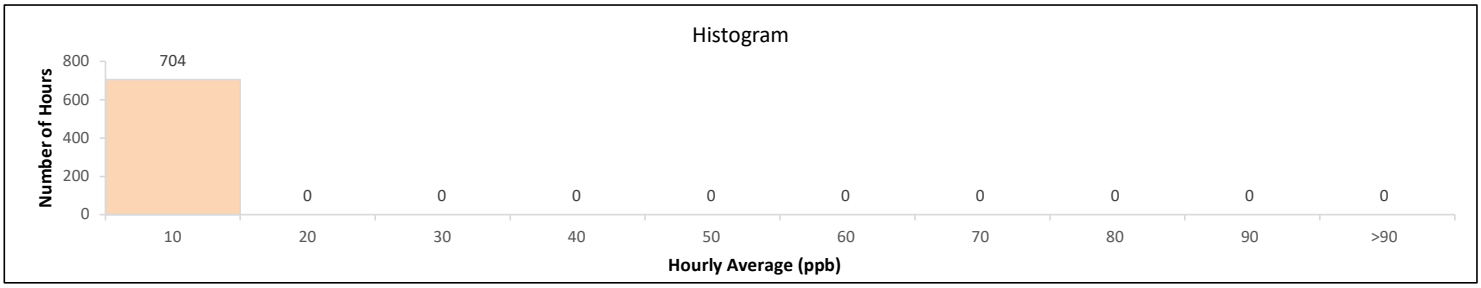
Day	Hourly Period Starting at (MST)																						Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Aug 1	2	2	4	4	4	4	4	2	2	2	2	S	3	1	1	1	1	1	1	1	2	2	2	2	1	4	2.2
Aug 2	2	2	2	3	3	2	5	5	3	2	S	5	3	2	3	2	2	2	2	2	3	3	2	1	1	5	2.7
Aug 3	2	1	1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

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	ND	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.



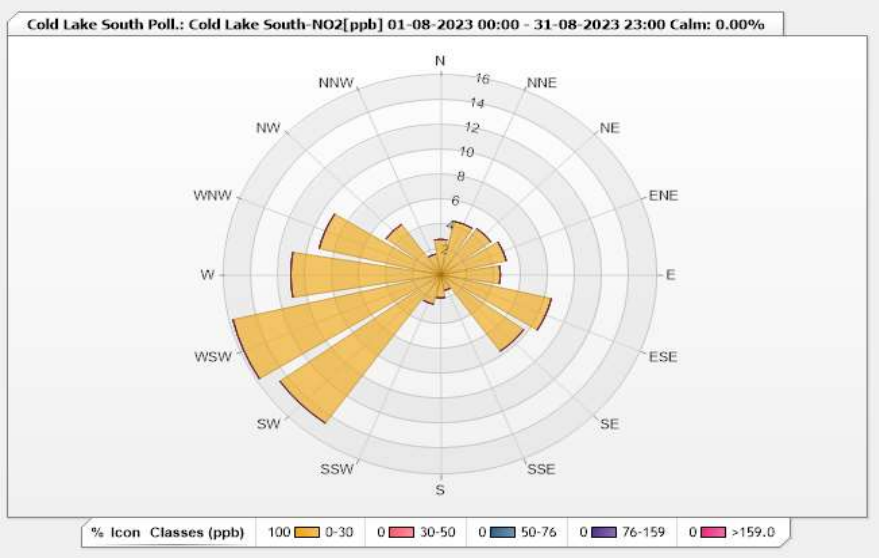


Station: Cold Lake South Poll.: Cold Lake South-NO2[ppb] Monthly: 08-2023

Type: Pollution Rose
Direction: Blowing From (Wind Frequency)
Time Base: 1 - Hour

Calm: 0.00% Valid Data: 94.62% Calm Avg: 0.00 [ppm]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	2.84	0	0	0	0	2.84
NNE	4.4	0	0	0	0	4.4
NE	4.55	0	0	0	0	4.55
ENE	4.97	0	0	0	0	4.97
E	4.4	0	0	0	0	4.4
ESE	8.38	0	0	0	0	8.38
SE	7.53	0	0	0	0	7.53
SSE	1.28	0	0	0	0	1.28
S	1.85	0	0	0	0	1.85
SSW	2.41	0	0	0	0	2.41
SW	14.63	0	0	0	0	14.63
WSW	15.77	0	0	0	0	15.77
W	11.08	0	0	0	0	11.08
WNW	9.23	0	0	0	0	9.23
NW	4.97	0	0	0	0	4.97
NNW	1.7	0	0	0	0	1.7
Summary	100	0	0	0	0	100



Lakeland Industry & Community Association

Cold Lake South Station - August 2023

Summary of Hourly Averages

OZONE (O_3) in ppb

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

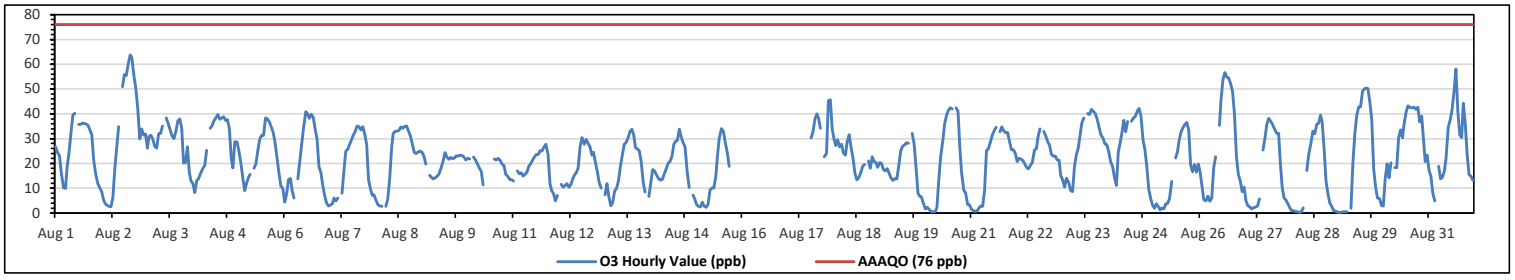
Number of 1-Hour Exceedances: 0

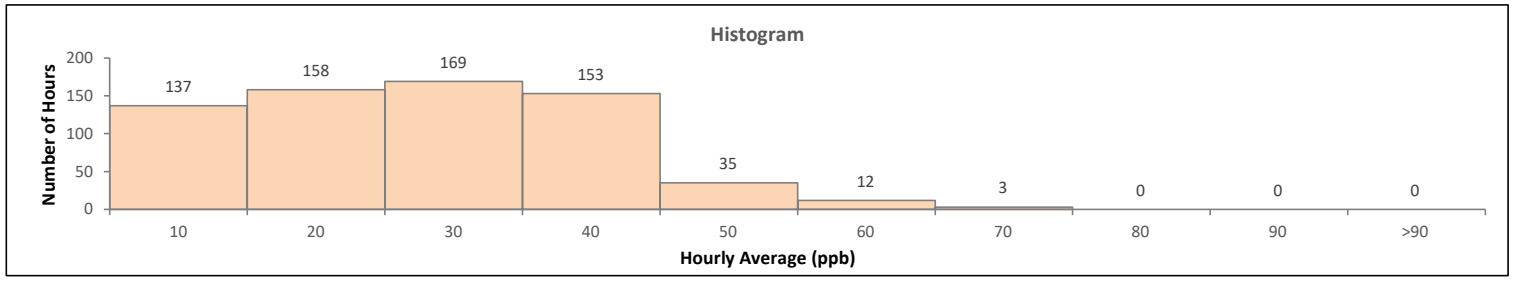
Maximum Hourly Value:	63.8	ppb	on Aug 2 at hr 15	Hours in Service:	744
Maximum Daily Value:	31.9	ppb	on Aug 2	Hours of Data:	667
Minimum Hourly Value:	0.2	ppb	on Aug 28 at hr 4	Hours of Missing Data:	42
Minimum Daily Value:	14.2	ppb	on Aug 15	Hours of Calibration:	35
Monthly Average:	22.3	ppb		Operational Uptime:	94.4

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Aug 1	26.7	24.3	23.2	15.9	10.2	9.9	18.5	24.3	32.3	39.5	40.3	S	35.8	35.8	36.3	36.2	35.9	35.2	33.5	31.7	21.4	15.9	11.8	10.2	9.9	40.3	26.3
Aug 2	8.6	5.3	3.6	3.1	2.6	2.5	6.2	17.8	26.4	34.8	S	51	55.8	55.5	60.1	**63.8**	62.8	55.1	50	41.7	29.9	34	31.5	31.9	2.5	**63.8**	**31.9**
Aug 3	26.2	31	31.3	29.7	26.8	26.2	32	32.1	35	S	38.3	36	33.6	31.1	30.1	33	37.1	38	34.3	20.1	20.4	26.7	16.2	13	13.0	38.3	29.5
Aug 4	11.8	8.2	13	13.9	16	17.9	19.3	25.3	S	34.2	35.2	37.3	38.5	39.7	37.8	38.3	38.8	37.4	37.6	34.1	21.9	18.2	28.8	28.6	8.2	39.7	27.5
Aug 5	24.9	20.1	14.2	9	12.1	14.4	15.6	S	18	19.8	25.3	29.8	31.4	31.3	38.4	38	36.7	34.6	32.4	28.2	22.2	16.1	10.9	10	9.0	38.4	23.2
Aug 6	4.4	7.8	13.5	13.9	9.1	6.1	S	13.7	20.8	27.7	34.5	40.8	39.8	38.2	39.9	38.7	33.9	30	18.7	16.4	11	6.9	4	2.8	2.8	40.8	20.5
Aug 7	3.2	3.7	6	4.8	6.1	S	8	17.1	25	25.7	27.7	29.3	31.3	32.7	35.1	34.8	33.5	34.8	31.9	27.7	13.3	9.7	7	7.3	3.2	35.1	19.8
Aug 8	4.9	3.2	2.8	2.7	S	2.7	5.6	13.9	26.1	32.1	32.8	33	33.3	34.7	34.2	34.9	35.1	33	30.9	27.7	24.3	24	24.6	25	2.7	35.1	22.7
Aug 9	24.5	22.9	19.7	S	15.2	14.3	13.8	14.2	14.9	15.7	17.9	20.5	24.4	22.5	21.6	22.4	21.9	22.2	23.1	22.9	23.3	23.2	22.5	21.5	13.8	24.5	20.2
Aug 10	22	21.7	S	22.6	21.6	20.1	18.2	16.9	11.3	C	C	C	C	C	21.8	21.4	22	21.3	19.7	19.2	15.4	14.8	13.5	13.3	11.3	22.6	18.7
Aug 11	12.9	S	17.1	15.8	16.2	15	15.5	16.5	19	20	21.4	22.6	23.7	23.7	25.1	25	26.6	27.8	23.6	11.8	9.1	7.8	4.9	7.1	4.9	27.8	17.7
Aug 12	S	11.6	10.5	11	11.9	10.4	11.3	13.7	15.4	16.3	18.2	26.7	30.4	27.8	29.7	28.1	26.7	23.4	24.5	20.4	16.7	12.1	10	S	10.0	30.4	18.5
Aug 13	7.3	11.8	6.6	2.9	4.3	8.8	9.9	13	18.9	23.4	27.7	28.5	30.2	32.9	33.8	31.2	26.4	25.8	25.1	20.7	12.6	8.5	S	6.7	2.9	33.8	18.1
Aug 14	12.3	17.5	16.9	15.3	13.9	13.2	13.5	15.7	17.8	19.9	20.7	22.8	27.8	29	29.3	33.8	30.7	28.3	26.7	16.2	10.3	S	7.2	5.8	5.8	33.8	19.3
Aug 15	3.5	2.7	2.4	4.4	2.6	2.3	3.4	9.2	10	10.2	14.6	22.5	30.2	34.1	32.9	28.2	24.3	18.8	X	X	X	X	X	X	2.3	34.1	**14.2**
Aug 16	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 17	X	X	X	X	X	X	X	X	X	NRM	NRM	NRM	30.3	32.8	38	40	38.4	34.2	S	22.7	24	45.2	45.7	33.8	22.7	45.7	NA
Aug 18	29.6	27.2	29.6	26.7	27.8	24.2	23.4	28.9	31.6	26.4	22	15.9	13.4	14.3	16.2	18.9	19.5	S	21	18	22.7	20.7	20.2	18.4	13.4	31.6	22.5
Aug 19	20.3	20	17.5	17	17.9	15.9	14	13.1	13.9	13.7	19.2	25	26.9	27.5	28.4	28.1	S	32.1	27.7	18.1	8	6.8	6.4	3.9	3.9	32.1	18.3
Aug 20	1.6	2.3	1.3	0.4	0.5	0.6	2.1	13.5	23	28.6	35.8	39.3	41.4	42.4	41.9	S	42.5	41	25.9	16.5	9.3	8	3.4	3.3	0.4	42.5	18.5
Aug 21	1.5	1	0.6	0.9	1.9	2.8	2.6	9	25.1	25.9	28.5	31.4	33.1	34.5	S	32.7	34.7	33.1	32.3	32.5	28.9	25.5	25.5	24.1	0.6	34.7	20.4
Aug 22	20.8	22	21.8	21.3	20	18.4	17.7	19.2	20.2	25.4	25.9	30.5	34	S	32.9	31.2	28.9	27.3	23.7	23	22.9	21.5	21.3	15.1	15.1	34.0	23.7
Aug 23	13.4	10.4	14	12.3	9.1	8.7	18.9	23.7	26.3	31	36.4	38.3	S	40.2	39.7	41.8	41	40.2	37.8	34.4	31.4	30.2	27.9	27.6	8.7	41.8	27.6
Aug 24	24.7	20.6	18.8	14.4	11	24.8	27.9	32.1	37.4	32.7	36.9	S	37	38.4	38.9	41.3	42.2	38.9	29.7	25.7	18.8	9.6	5.9	3.2	3.2	42.2	26.6
Aug 25	1.9	3.7	2.5	1.2	2.1	1.7	3.6	3.9	5.8	12.8	S	22.1	24.7	29.3	32.6	34.4	35.7	36.5	33.4	19.4	16.6	19.5	16.5	19.7	1.2	36.5	16.5
Aug 26	16.2	10.5	5.4	4.9	6.8	4.7	6	18.1	22.7	S	35.3	45.7	53.9	56.6	54.9	54.4	52.1	48.9	40	22.9	15.5	13	8.6	10.5	4.7	56.6	26.4
Aug 27	4.8	2.9	2.4	1.7	2.2	2.4	2.8	5.6	S	25.4	30	35.8	38.2	37	35.8	34	32.2	32.1	20.7	10.4	6.1	5.1	3.7	2.1	1.7	38.2	16.2
Aug 28	0.9	0.9	0.6	0.5	0.2	0.4	2.1	S	17.2	23.6	28.2	33	32	35.7	36.3	39.5	36.6	26.1	12.9	7.8	4	2.6	0.9	0.7	**0.2**	39.5	14.9
Aug 29	0.3	0.2	0.3	0.4	0.4	0.5	S	2	20	31.8	39.3	42.8	42.9	49	49.9	50.4	50.2	45	37.6	17.7	10.5	6	5.8	3	**0.2**	50.4	22.0
Aug 30	2.8	13.9	19.8	14.2	20.2	S	18.3	18.3	30.4	33.6	30.3	35.9	40.5	43.2	42.6	42.4	42.7	41.8	42.7	36.7	39.1	30.8	20.8	23.4	2.8	43.2	29.8
Aug 31	17.3	14.7	7.8	4.8	S	18.8	13.7	14.5	17	21.9	34.5	37.5	41.6	49	58	40.9	31.5	30.4	44.2	36.5	23.8	15.4	14.8	13.2	4.8	58.0	26.2
Diurnal Maximum	29.6	31.0	31.3	29.7	27.8	26.2	32.0	32.1	37.4	39.5	40.3	51.0	55.8	56.6	60.1	63.8	62.8	55.1	50.0	41.7	39.1	45.2	45.7	33.8			
Diurnal Average	12.5	12.2	11.5	10.2	10.7	10.7	12.7	16.5	21.5	25.1	29.1	32.1	34.1	35.7	36.3	35.8	35.2	33.6	30.1	23.5	18.4	17.1	15.0	13.8			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	ND	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.



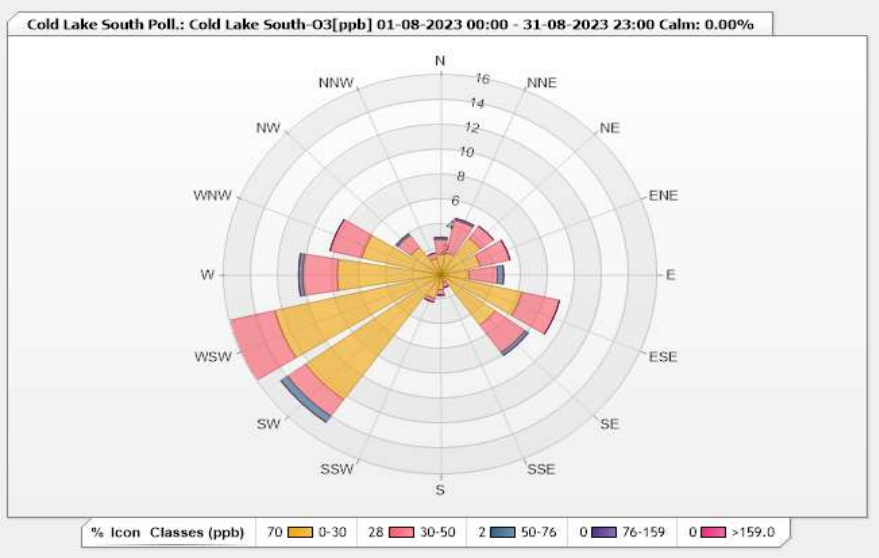


Station: Cold Lake South Poll.: Cold Lake South-O3[ppb] Monthly: 08-2023

Type: Pollution Rose
Direction: Blowing From (Wind Frequency)
Time Base: 1 - Hour

Calm: 0.00% Valid Data: 89.65% Calm Avg: 0.00 [ppm]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	1.65	1.2	0.15	0	0	3
NNE	1.8	2.7	0.15	0	0	4.65
NE	3.6	1.2	0	0	0	4.8
ENE	3	2.25	0	0	0	5.25
E	2.1	2.1	0.45	0	0	4.65
ESE	6.15	2.85	0	0	0	9
SE	4.95	2.7	0.3	0	0	7.95
SSE	0.6	0.45	0	0	0	1.05
S	1.2	0.45	0	0	0	1.65
SSW	1.95	0.3	0	0	0	2.25
SW	12.29	1.65	0.6	0	0	14.54
WSW	12.59	3.75	0.15	0	0	16.49
W	7.65	2.55	0.3	0	0	10.5
WNW	6	2.4	0	0	0	8.4
NW	2.7	1.2	0.15	0	0	4.05
NNW	1.35	0.45	0	0	0	1.8
Summary	69.58	28.2	2.25	0	0	100



Lakeland Industry & Community Association

Cold Lake South Station - August 2023

Summary of Hourly Averages

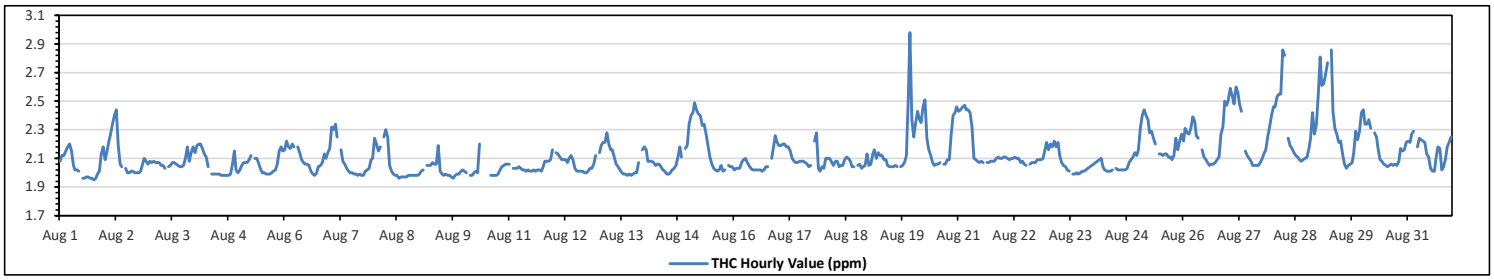
TOTAL HYDROCARBONS (THC) in ppm

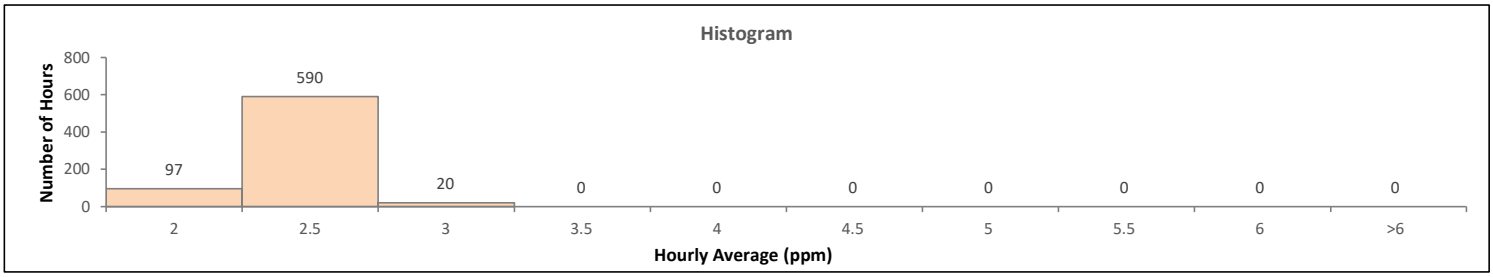
Maximum Hourly Value:	2.98	ppm	on Aug 19 at hr 22	Hours in Service:	744
Maximum Daily Value:	2.35	ppm	on Aug 29	Hours of Data:	707
Minimum Hourly Value:	1.95	ppm	on Aug 1 at hr 18	Hours of Missing Data:	0
Minimum Daily Value:	2.02	ppm	on Aug 9	Hours of Calibration:	37
Monthly Average:	2.12	ppm		Operational 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	2.08	2.12	2.12	2.15	2.18	2.20	2.15	2.05	2.02	2.02	2.01	S	1.96	1.96	1.97	1.97	1.96	1.96	1.95	1.96	1.99	2.01	2.13	2.18	1.95	2.20	2.05
Aug 2	2.09	2.15	2.22	2.27	2.34	2.40	2.44	2.19	2.06	2.04	S	2.03	2.00	2.00	2.01	2.01	2.00	2.00	2.00	2.01	2.06	2.10	2.08	2.06	2.00	2.44	2.11
Aug 3	2.08	2.07	2.08	2.07	2.07	2.07	2.05	2.05	2.03	S	2.04	2.05	2.07	2.07	2.06	2.05	2.04	2.04	2.05	2.10	2.18	2.08	2.14	2.18	2.03	2.18	2.07
Aug 4	2.14	2.19	2.20	2.20	2.17	2.13	2.11	2.04	S	1.99	1.99	1.99	1.99	1.99	1.98	1.98	1.98	1.98	1.98	1.99	2.06	2.15	2.02	2.00	1.98	2.20	2.05
Aug 5	2.02	2.05	2.07	2.07	2.07	2.09	2.12	S	2.10	2.10	2.07	2.03	2.00	2.00	1.99	1.99	1.99	2.00	2.01	2.02	2.06	2.15	2.18	2.15	1.99	2.18	2.06
Aug 6	2.16	2.22	2.18	2.17	2.20	2.18	S	2.18	2.14	2.09	2.07	2.06	2.06	2.05	2.01	1.99	1.98	2.00	2.04	2.05	2.07	2.13	2.10	2.14	1.98	2.22	2.10
Aug 7	2.17	2.32	2.30	2.34	2.25	S	2.16	2.08	2.06	2.03	2.01	2.00	2.00	1.99	1.99	1.98	1.99	1.98	1.98	2.01	2.02	2.03	2.09	2.10	1.98	2.34	2.08
Aug 8	2.24	2.20	2.15	2.18	S	2.25	2.30	2.25	2.05	2.01	1.99	1.98	1.98	1.96	1.97	1.97	1.97	1.97	1.98	1.98	1.98	1.98	1.98	1.98	1.96	2.30	2.06
Aug 9	1.99	2.01	2.02	S	2.05	2.05	2.05	2.07	2.06	2.06	2.19	2.01	1.99	1.98	1.99	1.98	1.98	1.97	1.96	1.98	1.99	1.99	2.01	2.02	1.96	2.19	2.02
Aug 10	2.01	2.00	S	1.98	1.98	2.00	2.01	2.00	2.20	C	C	C	C	C	1.98	1.98	1.98	1.98	1.99	2.02	2.04	2.05	2.06	2.06	1.98	2.20	2.02
Aug 11	2.06	S	2.03	2.03	2.03	2.04	2.03	2.02	2.02	2.01	2.02	2.01	2.01	2.02	2.01	2.02	2.02	2.01	2.04	2.08	2.08	2.08	2.09	2.16	2.01	2.16	2.04
Aug 12	S	2.14	2.13	2.11	2.09	2.09	2.09	2.07	2.10	2.12	2.09	2.03	2.01	2.01	2.01	2.01	2.00	2.00	2.01	2.03	2.03	2.06	2.12	S	2.00	2.14	2.06
Aug 13	2.14	2.19	2.21	2.21	2.28	2.20	2.16	2.16	2.11	2.06	2.04	2.02	2.00	1.99	1.99	1.98	1.99	1.98	1.99	2.00	2.00	2.07	S	2.16	1.98	2.28	2.08
Aug 14	2.18	2.16	2.08	2.08	2.08	2.07	2.05	2.06	2.06	2.04	2.02	2.01	1.99	1.99	2.00	2.02	2.03	2.05	2.11	2.18	2.11	S	2.17	2.19	1.99	2.19	2.08
Aug 15	2.34	2.40	2.42	2.49	2.44	2.41	2.40	2.33	2.34	2.27	2.19	2.11	2.06	2.03	2.02	2.01	2.02	2.05	2.01	2.02	S	2.05	2.04	2.04	2.01	2.49	2.20
Aug 16	2.02	2.03	2.03	2.03	2.07	2.09	2.10	2.07	2.05	2.03	2.02	2.02	2.02	2.02	2.02	2.01	2.02	2.04	2.04	S	2.10	2.17	2.26	2.21	2.01	2.26	2.06
Aug 17	2.19	2.19	2.20	2.20	2.18	2.18	2.15	2.10	2.08	2.07	2.07	2.08	2.08	2.08	2.07	2.06	2.04	2.05	S	2.22	2.28	2.03	2.01	2.04	2.01	2.28	2.12
Aug 18	2.03	2.10	2.10	2.10	2.08	2.05	2.08	2.08	2.04	2.05	2.05	2.09	2.11	2.10	2.08	2.04	2.04	S	2.05	2.06	2.03	2.04	2.05	2.13	2.03	2.13	2.07
Aug 19	2.05	2.06	2.13	2.16	2.10	2.14	2.12	2.12	2.09	2.09	2.05	2.04	2.04	2.04	2.05	2.04	S	2.04	2.05	2.12	2.53	**2.98**	2.37	2.04	**2.98**	2.15
Aug 20	2.25	2.35	2.43	2.37	2.35	2.46	2.51	2.24	2.16	2.12	2.07	2.05	2.06	2.06	2.07	S	2.06	2.06	2.09	2.09	2.27	2.40	2.42	2.46	2.05	2.51	2.23
Aug 21	2.43	2.44	2.46	2.47	2.44	2.44	2.42	2.32	2.10	2.09	2.08	2.07	2.08	2.07	S	2.07	2.07	2.08	2.08	2.08	2.10	2.11	2.10	2.10	2.07	2.47	2.20
Aug 22	2.11	2.11	2.10	2.09	2.10	2.10	2.11	2.10	2.10	2.07	2.08	2.06	2.05	S	2.06	2.07	2.07	2.07	2.09	2.09	2.09	2.10	2.16	2.21	2.05	2.21	2.10
Aug 23	2.16	2.20	2.18	2.22	2.18	2.21	2.12	2.07	2.05	2.04	2.02	2.01	S	1.99	1.99	2.00	1.99	2.00	2.01	2.01	2.02	2.03	2.04	2.05	1.99	2.22	2.07
Aug 24	2.06	2.07	2.08	2.09	2.10	2.04	2.02	2.01	2.01	2.01	2.02	S	2.03	2.02	2.02	2.02	2.02	2.02	2.03	2.07	2.09	2.11	2.14	2.12	2.01	2.14	2.05
Aug 25	2.16	2.31	2.40	2.44	2.40	2.37	2.28	2.29	2.24	2.20	S	2.13	2.13	2.12	2.13	2.13	2.11	2.11	2.09	2.12	2.24	2.16	2.22	2.27	2.09	2.44	2.22
Aug 26	2.22	2.31	2.28	2.27	2.31	2.39	2.36	2.26	2.24	S	2.16	2.11	2.09	2.07	2.05	2.06	2.06	2.07	2.09	2.11	2.27	2.32	2.50	2.47	2.05	2.50	2.22
Aug 27	2.51	2.59	2.54	2.48	2.60	2.56	2.48	2.43	S	2.15	2.12	2.10	2.08	2.05	2.05	2.05	2.05	2.07	2.10	2.13	2.16	2.25	2.32	2.40	2.05	2.60	2.27
Aug 28	2.46	2.46	2.53	2.55	2.55	2.86	2.82	S	2.24	2.19	2.17	2.14	2.12	2.11	2.09	2.08	2.09	2.10	2.11	2.17	2.24	2.42	2.27	2.33	2.08	2.86	2.31
Aug 29	2.54	2.81	2.61	2.62	2.69	2.77	S	2.86	2.43	2.31	2.27	2.21	2.22	2.13	2.06	2.03	2.05	2.06	2.07	2.14	2.29	2.23	2.29	2.42	2.03	2.86	**2.35**
Aug 30	2.44	2.34	2.34	2.37	2.31	S	2.28	2.25	2.17	2.09	2.08	2.06	2.05	2.04	2.05	2.06	2.05	2.06	2.05	2.08	2.17	2.15	2.16	2.21	2.04	2.44	2.17
Aug 31	2.22	2.21	2.27	2.29	S	2.18	2.24	2.23	2.22	2.21	2.13	2.11	2.03	2.01	2.01	2.10	2.18	2.17	2.02	2.04	2.10	2.18	2.21	2.25	2.01	2.29	2.16
Diurnal Maximum	2.54	2.81	2.61	2.62	2.69	2.86	2.82	2.86	2.43	2.31	2.27	2.21	2.22	2.13	2.13	2.13	2.18	2.17	2.11	2.22	2.29	2.53	2.98	2.47			
Diurnal Average	2.19	2.23	2.23	2.24	2.23	2.24	2.21	2.17	2.12	2.09	2.08	2.06	2.05	2.03	2.03	2.03	2.03	2.03	2.04	2.06	2.11	2.14	2.18	2.18			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	ND	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.



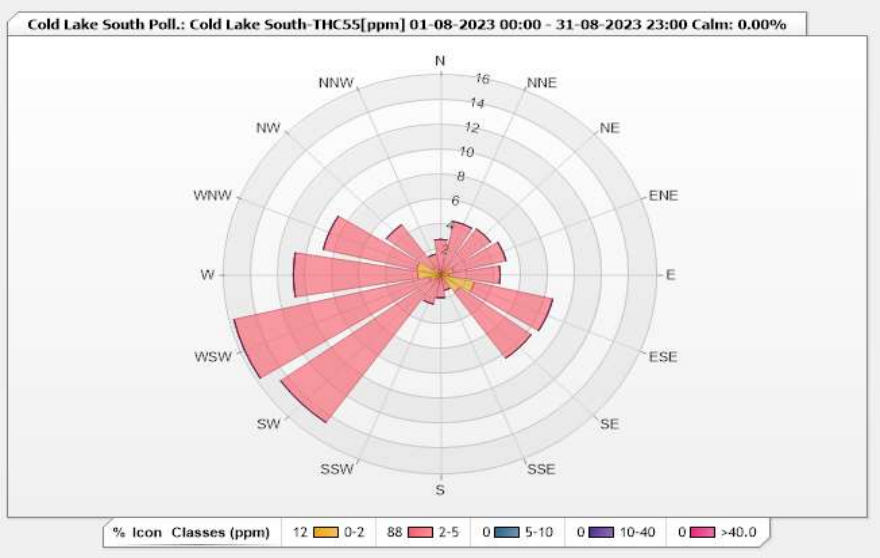


Station: Cold Lake South Poll.: Cold Lake South-THC55[ppm] Monthly: 08-2023

Type: Pollution Rose
Direction: Blowing From (Wind Frequency)
Time Base: 1 - Hour

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	0.14	2.69	0	0	0	2.83
NNE	0.28	4.1	0	0	0	4.38
NE	0.14	4.38	0	0	0	4.52
ENE	0.99	3.96	0	0	0	4.95
E	0.57	3.82	0	0	0	4.39
ESE	2.55	5.94	0	0	0	8.49
SE	1.7	6.51	0	0	0	8.21
SSE	0	1.27	0	0	0	1.27
S	0	1.84	0	0	0	1.84
SSW	0	2.4	0	0	0	2.4
SW	0.42	14.14	0	0	0	14.56
WSW	0.85	14.85	0	0	0	15.7
W	1.7	9.19	0	0	0	10.89
WNW	1.84	7.07	0	0	0	8.91
NW	0.71	4.24	0	0	0	4.95
NNW	0	1.7	0	0	0	1.7
Summary	11.89	88.1	0	0	0	100



Lakeland Industry & Community Association

Cold Lake South Station - August 2023

Summary of Hourly Averages

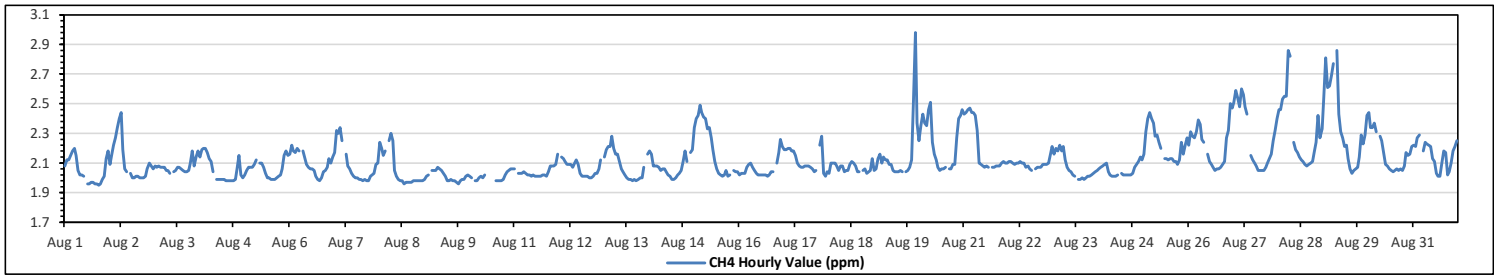
METHANE (CH4) in ppm

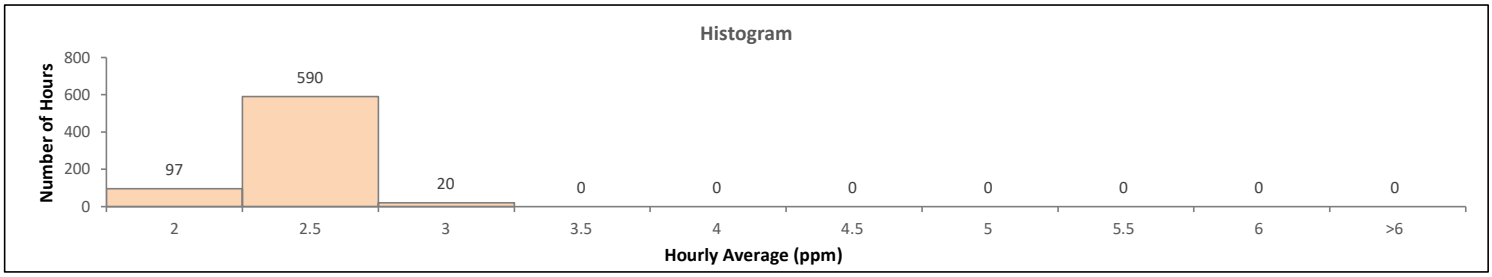
Maximum Hourly Value:	2.98	ppm	on Aug 19 at hr 22	Hours in Service:	744	
Maximum Daily Value:	2.35	ppm	on Aug 29	Hours of Data:	707	
Minimum Hourly Value:	1.95	ppm	on Aug 1 at hr 18	Hours of Missing Data:	0	
Minimum Daily Value:	2.01	ppm	on Aug 10	Hours of Calibration:	37	
Monthly Average:	2.12	ppm		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	2.08	2.12	2.12	2.15	2.18	2.20	2.15	2.05	2.02	2.02	2.01	S	1.96	1.96	1.97	1.97	1.96	1.96	1.95	1.96	1.99	2.01	2.13	2.18	1.95	2.20	2.05
Aug 2	2.09	2.15	2.22	2.27	2.34	2.40	2.44	2.19	2.06	2.04	S	2.03	2.00	2.00	2.01	2.01	2.00	2.00	2.00	2.01	2.06	2.10	2.08	2.06	2.00	2.44	2.11
Aug 3	2.08	2.07	2.08	2.07	2.07	2.07	2.05	2.05	2.03	S	2.04	2.05	2.07	2.07	2.06	2.05	2.04	2.04	2.05	2.10	2.18	2.08	2.14	2.18	2.03	2.18	2.07
Aug 4	2.14	2.19	2.20	2.20	2.17	2.13	2.11	2.04	S	1.99	1.99	1.99	1.99	1.99	1.98	1.98	1.98	1.98	1.98	1.99	2.06	2.15	2.02	2.00	1.98	2.20	2.05
Aug 5	2.02	2.05	2.07	2.07	2.07	2.09	2.12	S	2.10	2.10	2.07	2.03	2.00	2.00	1.99	1.99	1.99	2.00	2.01	2.02	2.06	2.15	2.18	2.15	1.99	2.18	2.06
Aug 6	2.16	2.22	2.18	2.17	2.20	2.18	S	2.18	2.14	2.09	2.07	2.06	2.06	2.05	2.01	1.99	1.98	2.00	2.04	2.05	2.07	2.13	2.10	2.14	1.98	2.22	2.10
Aug 7	2.17	2.32	2.30	2.34	2.25	S	2.16	2.08	2.06	2.03	2.01	2.00	2.00	1.99	1.99	1.98	1.99	1.98	1.98	2.01	2.02	2.03	2.09	2.10	1.98	2.34	2.08
Aug 8	2.24	2.20	2.15	2.18	S	2.25	2.30	2.25	2.05	2.01	1.99	1.98	1.98	1.96	1.97	1.97	1.97	1.97	1.98	1.98	1.98	1.98	1.98	1.98	1.96	2.30	2.06
Aug 9	1.99	2.01	2.02	S	2.05	2.05	2.05	2.07	2.06	2.05	2.03	2.01	1.98	1.98	1.99	1.98	1.98	1.97	1.96	1.98	1.99	1.99	2.01	2.02	1.96	2.07	2.01
Aug 10	2.01	2.00	S	1.98	1.98	2.00	2.01	2.00	2.02	C	C	C	C	C	1.98	1.98	1.98	1.98	1.99	2.02	2.04	2.05	2.06	2.06	1.98	2.06	2.01
Aug 11	2.06	S	2.03	2.03	2.03	2.04	2.03	2.02	2.02	2.01	2.02	2.01	2.01	2.01	2.01	2.02	2.02	2.01	2.04	2.08	2.08	2.08	2.09	2.16	2.01	2.16	2.04
Aug 12	S	2.14	2.13	2.11	2.09	2.09	2.09	2.07	2.10	2.12	2.09	2.03	2.01	2.01	2.01	2.01	2.00	2.00	2.01	2.03	2.03	2.06	2.12	S	2.00	2.14	2.06
Aug 13	2.14	2.19	2.21	2.21	2.28	2.20	2.16	2.16	2.11	2.06	2.04	2.02	2.00	1.99	1.99	1.98	1.99	1.98	1.99	2.00	2.00	2.07	S	2.16	1.98	2.28	2.08
Aug 14	2.18	2.16	2.08	2.08	2.08	2.07	2.05	2.06	2.06	2.04	2.02	2.01	1.99	1.99	2.00	2.02	2.03	2.05	2.11	2.18	2.11	S	2.17	2.19	1.99	2.19	2.08
Aug 15	2.34	2.40	2.42	2.49	2.44	2.41	2.40	2.33	2.34	2.27	2.19	2.11	2.06	2.03	2.02	2.01	2.02	2.05	2.01	2.02	S	2.05	2.04	2.04	2.01	2.49	2.20
Aug 16	2.02	2.03	2.03	2.03	2.07	2.09	2.10	2.07	2.05	2.03	2.02	2.02	2.02	2.02	2.02	2.01	2.02	2.04	2.04	S	2.10	2.17	2.26	2.21	2.01	2.26	2.06
Aug 17	2.19	2.19	2.20	2.20	2.18	2.18	2.15	2.10	2.08	2.07	2.07	2.08	2.08	2.08	2.07	2.06	2.04	2.05	S	2.22	2.28	2.03	2.01	2.04	2.01	2.28	2.12
Aug 18	2.03	2.10	2.10	2.10	2.08	2.05	2.08	2.08	2.04	2.05	2.05	2.09	2.11	2.10	2.08	2.04	2.04	S	2.05	2.06	2.03	2.04	2.05	2.13	2.03	2.13	2.07
Aug 19	2.05	2.06	2.13	2.16	2.10	2.14	2.12	2.12	2.09	2.09	2.05	2.04	2.04	2.04	2.05	2.04	S	2.04	2.05	2.07	2.12	2.53	**2.98**	2.37	2.04	**2.98**	2.15
Aug 20	2.25	2.35	2.43	2.37	2.35	2.46	2.51	2.24	2.16	2.12	2.07	2.05	2.06	2.06	2.07	S	2.06	2.06	2.09	2.09	2.27	2.40	2.42	2.46	2.05	2.51	2.23
Aug 21	2.43	2.44	2.46	2.47	2.44	2.44	2.42	2.32	2.10	2.09	2.08	2.07	2.08	2.07	S	2.07	2.07	2.08	2.08	2.08	2.10	2.11	2.10	2.10	2.07	2.47	2.20
Aug 22	2.11	2.11	2.10	2.09	2.10	2.10	2.11	2.10	2.10	2.07	2.08	2.06	2.05	S	2.06	2.07	2.07	2.07	2.09	2.09	2.09	2.10	2.16	2.21	2.05	2.21	2.10
Aug 23	2.16	2.20	2.18	2.22	2.18	2.21	2.12	2.07	2.05	2.04	2.02	2.01	S	1.99	1.99	2.00	1.99	2.00	2.01	2.01	2.02	2.03	2.04	2.05	1.99	2.22	2.07
Aug 24	2.06	2.07	2.08	2.09	2.10	2.04	2.02	2.01	2.01	2.01	2.02	S	2.03	2.02	2.02	2.02	2.02	2.02	2.03	2.07	2.09	2.11	2.14	2.12	2.01	2.14	2.05
Aug 25	2.16	2.31	2.40	2.44	2.40	2.37	2.28	2.29	2.24	2.20	S	2.13	2.13	2.12	2.13	2.13	2.11	2.11	2.09	2.12	2.24	2.16	2.22	2.27	2.09	2.44	2.22
Aug 26	2.22	2.31	2.28	2.27	2.31	2.39	2.36	2.26	2.24	S	2.16	2.11	2.09	2.07	2.05	2.06	2.06	2.07	2.09	2.11	2.27	2.32	2.50	2.47	2.05	2.50	2.22
Aug 27	2.51	2.59	2.54	2.48	2.60	2.56	2.48	2.43	S	2.15	2.12	2.10	2.08	2.05	2.05	2.05	2.05	2.07	2.10	2.13	2.16	2.25	2.32	2.40	2.05	2.60	2.27
Aug 28	2.46	2.46	2.53	2.55	2.55	2.86	2.82	S	2.24	2.19	2.17	2.14	2.12	2.11	2.09	2.08	2.09	2.10	2.11	2.17	2.24	2.42	2.27	2.33	2.08	2.86	2.31
Aug 29	2.54	2.81	2.61	2.62	2.69	2.77	S	2.86	2.43	2.31	2.27	2.21	2.22	2.13	2.06	2.03	2.05	2.06	2.07	2.14	2.29	2.23	2.29	2.42	2.03	2.86	**2.35**
Aug 30	2.44	2.34	2.34	2.37	2.31	S	2.28	2.25	2.17	2.09	2.08	2.06	2.05	2.04	2.05	2.06	2.05	2.06	2.05	2.08	2.17	2.15	2.16	2.21	2.04	2.44	2.17
Aug 31	2.22	2.21	2.27	2.29	S	2.18	2.24	2.23	2.22	2.21	2.13	2.11	2.03	2.01	2.01	2.10	2.18	2.17	2.02	2.04	2.10	2.18	2.21	2.25	2.01	2.29	2.16
Diurnal Maximum	2.54	2.81	2.61	2.62	2.69	2.86	2.82	2.86	2.43	2.31	2.27	2.21	2.22	2.13	2.13	2.13	2.18	2.17	2.11	2.22	2.29	2.53	2.98	2.47			
Diurnal Average	2.19	2.23	2.23	2.24	2.23	2.24	2.21	2.17	2.12	2.09	2.07	2.06	2.04	2.03	2.03	2.03	2.03	2.03	2.04	2.06	2.11	2.14	2.18	2.18			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance			
K	Collection Error	ND	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.



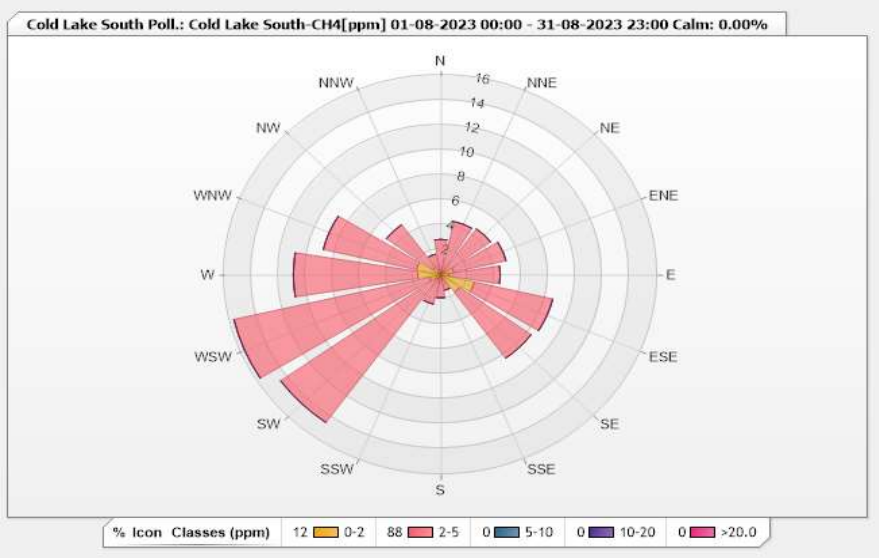


Station: Cold Lake South Poll.: Cold Lake South-CH4[ppm] Monthly: 08-2023

Type: Pollution Rose
Direction: Blowing From (Wind Frequency)
Time Base: 1 - Hour

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	0.14	2.69	0	0	0	2.83
NNE	0.28	4.1	0	0	0	4.38
NE	0.14	4.38	0	0	0	4.52
ENE	0.99	3.96	0	0	0	4.95
E	0.57	3.82	0	0	0	4.39
ESE	2.55	5.94	0	0	0	8.49
SE	1.7	6.51	0	0	0	8.21
SSE	0	1.27	0	0	0	1.27
S	0	1.84	0	0	0	1.84
SSW	0	2.4	0	0	0	2.4
SW	0.42	14.14	0	0	0	14.56
WSW	0.85	14.85	0	0	0	15.7
W	1.7	9.19	0	0	0	10.89
WNW	1.84	7.07	0	0	0	8.91
NW	0.71	4.24	0	0	0	4.95
NNW	0	1.7	0	0	0	1.7
Summary	11.89	88.1	0	0	0	100



Lakeland Industry & Community Association

Cold Lake South Station - August 2023

Summary of Hourly Averages

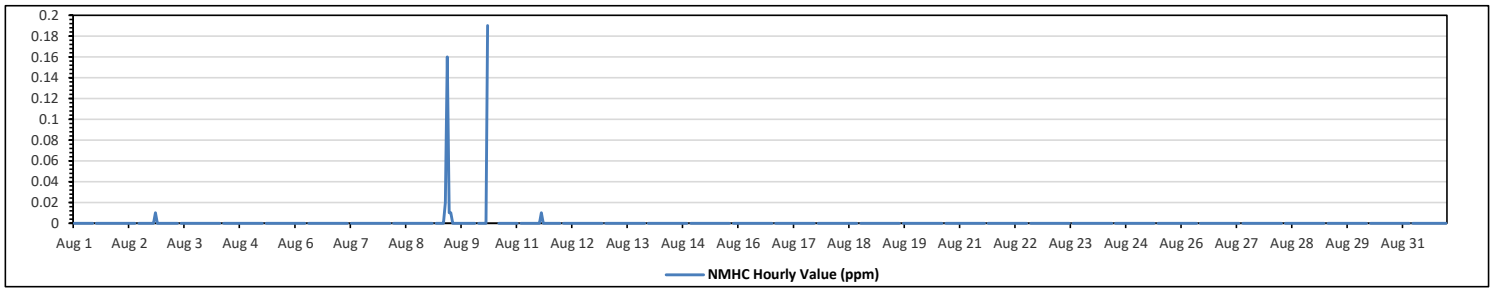
NON-METHANE HYDROCARBONS (NMHC) in ppm

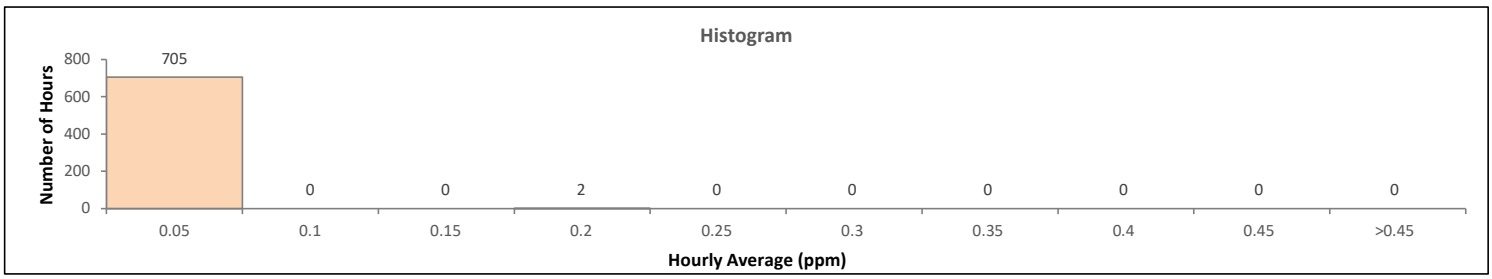
Maximum Hourly Value:	0.19	ppm	on Aug 10 at hr 8	Hours in Service:	744
Maximum Daily Value:	0.01	ppm	on Aug 10	Hours of Data:	707
Minimum Hourly Value:	0.00	ppm	on Aug 1 at hr 0	Hours of Missing Data:	0
Minimum Daily Value:	0.00	ppm	on Aug 1	Hours of Calibration:	37
Monthly Average:	0.00	ppm		Operational 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	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 2	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	0.01	0.00	0.00	0.00	0.00	0.01	0.00
Aug 3	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 4	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 5	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 6	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 7	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 8	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 9	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.02	0.16	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.01
Aug 10	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	**0.19**	C	C	C	C	C	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.19**	**0.01**
Aug 11	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Aug 12	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00
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	0.00	S	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	0.00	S	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
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	S	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	S	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	S	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	S	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	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
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	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 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
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	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
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
Aug 25	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 26	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 27	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 28	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 29	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 30	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 31	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
Diurnal Maximum	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.19	0.02	0.16	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00			
Diurnal Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	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			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	ND	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.



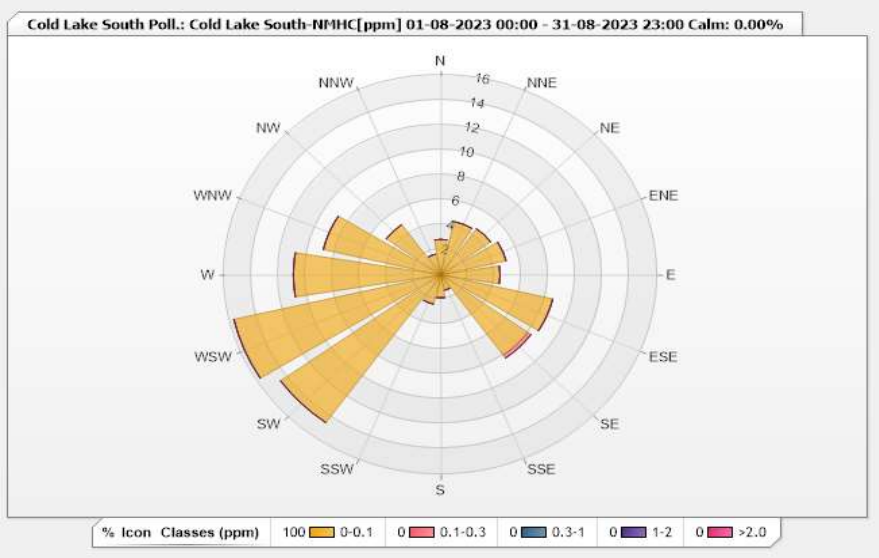


Station: Cold Lake South Poll.: Cold Lake South-NMHC[ppm] Monthly: 08-2023

Type: Pollution Rose
Direction: Blowing From (Wind Frequency)
Time Base: 1 - Hour

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	2.83	0	0	0	0	2.83
NNE	4.38	0	0	0	0	4.38
NE	4.53	0	0	0	0	4.53
ENE	4.95	0	0	0	0	4.95
E	4.38	0	0	0	0	4.38
ESE	8.49	0	0	0	0	8.49
SE	7.92	0.28	0	0	0	8.2
SSE	1.27	0	0	0	0	1.27
S	1.84	0	0	0	0	1.84
SSW	2.4	0	0	0	0	2.4
SW	14.57	0	0	0	0	14.57
WSW	15.7	0	0	0	0	15.7
W	10.89	0	0	0	0	10.89
WNW	8.91	0	0	0	0	8.91
NW	4.95	0	0	0	0	4.95
NNW	1.7	0	0	0	0	1.7
Summary	100	0.28	0	0	0	100



Lakeland Industry & Community Association

Cold Lake South Station - August 2023

Summary of Hourly Averages

PARTICULATE MATTER 2.5 ($PM_{2.5}$) in µg/m^3

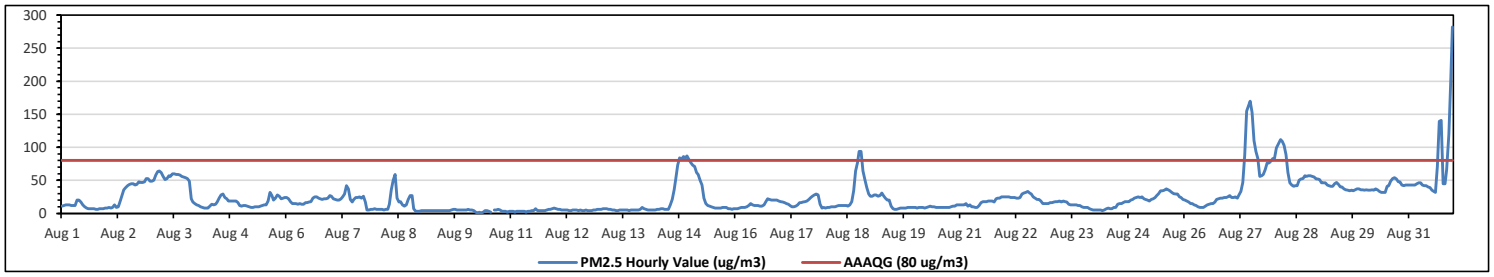
Alberta Ambient Air Quality Guideline (AAAQG): 1-Hour 80 µg/m3, Alberta Ambient Air Quality Objective (AAAQO): 24-Hour 29 µg/m3

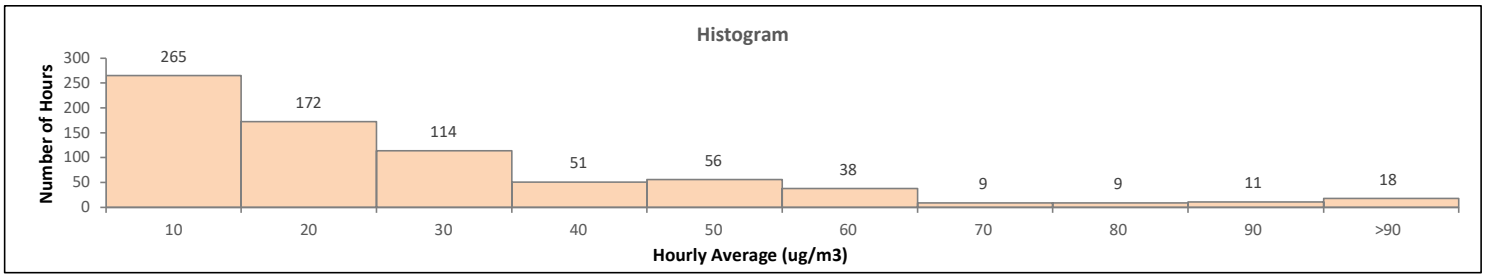
Number of 1-Hour Exceedances:	29	Number of 24-Hour Exceedances:	9
Maximum Hourly Value:	282 µg/m^3 on Aug 31 at hr 23	Hours in Service:	744
Maximum Daily Value:	75.0 µg/m^3 on Aug 27	Hours of Data:	743
Minimum Hourly Value:	1 µg/m^3 on Aug 10 at hr 6	Hours of Missing Data:	0
Minimum Daily Value:	4 µg/m^3 on Aug 10	Hours of Calibration:	1
Monthly Average:	24.3 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	11	12	13	13	13	12	12	12	20	20	17	13	10	8	7	7	7	7	6	6	7	7	7	8	6	20	10.6
Aug 2	8	9	8	9	13	9	10	19	28	36	39	42	44	45	45	43	44	48	47	47	48	53	53	49	8	53	33.2
Aug 3	49	50	58	63	64	62	56	51	53	57	56	60	60	59	59	58	56	55	54	53	49	22	17	15	15	64	51.5
Aug 4	13	12	10	9	8	8	8	11	14	13	14	17	23	28	29	24	22	19	19	19	19	19	16	12	8	29	16.1
Aug 5	11	12	12	11	10	9	9	10	10	10	11	12	13	13	19	32	27	20	23	28	26	22	23	24	9	32	16.5
Aug 6	24	22	18	15	15	15	14	15	14	14	16	16	17	18	23	25	25	23	22	21	22	22	23	27	14	27	19.4
Aug 7	26	22	21	20	20	22	25	29	42	37	21	17	21	24	24	25	23	26	17	5	5	6	6	7	5	42	20.5
Aug 8	6	6	6	6	5	6	6	14	36	50	59	23	17	18	13	11	13	21	27	27	7	3	3	3	3	59	16.1
Aug 9	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	5	6	6	5	5	5	5	5	4	6	4.4
Aug 10	5	6	5	5	4	2	1	2	1	2	4	4	3	2	C	5	5	6	5	3	3	3	2	3	**1**	6	**3.5**
Aug 11	3	3	2	3	3	3	3	3	2	3	3	4	4	7	4	4	4	4	4	5	6	6	7	8	2	8	4.1
Aug 12	7	6	6	5	5	5	5	4	4	5	5	5	4	5	4	4	5	4	4	4	5	5	6	6	4	7	4.9
Aug 13	6	7	7	7	6	6	5	5	4	4	5	5	5	5	5	4	5	5	5	5	5	6	9	7	4	9	5.5
Aug 14	6	5	5	5	5	5	6	6	7	7	6	6	6	13	21	36	52	73	84	82	86	84	87	82	5	87	32.3
Aug 15	77	73	71	62	59	50	43	23	15	12	11	10	9	8	8	8	8	9	9	9	7	7	6	7	6	77	25.0
Aug 16	7	7	8	9	9	9	10	12	15	13	12	12	12	11	11	13	17	22	21	20	20	20	20	19	7	22	13.7
Aug 17	18	17	16	15	14	12	10	10	11	13	16	16	17	18	19	21	24	26	28	29	28	14	8	9	8	29	17.0
Aug 18	8	9	9	10	10	10	11	12	12	12	12	12	11	13	18	34	64	77	94	94	64	51	39	29	8	94	29.8
Aug 19	26	26	28	28	26	27	31	27	23	20	20	11	7	6	6	7	8	8	8	8	9	9	9	9	6	31	16.1
Aug 20	9	8	9	9	9	8	9	10	11	10	10	9	9	9	9	9	9	9	9	10	11	11	13	13	8	13	9.7
Aug 21	13	13	13	15	11	13	10	10	9	9	12	16	18	18	18	19	19	19	17	22	23	23	25	25	9	25	16.3
Aug 22	25	25	25	24	24	24	23	23	24	29	31	32	33	31	29	25	23	21	21	19	15	15	15	15	15	33	23.8
Aug 23	16	16	17	18	18	19	17	19	18	17	14	13	13	13	13	12	12	10	9	9	9	7	6	5	5	19	13.3
Aug 24	5	5	5	5	4	5	7	8	7	7	9	9	14	15	15	16	18	18	18	20	21	23	24	25	4	25	12.6
Aug 25	24	25	22	21	20	19	21	22	24	27	30	34	34	35	37	36	34	32	30	29	29	25	24	21	19	37	27.3
Aug 26	20	19	17	15	15	13	12	10	9	9	9	11	13	14	15	15	17	21	22	23	23	24	24	25	9	25	16.5
Aug 27	27	24	24	25	23	28	33	47	88	155	163	170	153	110	94	83	56	57	59	66	76	76	79	83	23	170	**75.0**
Aug 28	83	99	106	112	109	103	89	62	46	43	41	42	42	50	52	53	57	56	57	57	56	55	52	52	41	112	65.6
Aug 29	51	46	46	46	43	42	41	41	45	47	44	40	40	37	36	35	34	35	34	36	37	37	36	36	34	51	40.2
Aug 30	35	36	35	35	36	35	37	36	33	32	32	32	41	42	49	53	54	52	48	48	43	42	43	43	32	54	40.5
Aug 31	43	43	43	43	45	46	46	43	42	42	40	39	35	33	32	71	139	141	45	45	66	120	203	**282**	32	**282**	72.0
Diurnal Maximum	83	99	106	112	109	103	89	62	88	155	163	170	153	110	94	83	139	141	94	94	86	120	203	282			
Diurnal Average	21.5	21.5	21.6	21.5	21.0	20.4	19.8	19.4	21.6	24.5	24.7	23.7	23.6	23.0	23.9	25.5	28.6	30.0	27.5	27.5	26.8	26.5	28.7	30.8			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	ND	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.



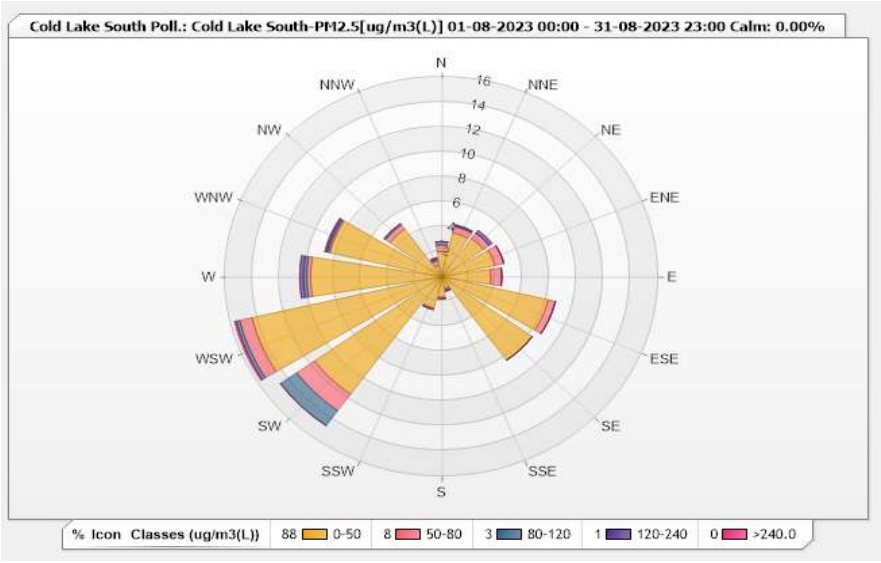


Station: Cold Lake South Poll.: Cold Lake South-PM2.5[ug/m3(L)] Monthly: 08-2023

Type: Pollution Rose
Direction: Blowing From (Wind Frequency)
Time Base: 1 - Hour

Calm: 0.00% Valid Data: 99.87% Calm Avg: 0.00 [ppm]

Direction	0-50	50-80	80-120	120-240	>240.0	Total
N	2.02	0.54	0.27	0	0	2.83
NNE	3.63	0.54	0	0.13	0	4.3
NE	3.77	0.54	0	0.27	0	4.58
ENE	4.04	0.67	0	0	0	4.71
E	3.63	0.81	0	0	0	4.44
ESE	8.08	0.54	0	0	0	8.62
SE	8.21	0	0	0	0	8.21
SSE	0.94	0.13	0.13	0	0	1.2
S	1.62	0.13	0	0	0	1.75
SSW	2.56	0.13	0	0	0	2.69
SW	11.57	1.62	1.48	0	0	14.67
WSW	14.4	0.94	0.27	0	0.13	15.74
W	9.69	0.27	0.27	0.27	0	10.5
WNW	8.48	0.13	0.13	0.13	0	8.87
NW	4.71	0.4	0.13	0	0	5.24
NNW	0.94	0.4	0.13	0.13	0	1.6
Summary	88.29	7.79	2.81	0.93	0.13	100



Lakeland Industry & Community Association

Cold Lake South Station - August 2023

Summary of Hourly Averages

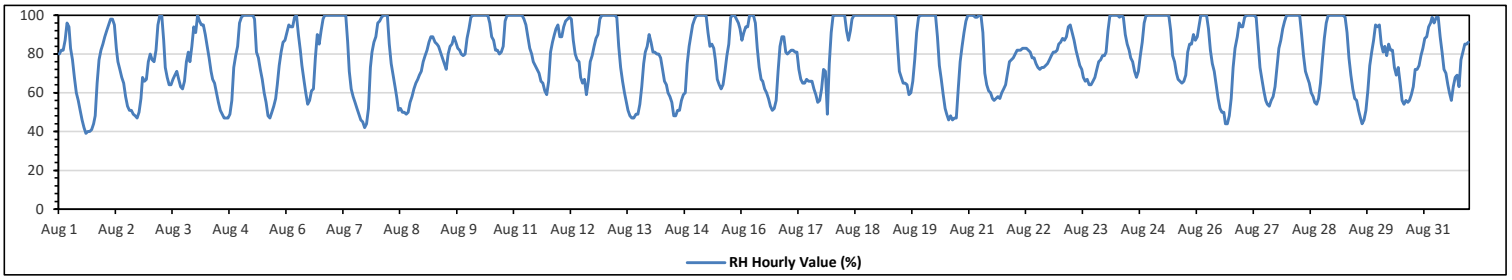
RELATIVE HUMIDITY (RH) in %

Maximum Hourly Value:	100	%	on Aug 3 at hr 5	Hours in Service:	744	
Maximum Daily Value:	98.7	%	on Aug 18	Hours of Data:	744	
Minimum Hourly Value:	39	%	on Aug 1 at hr 14	Hours of Missing Data:	0	
Minimum Daily Value:	65.2	%	on Aug 1	Hours of Calibration:	0	
Monthly Average:	79.1	%		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	80	82	82	87	96	94	83	77	68	60	56	51	46	42	**39**	40	40	41	44	48	65	77	82	85	**39**	96	**65.2**
Aug 2	89	92	95	98	98	95	83	76	72	68	65	58	53	51	51	49	48	47	50	57	68	66	67	76	47	98	69.7
Aug 3	80	77	76	82	95	**100**	**100**	87	73	68	64	64	67	69	71	67	63	62	66	76	81	76	84	94	62	**100**	76.8
Aug 4	91	**100**	97	95	95	90	84	78	71	67	65	60	55	51	49	47	47	47	49	56	73	79	84	96	47	**100**	71.9
Aug 5	99	**100**	**100**	**100**	**100**	**100**	**100**	98	81	78	72	67	60	55	48	47	50	53	57	64	74	81	86	87	47	**100**	77.4
Aug 6	91	95	94	94	99	**100**	90	82	74	67	60	54	56	61	62	78	90	85	92	98	**100**	**100**	**100**	**100**	54	**100**	84.3
Aug 7	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	86	71	62	58	55	52	49	46	45	42	44	52	73	81	86	89	42	**100**	74.6
Aug 8	96	97	99	**100**	**100**	**100**	85	75	69	63	58	51	52	50	50	49	50	55	58	62	65	67	69	71	49	**100**	70.5
Aug 9	76	79	82	86	89	89	86	85	84	81	78	75	72	80	84	85	89	86	83	82	80	79	80	88	72	89	82.4
Aug 10	93	99	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	96	89	87	82	82	80	81	84	97	**100**	**100**	**100**	**100**	80	**100**	94.6
Aug 11	**100**	**100**	**100**	**100**	**100**	98	95	89	83	80	76	74	72	70	66	65	61	59	66	81	86	90	93	95	59	**100**	83.3
Aug 12	89	89	94	97	98	99	98	87	80	77	76	68	65	67	59	66	76	79	84	88	90	98	**100**	**100**	59	**100**	84.3
Aug 13	**100**	**100**	**100**	**100**	**100**	**100**	99	84	73	66	60	55	51	48	47	47	49	49	54	63	75	81	84	90	47	**100**	74.0
Aug 14	86	81	81	80	80	78	72	66	64	60	58	55	48	48	51	51	56	59	60	75	84	90	95	98	48	98	69.8
Aug 15	**100**	**100**	**100**	**100**	**100**	**100**	91	84	85	83	77	67	64	62	64	71	79	85	99	**100**	**100**	98	96	93	62	**100**	87.4
Aug 16	87	91	94	94	**100**	**100**	**100**	96	83	73	67	66	62	60	57	53	51	52	56	71	84	89	89	81	51	**100**	77.3
Aug 17	80	81	82	82	81	81	72	67	65	65	67	66	66	66	62	59	55	56	62	72	71	49	75	91	49	91	69.7
Aug 18	**100**	**100**	**100**	**100**	**100**	**100**	**100**	92	87	92	98	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	87	**100**	**98.7**
Aug 19	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	99	83	71	68	65	65	64	59	60	66	77	91	99	**100**	**100**	59	**100**	86.1
Aug 20	**100**	**100**	**100**	**100**	**100**	**100**	**100**	89	74	67	59	52	49	46	48	46	47	47	62	76	84	91	97	**100**	46	**100**	76.4
Aug 21	**100**	**100**	**100**	99	99	**100**	**100**	91	70	64	61	60	57	56	57	58	57	60	62	64	70	76	77	78	56	**100**	75.7
Aug 22	80	82	82	82	83	83	83	82	81	78	78	75	73	72	73	73	74	75	77	79	81	81	82	85	72	85	78.9
Aug 23	86	88	87	89	94	95	91	87	82	78	74	72	68	66	67	64	64	66	68	72	76	77	79	79	64	95	77.9
Aug 24	81	92	**100**	**100**	**100**	**100**	**100**	99	**100**	99	90	85	82	78	76	71	68	71	79	86	96	**100**	**100**	**100**	68	**100**	89.7
Aug 25	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	92	79	76	70	67	66	65	66	69	81	85	85	90	87	65	**100**	86.6
Aug 26	89	95	**100**	**100**	**100**	**100**	93	82	75	71	64	57	52	50	50	44	44	48	57	73	83	89	96	94	44	**100**	75.3
Aug 27	94	99	**100**	**100**	**100**	**100**	**100**	99	86	73	67	61	56	54	53	56	58	63	73	83	87	93	97	**100**	53	**100**	81.3
Aug 28	**100**	**100**	**100**	**100**	**100**	**100**	**100**	90	79	71	68	65	60	58	55	54	57	65	77	88	96	**100**	**100**	**100**	54	**100**	82.6
Aug 29	**100**	**100**	**100**	**100**	**100**	**100**	99	91	78	69	62	57	56	51	47	44	46	51	61	74	81	87	95	94	44	**100**	76.8
Aug 30	95	85	81	84	79	85	82	82	73	69	73	65	56	54	56	55	56	59	63	72	72	74	79	83	54	95	72.2
Aug 31	88	89	94	96	99	96	99	99	89	81	72	70	64	60	56	63	68	69	63	77	81	85	85	86	56	99	80.4
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			
Diurnal Average	91.9	93.3	94.2	95.0	96.3	96.2	93.1	87.5	80.2	75.4	71.0	66.3	62.9	61.3	60.0	60.0	61.0	62.5	67.3	75.6	82.3	85.1	88.6	91.0			

C	Monthly Calibration	**S**	Daily Zero-Span Check	**Q**	Quality Assurance	
K	Collection Error	**ND**	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 2023

Summary of Hourly Averages

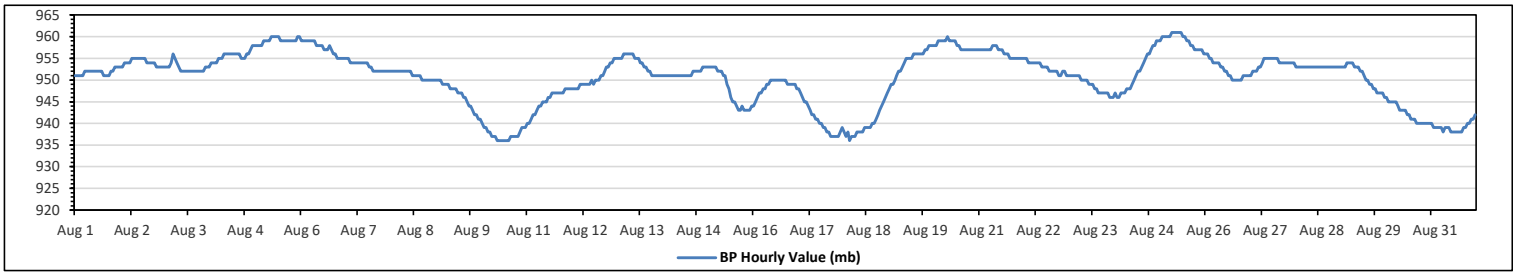
BAROMETRIC PRESSURE (BP) in millibar

Maximum Hourly Value:	961	mb	on Aug 25 at hr 6	Hours in Service:	744	
Maximum Daily Value:	959	mb	on Aug 25	Hours of Data:	744	
Minimum Hourly Value:	936	mb	on Aug 10 at hr 8	Hours of Missing Data:	0	
Minimum Daily Value:	937	mb	on Aug 10	Hours of Calibration:	0	
Monthly Average:	951	mb		Operational Uptime:	100.0	

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

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	ND	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 2023

Summary of Hourly Averages

AMBIENT TEMPERATURE (AT) in Degree Celsius

Maximum Hourly Value:	29.2	°C	on Aug 29 at hr 15	Hours in Service:	744
Maximum Daily Value:	20.7	°C	on Aug 30	Hours of Data:	744
Minimum Hourly Value:	3.2	°C	on Aug 20 at hr 5	Hours of Missing Data:	0
Minimum Daily Value:	11.3	°C	on Aug 19	Hours of Calibration:	0
Monthly Average:	16.5	°C		Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																							Daily	Daily	Daily
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Minimum	Maximum	Average
Aug 1	13.2	12.9	12.4	11.3	9.9	10.7	13.6	16	18.7	20.3	21.4	22.8	23.8	24.6	25.3	25.5	25.2	25.2	24	22.9	18.6	15.6	14	12.9	9.9	25.5	18.4
Aug 2	11.6	10.6	9.9	9.2	8.6	9.4	12.6	16.2	18.1	19.3	20.4	22.2	23.3	23.3	23.9	24.2	24.3	24	23.3	21.5	19.4	19.8	18.6	17.6	8.6	24.3	18.0
Aug 3	17	17.9	18.1	17.2	16.1	15.9	16.4	16.8	19.1	20	21	21.6	21.2	20.7	20.5	21.3	21.8	22.1	21.4	19.6	17.6	16.8	14.6	13.1	13.1	22.1	18.7
Aug 4	12.9	11.6	11.8	11.4	11.6	12.2	13.6	15.3	16.7	17.5	18.4	19.6	21	22	22.8	23	22.7	23.3	22.5	20.5	16.8	15.5	15.5	14.2	11.4	23.3	17.2
Aug 5	13.3	12.7	11.9	10.9	10.5	11.3	12.7	14.7	16.5	17.9	19.9	21.4	22.5	23.5	23.8	24	23.4	22.5	21.5	19.8	17.6	16.1	14.6	13.9	10.5	24.0	17.4
Aug 6	12.5	12.4	13.2	12.9	11.8	11.5	13.7	15.3	18.2	20.6	22.6	23.9	23.5	22.4	20.4	16.3	15.7	17	16.7	15.8	14.8	13.7	13	12.3	11.5	23.9	16.3
Aug 7	11.6	12.3	13.1	12.8	13.1	13.4	14.5	15.5	16.5	17.3	18.1	18.9	19.7	20.4	21.2	21.2	21.1	21.1	20.8	19.1	14.3	11.9	10.4	9.3	9.3	21.2	16.2
Aug 8	8.4	7.6	6.8	6.1	5.6	6.2	9.7	13.4	15.3	16.7	17.9	19.2	19.2	19.5	19.5	19.7	19.4	18.8	18.4	17.5	16.3	15.5	14.9	14.3	5.6	19.7	14.4
Aug 9	13.4	13.1	12.6	12.2	11.9	11.8	11.9	12.3	12.8	13.7	14.5	15.4	15.6	15	14.8	14.5	14.1	14	14.1	13.9	13.8	13.9	13.6	12.7	11.8	15.6	13.6
Aug 10	12.5	12.3	12.1	12	12	11.9	11.9	12	12.3	12.9	13.7	16	16.5	16.7	16.9	16.4	16.6	16.3	15.8	14.4	14.1	13.7	13.3	13	11.9	16.9	14.0
Aug 11	12.7	12.2	11.6	11.3	11.6	11.9	12.3	12.9	13.5	13.7	14.6	15.1	15.3	15.9	16.9	17.2	18.2	18.6	17.2	15.1	13.6	13.1	12.8	13	11.3	18.6	14.2
Aug 12	13.9	13.8	13.4	13.2	13	12.9	13.6	14.7	15.7	16.4	17.1	18.5	18.9	18.9	20.3	19.2	17.5	17.5	15.6	15.1	14.6	13.5	12.8	12.1	12.1	20.3	15.5
Aug 13	11.3	11.9	10.9	9.8	10.2	11.1	12.5	15.2	18.3	20.8	22.1	23.1	24.2	25.1	25.9	26.1	26	26.1	25.2	22.7	19.7	17.7	16.5	15	9.8	26.1	18.6
Aug 14	15.3	16.4	16.5	16.2	15.9	16.3	18.4	20.4	21.5	22.6	23.1	23.9	25.4	24.8	24.3	24.1	22.7	21.8	22.5	19	15.6	13.5	12.4	11.5	11.5	25.4	19.3
Aug 15	11	10.2	9.5	9.8	9.1	9	12.6	14.8	15.7	16.9	18.1	21.7	23.2	24.1	24	22.9	20.3	19.6	17.2	16.8	16	16	14.8	14.8	9.0	24.1	16.2
Aug 16	14.2	13.3	12.6	12.1	10.9	10.5	11.5	12.7	14.8	16.4	17.1	17.7	18.6	18.8	19.5	20.4	20.4	20.6	19.7	16.5	13	11.6	11.9	13.2	10.5	20.6	15.3
Aug 17	13.1	12.7	12.3	12.2	12.6	12.4	15.3	17.8	19	20	20	20.5	21.4	22.4	24.2	24.9	25.6	25.4	23.8	21.3	20.9	21.4	16.3	14.5	12.2	25.6	18.8
Aug 18	14	13.9	13.7	13.5	13.7	13.3	13.5	13.8	13.9	13.8	13.8	13.7	14	14.4	14.6	14	13.5	12.3	11.8	11.8	11.3	11.2	11	10.9	10.9	14.6	13.1
Aug 19	10.6	10.4	10.2	10.1	9.9	9.9	10	10	10	10.7	12.7	13.6	13.8	14.2	14.2	14.8	15	14.9	13.9	11.5	8.9	7.9	7.3	6.5	6.5	15.0	**11.3**
Aug 20	5.7	5.1	4.7	3.9	3.4	**3.2**	5.8	9.6	12.4	14.8	17	18	18.8	19.4	19.1	19.6	19.2	19	17	13.4	11.1	9.4	8.2	7.3	**3.2**	19.6	11.9
Aug 21	6.6	5.9	5.4	5.2	5.2	5.3	6.9	10.3	13.3	15.5	17.3	18.7	19.7	20	20.3	20.2	20.1	19.5	18.9	18	16.8	15.6	15.7	15.5	5.2	20.3	14.0
Aug 22	15.2	15.2	15.4	15.3	15.2	15.2	15.4	15.8	16.2	16.9	17.1	17.8	18.3	18.5	18.3	18.6	18.6	18.6	18.3	17.8	17.2	16.8	16.6	16.1	15.2	18.6	16.9
Aug 23	16	15.7	15.8	15.6	15.3	15.2	15.5	16.2	17	17.7	18.5	19	20	20.9	20.7	21.2	21.2	20.4	19.7	18.5	17.8	17.4	17	16.6	15.2	21.2	17.9
Aug 24	16	15.2	14.7	14.6	14.5	14.7	14.7	14.5	14.3	15	15.7	15.8	16.2	17.3	17.9	18.6	18.8	18.2	16.8	15.4	14	12.6	11.6	10.6	10.6	18.8	15.3
Aug 25	9.8	9.7	9.2	8.9	9.6	9.6	10.4	11.7	13.1	14.3	16.4	17.7	18.3	19.7	20.3	21	21.1	20.8	19.6	16.8	15.3	14.8	13.7	13.5	8.9	21.1	14.8
Aug 26	12.4	11.2	10.2	9.6	9.4	8.9	10.6	13.7	16.2	18	20.5	22.6	23.8	24.4	25.4	25.9	25.7	25.1	23.1	19.2	16.3	14.8	13.8	13.7	8.9	25.9	17.3
Aug 27	12.6	11.9	11.7	11.2	11.1	11.4	11.9	13.7	15.9	18.4	20	20.6	22.1	22.8	23.5	23.5	23.1	22	19.7	17	15.4	14.5	13.7	13	11.1	23.5	16.7
Aug 28	12.4	11.9	11.3	10.5	10	9.8	11.7	15.5	18.3	20.5	22.3	23.9	25.2	26.2	27	27.3	27.1	25.6	22.8	20	18.1	16.8	15.9	14.9	9.8	27.3	18.5
Aug 29	14	13.1	12.5	11.8	11.3	10.8	12.1	15.6	19.7	21.8	24.1	25.9	26.9	28	28.7	**29.2**	28.9	28	26.1	22.5	19.9	18.1	16.7	16.1	10.8	**29.2**	20.1
Aug 30	15.4	16.3	16.4	15.5	16.7	15.1	15.8	17	19.8	21.4	20.9	23.1	25.3	25.6	26.4	27	27.1	26.6	24.3	21.7	21	20.4	19.3	18.5	15.1	27.1	**20.7**
Aug 31	17.6	17.4	16.7	16.6	17.2	17.7	17.3	17.7	19.7	21.3	22.6	22.9	24.4	25.5	26	24.8	24.5	23.5	21.8	19.6	19.1	18.4	18.1	17.3	16.6	26.0	20.3
Diurnal Maximum	17.6	17.9	18.1	17.2	17.2	17.7	18.4	20.4	21.5	22.6	24.1	25.9	26.9	28.0	28.7	29.2	28.9	28.0	26.1	22.9	21.0	21.4	19.3	18.5			
Diurnal Average	12.8	12.5	12.1	11.7	11.5	11.6	12.9	14.6	16.2	17.5	18.7	19.8	20.6	21.1	21.5	21.5	21.3	20.9	19.8	17.9	16.1	15.1	14.1	13.5			

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

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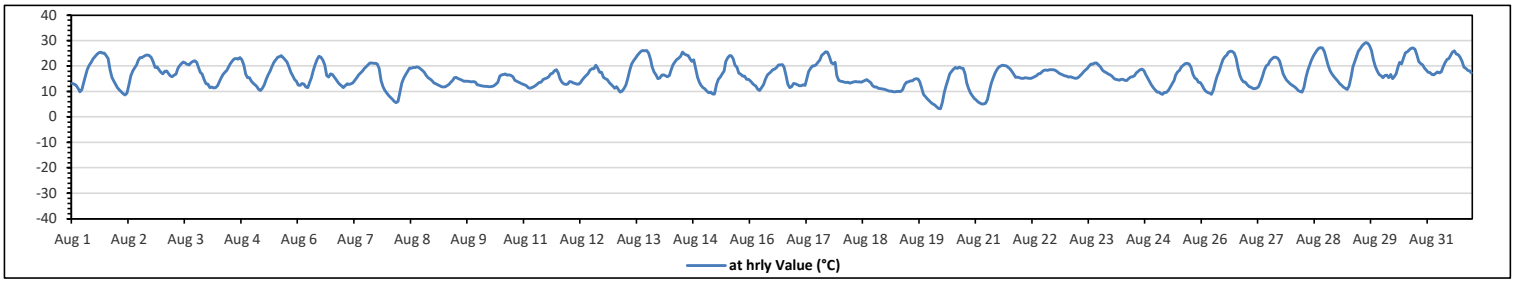


Lakeland Industry & Community Association

Cold Lake South Station - August 2023

Summary of Hourly Averages

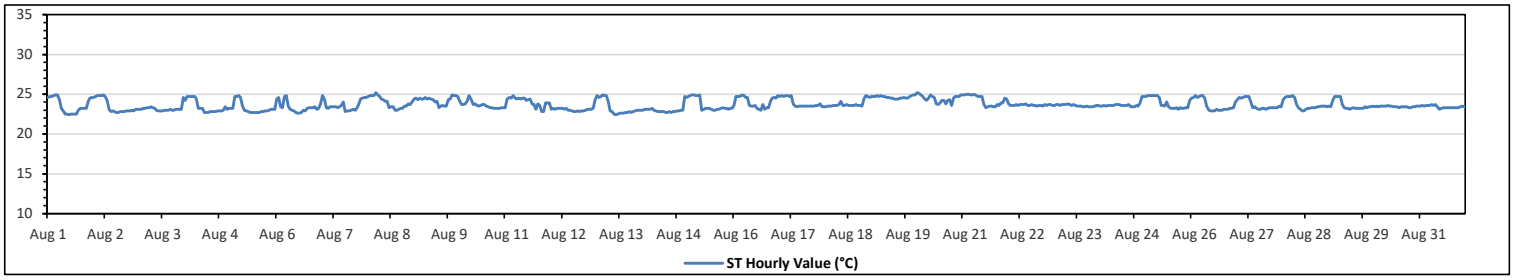
STATION TEMPERATURE (ST) in Degree Celsius

Maximum Hourly Value:	25.2	°C	on Aug 8 at hr 4	Hours in Service:	744	
Maximum Daily Value:	24.6	°C	on Aug 19	Hours of Data:	744	
Minimum Hourly Value:	22.4	°C	on Aug 1 at hr 11	Hours of Missing Data:	0	
Minimum Daily Value:	23.1	°C	on Aug 14	Hours of Calibration:	0	
Monthly Average:	23.7	°C		Operational Uptime:	100.0	

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

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	ND	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 2023

Summary of Hourly Averages

VECTOR WIND SPEED (VWS) in km/hr

Maximum Hourly Value:	14.8	kph	on Aug 18 at hr 17	Hours in Service:	744
Maximum Daily Value:	7.4	kph	on Aug 9	Hours of Data:	744
Minimum Hourly Value:	0.0	kph	on Aug 7 at hr 21	Hours of Missing Data:	0
Minimum Daily Value:	1.8	kph	on Aug 27	Hours of Calibration:	0
Monthly Average:	1.1	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	3.6	4.3	2.1	0.2	2.9	5.2	7.5	7.7	9.4	10.2	11.3	11.8	12.0	11.6	11.4	11.1	9.9	7.0	5.0	1.8	1.9	2.0	0.6	0.2	12.0	6.4
Aug 2	0.6	0.3	0.2	0.7	0.2	0.1	1.8	3.9	1.0	1.3	3.0	2.4	2.7	2.4	1.9	2.7	3.9	4.3	3.1	2.1	1.1	3.5	3.0	2.4	0.1	4.3	2.0
Aug 3	2.9	5.9	5.9	7.3	9.0	9.0	13.5	9.9	9.3	10.8	11.8	9.1	6.2	4.8	3.5	4.2	5.7	2.8	1.3	0.4	2.3	4.0	3.2	3.4	0.4	13.5	6.1
Aug 4	2.6	3.4	3.9	3.2	5.0	3.8	5.3	7.3	11.0	10.6	9.0	7.5	11.3	10.4	7.6	7.6	4.8	6.5	6.8	4.5	2.9	1.9	6.4	6.3	1.9	11.3	6.2
Aug 5	3.3	1.7	1.4	2.2	2.4	4.0	4.9	5.1	5.6	5.0	5.3	7.1	8.2	7.5	7.8	8.2	8.7	9.6	7.5	5.5	4.9	3.5	3.6	0.8	0.8	9.6	5.2
Aug 6	0.5	3.5	5.6	4.0	1.6	0.9	3.0	2.8	4.1	3.0	3.9	6.0	4.0	5.5	11.1	4.9	2.1	0.9	1.5	1.8	1.2	0.4	0.3	0.4	0.3	11.1	3.0
Aug 7	0.7	0.6	1.4	1.6	1.0	1.4	2.3	5.1	7.8	8.3	10.1	7.4	6.7	6.3	4.9	8.4	7.1	6.5	4.8	2.8	0.1	**0.0**	0.2	0.3	**0.0**	10.1	4.0
Aug 8	0.7	**0.0**	0.6	0.1	0.2	0.9	1.6	1.5	5.6	6.7	6.4	4.4	5.3	4.1	5.8	6.7	6.6	7.0	5.8	6.9	7.3	9.8	11.5	11.7	**0.0**	11.7	4.9
Aug 9	8.0	6.5	3.9	2.4	3.3	3.9	5.2	6.6	6.6	8.9	9.2	10.1	9.7	7.5	8.2	9.1	7.7	7.7	8.4	9.7	8.4	10.1	8.8	7.1	2.4	10.1	**7.4**
Aug 10	6.2	5.7	5.6	6.0	5.5	4.2	4.7	5.6	5.4	5.5	3.4	7.8	6.4	10.0	13.0	14.4	12.5	11.0	7.6	4.5	5.1	8.1	5.2	5.2	3.4	14.4	7.0
Aug 11	5.6	7.3	6.2	5.9	8.4	7.2	6.9	7.4	9.5	8.0	7.7	8.7	8.1	8.7	7.7	7.0	6.7	4.7	1.4	1.4	1.0	1.1	0.3	2.4	0.3	9.5	5.8
Aug 12	5.2	4.3	5.4	5.4	3.5	2.2	2.1	5.8	6.7	7.1	8.8	10.1	13.2	11.1	8.9	4.1	4.7	5.9	5.3	4.0	4.1	4.0	3.0	1.0	1.0	13.2	5.7
Aug 13	3.1	4.3	1.5	0.2	4.3	5.7	4.4	5.6	4.9	6.1	9.7	11.1	12.5	12.3	14.1	13.6	12.5	10.2	8.8	4.7	1.6	0.5	0.4	0.6	0.2	14.1	6.4
Aug 14	3.5	6.1	6.2	5.9	5.5	6.3	6.3	7.5	8.4	9.7	10.5	13.0	12.6	11.6	10.1	9.7	5.0	1.9	0.6	0.2	0.4	0.6	0.5	0.8	0.2	13.0	6.0
Aug 15	0.4	0.2	**0.0**	2.1	0.1	**0.0**	0.1	3.2	3.7	1.3	3.1	6.1	5.2	6.7	5.8	2.7	2.8	4.8	3.7	4.4	4.9	6.9	5.5	9.3	**0.0**	9.3	3.5
Aug 16	9.9	6.1	6.4	4.6	2.6	4.4	4.7	6.1	6.6	9.6	11.9	10.2	9.9	8.8	7.8	8.0	8.0	6.3	5.4	1.0	0.5	0.9	0.5	1.1	0.5	11.9	5.9
Aug 17	1.5	1.6	2.1	1.4	1.6	1.1	2.3	6.9	7.3	6.8	5.4	5.2	5.8	4.7	4.6	4.6	4.5	4.1	2.7	3.0	4.7	14.3	4.4	2.1	1.1	14.3	4.3
Aug 18	2.1	1.7	4.2	4.0	5.2	2.7	6.2	8.2	9.1	7.9	7.6	6.3	5.1	2.6	5.0	6.4	5.9	**14.8**	8.6	9.0	11.1	12.1	10.1	7.4	1.7	**14.8**	6.8
Aug 19	9.1	7.6	4.7	3.8	4.7	3.8	4.5	4.6	4.7	5.6	7.3	8.8	8.9	8.2	7.7	7.2	9.2	8.4	6.4	1.4	0.9	2.1	1.3	0.4	0.4	9.2	5.5
Aug 20	**0.0**	0.5	0.1	0.2	0.3	**0.0**	0.1	2.1	5.1	5.2	4.6	5.4	5.9	2.9	4.5	4.2	4.2	2.2	0.2	0.3	0.3	**0.0**	0.1	0.5	**0.0**	5.9	2.0
Aug 21	0.2	0.3	**0.0**	**0.0**	0.1	0.4	0.4	1.3	5.1	3.9	3.6	4.9	6.6	7.4	8.0	6.9	6.6	5.0	4.5	4.6	3.4	3.9	2.7	2.5	**0.0**	8.0	3.4
Aug 22	1.4	3.7	1.8	3.6	2.9	2.5	2.0	2.4	3.3	4.0	3.9	4.7	5.4	5.8	5.7	5.1	4.1	3.5	3.5	3.7	3.8	1.1	1.4	0.8	0.8	5.8	3.3
Aug 23	1.2	0.5	0.8	0.6	0.6	0.5	2.9	4.5	5.9	6.1	6.0	5.5	7.1	6.1	5.6	9.9	10.0	10.1	5.9	4.9	5.6	7.0	6.7	6.7	0.5	10.1	5.0
Aug 24	4.4	4.9	5.8	0.5	1.0	7.0	6.2	11.5	12.1	9.9	12.1	12.7	10.3	11.6	11.0	11.9	7.7	4.4	4.3	3.1	2.5	2.4	1.7	0.7	0.5	12.7	6.7
Aug 25	0.3	2.8	0.9	1.0	1.6	2.4	3.2	1.8	1.6	4.3	5.2	7.2	6.7	4.5	4.9	3.9	4.1	4.4	3.3	2.2	3.8	3.3	5.2	3.3	0.3	7.2	3.4
Aug 26	1.7	0.3	0.2	0.6	1.9	0.1	1.5	5.2	2.8	3.7	4.6	6.8	9.8	11.4	11.1	10.3	7.3	6.3	4.1	0.6	1.5	1.5	2.3	2.9	0.1	11.4	4.1
Aug 27	0.2	1.7	0.7	1.4	3.0	2.5	1.6	1.5	2.0	2.0	3.3	4.1	1.6	2.1	1.5	3.3	3.4	4.3	2.3	0.3	**0.0**	**0.0**	0.4	**0.0**	**0.0**	4.3	**1.8**
Aug 28	0.1	0.4	0.4	0.4	0.1	1.6	1.8	3.6	4.1	5.7	5.0	5.9	6.5	6.4	6.3	4.9	2.6	2.0	0.3	0.3	0.4	0.3	0.2	**0.0**	**0.0**	6.5	2.5
Aug 29	0.2	0.1	0.2	0.1	0.1	0.1	0.4	0.2	2.9	4.1	4.4	5.2	7.3	8.5	8.8	5.9	7.0	4.9	3.0	1.1	0.2	**0.0**	**0.0**	0.1	**0.0**	8.8	2.7
Aug 30	0.3	4.3	0.8	2.0	2.0	1.4	1.5	1.5	4.8	6.1	5.3	2.0	3.0	9.8	10.1	9.3	6.8	5.0	4.2	2.8	4.1	0.7	0.1	0.9	0.1	10.1	3.7
Aug 31	0.5	0.7	0.2	0.2	0.4	3.3	2.2	2.3	0.9	3.8	5.6	4.4	4.1	6.2	7.0	7.0	7.3	8.1	5.6	3.5	3.9	3.7	3.9	4.5	0.2	8.1	3.7
Diurnal Maximum	9.9	7.6	6.4	7.3	9.0	9.0	13.5	11.5	12.1	10.8	12.1	13.0	13.2	12.3	14.1	14.4	12.5	14.8	8.8	9.7	11.1	14.3	11.5	11.7			
Diurnal Average	2.6	2.9	2.6	2.4	2.5	2.8	3.5	4.8	5.7	6.1	6.7	7.1	7.4	7.4	7.5	7.2	6.5	6.0	4.4	3.2	3.0	3.5	3.1	2.8			

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

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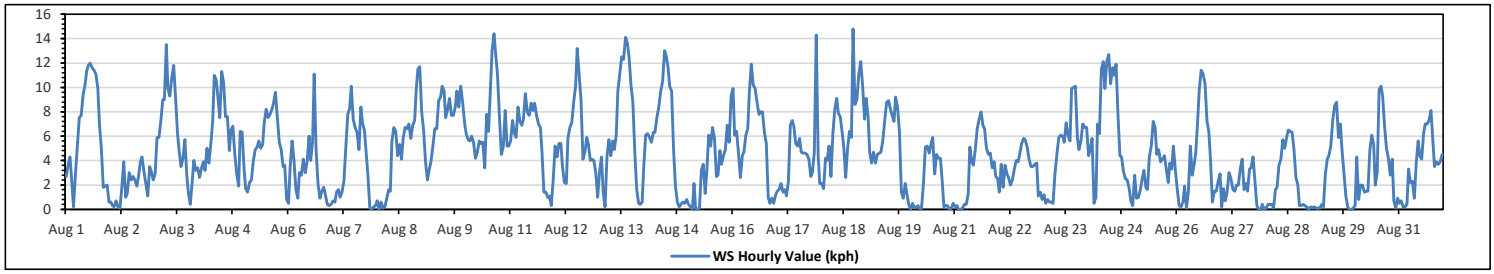
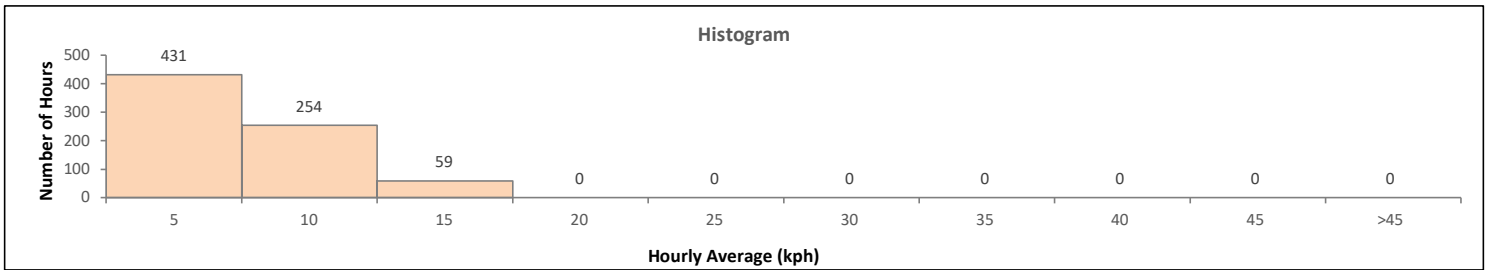


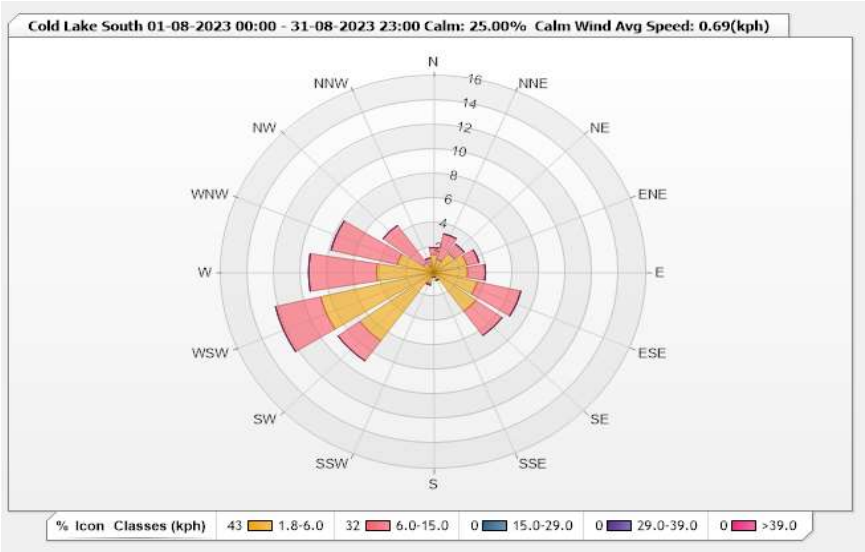


Station: Cold Lake South Monitor: WDS [kph] Monthly: 08-2023

Type: Wind Rose
Direction: Blowing From (Wind Frequency)
Time Base: 1 - Hour

Calm (WS<1.8kph): 25.00% 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	1.48	0.54	0	0	0	2.02
NNE	1.08	2.15	0	0	0	3.23
NE	1.88	0.94	0	0	0	2.82
ENE	2.55	0.94	0	0	0	3.49
E	2.55	1.34	0	0	0	3.89
ESE	3.36	3.36	0	0	0	6.72
SE	3.9	2.42	0	0	0	6.32
SSE	0.67	0	0	0	0	0.67
S	0.4	0	0	0	0	0.4
SSW	0.94	0.13	0	0	0	1.07
SW	6.85	2.02	0	0	0	8.87
WSW	8.74	3.49	0	0	0	12.23
W	4.3	5.11	0	0	0	9.41
WNW	2.82	5.11	0	0	0	7.93
NW	0.94	3.76	0	0	0	4.7
NNW	0.54	0.67	0	0	0	1.21
Summary	43	31.98	0	0	0	74.98



Lakeland Industry & Community Association

Cold Lake South Station - August 2023

Summary of Hourly Averages

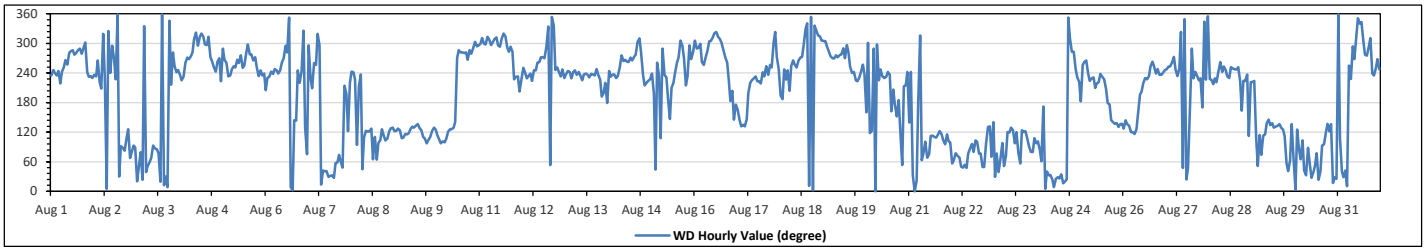
WIND DIRECTION (VWD) in sector

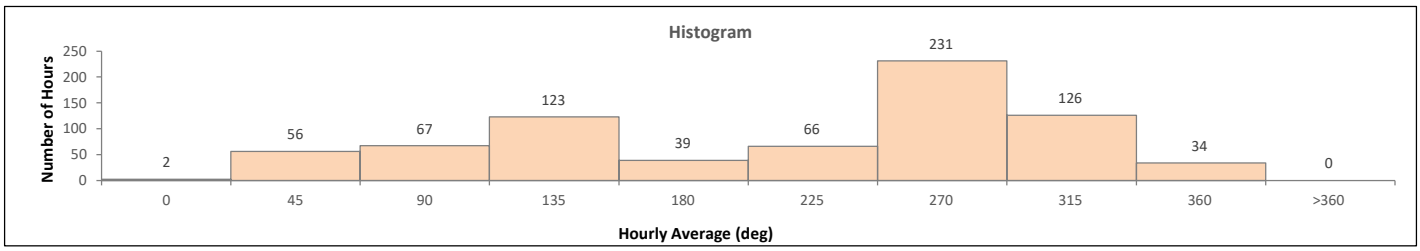
Monthly Average:	269 (W)	degree	
Hours in Service:	744		
Hours of Data:	744		
Hours of Missing Data:	0		
Hours of Calibration:	0		
Operational Uptime:	100.0		

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	WSW	WSW	SW	WSW	SW	WSW	WSW	W	WSW	W	WNW	WNW	W	W	WNW	WNW	W	WNW	WNW	WSW	SW	SW	SW	272	W
Aug 2	SW	SW	W	SW	SSW	NW	SW	N	NW	WSW	WNW	W	SW	N	NNE	E	E	E	ESE	SE	ENE	ENE	E	E	72	ENE
Aug 3	NNE	NE	ENE	NNE	NNW	NE	NE	ENE	ENE	E	E	E	ENE	NNE	N	NNE	NNE	N	NNW	SW	W	WSW	WSW	WSW	48	NE
Aug 4	SW	SW	SW	W	W	W	W	W	NW	NW	WNW	NW	NW	NW	WNW	WNW	NW	W	W	WSW	WSW	W	W	SW	286	WNW
Aug 5	WNW	W	W	SW	SW	WSW	WSW	WSW	W	WSW	W	WSW	WSW	W	WNW	W	W	W	W	WSW	SW	WSW	SW	WSW	263	W
Aug 6	SSW	SW	SW	WSW	SW	WSW	WSW	WSW	WSW	WSW	W	WNW	W	N	N	N	SE	SE	WSW	SW	WSW	NW	SE	ENE	279	W
Aug 7	WNW	SW	SSW	WSW	WSW	NW	WNW	NNE	NE	NE	NE	NNE	NNE	NNE	NNE	ENE	ENE	ENE	ENE	NE	SSW	SSW	ESE	SW	39	NE
Aug 8	WSW	WSW	SW	E	SSW	SW	NE	ESE	ESE	ESE	ESE	SE	ENE	ESE	ENE	E	ESE	SE	ESE	ESE	ESE	ESE	SE	SE	113	ESE
Aug 9	ESE	ESE	SE	ESE	ESE	ESE	ESE	ESE	ESE	SE	SE	SE	SE	SE	SE	ESE	ESE	ESE	E	ESE	ESE	ESE	SE	SE	120	ESE
Aug 10	ESE	ESE	E	E	E	ESE	ESE	SE	SE	SE	SE	W	WNW	W	W	W	W	W	WNW	W	WNW	WNW	WNW	WNW	271	W
Aug 11	WNW	NW	WNW	WNW	NW	NW	WNW	WNW	NW	NW	WNW	WNW	NW	NW	NW	WNW	W	WNW	W	SW	SW	SW	SSW	SW	301	WNW
Aug 12	WSW	WSW	SW	SW	WSW	SW	WSW	WSW	W	W	W	W	W	WNW	NNW	NE	N	NNW	WSW	WSW	WSW	SW	WSW	SW	268	W
Aug 13	SW	WSW	WSW	SW	WSW	WSW	SW	WSW	SW	SW	SW	WSW	SW	SW	SW	SW	SW	WSW	SW	SW	S	SSW	SW	S	236	SW
Aug 14	WSW	SW	SW	SW	SW	SW	WSW	W	W	W	W	W	W	W	W	W	WNW	NW	W	SW	SSW	SW	SW	SW	261	W
Aug 15	WSW	SSW	NE	W	SW	ESE	WNW	SW	SW	S	SE	SSW	SW	WSW	W	W	NW	WNW	W	SSW	SW	WNW	W	W	252	WSW
Aug 16	NW	WNW	WNW	WNW	W	WSW	W	WNW	WNW	WNW	NW	NW	NW	NW	NW	WNW	WNW	W	W	SW	S	SSW	SE	S	297	WNW
Aug 17	SSE	SE	SE	SE	SE	SE	SSW	SW	SW	SW	SW	SW	SW	SW	WSW	SW	WSW	SW	WSW	WSW	WNW	NW	W	WSW	241	WSW
Aug 18	SSW	S	WSW	SW	WSW	SSW	WSW	W	WSW	WSW	W	W	W	WNW	NNW	NNW	NNE	N	N	NNW	NW	NW	NW	NW	300	WNW
Aug 19	WNW	WNW	WNW	W	W	W	W	W	W	W	W	WNW	W	WNW	W	WSW	WSW	WSW	SW	SW	SW	WSW	WSW	SW	272	W
Aug 20	SSE	WNW	ESE	ESE	WNW	N	WNW	SW	WSW	SW	SW	SW	WSW	SW	SSE	SSW	S	SSE	S	ESE	NE	SSW	SSW	WSW	219	SW
Aug 21	SE	WSW	NNE	N	NNE	S	NW	ENE	ENE	E	ENE	ENE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	E	ESE	E	E	103	ESE
Aug 22	NE	ENE	ENE	ENE	ENE	NE	NE	NE	NE	ENE	E	E	E	ESE	E	ENE	ENE	NE	NE	E	SE	SE	ENE	SE	79	ENE
Aug 23	NNE	ENE	NE	ENE	E	NE	ENE	ESE	ESE	SE	ESE	E	ESE	ENE	NE	ESE	ESE	ESE	ESE	E	E	E	ESE	E	104	ESE
Aug 24	E	E	ENE	S	N	NE	NNE	NNE	NNE	N	NNE	NNE	NNE	NE	NNE	NNE	NNE	N	NW	W	W	WSW	SW	SW	24	NNE
Aug 25	S	WSW	W	W	WSW	SW	SW	SW	SSW	SW	SW	SW	SW	SW	SSW	S	S	SE	SE	SE	SE	SE	SE	SE	197	SSW
Aug 26	SE	SE	SE	SE	ESE	ESE	ESE	SE	SSE	SSW	SSW	SW	SW	SW	SW	WSW	W	WSW	WSW	WSW	SW	SW	WSW	WSW	226	SW
Aug 27	WSW	WSW	WSW	W	W	WSW	SW	WSW	NW	NE	NNW	NNE	NE	SSE	WNW	SW	WSW	SW	SW	SW	SSE	NNW	SW	N	265	W
Aug 28	SW	SW	SW	SW	SW	WSW	W	WSW	WSW	WSW	SW	SW	WSW	WSW	WSW	WSW	WSW	SW	SSE	SW	SW	SW	ESE	SW	243	WSW
Aug 29	SW	SW	ESE	NE	ESE	ENE	ESE	ESE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	ESE	NE	NE	ENE	SE	ENE	131	SE
Aug 30	N	SE	E	ENE	ESE	NE	NNE	E	NE	NNE	NE	NE	ENE	NNE	NE	E	E	ESE	SE	ESE	SE	NNE	NNE	NNE	71	ENE
Aug 31	N	ESE	NE	NNE	NE	N	WSW	SW	WNW	W	NW	N	NNW	NNW	WNW	W	W	WNW	NW	WSW	SW	WSW	W	WSW	292	WNW

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	ND	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.





