Lakeland Industry & Community Association

JANUARY 2023

Monthly Ambient Air Quality Monitoring Report

LICA-202301

Operation and Maintenance:

Bureau Veritas Canada

Data Validation and Report:

Lakeland Industry & Community Association

February 24, 2023

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Lakeland Industry & Community Association
5107 50 St
Bonnyville, AB, T9N 2J7
Phone #: 780-226-7068
E-mail: monitoring@lica.ca
www.lica.ca

February 24, 2023

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

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

Enclosed is the January 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
Bonnyville, AB, T9N 2J7
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

NETWORK STATION SUMMARY

Listing of Continuous Monitoring Stations and Integrated Sampling Stations

	Station Name	Cold Lake South	Tamarack	St. Lina	Lac La Biche
	Station ID	1174	1248	1250	1690
	Coordinates	54.41402	54.604935	54.215961	54.76516
		-110.23316	-110.452637	-111.503304	-111.9714490
Continuous Monitoring Parameter	SO2	√	√	√	√
	H2S		√	√	√
	TRS	√			
	NOX	√	√	√	√
	NOX	√	√	√	√
	NO2	√	√	√	√
	O3	√	√	√	√
	THC	√	√	√	√
	CH4	√	√	√	√
	NMHC	√	√	√	√
	RH	√	√	√	√
	BP	√	√	√	√
	AT	√	√	√	√
	ST	√	√	√	√
	PRECEIPITATION		√	√	
	WS	√	√	√	√
	WD	√	√	√	√
	STDWD	√	√	√	√
Integrated Sampling	VOCs	√			
	PAHs	√			
	Partisol	√			
	Passive	√			√
	NMHC Canister				√
	PAC			√	

List of Contractors performing air monitoring activities

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

Monitoring Notes during the Month of January 2023

Cold Lake South

- All data collected this month were compliant with the requirements outlined in the AMD 2016.
- Measured parameters were below Alberta Ambient Air Quality Objectives (AAAQOs) and/or Alberta Ambient Air Quality Guidelines (AAAQGs) where applicable.
- All parameters met the 90% operational uptime requirement.
- No major events were identified this month.

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.
- THC/CH4/NMHC: To address bad injection issues, the Thermo 55i HC analyzer, s/n: 1314057759, was removed, and the Thermo 55i HC analyzer, s/n: 1180930026, was installed on January 5. Nineteen hours of downtime were recorded due to this event.

St. Lina Station

- All data collected this month were compliant with the requirements outlined in the AMD 2016.
- Measured parameters were below Alberta Ambient Air Quality Objectives (AAAQOs) and/or Alberta Ambient Air Quality Guidelines (AAAQGs) where applicable.
- All parameters met the 90% operational uptime requirement, except precipitation (83.6%).

- **Precipitation**: The precipitation gauge was found to be non-functional (tipping bucket and drain holes were blocked by ice) on January 15. Due to insufficient field time for troubleshooting, the issue was not addressed until January 19. Data were invalidated back to January 14 hour 10, when a nearby air monitoring station (St. Lina station), started recording precipitation data. One hundred twenty-one hours of downtime were recorded due to this event.

Lac La Biche Station

- All data collected this month were compliant with the requirements outlined in the AMD 2016.
- Measured parameters were below Alberta Ambient Air Quality Objectives (AAAQOs) and/or Alberta Ambient Air Quality Guidelines (AAAQGs) where applicable.
- All parameters met the 90% operational uptime requirement.
- No major events were identified this month.

Integrated Sampling

All the integrated sampling analytical results are included in the January 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 January 6, 12, 18, 24 and 30.
- **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 January 6, 12, 18, 24 and 30.
- **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 January 6, 12, 18, 24 and 30.
- **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 December 29, 2022 and January 3, 2023, and were removed between January 29 and January 31.
  - 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 #32: the Ozone sample was missing.
- **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 January/February 2023 monitoring period were installed between December 29, 2022 and January 3, 2023. They are schedule to be removed by the end of February.
- **NMHC canister Sampling System**:
    - The canister sampling program collects a 1-hour sample of air when the continuously non-methane hydrocarbon (NMHC) concentration reaches a specified trigger point. The current trigger point is 0.3 ppm and is based on real-time monitoring data that are averaged over a 5-minute period.
    - One canister was collected this month, on January 5 at 08:00, at concentration of 0.37ppm.

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

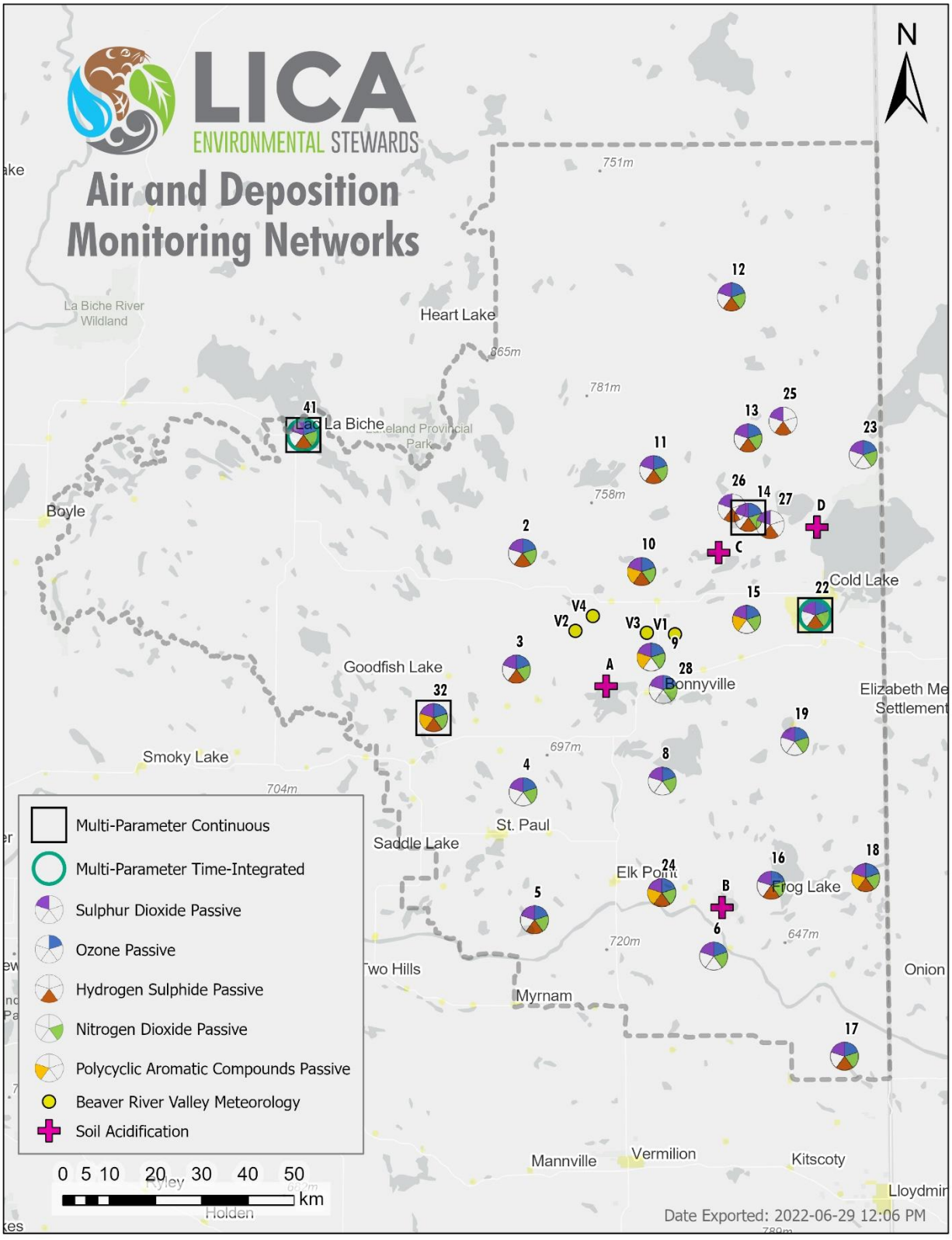
This report was reviewed by Michael Bisaga in accordance with Chapter 9 of the Air Monitoring Directive (AMD 2016).

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

February 24, 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	January 8, 2023	• No operational issues were recorded this month.
TRS Thermo 450i #812728560	January 8, 2023	• A successful shut-down calibration was performed on January 7 before the SO2 scrubber material renewal. The analyzer was allowed time to stabilize overnight. A successful post-repair calibration was completed on January 8. Nineteen hours of downtime were recorded due to this event.
NOx/NO/NO2 Thermo 42i #1505664393	January 8, 2023	• No operational issues were recorded this month.
O3 Thermo 49iQ #12208316585	January 8, 2023	• No operational issues were recorded this month.
THC/CH4/NMHC Thermo 55i #1180930025	January 7, 2023	• The analyzer was put offline on January 19 for the hydrogen generator maintenance. Two hours of downtime were recorded.
PM2.5 Teledyne T640 #575	January 9, 2023	• Following the monthly audit, a new sample pump was attempted to be installed on January 9. However, issues were identified on the new pump. The old pump was reinstalled. No changes were made on the analyzer afterward.
Parameter	**Verification Date**	**Equipment Operational Summary**
RH Rotronic HC2A-S3 #20257103	January 9, 2023	• No operational issues were recorded this month.
BP Met One 092 #Y23368	January 9, 2023	• No operational issues were recorded this month.
AT Rotronic HC2A-S3 #20257103	January 9, 2023	• No operational issues were recorded this month.

Parameter	Verification Date	Equipment Operational Summary
ST COMET #NA	January 9, 2023	• No operational issues were recorded this month.
WS/WD/STDWD RM Young 05305AQ #177354	January 9, 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 issues were identified this month.

Monitored Data Summary for Cold Lake South Station

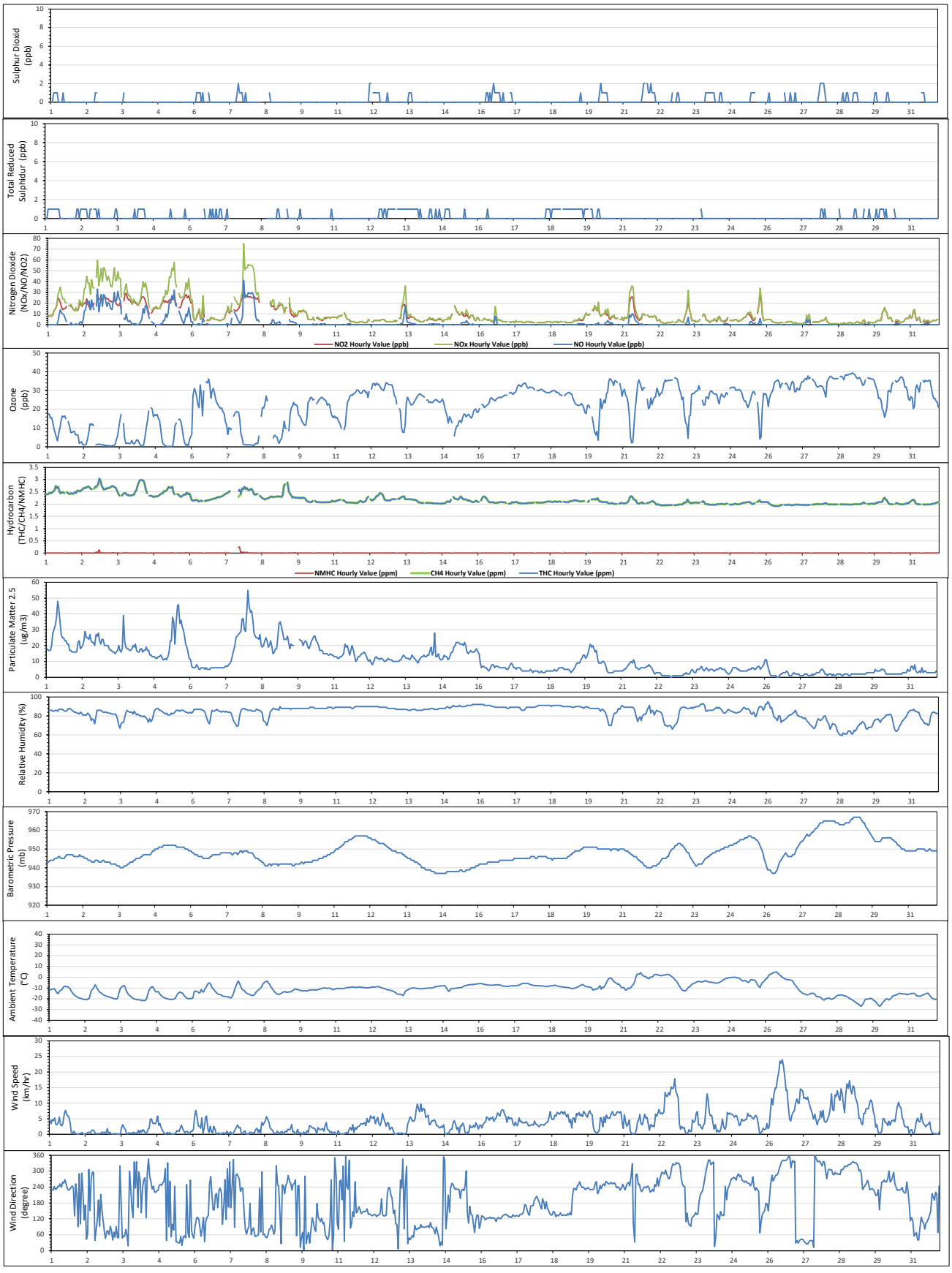
Parameter	Objectives/Guidelines			Exceedances			Monthly Avg.	Min. 1-hr	Max. 1-hr	Date/Time	VWS (km/hr)	VWD (sector)	Max. 24-hr	Date	Operational Uptime (%)	Valid Data (%)
	1-hr	24-hr	30-day	1-hr	24-hr	30-day										
SO2 (ppb)	172	48	11	0	0	0	0.2	0	2	January 7 at hour 13	3	W	0.5	January 16	100.0	95.0
TRS (ppb)	-	-	-	-	-	-	0.2	0	1	January 1 at hour 2	4.7	WSW	1.0	January 13	97.4	92.0
NOx (ppb)	-	-	-	-	-	-	11.1	1	75	January 7 at hour 19	1.2	ENE	36.2	January 3	100.0	94.7
NO (ppb)	-	-	-	-	-	-	2.5	0	41	January 7 at hour 19	1.2	ENE	15.2	January 2	100.0	94.7
NO2 (ppb)	159	-	-	0	-	-	8.6	1	34	January 7 at hour 19	1.2	ENE	22.7	January 5	100.0	94.7
O3 (ppb)	76	-	-	0	-	-	22.4	0.1	39.4	January 28 at hour 23	15.6	NNW	36.4	January 28	100.0	95.1
THC (ppm)	-	-	-	-	-	-	2.18	1.92	3.06	January 2 at hour 20	0.8	ENE	2.67	January 2	99.7	94.9
CH4 (ppm)	-	-	-	-	-	-	2.18	1.92	2.99	January 2 at hour 21	0.2	NE	2.66	January 2	99.7	94.9
NMHC (ppm)	-	-	-	-	-	-	0.00	0.00	0.25	January 7 at hour 17	0.3	SE	0.03	January 7	99.7	94.9
PM2.5 (µg/m3)	80	29	-	0	0	-	11.0	0	55	January 8 at hour 0	0.7	ENE	26.4	January 8	100.0	99.5
RH (%)	-	-	-	-	-	-	83.7	59	95	January 26 at hour 1	2.6	SSW	90.8	January 18	100.0	100.0
BP (millibar)	-	-	-	-	-	-	948	937	967	January 29 at hour 2	10.6	NNW	964	January 28	100.0	100.0
Ext. Temp. (°C)	-	-	-	-	-	-	-10.9	-27.0	4.9	January 26 at hour 9	20.1	NW	0.5	January 26	100.0	100.0
Stn. Temp. (°C)	-	-	-	-	-	-	22.5	20.0	24.1	January 8 at hour 14	5	E	23.0	January 3	100.0	100.0
WSV (km/hr)	-	-	-	-	-	-	0.8	0.0	24.0	January 26 at hour 12	24	NNW	10.6	January 26	100.0	100.0
WDV (sector)	-	-	-	-	-	-	270 (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 measured ambient air quality was within the AAAQOs and/or AAAQGs for all monitored parameters.

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



Tamarack Station

Equipment Operation Summary

Parameter	Calibration Date	Equipment Operational Summary
SO2 Thermo 43i-TLE #1180930031	January 8, 2023	• No operational issues were recorded this month.
H2S Thermo 450i #CM17360005	January 8, 2023	• A successful shut-down calibration was performed on January 5 before the SO2 scrubber material renewal. The analyzer was allowed time to stabilize overnight. A successful post-repair calibration was completed on January 6. Fifteen hours of downtime were recorded due to this event.
NOx/NO/NO2 Thermo 42i #1180930025	January 8, 2023	• No operational issues were recorded this month.
O3 Thermo 49iQ #1202068570	January 8, 2023	• No operational issues were recorded this month.
THC/CH4/NMHC Thermo 55i #1314057759 #1180930026	January 7, 2023	• The analyzer started having bad injection issues on December 14. Following a successful shut-down calibration on January 5, the Thermo 55i HC analyzer, s/n: 1314057759, was removed, and the Thermo 55i HC analyzer, s/n: 1180930026, was installed. The analyzer was allowed time to stabilize and column conditioning overnight. A successful installation calibration was completed on January 6. Nineteen hours of downtime were recorded due to this event. Data collected between January 1 and January 5 were reviewed and were discarded if data quality was affected by the injection issues. Hourly data collected on January 3 hour 14 was discarded as a result. • The analyzer started showing positive drift on the daily span check between January 25 and January 28. A successful repeat multi-point calibration was completed to correct the drift on January 28. Five hours of downtime were recorded due to this additional quality check.
PM2.5 Thermo Sharp 5030 #CM2209	January 9, 2023	• No operational issues were recorded this month.

Parameter	Verification Date	Equipment Operational Summary
RH Rotronic HC2A-S3 #20433166	January 6, 2023	• No operational issues were recorded this month.
BP Met One 090D #F4497	January 6, 2023	• No operational issues were recorded this month.
AT Rotronic HC2A-S3 #20433166	January 6, 2023	• No operational issues were recorded this month.
ST COMET #NA	January 6, 2023	• No operational issues were recorded this month.
Precipitation MetOne 387 #C13580	January 6, 2023	• No operational issues were recorded this month.
WS/WD/STDWD RM Young 05305VK #161465	January 6, 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. • Thirty-seven hours of data collected between January 14 and January 15 were invalidated due to the frozen wind system.

Monitored Data Summary for Tamarack Site

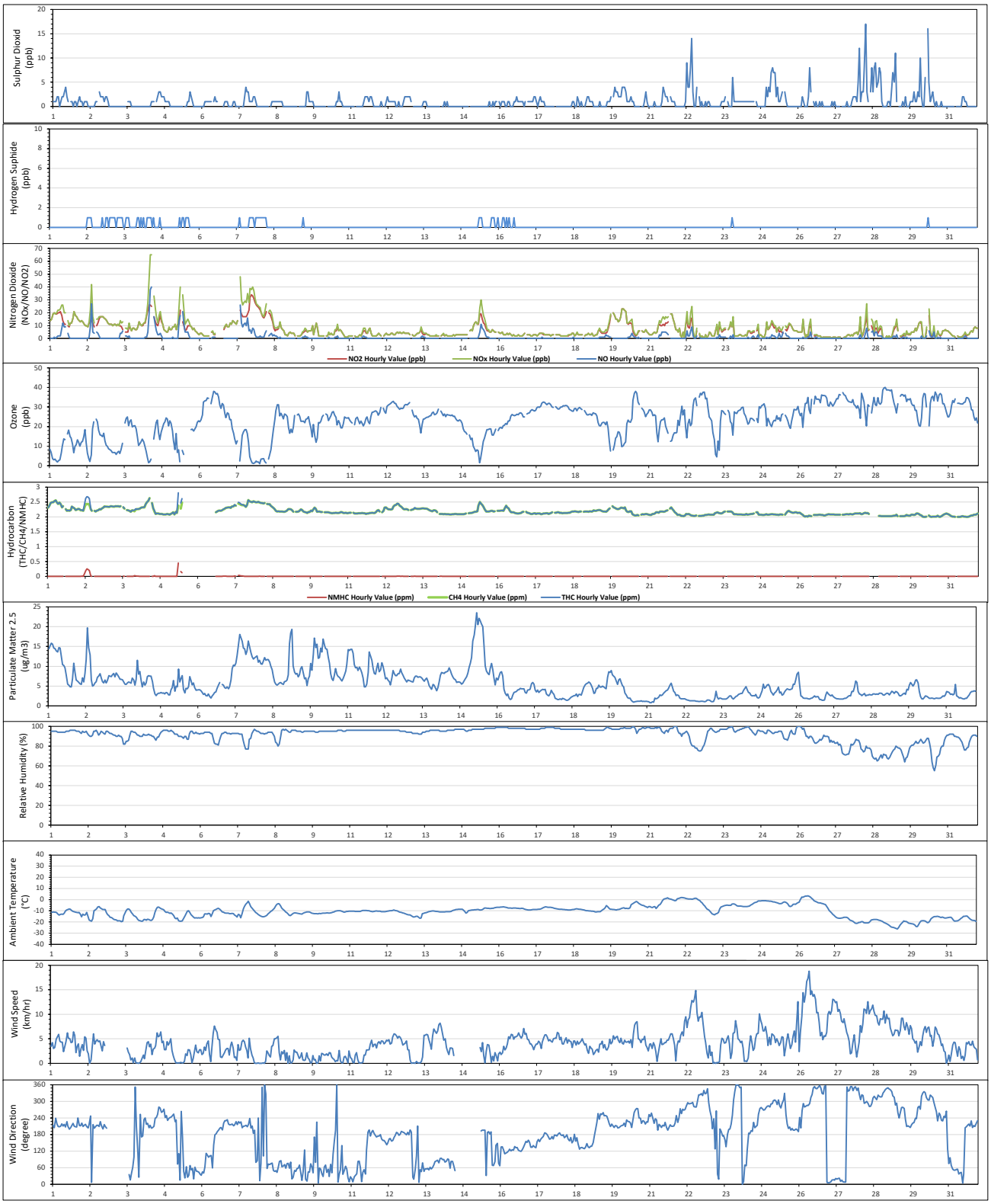
Parameter	Objectives/Guidelines			Exceedances			Monthly Avg.	Min. 1-hr	Max. 1-hr	Date/Time	VWS (km/hr)	VWD (sector)	Max. 24-hr	Date	Operational Uptime (%)	Valid Data (%)
	1-hr	24-hr	30-day	1-hr	24-hr	30-day										
SO2 (ppb)	172	48	11	0	0	0	1.0	0	17	January 28 at hour 6	10.2	WNW	4.7	January 28	100.0	95.1
H2S (ppb)	10	3	-	0	0	-	0.1	0	1	January 2 at hour 6	1.9	WSW	0.7	January 3	98.0	92.8
NOx (ppb)	-	-	-	-	-	-	8.0	0	65	January 4 at hour 8	3.9	SSW	26.2	January 7	100.0	94.9
NO (ppb)	-	-	-	-	-	-	1.2	0	40	January 4 at hour 9	1.8	SSW	6.5	January 4	100.0	94.9
NO2 (ppb)	159	-	-	0	-	-	6.8	0	34	January 7 at hour 17	1.7	S	20.4	January 7	100.0	94.9
O3 (ppb)	76	-	-	0	-	-	23.5	1.0	40.0	January 28 at hour 21	8.2	NNW	33.1	January 27	100.0	95.0
THC (ppm)	-	-	-	-	-	-	2.18	2.00	2.81	January 5 at hour 8	0.2	S	2.43	January 7	96.6	91.5
CH4 (ppm)	-	-	-	-	-	-	2.17	2.00	2.63	January 4 at hour 9	1.8	SSW	2.42	January 7	96.6	91.5
NMHC (ppm)	-	-	-	-	-	-	0.00	0.00	0.45	January 5 at hour 8	0.2	S	0.04	January 2	96.6	91.5
PM2.5 (µg/m3)	80	29	-	0	0	-	5.7	1	24	January 15 at hour 7	X	X	13.4	January 15	100.0	99.9
RH (%)	-	-	-	-	-	-	91.8	55	100	January 20 at hour 11	6	WSW	98.2	January 16	100.0	100.0
BP (millibar)	-	-	-	-	-	-	932	922	950	January 29 at hour 1	7.2	NNW	947	January 28	100.0	100.0
Ext. Temp. (°C)	-	-	-	-	-	-	-10.5	-26.3	3.5	January 26 at hour 8	18.8	WNW	-0.6	January 22	100.0	100.0
Stn. Temp. (°C)	-	-	-	-	-	-	20.6	19.1	23.0	January 5 at hour 17	0.1	NNE	21.9	January 22	100.0	100.0
Precipitation (mm)*	-	-	-	-	-	-	11.1	0.0	1.8	January 14 at hour 14	X	X	4.4	January 14	100.0	100.0
WSV (km/hr)	-	-	-	-	-	-	1.2	0.0	18.8	January 26 at hour 8	18.8	WNW	8.9	January 28	95.0	95.0
WDV (sector)	-	-	-	-	-	-	251 (WSW)	-	-	-	-	-	-	-	95.0	95.0

1- Date/ Time given is the first minimum and maximum value that was recorded
* Data represents the total (sum) for the indicated time frame
X: Wind data is not available

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

The measured ambient air quality was within the AAAQOs and/or AAAQGs for all monitored parameters.