Lakeland Industry & Community Association

Cold Lake South Station - August 2023

Summary of Hourly Averages

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

WIND SPEED

Maximum Hourly Value:	14.8	kph	on Aug 18 at hr 17	Hours in Service:	744
Maximum Daily Value:	7.4	kph	on Aug 9	Hours of Data:	744
Minimum Hourly Value:	0.0	kph	on Aug 7 at hr 21	Hours of Missing Data:	0
Minimum Daily Value:	1.8	kph	on Aug 27	Hours of Calibration:	0
Monthly Average:	1.1	kph		Operational Uptime:	100.0

WIND DIRECTION

Monthly Average: 269 degree (W)

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	3.6	4.3	2.1	0.2	2.9	5.2	7.5	7.7	9.4	10.2	11.3	11.8	12.0	11.6	11.4	11.1	9.9	7.0	5.0	1.8	1.9	2.0	0.6	0.2	12.0	6.4
	SW	WSW	WSW	SW	WSW	SW	WSW	WSW	W	WSW	W	WNW	WNW	W	W	WNW	WNW	W	WNW	WNW	WSW	SW	SW	SW			
Aug 2	0.6	0.3	0.2	0.7	0.2	0.1	1.8	3.9	1.0	1.3	3.0	2.4	2.7	2.4	1.9	2.7	3.9	4.3	3.1	2.1	1.1	3.5	3.0	2.4	0.1	4.3	2.0
	SW	SW	W	SW	SSW	NW	SW	N	NW	WSW	WNW	W	SW	N	NNE	E	E	E	ESE	SE	ENE	ENE	E	E			
Aug 3	2.9	5.9	5.9	7.3	9.0	9.0	13.5	9.9	9.3	10.8	11.8	9.1	6.2	4.8	3.5	4.2	5.7	2.8	1.3	0.4	2.3	4.0	3.2	3.4	0.4	13.5	6.1
	NNE	NE	ENE	NNE	NNW	NE	NE	ENE	ENE	E	E	E	ENE	NNE	N	NNE	NNE	N	NNW	SW	W	WSW	WSW	WSW			
Aug 4	2.6	3.4	3.9	3.2	5.0	3.8	5.3	7.3	11.0	10.6	9.0	7.5	11.3	10.4	7.6	7.6	4.8	6.5	6.8	4.5	2.9	1.9	6.4	6.3	1.9	11.3	6.2
	SW	SW	SW	W	W	W	W	W	NW	NW	WNW	NW	NW	NW	WNW	WNW	NW	W	W	WSW	WSW	W	W	SW			
Aug 5	3.3	1.7	1.4	2.2	2.4	4.0	4.9	5.1	5.6	5.0	5.3	7.1	8.2	7.5	7.8	8.2	8.7	9.6	7.5	5.5	4.9	3.5	3.6	0.8	0.8	9.6	5.2
	WNW	W	W	SW	SW	WSW	WSW	WSW	W	WSW	W	WSW	WSW	W	WNW	W	W	W	W	WSW	SW	WSW	SW	WSW			
Aug 6	0.5	3.5	5.6	4.0	1.6	0.9	3.0	2.8	4.1	3.0	3.9	6.0	4.0	5.5	11.1	4.9	2.1	0.9	1.5	1.8	1.2	0.4	0.3	0.4	0.3	11.1	3.0
	SSW	SW	SW	WSW	SW	WSW	WSW	WSW	WSW	WSW	W	WNW	W	N	N	N	SE	SE	WSW	SW	WSW	NW	SE	ENE			
Aug 7	0.7	0.6	1.4	1.6	1.0	1.4	2.3	5.1	7.8	8.3	10.1	7.4	6.7	6.3	4.9	8.4	7.1	6.5	4.8	2.8	0.1	**0.0**	0.2	0.3	**0.0**	10.1	4.0
	WNW	SW	SSW	WSW	WSW	NW	WNW	NNE	NE	NE	NE	NNE	NNE	NNE	NNE	ENE	ENE	ENE	ENE	NE	SSW	SSW	ESE	SW			
Aug 8	0.7	**0.0**	0.6	0.1	0.2	0.9	1.6	1.5	5.6	6.7	6.4	4.4	5.3	4.1	5.8	6.7	6.6	7.0	5.8	6.9	7.3	9.8	11.5	11.7	**0.0**	11.7	4.9
	WSW	WSW	SW	E	SSW	SW	NE	ESE	ESE	ESE	ESE	SE	ENE	ESE	ENE	E	ESE	SE	ESE	ESE	ESE	ESE	SE	SE			
Aug 9	8.0	6.5	3.9	2.4	3.3	3.9	5.2	6.6	6.6	8.9	9.2	10.1	9.7	7.5	8.2	9.1	7.7	7.7	8.4	9.7	8.4	10.1	8.8	7.1	2.4	10.1	**7.4**
	ESE	ESE	SE	ESE	ESE	ESE	ESE	ESE	ESE	SE	SE	SE	SE	SE	SE	ESE	ESE	ESE	E	ESE	ESE	ESE	SE	SE			
Aug 10	6.2	5.7	5.6	6.0	5.5	4.2	4.7	5.6	5.4	5.5	3.4	7.8	6.4	10.0	13.0	14.4	12.5	11.0	7.6	4.5	5.1	8.1	5.2	5.2	3.4	14.4	7.0
	ESE	ESE	E	E	E	ESE	ESE	SE	SE	SE	SE	W	WNW	W	W	W	W	W	WNW	W	WNW	WNW	WNW	WNW			
Aug 11	5.6	7.3	6.2	5.9	8.4	7.2	6.9	7.4	9.5	8.0	7.7	8.7	8.1	8.7	7.7	7.0	6.7	4.7	1.4	1.4	1.0	1.1	0.3	2.4	0.3	9.5	5.8
	WNW	NW	WNW	WNW	NW	NW	WNW	WNW	NW	NW	WNW	WNW	NW	NW	NW	WNW	W	WNW	W	SW	SW	SW	SSW	SW			
Aug 12	5.2	4.3	5.4	5.4	3.5	2.2	2.1	5.8	6.7	7.1	8.8	10.1	13.2	11.1	8.9	4.1	4.7	5.9	5.3	4.0	4.1	4.0	3.0	1.0	1.0	13.2	5.7
	WSW	WSW	SW	SW	WSW	SW	WSW	WSW	W	W	W	W	W	WNW	NNW	NE	N	NNW	WSW	WSW	WSW	SW	WSW	SW			
Aug 13	3.1	4.3	1.5	0.2	4.3	5.7	4.4	5.6	4.9	6.1	9.7	11.1	12.5	12.3	14.1	13.6	12.5	10.2	8.8	4.7	1.6	0.5	0.4	0.6	0.2	14.1	6.4
	SW	WSW	WSW	SW	WSW	WSW	SW	WSW	SW	SW	SW	WSW	SW	SW	SW	SW	SW	WSW	SW	SW	S	SSW	SW	S			
Aug 14	3.5	6.1	6.2	5.9	5.5	6.3	6.3	7.5	8.4	9.7	10.5	13.0	12.6	11.6	10.1	9.7	5.0	1.9	0.6	0.2	0.4	0.6	0.5	0.8	0.2	13.0	6.0
	WSW	SW	SW	SW	SW	SW	WSW	W	W	W	W	W	W	W	W	W	WNW	NW	W	SW	SSW	SW	SW	SW			
Aug 15	0.4	0.2	**0.0**	2.1	0.1	**0.0**	0.1	3.2	3.7	1.3	3.1	6.1	5.2	6.7	5.8	2.7	2.8	4.8	3.7	4.4	4.9	6.9	5.5	9.3	**0.0**	9.3	3.5
	WSW	SSW	NE	W	SW	ESE	WNW	SW	SW	S	SE	SSW	SW	WSW	W	W	NW	WNW	W	SSW	SW	WNW	W	W			
Aug 16	9.9	6.1	6.4	4.6	2.6	4.4	4.7	6.1	6.6	9.6	11.9	10.2	9.9	8.8	7.8	8.0	8.0	6.3	5.4	1.0	0.5	0.9	0.5	1.1	0.5	11.9	5.9
	NW	WNW	WNW	WNW	W	WSW	W	WNW	WNW	WNW	NW	NW	NW	NW	NW	WNW	WNW	W	W	SW	S	SSW	SE	S			
Aug 17	1.5	1.6	2.1	1.4	1.6	1.1	2.3	6.9	7.3	6.8	5.4	5.2	5.8	4.7	4.6	4.6	4.5	4.1	2.7	3.0	4.7	14.3	4.4	2.1	1.1	14.3	4.3
	SSE	SE	SE	SE	SE	SE	SSW	SW	SW	SW	SW	SW	SW	SW	WSW	SW	WSW	SW	WSW	WSW	WNW	NW	W	WSW			
Aug 18	2.1	1.7	4.2	4.0	5.2	2.7	6.2	8.2	9.1	7.9	7.6	6.3	5.1	2.6	5.0	6.4	5.9	**14.8**	8.6	9.0	11.1	12.1	10.1	7.4	1.7	**14.8**	6.8
	SSW	S	WSW	SW	WSW	SSW	WSW	W	WSW	WSW	W	W	W	WNW	NNW	NNW	NNE	N	N	NNW	NW	NW	NW	NW			
Aug 19	9.1	7.6	4.7	3.8	4.7	3.8	4.5	4.6	4.7	5.6	7.3	8.8	8.9	8.2	7.7	7.2	9.2	8.4	6.4	1.4	0.9	2.1	1.3	0.4	0.4	9.2	5.5
	WNW	WNW	WNW	W	W	W	W	W	W	W	W	WNW	W	WNW	W	WSW	WSW	WSW	SW	SW	SW	WSW	WSW	SW			
Aug 20	**0.0**	0.5	0.1	0.2	0.3	**0.0**	0.1	2.1	5.1	5.2	4.6	5.4	5.9	2.9	4.5	4.2	4.2	2.2	0.2	0.3	0.3	**0.0**	0.1	0.5	**0.0**	5.9	2.0
	SSE	WNW	ESE	ESE	WNW	N	WNW	SW	WSW	SW	SW	SW	WSW	SW	SSE	SSW	S	SSE	S	ESE	NE	SSW	SSW	WSW			
Aug 21	0.2	0.3	**0.0**	**0.0**	0.1	0.4	0.4	1.3	5.1	3.9	3.6	4.9	6.6	7.4	8.0	6.9	6.6	5.0	4.5	4.6	3.4	3.9	2.7	2.5	**0.0**	8.0	3.4
	SE	WSW	NNE	N	NNE	S	NW	ENE	ENE	E	ENE	ENE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	E	ESE	E	E			
Aug 22	1.4	3.7	1.8	3.6	2.9	2.5	2.0	2.4	3.3	4.0	3.9	4.7	5.4	5.8	5.7	5.1	4.1	3.5	3.5	3.7	3.8	1.1	1.4	0.8	0.8	5.8	3.3
	NE	ENE	ENE	ENE	ENE	NE	NE	NE	NE	ENE	E	E	E	ESE	E	ENE	ENE	NE	NE	E	SE	SE	ENE	SE			
Aug 23	1.2	0.5	0.8	0.6	0.6	0.5	2.9	4.5	5.9	6.1	6.0	5.5	7.1	6.1	5.6	9.9	10.0	10.1	5.9	4.9	5.6	7.0	6.7	6.7	0.5	10.1	5.0
	NNE	ENE	NE	ENE	E	NE	ENE	ESE	ESE	SE	ESE	E	ESE	ENE	NE	ESE	ESE	ESE	ESE	ESE	E	E	E	ESE	E			
Aug 24	4.4	4.9	5.8	0.5	1.0	7.0	6.2	11.5	12.1	9.9	12.1	12.7	10.3	11.6	11.0	11.9	7.7	4.4	4.3	3.1	2.5	2.4	1.7	0.7	0.5	12.7	6.7
	E	E	ENE	S	N	NE	NNE	NNE	NNE	N	NNE	NNE	NNE	NE	NNE	NNE	NNE	N	NW	W	W	WSW	SW	SW			
Aug 25	0.3	2.8	0.9	1.0	1.6	2.4	3.2	1.8	1.6	4.3	5.2	7.2	6.7	4.5	4.9	3.9	4.1	4.4	3.3	2.2	3.8	3.3	5.2	3.3	0.3	7.2	3.4
	S	WSW	W	W	WSW	SW	SW	SW	SSW	SW	SW	SW	SW	SW	SSW	S	S	SE	SE	SE	SE	SE	SE	SE			
Aug 26	1.7	0.3	0.2	0.6	1.9	0.1	1.5	5.2	2.8	3.7	4.6	6.8	9.8	11.4	11.1	10.3	7.3	6.3	4.1	0.6	1.5	1.5	2.3	2.9	0.1	11.4	4.1
	SE	SE	SE	SE	ESE	ESE	ESE	SE	SSE	SSW	SW	SW	SW	SW	SW	WSW	W	WSW	WSW	WSW	SW	SW	WSW	WSW			
Aug 27	0.2	1.7	0.7	1.4	3.0	2.5	1.6	1.5	2.0	2.0	3.3	4.1	1.6	2.1	1.5	3.3	3.4	4.3	2.3	0.3	**0.0**	**0.0**	0.4	**0.0**	**0.0**	4.3	**1.8**
	WSW	WSW	WSW	W	W	WSW	SW	WSW	NW	NE	NNW	NNE	NE	SSE	WNW	SW	WSW	SW	SW	SW	SSE	NNW	SW	N			
Aug 28	0.1	0.4	0.4	0.4	0.1	1.6	1.8	3.6	4.1	5.7	5.0	5.9	6.5	6.4	6.3	4.9	2.6	2.0	0.3	0.3	0.4	0.3	0.2	**0.0**	**0.0**	6.5	2.5
	SW	SW	SW	SW	SW	WSW	W	WSW	WSW	WSW	SW	SW	WSW	WSW	WSW	WSW	WSW	SW	SSE	SW	SW	SW	ESE	SW			
Aug 29	0.2	0.1	0.2	0.1	0.1	0.1	0.4	0.2	2.9	4.1	4.4	5.2	7.3	8.5	8.8	5.9	7.0	4.9	3.0	1.1	0.2	**0.0**	**0.0**	0.1	**0.0**	8.8	2.7
	SW	SW	ESE	NE	ESE	ENE	ESE	ESE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	ESE	NE	NE	ENE	SE	ENE			
Aug 30	0.3	4.3	0.8	2.0	2.0	1.4	1.5	1.5	4.8	6.1	5.3	2.0	3.0	9.8	10.1	9.3	6.8	5.0	4.2	2.8	4.1	0.7	0.1	0.9	0.1	10.1	3.7
	N	SE	E	ENE	ESE	NE	NNE	E	NE	NNE	NE	NE	ENE	NNE	NE	E	E	ESE	SE	ESE	SE	NNE	NNE	NNE			
Aug 31	0.5	0.7	0.2	0.2	0.4	3.3	2.2	2.3	0.9	3.8	5.6	4.4	4.1	6.2	7.0	7.0	7.3	8.1	5.6	3.5	3.9	3.7	3.9	4.5	0.2	8.1	3.7
	N	ESE	NE	NNE	NE	N	WSW	SW	WNW	W	NW	N	NNW	NNW	WNW	W	W	WNW	NW	WSW	SW	WSW	W	WSW			

C	Monthly Calibration	**S**	Daily Zero-Span Check	**Q**	Quality Assurance		
K	Collection Error	**ND**	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 2023

Summary of Hour Standard Deviations

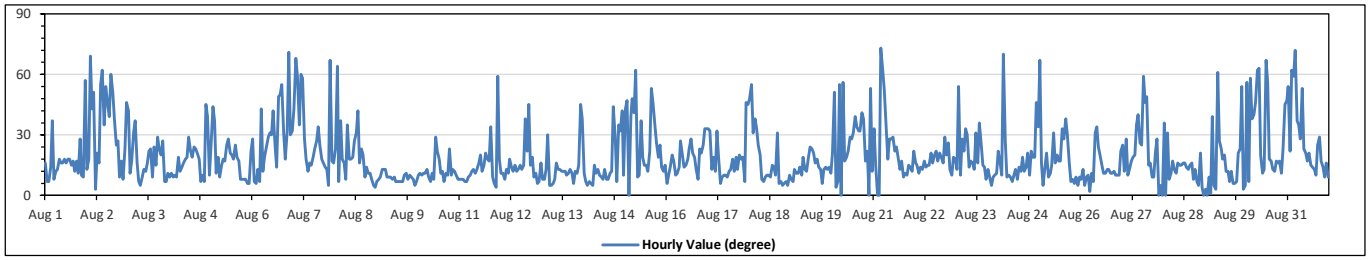
STANDARD DEVIATION WIND DIRECTION (STDWD) in Degree

Maximum Hourly Value:	73 degree on Aug 21 at hr 4	Hours in Service:	744
		Hours of Data:	744
Minimum Hourly Value:	0 degree on Aug 15 at hr 2	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	16	7	7	14	37	8	12	13	18	16	16	18	16	18	18	15	17	12	17	11	28	10	9	57	7	57
Aug 2	13	18	69	43	51	3	21	16	55	62	35	54	45	39	60	51	38	25	27	9	17	8	23	46	3	69
Aug 3	42	11	17	31	37	16	7	5	9	13	12	16	22	23	9	24	15	29	23	20	27	7	7	11	5	42
Aug 4	9	11	9	10	9	19	12	14	16	18	19	29	22	19	24	23	21	18	7	10	7	45	39	10	7	45
Aug 5	28	44	37	11	19	9	15	18	17	25	28	21	20	18	25	19	17	8	8	8	8	6	6	22	6	44
Aug 6	28	7	6	13	7	43	12	19	24	29	31	30	42	25	14	49	50	55	31	18	32	71	30	32	6	71
Aug 7	43	68	59	35	60	58	28	18	12	16	15	19	23	27	34	25	18	16	14	13	5	67	17	16	5	68
Aug 8	23	64	7	37	18	16	8	35	18	18	19	27	31	42	16	23	20	9	14	11	11	8	5	4	4	64
Aug 9	7	8	9	13	13	13	9	9	9	8	9	7	7	7	7	7	10	11	8	10	9	8	5	7	5	13
Aug 10	10	11	10	11	11	13	9	7	11	8	29	22	18	11	12	7	11	10	23	10	13	12	10	8	7	29
Aug 11	8	8	8	7	7	9	10	12	13	11	13	16	20	12	15	21	18	17	34	9	6	4	59	18	4	59
Aug 12	11	11	8	13	11	18	14	12	15	12	13	15	13	15	38	22	45	15	19	9	11	6	7	16	6	45
Aug 13	8	8	13	30	5	5	6	8	16	13	13	12	12	12	10	11	13	11	6	12	11	15	45	38	5	45
Aug 14	11	7	5	7	6	5	15	11	13	10	9	8	13	8	8	11	12	44	29	7	35	32	42	10	5	44
Aug 15	43	47	**0**	39	48	41	62	9	10	37	19	15	15	12	22	53	46	35	26	19	25	14	12	15	**0**	62
Aug 16	6	10	14	20	17	10	11	14	27	20	14	15	18	23	28	21	19	13	8	23	21	25	33	33	6	33
Aug 17	33	32	13	19	12	32	19	6	9	10	10	9	12	13	18	12	19	13	20	18	19	7	46	45	6	46
Aug 18	48	55	31	38	33	25	20	8	7	9	10	10	9	15	14	10	31	6	7	5	6	7	5	10	5	55
Aug 19	8	7	13	11	11	14	10	19	13	12	19	24	23	21	16	18	14	13	6	13	14	13	14	11	6	24
Aug 20	21	51	4	7	55	**0**	56	17	19	22	29	28	31	39	34	32	32	41	38	17	22	**0**	53	12	**0**	56
Aug 21	33	15	**0**	**0**	73	62	52	33	18	28	28	29	22	24	19	13	17	9	11	10	15	14	12	22	**0**	73
Aug 22	16	15	11	14	13	17	14	15	15	21	16	20	22	17	21	19	16	29	20	26	13	10	19	18	10	29
Aug 23	13	54	10	28	22	33	30	14	17	16	13	31	16	36	25	15	14	8	13	9	5	9	10	11	5	54
Aug 24	22	16	10	70	27	9	10	9	7	10	13	8	14	12	19	12	14	21	10	22	19	19	46	34	7	70
Aug 25	67	16	5	14	21	9	11	15	31	16	20	17	17	33	28	38	30	16	7	8	6	9	5	9	5	67
Aug 26	8	13	5	9	10	2	11	7	31	34	24	20	15	11	11	13	13	11	11	12	10	10	10	22	2	34
Aug 27	25	12	28	10	13	17	19	20	35	40	26	25	59	46	49	15	16	9	9	21	28	**0**	5	**0**	**0**	59
Aug 28	36	**0**	31	8	11	17	13	11	16	15	15	16	16	14	13	15	16	8	13	7	5	21	4	**0**	**0**	36
Aug 29	3	**0**	9	1	39	5	3	61	27	23	18	20	12	12	7	12	6	6	7	21	23	54	3	5	**0**	61
Aug 30	56	7	58	38	40	46	62	63	20	11	13	67	56	18	17	13	12	17	16	17	11	23	45	47	7	67
Aug 31	54	22	62	59	72	37	35	28	53	23	21	17	21	15	14	13	10	25	29	17	14	9	16	9	9	72
Diurnal Minimum	3	0	0	0	5	0	3	5	7	8	9	7	7	7	7	7	6	6	6	5	5	0	3	0		
Diurnal Maximum	67	68	69	70	73	62	62	63	55	62	35	67	59	46	60	53	50	55	38	26	35	71	59	57		

C	Monthly Calibration	**S**	Daily Zero-Span Check	**Q**	Quality Assurance	
K	Collection Error	**ND**	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.



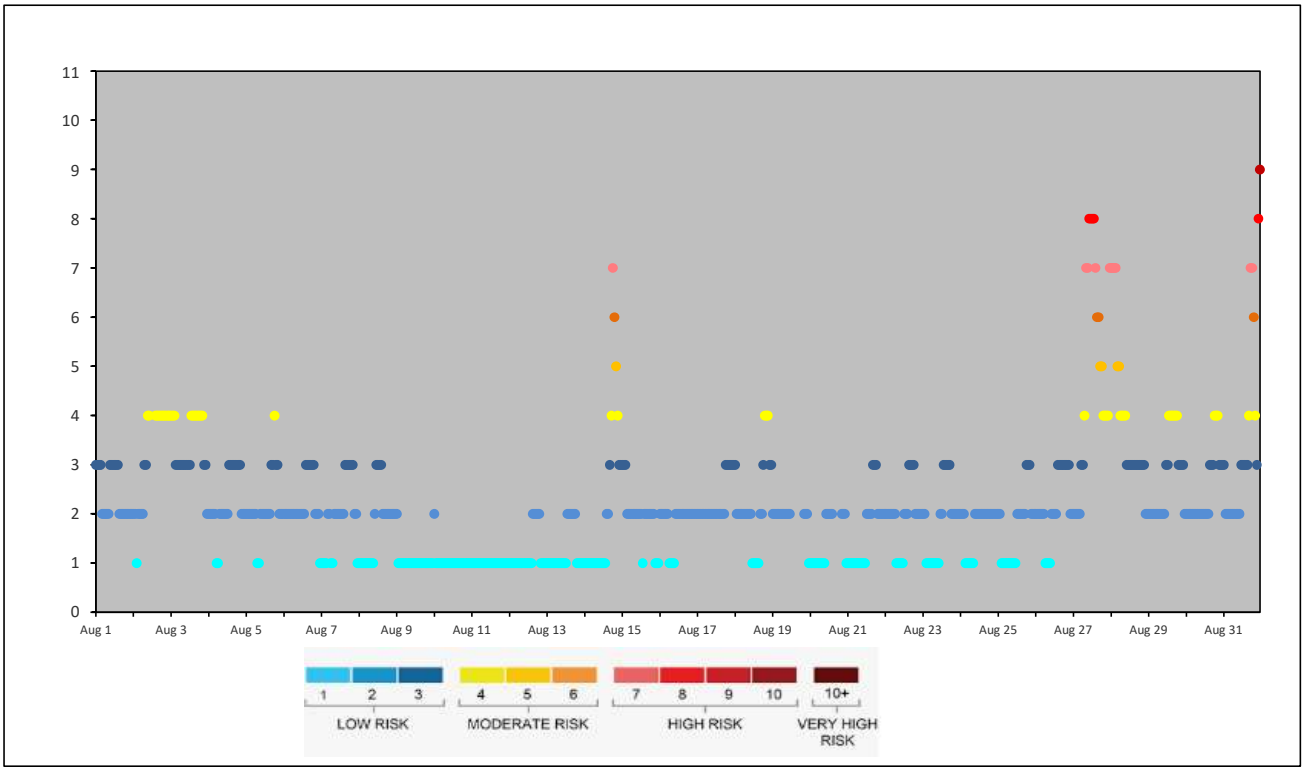
TAMARACK STATION

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Tamarack Site - August 2023

AIR QUALITY HEALTH INDEX

Day	Hourly Period Starting at (MST)																							
	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	3	3	3	2	2	2	2	2	3	3	3	3	3	3	2	2	2	2	2	2	2	2	2
Aug 2	2	2	1	2	2	2	2	3	3	4	4				4	4	4	4	4	4	4	4	4	4
Aug 3	4	4	4	3	3	3	3	3	3	3	3	3	3	4	4	4	4	4	4	4	4	3	3	2
Aug 4	2	2	2	2	2	1	1	2	2	2	2	2	2	3	3	3	3	3	3	3	3	2	2	2
Aug 5	2	2	2	2	2	2	2	1	1	2	2	2	2	2	2	2	3	3	4	3	3	2	2	2
Aug 6	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3	3	2	2	2	1
Aug 7	1	1	1	1	2	2	1	1	2	2	2	2	2	2	2	3	3	3	3	3	3	2	2	1
Aug 8	1	1	1	1	1	1	1	1	1	1	2	3	3	3	3	2	2	2	2	2	2	2	2	2
Aug 9	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Aug 10	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Aug 11	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Aug 12	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	1	1	1	1
Aug 13	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	1	1	1	1	1
Aug 14	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	3	4	7	6	5	4	3	3
Aug 15	3	3	3	2	2	2	2	2	2	2	2	2	2	1	2	2	2	2	2	2	2	1	1	1
Aug 16	2	2	2	2	2	2	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Aug 17	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3	3
Aug 18	3	2	2	2	2	2	2	2	2	2	2	1	1	1	1	1	2	2	3	4	4	4	3	3
Aug 19	2	2	2	2	2	2	2	2	2	2	2	2									2	2	2	1
Aug 20	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2						2	2	2	1
Aug 21	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	3	3	3	2	2	2	2	2
Aug 22	2	2	2	2	2	2	2	1	1	1	1	1	2	2	2	3	3	3	3	2	2	2	2	2
Aug 23	2	2	1	1	1	1	1	1	1	1	1	2	2	3	3	3	3	3	2	2	2	2	2	2
Aug 24	2	2	2	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Aug 25	2	2	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	3	3	3	2	2	2
Aug 26	2	2	2	2	2	2	1	1	1	1	2	2	2	2	3	3	3	3	3	3	3	3	2	2
Aug 27	2	2	2	2	2	3	3	4	7	7	8	8	8	8	7	6	6	5	5	4	4	4	4	7
Aug 28	7	7	7	7	5	5	4	4	4	4	3	3	3	3	3	3	3	3	3	3	3	3	2	2
Aug 29	2	2	2	2	2	2	2	2	2	2	2	3	3	4	4	4	4	4	4	3	3	3	3	2
Aug 30	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	4	4	4	3	3	3
Aug 31	3	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3	4	7	7	6	4	3	8	9



Lakeland Industry & Community Association

Tamarack Site - August 2023

Summary of Hourly Averages

SULPHUR DIOXIDE (SO_2) in ppb

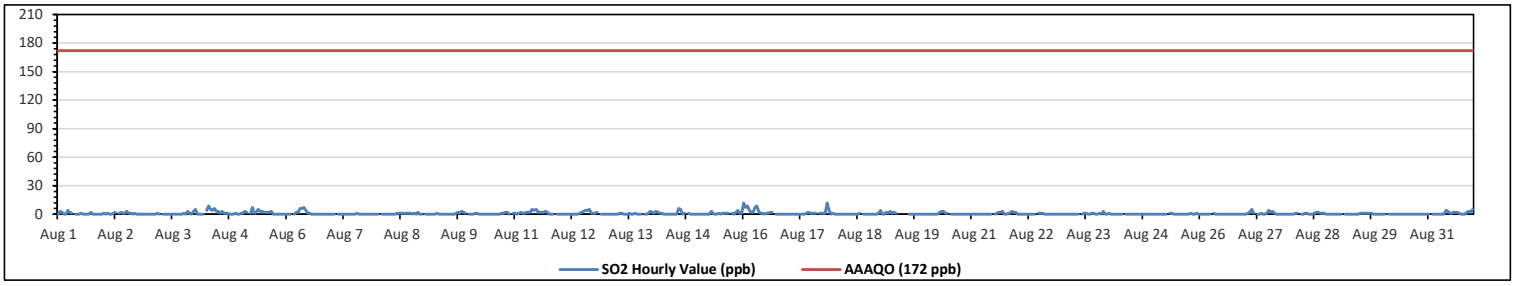
Alberta Ambient Air Quality Objectives (AAAQO): 1-Hour 172 ppb, 24-Hour 48 ppb, 30-Day 11 ppb

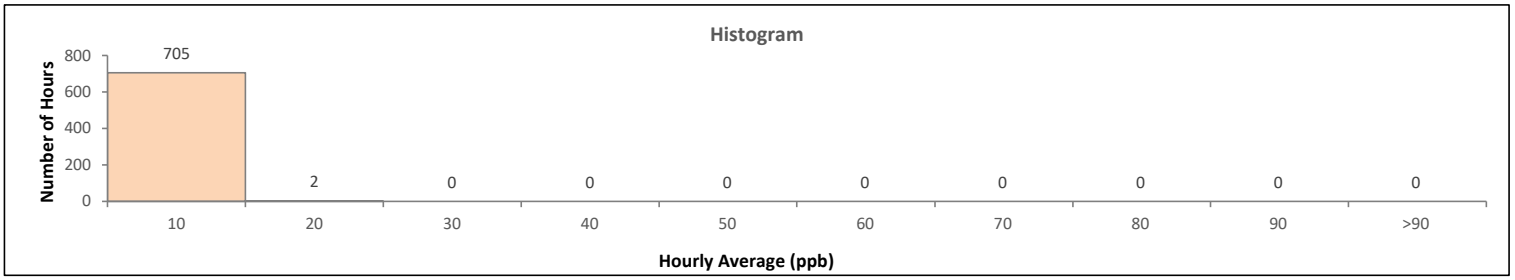
Number of 1-Hour Exceedances:	0	Number of 24-Hour Exceedances:	0	30-Day Exceedence:	0	
Maximum Hourly Value:	12	ppb	on Aug 16 at hr 0	Hours in Service:	744	
Maximum Daily Value:	2.7	ppb	on Aug 16	Hours of Data:	707	
Minimum Hourly Value:	0	ppb	on Aug 1 at hr 0	Hours of Missing Data:	0	
Minimum Daily Value:	0.0	ppb	on Aug 30	Hours of Calibration:	37	
Monthly Average:	0.7	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	3	2	0	0	4	2	1	S	0	0	0	1	0	0	0	0	2	0	0	0	0	0	0	0	4	0.7
Aug 2	1	0	1	0	0	1	2	S	1	2	1	1	3	1	1	0	1	0	0	0	0	0	0	0	0	3	0.7
Aug 3	0	0	0	0	1	0	S	0	0	0	0	0	0	0	0	0	0	0	1	0	3	1	0	3	0	3	0.4
Aug 4	5	0	0	0	0	S	4	9	5	4	6	3	3	1	3	1	1	1	0	0	0	1	0	0	0	9	2.0
Aug 5	1	1	3	2	S	1	7	1	2	5	3	3	2	2	2	2	3	0	0	0	0	0	0	0	0	7	1.7
Aug 6	0	0	0	S	0	2	2	6	6	7	4	1	1	0	0	0	0	0	0	0	0	0	0	0	0	7	1.3
Aug 7	0	0	S	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0.0
Aug 8	0	S	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	1	0	2	0	0	0	2	0.5
Aug 9	S	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	2	1	3	2	1	S	0	3	0.5
Aug 10	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	2	0	S	1	0	2	0.4
Aug 11	1	0	1	2	1	1	2	2	2	5	4	5	2	2	2	2	3	2	0	0	0	S	0	0	0	5	1.7
Aug 12	0	0	0	0	0	0	0	0	0	0	1	2	3	4	4	5	1	1	1	2	S	0	0	0	0	5	1.0
Aug 13	0	0	0	0	0	0	0	1	1	0	0	0	1	0	0	1	0	0	0	S	0	0	1	3	0	3	0.3
Aug 14	2	1	3	2	1	1	0	0	0	0	0	0	0	0	6	5	0	1	S	1	0	0	0	0	0	6	1.0
Aug 15	0	0	0	0	0	0	0	3	1	0	0	1	0	1	1	1	1	S	1	0	2	4	1	1	0	4	0.8
Aug 16	12	7	9	4	2	2	7	9	3	1	1	0	1	1	2	2	S	0	0	0	0	0	0	0	0	12	2.7
Aug 17	0	0	0	0	0	0	0	0	0	1	2	1	1	1	1	S	1	1	1	1	12	4	0	1	0	12	1.2
Aug 18	0	0	0	0	0	0	0	0	0	0	0	0	0	1	S	0	0	0	0	0	0	0	0	1	0	1	0.1
Aug 19	4	0	0	2	1	3	1	2	1	C	C	C	C	C	C	0	0	0	0	0	0	0	0	0	0	4	0.8
Aug 20	0	0	0	0	0	0	0	2	3	3	1	1	S	0	0	0	0	0	0	0	0	0	0	0	0	3	0.4
Aug 21	0	0	0	0	0	0	0	0	0	0	0	S	0	1	2	2	3	0	0	1	1	3	2	2	0	3	0.7
Aug 22	0	0	0	0	0	0	0	0	0	0	S	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0.1
Aug 23	0	0	0	0	0	0	0	0	0	S	0	1	1	0	0	1	1	0	0	1	0	3	0	0	0	3	0.3
Aug 24	1	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0
Aug 25	0	0	0	0	0	0	0	S	1	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1	0.2
Aug 26	0	0	0	0	0	0	S	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0
Aug 27	0	1	2	5	1	S	0	0	1	0	0	1	4	2	3	1	0	0	0	0	0	0	0	0	0	5	0.9
Aug 28	0	0	1	1	S	0	0	1	1	0	0	0	1	2	2	1	1	1	0	0	0	0	0	0	0	2	0.5
Aug 29	0	0	0	S	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	1	0.3
Aug 30	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
Aug 31	0	S	0	0	0	0	0	0	0	4	3	1	1	2	2	2	1	0	0	0	2	3	2	5	0	5	1.2
Diurnal Maximum	12	7	9	5	2	4	7	9	6	7	6	5	4	4	6	5	3	2	2	2	12	4	2	5			
Diurnal Average	0.9	0.4	0.8	0.7	0.3	0.5	0.9	1.3	1.0	1.1	0.9	0.8	1.0	0.8	1.1	0.9	0.6	0.4	0.3	0.4	0.8	0.8	0.3	0.6			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	ND	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.



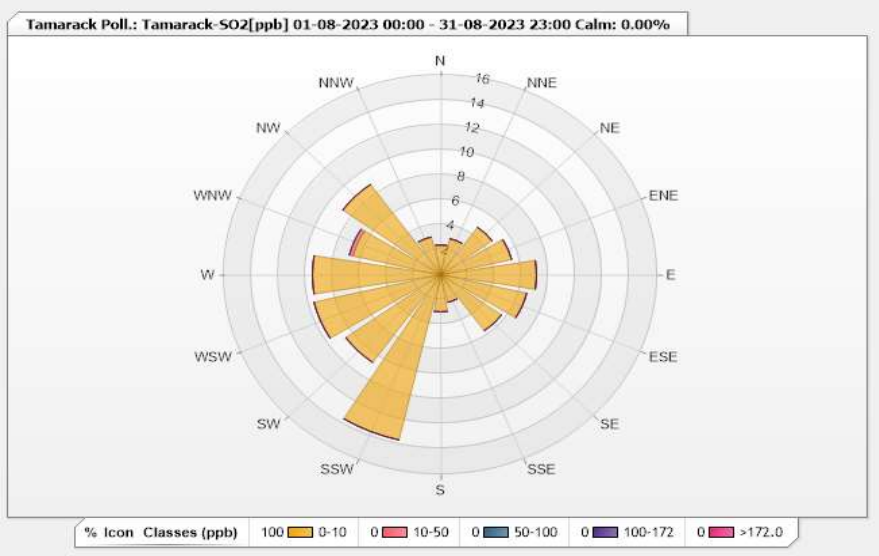


Station: Tamarack Poll.: Tamarack-SO2[ppb] Monthly: 08-2023

Type: Pollution Rose
Direction: Blowing From (Wind Frequency)
Time Base: 1 - Hour

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

Direction	0-10	10-50	50-100	100-172	>172.0	Total
N	2.4	0	0	0	0	2.4
NNE	2.97	0	0	0	0	2.97
NE	4.67	0	0	0	0	4.67
ENE	5.37	0	0	0	0	5.37
E	7.07	0	0	0	0	7.07
ESE	6.51	0	0	0	0	6.51
SE	5.52	0	0	0	0	5.52
SSE	2.26	0	0	0	0	2.26
S	2.97	0	0	0	0	2.97
SSW	13.58	0	0	0	0	13.58
SW	8.63	0	0	0	0	8.63
WSW	9.62	0	0	0	0	9.62
W	9.48	0	0	0	0	9.48
WNW	6.65	0.28	0	0	0	6.93
NW	8.91	0	0	0	0	8.91
NNW	3.11	0	0	0	0	3.11
Summary	100	0.28	0	0	0	100



Lakeland Industry & Community Association

Tamarack Site - August 2023

Summary of Hourly Averages

HYDROGEN SULPHIDE (H_2S) in ppb

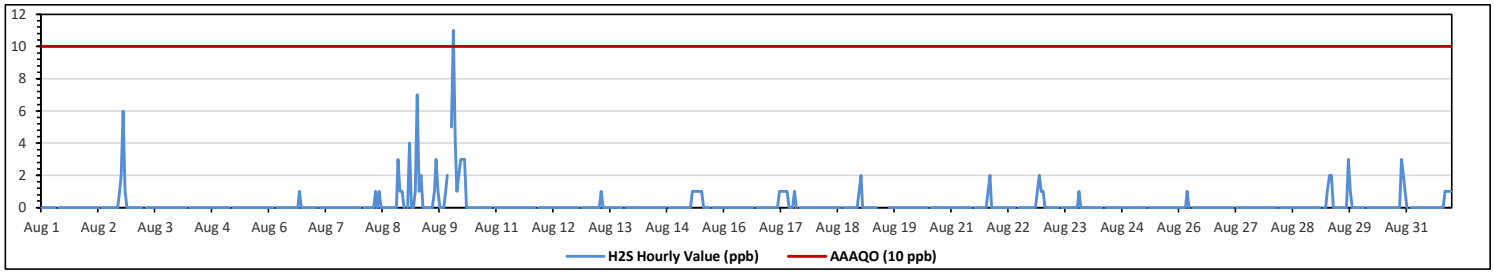
Alberta Ambient Air Quality Objectives (AAAQO): 1-Hour 10 ppb, 24-Hour 3 ppb

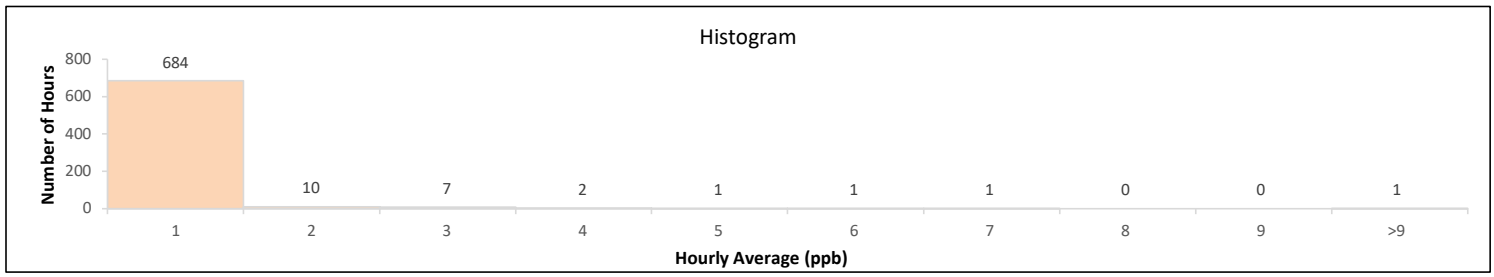
Number of 1-Hour Exceedances:	1		Number of 24-Hour Exceedances:	0		
Maximum Hourly Value:	11	ppb	on Aug 10 at hr 1	Hours in Service:	744	
Maximum Daily Value:	1.0	ppb	on Aug 9	Hours of Data:	707	
Minimum Hourly Value:	0	ppb	on Aug 1 at hr 0	Hours of Missing Data:	0	
Minimum Daily Value:	0.0	ppb	on Aug 1	Hours of Calibration:	37	
Monthly Average:	0.2	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	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 2	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	1	2	6	1	0	0	0	0	6	0.0
Aug 3	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 4	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
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	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0.0
Aug 7	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
Aug 8	0	S	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	3	1	1	0	0	3	0.0
Aug 9	S	0	4	0	0	1	7	1	2	0	0	0	0	0	0	1	3	1	0	0	0	1	2	S	0	7	**1.0**
Aug 10	5	**11**	4	1	2	3	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	**11**	**1.0**
Aug 11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0.0
Aug 12	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
Aug 13	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	1	0.0
Aug 14	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 15	0	0	0	0	0	0	0	1	1	1	1	1	1	0	0	0	0	S	0	0	0	0	0	0	0	1	0.0
Aug 16	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
Aug 17	0	0	0	0	0	1	1	1	1	1	0	0	0	1	0	S	0	0	0	0	0	0	0	0	0	1	0.0
Aug 18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	1	0	1	0.0
Aug 19	2	0	0	0	0	0	0	0	0	C	C	C	C	C	C	0	0	0	0	0	0	0	0	0	0	2	0.0
Aug 20	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 21	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	1	2	0	0	0	0	2	0.0
Aug 22	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	1	2	1	0	2	0.0
Aug 23	1	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0.0
Aug 24	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 25	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 26	0	0	0	0	1	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0
Aug 27	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
Aug 28	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 29	0	0	0	S	0	0	1	2	2	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	3	0.0
Aug 30	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2	1	0	3	0.0
Aug 31	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	1	0.0
Diurnal Maximum	5	11	4	1	2	3	7	3	2	1	1	1	1	1	0	1	3	3	2	6	3	3	2	1			
Diurnal Average	0.3	0.4	0.3	0.0	0.1	0.2	0.4	0.3	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.1	0.3	0.2	0.2	0.3	0.1			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	ND	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.



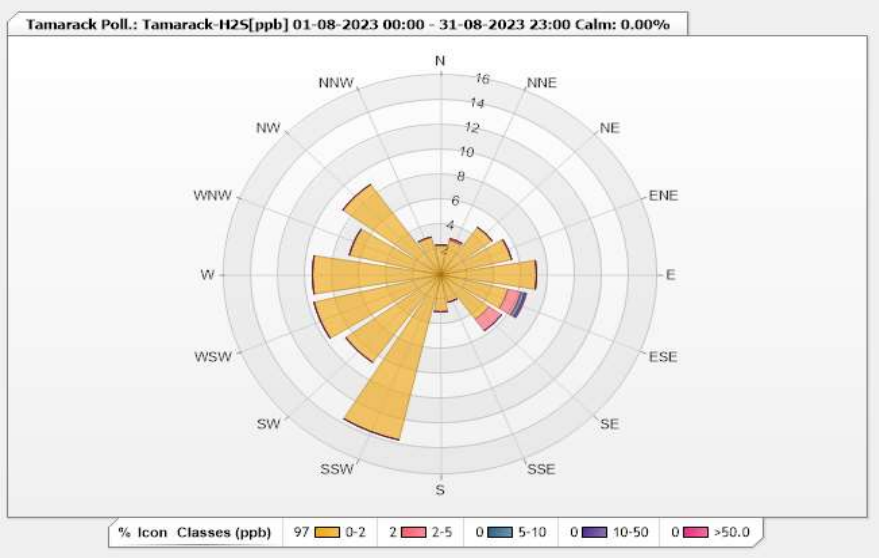


Station: Tamarack Poll.: Tamarack-H2S[ppb] Monthly: 08-2023

Type: Pollution Rose
Direction: Blowing From (Wind Frequency)
Time Base: 1 - Hour

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

Direction	0-2	2-5	5-10	10-50	>50.0	Total
N	2.4	0	0	0	0	2.4
NNE	2.83	0.14	0	0	0	2.97
NE	4.67	0	0	0	0	4.67
ENE	5.37	0	0	0	0	5.37
E	7.07	0	0	0	0	7.07
ESE	5.09	0.99	0.28	0.14	0	6.5
SE	4.38	1.13	0	0	0	5.51
SSE	2.26	0	0	0	0	2.26
S	2.97	0	0	0	0	2.97
SSW	13.58	0	0	0	0	13.58
SW	8.63	0	0	0	0	8.63
WSW	9.62	0	0	0	0	9.62
W	9.48	0	0	0	0	9.48
WNW	6.93	0	0	0	0	6.93
NW	8.91	0	0	0	0	8.91
NNW	3.11	0	0	0	0	3.11
Summary	97.3	2.26	0.28	0.14	0	100



Lakeland Industry & Community Association

Tamarack Site - August 2023

Summary of Hourly Averages

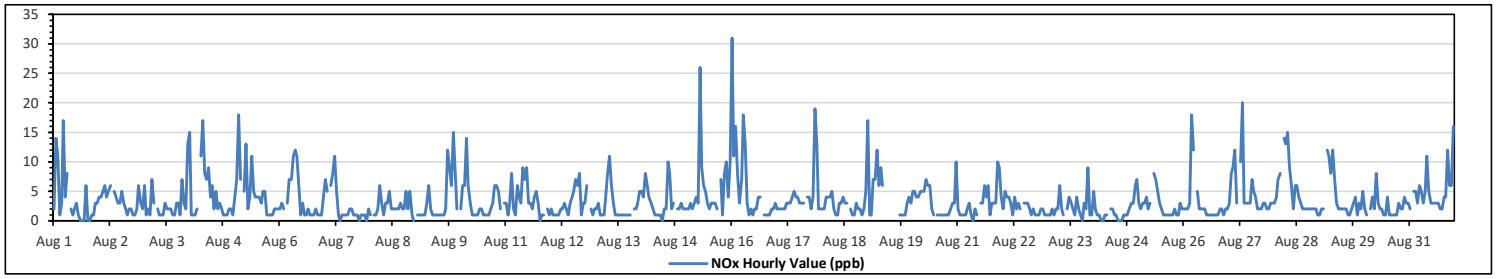
OXIDES OF NITROGEN (NOx) in ppb

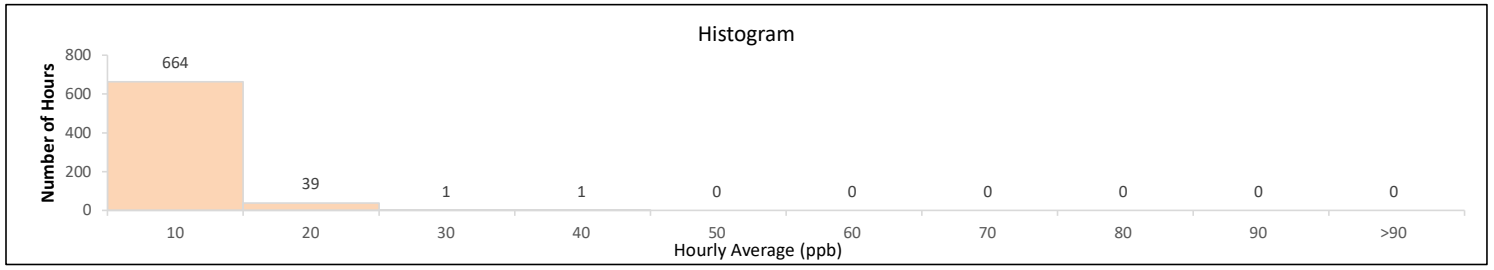
Maximum Hourly Value:	31	ppb	on Aug 16 at hr 0	Hours in Service:	744	
Maximum Daily Value:	6.0	ppb	on Aug 16	Hours of Data:	705	
Minimum Hourly Value:	0	ppb	on Aug 1 at hr 14	Hours of Missing Data:	0	
Minimum Daily Value:	1.8	ppb	on Aug 24	Hours of Calibration:	39	
Monthly Average:	3.5	ppb		Operational 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	14	11	1	3	17	4	8	S	2	1	2	3	1	0	0	0	6	0	0	1	1	3	3	0	17	3.6
Aug 2	4	4	5	6	4	5	6	S	5	4	3	3	5	3	2	1	2	2	1	1	2	6	3	2	1	6	3.4
Aug 3	6	1	2	1	7	3	S	2	1	1	1	3	2	2	2	1	1	3	3	1	7	3	2	13	1	13	3.0
Aug 4	15	1	1	1	2	S	11	17	8	7	9	4	6	2	5	2	3	2	1	1	1	2	2	1	1	17	4.5
Aug 5	4	7	18	7	S	5	13	2	4	11	5	4	4	4	3	5	5	1	1	1	1	2	2	2	1	18	4.8
Aug 6	2	3	2	S	3	7	7	11	12	11	6	1	3	1	1	2	1	1	1	2	1	1	1	4	1	12	3.7
Aug 7	7	5	S	6	8	11	5	1	0	1	1	1	1	2	2	1	1	1	0	1	1	1	0	2	0	11	2.6
Aug 8	1	S	1	1	2	6	3	1	3	3	5	2	2	2	2	2	3	2	2	5	2	5	1	0	0	6	2.4
Aug 9	S	1	1	1	1	1	3	6	2	1	1	1	1	1	1	1	2	12	9	6	15	8	2	S	1	15	3.5
Aug 10	2	6	6	14	6	3	1	1	1	1	2	2	1	1	1	1	2	3	6	6	5	2	S	3	1	14	3.3
Aug 11	3	1	3	8	2	1	6	4	3	9	7	9	3	3	2	4	5	3	0	1	1	S	2	1	0	9	3.5
Aug 12	2	1	1	1	1	2	2	3	2	1	3	4	5	7	6	8	1	3	3	6	S	2	1	2	1	8	2.9
Aug 13	2	3	1	1	1	4	8	11	6	3	1	1	1	1	1	1	1	1	1	S	2	2	3	5	1	11	2.7
Aug 14	5	4	8	6	4	3	2	1	1	1	1	0	2	2	10	8	2	3	S	2	2	3	2	2	0	10	3.2
Aug 15	2	2	3	2	3	4	3	26	9	6	5	3	2	3	3	3	2	S	7	1	8	10	4	10	1	26	5.3
Aug 16	31	11	16	8	3	7	18	13	3	1	2	1	2	2	4	4	S	1	1	1	1	2	2	3	1	31	6.0
Aug 17	2	2	2	2	2	3	3	3	4	5	4	4	3	3	3	S	4	4	2	4	19	13	2	2	2	19	4.1
Aug 18	2	2	4	4	4	5	2	1	1	3	3	4	3	3	S	2	1	1	3	2	2	1	2	5	1	5	2.6
Aug 19	17	1	1	7	7	12	6	9	6	C	C	C	C	C	C	C	C	1	1	1	1	3	4	3	1	17	NA
Aug 20	5	5	4	4	5	5	5	7	6	6	2	1	S	1	1	1	1	1	1	1	2	3	3	10	1	10	3.5
Aug 21	2	1	1	1	1	2	3	1	0	2	1	S	3	3	6	4	6	1	3	3	3	10	9	4	0	10	3.0
Aug 22	2	5	4	4	3	1	4	2	3	2	S	3	3	3	2	1	2	1	1	1	2	2	1	1	1	5	2.3
Aug 23	1	1	2	1	2	2	6	2	1	S	2	4	3	2	1	4	2	1	0	3	2	9	1	1	0	9	2.3
Aug 24	5	2	1	1	0	0	1	1	S	2	2	1	1	0	0	0	1	1	1	2	3	3	6	7	0	7	1.8
Aug 25	3	2	3	3	4	2	3	S	8	7	5	3	2	1	1	1	1	1	1	2	1	1	3	2	1	8	2.6
Aug 26	2	2	2	3	18	12	S	5	2	2	2	2	1	1	1	1	1	1	1	2	2	1	2	2	1	18	3.0
Aug 27	3	8	9	12	3	S	10	20	3	3	3	3	7	5	4	2	2	2	3	3	2	2	3	3	2	20	5.0
Aug 28	3	4	7	8	S	14	13	15	9	6	2	6	6	4	3	2	2	2	2	2	2	2	2	1	1	15	5.1
Aug 29	1	2	2	S	12	11	8	12	7	3	2	2	2	2	2	1	1	2	3	4	1	3	2	5	1	12	3.9
Aug 30	2	1	S	2	4	2	8	3	2	2	1	1	4	1	1	1	1	1	3	2	2	4	3	3	1	8	2.3
Aug 31	2	S	5	5	3	6	5	3	5	11	5	3	3	3	3	3	2	2	4	4	12	6	6	16	2	16	5.1
Diurnal Maximum	31	14	18	14	18	17	18	26	12	11	9	9	7	7	10	8	6	12	9	6	19	13	9	16			
Diurnal Average	4.7	3.5	4.3	4.2	4.1	5.4	5.8	6.6	4.0	4.0	3.0	2.7	2.9	2.3	2.5	2.3	2.0	2.2	2.2	2.4	3.5	3.8	2.6	3.9			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	ND	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.



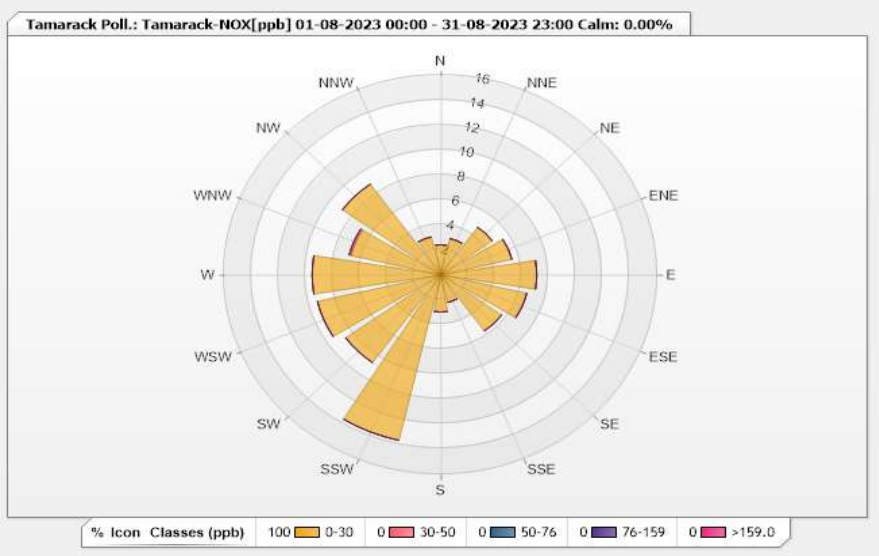


Station: Tamarack Poll.: Tamarack-NOX[ppb] Monthly: 08-2023

Type: Pollution Rose
Direction: Blowing From (Wind Frequency)
Time Base: 1 - Hour

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

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	2.41	0	0	0	0	2.41
NNE	2.98	0	0	0	0	2.98
NE	4.68	0	0	0	0	4.68
ENE	5.39	0	0	0	0	5.39
E	7.09	0	0	0	0	7.09
ESE	6.52	0	0	0	0	6.52
SE	5.53	0	0	0	0	5.53
SSE	2.27	0	0	0	0	2.27
S	2.98	0	0	0	0	2.98
SSW	13.62	0	0	0	0	13.62
SW	8.65	0	0	0	0	8.65
WSW	9.36	0	0	0	0	9.36
W	9.5	0	0	0	0	9.5
WNW	6.81	0.14	0	0	0	6.95
NW	8.94	0	0	0	0	8.94
NNW	3.12	0	0	0	0	3.12
Summary	100	0.14	0	0	0	100



Lakeland Industry & Community Association

Tamarack Site - August 2023

Summary of Hourly Averages

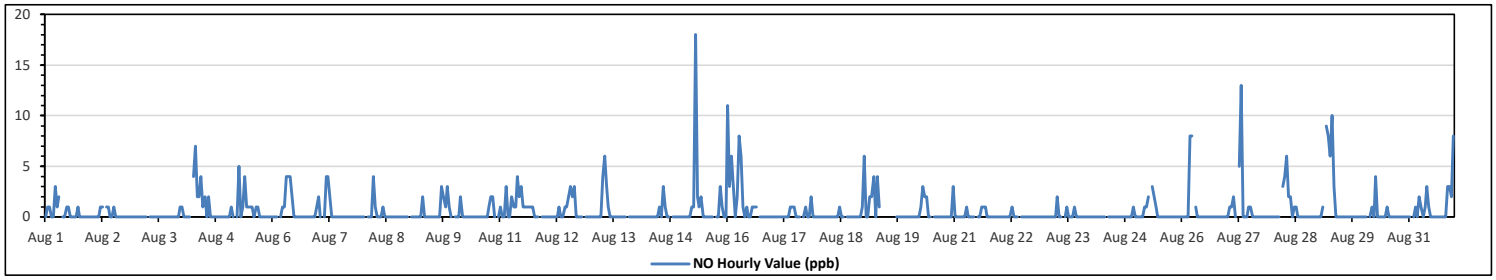
NITRIC OXIDE (NO) in ppb

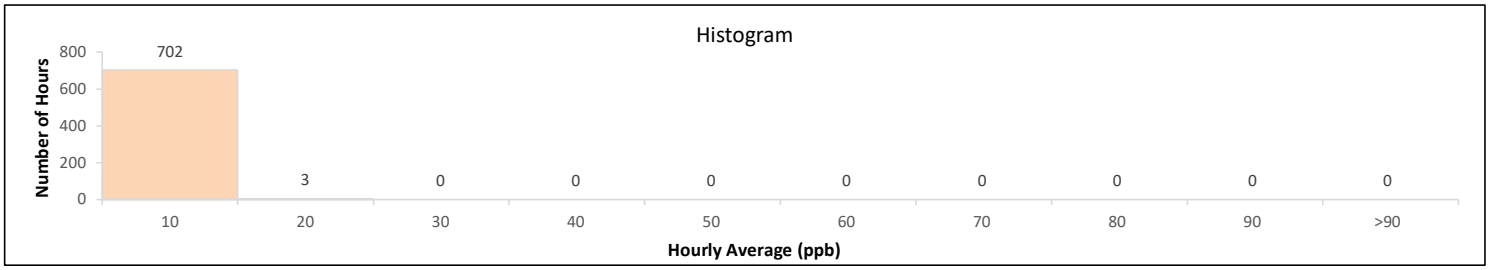
Maximum Hourly Value:	18	ppb	on Aug 15 at hr 7	Hours in Service:	744
Maximum Daily Value:	1.9	ppb	on Aug 16	Hours of Data:	705
Minimum Hourly Value:	0	ppb	on Aug 1 at hr 0	Hours of Missing Data:	0
Minimum Daily Value:	0.0	ppb	on Aug 3	Hours of Calibration:	39
Monthly Average:	0.6	ppb		Operational Uptime:	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	1	1	0	0	3	1	2	S	0	0	1	1	0	0	0	0	1	0	0	0	0	0	0	0	3	0.5
Aug 2	0	0	0	0	0	1	1	S	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2
Aug 3	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0.0
Aug 4	1	0	0	0	0	S	4	7	2	2	4	1	2	0	2	0	0	0	0	0	0	0	0	0	0	7	1.1
Aug 5	0	0	1	0	S	0	5	0	1	4	1	1	1	1	0	1	1	0	0	0	0	0	0	0	0	5	0.7
Aug 6	0	0	0	S	0	1	1	4	4	4	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	4	0.7
Aug 7	2	0	S	0	4	4	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0.5
Aug 8	0	S	0	0	0	4	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0.3
Aug 9	S	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	3	2	1	3	1	0	S	0	3	0.5
Aug 10	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	2	0	S	0	0	2	0.3
Aug 11	1	0	0	3	0	0	2	1	1	4	2	3	1	1	1	1	1	1	0	0	0	S	0	0	0	4	1.0
Aug 12	0	0	0	0	0	0	0	1	0	0	1	1	2	3	2	3	0	0	0	0	S	0	0	0	0	3	0.6
Aug 13	0	0	0	0	0	0	4	6	3	1	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	6	0.6
Aug 14	0	0	0	0	0	0	0	0	0	0	0	0	1	0	3	1	0	0	S	0	0	0	0	0	0	3	0.2
Aug 15	0	0	0	0	0	1	1	18	2	1	2	0	0	0	0	0	0	S	0	0	3	1	0	0	0	18	1.3
Aug 16	11	3	6	3	0	2	8	6	1	0	1	0	0	1	1	1	S	0	0	0	0	0	0	0	0	11	1.9
Aug 17	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	S	0	1	0	0	2	0	0	0	0	2	0.3
Aug 18	0	0	0	0	0	0	0	0	0	0	0	1	0	0	S	0	0	0	0	0	0	0	0	1	0	1	0.1
Aug 19	6	0	0	2	2	4	0	4	1	C	C	C	C	C	C	C	C	0	0	0	0	0	0	0	0	6	NA
Aug 20	0	0	0	0	0	0	1	3	2	2	0	0	S	0	0	0	0	0	0	0	0	0	0	3	0	3	0.5
Aug 21	0	0	0	0	0	0	1	0	0	0	0	S	0	0	1	1	1	0	0	0	0	0	0	0	0	1	0.2
Aug 22	0	0	0	0	0	0	1	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0
Aug 23	0	0	0	0	0	0	2	0	0	S	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	2	0.2
Aug 24	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0.0
Aug 25	0	0	0	0	1	1	2	S	3	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0.4
Aug 26	0	0	0	0	8	8	S	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0.7
Aug 27	0	1	1	2	0	S	5	13	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	13	1.0
Aug 28	0	0	0	0	S	3	4	6	2	2	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	6	0.8
Aug 29	0	0	1	S	9	8	6	10	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	1.6
Aug 30	0	0	S	0	1	0	4	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	4	0.3
Aug 31	0	S	0	1	0	2	1	0	1	3	1	0	0	0	0	0	0	0	0	0	3	3	2	8	0	8	1.1
Diurnal Maximum	11	3	6	3	9	8	8	18	4	4	4	3	2	3	3	3	1	3	2	2	3	3	2	8			
Diurnal Average	0.7	0.2	0.3	0.4	0.9	1.4	2.0	2.9	0.9	0.9	0.6	0.4	0.4	0.2	0.3	0.3	0.1	0.2	0.1	0.1	0.4	0.2	0.1	0.5			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	ND	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.



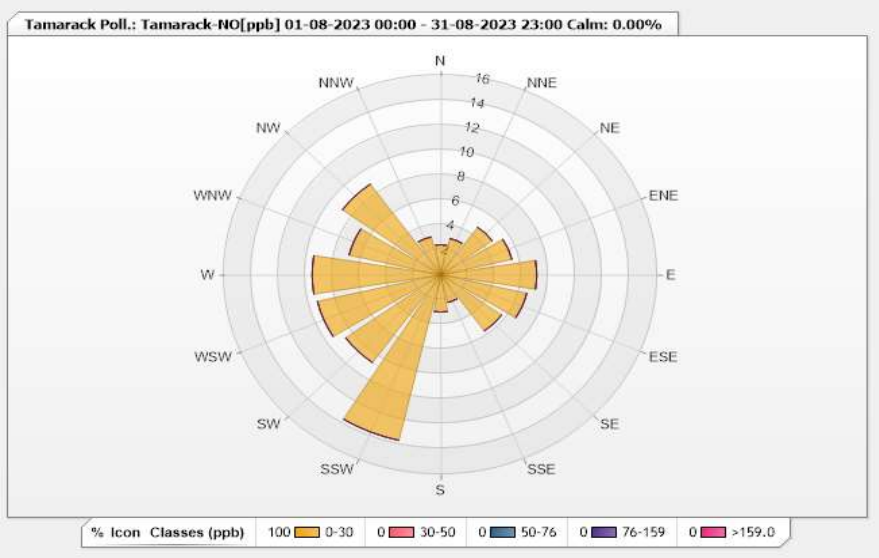


Station: Tamarack Poll.: Tamarack-NO[ppb] Monthly: 08-2023

Type: Pollution Rose
Direction: Blowing From (Wind Frequency)
Time Base: 1 - Hour

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

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	2.41	0	0	0	0	2.41
NNE	2.98	0	0	0	0	2.98
NE	4.68	0	0	0	0	4.68
ENE	5.39	0	0	0	0	5.39
E	7.09	0	0	0	0	7.09
ESE	6.52	0	0	0	0	6.52
SE	5.53	0	0	0	0	5.53
SSE	2.27	0	0	0	0	2.27
S	2.98	0	0	0	0	2.98
SSW	13.62	0	0	0	0	13.62
SW	8.65	0	0	0	0	8.65
WSW	9.36	0	0	0	0	9.36
W	9.5	0	0	0	0	9.5
WNW	6.95	0	0	0	0	6.95
NW	8.94	0	0	0	0	8.94
NNW	3.12	0	0	0	0	3.12
Summary	100	0	0	0	0	100



Lakeland Industry & Community Association

Tamarack Site - August 2023

Summary of Hourly Averages

NITROGEN DIOXIDE (NO_2) in ppb

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

Number of 1-Hour Exceedances: 0

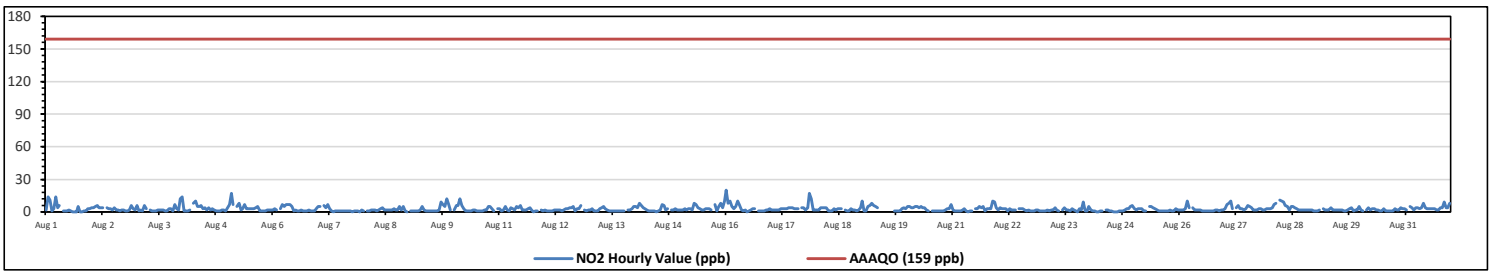
Maximum Hourly Value:	20	ppb	on Aug 16 at hr 0	Hours in Service:	744
Maximum Daily Value:	4.3	ppb	on Aug 28	Hours of Data:	705
Minimum Hourly Value:	0	ppb	on Aug 1 at hr 14	Hours of Missing Data:	0
Minimum Daily Value:	1.7	ppb	on Aug 24	Hours of Calibration:	39
Monthly Average:	2.9	ppb		Operational Uptime:	100.0

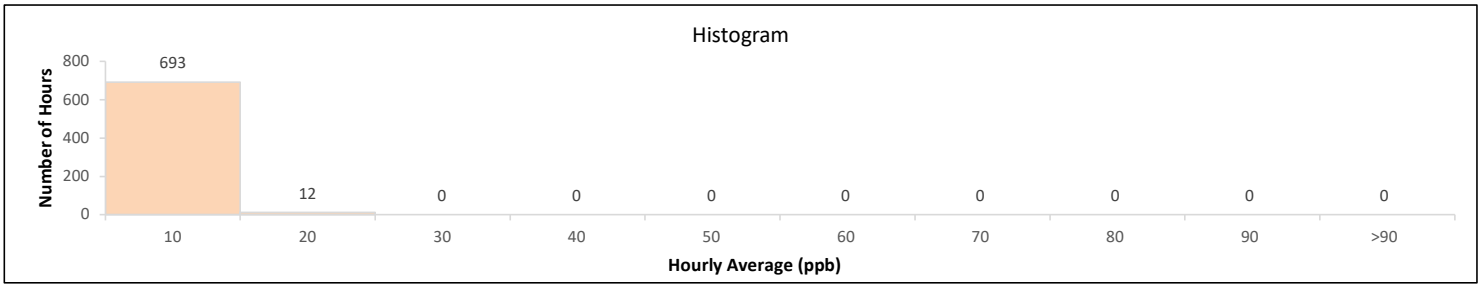
Day	Hourly Period Starting at (MST)																						Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Aug 1	2	14	11	1	3	14	4	6	S	1	1	1	2	1	0	0	0	5	0	0	1	1	3	3	0	14	3.2
Aug 2	4	4	5	6	4	4	4	S	4	3	3	2	4	2	2	1	2	2	1	1	2	6	3	2	1	6	3.1
Aug 3	6	1	2	1	6	3	S	2	1	1	1	2	2	2	2	1	1	3	3	1	7	3	2	12	1	12	2.8
Aug 4	14	1	1	1	2	S	8	10	5	5	6	3	4	2	4	2	3	2	1	1	1	2	2	1	1	14	3.5
Aug 5	4	7	17	7	S	5	8	2	3	7	3	3	3	3	3	4	5	1	1	1	1	2	2	2	1	17	4.1
Aug 6	2	3	2	S	3	7	5	7	7	7	5	1	2	1	1	2	1	1	1	2	1	1	1	3	1	7	2.9
Aug 7	5	5	S	6	4	7	3	1	0	1	1	1	1	1	1	1	1	1	0	1	1	1	0	2	0	7	2.0
Aug 8	1	S	1	1	2	2	2	1	2	3	4	2	2	2	2	2	3	2	2	5	2	5	1	0	0	5	2.1
Aug 9	S	1	1	1	1	1	2	5	2	1	1	1	1	1	1	1	2	9	7	5	12	7	2	S	1	12	3.0
Aug 10	2	6	6	12	6	3	1	1	1	1	2	2	1	1	1	1	2	2	5	5	3	1	S	3	1	12	3.0
Aug 11	3	1	2	5	2	1	4	3	2	5	4	6	2	2	2	3	4	2	0	1	1	S	2	1	0	6	2.5
Aug 12	2	1	1	1	1	2	2	2	2	1	2	3	3	4	4	5	1	3	3	6	S	2	1	2	1	6	2.3
Aug 13	2	3	1	1	1	3	4	5	3	2	1	1	1	1	1	1	1	1	1	S	2	2	3	5	1	5	2.0
Aug 14	5	4	8	6	4	3	2	1	1	1	1	0	1	2	7	6	2	3	S	2	2	3	2	2	0	8	3.0
Aug 15	2	2	3	2	3	3	2	8	7	4	3	2	2	3	3	3	2	S	7	1	5	8	4	10	1	10	3.9
Aug 16	20	8	10	5	3	5	10	7	2	1	2	0	1	2	3	3	S	1	1	1	1	2	2	3	0	20	4.0
Aug 17	2	2	2	2	2	3	3	3	3	4	4	4	3	3	3	S	4	4	2	4	17	12	2	2	2	17	3.9
Aug 18	2	2	4	4	4	4	1	1	1	3	2	3	3	3	S	2	1	1	3	2	2	1	2	4	1	4	2.4
Aug 19	10	1	1	5	6	8	6	5	4	C	C	C	C	C	C	C	C	1	1	1	1	3	4	3	1	10	NA
Aug 20	5	5	4	4	5	5	4	5	4	4	2	1	S	1	1	1	1	1	1	1	2	3	3	7	1	7	3.0
Aug 21	2	1	1	1	1	2	3	1	0	1	1	S	3	3	5	4	5	1	3	3	3	10	9	4	0	10	2.9
Aug 22	2	4	3	3	3	1	3	2	2	2	S	3	3	3	2	1	2	1	1	1	2	2	1	1	1	4	2.1
Aug 23	1	1	2	1	2	2	4	2	1	S	2	4	2	2	1	3	2	1	0	3	2	9	1	1	0	9	2.1
Aug 24	5	2	1	1	0	0	1	1	S	2	2	1	1	0	0	0	1	1	1	2	3	3	5	6	0	6	1.7
Aug 25	3	2	3	3	3	1	1	S	5	5	4	3	2	1	1	1	1	1	1	2	1	1	3	2	1	5	2.2
Aug 26	2	2	2	3	10	4	S	4	2	2	2	2	1	1	1	1	1	1	1	2	2	1	2	2	1	10	2.2
Aug 27	3	7	8	10	3	S	4	6	3	3	2	3	6	5	4	2	2	2	3	3	2	2	3	3	2	10	3.9
Aug 28	3	4	7	8	S	11	10	9	6	5	2	5	5	4	3	2	2	2	2	2	2	2	2	1	1	11	4.3
Aug 29	1	1	2	S	3	2	2	2	4	2	2	2	2	2	2	1	1	2	3	4	1	2	2	5	1	5	2.2
Aug 30	2	1	S	2	4	2	3	3	2	2	1	1	3	1	1	1	1	1	3	2	2	4	3	3	1	4	2.1
Aug 31	2	S	5	4	2	4	4	3	4	8	4	3	3	3	3	3	2	2	4	4	9	4	4	8	2	9	4.0
Diurnal Maximum	20	14	17	12	10	14	10	10	7	8	6	6	6	5	7	6	5	9	7	6	17	12	9	12			
Diurnal Average	4.0	3.3	4.0	3.7	3.2	3.9	3.8	3.7	2.9	3.0	2.4	2.2	2.4	2.1	2.2	2.0	1.9	2.0	2.1	2.3	3.1	3.5	2.5	3.4			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	ND	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.



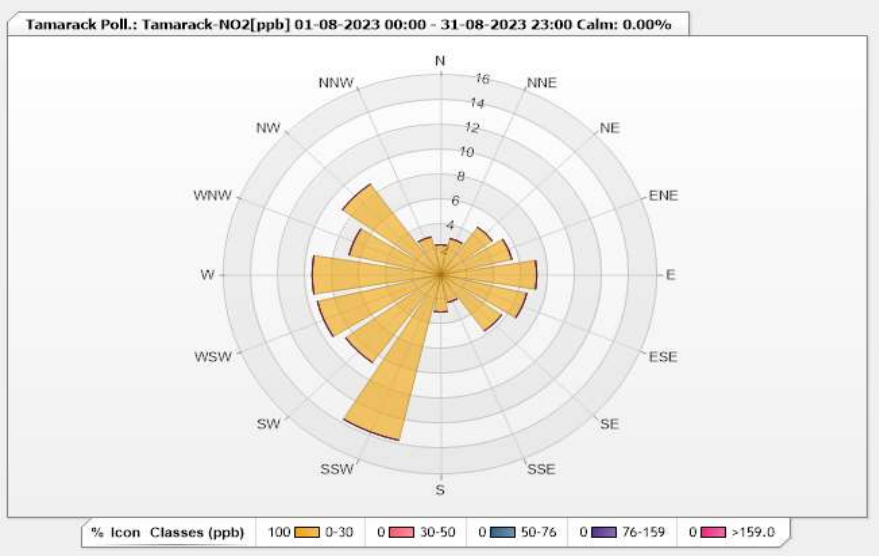


Station: Tamarack Poll.: Tamarack-NO2[ppb] Monthly: 08-2023

Type: Pollution Rose
Direction: Blowing From (Wind Frequency)
Time Base: 1 - Hour

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

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	2.41	0	0	0	0	2.41
NNE	2.98	0	0	0	0	2.98
NE	4.68	0	0	0	0	4.68
ENE	5.39	0	0	0	0	5.39
E	7.09	0	0	0	0	7.09
ESE	6.52	0	0	0	0	6.52
SE	5.53	0	0	0	0	5.53
SSE	2.27	0	0	0	0	2.27
S	2.98	0	0	0	0	2.98
SSW	13.62	0	0	0	0	13.62
SW	8.65	0	0	0	0	8.65
WSW	9.36	0	0	0	0	9.36
W	9.5	0	0	0	0	9.5
WNW	6.95	0	0	0	0	6.95
NW	8.94	0	0	0	0	8.94
NNW	3.12	0	0	0	0	3.12
Summary	100	0	0	0	0	100



Lakeland Industry & Community Association

Tamarack Site - August 2023

Summary of Hourly Averages

OZONE (O_3) in ppb

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

Number of 1-Hour Exceedances: 0

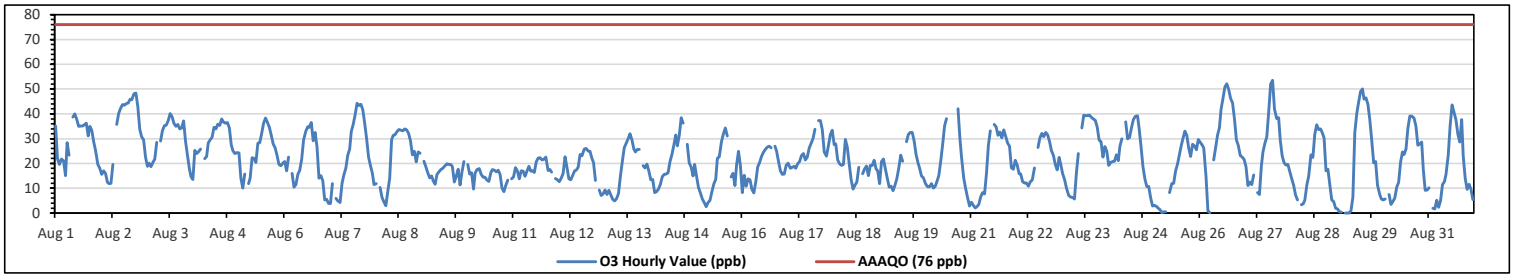
Maximum Hourly Value:	53.5	ppb	on Aug 27 at hr 14	Hours in Service:	744
Maximum Daily Value:	32.4	ppb	on Aug 2	Hours of Data:	708
Minimum Hourly Value:	0.0	ppb	on Aug 29 at hr 4	Hours of Missing Data:	0
Minimum Daily Value:	14.8	ppb	on Aug 10	Hours of Calibration:	36
Monthly Average:	21.7	ppb		Operational Uptime:	100.0

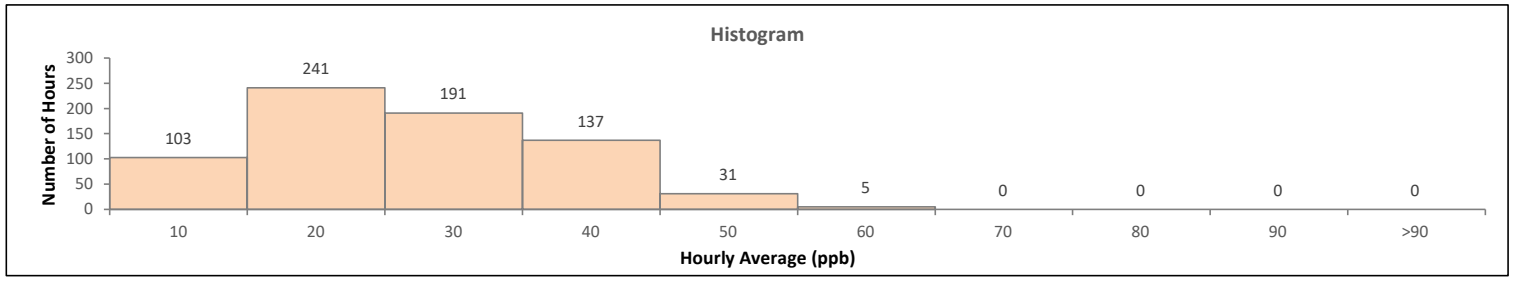
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Aug 1	35	21.7	19.6	21.8	21.1	15.1	28.3	23.4	S	38.7	40	37.8	34.9	35	35	35.6	36.3	31.1	34.9	33.4	28.8	25.2	19.5	18	15.1	40.0	29.1
Aug 2	15.5	17.1	15.9	12.4	11.9	12	19.5	S	35.7	40.2	42.2	43.7	43.5	44.1	44.4	45.9	45.7	48.1	48.4	42.9	33.8	30.7	29.5	22.6	11.9	48.4	**32.4**
Aug 3	18.9	20.1	18.7	20.4	21.8	28.5	S	29	33.3	35.2	35.5	37.2	40.1	38.8	36.2	34.9	35.8	34	34.3	37.1	29	23.4	17.9	14.7	14.7	40.1	29.3
Aug 4	13.5	25.3	23.9	24.8	25.8	S	21.9	22.8	28.2	29.6	30.6	34.5	33.9	35.9	35.3	37.9	36.6	36.3	36.5	34.3	27.5	25.2	23.9	24.4	13.5	37.9	29.1
Aug 5	24.2	14	10.1	15.7	S	11.9	14	22.3	22	20.4	28	28.3	32.2	36.3	38.3	36.5	34.5	31.4	27.9	26.3	23.2	19.5	19.1	20.1	10.1	38.3	24.2
Aug 6	20.8	17	22.6	S	15.9	10.5	11.5	15.6	17.3	21.6	29.5	33	34.8	34.5	36.5	29.1	32.4	26.6	14.1	15.1	13	5.2	5.5	3.8	3.8	36.5	20.3
Aug 7	3.9	11.8	S	5.9	4.9	4.2	11.9	15.4	18	23.3	25.8	32.8	35.8	39.6	44.2	43.3	43.9	41.6	36.2	30	22.5	19.1	16	11.4	3.9	44.2	23.5
Aug 8	11.9	S	10.3	6.3	4.5	2.9	8.7	13.9	29.5	31.4	31.6	32.8	33.7	33.4	33.1	34	33.5	32.1	29.1	23.5	24.9	20.6	24.6	24.1	2.9	34.0	23.1
Aug 9	S	20.9	18.7	16.3	14.2	15	13	11.6	15.5	16.7	17.5	18	19.1	19.8	19.5	19.6	18.7	12.5	14.8	17.6	11.3	16.7	20.7	S	11.3	20.9	16.7
Aug 10	19.5	15.7	16.3	9.7	16.1	17.5	17.9	15.6	14.5	14.4	13.2	12.8	16.2	17.5	17.3	16.6	17.3	15.6	10.1	8.6	11.1	13.2	S	13.7	8.6	19.5	**14.8**
Aug 11	14.6	18.3	17.1	13.7	17	16.9	14.8	16.9	18.8	16.9	17	16.4	20.6	22.1	22.3	21.5	21.6	22.5	17.2	17.5	16.5	S	13.9	13.4	13.4	22.5	17.7
Aug 12	12.7	14	15.9	22.7	18.4	13.8	13.4	15.2	17.1	17.3	18.4	23.7	23.1	25.8	26	25	24.9	22	20.4	13.1	S	9.2	7.1	7.7	7.1	26.0	17.7
Aug 13	9.2	7.5	9.1	7.3	5.5	4.9	5.8	7.9	14.8	20.8	26.3	28	29.9	32	29.5	25.8	24.6	25.7	25.7	S	19.1	18.1	19.7	16.9	4.9	32.0	18.0
Aug 14	13.3	13.5	8.2	8.7	9.6	11.6	14.7	15.6	15.7	16.3	20.7	23.6	27.3	31.5	27.1	31.4	38.5	36.3	S	27.8	20.2	18.5	15	19.5	8.2	38.5	20.2
Aug 15	14.8	10.3	8.1	5.7	4.3	2.5	4.3	5.1	8.7	11.7	13.6	22	22.7	28.9	32	34.3	31.1	S	14.6	16	11	19.4	24.9	19.1	2.5	34.3	15.9
Aug 16	8.3	15.2	10.8	13.7	13.4	9.5	8.1	12.5	18.6	20.4	22.8	24.5	25.7	26.5	26.9	26.3	S	26.9	25	20.9	17.1	15.5	15.7	19.2	8.1	26.9	18.4
Aug 17	20.1	18	18.4	18.8	18	19.8	20.8	23.2	24	21.5	22.5	26.2	28	30.1	33.8	S	37.2	37.2	33.6	24.6	22.9	27.1	31.6	33.4	18.0	37.2	25.7
Aug 18	27.6	27.9	21.4	19.8	19.2	19.5	29.7	26.6	20	13.5	9.7	11.1	12.5	18.4	S	15.8	17.7	19	15.1	19.3	19.2	21.3	17.7	17.1	9.7	29.7	19.1
Aug 19	11.8	20.7	21.7	17.8	14.1	10.5	10.8	9	11.2	13.9	18.1	23.3	20.9	S	28.8	31.8	32.5	32.4	29	23.7	20.2	18	15	14.2	9.0	32.5	19.5
Aug 20	12	10.7	10.6	11.8	10	10.8	12.6	15.1	20.9	27.6	35.1	38.1	S	C	C	C	C	42.1	30.1	22.6	14.1	9.8	6.2	2.8	2.8	42.1	18.1
Aug 21	4.4	3	2.1	2.6	3.4	6.6	8.2	7.7	15.9	27.3	33.2	S	35.7	34.8	31.4	32.6	30.2	33.5	30.9	28.2	26.9	18.1	17.6	21.3	2.1	35.7	19.8
Aug 22	19.4	15.8	15.7	12.6	12.1	12.1	10.8	12.6	13.2	18.2	S	26.4	30.3	32.2	30.8	32.5	31.6	28.9	25.1	23.4	19.6	17.4	22.4	19.7	10.8	32.5	21.0
Aug 23	15.8	13.5	10.1	7.1	6.5	6.3	5.6	16.1	24	S	34.3	39.4	39.2	39.3	39.5	38.6	37.9	37.4	34.7	29.4	28.8	22.5	26.8	24.9	5.6	39.5	25.1
Aug 24	19.3	20.4	20.8	20.9	23.5	21.2	26.9	29.9	S	36.7	30	30.4	34.3	37.7	38.9	39.2	34.2	26.8	18.7	13.8	10.7	10.7	6.2	2.8	2.8	39.2	24.1
Aug 25	3.1	2.7	1.9	1.3	0.2	0.5	0.4	S	8.2	11.9	12	17	19.7	22.9	26.8	30.1	33	31.3	26.1	22.8	27.8	27.1	25.5	29.7	0.2	33.0	16.6
Aug 26	28.5	27.5	26.1	14.8	0.8	0.1	S	21.4	26.3	31.3	34.4	41.8	46.2	50.9	52.1	49.8	46.2	44.4	38	29.6	27.2	23.2	22.5	21.6	0.1	52.1	30.6
Aug 27	18.7	11	12.5	11.5	15.3	S	8.3	7.5	19	24.6	28.1	30.7	40.8	51.9	**53.5**	41.9	38.1	38.5	29.5	23.1	20.2	19.4	19.6	16.6	7.5	**53.5**	25.2
Aug 28	13.8	11	7.2	5.3	S	3.3	3.7	5.3	11.2	15	23.5	22.4	31.9	35.6	33.7	33.9	32.4	30.3	17.1	17.6	11.3	5.2	4.6	1.9	1.9	35.6	16.4
Aug 29	1.6	0.4	0.3	S	0	0	0	0.9	6.3	32.3	40	44.8	49	50.1	45.9	46.4	43.9	37.5	29.1	20.2	20.7	11.2	7.5	5.7	**0.0**	50.1	21.5
Aug 30	5.3	5.7	S	7.5	3.4	4.6	6	10.5	12.4	20.5	24.6	23.7	25.8	34.3	39	39.1	38.3	35.1	27.3	27.9	28.6	17.6	9.1	9.2	3.4	39.1	19.8
Aug 31	10.2	S	1.9	1.6	5.1	2.3	5	11.5	12.6	15.6	23.4	35.4	43.6	40.7	37.6	31.9	28.6	37.6	22.7	14	9.5	11.6	9.7	5.4	1.6	43.6	18.2
Diurnal Maximum	35.0	27.9	26.1	24.8	25.8	28.5	29.7	29.9	35.7	40.2	42.2	44.8	49.0	51.9	53.5	49.8	46.2	48.1	48.4	42.9	33.8	30.7	31.6	33.4			
Diurnal Average	14.9	14.9	13.7	12.4	11.6	10.2	12.3	15.2	18.4	22.8	26.1	28.7	31.0	33.8	34.3	33.1	33.0	31.8	26.5	23.5	20.6	18.0	17.2	15.8			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	ND	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.



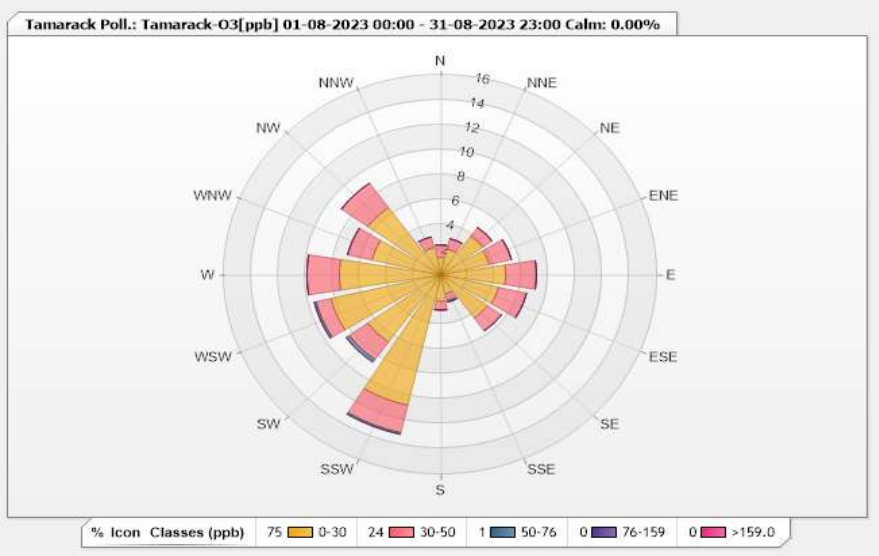


Station: Tamarack Poll.: Tamarack-O3[ppb] Monthly: 08-2023

Type: Pollution Rose
Direction: Blowing From (Wind Frequency)
Time Base: 1 - Hour

Calm: 0.00% Valid Data: 95.16% Calm Avg: 0.00 [ppm]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	1.41	0.99	0	0	0	2.4
NNE	2.12	0.85	0	0	0	2.97
NE	3.81	0.85	0	0	0	4.66
ENE	3.67	1.69	0	0	0	5.36
E	4.8	2.26	0	0	0	7.06
ESE	4.38	2.12	0	0	0	6.5
SE	4.24	1.27	0	0	0	5.51
SSE	1.55	0.56	0.14	0	0	2.25
S	2.12	0.71	0	0	0	2.83
SSW	10.73	2.26	0.14	0	0	13.13
SW	6.64	1.69	0.28	0	0	8.61
WSW	8.33	1.13	0.14	0	0	9.6
W	7.49	2.4	0	0	0	9.89
WNW	5.23	1.84	0	0	0	7.07
NW	6.64	2.4	0	0	0	9.04
NNW	2.26	0.85	0	0	0	3.11
Summary	75.42	23.87	0.7	0	0	100



Lakeland Industry & Community Association

Tamarack Site - August 2023

Summary of Hourly Averages

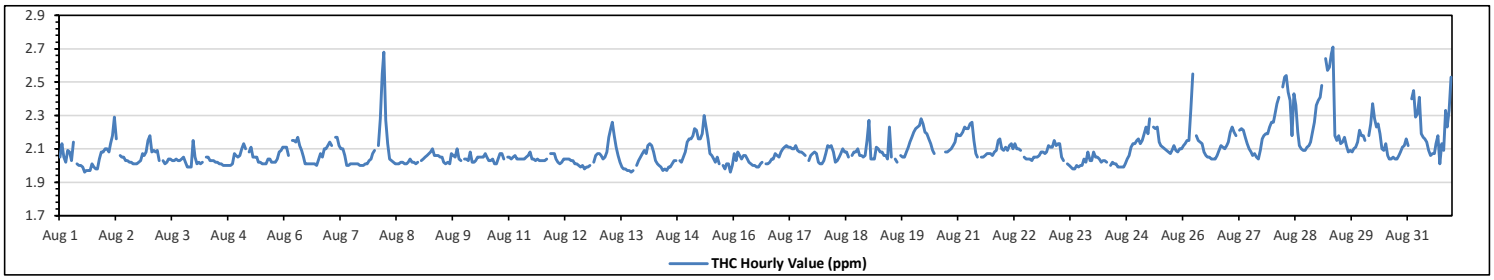
TOTAL HYDROCARBONS (THC) in ppm

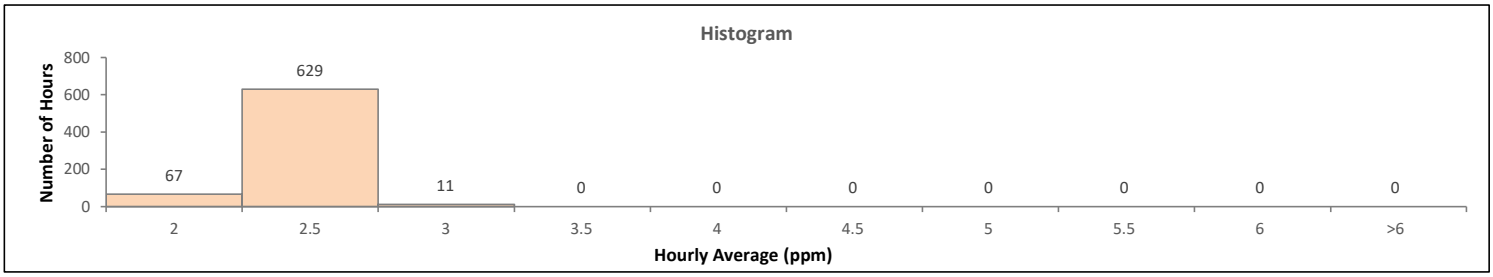
Maximum Hourly Value:	2.71	ppm	on Aug 29 at hr 8	Hours in Service:	744
Maximum Daily Value:	2.28	ppm	on Aug 29	Hours of Data:	707
Minimum Hourly Value:	1.96	ppm	on Aug 1 at hr 13	Hours of Missing Data:	1
Minimum Daily Value:	2.02	ppm	on Aug 12	Hours of Calibration:	36
Monthly Average:	2.09	ppm		Operational Uptime:	99.9

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Aug 1	2.05	2.13	2.05	2.02	2.09	2.08	2.03	2.14	S	2.01	2.00	2.00	1.99	1.96	1.97	1.97	1.97	2.01	1.99	1.98	1.98	2.04	2.08	2.08	1.96	2.14	2.03
Aug 2	2.10	2.10	2.08	2.13	2.18	2.29	2.16	S	2.06	2.05	2.05	2.03	2.03	2.02	2.02	2.01	2.01	2.01	2.02	2.03	2.07	2.06	2.08	2.15	2.01	2.29	2.08
Aug 3	2.18	2.08	2.09	2.08	2.09	2.03	S	2.03	2.01	2.02	2.04	2.04	2.03	2.03	2.04	2.03	2.03	2.04	2.05	2.02	1.99	1.99	1.99	2.15	1.99	2.18	2.05
Aug 4	2.05	2.01	2.02	2.01	2.02	S	2.05	2.05	2.03	2.03	2.03	2.02	2.02	2.01	2.01	2.00	2.00	2.00	2.00	2.00	2.01	2.07	2.06	2.05	2.00	2.07	2.02
Aug 5	2.06	2.10	2.13	2.10	S	2.08	2.11	2.05	2.05	2.05	2.02	2.02	2.01	2.01	2.01	2.04	2.04	2.02	2.02	2.02	2.04	2.08	2.09	2.11	2.01	2.13	2.05
Aug 6	2.11	2.11	2.06	S	2.15	2.15	2.14	2.17	2.12	2.09	2.05	2.01	2.01	2.01	2.01	2.01	2.01	2.00	2.03	2.07	2.05	2.10	2.10	2.12	2.00	2.17	2.07
Aug 7	2.14	2.12	S	2.17	2.17	2.12	2.10	2.10	2.06	2.00	2.00	2.01	2.01	2.01	2.01	2.01	2.00	2.00	2.00	2.01	2.01	2.03	2.04	2.07	2.00	2.17	2.05
Aug 8	2.09	S	2.12	2.28	2.55	2.68	2.27	2.13	2.04	2.03	2.02	2.01	2.01	2.01	2.02	2.02	2.01	2.01	2.02	2.04	2.02	2.02	2.01	2.02	2.01	2.68	2.11
Aug 9	S	2.03	2.04	2.05	2.06	2.07	2.08	2.10	2.06	2.06	2.06	2.05	2.05	2.02	2.01	2.02	2.01	2.07	2.06	2.05	2.10	2.04	2.03	S	2.01	2.10	2.05
Aug 10	2.04	2.04	2.03	2.08	2.02	2.02	2.03	2.05	2.05	2.05	2.05	2.07	2.05	2.03	2.03	2.04	2.01	2.01	2.04	2.07	2.07	2.04	S	2.05	2.01	2.08	2.04
Aug 11	2.05	2.04	2.05	2.06	2.04	2.04	2.04	2.04	2.04	2.05	2.06	2.08	2.04	2.04	2.03	2.04	2.03	2.03	2.03	2.03	2.04	S	2.07	2.07	2.03	2.08	2.05
Aug 12	2.07	2.04	2.02	2.01	2.02	2.04	2.04	2.04	2.04	2.03	2.03	2.01	2.01	2.00	1.99	2.00	1.98	1.99	1.99	2.00	S	2.02	2.06	2.07	1.98	2.07	2.02
Aug 13	2.07	2.06	2.04	2.05	2.08	2.17	2.22	2.26	2.18	2.11	2.06	2.02	1.99	1.98	1.98	1.97	1.97	1.96	1.97	S	2.00	2.03	2.05	2.07	1.96	2.26	2.06
Aug 14	2.09	2.07	2.12	2.13	2.12	2.08	2.03	2.01	2.00	1.99	1.97	1.98	1.97	1.99	1.99	2.01	2.03	2.03	S	2.03	2.02	2.05	2.08	2.14	1.97	2.14	2.04
Aug 15	2.16	2.16	2.18	2.22	2.21	2.16	2.16	2.19	2.30	2.23	2.16	2.07	2.06	2.04	2.02	2.05	2.01	S	2.00	1.98	2.01	2.01	1.96	2.00	1.96	2.30	2.10
Aug 16	2.07	2.03	2.08	2.06	2.04	2.06	2.06	2.04	2.02	2.01	2.00	2.00	1.99	1.99	2.01	2.02	S	2.01	2.01	2.02	2.04	2.04	2.07	2.06	1.99	2.08	2.03
Aug 17	2.05	2.08	2.10	2.11	2.12	2.11	2.11	2.10	2.10	2.12	2.09	2.08	2.08	2.07	2.06	S	2.03	2.06	2.07	2.08	2.07	2.02	2.01	2.01	2.01	2.12	2.08
Aug 18	2.03	2.07	2.12	2.11	2.12	2.08	2.02	2.03	2.05	2.07	2.10	2.08	2.08	2.05	S	2.06	2.08	2.08	2.10	2.06	2.06	2.05	2.06	2.15	2.02	2.15	2.07
Aug 19	2.27	2.04	2.04	2.04	2.11	2.10	2.08	2.08	2.06	2.06	2.04	2.23	2.05	S	2.04	2.02	Y	2.06	2.05	2.05	2.08	2.11	2.14	2.17	2.02	2.27	2.09
Aug 20	2.20	2.22	2.23	2.24	2.28	2.25	2.20	2.19	2.16	2.13	2.09	2.07	S	C	C	C	C	2.08	2.08	2.09	2.10	2.12	2.14	2.19	2.07	2.28	2.16
Aug 21	2.18	2.18	2.20	2.23	2.22	2.22	2.25	2.26	2.15	2.07	2.05	S	2.05	2.05	2.06	2.07	2.07	2.07	2.06	2.08	2.09	2.15	2.16	2.10	2.05	2.26	2.13
Aug 22	2.09	2.11	2.09	2.12	2.13	2.10	2.13	2.10	2.10	2.09	S	2.05	2.04	2.04	2.04	2.03	2.05	2.05	2.05	2.06	2.08	2.08	2.07	2.08	2.03	2.13	2.08
Aug 23	2.12	2.11	2.11	2.15	2.12	2.13	2.13	2.05	2.03	S	2.01	2.00	1.99	1.98	1.98	2.00	1.99	2.00	2.00	2.04	2.02	2.08	2.03	2.03	1.98	2.15	2.05
Aug 24	2.08	2.05	2.05	2.04	2.02	2.03	2.03	2.02	S	2.00	2.02	2.01	2.01	1.99	1.99	1.99	1.99	2.01	2.04	2.06	2.11	2.13	2.13	2.15	1.99	2.15	2.04
Aug 25	2.16	2.13	2.15	2.19	2.23	2.19	2.28	S	2.23	2.22	2.23	2.14	2.12	2.11	2.10	2.09	2.08	2.07	2.09	2.12	2.09	2.08	2.10	2.10	2.07	2.28	2.14
Aug 26	2.12	2.13	2.15	2.15	2.34	2.55	S	2.18	2.15	2.14	2.13	2.08	2.06	2.05	2.05	2.04	2.04	2.04	2.06	2.09	2.12	2.11	2.10	2.12	2.04	2.55	2.13
Aug 27	2.14	2.20	2.23	2.20	2.18	S	2.21	2.22	2.21	2.17	2.13	2.10	2.08	2.06	2.07	2.05	2.04	2.09	2.16	2.18	2.19	2.19	2.23	2.26	2.04	2.26	2.16
Aug 28	2.26	2.31	2.37	2.41	S	2.47	2.53	2.54	2.44	2.39	2.18	2.43	2.36	2.20	2.12	2.10	2.09	2.09	2.11	2.12	2.14	2.20	2.26	2.36	2.09	2.54	2.28
Aug 29	2.39	2.41	2.48	S	2.64	2.57	2.59	2.67	**2.71**	2.18	2.15	2.18	2.13	2.14	2.17	2.12	2.08	2.09	2.08	2.10	2.11	2.14	2.21	2.18	2.08	**2.71**	**2.28**
Aug 30	2.18	2.15	S	2.18	2.25	2.37	2.28	2.23	2.25	2.19	2.10	2.09	2.13	2.06	2.04	2.04	2.05	2.04	2.04	2.06	2.08	2.11	2.12	2.16	2.04	2.37	2.14
Aug 31	2.12	S	2.40	2.45	2.29	2.31	2.41	2.19	2.17	2.16	2.14	2.09	2.06	2.07	2.07	2.13	2.18	2.01	2.13	2.09	2.33	2.23	2.33	2.53	2.01	2.53	2.21
Diurnal Maximum	2.39	2.41	2.48	2.45	2.64	2.68	2.59	2.67	2.71	2.39	2.23	2.43	2.36	2.20	2.17	2.13	2.18	2.09	2.16	2.18	2.33	2.23	2.33	2.53			
Diurnal Average	2.12	2.11	2.13	2.14	2.17	2.19	2.16	2.15	2.13	2.09	2.07	2.07	2.05	2.04	2.03	2.03	2.03	2.03	2.05	2.05	2.07	2.08	2.10	2.13			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	ND	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.



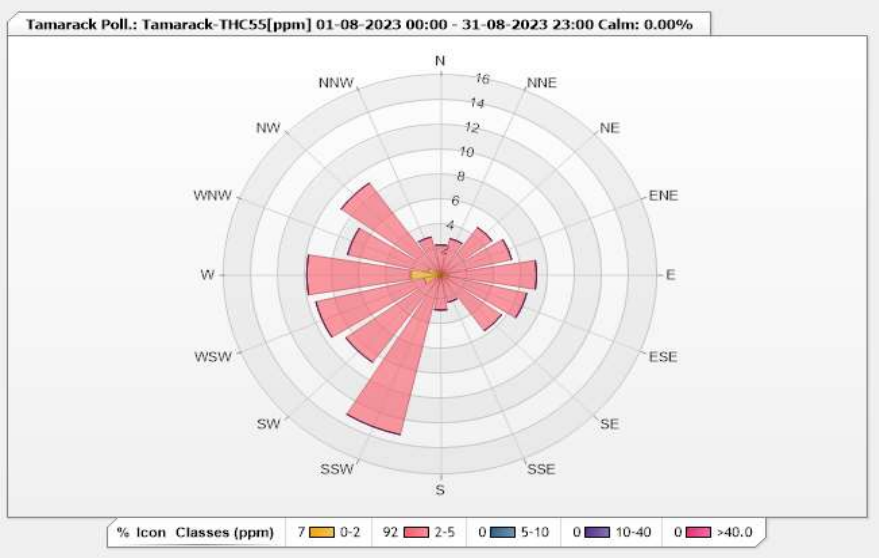


Station: Tamarack Poll.: Tamarack-THC55[ppm] Monthly: 08-2023

Type: Pollution Rose
Direction: Blowing From (Wind Frequency)
Time Base: 1 - Hour

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	0.14	2.26	0	0	0	2.4
NNE	0.28	2.69	0	0	0	2.97
NE	0.28	4.38	0	0	0	4.66
ENE	0.14	5.23	0	0	0	5.37
E	0.42	6.65	0	0	0	7.07
ESE	0.57	5.94	0	0	0	6.51
SE	0.14	5.37	0	0	0	5.51
SSE	0	2.26	0	0	0	2.26
S	0	2.83	0	0	0	2.83
SSW	0	13.15	0	0	0	13.15
SW	0.28	8.35	0	0	0	8.63
WSW	1.27	8.2	0	0	0	9.47
W	2.26	7.64	0	0	0	9.9
WNW	0.99	6.08	0	0	0	7.07
NW	0.42	8.63	0	0	0	9.05
NNW	0.28	2.83	0	0	0	3.11
Summary	7.47	92.49	0	0	0	100



Lakeland Industry & Community Association

Tamarack Site - August 2023

Summary of Hourly Averages

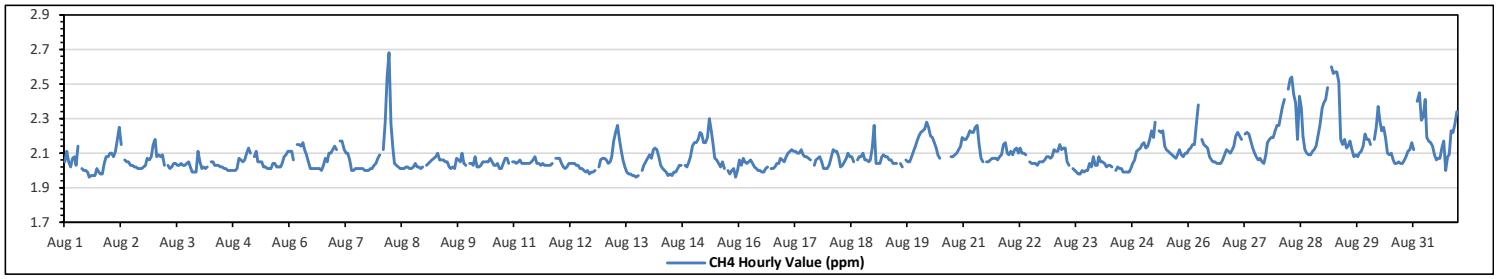
METHANE (CH4) in ppm

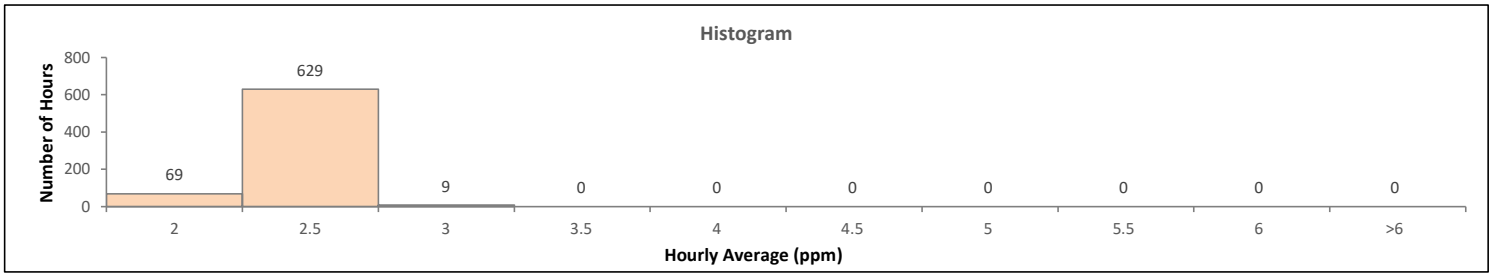
Maximum Hourly Value:	2.68	ppm	on Aug 8 at hr 5	Hours in Service:	744
Maximum Daily Value:	2.28	ppm	on Aug 28	Hours of Data:	707
Minimum Hourly Value:	1.96	ppm	on Aug 1 at hr 13	Hours of Missing Data:	1
Minimum Daily Value:	2.02	ppm	on Aug 12	Hours of Calibration:	36
Monthly Average:	2.09	ppm		Operational Uptime:	99.9

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Aug 1	2.05	2.11	2.05	2.02	2.07	2.08	2.03	2.14	S	2.01	2.00	2.00	1.99	1.96	1.97	1.97	1.97	2.01	1.99	1.98	1.98	2.04	2.08	2.08	1.96	2.14	2.03
Aug 2	2.10	2.10	2.08	2.11	2.18	2.25	2.15	S	2.06	2.05	2.05	2.03	2.03	2.02	2.02	2.01	2.01	2.01	2.02	2.03	2.07	2.06	2.08	2.15	2.01	2.25	2.07
Aug 3	2.18	2.08	2.09	2.08	2.09	2.03	S	2.03	2.01	2.02	2.04	2.04	2.03	2.03	2.04	2.03	2.03	2.04	2.05	2.02	1.99	1.99	1.99	2.11	1.99	2.18	2.05
Aug 4	2.05	2.01	2.02	2.01	2.02	S	2.05	2.05	2.03	2.03	2.03	2.02	2.02	2.01	2.01	2.00	2.00	2.00	2.00	2.00	2.01	2.07	2.06	2.05	2.00	2.07	2.02
Aug 5	2.06	2.10	2.13	2.10	S	2.08	2.11	2.05	2.05	2.05	2.02	2.02	2.01	2.01	2.01	2.04	2.04	2.02	2.02	2.02	2.04	2.08	2.09	2.11	2.01	2.13	2.05
Aug 6	2.11	2.11	2.06	S	2.15	2.15	2.14	2.16	2.12	2.09	2.05	2.01	2.01	2.01	2.01	2.01	2.01	2.00	2.03	2.07	2.05	2.10	2.10	2.12	2.00	2.16	2.07
Aug 7	2.14	2.12	S	2.17	2.17	2.12	2.10	2.10	2.06	2.00	2.00	2.01	2.01	2.01	2.01	2.01	2.00	2.00	2.00	2.01	2.01	2.03	2.04	2.07	2.00	2.17	2.05
Aug 8	2.09	S	2.12	2.28	2.54	**2.68**	2.27	2.13	2.04	2.03	2.02	2.01	2.01	2.01	2.02	2.02	2.01	2.01	2.02	2.04	2.02	2.02	2.01	2.02	2.01	**2.68**	2.11
Aug 9	S	2.03	2.04	2.05	2.06	2.07	2.08	2.10	2.06	2.06	2.06	2.05	2.05	2.02	2.01	2.02	2.01	2.07	2.06	2.05	2.10	2.04	2.03	S	2.01	2.10	2.05
Aug 10	2.04	2.04	2.03	2.08	2.02	2.02	2.03	2.05	2.05	2.05	2.05	2.07	2.05	2.03	2.03	2.04	2.01	2.01	2.04	2.07	2.07	2.04	S	2.05	2.01	2.08	2.04
Aug 11	2.05	2.04	2.05	2.06	2.04	2.04	2.04	2.04	2.04	2.05	2.06	2.08	2.04	2.04	2.03	2.04	2.03	2.03	2.03	2.03	2.04	S	2.07	2.07	2.03	2.08	2.05
Aug 12	2.07	2.04	2.02	2.01	2.02	2.04	2.04	2.04	2.04	2.03	2.03	2.01	2.01	2.00	1.99	2.00	1.98	1.99	1.99	2.00	S	2.02	2.06	2.07	1.98	2.07	2.02
Aug 13	2.07	2.06	2.04	2.05	2.08	2.17	2.22	2.26	2.18	2.11	2.06	2.02	1.99	1.98	1.98	1.97	1.97	1.96	1.97	S	2.00	2.03	2.05	2.07	1.96	2.26	2.06
Aug 14	2.09	2.07	2.12	2.13	2.12	2.08	2.03	2.01	2.00	1.99	1.97	1.98	1.97	1.99	1.99	2.01	2.03	2.03	S	2.03	2.02	2.05	2.08	2.14	1.97	2.14	2.04
Aug 15	2.16	2.16	2.18	2.22	2.21	2.16	2.16	2.19	2.30	2.23	2.16	2.07	2.06	2.04	2.02	2.05	2.01	S	2.00	1.98	2.00	2.01	1.96	2.00	1.96	2.30	2.10
Aug 16	2.06	2.03	2.07	2.05	2.04	2.05	2.06	2.04	2.02	2.01	2.00	2.00	1.99	1.99	2.01	2.02	S	2.01	2.01	2.02	2.04	2.04	2.07	2.06	1.99	2.07	2.03
Aug 17	2.05	2.08	2.10	2.11	2.12	2.11	2.11	2.10	2.10	2.12	2.09	2.08	2.08	2.07	2.06	S	2.03	2.06	2.07	2.08	2.05	2.01	2.01	2.01	2.01	2.12	2.07
Aug 18	2.03	2.07	2.12	2.11	2.11	2.08	2.02	2.03	2.05	2.07	2.10	2.08	2.08	2.05	S	2.06	2.08	2.08	2.10	2.06	2.06	2.05	2.06	2.13	2.02	2.13	2.07
Aug 19	2.26	2.04	2.04	2.04	2.08	2.09	2.08	2.08	2.06	2.06	2.04	2.04	2.04	S	2.04	2.02	Y	2.06	2.05	2.05	2.08	2.11	2.14	2.17	2.02	2.26	2.08
Aug 20	2.20	2.22	2.23	2.24	2.28	2.25	2.20	2.19	2.16	2.13	2.09	2.07	S	C	C	C	C	2.08	2.08	2.09	2.10	2.12	2.14	2.19	2.07	2.28	2.16
Aug 21	2.18	2.18	2.20	2.23	2.22	2.22	2.25	2.26	2.15	2.07	2.05	S	2.05	2.05	2.06	2.07	2.07	2.07	2.06	2.08	2.09	2.15	2.16	2.10	2.05	2.26	2.13
Aug 22	2.09	2.11	2.09	2.12	2.13	2.10	2.13	2.10	2.10	2.09	S	2.05	2.04	2.04	2.04	2.03	2.05	2.05	2.05	2.06	2.08	2.08	2.07	2.08	2.03	2.13	2.08
Aug 23	2.12	2.11	2.11	2.15	2.12	2.13	2.13	2.05	2.03	S	2.01	2.00	1.99	1.98	1.98	2.00	1.99	2.00	2.00	2.04	2.02	2.08	2.03	2.03	1.98	2.15	2.05
Aug 24	2.08	2.05	2.05	2.04	2.02	2.03	2.03	2.02	S	2.00	2.02	2.01	2.01	1.99	1.99	1.99	1.99	2.01	2.04	2.06	2.11	2.12	2.13	2.15	1.99	2.15	2.04
Aug 25	2.16	2.13	2.14	2.18	2.23	2.19	2.28	S	2.23	2.22	2.23	2.14	2.12	2.11	2.10	2.09	2.08	2.07	2.09	2.12	2.09	2.08	2.10	2.10	2.07	2.28	2.14
Aug 26	2.12	2.13	2.15	2.15	2.27	2.38	S	2.18	2.15	2.14	2.13	2.08	2.06	2.05	2.05	2.04	2.04	2.04	2.06	2.09	2.12	2.11	2.10	2.12	2.04	2.38	2.12
Aug 27	2.14	2.20	2.22	2.20	2.18	S	2.21	2.22	2.21	2.17	2.13	2.10	2.08	2.06	2.07	2.05	2.04	2.09	2.16	2.18	2.19	2.19	2.23	2.26	2.04	2.26	2.16
Aug 28	2.26	2.31	2.37	2.41	S	2.47	2.53	2.54	2.44	2.39	2.18	2.43	2.36	2.20	2.12	2.10	2.09	2.09	2.11	2.12	2.14	2.20	2.26	2.36	2.09	2.54	**2.28**
Aug 29	2.39	2.41	2.48	S	2.60	2.56	2.57	2.57	2.51	2.18	2.15	2.18	2.13	2.14	2.17	2.12	2.08	2.09	2.08	2.10	2.11	2.14	2.21	2.18	2.08	2.60	2.27
Aug 30	2.18	2.15	S	2.18	2.25	2.37	2.28	2.23	2.25	2.19	2.10	2.09	2.10	2.06	2.04	2.04	2.05	2.04	2.04	2.06	2.08	2.11	2.12	2.16	2.04	2.37	2.14
Aug 31	2.12	S	2.40	2.45	2.29	2.31	2.41	2.19	2.17	2.16	2.14	2.09	2.06	2.07	2.07	2.13	2.17	2.00	2.08	2.09	2.23	2.22	2.27	2.34	2.00	2.45	2.19
Diurnal Maximum	2.39	2.41	2.48	2.45	2.60	2.68	2.57	2.57	2.51	2.39	2.23	2.43	2.36	2.20	2.17	2.13	2.17	2.09	2.16	2.18	2.23	2.22	2.27	2.36			
Diurnal Average	2.12	2.11	2.13	2.14	2.16	2.18	2.16	2.14	2.13	2.09	2.07	2.06	2.05	2.04	2.03	2.03	2.03	2.03	2.04	2.05	2.07	2.08	2.09	2.12			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	ND	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.



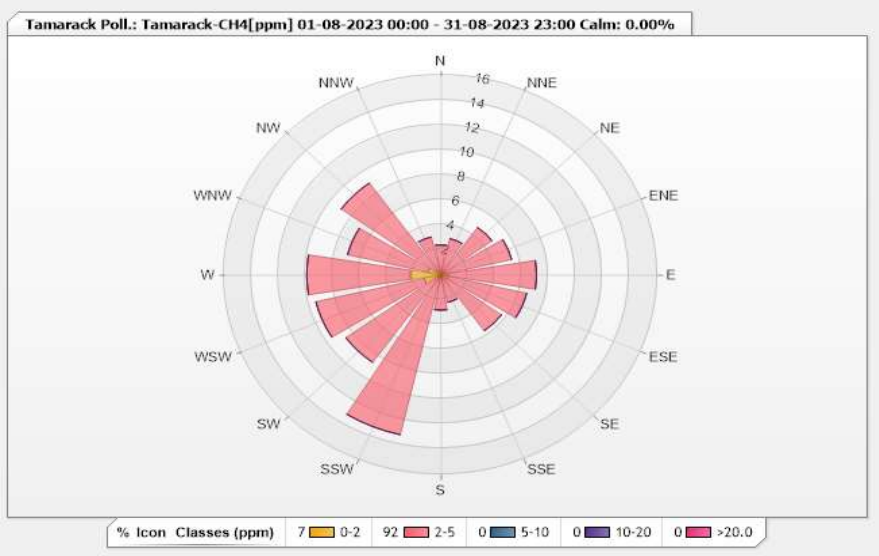


Station: Tamarack Poll.: Tamarack-CH4[ppm] Monthly: 08-2023

Type: Pollution Rose
Direction: Blowing From (Wind Frequency)
Time Base: 1 - Hour

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	0.14	2.26	0	0	0	2.4
NNE	0.28	2.69	0	0	0	2.97
NE	0.28	4.38	0	0	0	4.66
ENE	0.14	5.23	0	0	0	5.37
E	0.42	6.65	0	0	0	7.07
ESE	0.57	5.94	0	0	0	6.51
SE	0.14	5.37	0	0	0	5.51
SSE	0	2.26	0	0	0	2.26
S	0	2.83	0	0	0	2.83
SSW	0	13.15	0	0	0	13.15
SW	0.28	8.35	0	0	0	8.63
WSW	1.27	8.2	0	0	0	9.47
W	2.26	7.64	0	0	0	9.9
WNW	0.99	6.08	0	0	0	7.07
NW	0.42	8.63	0	0	0	9.05
NNW	0.28	2.83	0	0	0	3.11
Summary	7.47	92.49	0	0	0	100



Lakeland Industry & Community Association

Tamarack Site - August 2023

Summary of Hourly Averages

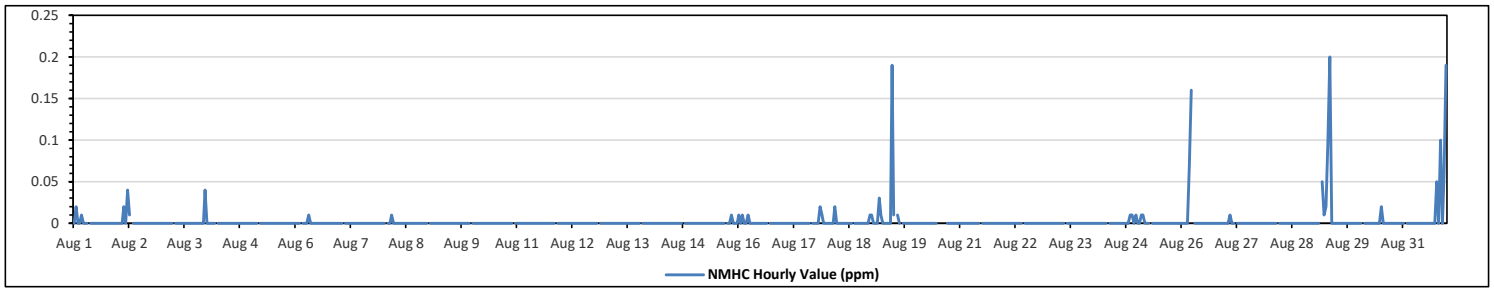
NON-METHANE HYDROCARBONS (NMHC) in ppm

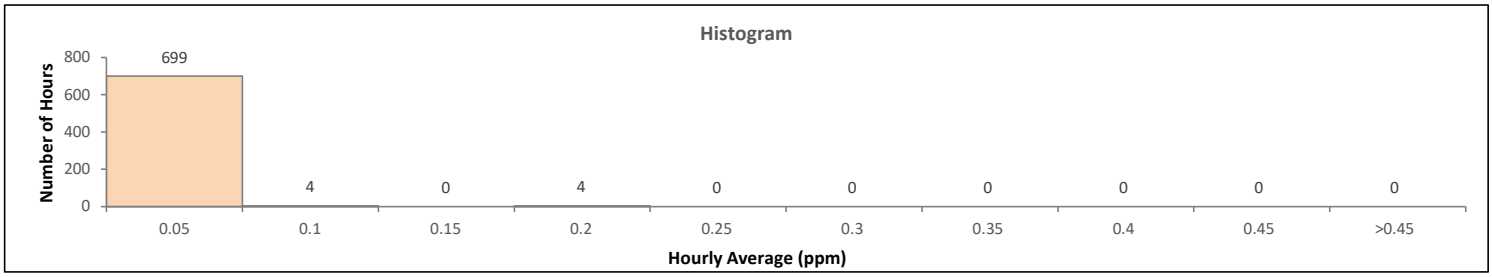
Maximum Hourly Value:	0.20	ppm	on Aug 29 at hr 8	Hours in Service:	744
Maximum Daily Value:	0.02	ppm	on Aug 31	Hours of Data:	707
Minimum Hourly Value:	0.00	ppm	on Aug 1 at hr 0	Hours of Missing Data:	1
Minimum Daily Value:	0.00	ppm	on Aug 4	Hours of Calibration:	36
Monthly Average:	0.00	ppm		Operational Uptime:	99.9

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Aug 1	0.00	0.02	0.00	0.00	0.01	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	0.02	0.00
Aug 2	0.00	0.00	0.00	0.02	0.00	0.04	0.01	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	0.04	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	0.04	0.00	0.04	0.00
Aug 4	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 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	0.00	0.00	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 6	0.00	0.00	0.00	S	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	0.01	0.00
Aug 7	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 8	0.00	S	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	0.01	0.00
Aug 9	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00
Aug 10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	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	S	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	S	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	S	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	S	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	S	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.01	0.00
Aug 16	0.01	0.00	0.01	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	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	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	S	0.00	0.00	0.00	0.00	0.02	0.01	0.00	0.00	0.00	0.02	0.00
Aug 18	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.02	0.00
Aug 19	0.01	0.00	0.00	0.00	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.19	0.01	S	0.01	0.00	Y	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.19	0.01
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	S	C	C	C	C	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	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 22	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 23	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 24	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	0.01	0.01	0.00	0.00	0.01	0.00
Aug 25	0.00	0.00	0.01	0.01	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	0.01	0.00
Aug 26	0.00	0.00	0.00	0.00	0.07	0.16	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	0.16	0.01
Aug 27	0.00	0.00	0.01	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	0.01	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
Aug 29	0.00	0.00	0.00	S	0.05	0.01	0.02	0.10	**0.20**	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.20**	0.02
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	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00
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	0.05	0.00	0.10	0.00	0.06	0.19	0.00	0.19	**0.02**
Diurnal Maximum	0.01	0.02	0.01	0.02	0.07	0.16	0.02	0.10	0.20	0.00	0.00	0.19	0.02	0.00	0.01	0.00	0.00	0.00	0.05	0.00	0.10	0.01	0.06	0.19			
Diurnal Average	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.01	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	0.01			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	ND	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.