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



St. Lina Station

Equipment Operation Summary

Parameter	Calibration Date	Equipment Operational Summary
SO2 Thermo 43i-TLE #1180930030	January 14, 2023	• Intermittent polling issues occurred on January 4 during hour 12. One hour of data was lost due to this event. • No operational issues were recorded this month.
H2S Thermo 450i #CM18010058	January 14, 2023	• Intermittent polling issues occurred on January 4 during hour 12. One hour of data was lost due to this event. • No operational issues were recorded this month.
NOx/NO/NO2 Thermo 42i #1180930029	January 14, 2023	• Intermittent polling issues occurred on January 4 during hour 12. One hour of data was lost due to this event. • No operational issues were recorded this month.
O3 Thermo 49iQ #12208316586	January 15, 2023	• Intermittent polling issues occurred on January 4 during hour 12. One hour of data was lost due to this event. • No operational issues were recorded this month.
THC/CH4/NMHC Thermo 55i #1180030034	January 15, 2023	• Intermittent polling issues occurred on January 4 during hour 12. One hour of data was lost due to this event. • No operational issues were recorded this month.
PM2.5 Thermo Sharp 5030i #CM17091001	January 15, 2023	• Intermittent polling issues occurred on January 4 during hour 12. One hour of data was lost due to this event. • No operational issues were recorded this month.
Parameter	**Verification Date**	**Equipment Operational Summary**
RH Rotronic HC2A-S3 #20404750	January 15, 2023	• Intermittent polling issues occurred on January 4 during hour 12. One hour of data was lost due to this event. • No operational issues were recorded this month.
BP Met One 090D #F4498	January 15, 2023	• Intermittent polling issues occurred on January 4 during hour 12. One hour of data was lost due to this event. • No operational issues were recorded this month.
AT Rotronic HC2A-S3 #20404750	January 15, 2023	• Intermittent polling issues occurred on January 4 during hour 12. One hour of data was lost due to this event. • No operational issues were recorded this month.
ST COMET #NA	January 15, 2023	• Intermittent polling issues occurred on January 4 during hour 12. One hour of data was lost due to this event. • No operational issues were recorded this month.

Parameter	Verification Date	Equipment Operational Summary
Precipitation MetOne 387D #A23775	January 15, 2023	• Intermittent polling issues occurred on January 4 during hour 12. One hour of data was lost due to this event. • The precipitation gauge was found to be non-functional (tipping bucket and drain holes were blocked by ice) on January 15. Due to insufficient field time for troubleshooting, the issue was not addressed until January 19. Data were invalidated back to January 14 hour 10, when a nearby air monitoring station (St. Lina station), started recording precipitation data. One hundred twenty-one hours of downtime were recorded due to this event.
WS/WD/STDWD RM Young 05305VK #161466	January 15, 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. • Intermittent polling issues occurred on January 4 during hour 11 and hour 12. Two hour of data was lost due to this event. • Data collected on January 1 hour 0, and January 19 between hour 0 and hour 10 were discarded due to the frozen wind system. Twelve hours of downtime were recorded due to this event.

Monitored Data Summary for St. Lina Site

Parameter	Objectives/Guidelines			Exceedances			Monthly Avg.	Min. 1-hr	Max. 1-hr	Date/Time	VWS (km/hr)	VWD (sector)	Max. 24-hr	Date	Operational Uptime (%)	Valid Data (%)
	1-hr	24-hr	30-day	1-hr	24-hr	30-day										
SO2 (ppb)	172	48	11	0	0	0	0.3	0	7	January 21 at hour 18	11.4	WSW	1.6	January 21	99.9	94.9
H2S (ppb)	10	3	-	0	0	-	0.0	0	1	January 1 at hour 0	X	X	0.0	January 1	99.9	94.9
NOx (ppb)	-	-	-	-	-	-	5.8	0	53	January 1 at hour 5	7.3	SW	25.9	January 1	99.9	94.7
NO (ppb)	-	-	-	-	-	-	0.5	0	22	January 1 at hour 5	7.3	SW	7.2	January 1	99.9	94.7
NO2 (ppb)	159	-	-	0	-	-	5.3	0	32	January 1 at hour 6	8.5	WSW	18.8	January 1	99.9	94.7
O3 (ppb)	76	-	-	0	-	-	29.5	0.0	41.9	January 26 at hour 10	27.4	NW	38.8	January 30	99.9	95.0
THC (ppm)	-	-	-	-	-	-	2.18	2.01	2.75	January 9 at hour 14	0.3	E	2.58	January 9	99.9	95.0
CH4 (ppm)	-	-	-	-	-	-	2.18	2.01	2.75	January 9 at hour 14	0.3	E	2.58	January 9	99.9	95.0
NMHC (ppm)	-	-	-	-	-	-	0.00	0.00	0.00	January 1 at hour 0	X	X	0.00	January 1	99.9	95.0
PM2.5 (µg/m3)	80	29	-	0	0	-	6.1	0	46	January 1 at hour 4	7.6	SW	22.1	January 1	99.9	99.6
RH (%)	-	-	-	-	-	-	86.1	60	97	January 24 at hour 1	4.6	NW	93.6	January 17	99.9	99.9
BP (millibar)	-	-	-	-	-	-	916	905	934	January 29 at hour 2	11.7	NNW	932	January 28	99.9	99.9
Ext. Temp. (°C)	-	-	-	-	-	-	-9.2	-25.2	5.7	January 26 at hour 4	20	NW	2.0	January 26	99.9	99.9
Stn. Temp. (°C)	-	-	-	-	-	-	20.9	18.6	23.8	January 22 at hour 8	15.5	NW	23.2	January 24	99.9	99.9
Precipitation (mm)*	-	-	-	-	-	-	4.4	0.0	0.4	January 22 at hour 1	13.6	NW	1.2	January 23	83.6	83.5
WSV (km/hr)	-	-	-	-	-	-	3.6	0.0	28.5	January 26 at hour 11	28.5	NNW	19.0	January 26	98.1	98.1
WDV (sector)	-	-	-	-	-	-	260 (WSW)	-	-	-	-	-	-	-	98.1	98.1

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

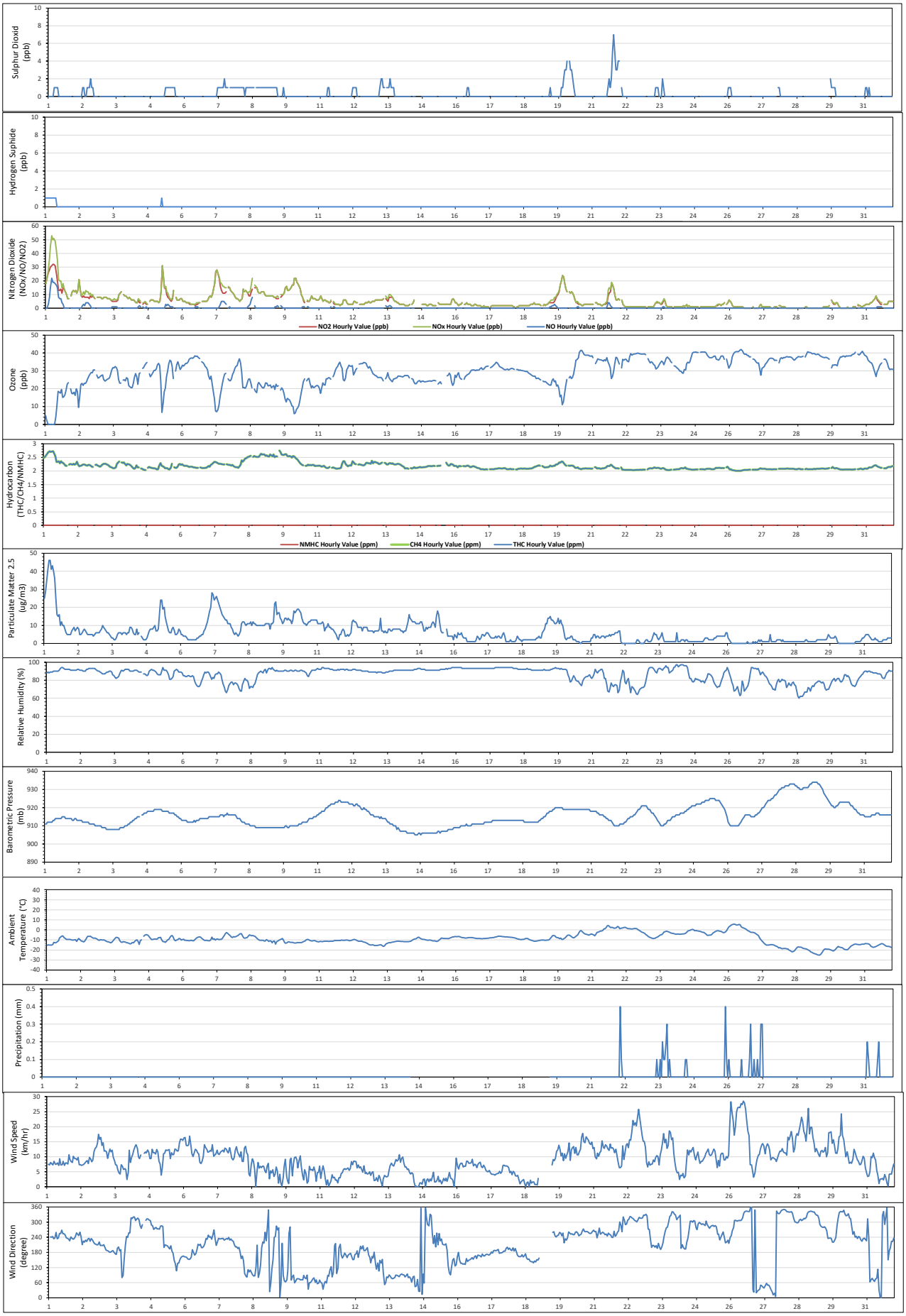
* Data represents the total (sum) for the indicated time frame

X: Wind data is not available

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

The measured ambient air quality was within the AAAQOs and/or AAAQGs for all monitored parameters.

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



Lac La Biche Station

Equipment Operation Summary

Parameter	Calibration Date	Equipment Operational Summary
SO2 Thermo 43i-TLE #1180320043	January 14, 2023	• No operational issues were recorded this month.
H2S API 101A #324	January 14, 2023	• No operational issues were recorded this month.
NOx/NO/NO2 Thermo 42i #1180930027	January 14, 2023	• No operational issues were recorded this month.
O3 Thermo 49i #1002240372	January 15, 2023	• No operational issues were recorded this month.
THC/CH4/NMHC Thermo 55i #1180030044	January 15, 2023	• A new span gas cylinder was installed on January 9. A repeat zero-span check was completed afterward to obtain a new expected span value. Two hours of downtime were recorded due to this additional quality check.
PM2.5 Thermo Sharp 5030i #CM17071016	January 15, 2023	• No operational issues were recorded this month.
Parameter	**Verification Date**	**Equipment Operational Summary**
RH Rotronic HC2A-S3 #0020357518	January 13, 2023	• No operational issues were recorded this month.
BP Met One 092 #Y23360	January 13, 2023	• No operational issues were recorded this month.
AT Rotronic HC2A-S3 #0020357518	January 13, 2023	• No operational issues were recorded this month.
ST COMET #NA	January 13, 2023	• No operational issues were recorded this month.

Parameter	Make / Model	Serial Number	System Check Date
Ambient Temperature (AT)	**Rotronic / HC2A-S3**	**0020357518**	**January 13, 2023**
• No issues were identified this month.			
Barometric Pressure (BP)	**Met One / Part 092**	**Y23360**	**January 13, 2023**
• No issues were identified this month.			
Station Temperature (ST)	**COMET**	**n/a**	**January 13, 2023**
• No issues were identified this month.			
Wind Speed (WS) / Wind Direction (WD)/ Stand Deviation Wind Direction (STDWD)	**RM Young / 05305VK**	**56778**	**January 13, 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 issues were identified this month.			

Monitored Data Summary for Lac La Biche Station

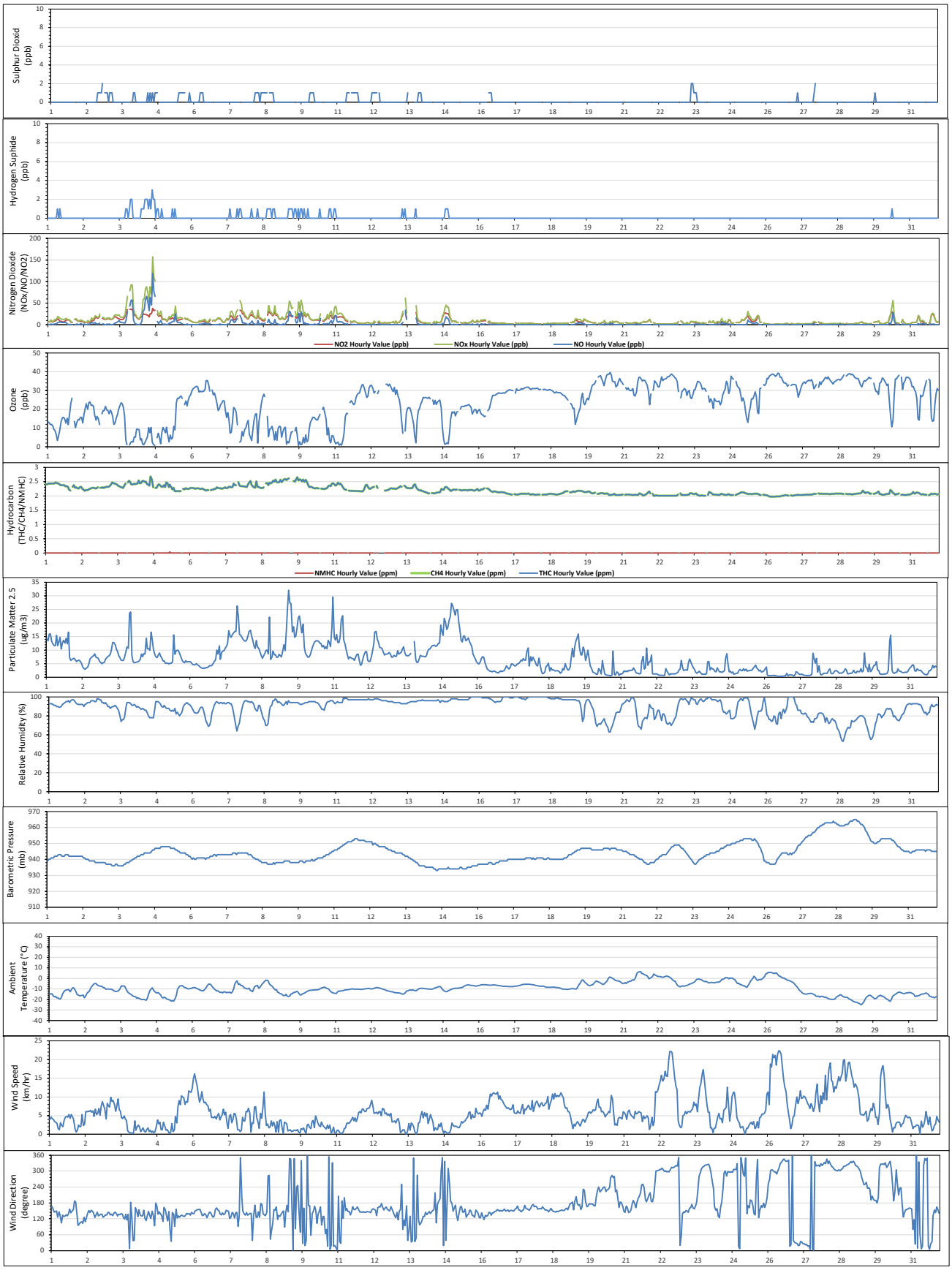
Parameter	Objectives/Guidelines			Exceedances			Monthly Avg.	Min. 1-hr	Max. 1-hr	Date/Time	VWS (km/hr)	VWD (sector)	Max. 24-hr	Date	Operational Uptime (%)	Valid Data (%)
	1-hr	24-hr	30-day	1-hr	24-hr	30-day										
SO2 (ppb)	172	48	11	0	0	0	0.1	0	2	January 2 at hour 19	7.5	SE	0.6	January 8	100.0	95.0
H2S (ppb)	10	3	-	0	0	-	0.1	0	3	January 4 at hour 15	0.4	S	1.0	January 4	100.0	95.0
NOx (ppb)	-	-	-	-	-	-	12.2	1	157	January 4 at hour 15	0.4	S	52.9	January 4	100.0	94.7
NO (ppb)	-	-	-	-	-	-	3.3	0	119	January 4 at hour 15	0.4	S	30.4	January 4	100.0	94.7
NO2 (ppb)	159	-	-	0	-	-	8.8	1	38	January 4 at hour 15	0.4	S	22.5	January 4	100.0	94.7
O3 (ppb)	76	-	-	0	-	-	23.8	0.8	39.6	January 20 at hour 13	10.4	WNW	36.6	January 28	100.0	95.0
THC (ppm)	-	-	-	-	-	-	2.19	1.97	2.68	January 4 at hour 15	0.4	S	2.54	January 9	99.7	94.7
CH4 (ppm)	-	-	-	-	-	-	2.19	1.97	2.68	January 4 at hour 15	0.4	S	2.54	January 9	99.7	94.7
NMHC (ppm)	-	-	-	-	-	-	0.00	0.00	0.04	January 5 at hour 7	0.7	E	0.00	January 5	99.7	94.7
PM2.5 (µg/m3)	80	29	-	0	0	-	6.7	0	32	January 9 at hour 10	0.7	N	16.5	January 15	100.0	99.7
RH (%)	-	-	-	-	-	-	89.1	53	100	January 15 at hour 17	5.3	SE	99.3	January 17	100.0	100.0
BP (millibar)	-	-	-	-	-	-	944	933	965	January 29 at hour 2	12.7	NW	962	January 28	100.0	100.0
Ext. Temp. (°C)	-	-	-	-	-	-	-9.4	-25.0	6.4	January 21 at hour 15	3.4	WSW	1.8	January 26	100.0	100.0
Stn. Temp. (°C)	-	-	-	-	-	-	23.8	21.9	25.3	January 12 at hour 19	5.4	SSE	24.7	January 16	100.0	100.0
WSV (km/hr)	-	-	-	-	-	-	1.2	0.1	22.4	January 26 at hour 9	22.4	NW	15.1	January 28	100.0	100.0
WDV (sector)	-	-	-	-	-	-	176 (S)	-	-	-	-	-	-	-	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 measured ambient air quality was within the AAAQOs and/or AAAQGs for all monitored parameters.

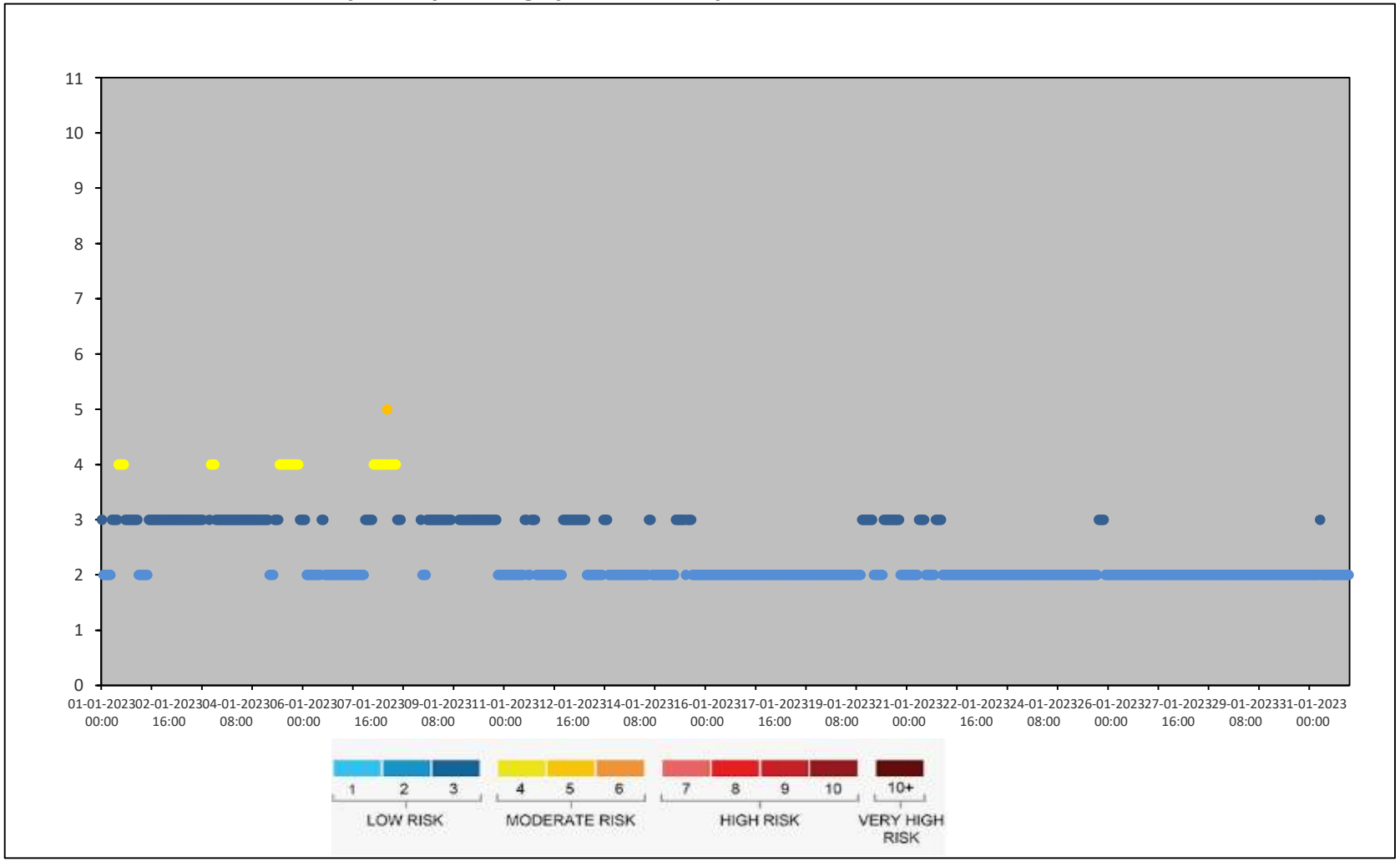
Timeseries Chart of Hourly Average for the month of January 2023 - Lac La Biche Station



TABLES AND CHARTS

COLD LAKE SOUTH STATION

Timeseries Chart of Hourly Average for Air Quality Health Index (AQHI) - Cold Lake South Station



Lakeland Industry & Community Association

Cold Lake South Station - January 2023

Summary of Hourly Averages

SULPHUR DIOXIDE (SO_2) in ppb

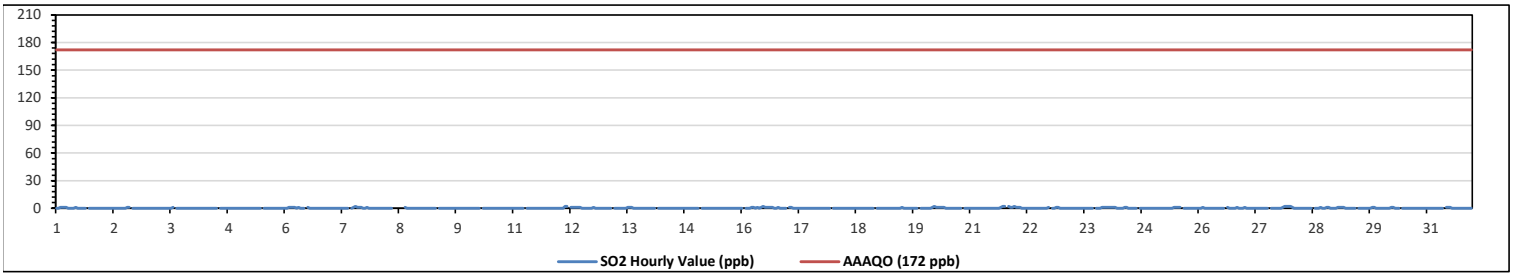
Alberta Ambient Air Quality Objectives (AAAQO): 1-Hour 172 ppb, 24-Hour 48 ppb, 30-Day 11 ppb

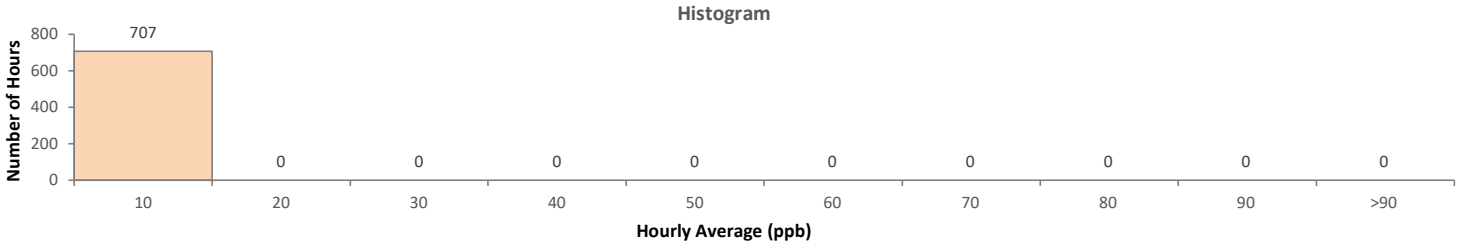
Number of 1-Hour Exceedances:	0	Number of 24-Hour Exceedances:	0	30-Day Exceedence:	0	
Maximum Hourly Value:	2	ppb	on January 7 at hour 13	Hours in Service:	744	
Maximum Daily Value:	0.5	ppb	on January 16	Hours of Data:	707	
Minimum Hourly Value:	0	ppb	on January 1 at hour 0	Hours of Missing Data:	0	
Minimum Daily Value:	0.0	ppb	on January 4	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			
Jan 1	0	0	1	1	1	1	0	0	0	0	1	0	0	0	0	0	S	0	0	0	0	0	0	0	0	1	0.2
Jan 2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	S	0	0	0	0	0	0	0	0	0	1	0.1
Jan 3	0	0	0	0	0	0	0	0	0	0	0	0	0	1	S	0	0	0	0	0	0	0	0	0	0	1	0.0
Jan 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
Jan 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
Jan 6	0	0	1	1	1	1	0	1	0	0	0	S	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0.3
Jan 7	0	0	0	0	0	0	0	0	0	0	S	0	1	2	1	1	1	0	0	1	0	0	0	0	0	2	0.3
Jan 8	0	0	0	0	0	0	0	0	0	S	C	C	C	C	C	1	0	0	0	0	0	0	0	0	0	1	0.1
Jan 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
Jan 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
Jan 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
Jan 12	0	0	0	2	2	S	1	1	1	1	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	2	0.5
Jan 13	0	0	0	0	S	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	1	0.1
Jan 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
Jan 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
Jan 16	0	S	0	0	0	1	1	0	1	0	1	2	1	1	1	1	1	0	0	1	0	0	0	0	0	2	0.5
Jan 17	S	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	1	0.1
Jan 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
Jan 19	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	S	0	0	0	1	0.0
Jan 20	0	0	0	0	1	2	1	1	1	1	1	0	0	0	0	0	0	0	0	0	S	0	0	0	0	2	0.3
Jan 21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	2	S	2	1	1	2	0	2	0.5
Jan 22	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	S	0	0	1	1	0	0	1	0.3
Jan 23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	1	1	1	0	1	0.1
Jan 24	1	1	1	1	1	0	0	0	0	1	1	0	0	0	0	0	S	0	0	0	0	0	0	0	0	1	0.3
Jan 25	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	S	0	0	0	0	0	0	0	0	0	1	0.2
Jan 26	0	0	1	0	0	0	0	0	0	0	0	0	0	0	S	1	0	0	0	0	1	0	0	0	0	1	0.1
Jan 27	1	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	1	2	2	2	0	2	0.3
Jan 28	2	1	0	0	0	0	0	0	0	0	0	0	S	0	0	0	1	0	0	1	1	0	0	0	0	2	0.3
Jan 29	0	1	1	1	1	0	0	0	0	0	0	S	0	0	0	0	0	0	0	1	1	0	0	0	0	1	0.3
Jan 30	0	0	0	0	0	1	1	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1
Jan 31	0	0	0	0	0	0	0	0	0	S	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1
Diurnal Maximum	2	1	1	2	2	2	1	1	1	1	1	2	1	2	1	1	1	2	2	1	2	2	2	2			
Diurnal Average	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.2	0.1	0.1	0.1	0.1	0.1	0.2	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.



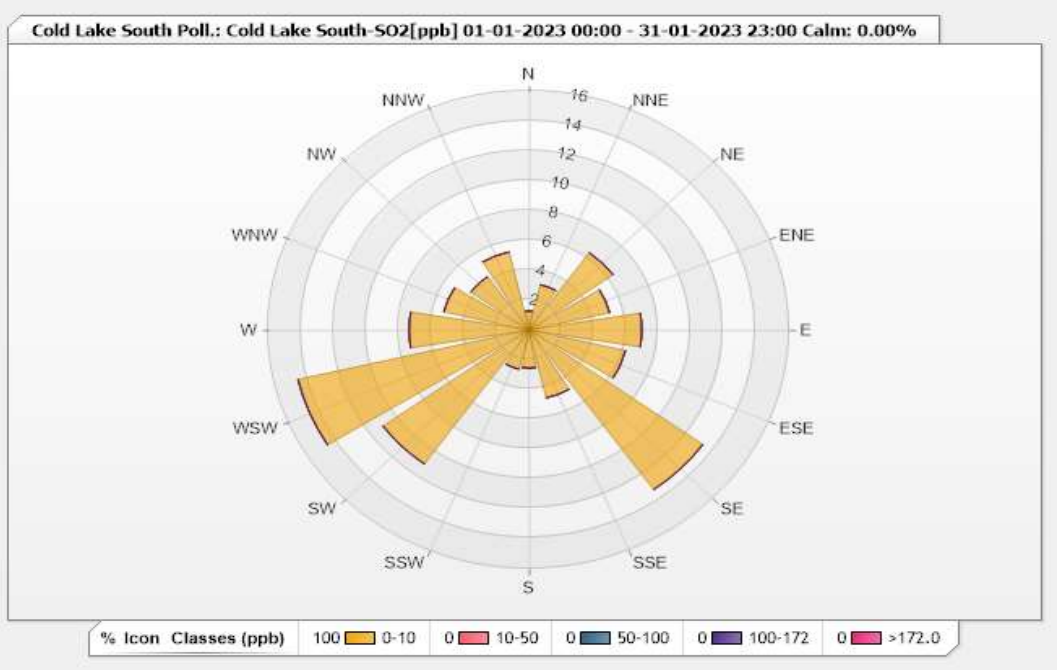


Station: Cold Lake South Poll.: Cold Lake South-SO2[ppb] Monthly: 01-2023

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	1.27	0	0	0	0	1.27
NNE	3.11	0	0	0	0	3.11
NE	6.36	0	0	0	0	6.36
ENE	5.09	0	0	0	0	5.09
E	6.93	0	0	0	0	6.93
ESE	6.08	0	0	0	0	6.08
SE	13.15	0	0	0	0	13.15
SSE	4.67	0	0	0	0	4.67
S	2.55	0	0	0	0	2.55
SSW	2.69	0	0	0	0	2.69
SW	11.03	0	0	0	0	11.03
WSW	14.57	0	0	0	0	14.57
W	7.36	0	0	0	0	7.36
WNW	5.37	0	0	0	0	5.37
NW	4.38	0	0	0	0	4.38
NNW	5.37	0	0	0	0	5.37
Summary	100	0	0	0	0	100



Lakeland Industry & Community Association

Cold Lake South Station - January 2023

Summary of Hourly Averages

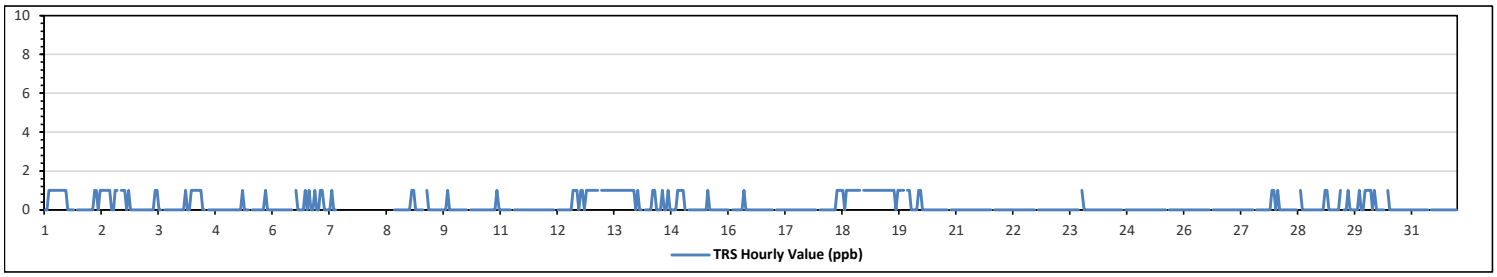
TOTAL REDUCED SULPHUR (TRS) in ppb

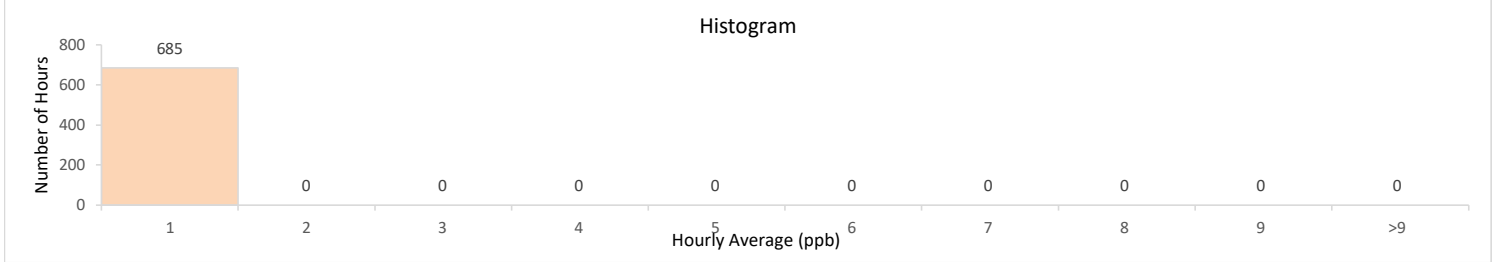
Maximum Hourly Value:	1	ppb	on January 1 at hour 2	Hours in Service:	744
Maximum Daily Value:	1.0	ppb	on January 13	Hours of Data:	685
Minimum Hourly Value:	0	ppb	on January 1 at hour 0	Hours of Missing Data:	19
Minimum Daily Value:	0.0	ppb	on January 11	Hours of Calibration:	40
Monthly Average:	0.2	ppb		Operational Uptime:	97.4

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			
Jan 1	0	0	1	1	1	1	1	1	1	1	1	1	0	0	0	0	S	0	0	0	0	0	0	0	0	1	0.4
Jan 2	0	0	1	1	0	1	1	1	1	1	1	0	0	1	1	S	1	1	1	0	1	0	0	0	0	1	0.6
Jan 3	0	0	0	0	0	0	0	0	0	0	1	1	0	0	S	0	0	0	0	0	0	0	0	0	0	1	0.1
Jan 4	0	0	1	0	0	1	1	1	1	1	1	0	0	S	0	0	0	0	0	0	0	0	0	0	0	1	0.3
Jan 5	0	0	0	0	0	0	0	0	1	0	0	0	S	0	0	0	0	0	0	0	1	0	0	0	0	1	0.1
Jan 6	0	0	0	0	0	0	0	0	0	0	0	S	1	0	0	0	0	1	0	1	0	0	1	0	0	1	0.2
Jan 7	0	1	1	0	0	0	0	1	0	0	S	0	C	C	C	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	0	1	NA
Jan 8	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	C	C	C	C	C	C	0	0	0	0	0	0	0	0	0	0	NA
Jan 9	0	1	1	0	0	0	0	0	S	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0.2
Jan 10	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	1	0.0
Jan 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
Jan 12	0	0	0	0	0	S	0	0	0	0	0	0	0	0	1	1	1	0	1	1	0	1	1	1	0	1	0.3
Jan 13	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1.0
Jan 14	1	0	0	S	0	0	0	0	1	1	0	0	0	1	0	0	1	0	0	0	0	1	1	1	0	1	0.3
Jan 15	1	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	0.1
Jan 16	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
Jan 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
Jan 18	0	0	0	0	0	0	0	0	0	1	1	1	1	0	1	1	1	1	1	1	1	1	S	1	0	1	0.6
Jan 19	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	S	1	1	0	1	1.0
Jan 20	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	1	0.1
Jan 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
Jan 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
Jan 23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	1	0	0	0	0	0	0	1	0.0
Jan 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
Jan 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
Jan 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
Jan 27	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	1	1	0	1	0.1
Jan 28	0	1	0	0	0	0	0	0	0	0	0	0	S	1	0	0	0	0	0	0	0	0	0	0	0	1	0.1
Jan 29	0	0	1	1	0	0	0	0	0	0	1	S	0	0	1	0	0	0	0	0	1	0	0	1	0	1	0.3
Jan 30	1	1	1	0	1	0	0	0	0	0	S	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2
Jan 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	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
Diurnal Average	0.2	0.2	0.3	0.2	0.1	0.2	0.2	0.2	0.3	0.3	0.3	0.2	0.1	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.1	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.



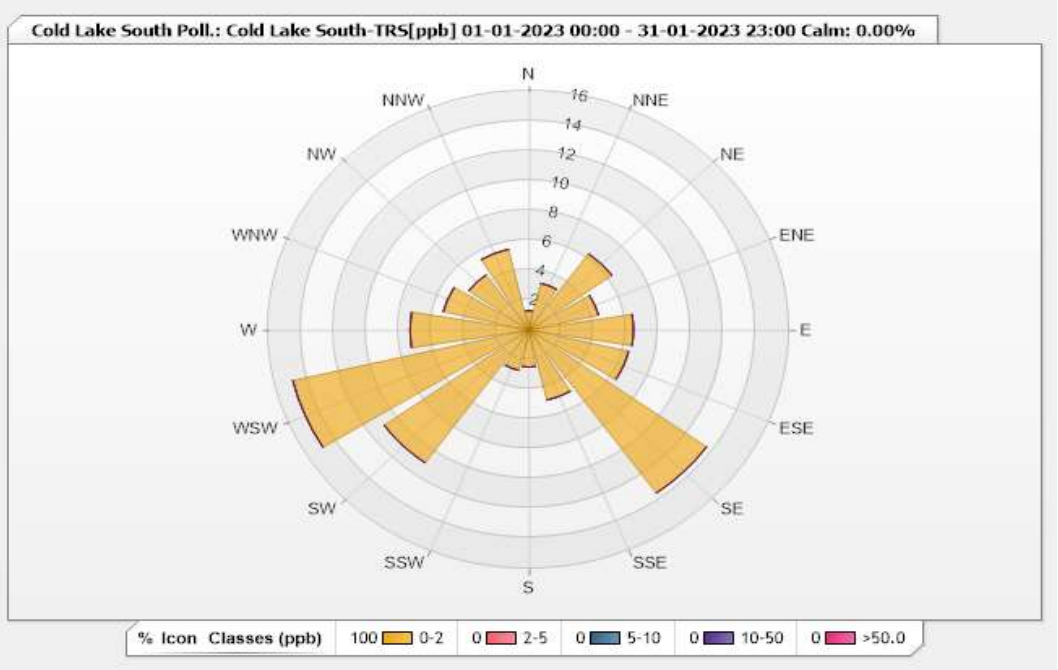


Station: Cold Lake South Poll.: Cold Lake South-TRS[ppb] Monthly: 01-2023

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

Calm: 0.00% Valid Data: 92.07% Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-50	>50.0	Total
N	1.31	0	0	0	0	1.31
NNE	3.21	0	0	0	0	3.21
NE	6.28	0	0	0	0	6.28
ENE	4.38	0	0	0	0	4.38
E	6.42	0	0	0	0	6.42
ESE	6.28	0	0	0	0	6.28
SE	13.43	0	0	0	0	13.43
SSE	4.82	0	0	0	0	4.82
S	2.48	0	0	0	0	2.48
SSW	2.77	0	0	0	0	2.77
SW	10.95	0	0	0	0	10.95
WSW	14.89	0	0	0	0	14.89
W	7.3	0	0	0	0	7.3
WNW	5.4	0	0	0	0	5.4
NW	4.53	0	0	0	0	4.53
NNW	5.55	0	0	0	0	5.55
Summary	100	0	0	0	0	100



Lakeland Industry & Community Association

Cold Lake South Station - January 2023

Summary of Hourly Averages

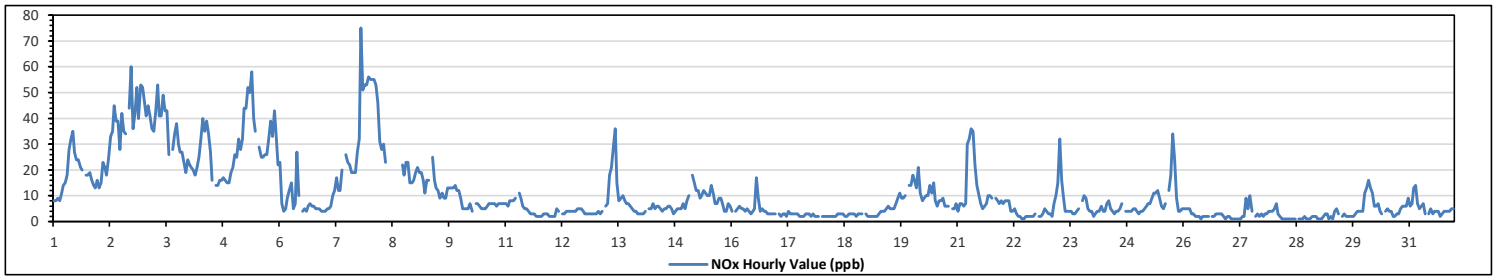
OXIDES OF NITROGEN (NOx) in ppb

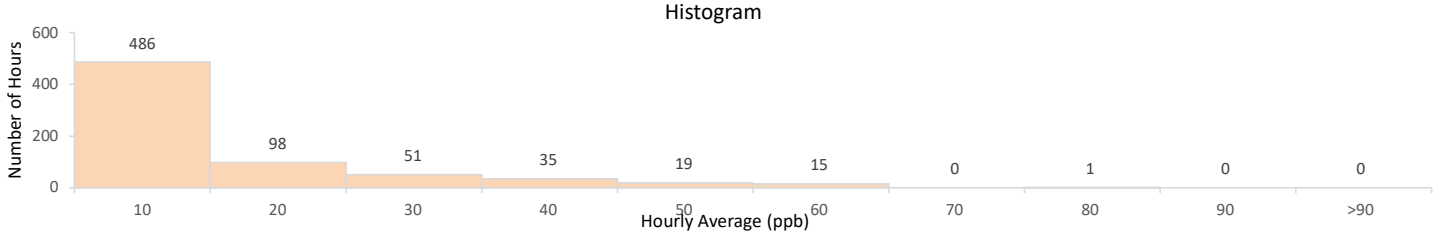
Maximum Hourly Value:	75	ppb	on January 7 at hour 19	Hours in Service:	744	
Maximum Daily Value:	36.2	ppb	on January 3	Hours of Data:	705	
Minimum Hourly Value:	1	ppb	on January 22 at hour 10	Hours of Missing Data:	0	
Minimum Daily Value:	1.7	ppb	on January 28	Hours of Calibration:	39	
Monthly Average:	11.1	ppb		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
Jan 1	8	8	9	8	11	14	15	18	28	32	35	27	24	24	21	20	S	18	18	19	16	14	13	16	8	35	18.1
Jan 2	13	15	23	21	18	24	33	35	45	39	39	28	42	35	34	S	44	60	36	42	52	40	53	52	13	60	35.8
Jan 3	46	41	45	41	36	35	43	53	41	41	49	43	43	26	S	28	34	38	30	27	27	23	19	24	19	53	**36.2**
Jan 4	22	21	20	18	21	25	32	40	35	39	34	27	16	S	14	14	16	16	17	16	15	15	19	21	14	40	22.3
Jan 5	26	25	32	28	32	44	44	52	50	58	40	35	S	29	25	25	26	26	32	39	33	43	34	22	22	58	34.8
Jan 6	23	7	4	5	9	12	15	5	7	27	10	S	4	5	4	6	7	6	6	5	5	5	4	4	4	27	8.0
Jan 7	4	5	5	6	10	12	17	12	12	20	S	26	23	22	19	19	19	27	32	**75**	51	53	53	56	4	**75**	25.1
Jan 8	55	55	55	53	46	31	28	30	23	S	C	C	C	C	C	C	C	22	18	23	23	15	15	16	15	55	NA
Jan 9	19	21	19	19	16	11	16	16	S	25	16	13	12	9	11	9	9	13	13	13	13	14	12	12	9	25	14.4
Jan 10	9	5	5	5	5	7	4	S	7	7	6	5	5	5	6	7	7	7	7	6	7	7	7	7	4	9	6.2
Jan 11	7	6	8	8	8	9	S	11	9	6	5	5	4	3	3	3	2	2	2	2	3	3	3	2	2	11	5.0
Jan 12	2	2	2	5	4	S	3	3	4	4	4	4	4	4	5	5	5	4	3	3	3	3	3	3	2	5	3.6
Jan 13	3	4	3	4	S	6	7	18	21	29	36	15	8	9	10	8	7	7	6	5	4	4	3	3	3	36	9.6
Jan 14	3	3	4	S	5	5	7	5	6	6	5	4	5	5	6	6	5	3	4	5	5	5	7	5	3	7	5.0
Jan 15	8	10	S	18	15	12	12	9	10	12	11	10	10	14	11	7	7	9	9	7	4	4	7	6	4	18	9.7
Jan 16	4	S	4	5	6	5	5	4	5	4	3	4	5	17	9	4	5	4	4	3	3	3	3	3	3	17	4.9
Jan 17	S	3	2	3	3	2	4	3	3	3	3	3	2	2	2	3	3	3	2	3	2	2	2	S	2	4	2.6
Jan 18	2	2	2	2	2	2	2	2	3	3	3	3	2	2	3	3	3	3	2	3	3	3	S	3	2	3	2.5
Jan 19	2	2	2	2	2	2	3	4	4	4	5	6	5	5	5	7	9	11	9	9	10	S	14	14	2	14	5.9
Jan 20	18	16	13	21	11	8	9	10	10	14	11	15	8	6	8	8	9	6	6	6	S	5	5	7	5	21	10.0
Jan 21	4	7	7	6	7	30	32	36	35	22	14	11	7	5	6	7	10	10	9	S	9	8	7	8	4	36	12.9
Jan 22	7	8	8	8	4	4	5	3	2	2	1	1	2	2	2	2	2	3	S	2	2	3	5	4	**1**	8	3.6
Jan 23	3	3	2	7	10	15	32	16	10	4	4	4	4	3	3	4	5	S	8	10	9	5	4	4	2	32	7.3
Jan 24	2	3	4	4	6	4	4	7	8	5	4	3	4	4	5	7	S	4	4	4	4	5	5	4	2	8	4.5
Jan 25	3	4	4	5	6	7	7	9	11	11	12	9	6	5	7	S	12	18	34	24	9	4	4	5	3	34	9.4
Jan 26	5	5	5	5	3	3	2	2	2	1	2	2	2	2	S	2	2	3	3	3	3	2	1	2	**1**	5	2.7
Jan 27	2	1	1	1	1	1	1	2	2	9	5	10	4	S	2	3	2	3	2	3	3	4	4	4	**1**	10	3.0
Jan 28	5	7	3	2	1	1	1	1	1	1	1	1	S	1	1	1	2	1	1	1	2	2	2	1	**1**	7	**1.7**
Jan 29	1	1	2	3	3	1	2	1	4	5	3	S	2	3	2	2	2	2	2	3	4	4	4	4	**1**	5	2.6
Jan 30	11	13	16	13	11	6	6	7	4	3	S	4	5	4	4	2	2	3	3	5	6	6	6	9	2	16	6.5
Jan 31	6	7	13	14	7	5	6	7	3	S	3	5	3	4	4	4	2	3	4	4	4	4	5	5	2	14	5.3
Diurnal Maximum	55	55	55	53	46	44	44	53	50	58	49	43	43	35	34	28	44	60	36	75	52	53	53	56			
Diurnal Average	10.8	10.3	10.7	11.3	10.6	11.4	13.2	14.0	13.5	15.0	13.0	11.5	9.3	9.1	8.3	7.7	9.2	11.2	10.9	12.3	11.1	10.3	10.8	10.9			

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.