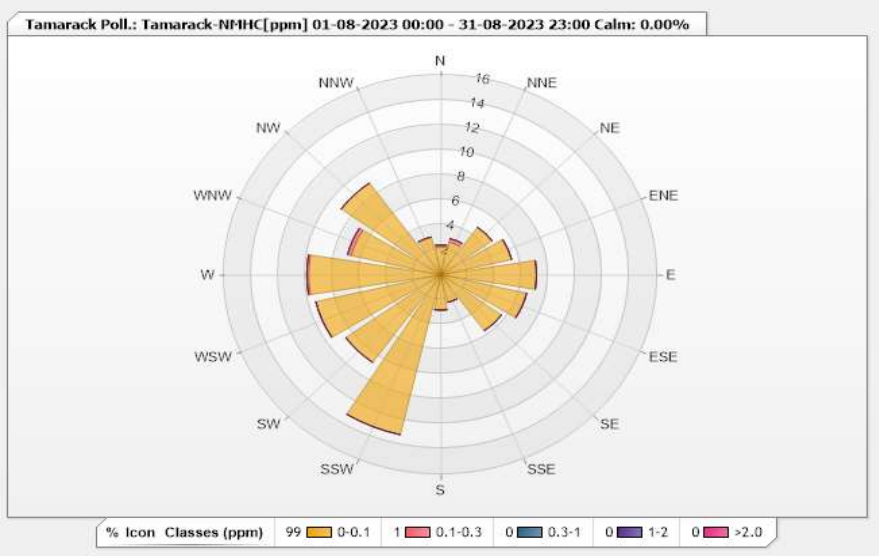


Station: Tamarack Poll.: Tamarack-NMHC[ppm] Monthly: 08-2023

Type: Pollution Rose
Direction: Blowing From (Wind Frequency)
Time Base: 1 - Hour

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	2.26	0.14	0	0	0	2.4
NNE	2.69	0.28	0	0	0	2.97
NE	4.67	0	0	0	0	4.67
ENE	5.37	0	0	0	0	5.37
E	7.07	0	0	0	0	7.07
ESE	6.51	0	0	0	0	6.51
SE	5.52	0	0	0	0	5.52
SSE	2.26	0	0	0	0	2.26
S	2.83	0	0	0	0	2.83
SSW	13.15	0	0	0	0	13.15
SW	8.63	0	0	0	0	8.63
WSW	9.48	0	0	0	0	9.48
W	9.76	0.14	0	0	0	9.9
WNW	6.79	0.28	0	0	0	7.07
NW	9.05	0	0	0	0	9.05
NNW	3.11	0	0	0	0	3.11
Summary	99.15	0.84	0	0	0	100



Lakeland Industry & Community Association

Tamarack Site - August 2023

Summary of Hourly Averages

PARTICULATE MATTER 2.5 ($PM_{2.5}$) in µg/m^3

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

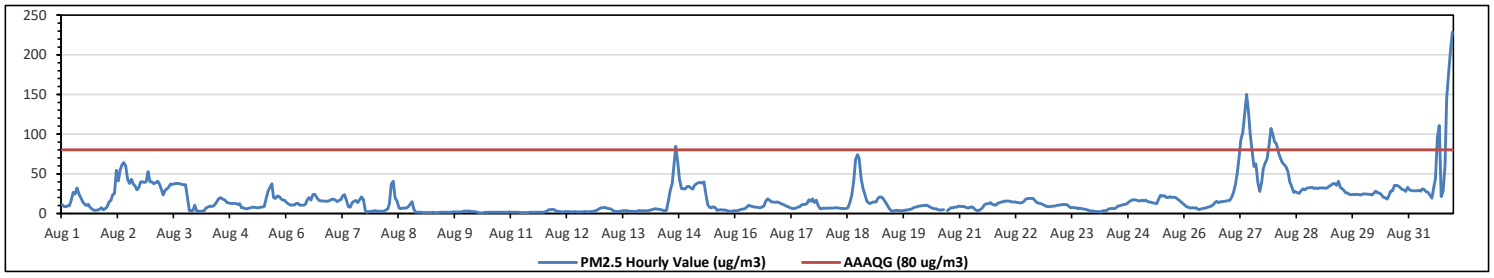
Number of 1-Hour Exceedances: 18 Number of 24-Hour Exceedances: 6

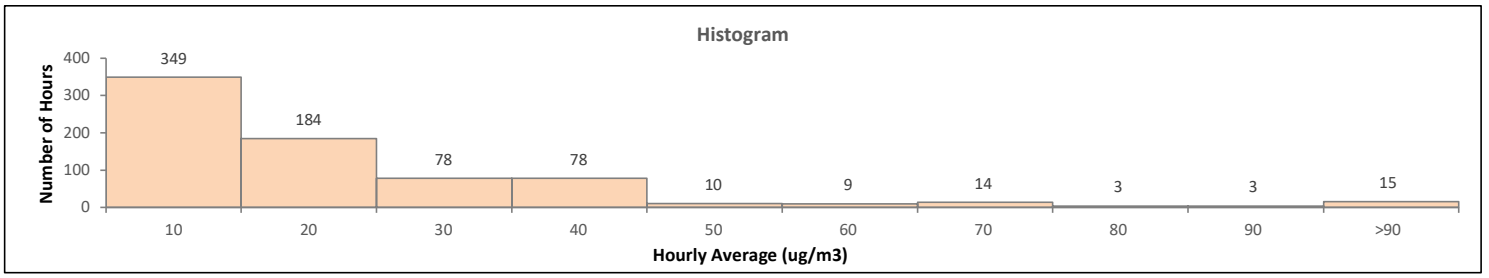
Maximum Hourly Value:	229 µg/m^3 on Aug 31 at hr 23	Hours in Service:	744
Maximum Daily Value:	71.1 µg/m^3 on Aug 27	Hours of Data:	743
Minimum Hourly Value:	1 µg/m^3 on Aug 10 at hr 8	Hours of Missing Data:	0
Minimum Daily Value:	1 µg/m^3 on Aug 9	Hours of Calibration:	1
Monthly Average:	17.9 µg/m^3	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	11	9	9	10	10	17	27	25	32	24	20	14	12	10	12	7	5	4	4	4	5	7	5	6	4	32	11.9
Aug 2	8	15	16	23	25	54	41	55	62	64	60	43	38	43	37	35	30	33	40	40	39	40	53	40	8	64	38.8
Aug 3	40	38	39	41	38	31	23	29	31	33	37	37	37	38	38	37	37	36	36	20	4	4	3	10	3	41	29.8
Aug 4	3	3	2	3	4	7	8	9	9	10	12	16	19	20	18	17	14	13	13	13	13	12	11	12	2	20	10.8
Aug 5	7	7	6	6	7	7	8	7	7	7	8	8	9	19	28	33	37	20	19	22	21	18	17	16	6	37	14.4
Aug 6	14	12	10	11	11	12	13	10	10	11	12	17	20	17	24	24	20	17	16	15	16	15	16	16	10	24	14.9
Aug 7	18	18	17	15	16	18	22	24	16	8	8	13	15	16	13	17	21	17	4	2	2	3	3	4	2	24	12.9
Aug 8	3	3	3	3	3	4	5	12	37	41	20	15	7	6	7	7	7	8	12	15	6	2	1	2	1	41	9.4
Aug 9	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	2	2	2	2	2	2	2	3	1	3	**1.5**
Aug 10	3	3	3	2	2	2	1	1	1	1	1	1	1	1	1	1	1	2	1	2	1	1	2	2	**1**	3	1.6
Aug 11	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	3	5	5	5	5	1	5	1.9
Aug 12	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	4	4	6	2	6	2.4
Aug 13	7	7	8	7	6	6	4	3	2	2	3	3	4	4	3	3	3	2	2	3	3	3	3	4	2	8	3.9
Aug 14	3	3	4	5	5	6	6	5	5	4	4	4	16	29	38	64	85	65	42	31	31	31	34	34	3	85	23.0
Aug 15	32	31	36	37	39	39	38	40	25	11	7	7	8	8	4	4	5	4	4	4	3	3	3	3	3	40	16.5
Aug 16	3	4	4	5	6	6	8	10	9	9	8	8	8	7	8	10	15	18	17	15	15	14	14	14	3	18	9.7
Aug 17	13	12	10	9	8	7	6	6	7	8	9	10	12	11	12	17	15	18	14	17	10	6	6	7	6	18	10.4
Aug 18	6	7	7	7	7	7	7	7	6	6	6	6	7	14	23	40	68	74	69	45	32	24	16	13	6	74	20.9
Aug 19	12	14	15	14	19	21	21	18	15	11	6	3	3	4	4	4	4	4	4	4	4	5	6	7	3	21	9.2
Aug 20	8	8	9	10	10	10	10	9	8	7	6	6	5	4	4	5	**C**	4	5	7	7	8	8	9	4	10	7.2
Aug 21	9	9	9	8	7	8	9	7	5	3	4	6	8	11	12	12	13	12	11	10	13	14	14	15	3	15	9.4
Aug 22	15	16	15	15	15	14	14	14	13	13	15	18	19	19	19	19	16	14	13	13	11	10	9	9	9	19	14.4
Aug 23	9	9	9	10	10	10	11	11	11	11	9	7	7	7	7	6	7	6	6	5	4	4	3	3	3	11	7.6
Aug 24	2	2	2	2	3	4	4	5	6	6	6	7	9	10	10	11	11	13	15	16	17	17	17	16	2	17	8.8
Aug 25	15	17	16	17	15	14	14	13	13	13	18	23	22	22	20	20	21	20	21	20	18	16	15	13	13	23	17.3
Aug 26	10	9	7	7	7	7	7	5	5	6	6	7	8	9	9	11	14	15	14	15	15	15	16	16	5	16	9.9
Aug 27	16	20	27	36	52	69	93	103	126	150	127	101	79	60	63	39	27	39	56	63	69	86	107	99	16	150	**71.1**
Aug 28	91	88	76	69	64	62	59	53	39	34	26	28	26	25	28	31	30	32	32	33	33	31	32	31	25	91	43.8
Aug 29	32	32	32	32	32	34	35	37	38	36	41	33	31	29	26	26	24	24	24	24	24	24	23	24	23	41	29.8
Aug 30	24	24	24	24	23	25	28	26	26	24	20	20	18	22	28	29	36	35	35	33	31	30	28	33	18	36	26.9
Aug 31	30	29	28	28	29	29	28	31	30	27	26	23	19	34	43	96	111	21	28	61	144	181	209	**229**	19	**229**	63.1
Diurnal Maximum	91	88	76	69	64	69	93	103	126	150	127	101	79	60	63	96	111	74	69	63	144	181	209	229			
Diurnal Average	14.5	14.5	14.4	14.7	15.3	17.2	17.9	18.7	19.2	18.8	17.0	15.7	15.2	16.2	17.5	20.3	22.7	18.6	18.0	17.9	19.4	20.5	22.1	22.6			

C	Monthly Calibration	**S**	Daily Zero-Span Check	**Q**	Quality Assurance	
K	Collection Error	**ND**	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.



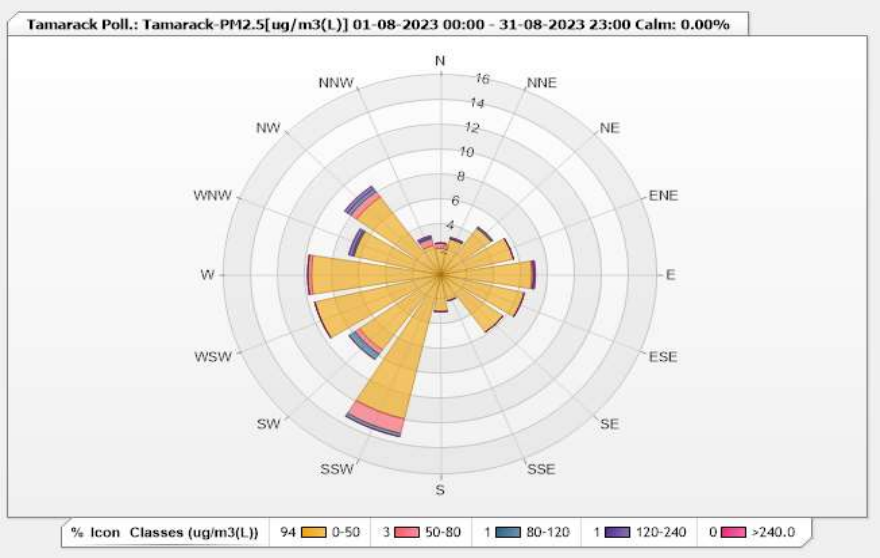


Station: Tamarack Poll.: Tamarack-PM2.5[ug/m3(L)] Monthly: 08-2023

Type: Pollution Rose
Direction: Blowing From (Wind Frequency)
Time Base: 1 - Hour

Calm: 0.00% Valid Data: 99.87% Calm Avg: 0.00 [ppm]

Direction	0-50	50-80	80-120	120-240	>240.0	Total
N	2.15	0.4	0	0	0	2.55
NNE	2.96	0	0	0.13	0	3.09
NE	4.58	0	0.13	0	0	4.71
ENE	5.52	0	0	0	0	5.52
E	6.73	0.13	0	0.13	0	6.99
ESE	6.33	0	0	0	0	6.33
SE	5.65	0	0	0	0	5.65
SSE	2.15	0	0	0	0	2.15
S	2.96	0	0	0	0	2.96
SSW	11.84	1.21	0.27	0	0	13.32
SW	7.4	0.4	0.54	0	0	8.34
WSW	9.56	0	0	0	0	9.56
W	9.56	0.27	0	0	0	9.83
WNW	6.59	0	0.13	0.27	0	6.99
NW	7.67	0.54	0.27	0.27	0	8.75
NNW	2.42	0.54	0.13	0.13	0	3.22
Summary	94.07	3.49	1.47	0.93	0	100



Lakeland Industry & Community Association

Tamarack Site - August 2023

Summary of Hourly Averages

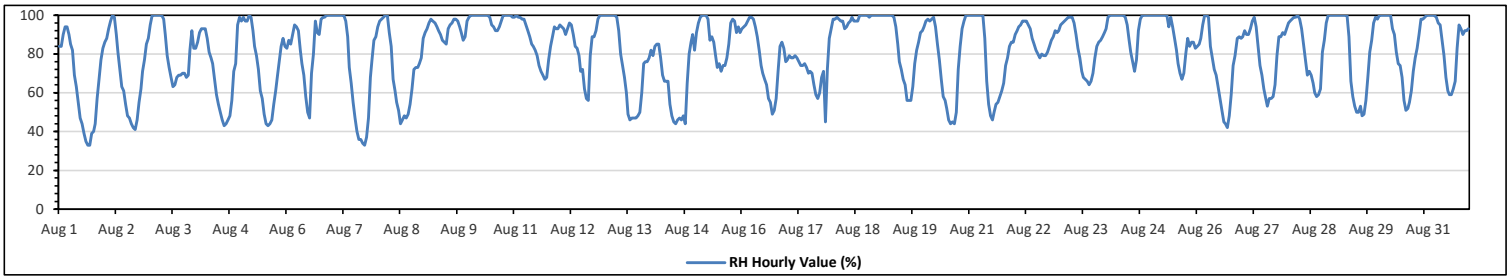
RELATIVE HUMIDITY (RH) in %

Maximum Hourly Value:	100	%	on Aug 2 at hr 4	Hours in Service:	744	
Maximum Daily Value:	98.4	%	on Aug 10	Hours of Data:	744	
Minimum Hourly Value:	33	%	on Aug 1 at hr 15	Hours of Missing Data:	0	
Minimum Daily Value:	63.7	%	on Aug 1	Hours of Calibration:	0	
Monthly Average:	80.9	%		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	84	84	90	94	94	90	85	82	69	63	55	47	44	39	35	**33**	**33**	39	40	44	57	67	77	83	**33**	94	**63.7**
Aug 2	86	88	93	97	**100**	99	90	81	72	63	61	54	48	47	44	42	41	46	55	62	71	77	85	88	41	**100**	70.4
Aug 3	95	**100**	**100**	**100**	**100**	**100**	**100**	98	90	79	73	68	63	64	68	69	69	70	70	68	69	82	92	83	63	**100**	82.1
Aug 4	83	86	91	93	93	93	88	81	78	75	67	59	54	50	46	43	44	46	48	56	71	75	95	99	43	99	71.4
Aug 5	97	99	97	97	**100**	99	92	84	79	72	61	57	49	44	43	44	46	54	61	68	76	84	88	84	43	**100**	74.0
Aug 6	83	87	85	90	95	94	92	82	75	69	58	50	47	70	80	97	91	90	98	99	99	**100**	**100**	**100**	47	**100**	84.6
Aug 7	**100**	**100**	**100**	**100**	**100**	**100**	**100**	97	89	73	65	55	47	40	36	36	34	**33**	37	47	68	77	87	89	**33**	**100**	71.3
Aug 8	94	97	98	99	**100**	**100**	91	84	67	61	55	51	44	46	48	47	49	54	62	72	73	73	75	78	44	**100**	71.6
Aug 9	88	91	93	96	98	97	96	94	92	90	87	86	85	93	95	96	98	98	97	94	91	87	89	97	85	98	92.8
Aug 10	99	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	99	95	94	92	92	94	97	**100**	**100**	**100**	**100**	**100**	99	92	**100**	**98.4**
Aug 11	99	**100**	99	99	98	98	95	92	89	85	84	82	79	74	71	69	67	68	77	84	89	94	93	93	67	**100**	86.6
Aug 12	95	94	93	90	93	96	95	90	84	83	79	71	72	62	57	56	79	89	89	92	98	**100**	**100**	**100**	56	**100**	85.7
Aug 13	**100**	**100**	**100**	**100**	**100**	**100**	99	92	80	74	68	60	49	46	47	47	47	48	50	60	75	76	76	78	46	**100**	73.8
Aug 14	82	79	84	85	85	78	69	66	66	66	54	48	45	44	46	47	46	48	44	65	80	86	90	82	44	90	66.0
Aug 15	91	96	99	**100**	**100**	**100**	98	87	89	86	80	73	75	71	74	74	78	85	96	98	97	91	94	91	71	**100**	88.5
Aug 16	93	94	95	97	99	99	98	94	89	82	74	70	67	64	57	55	49	51	57	71	84	86	83	76	49	99	78.5
Aug 17	77	79	78	78	79	78	76	74	74	75	73	70	71	70	64	59	57	60	68	71	45	72	88	93	45	93	72.0
Aug 18	98	98	99	98	97	97	93	94	96	97	99	97	97	97	**100**	**100**	**100**	**100**	**100**	99	**100**	**100**	**100**	**100**	93	**100**	98.2
Aug 19	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	99	94	85	76	72	67	64	56	56	56	63	75	82	86	91	92	56	**100**	83.9
Aug 20	94	97	98	97	98	99	94	85	77	67	58	56	52	46	44	45	44	50	72	84	93	97	**100**	**100**	44	**100**	77.0
Aug 21	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	88	66	54	48	46	50	54	55	58	61	65	74	78	84	86	86	46	**100**	77.2
Aug 22	90	92	94	95	97	97	97	95	93	88	85	82	80	78	80	79	79	81	84	87	89	92	91	92	78	97	88.2
Aug 23	95	96	97	98	99	99	99	96	90	83	78	71	68	67	66	64	66	70	78	84	86	87	89	91	64	99	84.0
Aug 24	93	99	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	99	95	87	81	76	71	77	92	98	**100**	**100**	**100**	**100**	**100**	71	**100**	94.5
Aug 25	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	94	99	94	88	82	75	70	67	70	80	88	84	86	86	83	67	**100**	89.4
Aug 26	84	85	88	95	**100**	**100**	99	84	78	72	69	63	57	51	45	44	42	48	59	74	79	88	89	88	42	**100**	74.2
Aug 27	89	92	90	90	93	97	99	94	84	74	69	62	57	53	57	57	58	64	79	89	89	91	90	93	53	99	79.6
Aug 28	96	97	98	99	99	**100**	98	93	85	77	69	71	69	65	60	58	59	62	81	87	96	**100**	**100**	**100**	58	**100**	84.1
Aug 29	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	89	66	58	53	50	50	53	48	49	56	68	81	87	96	99	98	48	**100**	79.2
Aug 30	**100**	**100**	**100**	**100**	**100**	**100**	**100**	93	90	81	75	74	68	56	51	52	55	61	71	78	83	90	98	98	51	**100**	82.3
Aug 31	99	**100**	**100**	**100**	**100**	**100**	99	96	95	87	79	68	61	59	59	62	66	83	95	93	90	92	92	93	59	**100**	86.2
Diurnal Maximum	100	100	100	100	100	100	100	100	100	100	100	99	97	97	100	100	100	100	100	100	100	100	100	100			
Diurnal Average	93.0	94.5	95.5	96.4	97.3	97.1	94.9	90.6	85.4	78.8	73.2	68.1	64.1	61.9	60.9	60.2	61.2	65.5	72.3	78.8	83.2	87.6	91.1	91.2			

C	Monthly Calibration	**S**	Daily Zero-Span Check	**Q**	Quality Assurance	
K	Collection Error	**ND**	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

Tamarack Site - August 2023

Summary of Hourly Averages

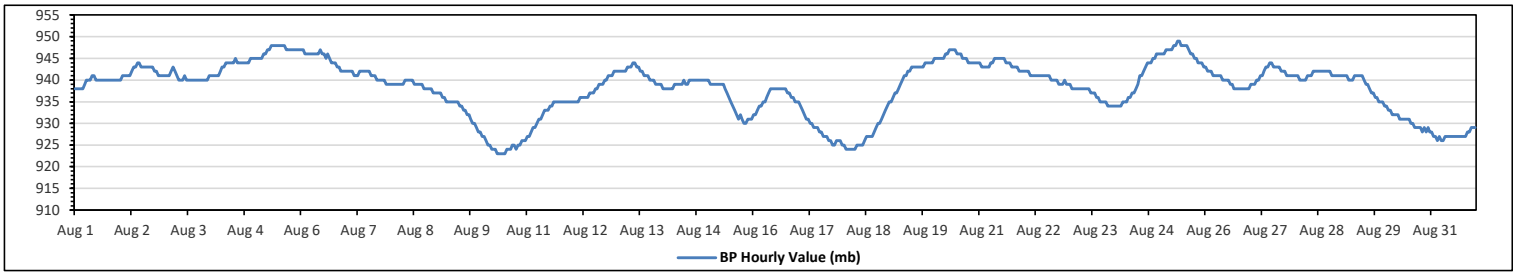
BAROMETRIC PRESSURE (BP) in millibar

Maximum Hourly Value:	949	mb	on Aug 25 at hr 9	Hours in Service:	744
Maximum Daily Value:	947	mb	on Aug 5	Hours of Data:	744
Minimum Hourly Value:	923	mb	on Aug 10 at hr 8	Hours of Missing Data:	0
Minimum Daily Value:	925	mb	on Aug 10	Hours of Calibration:	0
Monthly Average:	938	mb		Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																							Daily	Daily	Daily
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Minimum	Maximum	Average
Aug 1	938	938	938	938	938	939	940	940	940	941	941	940	940	940	940	940	940	940	940	940	940	940	940	940	938	941	940
Aug 2	940	941	941	941	941	941	942	943	943	944	944	943	943	943	943	943	943	943	942	942	941	941	941	941	940	944	942
Aug 3	941	941	941	942	943	942	941	940	940	940	941	940	940	940	940	940	940	940	940	940	940	940	940	941	940	943	941
Aug 4	941	941	941	941	941	942	943	943	944	944	944	944	944	945	944	944	944	944	944	944	944	945	945	945	941	945	943
Aug 5	945	945	945	945	946	946	947	947	948	948	948	948	948	948	948	948	947	947	947	947	947	947	947	947	945	948	**947**
Aug 6	947	947	946	946	946	946	946	946	946	946	947	946	946	945	946	945	944	944	944	943	943	942	942	942	942	947	945
Aug 7	942	942	942	942	941	941	941	942	942	942	942	942	942	941	941	941	940	940	940	940	940	939	939	939	939	942	941
Aug 8	939	939	939	939	939	939	939	940	940	940	940	940	939	939	939	939	939	938	938	938	938	938	937	937	937	940	939
Aug 9	937	937	937	936	936	935	935	935	935	935	935	935	934	934	933	933	932	932	931	930	930	929	928	928	928	937	933
Aug 10	927	927	926	925	925	924	924	924	**923**	**923**	**923**	**923**	**923**	924	924	924	925	925	924	925	925	926	926	926	**923**	927	**925**
Aug 11	927	927	928	929	929	930	931	931	932	933	933	933	934	934	935	935	935	935	935	935	935	935	935	935	927	935	933
Aug 12	935	935	935	935	936	936	936	936	936	937	937	937	938	938	939	939	939	940	940	941	941	941	942	942	935	942	938
Aug 13	942	942	942	942	942	943	943	943	944	944	943	943	942	942	941	941	941	940	940	940	939	939	939	939	939	944	942
Aug 14	938	938	938	938	938	938	939	939	939	939	939	940	939	939	940	940	940	940	940	940	940	940	940	940	938	940	939
Aug 15	940	939	939	939	939	939	939	939	939	938	937	936	935	934	933	932	931	932	931	930	930	931	931	931	930	940	935
Aug 16	932	932	933	934	934	935	935	936	937	938	938	938	938	938	938	938	938	938	937	937	936	936	935	935	932	938	936
Aug 17	935	934	933	932	931	931	930	930	929	929	929	928	928	927	927	927	926	926	925	925	926	926	926	925	925	935	929
Aug 18	925	924	924	924	924	924	924	925	925	925	925	926	927	927	927	927	928	929	930	930	931	932	933	934	924	934	927
Aug 19	935	935	936	937	937	938	939	940	941	941	942	942	943	943	943	943	943	943	943	944	944	944	944	944	935	944	941
Aug 20	945	945	945	945	945	945	946	946	947	947	947	947	946	946	946	945	945	945	944	944	944	944	944	944	944	947	945
Aug 21	944	943	943	943	943	943	944	944	945	945	945	945	945	945	944	944	944	943	943	943	943	942	942	942	942	945	944
Aug 22	942	942	942	941	941	941	941	941	941	941	941	941	941	941	940	940	940	940	939	939	939	940	939	939	939	942	941
Aug 23	939	938	938	938	938	938	938	938	938	938	938	937	937	937	936	936	935	935	935	935	934	934	934	934	934	939	937
Aug 24	934	934	934	934	935	935	935	936	936	937	937	938	939	941	941	942	943	944	944	944	945	945	946	946	934	946	939
Aug 25	946	946	946	947	947	947	947	948	948	**949**	**949**	948	948	948	948	947	946	946	945	945	944	944	944	943	943	**949**	947
Aug 26	943	942	942	942	941	941	941	941	941	940	940	940	940	939	939	938	938	938	938	938	938	938	938	938	938	943	940
Aug 27	939	939	939	940	940	941	941	942	943	943	944	944	943	943	943	943	942	942	942	941	941	941	941	941	939	944	942
Aug 28	941	941	940	940	940	940	941	941	941	942	942	942	942	942	942	942	942	942	942	941	941	941	941	941	940	942	941
Aug 29	941	941	941	941	940	940	940	941	941	941	941	941	940	939	939	938	937	937	936	936	935	935	935	934	934	941	939
Aug 30	934	933	933	932	932	932	932	931	931	931	931	931	931	930	930	929	929	929	929	928	929	928	929	928	928	934	931
Aug 31	928	927	927	926	927	926	926	927	927	927	927	927	927	927	927	927	927	927	927	928	928	929	929	929	926	929	927
Diurnal Maximum	947	947	946	947	947	947	947	948	948	949	949	948	948	948	948	948	947	947	947	947	947	947	947	947			
Diurnal Average	938	938	938	938	938	938	938	939	939	939	939	939	939	939	939	938	938	938	938	938	938	938	938	938			

C	Monthly Calibration	**S**	Daily Zero-Span Check	**Q**	Quality Assurance	
K	Collection Error	**ND**	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

Tamarack Site - August 2023

Summary of Hourly Averages

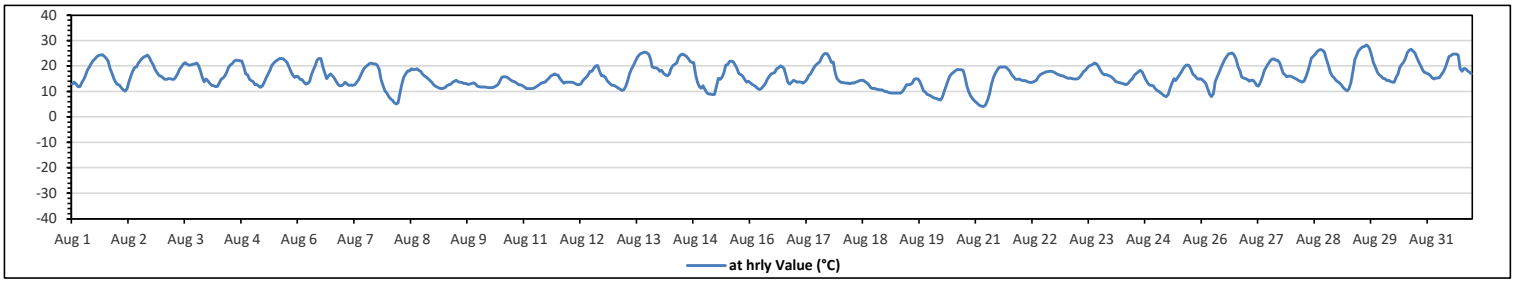
AMBIENT TEMPERATURE (AT) in Degree Celsius

Maximum Hourly Value:	28.2	°C	on Aug 29 at hr 15	Hours in Service:	744	
Maximum Daily Value:	19.5	°C	on Aug 29	Hours of Data:	744	
Minimum Hourly Value:	4.1	°C	on Aug 21 at hr 4	Hours of Missing Data:	0	
Minimum Daily Value:	11.1	°C	on Aug 19	Hours of Calibration:	0	
Monthly Average:	16.1	°C		Operational Uptime:	100.0	

Day	Hourly Period Starting at (MST)																							Daily	Daily	Daily
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Minimum	Maximum	Average
Aug 1	12.9	13.6	13	11.9	11.9	13.5	14.8	16.1	18.4	19.6	21	22.1	22.8	23.7	24.2	24.4	24.5	23.9	23.1	21.9	19	17.2	15	13.8	11.9	24.5	18.4
Aug 2	12.8	12.5	11.6	10.6	10.1	11	13.8	16	18.1	19.5	19.7	21.1	22.1	23	23.6	23.9	24.3	23.3	21.7	20.4	18.6	17.4	16.3	16	10.1	24.3	17.8
Aug 3	15.4	14.7	14.8	15	15.1	14.7	14.8	15.9	17.2	18.7	19.8	20.8	21.3	20.7	20.3	20.5	20.7	20.8	21.2	20.3	18.4	15.7	13.8	14.9	13.8	21.3	17.7
Aug 4	14.2	13.2	12.4	12.3	11.9	12	13.3	14.8	15.3	16.1	17.7	19.4	20.5	21	21.9	22.4	22.3	22.1	21.9	19.8	17	16.6	14.8	14.3	11.9	22.4	17.0
Aug 5	13.9	12.6	12.8	12.1	11.7	12.1	13.7	15.5	16.9	18.5	20.3	21.2	22	22.5	22.9	23	22.8	22.2	21.4	19.8	18	16.4	15.6	16	11.7	23.0	17.7
Aug 6	15.9	14.8	14.6	13.6	13	13.2	14.1	16.4	18.5	20.1	22.4	22.9	22.9	19.7	17.3	15	16.2	17	16.1	15.4	14.2	12.9	12.3	12.2	12.2	22.9	16.3
Aug 7	12.8	13.6	13	12.4	12.5	12.4	12.6	13.6	14.6	16.3	17.9	19.1	19.9	20.5	21.1	21.1	20.9	20.8	20.3	18.8	14.6	12.4	10.3	9.3	9.3	21.1	15.9
Aug 8	8	7.1	6.5	5.6	5.1	5.5	9.4	12.9	15.7	16.9	18.1	18.1	18.9	18.6	18.7	18.9	18.3	17.9	17	16.1	15.7	15.1	14.3	13.5	5.1	18.9	13.8
Aug 9	12.5	12	11.7	11.3	11.1	11.3	11.7	12.2	12.6	12.9	13.7	14.1	14.4	13.8	13.7	13.5	13.2	13.2	12.8	12.9	13.2	13.4	13.1	12.1	11.1	14.4	12.8
Aug 10	11.9	11.8	11.8	11.8	11.7	11.6	11.5	11.6	11.8	12.1	12.6	14.1	15.6	15.8	15.9	15.6	15	14.5	14	13.8	13.3	12.7	12.6	12.2	11.5	15.9	13.1
Aug 11	11.8	11.2	11.1	11.2	11.2	11.3	11.7	12.1	12.7	13.3	13.5	13.7	14.4	15.2	16	16.4	16.9	16.6	16.3	15	14.2	13.3	13.6	13.7	11.1	16.9	13.6
Aug 12	13.7	13.7	13.5	13.2	12.8	12.7	12.9	14.2	15.1	15.7	16.5	17.9	17.9	19.2	20	20.2	17.8	16.1	16.2	15.6	14.2	13.4	12.7	12.4	12.4	20.2	15.3
Aug 13	12.3	11.8	11.4	10.9	10.4	10.7	12.1	14.5	17.2	18.9	20.3	22	23.5	24.5	25	25.3	25.5	25.3	24.7	22.8	19.8	19.3	19.3	18.9	10.4	25.5	18.6
Aug 14	18	18.4	17.1	16.6	16.2	17	18.9	20.2	20.7	21.2	23.5	24.3	24.8	24.4	23.9	23	21.8	21.4	21.3	16.6	13.5	11.9	11.3	12.3	11.3	24.8	19.1
Aug 15	10.7	9.5	9	9	8.8	8.9	12	15.2	14.7	15.7	17.7	20.3	20.6	21.8	21.9	21.7	20.6	19.1	17.1	16.7	16	14.8	13.7	14.1	8.8	21.9	15.4
Aug 16	13.4	12.8	12.4	11.9	11.2	10.8	11.3	12.1	13.2	14.8	15.9	16.8	17.2	17.4	18.9	19.3	20	19.7	19	16.5	13.6	13	13.7	14.4	10.8	20.0	15.0
Aug 17	14.1	13.7	13.8	13.7	13.3	13.9	14.7	16.2	16.9	18.4	19.4	20.4	21.1	21.7	23.5	24.6	25	24.8	23.3	21.4	21.5	17.4	15.3	14.3	13.3	25.0	18.4
Aug 18	13.7	13.5	13.4	13.3	13.3	13.1	13.4	13.3	13.6	13.9	14.3	14.5	14.5	13.8	13.4	12.6	11.6	11.1	11.3	10.9	10.8	10.6	10.6	10.2	10.2	14.5	12.7
Aug 19	10	9.8	9.5	9.4	9.3	9.3	9.3	9.3	9.3	10.2	11.3	12.6	12.6	12.8	13.3	14.8	15.1	14.9	14.1	12.2	10.3	9.8	8.9	8.6	8.6	15.1	**11.1**
Aug 20	8.3	7.8	7.4	7.2	6.8	6.6	7.8	10.2	12.2	14.4	16	16.9	17.6	18.2	18.7	18.6	18.6	18.3	15.6	12.5	10	8.4	7.3	6.4	6.4	18.7	12.2
Aug 21	5.7	5	4.5	4.2	**4.1**	4.8	6.5	8.9	12.5	15.3	17.1	18.3	19.4	19.7	19.6	19.8	19.4	18.7	17.9	16.6	15.7	14.8	14.8	14.9	**4.1**	19.8	13.3
Aug 22	14.5	14.3	14.3	13.9	13.6	13.5	13.6	14	14.5	15.8	16.5	17.1	17.3	17.7	17.8	18	17.9	17.7	17.3	16.8	16.5	16.1	16.1	15.8	13.5	18.0	15.9
Aug 23	15.4	15.2	15.3	15	14.9	14.9	15.1	15.9	16.8	17.8	18.4	19.3	20.1	20.3	20.7	21.2	20.9	19.9	18.4	17.2	16.6	16.7	16.3	16	14.9	21.2	17.4
Aug 24	15.6	14.7	14	13.7	13.5	13.3	13.2	12.8	12.8	13.4	14.5	15.1	16.4	17.1	17.7	18.3	17.8	16.1	14.7	13.5	12.5	12.4	12.2	11.1	11.1	18.3	14.4
Aug 25	10.4	10	9.4	8.9	8.2	7.9	8.9	11.4	13.4	15	14.3	15.4	16.5	17.7	19	20	20.5	20.2	18.7	16.8	16.1	15.3	14.7	15	7.9	20.5	14.3
Aug 26	14.6	14	13.3	11.2	9.1	7.9	9.2	14	15.8	17.5	19.4	21.2	22.7	23.9	24.7	25	25.1	24.3	22.7	19.7	18.2	15.9	15.3	15.1	7.9	25.1	17.5
Aug 27	14.8	14.1	14.5	14.5	13.5	12.3	12.1	13.6	15.7	18.2	19.6	20.8	21.9	22.7	22.8	22.4	22.3	21.3	19.4	17.2	16.6	15.8	16	16	12.1	22.8	17.4
Aug 28	15.7	15.3	14.9	14.4	14.1	13.7	14	15.7	17.9	20.6	23.1	23.9	24.6	25.6	26.3	26.5	26.2	25.4	22.7	20.4	17.7	16.2	15.4	14.5	13.7	26.5	19.4
Aug 29	13.8	13.3	12.5	11.5	10.7	10.3	11.2	13.7	18	22.6	24.3	25.9	26.7	27.5	27.7	**28.2**	27.9	26.8	24.3	21.3	19.7	17.7	16.6	16	10.3	**28.2**	**19.5**
Aug 30	15.2	15.1	14.3	14.4	13.9	13.7	13.7	15.6	16.9	19.3	20.6	21.4	23	25.3	26.2	26.6	25.9	25.1	23.2	21.6	20	18.5	17.6	17.3	13.7	26.6	19.4
Aug 31	16.9	16.4	15.4	14.9	15.3	15.3	15.5	16.5	17.5	19.2	21.3	23.7	24	24.6	24.7	24.8	24.3	19	17.9	19.1	18.8	18.1	17.5	17	14.9	24.8	19.1
Diurnal Maximum	18.0	18.4	17.1	16.6	16.2	17.0	18.9	20.2	20.7	22.6	24.3	25.9	26.7	27.5	27.7	28.2	27.9	26.8	24.7	22.8	21.5	19.3	19.3	18.9			
Diurnal Average	13.2	12.8	12.4	11.9	11.6	11.6	12.5	14.0	15.4	16.8	18.1	19.2	19.9	20.3	20.7	20.8	20.6	19.9	18.9	17.4	15.9	14.8	14.1	13.8			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	ND	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

Tamarack Site - August 2023

Summary of Hourly Averages

STATION TEMPERATURE (ST) in Degree Celsius

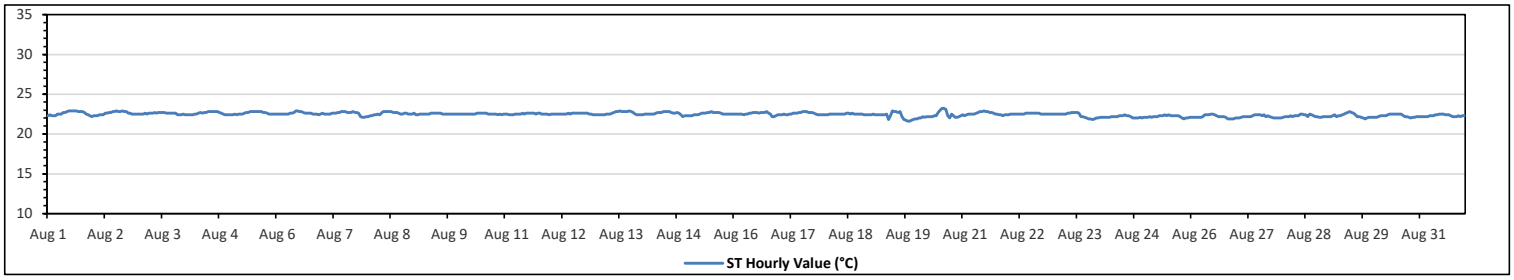
Maximum Hourly Value:	23.2	°C	on Aug 20 at hr 13	Hours in Service:	744	
Maximum Daily Value:	22.6	°C	on Aug 5	Hours of Data:	744	
Minimum Hourly Value:	21.6	°C	on Aug 19 at hr 19	Hours of Missing Data:	0	
Minimum Daily Value:	22.2	°C	on Aug 24	Hours of Calibration:	0	
Monthly Average:	22.5	°C		Operational Uptime:	100.0	

Day	Hourly Period Starting at (MST)																							Daily	Daily	Daily
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Minimum	Maximum	Average
Aug 1	22.3	22.4	22.3	22.3	22.3	22.5	22.5	22.5	22.7	22.7	22.8	22.9	22.9	22.9	22.9	22.9	22.8	22.8	22.8	22.7	22.5	22.4	22.3	22.2	22.2	22.9	22.6
Aug 2	22.3	22.3	22.3	22.4	22.4	22.4	22.6	22.6	22.7	22.7	22.8	22.8	22.9	22.8	22.8	22.9	22.8	22.8	22.6	22.6	22.5	22.5	22.5	22.5	22.3	22.9	22.6
Aug 3	22.5	22.5	22.5	22.6	22.5	22.6	22.6	22.6	22.7	22.6	22.7	22.7	22.7	22.7	22.6	22.6	22.6	22.6	22.6	22.6	22.4	22.4	22.4	22.5	22.4	22.7	22.6
Aug 4	22.4	22.4	22.4	22.4	22.4	22.5	22.5	22.6	22.7	22.6	22.7	22.7	22.8	22.8	22.8	22.8	22.8	22.8	22.7	22.6	22.5	22.4	22.4	22.4	22.4	22.8	22.6
Aug 5	22.4	22.4	22.5	22.4	22.5	22.5	22.5	22.6	22.7	22.7	22.8	22.8	22.8	22.8	22.8	22.8	22.8	22.7	22.7	22.6	22.5	22.5	22.5	22.5	22.4	22.8	**22.6**
Aug 6	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.6	22.6	22.7	22.9	22.9	22.8	22.8	22.7	22.6	22.6	22.6	22.6	22.5	22.5	22.5	22.4	22.5	22.4	22.9	22.6
Aug 7	22.6	22.5	22.5	22.5	22.5	22.6	22.6	22.6	22.7	22.7	22.8	22.8	22.8	22.7	22.7	22.7	22.8	22.7	22.7	22.6	22.2	22.1	22.1	22.2	22.1	22.8	22.6
Aug 8	22.2	22.3	22.3	22.4	22.4	22.5	22.4	22.6	22.8	22.8	22.8	22.8	22.8	22.7	22.7	22.7	22.6	22.5	22.5	22.6	22.6	22.5	22.5	22.5	22.2	22.8	22.6
Aug 9	22.6	22.4	22.4	22.5	22.5	22.5	22.5	22.5	22.5	22.6	22.6	22.6	22.6	22.6	22.6	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.4	22.6	22.5
Aug 10	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.6	22.6	22.6	22.6	22.6	22.6	22.5	22.5	22.5	22.5	22.5	22.4	22.5	22.4	22.5	22.4	22.6	22.5
Aug 11	22.5	22.5	22.4	22.4	22.4	22.5	22.5	22.5	22.5	22.6	22.5	22.6	22.6	22.6	22.6	22.6	22.5	22.6	22.6	22.5	22.5	22.5	22.5	22.4	22.4	22.6	22.5
Aug 12	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.6	22.5	22.6	22.6	22.6	22.6	22.6	22.6	22.6	22.6	22.6	22.5	22.5	22.4	22.4	22.4	22.6	22.5
Aug 13	22.4	22.4	22.4	22.4	22.4	22.5	22.5	22.5	22.6	22.7	22.8	22.8	22.9	22.8	22.8	22.8	22.8	22.9	22.8	22.7	22.5	22.4	22.4	22.4	22.4	22.9	22.6
Aug 14	22.4	22.5	22.5	22.5	22.5	22.5	22.5	22.6	22.7	22.7	22.7	22.8	22.8	22.8	22.8	22.7	22.6	22.6	22.7	22.6	22.4	22.2	22.3	22.3	22.2	22.8	22.6
Aug 15	22.3	22.3	22.3	22.4	22.4	22.4	22.5	22.6	22.6	22.6	22.7	22.7	22.8	22.7	22.7	22.7	22.7	22.6	22.5	22.5	22.5	22.5	22.5	22.5	22.3	22.8	22.5
Aug 16	22.5	22.5	22.5	22.5	22.5	22.4	22.5	22.5	22.6	22.6	22.7	22.7	22.7	22.6	22.7	22.7	22.7	22.8	22.6	22.5	22.2	22.2	22.3	22.4	22.2	22.8	22.5
Aug 17	22.4	22.4	22.5	22.4	22.4	22.5	22.5	22.6	22.6	22.6	22.7	22.7	22.8	22.8	22.8	22.7	22.7	22.7	22.6	22.5	22.4	22.4	22.4	22.4	22.4	22.8	22.6
Aug 18	22.4	22.4	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.6	22.6	22.5	22.6	22.5	22.5	22.5	22.5	22.5	22.4	22.4	22.4	22.4	22.4	22.6	22.5
Aug 19	22.4	22.5	22.4	22.4	22.4	22.4	22.4	22.4	22.5	21.8	22.3	22.9	22.8	22.8	22.7	22.8	22.2	21.8	21.7	**21.6**	**21.6**	21.7	21.8	21.9	**21.6**	22.9	22.3
Aug 20	21.9	22.0	22.0	22.2	22.1	22.2	22.2	22.2	22.2	22.3	22.3	22.7	23.0	**23.2**	**23.2**	23.1	22.3	22.0	22.5	22.3	22.1	22.1	22.2	22.3	21.9	**23.2**	22.4
Aug 21	22.4	22.3	22.4	22.5	22.5	22.5	22.5	22.6	22.7	22.8	22.8	22.9	22.8	22.8	22.7	22.7	22.6	22.5	22.5	22.4	22.4	22.3	22.4	22.4	22.3	22.9	22.6
Aug 22	22.4	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.6	22.6	22.6	22.6	22.6	22.6	22.6	22.6	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.4	22.6	22.5
Aug 23	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.6	22.6	22.7	22.7	22.7	22.7	22.6	22.2	22.2	22.1	22.0	21.9	21.9	21.8	21.9	22.0	22.0	21.8	22.7	22.3
Aug 24	22.1	22.1	22.1	22.1	22.1	22.1	22.2	22.2	22.2	22.2	22.3	22.3	22.3	22.4	22.3	22.3	22.2	22.0	22.0	22.0	22.0	22.1	22.0	22.1	22.0	22.4	**22.2**
Aug 25	22.1	22.1	22.2	22.1	22.2	22.2	22.2	22.3	22.3	22.3	22.4	22.3	22.4	22.3	22.3	22.3	22.3	22.3	22.2	22.0	21.9	22.0	22.0	22.1	21.9	22.4	22.2
Aug 26	22.1	22.1	22.1	22.1	22.1	22.1	22.2	22.4	22.4	22.4	22.5	22.5	22.4	22.3	22.2	22.2	22.2	22.2	22.1	21.9	21.9	21.9	21.9	22.0	21.9	22.5	22.2
Aug 27	22.0	22.0	22.1	22.2	22.2	22.2	22.2	22.2	22.3	22.4	22.4	22.4	22.4	22.3	22.4	22.2	22.3	22.2	22.1	22.0	22.0	22.0	22.0	22.0	22.0	22.4	22.2
Aug 28	22.1	22.2	22.2	22.2	22.3	22.2	22.3	22.3	22.3	22.5	22.5	22.4	22.4	22.2	22.5	22.4	22.3	22.2	22.2	22.1	22.1	22.2	22.2	22.2	22.1	22.5	22.3
Aug 29	22.2	22.2	22.3	22.4	22.2	22.3	22.3	22.4	22.5	22.6	22.7	22.8	22.7	22.6	22.4	22.2	22.2	22.1	22.0	21.9	22.0	22.1	22.1	22.1	21.9	22.8	22.3
Aug 30	22.1	22.1	22.2	22.3	22.3	22.3	22.3	22.4	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.3	22.2	22.2	22.1	22.0	22.1	22.1	22.2	22.2	22.0	22.5	22.3
Aug 31	22.2	22.2	22.2	22.2	22.2	22.3	22.3	22.3	22.4	22.4	22.5	22.5	22.5	22.4	22.4	22.4	22.3	22.2	22.2	22.2	22.3	22.2	22.3	22.3	22.2	22.5	22.3
Diurnal Maximum	22.6	22.5	22.5	22.6	22.5	22.6	22.6	22.6	22.8	22.8	22.9	22.9	23.0	23.2	23.2	23.1	22.8	22.9	22.8	22.7	22.6	22.5	22.5	22.5			
Diurnal Average	22.3	22.3	22.4	22.4	22.4	22.4	22.4	22.5	22.5	22.6	22.6	22.7	22.7	22.6	22.6	22.6	22.5	22.5	22.4	22.4	22.3	22.3	22.3	22.3			

C	Monthly Calibration	**S**	Daily Zero-Span Check	**Q**	Quality Assurance	
K	Collection Error	**ND**	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

Tamarack Site - August 2023

Summary of Hourly Averages

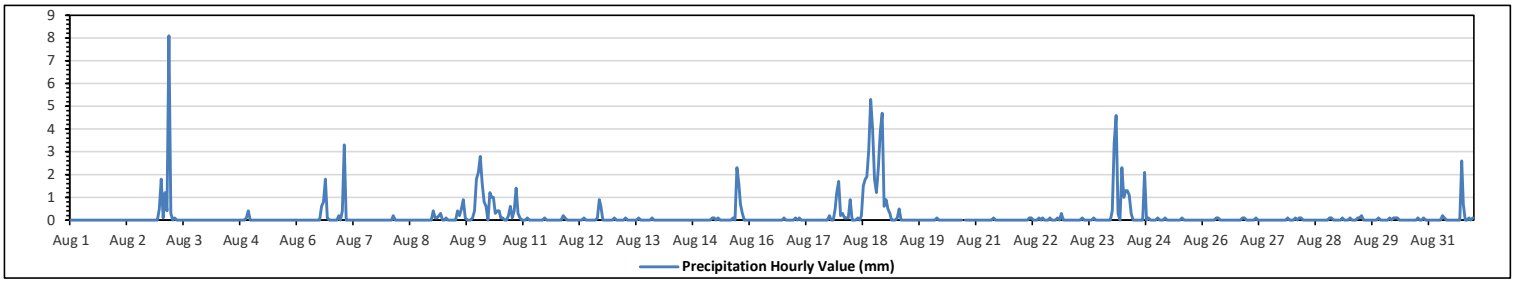
PRECIPITATION in mm

Maximum Hourly Value:	8.1	mm	on Aug 3 at hr 4	Hours in Service:	744	
Maximum Daily Value:	34.1	mm	on Aug 18	Hours of Data:	743	
Minimum Hourly Value:	0.0	mm	on Aug 1 at hr 0	Hours of Missing Data:	0	
Minimum Daily Value:	0.0	mm	on Aug 1	Hours of Calibration:	1	
Monthly Total:	115.7	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	0	0	0	0.0	0.0	0.0
Aug 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	0.0	0.5	0.5
Aug 3	1.8	0.1	1.2	0.4	**8.1**	0.3	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	**8.1**	12.0
Aug 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.4	0	0.0	0.4	0.5
Aug 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Aug 6	0	0	0	0	0	0	0	0	0	0	0	0	0	0.6	0.8	1.8	0.1	0	0	0	0	0	0.2	0	0.0	1.8	3.5
Aug 7	0.4	3.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	3.3	3.7
Aug 8	0	0	0	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.2	0.2
Aug 9	0.4	0.1	0.1	0.2	0.3	0	0	0.1	0	0	0	0	0	0.4	0.2	0.5	0.9	0.1	0	0	0	0.1	0.4	1.8	0.0	1.8	5.6
Aug 10	2.1	2.8	1.6	0.8	0.6	0	1.2	1	1	0.3	0.4	0.4	0.1	0.1	0	0	0.2	0.6	0.1	0.4	1.4	0.3	0.1	0	0.0	2.8	15.5
Aug 11	0	0	0.1	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0.2	0.1	0	0.0	0.2	0.5
Aug 12	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0.1	0.9	0.6	0	0	0	0	0	0	0.0	0.9	1.7
Aug 13	0.1	0	0	0	0	0	0.1	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0.1	0	0	0	0.0	0.1	0.4
Aug 14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Aug 15	0	0	0	0	0.1	0.1	0	0.1	0	0	0	0	0	0	0	0.1	0	2.3	1.6	0.7	0.3	0	0	0	0.0	2.3	5.3
Aug 16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0.0	0.1	0.1
Aug 17	0.1	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0	0	0.5	1.2	1.7	0.0	1.7	3.8
Aug 18	0.2	0.3	0.1	0.1	0.1	0.9	0	0	0	0.1	0	0.2	1.5	1.8	1.9	3.1	5.3	4	1.8	1.2	2.3	3.9	4.7	0.6	0.0	5.3	**34.1**
Aug 19	0.9	0.5	0.3	0	0	0	0.1	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.9	2.3
Aug 20	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	C	0	0	0	0	0	0	0.0	0.1	0.1
Aug 21	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	0.0	0.1	0.1
Aug 22	0	0	0	0	0.1	0.1	0	0	0	0.1	0	0.1	0	0	0	0.1	0	0	0	0.1	0	0.3	0	0	0.0	0.3	0.9
Aug 23	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0.0	0.1	0.2
Aug 24	0.4	3.4	4.6	0.3	0	2.3	1	1.3	1.3	1.1	0.3	0	0	0	0	0	0	2.1	0	0.1	0	0	0	0	0.0	4.6	18.2
Aug 25	0.1	0	0	0	0.1	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0.0	0.1	0.3
Aug 26	0	0	0	0	0	0	0	0.1	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.1	0	0.0	0.1	0.4
Aug 27	0	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	0.0	0.1	0.2
Aug 28	0	0.1	0	0.1	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.1	0	0	0	0.0	0.1	0.5
Aug 29	0	0	0.1	0	0	0	0.1	0	0	0	0.1	0.1	0.2	0	0	0	0	0	0	0	0	0.1	0	0	0.0	0.2	0.7
Aug 30	0	0	0	0.1	0	0.1	0.1	0.1	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0.1	0	0	0.0	0.1	0.6
Aug 31	0	0	0	0	0	0	0	0.2	0.1	0	0	0	0	0	0	0	0	2.6	0.7	0	0	0.1	0	0.1	0.0	2.6	3.8
Diurnal Maximum	2.1	3.4	4.6	0.8	8.1	2.3	1.2	1.3	1.3	1.1	0.4	0.4	1.5	1.8	1.9	3.1	5.3	4.0	1.8	1.2	2.3	3.9	4.7	1.8			
Diurnal Average	0.2	0.3	0.3	0.1	0.3	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.4	0.1	0.1	0.1	0.2	0.2	0.2			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	ND	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

Tamarack Site - August 2023

Summary of Hourly Averages

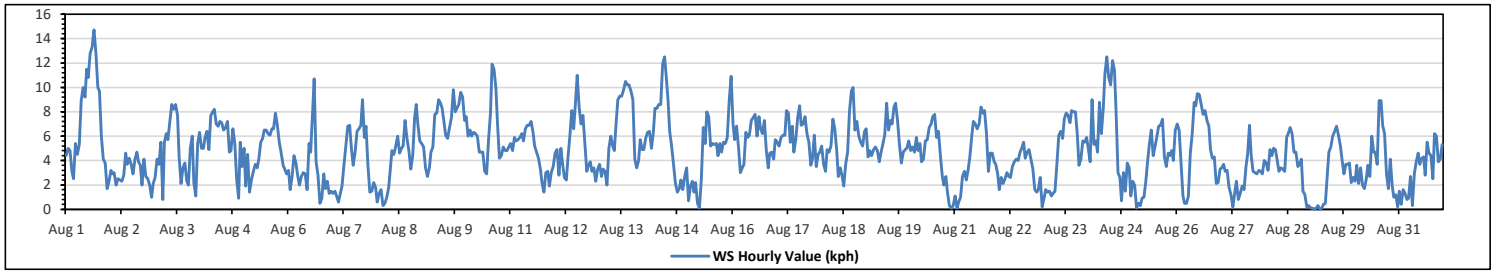
VECTOR WIND SPEED (VWS) in km/hr

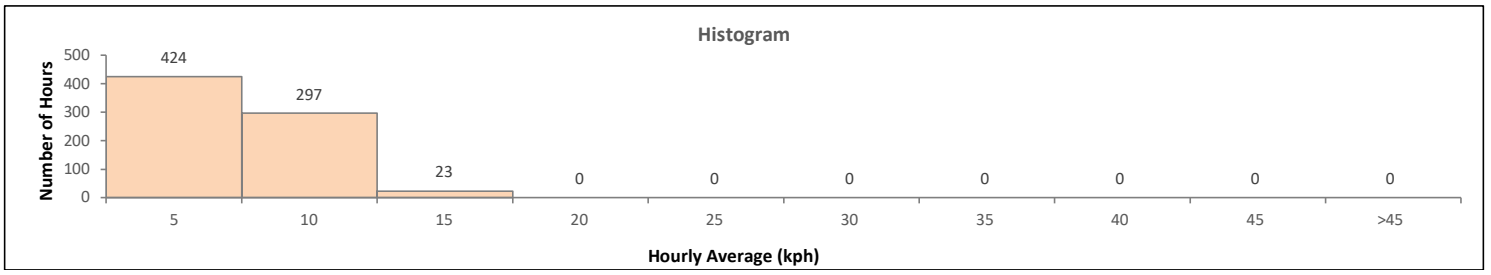
Maximum Hourly Value:	14.7	kph	on Aug 1 at hr 15	Hours in Service:	744	
Maximum Daily Value:	7.4	kph	on Aug 1	Hours of Data:	744	
Minimum Hourly Value:	0.0	kph	on Aug 29 at hr 2	Hours of Missing Data:	0	
Minimum Daily Value:	2.8	kph	on Aug 27	Hours of Calibration:	0	
Monthly Average:	1.1	kph		Operational 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	4.4	5.0	4.8	3.1	2.5	5.4	4.5	5.3	8.9	10.0	9.2	11.5	10.8	12.8	13.3	**14.7**	12.8	10.0	9.7	6.0	4.1	3.8	1.7	2.3	1.7	**14.7**	**7.4**
Aug 2	3.2	2.9	3.0	2.0	2.5	2.4	2.3	2.8	4.6	3.7	4.2	3.7	2.9	4.1	4.7	3.9	3.6	2.0	4.1	2.7	2.5	2.0	1.0	2.1	1.0	4.7	3.0
Aug 3	2.6	4.1	3.7	5.5	0.8	5.5	6.2	5.7	7.2	8.6	8.2	8.6	7.7	4.3	2.1	3.4	3.8	2.3	2.0	5.0	6.0	2.2	1.1	5.4	0.8	8.6	4.7
Aug 4	6.3	5.0	5.0	5.9	6.4	4.9	7.7	8.0	8.2	7.0	6.8	7.2	7.1	6.5	6.7	7.2	4.7	4.8	6.6	5.4	2.4	0.9	5.5	3.5	0.9	8.2	5.8
Aug 5	5.0	1.9	4.5	1.4	2.4	3.1	3.7	3.4	4.1	5.5	5.8	6.5	6.5	6.2	6.1	6.6	6.6	7.9	6.9	5.5	4.6	3.6	3.3	2.9	1.4	7.9	4.8
Aug 6	3.2	1.6	2.7	4.4	3.8	2.7	2.0	2.7	3.0	2.9	1.6	5.4	4.7	7.9	10.7	3.9	2.8	0.5	0.9	2.9	1.7	2.3	1.3	1.5	0.5	10.7	3.2
Aug 7	1.3	1.5	1.1	0.6	1.2	1.9	3.6	5.2	6.8	6.9	5.1	3.6	4.7	6.4	6.6	6.9	9.0	5.9	6.8	3.6	1.4	1.5	2.2	1.8	0.6	9.0	4.0
Aug 8	0.6	1.3	1.6	0.3	0.5	1.0	1.8	3.3	4.8	4.5	5.2	6.0	4.6	5.0	5.2	7.3	5.8	4.8	3.3	4.4	7.5	8.6	7.0	5.6	0.3	8.6	4.2
Aug 9	5.4	5.1	3.4	2.7	3.4	4.7	5.1	7.8	7.9	9.0	8.7	8.3	7.1	6.1	5.8	6.7	7.5	9.8	8.0	8.3	8.6	9.6	9.2	7.3	2.7	9.8	6.9
Aug 10	7.6	6.0	6.5	6.0	6.3	6.2	6.0	4.7	4.7	4.7	3.1	2.9	5.7	7.9	11.9	11.5	9.9	7.0	4.2	4.4	5.1	4.8	4.8	5.1	2.9	11.9	6.1
Aug 11	5.4	4.8	5.9	5.6	5.7	5.9	6.2	5.6	6.6	6.9	6.9	7.2	6.3	5.2	4.7	4.2	3.3	2.2	1.4	3.0	3.1	1.9	3.0	3.5	1.4	7.2	4.8
Aug 12	4.6	4.9	2.8	5.0	3.8	2.6	2.4	4.2	6.0	8.1	6.6	8.9	11.0	8.4	7.0	7.7	5.4	3.1	3.6	3.9	3.1	3.4	2.3	3.3	2.3	11.0	5.1
Aug 13	3.7	2.7	3.3	3.1	2.0	5.0	6.0	5.2	4.8	7.2	9.0	9.3	9.3	9.8	10.5	10.2	10.2	9.7	9.0	4.1	3.4	4.0	5.7	4.9	2.0	10.5	6.3
Aug 14	4.9	5.8	6.3	6.4	5.0	6.3	8.3	8.3	8.6	8.6	11.9	12.5	11.0	8.9	6.4	5.2	3.7	2.1	1.4	1.7	2.4	1.6	2.7	3.4	1.4	12.5	6.0
Aug 15	0.7	1.9	2.3	1.4	2.2	0.5	0.1	2.5	6.7	5.4	8.0	7.6	5.2	5.4	5.3	5.4	4.4	5.4	4.7	5.5	5.4	5.9	8.9	10.9	0.1	10.9	4.7
Aug 16	7.0	5.7	6.8	5.1	3.0	3.4	3.7	6.3	5.9	6.1	7.3	7.5	7.8	6.0	7.6	6.6	6.2	7.3	4.8	3.4	4.6	4.7	4.1	5.7	3.0	7.8	5.7
Aug 17	5.5	5.2	5.9	6.1	6.1	8.1	7.9	5.5	6.8	4.7	5.7	7.5	8.5	6.9	7.0	7.6	6.2	5.5	3.6	4.1	6.1	3.5	4.5	4.7	3.5	8.5	6.0
Aug 18	5.2	3.7	3.1	4.9	4.7	5.2	7.4	6.6	4.8	2.7	3.4	2.7	1.9	3.7	4.7	8.1	9.7	10.0	6.5	7.2	6.0	5.5	5.2	6.4	1.9	10.0	5.4
Aug 19	6.6	4.3	4.8	4.4	4.9	5.1	4.8	3.9	4.6	5.3	6.1	8.7	6.5	7.3	7.0	8.4	8.7	7.3	5.3	3.8	4.7	4.9	5.0	5.6	3.8	8.7	5.8
Aug 20	4.8	5.1	4.7	5.9	4.8	5.4	3.9	4.1	5.6	5.7	6.7	7.0	7.6	7.8	5.9	6.4	4.4	2.7	2.0	2.7	1.4	0.3	0.1	0.3	0.1	7.8	4.4
Aug 21	1.1	0.1	0.6	1.0	2.7	3.1	2.4	3.3	4.3	6.0	7.2	7.0	6.6	7.0	8.4	7.9	8.1	6.2	3.1	4.6	4.6	3.9	3.7	2.9	0.1	8.4	4.4
Aug 22	1.6	2.6	2.1	2.5	3.0	2.7	2.6	3.5	3.9	4.1	4.0	4.7	5.0	5.5	4.2	4.7	4.9	4.1	3.3	1.6	1.4	1.6	2.6	0.2	0.2	5.5	3.2
Aug 23	0.9	1.6	1.4	1.5	1.1	1.3	1.5	3.7	6.1	6.4	5.8	7.4	7.9	7.7	7.1	8.1	8.0	8.0	6.1	3.6	4.1	5.6	5.5	5.9	0.9	8.1	4.8
Aug 24	4.8	3.9	9.0	5.3	5.6	4.7	8.8	6.2	8.3	11.1	12.5	10.8	10.2	12.2	11.4	8.0	3.0	2.6	0.7	3.0	1.5	3.8	3.4	1.1	0.7	12.5	6.3
Aug 25	2.3	2.0	0.1	0.5	0.3	0.9	1.0	2.3	3.8	5.3	6.5	4.4	5.2	5.9	6.8	6.9	7.4	4.3	3.5	4.6	4.4	4.8	4.0	6.5	0.1	7.4	3.9
Aug 26	7.0	6.5	3.8	1.1	0.5	0.5	1.1	4.6	6.2	8.8	8.5	9.5	9.4	8.6	7.8	8.1	7.3	6.8	4.9	4.2	4.3	2.1	2.2	3.3	0.5	9.5	5.3
Aug 27	3.4	3.7	3.1	3.2	1.8	1.2	0.2	1.4	2.3	0.8	1.3	1.9	1.6	3.5	4.5	6.9	4.5	3.1	3.0	2.9	3.2	3.1	2.9	4.0	0.2	6.9	**2.8**
Aug 28	3.8	3.2	4.9	4.4	5.0	4.9	4.1	3.1	3.4	3.3	3.1	5.9	6.2	6.7	6.2	4.7	4.7	3.5	3.7	4.1	1.5	1.2	0.2	0.3	0.2	6.7	3.8
Aug 29	0.1	0.1	**0.0**	0.1	0.3	**0.0**	0.1	0.4	0.5	2.8	4.7	5.1	6.0	6.4	6.8	6.1	5.2	4.1	2.9	3.7	3.7	3.8	2.2	2.6	**0.0**	6.8	2.8
Aug 30	2.3	3.6	2.1	3.4	2.0	1.7	2.5	3.6	2.7	6.0	4.7	4.7	3.7	8.9	8.9	6.9	6.2	2.9	1.7	4.1	1.9	1.0	1.2	0.2	0.2	8.9	3.6
Aug 31	1.5	0.4	1.6	1.3	0.8	0.9	2.7	0.3	2.9	3.9	4.6	3.7	4.2	4.3	2.8	5.5	4.6	4.4	2.5	6.2	6.0	3.9	4.1	5.3	0.3	6.2	3.3
Diurnal Maximum	7.6	6.5	9.0	6.4	6.4	8.1	8.8	8.3	8.9	11.1	12.5	12.5	11.0	12.8	13.3	14.7	12.8	10.0	9.7	8.3	8.6	9.6	9.2	10.9			
Diurnal Average	3.8	3.4	3.6	3.4	3.1	3.5	3.9	4.3	5.3	5.9	6.2	6.7	6.5	6.9	6.9	7.0	6.2	5.2	4.2	4.2	3.9	3.5	3.6	3.8			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	ND	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.



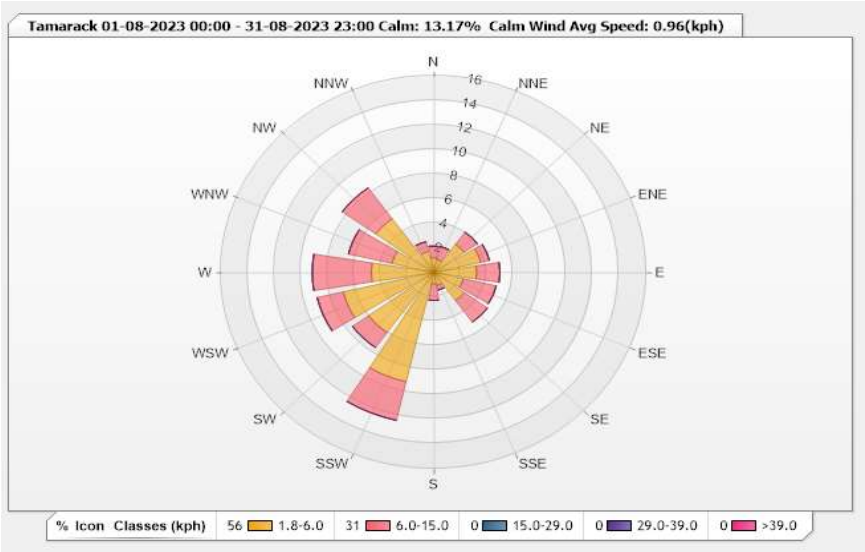


Station: Tamarack Monitor: WDS [kph] Monthly: 08-2023

Type: Wind Rose
Direction: Blowing From (Wind Frequency)
Time Base: 1 - Hour

Calm (WS<1.8kph): 13.17% 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	1.21	0.94	0	0	0	2.15
NNE	1.08	1.08	0	0	0	2.16
NE	2.82	1.21	0	0	0	4.03
ENE	3.63	0.67	0	0	0	4.3
E	3.23	1.75	0	0	0	4.98
ESE	2.28	2.55	0	0	0	4.83
SE	2.82	2.15	0	0	0	4.97
SSE	1.08	0.4	0	0	0	1.48
S	0.94	1.34	0	0	0	2.28
SSW	9.14	3.23	0	0	0	12.37
SW	6.05	1.48	0	0	0	7.53
WSW	6.99	2.02	0	0	0	9.01
W	4.7	4.44	0	0	0	9.14
WNW	3.23	3.36	0	0	0	6.59
NW	5.38	3.09	0	0	0	8.47
NNW	1.75	0.81	0	0	0	2.56
Summary	56.33	30.52	0	0	0	86.85



Lakeland Industry & Community Association

Tamarack Site - August 2023

Summary of Hourly Averages

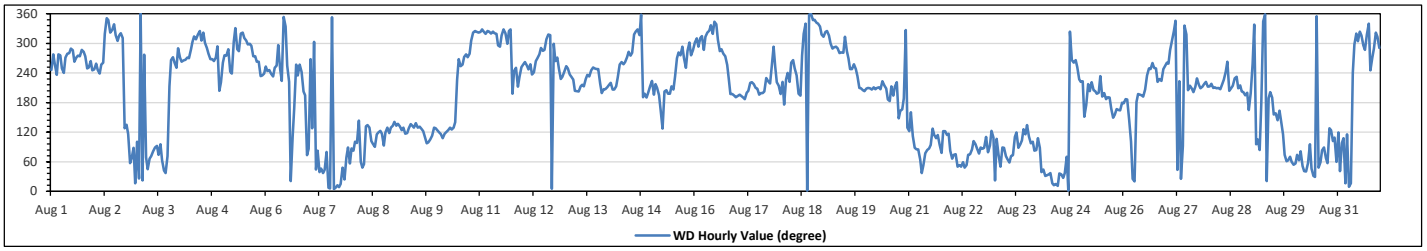
WIND DIRECTION (VWD) in sector

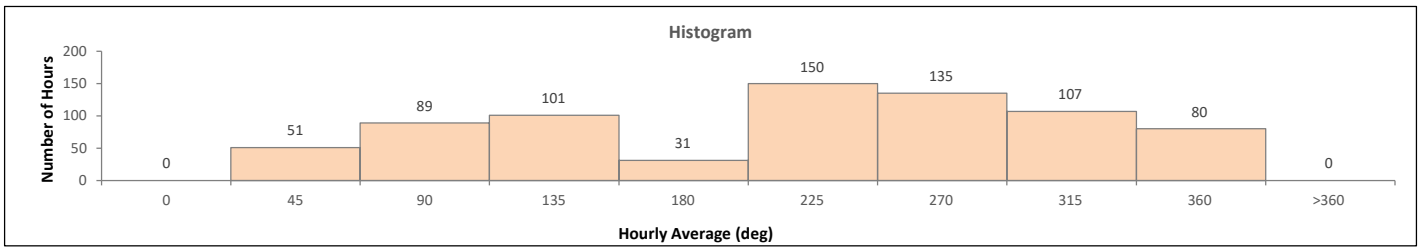
Monthly Average:	250 (WSW) degree	Hours in Service:	744
		Hours of Data:	744
		Hours of Missing Data:	0
		Hours of Calibration:	0
		Operational Uptime:	100.0

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	WSW	W	WSW	SW	W	W	WSW	WSW	W	W	W	WNW	WNW	W	W	W	W	WNW	W	W	WSW	WSW	W	WSW	272	W
Aug 2	WSW	WSW	WSW	WSW	WSW	W	NW	N	NNW	NW	NW	NNW	NW	WNW	NW	NW	NW	SE	SE	ESE	ENE	ENE	E	NNE	316	NW
Aug 3	E	NNE	N	NNE	W	ENE	NE	ENE	ENE	E	E	E	ENE	E	ENE	NE	NE	ENE	SSW	W	W	W	WSW	WNW	58	ENE
Aug 4	W	W	W	W	W	W	WNW	WNW	NW	NW	NW	NW	NW	NW	WNW	WNW	W	W	W	W	W	WNW	SSW	SW	286	WNW
Aug 5	W	W	W	WNW	WSW	WSW	WNW	NNW	WNW	WNW	NW	NW	NW	NW	WNW	WNW	WNW	W	W	W	W	SW	SW	WSW	285	WNW
Aug 6	WSW	WSW	WSW	SW	SW	WSW	WSW	WNW	WSW	SW	N	NNW	WSW	SW	NNE	ESE	SSE	WSW	SW	WSW	WSW	SSW	SSW	ENE	253	WSW
Aug 7	E	W	SE	WNW	NE	E	NE	NE	NE	NE	E	N	N	N	N	N	NNE	N	NNE	NE	NNE	ENE	E	NE	27	NNE
Aug 8	E	E	E	E	SE	ENE	NE	NE	SE	SE	SE	E	E	E	ESE	ESE	ESE	ESE	E	ESE	SE	ESE	SE	SE	114	ESE
Aug 9	SE	SE	SE	SE	ESE	SE	ESE	ESE	SE	SE	SE	SE	SE	SE	SE	SE	ESE	ESE	E	E	ESE	ESE	SE	SE	123	ESE
Aug 10	ESE	ESE	ESE	ESE	ESE	ESE	ESE	SE	SE	SE	SE	SW	W	WSW	WSW	W	W	W	W	NW	NW	NW	NW	NW	232	SW
Aug 11	NW	NNW	NW	NW	NW	NW	NW	NW	NW	NW	WNW	WNW	NW	NNW	NW	WNW	NW	NNW	SSW	WSW	WSW	SSW	SW	WSW	309	NW
Aug 12	WSW	W	WSW	WSW	WSW	SW	WSW	W	W	W	WNW	WNW	WNW	NW	NW	NW	N	WNW	W	W	WSW	SW	SW	WSW	279	W
Aug 13	WSW	WSW	SW	SW	SW	SSW	SSW	SSW	SSW	SW	SSW	SW	SW	SW	WSW	WSW	WSW	WSW	WSW	SW	SSW	SSW	SSW	SSW	229	SW
Aug 14	SW	SW	SSW	SSW	SSW	SW	WSW	W	WSW	W	W	W	W	W	NW	NW	NNW	NW	N	S	SSW	S	SSW	SSW	258	WSW
Aug 15	SW	SSW	SW	SSW	SSW	SSE	SE	SSW	SSW	SSW	SSW	SSW	SSW	SW	W	W	W	WNW	W	WSW	WNW	WNW	W	WNW	248	WSW
Aug 16	WNW	NW	WNW	NW	NW	WNW	NW	NW	NW	NNW	NW	NNW	NNW	NW	WNW	WNW	W	W	WSW	SW	SSW	SSW	SSW	S	294	WNW
Aug 17	S	SSW	S	S	S	SSW	SSW	SW	SW	SW	SSW	SSW	SSW	SSW	SSW	SSW	SW	SW	SW	WSW	WNW	WSW	SW	SSW	211	SSW
Aug 18	SSW	SW	S	SW	WSW	SW	W	W	WSW	SW	SSW	SSW	W	NW	NNW	N	N	N	NNW	NNW	NNW	NNW	NNW	NW	304	WNW
Aug 19	NW	NW	NW	NW	WNW	WNW	WNW	WNW	WNW	W	W	W	NW	WNW	W	WSW	WSW	WSW	WSW	SW	SSW	SSW	SSW	SSW	272	W
Aug 20	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SW	SSW	SSW	S	S	SSW	SSW	SSW	SW	SE	SSE	SSE	S	NW	SE	203	SSW
Aug 21	ESE	SSE	ESE	E	E	E	ENE	NE	NE	ENE	E	E	E	SE	ESE	ESE	ESE	E	ENE	ESE	ESE	ESE	ESE	E	98	E
Aug 22	ENE	ENE	ENE	NE	NE	NE	ENE	NE	NE	ENE	ENE	E	E	E	E	ENE	E	E	E	ESE	ENE	E	ESE	ESE	79	ENE
Aug 23	NNE	ESE	ENE	NE	E	E	ENE	ENE	ENE	ENE	ENE	ESE	ESE	E	E	ESE	SE	ESE	SE	ESE	E	E	E	E	96	E
Aug 24	ESE	E	NE	NE	NNE	NNE	NE	NE	NNE	NNE	NNE	NNE	NE	NE	NNE	NE	ENE	N	NW	W	W	W	WSW	SW	27	NNE
Aug 25	SW	SW	SSE	S	SW	SSW	SW	SSW	SSW	SSW	SSW	SW	S	SSW	S	S	S	SSE	SSE	SSE	SSE	SSE	SSE	S	188	S
Aug 26	S	S	S	SE	E	NNE	NNE	S	SSW	SSW	SSW	S	SSW	SW	WSW	WSW	WSW	WSW	WSW	SW	SW	SW	WSW	WSW	216	SW
Aug 27	W	WSW	WNW	NW	NW	NNW	NE	SW	NNE	E	NNW	NW	SSW	SSW	SSW	SSW	SSW	SW	SW	SSW	SSW	SW	SW	SSW	233	SW
Aug 28	SSW	SW	SSW	SSW	SSW	SSW	SSW	SW	SW	WSW	W	SSW	SSW	SSW	SW	SW	SSW	SSW	SSW	SSW	SSW	SSW	SSE	SSW	215	SSW
Aug 29	WSW	NNW	E	ESE	E	S	NNW	N	NNE	S	SSW	S	SSE	SSE	SE	SSE	SE	ESE	ENE	ENE	ENE	ENE	ENE	NE	134	SE
Aug 30	NE	ENE	ENE	E	NE	NE	NE	ENE	E	NE	NNE	NNE	N	NE	ENE	E	E	ENE	ENE	SE	ESE	E	ESE	ENE	62	ENE
Aug 31	ESE	NE	E	ESE	NNE	ESE	N	NNE	WSW	WNW	NW	WNW	NW	NW	WNW	WNW	NW	NNW	WSW	W	WNW	NW	NW	WNW	305	WNW

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	ND	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.





Lakeland Industry & Community Association

Tamarack Site - August 2023

Summary of Hourly Averages

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

WIND SPEED

Maximum Hourly Value:	14.7	kph	on Aug 1 at hr 15	Hours in Service:	744
Maximum Daily Value:	7.4	kph	on Aug 1	Hours of Data:	744
Minimum Hourly Value:	0.0	kph	on Aug 29 at hr 2	Hours of Missing Data:	0
Minimum Daily Value:	2.8	kph	on Aug 27	Hours of Calibration:	0
Monthly Average:	1.1	kph		Operational Uptime:	100.0

WIND DIRECTION

Monthly Average: 250 degree (WSW)

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	5.0	4.8	3.1	2.5	5.4	4.5	5.3	8.9	10.0	9.2	11.5	10.8	12.8	13.3	**14.7**	12.8	10.0	9.7	6.0	4.1	3.8	1.7	2.3	1.7	**14.7**	**7.4**
	WSW	W	WSW	SW	W	W	WSW	WSW	W	W	W	WNW	WNW	W	W	W	W	WNW	W	W	WSW	WSW	W	WSW			
Aug 2	3.2	2.9	3.0	2.0	2.5	2.4	2.3	2.8	4.6	3.7	4.2	3.7	2.9	4.1	4.7	3.9	3.6	2.0	4.1	2.7	2.5	2.0	1.0	2.1	1.0	4.7	3.0
	WSW	WSW	WSW	WSW	WSW	W	NW	N	NNW	NW	NW	NNW	NW	WNW	NW	NW	NW	SE	SE	ESE	ENE	ENE	E	NNE			
Aug 3	2.6	4.1	3.7	5.5	0.8	5.5	6.2	5.7	7.2	8.6	8.2	8.6	7.7	4.3	2.1	3.4	3.8	2.3	2.0	5.0	6.0	2.2	1.1	5.4	0.8	8.6	4.7
	E	NNE	N	NNE	W	ENE	NE	ENE	ENE	E	E	E	ENE	E	ENE	NE	NE	ENE	SSW	W	W	W	WSW	WNW			
Aug 4	6.3	5.0	5.0	5.9	6.4	4.9	7.7	8.0	8.2	7.0	6.8	7.2	7.1	6.5	6.7	7.2	4.7	4.8	6.6	5.4	2.4	0.9	5.5	3.5	0.9	8.2	5.8
	W	W	W	W	W	W	WNW	WNW	NW	NW	NW	NW	NW	NW	WNW	WNW	W	W	W	W	W	WNW	SSW	SW			
Aug 5	5.0	1.9	4.5	1.4	2.4	3.1	3.7	3.4	4.1	5.5	5.8	6.5	6.5	6.2	6.1	6.6	6.6	7.9	6.9	5.5	4.6	3.6	3.3	2.9	1.4	7.9	4.8
	W	W	W	WNW	WSW	WSW	WNW	NNW	WNW	WNW	NW	NW	NW	NW	WNW	WNW	WNW	W	W	W	W	SW	SW	WSW			
Aug 6	3.2	1.6	2.7	4.4	3.8	2.7	2.0	2.7	3.0	2.9	1.6	5.4	4.7	7.9	10.7	3.9	2.8	0.5	0.9	2.9	1.7	2.3	1.3	1.5	0.5	10.7	3.2
	WSW	WSW	WSW	SW	SW	WSW	WSW	WNW	WSW	SW	N	NNW	WSW	SW	NNE	ESE	SSE	WSW	SW	WSW	WSW	SSW	SSW	ENE			
Aug 7	1.3	1.5	1.1	0.6	1.2	1.9	3.6	5.2	6.8	6.9	5.1	3.6	4.7	6.4	6.6	6.9	9.0	5.9	6.8	3.6	1.4	1.5	2.2	1.8	0.6	9.0	4.0
	E	W	SE	WNW	NE	E	NE	NE	NE	NE	E	N	N	N	N	N	NNE	N	NNE	NE	NNE	ENE	E	NE			
Aug 8	0.6	1.3	1.6	0.3	0.5	1.0	1.8	3.3	4.8	4.5	5.2	6.0	4.6	5.0	5.2	7.3	5.8	4.8	3.3	4.4	7.5	8.6	7.0	5.6	0.3	8.6	4.2
	E	E	E	E	SE	ENE	NE	NE	SE	SE	SE	E	E	E	ESE	ESE	ESE	ESE	E	ESE	SE	ESE	SE	SE			
Aug 9	5.4	5.1	3.4	2.7	3.4	4.7	5.1	7.8	7.9	9.0	8.7	8.3	7.1	6.1	5.8	6.7	7.5	9.8	8.0	8.3	8.6	9.6	9.2	7.3	2.7	9.8	6.9
	SE	SE	SE	SE	ESE	SE	ESE	ESE	SE	SE	SE	SE	SE	SE	SE	SE	ESE	ESE	E	E	ESE	ESE	SE	SE			
Aug 10	7.6	6.0	6.5	6.0	6.3	6.2	6.0	4.7	4.7	4.7	3.1	2.9	5.7	7.9	11.9	11.5	9.9	7.0	4.2	4.4	5.1	4.8	4.8	5.1	2.9	11.9	6.1
	ESE	ESE	ESE	ESE	ESE	ESE	ESE	SE	SE	SE	SE	SW	W	WSW	WSW	W	W	W	W	NW	NW	NW	NW	NW			
Aug 11	5.4	4.8	5.9	5.6	5.7	5.9	6.2	5.6	6.6	6.9	6.9	7.2	6.3	5.2	4.7	4.2	3.3	2.2	1.4	3.0	3.1	1.9	3.0	3.5	1.4	7.2	4.8
	NW	NNW	NW	NW	NW	NW	NW	NW	NW	NW	WNW	WNW	NW	NNW	NW	WNW	NW	NNW	SSW	WSW	WSW	SSW	SW	WSW			
Aug 12	4.6	4.9	2.8	5.0	3.8	2.6	2.4	4.2	6.0	8.1	6.6	8.9	11.0	8.4	7.0	7.7	5.4	3.1	3.6	3.9	3.1	3.4	2.3	3.3	2.3	11.0	5.1
	WSW	W	WSW	WSW	WSW	SW	WSW	W	W	W	WNW	WNW	WNW	NW	NW	NW	N	WNW	W	W	WSW	SW	SW	WSW			
Aug 13	3.7	2.7	3.3	3.1	2.0	5.0	6.0	5.2	4.8	7.2	9.0	9.3	9.3	9.8	10.5	10.2	10.2	9.7	9.0	4.1	3.4	4.0	5.7	4.9	2.0	10.5	6.3
	WSW	WSW	SW	SW	SW	SSW	SSW	SSW	SSW	SW	SSW	SW	SW	SW	WSW	WSW	WSW	WSW	WSW	SW	SSW	SSW	SSW	SSW			
Aug 14	4.9	5.8	6.3	6.4	5.0	6.3	8.3	8.3	8.6	8.6	11.9	12.5	11.0	8.9	6.4	5.2	3.7	2.1	1.4	1.7	2.4	1.6	2.7	3.4	1.4	12.5	6.0
	SW	SW	SSW	SSW	SSW	SW	WSW	W	WSW	W	W	W	W	W	NW	NW	NNW	NW	N	S	SSW	S	SSW	SSW			
Aug 15	0.7	1.9	2.3	1.4	2.2	0.5	0.1	2.5	6.7	5.4	8.0	7.6	5.2	5.4	5.3	5.4	4.4	5.4	4.7	5.5	5.4	5.9	8.9	10.9	0.1	10.9	4.7
	SW	SSW	SW	SSW	SSW	SSE	SE	SSW	SSW	SSW	SSW	SSW	SSW	SW	W	W	W	WNW	W	WSW	WNW	WNW	W	WNW			
Aug 16	7.0	5.7	6.8	5.1	3.0	3.4	3.7	6.3	5.9	6.1	7.3	7.5	7.8	6.0	7.6	6.6	6.2	7.3	4.8	3.4	4.6	4.7	4.1	5.7	3.0	7.8	5.7
	WNW	NW	WNW	NW	NW	WNW	NW	NW	NW	NNW	NW	NNW	NNW	NW	WNW	WNW	W	W	WSW	SW	SSW	SSW	SSW	S			
Aug 17	5.5	5.2	5.9	6.1	6.1	8.1	7.9	5.5	6.8	4.7	5.7	7.5	8.5	6.9	7.0	7.6	6.2	5.5	3.6	4.1	6.1	3.5	4.5	4.7	3.5	8.5	6.0
	S	SSW	S	S	S	SSW	SSW	SW	SW	SW	SSW	SSW	SSW	SSW	SSW	SSW	SW	SW	SW	WSW	WNW	WSW	SW	SSW			
Aug 18	5.2	3.7	3.1	4.9	4.7	5.2	7.4	6.6	4.8	2.7	3.4	2.7	1.9	3.7	4.7	8.1	9.7	10.0	6.5	7.2	6.0	5.5	5.2	6.4	1.9	10.0	5.4
	SSW	SW	S	SW	WSW	SW	W	W	WSW	SW	SSW	SSW	W	NW	NNW	N	N	N	NNW	NNW	NNW	NNW	NNW	NW			
Aug 19	6.6	4.3	4.8	4.4	4.9	5.1	4.8	3.9	4.6	5.3	6.1	8.7	6.5	7.3	7.0	8.4	8.7	7.3	5.3	3.8	4.7	4.9	5.0	5.6	3.8	8.7	5.8
	NW	NW	NW	NW	WNW	WNW	WNW	WNW	WNW	W	W	W	NW	WNW	W	WSW	WSW	WSW	WSW	SW	SSW	SSW	SSW	SSW			
Aug 20	4.8	5.1	4.7	5.9	4.8	5.4	3.9	4.1	5.6	5.7	6.7	7.0	7.6	7.8	5.9	6.4	4.4	2.7	2.0	2.7	1.4	0.3	0.1	0.3	0.1	7.8	4.4
	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SW	SSW	SSW	S	S	SSW	SSW	SSW	SW	SE	SSE	SSE	S	NW	SE			
Aug 21	1.1	0.1	0.6	1.0	2.7	3.1	2.4	3.3	4.3	6.0	7.2	7.0	6.6	7.0	8.4	7.9	8.1	6.2	3.1	4.6	4.6	3.9	3.7	2.9	0.1	8.4	4.4
	ESE	SSE	ESE	E	E	E	ENE	NE	NE	ENE	E	E	E	SE	ESE	ESE	ESE	E	ENE	ESE	ESE	ESE	ESE	E			
Aug 22	1.6	2.6	2.1	2.5	3.0	2.7	2.6	3.5	3.9	4.1	4.0	4.7	5.0	5.5	4.2	4.7	4.9	4.1	3.3	1.6	1.4	1.6	2.6	0.2	0.2	5.5	3.2
	ENE	ENE	ENE	NE	NE	NE	ENE	NE	NE	ENE	ENE	E	E	E	E	ENE	E	E	E	ESE	ENE	E	ESE	ESE			
Aug 23	0.9	1.6	1.4	1.5	1.1	1.3	1.5	3.7	6.1	6.4	5.8	7.4	7.9	7.7	7.1	8.1	8.0	8.0	6.1	3.6	4.1	5.6	5.5	5.9	0.9	8.1	4.8
	NNE	ESE	ENE	NE	E	E	ENE	ENE	ENE	ENE	ENE	ESE	ESE	E	E	ESE	SE	ESE	SE	ESE	E	E	E	E			
Aug 24	4.8	3.9	9.0	5.3	5.6	4.7	8.8	6.2	8.3	11.1	12.5	10.8	10.2	12.2	11.4	8.0	3.0	2.6	0.7	3.0	1.5	3.8	3.4	1.1	0.7	12.5	6.3
	ESE	E	NE	NE	NNE	NNE	NE	NE	NNE	NNE	NNE	NNE	NE	NE	NNE	NE	ENE	N	NW	W	W	W	WSW	SW			
Aug 25	2.3	2.0	0.1	0.5	0.3	0.9	1.0	2.3	3.8	5.3	6.5	4.4	5.2	5.9	6.8	6.9	7.4	4.3	3.5	4.6	4.4	4.8	4.0	6.5	0.1	7.4	3.9
	SW	SW	SSE	S	SW	SSW	SW	SSW	SSW	SSW	SSW	SW	S	SSW	S	S	S	SSE	SSE	SSE	SSE	SSE	SSE	S			
Aug 26	7.0	6.5	3.8	1.1	0.5	0.5	1.1	4.6	6.2	8.8	8.5	9.5	9.4	8.6	7.8	8.1	7.3	6.8	4.9	4.2	4.3	2.1	2.2	3.3	0.5	9.5	5.3
	S	S	S	SE	E	NNE	NNE	S	SSW	SSW	SSW	S	SSW	SW	WSW	WSW	WSW	WSW	WSW	SW	SW	SW	WSW	WSW			
Aug 27	3.4	3.7	3.1	3.2	1.8	1.2	0.2	1.4	2.3	0.8	1.3	1.9	1.6	3.5	4.5	6.9	4.5	3.1	3.0	2.9	3.2	3.1	2.9	4.0	0.2	6.9	**2.8**
	W	WSW	WNW	NW	NW	NNW	NE	SW	NNE	E	NNW	NW	SSW	SSW	SSW	SSW	SSW	SW	SW	SSW	SSW	SW	SW	SSW			
Aug 28	3.8	3.2	4.9	4.4	5.0	4.9	4.1	3.1	3.4	3.3	3.1	5.9	6.2	6.7	6.2	4.7	4.7	3.5	3.7	4.1	1.5	1.2	0.2	0.3	0.2	6.7	3.8
	SSW	SW	SSW	SSW	SSW	SSW	SSW	SW	SW	WSW	W	SSW	SSW	SSW	SW	SW	SSW	SSW	SSW	SSW	SSW	SSW	SSE	SSW			
Aug 29	0.1	0.1	**0.0**	0.1	0.3	**0.0**	0.1	0.4	0.5	2.8	4.7	5.1	6.0	6.4	6.8	6.1	5.2	4.1	2.9	3.7	3.7	3.8	2.2	2.6	**0.0**	6.8	2.8
	WSW	NNW	E	ESE	E	S	NNW	N	NNE	S	SSW	S	SSE	SSE	SE	SSE	SE	ESE	ENE	ENE	ENE	ENE	ENE	NE			
Aug 30	2.3	3.6	2.1	3.4	2.0	1.7	2.5	3.6	2.7	6.0	4.7	4.7	3.7	8.9	8.9	6.9	6.2	2.9	1.7	4.1	1.9	1.0	1.2	0.2	0.2	8.9	3.6
	NE	ENE	ENE	E	NE	NE	NE	ENE	E	NE	NNE	NNE	N	NE	ENE	E	E	ENE	ENE	SE	ESE	E	ESE	ENE			
Aug 31	1.5	0.4	1.6	1.3	0.8	0.9	2.7	0.3	2.9	3.9	4.6	3.7	4.2	4.3	2.8	5.5	4.6	4.4	2.5	6.2	6.0	3.9	4.1	5.3	0.3	6.2	3.3
	ESE	NE	E	ESE	NNE	ESE	N	NNE	WSW	WNW	NW	WNW	NW	NW	WNW	WNW	NW	NNW	WSW	W	WNW	NW	NW	WNW			

C	Monthly Calibration	**S**	Daily Zero-Span Check	**Q**	Quality Assurance			
K	Collection Error	**ND**	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

Tamarack Site - August 2023

Summary of Hour Standard Deviations

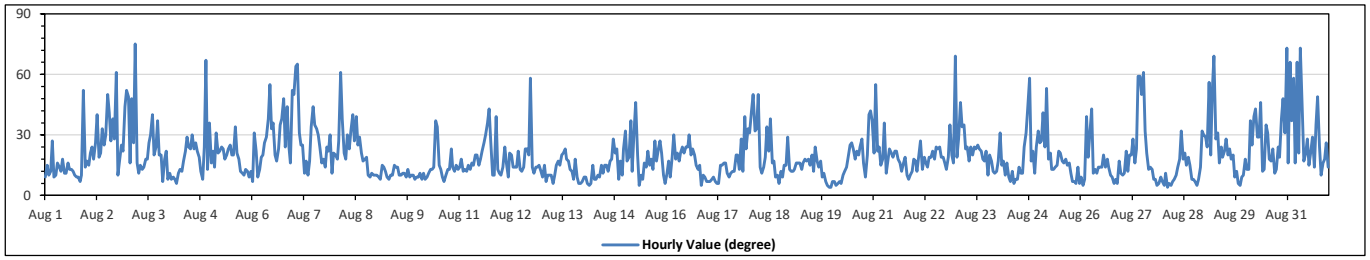
STANDARD DEVIATION WIND DIRECTION (STDWD) in Degree

Maximum Hourly Value:	75 degree on Aug 3 at hr 4	Hours in Service:	744
		Hours of Data:	744
Minimum Hourly Value:	4 degree on Aug 19 at hr 22	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	9	15	10	12	27	9	10	16	14	12	18	11	11	16	13	13	12	10	9	9	7	10	52	14	7	52
Aug 2	17	15	21	24	18	26	40	19	21	33	25	30	50	41	27	38	28	61	10	17	25	22	44	52	10	61
Aug 3	49	16	48	26	75	16	11	15	13	14	18	18	26	30	40	20	24	37	20	20	7	18	22	8	7	75
Aug 4	11	8	9	8	6	11	13	12	17	22	29	24	23	30	23	26	22	19	12	8	24	67	13	36	6	67
Aug 5	16	22	14	31	21	22	24	23	18	20	23	25	20	20	34	21	18	12	11	10	13	12	9	12	9	34
Aug 6	7	31	22	9	13	19	20	26	29	38	55	33	36	20	17	23	35	38	48	24	44	25	16	52	7	55
Aug 7	50	64	65	31	25	25	11	17	10	17	34	44	35	33	30	24	16	18	14	24	22	30	11	21	10	65
Aug 8	20	18	27	61	38	21	18	30	23	32	40	27	39	25	29	21	17	18	19	10	9	11	10	10	9	61
Aug 9	10	9	8	15	14	12	9	8	10	10	15	14	14	10	10	11	11	9	13	9	10	10	8	9	8	15
Aug 10	9	11	8	11	8	9	11	13	13	14	37	34	15	13	9	7	10	13	13	23	14	12	15	13	7	37
Aug 11	14	18	12	13	12	15	13	16	15	20	20	15	18	22	26	30	36	43	27	10	10	39	13	11	10	43
Aug 12	10	14	24	16	9	21	20	14	14	14	22	13	12	14	23	23	20	58	14	11	14	14	15	12	9	58
Aug 13	9	15	7	10	10	10	6	10	15	17	15	20	21	23	18	17	13	12	8	18	9	6	6	7	6	23
Aug 14	9	9	6	5	6	15	8	8	10	9	15	11	15	15	12	17	18	28	21	23	8	17	10	23	5	28
Aug 15	32	17	19	37	12	32	46	20	5	10	8	16	14	22	15	18	13	27	17	23	27	21	10	6	5	46
Aug 16	11	17	9	19	30	18	21	17	21	24	21	24	24	30	20	23	20	15	13	15	5	10	9	7	5	30
Aug 17	7	7	8	9	7	6	6	15	15	16	16	11	9	11	12	12	20	20	13	28	12	39	23	33	6	39
Aug 18	31	42	50	32	33	50	14	11	14	19	34	22	38	16	17	9	10	6	12	9	15	15	29	13	6	50
Aug 19	12	12	13	16	16	16	13	16	18	17	18	15	20	12	24	17	14	17	9	11	7	5	4	4	4	24
Aug 20	7	7	5	6	7	6	10	12	14	19	25	26	23	18	22	20	24	28	16	9	20	40	42	37	5	42
Aug 21	21	55	22	24	15	18	36	11	17	23	21	19	22	22	18	16	12	16	19	10	8	10	12	18	8	55
Aug 22	17	12	20	27	13	19	16	14	19	19	22	18	24	23	24	19	19	16	13	19	35	20	16	69	12	69
Aug 23	19	28	46	34	35	23	24	17	24	20	24	23	25	23	22	18	17	22	10	20	17	12	11	12	10	46
Aug 24	17	31	15	17	10	16	9	7	12	6	8	8	14	11	11	24	31	43	58	17	22	11	24	32	6	58
Aug 25	26	27	41	24	53	18	21	13	13	14	15	22	21	17	16	18	15	16	11	7	7	6	14	6	6	53
Aug 26	9	5	8	39	19	30	43	11	13	11	14	14	14	20	14	18	14	10	9	6	8	6	17	11	5	43
Aug 27	10	11	22	12	20	20	28	16	23	59	59	50	61	32	21	13	14	13	8	8	5	6	9	7	5	61
Aug 28	5	11	4	6	5	7	8	10	14	18	32	18	21	15	19	15	8	8	7	5	8	14	32	30	4	32
Aug 29	29	24	56	20	52	69	28	31	16	24	19	22	28	20	23	18	20	9	12	6	5	9	10	18	5	69
Aug 30	13	13	37	25	39	43	29	29	46	12	13	35	31	18	17	23	11	13	24	19	38	48	31	73	11	73
Aug 31	16	66	37	58	16	66	21	73	43	17	21	28	15	22	29	14	35	49	24	10	16	18	26	14	10	73
Diurnal Minimum	5	5	4	5	5	6	6	7	5	6	8	8	9	10	9	7	8	6	7	5	5	5	4	4		
Diurnal Maximum	50	66	65	61	75	69	46	73	46	59	59	50	61	41	40	38	36	61	58	28	44	67	52	73		

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	ND	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.



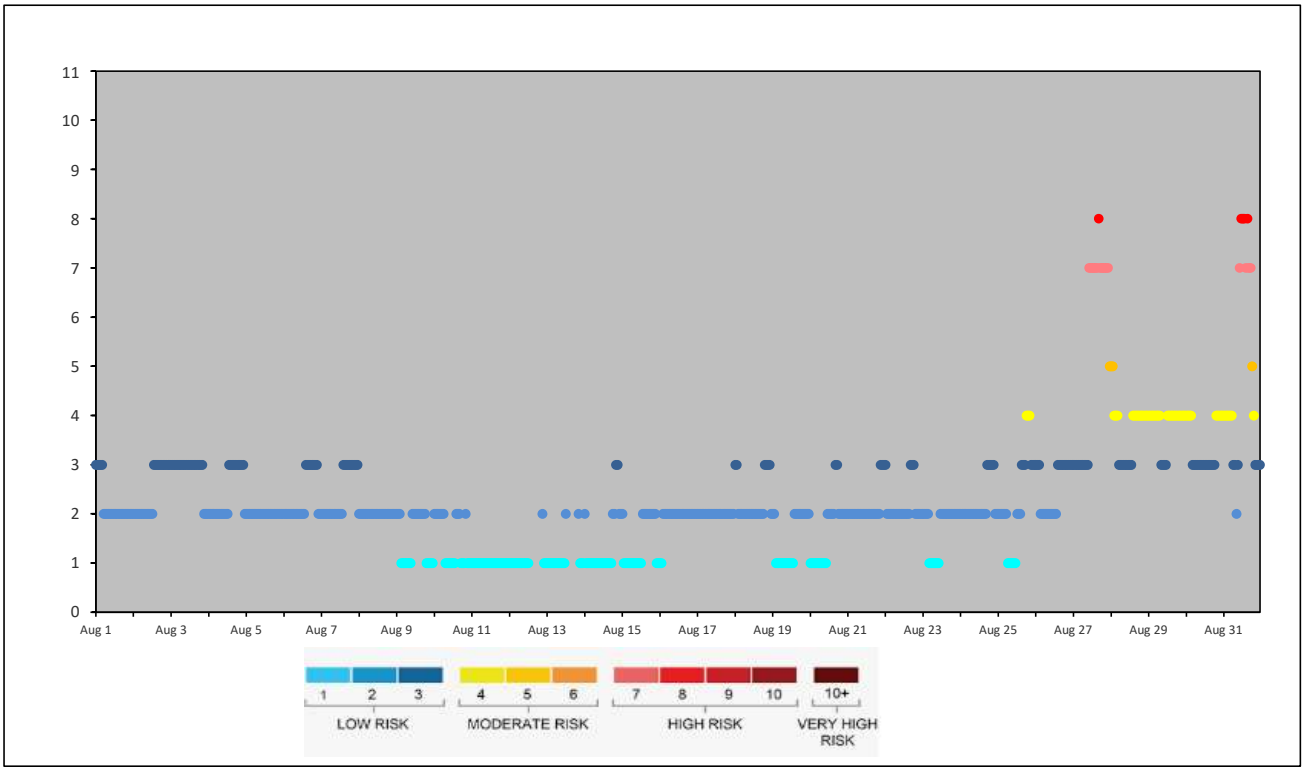
ST. LINA STATION

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - August 2023

AIR QUALITY HEALTH INDEX

Day	Hourly Period Starting at (MST)																						
	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	3	3	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Aug 2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3	3	3	3	3	3	3
Aug 3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	2	2	2
Aug 4	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3	3	3	3	3	3	2
Aug 5	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Aug 6	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3	3	3	3	2	2
Aug 7	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3	3	3	3	3	3
Aug 8	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Aug 9	2	2	2	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	1	1	1	1	1
Aug 10	2	2	2	2	2	2	2	1	1	1	1	1	1	1	2	2	2	1	1	1	2	1	1	1
Aug 11	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Aug 12	1	1	1	1	1	1	1	1	1	1	1	1	1									2	1	1
Aug 13	1	1	1	1	1	1	1	1	1	1	1	1	2								2	1	1	1
Aug 14	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	3	3	2	2
Aug 15	2	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	1	1
Aug 16	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Aug 17	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Aug 18	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3	2
Aug 19	2	2	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2
Aug 20	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	3	3	2	2	2	2	2	2
Aug 21	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3
Aug 22	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	2	2	2	2	2
Aug 23	2	2	2	2	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2
Aug 24	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3	2	2
Aug 25	2	2	2	2	2	2	1	1	1	1	1	1	2	2	2	3	3	3	4	4	4	3	3	3
Aug 26	3	3	3	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3	3	3	3	3	3
Aug 27	3	3	3	3	3	3	3	3	3	3	7	7	7	7	7	7	8	7	7	7	7	7	7	5
Aug 28	5	5	4	4	4	3	3	3	3	3	3	3	3	3	4	4	4	4	4	4	4	4	4	4
Aug 29	4	4	4	4	4	4	4	4	3	3	3	3	4	4	4	4	4	4	4	4	4	4	4	4
Aug 30	4	4	4	4	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	4	4	4	4
Aug 31	4	4	4	4	4	4	3	3	2	3	7	8	8	8	7	8	7	7	5	4	3	3	3	3



Lakeland Industry & Community Association

St. Lina Site - August 2023

Summary of Hourly Averages

SULPHUR DIOXIDE (SO_2) in ppb

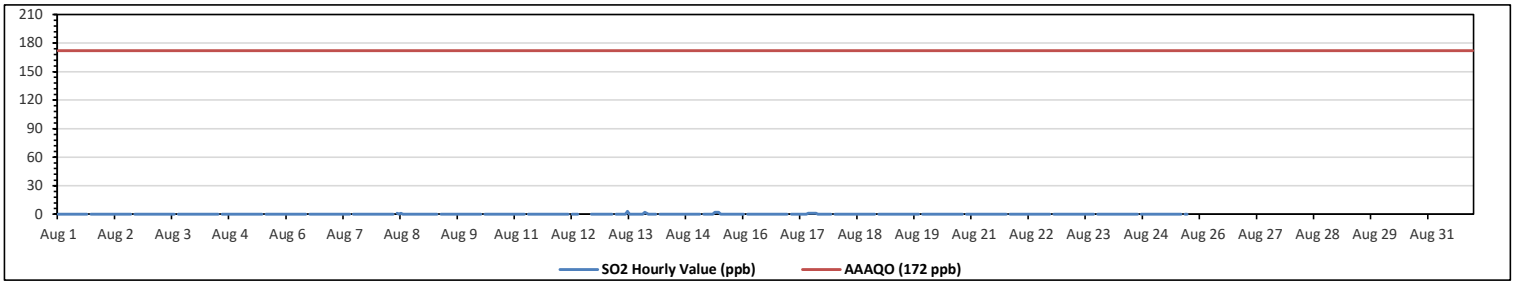
Alberta Ambient Air Quality Objectives (AAAQO): 1-Hour 172 ppb, 24-Hour 48 ppb, 30-Day 11 ppb

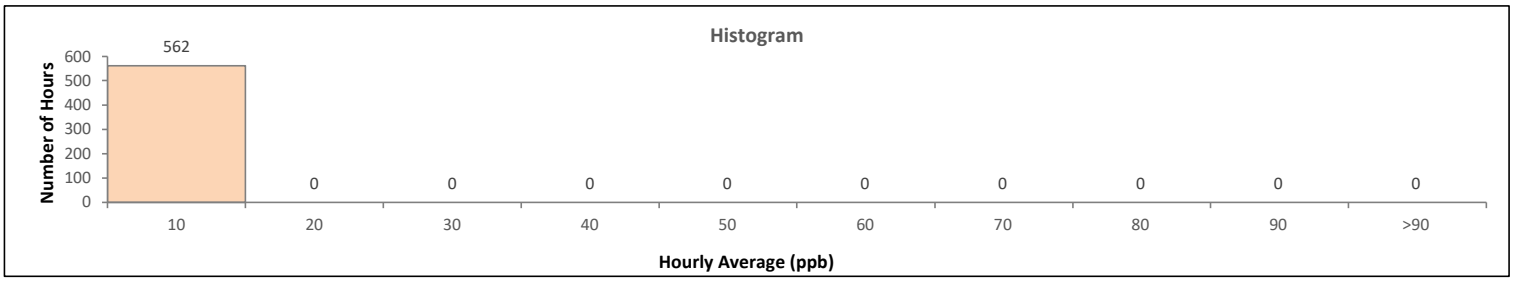
Number of 1-Hour Exceedances:	0	Number of 24-Hour Exceedances:	0	30-Day Exceedence:	0	
Maximum Hourly Value:	3	ppb	on Aug 13 at hr 11	Hours in Service:	744	
Maximum Daily Value:	0.3	ppb	on Aug 13	Hours of Data:	562	
Minimum Hourly Value:	0	ppb	on Aug 1 at hr 0	Hours of Missing Data:	150	
Minimum Daily Value:	0.0	ppb	on Aug 1	Hours of Calibration:	32	
Monthly Average:	0.0	ppb		Operational Uptime:	79.8	

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	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0.0
Aug 2	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 3	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 4	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 5	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 6	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 7	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 8	0	0	0	0	0	0	0	0	0	S	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1
Aug 9	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 10	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 11	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 12	0	0	0	0	0	S	0	0	0	0	C	C	C	C	C	C	0	0	0	0	0	0	0	0	0	0	NA
Aug 13	0	0	0	0	S	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	2	1	0	0	0	**3**	**0.3**
Aug 14	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 15	0	0	S	0	0	0	0	0	0	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	**0.3**
Aug 16	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 17	S	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	S	0	1	0.2
Aug 18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0.0
Aug 19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0.0
Aug 20	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
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	0.0
Aug 22	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 23	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
Aug 24	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
Aug 25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	X	X	X	X	X	X	0	0	NA
Aug 26	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 27	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 28	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 29	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 30	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 31	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-
Diurnal Maximum	0	0	0	0	0	0	0	0	0	2	2	3	1	1	1	0	0	0	0	0	2	1	0	0			
Diurnal Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	ND	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.



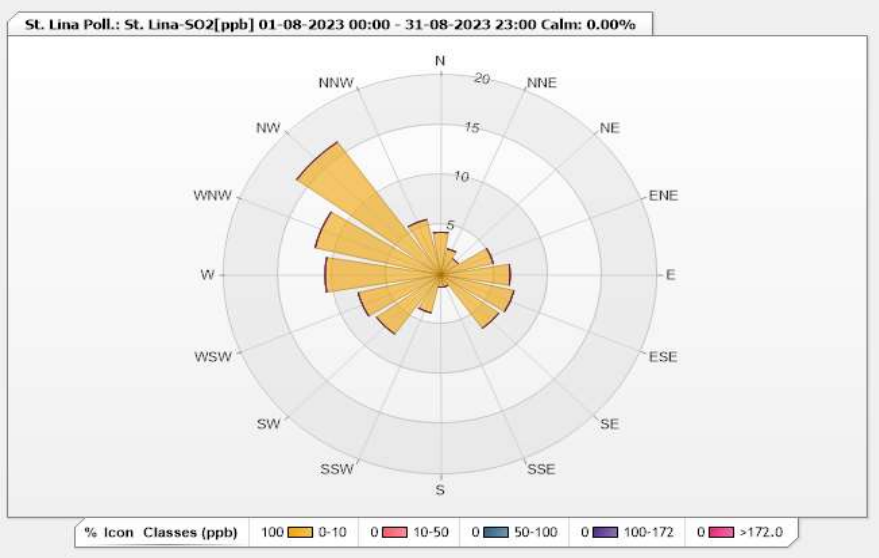


Station: St. Lina Poll.: St. Lina-SO2[ppb] Monthly: 08-2023

Type: Pollution Rose
Direction: Blowing From (Wind Frequency)
Time Base: 1 - Hour

Calm: 0.00% Valid Data: 75.54% Calm Avg: 0.00 [ppm]

Direction	0-10	10-50	50-100	100-172	>172.0	Total
N	4.27	0	0	0	0	4.27
NNE	2.67	0	0	0	0	2.67
NE	1.96	0	0	0	0	1.96
ENE	4.98	0	0	0	0	4.98
E	6.41	0	0	0	0	6.41
ESE	6.94	0	0	0	0	6.94
SE	6.58	0	0	0	0	6.58
SSE	1.25	0	0	0	0	1.25
S	1.25	0	0	0	0	1.25
SSW	3.91	0	0	0	0	3.91
SW	7.3	0	0	0	0	7.3
WSW	7.83	0	0	0	0	7.83
W	10.68	0	0	0	0	10.68
WNW	11.92	0	0	0	0	11.92
NW	16.37	0	0	0	0	16.37
NNW	5.69	0	0	0	0	5.69
Summary	100	0	0	0	0	100



Lakeland Industry & Community Association

St. Lina Site - August 2023

Summary of Hourly Averages

HYDROGEN SULPHIDE (H_2S) in ppb

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

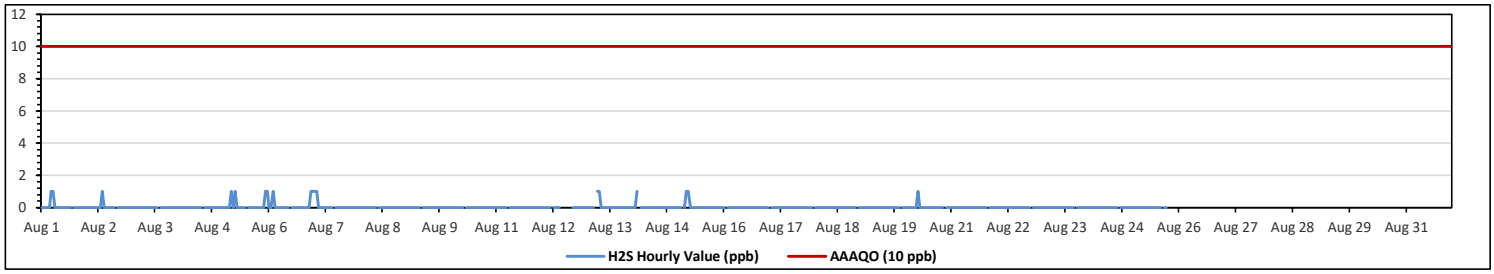
Number of 1-Hour Exceedances:	0		Number of 24-Hour Exceedances:	0		
Maximum Hourly Value:	1	ppb	on Aug 1 at hr 5	Hours in Service:	744	
Maximum Daily Value:	0.0	ppb	on Aug 1	Hours of Data:	562	
Minimum Hourly Value:	0	ppb	on Aug 1 at hr 0	Hours of Missing Data:	150	
Minimum Daily Value:	0.0	ppb	on Aug 1	Hours of Calibration:	32	
Monthly Average:	0.0	ppb		Operational Uptime:	79.8	

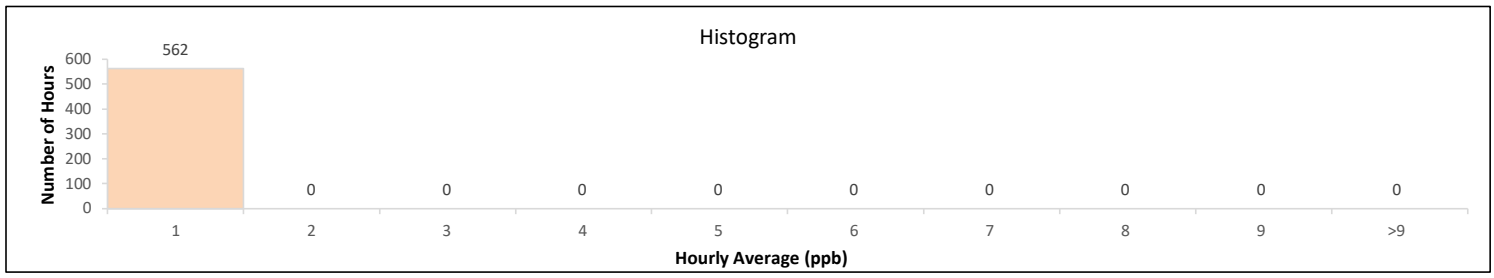
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Aug 1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	1	0.0
Aug 2	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	1	0.0
Aug 3	0	0	0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

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	ND	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.



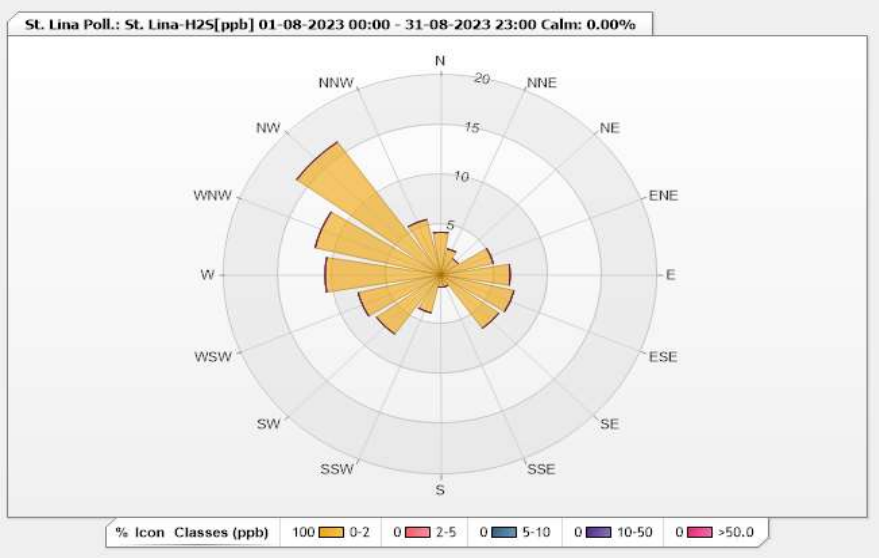


Station: St. Lina Poll.: St. Lina-H2S[ppb] Monthly: 08-2023

Type: Pollution Rose
Direction: Blowing From (Wind Frequency)
Time Base: 1 - Hour

Calm: 0.00% Valid Data: 75.54% Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-50	>50.0	Total
N	4.27	0	0	0	0	4.27
NNE	2.67	0	0	0	0	2.67
NE	1.96	0	0	0	0	1.96
ENE	4.98	0	0	0	0	4.98
E	6.41	0	0	0	0	6.41
ESE	6.94	0	0	0	0	6.94
SE	6.58	0	0	0	0	6.58
SSE	1.25	0	0	0	0	1.25
S	1.25	0	0	0	0	1.25
SSW	3.91	0	0	0	0	3.91
SW	7.3	0	0	0	0	7.3
WSW	7.83	0	0	0	0	7.83
W	10.68	0	0	0	0	10.68
WNW	11.92	0	0	0	0	11.92
NW	16.37	0	0	0	0	16.37
NNW	5.69	0	0	0	0	5.69
Summary	100	0	0	0	0	100



Lakeland Industry & Community Association

St. Lina Site - August 2023

Summary of Hourly Averages

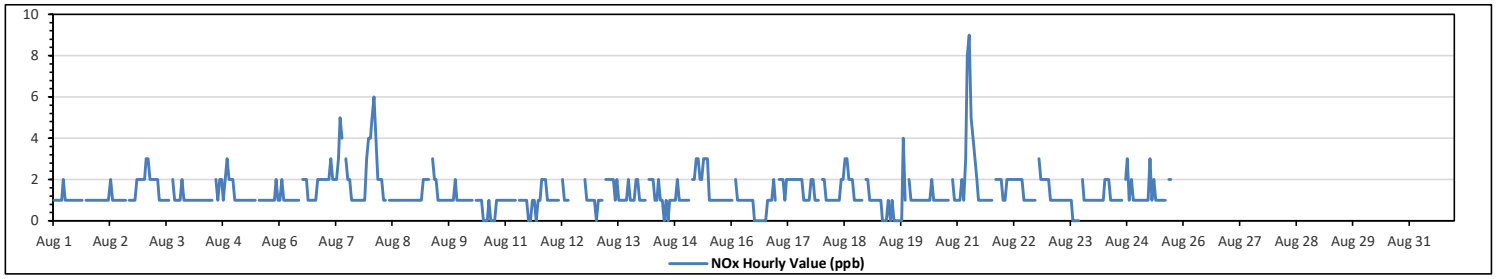
OXIDES OF NITROGEN (NOx) in ppb

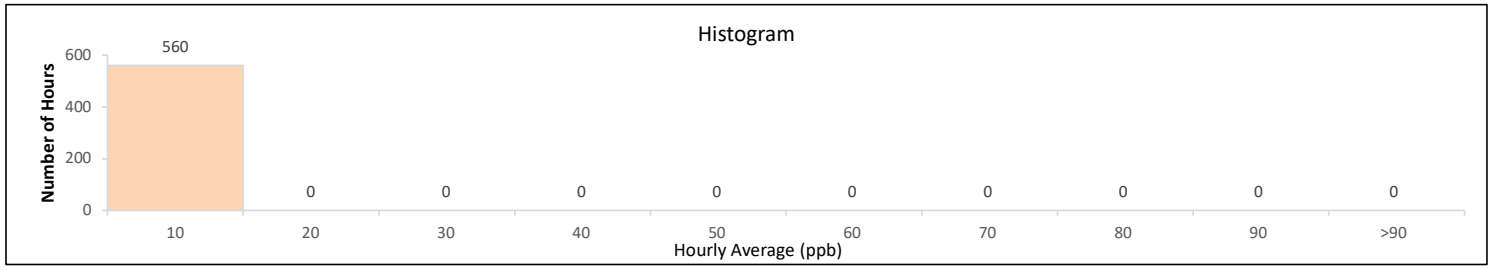
Maximum Hourly Value:	9	ppb	on Aug 21 at hr 6	Hours in Service:	744	
Maximum Daily Value:	2.4	ppb	on Aug 21	Hours of Data:	560	
Minimum Hourly Value:	0	ppb	on Aug 10 at hr 12	Hours of Missing Data:	150	
Minimum Daily Value:	0.7	ppb	on Aug 10	Hours of Calibration:	34	
Monthly Average:	1.3	ppb		Operational Uptime:	79.8	

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	1	1	2	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	2	1.0
Aug 2	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	S	1	1	1	1	2	2	2	2	1	2	1.2
Aug 3	2	3	3	2	2	2	2	2	1	1	1	1	1	1	S	2	1	1	1	1	2	1	1	1	1	3	1.5
Aug 4	1	1	1	1	1	1	1	1	1	1	1	1	1	S	2	1	2	2	1	2	3	2	2	2	1	3	1.4
Aug 5	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	2	1	1	2	1.0
Aug 6	1	2	1	1	1	1	1	1	1	1	1	S	2	2	2	1	1	1	1	1	2	2	2	2	1	2	1.3
Aug 7	2	2	2	3	2	2	2	3	5	4	S	3	2	2	1	1	1	1	1	1	1	1	3	4	1	5	2.1
Aug 8	4	5	6	4	2	2	2	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	6	1.8
Aug 9	1	1	1	1	2	2	2	2	S	3	2	2	1	1	1	1	1	1	1	1	1	2	1	1	1	3	1.4
Aug 10	1	1	1	1	1	1	1	S	1	1	1	1	0	0	0	1	0	0	0	1	1	1	1	1	**0**	1	**0.7**
Aug 11	1	1	1	1	1	1	S	1	1	1	1	1	0	0	1	1	0	1	1	2	2	2	1	1	**0**	2	1.0
Aug 12	1	1	1	1	1	S	2	1	1	1	C	C	C	C	C	C	C	C	2	1	1	1	1	1	1	2	NA
Aug 13	0	1	1	1	S	2	2	2	2	2	1	2	1	1	1	1	1	2	1	1	1	2	2	1	**0**	2	1.3
Aug 14	1	1	1	S	2	2	2	1	1	2	1	1	0	1	0	1	1	1	1	2	1	1	1	1	**0**	2	1.1
Aug 15	1	1	S	2	2	3	3	2	2	3	3	3	1	1	1	1	1	1	1	1	1	1	1	1	1	3	1.6
Aug 16	1	S	2	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	1	1	1	2	1	**0**	2	0.8
Aug 17	S	2	2	2	1	2	2	2	2	2	2	2	2	2	1	1	1	1	2	2	1	1	1	S	1	2	1.6
Aug 18	2	2	1	1	1	1	1	1	1	1	2	2	3	3	2	2	2	1	1	1	1	1	S	2	1	3	1.5
Aug 19	2	1	1	1	1	1	1	1	0	0	0	1	0	1	0	0	0	0	0	4	1	S	2	1	**0**	4	0.8
Aug 20	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	S	2	1	1	1	2	1.1
Aug 21	1	1	2	1	3	8	**9**	5	4	3	2	1	1	1	1	1	1	1	1	S	2	2	2	2	1	**9**	**2.4**
Aug 22	1	1	2	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1	S	3	2	2	2	2	1	3	1.7
Aug 23	2	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	S	2	1	1	1	1	1	**0**	2	0.9
Aug 24	1	1	1	1	1	1	2	2	2	1	1	1	1	1	1	1	S	2	3	1	2	1	1	1	1	3	1.3
Aug 25	1	1	1	1	1	1	3	1	2	1	1	1	1	1	1	S	2	2	X	X	X	X	X	X	1	3	NA
Aug 26	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 27	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 28	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 29	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 30	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 31	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-
Diurnal Maximum	4	5	6	4	3	8	9	5	5	4	3	3	3	3	2	2	2	2	3	4	3	2	3	4			
Diurnal Average	1.3	1.4	1.5	1.4	1.4	1.8	2.0	1.5	1.5	1.5	1.3	1.3	1.0	1.0	0.9	1.0	0.9	1.0	1.1	1.4	1.4	1.4	1.5	1.4			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	ND	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.



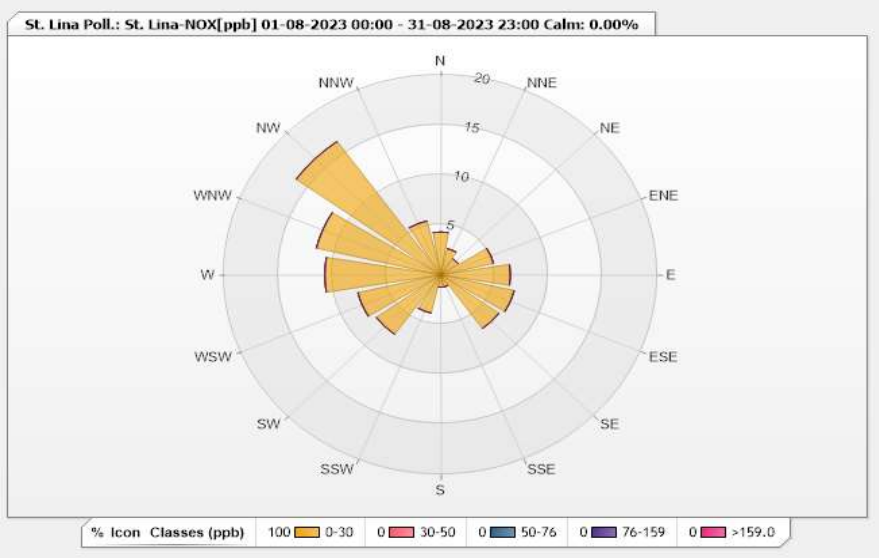


Station: St. Lina Poll.: St. Lina-NOX[ppb] Monthly: 08-2023

Type: Pollution Rose
Direction: Blowing From (Wind Frequency)
Time Base: 1 - Hour

Calm: 0.00% Valid Data: 75.27% Calm Avg: 0.00 [ppm]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	4.29	0	0	0	0	4.29
NNE	2.68	0	0	0	0	2.68
NE	1.96	0	0	0	0	1.96
ENE	5	0	0	0	0	5
E	6.43	0	0	0	0	6.43
ESE	6.96	0	0	0	0	6.96
SE	6.61	0	0	0	0	6.61
SSE	1.25	0	0	0	0	1.25
S	1.25	0	0	0	0	1.25
SSW	3.93	0	0	0	0	3.93
SW	7.32	0	0	0	0	7.32
WSW	7.86	0	0	0	0	7.86
W	10.71	0	0	0	0	10.71
WNW	11.79	0	0	0	0	11.79
NW	16.43	0	0	0	0	16.43
NNW	5.54	0	0	0	0	5.54
Summary	100	0	0	0	0	100



Lakeland Industry & Community Association

St. Lina Site - August 2023

Summary of Hourly Averages

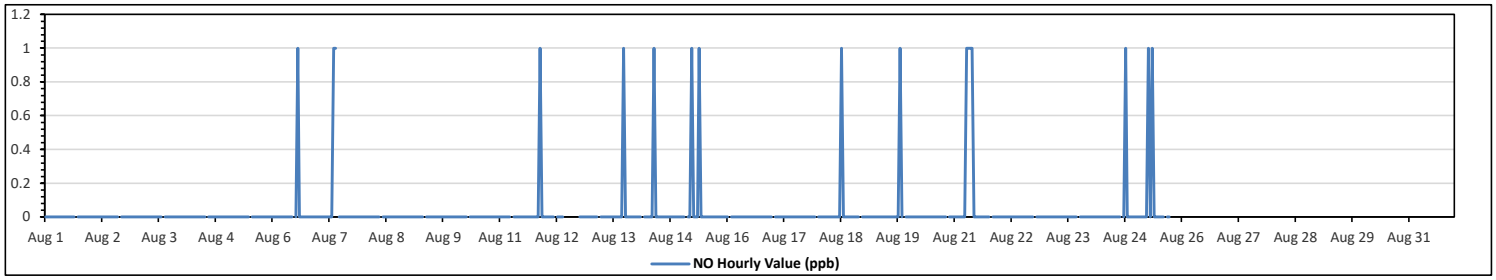
NITRIC OXIDE (NO) in ppb

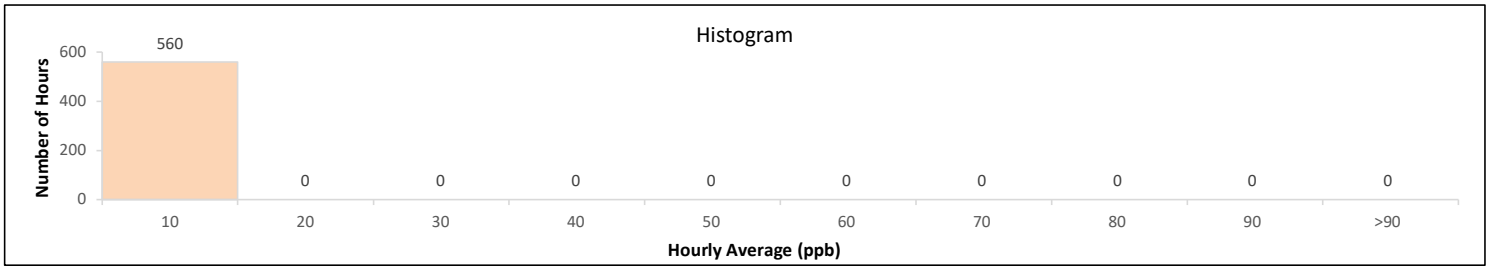
Maximum Hourly Value:	1	ppb	on Aug 6 at hr 13	Hours in Service:	744	
Maximum Daily Value:	0.2	ppb	on Aug 21	Hours of Data:	560	
Minimum Hourly Value:	0	ppb	on Aug 1 at hr 0	Hours of Missing Data:	150	
Minimum Daily Value:	0.0	ppb	on Aug 1	Hours of Calibration:	34	
Monthly Average:	0.0	ppb		Operational Uptime:	79.8	

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	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0.0
Aug 2	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 3	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 4	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 5	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 6	0	0	0	0	0	0	0	0	0	0	0	S	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0.0
Aug 7	0	0	0	0	0	0	0	0	1	1	S	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	0	0	0	S	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	0	0	0	S	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	S	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	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0.0
Aug 12	0	0	0	0	0	S	0	0	0	0	C	C	C	C	C	C	C	C	0	0	0	0	0	0	0	0	NA
Aug 13	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0.0
Aug 14	0	0	0	S	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0
Aug 15	0	0	S	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1
Aug 16	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 17	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0.0
Aug 18	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	S	0	0	1	0.0
Aug 19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	S	0	0	0	1	0.0
Aug 20	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
Aug 21	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	1	0.2
Aug 22	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 23	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
Aug 24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	1	0	0	0	0	0	0	1	0.0
Aug 25	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	S	0	0	X	X	X	X	X	X	0	1	NA
Aug 26	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 27	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 28	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 29	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 30	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 31	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-
Diurnal Maximum	0	0	0	0	0	1	1	1	1	1	0	0	1	1	0	0	0	1	1	1	0	1	0	0			
Diurnal Average	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance			
K	Collection Error	ND	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.



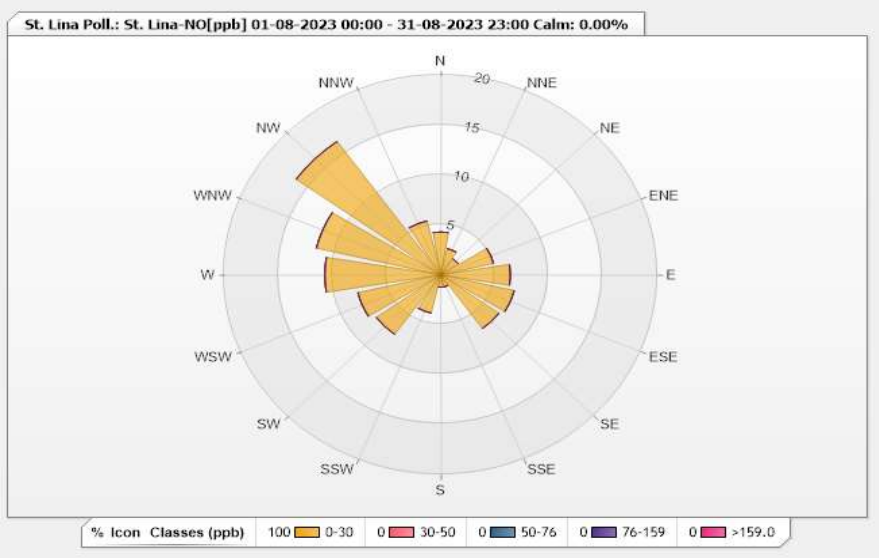


Station: St. Lina Poll.: St. Lina-NO[ppb] Monthly: 08-2023

Type: Pollution Rose
Direction: Blowing From (Wind Frequency)
Time Base: 1 - Hour

Calm: 0.00% Valid Data: 75.27% Calm Avg: 0.00 [ppm]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	4.29	0	0	0	0	4.29
NNE	2.68	0	0	0	0	2.68
NE	1.96	0	0	0	0	1.96
ENE	5	0	0	0	0	5
E	6.43	0	0	0	0	6.43
ESE	6.96	0	0	0	0	6.96
SE	6.61	0	0	0	0	6.61
SSE	1.25	0	0	0	0	1.25
S	1.25	0	0	0	0	1.25
SSW	3.93	0	0	0	0	3.93
SW	7.32	0	0	0	0	7.32
WSW	7.86	0	0	0	0	7.86
W	10.71	0	0	0	0	10.71
WNW	11.79	0	0	0	0	11.79
NW	16.43	0	0	0	0	16.43
NNW	5.54	0	0	0	0	5.54
Summary	100	0	0	0	0	100



Lakeland Industry & Community Association

St. Lina Site - August 2023

Summary of Hourly Averages

NITROGEN DIOXIDE (NO_2) in ppb

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

Number of 1-Hour Exceedances: 0

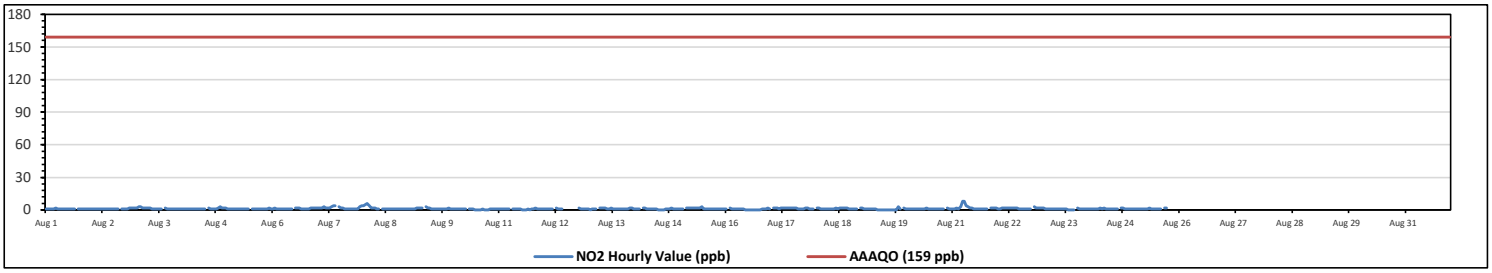
Maximum Hourly Value:	8	ppb	on Aug 21 at hr 5	Hours in Service:	744
Maximum Daily Value:	2.2	ppb	on Aug 21	Hours of Data:	560
Minimum Hourly Value:	0	ppb	on Aug 10 at hr 11	Hours of Missing Data:	150
Minimum Daily Value:	0.7	ppb	on Aug 10	Hours of Calibration:	34
Monthly Average:	1.3	ppb		Operational Uptime:	79.8

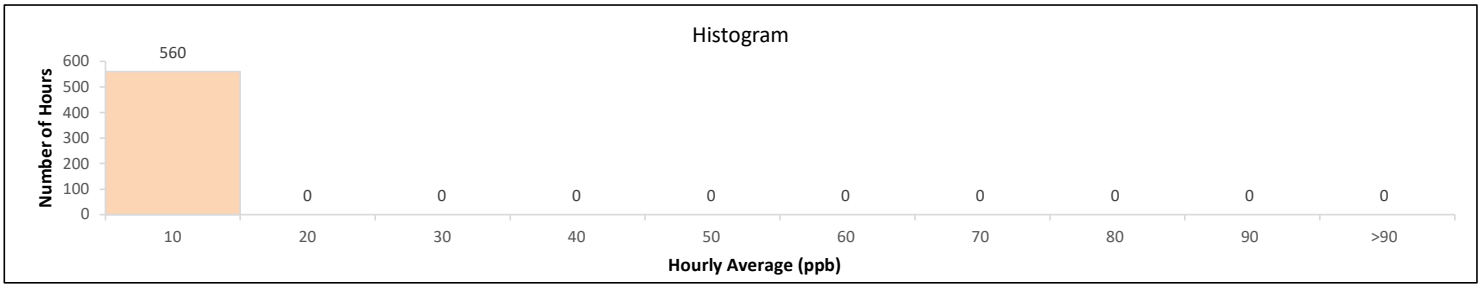
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Aug 1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	2	1.0
Aug 2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	2	2	2	2	1	2	1.2
Aug 3	2	3	3	2	2	2	2	2	1	1	1	1	1	1	S	2	1	1	1	1	1	1	1	1	1	3	1.5
Aug 4	1	1	1	1	1	1	1	1	1	1	1	1	1	S	2	1	1	1	1	2	3	2	2	2	1	3	1.3
Aug 5	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	2	1	1	2	1.0
Aug 6	1	2	1	1	1	1	1	1	1	1	1	S	2	2	2	1	1	1	1	1	2	2	2	2	1	2	1.3
Aug 7	2	2	2	3	2	2	2	3	4	4	S	3	2	2	1	1	1	1	1	1	1	1	3	4	1	4	2.1
Aug 8	4	5	6	4	2	2	2	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	6	1.8
Aug 9	1	1	1	1	2	2	2	2	S	3	2	2	1	1	1	1	1	1	1	1	1	2	1	1	1	3	1.4
Aug 10	1	1	1	1	1	1	1	S	1	1	1	0	0	0	0	1	0	0	0	1	1	1	1	1	**0**	1	**0.7**
Aug 11	1	1	1	1	1	1	S	1	1	1	1	1	0	0	0	1	0	1	1	2	1	1	1	1	**0**	2	0.9
Aug 12	1	1	1	1	1	S	2	1	1	1	C	C	C	C	C	C	C	C	2	1	1	1	1	1	1	2	NA
Aug 13	0	1	1	1	S	2	2	2	2	1	1	2	1	1	1	1	1	1	1	1	1	2	2	1	**0**	2	1.3
Aug 14	1	1	1	S	2	2	1	1	1	1	1	1	0	0	0	0	1	1	1	2	1	1	1	1	**0**	2	1.0
Aug 15	1	1	S	2	2	2	2	2	2	2	2	3	1	1	1	1	1	1	1	1	1	1	1	1	1	3	1.4
Aug 16	1	S	2	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	1	1	1	2	1	**0**	2	**0.7**
Aug 17	S	2	2	2	1	2	2	2	2	2	2	2	2	2	1	1	1	1	2	2	1	1	1	S	1	2	1.6
Aug 18	2	2	1	1	1	1	1	1	1	1	2	1	2	2	2	2	2	1	1	1	1	1	S	2	1	2	1.4
Aug 19	2	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	3	1	S	2	1	**0**	3	**0.7**
Aug 20	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	S	2	1	1	1	2	1.1
Aug 21	1	1	2	1	3	**8**	**8**	4	3	2	2	1	1	1	1	1	1	1	1	S	2	2	2	2	1	**8**	**2.2**
Aug 22	1	1	2	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1	S	3	2	2	2	2	1	3	1.7
Aug 23	2	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	S	2	1	1	1	1	1	**0**	2	0.9
Aug 24	1	1	1	1	1	1	2	1	2	1	1	1	1	1	1	1	S	2	2	1	1	1	1	1	1	2	1.2
Aug 25	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	S	2	2	X	X	X	X	X	X	1	2	NA
Aug 26	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 27	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 28	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 29	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 30	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 31	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-
Diurnal Maximum	4	5	6	4	3	8	8	4	4	4	2	3	2	2	2	2	2	2	2	3	3	2	3	4			
Diurnal Average	1.3	1.4	1.5	1.4	1.4	1.7	1.7	1.5	1.4	1.3	1.2	1.2	1.0	0.9	0.9	0.9	0.9	1.0	1.0	1.3	1.3	1.3	1.5	1.4			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	ND	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.



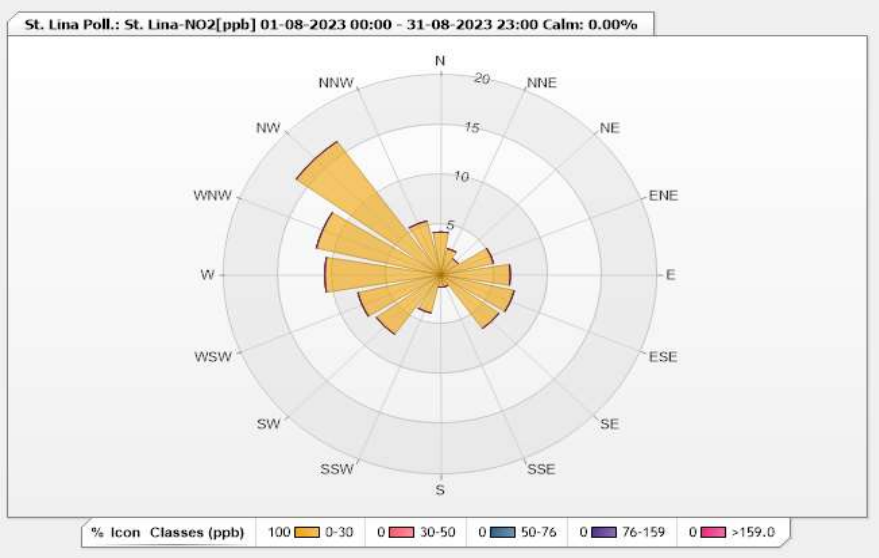


Station: St. Lina Poll.: St. Lina-NO2[ppb] Monthly: 08-2023

Type: Pollution Rose
Direction: Blowing From (Wind Frequency)
Time Base: 1 - Hour

Calm: 0.00% Valid Data: 75.27% Calm Avg: 0.00 [ppm]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	4.29	0	0	0	0	4.29
NNE	2.68	0	0	0	0	2.68
NE	1.96	0	0	0	0	1.96
ENE	5	0	0	0	0	5
E	6.43	0	0	0	0	6.43
ESE	6.96	0	0	0	0	6.96
SE	6.61	0	0	0	0	6.61
SSE	1.25	0	0	0	0	1.25
S	1.25	0	0	0	0	1.25
SSW	3.93	0	0	0	0	3.93
SW	7.32	0	0	0	0	7.32
WSW	7.86	0	0	0	0	7.86
W	10.71	0	0	0	0	10.71
WNW	11.79	0	0	0	0	11.79
NW	16.43	0	0	0	0	16.43
NNW	5.54	0	0	0	0	5.54
Summary	100	0	0	0	0	100



Lakeland Industry & Community Association

St. Lina Site - August 2023

Summary of Hourly Averages

OZONE (O_3) in ppb

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

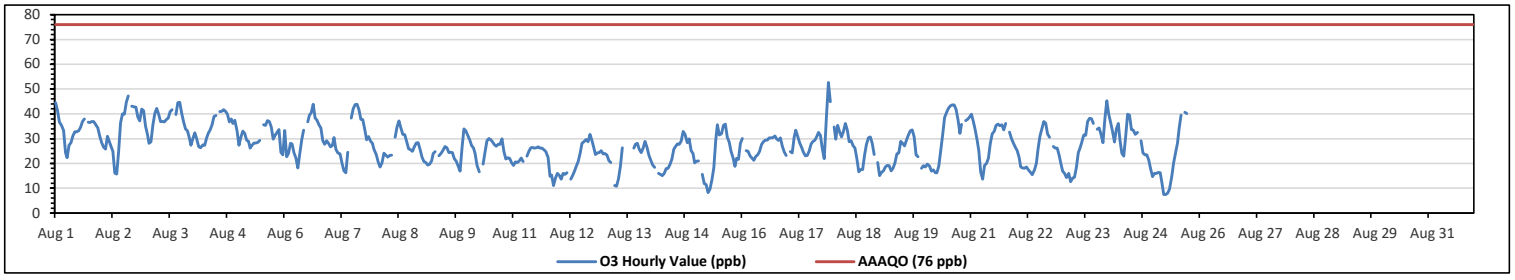
Number of 1-Hour Exceedances: 0

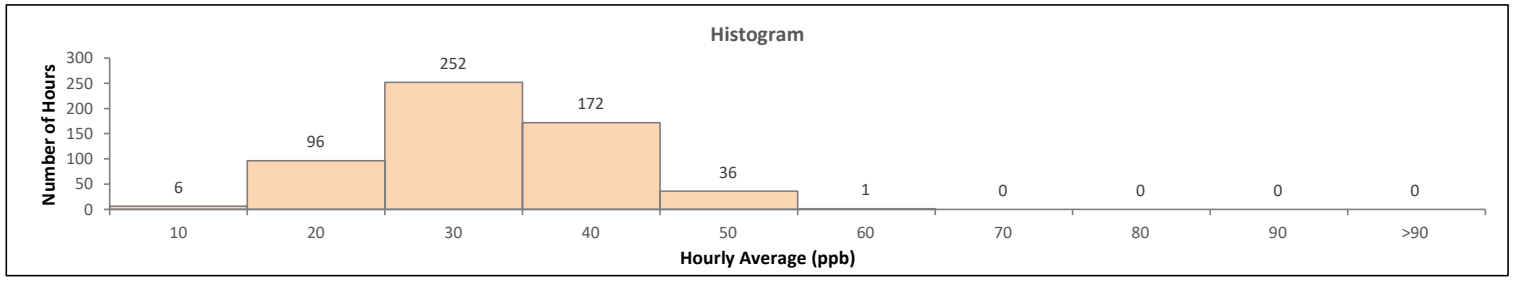
Maximum Hourly Value:	52.6	ppb	on Aug 17 at hr 21	Hours in Service:	744
Maximum Daily Value:	36.8	ppb	on Aug 3	Hours of Data:	563
Minimum Hourly Value:	7.5	ppb	on Aug 25 at hr 5	Hours of Missing Data:	150
Minimum Daily Value:	21.7	ppb	on Aug 11	Hours of Calibration:	31
Monthly Average:	27.7	ppb		Operational Uptime:	79.8

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	44.5	41.3	36.6	35.5	33.3	24.3	22.3	27.4	28.3	31.1	32.7	32.7	33.1	34.5	36.9	37.9	S	36.6	36.5	36.9	36.8	35.8	34.3	30.9	22.3	44.5	33.9
Aug 2	28.4	26.5	25.8	31	29.2	27	24.9	16.1	15.7	24.9	36.4	40	39.8	44.7	47.2	S	43.1	42.9	42.7	38.7	37.1	41.9	41.2	35	15.7	47.2	33.9
Aug 3	31.8	28	28.8	35.5	40.2	42.2	39.8	36.9	36.8	36.7	37.6	38.3	40.9	41.6	S	39.7	44.5	44.6	40.3	36.7	34	33.1	30.3	27.4	27.4	44.6	**36.8**
Aug 4	30.1	32.3	29.9	26.8	26.3	27.5	27.3	30.3	32.1	33.5	35.6	38.9	39.3	S	40.8	41	41.6	41	39.8	36.7	37.9	36.2	37.4	33.1	26.3	41.6	34.6
Aug 5	27.3	30.5	33	32.2	29.4	28.9	26.1	27.4	28.2	28.2	28.5	29.3	S	35.6	35.3	37.2	36.8	34.6	29.8	31.3	32.5	33.7	24.5	23.5	23.5	37.2	30.6
Aug 6	33.3	22.7	24.1	28	27.9	24.2	22.2	18.2	23.8	29.4	33.4	S	36.7	39.3	40.6	43.9	38.3	37.4	35.6	34.3	29.2	27.7	29.1	28	18.2	43.9	30.8
Aug 7	26.7	27.2	30.4	25.7	24.2	23.8	20.1	17	16.3	24.5	S	38.3	42.1	43.7	43.8	41.6	37.8	37.6	33.8	29.6	30.8	29	28.1	25.7	16.3	43.8	30.3
Aug 8	23.7	20.6	18.5	20.2	24.1	23.3	22.5	23.2	23.3	S	30.5	34.7	37.1	34.3	31.8	31.6	28.9	25.9	25.5	24.9	26.7	28.2	28.3	25.7	18.5	37.1	26.7
Aug 9	22.5	20.7	20.3	19.4	19.7	21	23.9	24.7	S	23.1	24	25.2	26.8	26.3	24.4	24.5	24.3	21.9	20.9	19	16.9	26.2	33.9	33.1	16.9	33.9	23.6
Aug 10	31.4	29.5	27.2	26.2	23.9	19.2	16.7	S	19.7	24.6	29.2	30.1	29.6	28.7	27.6	26.9	27.7	27.7	30	24.7	21.7	22.3	22	20.2	16.7	31.4	25.5
Aug 11	19.2	20.6	20.4	21	22.1	20.7	S	22.9	24.9	26.3	26.4	26.1	26.3	26.7	26.2	26.1	25.6	24.8	22.4	14.8	15.3	11	14	15.9	11.0	26.7	**21.7**
Aug 12	15.2	13.6	16	15.6	16.2	S	13.6	15.2	17.1	18.8	20.8	23.9	28	28.9	29.7	28.8	31.7	29.3	26.8	23.6	24.2	24.4	25.2	23.8	13.6	31.7	22.2
Aug 13	23.9	23.4	21.2	20.3	S	11	10.8	13.7	18.8	26.3	C	C	C	C	C	26.2	27.7	28	25.7	24.3	26.2	28.9	26.5	23.3	10.8	28.9	22.6
Aug 14	21.3	19.4	18.4	S	16	15.5	15.1	15.9	17.9	18	19.6	21.8	25.8	27	27.9	27.7	29	32.9	31.8	28.3	30	25.2	23.9	20.2	15.1	32.9	23.0
Aug 15	20.9	21	S	15.6	11.8	11.4	8.2	9.7	13.4	18.3	29.4	35.6	31.5	32	35.3	35.9	30.6	28.6	24.7	22.3	18.9	22	21.6	28.1	8.2	35.9	22.9
Aug 16	30.1	S	25.2	24.9	23.1	22.1	21.3	22.8	23.5	24.9	27.6	28.8	29.4	29.4	30.2	30.2	30.4	31.1	30	29.3	30.2	27	24.6	23.2	21.3	31.1	26.9
Aug 17	S	24.8	24.2	30.6	33.4	30.9	28.4	26.5	24.5	23.1	23.2	25	27.9	28.9	29.4	31	32.4	31.4	25.9	21.9	39	**52.6**	45	S	21.9	**52.6**	30.0
Aug 18	34.6	29.8	35.4	32.7	30.7	32.9	36.1	33.5	28.8	29.2	27.2	26.1	21.9	16.7	17.5	17.5	23.3	27.8	30.2	30.7	28	23.6	S	20.4	16.7	36.1	27.6
Aug 19	15.1	16.4	17	18.6	19.2	19.1	17	18	20.2	23.8	24.2	28.9	28	27.1	29.4	31.5	33.1	33.6	30.7	23.5	22.7	S	18	19.1	15.1	33.6	23.2
Aug 20	18.5	19.7	19	16.9	17.4	16.2	16.2	19	25.2	31.5	38.5	40.6	42.2	43.2	43.6	43.6	41.8	37.7	32.2	35.7	S	37.3	37.8	38.7	16.2	43.6	31.0
Aug 21	39.9	36.9	33.4	29.3	25.1	16.5	13.6	19.3	20	22	28	32	32.8	35.3	35.9	35.2	35.6	33.6	36.2	S	32.6	30.1	28.2	26.5	13.6	39.9	29.5
Aug 22	25.1	22.4	18.6	18.2	18	18.5	17.4	16.5	15.4	17.4	20.1	25.7	30.9	34	36.9	36.3	31.9	30.5	S	26.8	26.1	26.2	23.4	20.2	15.4	36.9	24.2
Aug 23	16.9	15.9	14.3	16	12.7	14	14.4	18.4	24.4	26	28.6	31.5	31.4	36.8	38.2	38.1	36.2	S	33.8	34.3	31.8	28.3	37.9	45.2	12.7	45.2	27.2
Aug 24	39.9	36.5	32.8	28.6	34	36.1	29.5	24.1	23	30.9	39.9	39.5	33.7	33.4	31.8	32.4	S	29.1	24.2	23.5	23.5	21.5	17.8	14.7	14.7	39.9	29.6
Aug 25	16	16	16.4	16.3	12.4	7.5	7.5	8	9.7	14.7	20.4	24.4	28.2	34.1	39.5	S	40.7	40.2	X	X	X	X	X	X	**7.5**	40.7	NA
Aug 26	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 27	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 28	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 29	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 30	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 31	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	
Diurnal Maximum	44.5	41.3	36.6	35.5	40.2	42.2	39.8	36.9	36.8	36.7	39.9	40.6	42.2	44.7	47.2	43.9	44.5	44.6	42.7	38.7	39.0	52.6	45.0	45.2			
Diurnal Average	26.5	24.8	24.5	24.4	23.8	22.2	20.6	21.0	22.1	25.3	28.8	31.2	32.3	33.1	33.9	33.3	33.6	32.9	30.8	28.3	28.4	29.2	28.4	26.2			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	ND	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.



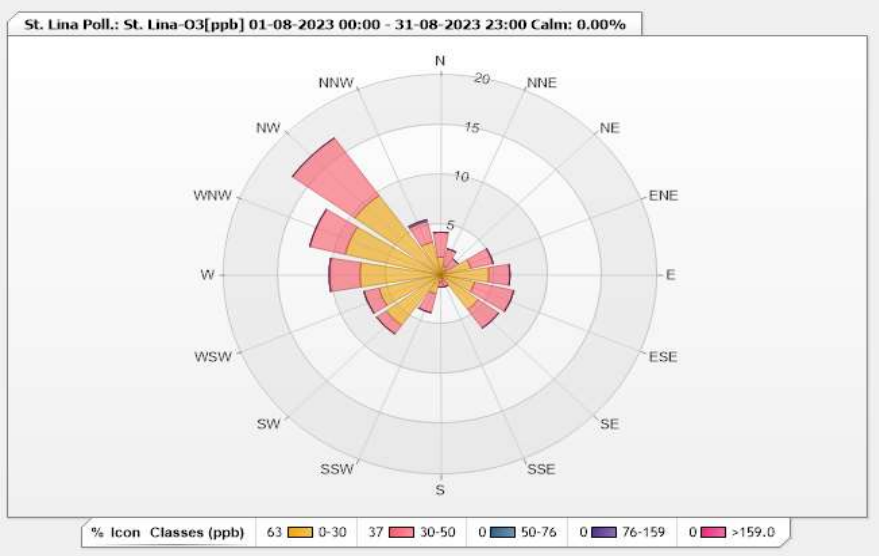


Station: St. Lina Poll.: St. Lina-O3[ppb] Monthly: 08-2023

Type: Pollution Rose
Direction: Blowing From (Wind Frequency)
Time Base: 1 - Hour

Calm: 0.00% Valid Data: 75.67% Calm Avg: 0.00 [ppm]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	1.78	2.49	0	0	0	4.27
NNE	0.89	1.78	0	0	0	2.67
NE	0.53	1.42	0	0	0	1.95
ENE	2.84	2.13	0	0	0	4.97
E	4.44	1.95	0	0	0	6.39
ESE	3.2	3.73	0	0	0	6.93
SE	4.26	2.31	0	0	0	6.57
SSE	0.36	0.89	0	0	0	1.25
S	0.71	0.53	0	0	0	1.24
SSW	1.95	1.95	0	0	0	3.9
SW	6.22	1.07	0	0	0	7.29
WSW	5.86	1.42	0	0	0	7.28
W	7.46	2.84	0	0	0	10.3
WNW	9.06	3.37	0	0	0	12.43
NW	9.77	7.1	0	0	0	16.87
NNW	3.37	2.13	0.18	0	0	5.68
Summary	62.7	37.11	0.18	0	0	100



Lakeland Industry & Community Association

St. Lina Site - August 2023

Summary of Hourly Averages

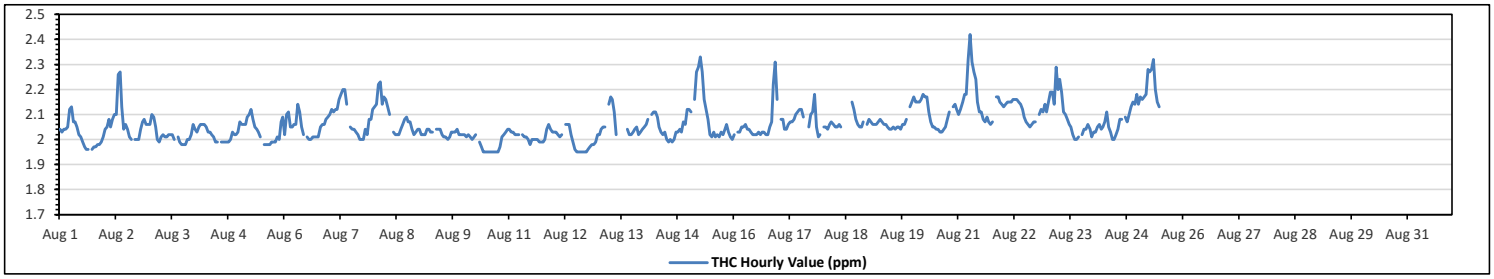
TOTAL HYDROCARBONS (THC) in ppm

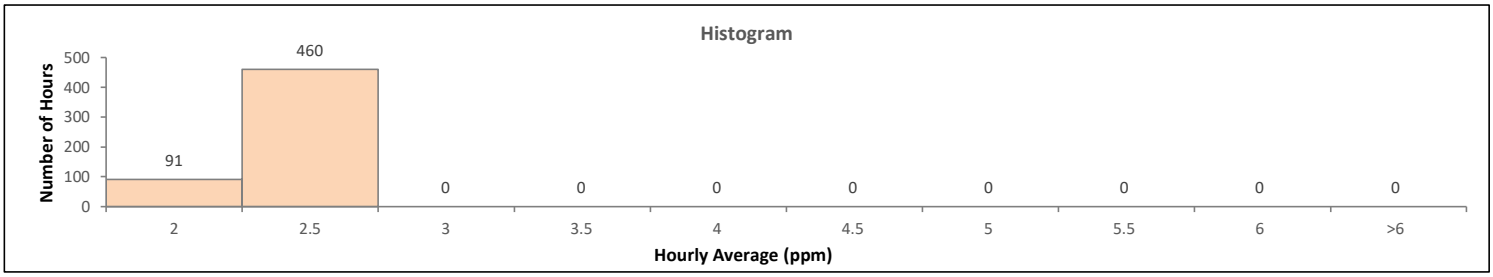
Maximum Hourly Value:	2.42	ppm	on Aug 21 at hr 6	Hours in Service:	744
Maximum Daily Value:	2.16	ppm	on Aug 21	Hours of Data:	551
Minimum Hourly Value:	1.95	ppm	on Aug 10 at hr 10	Hours of Missing Data:	163
Minimum Daily Value:	1.99	ppm	on Aug 10	Hours of Calibration:	30
Monthly Average:	2.06	ppm		Operational Uptime:	78.1

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	2.04	2.03	2.04	2.04	2.05	2.12	2.13	2.07	2.07	2.05	2.02	2.01	1.99	1.97	1.96	1.96	S	1.96	1.97	1.97	1.98	1.98	1.99	2.01	1.96	2.13	2.02
Aug 2	2.04	2.05	2.08	2.05	2.08	2.10	2.10	2.26	2.27	2.13	2.04	2.06	2.04	2.01	2.00	S	2.00	2.00	2.00	2.04	2.07	2.08	2.06	2.06	2.00	2.27	2.07
Aug 3	2.06	2.10	2.09	2.05	2.00	1.99	2.01	2.02	2.01	2.01	2.02	2.02	2.02	2.00	S	2.01	1.99	1.98	1.98	1.98	2.00	2.00	2.02	2.06	1.98	2.10	2.02
Aug 4	2.04	2.03	2.05	2.06	2.06	2.06	2.05	2.03	2.03	2.02	2.01	1.99	1.99	S	1.99	1.99	1.99	1.99	1.99	2.00	2.03	2.02	2.02	2.03	1.99	2.06	2.02
Aug 5	2.07	2.06	2.06	2.06	2.09	2.10	2.12	2.08	2.05	2.04	2.03	2.01	S	1.98	1.98	1.98	1.98	1.99	1.99	1.99	2.01	2.00	2.07	2.09	1.98	2.12	2.04
Aug 6	2.02	2.10	2.11	2.05	2.05	2.06	2.06	2.14	2.11	2.05	2.02	S	2.01	2.00	2.00	2.01	2.01	2.01	2.01	2.05	2.06	2.06	2.08	2.09	2.00	2.14	2.05
Aug 7	2.10	2.12	2.11	2.12	2.12	2.16	2.18	2.20	2.20	2.14	S	2.05	2.04	2.04	2.03	2.02	2.00	2.00	2.00	2.04	2.02	2.08	2.08	2.12	2.00	2.20	2.09
Aug 8	2.13	2.14	2.22	2.23	2.14	2.17	2.16	2.13	2.10	S	2.03	2.02	2.02	2.02	2.04	2.06	2.08	2.09	2.07	2.07	2.04	2.02	2.03	2.04	2.02	2.23	2.09
Aug 9	2.04	2.02	2.02	2.02	2.04	2.04	2.03	2.03	S	2.04	2.04	2.04	2.02	2.01	2.01	2.00	2.01	2.03	2.03	2.03	2.04	2.02	2.02	2.02	2.00	2.04	2.03
Aug 10	2.02	2.01	2.02	2.01	2.00	2.01	2.02	S	1.99	1.97	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.97	2.01	2.02	2.03	2.04	1.95	2.04	1.99
Aug 11	2.04	2.03	2.03	2.02	2.02	2.02	S	2.02	2.01	2.01	2.00	1.98	2.00	2.00	2.00	2.00	1.99	1.99	1.99	2.00	2.04	2.06	2.04	2.03	1.98	2.06	2.01
Aug 12	2.03	2.03	2.02	2.01	2.02	S	2.06	2.06	2.06	2.02	1.99	1.96	1.95	1.95	1.95	1.95	1.95	1.95	1.96	1.97	1.98	1.98	1.99	2.02	1.95	2.06	1.99
Aug 13	2.02	2.04	2.05	2.05	S	2.14	2.17	2.16	2.11	2.02	C	C	C	C	C	2.04	2.02	2.02	2.03	2.04	2.05	2.02	2.03	2.04	2.02	2.17	2.06
Aug 14	2.05	2.06	2.08	S	2.10	2.11	2.11	2.09	2.05	2.03	2.02	2.03	2.00	1.99	2.00	1.99	2.00	2.03	2.03	2.04	2.03	2.07	2.06	2.12	1.99	2.12	2.05
Aug 15	2.12	2.11	S	2.16	2.27	2.29	2.33	2.27	2.16	2.12	2.08	2.02	2.01	2.03	2.01	2.02	2.01	2.03	2.02	2.04	2.06	2.03	2.01	2.00	2.00	2.33	2.10
Aug 16	2.02	S	2.03	2.03	2.05	2.05	2.06	2.04	2.04	2.03	2.02	2.02	2.02	2.03	2.02	2.03	2.03	2.02	2.02	2.05	2.07	2.22	2.31	2.16	2.02	2.31	2.06
Aug 17	S	2.08	2.08	2.04	2.04	2.06	2.07	2.07	2.08	2.10	2.11	2.12	2.12	2.09	Y	Y	2.05	2.10	2.11	2.18	2.05	2.01	2.02	S	2.01	2.18	2.08
Aug 18	2.05	2.05	2.04	2.06	2.07	2.06	2.05	2.05	2.06	2.05	NRM	NRM	NRM	NRM	NRM	2.15	2.12	2.08	2.06	2.05	2.05	2.07	S	2.06	2.04	2.15	2.07
Aug 19	2.08	2.07	2.06	2.06	2.06	2.07	2.08	2.07	2.06	2.06	2.05	2.04	2.04	2.05	2.04	2.05	2.05	2.04	2.06	2.06	2.08	S	2.13	2.15	2.04	2.15	2.07
Aug 20	2.17	2.15	2.15	2.15	2.16	2.18	2.17	2.17	2.11	2.07	2.05	2.05	2.04	2.04	2.03	2.03	2.04	2.05	2.08	2.11	S	2.13	2.14	2.12	2.03	2.18	2.10
Aug 21	2.10	2.12	2.15	2.18	2.18	2.32	2.42	2.31	2.27	2.24	2.15	2.11	2.11	2.08	2.07	2.09	2.07	2.06	2.07	S	2.17	2.17	2.15	2.14	2.06	2.42	2.16
Aug 22	2.13	2.14	2.15	2.15	2.15	2.16	2.16	2.16	2.15	2.14	2.12	2.09	2.07	2.06	2.05	2.06	2.07	2.07	S	2.10	2.12	2.11	2.14	2.11	2.05	2.16	2.12
Aug 23	2.15	2.19	2.19	2.14	2.29	2.20	2.24	2.19	2.11	2.10	2.08	2.06	2.05	2.02	2.00	2.00	2.01	S	2.02	2.04	2.04	2.06	2.04	2.01	2.00	2.29	2.10
Aug 24	2.03	2.03	2.05	2.06	2.04	2.05	2.07	2.11	2.05	2.03	2.00	2.00	2.02	2.04	2.08	2.08	S	2.09	2.07	2.10	2.13	2.15	2.14	2.18	2.00	2.18	2.07
Aug 25	2.14	2.17	2.16	2.17	2.18	2.28	2.27	2.28	2.32	2.20	2.15	2.13	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	2.13	2.32	NA
Aug 26	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	X	X	X	X	X	X	X	X	-	-	-
Aug 27	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 28	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 29	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 30	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 31	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-
Diurnal Maximum	2.17	2.19	2.22	2.23	2.29	2.32	2.42	2.31	2.32	2.24	2.15	2.13	2.12	2.09	2.08	2.15	2.12	2.10	2.11	2.18	2.17	2.22	2.31	2.18			
Diurnal Average	2.07	2.08	2.09	2.08	2.09	2.12	2.13	2.13	2.10	2.07	2.04	2.03	2.02	2.02	2.01	2.02	2.02	2.02	2.02	2.04	2.05	2.06	2.07	2.07			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	ND	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.



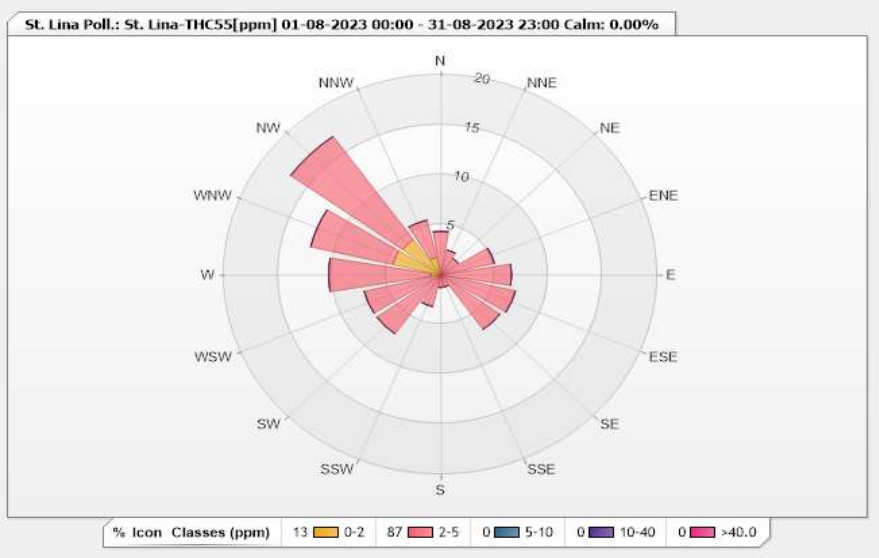


Station: St. Lina Poll.: St. Lina-THC55[ppm] Monthly: 08-2023

Type: Pollution Rose
Direction: Blowing From (Wind Frequency)
Time Base: 1 - Hour

Calm: 0.00% Valid Data: 74.06% Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-40	>40.0	Total
N	0	4.36	0	0	0	4.36
NNE	0.36	2.18	0	0	0	2.54
NE	0.18	1.81	0	0	0	1.99
ENE	0.36	4.72	0	0	0	5.08
E	0	6.53	0	0	0	6.53
ESE	0.18	6.9	0	0	0	7.08
SE	0	6.72	0	0	0	6.72
SSE	0	1.27	0	0	0	1.27
S	0	1.27	0	0	0	1.27
SSW	0	3.27	0	0	0	3.27
SW	0	7.26	0	0	0	7.26
WSW	0	7.26	0	0	0	7.26
W	0.91	9.44	0	0	0	10.35
WNW	4.54	7.8	0	0	0	12.34
NW	4.36	12.7	0	0	0	17.06
NNW	1.81	3.81	0	0	0	5.62
Summary	12.7	87.3	0	0	0	100



Lakeland Industry & Community Association

St. Lina Site - August 2023

Summary of Hourly Averages

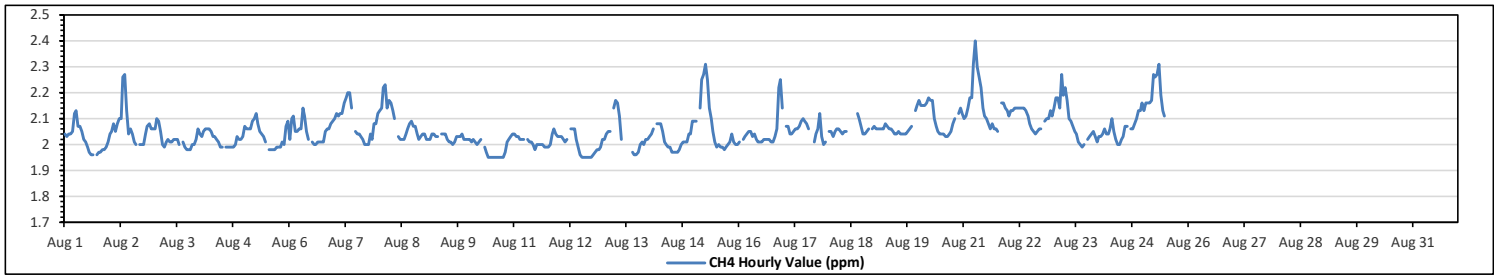
METHANE (CH4) in ppm

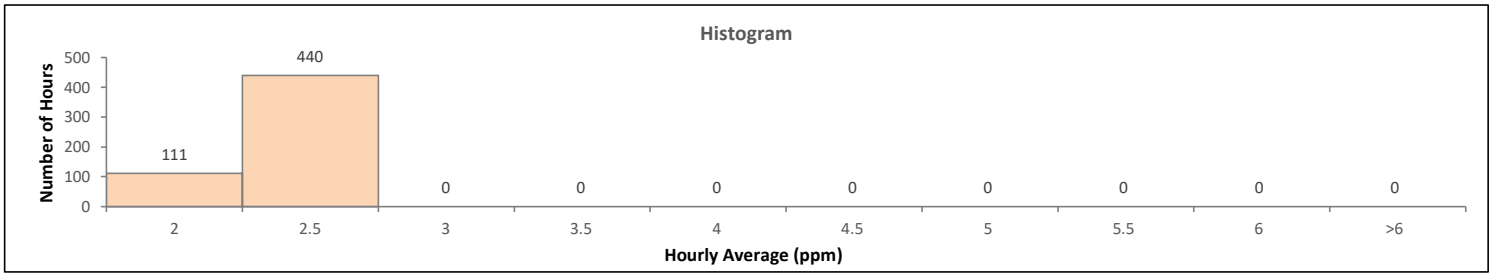
Maximum Hourly Value:	2.40	ppm	on Aug 21 at hr 6	Hours in Service:	744	
Maximum Daily Value:	2.15	ppm	on Aug 21	Hours of Data:	551	
Minimum Hourly Value:	1.95	ppm	on Aug 10 at hr 10	Hours of Missing Data:	163	
Minimum Daily Value:	1.99	ppm	on Aug 10	Hours of Calibration:	30	
Monthly Average:	2.06	ppm		Operational Uptime:	78.1	

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	2.04	2.03	2.04	2.04	2.05	2.12	2.13	2.07	2.07	2.05	2.02	2.01	1.99	1.97	1.96	1.96	S	1.96	1.97	1.97	1.98	1.98	1.99	2.01	1.96	2.13	2.02
Aug 2	2.04	2.05	2.08	2.05	2.08	2.10	2.10	2.26	2.27	2.13	2.04	2.06	2.04	2.01	2.00	S	2.00	2.00	2.00	2.04	2.07	2.08	2.06	2.06	2.00	2.27	2.07
Aug 3	2.06	2.10	2.09	2.05	2.00	1.99	2.01	2.02	2.01	2.01	2.02	2.02	2.02	2.00	S	2.01	1.99	1.98	1.98	1.98	2.00	2.00	2.02	2.06	1.98	2.10	2.02
Aug 4	2.04	2.03	2.05	2.06	2.06	2.06	2.05	2.03	2.03	2.02	2.01	1.99	1.99	S	1.99	1.99	1.99	1.99	1.99	2.00	2.03	2.02	2.02	2.03	1.99	2.06	2.02
Aug 5	2.07	2.06	2.06	2.06	2.09	2.10	2.12	2.08	2.05	2.04	2.03	2.01	S	1.98	1.98	1.98	1.98	1.99	1.99	1.99	2.01	2.00	2.07	2.09	1.98	2.12	2.04
Aug 6	2.02	2.10	2.11	2.05	2.05	2.06	2.06	2.14	2.11	2.05	2.02	S	2.01	2.00	2.00	2.01	2.01	2.01	2.01	2.05	2.06	2.06	2.08	2.09	2.00	2.14	2.05
Aug 7	2.10	2.12	2.11	2.12	2.12	2.16	2.18	2.20	2.20	2.14	S	2.05	2.04	2.04	2.03	2.02	2.00	2.00	2.00	2.04	2.02	2.08	2.08	2.12	2.00	2.20	2.09
Aug 8	2.13	2.14	2.22	2.23	2.14	2.17	2.16	2.13	2.10	S	2.03	2.02	2.02	2.02	2.04	2.06	2.08	2.09	2.07	2.07	2.04	2.02	2.03	2.04	2.02	2.23	2.09
Aug 9	2.04	2.02	2.02	2.02	2.04	2.04	2.03	2.03	S	2.04	2.04	2.04	2.02	2.01	2.01	2.00	2.01	2.03	2.03	2.03	2.04	2.02	2.02	2.02	2.00	2.04	2.03
Aug 10	2.02	2.01	2.02	2.01	2.00	2.01	2.02	S	1.99	1.97	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.97	2.01	2.02	2.03	2.04	1.95	2.04	1.99
Aug 11	2.04	2.03	2.03	2.02	2.02	2.02	S	2.02	2.01	2.01	2.00	1.98	2.00	2.00	2.00	2.00	1.99	1.99	1.99	2.00	2.04	2.06	2.04	2.03	1.98	2.06	2.01
Aug 12	2.03	2.03	2.02	2.01	2.02	S	2.06	2.06	2.06	2.02	1.99	1.96	1.95	1.95	1.95	1.95	1.95	1.95	1.96	1.97	1.98	1.98	1.99	2.02	1.95	2.06	1.99
Aug 13	2.02	2.04	2.05	2.05	S	2.14	2.17	2.16	2.11	2.02	C	C	C	C	C	1.97	1.96	1.96	1.97	2.00	2.01	2.00	2.02	2.02	1.96	2.17	2.04
Aug 14	2.03	2.04	2.06	S	2.08	2.08	2.08	2.05	2.01	2.00	1.99	1.99	1.97	1.97	1.97	1.97	1.98	2.00	2.01	2.01	2.01	2.04	2.04	2.09	1.97	2.09	2.02
Aug 15	2.09	2.09	S	2.14	2.25	2.27	2.31	2.25	2.14	2.10	2.05	2.01	1.99	2.00	1.99	1.99	1.98	1.99	2.00	2.01	2.04	2.01	2.00	2.00	1.98	2.31	2.07
Aug 16	2.01	S	2.02	2.03	2.04	2.05	2.05	2.03	2.04	2.02	2.01	2.01	2.01	2.02	2.02	2.02	2.02	2.01	2.01	2.03	2.06	2.22	2.25	2.14	2.01	2.25	2.05
Aug 17	S	2.07	2.07	2.04	2.04	2.05	2.06	2.06	2.07	2.09	2.10	2.09	2.08	2.06	Y	Y	2.01	2.04	2.06	2.12	2.03	2.00	2.01	S	2.00	2.12	2.06
Aug 18	2.05	2.05	2.03	2.05	2.06	2.06	2.05	2.04	2.05	2.05	NRM	NRM	NRM	NRM	NRM	2.12	2.10	2.07	2.04	2.04	2.05	2.06	S	2.06	2.03	2.12	2.06
Aug 19	2.07	2.06	2.06	2.06	2.06	2.06	2.08	2.07	2.06	2.06	2.05	2.04	2.04	2.05	2.04	2.04	2.04	2.04	2.05	2.06	2.07	S	2.13	2.15	2.04	2.15	2.06
Aug 20	2.17	2.15	2.15	2.15	2.16	2.18	2.17	2.17	2.10	2.07	2.05	2.04	2.04	2.04	2.03	2.03	2.04	2.05	2.08	2.10	S	2.12	2.14	2.12	2.03	2.18	2.10
Aug 21	2.10	2.11	2.14	2.18	2.18	2.31	**2.40**	2.30	2.26	2.22	2.14	2.11	2.10	2.08	2.06	2.08	2.06	2.06	2.05	S	2.16	2.16	2.14	2.13	2.05	**2.40**	**2.15**
Aug 22	2.11	2.13	2.13	2.14	2.14	2.14	2.14	2.14	2.14	2.13	2.11	2.08	2.06	2.05	2.04	2.05	2.06	2.06	S	2.09	2.10	2.10	2.13	2.11	2.04	2.14	2.10
Aug 23	2.14	2.18	2.18	2.14	2.27	2.19	2.22	2.17	2.10	2.09	2.07	2.05	2.04	2.01	2.00	1.99	2.00	S	2.02	2.03	2.04	2.05	2.03	2.01	1.99	2.27	2.09
Aug 24	2.03	2.03	2.04	2.06	2.04	2.04	2.06	2.10	2.05	2.02	2.00	2.00	2.02	2.03	2.07	2.07	S	2.06	2.06	2.08	2.10	2.13	2.13	2.16	2.00	2.16	2.06
Aug 25	2.13	2.16	2.16	2.16	2.17	2.27	2.26	2.27	2.31	2.19	2.13	2.11	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	2.11	2.31	NA
Aug 26	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	X	X	X	X	X	X	X	X	-	-	-
Aug 27	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 28	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 29	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 30	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 31	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-
Diurnal Maximum	2.17	2.18	2.22	2.23	2.27	2.31	2.40	2.30	2.31	2.22	2.14	2.11	2.10	2.08	2.07	2.12	2.10	2.09	2.08	2.12	2.16	2.22	2.25	2.16			
Diurnal Average	2.07	2.08	2.08	2.08	2.09	2.11	2.12	2.12	2.10	2.06	2.04	2.03	2.02	2.01	2.01	2.01	2.01	2.01	2.01	2.03	2.04	2.05	2.06	2.07			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	ND	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.



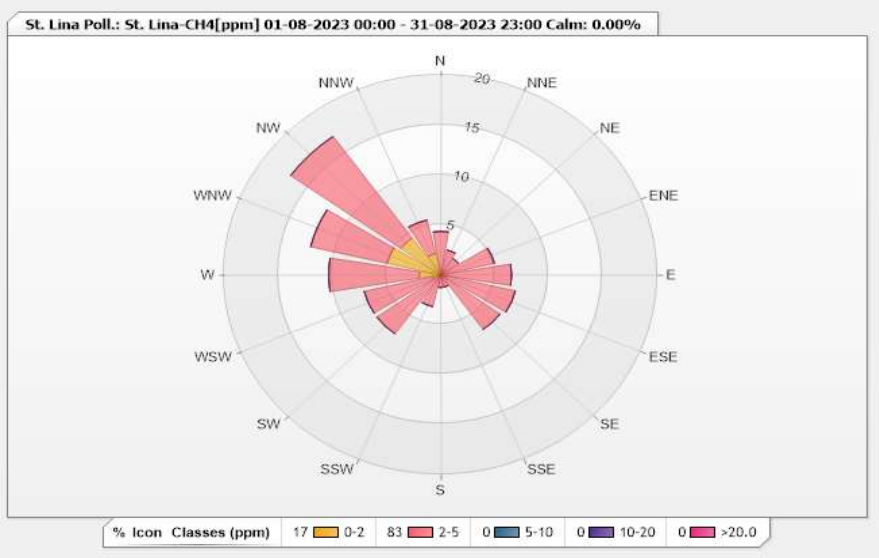


Station: St. Lina Poll.: St. Lina-CH4[ppm] Monthly: 08-2023

Type: Pollution Rose
Direction: Blowing From (Wind Frequency)
Time Base: 1 - Hour

Calm: 0.00% Valid Data: 74.06% Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-20	>20.0	Total
N	0.18	4.17	0	0	0	4.35
NNE	0.54	2	0	0	0	2.54
NE	0.18	1.81	0	0	0	1.99
ENE	0.36	4.72	0	0	0	5.08
E	0	6.53	0	0	0	6.53
ESE	0.54	6.53	0	0	0	7.07
SE	0	6.72	0	0	0	6.72
SSE	0	1.27	0	0	0	1.27
S	0	1.27	0	0	0	1.27
SSW	0	3.27	0	0	0	3.27
SW	0.18	7.08	0	0	0	7.26
WSW	0.73	6.53	0	0	0	7.26
W	2	8.35	0	0	0	10.35
WNW	5.08	7.26	0	0	0	12.34
NW	4.54	12.52	0	0	0	17.06
NNW	2.18	3.45	0	0	0	5.63
Summary	16.51	83.48	0	0	0	100



Lakeland Industry & Community Association

St. Lina Site - August 2023

Summary of Hourly Averages

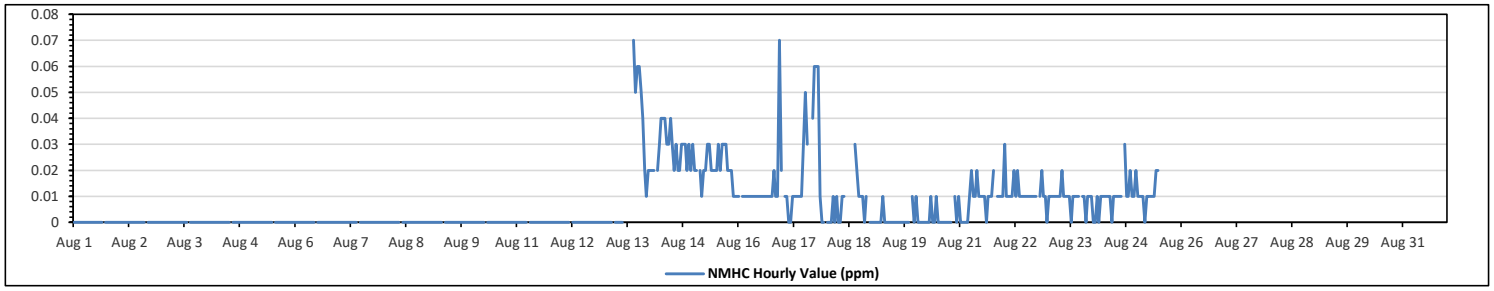
NON-METHANE HYDROCARBONS (NMHC) in ppm

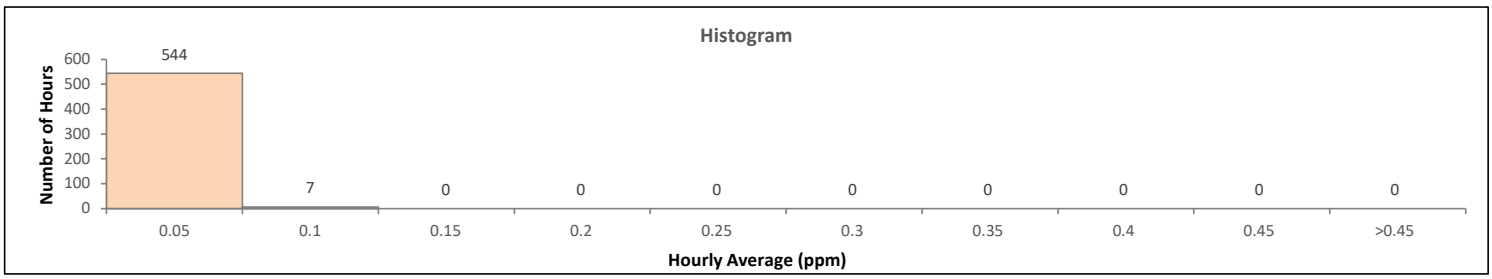
Maximum Hourly Value:	0.07	ppm	on Aug 13 at hr 15	Hours in Service:	744
Maximum Daily Value:	0.03	ppm	on Aug 14	Hours of Data:	551
Minimum Hourly Value:	0.00	ppm	on Aug 1 at hr 0	Hours of Missing Data:	163
Minimum Daily Value:	0.00	ppm	on Aug 1	Hours of Calibration:	30
Monthly Average:	0.01	ppm		Operational Uptime:	78.1

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	0.00	0.00	0.00	0.00	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 2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	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	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 4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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
Aug 5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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
Aug 6	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 7	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 8	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 9	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 10	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 11	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 12	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 13	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	C	C	C	C	C	0.07	0.05	0.06	0.06	0.05	0.04	0.02	0.01	0.02	0.00	0.07	0.02
Aug 14	0.02	0.02	0.02	S	0.02	0.03	0.04	0.04	0.04	0.03	0.03	0.04	0.03	0.02	0.03	0.02	0.02	0.03	0.03	0.03	0.02	0.03	0.02	0.03	0.02	0.04	0.03
Aug 15	0.02	0.02	S	0.02	0.01	0.02	0.02	0.03	0.03	0.02	0.02	0.02	0.02	0.03	0.02	0.03	0.03	0.03	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.03	0.02
Aug 16	0.01	S	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.07	0.02	0.01	0.07	0.01
Aug 17	S	0.01	0.01	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.03	0.05	0.03	Y	Y	0.04	0.06	0.06	0.06	0.01	0.00	0.00	S	0.00	0.06	0.02
Aug 18	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.01	0.01	NRM	NRM	NRM	NRM	NRM	0.03	0.02	0.01	0.01	0.01	0.00	0.01	S	0.00	0.00	0.03	0.01
Aug 19	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	S	0.01	0.00	0.00	0.01	0.00
Aug 20	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.01	0.00	0.01	0.00	0.01	0.00
Aug 21	0.00	0.00	0.00	0.00	0.00	0.01	0.02	0.01	0.01	0.02	0.01	0.01	0.01	0.01	0.00	0.01	0.01	0.01	0.02	S	0.01	0.01	0.01	0.01	0.00	0.02	0.01
Aug 22	0.03	0.01	0.01	0.01	0.01	0.02	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	S	0.01	0.02	0.01	0.01	0.00	0.00	0.03	0.01
Aug 23	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.01	0.01	0.00	0.01	0.01	0.01	0.01	S	0.01	0.01	0.00	0.01	0.01	0.01	0.00	0.02	0.01
Aug 24	0.00	0.00	0.01	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.01	0.01	0.01	0.01	0.01	S	0.03	0.01	0.01	0.02	0.01	0.01	0.02	0.00	0.03	0.01
Aug 25	0.01	0.01	0.01	0.01	0.00	0.01	0.01	0.01	0.01	0.01	0.02	0.02	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	0.00	0.02	NA
Aug 26	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	X	X	X	X	X	X	X	X	-	-	-
Aug 27	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 28	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 29	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 30	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 31	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-
Diurnal Maximum	0.03	0.02	0.02	0.02	0.02	0.03	0.04	0.04	0.04	0.03	0.03	0.04	0.05	0.03	0.03	0.07	0.05	0.06	0.06	0.06	0.04	0.03	0.07	0.03			
Diurnal Average	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	ND	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.



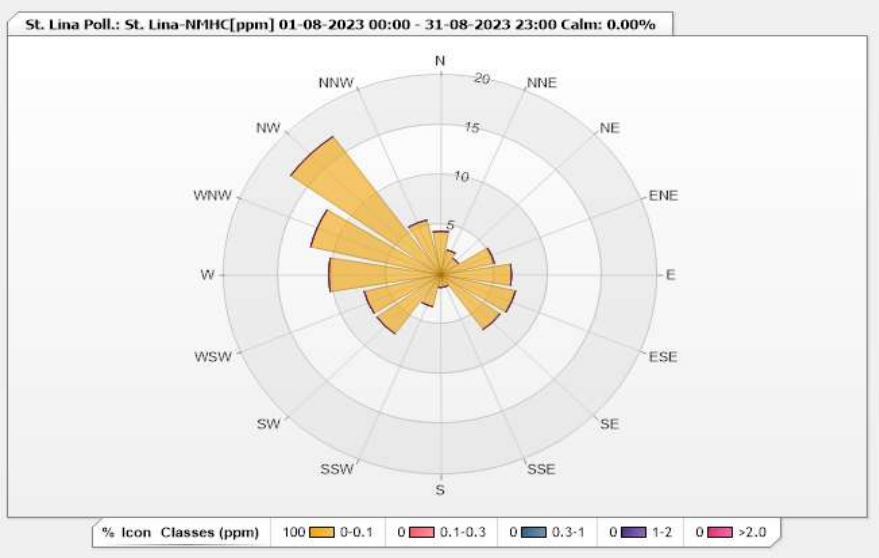


Station: St. Lina Poll.: St. Lina-NMHC[ppm] Monthly: 08-2023

Type: Pollution Rose
Direction: Blowing From (Wind Frequency)
Time Base: 1 - Hour

Calm: 0.00% Valid Data: 74.06% Calm Avg: 0.00 [ppm]

Direction	0-0.1	0.1-0.3	0.3-1	1-2	>2.0	Total
N	4.36	0	0	0	0	4.36
NNE	2.54	0	0	0	0	2.54
NE	2	0	0	0	0	2
ENE	5.08	0	0	0	0	5.08
E	6.53	0	0	0	0	6.53
ESE	7.08	0	0	0	0	7.08
SE	6.72	0	0	0	0	6.72
SSE	1.27	0	0	0	0	1.27
S	1.27	0	0	0	0	1.27
SSW	3.27	0	0	0	0	3.27
SW	7.26	0	0	0	0	7.26
WSW	7.26	0	0	0	0	7.26
W	10.34	0	0	0	0	10.34
WNW	12.34	0	0	0	0	12.34
NW	17.06	0	0	0	0	17.06
NNW	5.63	0	0	0	0	5.63
Summary	100	0	0	0	0	100



Lakeland Industry & Community Association

St. Lina Site - August 2023

Summary of Hourly Averages

PARTICULATE MATTER 2.5 ($PM_{2.5}$) in µg/m^3

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

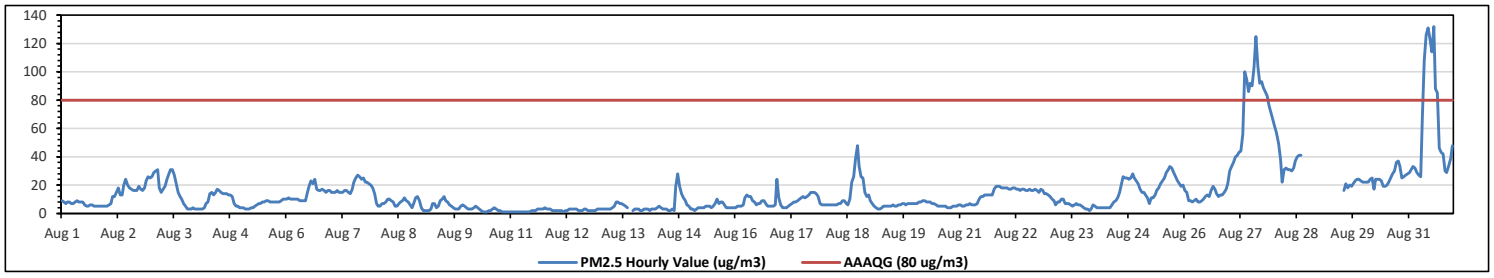
Number of 1-Hour Exceedances: 21 Number of 24-Hour Exceedances: 2

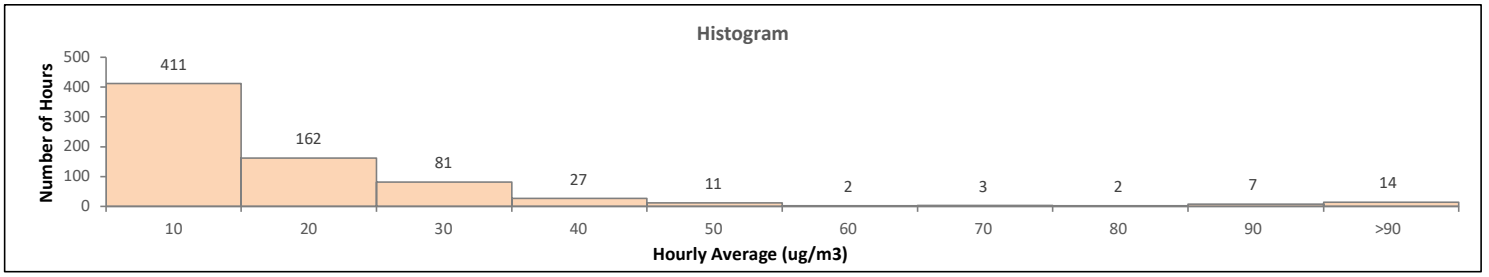
Maximum Hourly Value:	132 µg/m^3 on Aug 31 at hr 13	Hours in Service:	744
Maximum Daily Value:	73.9 µg/m^3 on Aug 27	Hours of Data:	720
Minimum Hourly Value:	1 µg/m^3 on Aug 10 at hr 9	Hours of Missing Data:	22
Minimum Daily Value:	2 µg/m^3 on Aug 11	Hours of Calibration:	2
Monthly Average:	14.8 µg/m^3	Operational Uptime:	97.0

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	9	8	7	8	8	7	7	8	9	8	8	8	6	5	5	6	6	5	5	5	5	5	5	5	5	9	6.6
Aug 2	5	6	7	12	12	15	18	13	13	20	24	20	18	17	16	16	16	19	17	16	18	23	26	25	5	26	16.3
Aug 3	26	29	30	31	18	15	17	19	24	28	31	31	27	21	15	12	10	7	5	3	3	3	4	3	3	31	17.2
Aug 4	3	3	3	3	4	7	8	14	15	13	15	17	16	15	14	14	14	13	13	12	7	5	5	4	3	17	9.9
Aug 5	4	4	3	3	3	4	4	5	6	7	7	8	8	9	9	8	8	8	8	8	8	9	10	10	3	10	6.7
Aug 6	10	11	10	10	10	10	10	9	9	9	9	14	19	23	21	24	17	16	16	17	16	15	16	16	9	24	14.0
Aug 7	15	15	15	16	15	15	15	16	16	15	14	17	22	25	27	26	24	25	22	22	21	20	18	14	14	27	18.8
Aug 8	7	5	5	7	7	8	10	10	9	8	5	5	7	8	9	11	9	8	6	4	7	11	12	9	4	12	7.8
Aug 9	4	2	2	2	2	3	7	7	4	5	9	10	12	9	8	6	5	4	3	3	3	5	6	5	2	12	5.3
Aug 10	4	3	3	3	4	5	4	3	2	1	1	1	2	2	3	4	3	2	2	1	1	1	1	1	**1**	5	2.4
Aug 11	1	1	1	1	1	1	1	1	1	1	1	2	2	2	3	3	3	3	4	3	3	3	2	2	**1**	4	**1.9**
Aug 12	2	2	2	2	1	2	2	3	3	3	3	3	2	2	2	3	3	2	2	2	2	2	3	3	**1**	3	2.3
Aug 13	3	3	3	3	3	3	4	5	8	8	7	7	6	5	4	C	C	2	3	3	3	2	2	3	2	8	4.1
Aug 14	3	3	2	3	3	3	4	5	4	3	3	3	2	2	3	2	19	28	19	14	11	9	6	5	2	28	6.6
Aug 15	3	3	2	3	4	4	4	4	5	5	5	4	5	7	10	7	8	8	6	4	4	4	4	4	2	10	4.9
Aug 16	4	5	5	5	6	11	13	12	12	9	8	6	7	7	9	9	7	5	5	5	5	6	24	11	4	24	8.2
Aug 17	6	4	4	4	5	6	7	8	8	9	10	11	12	11	12	13	15	15	15	14	12	7	6	6	4	15	9.2
Aug 18	6	6	6	6	6	6	6	7	7	9	9	7	6	10	22	26	39	48	33	26	25	15	12	13	6	48	14.8
Aug 19	9	7	5	4	3	3	4	5	5	5	5	5	6	5	5	6	6	7	7	6	7	7	7	7	3	9	5.7
Aug 20	7	7	8	8	9	9	8	8	8	7	7	6	5	5	5	5	5	4	4	4	5	5	5	6	4	9	6.3
Aug 21	6	5	5	6	6	7	6	6	6	7	10	12	12	13	13	13	13	13	17	19	19	19	18	18	5	19	11.2
Aug 22	18	18	17	17	18	18	17	17	16	17	17	16	16	17	16	16	17	16	15	17	16	14	14	13	13	18	16.4
Aug 23	12	10	9	6	8	8	10	10	7	7	7	6	5	6	7	6	6	5	4	3	3	2	3	6	2	12	6.5
Aug 24	5	4	4	4	4	4	4	4	4	6	8	9	11	15	21	26	25	25	24	25	28	25	23	21	4	28	13.7
Aug 25	17	15	15	13	11	7	11	11	13	16	18	21	23	25	29	31	33	32	29	26	23	21	19	20	7	33	20.0
Aug 26	16	15	9	9	8	9	10	8	8	9	10	12	13	12	16	19	17	14	12	13	13	15	17	21	8	21	12.7
Aug 27	30	33	36	40	41	43	44	56	100	95	86	92	90	103	125	104	92	93	89	86	83	76	71	66	30	125	**73.9**
Aug 28	62	57	49	38	22	31	32	31	31	30	32	37	40	41	41	X	X	X	X	X	X	X	X	X	22	62	NA
Aug 29	X	X	X	X	X	X	X	X	X	X	X	X	X	16	21	18	20	19	21	23	24	24	23	22	16	24	NA
Aug 30	22	22	22	24	25	17	24	24	24	23	19	19	20	22	25	28	30	36	37	33	25	26	27	28	17	37	25.1
Aug 31	29	31	33	32	29	27	26	67	108	126	131	123	114	**132**	88	85	46	43	42	30	29	34	39	48	26	**132**	62.2
Diurnal Maximum	62	57	49	40	41	43	44	67	108	126	131	123	114	132	125	104	92	93	89	86	83	76	71	66			
Diurnal Average	11.6	11.2	10.7	10.8	9.9	10.3	11.2	13.2	16.2	17.0	17.3	17.7	17.8	19.1	19.5	18.9	17.8	17.5	16.2	14.9	14.3	13.8	14.3	13.8			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	ND	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.



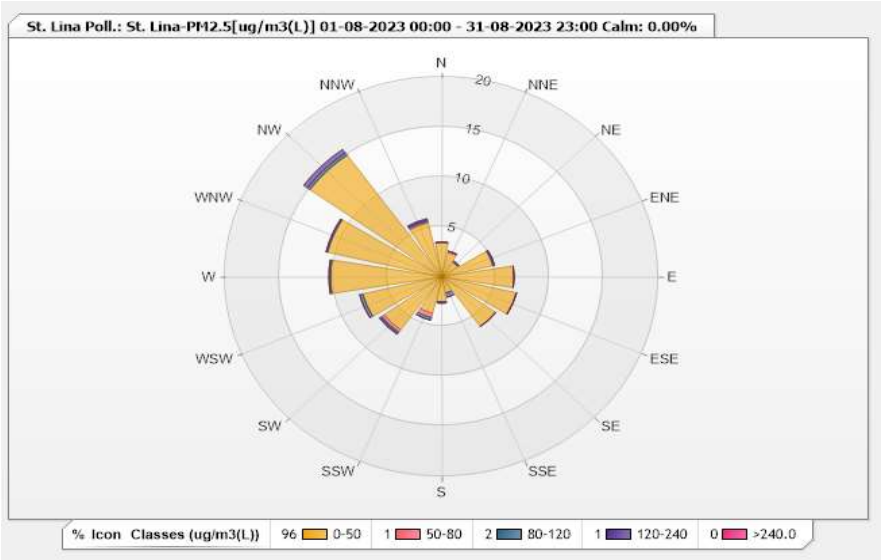


Station: St. Lina Poll.: St. Lina-PM2.5[ug/m3(L)] Monthly: 08-2023

Type: Pollution Rose
Direction: Blowing From (Wind Frequency)
Time Base: 1 - Hour

Calm: 0.00% Valid Data: 96.77% Calm Avg: 0.00 [ppm]

Direction	0-50	50-80	80-120	120-240	>240.0	Total
N	3.47	0	0	0	0	3.47
NNE	2.5	0.14	0	0	0	2.64
NE	1.81	0	0.14	0	0	1.95
ENE	4.86	0	0.14	0	0	5
E	6.67	0	0	0	0	6.67
ESE	7.08	0	0	0	0	7.08
SE	6.11	0	0	0	0	6.11
SSE	1.67	0	0.42	0	0	2.09
S	2.5	0	0.14	0	0	2.64
SSW	3.75	0.42	0.28	0	0	4.45
SW	6.53	0.28	0.14	0.14	0	7.09
WSW	7.5	0	0.28	0	0	7.78
W	10.28	0	0.14	0	0	10.42
WNW	10.83	0	0.14	0	0	10.97
NW	15	0	0.28	0.42	0	15.7
NNW	5.56	0.14	0.14	0.14	0	5.98
Summary	96.12	0.98	2.24	0.7	0	100



Lakeland Industry & Community Association

St. Lina Site - August 2023

Summary of Hourly Averages

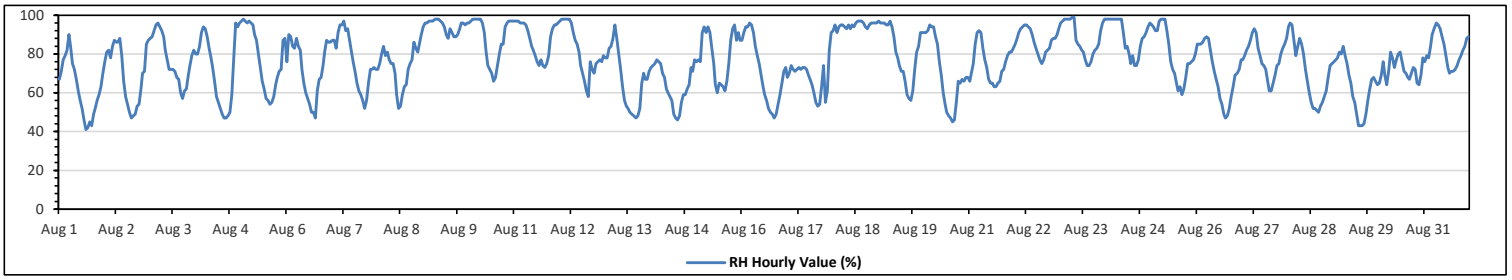
RELATIVE HUMIDITY (RH) in %

Maximum Hourly Value:	99	%	on Aug 23 at hr 6	Hours in Service:	744	
Maximum Daily Value:	94.8	%	on Aug 18	Hours of Data:	744	
Minimum Hourly Value:	41	%	on Aug 1 at hr 14	Hours of Missing Data:	0	
Minimum Daily Value:	62.5	%	on Aug 1	Hours of Calibration:	0	
Monthly Average:	76.9	%		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	67	71	77	79	82	90	84	75	72	67	61	56	52	46	**41**	42	45	43	49	52	56	59	63	70	**41**	90	**62.5**
Aug 2	76	81	82	78	84	87	86	86	88	79	66	58	54	50	47	48	49	53	54	62	70	71	85	87	47	88	70.0
Aug 3	88	89	92	95	96	94	92	89	82	77	72	72	72	71	68	67	60	57	61	62	69	74	79	82	57	96	77.5
Aug 4	80	80	84	91	94	93	89	83	78	73	66	58	55	52	49	47	47	48	50	59	78	96	94	96	47	96	72.5
Aug 5	97	98	97	96	97	96	95	90	87	80	73	66	62	57	56	54	55	58	64	68	71	72	87	88	54	98	77.7
Aug 6	76	90	89	84	83	88	84	82	72	65	60	57	54	50	50	47	61	67	68	74	81	87	86	86	47	90	72.5
Aug 7	87	87	83	91	95	95	97	92	93	88	82	76	71	65	61	59	56	52	56	65	72	72	73	72	52	97	76.7
Aug 8	72	75	80	84	79	81	77	75	75	70	59	52	53	59	63	64	72	75	77	86	83	81	85	90	52	90	73.6
Aug 9	94	96	96	97	97	97	98	98	98	97	96	94	90	88	93	91	89	89	90	93	96	96	95	96	88	98	94.3
Aug 10	96	97	98	98	98	98	98	96	91	82	74	72	70	66	68	74	80	85	85	94	96	97	97	97	66	98	87.8
Aug 11	97	97	97	96	96	96	95	92	88	84	82	79	76	74	77	74	73	75	79	89	93	95	95	96	73	97	87.3
Aug 12	97	98	98	98	98	98	96	91	87	85	81	74	70	66	61	58	76	72	70	75	76	77	76	79	58	98	81.5
Aug 13	78	78	83	84	88	95	88	80	72	63	56	53	52	50	49	48	47	48	52	65	70	67	67	71	47	95	66.8
Aug 14	73	74	75	77	76	75	70	68	62	60	58	56	49	47	46	48	55	59	59	62	64	73	71	77	46	77	63.9
Aug 15	76	77	76	91	94	91	94	91	83	75	64	60	65	64	63	61	66	75	87	93	95	87	91	87	60	95	79.4
Aug 16	87	91	94	94	96	95	91	84	79	75	69	64	59	56	52	50	49	47	49	54	59	65	71	73	47	96	71.0
Aug 17	68	70	74	72	71	72	73	72	73	73	72	69	67	64	60	55	53	54	63	74	55	61	82	91	53	91	68.3
Aug 18	92	95	91	94	95	95	94	93	95	93	95	94	96	97	97	97	96	94	93	95	96	96	96	96	91	97	**94.8**
Aug 19	97	96	96	96	95	95	97	94	89	81	78	74	71	71	66	59	57	56	61	72	81	84	91	91	56	97	81.2
Aug 20	91	91	92	95	94	94	89	85	76	69	60	54	50	48	47	45	46	55	66	65	67	66	68	68	45	95	70.0
Aug 21	66	70	75	85	91	92	91	83	77	73	67	65	65	63	63	65	66	71	72	76	79	81	81	83	63	92	75.0
Aug 22	85	88	91	93	94	95	95	94	93	90	86	83	80	77	75	77	81	82	83	87	88	88	90	93	75	95	87.0
Aug 23	96	97	98	98	98	98	**99**	**99**	87	85	84	82	81	77	74	74	76	80	82	83	85	92	96	98	74	**99**	88.3
Aug 24	98	98	98	98	98	98	98	98	98	91	83	84	80	75	79	74	74	77	84	88	89	91	94	96	74	98	89.2
Aug 25	95	94	92	92	97	98	98	98	92	85	76	72	70	65	61	63	59	62	68	75	75	76	77	80	59	98	80.0
Aug 26	85	85	85	86	88	89	88	82	76	71	67	63	57	54	49	47	48	52	58	63	69	70	72	77	47	89	70.0
Aug 27	77	79	82	84	87	91	93	91	83	79	75	74	72	67	61	61	65	69	74	75	80	83	85	88	61	93	78.1
Aug 28	94	96	95	87	79	84	88	85	80	72	66	60	55	52	52	51	50	53	55	58	61	68	74	75	50	96	70.4
Aug 29	76	77	78	81	80	84	79	75	69	65	58	55	49	43	43	43	44	49	56	62	67	68	66	64	43	84	63.8
Aug 30	65	69	76	69	64	71	81	78	73	77	80	81	76	71	70	68	67	70	73	72	65	64	69	78	64	81	72.0
Aug 31	76	79	78	84	90	93	96	95	93	89	85	79	73	70	71	71	72	74	77	79	82	84	88	89	70	96	82.0
Diurnal Maximum	98	98	98	98	98	98	99	99	98	97	96	94	96	97	97	97	96	94	93	95	96	97	97	98			
Diurnal Average	83.9	85.9	87.2	88.6	89.5	90.9	90.1	86.9	82.6	77.8	72.6	68.9	66.0	63.1	61.7	60.7	62.4	64.5	68.2	73.5	76.4	78.7	82.1	84.3			

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

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



Lakeland Industry & Community Association

St. Lina Site - August 2023

Summary of Hourly Averages

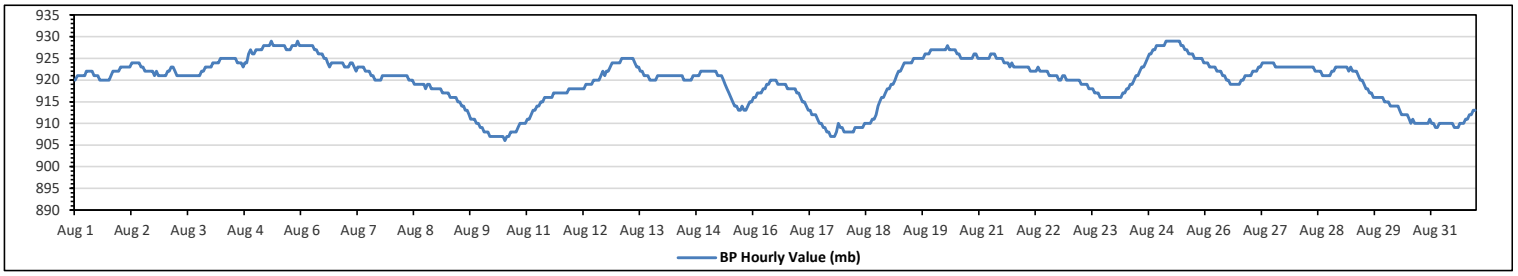
BAROMETRIC PRESSURE (BP) in millibar

Maximum Hourly Value:	929	mb	on Aug 5 at hr 8	Hours in Service:	744	
Maximum Daily Value:	928	mb	on Aug 5	Hours of Data:	744	
Minimum Hourly Value:	906	mb	on Aug 10 at hr 12	Hours of Missing Data:	0	
Minimum Daily Value:	908	mb	on Aug 10	Hours of Calibration:	0	
Monthly Average:	920	mb		Operational Uptime:	100.0	

Day	Hourly Period Starting at (MST)																							Daily	Daily	Daily
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Minimum	Maximum	Average
Aug 1	920	921	921	921	921	921	922	922	922	922	921	921	921	920	920	920	920	920	920	921	922	922	922	922	920	922	921
Aug 2	923	923	923	923	923	923	924	924	924	924	924	923	923	922	922	922	922	922	921	922	921	921	921	921	921	924	923
Aug 3	921	922	922	923	923	922	921	921	921	921	921	921	921	921	921	921	921	921	921	922	922	923	923	923	921	923	922
Aug 4	923	924	924	924	924	925	925	925	925	925	925	925	925	925	924	924	924	923	924	924	926	927	926	926	923	927	925
Aug 5	927	927	927	927	928	928	928	928	**929**	928	928	928	928	928	928	928	927	927	927	928	928	928	**929**	928	927	**929**	**928**
Aug 6	928	928	928	928	928	928	928	927	927	926	926	926	925	925	924	923	924	924	924	924	924	924	924	923	923	928	926
Aug 7	923	923	924	924	923	922	923	923	923	923	922	922	922	921	921	920	920	920	920	921	921	921	921	921	920	924	922
Aug 8	921	921	921	921	921	921	921	921	921	920	920	920	919	919	919	919	919	919	918	919	919	918	918	918	918	921	920
Aug 9	918	918	918	917	917	917	917	916	916	916	916	915	915	914	914	913	913	912	911	911	911	910	910	909	909	918	914
Aug 10	909	908	908	908	907	907	907	907	907	907	907	907	**906**	907	907	908	908	908	908	909	910	910	910	910	**906**	910	**908**
Aug 11	911	911	912	913	913	914	914	915	915	916	916	916	916	916	917	917	917	917	917	917	917	917	918	918	911	918	915
Aug 12	918	918	918	918	918	918	918	919	919	919	919	920	920	920	920	921	922	921	922	922	923	924	924	924	918	924	920
Aug 13	924	924	925	925	925	925	925	925	925	924	923	923	922	922	921	921	921	920	920	920	920	921	921	921	920	925	923
Aug 14	921	921	921	921	921	921	921	921	921	921	921	920	920	920	920	920	921	921	921	921	922	922	922	922	920	922	921
Aug 15	922	922	922	922	922	921	921	921	920	919	918	917	916	915	914	914	913	913	914	913	913	914	915	915	913	922	917
Aug 16	916	916	917	917	917	918	918	919	919	920	920	920	920	919	919	919	919	919	918	918	918	918	918	917	916	920	918
Aug 17	917	916	915	915	914	913	913	912	912	912	911	910	910	909	909	908	908	907	907	907	908	910	909	909	907	917	911
Aug 18	908	908	908	908	908	908	909	909	909	909	909	910	910	910	910	911	911	912	914	915	916	916	917	918	908	918	911
Aug 19	918	919	919	920	921	922	922	923	924	924	924	924	924	925	925	925	925	925	925	926	926	926	927	927	918	927	924
Aug 20	927	927	927	927	927	927	927	928	927	927	927	927	926	926	925	925	925	925	925	925	925	926	926	925	925	928	926
Aug 21	925	925	925	925	925	925	926	926	926	925	925	925	925	924	924	924	923	924	923	923	923	923	923	923	923	926	924
Aug 22	923	923	923	922	922	922	922	923	922	922	922	922	922	921	921	921	921	921	920	920	921	921	920	920	920	923	922
Aug 23	920	920	920	920	920	920	919	919	919	919	918	918	918	917	917	917	916	916	916	916	916	916	916	916	916	920	918
Aug 24	916	916	916	916	917	917	918	918	919	919	920	921	921	922	923	923	924	925	926	926	927	927	928	928	916	928	921
Aug 25	928	928	928	**929**	**929**	**929**	**929**	**929**	**929**	**929**	**929**	928	928	927	927	926	926	926	925	925	925	925	925	924	924	**929**	927
Aug 26	924	924	923	923	923	923	922	922	922	921	921	920	920	919	919	919	919	919	919	920	920	921	921	921	919	924	921
Aug 27	921	922	922	922	923	923	924	924	924	924	924	924	924	923	923	923	923	923	923	923	923	923	923	923	921	924	923
Aug 28	923	923	923	923	923	923	923	923	923	923	922	922	922	922	921	921	921	921	921	922	922	923	923	923	921	923	922
Aug 29	923	923	923	923	922	923	922	922	922	921	920	920	919	918	918	917	917	916	916	916	916	916	916	915	915	923	919
Aug 30	915	915	914	914	914	914	914	913	912	912	912	912	911	910	911	910	910	910	910	910	910	910	910	911	910	915	912
Aug 31	910	910	909	909	910	910	910	910	910	910	910	910	909	909	909	910	910	910	911	911	912	912	913	913	909	913	910
Diurnal Maximum	928	928	928	929	929	929	929	929	929	929	929	928	928	928	928	928	927	927	927	928	928	928	929	928			
Diurnal Average	920	920	920	920	920	920	920	920	920	920	920	920	920	919	919	919	919	919	919	919	920	920	920	920			

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

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



Lakeland Industry & Community Association

St. Lina Site - August 2023

Summary of Hourly Averages

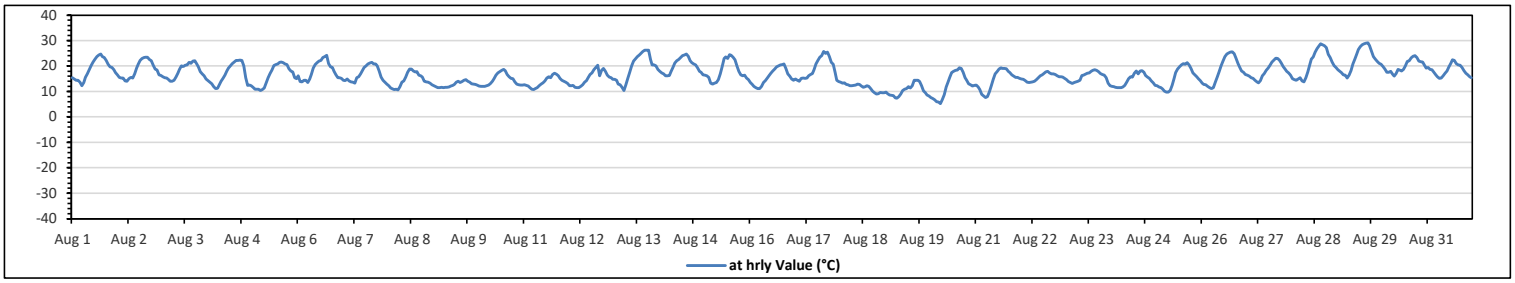
AMBIENT TEMPERATURE (AT) in Degree Celsius

Maximum Hourly Value:	29.1	°C	on Aug 29 at hr 16	Hours in Service:	744
Maximum Daily Value:	22.4	°C	on Aug 29	Hours of Data:	744
Minimum Hourly Value:	5.2	°C	on Aug 20 at hr 5	Hours of Missing Data:	0
Minimum Daily Value:	10.4	°C	on Aug 19	Hours of Calibration:	0
Monthly Average:	16.6	°C		Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																							Daily	Daily	Daily
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Minimum	Maximum	Average
Aug 1	15.5	14.9	14.4	14.4	13.7	12.2	13.5	15.6	16.9	18.6	20.2	21.5	22.7	23.8	24.3	24.7	23.7	23.4	22.3	20.7	19.7	19.4	18.6	17.4	12.2	24.7	18.8
Aug 2	16.5	15.6	15.3	15.3	14.2	14	15.1	15.6	15.3	17	19.2	20.7	22.2	22.9	23.3	23.5	23.5	22.6	22.1	20.3	18.8	18.5	16.5	16.3	14.0	23.5	18.5
Aug 3	15.9	15.5	15.3	14.7	14	14	14.5	15.7	17.2	18.7	20	19.9	20.3	20.4	21.4	21.1	22	22.1	20.8	19.7	17.8	17	16.2	14.9	14.0	22.1	17.9
Aug 4	14.3	13.7	13.1	11.9	11.2	11.3	12.5	14	15.2	16.4	18.1	19.2	20.1	21	21.5	22.2	22.3	22.4	22.2	20	15.5	12.4	12.5	12.3	11.2	22.4	16.5
Aug 5	11.7	10.9	10.9	10.9	10.5	10.7	11.4	13.4	15.5	17.1	18.5	20.2	20.6	20.8	21.4	21.6	21.3	20.9	20.6	18.9	18.1	17.7	15.4	15.1	10.5	21.6	16.4
Aug 6	16.1	13.9	13.8	14.4	14.4	13.5	14.9	16.7	19.2	20.6	21.3	21.9	22.3	23.4	23.8	24.2	21	19.7	19.5	18	16.6	15.5	15.4	15.2	13.5	24.2	18.1
Aug 7	14.5	14.3	14.9	14.2	13.8	13.6	13.3	15.4	15.8	17	18.3	19.5	20.1	20.9	21.2	21.4	20.9	20.9	20.1	18.1	15.7	14.5	13.6	12.9	12.9	21.4	16.9
Aug 8	12.3	11.4	11	10.7	10.9	10.6	11.9	13.6	14.2	15.7	17.5	18.8	18.8	18.1	17.7	17.8	16.4	16.1	15.7	14.1	13.8	13.7	13.3	12.7	10.6	18.8	14.5
Aug 9	12.2	11.9	11.6	11.5	11.7	11.6	11.7	11.7	11.8	12.1	12.4	12.8	13.6	14.1	13.5	13.9	14.5	14.6	14.1	13.6	13.1	13	12.8	12.5	11.5	14.6	12.8
Aug 10	12.1	12	12	12	12.2	12.5	13.2	14	15.1	16.4	17.3	17.8	18.4	18.7	18.2	16.7	15.8	15.2	15	13.8	13	12.7	12.5	12.5	12.0	18.7	14.5
Aug 11	12.6	12.4	12.1	11.6	10.9	10.7	11.1	11.6	12.3	13	13.4	14.2	15.3	15.8	15.5	16.7	17.2	16.8	16.1	15.2	14.5	14	13.7	13.2	10.7	17.2	13.7
Aug 12	12.3	12.3	12.4	11.7	11.6	11.5	12	12.6	13.6	14.3	15.4	16.7	17.3	18.6	19.5	20.3	16.1	18.4	19.1	18	16.4	15.7	15.4	14.7	11.5	20.3	15.2
Aug 13	14.7	14.4	12.9	12.6	11.7	10.5	12.7	15.2	17.5	20.1	21.9	22.8	23.7	24.3	25.2	25.7	26.2	26.3	26.2	22.6	20.5	20.4	20	18.7	10.5	26.3	19.5
Aug 14	17.9	17.3	16.9	16.2	16.1	16.3	17.8	19.4	21.2	22.1	22.6	23.4	24.1	24.3	24.7	23.9	22.1	21.3	20.8	20.4	19.3	17.9	17.6	16.6	16.1	24.7	20.0
Aug 15	16.4	16.1	15.6	13.3	13	13.3	13.5	14.6	16.9	19.9	22.9	23.6	23	24.5	24.2	23.5	22.5	20.1	17.9	16.6	16.1	16.4	15.3	14.6	13.0	24.5	18.1
Aug 16	13.5	12.8	12	11.6	11.1	11.2	12	13.5	14.3	15.3	16.2	17.2	18.1	18.8	19.7	20.1	20.4	20.6	20.8	19	16.9	16	14.9	14.4	11.1	20.8	15.9
Aug 17	14.9	14.4	14.1	15.2	15.3	15.2	15.3	16.2	16.7	17.1	18.6	20.8	22.2	23.5	24.1	25.7	25	25.5	23.7	21.4	20.7	17.4	14.5	13.9	13.9	25.7	18.8
Aug 18	13.6	13.3	13.4	12.8	12.6	12.3	12.2	12.4	12.5	13	12.8	12.1	11.7	11.9	12.3	12	11.1	10.2	9.5	9	9.2	9.6	9.5	9.5	9.0	13.6	11.6
Aug 19	9.7	9.2	8.7	8.5	8.4	7.5	7.4	7.9	9.1	10.4	10.9	11.2	11.9	11.4	12.2	14.4	14.4	14.5	13.9	12.2	10.3	9.5	8.7	8.3	7.4	14.5	**10.4**
Aug 20	7.7	7.3	6.7	6	5.9	**5.2**	6.9	8.8	11.8	13.8	15.6	17.4	18	18.4	18.5	19.3	19	17.5	15.5	14.4	13.1	12.6	12.1	12.4	**5.2**	19.3	12.7
Aug 21	12.5	11.8	10.7	8.9	8.2	7.6	7.9	9.9	12.3	14.7	16.9	17.8	18.8	19.3	19.1	19	18.9	17.9	17.4	16.6	16	15.6	15.6	15.2	7.6	19.3	14.5
Aug 22	14.9	14.7	14.3	13.7	13.5	13.6	13.8	14	14.6	15.4	16.2	16.5	17.1	17.7	18	17.3	16.9	17	16.7	16.2	15.9	15.9	15.7	15.2	13.5	18.0	15.6
Aug 23	14.6	13.9	13.5	13.2	13.5	13.8	14	14.5	16.3	16.4	16.8	17.2	17.3	18	18.4	18.6	18.4	17.8	17.1	16.7	16.4	15.5	13.3	12.2	12.2	18.6	15.7
Aug 24	12	11.9	11.7	11.6	11.5	11.5	11.8	12.4	13.7	15	15.8	15.7	17.2	18.1	17	18.1	18.2	17.5	16.3	15.7	15.2	14.2	13.4	12.4	11.5	18.2	14.5
Aug 25	12.3	11.8	11.6	11	10.2	9.7	9.7	10.5	12.4	15	17.4	18.8	19.7	20.5	21	20.7	21.3	20.5	19	17.3	16.5	15.8	15.1	14.3	9.7	21.3	15.5
Aug 26	13.3	12.8	12.6	12	11.6	11.1	11.5	13.7	15.7	17.8	20	22	23.7	24.7	25.2	25.5	25.6	24.9	23	21	19.3	18.1	17.6	16.7	11.1	25.6	18.3
Aug 27	16.4	16	15.5	15.2	14.5	13.8	13.4	14.3	16.2	17.1	18.4	19.2	20.3	21.5	22.4	23.1	23	22.2	21.2	19.9	18.8	18	17.3	16.4	13.4	23.1	18.1
Aug 28	15	14.6	14.4	14.9	15.4	14.2	13.8	15.4	17.7	20.4	22.7	23.6	25.4	26.9	27.8	28.7	28.3	28	27.2	24.6	23.3	21.6	20.2	19.4	13.8	28.7	21.0
Aug 29	18.6	18	17.4	16.5	16.4	15.3	16.4	18.2	20.9	22.7	24.8	26.5	27.6	28.3	28.7	29	**29.1**	28	25.8	23.8	22.7	21.8	21.1	20.7	15.3	**29.1**	**22.4**
Aug 30	19.9	18.8	17.6	17.6	18	16.8	16	17.1	18.7	18.5	18.1	18.7	20	21.8	22.1	23.2	23.9	24	23.4	22	21.7	21.6	20.5	19.2	16.0	24.0	20.0
Aug 31	19.4	18.7	18.6	17.5	16.6	15.9	15.2	15.3	16.2	17.2	18.1	19.7	21.1	22.5	22.3	21	20.5	20.3	19.4	18.2	17.2	16.5	15.8	15.4	15.2	22.5	18.3
Diurnal Maximum	19.9	18.8	18.6	17.6	18.0	16.8	17.8	19.4	21.2	22.7	24.8	26.5	27.6	28.3	28.7	29.0	29.1	28.0	27.2	24.6	23.3	21.8	21.1	20.7			
Diurnal Average	14.3	13.8	13.4	13.0	12.7	12.3	12.8	14.0	15.4	16.7	18.0	18.9	19.8	20.5	20.8	21.1	20.6	20.2	19.4	18.0	16.8	16.1	15.3	14.7			

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

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



Lakeland Industry & Community Association

St. Lina Site - August 2023

Summary of Hourly Averages

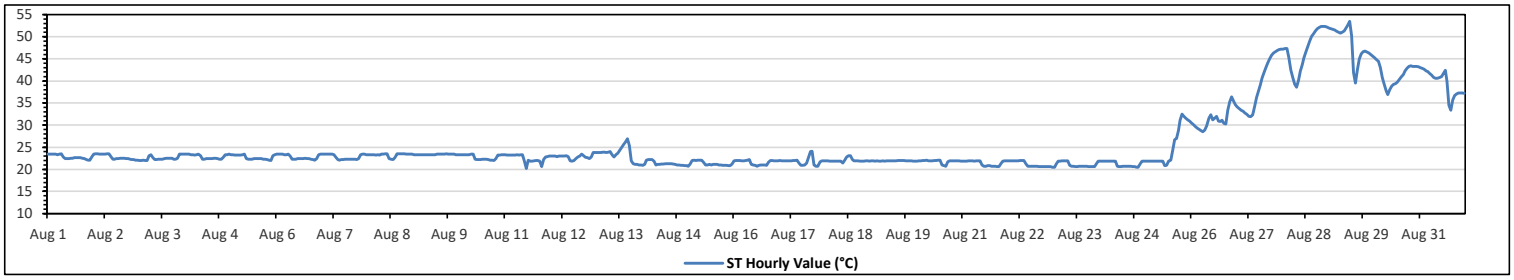
STATION TEMPERATURE (ST) in Degree Celsius

Maximum Hourly Value:	53.5	°C	on Aug 29 at hr 11	Hours in Service:	744	
Maximum Daily Value:	48.5	°C	on Aug 29	Hours of Data:	744	
Minimum Hourly Value:	20.2	°C	on Aug 11 at hr 11	Hours of Missing Data:	0	
Minimum Daily Value:	21.1	°C	on Aug 23	Hours of Calibration:	0	
Monthly Average:	26.0	°C		Operational Uptime:	100.0	

Day	Hourly Period Starting at (MST)																							Daily	Daily	Daily
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Minimum	Maximum	Average
Aug 1	23.4	23.4	23.4	23.4	23.4	23.3	23.4	23.5	22.8	22.4	22.4	22.4	22.5	22.5	22.6	22.6	22.6	22.6	22.5	22.4	22.2	22.1	22.1	22.8	22.1	23.5	22.8
Aug 2	23.4	23.5	23.5	23.4	23.4	23.4	23.4	23.5	23.5	22.9	22.3	22.3	22.4	22.4	22.5	22.5	22.5	22.4	22.4	22.3	22.2	22.2	22.1	22.1	22.1	23.5	22.8
Aug 3	22.0	22.0	22.1	22.0	22.0	23.1	23.3	22.6	22.2	22.2	22.3	22.3	22.3	22.4	22.5	22.5	22.5	22.5	22.3	22.3	22.5	23.4	23.4	23.4	22.0	23.4	22.5
Aug 4	23.4	23.4	23.4	23.3	23.3	23.2	23.3	23.4	23.1	22.3	22.3	22.4	22.4	22.4	22.4	22.5	22.5	22.4	22.3	22.3	22.7	23.3	23.3	23.4	22.3	23.4	22.9
Aug 5	23.3	23.3	23.2	23.2	23.2	23.2	23.3	23.4	22.4	22.3	22.3	22.3	22.4	22.4	22.4	22.4	22.4	22.3	22.3	22.2	22.1	22.0	23.1	23.3	22.0	23.4	22.7
Aug 6	23.4	23.4	23.4	23.4	23.3	23.3	23.4	23.0	22.3	22.3	22.3	22.4	22.4	22.4	22.4	22.5	22.4	22.4	22.3	22.2	22.1	22.4	23.3	23.4	22.1	23.4	22.8
Aug 7	23.4	23.4	23.4	23.4	23.4	23.4	23.3	22.7	22.2	22.1	22.2	22.2	22.3	22.3	22.3	22.3	22.3	22.3	22.2	22.4	23.3	23.4	23.4	23.3	22.1	23.4	22.8
Aug 8	23.3	23.3	23.3	23.3	23.2	23.3	23.2	23.4	23.4	23.5	23.5	22.4	22.3	22.2	22.7	23.5	23.5	23.5	23.5	23.5	23.4	23.4	23.4	23.4	22.2	23.5	23.2
Aug 9	23.3	23.3	23.3	23.3	23.3	23.3	23.3	23.3	23.3	23.3	23.3	23.3	23.4	23.4	23.4	23.4	23.4	23.5	23.4	23.4	23.4	23.4	23.3	23.3	23.3	23.5	23.3
Aug 10	23.3	23.3	23.3	23.3	23.3	23.3	23.4	23.4	22.3	22.2	22.2	22.2	22.3	22.3	22.3	22.2	22.1	22.1	22.0	22.4	23.2	23.2	23.3	23.3	22.0	23.4	22.8
Aug 11	23.3	23.2	23.2	23.2	23.2	23.2	23.3	23.2	23.3	23.3	21.8	**20.2**	22.1	21.8	21.8	21.9	22.0	22.0	21.8	20.6	22.2	22.8	22.9	23.0	**20.2**	23.3	22.5
Aug 12	23.0	23.0	23.0	22.9	23.0	23.0	23.0	23.0	23.1	22.9	21.9	21.8	22.0	22.4	22.8	23.0	23.4	23.1	22.7	22.6	22.4	22.8	23.8	23.8	21.8	23.8	22.9
Aug 13	23.8	23.8	23.8	23.9	23.9	23.8	23.9	24.0	23.3	22.8	23.3	23.7	24.3	25.0	25.6	26.2	26.9	25.4	21.9	21.3	21.1	21.1	21.0	21.0	21.0	26.9	23.5
Aug 14	20.9	21.1	22.1	22.2	22.2	22.2	21.8	21.0	21.1	21.1	21.2	21.2	21.3	21.3	21.3	21.3	21.2	21.1	21.0	21.0	20.9	20.9	20.8	20.8	20.8	22.2	21.3
Aug 15	20.7	21.2	22.0	22.1	22.0	22.1	22.1	22.1	21.5	21.0	21.0	21.1	21.0	21.1	21.1	21.1	21.0	21.0	20.9	20.9	20.9	20.8	20.8	21.2	20.7	22.1	21.3
Aug 16	21.9	22.0	22.0	22.0	21.9	21.9	22.0	22.1	22.2	21.1	21.0	20.9	20.7	20.9	21.0	21.0	21.0	20.9	21.6	22.0	22.0	21.9	21.9	21.9	20.7	22.2	21.6
Aug 17	22.0	21.9	21.9	21.9	21.9	21.9	21.9	22.0	22.0	22.1	21.4	20.9	20.9	21.0	21.4	22.7	24.0	24.1	21.0	20.7	20.7	21.7	21.9	21.9	20.7	24.1	21.8
Aug 18	21.9	21.9	21.8	21.8	21.8	21.8	21.8	21.8	21.8	21.4	22.1	22.8	23.1	23.1	22.2	21.9	21.9	21.9	21.8	21.8	21.8	21.9	21.9	21.8	21.4	23.1	22.0
Aug 19	21.9	21.9	21.8	21.9	21.8	21.8	21.9	21.8	21.9	21.9	21.9	21.9	21.9	21.9	22.0	22.0	22.0	22.0	21.9	21.9	21.9	21.9	21.8	21.8	21.8	22.0	21.9
Aug 20	21.8	21.9	21.9	22.0	22.0	22.1	21.9	21.9	21.9	22.0	22.0	22.1	22.1	21.0	20.8	20.7	21.7	21.9	21.9	21.9	21.9	21.9	21.9	21.8	20.7	22.1	21.8
Aug 21	21.8	21.8	21.8	21.9	21.9	21.9	21.8	21.9	21.9	21.9	21.0	20.7	20.7	20.8	20.8	20.7	20.7	20.7	20.6	20.6	21.3	21.8	21.9	21.9	20.6	21.9	21.4
Aug 22	21.9	21.9	21.9	21.9	21.9	21.9	22.0	22.0	22.0	21.3	20.7	20.7	20.7	20.7	20.7	20.7	20.6	20.6	20.6	20.6	20.6	20.6	20.6	20.5	20.5	22.0	21.2
Aug 23	20.5	21.2	21.8	21.8	21.9	21.9	21.9	21.9	20.9	20.7	20.7	20.6	20.6	20.7	20.7	20.7	20.7	20.7	20.6	20.6	20.6	20.6	21.2	21.8	20.5	21.9	**21.1**
Aug 24	21.8	21.8	21.8	21.8	21.8	21.8	21.8	21.8	21.8	20.7	20.6	20.6	20.7	20.7	20.7	20.7	20.7	20.6	20.6	20.5	20.5	21.2	21.8	21.8	20.5	21.8	21.2
Aug 25	21.8	21.8	21.8	21.8	21.8	21.8	21.8	21.8	21.8	21.8	20.8	20.9	21.8	22.1	24.3	26.7	27.0	28.8	31.1	32.5	32.0	31.5	31.2	30.9	20.8	32.5	25.0
Aug 26	30.5	30.1	29.7	29.3	29.0	28.7	28.5	28.9	29.8	31.5	32.3	31.2	31.5	32.0	30.9	30.8	31.1	30.4	30.3	33.4	35.2	36.4	35.4	34.6	28.5	36.4	31.3
Aug 27	34.1	33.7	33.4	33.1	32.8	32.4	32.0	31.9	32.3	34.2	36.2	37.7	39.1	40.6	41.8	43.0	44.1	45.0	45.8	46.3	46.6	46.9	47.1	47.2	31.9	47.2	39.1
Aug 28	47.2	47.3	47.3	45.2	42.5	40.8	39.3	38.6	40.1	42.2	43.7	45.2	46.5	47.8	49.0	50.1	50.7	51.3	51.8	52.1	52.3	52.3	52.3	52.2	38.6	52.3	47.0
Aug 29	52.0	51.8	51.7	51.5	51.2	51.0	50.8	51.0	51.3	51.9	52.6	**53.5**	50.2	41.9	39.5	42.5	44.9	46.1	46.6	46.7	46.5	46.3	45.9	45.6	39.5	**53.5**	**48.5**
Aug 30	45.2	44.8	44.4	43.0	40.7	39.2	37.8	36.9	38.0	38.8	39.2	39.4	39.7	40.3	40.9	41.5	42.2	42.8	43.3	43.4	43.3	43.3	43.3	43.2	36.9	45.2	41.4
Aug 31	43.0	42.8	42.6	42.3	42.1	41.7	41.3	40.8	40.6	40.6	40.7	41.0	41.7	42.4	39.9	34.5	33.4	35.7	36.7	37.1	37.3	37.3	37.3	37.2	33.4	43.0	39.6
Diurnal Maximum	52.0	51.8	51.7	51.5	51.2	51.0	50.8	51.0	51.3	51.9	52.6	53.5	50.2	47.8	49.0	50.1	50.7	51.3	51.8	52.1	52.3	52.3	52.3	52.2			
Diurnal Average	26.2	26.2	26.3	26.1	25.9	25.8	25.7	25.6	25.5	25.5	25.5	25.6	25.7	25.6	25.6	25.8	26.0	26.2	26.1	26.3	26.4	26.6	26.7	26.7			

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

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



Lakeland Industry & Community Association

St. Lina Site - August 2023

Summary of Hourly Averages

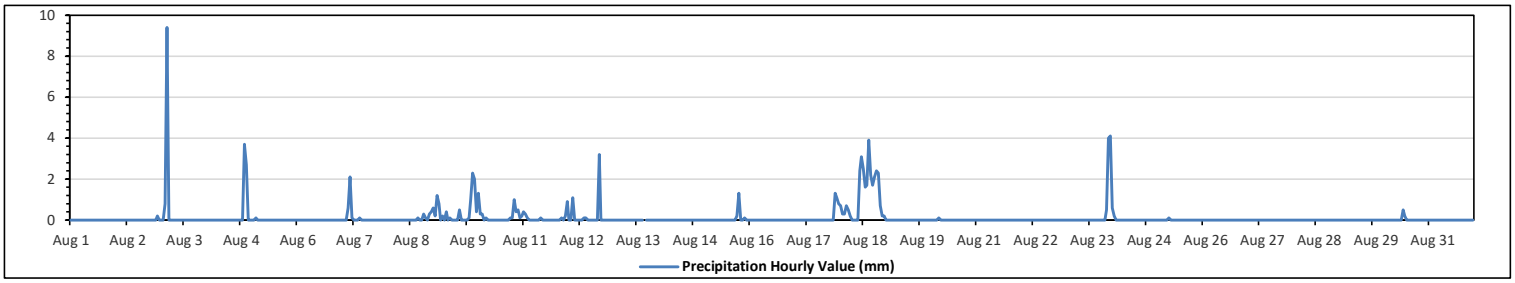
PRECIPITATION in mm

Maximum Hourly Value:	9.4	mm	on Aug 3 at hr 3	Hours in Service:	744	
Maximum Daily Value:	29.7	mm	on Aug 18	Hours of Data:	743	
Minimum Hourly Value:	0.0	mm	on Aug 1 at hr 0	Hours of Missing Data:	0	
Minimum Daily Value:	0.0	mm	on Aug 1	Hours of Calibration:	1	
Monthly Total:	86.6	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	0	0	0	0.0	0.0	0.0
Aug 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0	0.0	0.2	0.2
Aug 3	0	0	0.8	**9.4**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	**9.4**	10.2
Aug 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3.7	2.7	0	0	0.0	3.7	6.4
Aug 5	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1	0.1
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
Aug 7	0	0	0	0.6	2.1	0.1	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	2.1	2.9
Aug 8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0.3	0.1	0	0.3	0.4	0.0	0.4	1.2
Aug 9	0.6	0.2	1.2	0.8	0	0.2	0	0.4	0	0.1	0	0	0	0	0.5	0	0	0	0	0.1	1	2.3	2	0.4	0.0	2.3	9.8
Aug 10	1.3	0.3	0.3	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.1	1	0.4	0.5	0.1	0.2	0.0	1.3	4.4
Aug 11	0.4	0.3	0.1	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0.1	0	0.2	0.9	0.0	0.9	2.1
Aug 12	0	0	1.1	0	0	0	0	0	0.1	0.1	0	0	0	0	0	0	3.2	0	0	0	0	0	0	0	0.0	3.2	4.5
Aug 13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	C	0	0	0	0	0	0	0	0.0	0.0	0.0
Aug 14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Aug 15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	1.3	0	0	0.1	0	0	0.0	1.3	1.6
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
Aug 17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.3	1.1	0.8	0.0	1.3	3.2
Aug 18	0.7	0.3	0.3	0.7	0.5	0.2	0	0	0	0	2.4	3.1	2.5	1.6	1.7	3.9	2.2	1.7	2.1	2.4	2.3	0.7	0.2	0.2	0.0	3.9	**29.7**
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
Aug 20	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1	0.1
Aug 21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
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
Aug 23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	4	4.1	0.0	4.1	8.6
Aug 24	0.6	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	0.6	0.8
Aug 25	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 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	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	0.5	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.5	0.7
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	1.3	0.3	1.2	9.4	2.1	0.2	0.1	0.4	0.1	0.1	2.4	3.1	2.5	1.6	1.7	3.9	3.2	1.7	2.1	2.4	3.7	2.7	4.0	4.1			
Diurnal Average	0.1	0.0	0.1	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.2	0.3	0.3	0.2			

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

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



Lakeland Industry & Community Association

St. Lina Site - August 2023

Summary of Hourly Averages

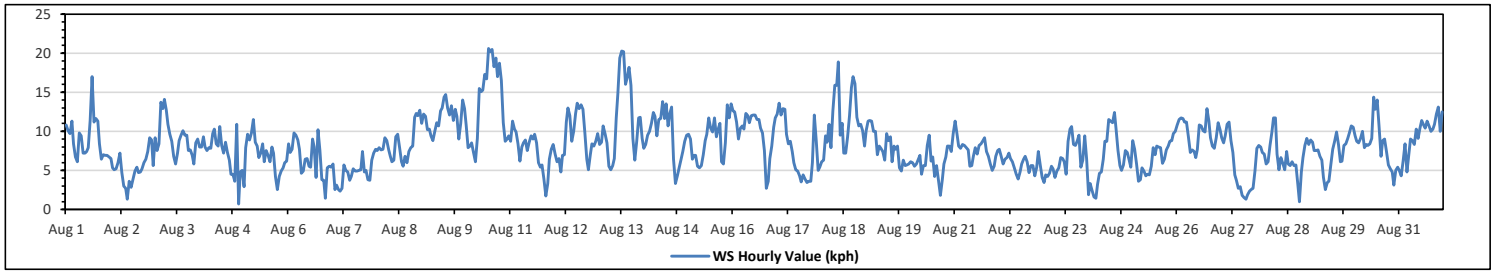
VECTOR WIND SPEED (VWS) in km/hr

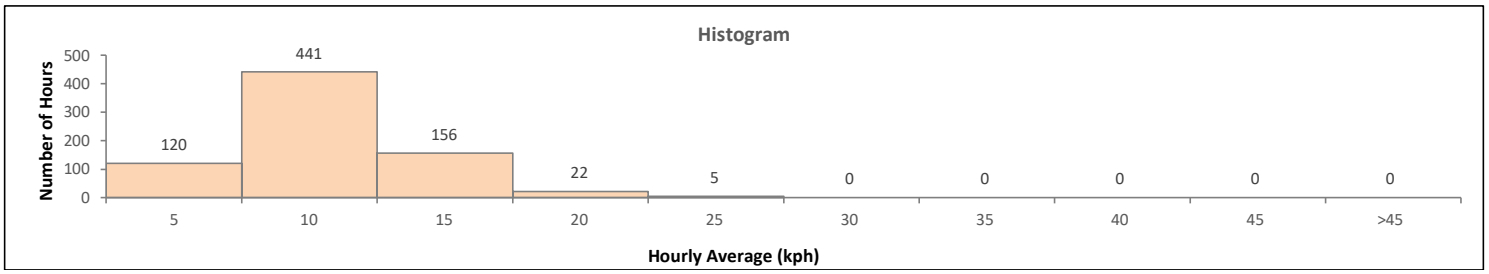
Maximum Hourly Value:	20.6	kph	on Aug 10 at hr 12	Hours in Service:	744	
Maximum Daily Value:	13.6	kph	on Aug 10	Hours of Data:	744	
Minimum Hourly Value:	0.7	kph	on Aug 4 at hr 21	Hours of Missing Data:	0	
Minimum Daily Value:	4.7	kph	on Aug 7	Hours of Calibration:	0	
Monthly Average:	2.3	kph		Operational 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	10.8	10.1	9.7	11.3	8.4	6.7	6.1	9.8	9.4	7.2	7.2	7.4	7.9	11.4	17.0	11.2	11.6	11.3	8.4	6.4	7.0	6.9	6.9	6.7	6.1	17.0	9.0
Aug 2	6.5	5.3	5.1	5.2	6.0	7.2	4.7	3.0	2.7	1.3	3.6	2.8	3.9	4.9	5.4	4.7	4.8	5.2	6.0	6.4	7.4	9.2	8.9	5.6	1.3	9.2	5.2
Aug 3	9.2	7.5	8.4	13.7	12.9	14.1	12.7	10.9	9.6	8.7	6.8	5.8	7.2	8.8	9.5	10.1	9.5	9.5	7.5	7.6	6.9	5.8	8.5	9.0	5.8	14.1	9.2
Aug 4	8.0	8.0	9.3	8.0	7.5	7.9	7.8	9.7	10.3	8.4	8.1	10.6	8.2	7.2	8.6	7.3	6.3	4.5	4.5	3.6	10.9	**0.7**	4.8	5.0	**0.7**	10.9	7.3
Aug 5	2.9	7.9	9.6	8.9	9.8	11.5	8.6	8.1	6.6	7.2	8.4	6.1	7.5	6.9	6.1	8.0	7.2	4.2	2.5	4.2	4.9	5.3	6.0	6.2	2.5	11.5	6.9
Aug 6	8.4	7.3	7.7	9.8	9.5	8.9	7.7	4.6	4.9	6.4	6.5	5.5	5.4	9.0	8.0	4.1	10.2	7.5	3.8	3.7	1.4	5.3	5.5	5.4	1.4	10.2	6.5
Aug 7	5.8	2.5	3.1	2.5	2.3	2.7	5.7	5.0	4.8	3.7	4.2	5.2	4.9	4.9	5.0	5.1	7.4	4.8	5.0	3.8	3.7	6.3	7.2	7.7	2.3	7.7	**4.7**
Aug 8	7.5	7.9	7.6	7.7	9.2	8.8	7.6	6.8	6.1	6.3	9.3	9.6	7.9	6.1	5.5	6.8	6.0	7.4	7.9	8.1	11.8	12.3	12.0	12.7	5.5	12.7	8.3
Aug 9	11.0	12.2	11.9	10.2	10.3	9.4	8.8	10.0	11.1	10.7	12.6	13.0	14.4	14.7	13.0	12.1	13.3	11.4	12.8	11.9	9.0	11.0	14.0	12.9	8.8	14.7	11.7
Aug 10	10.8	7.9	8.1	8.5	7.3	6.1	9.1	15.5	15.1	15.3	17.3	16.7	**20.6**	20.2	20.5	18.3	19.4	17.0	18.7	16.5	11.1	8.7	9.0	9.4	6.1	**20.6**	**13.6**
Aug 11	8.7	11.3	10.3	9.9	8.4	6.2	8.0	8.5	8.9	7.5	8.6	9.4	9.0	9.6	8.5	6.0	5.4	5.7	3.9	1.7	3.3	6.4	7.7	8.3	1.7	11.3	7.6
Aug 12	7.1	6.1	6.5	4.8	6.9	7.0	11.2	13.0	12.0	8.7	10.0	12.3	13.6	12.9	13.4	12.8	9.8	6.4	5.1	7.0	8.4	8.1	8.7	9.7	4.8	13.6	9.2
Aug 13	8.3	8.6	10.7	9.7	8.5	5.5	5.1	5.6	6.5	11.7	14.8	19.4	20.3	20.2	16.0	17.0	18.2	15.9	9.1	6.3	8.7	11.7	11.8	9.1	5.1	20.3	11.6
Aug 14	7.8	8.3	9.5	10.0	11.0	12.4	11.9	9.4	11.5	11.6	13.8	11.6	13.5	10.7	12.2	13.1	6.4	3.3	4.3	5.4	6.3	7.4	8.7	9.5	3.3	13.8	9.6
Aug 15	9.6	9.0	6.4	6.9	6.9	5.5	5.3	5.6	7.0	8.8	9.6	11.7	10.4	9.9	11.7	9.3	10.2	11.0	6.1	5.8	8.5	13.4	11.7	13.5	5.3	13.5	8.9
Aug 16	12.6	12.5	11.2	9.0	10.4	10.7	10.3	12.3	12.0	11.1	12.0	12.1	12.1	11.5	11.5	10.4	9.8	7.5	2.7	3.6	6.5	8.1	10.5	11.7	2.7	12.6	10.1
Aug 17	12.2	13.6	12.1	12.9	12.8	9.6	8.4	8.7	7.4	6.0	5.1	4.9	4.3	3.5	4.4	3.9	3.4	3.6	3.6	6.0	12.1	8.8	5.0	5.4	3.4	13.6	7.4
Aug 18	6.1	6.3	9.4	8.6	10.9	7.9	12.6	15.9	15.9	18.9	9.5	11.0	7.2	7.2	9.3	12.0	15.6	17.0	16.1	11.8	10.7	10.9	10.1	8.1	6.1	18.9	11.2
Aug 19	10.1	11.3	11.4	11.3	10.0	10.0	7.0	8.1	7.8	7.4	6.3	9.7	8.8	9.3	6.1	8.1	7.7	8.1	5.3	4.9	6.3	5.6	5.7	5.8	4.9	11.4	8.0
Aug 20	6.1	6.0	5.5	5.8	6.3	6.9	4.5	5.6	5.6	8.2	9.5	6.2	6.7	4.2	5.6	3.7	1.8	3.8	5.8	6.7	8.1	8.1	7.4	9.7	1.8	9.7	6.2
Aug 21	11.3	9.6	8.1	7.8	8.3	8.2	7.9	7.6	5.5	5.6	6.8	7.9	7.1	8.2	8.4	8.8	9.2	7.4	6.8	5.8	5.0	5.5	6.8	7.5	5.0	11.3	7.5
Aug 22	7.7	6.8	5.8	6.4	6.6	7.2	6.5	6.1	5.3	4.5	3.9	4.8	5.8	6.4	6.8	6.1	4.7	5.6	5.6	4.3	5.4	7.4	5.7	4.1	3.9	7.7	5.8
Aug 23	3.4	4.4	4.2	4.6	5.5	5.2	4.1	4.9	5.3	6.6	6.5	6.1	4.5	8.7	10.3	10.6	8.3	8.2	8.8	9.5	5.4	6.3	9.4	6.4	3.4	10.6	6.6
Aug 24	1.9	3.3	2.4	1.6	1.4	3.2	4.6	4.8	6.4	8.7	8.7	11.5	11.3	11.1	12.4	10.3	7.5	5.6	5.0	5.7	7.5	7.3	6.3	5.4	1.4	12.4	6.4
Aug 25	8.8	7.7	5.8	3.6	3.8	5.3	4.9	4.3	4.5	4.4	5.5	7.9	7.0	8.1	8.0	7.9	5.9	6.4	7.6	8.1	8.7	8.8	9.7	10.0	3.6	10.0	6.8
Aug 26	10.8	11.5	11.7	11.6	11.2	11.2	9.3	7.3	7.6	7.4	6.6	7.7	10.8	10.7	10.1	9.9	12.9	11.3	9.2	8.1	7.8	9.2	11.1	10.2	6.6	12.9	9.8
Aug 27	9.2	8.5	9.4	10.9	11.2	8.8	7.3	4.4	3.7	2.7	2.9	1.8	1.5	1.3	1.9	2.3	2.5	2.7	4.9	7.8	8.2	8.0	7.3	7.1	1.3	11.2	5.7
Aug 28	5.8	6.1	8.2	9.9	11.7	11.7	7.1	5.1	6.6	5.9	5.1	7.4	5.8	5.6	6.1	5.6	5.7	3.2	1.0	4.8	6.6	8.2	9.1	8.3	1.0	11.7	6.7
Aug 29	8.9	8.6	7.5	7.5	7.6	6.8	6.3	4.1	2.5	3.4	3.6	5.7	7.7	8.7	9.9	8.3	6.1	6.2	8.2	8.4	9.1	9.8	10.7	10.5	2.5	10.7	7.3
Aug 30	9.4	8.7	8.5	9.1	10.0	7.9	8.3	8.2	8.4	9.1	14.4	12.8	14.0	10.5	6.8	8.8	9.0	7.4	5.7	5.2	4.8	3.1	5.0	5.4	3.1	14.4	8.4
Aug 31	5.0	4.3	6.2	8.4	4.8	6.7	9.0	8.8	8.3	10.3	9.1	10.3	11.4	10.8	10.4	11.3	10.7	10.0	10.3	10.9	12.2	13.1	10.0	12.5	4.3	13.1	9.4
Diurnal Maximum	12.6	13.6	12.1	13.7	12.9	14.1	12.7	15.9	15.9	18.9	17.3	19.4	20.6	20.2	20.5	18.3	19.4	17.0	18.7	16.5	12.2	13.4	14.0	13.5			
Diurnal Average	8.1	8.0	8.1	8.3	8.3	8.0	7.7	7.8	7.7	7.9	8.3	8.9	9.1	9.1	9.3	8.8	8.6	7.7	6.8	6.8	7.5	8.0	8.4	8.3			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	ND	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.