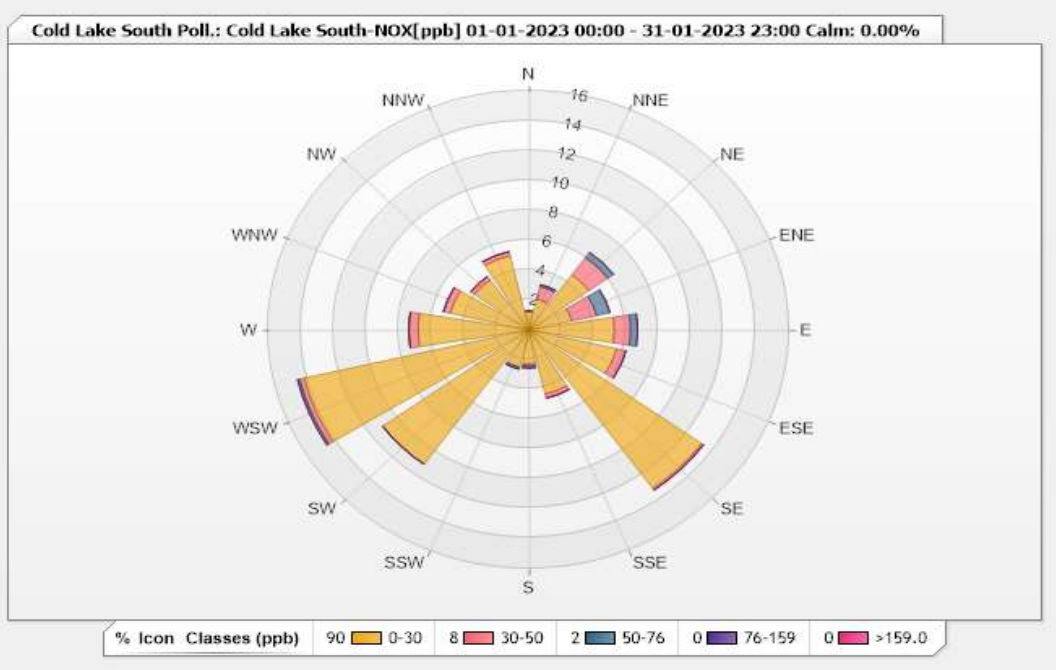


Station: Cold Lake South Poll.: Cold Lake South-NOX[ppb] Monthly: 01-2023

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	1.28	0	0	0	0	1.28
NNE	2.13	0.85	0.14	0	0	3.12
NE	4.54	1.42	0.43	0	0	6.39
ENE	2.7	1.56	0.85	0	0	5.11
E	5.25	0.99	0.43	0	0	6.67
ESE	5.53	0.57	0	0	0	6.1
SE	13.05	0.14	0	0	0	13.19
SSE	4.4	0.28	0	0	0	4.68
S	2.27	0.14	0.14	0	0	2.55
SSW	2.55	0	0.14	0	0	2.69
SW	11.06	0	0	0	0	11.06
WSW	14.18	0.28	0.14	0	0	14.6
W	6.81	0.57	0	0	0	7.38
WNW	4.96	0.43	0	0	0	5.39
NW	4.11	0.28	0	0	0	4.39
NNW	5.11	0.28	0	0	0	5.39
Summary	89.93	7.79	2.27	0	0	100



Lakeland Industry & Community Association

Cold Lake South Station - January 2023

Summary of Hourly Averages

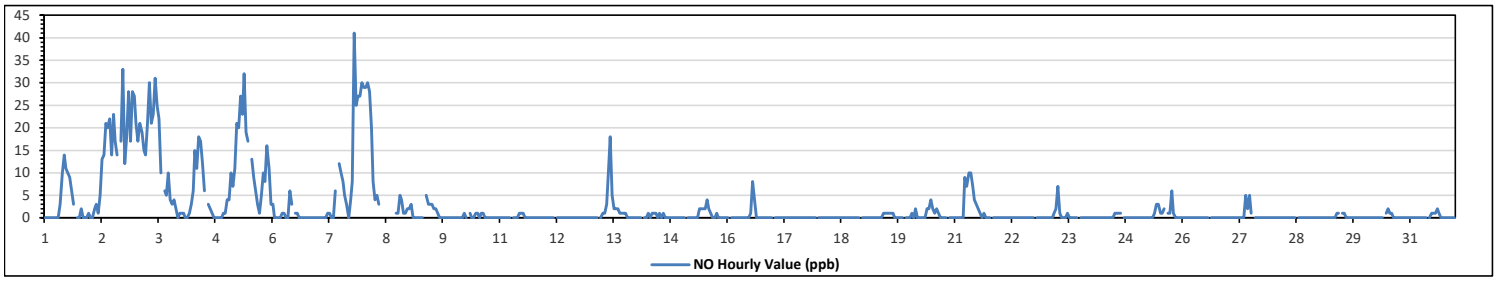
NITRIC OXIDE (NO) in ppb

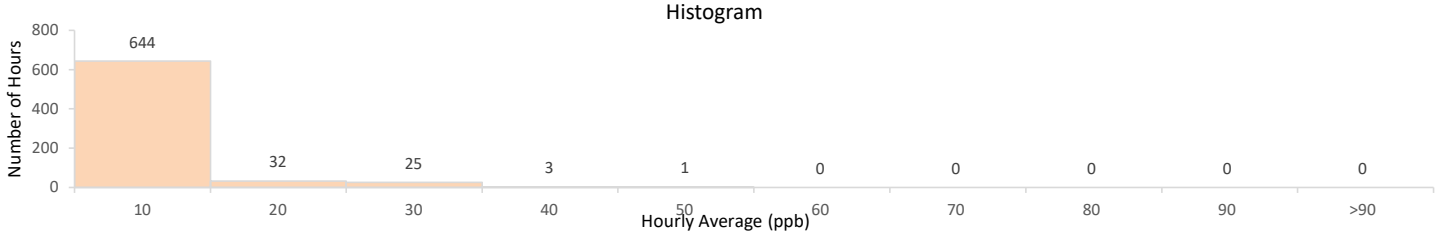
Maximum Hourly Value:	41	ppb	on January 7 at hour 19	Hours in Service:	744	
Maximum Daily Value:	15.2	ppb	on January 2	Hours of Data:	705	
Minimum Hourly Value:	0	ppb	on January 1 at hour 0	Hours of Missing Data:	0	
Minimum Daily Value:	0.0	ppb	on January 12	Hours of Calibration:	39	
Monthly Average:	2.5	ppb		Operational Uptime:	100.0	

Day	Hourly Period Starting at (MST)																								Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Jan 1	0	0	0	0	0	0	0	0	3	10	14	11	10	9	6	3	S	0	0	2	0	0	0	1	0	14	3.0
Jan 2	0	0	2	3	1	5	13	14	21	20	22	14	23	17	14	S	17	33	12	18	28	17	28	27	0	33	**15.2**
Jan 3	21	17	21	19	15	14	21	30	21	23	31	25	22	10	S	6	5	10	4	3	4	2	0	1	0	31	14.1
Jan 4	1	1	0	0	1	3	6	15	11	18	17	12	6	S	3	2	1	0	0	0	0	0	1	1	0	18	4.3
Jan 5	4	4	10	7	11	21	20	27	23	32	19	17	S	13	9	6	3	1	5	10	8	16	11	3	1	32	12.2
Jan 6	3	0	0	0	0	1	1	0	0	6	3	S	1	1	0	0	0	0	0	0	0	0	0	0	0	6	0.7
Jan 7	0	0	0	0	0	1	1	0	0	6	S	12	10	8	5	3	0	4	8	**41**	25	27	27	30	0	**41**	9.0
Jan 8	29	29	30	28	20	8	4	5	3	S	C	C	C	C	C	C	C	1	1	5	4	1	1	2	1	30	NA
Jan 9	2	3	0	0	0	0	0	0	S	5	3	3	3	2	2	1	0	0	0	0	0	0	0	0	0	5	1.0
Jan 10	0	0	0	0	0	1	0	S	1	0	0	1	1	0	1	1	0	0	0	0	0	0	0	0	0	1	0.3
Jan 11	0	0	0	0	0	0	S	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1
Jan 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
Jan 13	0	0	0	0	S	0	1	1	3	11	18	5	2	2	2	1	1	1	1	0	0	0	0	0	0	18	2.1
Jan 14	0	0	0	S	0	0	1	0	1	1	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0.3
Jan 15	0	0	S	0	0	0	0	0	0	2	2	2	2	4	2	1	0	0	1	0	0	0	0	0	0	4	0.7
Jan 16	0	S	0	0	0	0	0	0	0	0	0	0	1	8	4	0	0	0	0	0	0	0	0	0	0	8	0.6
Jan 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
Jan 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
Jan 19	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	S	0	0	0	1	0.3
Jan 20	0	1	0	2	0	0	0	0	0	2	2	4	2	1	2	1	0	0	0	0	S	0	0	0	0	4	0.7
Jan 21	0	0	0	0	0	9	7	10	10	7	4	3	2	1	0	1	0	0	0	S	0	0	0	0	0	10	2.3
Jan 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
Jan 23	0	0	0	0	1	2	7	1	0	0	0	1	0	0	0	0	0	S	0	0	0	0	0	0	0	7	0.5
Jan 24	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	S	0	0	0	0	0	0	0	0	1	0.2
Jan 25	0	0	0	0	0	0	0	0	0	1	3	3	1	1	2	S	1	1	6	1	0	0	0	0	0	6	0.9
Jan 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
Jan 27	0	0	0	0	0	0	0	0	0	5	2	5	1	S	0	0	0	0	0	0	0	0	0	0	0	5	0.6
Jan 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
Jan 29	0	0	0	0	0	0	0	0	0	1	1	S	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0.2
Jan 30	0	0	0	0	0	0	0	0	0	0	S	1	2	1	1	0	0	0	0	0	0	0	0	0	0	2	0.2
Jan 31	0	0	0	0	0	0	0	0	0	S	0	1	1	1	2	1	0	0	0	0	0	0	0	0	0	2	0.3
Diurnal Maximum	29	29	30	28	20	21	21	30	23	32	31	25	23	17	14	6	17	33	12	41	28	27	28	30			
Diurnal Average	2.0	1.8	2.1	2.0	1.6	2.2	2.7	3.4	3.2	5.2	5.1	4.4	3.4	2.9	2.1	1.0	1.0	1.7	1.3	2.7	2.3	2.1	2.3	2.2			

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.



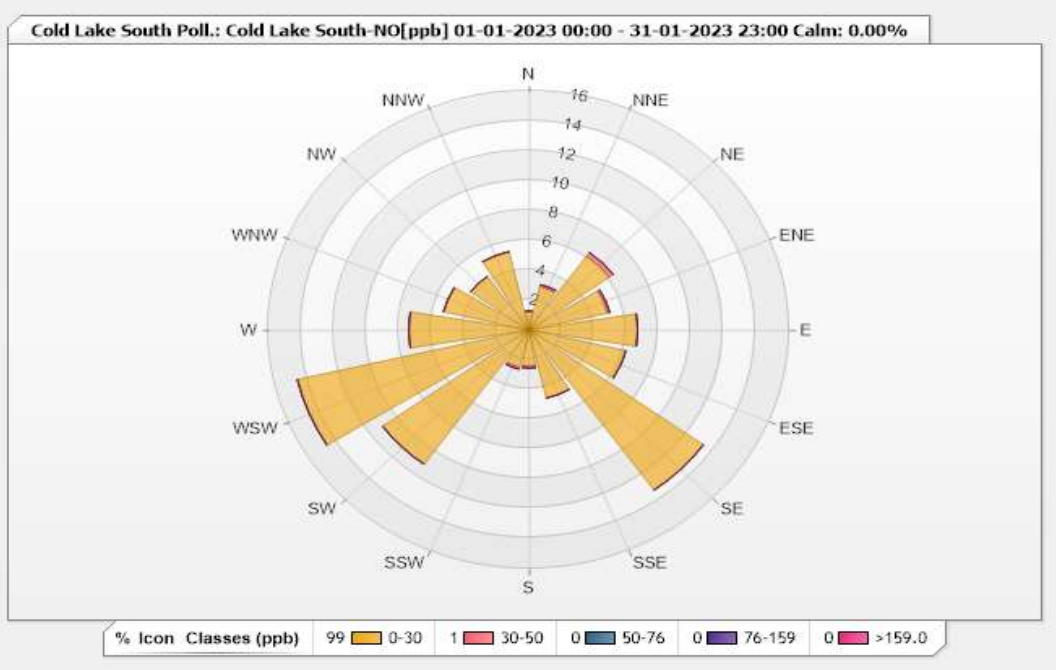


Station: Cold Lake South Poll.: Cold Lake South-NO[ppb] Monthly: 01-2023

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	1.28	0	0	0	0	1.28
NNE	2.98	0.14	0	0	0	3.12
NE	6.1	0.28	0	0	0	6.38
ENE	4.96	0.14	0	0	0	5.1
E	6.67	0	0	0	0	6.67
ESE	6.1	0	0	0	0	6.1
SE	13.19	0	0	0	0	13.19
SSE	4.68	0	0	0	0	4.68
S	2.41	0.14	0	0	0	2.55
SSW	2.55	0.14	0	0	0	2.69
SW	11.06	0	0	0	0	11.06
WSW	14.61	0	0	0	0	14.61
W	7.38	0	0	0	0	7.38
WNW	5.39	0	0	0	0	5.39
NW	4.4	0	0	0	0	4.4
NNW	5.39	0	0	0	0	5.39
Summary	99.15	0.84	0	0	0	100



Lakeland Industry & Community Association

Cold Lake South Station - January 2023

Summary of Hourly Averages

NITROGEN DIOXIDE (NO_2) in ppb

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

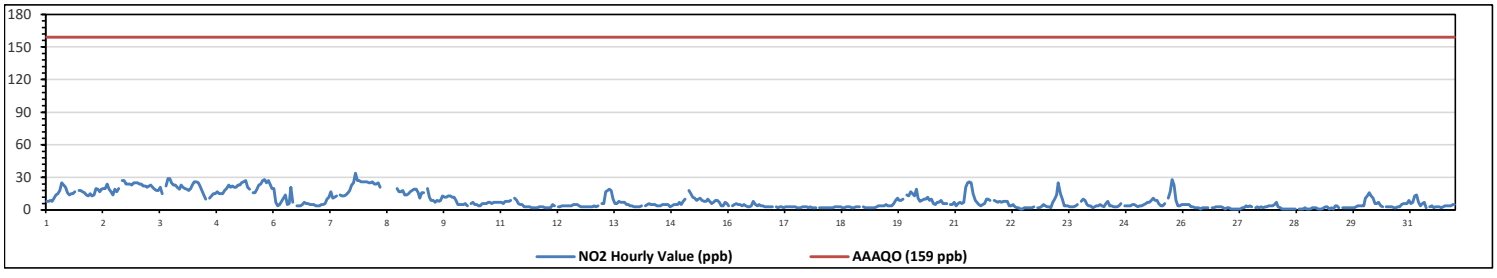
Number of 1-Hour Exceedances: 0

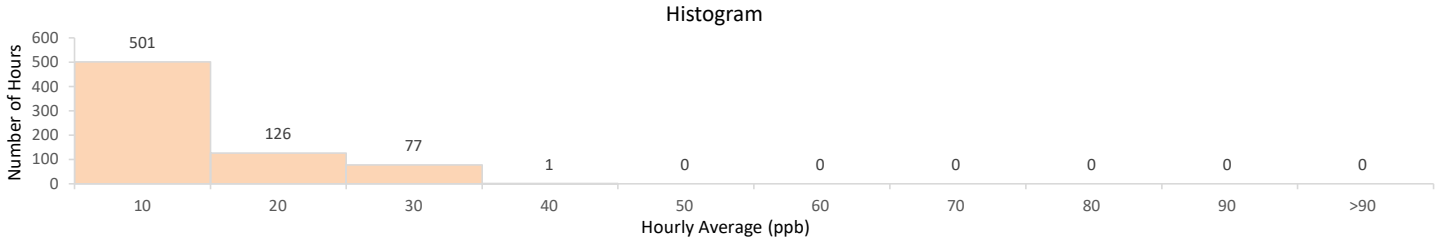
Maximum Hourly Value:	34	ppb	on January 7 at hour 19	Hours in Service:	744
Maximum Daily Value:	22.7	ppb	on January 5	Hours of Data:	705
Minimum Hourly Value:	1	ppb	on January 22 at hour 10	Hours of Missing Data:	0
Minimum Daily Value:	1.7	ppb	on January 28	Hours of Calibration:	39
Monthly Average:	8.6	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			
Jan 1	8	8	9	8	11	14	15	18	25	23	21	16	14	15	15	17	S	18	18	17	16	14	13	15	8	25	15.1
Jan 2	13	14	20	19	17	19	20	20	24	19	17	14	19	17	20	S	27	27	24	24	24	23	25	25	13	27	20.5
Jan 3	25	24	24	22	22	21	22	23	21	19	18	18	21	15	S	22	29	29	25	23	23	21	19	23	15	29	22.1
Jan 4	21	20	19	18	20	23	26	26	25	22	18	14	10	S	11	13	15	15	17	15	15	15	18	20	10	26	18.1
Jan 5	23	21	22	21	21	23	23	25	26	27	21	19	S	16	16	19	23	24	27	28	25	27	24	20	16	28	**22.7**
Jan 6	20	7	4	5	8	11	14	5	6	21	7	S	4	4	4	5	7	6	6	5	5	5	4	4	4	21	7.3
Jan 7	4	5	5	6	10	12	17	11	12	13	S	14	13	13	14	16	18	23	25	34	27	27	26	26	4	**34**	16.1
Jan 8	26	26	25	25	26	24	24	25	21	S	C	C	C	C	C	C	C	20	17	17	18	14	14	15	14	26	NA
Jan 9	17	18	19	19	16	11	16	16	S	20	12	9	9	7	9	8	9	13	12	12	13	13	12	12	7	20	13.1
Jan 10	9	5	5	5	5	6	4	S	6	7	5	5	4	4	6	6	6	7	7	6	7	7	7	7	4	9	5.9
Jan 11	7	6	8	8	8	9	S	11	9	6	5	5	3	3	3	3	2	2	2	2	3	3	3	2	2	11	4.9
Jan 12	2	2	2	5	4	S	3	3	4	4	4	4	4	4	5	5	5	4	3	3	3	3	3	3	2	5	3.6
Jan 13	3	4	3	4	S	6	6	17	18	19	18	10	6	6	8	7	7	7	5	5	4	4	3	3	3	19	7.5
Jan 14	3	3	4	S	4	5	6	5	5	5	4	4	4	5	5	5	5	3	4	5	5	5	7	5	3	7	4.6
Jan 15	8	10	S	18	15	12	11	9	10	11	9	8	8	10	8	6	7	9	9	7	4	4	7	6	4	18	9.0
Jan 16	4	S	4	5	6	5	5	4	5	4	3	3	4	8	5	4	5	4	4	3	3	3	3	3	3	8	4.2
Jan 17	S	3	2	3	3	2	3	3	3	3	3	3	2	2	2	3	3	3	2	3	2	2	2	S	2	3	2.6
Jan 18	2	2	2	2	2	2	2	2	3	3	3	3	2	2	3	3	3	2	2	3	3	3	S	3	2	3	2.5
Jan 19	2	2	2	2	2	2	3	4	4	4	4	5	4	4	4	6	9	11	9	9	10	S	14	13	2	14	5.6
Jan 20	17	15	13	19	11	8	9	10	10	12	9	10	6	5	7	7	9	6	6	6	S	5	5	7	5	19	9.2
Jan 21	4	6	7	6	7	21	25	26	25	15	9	7	5	4	5	6	10	10	9	S	9	8	7	8	4	26	10.4
Jan 22	7	8	8	8	4	4	5	3	2	2	1	1	2	2	2	2	2	3	S	2	2	3	5	4	**1**	8	3.6
Jan 23	3	3	2	7	10	14	25	15	10	4	4	4	3	3	3	4	5	S	8	10	9	5	4	4	2	25	6.9
Jan 24	2	3	4	4	5	4	3	6	8	4	4	3	3	3	4	6	S	4	4	4	4	5	5	4	2	8	4.2
Jan 25	3	4	4	5	6	7	7	9	11	9	9	6	4	4	6	S	11	17	28	23	9	4	4	5	3	28	8.5
Jan 26	5	5	5	5	3	3	2	2	2	1	2	2	2	2	S	2	2	3	3	3	3	2	1	2	**1**	5	2.7
Jan 27	2	1	1	1	1	1	1	2	2	4	3	4	3	S	2	3	2	3	2	3	3	4	4	4	**1**	4	2.4
Jan 28	5	7	3	2	1	1	1	1	1	1	1	1	S	1	1	1	2	1	1	1	2	2	2	1	**1**	7	**1.7**
Jan 29	1	1	2	3	3	1	2	1	4	4	2	S	2	2	2	2	2	2	2	3	4	4	4	4	**1**	4	2.5
Jan 30	11	13	16	13	11	6	6	7	4	3	S	3	3	3	3	2	2	3	3	5	6	6	6	9	2	16	6.3
Jan 31	6	7	13	14	7	4	6	7	2	S	3	4	2	3	3	3	2	3	4	4	4	4	5	5	2	14	5.0
Diurnal Maximum	26	26	25	25	26	24	26	26	26	27	21	19	21	17	20	22	29	29	28	34	27	27	26	26			
Diurnal Average	8.8	8.4	8.6	9.4	9.0	9.4	10.4	10.5	10.3	10.0	7.8	7.1	5.9	6.0	6.3	6.6	8.2	9.4	9.6	9.5	8.8	8.2	8.5	8.7			

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.



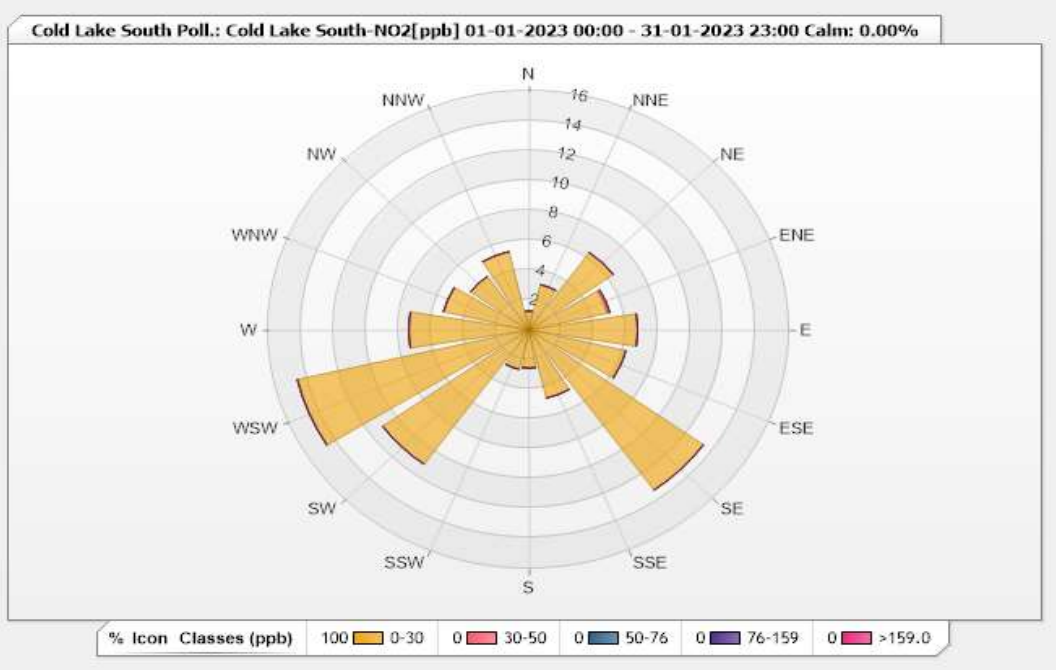


Station: Cold Lake South Poll.: Cold Lake South-NO2[ppb] Monthly: 01-2023

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	1.28	0	0	0	0	1.28
NNE	3.12	0	0	0	0	3.12
NE	6.38	0	0	0	0	6.38
ENE	4.96	0.14	0	0	0	5.1
E	6.67	0	0	0	0	6.67
ESE	6.1	0	0	0	0	6.1
SE	13.19	0	0	0	0	13.19
SSE	4.68	0	0	0	0	4.68
S	2.55	0	0	0	0	2.55
SSW	2.7	0	0	0	0	2.7
SW	11.06	0	0	0	0	11.06
WSW	14.61	0	0	0	0	14.61
W	7.38	0	0	0	0	7.38
WNW	5.39	0	0	0	0	5.39
NW	4.4	0	0	0	0	4.4
NNW	5.39	0	0	0	0	5.39
Summary	100	0.14	0	0	0	100



Lakeland Industry & Community Association

Cold Lake South Station - January 2023

Summary of Hourly Averages

OZONE (O_3) in ppb

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

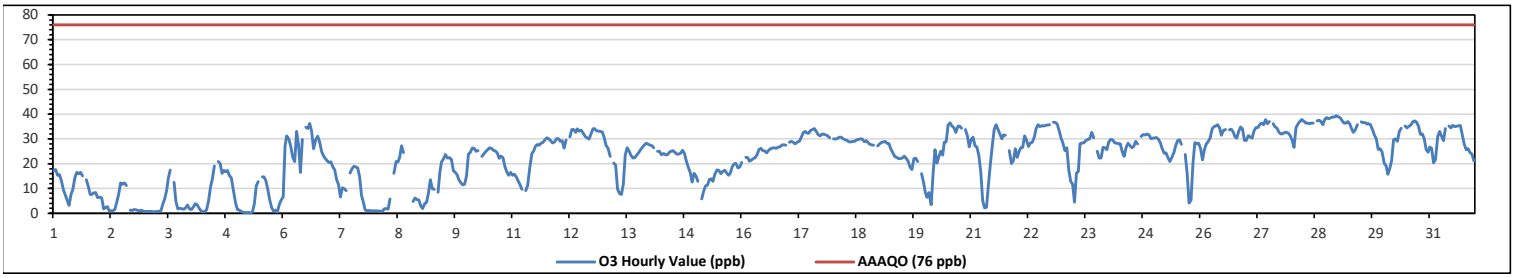
Number of 1-Hour Exceedances: 0

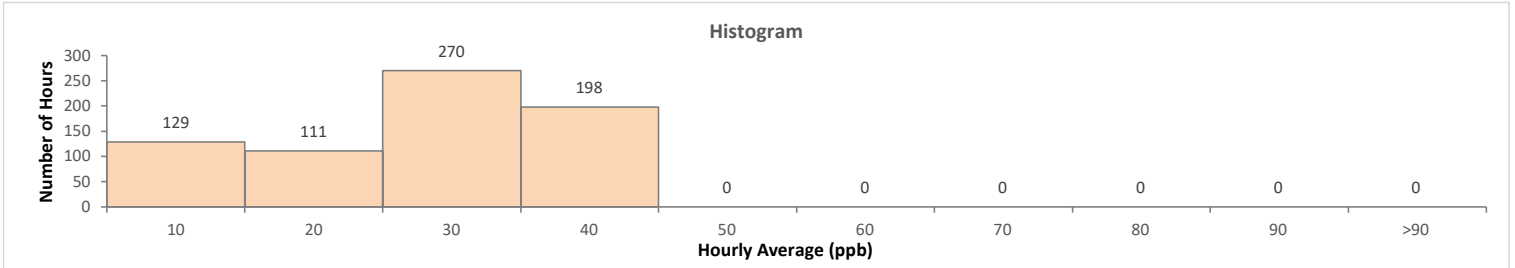
Maximum Hourly Value:	39.4	ppb	on January 28 at hour 23	Hours in Service:	744	
Maximum Daily Value:	36.4	ppb	on January 28	Hours of Data:	708	
Minimum Hourly Value:	0.1	ppb	on January 5 at hour 7	Hours of Missing Data:	0	
Minimum Daily Value:	3.8	ppb	on January 3	Hours of Calibration:	36	
Monthly Average:	22.4	ppb		Operational Uptime:	100.0	