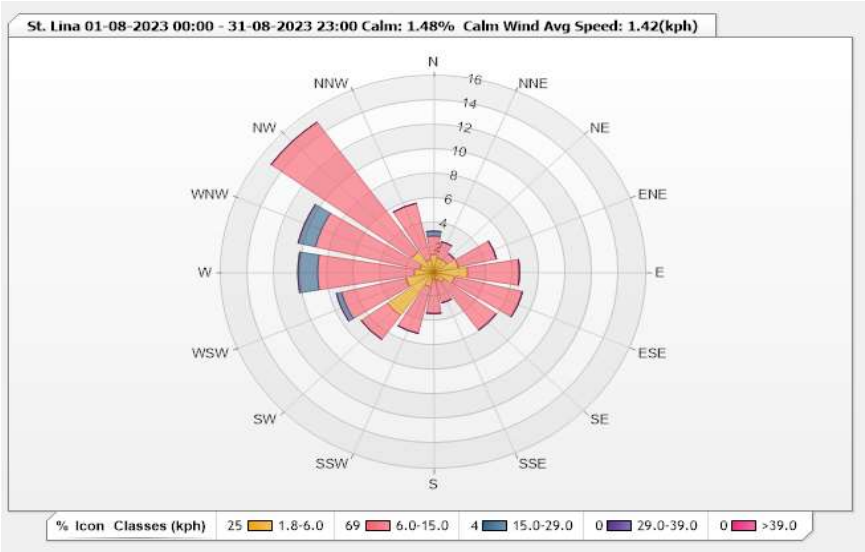


Station: St. Lina Monitor: WDS [kph] Monthly: 08-2023

Type: Wind Rose
Direction: Blowing From (Wind Frequency)
Time Base: 1 - Hour

Calm (WS<1.8kph): 1.48% 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	1.48	1.48	0.4	0	0	3.36
NNE	1.21	1.34	0	0	0	2.55
NE	1.21	0.67	0	0	0	1.88
ENE	1.88	2.96	0	0	0	4.84
E	2.55	3.9	0	0	0	6.45
ESE	1.61	5.24	0	0	0	6.85
SE	0.94	4.84	0	0	0	5.78
SSE	0.67	1.88	0	0	0	2.55
S	0.54	2.82	0	0	0	3.36
SSW	1.21	3.9	0	0	0	5.11
SW	4.3	2.42	0	0	0	6.72
WSW	2.15	4.97	0.4	0	0	7.52
W	1.48	7.26	1.48	0	0	10.22
WNW	1.08	8.06	1.34	0	0	10.48
NW	2.02	13.04	0	0	0	15.06
NNW	1.08	4.7	0	0	0	5.78
Summary	25.41	69.48	3.62	0	0	98.51



Lakeland Industry & Community Association

St. Lina Site - August 2023

Summary of Hourly Averages

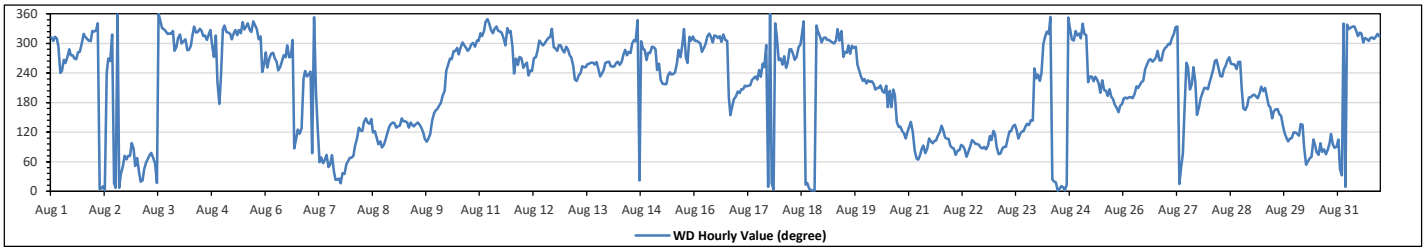
WIND DIRECTION (VWD) in sector

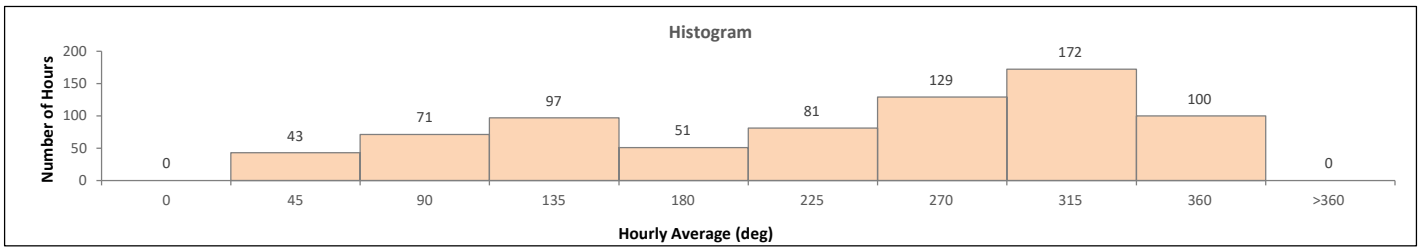
Monthly Average:	281 (W)	degree	
Hours in Service:	744		
Hours of Data:	744		
Hours of Missing Data:	0		
Hours of Calibration:	0		
Operational Uptime:	100.0		

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	NW	WNW	NW	NW	WNW	WSW	WSW	W	WSW	W	WNW	W	W	W	W	W	W	WNW	NW	NW	NW	NW	WNW	NW	289	WNW
Aug 2	NW	NW	NNW	N	N	N	N	WSW	W	W	NW	NNE	N	N	N	NE	NE	ENE	ENE	ENE	ENE	E	E	NE	28	NNE
Aug 3	ENE	NE	NNE	NNE	NE	ENE	ENE	ENE	ENE	ENE	NE	NNE	N	NNW	NNW	NNW	NW	NW	NW	NW	NW	WNW	WNW	NW	12	NNE
Aug 4	NW	WNW	WNW	NW	WNW	WNW	WNW	NW	NNW	NW	NW	NNW	NW	NW	NW	NW	NW	NW	WNW	W	NW	SW	S	SW	309	NW
Aug 5	NNW	NNW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NNW	NNW	NNW	NNW	NW	NW	NNW	NNW	NNW	NW	NW	WSW	WSW	321	NW
Aug 6	W	WSW	W	W	W	W	W	WSW	WSW	W	W	W	WNW	W	W	NW	E	ESE	SE	ESE	SE	SW	WSW	SW	263	W
Aug 7	SW	WSW	ENE	N	SSW	SE	ENE	ENE	ENE	ENE	ENE	NE	NE	ENE	NE	NNE	NNE	NNE	NNE	NE	NE	NE	ENE	ENE	51	NE
Aug 8	ENE	ENE	E	ESE	SE	ESE	ESE	SE	SE	SE	SE	SE	ESE	ESE	ESE	E	E	E	E	ESE	ESE	SE	SE	SE	118	ESE
Aug 9	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	ESE	ESE	E	ESE	ESE	SE	SSE	SSE	133	SE
Aug 10	SSE	S	S	SSW	SSW	WSW	WSW	W	W	WNW	WNW	WNW	W	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	NW	WNW	279	W
Aug 11	NW	NW	NW	NNW	NNW	NNW	NW	NW	NNW	NNW	NW	NW	NW	NW	WNW	NNW	NW	NW	WNW	WSW	W	WSW	W	W	316	NW
Aug 12	WSW	WSW	W	SW	WSW	WSW	W	W	WNW	NW	WNW	WNW	WNW	NW	NW	NW	NNW	WNW	WNW	WNW	WNW	WNW	WNW	W	288	WNW
Aug 13	WNW	WNW	W	W	WSW	SW	SW	SW	WSW	WSW	WSW	WSW	WSW	WSW	W	W	WSW	W	WSW	SW	SW	WSW	WSW	W	257	WSW
Aug 14	W	WSW	WSW	WSW	WSW	W	WSW	W	W	WNW	W	W	W	WNW	NW	WNW	NNW	NNE	WNW	WNW	WNW	W	W	W	279	W
Aug 15	WNW	WNW	WNW	WSW	WSW	SW	SW	SW	SW	SW	WSW	SW	SW	WSW	WSW	WNW	W	WNW	NNW	W	WSW	NW	NW	NW	269	W
Aug 16	WNW	WNW	WNW	WNW	W	WNW	WNW	NW	NW	NW	WNW	NW	NW	NW	NW	WNW	NW	NW	WNW	S	SSE	S	S	S	297	WNW
Aug 17	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SW	SW	SW	SW	WSW	SW	WSW	WSW	WNW	N	N	NNE	N	NNW	NW	W	234	SW
Aug 18	W	WSW	W	WSW	WSW	WNW	WNW	W	W	W	WNW	WNW	NW	NNW	NNE	NNE	N	N	N	N	NNW	NW	NW	WNW	312	NW
Aug 19	NW	NW	NW	NW	WNW	WNW	WNW	NW	NNW	NW	NW	W	W	W	WNW	W	WNW	WNW	WNW	WSW	WSW	SW	SW	SW	292	WNW
Aug 20	SW	SW	SW	SW	SW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	S	SSW	S	SSW	SSW	SE	SE	SE	ESE	ESE	ESE	ESE	181	S
Aug 21	SE	SE	ESE	E	ENE	ENE	ENE	E	E	ENE	E	ESE	E	E	E	ESE	ESE	ESE	SE	ESE	ESE	ESE	ESE	E	102	E
Aug 22	E	E	ENE	E	E	E	E	E	ENE	ENE	E	ESE	E	E	E	E	E	E	E	E	E	ESE	ESE	ESE	91	E
Aug 23	ESE	E	ENE	ENE	E	E	E	ESE	ESE	ESE	SE	SE	SE	ESE	ESE	ESE	ESE	SE	SE	SE	SE	SE	WSW	SW	124	ESE
Aug 24	SW	SW	WSW	WNW	NW	NW	NW	N	NNE	NNE	NNE	N	N	N	N	N	NNE	N	NNW	NW	NW	NW	NW	NW	349	NNW
Aug 25	NW	NNW	NW	NW	SW	SW	SW	SW	SW	SW	SW	SSW	SW	SSW	SSW	S	SSW	S	S	S	SSE	SSE	S	S	208	SSW
Aug 26	S	S	S	S	S	S	SSW	SSW	SSW	SW	SW	SW	WSW	WSW	W	W	W	W	W	WNW	W	W	WNW	WNW	235	SW
Aug 27	WNW	WNW	WNW	NW	NW	NNW	NNW	NNE	NE	ENE	SSE	W	WSW	SSW	SW	WSW	SW	SSE	SSE	S	SSW	SSW	SSW	SSW	269	W
Aug 28	SW	SW	WSW	W	W	WSW	SW	SW	WSW	WSW	W	W	WSW	WSW	WSW	WSW	W	W	SSW	SSE	SSE	S	S	S	238	SW
Aug 29	SSW	SSW	S	S	SSW	SSW	SSW	SSW	S	S	S	SE	SSE	SSE	SSE	SSE	SSE	SE	ESE	ESE	E	ESE	ESE	ESE	157	SSE
Aug 30	ESE	ESE	ESE	SE	SE	E	NE	ENE	ENE	ENE	ESE	E	ENE	ENE	E	E	E	ENE	E	E	ESE	E	E	E	92	E
Aug 31	ESE	NE	NNE	NNW	N	NNW	NNW	NNW	NNW	NNW	NW	NW	NW	NW	WNW	NW	NW	WNW	NW	NW	NW	NW	NW	NW	323	NW

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	ND	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.





Lakeland Industry & Community Association

St. Lina Site - August 2023

Summary of Hourly Averages

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

WIND SPEED

Maximum Hourly Value:	20.6	kph	on Aug 10 at hr 12	Hours in Service:	744
Maximum Daily Value:	13.6	kph	on Aug 10	Hours of Data:	744
Minimum Hourly Value:	0.7	kph	on Aug 4 at hr 21	Hours of Missing Data:	0
Minimum Daily Value:	4.7	kph	on Aug 7	Hours of Calibration:	0
Monthly Average:	2.3	kph		Operational Uptime:	100.0

WIND DIRECTION

Monthly Average: 281 degree (W)

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	10.8	10.1	9.7	11.3	8.4	6.7	6.1	9.8	9.4	7.2	7.2	7.4	7.9	11.4	17.0	11.2	11.6	11.3	8.4	6.4	7.0	6.9	6.9	6.7	6.1	17.0	9.0
	NW	WNW	NW	NW	WNW	WSW	WSW	W	WSW	W	WNW	W	W	W	W	W	W	WNW	NW	NW	NW	NW	WNW	NW			
Aug 2	6.5	5.3	5.1	5.2	6.0	7.2	4.7	3.0	2.7	1.3	3.6	2.8	3.9	4.9	5.4	4.7	4.8	5.2	6.0	6.4	7.4	9.2	8.9	5.6	1.3	9.2	5.2
	NW	NW	NNW	N	N	N	N	WSW	W	W	NW	NNE	N	N	N	NE	NE	ENE	ENE	ENE	ENE	E	E	NE			
Aug 3	9.2	7.5	8.4	13.7	12.9	14.1	12.7	10.9	9.6	8.7	6.8	5.8	7.2	8.8	9.5	10.1	9.5	9.5	7.5	7.6	6.9	5.8	8.5	9.0	5.8	14.1	9.2
	ENE	NE	NNE	NNE	NE	ENE	ENE	ENE	ENE	ENE	NE	NNE	N	NNW	NNW	NNW	NW	NW	NW	NW	NW	WNW	WNW	NW			
Aug 4	8.0	8.0	9.3	8.0	7.5	7.9	7.8	9.7	10.3	8.4	8.1	10.6	8.2	7.2	8.6	7.3	6.3	4.5	4.5	3.6	10.9	**0.7**	4.8	5.0	**0.7**	10.9	7.3
	NW	WNW	WNW	NW	WNW	WNW	WNW	NW	NNW	NW	NW	NNW	NW	NW	NW	NW	NW	NW	WNW	W	NW	SW	S	SW			
Aug 5	2.9	7.9	9.6	8.9	9.8	11.5	8.6	8.1	6.6	7.2	8.4	6.1	7.5	6.9	6.1	8.0	7.2	4.2	2.5	4.2	4.9	5.3	6.0	6.2	2.5	11.5	6.9
	NNW	NNW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NNW	NNW	NNW	NNW	NW	NW	NNW	NNW	NNW	NW	NW	WSW	WSW			
Aug 6	8.4	7.3	7.7	9.8	9.5	8.9	7.7	4.6	4.9	6.4	6.5	5.5	5.4	9.0	8.0	4.1	10.2	7.5	3.8	3.7	1.4	5.3	5.5	5.4	1.4	10.2	6.5
	W	WSW	W	W	W	W	W	WSW	WSW	W	W	W	WNW	W	W	NW	E	ESE	SE	ESE	SE	SW	WSW	SW			
Aug 7	5.8	2.5	3.1	2.5	2.3	2.7	5.7	5.0	4.8	3.7	4.2	5.2	4.9	4.9	5.0	5.1	7.4	4.8	5.0	3.8	3.7	6.3	7.2	7.7	2.3	7.7	**4.7**
	SW	WSW	ENE	N	SSW	SE	ENE	ENE	ENE	ENE	ENE	NE	NE	ENE	NE	NNE	NNE	NNE	NNE	NE	NE	NE	ENE	ENE			
Aug 8	7.5	7.9	7.6	7.7	9.2	8.8	7.6	6.8	6.1	6.3	9.3	9.6	7.9	6.1	5.5	6.8	6.0	7.4	7.9	8.1	11.8	12.3	12.0	12.7	5.5	12.7	8.3
	ENE	ENE	E	ESE	SE	ESE	ESE	SE	SE	SE	SE	SE	ESE	ESE	ESE	E	E	E	E	ESE	ESE	SE	SE	SE			
Aug 9	11.0	12.2	11.9	10.2	10.3	9.4	8.8	10.0	11.1	10.7	12.6	13.0	14.4	14.7	13.0	12.1	13.3	11.4	12.8	11.9	9.0	11.0	14.0	12.9	8.8	14.7	11.7
	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	ESE	ESE	E	ESE	ESE	SE	SSE	SSE			
Aug 10	10.8	7.9	8.1	8.5	7.3	6.1	9.1	15.5	15.1	15.3	17.3	16.7	**20.6**	20.2	20.5	18.3	19.4	17.0	18.7	16.5	11.1	8.7	9.0	9.4	6.1	**20.6**	**13.6**
	SSE	S	S	SSW	SSW	WSW	WSW	W	W	WNW	WNW	WNW	W	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	NW	WNW			
Aug 11	8.7	11.3	10.3	9.9	8.4	6.2	8.0	8.5	8.9	7.5	8.6	9.4	9.0	9.6	8.5	6.0	5.4	5.7	3.9	1.7	3.3	6.4	7.7	8.3	1.7	11.3	7.6
	NW	NW	NW	NNW	NNW	NNW	NW	NW	NNW	NNW	NW	NW	NW	NW	WNW	NNW	NW	NW	WNW	WSW	W	WSW	W	W			
Aug 12	7.1	6.1	6.5	4.8	6.9	7.0	11.2	13.0	12.0	8.7	10.0	12.3	13.6	12.9	13.4	12.8	9.8	6.4	5.1	7.0	8.4	8.1	8.7	9.7	4.8	13.6	9.2
	WSW	WSW	W	SW	WSW	WSW	W	W	WNW	NW	WNW	WNW	WNW	NW	NW	NW	NNW	WNW	WNW	WNW	WNW	WNW	WNW	W			
Aug 13	8.3	8.6	10.7	9.7	8.5	5.5	5.1	5.6	6.5	11.7	14.8	19.4	20.3	20.2	16.0	17.0	18.2	15.9	9.1	6.3	8.7	11.7	11.8	9.1	5.1	20.3	11.6
	WNW	WNW	W	W	WSW	SW	SW	SW	WSW	WSW	WSW	WSW	WSW	WSW	W	W	WSW	W	WSW	SW	SW	WSW	WSW	W			
Aug 14	7.8	8.3	9.5	10.0	11.0	12.4	11.9	9.4	11.5	11.6	13.8	11.6	13.5	10.7	12.2	13.1	6.4	3.3	4.3	5.4	6.3	7.4	8.7	9.5	3.3	13.8	9.6
	W	WSW	WSW	WSW	WSW	W	WSW	W	W	WNW	W	W	W	WNW	NW	WNW	NNW	NNE	WNW	WNW	WNW	W	W	W			
Aug 15	9.6	9.0	6.4	6.9	6.9	5.5	5.3	5.6	7.0	8.8	9.6	11.7	10.4	9.9	11.7	9.3	10.2	11.0	6.1	5.8	8.5	13.4	11.7	13.5	5.3	13.5	8.9
	WNW	WNW	WNW	WSW	WSW	SW	SW	SW	SW	SW	WSW	SW	SW	WSW	WSW	WNW	W	WNW	NNW	W	WSW	NW	NW	NW			
Aug 16	12.6	12.5	11.2	9.0	10.4	10.7	10.3	12.3	12.0	11.1	12.0	12.1	12.1	11.5	11.5	10.4	9.8	7.5	2.7	3.6	6.5	8.1	10.5	11.7	2.7	12.6	10.1
	WNW	WNW	WNW	WNW	W	WNW	WNW	NW	NW	NW	WNW	NW	NW	NW	NW	WNW	NW	NW	WNW	S	SSE	S	S	S			
Aug 17	12.2	13.6	12.1	12.9	12.8	9.6	8.4	8.7	7.4	6.0	5.1	4.9	4.3	3.5	4.4	3.9	3.4	3.6	3.6	6.0	12.1	8.8	5.0	5.4	3.4	13.6	7.4
	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SW	SW	SW	SW	WSW	SW	WSW	WSW	WNW	N	N	NNE	N	NNW	NW	W			
Aug 18	6.1	6.3	9.4	8.6	10.9	7.9	12.6	15.9	15.9	18.9	9.5	11.0	7.2	7.2	9.3	12.0	15.6	17.0	16.1	11.8	10.7	10.9	10.1	8.1	6.1	18.9	11.2
	W	WSW	W	WSW	WSW	WNW	WNW	W	W	W	WNW	WNW	NW	NNW	NNE	NNE	N	N	N	N	NNW	NW	NW	WNW			
Aug 19	10.1	11.3	11.4	11.3	10.0	10.0	7.0	8.1	7.8	7.4	6.3	9.7	8.8	9.3	6.1	8.1	7.7	8.1	5.3	4.9	6.3	5.6	5.7	5.8	4.9	11.4	8.0
	NW	NW	NW	NW	WNW	WNW	WNW	NW	NNW	NW	NW	W	W	W	WNW	W	WNW	WNW	WNW	WSW	WSW	SW	SW	SW			
Aug 20	6.1	6.0	5.5	5.8	6.3	6.9	4.5	5.6	5.6	8.2	9.5	6.2	6.7	4.2	5.6	3.7	1.8	3.8	5.8	6.7	8.1	8.1	7.4	9.7	1.8	9.7	6.2
	SW	SW	SW	SW	SW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	S	SSW	S	SSW	SSW	SE	SE	SE	ESE	ESE	ESE	ESE			
Aug 21	11.3	9.6	8.1	7.8	8.3	8.2	7.9	7.6	5.5	5.6	6.8	7.9	7.1	8.2	8.4	8.8	9.2	7.4	6.8	5.8	5.0	5.5	6.8	7.5	5.0	11.3	7.5
	SE	SE	ESE	E	ENE	ENE	ENE	E	E	ENE	E	ESE	E	E	E	ESE	ESE	ESE	SE	ESE	ESE	ESE	ESE	E			
Aug 22	7.7	6.8	5.8	6.4	6.6	7.2	6.5	6.1	5.3	4.5	3.9	4.8	5.8	6.4	6.8	6.1	4.7	5.6	5.6	4.3	5.4	7.4	5.7	4.1	3.9	7.7	5.8
	E	E	ENE	E	E	E	E	E	ENE	ENE	E	ESE	E	E	E	E	E	E	E	E	E	ESE	ESE	ESE			
Aug 23	3.4	4.4	4.2	4.6	5.5	5.2	4.1	4.9	5.3	6.6	6.5	6.1	4.5	8.7	10.3	10.6	8.3	8.2	8.8	9.5	5.4	6.3	9.4	6.4	3.4	10.6	6.6
	ESE	E	ENE	ENE	E	E	E	ESE	ESE	ESE	SE	SE	SE	ESE	ESE	ESE	ESE	SE	SE	SE	SE	SE	WSW	SW			
Aug 24	1.9	3.3	2.4	1.6	1.4	3.2	4.6	4.8	6.4	8.7	8.7	11.5	11.3	11.1	12.4	10.3	7.5	5.6	5.0	5.7	7.5	7.3	6.3	5.4	1.4	12.4	6.4
	SW	SW	WSW	WNW	NW	NW	NW	N	NNE	NNE	NNE	N	N	N	N	N	NNE	N	NNW	NW	NW	NW	NW	NW			
Aug 25	8.8	7.7	5.8	3.6	3.8	5.3	4.9	4.3	4.5	4.4	5.5	7.9	7.0	8.1	8.0	7.9	5.9	6.4	7.6	8.1	8.7	8.8	9.7	10.0	3.6	10.0	6.8
	NW	NNW	NW	NW	SW	SW	SW	SW	SW	SW	SW	SSW	SW	SSW	SSW	S	SSW	S	S	S	SSE	SSE	S	S			
Aug 26	10.8	11.5	11.7	11.6	11.2	11.2	9.3	7.3	7.6	7.4	6.6	7.7	10.8	10.7	10.1	9.9	12.9	11.3	9.2	8.1	7.8	9.2	11.1	10.2	6.6	12.9	9.8
	S	S	S	S	S	S	SSW	SSW	SSW	SW	SW	SW	WSW	WSW	W	W	W	W	W	WNW	W	W	WNW	WNW			
Aug 27	9.2	8.5	9.4	10.9	11.2	8.8	7.3	4.4	3.7	2.7	2.9	1.8	1.5	1.3	1.9	2.3	2.5	2.7	4.9	7.8	8.2	8.0	7.3	7.1	1.3	11.2	5.7
	WNW	WNW	WNW	NW	NW	NNW	NNW	NNE	NE	ENE	SSE	W	WSW	SSW	SW	WSW	SW	SSE	SSE	S	SSW	SSW	SSW	SSW			
Aug 28	5.8	6.1	8.2	9.9	11.7	11.7	7.1	5.1	6.6	5.9	5.1	7.4	5.8	5.6	6.1	5.6	5.7	3.2	1.0	4.8	6.6	8.2	9.1	8.3	1.0	11.7	6.7
	SW	SW	WSW	W	W	WSW	SW	SW	WSW	WSW	W	W	WSW	WSW	WSW	WSW	W	W	SSW	SSE	SSE	S	S	S			
Aug 29	8.9	8.6	7.5	7.5	7.6	6.8	6.3	4.1	2.5	3.4	3.6	5.7	7.7	8.7	9.9	8.3	6.1	6.2	8.2	8.4	9.1	9.8	10.7	10.5	2.5	10.7	7.3
	SSW	SSW	S	S	SSW	SSW	SSW	SSW	S	S	S	SE	SSE	SSE	SSE	SSE	SSE	SE	ESE	ESE	E	ESE	ESE	ESE			
Aug 30	9.4	8.7	8.5	9.1	10.0	7.9	8.3	8.2	8.4	9.1	14.4	12.8	14.0	10.5	6.8	8.8	9.0	7.4	5.7	5.2	4.8	3.1	5.0	5.4	3.1	14.4	8.4
	ESE	ESE	ESE	SE	SE	E	NE	ENE	ENE	ENE	ESE	E	ENE	ENE	E	E	E	ENE	E	E	ESE	E	E	E			
Aug 31	5.0	4.3	6.2	8.4	4.8	6.7	9.0	8.8	8.3	10.3	9.1	10.3	11.4	10.8	10.4	11.3	10.7	10.0	10.3	10.9	12.2	13.1	10.0	12.5	4.3	13.1	9.4
	ESE	NE	NNE	NNW	N	NNW	NNW	NNW	NNW	NNW	NW	NW	NW	NW	WNW	NW	NW	WNW	NW	NW	NW	NW	NW	NW			

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

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

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

Lakeland Industry & Community Association

St. Lina Site - August 2023

Summary of Hour Standard Deviations

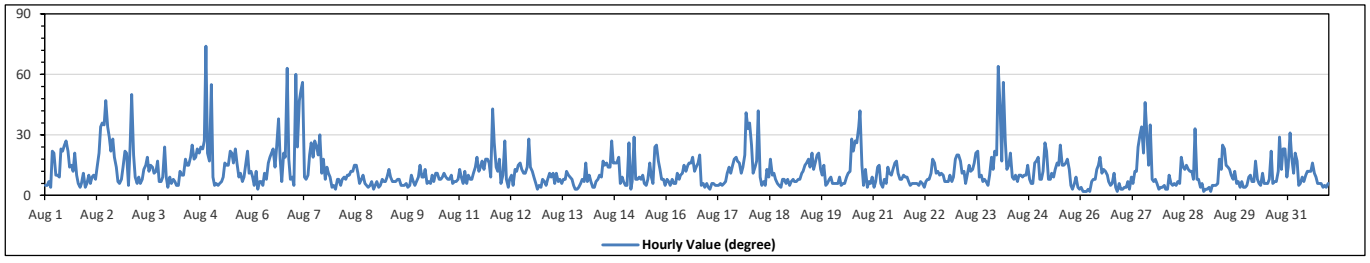
STANDARD DEVIATION WIND DIRECTION (STDWD) in Degree

Maximum Hourly Value:	74 degree on Aug 4 at hr 21	Hours in Service:	744
		Hours of Data:	744
Minimum Hourly Value:	2 degree on Aug 26 at hr 1	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	5	5	7	4	22	21	10	10	9	23	22	25	27	22	14	15	12	21	10	6	4	6	11	4	4	27
Aug 2	6	10	6	9	10	8	14	21	34	36	35	47	34	29	22	28	19	14	7	6	8	14	22	21	6	47
Aug 3	5	24	50	20	9	6	9	6	8	13	15	19	12	15	14	11	12	17	7	7	9	24	9	4	4	50
Aug 4	9	6	8	7	5	5	12	10	10	18	15	15	19	25	18	19	23	21	24	23	27	**74**	21	17	5	**74**
Aug 5	55	9	5	6	5	6	7	9	16	15	15	22	21	16	23	16	9	11	7	9	15	22	11	12	5	55
Aug 6	9	5	12	3	7	7	5	11	8	16	19	21	23	14	24	38	18	7	21	19	63	18	8	9	3	63
Aug 7	5	60	24	47	52	56	9	8	10	20	26	19	27	24	20	30	11	18	8	14	11	9	4	5	4	60
Aug 8	3	8	8	5	8	9	8	10	10	12	12	15	15	11	6	8	10	6	5	4	5	7	3	5	3	15
Aug 9	7	4	5	8	7	7	9	13	9	7	7	7	8	8	5	5	5	6	4	5	10	7	5	7	4	13
Aug 10	9	15	9	9	13	6	7	6	10	7	11	11	8	8	9	11	9	8	8	10	6	7	7	8	6	15
Aug 11	13	9	6	12	6	10	8	8	11	14	19	12	14	17	13	18	18	16	9	43	26	14	12	18	6	43
Aug 12	6	10	27	8	4	8	10	5	13	12	15	16	13	11	11	14	28	14	12	9	6	3	5	4	3	28
Aug 13	8	7	5	8	11	9	11	6	11	7	8	6	8	8	12	10	9	8	5	3	3	4	6	8	3	12
Aug 14	7	16	7	10	7	4	4	7	8	10	9	17	15	16	14	14	27	16	16	16	19	6	9	7	4	27
Aug 15	5	5	26	3	7	29	8	8	9	8	10	6	5	8	16	9	6	24	25	17	13	8	8	5	3	29
Aug 16	8	7	5	8	6	6	11	8	10	11	15	12	15	16	16	19	12	14	16	20	5	6	4	6	4	20
Aug 17	4	3	6	6	5	5	5	6	5	6	7	11	14	11	15	18	19	17	16	11	14	20	41	33	3	41
Aug 18	36	25	11	14	17	42	9	5	7	5	13	9	18	10	11	8	6	5	4	8	8	6	8	5	4	42
Aug 19	7	8	7	7	8	8	11	12	15	16	18	14	21	13	16	20	21	13	10	15	5	6	8	9	5	21
Aug 20	6	6	6	6	9	5	6	6	9	11	12	28	22	27	26	34	42	15	5	13	4	7	6	9	4	42
Aug 21	4	7	14	15	6	4	8	6	14	11	10	13	16	17	11	8	8	10	9	9	7	5	6	6	4	17
Aug 22	6	6	5	7	6	4	7	8	8	11	18	16	11	12	10	11	10	7	7	7	10	7	9	18	4	18
Aug 23	20	20	17	11	12	6	10	15	12	13	16	21	22	9	10	7	8	7	5	10	19	13	22	20	5	22
Aug 24	64	43	17	56	27	13	15	21	9	8	10	7	10	10	9	10	10	15	8	6	6	16	17	19	6	64
Aug 25	8	8	12	26	22	8	8	11	9	13	16	15	25	15	15	16	18	13	5	3	6	9	4	3	3	26
Aug 26	4	**2**	**2**	**2**	3	**2**	7	8	8	13	15	19	11	13	12	10	7	5	6	11	4	**2**	6	3	**2**	19
Aug 27	3	4	4	7	3	9	6	12	12	24	30	34	21	46	32	15	35	8	7	8	6	3	4	4	3	46
Aug 28	5	3	3	10	6	5	6	5	7	6	19	14	13	15	13	12	12	8	33	8	8	4	6	**2**	**2**	33
Aug 29	3	3	4	**2**	5	5	5	6	18	13	25	23	15	14	13	10	8	12	6	7	4	7	4	4	**2**	25
Aug 30	5	9	10	7	7	17	8	6	5	11	6	6	6	8	22	6	7	7	12	29	13	23	23	9	5	29
Aug 31	14	31	19	11	21	17	5	6	9	7	10	12	12	12	16	11	9	6	6	6	4	5	4	6	4	31
Diurnal Minimum	3	2	2	2	3	2	4	5	5	5	6	6	5	8	5	5	5	5	4	3	3	2	3	2		
Diurnal Maximum	64	60	50	56	52	56	15	21	34	36	35	47	34	46	32	38	42	24	33	43	63	74	41	33		

C	Monthly Calibration	**S**	Daily Zero-Span Check	**Q**	Quality Assurance	
K	Collection Error	**ND**	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.



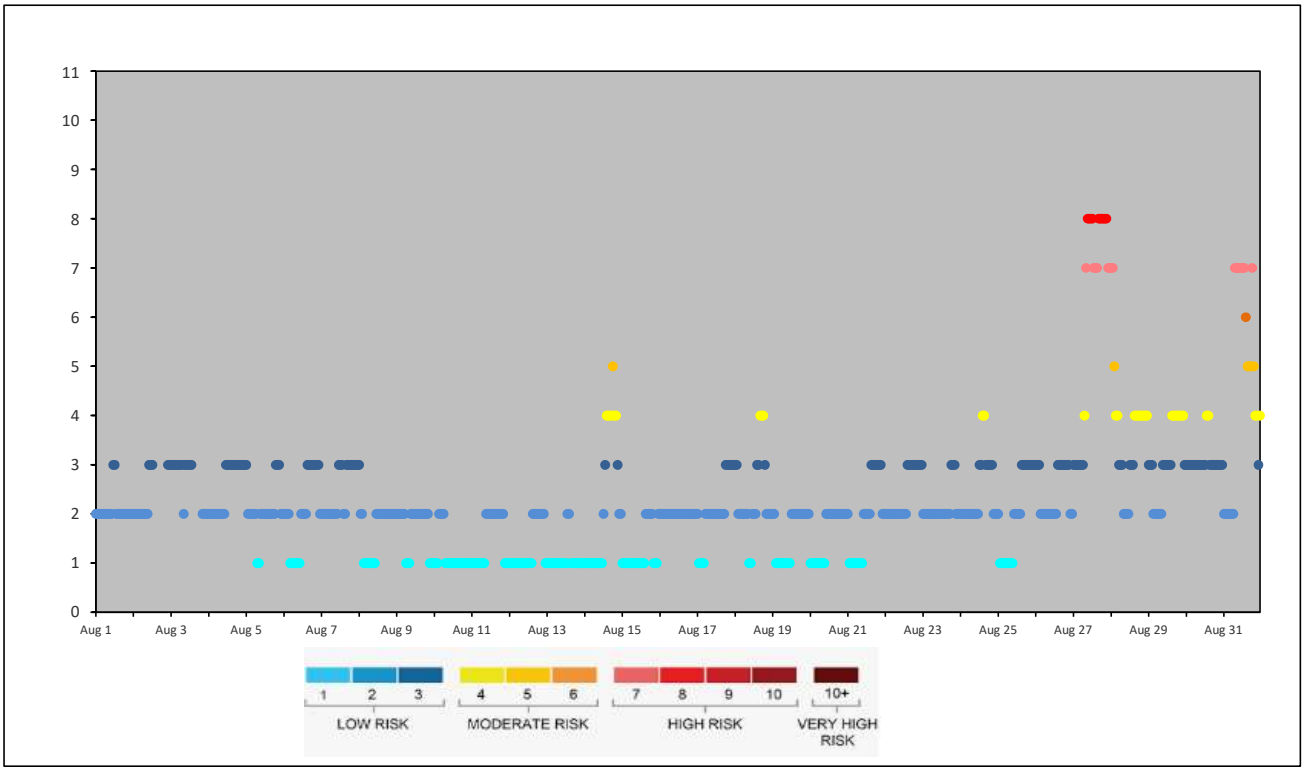
LAC LA BICHE STATION

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Lac La Biche Station - August 2023

AIR QUALITY HEALTH INDEX

Day	Hourly Period Starting at (MST)																							
	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	2	2	2	2	2	3	3	2	2	2	2	2	2	2	2	2	2	2
Aug 2	2	2	2	2	2	2	2	2	2	2	3	3	3										3	3
Aug 3	3	3	3	3	3	3	3	3	2	3	3	3	3	3							2	2	2	2
Aug 4	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3	3	3	3	3	3	3	3	3
Aug 5	3	2	2	2	2	2	2	1	1	2	2	2	2	2	2	2	2	2	2	3	3	3	2	2
Aug 6	2	2	2	2	1	1	1	1	1	1	1	2	2	2	2	3	3	3	3	3	3	3	3	1
Aug 7	2	2	2	2	2	2	2	2	2	2	2	3	3	3	2	2	3	3	3	3	3	3	3	3
Aug 8	3	2	2	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2
Aug 9	2	2	2	2	2	2	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	1	1	1
Aug 10	1	1	1	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Aug 11	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	1	1	1
Aug 12	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	1
Aug 13	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	1	1	1	1	1
Aug 14	1	1	1	1	1	1	1	1	1	1	1	1	2	3	4	4	4	4	5	4	4	3	2	2
Aug 15	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	1	1	1	2
Aug 16	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Aug 17	2	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3	3
Aug 18	3	3	2	2	2	2	2	2	2	1	1	2	2	2	3	3	4	4	4	3	2	2	2	2
Aug 19	2	2	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2
Aug 20	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Aug 21	2	1	1	1	1	1	1	1	1	1	2	2	2	2	2	3	3	3	3	3	3	3	2	2
Aug 22	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3	3	3	3	3	3
Aug 23	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	2	2	2
Aug 24	2	2	2	2	2	2	2	2	2	2	2	2	3	3	4	4	3	3	3	3	3	2	2	2
Aug 25	2	1	1	1	1	1	1	1	1	1	2	2	2	2	2	3	3	3	3	3	3	3	3	3
Aug 26	3	3	3	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3	3	3	3	2	2
Aug 27	3	3	3	3	3	3	3	4	7	8	8	8	8	7	7	7	8	8	8	8	8	8	7	7
Aug 28	7	7	5	4	4	3	3	3	2	2	2	2	3	3	3	4	4	4	4	4	4	4	4	4
Aug 29	3	3	3	2	2	2	2	2	2	3	3	3	3	3	3	4	4	4	4	4	4	4	4	3
Aug 30	3	3	3	3	3	3	3	3	3	3	3	3	3	4	4	3	3	3	3	3	3	3	3	3
Aug 31	2	2	2	2	2	2	2	7	7	7	7	7	7	7	6	5	5	5	7	5	4	4	3	4



Lakeland Industry & Community Association

Lac La Biche Station - August 2023

Summary of Hourly Averages

SULPHUR DIOXIDE (SO_2) in ppb

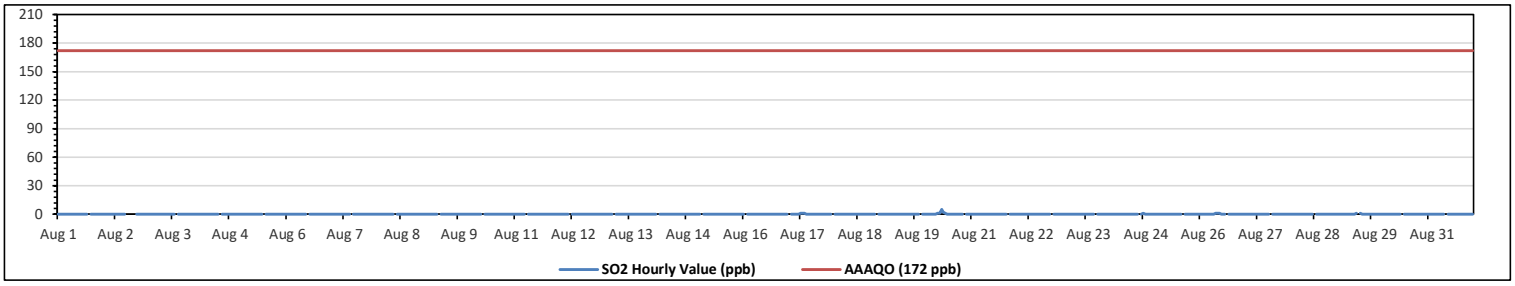
Alberta Ambient Air Quality Objectives (AAAQO): 1-Hour 172 ppb, 24-Hour 48 ppb, 30-Day 11 ppb

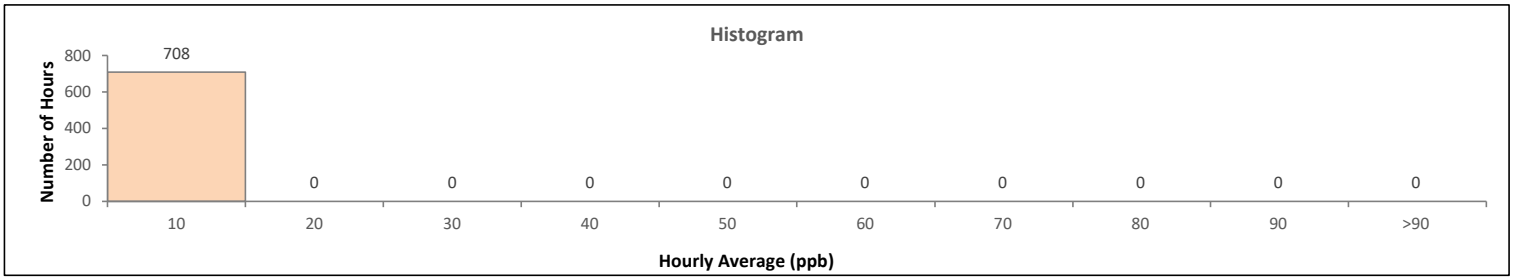
Number of 1-Hour Exceedances:	0	Number of 24-Hour Exceedances:	0	30-Day Exceedence:	0	
Maximum Hourly Value:	5	ppb	on Aug 20 at hr 8	Hours in Service:	744	
Maximum Daily Value:	0.4	ppb	on Aug 20	Hours of Data:	708	
Minimum Hourly Value:	0	ppb	on Aug 1 at hr 0	Hours of Missing Data:	0	
Minimum Daily Value:	0.0	ppb	on Aug 1	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	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0.0
Aug 2	0	0	0	0	0	0	0	0	0	0	0	0	C	C	C	C	C	0	0	0	0	0	0	0	0	0	0.0
Aug 3	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 4	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 5	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 6	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 7	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 8	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 9	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 10	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 11	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 12	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
Aug 13	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 14	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 15	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
Aug 16	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 17	S	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	1	0.1
Aug 18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0.0
Aug 19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0.0
Aug 20	0	0	0	0	0	0	1	1	5	2	1	0	0	0	0	0	0	0	0	0	S	0	0	0	0	5	0.4
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	0.0
Aug 22	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 23	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
Aug 24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	1	0	0	0	0	0	0	1	0.0
Aug 25	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 26	0	0	0	0	0	0	0	0	1	1	1	0	0	0	S	0	0	0	0	0	0	0	0	0	0	1	0.1
Aug 27	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 28	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 29	0	0	0	0	0	0	0	0	0	0	1	S	1	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	S	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	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Diurnal Maximum	0	0	0	0	0	0	1	1	5	2	1	0	1	0	0	0	0	0	1	0	0	0	0	0			
Diurnal Average	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	ND	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.



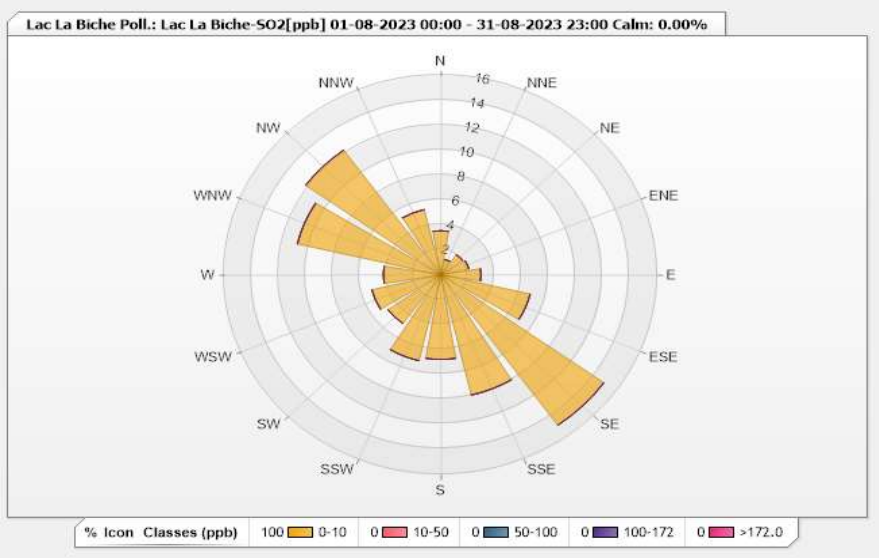


Station: Lac La Biche Poll.: Lac La Biche-SO2[ppb] Monthly: 08-2023

Type: Pollution Rose
Direction: Blowing From (Wind Frequency)
Time Base: 1 - Hour

Calm: 0.00% Valid Data: 95.16% Calm Avg: 0.00 [ppm]

Direction	0-10	10-50	50-100	100-172	>172.0	Total
N	3.53	0	0	0	0	3.53
NNE	1.27	0	0	0	0	1.27
NE	1.98	0	0	0	0	1.98
ENE	2.12	0	0	0	0	2.12
E	2.97	0	0	0	0	2.97
ESE	6.78	0	0	0	0	6.78
SE	14.83	0	0	0	0	14.83
SSE	9.89	0	0	0	0	9.89
S	6.78	0	0	0	0	6.78
SSW	7.06	0	0	0	0	7.06
SW	4.8	0	0	0	0	4.8
WSW	5.23	0	0	0	0	5.23
W	4.24	0	0	0	0	4.24
WNW	10.88	0	0	0	0	10.88
NW	12.29	0	0	0	0	12.29
NNW	5.37	0	0	0	0	5.37
Summary	100	0	0	0	0	100



Lakeland Industry & Community Association

Lac La Biche Station - August 2023

Summary of Hourly Averages

HYDROGEN SULPHIDE (H_2S) in ppb

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

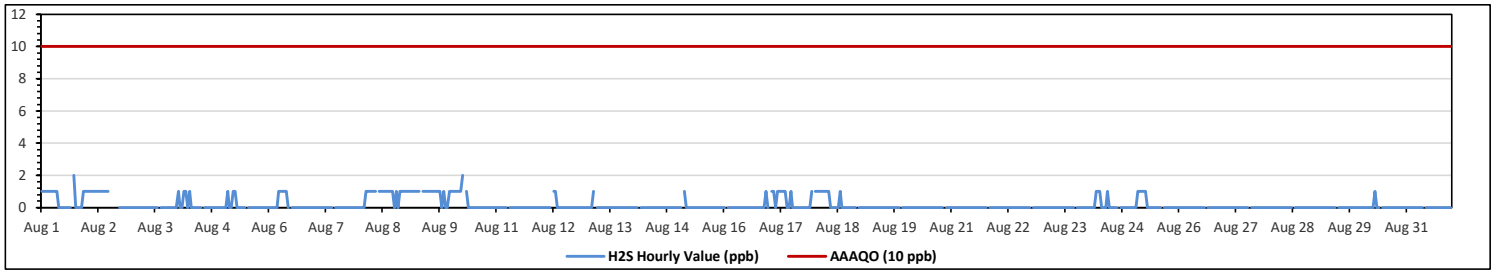
Number of 1-Hour Exceedances:	0		Number of 24-Hour Exceedances:	0	
Maximum Hourly Value:	2	ppb	on Aug 1 at hr 17	Hours in Service:	744
Maximum Daily Value:	1.0	ppb	on Aug 1	Hours of Data:	708
Minimum Hourly Value:	0	ppb	on Aug 1 at hr 9	Hours of Missing Data:	0
Minimum Daily Value:	0.0	ppb	on Aug 3	Hours of Calibration:	36
Monthly Average:	0.2	ppb		Operational Uptime:	100.0

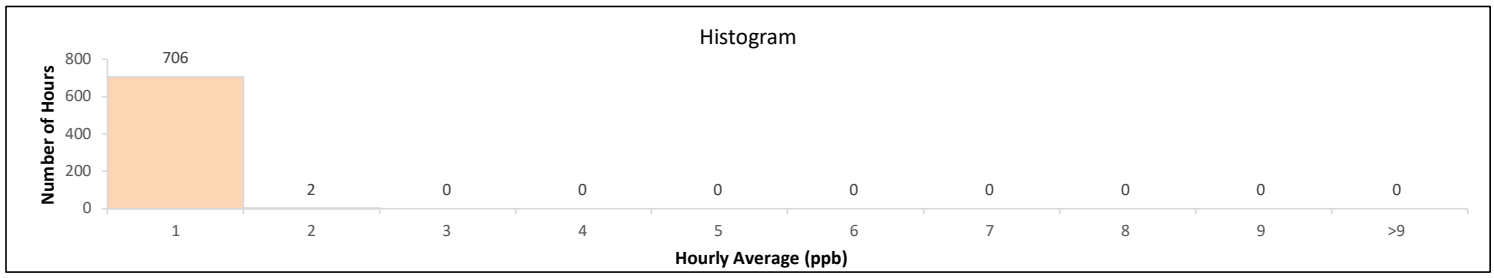
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Aug 1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	S	2	0	0	0	0	1	1	0	2	1.0
Aug 2	1	1	1	1	1	1	1	1	1	1	1	1	C	C	C	C	C	0	0	0	0	0	0	0	0	1	1.0
Aug 3	0	0	0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

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	ND	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.



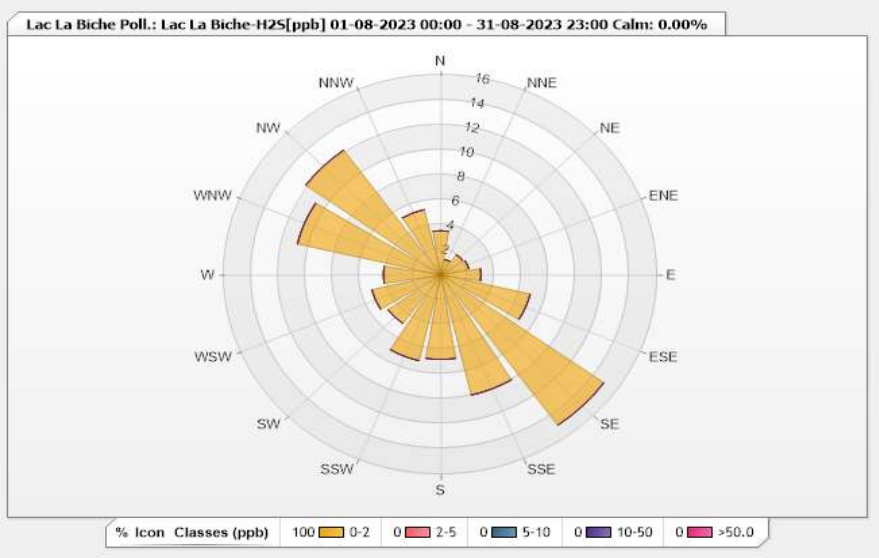


Station: Lac La Biche Poll.: Lac La Biche-H2S[ppb] Monthly: 08-2023

Type: Pollution Rose
Direction: Blowing From (Wind Frequency)
Time Base: 1 - Hour

Calm: 0.00% Valid Data: 95.16% Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-50	>50.0	Total
N	3.53	0	0	0	0	3.53
NNE	1.27	0	0	0	0	1.27
NE	1.98	0	0	0	0	1.98
ENE	2.12	0	0	0	0	2.12
E	2.97	0	0	0	0	2.97
ESE	6.78	0	0	0	0	6.78
SE	14.83	0	0	0	0	14.83
SSE	9.89	0	0	0	0	9.89
S	6.78	0	0	0	0	6.78
SSW	7.06	0	0	0	0	7.06
SW	4.8	0	0	0	0	4.8
WSW	5.23	0	0	0	0	5.23
W	4.24	0	0	0	0	4.24
WNW	10.88	0	0	0	0	10.88
NW	12.29	0	0	0	0	12.29
NNW	5.37	0	0	0	0	5.37
Summary	100	0	0	0	0	100



Lakeland Industry & Community Association

Lac La Biche Station - August 2023

Summary of Hourly Averages

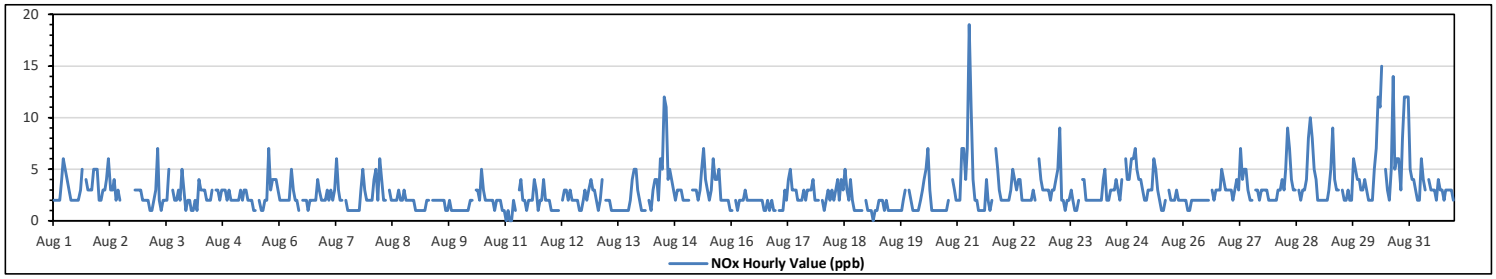
OXIDES OF NITROGEN (NOx) in ppb

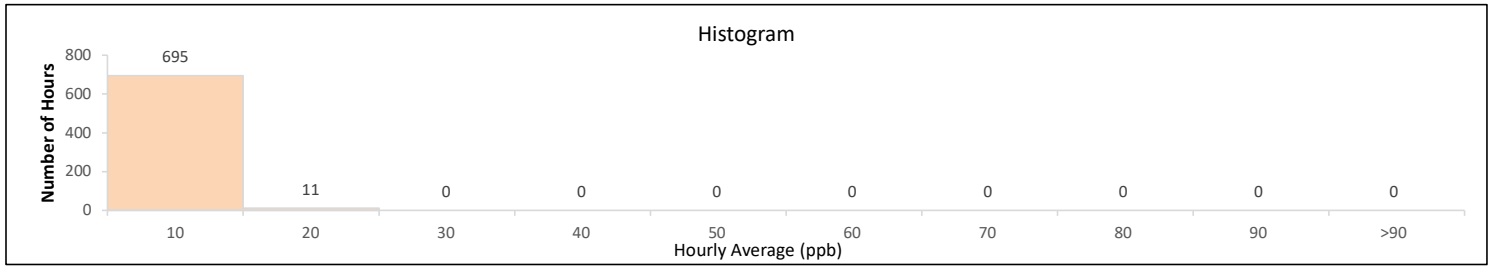
Maximum Hourly Value:	19	ppb	on Aug 21 at hr 6	Hours in Service:	744
Maximum Daily Value:	6.8	ppb	on Aug 30	Hours of Data:	706
Minimum Hourly Value:	0	ppb	on Aug 11 at hr 0	Hours of Missing Data:	0
Minimum Daily Value:	1.4	ppb	on Aug 19	Hours of Calibration:	38
Monthly Average:	2.8	ppb		Operational Uptime:	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	4	6	5	4	3	2	2	2	2	2	3	5	S	4	3	3	3	5	5	5	2	6	3.3
Aug 2	2	2	3	3	4	6	3	3	4	2	3	2	C	C	C	C	C	C	C	3	3	3	3	2	2	6	NA
Aug 3	2	2	2	1	1	2	3	7	2	1	2	2	2	5	S	3	2	2	3	2	5	3	1	2	1	7	2.5
Aug 4	2	1	1	2	1	4	3	3	3	2	2	2	3	S	3	3	2	3	3	3	2	3	2	2	1	4	2.4
Aug 5	2	2	2	3	2	3	3	2	2	2	1	1	S	2	1	1	2	2	7	3	4	4	4	3	1	7	2.5
Aug 6	2	2	2	2	2	2	5	3	2	2	1	S	2	2	2	1	2	2	2	2	4	3	2	2	1	5	2.2
Aug 7	2	3	2	3	2	3	6	3	2	2	S	2	1	1	1	1	1	1	1	3	5	3	2	2	1	6	2.3
Aug 8	2	2	4	5	2	6	4	2	2	S	3	2	2	2	2	3	2	2	3	2	2	2	2	2	2	6	2.6
Aug 9	1	1	1	1	1	1	2	2	S	2	2	2	2	2	2	2	1	1	2	1	1	1	1	1	1	2	1.4
Aug 10	1	1	1	1	1	2	2	S	3	3	2	5	3	2	2	2	2	2	1	2	2	2	1	1	1	5	1.9
Aug 11	0	1	0	0	2	1	S	3	4	2	2	1	2	2	2	4	3	1	2	2	4	2	2	2	**0**	4	1.9
Aug 12	1	1	1	1	1	S	2	3	3	2	3	2	2	2	2	1	1	2	3	2	3	4	3	3	1	4	2.1
Aug 13	2	1	2	4	S	2	2	2	1	1	1	1	1	1	1	1	1	1	2	4	5	5	3	2	1	5	2.0
Aug 14	1	1	1	S	2	1	3	4	4	2	6	5	12	11	4	5	4	3	2	3	3	3	2	2	1	12	3.7
Aug 15	2	2	S	3	3	3	2	3	5	7	4	3	2	3	6	4	4	5	2	2	2	2	2	1	1	7	3.1
Aug 16	1	S	2	1	2	2	2	3	2	2	2	2	2	2	2	2	2	1	1	2	1	2	1	1	1	3	1.7
Aug 17	S	1	1	1	3	2	4	5	3	3	3	2	2	2	3	2	3	3	3	4	2	2	2	S	1	5	2.5
Aug 18	2	1	2	3	2	3	2	3	4	2	4	3	5	3	2	4	2	1	1	1	1	1	S	2	1	5	2.3
Aug 19	1	1	1	0	1	1	2	2	2	1	2	1	1	1	1	1	1	1	1	2	3	S	3	2	**0**	3	**1.4**
Aug 20	1	1	1	1	2	3	4	5	7	3	1	1	1	1	1	1	1	1	1	2	S	4	3	2	1	7	2.1
Aug 21	2	2	7	7	4	7	**19**	11	4	2	2	1	1	1	1	4	2	1	2	S	7	5	3	2	1	**19**	4.2
Aug 22	2	2	2	2	3	5	4	3	4	4	2	2	2	2	2	2	3	2	S	6	4	3	3	3	2	6	2.9
Aug 23	3	2	3	3	4	5	9	2	2	1	2	2	3	2	1	1	2	S	4	4	2	2	2	2	1	9	2.7
Aug 24	2	2	2	2	2	4	5	2	2	3	3	3	4	3	2	4	S	6	4	4	6	6	7	5	2	7	3.6
Aug 25	4	4	3	2	2	3	3	3	6	5	3	2	1	1	2	S	3	2	2	2	3	2	2	2	1	6	2.7
Aug 26	2	2	1	1	2	2	2	2	2	2	2	2	2	2	S	3	2	3	3	3	5	4	3	3	1	5	2.4
Aug 27	3	3	2	3	4	3	7	4	5	5	3	2	2	S	3	3	2	3	3	3	3	2	2	2	2	7	3.1
Aug 28	2	2	3	3	4	3	5	9	7	4	3	3	S	3	2	3	3	4	8	10	8	5	4	2	2	10	4.3
Aug 29	2	2	2	2	2	3	5	9	4	3	3	S	3	2	2	3	2	2	6	5	4	4	3	3	2	9	3.3
Aug 30	4	3	2	2	2	5	7	12	11	15	S	5	3	2	5	14	5	6	6	3	8	12	12	12	2	15	**6.8**
Aug 31	5	4	4	3	2	2	6	4	3	S	4	3	3	3	2	4	3	3	2	3	3	3	3	2	2	6	3.2
Diurnal Maximum	5	4	7	7	4	7	19	12	11	15	6	5	12	11	6	14	5	6	8	10	8	12	12	12			
Diurnal Average	2.0	1.9	2.1	2.2	2.3	3.2	4.4	4.1	3.6	3.0	2.5	2.3	2.5	2.4	2.2	3.0	2.3	2.4	2.9	3.0	3.6	3.4	2.9	2.6			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	ND	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.



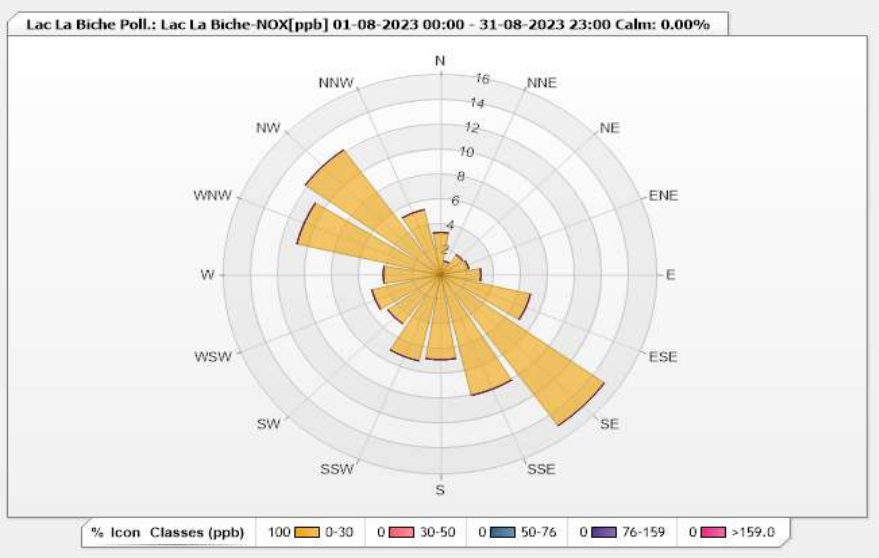


Station: Lac La Biche Poll.: Lac La Biche-NOX[ppb] Monthly: 08-2023

Type: Pollution Rose
Direction: Blowing From (Wind Frequency)
Time Base: 1 - Hour

Calm: 0.00% Valid Data: 94.89% Calm Avg: 0.00 [ppm]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	3.4	0	0	0	0	3.4
NNE	1.13	0	0	0	0	1.13
NE	1.98	0	0	0	0	1.98
ENE	2.12	0	0	0	0	2.12
E	2.97	0	0	0	0	2.97
ESE	6.8	0	0	0	0	6.8
SE	14.87	0	0	0	0	14.87
SSE	9.92	0	0	0	0	9.92
S	6.8	0	0	0	0	6.8
SSW	7.08	0	0	0	0	7.08
SW	4.82	0	0	0	0	4.82
WSW	5.24	0	0	0	0	5.24
W	4.25	0	0	0	0	4.25
WNW	10.91	0	0	0	0	10.91
NW	12.32	0	0	0	0	12.32
NNW	5.38	0	0	0	0	5.38
Summary	100	0	0	0	0	100



Lakeland Industry & Community Association

Lac La Biche Station - August 2023

Summary of Hourly Averages

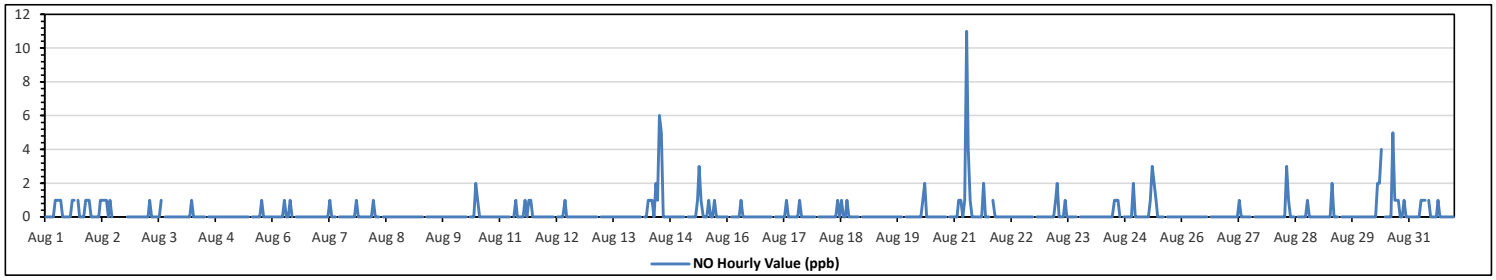
NITRIC OXIDE (NO) in ppb

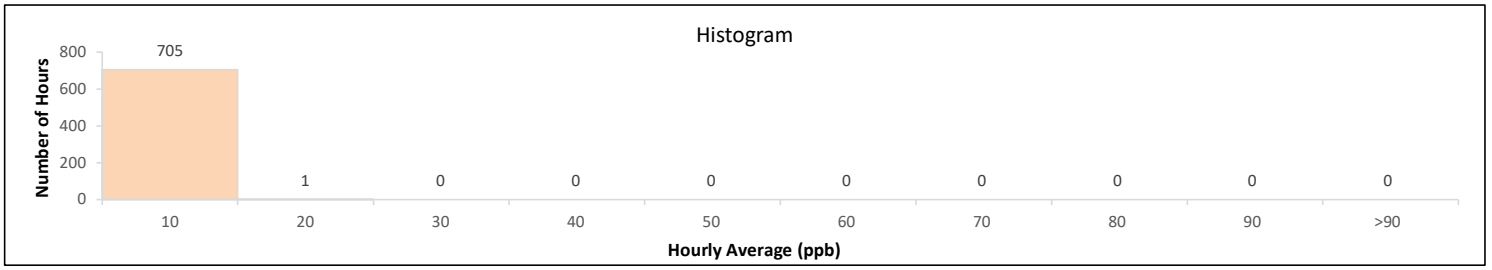
Maximum Hourly Value:	11	ppb	on Aug 21 at hr 6	Hours in Service:	744	
Maximum Daily Value:	1.0	ppb	on Aug 21	Hours of Data:	706	
Minimum Hourly Value:	0	ppb	on Aug 1 at hr 0	Hours of Missing Data:	0	
Minimum Daily Value:	0.0	ppb	on Aug 9	Hours of Calibration:	38	
Monthly Average:	0.2	ppb		Operational 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	0	0	0	0	0	1	1	1	1	0	0	0	0	0	1	1	S	1	0	0	0	1	1	1	0	1	0.4
Aug 2	0	0	0	0	0	1	1	1	1	0	1	0	C	C	C	C	C	C	C	0	0	0	0	0	0	1	NA
Aug 3	0	0	0	0	0	0	0	1	0	0	0	0	0	1	S	0	0	0	0	0	0	0	0	0	0	1	0.1
Aug 4	0	0	0	0	0	1	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	1	0.0
Aug 5	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	1	0	0	0	0	0	0	1	0.0
Aug 6	0	0	0	0	0	0	1	0	0	1	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1
Aug 7	0	0	0	0	0	0	1	0	0	0	S	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0.1
Aug 8	0	0	0	0	0	1	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0
Aug 9	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 10	0	0	0	0	0	0	0	S	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	2	0.1
Aug 11	0	0	0	0	0	0	S	0	1	0	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0	1	0.2
Aug 12	0	0	0	0	0	S	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0
Aug 13	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 14	0	0	0	S	0	0	1	1	1	0	2	1	6	5	0	0	0	0	0	0	0	0	0	0	0	6	0.7
Aug 15	0	0	S	0	0	0	0	0	1	3	1	0	0	0	1	0	0	1	0	0	0	0	0	0	0	3	0.3
Aug 16	0	S	0	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 17	S	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	S	0	1	0.1
Aug 18	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	1	0	0	0	0	0	0	S	0	0	1	0.1
Aug 19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0.0
Aug 20	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	2	0.1
Aug 21	0	0	1	1	0	1	**11**	4	1	0	0	0	0	0	0	2	0	0	0	S	1	0	0	0	0	**11**	**1.0**
Aug 22	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 23	0	0	0	0	0	1	2	0	0	0	1	0	0	0	0	0	0	S	0	0	0	0	0	0	0	2	0.2
Aug 24	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	S	0	0	0	0	0	2	0	0	2	0.2
Aug 25	0	0	0	0	0	0	0	1	3	2	1	0	0	0	0	S	0	0	0	0	0	0	0	0	0	3	0.3
Aug 26	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 27	0	0	0	0	0	0	1	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	1	0.0
Aug 28	0	0	0	0	0	0	0	3	1	0	0	0	S	0	0	0	0	0	1	0	0	0	0	0	0	3	0.2
Aug 29	0	0	0	0	0	0	0	2	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.1
Aug 30	0	0	0	0	0	0	0	2	2	4	S	0	0	0	0	5	1	1	1	0	0	1	0	0	0	5	0.7
Aug 31	0	0	0	0	0	0	1	1	1	S	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0.2
Diurnal Maximum	0	0	1	1	0	1	11	4	3	4	2	2	6	5	1	5	1	1	1	0	1	1	2	1			
Diurnal Average	0.0	0.0	0.0	0.0	0.0	0.2	0.7	0.7	0.5	0.3	0.3	0.1	0.3	0.3	0.1	0.4	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.0			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	ND	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.



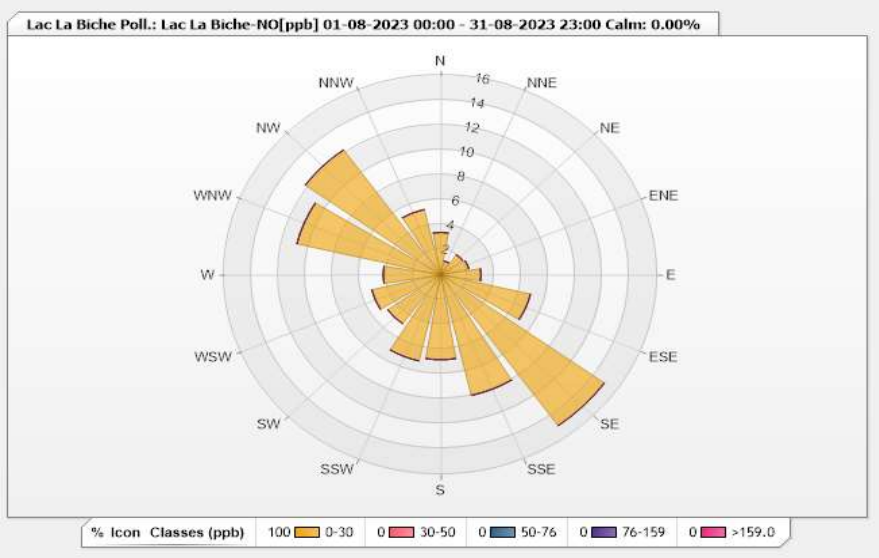


Station: Lac La Biche Poll.: Lac La Biche-NO[ppb] Monthly: 08-2023

Type: Pollution Rose
Direction: Blowing From (Wind Frequency)
Time Base: 1 - Hour

Calm: 0.00% Valid Data: 94.89% Calm Avg: 0.00 [ppm]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	3.4	0	0	0	0	3.4
NNE	1.13	0	0	0	0	1.13
NE	1.98	0	0	0	0	1.98
ENE	2.12	0	0	0	0	2.12
E	2.97	0	0	0	0	2.97
ESE	6.8	0	0	0	0	6.8
SE	14.87	0	0	0	0	14.87
SSE	9.92	0	0	0	0	9.92
S	6.8	0	0	0	0	6.8
SSW	7.08	0	0	0	0	7.08
SW	4.82	0	0	0	0	4.82
WSW	5.24	0	0	0	0	5.24
W	4.25	0	0	0	0	4.25
WNW	10.91	0	0	0	0	10.91
NW	12.32	0	0	0	0	12.32
NNW	5.38	0	0	0	0	5.38
Summary	100	0	0	0	0	100



Lakeland Industry & Community Association

Lac La Biche Station - August 2023

Summary of Hourly Averages

NITROGEN DIOXIDE (NO_2) in ppb

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

Number of 1-Hour Exceedances: 0

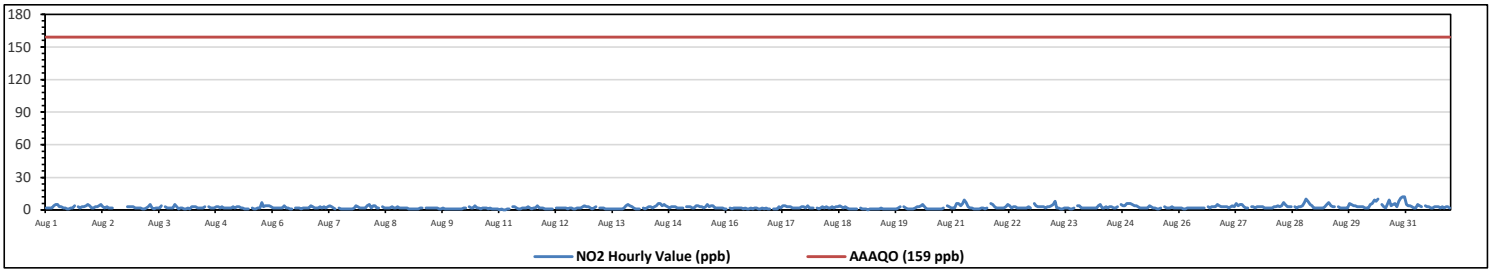
Maximum Hourly Value:	12	ppb	on Aug 30 at hr 22	Hours in Service:	744
Maximum Daily Value:	5.9	ppb	on Aug 30	Hours of Data:	706
Minimum Hourly Value:	0	ppb	on Aug 11 at hr 0	Hours of Missing Data:	0
Minimum Daily Value:	1.3	ppb	on Aug 19	Hours of Calibration:	38
Monthly Average:	2.5	ppb		Operational Uptime:	100.0

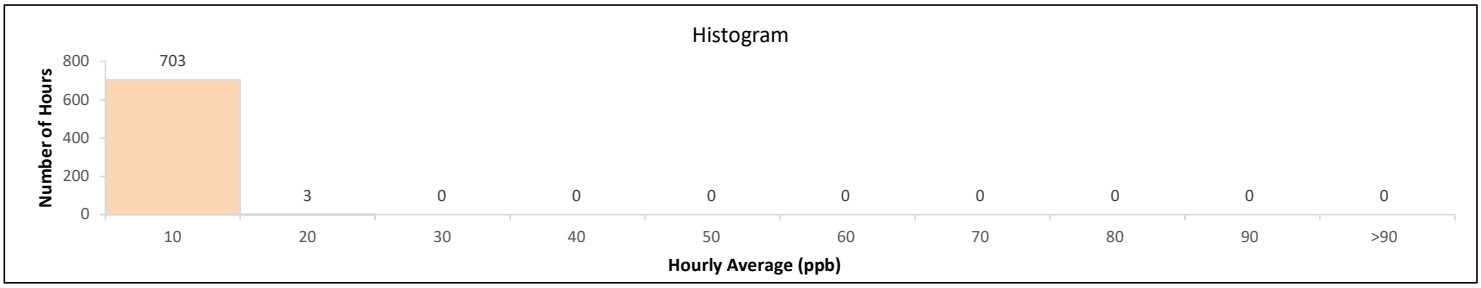
Day	Hourly Period Starting at (MST)																								Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Aug 1	2	2	2	2	4	5	5	3	3	2	2	1	1	2	2	4	S	3	2	3	3	4	5	4	1	5	2.9
Aug 2	2	2	3	3	4	5	3	2	3	2	2	2	C	C	C	C	C	C	C	3	3	3	3	2	2	5	NA
Aug 3	2	2	2	1	1	2	3	5	2	1	2	2	2	4	S	3	2	2	2	2	5	3	1	2	1	5	2.3
Aug 4	2	1	1	2	1	3	3	3	2	2	2	2	3	S	3	2	2	2	3	3	2	3	2	2	1	3	2.2
Aug 5	2	2	2	3	2	3	3	2	2	1	1	1	S	2	1	1	2	2	7	3	4	4	4	3	1	7	2.5
Aug 6	2	2	2	2	2	2	4	2	2	1	1	S	2	2	2	1	2	2	2	2	4	3	2	2	1	4	2.1
Aug 7	2	3	2	3	2	3	4	3	2	1	S	2	1	1	1	1	1	1	1	2	4	3	2	2	1	4	2.0
Aug 8	2	2	4	5	2	4	4	2	2	S	3	2	2	2	2	3	2	2	3	2	2	2	2	2	2	5	2.5
Aug 9	1	1	1	1	1	1	2	2	S	2	2	2	2	2	2	2	1	1	2	1	1	1	1	1	1	2	1.4
Aug 10	1	1	1	1	1	2	2	S	3	2	2	4	2	2	1	2	2	2	1	2	1	1	1	1	1	4	1.7
Aug 11	0	1	0	0	1	1	S	3	3	2	1	1	2	2	2	3	2	1	2	2	4	2	2	2	0	4	1.7
Aug 12	1	1	1	1	1	S	2	2	2	2	2	2	1	2	2	1	1	2	2	2	3	4	3	3	1	4	1.9
Aug 13	2	1	2	3	S	2	2	2	1	1	1	1	1	1	1	1	1	1	2	4	5	4	3	2	1	5	1.9
Aug 14	1	1	1	S	2	1	2	3	3	2	3	4	6	6	4	5	4	3	2	3	3	3	2	2	1	6	2.9
Aug 15	2	2	S	3	3	3	2	2	4	4	3	3	2	3	5	3	4	4	2	2	2	2	2	1	1	5	2.7
Aug 16	1	S	2	1	2	2	2	2	2	1	2	1	1	2	1	2	2	1	1	2	1	2	1	1	1	2	1.5
Aug 17	S	1	1	1	3	2	4	4	3	3	3	2	2	2	2	2	3	3	2	4	2	2	2	S	1	4	2.4
Aug 18	2	1	2	3	2	3	2	2	3	2	3	3	4	3	2	3	2	1	1	1	1	1	S	2	1	4	2.1
Aug 19	1	1	1	0	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	2	3	S	3	2	0	3	1.3
Aug 20	1	1	1	1	2	3	3	4	5	3	1	1	1	1	1	1	1	1	1	2	S	4	3	2	1	5	1.9
Aug 21	2	2	6	6	4	6	9	7	3	2	2	1	1	1	1	2	2	1	2	S	6	5	3	2	1	9	3.3
Aug 22	2	2	2	2	3	5	4	2	3	3	2	2	2	2	2	2	3	2	S	6	4	3	3	3	2	6	2.8
Aug 23	3	2	3	3	4	5	8	2	2	1	1	2	2	2	1	1	2	S	4	4	2	2	2	2	1	8	2.6
Aug 24	2	2	2	2	2	4	5	2	2	3	2	3	3	2	2	3	S	5	4	4	6	6	6	5	2	6	3.3
Aug 25	4	4	3	2	2	2	2	2	4	3	2	2	1	1	2	S	3	2	2	2	3	2	2	2	1	4	2.3
Aug 26	2	2	1	1	2	2	2	2	2	2	2	2	2	2	S	3	2	3	3	3	5	4	3	3	1	5	2.4
Aug 27	3	3	2	3	4	3	6	4	5	5	3	2	2	S	3	3	2	3	3	3	3	2	2	2	2	6	3.1
Aug 28	2	2	3	3	4	3	4	7	5	3	3	3	S	3	2	3	3	4	7	10	8	5	4	2	2	10	4.0
Aug 29	2	2	2	2	2	3	5	7	4	3	3	S	3	2	2	2	2	2	6	5	4	4	3	3	2	7	3.2
Aug 30	3	3	2	2	2	5	6	9	8	10	S	5	3	2	5	9	4	5	6	3	8	11	12	12	2	12	5.9
Aug 31	5	4	4	3	2	2	5	4	3	S	4	3	3	2	2	3	3	3	2	3	2	3	3	2	2	5	3.0
Diurnal Maximum	5	4	6	6	4	6	9	9	8	10	4	5	6	6	5	9	4	5	7	10	8	11	12	12			
Diurnal Average	2.0	1.9	2.0	2.2	2.3	2.9	3.6	3.2	3.0	2.4	2.1	2.1	2.1	2.1	2.0	2.5	2.2	2.2	2.7	3.0	3.5	3.3	2.9	2.5			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	ND	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.



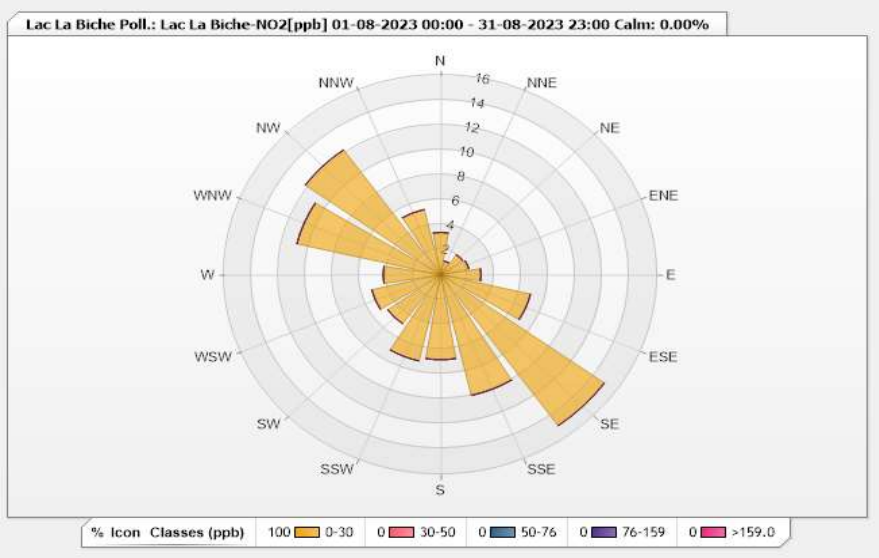


Station: Lac La Biche Poll.: Lac La Biche-NO2[ppb] Monthly: 08-2023

Type: Pollution Rose
Direction: Blowing From (Wind Frequency)
Time Base: 1 - Hour

Calm: 0.00% Valid Data: 94.89% Calm Avg: 0.00 [ppm]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	3.4	0	0	0	0	3.4
NNE	1.13	0	0	0	0	1.13
NE	1.98	0	0	0	0	1.98
ENE	2.12	0	0	0	0	2.12
E	2.97	0	0	0	0	2.97
ESE	6.8	0	0	0	0	6.8
SE	14.87	0	0	0	0	14.87
SSE	9.92	0	0	0	0	9.92
S	6.8	0	0	0	0	6.8
SSW	7.08	0	0	0	0	7.08
SW	4.82	0	0	0	0	4.82
WSW	5.24	0	0	0	0	5.24
W	4.25	0	0	0	0	4.25
WNW	10.91	0	0	0	0	10.91
NW	12.32	0	0	0	0	12.32
NNW	5.38	0	0	0	0	5.38
Summary	100	0	0	0	0	100



Lakeland Industry & Community Association

Lac La Biche Station - August 2023

Summary of Hourly Averages

OZONE (O_3) in ppb

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

Number of 1-Hour Exceedances: 0

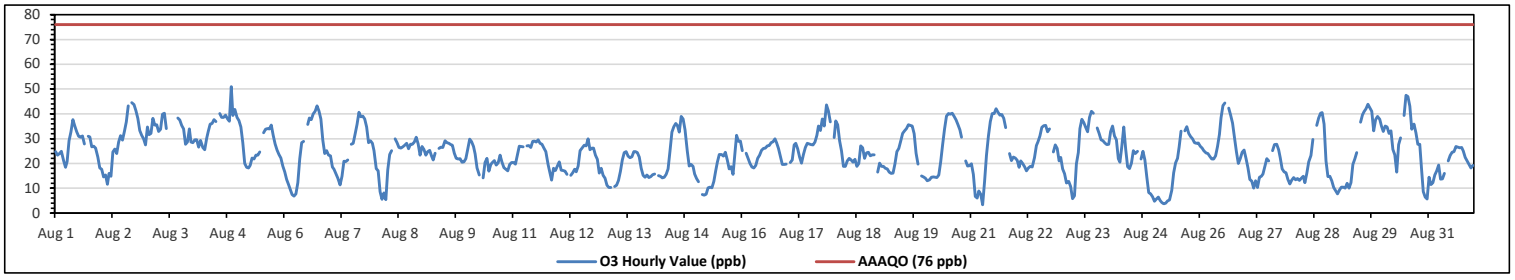
Maximum Hourly Value:	51.0	ppb	on Aug 4 at hr 20	Hours in Service:	744	
Maximum Daily Value:	35.1	ppb	on Aug 4	Hours of Data:	708	
Minimum Hourly Value:	3.3	ppb	on Aug 21 at hr 6	Hours of Missing Data:	0	
Minimum Daily Value:	17.8	ppb	on Aug 13	Hours of Calibration:	36	
Monthly Average:	24.5	ppb		Operational Uptime:	100.0	

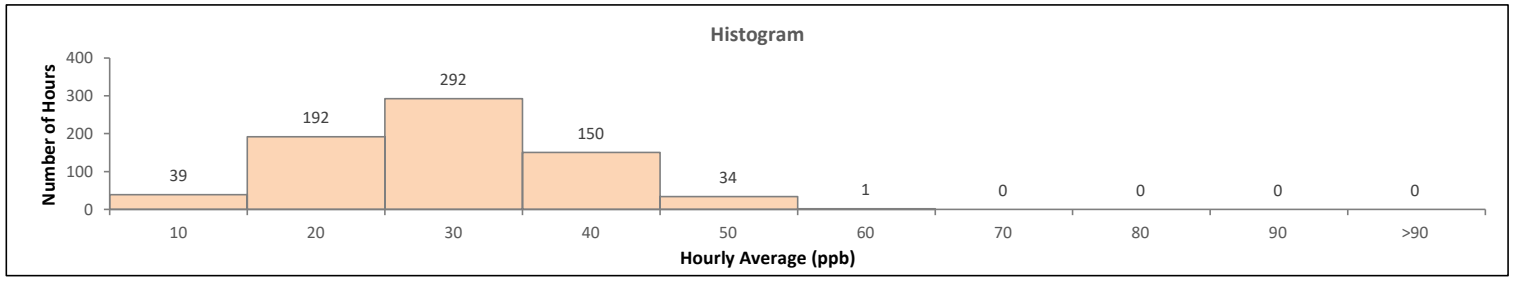
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Aug 1	24.7	23.4	23.9	24.9	21.2	18.4	20.7	29.2	32.7	37.7	35	32.7	31	30.6	31.1	27.9	S	30.9	30.7	26.7	26.9	26.1	22.5	18.2	18.2	37.7	27.3
Aug 2	17.6	14.6	15.3	11.6	15.9	14.9	24.6	25.8	24	28.6	31.2	29.4	32.8	36.7	43.2	S	44.5	43.7	41.3	38.2	33.3	31.3	30	27.5	11.6	44.5	28.5
Aug 3	34.7	31.6	32.2	38.2	35.5	35.6	32.9	33.8	39.9	40.3	34.1	C	C	C	C	C	38.3	37.5	35.3	33.9	27.7	28.6	33.9	28.6	27.7	40.3	34.3
Aug 4	28.3	29.6	29.6	26.5	29.3	26.4	25.6	30.1	32.9	35.9	36.1	37.7	36.9	S	40.2	38.6	38.6	39.5	38.1	37	**51**	39.3	41.8	38.6	25.6	**51.0**	**35.1**
Aug 5	37.2	34.7	28.4	19.9	18.4	18.2	19.3	22.1	21.8	23.3	23.4	24.6	S	32.3	33.8	34.1	33.9	35.5	31.3	27.9	25.4	23.7	22.1	19	18.2	37.2	26.5
Aug 6	16.7	13.5	11.5	9.3	7.5	6.8	7.7	12.2	21.9	28.4	28.9	S	35.7	38.3	37.7	40	41	43.2	41.1	37.9	29.4	24	25.2	23.4	6.8	43.2	25.3
Aug 7	23.1	18.5	17.6	15.8	14.1	11.3	14.9	20.9	20.8	21.5	S	27.7	28	31.9	35.7	40.7	38.8	39	37.9	34.6	28.3	29.2	28.1	25.1	11.3	40.7	26.2
Aug 8	17.9	17.1	8.7	5.5	8.1	5.4	17.4	23.7	25.1	S	29.9	28.3	26.4	26.1	26.7	27.4	28	25.9	27.8	27.7	28.6	30.6	27.9	23.3	5.4	30.6	22.3
Aug 9	26.8	25.7	23.4	24.8	25.3	23	21.4	24.1	S	26	26.6	26.4	29.1	28.3	28	27.6	27.3	24.1	22	21.7	21.9	20.5	20.6	21.9	20.5	29.1	24.6
Aug 10	25.8	29.8	28.7	26.8	23.8	18.1	15.3	S	14.2	20.3	22	16.9	19.6	20.4	21.2	19.4	20.2	23.4	20.5	18.3	17.6	17	19.6	20.3	14.2	29.8	20.8
Aug 11	20.3	19.7	23.4	26.9	26.8	26.7	S	27.1	27.2	26.4	28.9	29	28.6	29.6	28.1	27.7	26.1	24.8	19.5	16.1	13.2	18	17.2	19	13.2	29.6	23.9
Aug 12	20.6	17.3	17.2	16.9	15.6	S	15.2	16.3	17.6	16.7	19	25.2	26.1	27.4	27.1	30	25.5	26.1	26.1	23.4	21.6	16.1	18	15.2	15.2	30.0	20.9
Aug 13	14.1	11.1	10.3	10.3	S	10.7	11.2	13.1	16.8	21.5	24.3	24.7	23	22.3	22.7	24.8	24.7	24.4	22.5	18	15.2	14.5	15.3	14.3	10.3	24.8	**17.8**
Aug 14	14.7	15.4	15.7	S	15.1	14.9	14.2	14.4	15.5	17.8	25	32.6	34.8	36.2	35.4	32.6	38.9	37.9	33.5	25	19	19.5	18.8	15.7	14.2	38.9	23.6
Aug 15	13.9	12.6	S	7.4	7.2	7.6	10.2	10.4	10.2	12.8	17.2	20.5	23.6	23.7	23	24.5	21.4	17.8	18.7	15.5	24.2	31.4	28.9	29	7.2	31.4	17.9
Aug 16	25.1	S	24.1	22	20	18.6	18.1	19.3	22	23.4	25.3	26	26.2	27.1	27.2	28.3	28.8	30	28.3	26	22.8	19.6	19.5	19.7	18.1	30.0	23.8
Aug 17	S	20.3	21.4	27.5	28.1	25.9	22.5	20.1	23.6	26.4	28	27.9	27.6	27.5	28.6	31.4	35	33.3	38	35	43.6	41.1	36.7	S	20.1	43.6	29.5
Aug 18	30.4	37.1	35.6	29.1	25	18.8	18.9	21	22	21.5	20.5	21.6	18.9	20	27.1	26.3	22	24.2	24.5	23.1	23.5	23.5	S	16.5	16.5	37.1	24.0
Aug 19	20.1	18.9	18.8	18	17.8	16.5	15.9	16.1	19.8	24.7	26	29	32.1	33.1	34.1	35.6	35.3	35.1	32	24.1	19.7	S	15	14.6	14.6	35.6	24.0
Aug 20	14.1	13	13.4	14.4	14.6	14.5	14.3	15.3	20.8	27.6	33.9	39.1	40.1	39.9	40.3	38.9	37.5	35.6	33.5	30.6	S	21.1	19	19.1	13.0	40.3	25.7
Aug 21	19.8	15.5	6.7	6.1	8.8	7.6	3.3	12.6	23.3	31	36.8	40.2	40.1	42.1	40.7	39.5	39.7	38.2	34.4	S	23.9	21.2	22.6	22.2	**3.3**	42.1	25.1
Aug 22	21.3	18.4	21.1	19.9	18.7	17	18.2	18.9	18.6	22.3	27.2	28.8	31.1	34.5	35.2	35.4	32.7	34	S	24.6	27.5	26	21	22.4	17.0	35.4	25.0
Aug 23	17.7	15.8	12.1	12.8	10.7	5.8	6.9	19.8	24.4	34.1	37.8	36.5	34.5	32.7	38.6	41	40.3	S	34.3	32.2	29.5	29.2	28.2	27.6	5.8	41.0	26.2
Aug 24	27.7	32.8	35	31.1	29.6	21.9	20.5	26.9	34.6	25.8	18.7	17.9	20.1	25.2	24	24.9	S	21.8	24.9	21.5	14.6	8.2	7.7	6.6	6.6	35.0	22.7
Aug 25	4.7	5.7	6.5	5	4.3	3.7	4	4.9	5.3	9.1	16.3	20.2	22	26.6	33	S	33.1	34.8	32.2	30.8	30	28.4	28	28.2	3.7	34.8	18.1
Aug 26	26.9	26.2	25.1	24.2	23.9	22.8	21.7	21.8	23.1	26.8	31.8	38.5	43.3	44.4	S	42.3	39.5	36.3	30.4	24.8	20	21.9	24.5	25.4	20.0	44.4	28.9
Aug 27	22	18.3	13.5	12.9	10.1	13	10.3	14.5	14.9	15.7	18.8	21.9	21.1	S	25.2	27.6	27.7	25.6	22.3	17.8	16.6	16.3	13.5	11.7	10.1	27.7	17.9
Aug 28	13.2	14.3	13.4	13.9	13.1	14	14.9	12.3	16	20.6	23.2	29.7	S	35.4	38.4	40.3	40.6	35.9	21	14.7	14.9	13	10.3	9	9.0	40.6	20.5
Aug 29	7.7	9.2	10.4	10.4	10	12	10	12.3	19.5	21.8	24.3	S	36.6	39.6	40.9	42	43.9	42.5	41	33.2	37.6	38.9	37.8	35.2	7.7	43.9	26.8
Aug 30	32.9	35.1	34.6	32.2	33.1	25.7	23.5	16.5	27.6	30.2	S	39.3	47.5	47	43	33.8	35.9	32.3	27.7	27.8	17.1	8.6	6.5	5.7	5.7	47.5	28.9
Aug 31	14.5	11.4	12.3	15.3	17.1	19.4	13.6	13.7	15.9	S	21.1	23.2	24.5	24.8	26.8	26.6	26.3	26.4	25	22.4	21.1	19.5	18.2	19.2	11.4	26.8	19.9
Diurnal Maximum	37.2	37.1	35.6	38.2	35.5	35.6	32.9	33.8	39.9	40.3	37.8	40.2	47.5	47.0	43.2	42.3	44.5	43.7	41.3	38.2	51.0	41.1	41.8	38.6			
Diurnal Average	21.2	20.2	19.7	18.7	18.3	16.5	16.2	19.0	21.7	24.8	26.6	28.4	30.0	31.6	32.3	32.5	33.3	32.0	29.9	26.4	24.9	23.5	22.6	20.7			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance			
K	Collection Error	ND	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.



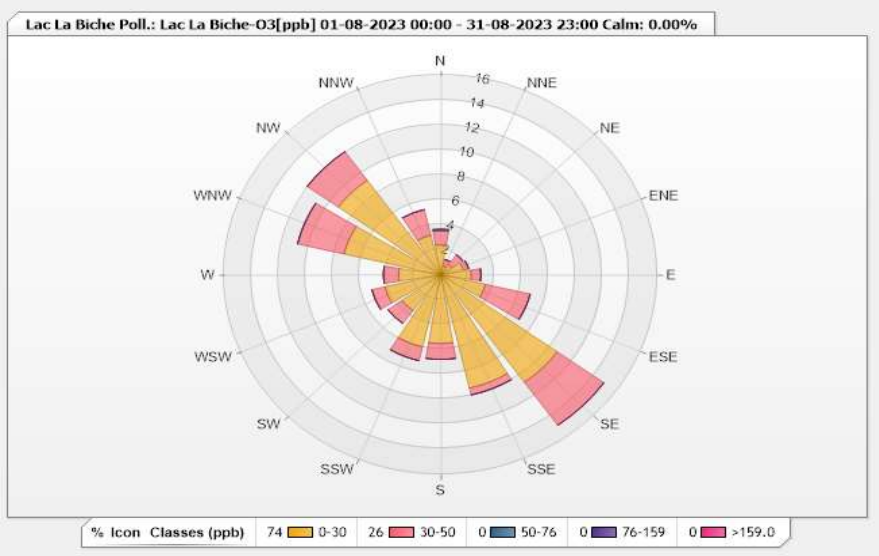


Station: Lac La Biche Poll.: Lac La Biche-O3[ppb] Monthly: 08-2023

Type: Pollution Rose
Direction: Blowing From (Wind Frequency)
Time Base: 1 - Hour

Calm: 0.00% Valid Data: 95.16% Calm Avg: 0.00 [ppm]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	2.4	1.13	0.14	0	0	3.67
NNE	0.71	0.56	0	0	0	1.27
NE	0.99	0.99	0	0	0	1.98
ENE	1.69	0.42	0	0	0	2.11
E	2.26	0.71	0	0	0	2.97
ESE	3.39	3.39	0	0	0	6.78
SE	10.59	4.24	0	0	0	14.83
SSE	9.32	0.56	0	0	0	9.88
S	5.51	1.27	0	0	0	6.78
SSW	5.93	1.13	0	0	0	7.06
SW	3.53	1.27	0	0	0	4.8
WSW	4.24	0.99	0	0	0	5.23
W	3.11	1.13	0	0	0	4.24
WNW	7.34	3.53	0	0	0	10.87
NW	9.32	2.82	0	0	0	12.14
NNW	3.25	2.12	0	0	0	5.37
Summary	73.58	26.26	0.14	0	0	100



Lakeland Industry & Community Association

Lac La Biche Station - August 2023

Summary of Hourly Averages

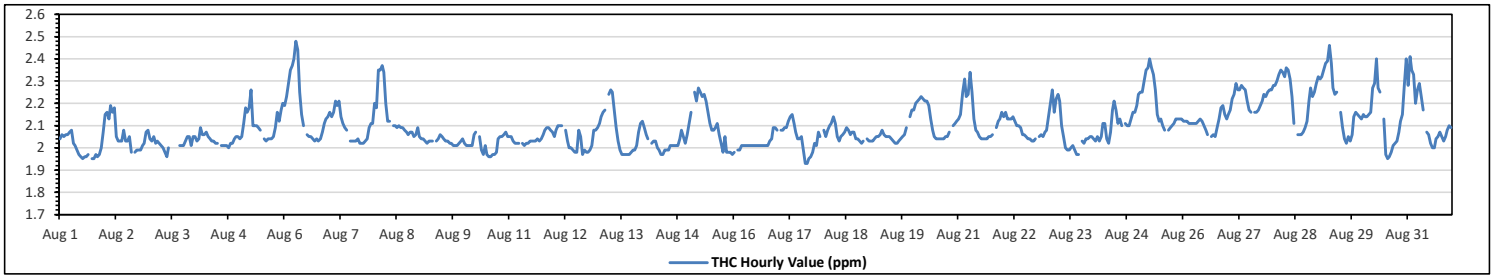
TOTAL HYDROCARBONS (THC) in ppm

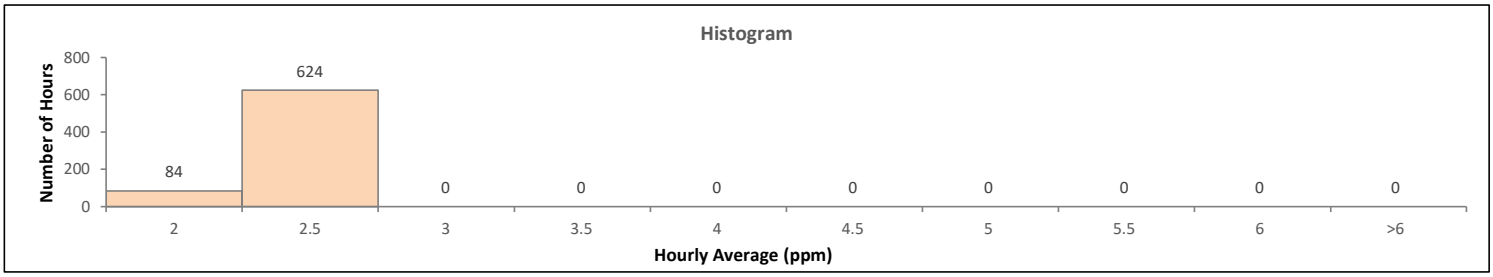
Maximum Hourly Value:	2.48	ppm	on Aug 6 at hr 6	Hours in Service:	744
Maximum Daily Value:	2.23	ppm	on Aug 28	Hours of Data:	708
Minimum Hourly Value:	1.93	ppm	on Aug 17 at hr 14	Hours of Missing Data:	0
Minimum Daily Value:	2.00	ppm	on Aug 1	Hours of Calibration:	36
Monthly Average:	2.09	ppm		Operational 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	2.04	2.06	2.05	2.06	2.06	2.07	2.08	2.02	2.01	1.99	1.97	1.96	1.95	1.96	1.96	1.97	S	1.95	1.95	1.97	1.96	1.97	2.00	2.07	1.95	2.08	2.00
Aug 2	2.15	2.16	2.13	2.19	2.16	2.18	2.05	2.03	2.03	2.03	2.08	2.03	2.03	2.05	1.98	S	1.98	1.99	1.99	1.99	2.01	2.02	2.07	2.08	1.98	2.19	2.06
Aug 3	2.04	2.03	2.05	2.02	2.03	2.02	2.01	2.00	1.98	1.96	2.00	C	C	C	C	C	2.01	2.01	2.01	2.03	2.05	2.05	2.01	2.05	1.96	2.05	2.02
Aug 4	2.05	2.03	2.04	2.09	2.06	2.06	2.07	2.05	2.04	2.03	2.03	2.02	2.02	S	2.01	2.01	2.01	2.01	2.00	2.02	2.02	2.04	2.05	2.05	2.00	2.09	2.04
Aug 5	2.04	2.05	2.11	2.18	2.16	2.18	2.26	2.10	2.10	2.10	2.09	2.08	S	2.04	2.03	2.04	2.04	2.04	2.05	2.09	2.16	2.12	2.17	2.20	2.03	2.26	2.11
Aug 6	2.19	2.23	2.29	2.35	2.37	2.40	**2.48**	2.44	2.25	2.15	2.10	S	2.06	2.05	2.05	2.04	2.03	2.04	2.03	2.04	2.07	2.11	2.13	2.14	2.03	**2.48**	2.18
Aug 7	2.16	2.14	2.16	2.21	2.19	2.21	2.14	2.11	2.09	2.08	S	2.03	2.03	2.03	2.03	2.04	2.02	2.02	2.02	2.03	2.04	2.09	2.11	2.11	2.02	2.21	2.09
Aug 8	2.20	2.18	2.35	2.35	2.37	2.34	2.20	2.12	2.12	S	2.10	2.10	2.09	2.10	2.09	2.09	2.08	2.07	2.06	2.07	2.07	2.05	2.06	2.09	2.05	2.37	2.15
Aug 9	2.05	2.04	2.04	2.03	2.02	2.03	2.03	2.03	S	2.03	2.04	2.06	2.05	2.04	2.03	2.03	2.02	2.02	2.01	2.01	2.01	2.02	2.03	2.04	2.01	2.06	2.03
Aug 10	2.02	2.01	2.01	2.01	2.01	2.06	2.07	S	2.05	1.99	1.97	2.01	1.97	1.96	1.96	1.97	1.97	1.98	2.04	2.05	2.05	2.06	2.07	2.05	1.96	2.07	2.01
Aug 11	2.05	2.05	2.03	2.02	2.02	2.02	S	2.02	2.01	2.02	2.02	2.03	2.03	2.03	2.03	2.04	2.03	2.04	2.06	2.08	2.09	2.09	2.08	2.07	2.01	2.09	2.04
Aug 12	2.05	2.08	2.10	2.10	2.10	S	2.08	2.03	2.00	2.00	1.99	1.98	1.98	2.08	2.05	1.97	1.99	1.98	1.98	1.99	2.01	2.08	2.08	2.09	1.97	2.10	2.03
Aug 13	2.11	2.14	2.16	2.17	S	2.24	2.26	2.25	2.17	2.09	2.03	1.99	1.97	1.97	1.97	1.97	1.97	1.98	1.99	1.99	2.01	2.07	2.11	2.12	1.97	2.26	2.08
Aug 14	2.09	2.06	2.04	S	2.02	2.03	2.03	2.00	1.99	1.97	1.97	1.99	1.99	1.99	2.01	2.01	2.01	2.01	2.01	2.04	2.08	2.05	2.02	2.06	1.97	2.09	2.02
Aug 15	2.11	2.16	S	2.25	2.21	2.27	2.25	2.23	2.24	2.21	2.16	2.11	2.08	2.08	2.09	2.11	2.06	2.02	1.98	2.05	1.98	1.98	1.98	1.97	1.97	2.27	2.11
Aug 16	1.98	S	1.99	1.99	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.03	2.04	2.09	2.09	2.08	1.98	2.09	2.02
Aug 17	S	2.08	2.08	2.09	2.09	2.12	2.14	2.15	2.11	2.07	2.04	2.04	2.05	1.99	1.93	1.93	1.95	1.96	1.98	2.02	2.01	2.07	2.05	S	1.93	2.15	2.04
Aug 18	2.08	2.05	2.08	2.10	2.11	2.14	2.11	2.05	2.03	2.05	2.06	2.07	2.09	2.08	2.06	2.07	2.07	2.04	2.04	2.03	2.02	2.03	S	2.04	2.02	2.14	2.07
Aug 19	2.03	2.03	2.03	2.04	2.05	2.05	2.06	2.08	2.06	2.05	2.05	2.05	2.04	2.03	2.02	2.02	2.03	2.04	2.05	2.06	2.09	S	2.14	2.17	2.02	2.17	2.06
Aug 20	2.17	2.20	2.21	2.22	2.23	2.22	2.21	2.21	2.19	2.13	2.08	2.05	2.04	2.04	2.04	2.04	2.04	2.05	2.05	2.07	S	2.10	2.11	2.12	2.04	2.23	2.12
Aug 21	2.13	2.15	2.25	2.31	2.23	2.24	2.34	2.25	2.13	2.08	2.07	2.05	2.04	2.04	2.04	2.04	2.05	2.05	2.06	S	2.09	2.12	2.13	2.16	2.04	2.34	2.13
Aug 22	2.14	2.16	2.13	2.13	2.13	2.14	2.12	2.10	2.10	2.09	2.06	2.06	2.05	2.04	2.04	2.03	2.03	2.04	S	2.05	2.06	2.05	2.07	2.08	2.03	2.16	2.08
Aug 23	2.14	2.20	2.26	2.16	2.22	2.24	2.21	2.10	2.05	2.00	1.99	1.99	2.00	2.01	1.99	1.97	1.97	S	2.03	2.02	2.04	2.04	2.05	2.05	1.97	2.26	2.08
Aug 24	2.04	2.03	2.05	2.03	2.05	2.11	2.11	2.04	2.02	2.07	2.17	2.21	2.17	2.11	2.13	2.10	S	2.11	2.10	2.10	2.13	2.16	2.16	2.19	2.02	2.21	2.10
Aug 25	2.24	2.25	2.25	2.30	2.35	2.36	2.40	2.36	2.33	2.26	2.15	2.12	2.13	2.10	2.08	S	2.08	2.09	2.10	2.11	2.13	2.13	2.13	2.13	2.08	2.40	2.20
Aug 26	2.12	2.12	2.12	2.11	2.11	2.11	2.11	2.11	2.12	2.13	2.12	2.10	2.08	2.06	S	2.05	2.06	2.05	2.09	2.13	2.18	2.19	2.15	2.13	2.05	2.19	2.11
Aug 27	2.15	2.17	2.22	2.24	2.29	2.26	2.26	2.28	2.27	2.26	2.21	2.17	2.16	S	2.16	2.16	2.17	2.19	2.21	2.24	2.23	2.25	2.26	2.26	2.15	2.29	2.22
Aug 28	2.28	2.28	2.30	2.33	2.35	2.34	2.32	2.36	2.35	2.31	2.23	2.11	S	2.06	2.06	2.06	2.07	2.09	2.12	2.21	2.27	2.23	2.25	2.29	2.06	2.36	**2.23**
Aug 29	2.32	2.31	2.32	2.35	2.38	2.39	2.46	2.38	2.27	2.24	2.25	S	2.16	2.09	2.04	2.02	2.05	2.03	2.06	2.14	2.16	2.15	2.14	2.13	2.02	2.46	2.21
Aug 30	2.15	2.14	2.14	2.15	2.16	2.27	2.29	2.40	2.27	2.25	S	2.13	1.97	1.95	1.96	1.98	2.01	2.02	2.03	2.07	2.12	2.15	2.28	2.40	1.95	2.40	2.14
Aug 31	2.28	2.41	2.35	2.33	2.20	2.26	2.29	2.23	2.17	S	2.07	2.06	2.02	2.00	2.00	2.04	2.05	2.07	2.05	2.03	2.05	2.08	2.10	2.09	2.00	2.41	2.14
Diurnal Maximum	2.32	2.41	2.35	2.35	2.38	2.40	2.48	2.44	2.35	2.31	2.25	2.21	2.17	2.11	2.16	2.16	2.17	2.19	2.21	2.24	2.27	2.25	2.28	2.40			
Diurnal Average	2.12	2.13	2.14	2.16	2.16	2.18	2.18	2.15	2.12	2.09	2.07	2.06	2.05	2.04	2.03	2.03	2.03	2.03	2.04	2.06	2.07	2.09	2.10	2.12			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	ND	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.