Day	Hourly Period Starting at (MST)																								Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Jan 1	17.3	17.6	15.3	15.6	13.1	9.7	7.5	5.3	3.2	7.6	9.8	14.3	16.5	16	16.5	15.1	S	13.5	10.8	7.6	7.6	8.2	8.4	6.3	3.2	17.6	11.4
Jan 2	6.6	6.1	1.8	2.3	2.7	1.1	1.1	1	1.5	4.5	7.8	12.2	11.7	12.2	11.2	S	1.3	1.2	1.5	1.4	1.2	1	1.3	0.8	0.8	12.2	4.1
Jan 3	0.8	0.7	0.7	0.7	0.6	0.6	0.7	0.7	1.1	3.7	5.9	9.3	14.1	17.4	S	12.5	4.6	1.7	2	1.8	1.6	2.2	3.3	1.8	0.6	17.4	**3.8**
Jan 4	1.5	2.4	3.8	3.5	2.1	1	0.6	0.6	1.5	5.1	10.5	14.1	19.1	S	20.8	20.1	16.1	17.2	16.7	17.3	15.2	14.3	9.7	4.4	0.6	20.8	9.5
Jan 5	1.5	1.3	0.7	0.3	0.3	0.2	0.3	0.1	0.5	3.8	11.1	12.7	S	14.6	14.7	13.2	9.7	5.4	2.3	0.9	1.3	0.5	3.6	5.4	**0.1**	14.7	4.5
Jan 6	6.6	27.1	31.2	29.9	26.8	22.6	20.9	33	27.6	16.4	29.8	S	34.7	34.1	36.2	33	26	29.8	31.1	28.8	25	23.4	22.2	21.2	6.6	36.2	26.8
Jan 7	20.5	20.7	18.8	17.5	13.7	11.6	6.6	10.2	9.9	9.2	S	16.3	18	18.9	18.6	18.4	14.7	7.1	4.9	1.4	1.1	1.2	1	1.1	1.0	20.7	11.4
Jan 8	1.1	1.1	0.9	0.9	0.8	1.7	1.9	1.6	5.8	S	16.2	20.8	20.7	22.6	27.1	24.5	C	C	C	C	4.7	6.2	5.5	5.4	0.8	27.1	8.9
Jan 9	2.9	1.9	3.8	4.4	8	13.6	9.9	9.7	S	8.5	16.8	20.7	21.9	23.7	22.3	22.4	21.7	17.1	16.4	15.5	13.6	12.3	11.5	11.7	1.9	23.7	13.5
Jan 10	15.1	23.8	24.6	26.3	26.2	25	25.3	S	22.9	23.8	24.9	25.7	26.5	26.2	25.4	25.1	24.4	22.2	23	22.5	18.8	16.6	15.4	16.4	15.1	26.5	22.9
Jan 11	15.3	15.7	14.5	13.1	11.6	9.7	S	9.1	11.2	18.6	24	25.1	27	27.7	27.4	28.3	28.6	29.7	30.4	30	29.2	28.4	28.8	30.1	9.1	30.4	22.3
Jan 12	30.2	29	29.2	26.3	29.5	S	30.8	33.7	33.8	32.7	34	33.2	33.5	32.3	31	30.4	29.9	31.9	34	34.1	33.3	33.2	33	32.9	26.3	34.1	31.8
Jan 13	30.7	27.3	26.3	22.9	S	20.3	19.5	9.8	7.9	7.6	11.7	23.5	26.4	25.1	23.3	22.3	22.5	23.4	24.5	25.6	26.7	27.6	28.2	27.9	7.6	30.7	22.2
Jan 14	27.5	27.1	26.4	S	25	25	23.6	24.1	23.6	23.6	24.7	25	25.2	24.6	23.9	23.8	24.2	25.4	24.1	21	18.5	16.4	12.6	16.1	12.6	27.5	23.1
Jan 15	15.1	12.9	S	5.8	8.9	11.1	11.3	13.7	13.9	12.9	15.7	17.5	17.3	16	16.8	17.4	16.3	15.3	16.2	18.7	20	20.2	18.3	18.6	5.8	20.2	15.2
Jan 16	20.5	S	22.6	22.4	21	21.4	22.1	22.4	23.6	25.8	26.2	25.3	25.1	24.4	25.4	26	26.3	26.4	26.2	26.7	26.9	27.6	27.6	27.5	20.5	27.6	24.8
Jan 17	S	28.6	29.1	28.6	28	28.8	29	30.6	32.5	33	32.4	32.2	33.4	33.7	34.1	33.1	31.7	31.2	31.9	31.8	31.6	31.2	30.5	S	28.0	34.1	31.2
Jan 18	30.1	29.9	30.2	30.7	30.7	30	29.6	29.3	28.9	28.8	29	29.1	29.6	29.8	30.1	29.9	28.9	29.2	28.7	27.8	27.6	27.5	S	27.2	27.2	30.7	29.2
Jan 19	28	28.6	28.8	29.1	28.2	28.1	25.9	24.5	22.9	22.6	22.1	22.1	22.3	23.1	22.2	21	18.5	17.7	22	22.2	20.8	S	16	12.6	12.6	29.1	23.0
Jan 20	8.2	6.4	8.3	3.5	15.9	25.6	20.3	22.8	25	23.4	28.6	28.9	35.6	36.5	35.3	34.6	32.7	35.3	35.1	34.3	S	33.8	31.3	26.9	3.5	36.5	25.6
Jan 21	29.8	30.7	27.2	26.7	23.3	16.7	5.1	2.1	2.4	11.6	19.9	27.2	33.7	35.7	33.8	31.8	30.1	31.5	31.4	S	25.3	20.2	21.2	26.1	2.1	35.7	23.6
Jan 22	22.6	25	26.5	26.6	31.2	29.5	27	28.4	28.6	30.6	34.1	35.7	35	35.4	35.3	35.5	35.6	35.7	S	36.8	36.6	36	33.3	30.3	22.6	36.8	31.8
Jan 23	28.6	25.2	26.4	17.5	12.8	11.7	4.5	16.3	16.8	28	28.4	28.4	29.2	29.8	29.9	32.6	30.4	S	25	22.3	22.3	26.6	26.4	25.6	4.5	32.6	23.7
Jan 24	28.8	29.8	29.6	28.5	28.2	28.1	28	24.9	22.9	26.4	28.2	27.3	26.5	27	29	28	S	31	31.7	31.5	32	31.5	30.1	30.3	22.9	32.0	28.7
Jan 25	30.4	30.6	29.9	28.5	26.1	24.3	24.4	22.5	20.9	22.8	24.6	27.2	29.2	29.6	27.8	S	23.7	16.1	4.1	5.3	19.8	28.5	28	28.2	4.1	30.6	24.0
Jan 26	26	21.5	25.8	28	29.1	30.4	34	35	35.2	35.7	34.6	31.4	33.4	33.8	S	33.6	33.9	32.8	31	30.3	33.1	34.9	34	29.3	21.5	35.7	31.6
Jan 27	29.4	31.3	30.7	30.3	33.3	34.6	34.6	35.8	36.4	35.7	37.8	36.1	37	S	36.1	35	34.3	32.6	32	32.1	32.6	32.6	32.2	31.1	29.4	37.8	33.6
Jan 28	29	26.6	34.5	35.9	37.1	37.7	37.2	36.4	36.4	36.1	36.4	36.4	S	37.3	37.6	37.1	35.7	37.9	38.5	38.2	38.4	38.8	38.8	**39.4**	26.6	**39.4**	**36.4**
Jan 29	39	38.5	37.5	36.4	36.4	37	36.1	34	32.7	33.5	35.7	S	36.9	36.5	36.6	36	36.1	35.7	33.8	31.6	30	25.8	26.1	24.8	24.8	39.0	34.2
Jan 30	20.1	19	15.7	18	21.2	29.7	30.1	29.1	33	34.3	S	35.3	34.4	35.1	35.6	36.9	37.3	36.7	35.1	31.8	31.9	30.1	25.6	24.7	15.7	37.3	29.6
Jan 31	26.7	26.2	20.4	21.7	31	33	31.1	29.2	34.2	S	35.3	34.4	35.5	35	35.1	35.4	35.4	31.4	27.9	25.7	26	24.5	23.8	21.1	20.4	35.5	29.6
Diurnal Maximum	39.0	38.5	37.5	36.4	37.1	37.7	37.2	36.4	36.4	36.1	37.8	36.4	37.0	37.3	37.6	37.1	37.3	37.9	38.5	38.2	38.4	38.8	38.8	39.4			
Diurnal Average	19.7	20.4	20.7	19.4	20.1	20.0	19.3	19.2	19.9	20.9	24.0	25.1	27.2	27.4	27.6	27.3	25.4	24.2	23.2	22.6	21.8	22.0	20.9	20.2			

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.



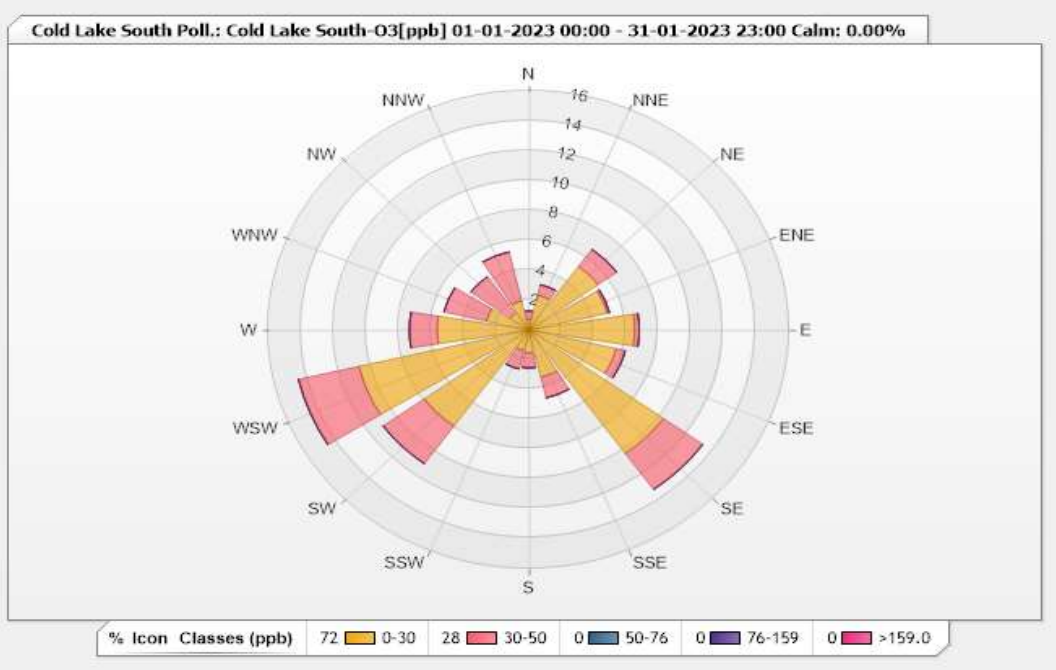


Station: Cold Lake South Poll.: Cold Lake South-O3[ppb] Monthly: 01-2023

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	0.71	0.56	0	0	0	1.27
NNE	2.4	0.71	0	0	0	3.11
NE	5.23	1.41	0	0	0	6.64
ENE	4.94	0.14	0	0	0	5.08
E	6.5	0.28	0	0	0	6.78
ESE	5.51	0.56	0	0	0	6.07
SE	10.17	2.97	0	0	0	13.14
SSE	3.25	1.41	0	0	0	4.66
S	1.55	0.99	0	0	0	2.54
SSW	1.41	1.27	0	0	0	2.68
SW	7.91	3.11	0	0	0	11.02
WSW	10.73	3.81	0	0	0	14.54
W	5.65	1.69	0	0	0	7.34
WNW	2.68	2.68	0	0	0	5.36
NW	1.41	2.97	0	0	0	4.38
NNW	1.98	3.39	0	0	0	5.37
Summary	72.03	27.95	0	0	0	100



Lakeland Industry & Community Association

Cold Lake South Station - January 2023

Summary of Hourly Averages

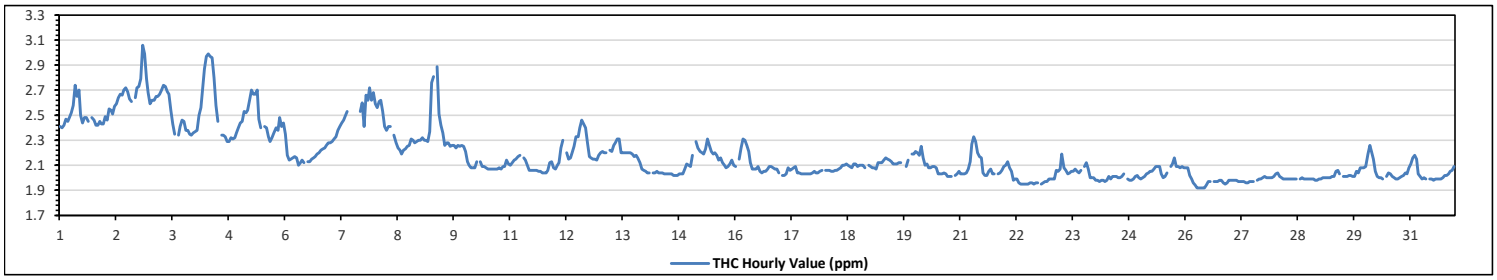
TOTAL HYDROCARBONS (THC) in ppm

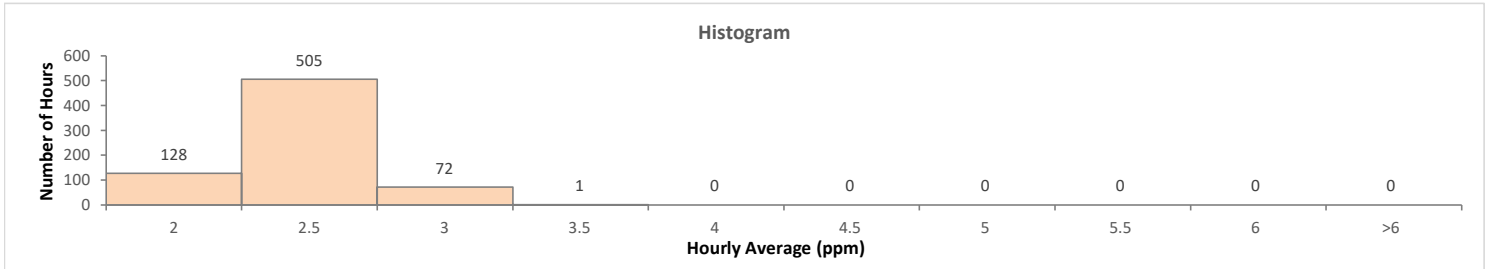
Maximum Hourly Value:	3.06	ppm	on January 2 at hour 20	Hours in Service:	744
Maximum Daily Value:	2.67	ppm	on January 2	Hours of Data:	706
Minimum Hourly Value:	1.92	ppm	on January 26 at hour 6	Hours of Missing Data:	2
Minimum Daily Value:	1.97	ppm	on January 26	Hours of Calibration:	36
Monthly Average:	2.18	ppm		Operational Uptime:	99.7

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Jan 1	2.41	2.40	2.42	2.47	2.45	2.48	2.52	2.58	2.74	2.65	2.70	2.50	2.44	2.48	2.48	2.45	S	2.48	2.46	2.42	2.42	2.45	2.43	2.43	2.40	2.74	2.49
Jan 2	2.49	2.46	2.55	2.54	2.51	2.57	2.59	2.64	2.67	2.66	2.70	2.72	2.69	2.63	2.61	S	2.64	2.72	2.73	2.79	**3.06**	2.99	2.79	2.68	2.46	**3.06**	**2.67**
Jan 3	2.59	2.62	2.62	2.65	2.65	2.67	2.70	2.74	2.73	2.69	2.67	2.54	2.43	2.35	S	2.34	2.41	2.46	2.45	2.38	2.38	2.35	2.34	2.36	2.34	2.74	2.53
Jan 4	2.37	2.38	2.50	2.56	2.73	2.87	2.97	2.99	2.97	2.96	2.80	2.58	2.45	S	2.34	2.34	2.33	2.29	2.29	2.32	2.31	2.32	2.36	2.40	2.29	2.99	2.54
Jan 5	2.44	2.45	2.53	2.52	2.54	2.62	2.70	2.67	2.67	2.70	2.47	2.40	S	2.41	2.40	2.33	2.29	2.32	2.36	2.40	2.38	2.48	2.41	2.44	2.29	2.70	2.48
Jan 6	2.35	2.18	2.14	2.15	2.16	2.17	2.16	2.10	2.12	2.14	2.12	S	2.13	2.13	2.15	2.16	2.17	2.19	2.20	2.22	2.23	2.24	2.26	2.28	2.10	2.35	2.18
Jan 7	2.28	2.29	2.31	2.33	2.38	2.41	2.44	2.46	2.50	2.53	S	2.72	C	C	C	C	2.53	2.60	2.41	2.66	2.62	2.72	2.62	2.68	2.28	2.72	2.50
Jan 8	2.59	2.56	2.61	2.62	2.53	2.41	2.38	2.41	2.41	S	2.34	2.28	2.24	2.22	2.19	2.22	2.23	2.25	2.26	2.31	2.30	2.28	2.29	2.30	2.19	2.62	2.36
Jan 9	2.30	2.32	2.30	2.30	2.29	2.37	2.76	2.81	S	2.89	2.51	2.42	2.36	2.26	2.28	2.28	2.25	2.26	2.26	2.24	2.26	2.25	2.26	2.25	2.24	2.89	2.37
Jan 10	2.21	2.13	2.10	2.08	2.08	2.08	2.13	S	2.13	2.09	2.09	2.08	2.07	2.07	2.07	2.07	2.07	2.07	2.08	2.07	2.09	2.09	2.14	2.11	2.07	2.21	2.10
Jan 11	2.10	2.12	2.14	2.15	2.17	2.18	S	2.16	2.14	2.10	2.06	2.06	2.06	2.06	2.06	2.05	2.05	2.04	2.04	2.04	2.06	2.12	2.13	2.08	2.04	2.18	2.09
Jan 12	2.07	2.10	2.12	2.24	2.30	S	2.20	2.15	2.16	2.20	2.25	2.33	2.33	2.40	2.46	2.43	2.40	2.28	2.17	2.16	2.15	2.15	2.14	2.18	2.07	2.46	2.23
Jan 13	2.20	2.21	2.20	2.20	S	2.22	2.21	2.26	2.28	2.31	2.31	2.20	2.20	2.20	2.20	2.20	2.20	2.19	2.17	2.18	2.16	2.12	2.07	2.06	2.06	2.31	2.20
Jan 14	2.05	2.04	2.04	S	2.04	2.04	2.05	2.04	2.04	2.04	2.03	2.03	2.03	2.03	2.03	2.02	2.02	2.02	2.03	2.03	2.03	2.07	2.11	2.10	2.02	2.11	2.04
Jan 15	2.09	2.18	S	2.29	2.24	2.21	2.20	2.19	2.23	2.31	2.26	2.21	2.19	2.20	2.18	2.14	2.16	2.12	2.10	2.08	2.09	2.11	2.14	2.10	2.08	2.31	2.17
Jan 16	2.09	S	2.15	2.24	2.31	2.30	2.26	2.21	2.12	2.07	2.07	2.07	2.09	2.05	2.04	2.05	2.05	2.07	2.09	2.09	2.08	2.07	2.07	2.04	2.04	2.31	2.12
Jan 17	S	2.02	2.02	2.03	2.08	2.06	2.07	2.08	2.09	2.04	2.04	2.03	2.03	2.03	2.03	2.03	2.03	2.04	2.05	2.04	2.04	2.05	2.06	S	2.02	2.09	2.05
Jan 18	2.06	2.06	2.06	2.05	2.05	2.06	2.06	2.07	2.08	2.10	2.10	2.11	2.10	2.09	2.08	2.11	2.11	2.09	2.10	2.10	2.10	2.08	S	2.10	2.05	2.11	2.08
Jan 19	2.09	2.08	2.08	2.07	2.12	2.12	2.12	2.14	2.16	2.15	2.14	2.13	2.11	2.11	2.11	2.12	2.12	Y	Y	2.09	2.14	S	2.19	2.19	2.07	2.19	2.12
Jan 20	2.21	2.20	2.18	2.25	2.16	2.10	2.11	2.08	2.08	2.09	2.09	2.08	2.03	2.03	2.03	2.04	2.03	2.01	2.01	2.01	S	2.02	2.03	2.05	2.01	2.25	2.08
Jan 21	2.03	2.03	2.03	2.04	2.07	2.13	2.27	2.33	2.29	2.20	2.17	2.16	2.04	2.02	2.02	2.05	2.07	2.03	2.03	S	2.03	2.04	2.06	2.09	2.02	2.33	2.10
Jan 22	2.10	2.13	2.08	2.05	1.98	1.99	1.99	1.96	1.95	1.95	1.95	1.95	1.95	1.96	1.96	1.95	1.96	1.96	S	1.95	1.96	1.97	1.97	1.99	1.95	2.13	1.99
Jan 23	1.99	1.99	1.99	2.06	2.05	2.07	2.19	2.08	2.06	2.03	2.04	2.05	2.05	2.07	2.05	2.04	2.06	S	2.09	2.12	2.07	2.00	2.00	2.00	1.99	2.19	2.05
Jan 24	1.98	1.98	1.97	1.98	1.98	1.97	1.98	2.01	1.99	2.01	2.01	2.01	2.00	2.00	2.01	2.03	S	1.99	1.98	1.98	1.99	2.01	2.02	2.00	1.97	2.03	1.99
Jan 25	1.99	2.00	2.01	2.03	2.04	2.05	2.05	2.07	2.09	2.09	2.09	2.03	2.00	2.01	2.04	S	2.09	2.11	2.16	2.09	2.09	2.08	2.09	2.08	1.99	2.16	2.06
Jan 26	2.08	2.08	2.02	1.99	1.96	1.94	1.92	1.92	1.92	1.92	1.92	1.94	1.97	1.97	S	1.97	1.97	1.97	1.98	1.98	1.96	1.95	1.96	1.98	1.92	2.08	1.97
Jan 27	1.98	1.98	1.98	1.98	1.97	1.97	1.97	1.97	1.96	1.96	1.97	1.97	1.97	S	1.98	1.99	1.99	2.00	2.01	2.00	2.00	2.00	2.00	2.01	1.96	2.01	1.98
Jan 28	2.03	2.04	2.01	2.00	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.99	S	1.99	2.00	1.99	1.99	1.99	1.99	1.99	1.99	1.98	1.98	1.99	1.98	2.04	1.99
Jan 29	1.99	2.00	2.00	2.00	2.00	2.00	2.01	2.01	2.05	2.06	2.03	S	2.01	2.01	2.01	2.02	2.02	2.01	2.01	2.05	2.04	2.08	2.08	2.08	1.99	2.08	2.02
Jan 30	2.09	2.19	2.26	2.21	2.15	2.05	2.01	2.00	2.00	1.99	S	2.01	2.04	2.03	2.01	2.00	1.99	1.99	2.00	2.01	2.02	2.04	2.03	2.08	1.99	2.26	2.05
Jan 31	2.11	2.16	2.18	2.15	2.03	2.01	1.99	2.00	1.99	S	1.99	1.99	1.98	1.99	1.99	1.99	1.99	2.00	2.02	2.02	2.03	2.05	2.06	2.09	1.98	2.18	2.04
Diurnal Maximum	2.59	2.62	2.62	2.65	2.73	2.87	2.97	2.99	2.97	2.96	2.80	2.72	2.69	2.63	2.61	2.45	2.64	2.72	2.73	2.79	3.06	2.99	2.79	2.68			
Diurnal Average	2.18	2.18	2.19	2.21	2.20	2.20	2.23	2.24	2.22	2.24	2.20	2.19	2.14	2.14	2.14	2.12	2.15	2.16	2.16	2.16	2.17	2.17	2.17	2.17			

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.



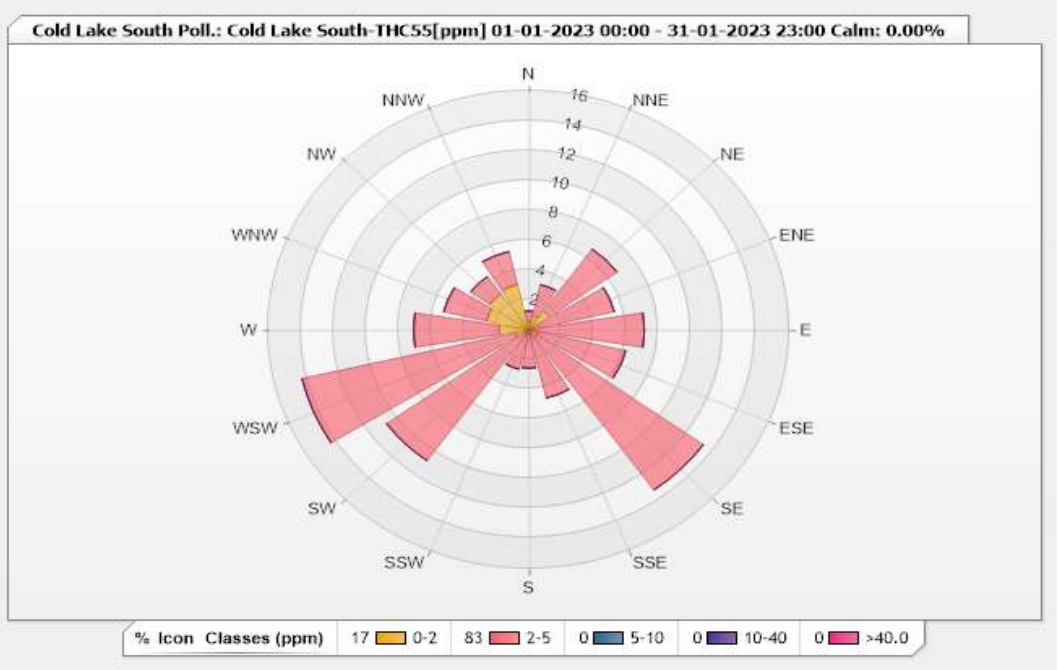


Station: Cold Lake South Poll.: Cold Lake South-THC55[ppm] Monthly: 01-2023

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	10-40	>40.0	Total
N	0.57	0.71	0	0	0	1.28
NNE	0.99	2.12	0	0	0	3.11
NE	1.56	5.1	0	0	0	6.66
ENE	0	5.38	0	0	0	5.38
E	0.28	6.8	0	0	0	7.08
ESE	0.57	5.52	0	0	0	6.09
SE	0.57	12.61	0	0	0	13.18
SSE	0.28	4.39	0	0	0	4.67
S	0	2.55	0	0	0	2.55
SSW	0	2.69	0	0	0	2.69
SW	0.28	10.48	0	0	0	10.76
WSW	0.85	13.46	0	0	0	14.31
W	1.84	5.24	0	0	0	7.08
WNW	2.69	2.69	0	0	0	5.38
NW	2.97	1.42	0	0	0	4.39
NNW	3.12	2.27	0	0	0	5.39
Summary	16.57	83.43	0	0	0	100



Lakeland Industry & Community Association

Cold Lake South Station - January 2023

Summary of Hourly Averages

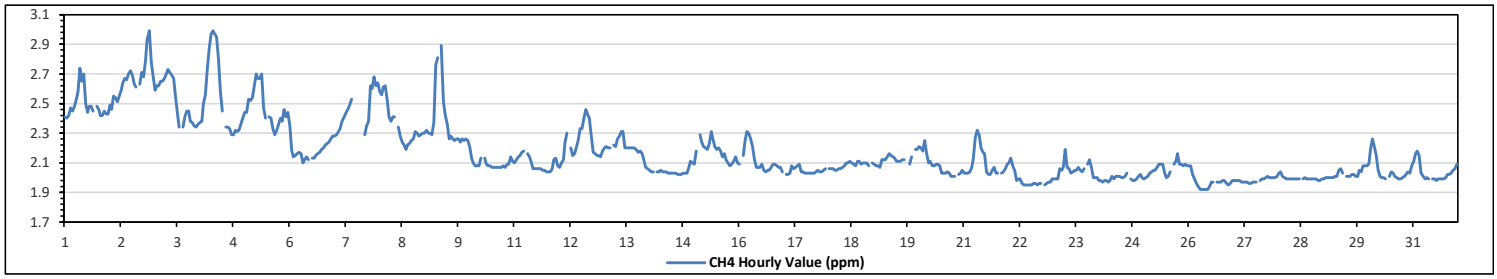
METHANE (CH4) in ppm

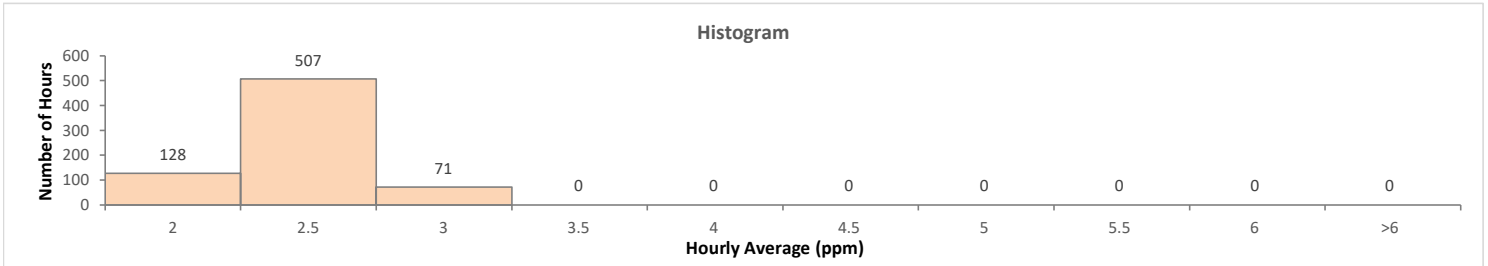
Maximum Hourly Value:	2.99	ppm	on January 2 at hour 21	Hours in Service:	744
Maximum Daily Value:	2.66	ppm	on January 2	Hours of Data:	706
Minimum Hourly Value:	1.92	ppm	on January 26 at hour 6	Hours of Missing Data:	2
Minimum Daily Value:	1.97	ppm	on January 26	Hours of Calibration:	36
Monthly Average:	2.18	ppm		Operational Uptime:	99.7

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Jan 1	2.41	2.40	2.42	2.47	2.45	2.48	2.52	2.58	2.74	2.65	2.70	2.50	2.44	2.48	2.48	2.45	S	2.48	2.46	2.42	2.42	2.45	2.43	2.43	2.40	2.74	2.49
Jan 2	2.49	2.46	2.55	2.54	2.51	2.55	2.59	2.64	2.67	2.66	2.70	2.72	2.69	2.63	2.61	S	2.63	2.71	2.68	2.79	2.93	**2.99**	2.78	2.68	2.46	**2.99**	**2.66**
Jan 3	2.59	2.62	2.62	2.65	2.65	2.67	2.70	2.73	2.71	2.69	2.67	2.54	2.43	2.34	S	2.34	2.41	2.45	2.45	2.38	2.37	2.35	2.34	2.36	2.34	2.73	2.52
Jan 4	2.37	2.38	2.50	2.56	2.73	2.87	2.97	**2.99**	2.97	2.95	2.80	2.58	2.45	S	2.34	2.34	2.33	2.29	2.29	2.32	2.31	2.32	2.36	2.40	2.29	**2.99**	2.54
Jan 5	2.44	2.44	2.53	2.52	2.54	2.62	2.70	2.67	2.67	2.70	2.47	2.40	S	2.41	2.40	2.33	2.29	2.32	2.36	2.40	2.38	2.46	2.41	2.44	2.29	2.70	2.47
Jan 6	2.35	2.18	2.14	2.15	2.16	2.17	2.16	2.10	2.12	2.14	2.12	S	2.13	2.13	2.15	2.16	2.17	2.19	2.20	2.22	2.23	2.24	2.26	2.28	2.10	2.35	2.18
Jan 7	2.28	2.29	2.31	2.33	2.38	2.41	2.44	2.46	2.49	2.53	S	2.72	C	C	C	C	2.29	2.35	2.38	2.62	2.60	2.68	2.62	2.64	2.28	2.72	2.46
Jan 8	2.58	2.56	2.61	2.62	2.53	2.41	2.38	2.41	2.41	S	2.34	2.28	2.24	2.22	2.19	2.22	2.23	2.25	2.26	2.31	2.30	2.28	2.29	2.30	2.19	2.62	2.36
Jan 9	2.30	2.32	2.30	2.30	2.29	2.37	2.76	2.81	S	2.89	2.51	2.42	2.36	2.26	2.28	2.26	2.25	2.26	2.26	2.24	2.26	2.25	2.26	2.25	2.24	2.89	2.37
Jan 10	2.21	2.13	2.10	2.08	2.08	2.08	2.13	S	2.13	2.09	2.08	2.08	2.07	2.07	2.07	2.07	2.07	2.07	2.08	2.07	2.09	2.09	2.14	2.11	2.07	2.21	2.10
Jan 11	2.10	2.12	2.14	2.15	2.17	2.18	S	2.16	2.14	2.10	2.06	2.06	2.06	2.06	2.06	2.05	2.05	2.04	2.04	2.04	2.06	2.12	2.13	2.08	2.04	2.18	2.09
Jan 12	2.07	2.10	2.12	2.24	2.30	S	2.20	2.15	2.16	2.20	2.25	2.33	2.33	2.40	2.46	2.43	2.40	2.28	2.17	2.16	2.15	2.15	2.14	2.18	2.07	2.46	2.23
Jan 13	2.20	2.21	2.20	2.20	S	2.22	2.21	2.26	2.28	2.31	2.31	2.20	2.20	2.20	2.20	2.20	2.20	2.19	2.17	2.18	2.16	2.12	2.07	2.06	2.06	2.31	2.20
Jan 14	2.05	2.04	2.04	S	2.04	2.04	2.05	2.04	2.04	2.04	2.03	2.03	2.03	2.03	2.03	2.02	2.02	2.02	2.03	2.03	2.03	2.07	2.11	2.10	2.02	2.11	2.04
Jan 15	2.09	2.18	S	2.29	2.24	2.21	2.20	2.19	2.23	2.31	2.26	2.21	2.19	2.20	2.18	2.14	2.16	2.12	2.10	2.08	2.09	2.11	2.14	2.10	2.08	2.31	2.17
Jan 16	2.09	S	2.15	2.24	2.31	2.30	2.26	2.21	2.12	2.07	2.07	2.07	2.09	2.05	2.04	2.05	2.05	2.07	2.09	2.09	2.08	2.07	2.07	2.04	2.04	2.31	2.12
Jan 17	S	2.02	2.02	2.03	2.08	2.06	2.07	2.08	2.09	2.04	2.04	2.03	2.03	2.03	2.03	2.03	2.03	2.04	2.05	2.04	2.04	2.05	2.06	S	2.02	2.09	2.05
Jan 18	2.06	2.06	2.06	2.05	2.05	2.06	2.06	2.07	2.08	2.10	2.10	2.11	2.10	2.09	2.08	2.11	2.11	2.09	2.10	2.10	2.10	2.08	S	2.10	2.05	2.11	2.08
Jan 19	2.09	2.08	2.08	2.07	2.12	2.12	2.12	2.14	2.16	2.15	2.14	2.13	2.11	2.11	2.11	2.12	2.12	Y	Y	2.09	2.14	S	2.19	2.19	2.07	2.19	2.12
Jan 20	2.21	2.20	2.18	2.25	2.16	2.10	2.11	2.08	2.08	2.09	2.09	2.08	2.03	2.03	2.03	2.04	2.03	2.01	2.01	2.01	S	2.02	2.03	2.05	2.01	2.25	2.08
Jan 21	2.03	2.03	2.03	2.04	2.07	2.13	2.27	2.32	2.29	2.20	2.17	2.16	2.04	2.02	2.02	2.05	2.07	2.03	2.03	S	2.03	2.04	2.06	2.09	2.02	2.32	2.10
Jan 22	2.10	2.13	2.08	2.05	1.98	1.99	1.99	1.96	1.95	1.95	1.95	1.95	1.95	1.96	1.96	1.95	1.96	1.96	S	1.95	1.96	1.97	1.97	1.99	1.95	2.13	1.99
Jan 23	1.99	1.99	1.99	2.06	2.05	2.07	2.19	2.07	2.06	2.03	2.04	2.05	2.05	2.07	2.05	2.04	2.06	S	2.09	2.12	2.07	2.00	2.00	2.00	1.99	2.19	2.05
Jan 24	1.98	1.98	1.97	1.98	1.98	1.97	1.98	2.01	1.99	2.01	2.01	2.01	2.00	2.00	2.01	2.03	S	1.99	1.98	1.98	1.99	2.01	2.02	2.00	1.97	2.03	1.99
Jan 25	1.99	2.00	2.01	2.03	2.04	2.05	2.05	2.07	2.09	2.09	2.09	2.03	2.00	2.01	2.04	S	2.09	2.11	2.16	2.09	2.09	2.08	2.09	2.08	1.99	2.16	2.06
Jan 26	2.08	2.08	2.02	1.99	1.96	1.94	1.92	1.92	1.92	1.92	1.92	1.94	1.97	1.97	S	1.97	1.97	1.97	1.98	1.98	1.96	1.95	1.96	1.98	1.92	2.08	1.97
Jan 27	1.98	1.98	1.98	1.98	1.97	1.97	1.97	1.97	1.96	1.96	1.97	1.97	1.97	S	1.98	1.99	1.99	2.00	2.01	2.00	2.00	2.00	2.00	2.01	1.96	2.01	1.98
Jan 28	2.03	2.04	2.01	2.00	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.99	S	1.99	2.00	1.99	1.99	1.99	1.99	1.99	1.99	1.98	1.98	1.99	1.98	2.04	1.99
Jan 29	1.99	2.00	2.00	2.00	2.00	2.00	2.01	2.01	2.05	2.06	2.03	S	2.01	2.01	2.01	2.02	2.02	2.01	2.01	2.05	2.04	2.08	2.08	2.08	1.99	2.08	2.02
Jan 30	2.09	2.19	2.26	2.21	2.15	2.05	2.01	2.00	2.00	1.99	S	2.01	2.04	2.03	2.01	2.00	1.99	1.99	2.00	2.01	2.02	2.04	2.03	2.08	1.99	2.26	2.05
Jan 31	2.11	2.16	2.18	2.15	2.03	2.01	1.99	2.00	1.99	S	1.99	1.99	1.98	1.99	1.99	1.99	1.99	2.00	2.02	2.02	2.03	2.05	2.06	2.09	1.98	2.18	2.04
Diurnal Maximum	2.59	2.62	2.62	2.65	2.73	2.87	2.97	2.99	2.97	2.95	2.80	2.72	2.69	2.63	2.61	2.45	2.63	2.71	2.68	2.79	2.93	2.99	2.78	2.68			
Diurnal Average	2.18	2.18	2.19	2.21	2.20	2.20	2.23	2.24	2.22	2.24	2.20	2.19	2.14	2.14	2.14	2.12	2.14	2.15	2.15	2.16	2.16	2.17	2.17	2.17			

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.



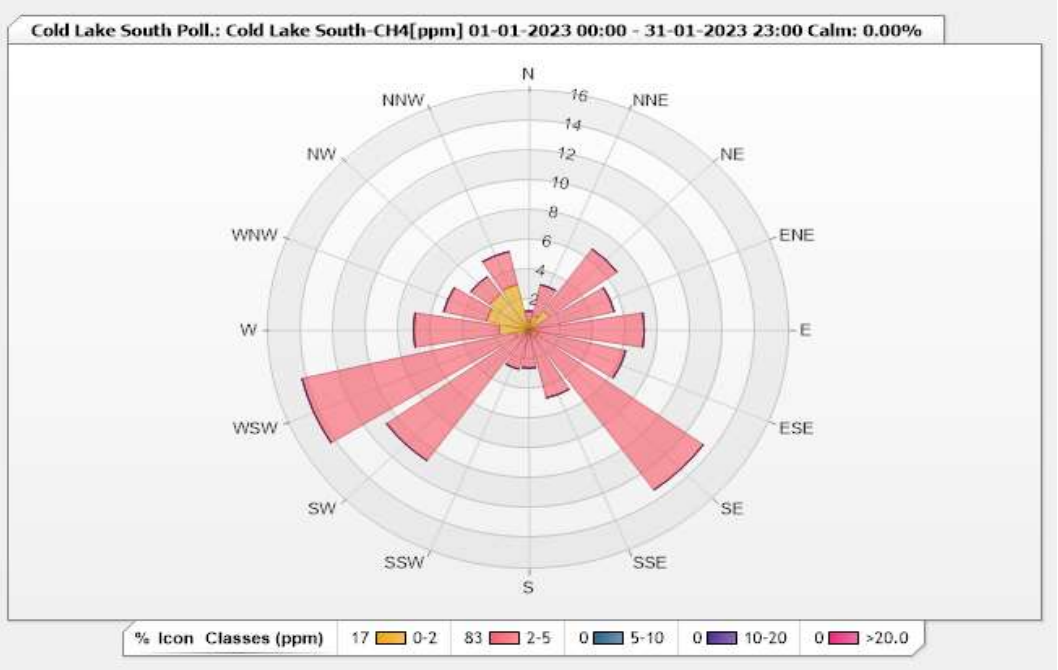


Station: Cold Lake South Poll.: Cold Lake South-CH4[ppm] Monthly: 01-2023

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	10-20	>20.0	Total
N	0.57	0.71	0	0	0	1.28
NNE	0.99	2.12	0	0	0	3.11
NE	1.56	5.1	0	0	0	6.66
ENE	0	5.38	0	0	0	5.38
E	0.28	6.8	0	0	0	7.08
ESE	0.57	5.52	0	0	0	6.09
SE	0.57	12.61	0	0	0	13.18
SSE	0.28	4.39	0	0	0	4.67
S	0	2.55	0	0	0	2.55
SSW	0	2.69	0	0	0	2.69
SW	0.28	10.48	0	0	0	10.76
WSW	0.85	13.46	0	0	0	14.31
W	1.84	5.24	0	0	0	7.08
WNW	2.69	2.69	0	0	0	5.38
NW	2.97	1.42	0	0	0	4.39
NNW	3.12	2.27	0	0	0	5.39
Summary	16.57	83.43	0	0	0	100



Lakeland Industry & Community Association

Cold Lake South Station - January 2023

Summary of Hourly Averages

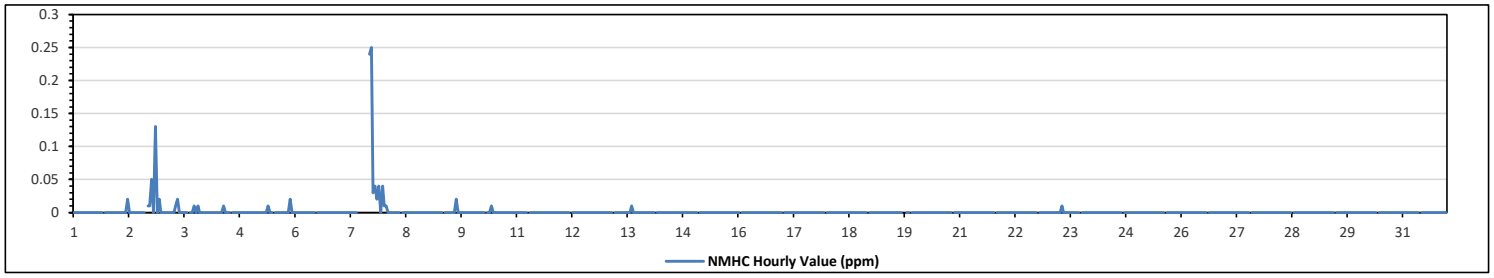
NON-METHANE HYDROCARBONS (NMHC) in ppm

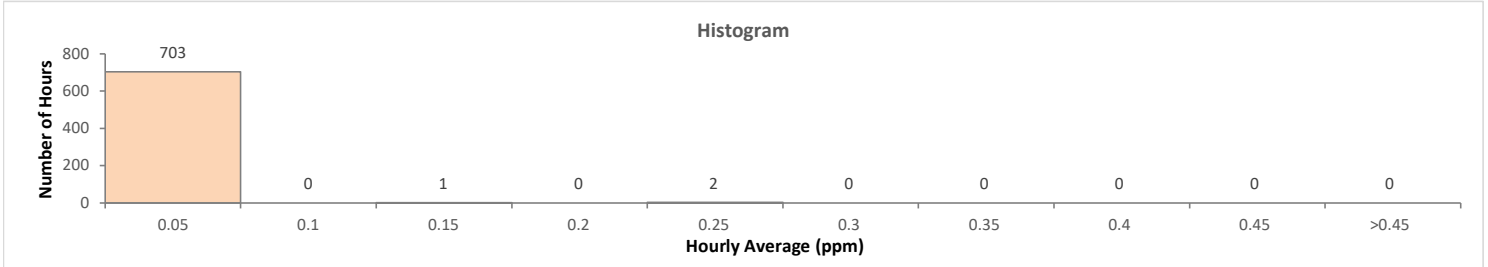
Maximum Hourly Value:	0.25	ppm	on January 7 at hour 17	Hours in Service:	744
Maximum Daily Value:	0.03	ppm	on January 7	Hours of Data:	706
Minimum Hourly Value:	0.00	ppm	on January 1 at hour 0	Hours of Missing Data:	2
Minimum Daily Value:	0.00	ppm	on January 1	Hours of Calibration:	36
Monthly Average:	0.00	ppm		Operational Uptime:	99.7

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Jan 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
Jan 2	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	S	0.01	0.01	0.05	0.00	0.13	0.00	0.02	0.00	0.00	0.13	0.01
Jan 3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.02	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.02	0.00
Jan 4	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	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
Jan 5	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	0.02	0.00	0.00	0.00	0.02	0.00
Jan 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
Jan 7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	C	C	C	C	0.24	**0.25**	0.03	0.04	0.02	0.04	0.00	0.04	0.00	**0.25**	**0.03**
Jan 8	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Jan 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	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00
Jan 10	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Jan 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
Jan 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
Jan 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	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Jan 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
Jan 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
Jan 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
Jan 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
Jan 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
Jan 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	Y	Y	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00
Jan 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
Jan 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
Jan 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
Jan 23	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	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Jan 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
Jan 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
Jan 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
Jan 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
Jan 28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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
Jan 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
Jan 30	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
Jan 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diurnal Maximum	0.01	0.01	0.00	0.00	0.00	0.02	0.00	0.01	0.02	0.01	0.01	0.00	0.00	0.00	0.01	0.02	0.24	0.25	0.05	0.04	0.13	0.04	0.02	0.04			
Diurnal Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.01	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.



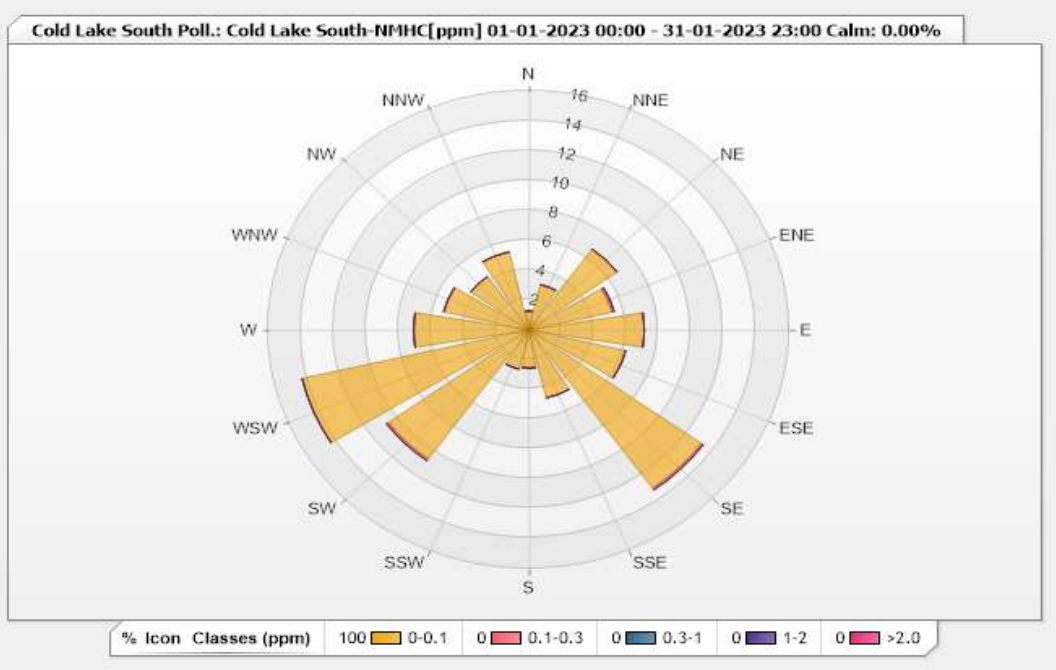


Station: Cold Lake South Poll.: Cold Lake South-NMHC[ppm] Monthly: 01-2023

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	0-0.1	0.1-0.3	0.3-1	1-2	>2.0	Total
N	1.27	0	0	0	0	1.27
NNE	3.12	0	0	0	0	3.12
NE	6.66	0	0	0	0	6.66
ENE	5.24	0.14	0	0	0	5.38
E	7.08	0	0	0	0	7.08
ESE	6.09	0	0	0	0	6.09
SE	13.03	0.14	0	0	0	13.17
SSE	4.67	0	0	0	0	4.67
S	2.55	0	0	0	0	2.55
SSW	2.69	0	0	0	0	2.69
SW	10.62	0.14	0	0	0	10.76
WSW	14.31	0	0	0	0	14.31
W	7.08	0	0	0	0	7.08
WNW	5.38	0	0	0	0	5.38
NW	4.39	0	0	0	0	4.39
NNW	5.38	0	0	0	0	5.38
Summary	100	0.42	0	0	0	100



Lakeland Industry & Community Association

Cold Lake South Station - January 2023

Summary of Hourly Averages

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

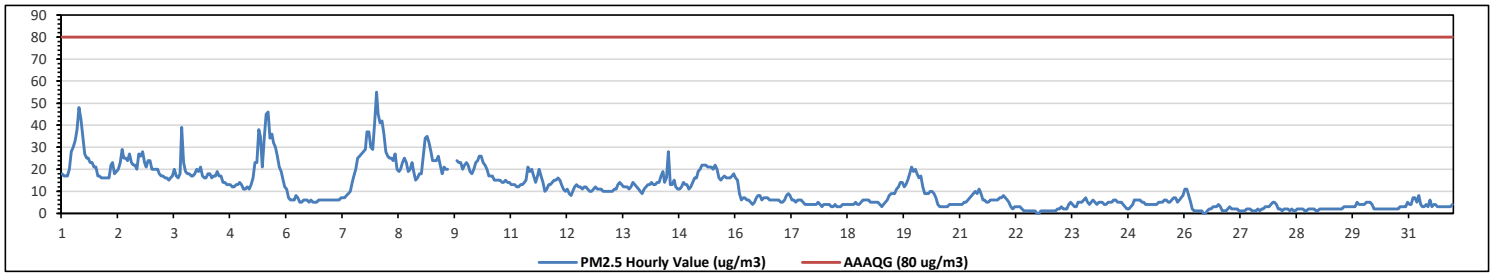
Alberta Ambient Air Quality Guideline (AAAQG): 1-Hour 80 µg/m3, Alberta Ambient Air Quality Objective (AAAQO): 24-Hour 29 µg/m3