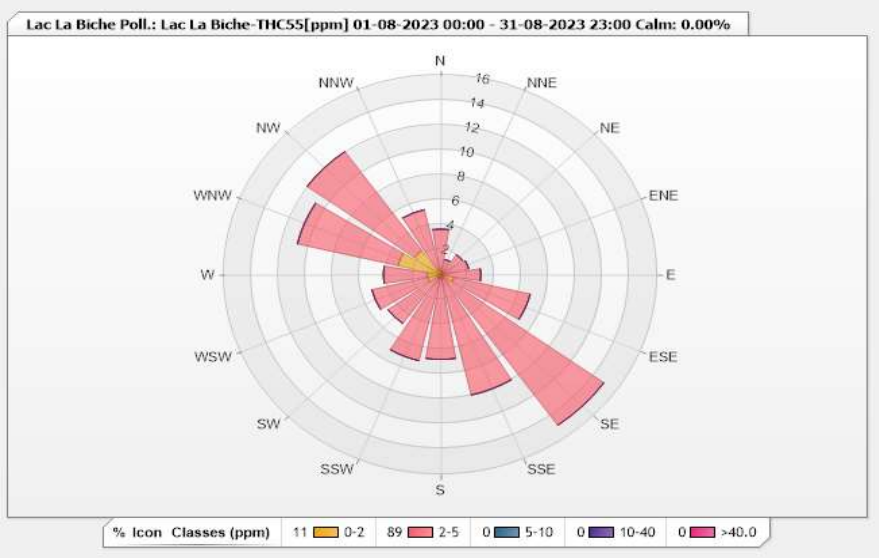


Station: Lac La Biche Poll.: Lac La Biche-THC55[ppm] Monthly: 08-2023

Type: Pollution Rose
Direction: Blowing From (Wind Frequency)
Time Base: 1 - Hour

Calm: 0.00% Valid Data: 95.16% Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-40	>40.0	Total
N	0.28	3.39	0	0	0	3.67
NNE	0.28	0.99	0	0	0	1.27
NE	0.14	1.84	0	0	0	1.98
ENE	0.14	1.98	0	0	0	2.12
E	0.14	2.82	0	0	0	2.96
ESE	0.99	5.79	0	0	0	6.78
SE	0.28	14.55	0	0	0	14.83
SSE	0	9.89	0	0	0	9.89
S	0.14	6.64	0	0	0	6.78
SSW	0.28	6.78	0	0	0	7.06
SW	0.28	4.52	0	0	0	4.8
WSW	0.99	4.24	0	0	0	5.23
W	0.99	3.25	0	0	0	4.24
WNW	3.25	7.63	0	0	0	10.88
NW	2.4	9.75	0	0	0	12.15
NNW	0.42	4.94	0	0	0	5.36
Summary	11	89	0	0	0	100



Lakeland Industry & Community Association

Lac La Biche Station - August 2023

Summary of Hourly Averages

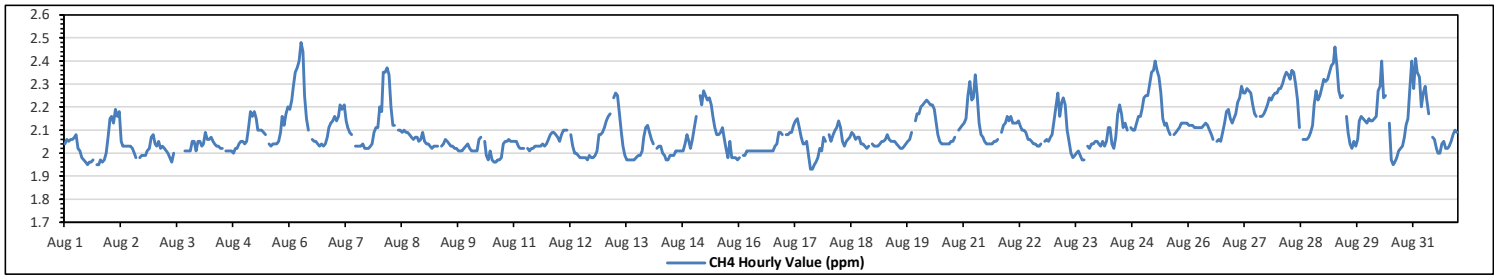
METHANE (CH4) in ppm

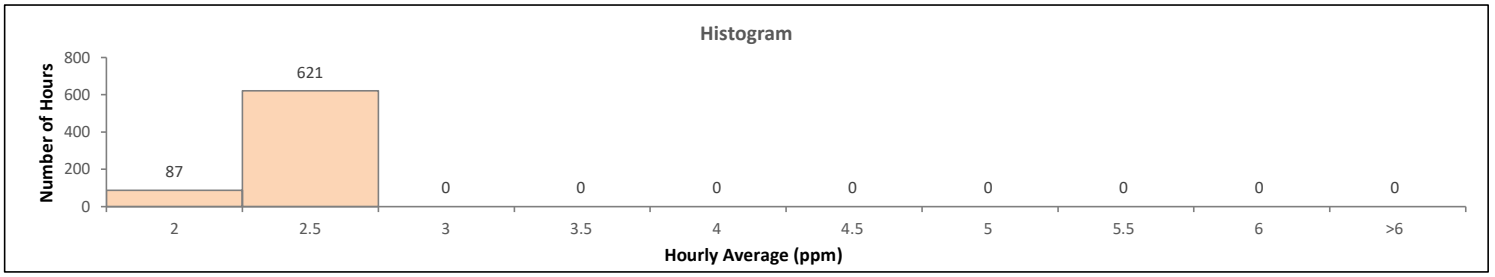
Maximum Hourly Value:	2.48	ppm	on Aug 6 at hr 6	Hours in Service:	744
Maximum Daily Value:	2.23	ppm	on Aug 28	Hours of Data:	708
Minimum Hourly Value:	1.93	ppm	on Aug 17 at hr 14	Hours of Missing Data:	0
Minimum Daily Value:	2.00	ppm	on Aug 1	Hours of Calibration:	36
Monthly Average:	2.09	ppm		Operational 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	2.04	2.06	2.05	2.06	2.06	2.07	2.08	2.02	2.01	1.98	1.97	1.96	1.95	1.96	1.96	1.97	S	1.95	1.95	1.97	1.96	1.97	2.00	2.07	1.95	2.08	2.00
Aug 2	2.15	2.16	2.13	2.19	2.16	2.18	2.05	2.03	2.03	2.03	2.03	2.03	2.02	2.00	1.98	S	1.98	1.99	1.99	1.99	2.01	2.02	2.07	2.08	1.98	2.19	2.06
Aug 3	2.04	2.03	2.05	2.02	2.03	2.02	2.01	2.00	1.98	1.96	2.00	C	C	C	C	C	2.01	2.01	2.01	2.01	2.05	2.05	2.01	2.05	1.96	2.05	2.02
Aug 4	2.05	2.03	2.04	2.09	2.06	2.06	2.07	2.05	2.04	2.03	2.03	2.02	2.02	S	2.01	2.01	2.01	2.01	2.00	2.02	2.02	2.04	2.05	2.05	2.00	2.09	2.04
Aug 5	2.04	2.05	2.11	2.18	2.16	2.18	2.15	2.10	2.10	2.10	2.09	2.08	S	2.04	2.03	2.04	2.04	2.04	2.05	2.09	2.16	2.12	2.17	2.20	2.03	2.20	2.10
Aug 6	2.19	2.23	2.29	2.35	2.37	2.40	**2.48**	2.44	2.25	2.15	2.10	S	2.06	2.05	2.05	2.04	2.03	2.04	2.03	2.04	2.07	2.11	2.13	2.14	2.03	**2.48**	2.18
Aug 7	2.16	2.14	2.16	2.21	2.19	2.21	2.14	2.11	2.09	2.08	S	2.03	2.03	2.03	2.03	2.04	2.02	2.02	2.02	2.03	2.04	2.09	2.11	2.11	2.02	2.21	2.09
Aug 8	2.20	2.18	2.35	2.35	2.37	2.34	2.20	2.12	2.12	S	2.10	2.10	2.09	2.10	2.09	2.09	2.08	2.07	2.06	2.07	2.07	2.05	2.06	2.09	2.05	2.37	2.15
Aug 9	2.05	2.04	2.04	2.03	2.02	2.03	2.03	2.03	S	2.03	2.04	2.06	2.05	2.04	2.03	2.03	2.02	2.02	2.01	2.01	2.01	2.02	2.03	2.04	2.01	2.06	2.03
Aug 10	2.02	2.01	2.01	2.01	2.01	2.06	2.07	S	2.05	1.99	1.97	2.01	1.97	1.96	1.96	1.97	1.97	1.98	2.04	2.05	2.05	2.06	2.05	2.05	1.96	2.07	2.01
Aug 11	2.05	2.05	2.03	2.02	2.02	2.02	S	2.02	2.01	2.02	2.02	2.03	2.03	2.03	2.03	2.04	2.03	2.04	2.06	2.08	2.09	2.09	2.08	2.07	2.01	2.09	2.04
Aug 12	2.05	2.08	2.10	2.10	2.10	S	2.08	2.03	2.00	2.00	1.99	1.98	1.98	1.98	1.98	1.97	1.99	1.98	1.98	1.99	2.01	2.08	2.08	2.09	1.97	2.10	2.03
Aug 13	2.11	2.14	2.16	2.17	S	2.24	2.26	2.25	2.17	2.09	2.03	1.99	1.97	1.97	1.97	1.97	1.97	1.98	1.99	1.99	2.01	2.07	2.11	2.12	1.97	2.26	2.08
Aug 14	2.09	2.06	2.04	S	2.02	2.03	2.03	2.00	1.99	1.97	1.97	1.99	1.99	1.99	2.01	2.01	2.01	2.01	2.01	2.04	2.08	2.05	2.02	2.06	1.97	2.09	2.02
Aug 15	2.11	2.16	S	2.25	2.21	2.27	2.25	2.23	2.24	2.21	2.16	2.11	2.08	2.08	2.09	2.11	2.06	2.02	1.98	2.05	1.98	1.98	1.98	1.97	1.97	2.27	2.11
Aug 16	1.98	S	1.99	1.99	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.03	2.04	2.09	2.09	2.08	1.98	2.09	2.02
Aug 17	S	2.08	2.08	2.09	2.09	2.12	2.14	2.15	2.11	2.07	2.04	2.04	2.05	1.99	1.93	1.93	1.95	1.96	1.98	2.02	2.01	2.07	2.05	S	1.93	2.15	2.04
Aug 18	2.08	2.05	2.08	2.10	2.11	2.14	2.11	2.05	2.03	2.05	2.06	2.07	2.09	2.08	2.06	2.07	2.07	2.04	2.04	2.03	2.02	2.03	S	2.04	2.02	2.14	2.07
Aug 19	2.03	2.03	2.03	2.04	2.05	2.05	2.06	2.08	2.06	2.05	2.05	2.05	2.04	2.03	2.02	2.02	2.03	2.04	2.05	2.06	2.09	S	2.14	2.17	2.02	2.17	2.06
Aug 20	2.17	2.20	2.21	2.22	2.23	2.22	2.21	2.21	2.19	2.13	2.08	2.05	2.04	2.04	2.04	2.04	2.04	2.05	2.05	2.07	S	2.10	2.11	2.12	2.04	2.23	2.12
Aug 21	2.13	2.15	2.25	2.31	2.23	2.24	2.34	2.25	2.13	2.08	2.07	2.05	2.04	2.04	2.04	2.04	2.05	2.05	2.06	S	2.09	2.12	2.13	2.16	2.04	2.34	2.13
Aug 22	2.14	2.16	2.13	2.13	2.13	2.14	2.12	2.10	2.10	2.09	2.06	2.06	2.05	2.04	2.04	2.03	2.03	2.04	S	2.05	2.06	2.05	2.07	2.08	2.03	2.16	2.08
Aug 23	2.14	2.20	2.26	2.16	2.22	2.24	2.21	2.10	2.05	2.00	1.98	1.99	2.00	2.01	1.99	1.97	1.97	S	2.03	2.02	2.04	2.04	2.05	2.05	1.97	2.26	2.07
Aug 24	2.04	2.03	2.05	2.03	2.05	2.11	2.11	2.04	2.02	2.07	2.17	2.21	2.17	2.11	2.13	2.10	S	2.11	2.10	2.10	2.13	2.16	2.16	2.19	2.02	2.21	2.10
Aug 25	2.24	2.25	2.25	2.30	2.35	2.36	2.40	2.36	2.33	2.26	2.15	2.12	2.13	2.10	2.08	S	2.08	2.09	2.10	2.11	2.13	2.13	2.13	2.13	2.08	2.40	2.20
Aug 26	2.12	2.12	2.12	2.11	2.11	2.11	2.11	2.11	2.12	2.13	2.12	2.10	2.08	2.06	S	2.05	2.06	2.05	2.09	2.13	2.18	2.19	2.15	2.13	2.05	2.19	2.11
Aug 27	2.15	2.17	2.22	2.24	2.29	2.26	2.26	2.28	2.27	2.26	2.21	2.17	2.16	S	2.16	2.16	2.17	2.19	2.21	2.24	2.23	2.25	2.26	2.26	2.15	2.29	2.22
Aug 28	2.28	2.28	2.30	2.33	2.35	2.34	2.32	2.36	2.35	2.30	2.23	2.11	S	2.06	2.06	2.06	2.07	2.09	2.12	2.21	2.27	2.23	2.25	2.29	2.06	2.36	**2.23**
Aug 29	2.32	2.31	2.32	2.35	2.38	2.39	2.46	2.38	2.27	2.24	2.25	S	2.16	2.09	2.04	2.02	2.05	2.03	2.06	2.14	2.16	2.15	2.14	2.13	2.02	2.46	2.21
Aug 30	2.15	2.14	2.14	2.15	2.16	2.27	2.29	2.40	2.24	2.25	S	2.13	1.97	1.95	1.96	1.98	2.01	2.02	2.03	2.07	2.12	2.15	2.28	2.40	1.95	2.40	2.14
Aug 31	2.28	2.41	2.35	2.33	2.20	2.26	2.29	2.23	2.17	S	2.07	2.06	2.02	2.00	2.00	2.04	2.05	2.02	2.02	2.03	2.05	2.08	2.10	2.09	2.00	2.41	2.14
Diurnal Maximum	2.32	2.41	2.35	2.35	2.38	2.40	2.48	2.44	2.35	2.30	2.25	2.21	2.17	2.11	2.16	2.16	2.17	2.19	2.21	2.24	2.27	2.25	2.28	2.40			
Diurnal Average	2.12	2.13	2.14	2.16	2.16	2.18	2.18	2.15	2.12	2.09	2.07	2.06	2.04	2.03	2.03	2.03	2.03	2.03	2.04	2.06	2.07	2.09	2.10	2.12			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	ND	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.



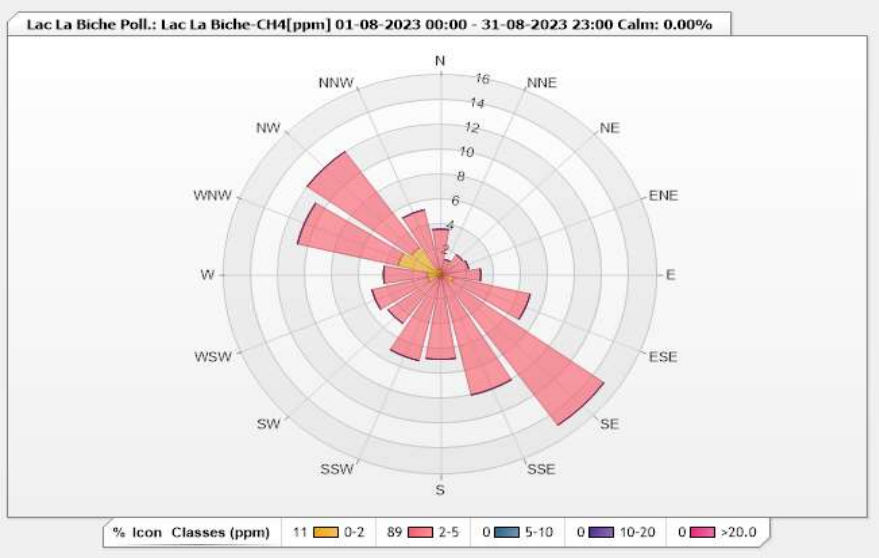


Station: Lac La Biche Poll.: Lac La Biche-CH4[ppm] Monthly: 08-2023

Type: Pollution Rose
Direction: Blowing From (Wind Frequency)
Time Base: 1 - Hour

Calm: 0.00% Valid Data: 95.16% Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-20	>20.0	Total
N	0.42	3.25	0	0	0	3.67
NNE	0.28	0.99	0	0	0	1.27
NE	0.14	1.84	0	0	0	1.98
ENE	0.14	1.98	0	0	0	2.12
E	0.14	2.82	0	0	0	2.96
ESE	0.99	5.79	0	0	0	6.78
SE	0.28	14.55	0	0	0	14.83
SSE	0	9.89	0	0	0	9.89
S	0.14	6.64	0	0	0	6.78
SSW	0.28	6.78	0	0	0	7.06
SW	0.28	4.52	0	0	0	4.8
WSW	0.99	4.24	0	0	0	5.23
W	0.99	3.25	0	0	0	4.24
WNW	3.25	7.63	0	0	0	10.88
NW	2.68	9.46	0	0	0	12.14
NNW	0.42	4.94	0	0	0	5.36
Summary	11.42	88.57	0	0	0	100



Lakeland Industry & Community Association

Lac La Biche Station - August 2023

Summary of Hourly Averages

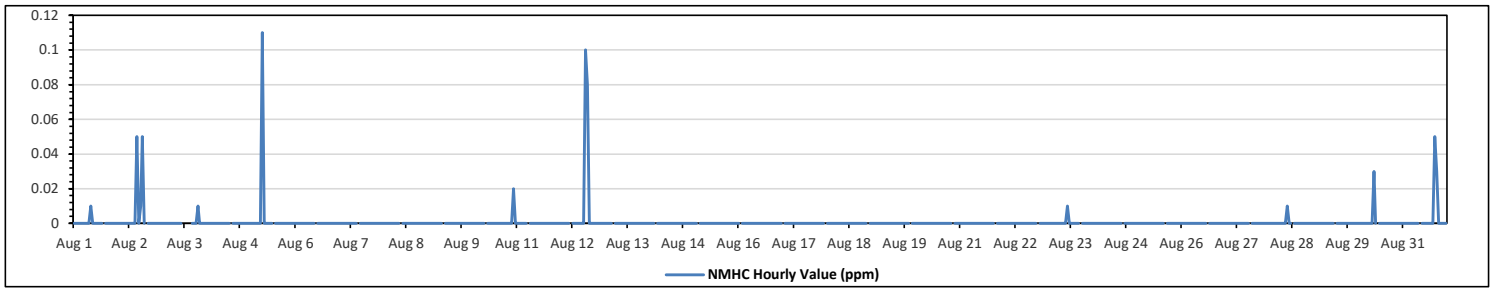
NON-METHANE HYDROCARBONS (NMHC) in ppm

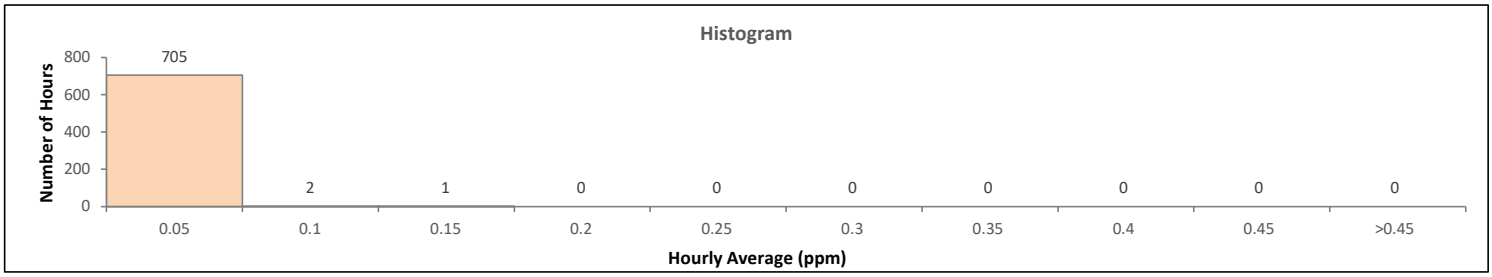
Maximum Hourly Value:	0.11	ppm	on Aug 5 at hr 6	Hours in Service:	744
Maximum Daily Value:	0.01	ppm	on Aug 12	Hours of Data:	708
Minimum Hourly Value:	0.00	ppm	on Aug 1 at hr 0	Hours of Missing Data:	0
Minimum Daily Value:	0.00	ppm	on Aug 4	Hours of Calibration:	36
Monthly Average:	0.00	ppm		Operational 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	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	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Aug 2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.01	0.05	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00
Aug 3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	C	C	C	C	C	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Aug 4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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
Aug 5	0.00	0.00	0.00	0.00	0.00	0.00	**0.11**	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	**0.11**	0.00
Aug 6	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 7	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 8	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 9	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 10	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	0.02	0.00	0.00	0.02	0.00
Aug 11	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 12	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	0.10	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	**0.01**
Aug 13	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 14	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 15	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 16	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 17	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00
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	0.00	0.00	S	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	0.00	S	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	0.00	S	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	0.00	0.00	0.00	S	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	0.00	0.00	S	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	0.01	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
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	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 25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	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	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 27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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
Aug 28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	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	0.01	0.00
Aug 29	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 30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	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	0.03	0.00
Aug 31	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	0.05	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00
Diurnal Maximum	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.00	0.03	0.01	0.05	0.00	0.01	0.10	0.08	0.00	0.00	0.05	0.03	0.01	0.00	0.00	0.02	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	0.01	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	ND	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.



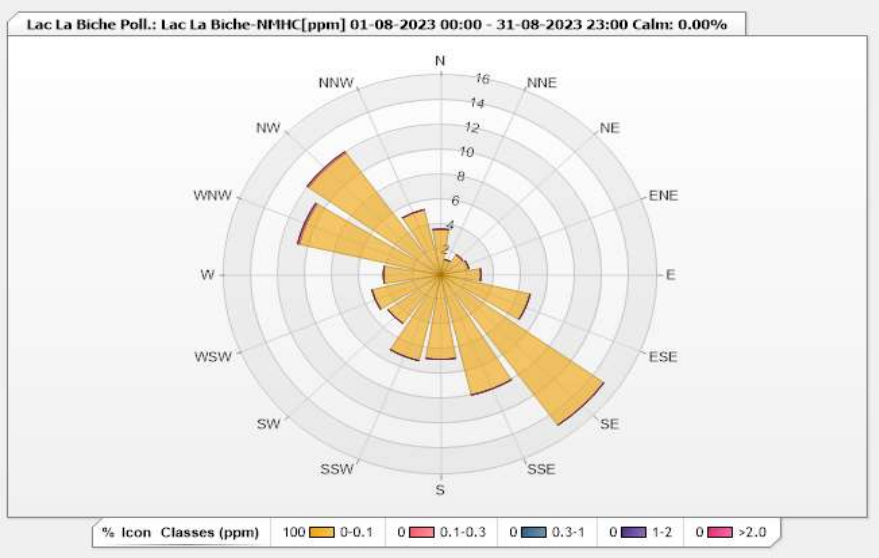


Station: Lac La Biche Poll.: Lac La Biche-NMHC[ppm] Monthly: 08-2023

Type: Pollution Rose
Direction: Blowing From (Wind Frequency)
Time Base: 1 - Hour

Calm: 0.00% Valid Data: 95.16% Calm Avg: 0.00 [ppm]

Direction	0-0.1	0.1-0.3	0.3-1	1-2	>2.0	Total
N	3.67	0	0	0	0	3.67
NNE	1.27	0	0	0	0	1.27
NE	1.98	0	0	0	0	1.98
ENE	2.12	0	0	0	0	2.12
E	2.97	0	0	0	0	2.97
ESE	6.78	0	0	0	0	6.78
SE	14.83	0	0	0	0	14.83
SSE	9.89	0	0	0	0	9.89
S	6.78	0	0	0	0	6.78
SSW	7.06	0	0	0	0	7.06
SW	4.8	0	0	0	0	4.8
WSW	5.23	0	0	0	0	5.23
W	4.24	0	0	0	0	4.24
WNW	10.73	0.14	0	0	0	10.87
NW	12.01	0.14	0	0	0	12.15
NNW	5.37	0	0	0	0	5.37
Summary	100	0.28	0	0	0	100



Lakeland Industry & Community Association

Lac La Biche Station - August 2023

Summary of Hourly Averages

PARTICULATE MATTER 2.5 ($PM_{2.5}$) in µg/m^3

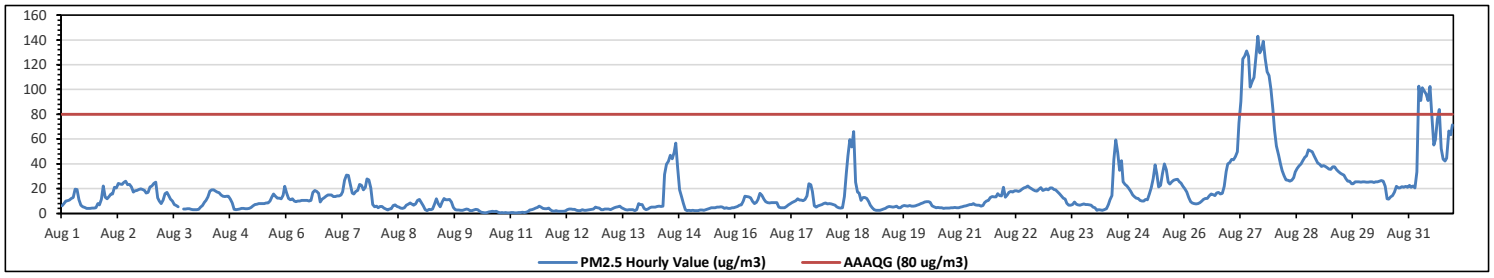
Alberta Ambient Air Quality Guideline (AAAQG): 1-Hour 80 µg/m3, Alberta Ambient Air Quality Objective (AAAQO): 24-Hour 29 µg/m3

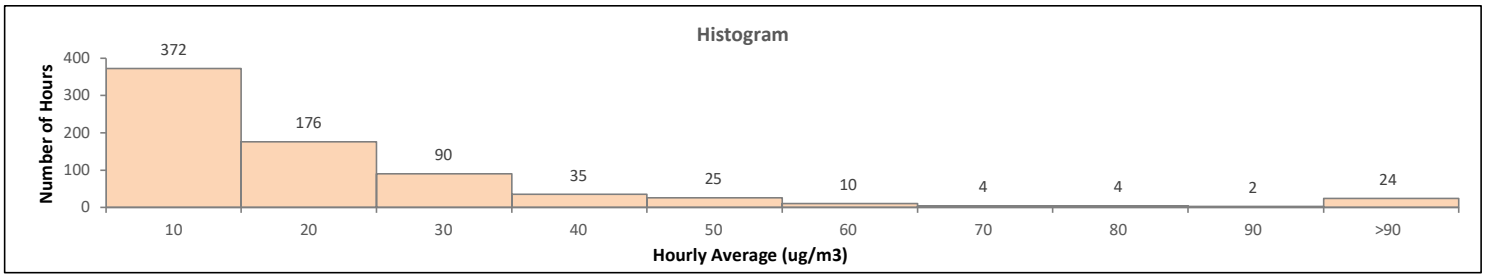
Number of 1-Hour Exceedances:	26	Number of 24-Hour Exceedances:	4
Maximum Hourly Value:	143 µg/m^3 on Aug 27 at hr 15	Hours in Service:	744
Maximum Daily Value:	100.8 µg/m^3 on Aug 27	Hours of Data:	742
Minimum Hourly Value:	0 µg/m^3 on Aug 10 at hr 10	Hours of Missing Data:	0
Minimum Daily Value:	1 µg/m^3 on Aug 10	Hours of Calibration:	2
Monthly Average:	17.4 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	6	8	10	10	11	12	13	20	19	11	7	5	5	4	4	4	4	4	4	8	7	11	22	13	4	22	9.3
Aug 2	12	14	16	16	21	21	24	24	24	25	26	23	23	21	17	18	19	19	20	19	19	16	17	21	12	26	19.7
Aug 3	22	24	25	13	10	8	11	16	17	14	12	10	7	6	5	C	C	4	4	4	4	3	3	3	3	25	10.2
Aug 4	3	3	5	6	9	11	13	18	19	19	18	17	17	15	14	13	14	14	11	8	3	3	3	3	3	19	10.9
Aug 5	4	4	4	4	4	5	6	7	7	8	8	8	8	8	8	10	13	16	14	12	12	12	15	22	4	22	9.1
Aug 6	17	12	11	12	10	10	10	10	10	10	10	11	10	11	17	18	18	16	9	12	13	14	15	15	9	18	12.5
Aug 7	15	13	14	14	14	15	18	27	31	31	23	16	16	18	19	23	23	19	21	28	27	20	7	5	5	31	19.0
Aug 8	6	4	6	6	4	4	3	4	4	6	7	6	5	4	4	4	7	7	8	8	7	8	10	11	3	11	5.9
Aug 9	9	6	3	2	3	3	3	8	12	8	5	9	12	11	11	11	9	5	3	3	3	3	3	3	2	12	6.1
Aug 10	3	3	2	2	3	3	3	2	1	1	0	1	1	2	2	1	2	1	1	1	1	1	0	0	**0**	3	**1.5**
Aug 11	1	1	0	1	1	1	1	1	1	2	3	3	3	4	5	6	5	4	4	4	4	3	2	2	**0**	6	2.4
Aug 12	2	2	2	2	2	2	3	3	3	3	3	3	2	2	3	3	3	3	3	3	3	5	5	4	2	5	2.9
Aug 13	3	3	3	4	3	3	4	4	5	5	6	5	4	3	3	3	3	3	2	3	8	7	7	4	2	8	4.1
Aug 14	3	4	5	5	5	5	6	6	6	6	31	40	42	47	44	49	57	37	19	14	8	3	2	3	2	57	18.5
Aug 15	2	3	2	2	2	3	3	3	3	4	4	5	5	5	5	5	5	5	4	5	4	4	5	5	2	5	3.8
Aug 16	5	6	7	7	10	14	14	13	13	10	8	9	11	16	15	11	10	9	8	9	9	9	9	5	5	16	9.7
Aug 17	5	4	5	6	7	8	9	10	10	12	11	11	10	11	14	24	23	18	6	5	6	7	7	8	4	24	9.8
Aug 18	8	8	8	8	7	7	5	4	4	5	14	32	46	60	54	66	25	17	16	10	13	13	12	10	4	66	18.8
Aug 19	7	4	3	3	3	3	3	3	4	5	6	5	5	5	6	5	5	6	6	6	6	6	6	6	3	7	4.8
Aug 20	6	7	7	8	8	9	10	10	9	6	5	5	5	5	5	4	4	4	4	4	5	5	5	5	4	10	6.0
Aug 21	5	5	6	6	7	7	7	8	7	7	7	6	6	9	10	11	13	13	13	13	16	14	14	21	5	21	9.6
Aug 22	13	15	17	18	17	18	18	18	18	20	21	21	22	21	20	19	18	18	20	21	19	19	20	19	13	22	18.7
Aug 23	21	21	19	19	18	16	14	12	12	8	7	7	7	9	8	7	7	7	8	7	7	7	7	5	5	21	10.7
Aug 24	5	3	3	3	3	3	4	7	11	14	43	59	49	35	43	26	23	22	20	18	15	14	12	12	3	59	18.5
Aug 25	10	10	10	11	11	16	21	28	39	32	21	23	32	40	35	25	24	25	27	27	27	25	24	22	10	40	23.6
Aug 26	20	17	13	10	8	8	8	8	9	10	11	12	12	14	16	15	15	17	17	16	16	22	34	40	8	40	15.2
Aug 27	41	44	43	46	50	73	90	125	127	131	127	102	106	110	126	**143**	130	133	139	125	114	111	100	84	41	**143**	**100.8**
Aug 28	68	54	47	40	35	31	27	27	26	27	29	34	36	38	40	43	45	46	51	51	50	47	43	41	26	68	40.6
Aug 29	40	38	39	38	37	36	36	38	38	35	34	33	32	31	28	26	26	24	24	25	25	25	25	25	24	40	31.5
Aug 30	26	25	25	25	25	25	25	26	26	26	26	22	12	12	13	15	17	22	21	21	22	21	22	21	12	26	21.6
Aug 31	23	21	22	20	33	103	91	102	99	96	91	103	78	55	60	76	84	52	44	42	45	67	64	71	20	103	64.2
Diurnal Maximum	68	54	47	46	50	103	91	125	127	131	127	103	106	110	126	143	130	133	139	125	114	111	100	84			
Diurnal Average	13.2	12.4	12.3	11.7	12.3	15.4	16.2	19.0	19.7	19.2	20.1	20.7	20.3	20.4	21.0	22.8	21.6	19.0	17.8	17.1	16.6	16.9	16.7	16.4			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	ND	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.



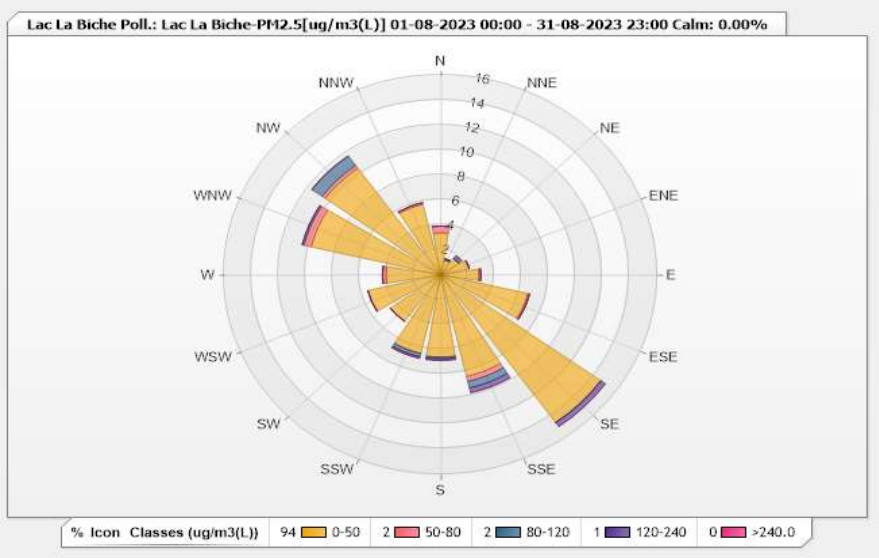


Station: Lac La Biche Poll.: Lac La Biche-PM2.5[ug/m3(L)] Monthly: 08-2023

Type: Pollution Rose
Direction: Blowing From (Wind Frequency)
Time Base: 1 - Hour

Calm: 0.00% Valid Data: 99.73% Calm Avg: 0.00 [ppm]

Direction	0-50	50-80	80-120	120-240	>240.0	Total
N	3.37	0.54	0	0	0	3.91
NNE	1.21	0	0.13	0	0	1.34
NE	1.62	0	0	0.27	0	1.89
ENE	2.16	0	0	0	0	2.16
E	2.83	0.13	0	0	0	2.96
ESE	6.6	0.13	0	0	0	6.73
SE	14.56	0	0	0.4	0	14.96
SSE	8.36	0.4	0.54	0.4	0	9.7
S	6.6	0	0.13	0.13	0	6.86
SSW	6.47	0	0.27	0.13	0	6.87
SW	4.58	0	0	0	0	4.58
WSW	5.53	0	0	0	0	5.53
W	4.04	0.27	0	0	0	4.31
WNW	9.84	0.54	0.13	0	0	10.51
NW	10.51	0.27	0.94	0	0	11.72
NNW	5.8	0.13	0	0	0	5.93
Summary	94.08	2.41	2.14	1.33	0	100



Lakeland Industry & Community Association

Lac La Biche Station - August 2023

Summary of Hourly Averages

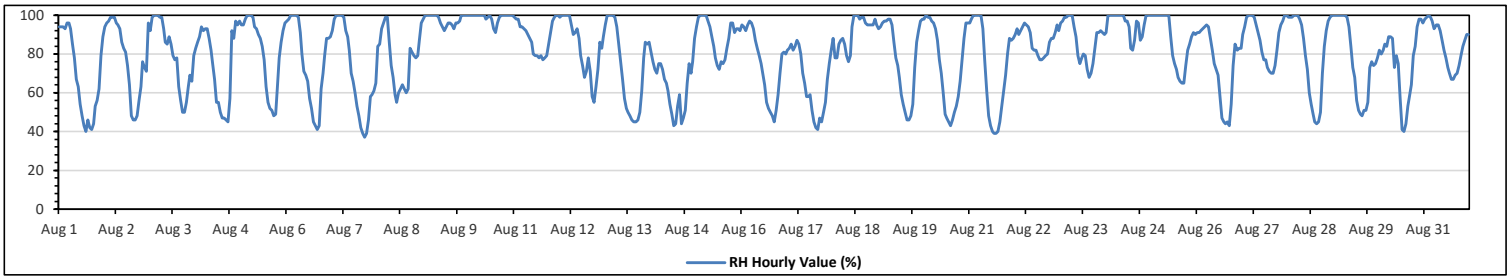
RELATIVE HUMIDITY (RH) in %

Maximum Hourly Value:	100	%	on Aug 3 at hr 2	Hours in Service:	744	
Maximum Daily Value:	98.9	%	on Aug 10	Hours of Data:	744	
Minimum Hourly Value:	37	%	on Aug 7 at hr 17	Hours of Missing Data:	0	
Minimum Daily Value:	63.8	%	on Aug 14	Hours of Calibration:	0	
Monthly Average:	80.5	%		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	94	94	94	93	96	96	93	85	78	67	63	54	48	43	40	46	42	41	44	53	56	62	79	89	40	96	68.8
Aug 2	94	96	97	99	99	99	96	95	93	86	83	81	74	64	48	46	46	48	56	63	76	73	71	96	46	99	78.3
Aug 3	92	99	**100**	**100**	**100**	99	99	93	86	85	89	85	79	77	78	63	56	50	50	55	63	69	66	79	50	**100**	79.7
Aug 4	83	86	89	94	92	93	93	88	82	75	67	55	55	50	47	47	46	45	57	92	88	97	95	97	45	97	75.5
Aug 5	95	95	98	**100**	**100**	**100**	99	94	93	90	88	84	77	63	55	52	51	48	49	62	78	86	92	96	48	**100**	81.0
Aug 6	97	98	**100**	**100**	**100**	**100**	99	91	80	71	69	66	57	52	45	43	41	43	62	70	79	88	88	89	41	**100**	76.2
Aug 7	92	98	**100**	**100**	**100**	**100**	99	92	89	82	70	66	60	53	48	42	39	**37**	39	46	58	59	61	65	**37**	**100**	70.6
Aug 8	84	85	93	96	99	99	86	74	68	59	55	60	62	64	62	60	62	83	81	79	78	79	87	96	55	99	77.1
Aug 9	98	**100**	**100**	**100**	**100**	**100**	**100**	**100**	99	96	94	92	94	96	96	95	93	96	96	97	**100**	**100**	**100**	**100**	92	**100**	97.6
Aug 10	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	98	99	**100**	98	93	91	96	99	**100**	**100**	**100**	**100**	**100**	**100**	**100**	91	**100**	**98.9**
Aug 11	99	98	98	94	94	93	92	90	88	86	80	79	79	78	79	77	78	79	85	91	97	99	**100**	**100**	77	**100**	88.9
Aug 12	99	**100**	**100**	**100**	**100**	**100**	95	90	91	93	88	79	74	68	71	78	71	58	55	63	72	86	83	89	55	**100**	83.5
Aug 13	95	**100**	**100**	**100**	**100**	99	94	85	76	67	57	52	50	48	46	45	45	46	50	61	78	86	85	86	45	**100**	73.0
Aug 14	81	76	72	70	75	75	72	67	65	61	54	49	43	44	53	59	44	47	51	65	75	70	76	88	43	88	**63.8**
Aug 15	94	99	**100**	**100**	**100**	**100**	97	94	89	84	78	74	72	76	75	77	83	88	96	96	91	93	93	92	72	**100**	89.2
Aug 16	95	94	92	95	97	96	93	87	83	79	75	70	64	55	52	50	48	45	51	59	70	80	81	80	45	97	74.6
Aug 17	82	83	85	82	84	87	85	80	70	65	58	58	59	51	45	42	41	47	45	50	55	67	75	82	41	87	65.8
Aug 18	88	78	78	85	87	88	85	79	76	79	94	**100**	**100**	**100**	98	99	99	96	95	95	95	95	98	95	76	**100**	90.9
Aug 19	93	94	96	97	97	98	98	95	86	78	74	68	59	54	50	46	46	48	54	73	86	92	97	98	46	98	78.2
Aug 20	98	**100**	99	99	97	96	93	87	77	70	60	49	47	45	43	46	50	53	58	66	77	88	96	96	43	**100**	74.6
Aug 21	96	98	**100**	**100**	**100**	**100**	**100**	93	76	61	48	43	40	39	39	40	45	53	61	69	80	88	87	88	39	**100**	72.7
Aug 22	90	93	90	92	94	96	95	94	91	83	82	82	79	77	77	78	79	80	86	88	88	91	95	92	77	96	87.2
Aug 23	96	97	99	99	**100**	**100**	**100**	94	89	79	75	78	80	79	72	68	70	75	83	91	91	92	91	90	68	**100**	87.0
Aug 24	91	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	97	97	94	83	82	87	97	96	87	89	95	**100**	**100**	**100**	82	**100**	95.6
Aug 25	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	89	79	75	72	68	66	65	65	74	82	85	89	91	90	65	**100**	87.1
Aug 26	91	91	92	93	94	95	94	88	82	75	72	69	58	47	45	44	45	43	54	74	85	82	83	83	43	95	74.1
Aug 27	90	94	99	**100**	**100**	**100**	99	95	91	87	81	77	77	73	71	70	70	74	82	91	95	97	**100**	**100**	70	**100**	88.0
Aug 28	99	99	99	**100**	**100**	**100**	98	95	88	79	72	60	54	49	45	44	45	50	70	84	92	97	99	**100**	44	**100**	79.9
Aug 29	**100**	**100**	**100**	**100**	**100**	**100**	**100**	99	94	84	73	68	56	51	49	48	51	51	55	73	76	74	75	78	48	**100**	77.3
Aug 30	82	80	82	85	84	89	89	88	73	79	75	57	41	40	44	53	58	64	79	84	94	98	98	96	40	98	75.5
Aug 31	98	99	**100**	99	97	93	95	95	92	87	82	78	73	70	67	67	69	70	74	79	84	87	90	90	67	**100**	84.8
Diurnal Maximum	100	100	100	100	100	100	100	100	100	100	99	100	100	100	98	99	99	100	100	100	100	100	100	100			
Diurnal Average	93.1	94.3	95.2	95.9	96.3	96.5	94.8	90.5	85.3	80.2	75.5	71.3	67.0	63.0	60.7	60.5	60.5	61.9	67.1	75.5	81.8	85.9	88.1	91.0			

C	Monthly Calibration	**S**	Daily Zero-Span Check	**Q**	Quality Assurance	
K	Collection Error	**ND**	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

Lac La Biche Station - August 2023

Summary of Hourly Averages

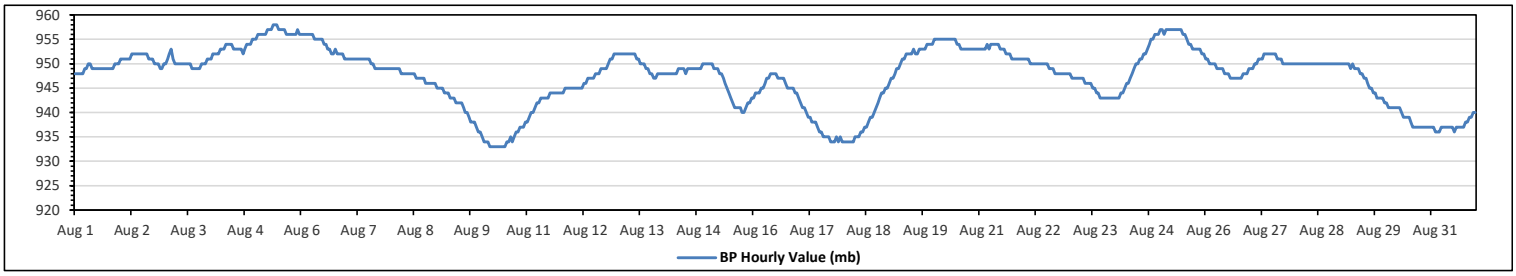
BAROMETRIC PRESSURE (BP) in millibar

Maximum Hourly Value:	958	mb	on Aug 5 at hr 9	Hours in Service:	744
Maximum Daily Value:	957	mb	on Aug 5	Hours of Data:	744
Minimum Hourly Value:	933	mb	on Aug 10 at hr 4	Hours of Missing Data:	0
Minimum Daily Value:	934	mb	on Aug 10	Hours of Calibration:	0
Monthly Average:	947	mb		Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																							Daily	Daily	Daily
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Minimum	Maximum	Average
Aug 1	948	948	948	948	948	949	949	950	950	949	949	949	949	949	949	949	949	949	949	949	950	950	950	948	950	949
Aug 2	951	951	951	951	951	951	952	952	952	952	952	952	952	952	952	951	951	951	950	950	950	949	949	950	949	952	951
Aug 3	950	951	952	953	951	950	950	950	950	950	950	950	950	950	949	949	949	949	949	950	950	950	951	951	949	953	950
Aug 4	951	952	952	952	952	953	953	953	954	954	954	954	953	953	953	953	953	952	953	954	954	954	955	955	951	955	953
Aug 5	955	956	956	956	956	956	957	957	957	**958**	**958**	**958**	957	957	957	957	956	956	956	956	956	956	957	956	955	**958**	**957**
Aug 6	956	956	956	956	956	956	956	955	955	955	955	955	954	954	953	953	952	952	953	952	952	952	952	951	951	956	954
Aug 7	951	951	951	951	951	951	951	951	951	951	951	951	951	950	950	949	949	949	949	949	949	949	949	949	949	951	950
Aug 8	949	949	949	949	949	948	948	948	948	948	948	948	948	947	947	947	947	947	946	946	946	946	946	946	946	949	948
Aug 9	945	945	945	945	944	944	944	943	943	943	942	942	942	942	941	940	940	939	938	938	938	937	936	936	936	945	941
Aug 10	935	934	934	934	**933**	**933**	**933**	**933**	**933**	**933**	**933**	**933**	**933**	934	934	935	934	935	936	936	937	937	937	938	**933**	938	**934**
Aug 11	938	939	940	940	941	942	942	943	943	943	943	943	944	944	944	944	944	944	944	944	945	945	945	945	938	945	943
Aug 12	945	945	945	945	945	945	946	946	947	947	947	947	948	948	948	949	949	949	949	950	951	951	952	952	945	952	948
Aug 13	952	952	952	952	952	952	952	952	952	952	951	951	950	950	950	949	949	948	948	947	947	948	948	948	947	952	950
Aug 14	948	948	948	948	948	948	948	948	949	949	949	949	948	949	949	949	949	949	949	949	949	950	950	950	948	950	949
Aug 15	950	950	950	949	949	949	948	948	947	946	945	944	943	942	941	941	941	941	940	940	941	942	942	943	940	950	945
Aug 16	943	944	944	944	945	945	946	947	947	948	948	948	948	947	947	947	947	946	945	945	945	945	944	944	943	948	946
Aug 17	943	942	941	941	940	939	939	938	938	938	937	936	936	935	935	935	935	934	934	934	935	934	935	934	934	943	937
Aug 18	934	934	934	934	934	934	935	935	935	936	936	937	937	938	939	939	940	941	942	943	944	944	945	945	934	945	938
Aug 19	946	947	947	948	949	949	950	951	951	952	952	952	952	953	952	952	953	953	953	953	954	954	954	954	946	954	951
Aug 20	955	955	955	955	955	955	955	955	955	955	955	955	954	954	953	953	953	953	953	953	953	953	953	953	953	955	954
Aug 21	953	953	953	953	954	953	954	954	954	954	954	953	953	953	952	952	952	951	951	951	951	951	951	951	951	954	953
Aug 22	951	951	951	950	950	950	950	950	950	950	950	950	950	949	949	949	948	948	948	948	948	948	948	948	948	951	949
Aug 23	948	947	947	947	947	947	947	947	946	946	946	946	945	945	944	944	943	943	943	943	943	943	943	943	943	948	945
Aug 24	943	943	943	944	944	945	946	946	947	948	949	950	950	951	951	952	952	953	954	955	955	956	956	956	943	956	950
Aug 25	957	957	956	957	957	957	957	957	957	957	957	957	956	956	955	954	954	953	953	953	953	953	952	952	952	957	955
Aug 26	951	951	950	950	950	950	949	949	949	949	948	948	948	947	947	947	947	947	947	947	948	948	948	949	947	951	949
Aug 27	949	949	950	950	951	951	951	952	952	952	952	952	952	952	951	951	951	950	950	950	950	950	950	950	949	952	951
Aug 28	950	950	950	950	950	950	950	950	950	950	950	950	950	950	950	950	950	950	950	950	950	950	950	950	950	950	950
Aug 29	950	950	950	950	950	949	950	949	949	949	948	948	947	947	946	945	945	944	944	943	943	943	943	942	942	950	947
Aug 30	942	941	941	941	941	941	941	941	940	939	939	939	939	938	937	937	937	937	937	937	937	937	937	937	937	942	939
Aug 31	937	937	936	936	936	937	937	937	937	937	937	937	936	937	937	937	937	937	938	938	939	939	940	940	936	940	937
Diurnal Maximum	957	957	956	957	957	957	957	957	957	958	958	958	957	957	957	957	956	956	956	956	956	956	957	956			
Diurnal Average	948	948	948	948	948	948	948	948	948	948	948	948	948	948	947	947	947	947	947	947	947	947	947	947			

C	Monthly Calibration	**S**	Daily Zero-Span Check	**Q**	Quality Assurance	
K	Collection Error	**ND**	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

Lac La Biche Station - August 2023

Summary of Hourly Averages

AMBIENT TEMPERATURE (AT) in Degree Celsius

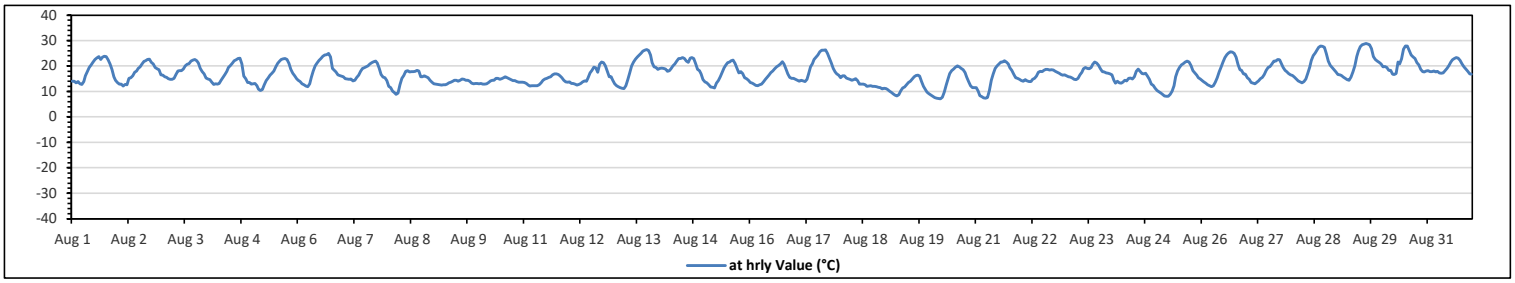
Maximum Hourly Value:	28.9	°C	on Aug 29 at hr 15	Hours in Service:	744
Maximum Daily Value:	21.7	°C	on Aug 29	Hours of Data:	744
Minimum Hourly Value:	7.1	°C	on Aug 20 at hr 5	Hours of Missing Data:	0
Minimum Daily Value:	11.9	°C	on Aug 19	Hours of Calibration:	0
Monthly Average:	17.0	°C		Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																							Daily	Daily	Daily
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Minimum	Maximum	Average
Aug 1	14.1	14	13.4	13.9	13.1	12.8	13.9	16.1	17.8	19.4	20.4	21.6	22.6	23.2	23.7	22.6	23.5	23.9	23.7	22.5	20.8	18.7	15.9	14.4	12.8	23.9	18.6
Aug 2	13.5	13	13	12.1	12.8	12.7	15.2	15.5	16.1	17.5	18.1	19	19.8	20.9	21.8	22.1	22.6	22.7	21.4	20.8	19.5	18.9	18.6	16.5	12.1	22.7	17.7
Aug 3	16.4	15.8	15.6	15	14.8	14.7	15.2	16.7	18.1	18.2	18.2	18.8	20.1	20.7	21	22	22.4	22.6	22.1	21.2	19.1	17.8	17	15.3	14.7	22.6	18.3
Aug 4	14.9	14.6	13.7	12.8	13.1	13	13.2	14.4	15.6	16.7	18	19.4	20.2	21.1	22.1	22.5	22.9	23.1	20.8	16	15	13.5	13.5	12.9	12.8	23.1	16.8
Aug 5	13.1	13.2	12.2	10.9	10.5	10.8	12.6	14.3	15.3	16.4	17.2	18.1	19.8	21.1	21.9	22.6	22.8	23	22.6	21.1	18.7	17.2	16.1	15	10.5	23.0	16.9
Aug 6	14.5	13.9	13.1	12.6	12.1	11.9	13.1	15.6	18.1	20.1	21.2	22.3	22.9	23.9	24.4	24.5	25	23.6	19	18.5	17.7	16.5	16.3	16	11.9	25.0	18.2
Aug 7	15.9	15.1	14.9	14.8	14.9	14.2	14.4	15.6	16.4	17.9	19.1	19.3	19.7	20.1	20.8	21.3	21.7	21.9	21.2	19.2	16.7	15.7	15.5	14.3	14.2	21.9	17.5
Aug 8	12	11.6	10.2	9.6	8.9	9.4	12.6	15.2	16.3	17.9	18.2	17.7	17.8	17.8	17.9	18.4	18.1	15.9	15.9	16.1	15.9	15.4	14.4	13.7	8.9	18.4	14.9
Aug 9	13.1	13	12.8	12.6	12.5	12.6	12.6	12.9	13.4	13.7	14	14.5	14.4	14.1	14.5	14.9	14.7	14.4	14.4	14.1	13.3	13.1	13.2	13.2	12.5	14.9	13.6
Aug 10	13.1	13.2	13	12.9	13.1	13.5	14.2	14.5	14.4	15.2	15.2	14.7	15.1	15.5	15.8	15.5	15.1	14.6	14.3	14.3	13.9	13.6	13.7	13.7	12.9	15.8	14.3
Aug 11	13.5	13.2	12.5	12.1	12.2	12.2	12.2	12.3	12.7	13.4	14.5	14.9	15.2	15.6	15.8	16.6	16.9	17	16.7	16.1	15.5	14.5	13.8	13.7	12.1	17.0	14.3
Aug 12	13.8	13.2	13.2	12.9	12.5	12.8	13.2	13.8	14.2	14.1	15.5	17.3	18.4	19.6	19.3	17.5	20.7	21.6	21.3	20	17.9	15.8	15.9	14.5	12.5	21.6	16.2
Aug 13	13.1	12.2	11.9	11.5	11.3	11.1	12.3	14.6	17.3	20	21.6	22.7	23.6	24.3	25.1	25.8	26.3	26.5	26.1	24.3	21.3	19.7	19.4	18.7	11.1	26.5	19.2
Aug 14	19	19.2	19.1	18.8	18	18.2	18.9	20.1	20.9	21.9	22.9	23	23.4	23	21.9	21.4	23.1	23.4	23	21	18.7	18.2	16.9	14.6	14.6	23.4	20.4
Aug 15	13.8	13.4	12.7	11.8	11.7	11.4	13.3	14.3	15.8	17.6	19.3	20.3	21.3	21.6	22.1	22.4	21.1	19.2	17.3	17.8	17.1	15.5	15.1	14.5	11.4	22.4	16.7
Aug 16	13.5	13.3	13	12.4	12.3	12.6	13	13.8	14.7	15.7	16.4	17.4	18.1	18.9	19.7	20.2	20.8	21.7	20.8	18.9	16.9	15.6	15.2	15.2	12.3	21.7	16.3
Aug 17	14.7	14.4	14	14.4	14.2	13.9	14.8	17	19.7	21	22.6	23.5	24.3	25.6	26.2	26.3	26.4	25	23.1	21.2	19	17.7	17	16.4	13.9	26.4	19.7
Aug 18	15.5	16.1	16.1	15.3	15.1	14.8	14.4	14.6	15	14.3	13	12.9	12.9	12.6	12	12.1	12.3	12	12	11.9	11.7	11.5	11	11.3	11.0	16.1	13.4
Aug 19	11.2	10.8	10.1	9.6	9.1	8.5	8.3	8.8	10.3	11.4	11.8	12.6	13.5	14	14.9	15.8	16.3	16.4	16	13.9	12	10.8	9.8	9.2	8.3	16.4	**11.9**
Aug 20	8.6	8.1	7.7	7.4	7.2	**7.1**	7.8	9.7	12.5	15.1	17.1	18.2	18.8	19.6	20.1	19.7	19.1	18.6	17.4	15.7	13.9	12.2	11.5	11.5	**7.1**	20.1	13.5
Aug 21	11.6	10.2	8.4	7.9	7.5	7.4	7.7	10.5	14.4	16.9	19	20.1	20.9	21.6	21.5	22.1	21.6	20.8	19.3	18.3	16.8	15.4	15.2	14.7	7.4	22.1	15.4
Aug 22	14.3	14	14.6	14.2	13.9	13.9	14.7	15.2	16	17.6	18	17.8	18.4	18.7	18.7	18.5	18.6	18.5	17.9	17.6	17.2	16.7	16.4	16.5	13.9	18.7	16.6
Aug 23	16.1	15.8	15.7	15.3	14.7	14.6	15.2	16.6	17.6	18.9	19.4	19	18.9	19.4	20.7	21.5	21.2	20.3	18.9	17.8	17.7	17.3	17.2	16.9	14.6	21.5	17.8
Aug 24	16.6	14.4	13.3	14.1	13.4	13.3	13.6	14.5	14.2	15.2	15.3	14.9	15.9	17.9	18.8	18	17.1	16.9	17.2	16	14.7	13	12.4	11.3	11.3	18.8	15.1
Aug 25	10.4	9.9	9.4	8.9	8.3	8.1	8.1	8.9	10.1	12.3	15.8	18.1	19.5	20.4	21	21.6	22	21.6	20.2	18.2	17.3	16.4	15.4	14.9	8.1	22.0	14.9
Aug 26	14.3	13.8	13.3	12.7	12.3	11.9	12.3	13.6	15.4	17.7	19.6	21.6	23.4	24.5	25.2	25.6	25.5	25	23.5	20.6	18.6	18.3	16.9	16.8	11.9	25.6	18.4
Aug 27	15.4	14.7	13.5	13.3	13.1	13.7	14.2	15	15.6	16.7	18.3	19.5	19.9	20.8	21.9	22	22.6	22.5	21.1	19.5	18.3	17.8	17.1	16.5	13.1	22.6	17.6
Aug 28	16.3	15.7	14.9	14.2	13.8	13.4	13.9	14.9	17.2	19.6	22.3	24	25.2	26.4	27.4	27.9	27.8	27.4	24.9	21.9	20.3	19.4	18.6	17.7	13.4	27.9	20.2
Aug 29	16.7	16.5	16.3	15.7	15.2	14.6	14.4	15.7	17.7	20.1	23.7	25.8	27.6	28.3	28.6	**28.9**	28.6	28.3	26.9	23.8	22.6	22	21.4	20.8	14.4	**28.9**	**21.7**
Aug 30	19.8	19.9	19.4	18.3	18.3	16.8	16.7	17.1	21.5	20.8	22.8	26.6	27.9	27.9	26.1	24.4	23.6	22.9	21.3	20.4	18.7	17.8	17.7	18.1	16.7	27.9	21.0
Aug 31	18.2	17.8	17.8	18.1	17.7	18	17.3	17.2	17.3	18.2	19.1	20.2	21.5	22.5	23	23.3	23.1	22.2	20.9	19.8	18.8	17.9	17	16.8	16.8	23.3	19.3
Diurnal Maximum	19.8	19.9	19.4	18.8	18.3	18.2	18.9	20.1	21.5	21.9	23.7	26.6	27.9	28.3	28.6	28.9	28.6	28.3	26.9	24.3	22.6	22.0	21.4	20.8			
Diurnal Average	14.4	14.0	13.5	13.1	12.8	12.7	13.3	14.5	15.9	17.1	18.3	19.2	20.0	20.7	21.1	21.2	21.4	21.1	20.0	18.7	17.3	16.3	15.6	15.0			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	ND	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

Lac La Biche Station - August 2023

Summary of Hourly Averages

STATION TEMPERATURE (ST) in Degree Celsius

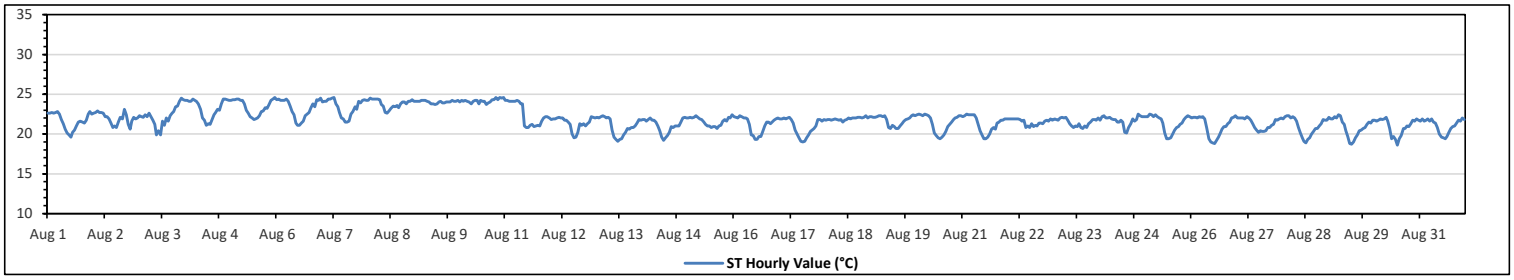
Maximum Hourly Value:	24.6	°C	on Aug 5 at hr 23	Hours in Service:	744	
Maximum Daily Value:	24.2	°C	on Aug 10	Hours of Data:	744	
Minimum Hourly Value:	18.6	°C	on Aug 30 at hr 12	Hours of Missing Data:	0	
Minimum Daily Value:	20.9	°C	on Aug 17	Hours of Calibration:	0	
Monthly Average:	21.9	°C		Operational Uptime:	100.0	

Day	Hourly Period Starting at (MST)																							Daily	Daily	Daily
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Minimum	Maximum	Average
Aug 1	22.6	22.6	22.7	22.6	22.7	22.8	22.5	21.8	21.3	20.6	20.1	19.9	19.6	20.2	20.5	21.0	21.5	21.6	21.5	21.4	21.7	22.5	22.8	22.5	19.6	22.8	21.6
Aug 2	22.6	22.7	22.9	22.7	22.7	22.6	22.2	22.2	21.9	21.4	20.8	21.0	20.8	21.5	22.1	21.9	23.1	22.4	21.2	20.6	21.6	22.1	21.9	22.0	20.6	23.1	22.0
Aug 3	22.3	22.2	22.1	22.4	22.2	22.6	22.2	21.7	21.2	19.9	20.4	19.9	21.6	21.1	22.0	21.6	22.3	22.6	22.8	23.4	23.5	24.1	24.5	24.3	19.9	24.5	22.2
Aug 4	24.2	24.2	24.1	24.1	24.4	24.2	24.1	23.8	23.1	22.0	21.7	21.1	21.3	21.2	21.8	22.4	22.7	23.1	23.0	23.8	24.4	24.4	24.3	24.2	21.1	24.4	23.2
Aug 5	24.2	24.3	24.3	24.4	24.4	24.2	24.2	23.8	23.0	22.6	22.2	22.0	21.8	21.9	22.0	22.3	22.8	22.9	23.3	23.2	23.7	24.2	24.4	**24.6**	21.8	**24.6**	23.4
Aug 6	24.3	24.4	24.2	24.2	24.2	24.4	24.1	23.5	22.8	22.4	21.4	21.1	21.1	21.4	21.6	22.3	22.5	22.7	23.3	23.8	23.4	24.3	24.2	24.5	21.1	24.5	23.2
Aug 7	24.0	24.1	24.1	24.4	24.4	24.5	**24.6**	23.8	23.4	22.7	22.0	21.9	21.5	21.5	21.6	22.5	22.8	23.4	23.1	24.1	23.9	24.2	24.3	24.2	21.5	**24.6**	23.4
Aug 8	24.2	24.5	24.4	24.4	24.4	24.4	24.3	23.7	23.5	22.7	22.6	22.9	23.2	23.5	23.4	23.6	23.3	23.8	24.0	24.0	23.8	24.1	24.1	24.3	22.6	24.5	23.8
Aug 9	24.1	24.1	24.1	24.1	24.2	24.2	24.2	24.1	24.0	23.8	23.8	23.7	23.8	24.0	24.1	23.9	23.9	24.0	24.0	24.0	24.2	24.1	24.1	24.2	23.7	24.2	24.0
Aug 10	24.0	24.2	24.1	24.2	24.1	24.0	23.8	24.1	24.2	24.2	23.8	24.2	24.1	24.1	23.7	23.9	24.0	24.3	24.3	**24.6**	24.3	**24.6**	24.5	**24.6**	23.7	**24.6**	**24.2**
Aug 11	24.2	24.2	24.1	24.1	24.1	24.1	24.2	24.1	23.8	23.8	21.0	20.8	20.8	21.1	21.2	20.9	21.0	21.1	21.0	21.6	22.0	22.2	22.2	22.0	20.8	24.2	22.5
Aug 12	21.8	21.9	21.9	22.0	22.1	22.0	22.0	21.7	21.7	21.5	21.2	20.0	19.5	19.6	20.2	21.3	21.1	21.3	21.0	21.3	21.5	22.2	22.1	22.0	19.5	22.2	21.4
Aug 13	22.1	22.0	22.2	22.3	22.2	22.0	22.1	21.9	20.5	19.6	19.3	19.1	19.3	19.4	19.9	20.2	20.7	20.6	20.8	20.8	21.0	21.4	21.8	21.7	19.1	22.3	21.0
Aug 14	21.8	21.8	21.6	21.8	22.0	21.7	21.7	21.5	21.0	20.4	19.6	19.2	19.5	19.8	20.2	20.9	20.8	21.0	21.0	21.0	21.5	22.0	22.1	22.0	19.2	22.1	21.1
Aug 15	22.0	22.1	22.0	22.1	22.3	22.1	21.9	21.8	21.5	21.2	21.0	21.0	20.8	20.9	20.9	20.7	21.0	21.1	21.6	21.8	21.6	22.1	22.0	22.4	20.7	22.4	21.6
Aug 16	22.2	22.1	22.0	22.3	22.2	22.0	22.0	21.9	21.2	19.9	19.8	19.3	19.3	19.7	19.7	20.3	21.0	21.5	21.5	21.3	21.5	21.7	21.9	22.0	19.3	22.3	21.2
Aug 17	21.9	21.9	22.0	21.9	22.0	22.1	21.8	21.4	20.5	20.0	19.5	19.1	19.0	19.1	19.5	19.9	20.3	20.5	20.7	21.0	21.8	21.8	21.6	21.8	19.0	22.1	**20.9**
Aug 18	21.7	21.8	21.8	21.7	21.8	21.9	21.8	21.7	21.8	21.5	21.7	21.8	22.0	21.9	22.0	22.0	22.0	22.1	22.1	22.0	22.1	22.3	22.0	22.2	21.5	22.3	21.9
Aug 19	22.2	22.1	22.1	22.2	22.3	22.3	22.2	22.3	21.8	20.8	20.7	21.1	20.9	20.7	20.7	21.0	21.3	21.6	21.8	21.9	22.0	22.3	22.4	22.3	20.7	22.4	21.7
Aug 20	22.4	22.5	22.4	22.3	22.5	22.4	22.3	22.0	21.2	20.1	19.8	19.5	19.4	19.6	19.9	20.3	20.9	21.2	21.5	21.8	22.0	22.1	22.3	22.3	19.4	22.5	21.4
Aug 21	22.2	22.3	22.5	22.4	22.4	22.4	22.4	22.0	21.2	20.4	19.9	19.4	19.4	19.6	20.0	20.6	20.8	20.6	21.4	21.5	21.7	21.7	21.9	21.9	19.4	22.5	21.3
Aug 22	21.9	21.9	21.9	21.9	21.9	21.9	21.8	21.6	21.7	20.8	21.0	20.8	21.3	20.9	21.1	21.0	21.4	21.4	21.3	21.6	21.7	21.6	21.9	21.7	20.8	21.9	21.5
Aug 23	21.9	21.8	21.7	22.0	22.1	22.0	22.1	21.7	21.3	21.0	20.8	21.0	20.9	21.3	20.8	20.7	21.0	20.8	21.3	21.5	21.8	21.8	21.7	22.0	20.7	22.1	21.5
Aug 24	21.7	22.2	22.3	22.0	22.0	22.1	21.9	21.8	21.8	21.5	21.5	21.7	21.5	20.2	20.1	20.8	21.3	21.9	21.6	21.8	22.5	22.3	22.2	22.2	20.1	22.5	21.7
Aug 25	22.2	22.2	22.5	22.4	22.2	22.4	22.2	22.0	21.9	21.4	20.1	19.4	19.4	19.5	20.0	20.5	20.8	20.9	21.2	21.4	21.8	22.1	22.3	22.2	19.4	22.5	21.4
Aug 26	22.0	22.1	22.1	22.0	22.2	22.1	22.2	21.9	20.8	19.4	19.0	18.9	18.8	19.2	19.6	20.1	20.6	20.9	20.9	21.3	21.5	22.0	22.1	22.3	18.8	22.3	21.0
Aug 27	22.0	22.0	22.0	22.0	21.9	22.2	22.0	21.7	21.3	20.8	20.5	20.2	20.4	20.3	20.3	20.4	20.8	20.8	21.1	21.2	21.8	21.7	21.9	22.0	20.2	22.2	21.3
Aug 28	21.9	22.2	22.3	22.3	22.0	22.2	22.0	21.6	20.8	20.1	19.5	19.1	18.9	19.3	19.5	20.0	20.3	20.7	20.7	21.0	21.3	21.8	21.7	21.7	18.9	22.3	21.0
Aug 29	22.1	21.9	21.9	22.2	22.0	22.4	22.3	21.5	21.2	20.4	19.7	18.8	18.7	19.0	19.5	19.9	20.4	20.5	20.7	20.8	21.2	21.5	21.4	21.7	18.7	22.4	20.9
Aug 30	21.7	21.6	21.7	21.9	21.8	21.9	22.1	21.6	20.7	19.4	19.7	19.3	**18.6**	19.4	19.8	20.7	20.7	21.0	20.9	21.3	21.7	21.6	21.9	21.7	**18.6**	22.1	20.9
Aug 31	21.6	21.9	21.6	21.7	21.9	21.6	21.9	21.5	21.4	20.8	20.0	19.6	19.5	19.4	19.7	20.2	20.7	20.9	21.0	21.4	21.7	21.6	22.0	21.8	19.4	22.0	21.1
Diurnal Maximum	24.3	24.5	24.4	24.4	24.4	24.5	24.6	24.1	24.2	24.2	23.8	24.2	24.1	24.1	24.1	23.9	24.0	24.3	24.3	24.6	24.4	24.6	24.5	24.6			
Diurnal Average	22.6	22.6	22.6	22.7	22.7	22.7	22.6	22.3	21.9	21.2	20.8	20.5	20.5	20.7	20.9	21.2	21.5	21.7	21.8	22.0	22.3	22.5	22.6	22.6			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	ND	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

Lac La Biche Station - August 2023

Summary of Hourly Averages

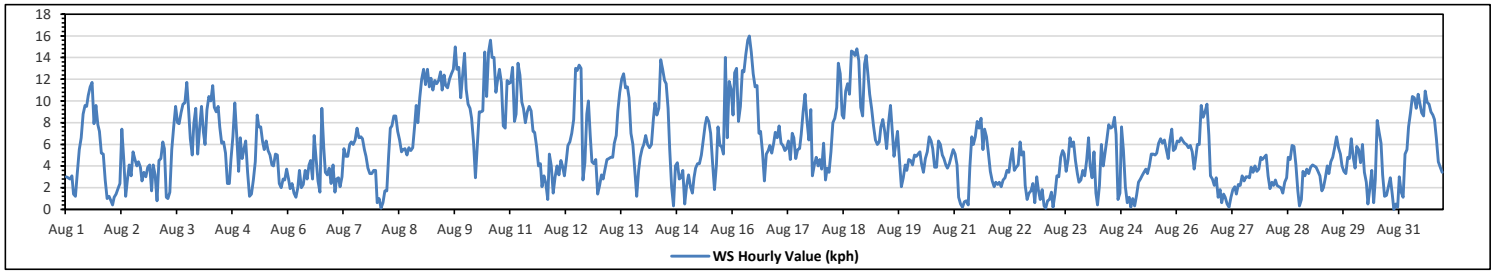
VECTOR WIND SPEED (VWS) in km/hr

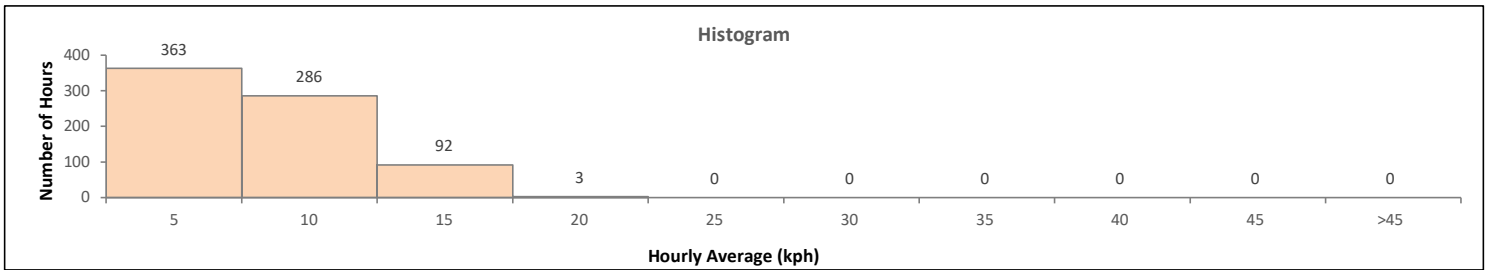
Maximum Hourly Value:	16.0	kph	on Aug 16 at hr 9	Hours in Service:	744	
Maximum Daily Value:	12.2	kph	on Aug 9	Hours of Data:	744	
Minimum Hourly Value:	0.0	kph	on Aug 30 at hr 21	Hours of Missing Data:	0	
Minimum Daily Value:	2.6	kph	on Aug 27	Hours of Calibration:	0	
Monthly Average:	1.1	kph		Operational Uptime:	100.0	

Day	Hourly Period Starting at (MST)																							Daily	Daily	Daily
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Minimum	Maximum	Average
Aug 1	3.0	2.9	2.8	3.1	1.4	1.2	3.4	5.5	6.6	8.8	9.6	9.5	10.5	11.3	11.7	7.9	9.6	7.8	7.2	5.2	5.1	2.7	1.0	1.2	1.0	11.7	5.8
Aug 2	0.8	0.4	1.1	1.4	1.9	2.4	7.4	4.6	1.2	2.6	4.1	3.1	5.3	4.6	4.0	4.4	3.9	2.6	3.4	3.0	3.9	4.1	1.7	4.1	0.4	7.4	3.2
Aug 3	3.2	0.8	4.5	4.7	6.2	5.6	1.1	1.0	1.6	5.5	7.6	9.5	8.0	7.9	8.9	9.7	9.8	11.7	9.5	6.5	5.0	7.9	9.3	5.1	0.8	11.7	6.3
Aug 4	7.5	9.5	7.1	6.0	9.2	10.4	10.0	11.4	9.4	9.0	9.5	7.6	6.1	6.2	5.2	2.4	2.4	4.6	6.7	9.8	6.8	3.5	6.6	4.7	2.4	11.4	7.2
Aug 5	5.6	6.3	3.4	1.2	1.4	2.7	4.4	8.7	7.6	7.6	6.2	5.5	6.3	5.4	5.0	4.1	4.0	5.1	5.0	2.4	2.0	2.8	2.7	3.7	1.2	8.7	4.5
Aug 6	2.8	1.9	2.4	1.5	1.1	2.0	3.6	2.0	2.3	3.6	2.8	4.1	4.5	2.8	6.8	4.7	2.6	1.6	9.3	5.7	3.4	3.2	3.8	2.4	1.1	9.3	3.4
Aug 7	4.1	1.6	2.8	2.9	2.1	3.0	5.6	4.9	4.9	6.0	6.2	6.0	6.4	7.5	6.6	6.7	6.5	5.5	4.9	3.8	3.3	3.3	3.6	3.6	1.6	7.5	4.7
Aug 8	0.6	1.0	0.1	0.6	1.7	1.7	5.1	7.5	7.7	8.6	8.6	7.2	6.4	5.3	5.5	5.6	5.0	5.7	5.4	5.7	7.7	9.6	8.0	10.3	0.1	10.3	5.4
Aug 9	12.0	12.9	11.5	12.9	11.3	12.1	11.0	11.9	11.6	11.9	12.7	11.0	12.4	11.4	11.2	12.0	12.5	12.9	15.0	12.9	13.1	10.3	12.4	14.4	10.3	15.0	**12.2**
Aug 10	11.1	9.7	9.3	8.4	6.2	2.9	6.0	9.0	9.0	9.1	14.5	10.4	14.5	15.6	14.0	14.0	10.8	11.9	12.9	11.7	7.7	7.5	11.9	11.6	2.9	15.6	10.4
Aug 11	11.7	13.1	8.1	8.8	13.5	12.4	9.9	9.3	8.0	9.0	9.5	9.1	7.2	7.1	5.8	4.0	4.2	2.1	3.1	2.4	0.9	5.1	4.0	1.5	0.9	13.5	7.1
Aug 12	3.0	4.0	3.2	4.5	4.0	3.1	4.5	5.9	6.2	7.0	8.3	13.0	12.8	13.3	13.0	2.7	4.3	8.8	10.0	6.7	4.4	4.2	4.6	1.4	1.4	13.3	6.4
Aug 13	2.2	3.2	2.8	3.7	4.6	4.7	4.8	4.8	6.1	6.8	9.1	10.8	12.0	12.5	11.2	11.3	10.3	7.0	6.0	3.6	1.2	3.6	4.8	5.6	1.2	12.5	6.4
Aug 14	6.0	6.8	6.0	5.7	6.0	8.3	9.8	8.7	9.3	13.8	12.9	11.9	11.6	9.3	5.6	2.1	0.3	4.0	4.3	2.8	2.9	3.6	0.5	2.2	0.3	13.8	6.4
Aug 15	3.2	2.1	1.5	2.9	3.8	4.2	4.2	5.0	6.4	7.8	8.5	8.1	7.0	4.3	1.8	4.1	7.6	5.9	5.8	5.1	14.0	6.6	11.8	11.1	1.5	14.0	6.0
Aug 16	8.7	12.6	13.0	8.1	9.5	12.8	12.7	14.3	15.6	**16.0**	14.5	12.5	11.3	11.4	7.0	7.2	5.3	2.6	5.1	5.4	5.9	5.2	6.1	7.1	2.6	**16.0**	9.6
Aug 17	6.6	7.7	6.1	5.9	5.4	5.6	6.3	4.6	7.0	6.6	4.7	5.5	5.6	6.9	9.0	10.6	8.2	6.4	9.2	3.1	4.1	4.8	4.0	4.6	3.1	10.6	6.2
Aug 18	3.7	6.1	2.7	3.8	3.4	5.3	8.0	8.4	9.4	13.5	12.5	8.7	8.4	10.9	11.6	10.6	14.6	14.5	14.2	14.8	13.7	9.4	8.6	13.4	2.7	14.8	9.6
Aug 19	14.2	12.3	10.6	9.3	7.7	6.4	6.0	6.2	7.6	8.3	7.2	5.6	8.0	9.6	7.5	4.9	5.9	7.2	4.6	2.1	2.9	4.1	3.6	4.6	2.1	14.2	6.9
Aug 20	4.5	4.1	5.0	4.9	5.1	5.3	4.2	3.4	4.7	5.3	6.7	6.3	5.6	3.9	3.9	6.3	6.0	5.0	4.7	4.1	3.8	4.2	4.9	5.5	3.4	6.7	4.9
Aug 21	5.1	4.1	1.1	0.5	0.2	0.7	0.8	0.4	3.9	6.7	6.0	6.7	8.1	7.5	8.4	5.5	7.4	6.7	5.2	3.5	2.6	2.1	2.5	2.3	0.2	8.4	4.1
Aug 22	2.5	2.1	2.7	2.9	3.6	3.4	4.6	5.6	3.6	3.9	4.1	6.2	5.0	5.3	2.2	0.9	1.5	1.7	2.4	0.6	3.0	1.8	0.9	1.8	0.6	6.2	3.0
Aug 23	0.3	0.1	0.8	0.9	1.6	0.2	1.4	3.1	3.0	4.8	5.4	5.1	3.5	4.6	6.6	5.8	6.2	4.5	3.3	2.5	2.7	3.6	3.1	4.5	0.1	6.6	3.2
Aug 24	6.6	4.0	2.9	5.3	1.5	0.4	2.2	6.0	4.0	5.1	6.4	7.8	7.5	7.6	8.5	6.9	0.9	1.5	7.6	5.4	2.1	0.6	1.1	0.2	0.2	8.5	4.3
Aug 25	1.0	0.3	1.3	2.5	2.8	3.1	3.4	3.7	3.3	4.0	5.1	5.1	5.0	5.2	6.1	6.5	6.1	6.4	5.5	4.7	6.3	7.4	5.4	5.6	0.3	7.4	4.4
Aug 26	6.3	6.2	6.6	6.3	6.1	6.0	5.7	5.9	5.3	3.7	4.8	6.0	6.0	9.6	8.5	9.0	9.7	6.8	3.1	2.8	2.2	2.9	1.1	1.8	1.1	9.7	5.5
Aug 27	0.6	1.4	1.1	0.5	0.2	1.1	1.8	2.1	1.4	2.3	2.2	3.1	2.6	3.0	3.0	2.9	3.9	3.4	4.0	3.5	3.7	4.8	4.6	4.8	0.2	4.8	**2.6**
Aug 28	5.0	3.1	1.9	2.5	2.2	2.7	2.2	2.1	2.0	1.5	2.5	2.9	4.8	4.6	5.9	5.8	4.1	1.7	0.3	0.9	3.5	3.1	3.7	3.3	0.3	5.9	3.0
Aug 29	3.9	4.1	4.0	3.9	3.5	3.1	1.7	2.0	2.9	4.0	3.3	4.4	4.8	5.7	6.7	5.7	5.1	4.0	3.5	3.3	4.8	4.7	6.5	4.8	1.7	6.7	4.2
Aug 30	3.8	5.8	5.5	4.3	6.0	3.4	2.5	0.5	1.9	3.6	0.6	2.7	8.2	7.1	6.1	3.2	1.2	1.3	2.1	2.9	1.4	**0.0**	0.5	0.2	**0.0**	8.2	3.1
Aug 31	3.0	1.6	1.1	5.1	5.5	7.6	8.9	10.4	10.3	9.3	10.6	9.8	8.9	8.6	10.9	9.9	9.7	9.0	8.7	8.3	6.5	4.4	3.9	3.4	1.1	10.9	7.3
Diurnal Maximum	14.2	13.1	13.0	12.9	13.5	12.8	12.7	14.3	15.6	16.0	14.5	13.0	14.5	15.6	14.0	14.0	14.6	14.5	15.0	14.8	14.0	10.3	12.4	14.4			
Diurnal Average	4.9	4.9	4.3	4.4	4.5	4.6	5.3	5.8	5.9	7.0	7.3	7.3	7.6	7.6	7.4	6.4	6.1	5.8	6.2	5.0	4.9	4.6	4.7	4.9			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance			
K	Collection Error	ND	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.



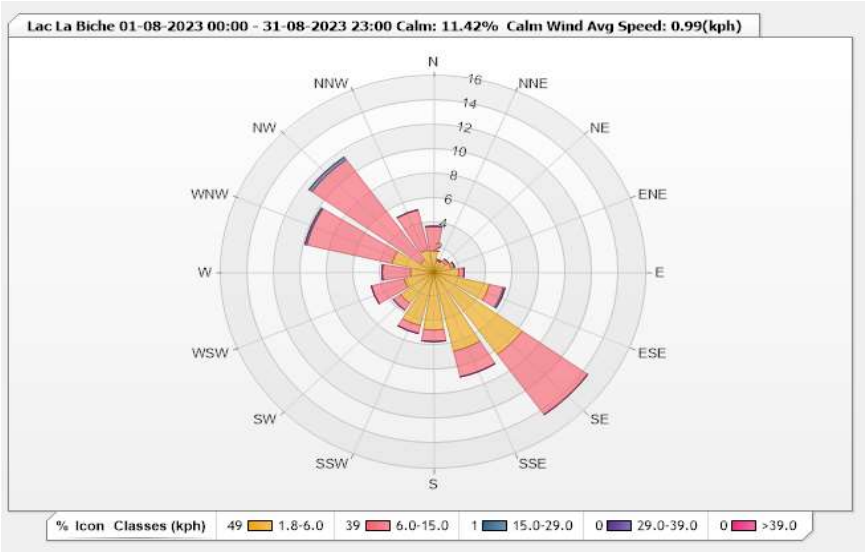


Station: Lac La Biche Monitor: WDS [kph] Monthly: 08-2023

Type: Wind Rose
Direction: Blowing From (Wind Frequency)
Time Base: 1 - Hour

Calm (WS<1.8kph): 11.42% 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	1.75	2.02	0	0	0	3.77
NNE	0.94	0.13	0	0	0	1.07
NE	1.08	0.27	0	0	0	1.35
ENE	1.34	0.27	0	0	0	1.61
E	1.88	0.4	0	0	0	2.28
ESE	4.3	1.08	0.13	0	0	5.51
SE	8.2	6.05	0	0	0	14.25
SSE	6.59	2.15	0	0	0	8.74
S	4.7	0.94	0	0	0	5.64
SSW	4.44	0.67	0	0	0	5.11
SW	3.09	0.67	0	0	0	3.76
WSW	2.28	2.55	0	0	0	4.83
W	1.75	2.15	0	0	0	3.9
WNW	3.23	6.59	0.13	0	0	9.95
NW	1.21	10.08	0.27	0	0	11.56
NNW	1.88	3.36	0	0	0	5.24
Summary	48.66	39.38	0.53	0	0	88.57



Lakeland Industry & Community Association

Lac La Biche Station - August 2023

Summary of Hourly Averages

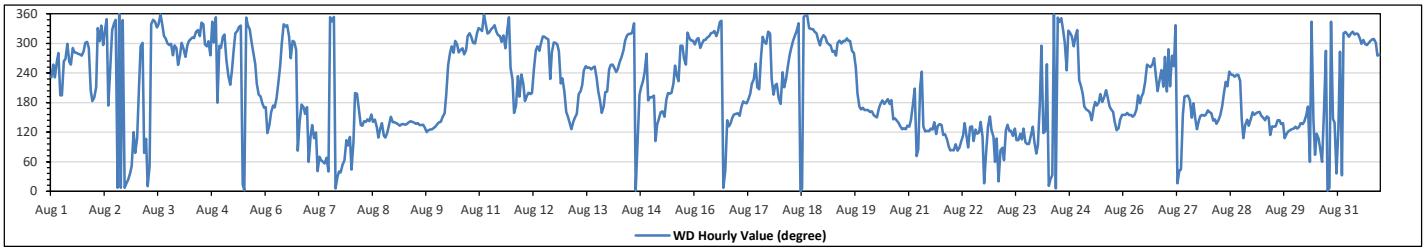
WIND DIRECTION (VWD) in sector

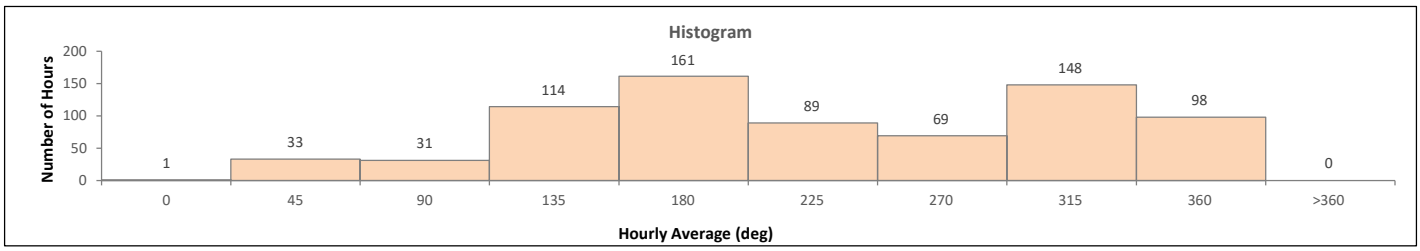
Monthly Average:	269 (W)	degree	
Hours in Service:	744		
Hours of Data:	744		
Hours of Missing Data:	0		
Hours of Calibration:	0		
Operational Uptime:	100.0		

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	WSW	SW	W	W	SSW	SSW	W	W	WNW	W	WSW	WNW	W	W	W	W	W	WNW	WNW	WNW	WNW	SSW	S	274	W
Aug 2	S	SSW	NNW	WNW	NNW	WNW	NW	NNW	S	WSW	NW	NNW	NNW	N	N	N	NNW	N	NNE	NNE	NE	NE	ESE	ENE	357	N
Aug 3	ESE	SSW	WNW	WNW	ENE	ESE	N	NE	NNW	NNW	NNW	NNW	NNW	N	NNW	NW	NW	WNW	WNW	WNW	W	WNW	WNW	WSW	319	NW
Aug 4	W	WNW	WNW	W	WNW	WNW	NW	NW	NW	NW	NW	NW	NNW	NNW	WNW	WNW	WNW	W	NNW	WNW	N	S	WNW	WNW	308	NW
Aug 5	NW	NW	W	SW	SW	WSW	WNW	NW	NW	NNW	NNW	NNE	N	N	NNW	NNW	NW	W	WSW	SW	SSW	S	S	SSE	311	NW
Aug 6	S	ESE	SE	SSE	S	SSE	S	SW	WSW	WNW	NNW	NNW	NNW	NW	W	WNW	WNW	WNW	E	SE	S	S	SSE	S	212	SSW
Aug 7	ENE	ESE	SE	ESE	ESE	NE	ENE	ENE	ENE	NE	ENE	NE	N	NNW	N	N	NNE	NE	NE	NE	ENE	ESE	E	ESE	48	NE
Aug 8	NE	E	SSW	SSW	SSE	SE	SE	SE	SE	SE	SE	SSE	SE	SE	SE	ESE	SE	SE	ESE	ESE	ESE	SE	SSE	SE	136	SE
Aug 9	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	ESE	ESE	SE	SE	SE	SE	134	SE
Aug 10	SE	SE	SE	SSE	SSE	SSW	WSW	W	WNW	W	WNW	WNW	W	WNW	WNW	W	WNW	NW	NW	NW	WNW	WNW	NW	NNW	289	WNW
Aug 11	NNW	NW	N	NNW	NW	NW	NNW	NNW	NNW	NW	NW	NW	WNW	NW	WNW	NNW	N	WSW	SW	SSE	S	SW	S	SW	319	NW
Aug 12	SW	S	S	SSW	SSW	SSW	WSW	WNW	WNW	WNW	WNW	NW	NW	NW	NW	SW	W	WNW	WNW	WNW	WNW	SW	SW	SSW	284	WNW
Aug 13	SSE	SSE	SE	SE	SE	SSE	SSE	SSW	SSW	SW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	SW	SSW	S	SSE	S	SSW	SSW	220	SW
Aug 14	WSW	WSW	WSW	WSW	WSW	WSW	W	W	WNW	NW	NW	NW	NW	NW	NNW	N	E	SSW	SSW	SW	WSW	W	S	S	282	W
Aug 15	S	SSW	E	SE	SE	SSE	SSE	SSE	S	SSW	SSW	SSW	SW	WSW	SW	SW	WNW	WNW	W	WSW	NW	NW	NW	NW	246	WSW
Aug 16	WNW	NW	NW	WNW	WNW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NNW	NNW	N	NE	SE	SE	SE	SSE	SSE	315	NW
Aug 17	SSE	SSE	SSE	S	S	S	S	SSW	SW	SW	WSW	SSW	SSW	W	NW	WNW	WNW	NW	NW	SW	SSW	SSW	SW	S	228	SW
Aug 18	S	WSW	SSW	SW	WSW	W	WNW	NW	NW	NW	NNW	N	N	N	N	N	NNW	NNW	NNW	NW	NW	NW	WNW	NW	323	NW
Aug 19	NW	NW	WNW	WNW	WNW	W	WNW	W	WNW	NW	WNW	WNW	WNW	NW	WNW	WNW	WNW	W	WSW	SSW	S	SSE	SSE	SSE	293	WNW
Aug 20	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	S	S	S	S	S	S	S	SE	SE	SE	SE	SE	SE	SE	SE	SE	158	SSE
Aug 21	SE	SE	S	SSW	ENE	E	SSW	WSW	SE	ESE	ESE	ESE	SE	SE	SE	ESE	SE	SE	SE	ESE	ESE	ESE	E	E	127	SE
Aug 22	E	E	E	E	E	E	ESE	SE	ESE	E	SE	SE	E	SE	ESE	ESE	SE	ESE	NNE	ENE	SE	SSE	ESE	ESE	111	ESE
Aug 23	ENE	ESE	NNE	E	E	ENE	ESE	SE	ESE	ESE	ESE	SE	ESE	ESE	ESE	ESE	SE	E	E	E	ESE	SE	E	ENE	110	ESE
Aug 24	E	S	WNW	ESE	ESE	WSW	NNE	NNE	NNE	N	N	N	NNW	N	NW	WNW	WSW	NW	NW	NW	WNW	NW	NW	SW	348	NNW
Aug 25	SSW	SSW	S	SSE	SSE	SSE	SE	SSE	S	S	S	SSW	S	S	SSW	S	S	SSE	SSE	SE	ESE	SE	SE	SSE	167	SSE
Aug 26	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSW	S	S	SSW	SW	WSW	WSW	WSW	WSW	W	SW	SSW	SW	WSW	SSW	W	205	SSW
Aug 27	SSW	WNW	SSW	W	WSW	NNW	NNE	NE	NE	SSE	S	S	SSW	S	SSE	S	SE	SE	SE	SSE	SSE	SSE	SSE	SSE	159	SSE
Aug 28	SSE	SSE	SE	SE	SE	SE	SSE	S	SSW	SW	SSW	WSW	SW	SW	SW	SW	SW	SW	SE	ESE	SE	SE	SE	SE	189	S
Aug 29	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SE	SSE	SSE	ESE	SE	SE	SE	SE	SE	SE	SE	ESE	ESE	ESE	ESE	SE	SE	138	SE
Aug 30	SE	SE	SE	SE	SE	SE	SSE	S	ENE	NNW	SE	ENE	ESE	ESE	E	ENE	SSE	WNW	N	N	NNW	SE	SE	NE	108	ESE
Aug 31	SE	W	NNE	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	WNW	NW	WNW	WNW	WNW	WNW	NW	NW	WNW	W	W	310	NW

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	ND	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.





Lakeland Industry & Community Association

Lac La Biche Station - August 2023

Summary of Hourly Averages

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

WIND SPEED

Maximum Hourly Value:	16.0	kph	on Aug 16 at hr 9	Hours in Service:	744
Maximum Daily Value:	12.2	kph	on Aug 9	Hours of Data:	744
Minimum Hourly Value:	0.0	kph	on Aug 30 at hr 21	Hours of Missing Data:	0
Minimum Daily Value:	2.6	kph	on Aug 27	Hours of Calibration:	0
Monthly Average:	1.1	kph		Operational Uptime:	100.0

WIND DIRECTION

Monthly Average: 269 degree (W)

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	3.0	2.9	2.8	3.1	1.4	1.2	3.4	5.5	6.6	8.8	9.6	9.5	10.5	11.3	11.7	7.9	9.6	7.8	7.2	5.2	5.1	2.7	1.0	1.2	1.0	11.7	5.8
	SW	WSW	SW	W	W	SSW	SSW	W	W	WNW	W	WSW	WNW	W	W	W	W	W	WNW	WNW	WNW	WNW	SSW	S			
Aug 2	0.8	0.4	1.1	1.4	1.9	2.4	7.4	4.6	1.2	2.6	4.1	3.1	5.3	4.6	4.0	4.4	3.9	2.6	3.4	3.0	3.9	4.1	1.7	4.1	0.4	7.4	3.2
	S	SSW	NNW	WNW	NNW	WNW	NW	NNW	S	WSW	NW	NNW	NNW	N	N	N	NNW	N	NNE	NNE	NE	NE	ESE	ENE			
Aug 3	3.2	0.8	4.5	4.7	6.2	5.6	1.1	1.0	1.6	5.5	7.6	9.5	8.0	7.9	8.9	9.7	9.8	11.7	9.5	6.5	5.0	7.9	9.3	5.1	0.8	11.7	6.3
	ESE	SSW	WNW	WNW	ENE	ESE	N	NE	NNW	NNW	NNW	NNW	NNW	N	NNW	NW	NW	WNW	WNW	WNW	W	WNW	WNW	WSW			
Aug 4	7.5	9.5	7.1	6.0	9.2	10.4	10.0	11.4	9.4	9.0	9.5	7.6	6.1	6.2	5.2	2.4	2.4	4.6	6.7	9.8	6.8	3.5	6.6	4.7	2.4	11.4	7.2
	W	WNW	WNW	W	WNW	WNW	NW	NW	NW	NW	NW	NW	NNW	NNW	WNW	WNW	WNW	W	NNW	WNW	N	S	WNW	WNW			
Aug 5	5.6	6.3	3.4	1.2	1.4	2.7	4.4	8.7	7.6	7.6	6.2	5.5	6.3	5.4	5.0	4.1	4.0	5.1	5.0	2.4	2.0	2.8	2.7	3.7	1.2	8.7	4.5
	NW	NW	W	SW	SW	WSW	WNW	NW	NW	NNW	NNW	NNE	N	N	NNW	NNW	NW	W	WSW	SW	SSW	S	S	SSE			
Aug 6	2.8	1.9	2.4	1.5	1.1	2.0	3.6	2.0	2.3	3.6	2.8	4.1	4.5	2.8	6.8	4.7	2.6	1.6	9.3	5.7	3.4	3.2	3.8	2.4	1.1	9.3	3.4
	S	ESE	SE	SSE	S	SSE	S	SW	WSW	WNW	NNW	NNW	NNW	NW	W	WNW	WNW	WNW	E	SE	S	S	SSE	S			
Aug 7	4.1	1.6	2.8	2.9	2.1	3.0	5.6	4.9	4.9	6.0	6.2	6.0	6.4	7.5	6.6	6.7	6.5	5.5	4.9	3.8	3.3	3.3	3.6	3.6	1.6	7.5	4.7
	ENE	ESE	SE	ESE	ESE	NE	ENE	ENE	ENE	NE	ENE	NE	N	NNW	N	N	NNE	NE	NE	NE	ENE	ESE	E	ESE			
Aug 8	0.6	1.0	0.1	0.6	1.7	1.7	5.1	7.5	7.7	8.6	8.6	7.2	6.4	5.3	5.5	5.6	5.0	5.7	5.4	5.7	7.7	9.6	8.0	10.3	0.1	10.3	5.4
	NE	E	SSW	SSW	SSE	SE	SE	SE	SE	SE	SE	SSE	SE	SE	SE	ESE	SE	SE	ESE	ESE	ESE	SE	SSE	SE			
Aug 9	12.0	12.9	11.5	12.9	11.3	12.1	11.0	11.9	11.6	11.9	12.7	11.0	12.4	11.4	11.2	12.0	12.5	12.9	15.0	12.9	13.1	10.3	12.4	14.4	10.3	15.0	**12.2**
	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	ESE	ESE	SE	SE	SE	SE			
Aug 10	11.1	9.7	9.3	8.4	6.2	2.9	6.0	9.0	9.0	9.1	14.5	10.4	14.5	15.6	14.0	14.0	10.8	11.9	12.9	11.7	7.7	7.5	11.9	11.6	2.9	15.6	10.4
	SE	SE	SE	SSE	SSE	SSW	WSW	W	WNW	W	WNW	WNW	W	WNW	WNW	W	WNW	NW	NW	NW	WNW	WNW	NW	NNW			
Aug 11	11.7	13.1	8.1	8.8	13.5	12.4	9.9	9.3	8.0	9.0	9.5	9.1	7.2	7.1	5.8	4.0	4.2	2.1	3.1	2.4	0.9	5.1	4.0	1.5	0.9	13.5	7.1
	NNW	NW	N	NNW	NW	NW	NNW	NNW	NNW	NW	NW	NW	WNW	NW	WNW	NNW	N	WSW	SW	SSE	S	SW	S	SW			
Aug 12	3.0	4.0	3.2	4.5	4.0	3.1	4.5	5.9	6.2	7.0	8.3	13.0	12.8	13.3	13.0	2.7	4.3	8.8	10.0	6.7	4.4	4.2	4.6	1.4	1.4	13.3	6.4
	SW	S	S	SSW	SSW	SSW	WSW	WNW	WNW	WNW	WNW	NW	NW	NW	NW	SW	W	WNW	WNW	WNW	WNW	SW	SW	SSW			
Aug 13	2.2	3.2	2.8	3.7	4.6	4.7	4.8	4.8	6.1	6.8	9.1	10.8	12.0	12.5	11.2	11.3	10.3	7.0	6.0	3.6	1.2	3.6	4.8	5.6	1.2	12.5	6.4
	SSE	SSE	SE	SE	SE	SSE	SSE	SSW	SSW	SW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	SW	SSW	S	SSE	S	SSW	SSW			
Aug 14	6.0	6.8	6.0	5.7	6.0	8.3	9.8	8.7	9.3	13.8	12.9	11.9	11.6	9.3	5.6	2.1	0.3	4.0	4.3	2.8	2.9	3.6	0.5	2.2	0.3	13.8	6.4
	WSW	WSW	WSW	WSW	WSW	WSW	W	W	WNW	NW	NW	NW	NW	NW	NNW	N	E	SSW	SSW	SW	WSW	W	S	S			
Aug 15	3.2	2.1	1.5	2.9	3.8	4.2	4.2	5.0	6.4	7.8	8.5	8.1	7.0	4.3	1.8	4.1	7.6	5.9	5.8	5.1	14.0	6.6	11.8	11.1	1.5	14.0	6.0
	S	SSW	E	SE	SE	SSE	SSE	SSE	S	SSW	SSW	SSW	SW	WSW	SW	SW	WNW	WNW	W	WSW	NW	NW	NW	NW			
Aug 16	8.7	12.6	13.0	8.1	9.5	12.8	12.7	14.3	15.6	**16.0**	14.5	12.5	11.3	11.4	7.0	7.2	5.3	2.6	5.1	5.4	5.9	5.2	6.1	7.1	2.6	**16.0**	9.6
	WNW	NW	NW	WNW	WNW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NNW	NNW	N	NE	SE	SE	SE	SSE	SSE	SSE			
Aug 17	6.6	7.7	6.1	5.9	5.4	5.6	6.3	4.6	7.0	6.6	4.7	5.5	5.6	6.9	9.0	10.6	8.2	6.4	9.2	3.1	4.1	4.8	4.0	4.6	3.1	10.6	6.2
	SSE	SSE	SSE	S	S	S	S	SSW	SW	SW	WSW	SSW	SSW	W	NW	WNW	WNW	NW	NW	SW	SSW	SSW	SW	S			
Aug 18	3.7	6.1	2.7	3.8	3.4	5.3	8.0	8.4	9.4	13.5	12.5	8.7	8.4	10.9	11.6	10.6	14.6	14.5	14.2	14.8	13.7	9.4	8.6	13.4	2.7	14.8	9.6
	S	WSW	SSW	SW	WSW	W	WNW	NW	NW	NW	NNW	N	N	N	N	N	NNW	NNW	NNW	NW	NW	NW	WNW	NW			
Aug 19	14.2	12.3	10.6	9.3	7.7	6.4	6.0	6.2	7.6	8.3	7.2	5.6	8.0	9.6	7.5	4.9	5.9	7.2	4.6	2.1	2.9	4.1	3.6	4.6	2.1	14.2	6.9
	NW	NW	WNW	WNW	WNW	W	WNW	W	WNW	NW	WNW	WNW	WNW	NW	WNW	WNW	WNW	W	WSW	SSW	S	SSE	SSE	SSE			
Aug 20	4.5	4.1	5.0	4.9	5.1	5.3	4.2	3.4	4.7	5.3	6.7	6.3	5.6	3.9	3.9	6.3	6.0	5.0	4.7	4.1	3.8	4.2	4.9	5.5	3.4	6.7	4.9
	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	S	S	S	S	S	S	S	SE	SE	SE	SE	SE	SE	SE	SE	SE			
Aug 21	5.1	4.1	1.1	0.5	0.2	0.7	0.8	0.4	3.9	6.7	6.0	6.7	8.1	7.5	8.4	5.5	7.4	6.7	5.2	3.5	2.6	2.1	2.5	2.3	0.2	8.4	4.1
	SE	SE	S	SSW	ENE	E	SSW	WSW	SE	ESE	ESE	ESE	SE	SE	SE	ESE	SE	SE	SE	ESE	ESE	ESE	E	E			
Aug 22	2.5	2.1	2.7	2.9	3.6	3.4	4.6	5.6	3.6	3.9	4.1	6.2	5.0	5.3	2.2	0.9	1.5	1.7	2.4	0.6	3.0	1.8	0.9	1.8	0.6	6.2	3.0
	E	E	E	E	E	E	ESE	SE	ESE	E	SE	SE	E	SE	ESE	ESE	SE	ESE	NNE	ENE	SE	SSE	ESE	ESE			
Aug 23	0.3	0.1	0.8	0.9	1.6	0.2	1.4	3.1	3.0	4.8	5.4	5.1	3.5	4.6	6.6	5.8	6.2	4.5	3.3	2.5	2.7	3.6	3.1	4.5	0.1	6.6	3.2
	ENE	ESE	NNE	E	E	ENE	ESE	SE	ESE	ESE	ESE	SE	ESE	ESE	ESE	ESE	SE	E	E	E	ESE	SE	E	ENE			
Aug 24	6.6	4.0	2.9	5.3	1.5	0.4	2.2	6.0	4.0	5.1	6.4	7.8	7.5	7.6	8.5	6.9	0.9	1.5	7.6	5.4	2.1	0.6	1.1	0.2	0.2	8.5	4.3
	E	S	WNW	ESE	ESE	WSW	NNE	NNE	NNE	N	N	N	NNW	N	NW	WNW	WSW	NW	NW	NW	WNW	NW	NW	SW			
Aug 25	1.0	0.3	1.3	2.5	2.8	3.1	3.4	3.7	3.3	4.0	5.1	5.1	5.0	5.2	6.1	6.5	6.1	6.4	5.5	4.7	6.3	7.4	5.4	5.6	0.3	7.4	4.4
	SSW	SSW	S	SSE	SSE	SSE	SE	SSE	S	S	S	SSW	S	S	SSW	S	S	SSE	SSE	SE	ESE	SE	SE	SSE			
Aug 26	6.3	6.2	6.6	6.3	6.1	6.0	5.7	5.9	5.3	3.7	4.8	6.0	6.0	9.6	8.5	9.0	9.7	6.8	3.1	2.8	2.2	2.9	1.1	1.8	1.1	9.7	5.5
	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSW	S	S	SSW	SW	WSW	WSW	WSW	WSW	W	SW	SSW	SW	WSW	SSW	W			
Aug 27	0.6	1.4	1.1	0.5	0.2	1.1	1.8	2.1	1.4	2.3	2.2	3.1	2.6	3.0	3.0	2.9	3.9	3.4	4.0	3.5	3.7	4.8	4.6	4.8	0.2	4.8	**2.6**
	SSW	WNW	SSW	W	WSW	NNW	NNE	NE	NE	SSE	S	S	SSW	S	SSE	S	SE	SE	SE	SSE	SSE	SSE	SSE	SSE			
Aug 28	5.0	3.1	1.9	2.5	2.2	2.7	2.2	2.1	2.0	1.5	2.5	2.9	4.8	4.6	5.9	5.8	4.1	1.7	0.3	0.9	3.5	3.1	3.7	3.3	0.3	5.9	3.0
	SSE	SSE	SE	SE	SE	SE	SSE	S	SSW	SW	SSW	WSW	SW	SW	SW	SW	SW	SW	SE	ESE	SE	SE	SE	SE			
Aug 29	3.9	4.1	4.0	3.9	3.5	3.1	1.7	2.0	2.9	4.0	3.3	4.4	4.8	5.7	6.7	5.7	5.1	4.0	3.5	3.3	4.8	4.7	6.5	4.8	1.7	6.7	4.2
	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SE	SSE	SSE	ESE	SE	SE	SE	SE	SE	SE	SE	ESE	ESE	ESE	ESE	SE	SE			
Aug 30	3.8	5.8	5.5	4.3	6.0	3.4	2.5	0.5	1.9	3.6	0.6	2.7	8.2	7.1	6.1	3.2	1.2	1.3	2.1	2.9	1.4	**0.0**	0.5	0.2	**0.0**	8.2	3.1
	SE	SE	SE	SE	SE	SE	SSE	S	ENE	NNW	SE	ENE	ESE	ESE	E	ENE	SSE	WNW	N	N	NNW	SE	SE	NE			
Aug 31	3.0	1.6	1.1	5.1	5.5	7.6	8.9	10.4	10.3	9.3	10.6	9.8	8.9	8.6	10.9	9.9	9.7	9.0	8.7	8.3	6.5	4.4	3.9	3.4	1.1	10.9	7.3
	SE	W	NNE	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	WNW	NW	WNW	WNW	WNW	WNW	NW	NW	WNW	W	W			

C	Monthly Calibration	**S**	Daily Zero-Span Check	**Q**	Quality Assurance	
K	Collection Error	**ND**	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

Lac La Biche Station - August 2023

Summary of Hour Standard Deviations

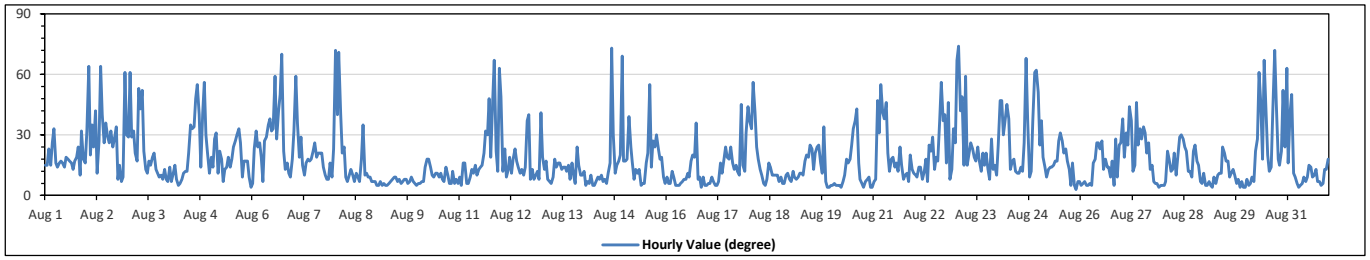
STANDARD DEVIATION WIND DIRECTION (STDWD) in Degree

Maximum Hourly Value:	74 degree on Aug 23 at hr 1	Hours in Service:	744
		Hours of Data:	744
Minimum Hourly Value:	3 degree on Aug 25 at hr 21	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	15	15	23	15	26	33	16	14	16	17	16	14	19	18	17	16	13	17	19	24	10	32	18	16	10	33
Aug 2	32	64	20	35	24	42	11	27	64	40	26	36	29	26	32	24	28	34	8	15	7	9	61	30	7	64
Aug 3	29	61	29	32	21	17	53	43	52	22	13	11	17	15	19	21	13	11	9	10	8	13	8	7	7	61
Aug 4	14	7	11	15	8	5	6	8	11	12	12	21	35	33	34	48	55	40	14	41	56	30	21	11	5	56
Aug 5	19	14	28	31	11	22	18	7	13	14	19	14	18	24	27	30	33	26	9	17	17	17	9	4	4	33
Aug 6	6	23	32	24	26	19	7	27	29	35	38	32	33	59	28	42	50	70	22	13	16	11	9	18	6	70
Aug 7	32	59	36	19	29	15	10	16	18	17	18	22	26	19	21	21	21	14	10	8	8	16	9	23	8	59
Aug 8	72	40	71	41	21	24	9	7	10	13	10	7	11	9	7	18	35	10	11	9	9	7	7	7	7	72
Aug 9	5	5	7	5	6	5	5	6	7	8	9	9	7	8	6	7	8	8	6	7	9	7	6	5	5	9
Aug 10	6	6	7	7	14	18	18	14	10	9	11	11	9	11	8	7	14	10	6	6	12	6	8	6	6	18
Aug 11	9	5	16	16	6	6	9	13	11	15	10	13	14	15	21	32	30	48	19	46	67	22	12	63	5	67
Aug 12	49	12	23	9	13	19	11	18	23	17	14	11	13	10	14	37	40	8	13	8	10	12	8	41	8	49
Aug 13	19	13	17	8	7	6	9	18	14	16	16	13	14	14	12	15	8	16	10	6	24	15	10	10	6	24
Aug 14	12	5	7	6	10	5	5	7	9	8	10	7	8	6	11	16	73	30	11	15	17	20	69	17	5	73
Aug 15	17	18	39	24	17	8	13	11	13	5	6	6	16	21	55	14	27	24	30	23	18	19	9	6	5	55
Aug 16	9	6	6	12	9	5	5	5	6	7	8	8	11	9	17	20	19	36	8	9	4	9	5	5	4	36
Aug 17	6	6	9	7	5	5	7	16	11	18	24	19	18	24	16	13	15	12	10	45	15	12	31	44	5	45
Aug 18	37	33	56	41	24	18	13	10	6	5	8	16	14	10	10	10	10	7	9	6	6	10	11	8	5	56
Aug 19	7	12	9	8	9	11	11	10	17	20	19	25	23	13	21	24	25	16	11	34	7	4	4	5	4	34
Aug 20	5	6	5	5	5	4	7	10	18	16	18	25	33	37	43	16	8	6	4	7	8	9	4	4	4	43
Aug 21	7	8	47	31	55	41	38	46	21	12	18	19	14	16	12	24	15	8	10	11	7	20	13	11	7	55
Aug 22	10	9	14	14	8	12	18	7	25	22	29	13	19	17	37	56	37	40	16	46	8	13	33	26	7	56
Aug 23	67	74	42	49	15	59	15	21	26	23	19	17	24	17	12	21	15	21	13	8	28	13	15	10	8	74
Aug 24	25	47	47	30	38	45	38	13	17	18	12	11	11	14	12	26	68	37	9	12	37	61	62	51	9	68
Aug 25	25	37	19	14	9	13	14	14	15	17	17	27	31	27	21	23	17	13	5	16	5	3	7	7	3	37
Aug 26	5	6	7	5	5	6	5	16	18	26	26	23	27	13	18	14	14	9	17	5	28	9	25	26	5	28
Aug 27	38	19	31	25	44	37	12	15	46	25	33	28	34	31	21	26	13	15	7	6	6	4	5	5	4	46
Aug 28	5	7	22	18	12	13	21	10	19	29	30	28	24	22	12	12	9	22	25	17	15	7	6	11	5	30
Aug 29	5	5	7	5	4	9	6	10	11	11	24	21	17	17	9	11	13	10	6	8	4	7	4	4	4	24
Aug 30	8	5	6	9	7	22	28	61	47	18	67	41	20	12	14	42	72	45	18	15	22	52	24	63	5	72
Aug 31	16	41	50	11	9	6	4	5	6	9	7	9	15	14	9	10	13	7	7	5	6	13	13	18	4	50
Diurnal Minimum	5	5	5	5	4	4	4	5	6	5	6	6	7	6	6	7	8	6	4	5	4	3	4	4		
Diurnal Maximum	72	74	71	49	55	59	53	61	64	40	67	41	35	59	55	56	73	70	30	46	67	61	69	63		

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	ND	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.