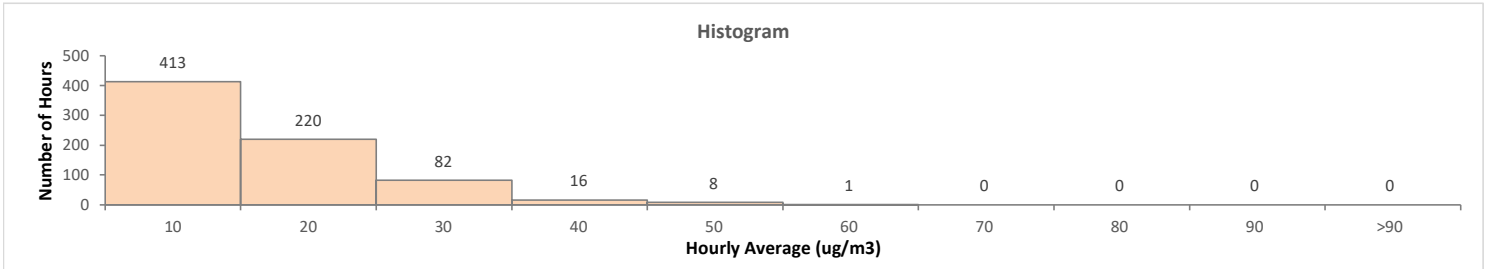
Number of 1-Hour Exceedances:	0	Number of 24-Hour Exceedances:	0
Maximum Hourly Value:	55 µg/m^3 on January 8 at hour 0	Hours in Service:	744
Maximum Daily Value:	26.4 µg/m^3 on January 8	Hours of Data:	740
Minimum Hourly Value:	0 µg/m^3 on January 22 at hour 17	Hours of Missing Data:	0
Minimum Daily Value:	2 µg/m^3 on January 28	Hours of Calibration:	4
Monthly Average:	11.0 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			
Jan 1	18	17	17	17	20	28	30	33	38	48	43	35	27	25	25	23	23	21	21	17	17	16	16	16	16	48	24.6
Jan 2	16	16	22	23	18	19	20	23	29	25	25	24	27	23	22	22	20	27	26	28	23	21	24	24	16	29	22.8
Jan 3	20	20	20	20	18	17	17	16	16	15	16	17	20	17	16	18	39	23	19	18	18	17	17	18	15	39	18.8
Jan 4	20	19	21	17	16	16	18	18	16	17	17	19	17	17	14	14	13	13	13	12	12	13	13	14	12	21	15.8
Jan 5	13	11	11	12	11	13	16	23	23	38	35	21	34	45	46	34	36	32	30	26	21	19	15	12	11	46	24.0
Jan 6	11	7	6	6	6	8	7	5	5	6	6	6	5	6	5	5	5	6	6	6	6	6	6	6	5	11	6.1
Jan 7	6	6	6	6	6	7	7	7	8	9	10	14	17	20	25	26	27	28	29	37	37	30	29	41	6	41	18.3
Jan 8	**55**	45	41	42	36	28	26	25	25	24	27	20	19	20	23	25	23	19	20	23	19	15	16	18	15	**55**	**26.4**
Jan 9	18	26	34	35	32	28	24	24	24	26	22	18	21	20	20	**C**	**C**	**C**	**C**	24	23	23	20	22	18	35	24.2
Jan 10	23	22	19	18	20	23	24	26	26	23	22	20	17	17	17	15	15	15	15	14	14	15	14	14	14	26	18.7
Jan 11	13	13	13	12	12	13	13	14	15	21	19	20	17	14	17	20	17	14	10	11	13	13	14	15	10	21	14.7
Jan 12	15	16	15	13	11	10	11	9	8	10	12	13	12	12	11	12	12	11	10	10	11	12	11	11	8	16	11.6
Jan 13	11	10	10	10	10	10	10	11	11	13	14	13	12	12	12	11	12	14	13	12	11	10	9	11	9	14	11.3
Jan 14	12	13	13	14	13	13	14	14	17	19	14	16	28	13	13	15	12	11	11	12	14	13	13	11	11	28	14.1
Jan 15	12	14	16	16	19	20	22	22	22	21	21	21	20	22	20	16	15	16	17	16	16	16	17	18	12	22	18.1
Jan 16	16	15	9	6	7	7	6	6	5	4	5	7	8	8	6	7	7	7	6	6	6	6	6	6	4	16	7.2
Jan 17	5	5	6	8	9	8	6	6	5	6	6	6	5	4	4	4	4	4	4	4	5	4	3	4	3	9	5.2
Jan 18	4	4	4	3	3	4	3	3	3	4	4	4	4	4	4	4	5	4	4	5	6	6	6	6	3	6	4.2
Jan 19	5	5	5	5	5	4	3	4	5	6	8	9	9	9	11	12	14	14	12	13	15	18	21	19	3	21	9.6
Jan 20	20	18	16	17	12	9	9	9	10	10	9	7	4	3	3	3	3	3	4	4	4	4	4	4	3	20	7.9
Jan 21	4	4	5	5	6	7	8	9	10	9	11	9	6	6	5	5	6	6	6	6	6	7	7	8	4	11	6.7
Jan 22	7	6	5	3	2	3	3	3	3	2	1	1	1	1	1	1	1	0	0	1	1	1	1	1	**0**	7	2.0
Jan 23	1	1	1	1	2	2	3	2	2	2	4	5	4	3	3	5	5	5	6	7	5	4	5	6	1	7	3.5
Jan 24	5	4	5	5	5	4	4	5	5	5	6	6	5	5	5	4	3	2	2	3	4	6	6	6	2	6	4.6
Jan 25	6	5	5	4	4	4	4	4	4	4	5	5	5	6	6	5	5	6	7	7	5	6	7	8	4	8	5.3
Jan 26	11	11	8	5	2	1	1	1	1	1	0	0	1	2	2	3	3	3	4	3	1	1	1	2	**0**	11	2.8
Jan 27	3	2	2	2	2	1	1	1	1	2	2	2	1	1	1	2	1	2	2	3	3	3	4	5	1	5	2.0
Jan 28	5	4	2	2	1	2	2	2	1	2	1	1	2	2	2	2	1	1	2	2	2	2	1	1	1	5	**1.9**
Jan 29	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3	3	3	5	4	4	4	2	5	2.7
Jan 30	4	5	5	5	4	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3	5	2	5	2.8
Jan 31	4	4	7	7	5	8	4	3	3	4	3	6	3	4	4	3	3	3	3	3	3	3	3	4	3	8	4.0
Diurnal Maximum	55	45	41	42	36	28	30	33	38	48	43	35	34	45	46	34	39	32	30	37	37	30	29	41			
Diurnal Average	11.8	11.3	11.3	11.0	10.3	10.4	10.3	10.7	11.1	12.3	12.0	11.3	11.5	11.2	11.2	10.7	11.2	10.5	10.2	10.9	10.6	10.2	10.2	11.0			

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.



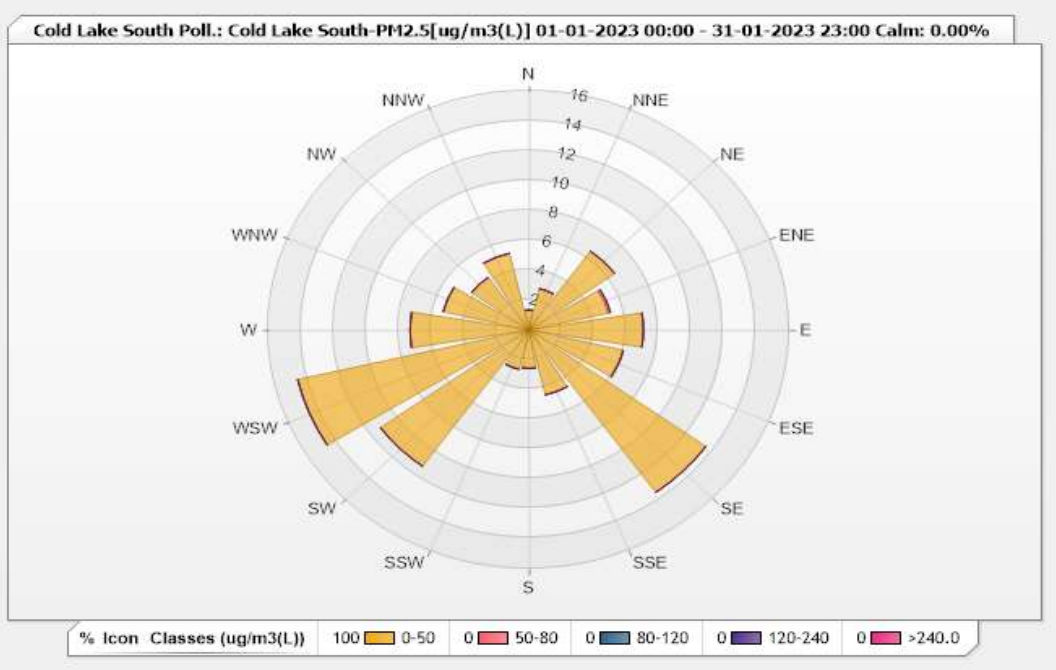


Station: Cold Lake South Poll.: Cold Lake South-PM2.5[ug/m3(L)] Monthly: 01-2023

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

Calm: 0.00% Valid Data: 99.46% Calm Avg: 0.00 [ppm]

Direction	0-50	50-80	80-120	120-240	>240.0	Total
N	1.35	0	0	0	0	1.35
NNE	2.84	0	0	0	0	2.84
NE	6.49	0	0	0	0	6.49
ENE	5	0.14	0	0	0	5.14
E	7.03	0	0	0	0	7.03
ESE	5.95	0	0	0	0	5.95
SE	13.38	0	0	0	0	13.38
SSE	4.46	0	0	0	0	4.46
S	2.57	0	0	0	0	2.57
SSW	2.7	0	0	0	0	2.7
SW	11.22	0	0	0	0	11.22
WSW	14.59	0	0	0	0	14.59
W	7.3	0	0	0	0	7.3
WNW	5.41	0	0	0	0	5.41
NW	4.32	0	0	0	0	4.32
NNW	5.27	0	0	0	0	5.27
Summary	100	0.14	0	0	0	100



Lakeland Industry & Community Association

Cold Lake South Station - January 2023

Summary of Hourly Averages

RELATIVE HUMIDITY (RH) in %

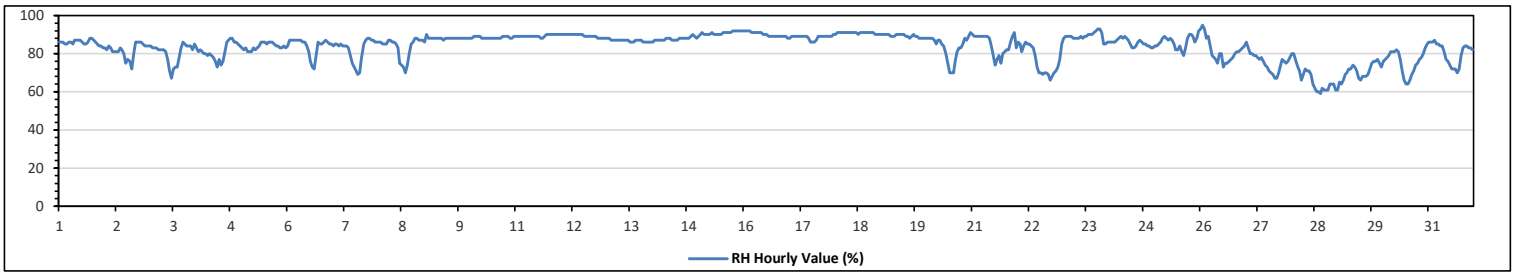
Maximum Hourly Value:	95 %	on January 26 at hour 1	Hours in Service:	744	
Maximum Daily Value:	90.8 %	on January 18	Hours of Data:	744	
Minimum Hourly Value:	59 %	on January 28 at hour 15	Hours of Missing Data:	0	
Minimum Daily Value:	66.7 %	on January 28	Hours of Calibration:	0	
Monthly Average:	83.7 %		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
Jan 1	86	86	86	85	85	86	86	85	87	87	87	87	86	85	85	86	88	88	87	86	85	84	84	83	83	88	85.8
Jan 2	83	82	84	83	81	81	81	81	83	82	80	75	77	76	72	80	86	86	86	86	85	84	84	84	72	86	81.8
Jan 3	84	83	83	83	82	82	82	82	81	77	71	67	72	73	73	78	83	86	85	84	84	84	82	85	67	86	80.3
Jan 4	83	81	82	81	80	80	79	80	79	78	76	73	77	74	76	81	86	87	88	88	86	86	85	84	73	88	81.3
Jan 5	83	82	83	81	81	81	83	82	83	84	86	86	86	85	86	86	86	85	84	84	83	83	84	83	81	86	83.8
Jan 6	84	87	87	87	87	87	87	87	86	86	84	81	76	73	72	79	86	85	85	86	87	86	85	85	72	87	84.0
Jan 7	84	85	85	84	85	84	84	84	83	79	75	73	71	69	70	78	85	87	88	88	87	87	86	86	69	88	82.0
Jan 8	86	86	85	85	85	87	87	86	86	85	83	75	74	73	70	74	80	85	86	88	88	87	87	87	70	88	83.1
Jan 9	86	90	88	88	88	88	88	88	88	88	87	88	88	88	88	88	88	88	88	88	88	88	88	88	86	90	88.0
Jan 10	88	88	89	89	89	89	88	88	88	88	88	88	88	88	88	88	88	89	89	89	89	88	88	89	88	89	88.4
Jan 11	89	89	89	89	89	89	89	89	89	89	89	89	89	88	88	89	90	90	90	90	90	90	90	90	88	90	89.3
Jan 12	90	90	90	90	90	90	90	90	90	90	90	90	89	89	89	89	89	89	89	88	88	88	88	88	88	90	89.3
Jan 13	88	88	87	87	87	87	87	87	87	87	87	87	86	86	86	87	87	87	87	86	86	86	86	86	86	88	86.8
Jan 14	86	87	87	87	87	87	87	88	88	88	87	87	87	87	88	88	88	88	88	88	89	90	89	88	86	90	87.7
Jan 15	89	90	91	90	90	90	90	91	90	90	90	90	90	91	91	91	91	91	92	92	92	92	92	92	89	92	90.8
Jan 16	92	92	92	92	91	91	91	91	91	91	90	90	90	89	89	89	89	89	89	89	89	89	89	88	88	92	90.1
Jan 17	88	89	89	89	89	89	89	89	89	89	88	86	86	86	87	89	89	89	89	89	89	89	89	90	86	90	88.5
Jan 18	90	91	91	91	91	91	91	91	91	91	91	91	90	91	91	91	91	91	91	91	91	90	90	90	90	91	**90.8**
Jan 19	90	90	90	90	90	89	89	89	90	90	90	90	90	89	89	88	89	90	89	89	88	88	88	88	88	90	89.3
Jan 20	88	88	88	88	87	85	87	87	85	84	80	75	70	70	70	76	81	83	83	85	88	87	89	91	70	91	83.1
Jan 21	90	89	89	89	89	89	89	89	89	88	84	79	74	77	79	75	80	81	82	82	86	89	91	83	74	91	84.7
Jan 22	86	85	81	84	86	85	85	84	83	79	73	70	70	69	70	70	69	66	68	70	71	73	77	85	66	86	76.6
Jan 23	88	89	89	89	89	88	88	88	88	89	88	89	89	90	90	90	91	92	93	93	91	85	85	86	85	93	89.0
Jan 24	86	86	86	86	87	88	89	88	89	88	87	85	83	83	84	86	87	86	85	85	84	84	83	83	83	89	85.8
Jan 25	84	84	85	86	88	89	88	87	88	87	85	82	82	84	81	79	83	88	90	90	89	86	88	92	79	92	86.0
Jan 26	93	**95**	93	88	89	84	79	78	77	75	80	80	73	75	75	76	77	78	80	81	81	82	83	84	73	**95**	81.5
Jan 27	86	83	80	80	79	79	78	77	78	76	74	73	71	70	69	67	67	70	74	77	76	75	76	78	67	86	75.5
Jan 28	80	80	76	73	71	66	69	72	71	71	69	64	62	60	60	**59**	62	61	61	61	64	64	64	61	**59**	80	**66.7**
Jan 29	61	65	64	66	69	70	72	72	74	73	71	67	66	68	68	68	69	72	75	76	76	77	75	73	61	77	70.3
Jan 30	76	77	78	79	81	81	81	82	81	77	71	66	64	64	66	69	71	74	75	77	78	80	83	85	64	85	75.7
Jan 31	86	86	86	87	85	85	84	84	81	77	76	74	72	72	72	70	72	79	83	84	84	83	83	82	70	87	80.3
Diurnal Maximum	93	95	93	92	91	91	91	91	91	91	91	91	90	91	91	91	91	92	93	93	92	92	92	92			
Diurnal Average	85.6	85.9	85.6	85.4	85.4	85.1	85.1	85.0	84.9	84.0	82.5	80.5	79.6	79.4	79.4	80.8	82.8	83.9	84.5	84.8	84.9	84.6	84.9	85.1			

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.



Lakeland Industry & Community Association

Cold Lake South Station - January 2023

Summary of Hourly Averages

BAROMETRIC PRESSURE (BP) in millibar

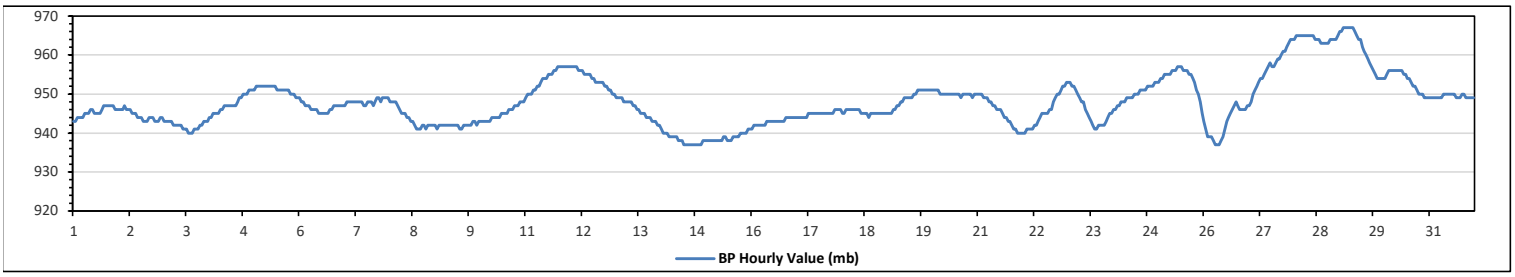
Maximum Hourly Value:	967 mb	on January 29 at hour 2	Hours in Service:	744	
Maximum Daily Value:	964 mb	on January 28	Hours of Data:	744	
Minimum Hourly Value:	937 mb	on January 14 at hour 12	Hours of Missing Data:	0	
Minimum Daily Value:	938 mb	on January 14	Hours of Calibration:	0	
Monthly Average:	948 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
Jan 1	943	943	944	944	944	944	945	945	945	946	946	945	945	945	945	946	947	947	947	947	947	947	946	946	943	947	945
Jan 2	946	946	946	947	946	946	946	945	945	945	944	944	944	943	943	943	944	944	944	943	943	943	944	944	943	947	945
Jan 3	943	943	943	943	943	942	942	942	942	942	941	941	941	940	940	940	941	941	941	942	942	943	943	943	940	943	942
Jan 4	944	944	945	945	945	945	946	946	947	947	947	947	947	947	947	948	949	949	950	950	950	951	951	951	944	951	947
Jan 5	951	952	952	952	952	952	952	952	952	952	952	952	951	951	951	951	951	951	951	950	950	950	949	949	949	952	951
Jan 6	949	948	948	947	947	947	946	946	946	946	945	945	945	945	945	945	946	946	947	947	947	947	947	947	945	949	946
Jan 7	947	948	948	948	948	948	948	948	948	948	947	947	948	948	948	947	948	949	949	948	949	949	949	949	947	949	948
Jan 8	948	948	948	948	947	946	945	945	945	944	944	943	943	942	941	941	941	942	942	941	942	942	942	942	941	948	944
Jan 9	942	941	942	942	942	942	942	942	942	942	942	942	942	941	941	942	942	942	942	942	943	943	942	943	941	943	942
Jan 10	943	943	943	943	943	943	944	944	944	944	944	945	945	945	945	946	946	946	947	947	947	948	948	948	943	948	945
Jan 11	949	950	950	950	951	951	952	952	953	954	954	954	955	955	955	956	956	957	957	957	957	957	957	957	949	957	954
Jan 12	957	957	957	957	956	956	956	955	955	955	955	954	954	953	953	953	953	953	952	952	951	951	950	950	950	957	954
Jan 13	949	949	949	949	948	948	948	948	948	947	947	946	946	945	945	945	944	944	944	943	943	943	942	942	942	949	946
Jan 14	941	940	940	940	939	939	939	939	939	938	938	938	**937**	**937**	**937**	**937**	**937**	**937**	**937**	**937**	**937**	**937**	938	938	**937**	941	**938**
Jan 15	938	938	938	938	938	938	938	938	938	939	939	938	938	938	939	939	939	939	940	940	940	940	941	941	938	941	939
Jan 16	941	942	942	942	942	942	942	942	943	943	943	943	943	943	943	943	943	943	944	944	944	944	944	944	941	944	943
Jan 17	944	944	944	944	944	944	945	945	945	945	945	945	945	945	945	945	945	945	945	945	946	946	946	946	944	946	945
Jan 18	945	945	946	946	946	946	946	946	946	946	945	945	945	945	944	945	945	945	945	945	945	945	945	945	944	946	945
Jan 19	945	945	945	946	946	947	947	948	948	949	949	949	949	949	950	950	951	951	951	951	951	951	951	951	945	951	949
Jan 20	951	951	951	951	950	950	950	950	950	950	950	950	950	950	950	949	950	950	950	950	950	949	950	950	949	951	950
Jan 21	950	950	950	949	949	949	948	948	947	947	946	946	946	945	944	944	943	943	942	941	941	940	940	940	940	950	945
Jan 22	940	940	941	941	941	941	942	942	943	944	945	945	945	945	946	946	948	949	950	950	951	952	952	953	940	953	946
Jan 23	953	953	952	952	951	950	949	948	948	946	945	944	943	942	941	941	942	942	942	942	943	944	945	945	941	953	946
Jan 24	946	946	947	947	948	948	948	949	949	949	949	950	950	950	951	951	951	951	952	952	952	952	953	953	946	953	950
Jan 25	953	954	954	955	955	955	955	956	956	956	957	957	957	956	956	956	955	955	954	953	951	950	948	945	945	957	954
Jan 26	943	941	939	939	939	938	**937**	**937**	**937**	938	939	941	943	944	945	946	947	948	947	946	946	946	946	947	**937**	948	942
Jan 27	947	948	950	951	952	953	954	954	955	956	957	958	957	957	958	959	959	960	961	961	962	963	964	964	947	964	957
Jan 28	964	965	965	965	965	965	965	965	965	965	965	964	964	964	963	963	963	963	963	964	964	964	964	965	963	965	**964**
Jan 29	966	966	**967**	**967**	**967**	**967**	**967**	**967**	966	965	964	964	962	961	960	959	958	957	956	955	954	954	954	954	954	**967**	962
Jan 30	954	955	956	956	956	956	956	956	956	956	955	955	954	954	953	952	952	951	950	950	950	949	949	949	949	956	953
Jan 31	949	949	949	949	949	949	949	950	950	950	950	950	950	950	949	949	949	950	950	949	949	949	949	949	949	950	949
Diurnal Maximum	966	966	967	967	967	967	967	967	966	965	965	964	964	964	963	963	963	963	963	964	964	964	964	965			
Diurnal Average	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948			

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 - January 2023

Summary of Hourly Averages

AMBIENT TEMPERATURE (AT) in Degree Celsius

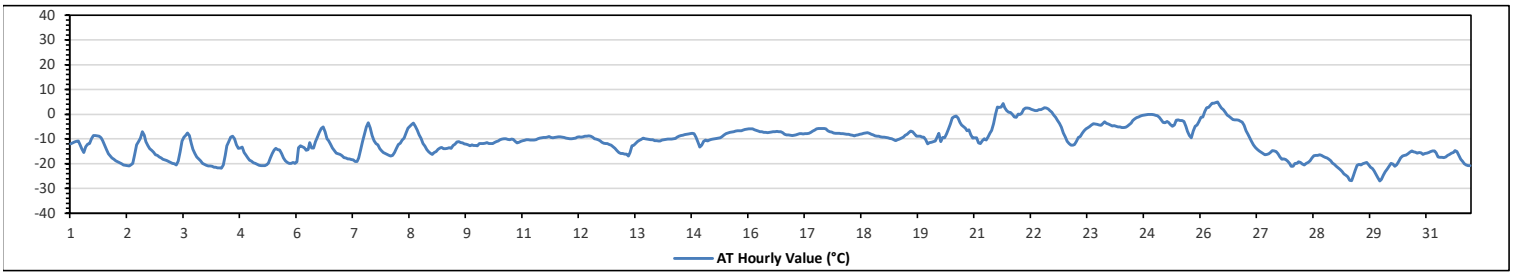
Maximum Hourly Value:	4.9 °C	on January 26 at hour 9	Hours in Service:	744		
Maximum Daily Value:	0.5 °C	on January 26	Hours of Data:	744		
Minimum Hourly Value:	-27.0 °C	on January 29 at hour 23	Hours of Missing Data:	0		
Minimum Daily Value:	-22.8 °C	on January 29	Hours of Calibration:	0		
Monthly Average:	-10.9 °C		Operational Uptime:	100.0		