END OF REPORT

This page, 164 of 164 ends the August 2023 Monthly Ambient Air Quality Monitoring Report.

Lakeland Industry & Community Association

AUGUST 2023

Ambient Air Monitoring Calibration Report

- COLD LAKE SOUTH STATION-

CAL-LICA-202308-01174

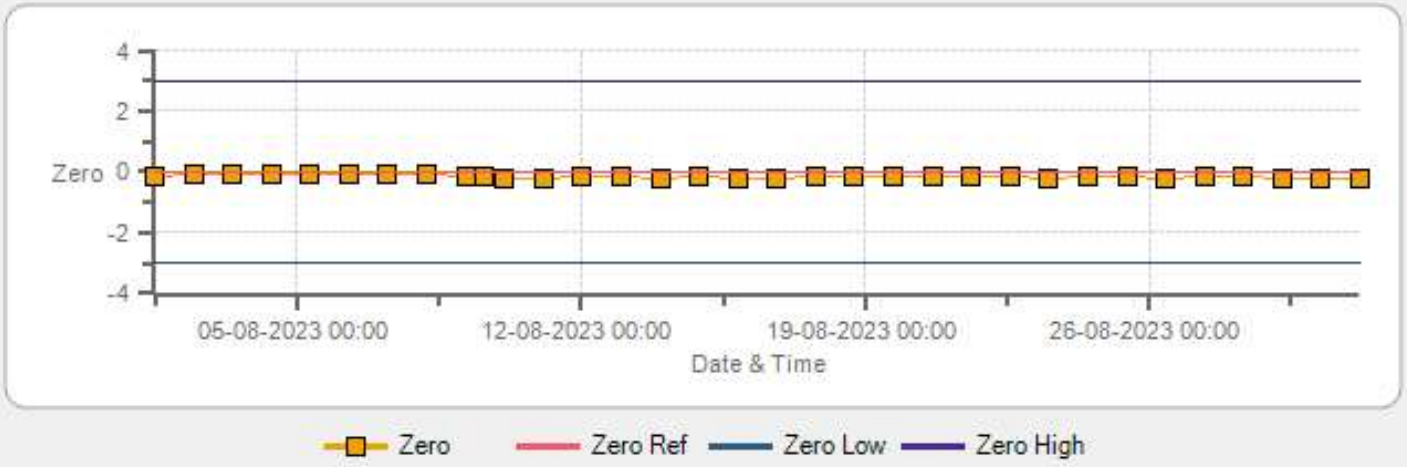
Station Operation and Maintenance:
Bureau Veritas Canada

Data Validation and Report:
LICA / Bureau Veritas Canada

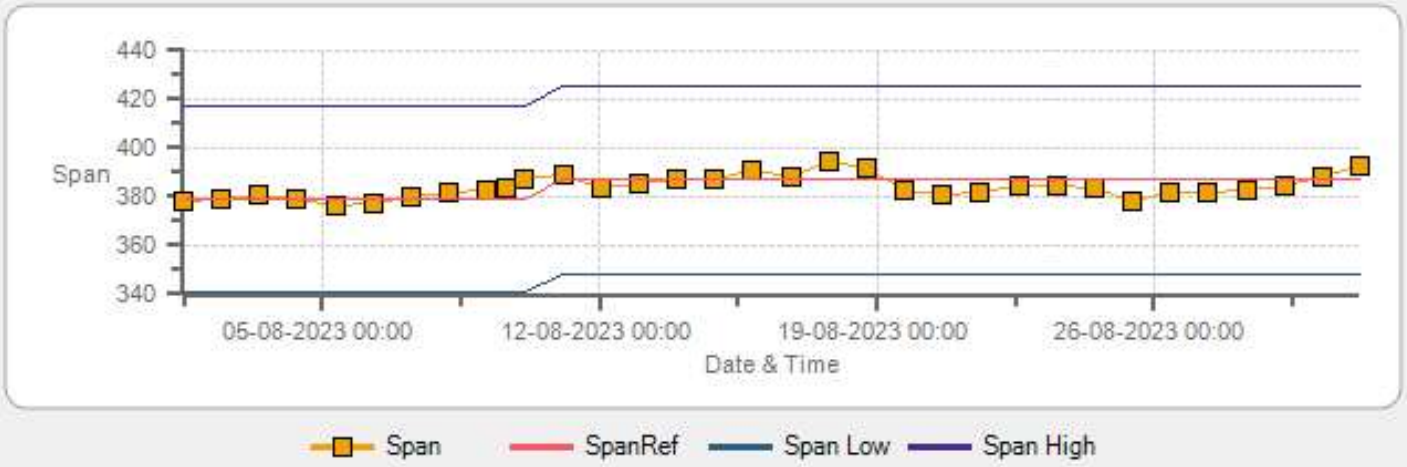
September 18, 2023

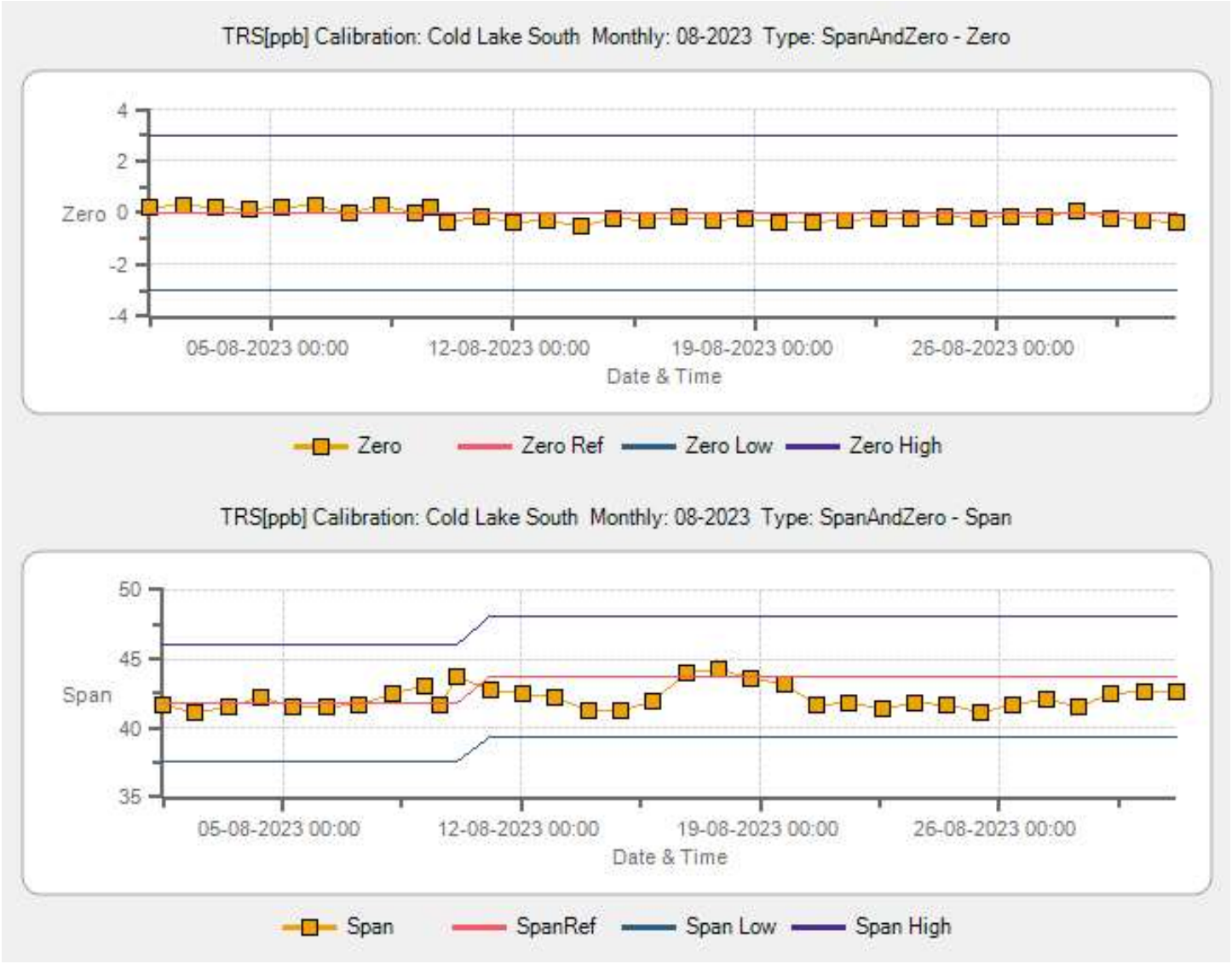
DAILY INTERNAL ZERO-SPAN CALIBRATION RECORDS

SO2[ppb] Calibration: Cold Lake South Monthly: 08-2023 Type: SpanAndZero - Zero

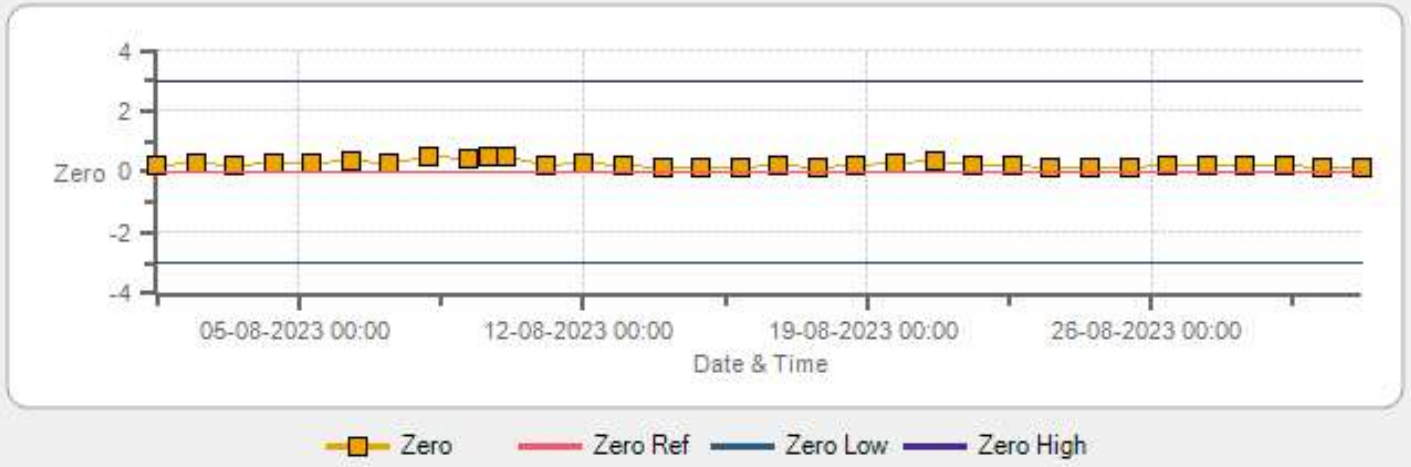


SO2[ppb] Calibration: Cold Lake South Monthly: 08-2023 Type: SpanAndZero - Span

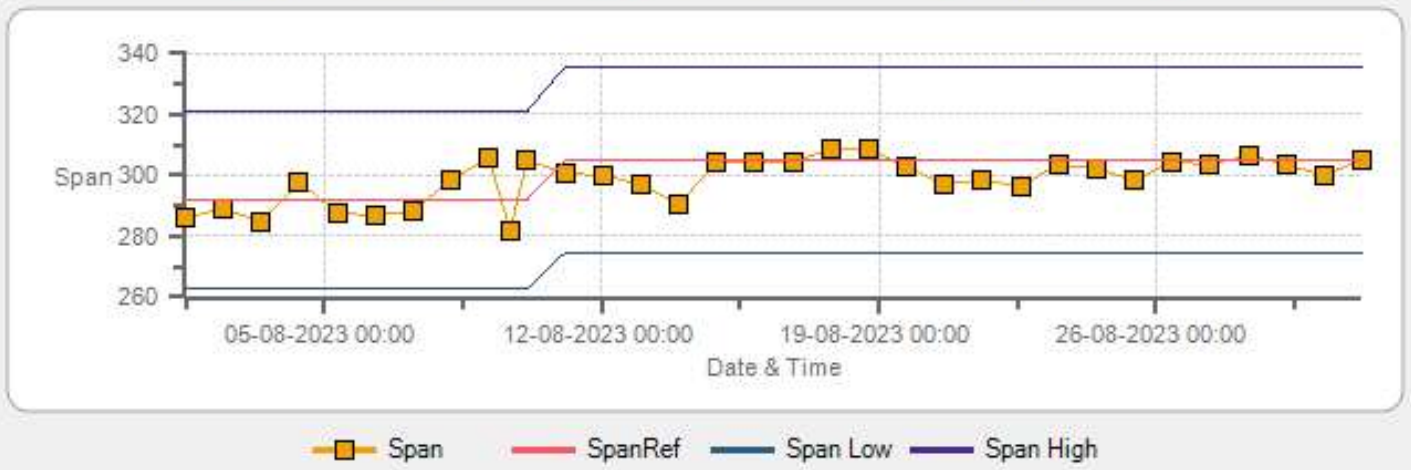



TRS[ppb] Calibration: Cold Lake South Monthly: 08-2023 Type: SpanAndZero - Zero
4
2
Zero 0
-2
-4
05-08-2023 00:00
12-08-2023 00:00
19-08-2023 00:00
26-08-2023 00:00
Date & Time
Zero
Zero Ref
Zero Low
Zero High
TRS[ppb] Calibration: Cold Lake South Monthly: 08-2023 Type: SpanAndZero - Span
50
45
Span
40
35
05-08-2023 00:00
12-08-2023 00:00
19-08-2023 00:00
26-08-2023 00:00
Date & Time
Span
SpanRef
Span Low
Span High

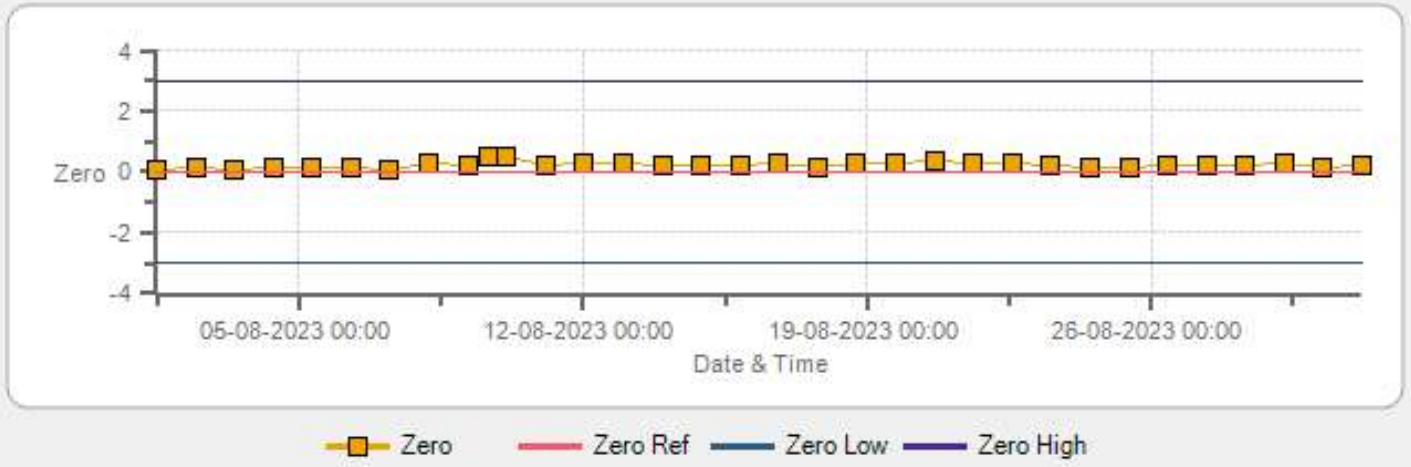
NOX[ppb] Calibration: Cold Lake South Monthly: 08-2023 Type: SpanAndZero - Zero



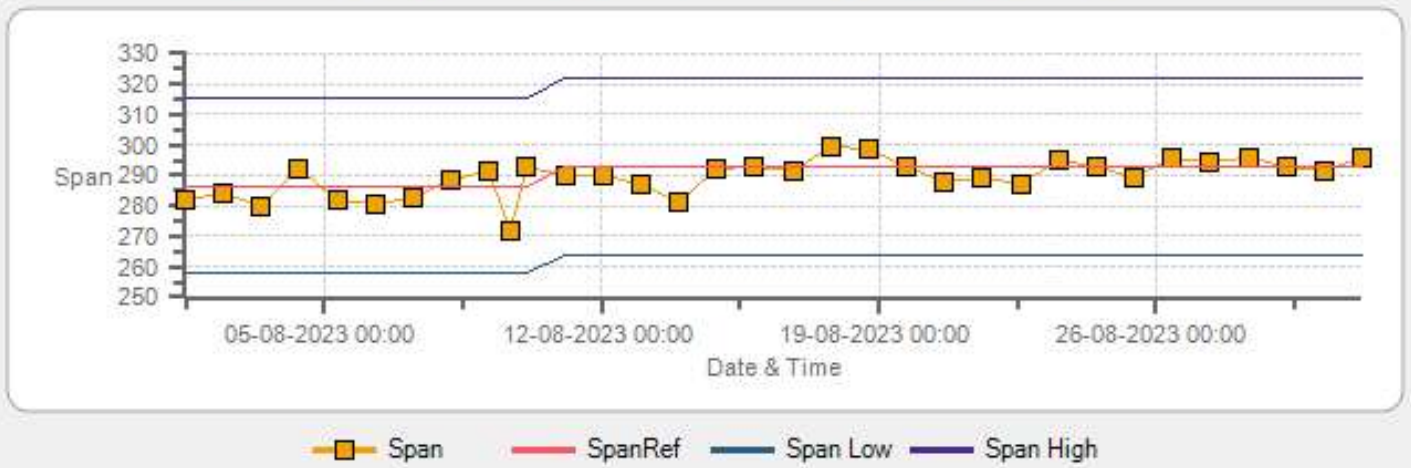
NOX[ppb] Calibration: Cold Lake South Monthly: 08-2023 Type: SpanAndZero - Span



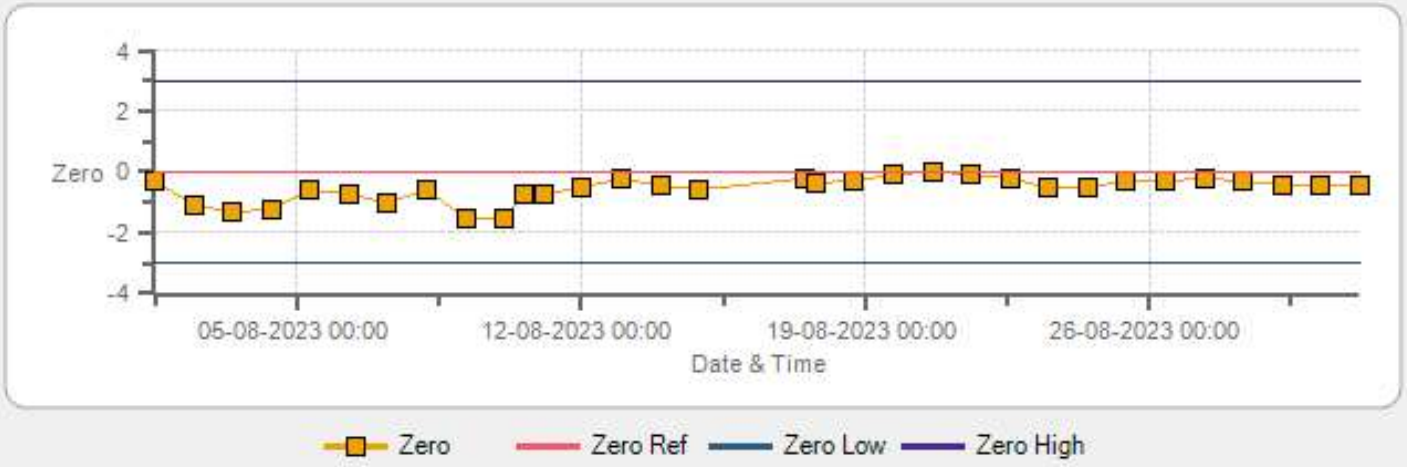
NO2[ppb] Calibration: Cold Lake South Monthly: 08-2023 Type: SpanAndZero - Zero



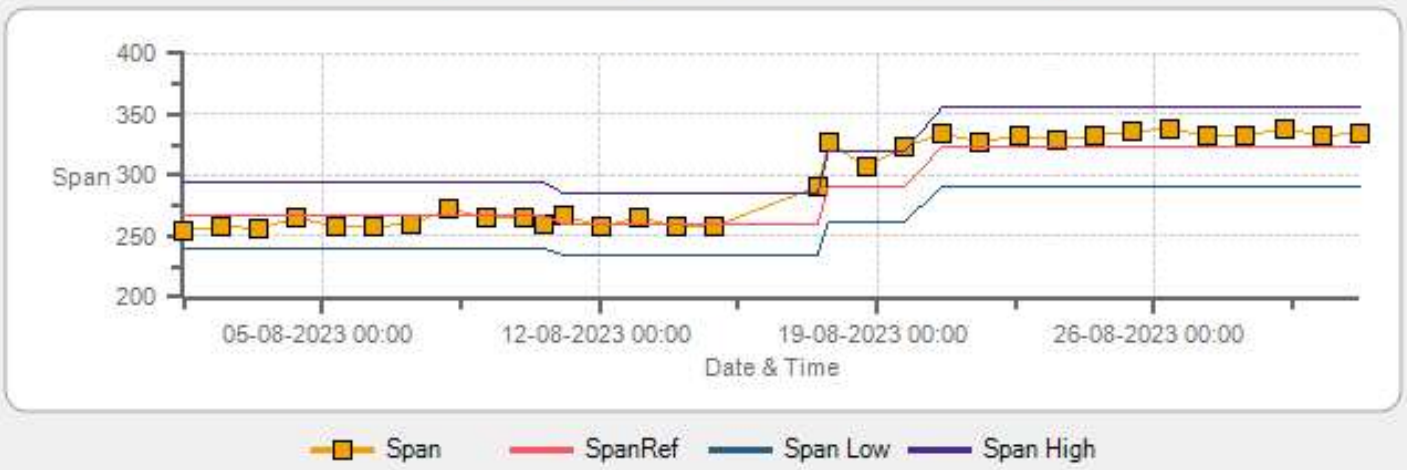
NO2[ppb] Calibration: Cold Lake South Monthly: 08-2023 Type: SpanAndZero - Span

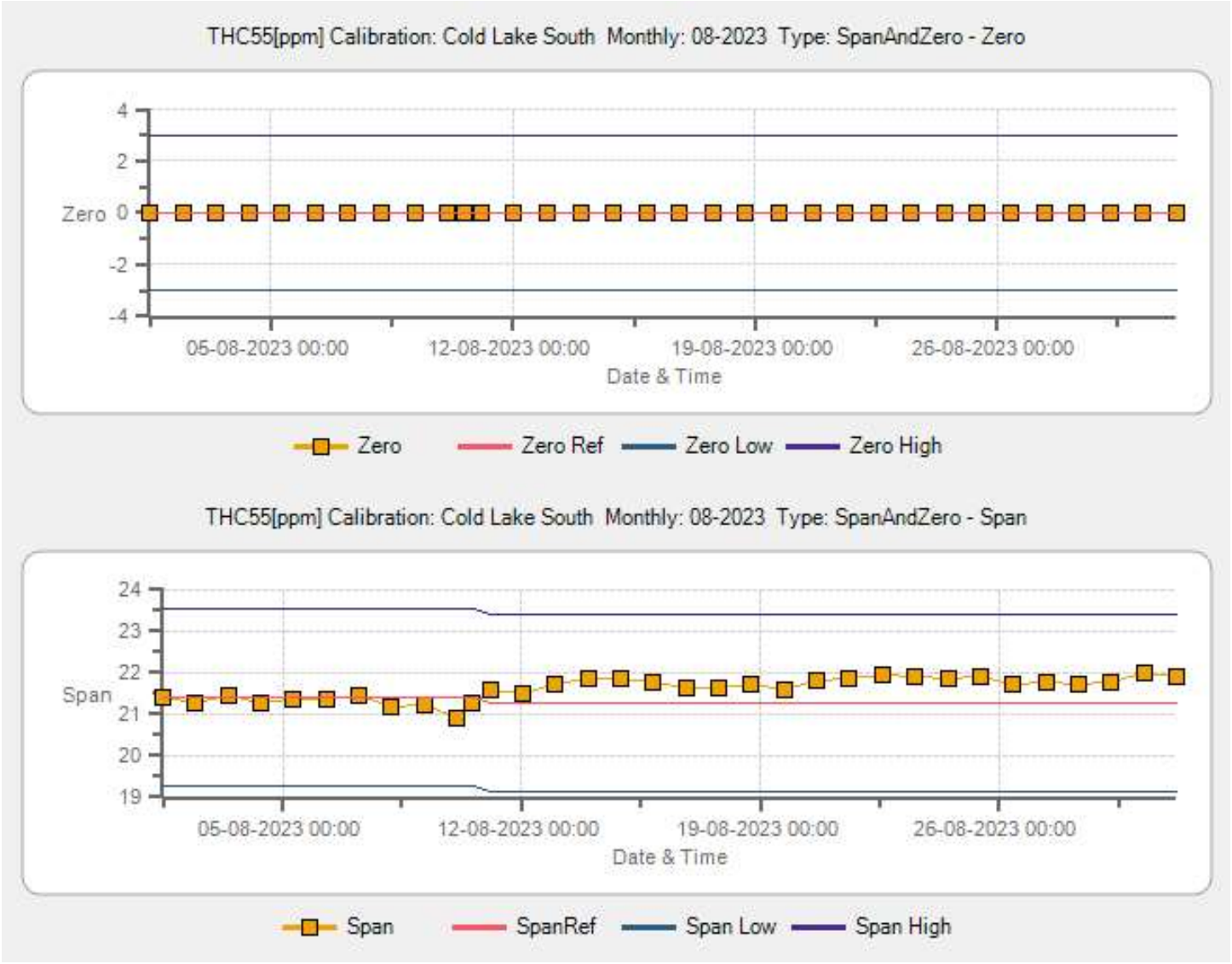


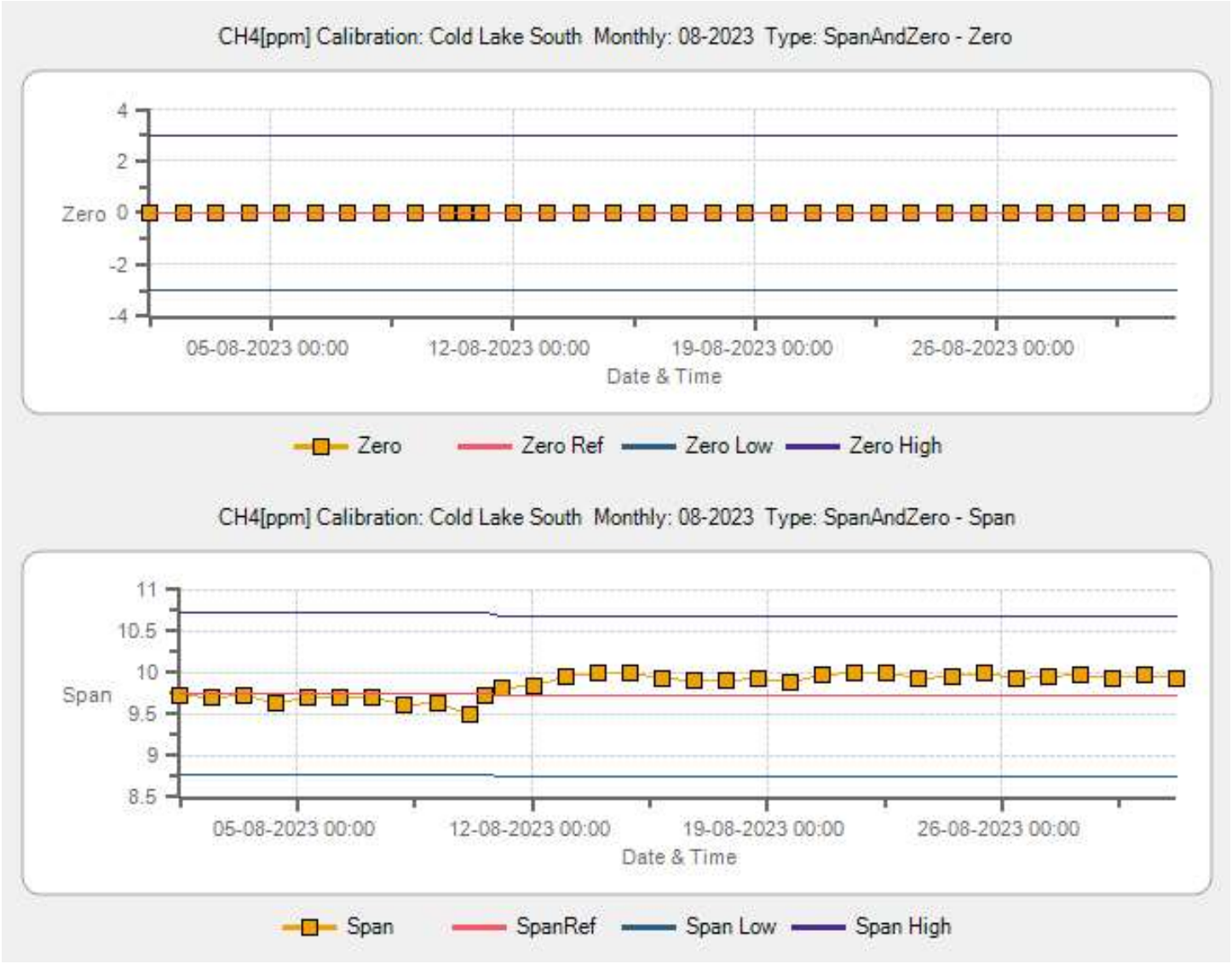
O3[ppb] Calibration: Cold Lake South Monthly: 08-2023 Type: SpanAndZero - Zero

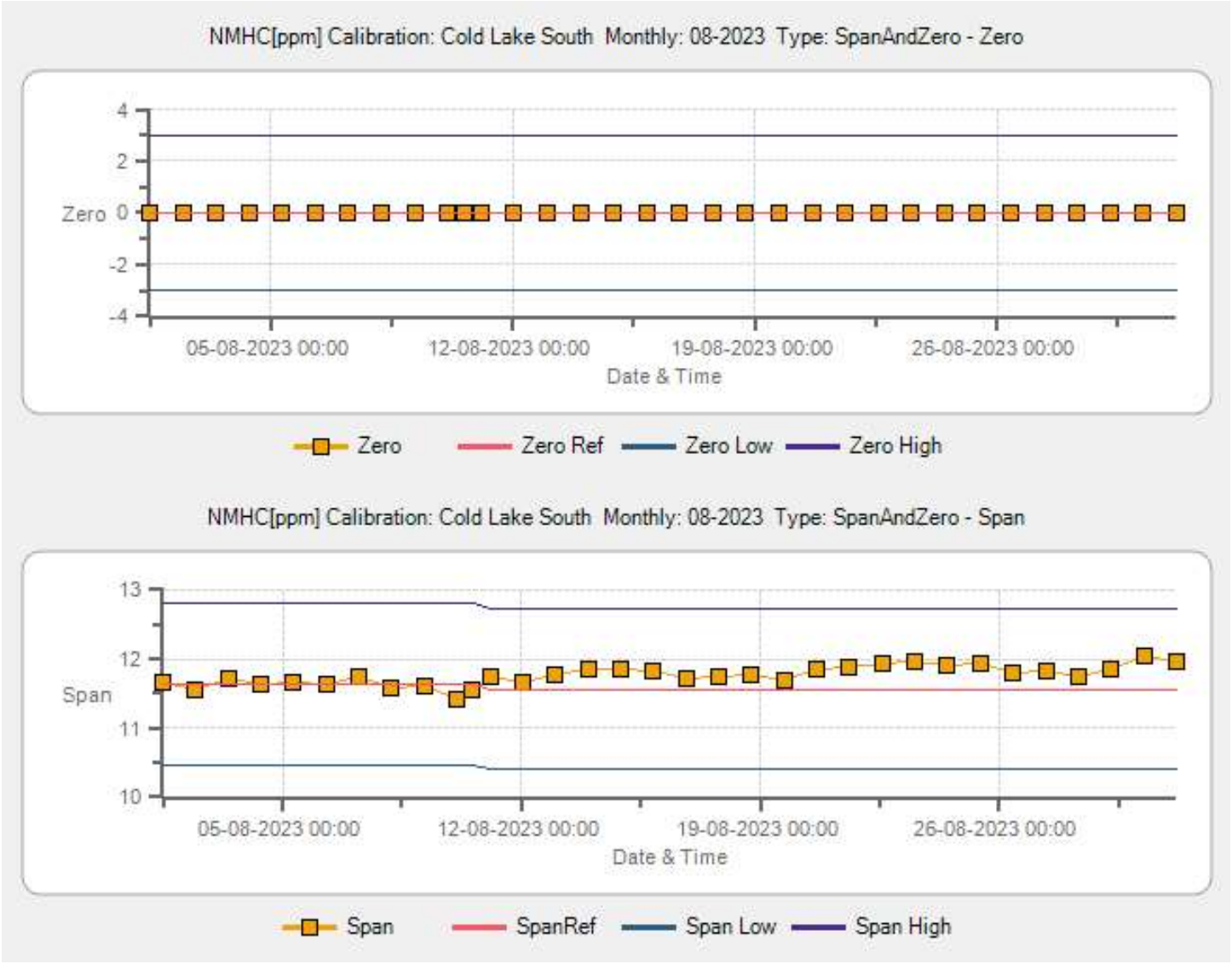


O3[ppb] Calibration: Cold Lake South Monthly: 08-2023 Type: SpanAndZero - Span




THC55[ppm] Calibration: Cold Lake South Monthly: 08-2023 Type: SpanAndZero - Zero
4
2
Zero 0
-2
-4
05-08-2023 00:00
12-08-2023 00:00
19-08-2023 00:00
26-08-2023 00:00
Date & Time
Zero
Zero Ref
Zero Low
Zero High
THC55[ppm] Calibration: Cold Lake South Monthly: 08-2023 Type: SpanAndZero - Span
24
23
22
Span 21
20
19
05-08-2023 00:00
12-08-2023 00:00
19-08-2023 00:00
26-08-2023 00:00
Date & Time
Span
SpanRef
Span Low
Span High


CH4[ppm] Calibration: Cold Lake South Monthly: 08-2023 Type: SpanAndZero - Zero
4
2
Zero 0
-2
-4
05-08-2023 00:00
12-08-2023 00:00
19-08-2023 00:00
26-08-2023 00:00
Date & Time
Zero
Zero Ref
Zero Low
Zero High
CH4[ppm] Calibration: Cold Lake South Monthly: 08-2023 Type: SpanAndZero - Span
11
10.5
Span 10
9.5
9
8.5
05-08-2023 00:00
12-08-2023 00:00
19-08-2023 00:00
26-08-2023 00:00
Date & Time
Span
SpanRef
Span Low
Span High


NMHC[ppm] Calibration: Cold Lake South Monthly: 08-2023 Type: SpanAndZero - Zero
4
2
Zero 0
-2
-4
05-08-2023 00:00
12-08-2023 00:00
19-08-2023 00:00
26-08-2023 00:00
Date & Time
Zero
Zero Ref
Zero Low
Zero High
NMHC[ppm] Calibration: Cold Lake South Monthly: 08-2023 Type: SpanAndZero - Span
13
12
Span
11
10
05-08-2023 00:00
12-08-2023 00:00
19-08-2023 00:00
26-08-2023 00:00
Date & Time
Span
SpanRef
Span Low
Span High

MULTI-POINT CALIBRATION RECORDS

SO2 Analyzer Calibration by Dilution

DATE:	09-Aug-2023	PREVIOUS CALIBRATION DATE:	12-Jul-2023
PARAMETER:	SO2	PREVIOUS CORRECTION FACTOR:	0.997
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	CLS	BAROMETRIC (mBar):	948
PURPOSE	Routine	START TIME (MST):	09:13
PERFORMED BY:	Alex Yakupov	END TIME (MST):	14:49

ANALYZER:

MAKE/MODEL	Thermo 43I-TLE	RANGE	500 ppb
SERIAL #	1180260018	FLOW (mL/min)	441
INITIAL		FINAL	
BKG/OFFSET	2.18	BKG/OFFSET	2.27
COEF/SLOPE	0.984	COEF/SLOPE	0.985
Expected (reference) Value	379	Expected (reference) Value	387

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010	MODEL:	T701
ID:	17100415	ID:	132
MFC CALIBRATION DATE:	12-Apr-2023	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	LL 127895	HIGH ID	n/a
CONC (ppm):	50.40	EXPIRY DATE	n/a
CYLINDER (psi):	1200	LOW ID	n/a
EXPIRY DATE	27-Oct-2030	EXPIRY DATE	n/a

CALIBRATION PARAMETERS:

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

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

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

CALIBRATION:

FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
			ACTUAL	INDICATED		Initial	Final
DILUENT	GAS	TOTAL		Initial	Final		
5000		5000	0.00	0	0		
4961	37.20	4998	375.13	370.6	376.1	1.012	0.997
4982	17.60	5000	177.41	n/a	177.6	n/a	0.999
4990	8.80	4999	88.72	n/a	87.8	n/a	1.010

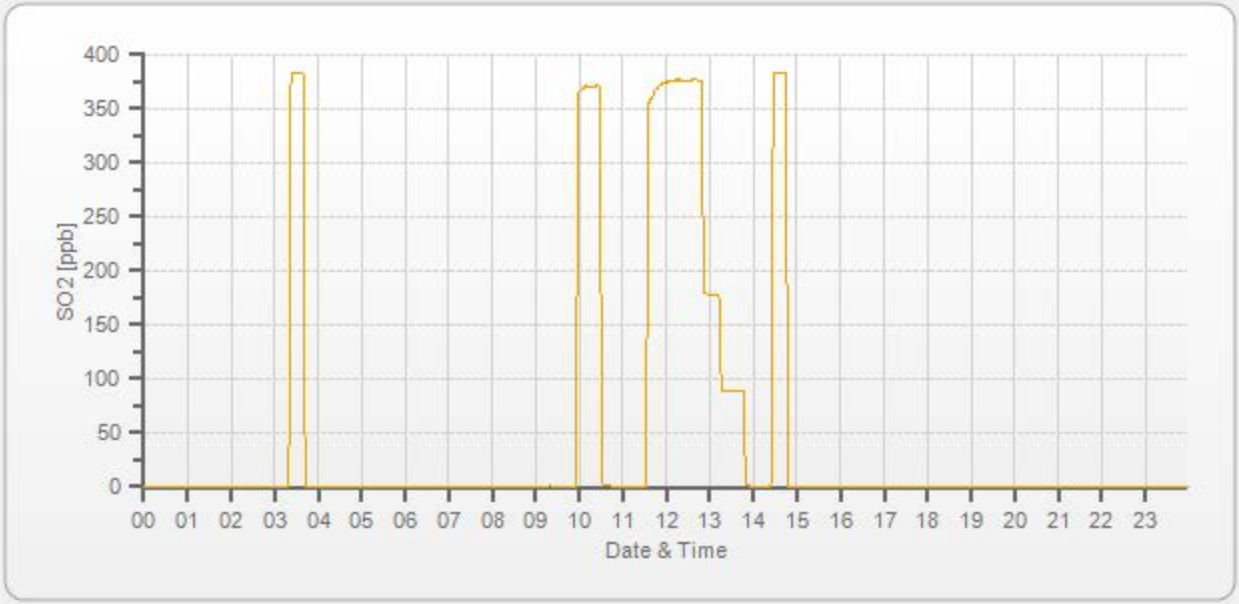
LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.004	-0.1%

COMMENTS:

Sample inlet filter was changed.

SO2[ppb] Station: Cold Lake South Daily: 09-08-2023 Type: AVG 1 Min. [1 Min.]



TRS Analyzer Calibration by Dilution

DATE:	09-Aug-2023	PREVIOUS CALIBRATION DATE:	12-Jul-2023
PARAMETER:	TRS	PREVIOUS CORRECTION FACTOR:	1.006
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	CLS	BAROMETRIC (mBar):	948
PURPOSE	Routine	START TIME (MST):	09:11
PERFORMED BY:	Alex Yakupov	END TIME (MST):	14:49

ANALYZER:

MAKE/MODEL	Thermo 450i	RANGE	100 ppb
SERIAL #	812728560	FLOW (mL/min)	493
INITIAL		FINAL	
BKG/OFFSET	26.6	BKG/OFFSET	27.4
COEF/SLOPE	1.114	COEF/SLOPE	1.162
Expected (reference) Value	41.8	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:	12-Apr-2023	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):	400	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:	09:18	SO2 Conc (ppb)	380
END TIME:	09:33	Analyzer Response (ppb)	0.0

CALIBRATION:

FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
			ACTUAL	INDICATED		Initial	Final
DILUENT	GAS	TOTAL		Initial	Final		
7500		7500	0.00	0.3	0		
7442	57.90	7500	77.97	75.1	78	1.042	1.000
7472	28.20	7500	37.98	n/a	38.9	n/a	0.976
7486	14.10	7500	18.99	n/a	19.2	n/a	0.989

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.001	0.3%

COMMENTS:

Sample inlet filter was changed.

TRS[ppb] Station: Cold Lake South Daily: 09-08-2023 Type: AVG 1 Min. [1 Min.]

NOx Calibration by Dilution/Gas-Phase Titration

CALIBRATION:

DATE:	09-Aug-2023	PREVIOUS CALIBRATION DATE:	12-Jul-2023
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	CLS	BAROMETRIC (mBar):	948
PURPOSE	Routine	START TIME (MST):	09:14
PERFORMED BY:	Alex Yakupov	END TIME (MST):	16:34

ANALYZER:

MAKE/MODEL:	Thermo 42i	PREVIOUS CF.	
SERIAL #:	1505664393	NOx	1.002
FLOW (mL/min)	663	NO	1.002
RANGE (ppb)	500	NO2	0.999
GPT FOR O3?		No	

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:		CALIBRATION GAS:			FLOWMETERS (if applicable):	
MAKE:	SABIO	MAKE:	Teledyne	CYLINDER ID:	LL 127895		HIGH ID:	n/a
MODEL:	2010	MODEL:	T701	NO/NOx (PPM):	51.1	51.6	HIGH EXPIRY:	n/a
ID:	17100415	ID:	132	CYLINDER (psi):	1200		LOW ID:	n/a
MFC CALIBRATION DATE:	12-Apr-2023	OXIDIZER ID:	n/a	EXPIRY DATE	27-Oct-2030		LOW EXPIRY:	n/a

CALIBRATION SETTINGS:

INITIAL	NOx	NO	NO2	FINAL	NOx	NO	NO2
BKG/OFFSET:	4.9	4.7	n/a	BKG/OFFSET:	5.1	5	n/a
SLOPE/COEF/CE:	1.007	1.071	0.999	SLOPE/COEF/CE:	1.007	1.086	0.999

EXPECTED (REFERENCE) VALUE:

INITIAL	NOx	NO	NO2	FINAL	NOx	NO	NO2
	292.1	5.6	286.5		305.0	12.2	293.0

CALIBRATION PARAMETERS:

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

NO/NOx CALIBRATION:

FLOW RATE			CONCENTRATION (ppb)									CORRECTION FACTOR (CF.)					
(mL/min)			CALCULATED			INITIAL INDICATED			FINAL INDICATED			INITIAL			FINAL		
DILUENT	GAS	TOTAL	NO	NOx	NO2	NO	NOx	NO2	NO	NOx	NO2	NO	NOx	NO2	NO	NOx	NO2
5000		5000	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0						
4961	37.20	4998	380.3	384.1	3.7	375.6	379.4	3.7	380.5	383.7	3.2	1.013	1.013		1.000	1.001	
4982	17.60	5000	179.9	181.6	1.8	n/a	n/a	n/a	180.2	182.0	1.7	n/a	n/a		0.998	0.998	
4990	8.80	4999	90.0	90.8	0.9	n/a	n/a	n/a	90.0	90.6	0.6	n/a	n/a		0.999	1.003	

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	37.20	4998	0	381.2	384.6	3.3				
AS-FOUND HIGH	37.20	4998	235	126.3	384.4	257.8	254.9	254.5	1.002	99.84%
ADJUSTED HIGH	n/a	n/a	n/a	n/a	n/a	n/a	n/a	**n/a**	**n/a**	n/a
MID	37.20	4998	110	260.8	384.8	124.0	120.4	120.7	0.998	100.25%
LOW	37.20	4998	40	332.5	385.3	52.7	48.7	49.4	0.986	101.44%
NO2 adjustment not required.									AVERAGE:	100.51%

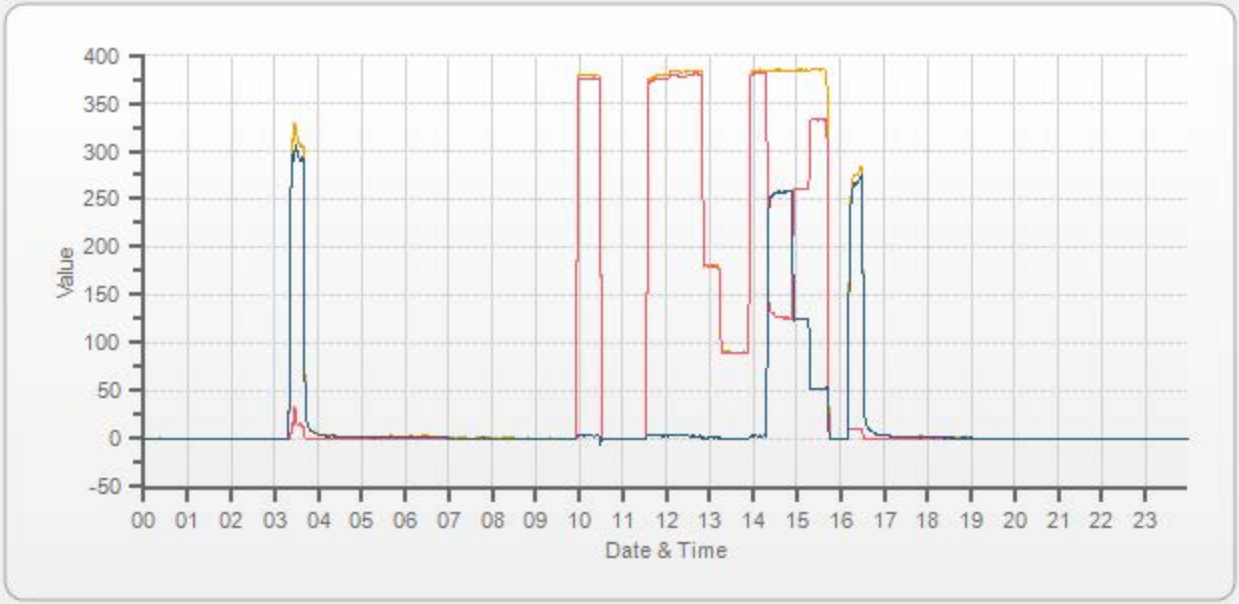
LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
NO	1.000	1.000	0.01%
NOx	1.000	0.999	0.01%
NO2	1.000	0.995	0.19%

COMMENTS:

Sample inlet filter was changed.

Station: Cold Lake South Daily: 09-08-2023 Type: AVG 1 Min. [1 Min.]



Ozone Calibration by Photometer (Varying UV Lamp)

DATE:	10-Aug-2023	PREVIOUS CALIBRATION DATE:	13-Jul-2023
PARAMETER:	O3	PREVIOUS CORRECTION FACTOR:	1.005
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	CLS	BAROMETRIC (mBar):	936
PURPOSE	Routine	START TIME (MST):	09:26
PERFORMED BY:	Alex Yakupov	END TIME (MST):	13:44

ANALYZER:

MAKE/MODEL	Thermo 49iQ	RANGE	500 ppb
SERIAL #	12208316585	FLOW (mL/min)	1.29
INITIAL		FINAL	
BKG/OFFSET	0.4	BKG/OFFSET	-0.5
COEF/SLOPE	1.036	COEF/SLOPE	1.039
Expected (reference) Value	267	Expected (reference) Value	260

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010 D	MODEL:	T701
ID:	11900613	ID:	132
MFC CALIBRATION DATE:	12-Apr-2023	OXIDIZER ID:	n/a
CALIBRATION METHOD:		Photometer (Varying UV Lamp)	
GPT DATE:	n/a	GPT END TIME:	n/a

CALIBRATION PARAMETERS:

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

CALIBRATION:

FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
			ACTUAL	INDICATED		Initial	Final
DILUENT	GAS	TOTAL		Initial	Final		
5000		5000	0.0	-0.4	0.0		
5000		5000	378.0	379.0	377.0	0.996	1.003
5000		5000	180.0	n/a	180.0	n/a	1.000
5000		5000	60.0	n/a	61.4	n/a	0.977

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: 10-08-2023 Type: AVG 1 Min. [1 Min.]
O3 [ppb]
450
400
350
300
250
200
150
100
50
0
-50
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23
Date & Time
O3 [ppb]

Ozone Calibration by Photometer (Varying UV Lamp)

DATE:	17-Aug-2023	PREVIOUS CALIBRATION DATE:	n/a
PARAMETER:	O3	PREVIOUS CORRECTION FACTOR:	n/a
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	CLS	BAROMETRIC (mBar):	941
PURPOSE	Install/Post-Repair	START TIME (MST):	08:50
PERFORMED BY:	Alex Yakupov	END TIME (MST):	12:05

ANALYZER:

MAKE/MODEL	Thermo 49i	RANGE	500 ppb
SERIAL #	1002240371	FLOW (mL/min)	1509
INITIAL		FINAL	
BKG/OFFSET	n/a	BKG/OFFSET	0.3
COEF/SLOPE	n/a	COEF/SLOPE	1.258
Expected (reference) Value	n/a	Expected (reference) Value	291

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010 D	MODEL:	T701
ID:	11900613	ID:	132
MFC CALIBRATION DATE:	12-Apr-2023	OXIDIZER ID:	n/a
CALIBRATION METHOD:		Photometer (Varying UV Lamp)	
GPT DATE:	n/a	GPT END TIME:	n/a

CALIBRATION PARAMETERS:

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

CALIBRATION:

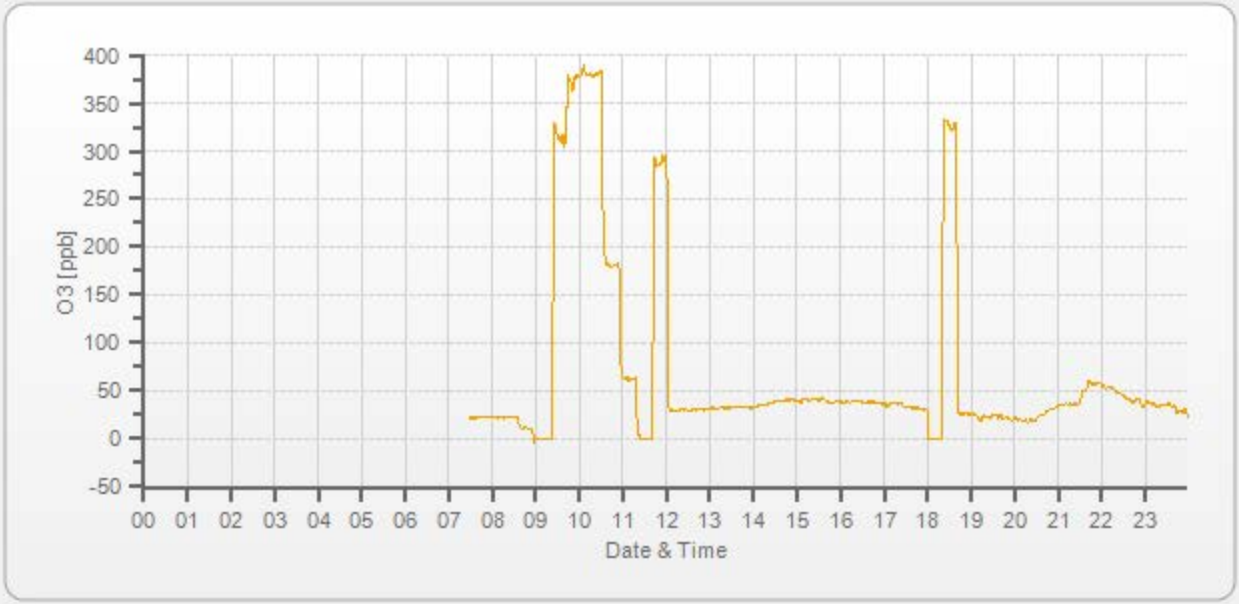
FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
			ACTUAL	INDICATED		Initial	Final
DILUENT	GAS	TOTAL		Initial	Final		
5000		5000	0.0	n/a	0.0		
5000		5000	378.0	n/a	378.8	n/a	0.998
5000		5000	180.0	n/a	179.9	n/a	1.001
5000		5000	61.0	n/a	62.5	n/a	0.976

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.000	0.1%

COMMENTS:

Installation calibration was completed to replace failed Thermo 49iQ #12208316585.
(No shutdown calibration possible)


O3[ppb] Station: Cold Lake South Daily: 17-08-2023 Type: AVG 1 Min. [1 Min.]
400
350
300
250
200
150
100
50
0
-50
O3 [ppb]
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23
Date & Time
O3 [ppb]

Methane/Non-Methane Analyzer Calibration by Dilution

CALIBRATION:

DATE:	10-Aug-2023	PREVIOUS CALIBRATION DATE:	13-Jul-2023
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	CLS	BAROMETRIC (mBar):	936
PURPOSE	Routine	START TIME (MST):	09:27
PERFORMED BY:	Alex Yakupov	END TIME (MST):	13:44

ANALYZER:

VALUE	MAKE/MODEL	SERIAL	FLOW (mL/min)
	Thermo 55i	1180930025	1100
PARAMETER:	CH4	NMHC	THC
RANGE (ppm):	20	20	40
PREVIOUS CF:	1.001	1.000	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_3H_8 (ppm):	603.0	204.0	HIGH EXPIRY:	n/a
ID:	17100415	ID:	134	CYLINDER (psi):	1100		LOW ID:	n/a
MFC CALIBRATION DATE:	12-Apr-2023	OXIDIZER ID:	n/a	EXPIRY DATE	18-Aug-2029		LOW EXPIRY:	n/a

CALIBRATION PARAMETERS:

POINT (CH4/NMHC)	HIGH	MID	LOW	CH4 EQUIVILANCE	
TARGET	14	7	3.5	C_3H_8 as CH_4	561.0
RANGE	12 - 16	6 - 8	2 - 4	THC as CH_4	1164.0

EXPECTED (REFERENCE) VALUE:

INITIAL	CH4	NMHC	THC	FINAL	CH4	NMHC	THC
	9.74	11.29	21.03		9.72	11.56	21.28

CALIBRATION:

FLOW RATE (mL/min)			CONCENTRATION (PPM)									CORRECTION FACTOR (CF.)					
			CALCULATED			INITIAL INDICATED			FINAL INDICATED			INITIAL			FINAL		
DILUENT	GAS	TOTAL	CH4	NMHC	THC	CH4	NMHC	THC	CH4	NMHC	THC	CH4	NMHC	THC	CH4	NMHC	THC
3100		3100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						
3025	74.60	3100	14.51	13.50	28.01	14.15	13.46	27.61	14.49	13.58	28.08	1.026	1.003	1.015	1.001	0.994	0.998
3063	37.30	3100	7.26	6.75	14.01	n/a	n/a	n/a	7.21	6.85	14.06	n/a	n/a	n/a	1.006	0.985	0.996
3081	18.60	3100	3.62	3.37	6.98	n/a	n/a	n/a	3.58	3.53	7.12	n/a	n/a	n/a	1.011	0.954	0.981

LINEAR REGRESSION ANALYSIS:

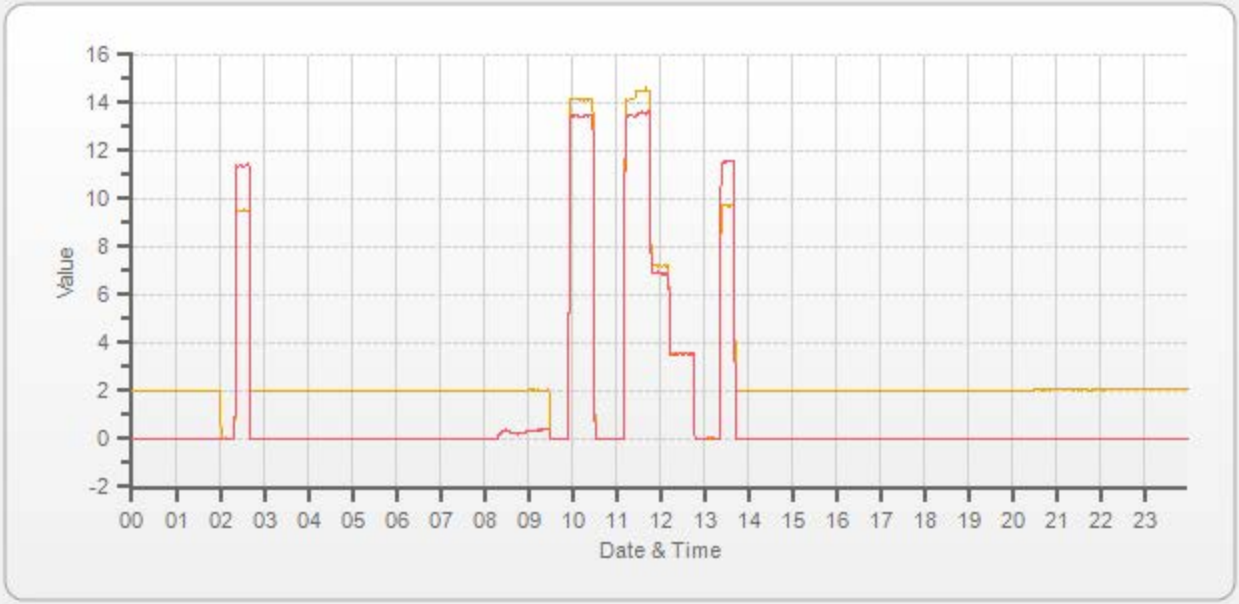
	CORRELATION	SLOPE	INTERCEPT
CH4	1.000	0.999	-0.1%
NMHC	1.000	1.003	0.3%
THC	1.000	1.001	0.1%

Comments:

Sample inlet filter was changed.

Use Zero Chrom? **Yes**

Station: Cold Lake South Daily: 10-08-2023 Type: AVG 1 Min. [1 Min.]



Teledyne T640 Audit/Calibration

Date/Previous Audit Date:	August 10, 2023	July 13, 2023	**Weather Conditions:**	Moderate rain
Company:	LICA		**Start Time (mst):**	14:03
Station:	Cold Lake South		**End Time (mst):**	15:08
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 177246 / Sep 03, 2023	**Temperature:**	Vaisala / HM70 / #T1640130/ Jun 26, 2024
Digital Manometer:	DeltaCal DC1 S/N 177246 / Sep 03, 2023	**Pressure:**	Fisher / FB 61291/ #130168457/ Mar 20, 2024

DIAGNOSTICS:

Ambient Pressure (mmHg)	701.2	Ambient Temp (°C)	17.4	ASC Heater Duty (%)	68.3
Box Temp (°C)	29.8	Current PMT HV (V)	1432	LED Temp (°C)	40.38
P3 Value	31	PMT Setting (V)	1432	Pump PWM (%)	77
Sample Flow (L/min)	5.03	Sample RH (%RH)	35.1	Sample Temp (°C)	31.6

Monthly Audit/Calibration:

Item:	As-found		As-left		Tolerance
	Reference	**T640x**	**Reference**	**T640x**	
Zero Test (Leak Check)	PM10	0.0	PM10	0.0	0.0 to 0.2
	PM2.5	0.0	PM2.5	0.0	
Ambient Pressure (mmHg)	701.3	701.2	701.3	701.2	+/- 10 mm Hg
Ambient Temperature (°C)	17.50	17.4	n/a		+/- 2°C
Sample Flow (L/min)	5.00	4.99	5.00	5	+/-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:

A new filter was installed.

Meteorological System Checklist

Date:	August 10, 2023		
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 26, 2024		
Reference Temperature (^{o}C):	17.2		
Station - Ambient Temperature (^{o}C):	16.4		
Temperature Difference (^{o}C):	0.8		
BAROMETRIC PRESSURE SENSOR CHECK			
Reference Barometer ID:	Fisher / FB 61291/ #130168457/ Mar 20, 2024		
Reference Pressure - Units/Reading:	millibar	939	
Station Pressure - Units/Reading:	millibar	936	
Pressure Tolerance +/- 15% of error:	798 - 1080	0.32%	
RELATIVE HUMIDITY (HYGROMETER) SENSOR CHECK			
Reference Hygrometer ID:	Vaisala / HM70 / #T1640130/ Jun 26, 2024		
Reference Hygrometer % RH- Reading:	89.10		
Station Hygrometer % RH- Reading:	79.80		
RH Tolerance +/- 15% of difference:	75.74 - 102.47	10.4%	
ANEMOMETER - WIND SPEED & WIND DIRECTION SENSOR CHECK			
WIND SPEED		WIND DIRECTION	
Previous check date:	July 13, 2023	Previous check date:	July 13, 2023
Wind Speed Observed (kph):	0 - 10	Wind Direction Observed:	W
Wind speed on Data Logger (kph):	7.5	Wind Direction on Data Logger:	W
	Annual audit: Jul 6, 2022	Wind Direction Pass/Fail?:	Pass

Comments

Station (Trailer) temperature vs Reference gauge: 22.8 vs 22.5, Difference = 0.3 degrees. Passed. Wind system: Model 05305AQ. Signal box # 32400

Meteorological Sensor Audit/Calibration

Location Information

Company:	LICA	**Performed By:**	Alex Yakupov
Audit Location:	Cold Lake South	**Reviewed By:**	Chris Wesson
Audit Date:	July 6, 2022	**Start/End Time (mst):**	15:54 / 17:48
Calibration Purpose:	routine annual	**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 2023

Ambient Air Monitoring Calibration Report

- TAMARACK STATION-

CAL-LICA-202308-01248

Station Operation and Maintenance:
Bureau Veritas Canada

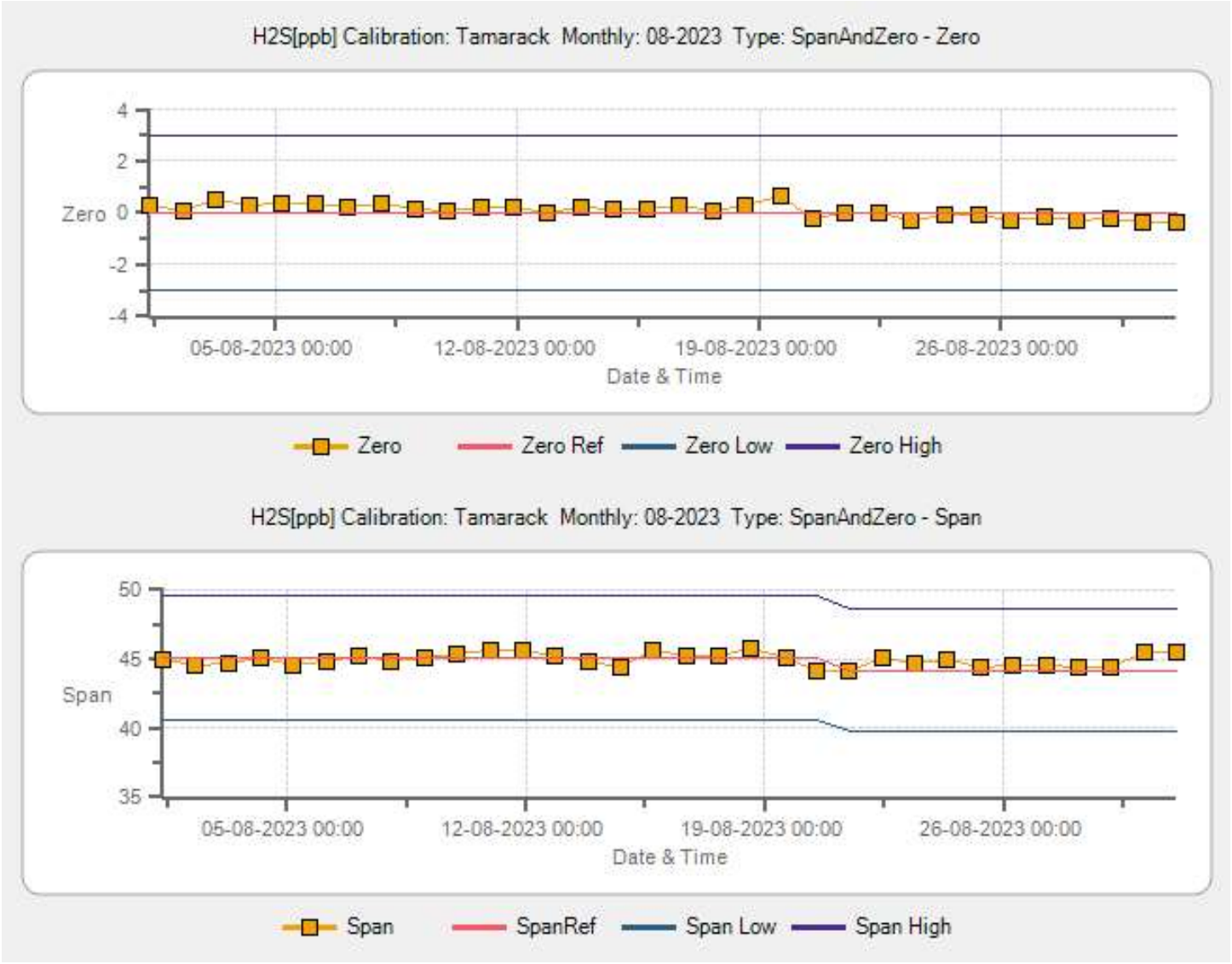
Data Validation and Report:
LICA / Bureau Veritas Canada

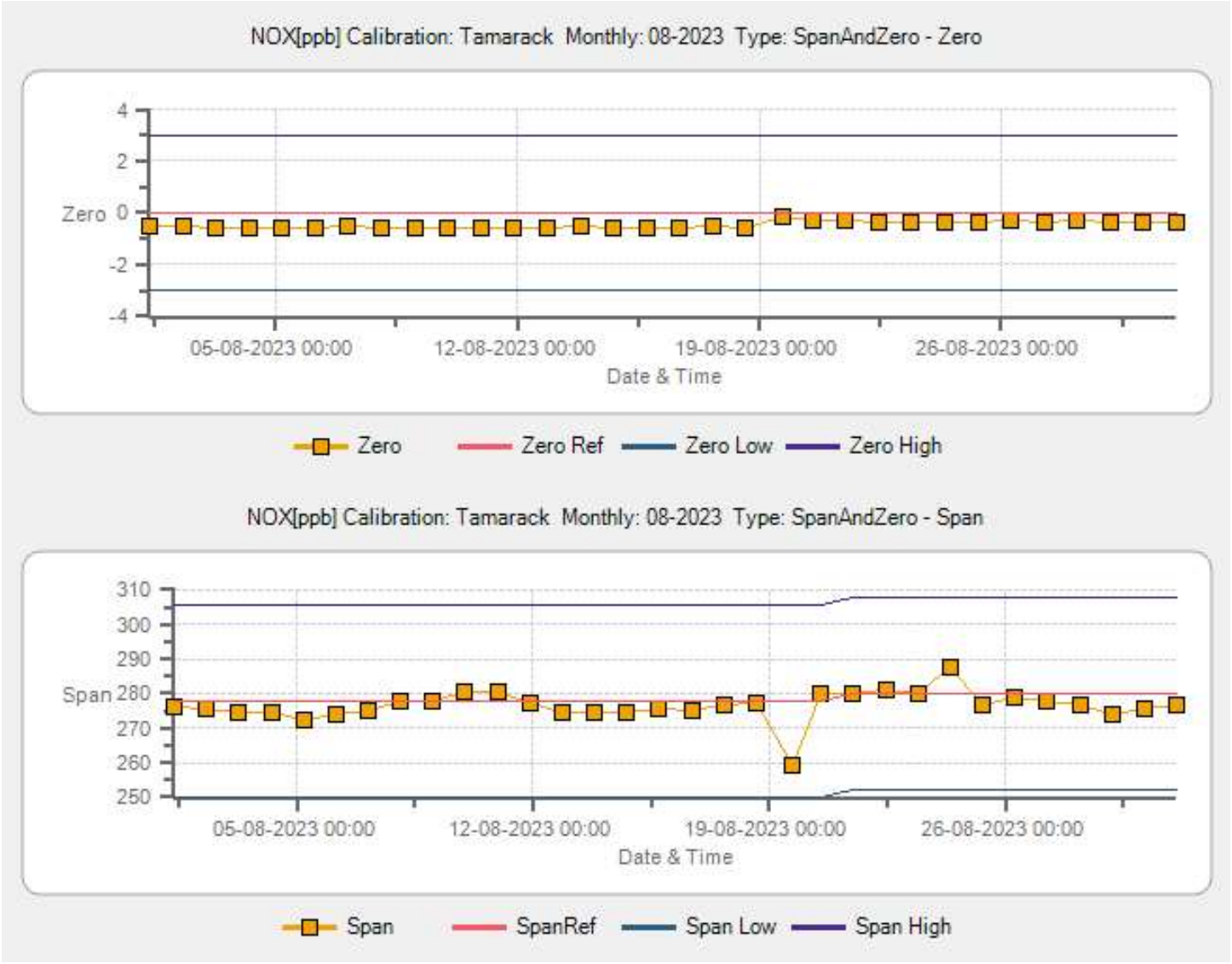
September 18, 2023

DAILY INTERNAL ZERO-SPAN CALIBRATION RECORDS

SO2[ppb] Calibration: Tamarack Monthly: 08-2023 Type: SpanAndZero - Zero

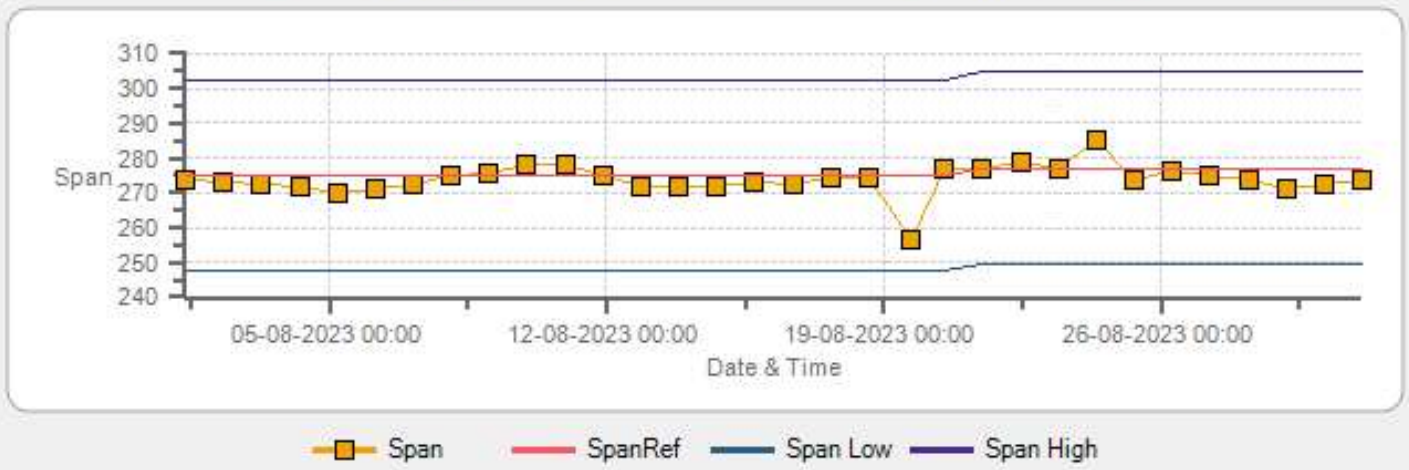
SO2[ppb] Calibration: Tamarack Monthly: 08-2023 Type: SpanAndZero - Span

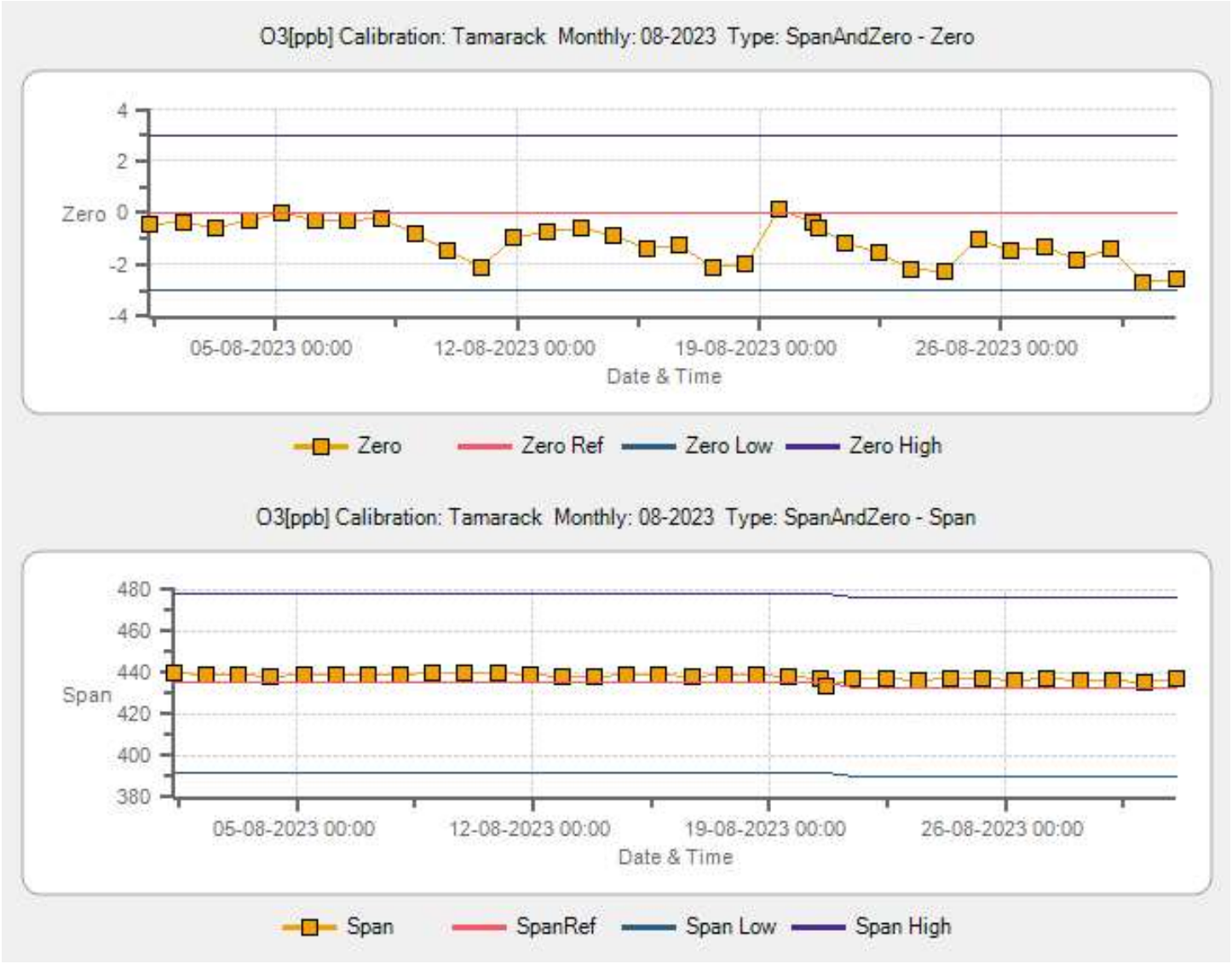

H2S[ppb] Calibration: Tamarack Monthly: 08-2023 Type: SpanAndZero - Zero
4
2
Zero 0
-2
-4
05-08-2023 00:00
12-08-2023 00:00
19-08-2023 00:00
26-08-2023 00:00
Date & Time
Zero
Zero Ref
Zero Low
Zero High
H2S[ppb] Calibration: Tamarack Monthly: 08-2023 Type: SpanAndZero - Span
50
45
Span
40
35
05-08-2023 00:00
12-08-2023 00:00
19-08-2023 00:00
26-08-2023 00:00
Date & Time
Span
SpanRef
Span Low
Span High

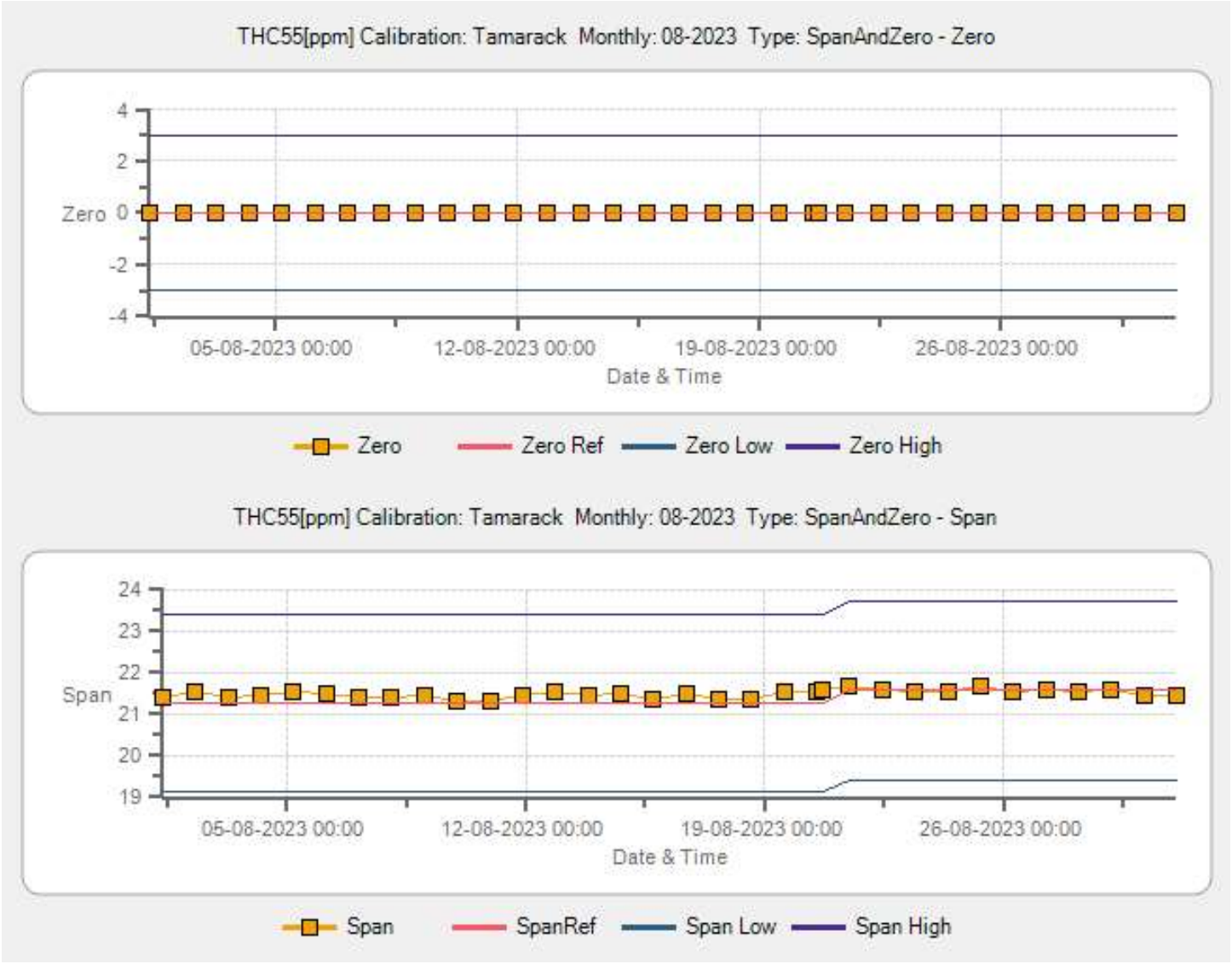

NOX[ppb] Calibration: Tamarack Monthly: 08-2023 Type: SpanAndZero - Zero
4
2
Zero 0
-2
-4
05-08-2023 00:00
12-08-2023 00:00
19-08-2023 00:00
26-08-2023 00:00
Date & Time
Zero
Zero Ref
Zero Low
Zero High
NOX[ppb] Calibration: Tamarack Monthly: 08-2023 Type: SpanAndZero - Span
310
300
290
Span 280
270
260
250
05-08-2023 00:00
12-08-2023 00:00
19-08-2023 00:00
26-08-2023 00:00
Date & Time
Span
SpanRef
Span Low
Span High

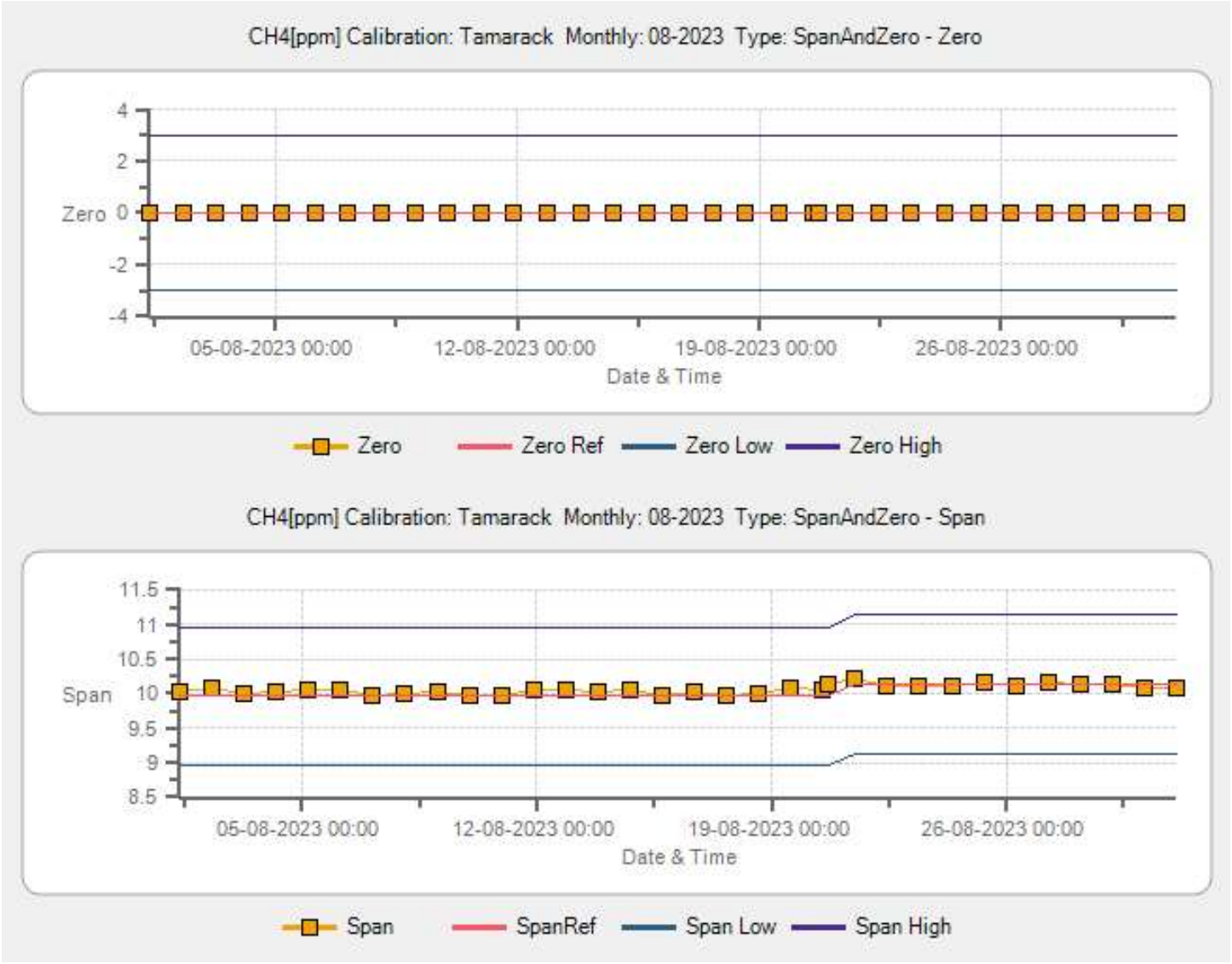
NO2[ppb] Calibration: Tamarack Monthly: 08-2023 Type: SpanAndZero - Zero

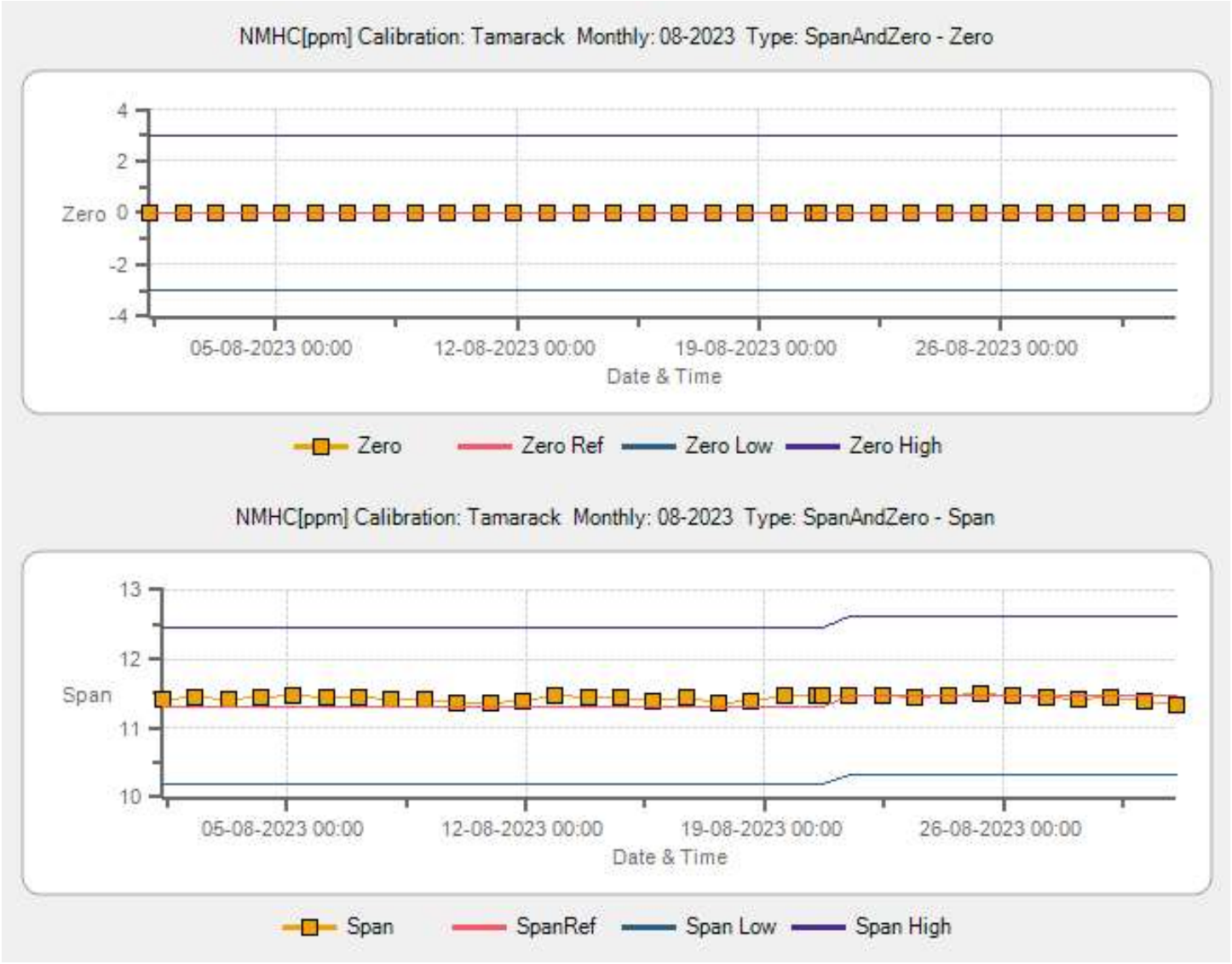
NO2[ppb] Calibration: Tamarack Monthly: 08-2023 Type: SpanAndZero - Span




O3[ppb] Calibration: Tamarack Monthly: 08-2023 Type: SpanAndZero - Zero
4
2
Zero 0
-2
-4
05-08-2023 00:00
12-08-2023 00:00
19-08-2023 00:00
26-08-2023 00:00
Date & Time
Zero
Zero Ref
Zero Low
Zero High
O3[ppb] Calibration: Tamarack Monthly: 08-2023 Type: SpanAndZero - Span
480
460
440
Span
420
400
380
05-08-2023 00:00
12-08-2023 00:00
19-08-2023 00:00
26-08-2023 00:00
Date & Time
Span
SpanRef
Span Low
Span High


THC55[ppm] Calibration: Tamarack Monthly: 08-2023 Type: SpanAndZero - Zero
4
2
Zero 0
-2
-4
05-08-2023 00:00
12-08-2023 00:00
19-08-2023 00:00
26-08-2023 00:00
Date & Time
Zero
Zero Ref
Zero Low
Zero High
THC55[ppm] Calibration: Tamarack Monthly: 08-2023 Type: SpanAndZero - Span
24
23
22
Span 21
20
19
05-08-2023 00:00
12-08-2023 00:00
19-08-2023 00:00
26-08-2023 00:00
Date & Time
Span
SpanRef
Span Low
Span High


CH4[ppm] Calibration: Tamarack Monthly: 08-2023 Type: SpanAndZero - Zero
4
2
Zero 0
-2
-4
05-08-2023 00:00
12-08-2023 00:00
19-08-2023 00:00
26-08-2023 00:00
Date & Time
Zero
Zero Ref
Zero Low
Zero High
CH4[ppm] Calibration: Tamarack Monthly: 08-2023 Type: SpanAndZero - Span
11.5
11
10.5
Span 10
9.5
9
8.5
05-08-2023 00:00
12-08-2023 00:00
19-08-2023 00:00
26-08-2023 00:00
Date & Time
Span
SpanRef
Span Low
Span High


NMHC[ppm] Calibration: Tamarack Monthly: 08-2023 Type: SpanAndZero - Zero
4
2
Zero 0
-2
-4
05-08-2023 00:00
12-08-2023 00:00
19-08-2023 00:00
26-08-2023 00:00
Date & Time
Zero
Zero Ref
Zero Low
Zero High
NMHC[ppm] Calibration: Tamarack Monthly: 08-2023 Type: SpanAndZero - Span
13
12
Span
11
10
05-08-2023 00:00
12-08-2023 00:00
19-08-2023 00:00
26-08-2023 00:00
Date & Time
Span
SpanRef
Span Low
Span High

MULTI-POINT CALIBRATION RECORDS

SO2 Analyzer Calibration by Dilution

DATE:	19-Aug-2023	PREVIOUS CALIBRATION DATE:	16-Jul-2023
PARAMETER:	SO2	PREVIOUS CORRECTION FACTOR:	1.000
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	Tamarack	BAROMETRIC (mBar):	941
PURPOSE	Routine	START TIME (MST):	09:43
PERFORMED BY:	Alex Yakupov	END TIME (MST):	14:47

ANALYZER:

MAKE/MODEL	Thermo 43I-TLE	RANGE	500 ppb
SERIAL #	1180930031	FLOW (mL/min)	452
INITIAL		FINAL	
BKG/OFFSET	2.73	BKG/OFFSET	2.77
COEF/SLOPE	0.999	COEF/SLOPE	1.014
Expected (reference) Value	192	Expected (reference) Value	191

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010	MODEL:	T701
ID:	17100415	ID:	132
MFC CALIBRATION DATE:	12-Apr-2023	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	LL 127895	HIGH ID	n/a
CONC (ppm):	50.40	EXPIRY DATE	n/a
CYLINDER (psi):	1100	LOW ID	n/a
EXPIRY DATE	27-Oct-2030	EXPIRY DATE	n/a

CALIBRATION PARAMETERS:

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

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

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

CALIBRATION:

FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
			ACTUAL	INDICATED		Initial	Final
DILUENT	GAS	TOTAL		Initial	Final		
5000		5000	0.00	-0.1	0		
4961	37.20	4998	375.13	366.4	374.2	1.024	1.002
4982	17.60	5000	177.41	n/a	175	n/a	1.014
4990	8.80	4999	88.72	n/a	87.2	n/a	1.017

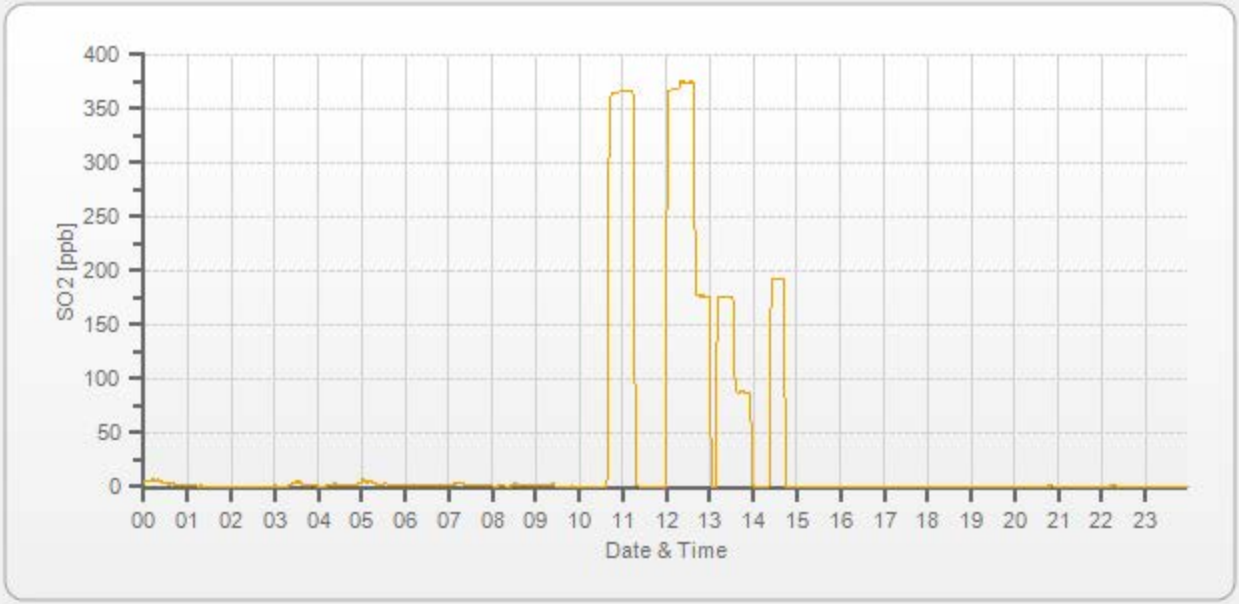
LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	0.998	-0.2%

COMMENTS:

Sample inlet filter was changed.
13:00 = Daily ZS. Mid-point restarted

SO2[ppb] Station: Tamarack Daily: 19-08-2023 Type: AVG 1 Min. [1 Min.]



H2S Analyzer Calibration by Dilution

DATE:	19-Aug-2023	PREVIOUS CALIBRATION DATE:	16-Jul-2023
PARAMETER:	H2S	PREVIOUS CORRECTION FACTOR:	1.001
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	Tamarack	BAROMETRIC (mBar):	941
PURPOSE	Routine	START TIME (MST):	09:42
PERFORMED BY:	Alex Yakupov	END TIME (MST):	14:47

ANALYZER:

MAKE/MODEL	Thermo 450i	RANGE	100 ppb
SERIAL #	CM 17360005	FLOW (mL/min)	908
INITIAL		FINAL	
BKG/OFFSET	35.5	BKG/OFFSET	36.3
COEF/SLOPE	0.805	COEF/SLOPE	0.809
Expected (reference) Value	45.1	Expected (reference) Value	44.2

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010 D	MODEL:	T701
ID:	11900613	ID:	134
MFC CALIBRATION DATE:	12-Apr-2023	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):	400	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:	09:47	SO2 Conc (ppb)	380
END TIME:	10:02	Analyzer Response (ppb)	0.0

CALIBRATION:

FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
			ACTUAL	INDICATED		Initial	Final
DILUENT	GAS	TOTAL		Initial	Final		
7500		7500	0.00	0.3	0		
7442	57.90	7500	77.97	79.8	77.6	0.981	1.005
7472	28.20	7500	37.98	n/a	37.7	n/a	1.007
7486	14.10	7500	18.99	n/a	18.9	n/a	1.005

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	0.995	0.0%

COMMENTS:

Sample inlet filter was changed.
13:00 = Daily ZS. Mid-point restarted

H2S[ppb] Station: Tamarack Daily: 19-08-2023 Type: AVG 1 Min. [1 Min.]

NOx Calibration by Dilution/Gas-Phase Titration

CALIBRATION:

DATE:	19-Aug-2023	PREVIOUS CALIBRATION DATE:	16-Jul-2023
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	Tamarack	BAROMETRIC (mBar):	941
PURPOSE	Routine	START TIME (MST):	09:44
PERFORMED BY:	Alex Yakupov	END TIME (MST):	16:43

ANALYZER:

MAKE/MODEL:	Thermo 42i	PREVIOUS CF.	
SERIAL #:	1180930028	NOx	1.000
FLOW (mL/min)	766	NO	1.001
RANGE (ppb)	500	NO2	1.000
GPT FOR O3?		No	

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:		CALIBRATION GAS:			FLOWMETERS (if applicable):	
MAKE:	SABIO	MAKE:	Teledyne	CYLINDER ID:	LL 127895		HIGH ID:	n/a
MODEL:	2010	MODEL:	T701	NO/NOx (PPM):	51.1	51.6	HIGH EXPIRY:	n/a
ID:	17100415	ID:	134	CYLINDER (psi):	1100		LOW ID:	n/a
MFC CALIBRATION DATE:	12-Apr-2023	OXIDIZER ID:	n/a	EXPIRY DATE	27-Oct-2030		LOW EXPIRY:	n/a

CALIBRATION SETTINGS:

INITIAL	NOx	NO	NO2	FINAL	NOx	NO	NO2
BKG/OFFSET:	2.5	2	n/a	BKG/OFFSET:	2.3	2.1	n/a
SLOPE/COEF/CE:	1.01	1.093	1	SLOPE/COEF/CE:	1.008	1.133	1

EXPECTED (REFERENCE) VALUE:

INITIAL	NOx	NO	NO2	FINAL	NOx	NO	NO2
	278.0	2.4	275.0		280.0	2.8	277.0

CALIBRATION PARAMETERS:

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

NO/NOx CALIBRATION:

FLOW RATE			CONCENTRATION (ppb)									CORRECTION FACTOR (CF.)					
(mL/min)			CALCULATED			INITIAL INDICATED			FINAL INDICATED			INITIAL			FINAL		
DILUENT	GAS	TOTAL	NO	NOx	NO2	NO	NOx	NO2	NO	NOx	NO2	NO	NOx	NO2	NO	NOx	NO2
5000		5000	0.0	0.0	0.0	-0.1	-0.4	-0.3	0.0	0.0	0.0						
4961	37.10	4998	379.3	383.0	3.7	366.4	370.5	4.2	380.3	383.6	3.3	1.035	1.033		0.997	0.999	
4982	17.60	5000	179.9	181.6	1.8	n/a	n/a	n/a	180.3	181.6	1.3	n/a	n/a		0.998	1.000	
4990	8.80	4999	90.0	90.8	0.9	n/a	n/a	n/a	90.3	90.9	0.7	n/a	n/a		0.996	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	37.10	4997	0	380.4	383.9	3.3				
AS-FOUND HIGH	37.10	4997	235	126.8	383.9	257.1	253.6	253.8	0.999	100.08%
ADJUSTED HIGH	n/a	n/a	n/a	n/a	n/a	n/a	n/a	**n/a**	**n/a**	n/a
MID	37.10	4997	110	259.9	384.0	124.1	120.5	120.8	0.998	100.25%
LOW	37.10	4997	40	329.1	381.4	52.2	51.3	48.9	1.049	95.32%
NO2 adjustment not required.									AVERAGE:	98.55%

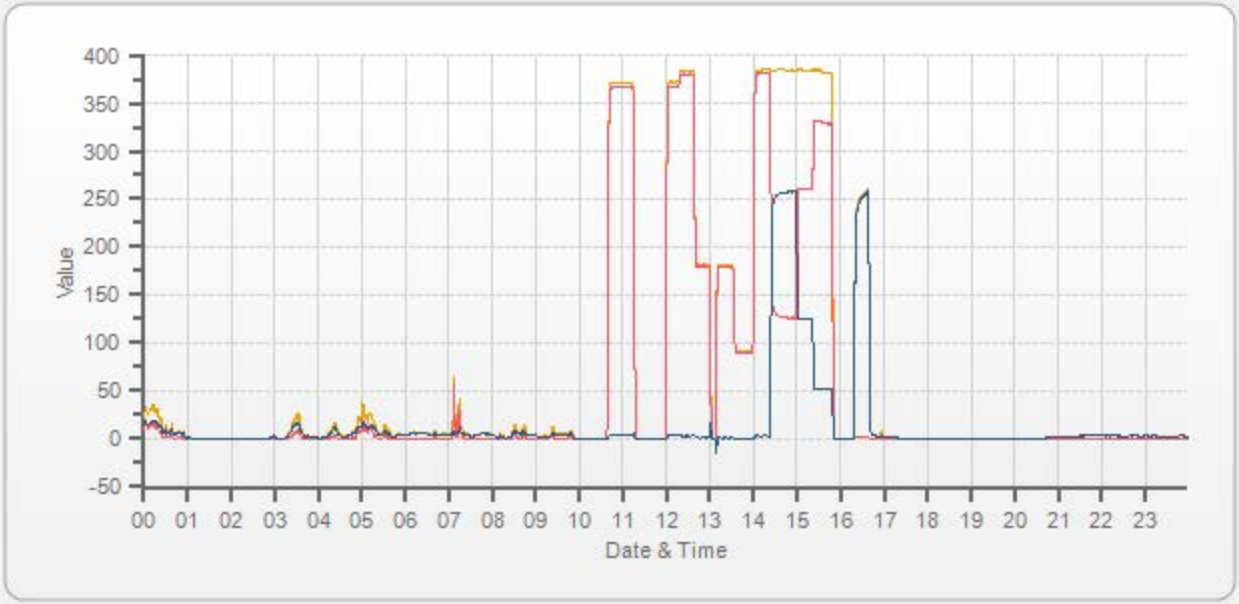
LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
NO	1.000	1.002	0.01%
NOx	1.000	1.001	-0.02%
NO2	1.000	1.011	-0.44%

COMMENTS:

Sample inlet filter was changed.
13:00 = Daily ZS. Mid-point restarted

Station: Tamarack Daily: 19-08-2023 Type: AVG 1 Min. [1 Min.]



Ozone Calibration by Photometer (Varying UV Lamp)

DATE:	20-Aug-2023	PREVIOUS CALIBRATION DATE:	17-Jul-2023
PARAMETER:	O3	PREVIOUS CORRECTION FACTOR:	1.000
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	Tamarack	BAROMETRIC (mBar):	947
PURPOSE	Routine	START TIME (MST):	12:46
PERFORMED BY:	Alex Yakupov	END TIME (MST):	16:54

ANALYZER:

MAKE/MODEL	Thermo 49iQ	RANGE	500 ppb
SERIAL #	1202068570	FLOW (mL/min)	1360
INITIAL		FINAL	
BKG/OFFSET	4.4	BKG/OFFSET	5
COEF/SLOPE	1.033	COEF/SLOPE	1.033
Expected (reference) Value	435	Expected (reference) Value	433

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010 D	MODEL:	T701
ID:	11900613	ID:	134
MFC CALIBRATION DATE:	12-Apr-2023	OXIDIZER ID:	n/a
CALIBRATION METHOD:		Photometer (Varying UV Lamp)	
GPT DATE:	n/a	GPT END TIME:	n/a

CALIBRATION PARAMETERS:

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

CALIBRATION:

FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
			ACTUAL	INDICATED		Initial	Final
DILUENT	GAS	TOTAL		Initial	Final		
5000		5000	0.0	0.4	0.0		
5000		5000	378.0	379.9	378.4	0.996	0.999
5000		5000	180.0	n/a	179.0	n/a	1.006
5000		5000	61.0	n/a	61.6	n/a	0.990

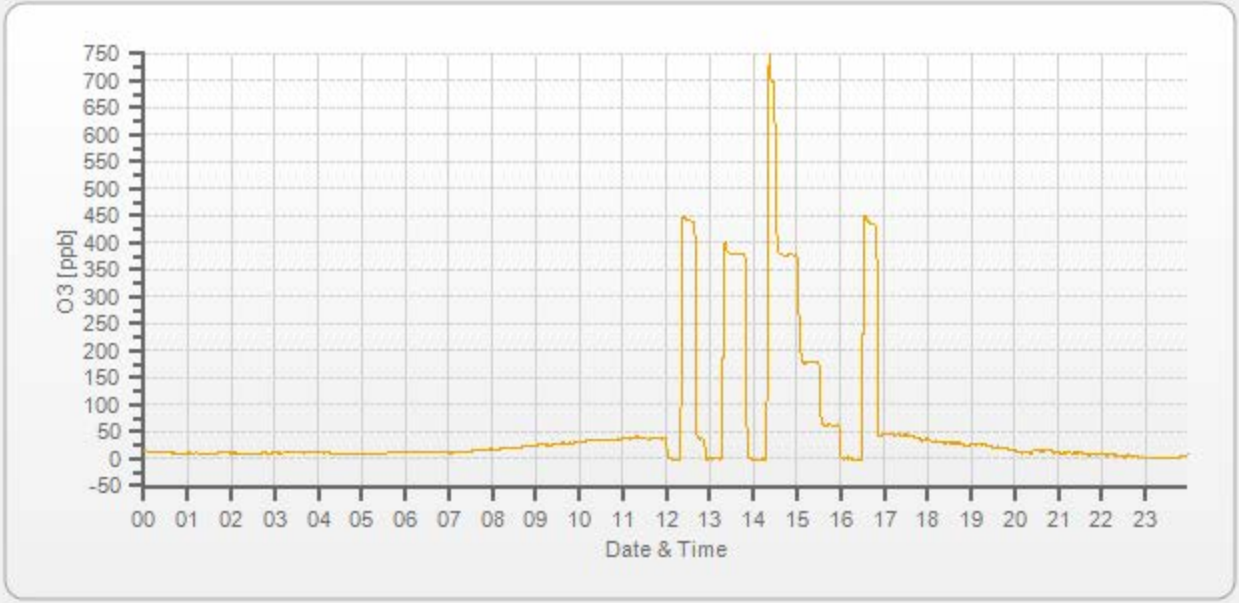
LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.000	0.0%

COMMENTS:

Sample inlet filter was changed.
High adjust point starts at 14:36 (operator error)

O3[ppb] Station: Tamarack Daily: 20-08-2023 Type: AVG 1 Min. [1 Min.]



Methane/Non-Methane Analyzer Calibration by Dilution

CALIBRATION:

DATE:	20-Aug-2023	PREVIOUS CALIBRATION DATE:	17-Jul-2023
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	Tamarack	BAROMETRIC (mBar):	947
PURPOSE	Routine	START TIME (MST):	12:47
PERFORMED BY:	Alex Yakupov	END TIME (MST):	16:54

ANALYZER:

VALUE	MAKE/MODEL	SERIAL	FLOW (mL/min)
	Thermo 55i	1180930026	1190
PARAMETER:	CH4	NMHC	THC
RANGE (ppm):	20	20	40
PREVIOUS CF:	1.002	1.000	1.001

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_3H_8 (ppm):	603.0	204.0	HIGH EXPIRY:	n/a
ID:	17100415	ID:	132	CYLINDER (psi):	1100		LOW ID:	n/a
MFC CALIBRATION DATE:	12-Apr-2023	OXIDIZER ID:	115	EXPIRY DATE	18-Aug-2029		LOW EXPIRY:	n/a

CALIBRATION PARAMETERS:

POINT (CH4/NMHC)	HIGH	MID	LOW	CH4 EQUIVILANCE	
TARGET	14	7	3.5	C_3H_8 as CH_4	561.0
RANGE	12 - 16	6 - 8	2 - 4	THC as CH_4	1164.0

EXPECTED (REFERENCE) VALUE:

INITIAL	CH4	NMHC	THC	FINAL	CH4	NMHC	THC
	9.96	11.32	21.27		10.13	11.46	21.59

CALIBRATION:

FLOW RATE (mL/min)			CONCENTRATION (PPM)									CORRECTION FACTOR (CF.)					
			CALCULATED			INITIAL INDICATED			FINAL INDICATED			INITIAL			FINAL		
DILUENT	GAS	TOTAL	CH4	NMHC	THC	CH4	NMHC	THC	CH4	NMHC	THC	CH4	NMHC	THC	CH4	NMHC	THC
3100		3100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						
3025	74.60	3100	14.51	13.50	28.01	14.41	13.53	27.95	14.47	13.49	27.96	1.007	0.998	1.002	1.003	1.001	1.002
3063	37.30	3100	7.26	6.75	14.01	n/a	n/a	n/a	7.25	6.72	13.97	n/a	n/a	n/a	1.001	1.004	1.003
3081	18.60	3100	3.62	3.37	6.98	n/a	n/a	n/a	3.64	3.33	6.98	n/a	n/a	n/a	0.994	1.011	1.001

LINEAR REGRESSION ANALYSIS:

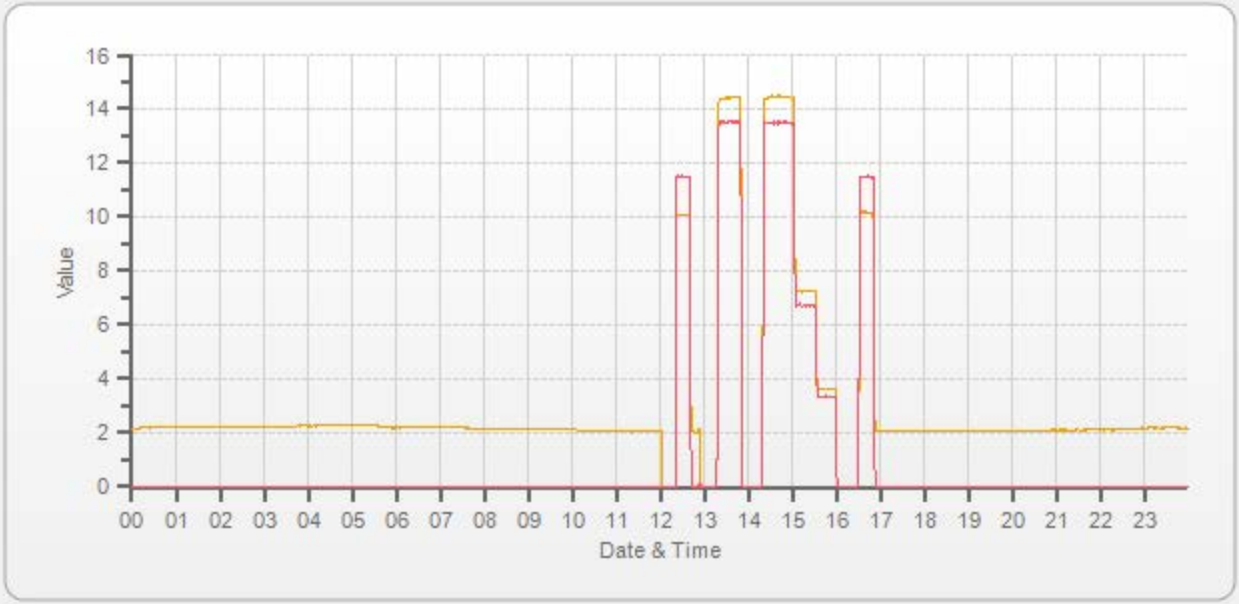
	CORRELATION	SLOPE	INTERCEPT
CH4	1.000	0.997	0.1%
NMHC	1.000	1.000	-0.1%
THC	1.000	0.998	0.0%

Comments:

Sample inlet filter was changed.

Use Zero Chrom? **Yes**

Station: Tamarack Daily: 20-08-2023 Type: AVG 1 Min. [1 Min.]



Thermo 5030 SHARP Monitor Monthly Check

Date:	August 20, 2023	**Performed By/Reviewer:**	Alex Yakupov / Chris Wesson
Company:	LICA	**Start Time (mst):**	16:11
Station Name/Location:	Tamarack	**End Time (mst):**	16:56
Previous Audit Date:	July 17, 2023	**Calibration Purpose:**	routine monthly
Parameter:	PM 2.5	**Weather Conditions:**	Mainly sunny

SHARP Information and Status:

Serial Number:	CM-2209	**Status:**	0.00
Approx Tape remaining:	6/10	**Error Code:**	0.00

Reference Standards:

	Air Flow			
	Manometer	**Orifice**	**Pressure:**	**Temperature:**
Make:	DeltaCal	DeltaCal	Fisher	Vaisala
Model:	DC1	DC1	FB61291	HM70
Serial Number:	177246	177246	130168457	T1640130
Calibration Expiration Date:	September 7, 2023	September 7, 2023	March 20, 2024	June 26, 2024

As found temperature and pressure:

Tolerance +/- 4°C		**Tolerance +/- 13.33 hPa**	
SHARP T1 °C:	18.0	**SHARP P3 (hPa):**	946.000
Reference °C:	18.9	**Reference (hPa):**	946.000
Difference °C:	0.9	**Difference (hPa) :**	0.000

As left temperature and pressure (same as above if as found adequate):

Tolerance +/- 4°C		**Tolerance +/- 13.33 hPa**	
SHARP T1 °C:	18.0	**SHARP P3 (hPa):**	946.000
Reference °C:	18.9	**Reference (hPa):**	946.000
Difference °C:	0.9	**Difference :**	0.000

As found flows:

Targets: 1000 l/hr / <90%		**Flow Tolerance 16.67 lpm +/- 0.67 lpm**	
SHARP AirFlow l/hr	1000.00	**SHARP Airflow (l/min)**	16.67
Pump Voltage (%)	48.80	**Reference AirFlow (l/min)**	16.71
		Difference (l/min)	0.04

As left flows (same as above if as found adequate):

Targets: 1000 l/hr / <90%		**Flow Tolerance 16.67 lpm +/- 0.67 lpm**	
SHARP AirFlow l/hr	1000.00	**SHARP Airflow (l/min)**	16.67
Pump Voltage (%)	48.80	**Reference AirFlow (l/min)**	16.71
		Difference (l/min)	0.04

Inlet Assembly:

	Yes/No?	**If No, give reason**
PM10 Inlet Cleaned	yes	
PM2.5 Cyclone Cleaned	yes	

Comments:

Leak check: 16.71 vs 16.60, 0.11 < 0.80 lpm, passed.

Meteorological System Checklist

Date:	August 20, 2023		
Technician:	Alex Yakupov		
Station:	Tamarack / Audit time: 17:11 - 17:49		
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	no	17:11 - 17:36: water test. Response is timely and accurate.
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 mm)

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

AMBIENT TEMPERATURE SENSOR CHECK

Parameter:	Temperature @ 2 metres
Reference Thermometer ID:	Vaisala HMP76B #T1640130, Exp. Date: Jun 26, 2024
Reference Temperature (^{o}C):	19.2
Station - Ambient Temperature (^{o}C):	18.5
Temperature Difference (^{o}C):	0.7

BAROMETRIC PRESSURE SENSOR CHECK

Reference Barometer ID:	Fisher / FB 61291/ #130168457/ Mar 20, 2024	
Reference Pressure - Units/Reading:	millibar	946
Station Pressure - Units/Reading:	millibar	945
Pressure Tolerance +/- 15% of error:	804 - 1088	0.11%

RELATIVE HUMIDITY (HYGROMETER) SENSOR CHECK

Reference Hygrometer ID:	Vaisala HMP76B #T1640130, Exp. Date: Jun 26, 2024	
Reference Hygrometer % RH- Reading:	45.50	
Station Hygrometer % RH- Reading:	46.40	
RH Tolerance +/- 15% of difference:	38.68 - 52.33	-2.0%

ANEMOMETER - WIND SPEED & WIND DIRECTION SENSOR CHECK

WIND SPEED		WIND DIRECTION	
Previous check date:	July 17, 2023	Previous check date:	July 17, 2023
Wind Speed Observed (kph):	0 to 10	Wind Direction Observed:	SW
Wind speed on Data Logger (kph):	4.9	Wind Direction on Data Logger:	SW
	Annual audit: Jul 26, 2022	Wind Direction Pass/Fail?:	Pass

Comments

Station (Trailer) temperature vs Reference gauge temperature: 23.0 vs 23.2 degrees, difference = 0.2 => Passed.

Meteorological Sensor Audit/Calibration

Location Information

Company:	LICA	**Performed By:**	Alex Yakupov
Audit Location:	Tamarack	**Reviewed By:**	Chris Wesson
Audit Date:	July 26, 2022	**Start/End Time (mst):**	16:01 / 17:14
Calibration Purpose:	routine annual	**Weather Conditions:**	Mix of sun and clouds

Wind Sensor Information

Sensor ID Data:		**Sensor Outputs:**	
Sensor Make:	RM Young	**Velocity Voltage Output Range:**	0-1
Sensor Model:	05305VK	**Velocity Unit Output Range:**	0-200
Serial #:	161465	**Direction Voltage Output Range:**	0-1
Previous Cal/Audit Date:	September 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 2023

Ambient Air Monitoring Calibration Report

- ST. LINA STATION-

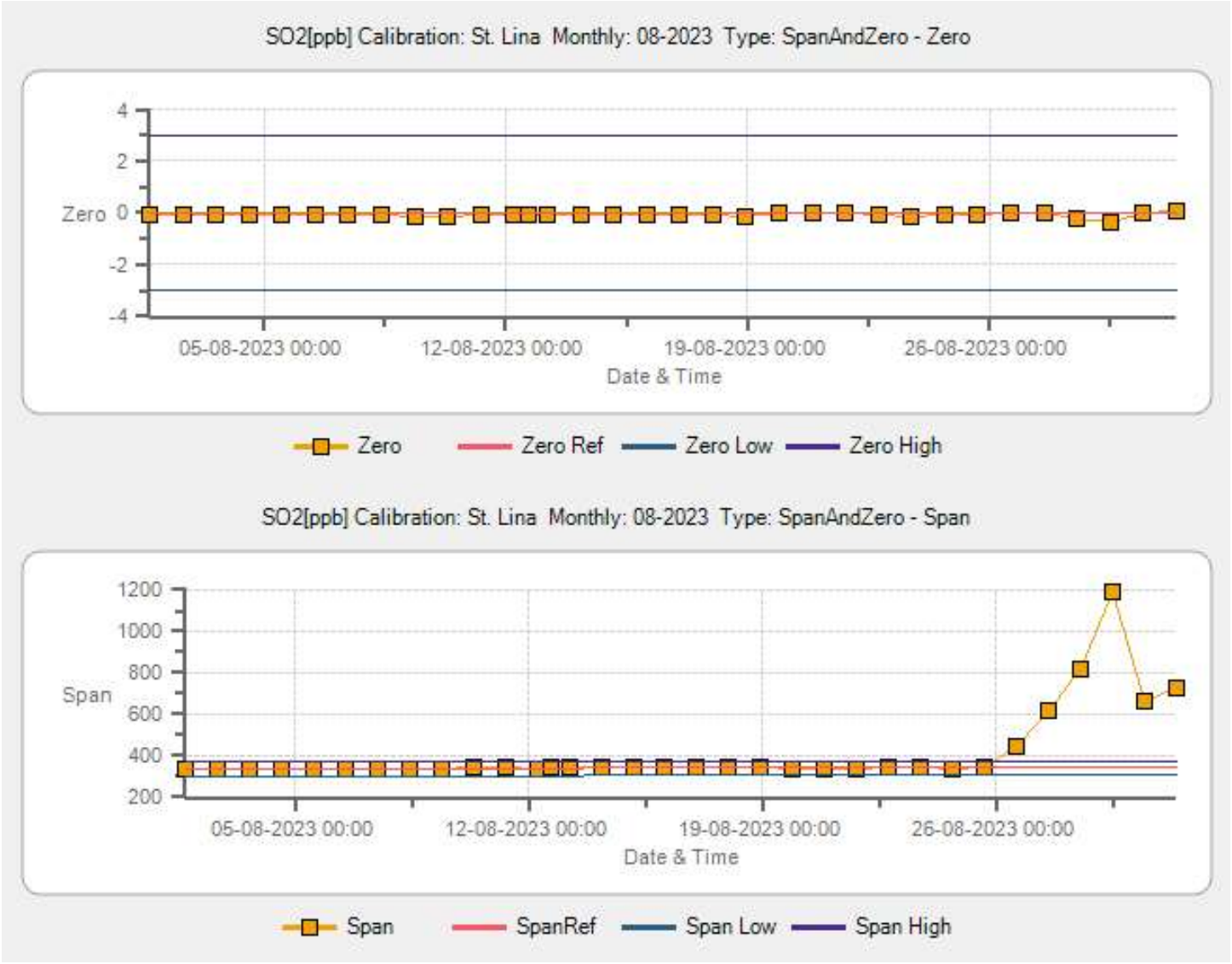
CAL-LICA-202308-01250

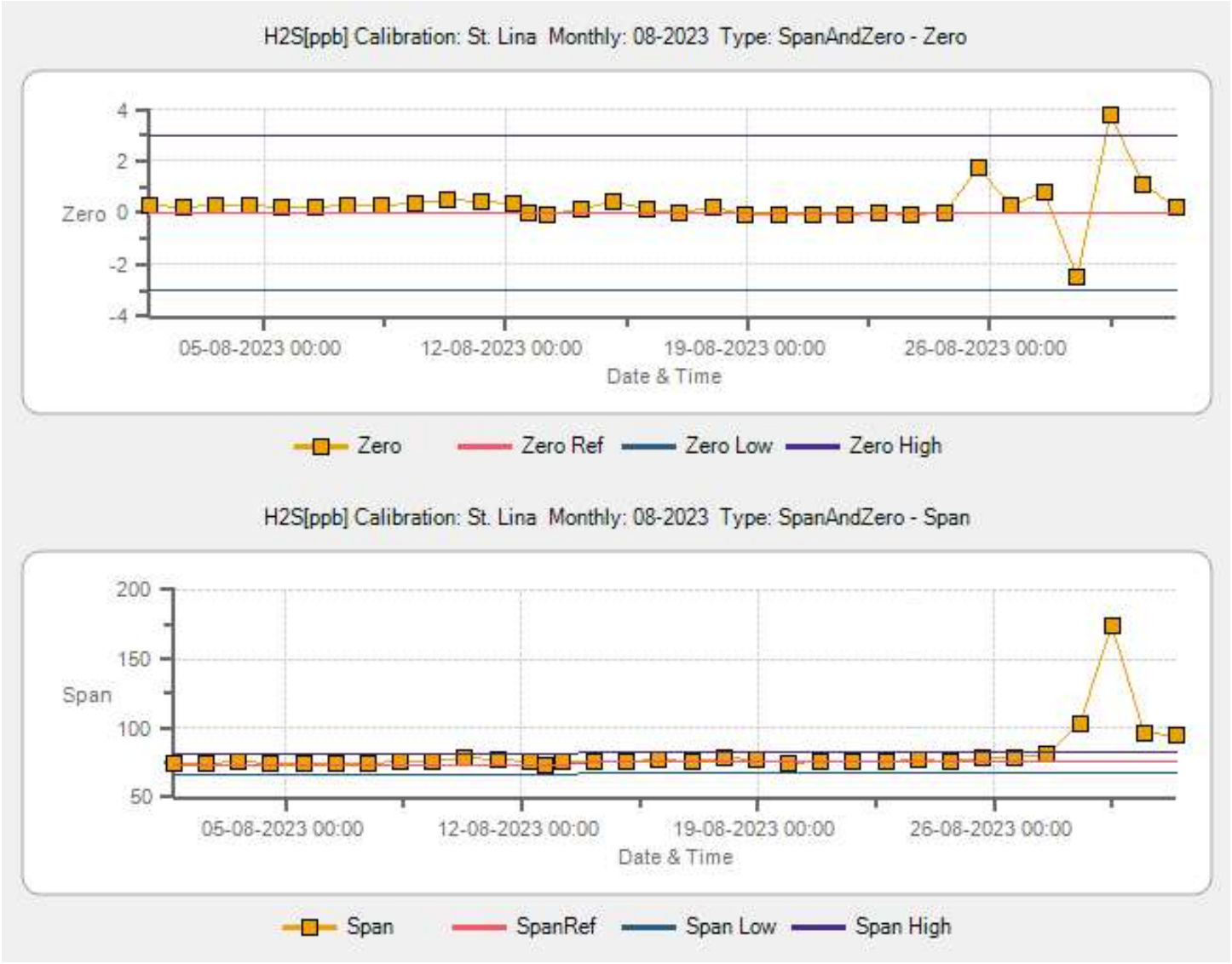
Station Operation and Maintenance:
Bureau Veritas Canada

Data Validation and Report:
LICA / Bureau Veritas Canada

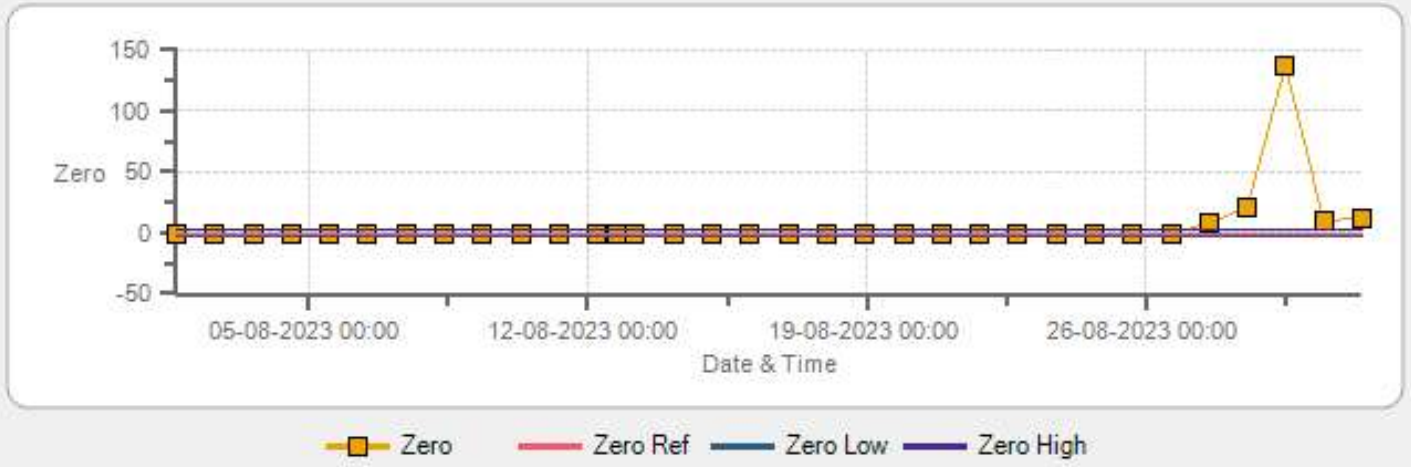
September 18, 2023

DAILY INTERNAL ZERO-SPAN CALIBRATION RECORDS

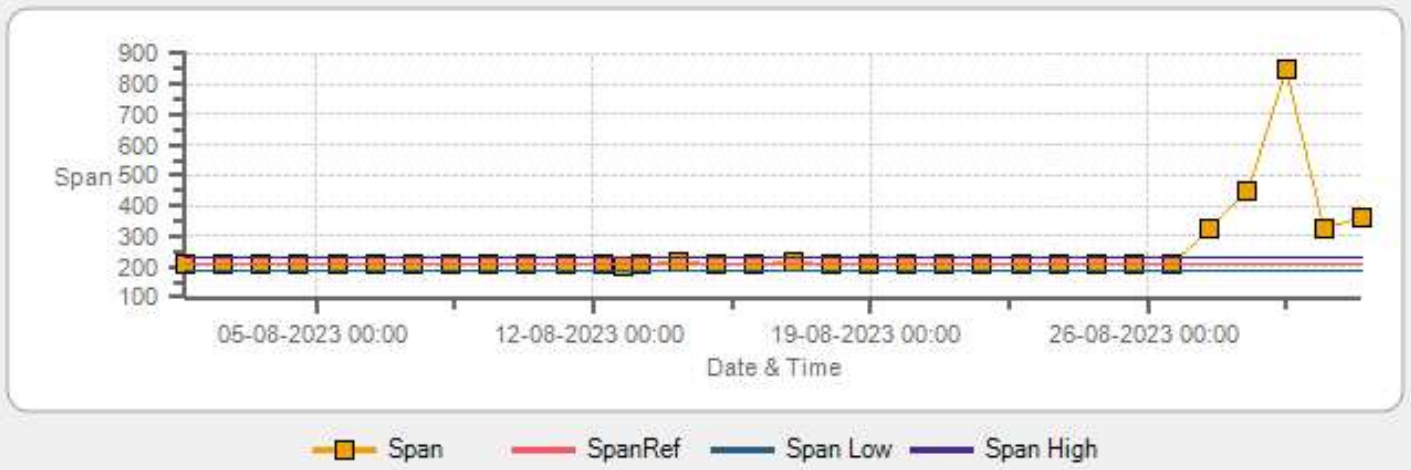

SO2[ppb] Calibration: St. Lina Monthly: 08-2023 Type: SpanAndZero - Zero
4
2
Zero 0
-2
-4
05-08-2023 00:00
12-08-2023 00:00
19-08-2023 00:00
26-08-2023 00:00
Date & Time
Zero
Zero Ref
Zero Low
Zero High
SO2[ppb] Calibration: St. Lina Monthly: 08-2023 Type: SpanAndZero - Span
1200
1000
800
Span
600
400
200
05-08-2023 00:00
12-08-2023 00:00
19-08-2023 00:00
26-08-2023 00:00
Date & Time
Span
SpanRef
Span Low
Span High


H2S[ppb] Calibration: St. Lina Monthly: 08-2023 Type: SpanAndZero - Zero
4
2
Zero 0
-2
-4
05-08-2023 00:00
12-08-2023 00:00
19-08-2023 00:00
26-08-2023 00:00
Date & Time
Zero
Zero Ref
Zero Low
Zero High
H2S[ppb] Calibration: St. Lina Monthly: 08-2023 Type: SpanAndZero - Span
200
150
Span
100
50
05-08-2023 00:00
12-08-2023 00:00
19-08-2023 00:00
26-08-2023 00:00
Date & Time
Span
SpanRef
Span Low
Span High

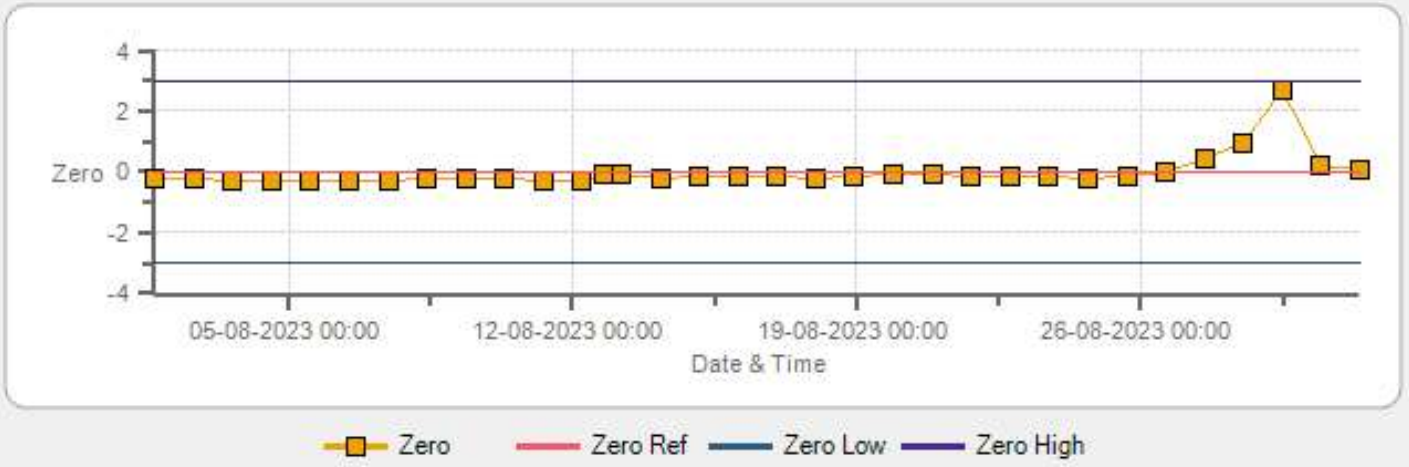
NOX[ppb] Calibration: St. Lina Monthly: 08-2023 Type: SpanAndZero - Zero



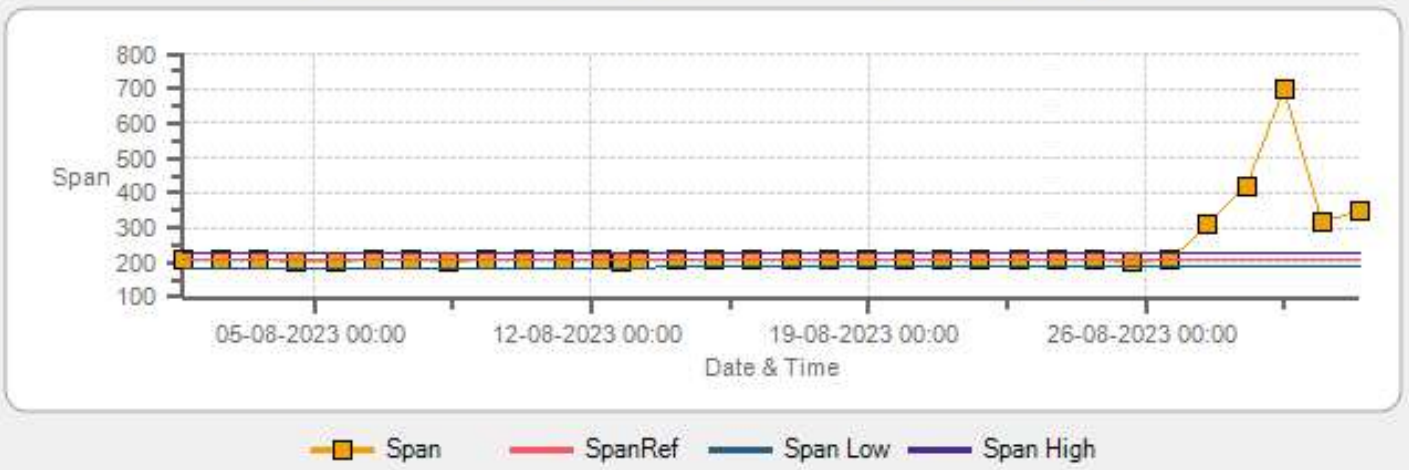
NOX[ppb] Calibration: St. Lina Monthly: 08-2023 Type: SpanAndZero - Span



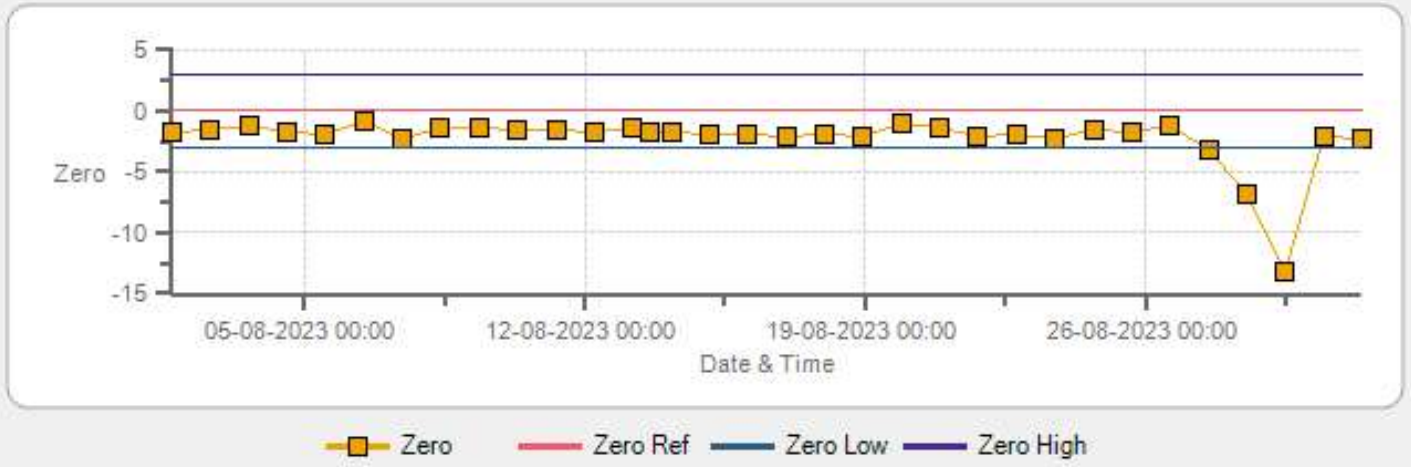
NO2[ppb] Calibration: St. Lina Monthly: 08-2023 Type: SpanAndZero - Zero



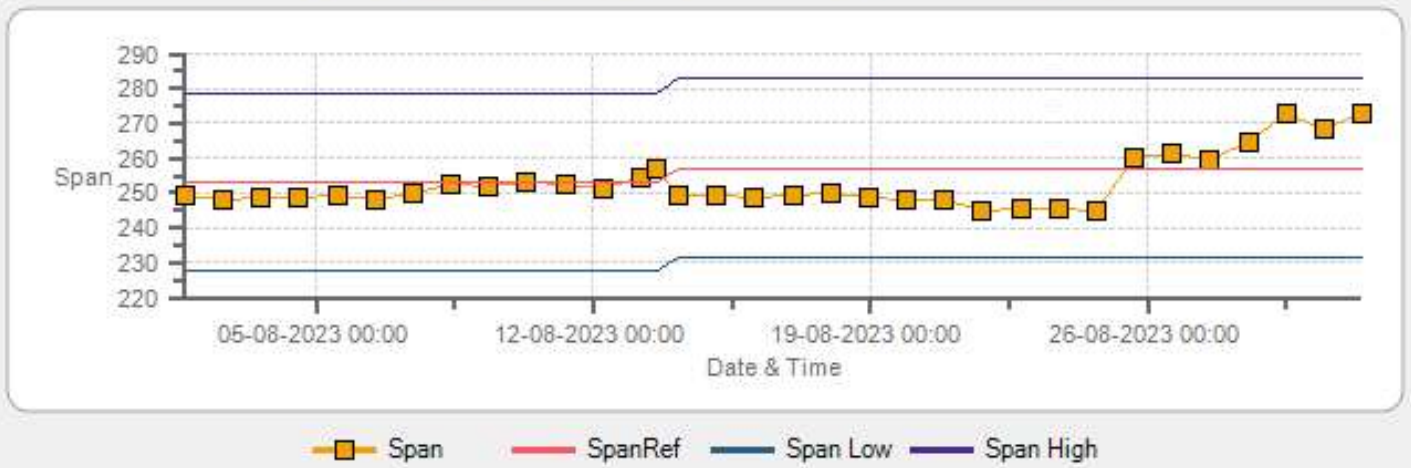
NO2[ppb] Calibration: St. Lina Monthly: 08-2023 Type: SpanAndZero - Span

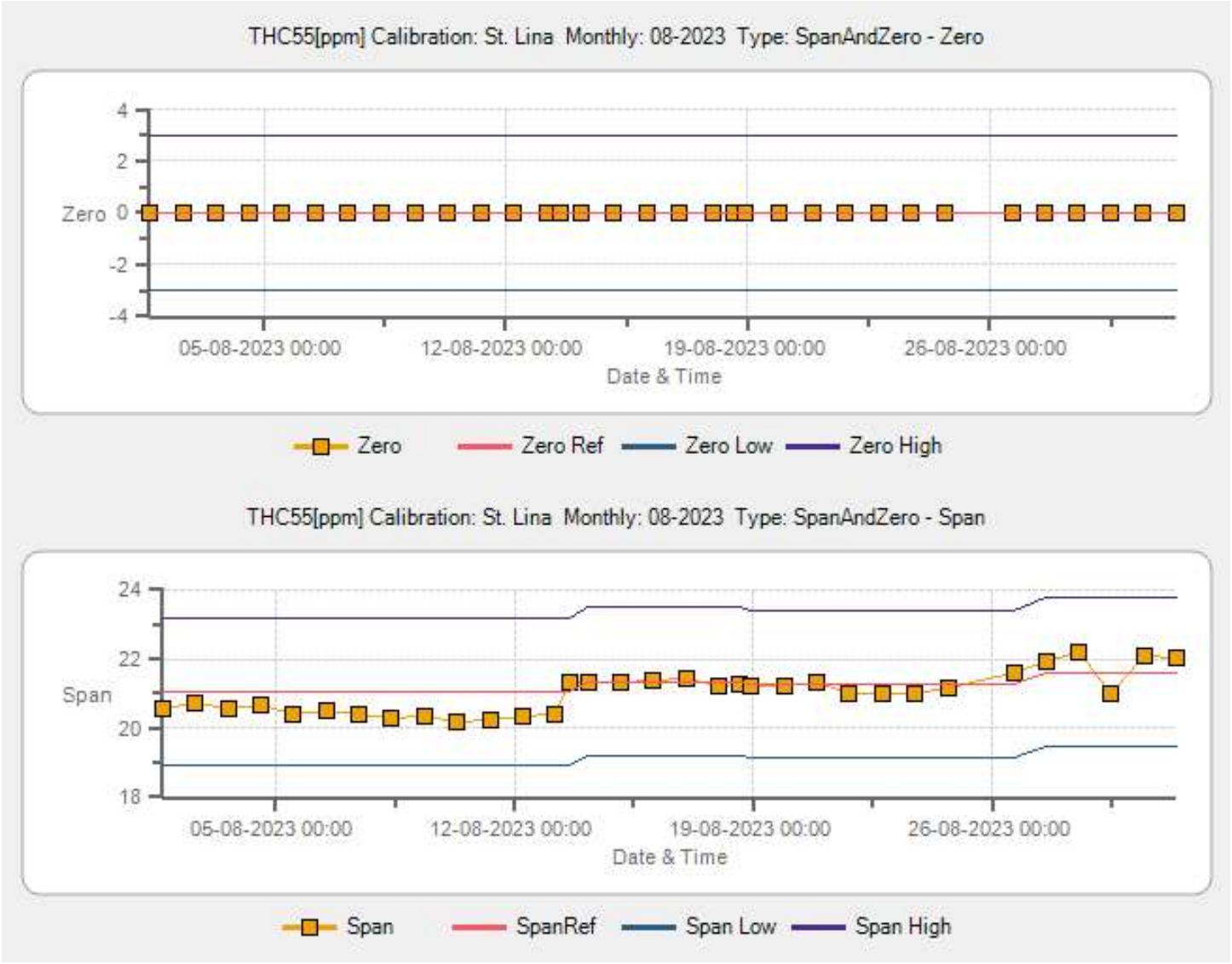


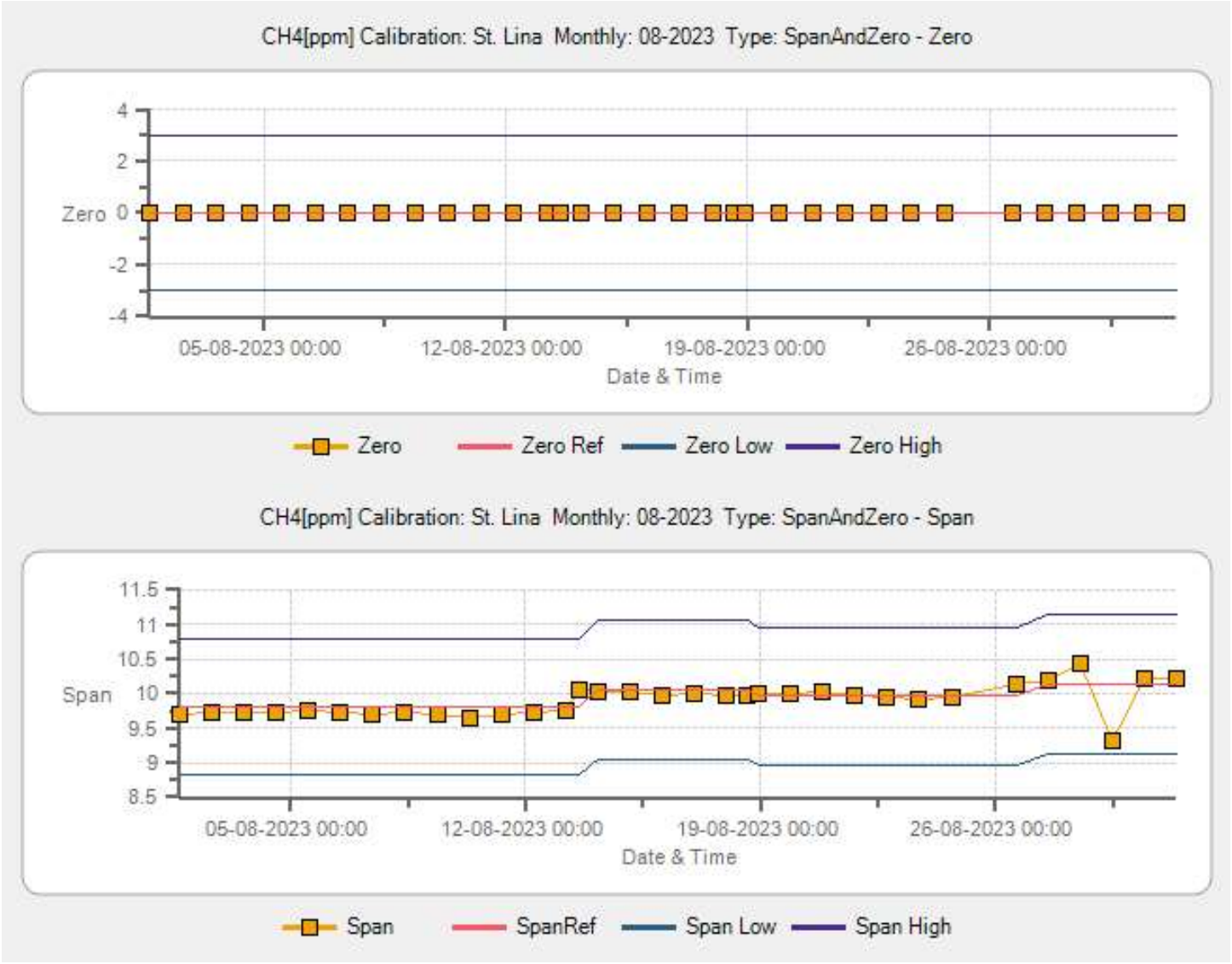
O3[ppb] Calibration: St. Lina Monthly: 08-2023 Type: SpanAndZero - Zero

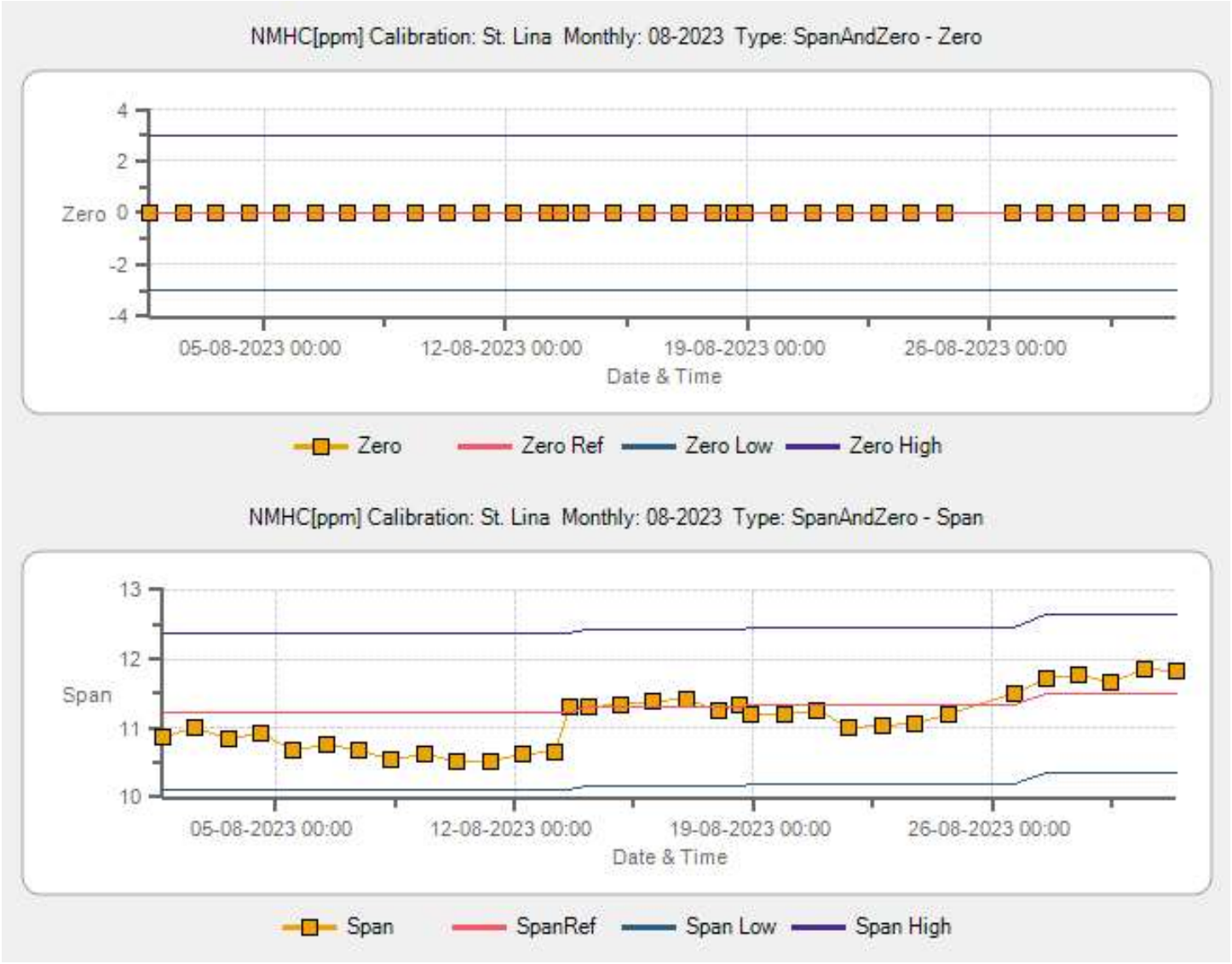


O3[ppb] Calibration: St. Lina Monthly: 08-2023 Type: SpanAndZero - Span




THC55[ppm] Calibration: St. Lina Monthly: 08-2023 Type: SpanAndZero - Zero
4
2
Zero 0
-2
-4
05-08-2023 00:00
12-08-2023 00:00
19-08-2023 00:00
26-08-2023 00:00
Date & Time
Zero
Zero Ref
Zero Low
Zero High
THC55[ppm] Calibration: St. Lina Monthly: 08-2023 Type: SpanAndZero - Span
24
22
Span
20
18
05-08-2023 00:00
12-08-2023 00:00
19-08-2023 00:00
26-08-2023 00:00
Date & Time
Span
SpanRef
Span Low
Span High


CH4[ppm] Calibration: St. Lina Monthly: 08-2023 Type: SpanAndZero - Zero
Zero
4
2
0
-2
-4
05-08-2023 00:00
12-08-2023 00:00
19-08-2023 00:00
26-08-2023 00:00
Date & Time
Zero
Zero Ref
Zero Low
Zero High
CH4[ppm] Calibration: St. Lina Monthly: 08-2023 Type: SpanAndZero - Span
Span
11.5
11
10.5
10
9.5
9
8.5
05-08-2023 00:00
12-08-2023 00:00
19-08-2023 00:00
26-08-2023 00:00
Date & Time
Span
SpanRef
Span Low
Span High


NMHC[ppm] Calibration: St. Lina Monthly: 08-2023 Type: SpanAndZero - Zero
Zero
4
2
0
-2
-4
05-08-2023 00:00
12-08-2023 00:00
19-08-2023 00:00
26-08-2023 00:00
Date & Time
Zero
Zero Ref
Zero Low
Zero High
NMHC[ppm] Calibration: St. Lina Monthly: 08-2023 Type: SpanAndZero - Span
Span
13
12
11
10
05-08-2023 00:00
12-08-2023 00:00
19-08-2023 00:00
26-08-2023 00:00
Date & Time
Span
SpanRef
Span Low
Span High

MULTI-POINT CALIBRATION RECORDS

SO2 Analyzer Calibration by Dilution

DATE:	12-Aug-2023	PREVIOUS CALIBRATION DATE:	14-Jul-2023
PARAMETER:	SO2	PREVIOUS CORRECTION FACTOR:	1.002
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	St. Lina	BAROMETRIC (mBar):	920
PURPOSE	Routine	START TIME (MST):	10:45
PERFORMED BY:	Alex Yakupov	END TIME (MST):	16:10

ANALYZER:

MAKE/MODEL	Thermo 43I-TLE	RANGE	500 ppb
SERIAL #	1180930030	FLOW (mL/min)	431
INITIAL		FINAL	
BKG/OFFSET	4.64	BKG/OFFSET	4.86
COEF/SLOPE	1.171	COEF/SLOPE	1.191
Expected (reference) Value	335	Expected (reference) Value	342

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010	MODEL:	T701
ID:	17100415	ID:	132
MFC CALIBRATION DATE:	12-Apr-2023	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	LL 127895	HIGH ID	n/a
CONC (ppm):	50.40	EXPIRY DATE	n/a
CYLINDER (psi):	1100	LOW ID	n/a
EXPIRY DATE	27-Oct-2030	EXPIRY DATE	n/a

CALIBRATION PARAMETERS:

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

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

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

CALIBRATION:

FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
			ACTUAL	INDICATED		Initial	Final
DILUENT	GAS	TOTAL		Initial	Final		
5000		5000	0.00	-0.1	0		
4961	37.20	4998	375.13	367.3	375.6	1.021	0.999
4982	17.60	5000	177.41	n/a	176.2	n/a	1.007
4990	8.80	4999	88.72	n/a	87	n/a	1.020

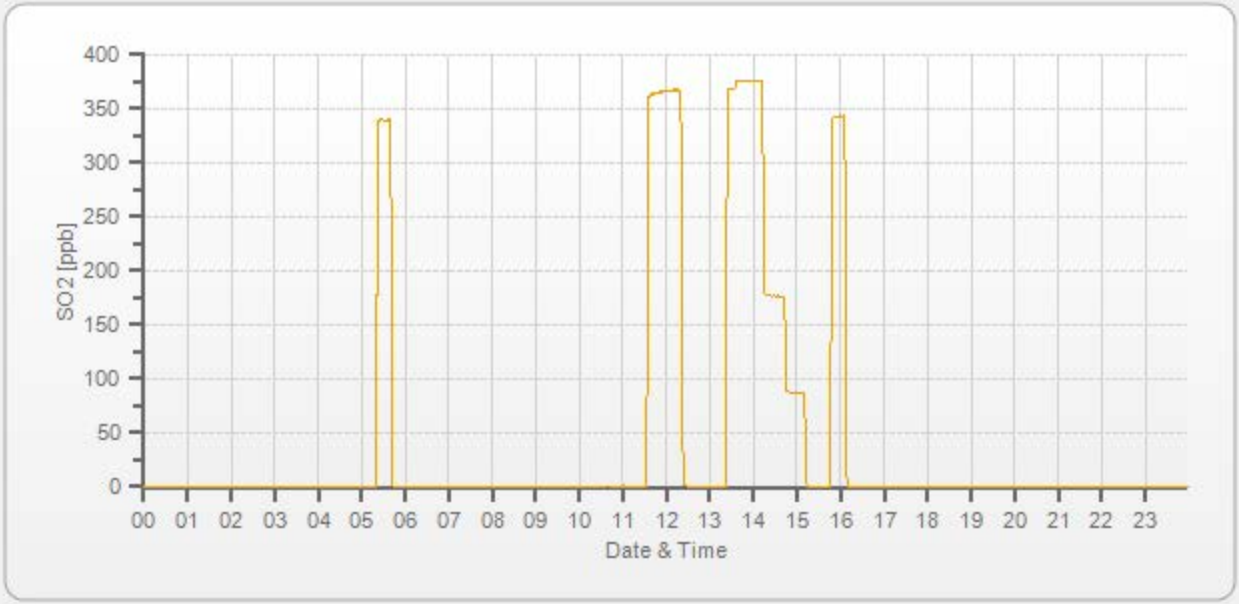
LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.003	-0.2%

COMMENTS:

Sample inlet filter was changed.

SO2[ppb] Station: St. Lina Daily: 12-08-2023 Type: AVG 1 Min. [1 Min.]



H2S Analyzer Calibration by Dilution

DATE:	12-Aug-2023	PREVIOUS CALIBRATION DATE:	14-Jul-2023
PARAMETER:	H2S	PREVIOUS CORRECTION FACTOR:	1.002
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	St. Lina	BAROMETRIC (mBar):	920
PURPOSE	Routine	START TIME (MST):	10:48
PERFORMED BY:	Alex Yakupov	END TIME (MST):	16:10

ANALYZER:

MAKE/MODEL	Teledyne T100	RANGE	100 ppb
SERIAL #	1014	FLOW (mL/min)	522
INITIAL		FINAL	
BKG/OFFSET	12	BKG/OFFSET	12.6
COEF/SLOPE	1.034	COEF/SLOPE	1.004
Expected (reference) Value	73.6	Expected (reference) Value	75.7

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010 D	MODEL:	T701
ID:	11900613	ID:	132
MFC CALIBRATION DATE:	12-Apr-2023	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):	400	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:	10:52	SO2 Conc (ppb)	380
END TIME:	11:07	Analyzer Response (ppb)	0.0

CALIBRATION:

FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
			ACTUAL	INDICATED		Initial	Final
DILUENT	GAS	TOTAL		Initial	Final		
7500		7500	0.00	-0.2	0		
7442	57.90	7500	77.97	78.4	77.6	0.992	1.005
7472	28.20	7500	37.98	n/a	37.6	n/a	1.010
7486	14.10	7500	18.99	n/a	18.5	n/a	1.026

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	0.997	-0.2%

COMMENTS:

Sample inlet filter was changed.


H2S[ppb] Station: St. Lina Daily: 12-08-2023 Type: AVG 1 Min. [1 Min.]
H2S [ppb]
80
70
60
50
40
30
20
10
0
-10
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23
Date & Time
H2S [ppb]

NOx Calibration by Dilution/Gas-Phase Titration

CALIBRATION:

DATE:	12-Aug-2023	PREVIOUS CALIBRATION DATE:	14-Jul-2023
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	St. Lina	BAROMETRIC (mBar):	920
PURPOSE	Routine	START TIME (MST):	10:47
PERFORMED BY:	Alex Yakupov	END TIME (MST):	17:54

ANALYZER:

MAKE/MODEL:	Thermo 42i	PREVIOUS CF.	
SERIAL #:	1180930029	NOx	1.000
FLOW (mL/min)	809	NO	1.000
RANGE (ppb)	500	NO2	1.001
GPT FOR O3?		No	

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:		CALIBRATION GAS:			FLOWMETERS (if applicable):	
MAKE:	SABIO	MAKE:	Teledyne	CYLINDER ID:	LL 127895		HIGH ID:	n/a
MODEL:	2010	MODEL:	T701	NO/NOx (PPM):	51.1	51.6	HIGH EXPIRY:	n/a
ID:	17100415	ID:	132	CYLINDER (psi):	1100		LOW ID:	n/a
MFC CALIBRATION DATE:	12-Apr-2023	OXIDIZER ID:	n/a	EXPIRY DATE	27-Oct-2030		LOW EXPIRY:	n/a

CALIBRATION SETTINGS:

INITIAL	NOx	NO	NO2	FINAL	NOx	NO	NO2
BKG/OFFSET:	4.6	4.1	n/a	BKG/OFFSET:	4.5	4.2	n/a
SLOPE/COEF/CE:	1.011	0.871	1	SLOPE/COEF/CE:	1.009	0.895	1

EXPECTED (REFERENCE) VALUE:

INITIAL	NOx	NO	NO2	FINAL	NOx	NO	NO2
	207.0	1.6	206.0		209.0	1.8	208.0

CALIBRATION PARAMETERS:

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

NO/NOx CALIBRATION:

FLOW RATE (mL/min)			CONCENTRATION (ppb)									CORRECTION FACTOR (CF.)					
			CALCULATED			INITIAL INDICATED			FINAL INDICATED			INITIAL			FINAL		
DILUENT	GAS	TOTAL	NO	NOx	NO2	NO	NOx	NO2	NO	NOx	NO2	NO	NOx	NO2	NO	NOx	NO2
5000		5000	0.0	0.0	0.0	-0.1	-0.3	-0.2	0.0	0.0	0.0						
4961	37.20	4998	380.3	384.1	3.7	371.4	375.8	4.1	378.9	382.2	3.3	1.024	1.021		1.004	1.005	
4982	17.60	5000	179.9	181.6	1.8	n/a	n/a	n/a	178.4	180.0	1.6	n/a	n/a		1.008	1.009	
4990	8.80	4999	90.0	90.8	0.9	n/a	n/a	n/a	88.4	89.3	0.9	n/a	n/a		1.018	1.017	

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	37.20	4998	0	377.2	380.6	3.5				
AS-FOUND HIGH	37.20	4998	240	128.7	380.6	251.9	248.5	248.4	1.000	99.96%
ADJUSTED HIGH	n/a	n/a	n/a	n/a	n/a	n/a	n/a	**n/a**	**n/a**	n/a
MID	37.20	4998	125	261.3	382.0	120.7	115.9	117.2	0.989	101.12%
LOW	37.20	4998	45	333.2	381.9	48.6	44	45.1	0.976	102.50%
NO2 adjustment not required.									AVERAGE:	101.19%

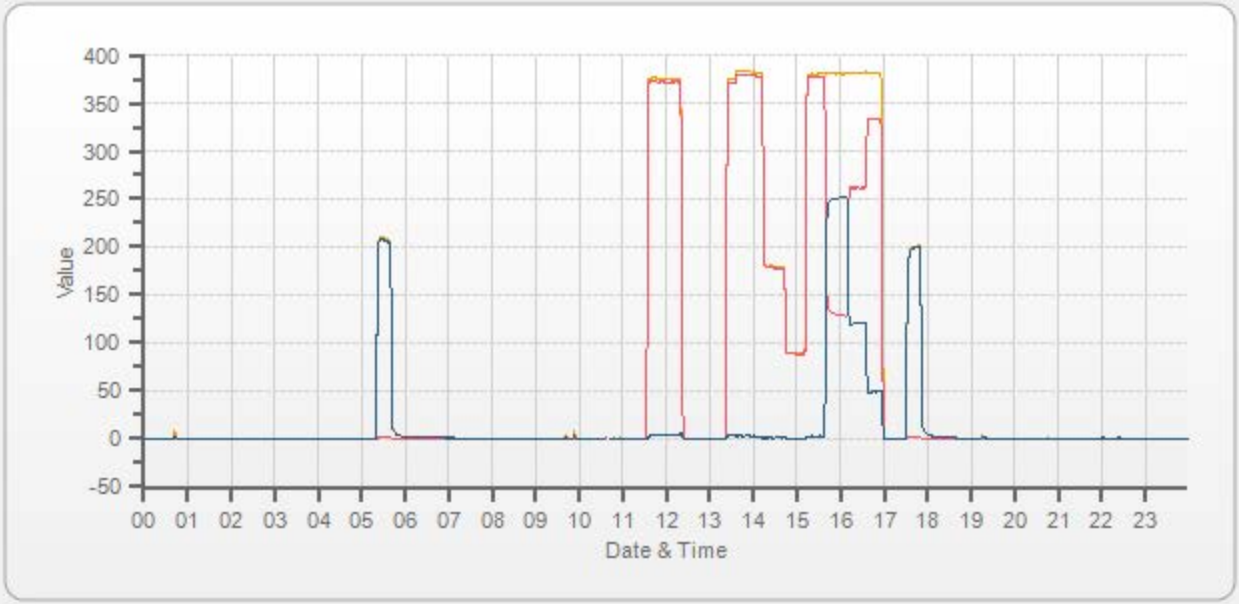
LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
NO	1.000	0.997	-0.13%
NOx	1.000	0.996	-0.12%
NO2	1.000	0.994	0.33%

COMMENTS:

Sample inlet filter was changed.

Station: St. Lina Daily: 12-08-2023 Type: AVG 1 Min. [1 Min.]



Ozone Calibration by Photometer (Varying UV Lamp)

DATE:	13-Aug-2023	PREVIOUS CALIBRATION DATE:	15-Jul-2023
PARAMETER:	O3	PREVIOUS CORRECTION FACTOR:	1.000
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	St. Lina	BAROMETRIC (mBar):	924
PURPOSE	Routine	START TIME (MST):	10:23
PERFORMED BY:	Alex Yakupov	END TIME (MST):	14:31

ANALYZER:

MAKE/MODEL	Thermo 49iQ	RANGE	500 ppb
SERIAL #	12208316586	FLOW (mL/min)	1.33
INITIAL		FINAL	
BKG/OFFSET	0	BKG/OFFSET	0.4
COEF/SLOPE	1.023	COEF/SLOPE	1.023
Expected (reference) Value	253	Expected (reference) Value	257

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010 D	MODEL:	T701
ID:	11900613	ID:	132
MFC CALIBRATION DATE:	12-Apr-2023	OXIDIZER ID:	n/a
	CALIBRATION METHOD:	Photometer (Varying UV Lamp)	
GPT DATE:	n/a	GPT END TIME:	n/a

CALIBRATION PARAMETERS:

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

CALIBRATION:

FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
			ACTUAL	INDICATED		Initial	Final
DILUENT	GAS	TOTAL		Initial	Final		
5000		5000	0.0	0.7	0.0		
5000		5000	378.0	378.9	377.9	0.999	1.000
5000		5000	180.0	n/a	179.7	n/a	1.002
5000		5000	61.0	n/a	61.8	n/a	0.987

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	0.999	0.1%

COMMENTS:

Sampe inlet filter was changed.


O3[ppb] Station: St. Lina Daily: 13-08-2023 Type: AVG 1 Min. [1 Min.]
O3 [ppb]
450
400
350
300
250
200
150
100
50
0
-50
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23
Date & Time
O3 [ppb]

Methane/Non-Methane Analyzer Calibration by Dilution

CALIBRATION:

DATE:	13-Aug-2023	PREVIOUS CALIBRATION DATE:	15-Jul-2023
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	St. Lina	BAROMETRIC (mBar):	924
PURPOSE	Routine	START TIME (MST):	10:24
PERFORMED BY:	Alex Yakupov	END TIME (MST):	14:31

ANALYZER:

VALUE	MAKE/MODEL	SERIAL	FLOW (mL/min)
	Thermo 55i	1180030034	1180
PARAMETER:	CH4	NMHC	THC
RANGE (ppm):	20	20	40
PREVIOUS CF:	1.000	0.998	0.999

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_3H_8 (ppm):	603.0	204.0	HIGH EXPIRY:	n/a
ID:	17100415	ID:	132	CYLINDER (psi):	1100		LOW ID:	n/a
MFC CALIBRATION DATE:	12-Apr-2023	OXIDIZER ID:	115	EXPIRY DATE	18-Aug-2029		LOW EXPIRY:	n/a

CALIBRATION PARAMETERS:

POINT (CH4/NMHC)	HIGH	MID	LOW	CH4 EQUIVILANCE	
TARGET	14	7	3.5	C_3H_8 as CH_4	561.0
RANGE	12 - 16	6 - 8	2 - 4	THC as CH_4	1164.0

EXPECTED (REFERENCE) VALUE:

INITIAL	CH4	NMHC	THC	FINAL	CH4	NMHC	THC
	9.81	11.24	21.05		10.05	11.30	21.35

CALIBRATION:

FLOW RATE (mL/min)			CONCENTRATION (PPM)									CORRECTION FACTOR (CF.)					
			CALCULATED			INITIAL INDICATED			FINAL INDICATED			INITIAL			FINAL		
DILUENT	GAS	TOTAL	CH4	NMHC	THC	CH4	NMHC	THC	CH4	NMHC	THC	CH4	NMHC	THC	CH4	NMHC	THC
3100		3100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						
3025	74.60	3100	14.51	13.50	28.01	14.09	12.46	26.55	14.53	13.42	27.95	1.030	1.083	1.055	0.999	1.006	1.002
3063	37.30	3100	7.26	6.75	14.01	n/a	n/a	n/a	7.25	6.69	13.94	n/a	n/a	n/a	1.001	1.009	1.005
3081	18.60	3100	3.62	3.37	6.98	n/a	n/a	n/a	3.62	3.35	6.97	n/a	n/a	n/a	0.999	1.005	1.002

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
CH4	1.000	1.001	0.0%
NMHC	1.000	0.994	0.0%
THC	1.000	0.998	0.0%

Comments:

Sample inlet filter was changed.

Use Zero Chrom? **Yes**

Station: St. Lina Daily: 13-08-2023 Type: AVG 1 Min. [1 Min.]

Methane/Non-Methane Analyzer Calibration by Dilution

CALIBRATION:

DATE:	18-Aug-2023	PREVIOUS CALIBRATION DATE:	13-Aug-2023
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	St. Lina	BAROMETRIC (mBar):	909
PURPOSE	Repeat	START TIME (MST):	10:22
PERFORMED BY:	Alex Yakupov	END TIME (MST):	14:45

ANALYZER:

VALUE	MAKE/MODEL	SERIAL	FLOW (mL/min)
	Thermo 55i	1180030034	1180
PARAMETER:	CH4	NMHC	THC
RANGE (ppm):	20	20	40
PREVIOUS CF:	0.999	1.006	1.002

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_3H_8 (ppm):	603.0	204.0	HIGH EXPIRY:	n/a
ID:	17100415	ID:	132	CYLINDER (psi):	1100		LOW ID:	n/a
MFC CALIBRATION DATE:	12-Apr-2023	OXIDIZER ID:	115	EXPIRY DATE	18-Aug-2029		LOW EXPIRY:	n/a

CALIBRATION PARAMETERS:

POINT (CH4/NMHC)	HIGH	MID	LOW	CH4 EQUIVILANCE	
TARGET	14	7	3.5	C_3H_8 as CH_4	561.0
RANGE	12 - 16	6 - 8	2 - 4	THC as CH_4	1164.0

EXPECTED (REFERENCE) VALUE:

INITIAL	CH4	NMHC	THC	FINAL	CH4	NMHC	THC
	10.05	11.30	21.35		9.97	11.33	21.29

CALIBRATION:

FLOW RATE			CONCENTRATION (PPM)									CORRECTION FACTOR (CF.)					
(mL/min)			CALCULATED			INITIAL INDICATED			FINAL INDICATED			INITIAL			FINAL		
DILUENT	GAS	TOTAL	CH4	NMHC	THC	CH4	NMHC	THC	CH4	NMHC	THC	CH4	NMHC	THC	CH4	NMHC	THC
3100		3100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						
3025	74.60	3100	14.51	13.50	28.01	14.50	13.37	27.86	14.51	13.47	27.98	1.001	1.010	1.005	1.000	1.002	1.001
3063	37.30	3100	7.26	6.75	14.01	n/a	n/a	n/a	7.27	6.73	14.00	n/a	n/a	n/a	0.998	1.003	1.000
3081	18.60	3100	3.62	3.37	6.98	n/a	n/a	n/a	3.65	3.37	7.01	n/a	n/a	n/a	0.991	0.999	0.996

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
CH4	1.000	0.999	0.1%
NMHC	1.000	0.997	0.0%
THC	1.000	0.999	0.0%

Comments:

Repeat calibration was completed to correct zero calibration after H2 generator maintenance.

Use Zero Chrom? **Yes**

Station: St. Lina Daily: 18-08-2023 Type: AVG 1 Min. [1 Min.]

Methane/Non-Methane Analyzer Calibration by Dilution

CALIBRATION:

DATE:	25-Aug-2023	PREVIOUS CALIBRATION DATE:	18-Aug-2023
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	St. Lina	BAROMETRIC (mBar):	928
PURPOSE	Removal/Shut-down	START TIME (MST):	12:02
PERFORMED BY:	Alex Yakupov	END TIME (MST):	13:50

ANALYZER:

VALUE	MAKE/MODEL	SERIAL	FLOW (mL/min)
	Thermo 55i	1180030034	1180
PARAMETER:	CH4	NMHC	THC
RANGE (ppm):	20	20	40
PREVIOUS CF:	1.000	1.002	1.001

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_3H_8 (ppm):	603.0	204.0	HIGH EXPIRY:	n/a
ID:	17100415	ID:	132	CYLINDER (psi):	1100		LOW ID:	n/a
MFC CALIBRATION DATE:	12-Apr-2023	OXIDIZER ID:	115	EXPIRY DATE	18-Aug-2029		LOW EXPIRY:	n/a

CALIBRATION PARAMETERS:

POINT (CH4/NMHC)	HIGH	MID	LOW	CH4 EQUIVILANCE	
TARGET	14	7	3.5	C_3H_8 as CH_4	561.0
RANGE	12 - 16	6 - 8	2 - 4	THC as CH_4	1164.0

EXPECTED (REFERENCE) VALUE:

INITIAL	CH4	NMHC	THC	FINAL	CH4	NMHC	THC
	9.97	11.33	21.29		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	CH4	NMHC	THC	CH4	NMHC	THC	CH4	NMHC	THC	CH4	NMHC	THC	CH4	NMHC	THC
3100		3100	0.00	0.00	0.00	0.00	0.00	0.00	n/a	n/a	n/a						
3025	74.60	3100	14.51	13.50	28.01	14.60	13.10	27.71	n/a	n/a	n/a	0.994	1.031	1.011	n/a	n/a	n/a
3063	37.30	3100	7.26	6.75	14.01	7.30	6.60	13.92	n/a	n/a	n/a	0.994	1.023	1.006	n/a	n/a	n/a
3081	18.60	3100	3.62	3.37	6.98	3.66	3.31	6.97	n/a	n/a	n/a	0.989	1.017	1.002	n/a	n/a	n/a

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
CH4	1.000	1.006	0.0%
NMHC	1.000	0.970	0.1%
THC	1.000	0.989	0.1%

Comments:

Shutdown calibration was completed to remove the analyzer for maintenance/repair.
Reason - NMHC channel is noisy.

Use Zero Chrom? **Yes**

Station: St. Lina Daily: 25-08-2023 Type: AVG 1 Min. [1 Min.]

Methane/Non-Methane Analyzer Calibration by Dilution

CALIBRATION:

DATE:	26-Aug-2023	PREVIOUS CALIBRATION DATE:	n/a
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	St. Lina	BAROMETRIC (mBar):	920
PURPOSE	Install/Post-Repair	START TIME (MST):	11:40
PERFORMED BY:	Alex Yakupov	END TIME (MST):	15:25

ANALYZER:

VALUE	MAKE/MODEL	SERIAL	FLOW (mL/min)
	Thermo 55i	1236656107	1180
PARAMETER:	CH4	NMHC	THC
RANGE (ppm):	20	20	40
PREVIOUS CF:	n/a	n/a	n/a

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:		CALIBRATION GAS:			FLOWMETERS (if applicable):	
MAKE:	SABIO	MAKE:	Teledyne	CYLINDER ID:	LL 23593		HIGH ID:	n/a
MODEL:	2010	MODEL:	T701	CH_4/C_3H_8 (ppm):	603.0	204.0	HIGH EXPIRY:	n/a
ID:	17100415	ID:	132	CYLINDER (psi):	1000		LOW ID:	n/a
MFC CALIBRATION DATE:	12-Apr-2023	OXIDIZER ID:	115	EXPIRY DATE	18-Aug-2029		LOW EXPIRY:	n/a

CALIBRATION PARAMETERS:

POINT (CH4/NMHC)	HIGH	MID	LOW	CH4 EQUIVILANCE	
TARGET	14	7	3.5	C_3H_8 as CH_4	561.0
RANGE	12 - 16	6 - 8	2 - 4	THC as CH_4	1164.0

EXPECTED (REFERENCE) VALUE:

INITIAL	CH4	NMHC	THC	FINAL	CH4	NMHC	THC
	n/a	n/a	n/a		10.13	11.49	21.62

CALIBRATION:

FLOW RATE			CONCENTRATION (PPM)									CORRECTION FACTOR (CF.)					
(mL/min)			CALCULATED			INITIAL INDICATED			FINAL INDICATED			INITIAL			FINAL		
DILUENT	GAS	TOTAL	CH4	NMHC	THC	CH4	NMHC	THC	CH4	NMHC	THC	CH4	NMHC	THC	CH4	NMHC	THC
3100		3100	0.00	0.00	0.00	n/a	n/a	n/a	0.00	0.00	0.00						
3025	74.60	3100	14.51	13.50	28.01	n/a	n/a	n/a	14.55	13.48	28.03	n/a	n/a	n/a	0.997	1.001	0.999
3063	37.30	3100	7.26	6.75	14.01	n/a	n/a	n/a	7.31	6.69	14.00	n/a	n/a	n/a	0.993	1.009	1.000
3081	18.60	3100	3.62	3.37	6.98	n/a	n/a	n/a	3.66	3.36	7.02	n/a	n/a	n/a	0.989	1.002	0.995

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
CH4	1.000	1.002	0.1%
NMHC	1.000	0.998	-0.1%
THC	1.000	1.000	0.0%

Comments:

No issues

Use Zero Chrom? **Yes**

Station: St. Lina Daily: 26-08-2023 Type: AVG 1 Min. [1 Min.]

Thermo 5030i SHARP Monitor Monthly Check

Date:	August 13, 2023	**Performed By/Reviewer:**	Alex Yakupov / Chris Wesson
Company:	LICA	**Start Time (mst):**	15:20
Station Name/Location:	St. Lina	**End Time (mst):**	16:18
Previous Audit Date:	July 15, 2023	**Calibration Purpose:**	routine monthly
Parameter:	PM 2.5	**Weather Conditions:**	Mainly sunny

SHARP 5030i Information and Status:

Serial Number: CM 17091001 **Filter Tape Counter** 286

Reference Standards:

	Air Flow			
	Manometer	**Orifice**	**Pressure:**	**Temp / RH:**
Make:	DeltaCal	DeltaCal	Fisher	Vaisala HMP76B
Model:	DC1	DC1	FB61291	HMP 76B
Serial Number:	177246	177246	130168457	T1640130
Calibration Expiration Date:	September 7, 2023	September 7, 2023	March 20, 2024	June 26, 2024

Ambient Temperature (°C)

	Reference	SHARP	Difference
#1	26.70	27.0	-0.3

Range	Action
< ± 2°C	OK
2-3 °C	Recalibrate
> 3°C	*Fail*

Ambient Relative Humidity (%RH)

As Found:

	Reference	SHARP	Difference
#1	45.70	46.0	-0.3

Range	Action
< ± 2 %RH	OK
2-5 %RH	Recalibrate
> 5 %RH	*Fail*

Barometric Pressure (mmHg)

As Found:

	Reference	SHARP	Difference
#1	701.0	701.0	0.0

Range	Action
< ± 10 mmHg	OK
10-12 mmHg	Recalibrate
> 12 mmHg	*Fail*

Flow Audit (L/min)

As Found:

	Reference	SHARP			
#1	16.68	16.67		% Difference	-0.10%
#2	16.68	16.66			
#3	16.69	16.67			
Average	16.68	16.67			

Range	Action
< ± 4%	OK
4-5%	Recalibrate
>5%	*Fail*

Leak Check (L/min)

	Without Leak Check Adapter			With leak Check Adapter		
	Reference	**SHARP**	**Difference**	**Reference**	**SHARP**	**Difference**
#1	16.68	16.67	0.01	16.11	16.65	-0.54
					LEAK RATE:	**-0.55**

Leak Limit: 0.80 L/min

Meteorological System Checklist

Date:	August 13, 2023		
Technician:	Alex Yakupov / Audit time: 16:19 - 16:58		
Reviewer:	Chris Wesson		
Station:	St. Lina		
Unit:	**Make:**	**Model:**	**Serial #:**
Temperature Sensor:	Rotronic	HC2-S3	20404750
Barometric Pressure Sensor:	Met One	O90D	F4498
Relative Humidity Sensor:	Rotronic	HC2-S3	20404750
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	16:19 - 16:43 = TIP TEST
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 mm)

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

AMBIENT TEMPERATURE SENSOR CHECK

Parameter:	Temperature @ 2 metres
Reference Thermometer ID:	Vaisala / HM70 / #T1640130, Exp. Date: Jun 26, 2024
Reference Temperature (^{o}C):	26.6
Station - Ambient Temperature (^{o}C):	25.4
Temperature Difference (^{o}C):	1.2

BAROMETRIC PRESSURE SENSOR CHECK

Reference Barometer ID:	Fisher / FB 61291/ #130168457/ Mar 20, 2024	
Reference Pressure - Units/Reading:	millibar	933
Station Pressure - Units/Reading:	millibar	921
Pressure Tolerance +/- 15% of error:	793 - 1073	1.29%

RELATIVE HUMIDITY (HYGROMETER) SENSOR CHECK

Reference Hygrometer ID:	Vaisala / HM70 / #T1640130, Exp. Date: Jun 26, 2024	
Reference Hygrometer % RH- Reading:	44.10	
Station Hygrometer % RH- Reading:	46.40	
RH Tolerance +/- 15% of difference:	37.49 - 50.72	-5.2%

ANEMOMETER - WIND SPEED & WIND DIRECTION SENSOR CHECK

WIND SPEED		WIND DIRECTION	
Previous check date:	July 15, 2023	Previous check date:	July 15, 2023
Wind Speed Observed (kph):	10-20	Wind Direction Observed:	W
Wind speed on Data Logger (kph):	18.1	Wind Direction on Data Logger:	W
	Annual audit: Jul 22, 2022	Wind Direction Pass/Fail?:	Pass

Comments

Station (Trailer) temperature vs Reference gauge temperature: 25.3 vs 25.1. Difference: 0.2 degrees. Passed

Meteorological Sensor Audit/Calibration

Location Information

Company:	LICA	**Performed By:**	Alex Yakupov
Audit Location:	St. Lina	**Reviewed By:**	Chris Wesson
Audit Date:	July 22, 2022	**Start/End Time (mst):**	15:07 / 16:23
Calibration Purpose:	routine annual	**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 2023

Ambient Air Monitoring Calibration Report

- LAC LA BICHE STATION-

CAL-LICA-202308-01690

Station Operation and Maintenance:
Bureau Veritas Canada

Data Validation and Report:
LICA / Bureau Veritas Canada

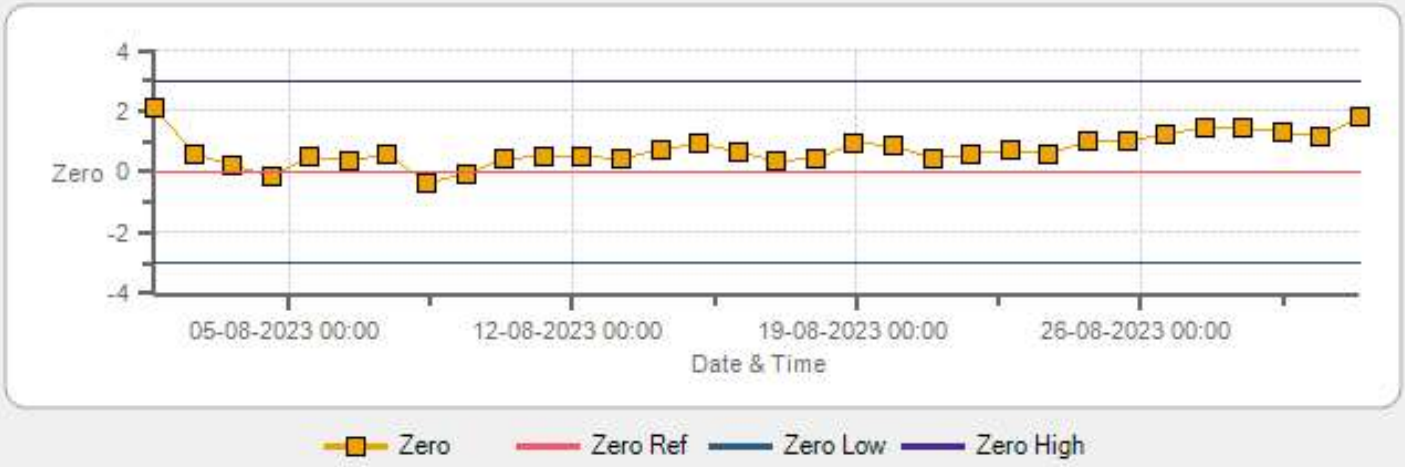
September 18, 2023

DAILY INTERNAL ZERO-SPAN CALIBRATION RECORDS

SO2[ppb] Calibration: Lac La Biche Monthly: 08-2023 Type: SpanAndZero - Zero

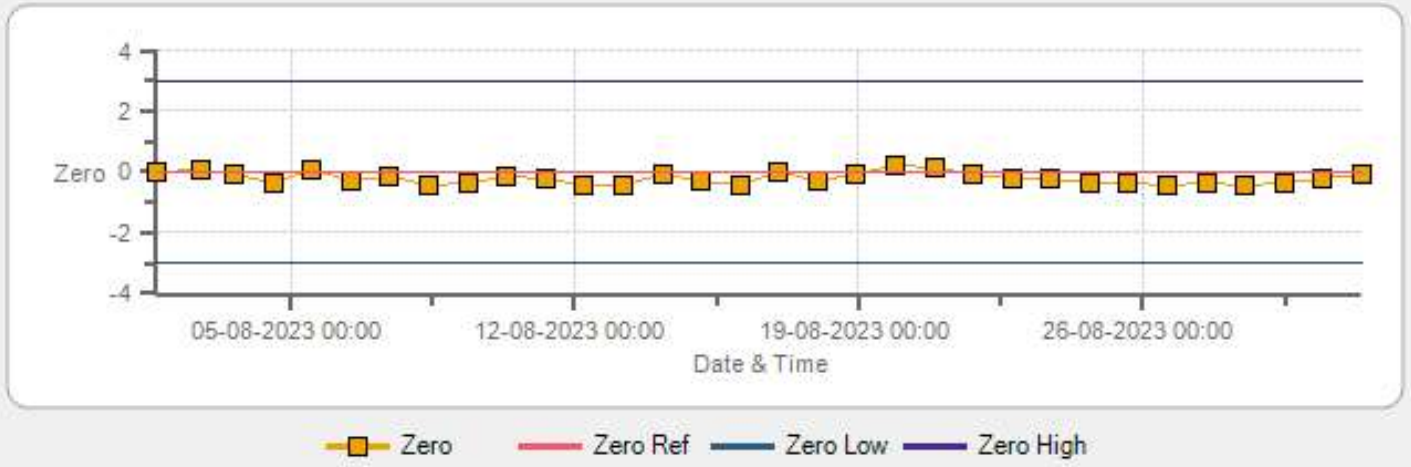
SO2[ppb] Calibration: Lac La Biche Monthly: 08-2023 Type: SpanAndZero - Span

H2S[ppb] Calibration: Lac La Biche Monthly: 08-2023 Type: SpanAndZero - Zero

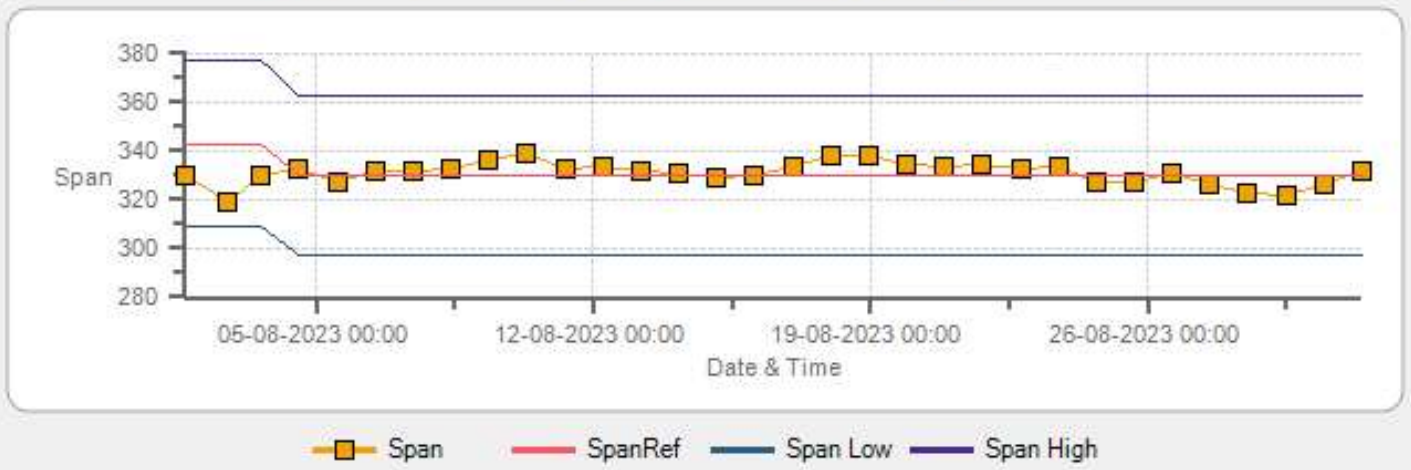


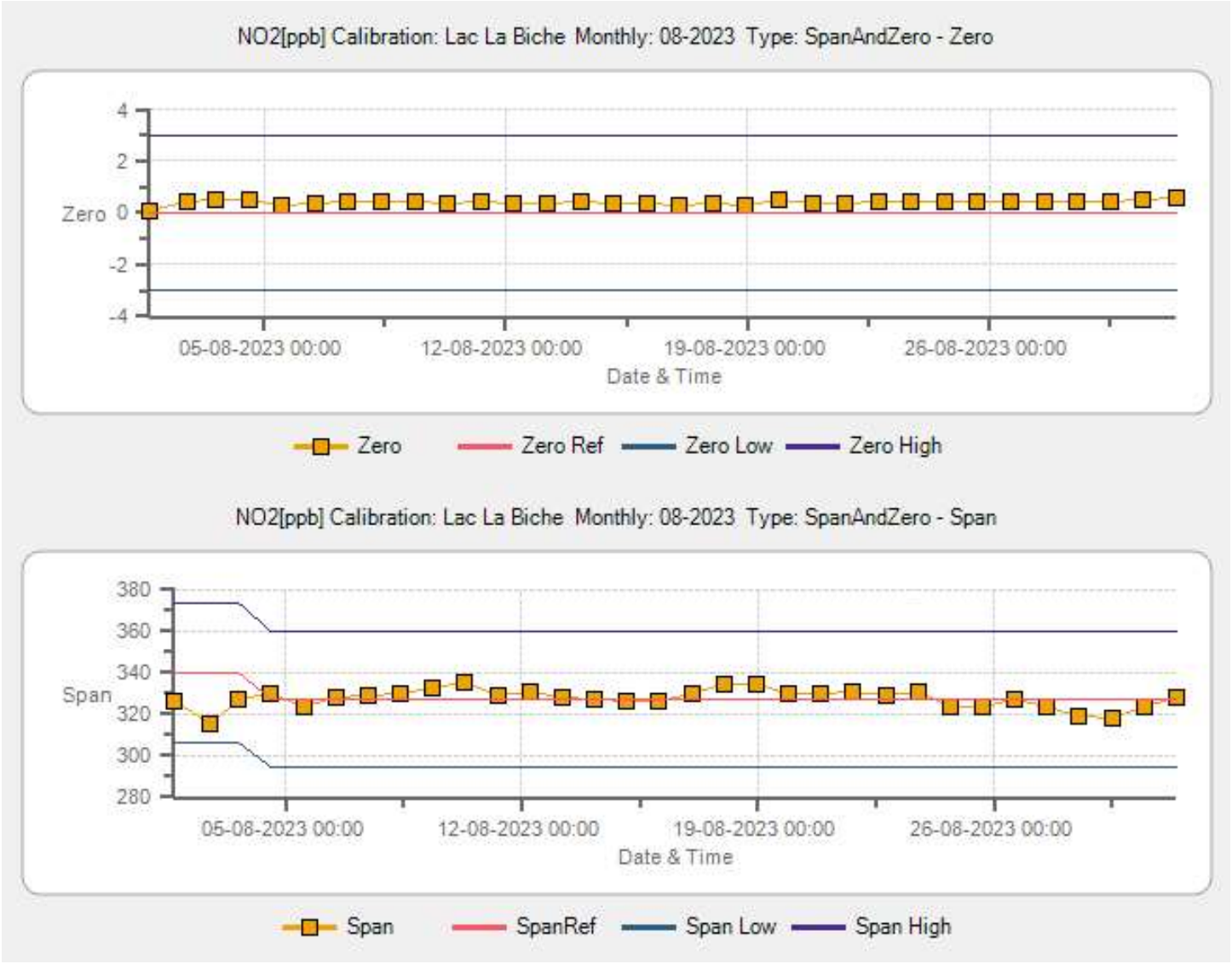
H2S[ppb] Calibration: Lac La Biche Monthly: 08-2023 Type: SpanAndZero - Span

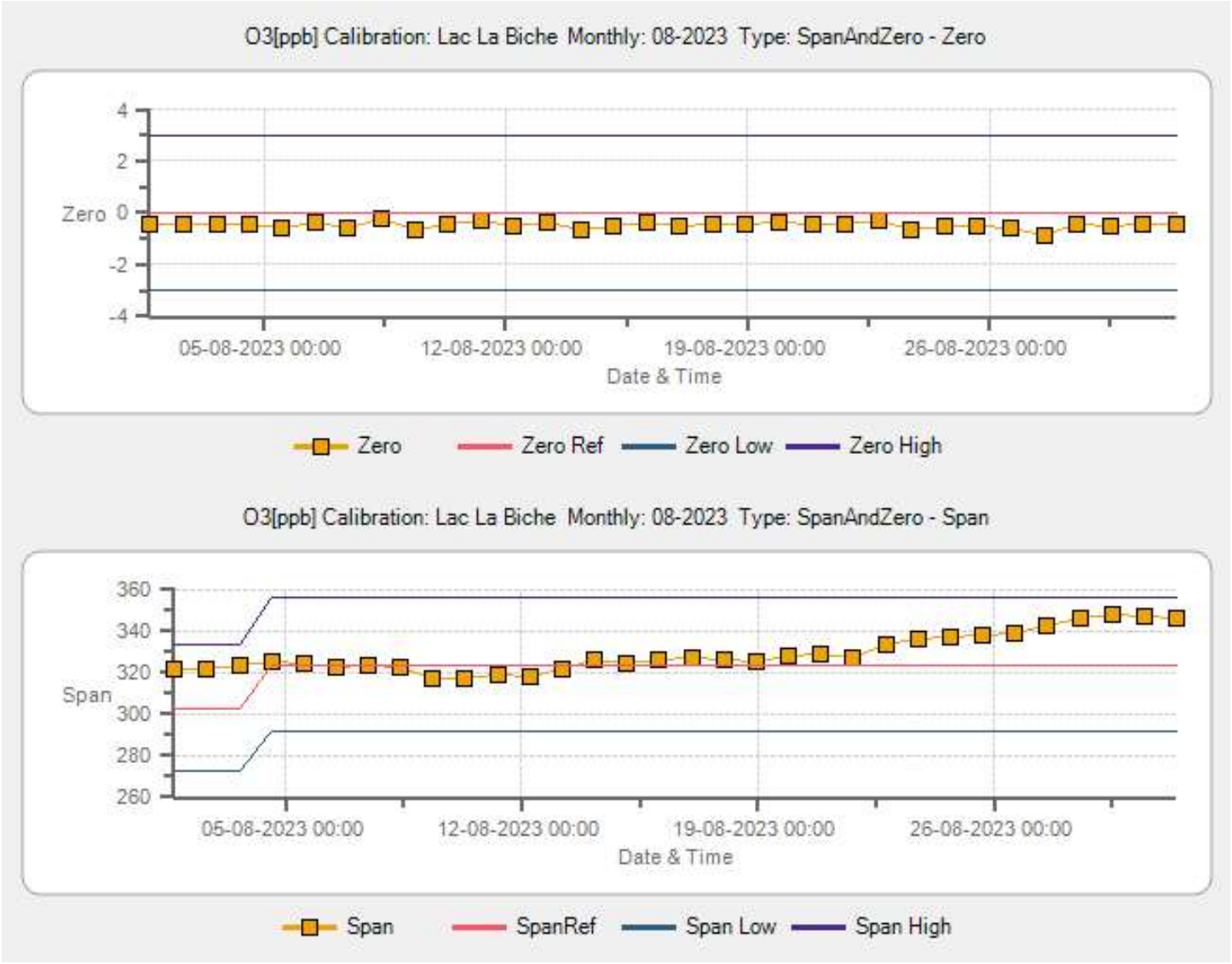
NOX[ppb] Calibration: Lac La Biche Monthly: 08-2023 Type: SpanAndZero - Zero

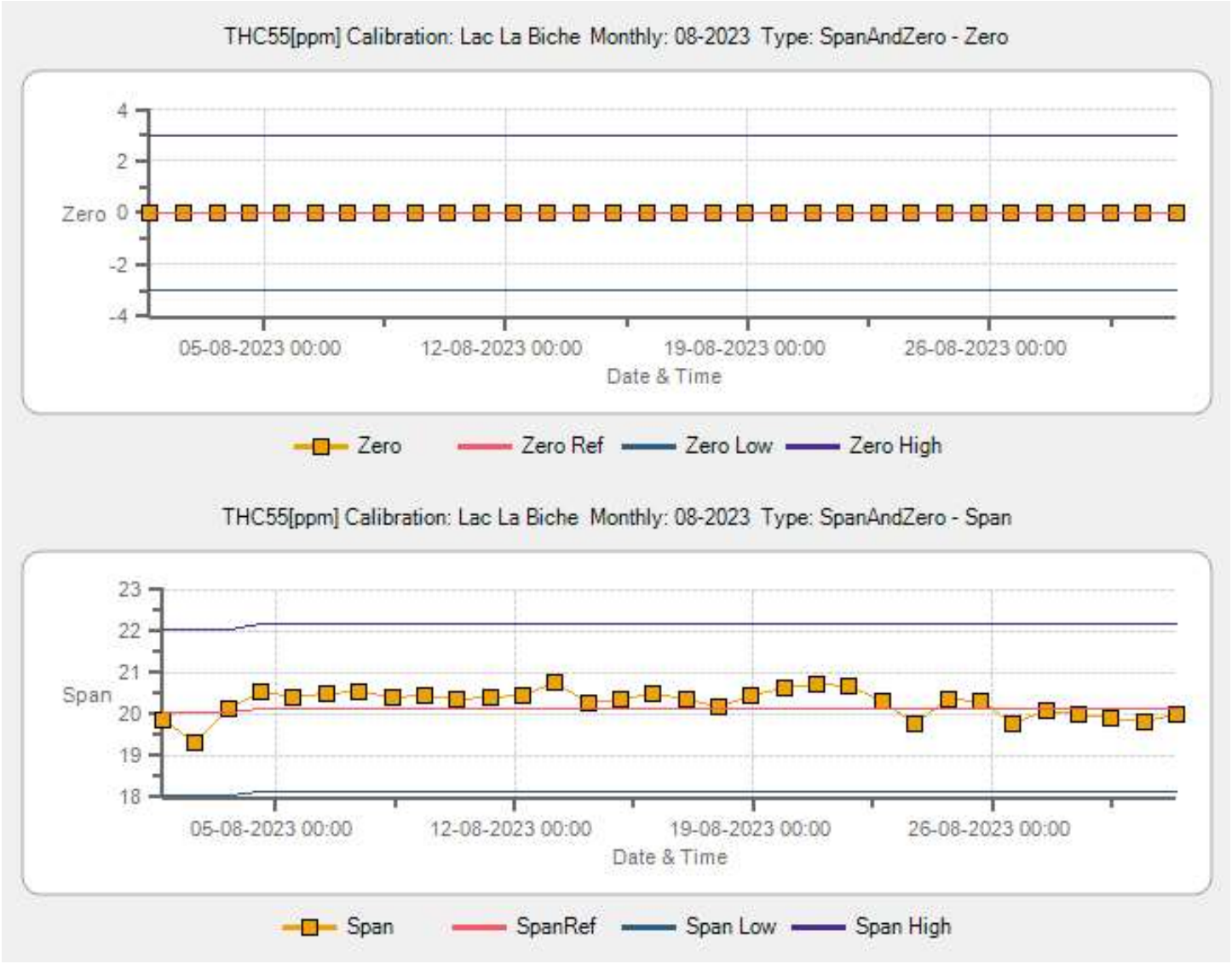


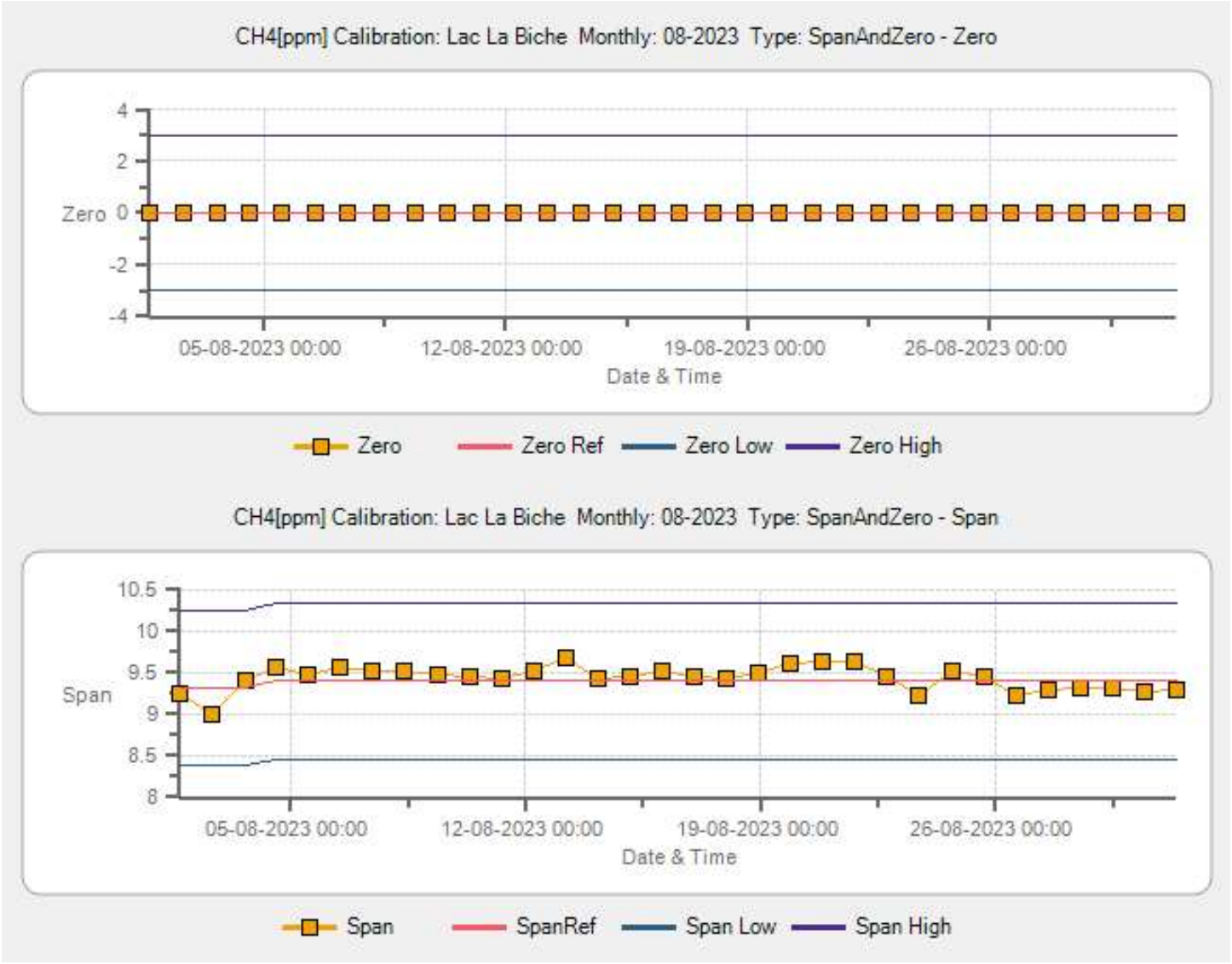
NOX[ppb] Calibration: Lac La Biche Monthly: 08-2023 Type: SpanAndZero - Span

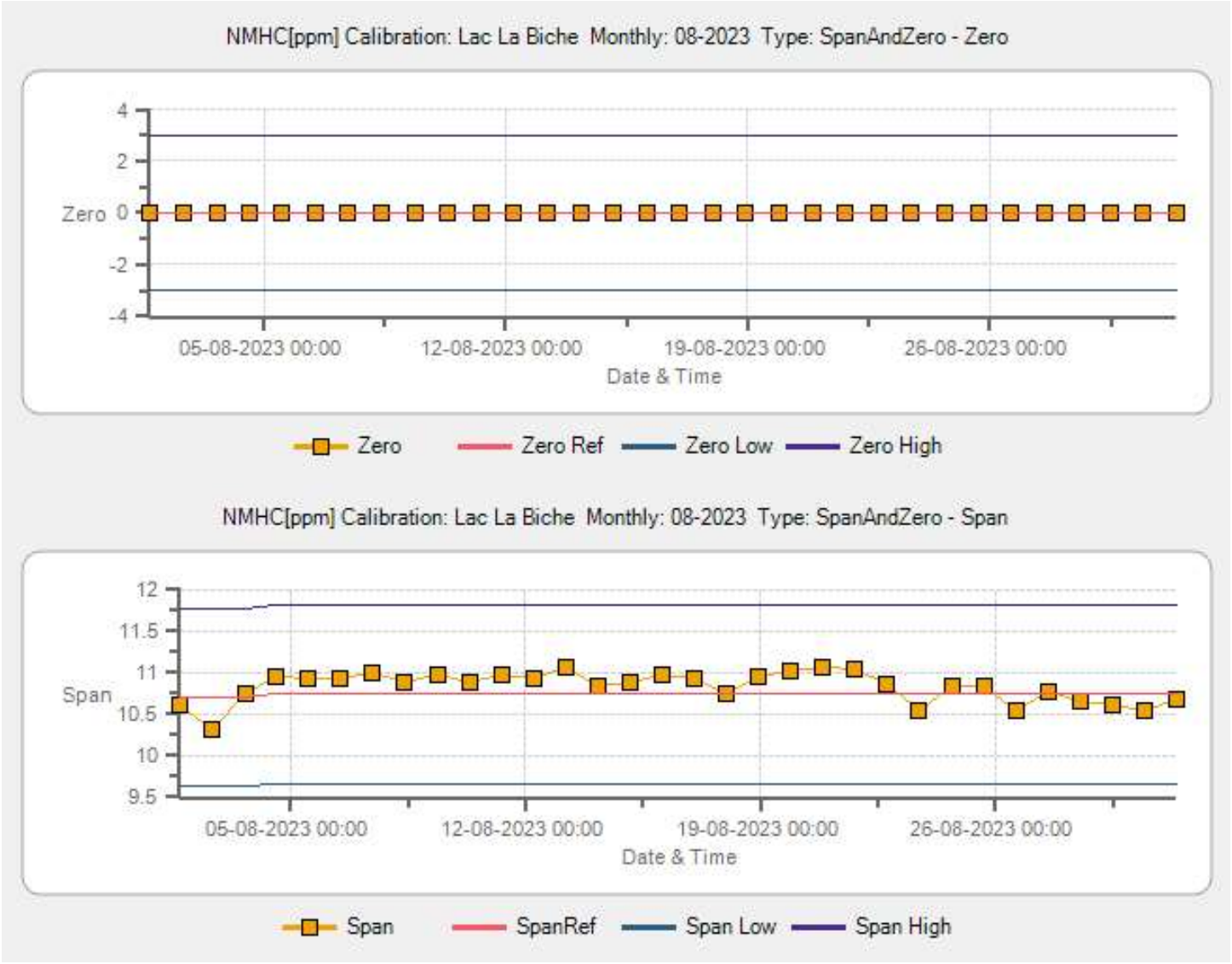



NO2[ppb] Calibration: Lac La Biche Monthly: 08-2023 Type: SpanAndZero - Zero
4
2
Zero 0
-2
-4
05-08-2023 00:00
12-08-2023 00:00
19-08-2023 00:00
26-08-2023 00:00
Date & Time
Zero
Zero Ref
Zero Low
Zero High
NO2[ppb] Calibration: Lac La Biche Monthly: 08-2023 Type: SpanAndZero - Span
380
360
340
Span
320
300
280
05-08-2023 00:00
12-08-2023 00:00
19-08-2023 00:00
26-08-2023 00:00
Date & Time
Span
SpanRef
Span Low
Span High


O3[ppb] Calibration: Lac La Biche Monthly: 08-2023 Type: SpanAndZero - Zero
4
2
Zero 0
-2
-4
05-08-2023 00:00
12-08-2023 00:00
19-08-2023 00:00
26-08-2023 00:00
Date & Time
Zero
Zero Ref
Zero Low
Zero High
O3[ppb] Calibration: Lac La Biche Monthly: 08-2023 Type: SpanAndZero - Span
360
340
320
Span
300
280
260
05-08-2023 00:00
12-08-2023 00:00
19-08-2023 00:00
26-08-2023 00:00
Date & Time
Span
SpanRef
Span Low
Span High


THC55[ppm] Calibration: Lac La Biche Monthly: 08-2023 Type: SpanAndZero - Zero
4
2
Zero 0
-2
-4
05-08-2023 00:00
12-08-2023 00:00
19-08-2023 00:00
26-08-2023 00:00
Date & Time
Zero
Zero Ref
Zero Low
Zero High
THC55[ppm] Calibration: Lac La Biche Monthly: 08-2023 Type: SpanAndZero - Span
23
22
21
Span 20
19
18
05-08-2023 00:00
12-08-2023 00:00
19-08-2023 00:00
26-08-2023 00:00
Date & Time
Span
SpanRef
Span Low
Span High


CH4[ppm] Calibration: Lac La Biche Monthly: 08-2023 Type: SpanAndZero - Zero
4
2
Zero 0
-2
-4
05-08-2023 00:00
12-08-2023 00:00
19-08-2023 00:00
26-08-2023 00:00
Date & Time
Zero
Zero Ref
Zero Low
Zero High
CH4[ppm] Calibration: Lac La Biche Monthly: 08-2023 Type: SpanAndZero - Span
10.5
10
9.5
Span 9
8.5
8
05-08-2023 00:00
12-08-2023 00:00
19-08-2023 00:00
26-08-2023 00:00
Date & Time
Span
SpanRef
Span Low
Span High


NMHC[ppm] Calibration: Lac La Biche Monthly: 08-2023 Type: SpanAndZero - Zero
4
2
Zero 0
-2
-4
05-08-2023 00:00
12-08-2023 00:00
19-08-2023 00:00
26-08-2023 00:00
Date & Time
Zero
Zero Ref
Zero Low
Zero High
NMHC[ppm] Calibration: Lac La Biche Monthly: 08-2023 Type: SpanAndZero - Span
12
11.5
Span 11
10.5
10
9.5
05-08-2023 00:00
12-08-2023 00:00
19-08-2023 00:00
26-08-2023 00:00
Date & Time
Span
SpanRef
Span Low
Span High

MULTI-POINT CALIBRATION RECORDS

SO2 Analyzer Calibration by Dilution

DATE:	02-Aug-2023	PREVIOUS CALIBRATION DATE:	07-Jul-2023
PARAMETER:	SO2	PREVIOUS CORRECTION FACTOR:	0.995
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	Lac La Biche	BAROMETRIC (mBar):	952
PURPOSE	Routine	START TIME (MST):	12:03
PERFORMED BY:	Alex Yakupov	END TIME (MST):	16:41

ANALYZER:

MAKE/MODEL	Thermo 43I-TLE	RANGE	500 ppb
SERIAL #	1180320043	FLOW (mL/min)	457
INITIAL		FINAL	
BKG/OFFSET	6.6	BKG/OFFSET	6.88
COEF/SLOPE	1.351	COEF/SLOPE	1.38
Expected (reference) Value	443	Expected (reference) Value	449

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010	MODEL:	T701
ID:	17100415	ID:	132
MFC CALIBRATION DATE:	12-Apr-2023	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	LL 127895	HIGH ID	n/a
CONC (ppm):	50.40	EXPIRY DATE	n/a
CYLINDER (psi):	1100	LOW ID	n/a
EXPIRY DATE	27-Oct-2030	EXPIRY DATE	n/a

CALIBRATION PARAMETERS:

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

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

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

CALIBRATION:

FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
			ACTUAL	INDICATED		Initial	Final
DILUENT	GAS	TOTAL		Initial	Final		
5000		5000	0.00	-0.16	0		
4961	37.20	4998	375.13	365.6	374.56	1.026	1.002
4982	17.60	5000	177.41	n/a	176.33	n/a	1.006
4990	8.80	4999	88.72	n/a	87.51	n/a	1.014

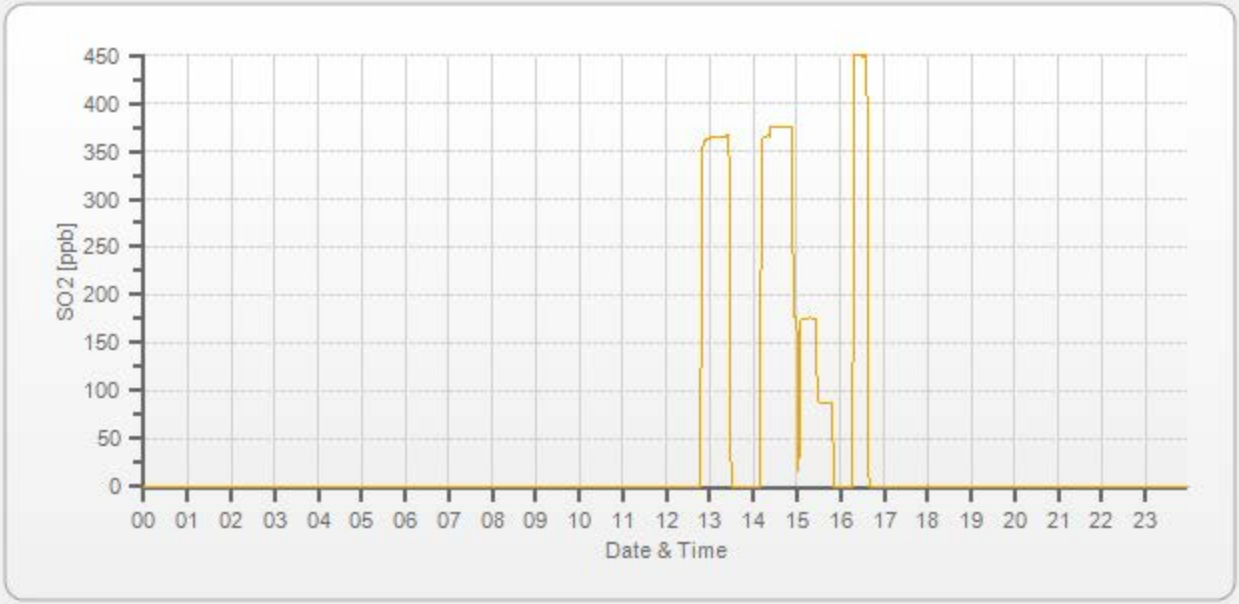
LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	0.999	-0.1%

COMMENTS:

Sample inlet filter was changed. 15:00 - a scheduled ZS check interfered with the calibration; Mid point was started from beginning.

SO2[ppb] Station: Lac La Biche Daily: 02-08-2023 Type: AVG 1 Min. [1 Min.]



H2S Analyzer Calibration by Dilution

DATE:	02-Aug-2023	PREVIOUS CALIBRATION DATE:	07-Jul-2023
PARAMETER:	H2S	PREVIOUS CORRECTION FACTOR:	1.005
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	Lac La Biche	BAROMETRIC (mBar):	952
PURPOSE	Routine	START TIME (MST):	12:01
PERFORMED BY:	Alex Yakupov	END TIME (MST):	16:41

ANALYZER:

MAKE/MODEL	Thermo 450i	RANGE	100 ppb
SERIAL #	CM17360002	FLOW (mL/min)	938
INITIAL		FINAL	
BKG/OFFSET	79.7	BKG/OFFSET	82.2
COEF/SLOPE	0.993	COEF/SLOPE	1.003
Expected (reference) Value	54	Expected (reference) Value	53.4

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010 D	MODEL:	T701
ID:	11900613	ID:	132
MFC CALIBRATION DATE:	12-Apr-2023	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):	400	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:	12:04	SO2 Conc (ppb)	380
END TIME:	12:19	Analyzer Response (ppb)	0.0

CALIBRATION:

FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
			ACTUAL	INDICATED		Initial	Final
DILUENT	GAS	TOTAL		Initial	Final		
7500		7500	0.00	2.7	0		
7442	57.90	7500	77.97	80.7	78.3	1.000	0.996
7472	28.20	7500	37.98	n/a	37.5	n/a	1.013
7486	14.10	7500	18.99	n/a	18.4	n/a	1.032

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.006	-0.4%

COMMENTS:

Sample inlet filter was changed. 15:00 - a scheduled ZS check interfered with the calibration; Mid point was started from beginning.


H2S[ppb] Station: Lac La Biche Daily: 02-08-2023 Type: AVG 1 Min. [1 Min.]
H2S [ppb]
90
80
70
60
50
40
30
20
10
0
-10
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23
Date & Time
H2S [ppb]

NOx Calibration by Dilution/Gas-Phase Titration

CALIBRATION:

DATE:	02-Aug-2023	PREVIOUS CALIBRATION DATE:	07-Jul-2023
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	Lac La Biche	BAROMETRIC (mBar):	952
PURPOSE	Routine	START TIME (MST):	12:02
PERFORMED BY:	Alex Yakupov	END TIME (MST):	18:50

ANALYZER:

MAKE/MODEL:	Thermo 42i	PREVIOUS CF.	
SERIAL #:	1180930027	NOx	1.003
FLOW (mL/min)	762	NO	1.001
RANGE (ppb)	500	NO2	1.000
GPT FOR O3?		No	

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:		CALIBRATION GAS:			FLOWMETERS (if applicable):	
MAKE:	SABIO	MAKE:	Teledyne	CYLINDER ID:	LL 127895		HIGH ID:	n/a
MODEL:	2010	MODEL:	T701	NO/NOx (PPM):	51.1	51.6	HIGH EXPIRY:	n/a
ID:	17100415	ID:	132	CYLINDER (psi):	1100		LOW ID:	n/a
MFC CALIBRATION DATE:	12-Apr-2023	OXIDIZER ID:	n/a	EXPIRY DATE	27-Oct-2030		LOW EXPIRY:	n/a

CALIBRATION SETTINGS:

INITIAL	NOx	NO	NO2	FINAL	NOx	NO	NO2
BKG/OFFSET:	8.4	8.2	n/a	BKG/OFFSET:	8.8	8.7	n/a
SLOPE/COEF/CE:	1.007	0.821	0.99	SLOPE/COEF/CE:	1.008	0.8541	0.998

EXPECTED (REFERENCE) VALUE:

INITIAL	NOx	NO	NO2	FINAL	NOx	NO	NO2
	343.0	3.0	340.0		330.0	3.4	327.0

CALIBRATION PARAMETERS:

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

NO/NOx CALIBRATION:

FLOW RATE (mL/min)			CONCENTRATION (ppb)									CORRECTION FACTOR (CF.)					
			CALCULATED			INITIAL INDICATED			FINAL INDICATED			INITIAL			FINAL		
DILUENT	GAS	TOTAL	NO	NOx	NO2	NO	NOx	NO2	NO	NOx	NO2	NO	NOx	NO2	NO	NOx	NO2
5000		5000	0.0	0.0	0.0	-0.1	-0.1	0.1	0.0	0.0	0.0						
4961	37.20	4998	380.3	384.1	3.7	373.2	376.8	3.4	380.9	384.4	3.7	1.019	1.019		0.999	0.999	
4982	17.60	5000	179.9	181.6	1.8	n/a	n/a	n/a	180.2	182.3	2.1	n/a	n/a		0.998	0.996	
4990	8.80	4999	90.0	90.8	0.9	n/a	n/a	n/a	89.3	91.0	1.7	n/a	n/a		1.007	0.998	

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	37.20	4998	0	379.5	383.5	4.0				
AS-FOUND HIGH	37.20	4998	235	126.7	385.9	259.2	252.8	255.2	0.991	100.95%
ADJUSTED HIGH	37.20	4998	235	125.9	383.8	257.9	253.6	253.9	0.999	100.12%
MID	37.20	4998	110	260.6	384.4	123.9	118.9	119.9	0.992	100.84%
LOW	37.20	4998	40	333.0	384.4	51.5	46.5	47.5	0.979	102.15%
NO2 COEF/CONVERTER EFFICIENCY ADJUSTED									AVERAGE:	101.04%

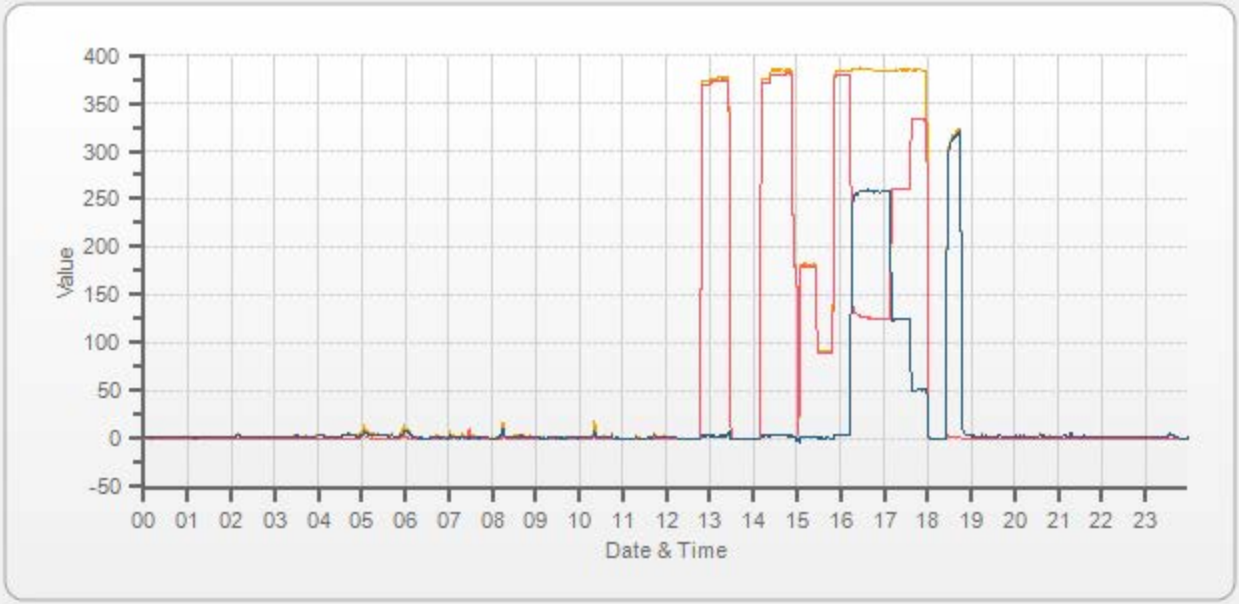
LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
NO	1.000	1.002	-0.06%
NOx	1.000	1.001	0.03%
NO2	1.000	0.996	0.25%

COMMENTS:

Sample inlet filter was changed.
15:00 = Daily ZS. Mid point restarted

Station: Lac La Biche Daily: 02-08-2023 Type: AVG 1 Min. [1 Min.]



Ozone Calibration by Photometer (Varying UV Lamp)

DATE:	03-Aug-2023	PREVIOUS CALIBRATION DATE:	08-Jul-2023
PARAMETER:	O3	PREVIOUS CORRECTION FACTOR:	1.002
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	Lac La Biche	BAROMETRIC (mBar):	950
PURPOSE	Routine	START TIME (MST):	11:25
PERFORMED BY:	Alex Yakupov	END TIME (MST):	15:41

ANALYZER:

MAKE/MODEL	Thermo 49i	RANGE	500 ppb
SERIAL #	1002240372	FLOW (mL/min)	1442
INITIAL		FINAL	
BKG/OFFSET	0.2	BKG/OFFSET	0.2
COEF/SLOPE	1.029	COEF/SLOPE	1.032
Expected (reference) Value	303	Expected (reference) Value	324

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010 D	MODEL:	T701
ID:	11900613	ID:	132
MFC CALIBRATION DATE:	12-Apr-2023	OXIDIZER ID:	n/a
CALIBRATION METHOD:		Photometer (Varying UV Lamp)	
GPT DATE:	n/a	GPT END TIME:	n/a

CALIBRATION PARAMETERS:

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

CALIBRATION:

FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
			ACTUAL	INDICATED		Initial	Final
DILUENT	GAS	TOTAL		Initial	Final		
5000		5000	0.0	-0.3	0.0		
5000		5000	378.0	377.6	377.0	1.000	1.003
5000		5000	180.0	n/a	180.0	n/a	1.000
5000		5000	60.0	n/a	59.6	n/a	1.007

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	0.998	0.0%

COMMENTS:

Sample inlet filter was changed
14:00 = Daily ZS. Mid point restarted.


O3[ppb] Station: Lac La Biche Daily: 03-08-2023 Type: AVG 1 Min. [1 Min.]
450
400
350
300
250
200
150
100
50
0
-50
O3 [ppb]
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23
Date & Time
O3 [ppb]

Methane/Non-Methane Analyzer Calibration by Dilution

CALIBRATION:

DATE:	03-Aug-2023	PREVIOUS CALIBRATION DATE:	08-Jul-2023
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	Lac La Biche	BAROMETRIC (mBar):	950
PURPOSE	Routine	START TIME (MST):	11:24
PERFORMED BY:	Alex Yakupov	END TIME (MST):	15:41

ANALYZER:

VALUE	MAKE/MODEL	SERIAL	FLOW (mL/min)
	Thermo 55i	1180320044	1018
PARAMETER:	CH4	NMHC	THC
RANGE (ppm):	20	20	40
PREVIOUS CF:	1.002	0.993	0.998

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_3H_8 (ppm):	603.0	204.0	HIGH EXPIRY:	n/a
ID:	17100415	ID:	134	CYLINDER (psi):	1100		LOW ID:	n/a
MFC CALIBRATION DATE:	12-Apr-2023	OXIDIZER ID:	n/a	EXPIRY DATE	18-Aug-2029		LOW EXPIRY:	n/a

CALIBRATION PARAMETERS:

POINT (CH4/NMHC)	HIGH	MID	LOW	CH4 EQUIVILANCE	
TARGET	14	7	3.5	C_3H_8 as CH_4	561.0
RANGE	12 - 16	6 - 8	2 - 4	THC as CH_4	1164.0

EXPECTED (REFERENCE) VALUE:

INITIAL	CH4	NMHC	THC	FINAL	CH4	NMHC	THC
	9.32	10.71	20.03		9.40	10.74	20.15

CALIBRATION:

FLOW RATE (mL/min)			CONCENTRATION (PPM)									CORRECTION FACTOR (CF.)					
			CALCULATED			INITIAL INDICATED			FINAL INDICATED			INITIAL			FINAL		
DILUENT	GAS	TOTAL	CH4	NMHC	THC	CH4	NMHC	THC	CH4	NMHC	THC	CH4	NMHC	THC	CH4	NMHC	THC
3100		3100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						
3025	74.60	3100	14.51	13.50	28.01	14.02	13.27	27.29	14.50	13.54	28.04	1.035	1.017	1.026	1.001	0.997	0.999
3063	37.30	3100	7.26	6.75	14.01	n/a	n/a	n/a	7.23	6.77	13.99	n/a	n/a	n/a	1.004	0.997	1.001
3081	18.60	3100	3.62	3.37	6.98	n/a	n/a	n/a	3.62	3.36	6.98	n/a	n/a	n/a	0.999	1.002	1.001

LINEAR REGRESSION ANALYSIS:

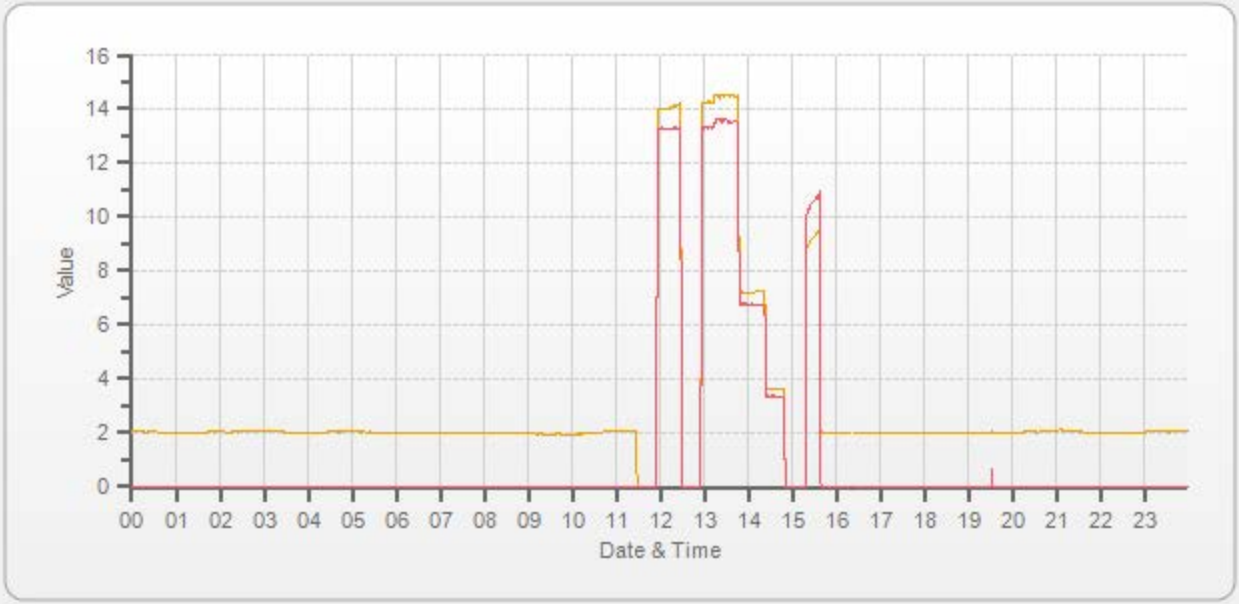
	CORRELATION	SLOPE	INTERCEPT
CH4	1.000	0.999	0.0%
NMHC	1.000	1.003	0.0%
THC	1.000	1.001	0.0%

Comments:

Sample inlet filter was changed.
14:00 = Daily ZS. Mid point restarted.

Use Zero Chrom? **Yes**

Station: Lac La Biche Daily: 03-08-2023 Type: AVG 1 Min. [1 Min.]



Thermo 5030i SHARP Monitor Monthly Check

Date:	August 3, 2023	**Performed By/Reviewer:**	Alex Yakupov / Chris Wesson
Company:	LICA	**Start Time (mst):**	15:03
Station Name/Location:	Lac La Biche	**End Time (mst):**	16:13
Previous Audit Date:	July 8, 2023	**Calibration Purpose:**	routine monthly
Parameter:	PM 2.5	**Weather Conditions:**	Mainly sunny

SHARP 5030i Information and Status:

Serial Number: CM 17071016 **Filter Tape Counter** 424

Reference Standards:

	Air Flow			
	Manometer	**Orifice**	**Pressure:**	**Temp / RH:**
Make:	DeltaCal	DeltaCal	Fisher Scientific	Vaisala HMP76B
Model:	DC1	DC1	FB 61291	HMP 76B
Serial Number:	177246	177246	130168457	T1640130
Calibration Expiration Date:	September 7, 2023	September 7, 2023	March 20, 2024	June 26, 2024

Ambient Temperature (°C)

	Reference	SHARP	Difference
#1	22.50	22.0	0.5

Range	Action
< ± 2°C	OK
2-3 °C	Recalibrate
> 3°C	*Fail*

Ambient Relative Humidity (%RH)

As Found:

	Reference	SHARP	Difference
#1	64.90	64.2	0.7

Range	Action
< ± 2 %RH	OK
2-5 %RH	Recalibrate
> 5 %RH	*Fail*

Barometric Pressure (mmHg)

As Found:

	Reference	SHARP	Difference
#1	710.0	710.0	0.0

Range	Action
< ± 10 mmHg	OK
10-12 mmHg	Recalibrate
> 12 mmHg	*Fail*

Flow Audit (L/min)

As Found:

	Reference	SHARP			
#1	16.64	16.67		% Difference	0.18%
#2	16.64	16.67			
#3	16.64	16.67			
Average	16.64	16.67			

Range	Action
< ± 4%	OK
4-5%	Recalibrate
>5%	*Fail*

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	16.51	16.67	-0.16	*Leak Limit: 0.80 L/min*
					LEAK RATE:	**-0.13**	

Meteorological System Checklist

Date:	August 3, 2023		
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
AMBIENT TEMPERATURE SENSOR CHECK			
Parameter:	Temperature @ 2 metres		
Reference Thermometer ID:	Vaisala / HM70 / #T1640130/ Jun 26, 2024		
Reference Temperature (°C):	23.1		
Station - Ambient Temperature (°C):	21.5		
Temperature Difference (°C):	1.6		
BAROMETRIC PRESSURE SENSOR CHECK			
Reference Barometer ID:	Fisher Scientific / FB 61291 / #130168457/ Mar 20, 2024		
Reference Pressure - Units/Reading:	millibar	949	
Station Pressure - Units/Reading:	millibar	945	
Pressure Tolerance +/- 15% of error:	807 - 1091	0.42%	
RELATIVE HUMIDITY (HYGROMETER) SENSOR CHECK			
Reference Hygrometer ID:	Vaisala / HM70 / #T1640130/ Jun 26, 2024		
Reference Hygrometer % RH- Reading:	59.20		
Station Hygrometer % RH- Reading:	65.80		
RH Tolerance +/- 15% of difference:	50.32 - 68.08	-11.1%	
ANEMOMETER - WIND SPEED & WIND DIRECTION SENSOR CHECK			
WIND SPEED		WIND DIRECTION	
Wind Speed Observed (kph):	1-10	Wind Direction Observed:	N
Wind speed on Data Logger (kph):	6.9	Wind Direction on Data Logger:	N
	Annual audit: May 09, 2022	Wind Direction Pass/Fail?:	Pass

Comments

Station (Trailer) temperature vs Reference gauge: 21.1 vs 21.6 - passed.

Meteorological Sensor Audit/Calibration

Location Information

Company:	LICA	**Performed By:**	Alex Yakupov
Audit Location:	Lac La Biche	**Reviewed By:**	Chris Wesson
Audit Date:	May 9, 2022	**Start/End Time (mst):**	17:47/18:45
Calibration Purpose:	installation	**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 (SO_2)	Bureau Veritas EMS SOP-00209: Ambient Sulphur Monitoring
HYDROGEN SULPHIDE (H_2S)	Bureau Veritas EMS SOP-00209: Ambient Sulphur Monitoring
TOTAL HYDROCARBONS (THC), METHANE (CH4), NON-METHANE(NMHC)	Bureau Veritas EMS SOP-00001: Methane, Non-Methane Hydrocarbon Analyzer Monitoring
OXIDES OF NITROGEN (NOx), NITRIC OXIDE (NO) & NITROGEN DIOXIDE (NO_2)	Bureau Veritas EMS SOP-00213: Ambient NO/NO_2/NOx 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