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Jan 1	-12	-11.6	-11.2	-10.9	-10.8	-12.3	-14.1	-15.4	-13.1	-12.2	-11.8	-10	-8.6	-8.6	-8.7	-8.8	-9.5	-10.7	-12.6	-14.3	-16	-16.8	-17.7	-18.2	-18.2	-8.6	-12.3
Jan 2	-18.9	-19.3	-19.6	-20	-20.5	-20.7	-20.8	-20.9	-20.4	-19.9	-16.2	-12.4	-11	-9.7	-7	-8.5	-11	-12.7	-13.9	-14.6	-15.3	-16.4	-16.7	-17.3	-20.9	-7.0	-16.0
Jan 3	-17.7	-18.2	-18.5	-18.7	-19.1	-19.5	-19.8	-20	-20.5	-19	-15.2	-10.8	-9.3	-8.6	-7.6	-8.6	-11.8	-14.2	-15.9	-17.2	-18	-18.9	-19.8	-20.2	-20.5	-7.6	-16.1
Jan 4	-20.6	-20.9	-20.9	-21	-21.4	-21.4	-21.7	-21.6	-21.8	-20.5	-16.6	-12.8	-11	-9.3	-8.8	-10	-12.4	-13.8	-13.6	-13.3	-15.4	-16.4	-17.5	-18.6	-21.8	-8.8	-16.7
Jan 5	-19	-19.6	-19.8	-20.3	-20.6	-20.8	-20.8	-20.8	-20.4	-19.7	-17.7	-15.8	-14.5	-13.8	-14.3	-14.5	-15.8	-17.7	-18.8	-19.4	-19.9	-19.9	-19.5	-19.8	-20.8	-13.8	-18.5
Jan 6	-19.2	-13.5	-12.8	-13.1	-13.5	-14.6	-14.3	-11.4	-13.6	-13.7	-11	-9.3	-7.3	-5.8	-5.2	-7	-10	-10.7	-12.1	-13.6	-14.8	-15.7	-16	-16.2	-19.2	-5.2	-12.3
Jan 7	-16.8	-17.5	-17.6	-18	-18.1	-18.3	-18.4	-19.1	-19.1	-17.6	-14.5	-11	-8.2	-5.2	-3.5	-5.6	-8.6	-10.7	-11.9	-12.4	-13.9	-14.8	-15.4	-15.8	-19.1	-3.5	-13.8
Jan 8	-16.3	-16.7	-17	-16.7	-15.4	-13.8	-12.3	-11.7	-10.5	-9.7	-7.6	-5.7	-4.8	-4.2	-3.6	-4.8	-6.4	-8.4	-9.8	-11.8	-12.9	-14.3	-15.2	-15.8	-17.0	-3.6	-11.1
Jan 9	-16.2	-15.4	-15	-14.2	-13.6	-13.4	-13.9	-13.9	-13.8	-13.5	-13.8	-12.7	-12.1	-11.2	-11	-11.4	-11.6	-12	-12.2	-12.4	-12.8	-12.4	-12.7	-12.7	-16.2	-11.0	-13.1
Jan 10	-12.8	-11.9	-11.8	-11.8	-11.7	-11.5	-11.8	-11.9	-11.8	-11.4	-11.1	-10.8	-10.4	-10.1	-10	-10	-10.2	-10.3	-10.1	-10.2	-10.9	-11.6	-11.3	-10.9	-12.8	-10.0	-11.1
Jan 11	-10.7	-10.6	-10.4	-10.4	-10.5	-10.5	-10.5	-10.3	-10	-9.6	-9.5	-9.4	-9.4	-9.2	-9	-9.4	-9.5	-9.4	-9.2	-9.1	-9.1	-9.3	-9.4	-9.6	-10.7	-9.0	-9.8
Jan 12	-9.8	-9.9	-9.9	-9.8	-9.6	-9.3	-9.1	-9.2	-9.1	-8.9	-8.8	-8.7	-8.9	-9.3	-9.9	-10.1	-10.4	-10.7	-11.3	-11.7	-11.8	-11.9	-12.3	-12.6	-12.6	-8.7	-10.1
Jan 13	-13.1	-13.8	-14.8	-15.4	-15.9	-15.8	-16.1	-16.1	-16.9	-15.5	-12.8	-12.5	-11.8	-11.1	-10.6	-10.2	-9.7	-10	-10.1	-10.2	-10.4	-10.4	-10.7	-10.7	-16.9	-9.7	-12.7
Jan 14	-10.8	-10.8	-10.5	-10.3	-10.2	-10.1	-10.1	-10.1	-10	-9.8	-9.2	-8.9	-8.6	-8.5	-8.3	-8.1	-8	-7.9	-7.8	-7.9	-9.3	-11.2	-13.2	-12.6	-13.2	-7.8	-9.7
Jan 15	-10.9	-10.5	-10.8	-10.5	-10.2	-10.1	-9.9	-9.8	-9.6	-9.5	-9	-8.4	-7.9	-7.6	-7.3	-7.2	-7	-6.8	-6.7	-6.7	-6.6	-6.4	-6.2	-6.1	-10.9	-6.1	-8.4
Jan 16	-6	-6	-6	-6.3	-6.5	-6.8	-7	-7.1	-7.3	-7.4	-7.5	-7.4	-7.2	-7.1	-7	-6.9	-7	-7.1	-7.5	-8.1	-8.4	-8.4	-8.5	-8.6	-8.6	-6.0	-7.2
Jan 17	-8.5	-8.4	-8.1	-7.9	-7.9	-8	-7.9	-7.9	-7.7	-7.4	-6.8	-6.4	-6	-5.8	-5.8	-5.8	-5.8	-6	-6.6	-7	-7.2	-7.6	-7.7	-7.8	-8.5	-5.8	-7.2
Jan 18	-7.8	-7.9	-7.9	-8	-8.2	-8.2	-8.4	-8.5	-8.7	-8.5	-8.4	-8.1	-8	-7.8	-7.6	-7.5	-7.7	-8.1	-8.4	-8.7	-8.8	-8.9	-9.1	-9.2	-9.2	-7.5	-8.3
Jan 19	-9.3	-9.4	-9.5	-9.8	-10	-10.4	-10.7	-10.3	-10.1	-9.6	-9.2	-8.5	-8.1	-7.5	-6.8	-7	-8	-8.8	-8.8	-8.9	-9.2	-9.2	-10.3	-12	-12.0	-6.8	-9.2
Jan 20	-11.4	-11.3	-11	-10.8	-9.1	-7.8	-11.1	-9.4	-9.5	-8	-6.1	-4	-1.6	-1	-0.7	-1.5	-3.4	-4.3	-5	-5.7	-6.6	-6.3	-8.4	-9.7	-11.4	-0.7	-6.8
Jan 21	-9.5	-9.5	-11.6	-11.9	-10.7	-10	-10.5	-9.1	-7.6	-6.5	-3.9	0	2.8	2.7	2.9	4.3	2.6	1.5	0.8	0.7	0	-1.1	-1.3	0.1	-11.9	4.3	-3.5
Jan 22	-0.1	0.4	2	2.5	2.5	2.4	2	1.7	1.5	1.5	1.9	1.9	2.3	2.6	2.5	2.1	1.4	0.8	-0.3	-1.3	-2.6	-3.7	-5.3	-7.6	-7.6	2.6	0.5
Jan 23	-9.1	-10.9	-11.9	-12.5	-12.6	-12.3	-10.9	-9.4	-9	-7.7	-6.6	-6	-5.5	-5	-4.3	-3.9	-4	-4.1	-4.3	-4.4	-3.7	-3.1	-3.7	-4	-12.6	-3.1	-7.0
Jan 24	-4.3	-4.7	-4.6	-4.8	-5.1	-5.2	-5.4	-5.4	-5.3	-4.9	-4.2	-3.6	-2.6	-1.9	-1.4	-1.1	-0.8	-0.5	-0.3	-0.2	0	0	-0.1	-0.2	-5.4	0.0	-2.8
Jan 25	-0.5	-0.6	-1.3	-2.3	-3.4	-3.5	-3	-3.4	-4.2	-4.9	-4.3	-2.4	-2.2	-2.6	-2.6	-3	-4.8	-6.9	-8.6	-9.5	-6.8	-4.8	-4.3	-2.9	-9.5	-0.5	-3.9
Jan 26	-1.3	-1.1	1	2.6	2.7	3.5	4.4	4.5	4.7	**4.9**	3.6	2.5	1.8	0.8	-0.4	-0.9	-1.6	-2.1	-2.3	-2.2	-2.4	-2.8	-3.2	-4.5	-4.5	**4.9**	**0.5**
Jan 27	-6.7	-8.1	-9.6	-10.9	-12.4	-13.4	-14.2	-14.9	-15.3	-15.9	-16.4	-16.3	-16	-15.4	-14.8	-14.9	-15.1	-16	-17.3	-18.2	-18.1	-18.3	-19	-19.9	-19.9	-6.7	-14.9
Jan 28	-21.1	-21.1	-19.8	-19.8	-19.3	-19.4	-20.1	-20.5	-19.9	-19.4	-18.8	-17.6	-16.8	-16.6	-16.7	-16.4	-16.6	-17.1	-17.4	-17.7	-18.2	-18.8	-19.7	-20.3	-21.1	-16.4	-18.7
Jan 29	-21	-21.6	-22.3	-23.1	-24.1	-24.6	-25.3	-26.7	-26.8	-25.1	-22.7	-20.7	-20.2	-20.5	-20	-19.7	-19.5	-20.4	-21.4	-21.9	-22.9	-24.3	-25.7	**-27**	**-27.0**	-19.5	**-22.8**
Jan 30	-26.3	-24.7	-23.2	-22.2	-21	-19.9	-20.1	-21.1	-20.4	-19.1	-17.7	-16.9	-16.7	-16.5	-16	-15.3	-14.9	-15.2	-15.3	-15.7	-15.4	-15.6	-16.3	-15.9	-26.3	-14.9	-18.4
Jan 31	-15.7	-15.4	-15.1	-14.9	-14.9	-15.6	-17.2	-17.4	-17.4	-17.5	-17.2	-16.7	-16.2	-15.7	-15.4	-14.8	-15.1	-16.6	-18.2	-19.1	-20	-20.5	-20.8	-20.8	-20.8	-14.8	-17.0
Diurnal Maximum	-0.1	0.4	2.0	2.6	2.7	3.5	4.4	4.5	4.7	4.9	3.6	2.5	2.8	2.7	2.9	4.3	2.6	1.5	0.8	0.7	0.0	0.0	-0.1	0.1			
Diurnal Average	-12.4	-12.3	-12.2	-12.3	-12.3	-12.3	-12.5	-12.5	-12.4	-11.8	-10.6	-9.3	-8.5	-8.0	-7.7	-8.0	-8.8	-9.6	-10.2	-10.7	-11.2	-11.6	-12.2	-12.5			

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.



Lakeland Industry & Community Association

Cold Lake South Station - January 2023

Summary of Hourly Averages

STATION TEMPERATURE (ST) in Degree Celsius

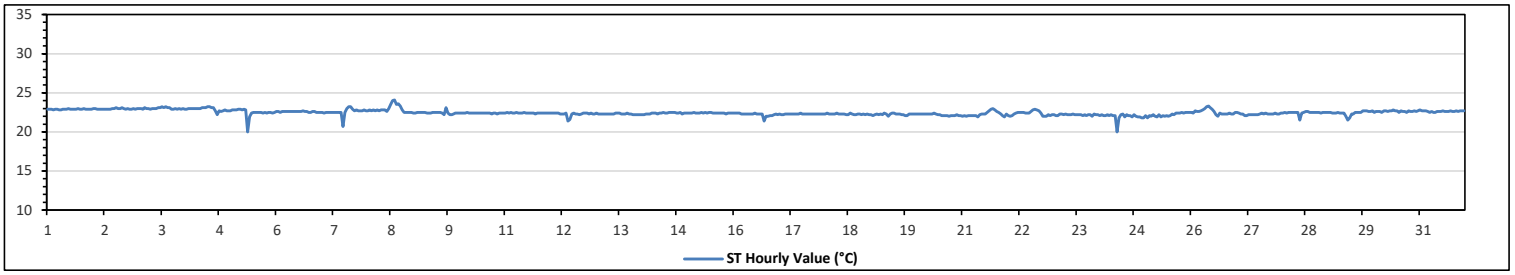
Maximum Hourly Value:	24.1 °C	on January 8 at hour 14	Hours in Service:	744		
Maximum Daily Value:	23.0 °C	on January 3	Hours of Data:	744		
Minimum Hourly Value:	20.0 °C	on January 5 at hour 9	Hours of Missing Data:	0		
Minimum Daily Value:	22.0 °C	on January 24	Hours of Calibration:	0		
Monthly Average:	22.5 °C		Operational Uptime:	100.0		

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Jan 1	22.9	22.9	22.9	22.8	22.9	22.9	22.8	22.8	22.9	22.9	22.9	23.0	22.9	22.9	22.9	22.9	23.0	22.9	22.9	23.0	22.9	22.9	22.9	22.9	22.8	23.0	22.9
Jan 2	23.0	23.0	22.9	22.9	22.9	22.9	22.9	22.9	22.9	22.9	23.0	23.0	23.1	23.0	23.0	23.1	23.0	22.9	23.0	22.9	22.9	23.0	22.9	23.0	22.9	23.1	23.0
Jan 3	23.0	23.0	22.9	23.1	23.0	23.0	22.9	23.0	23.0	23.0	23.1	23.1	23.2	23.1	23.2	23.1	23.1	22.9	22.9	23.0	22.9	23.0	22.9	23.0	22.9	23.2	**23.0**
Jan 4	22.9	22.9	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.1	23.1	23.1	23.2	23.2	23.1	23.1	22.7	22.2	22.7	22.6	22.7	22.8	22.7	22.7	22.2	23.2	22.9
Jan 5	22.7	22.8	22.8	22.8	22.9	22.9	22.8	22.9	22.8	**20.0**	21.9	22.4	22.5	22.5	22.5	22.5	22.5	22.4	22.5	22.4	22.5	22.5	22.4	22.5	**20.0**	22.9	22.5
Jan 6	22.6	22.6	22.5	22.6	22.6	22.6	22.6	22.6	22.6	22.6	22.6	22.6	22.6	22.6	22.7	22.6	22.6	22.5	22.5	22.6	22.6	22.5	22.5	22.5	22.5	22.7	22.6
Jan 7	22.5	22.4	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	20.7	22.5	23.0	23.2	23.2	22.9	22.7	22.8	22.7	22.7	22.7	22.8	22.7	20.7	23.2	22.6
Jan 8	22.7	22.8	22.7	22.8	22.7	22.8	22.7	22.8	22.8	22.8	22.6	23.0	23.5	24.0	**24.1**	23.5	23.6	23.3	22.8	22.5	22.5	22.5	22.5	22.5	22.5	**24.1**	22.9
Jan 9	22.4	22.4	22.5	22.5	22.5	22.5	22.5	22.4	22.4	22.4	22.5	22.5	22.5	22.5	22.5	22.4	22.2	23.1	22.4	22.2	22.2	22.3	22.4	22.4	22.2	23.1	22.4
Jan 10	22.4	22.4	22.4	22.4	22.5	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.3	22.4	22.4	22.3	22.4	22.4	22.4	22.3	22.5	22.4
Jan 11	22.4	22.5	22.4	22.5	22.4	22.4	22.5	22.4	22.4	22.4	22.5	22.4	22.4	22.4	22.4	22.4	22.3	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.3	22.5	22.4
Jan 12	22.4	22.4	22.4	22.4	22.4	22.3	22.3	22.3	22.4	21.4	21.6	22.3	22.4	22.3	22.3	22.2	22.3	22.4	22.4	22.4	22.3	22.4	22.3	22.3	21.4	22.4	22.3
Jan 13	22.4	22.3	22.3	22.3	22.3	22.3	22.3	22.3	22.3	22.3	22.4	22.4	22.4	22.3	22.3	22.3	22.4	22.3	22.3	22.2	22.2	22.2	22.2	22.2	22.2	22.4	22.3
Jan 14	22.2	22.2	22.3	22.3	22.3	22.4	22.4	22.4	22.3	22.4	22.4	22.5	22.4	22.4	22.5	22.5	22.5	22.5	22.4	22.4	22.5	22.3	22.4	22.4	22.2	22.5	22.4
Jan 15	22.4	22.4	22.4	22.5	22.4	22.4	22.4	22.5	22.4	22.5	22.4	22.5	22.5	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.3	22.4	22.4	22.4	22.3	22.5	22.4
Jan 16	22.4	22.4	22.4	22.4	22.3	22.3	22.3	22.3	22.3	22.3	22.3	22.4	22.3	22.3	22.3	22.3	21.4	22.0	22.0	22.1	22.1	22.2	22.3	22.2	21.4	22.4	22.2
Jan 17	22.3	22.2	22.2	22.3	22.3	22.3	22.3	22.3	22.3	22.3	22.3	22.4	22.3	22.3	22.3	22.3	22.3	22.3	22.3	22.3	22.3	22.3	22.3	22.3	22.2	22.4	22.3
Jan 18	22.3	22.4	22.3	22.3	22.3	22.3	22.4	22.3	22.3	22.3	22.3	22.2	22.2	22.4	22.3	22.2	22.2	22.3	22.3	22.2	22.3	22.2	22.3	22.2	22.2	22.4	22.3
Jan 19	22.2	22.1	22.2	22.3	22.2	22.3	22.2	22.4	22.3	22.0	22.3	22.4	22.4	22.3	22.3	22.3	22.2	22.2	22.1	22.1	22.3	22.3	22.3	22.3	22.0	22.4	22.3
Jan 20	22.3	22.3	22.3	22.3	22.3	22.3	22.3	22.3	22.3	22.4	22.3	22.2	22.2	22.1	22.1	22.1	22.1	22.0	22.1	22.1	22.1	22.2	22.1	22.1	22.0	22.4	22.2
Jan 21	22.0	22.1	22.0	22.1	22.1	22.1	22.1	22.1	21.9	22.2	22.3	22.3	22.3	22.5	22.7	22.9	23.0	22.8	22.6	22.5	22.3	22.1	21.9	22.3	21.9	23.0	22.3
Jan 22	22.1	22.0	22.1	22.3	22.4	22.5	22.5	22.5	22.5	22.4	22.4	22.4	22.6	22.8	22.9	22.8	22.7	22.4	22.0	22.0	22.0	22.2	22.1	22.2	22.0	22.9	22.4
Jan 23	22.2	22.1	22.1	22.3	22.3	22.2	22.3	22.2	22.2	22.2	22.3	22.2	22.2	22.2	22.2	22.1	22.2	22.1	22.2	22.2	22.0	22.3	22.2	22.2	22.0	22.3	22.2
Jan 24	22.1	22.2	22.1	22.1	22.2	22.1	22.2	22.1	22.1	**20.0**	21.8	22.2	22.3	21.9	22.2	22.1	22.1	21.9	22.2	22.0	21.9	21.9	21.8	21.8	**20.0**	22.3	**22.0**
Jan 25	22.1	21.8	22.1	22.0	22.2	22.0	21.9	22.2	21.9	22.1	22.0	22.1	22.0	22.1	22.3	22.2	22.4	22.4	22.4	22.5	22.4	22.5	22.5	22.5	21.8	22.5	22.2
Jan 26	22.5	22.4	22.7	22.6	22.6	22.7	22.8	23.0	23.2	23.3	23.1	22.9	22.6	22.2	22.0	22.4	22.3	22.3	22.3	22.3	22.4	22.3	22.3	22.5	22.0	23.3	22.6
Jan 27	22.5	22.4	22.3	22.3	22.1	22.1	22.2	22.2	22.2	22.2	22.2	22.2	22.3	22.4	22.3	22.4	22.3	22.3	22.3	22.3	22.4	22.3	22.3	22.4	22.1	22.5	22.3
Jan 28	22.4	22.5	22.4	22.5	22.5	22.5	22.5	22.5	22.5	21.5	22.4	22.5	22.6	22.6	22.5	22.5	22.5	22.5	22.5	22.5	22.4	22.5	22.5	22.5	21.5	22.6	22.5
Jan 29	22.5	22.5	22.4	22.4	22.4	22.5	22.4	22.4	22.4	22.0	21.5	21.8	22.3	22.3	22.5	22.5	22.5	22.5	22.7	22.7	22.7	22.6	22.6	22.7	21.5	22.7	22.4
Jan 30	22.5	22.6	22.6	22.6	22.5	22.7	22.7	22.6	22.7	22.7	22.8	22.7	22.7	22.5	22.7	22.6	22.6	22.5	22.7	22.6	22.6	22.7	22.6	22.7	22.5	22.8	22.6
Jan 31	22.8	22.7	22.7	22.7	22.6	22.5	22.6	22.5	22.5	22.6	22.6	22.6	22.7	22.6	22.6	22.6	22.7	22.6	22.6	22.7	22.6	22.7	22.7	22.7	22.5	22.8	22.6
Diurnal Maximum	23.0	23.0	23.0	23.1	23.0	23.0	23.0	23.0	23.2	23.3	23.1	23.1	23.5	24.0	24.1	23.5	23.6	23.3	23.0	23.0	22.9	23.0	22.9	23.0			
Diurnal Average	22.5	22.4	22.4	22.5	22.5	22.5	22.5	22.5	22.5	22.3	22.4	22.4	22.5	22.5	22.6	22.5	22.5	22.5	22.5	22.4	22.4	22.4	22.4	22.4			

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.



Lakeland Industry & Community Association

Cold Lake South Station - January 2023

Summary of Hourly Averages

VECTOR WIND SPEED (VWS) in km/hr

Maximum Hourly Value:	24.0	kph	on January 26 at hour 12	Hours in Service:	744	
Maximum Daily Value:	12.6	kph	on January 26	Hours of Data:	744	
Minimum Hourly Value:	0.0	kph	on January 2 at hour 0	Hours of Missing Data:	0	
Minimum Daily Value:	0.5	kph	on January 2	Hours of Calibration:	0	
Monthly Average:	0.8	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
Jan 1	4.6	3.4	4.7	4.4	5.3	3.2	3.1	3.8	5.5	3.1	2.7	3.5	6.4	7.7	6.5	5.9	5.5	3.8	0.6	0.3	1.0	0.5	0.2	0.1	0.1	7.7	3.6
Jan 2	**0.0**	0.3	0.3	0.6	**0.0**	0.1	0.2	0.4	0.6	0.7	0.4	1.3	1.4	1.2	0.3	0.2	0.3	0.2	0.3	0.5	0.8	0.2	0.7	0.5	**0.0**	1.4	**0.5**
Jan 3	1.8	0.2	0.7	0.2	0.2	0.1	0.3	0.1	0.2	**0.0**	**0.0**	0.2	2.2	3.1	2.1	1.6	0.3	0.1	0.5	0.2	0.5	0.3	0.7	0.2	**0.0**	3.1	0.7
Jan 4	0.5	0.4	1.3	0.3	1.3	0.7	1.5	1.0	0.2	0.3	1.6	2.0	4.9	4.9	3.6	3.5	3.4	4.0	5.9	2.9	3.5	2.2	1.4	0.8	0.2	5.9	2.2
Jan 5	0.2	0.1	0.6	0.1	0.6	0.1	0.2	0.1	0.2	0.2	1.2	1.1	0.9	2.1	3.0	1.8	1.1	0.5	0.9	0.9	0.1	0.5	1.0	1.0	0.1	3.0	0.8
Jan 6	1.6	5.5	7.7	5.5	2.7	2.6	2.0	5.3	0.4	2.0	5.4	5.9	1.7	0.6	2.6	0.9	0.5	2.6	1.7	0.2	0.1	0.5	0.2	0.1	0.1	7.7	2.4
Jan 7	0.4	0.5	0.4	0.1	1.0	0.3	0.5	0.8	0.1	0.1	0.9	1.5	2.4	3.0	2.1	2.2	0.2	0.3	0.7	1.2	0.1	0.2	**0.0**	0.6	**0.0**	3.0	0.8
Jan 8	0.7	0.4	0.5	0.5	1.5	2.0	0.6	1.5	0.4	3.9	3.0	3.6	4.2	5.7	5.0	3.8	2.0	1.7	1.3	0.5	0.3	0.3	1.0	0.6	0.3	5.7	1.9
Jan 9	0.2	0.8	0.9	0.1	0.7	1.0	0.8	1.7	1.4	1.7	3.2	0.8	0.9	0.1	0.3	1.6	0.5	0.5	0.4	**0.0**	0.8	0.5	0.4	1.2	**0.0**	3.2	0.9
Jan 10	0.6	2.8	2.6	2.2	2.0	2.0	1.4	0.2	2.2	1.7	1.6	1.5	1.9	1.0	2.8	3.8	1.5	1.4	0.6	0.9	0.4	0.6	0.8	0.1	0.1	3.8	1.5
Jan 11	0.1	1.2	0.4	**0.0**	0.2	0.1	0.2	0.4	0.7	0.3	1.5	2.2	1.3	3.1	0.6	2.2	1.6	2.4	2.5	3.0	3.5	3.3	3.3	3.8	**0.0**	3.8	1.6
Jan 12	2.8	5.1	3.9	4.1	6.0	5.3	5.2	5.8	3.5	4.7	5.4	3.4	2.8	4.1	6.8	5.0	3.9	2.6	3.8	3.6	1.5	2.0	2.3	1.0	1.0	6.8	3.9
Jan 13	**0.0**	0.1	0.1	0.5	0.3	0.3	0.5	0.3	0.1	0.2	0.6	3.3	4.3	5.6	5.2	4.2	4.2	4.8	7.8	9.7	8.2	7.2	9.7	7.4	**0.0**	9.7	3.5
Jan 14	8.3	8.0	5.4	5.7	6.2	3.2	3.2	4.3	4.3	4.7	4.2	2.8	2.7	2.3	2.1	2.6	2.2	3.1	0.3	**0.0**	0.4	0.1	1.2	1.7	**0.0**	8.3	3.3
Jan 15	1.7	3.6	4.4	3.4	1.6	2.3	0.3	2.7	2.6	3.6	2.9	0.6	0.1	0.8	0.6	3.0	2.2	2.2	2.9	2.3	3.7	2.9	1.7	2.9	0.1	4.4	2.3
Jan 16	3.0	2.1	3.2	3.7	4.0	5.6	5.3	4.5	5.3	5.0	5.6	4.2	4.8	5.5	6.9	6.4	5.9	7.5	7.9	7.8	6.5	5.4	3.9	5.7	2.1	7.9	5.2
Jan 17	4.9	5.3	5.1	3.4	2.8	4.0	2.8	3.0	5.3	4.1	4.2	3.6	3.8	3.7	4.1	3.5	2.7	2.8	3.0	3.2	3.0	4.3	3.3	3.2	2.7	5.3	3.7
Jan 18	2.6	2.5	3.2	3.1	3.1	2.9	3.4	3.8	4.0	5.3	7.3	5.3	4.7	5.0	6.2	5.8	7.1	6.7	6.4	7.2	7.2	6.5	7.3	6.4	2.5	7.3	5.1
Jan 19	5.6	6.4	3.8	4.8	2.1	5.2	5.2	3.8	6.7	6.1	7.0	6.0	6.4	5.7	7.4	6.8	6.1	5.5	6.8	7.6	6.7	6.3	2.5	1.0	1.0	7.6	5.5
Jan 20	0.8	0.3	0.6	1.3	5.4	5.0	2.4	5.6	3.8	6.2	5.3	5.2	5.2	6.7	7.3	6.2	6.1	6.4	7.2	7.2	6.9	7.3	4.1	1.9	0.3	7.3	4.8
Jan 21	6.3	4.1	2.6	3.2	4.6	1.1	0.3	0.2	0.1	0.4	1.3	4.1	4.5	6.4	3.3	3.1	5.0	6.5	5.1	5.4	3.3	1.3	3.2	2.5	0.1	6.5	3.2
Jan 22	2.9	2.4	6.5	5.8	6.7	8.0	6.6	6.9	6.6	7.3	13.5	12.3	12.2	13.4	12.6	15.2	14.7	14.9	17.8	13.8	12.9	11.6	3.4	1.6	1.6	17.8	9.6
Jan 23	2.6	2.0	2.2	0.5	0.2	0.4	1.5	0.9	0.9	4.6	3.9	4.4	6.8	7.3	3.0	3.2	2.4	1.7	2.7	3.6	7.9	13.0	11.1	6.9	0.2	13.0	3.9
Jan 24	6.0	6.1	3.4	1.7	3.1	0.8	1.4	0.8	0.9	2.4	4.9	2.3	1.6	2.7	7.0	6.5	6.9	6.5	6.5	6.0	5.5	6.1	5.8	4.4	0.8	7.0	4.1
Jan 25	2.8	3.2	4.9	4.4	4.4	4.8	4.8	6.8	5.9	6.1	5.7	5.3	4.9	5.9	6.1	5.1	2.9	0.3	0.5	0.9	2.0	1.5	1.6	3.5	0.3	6.8	3.9
Jan 26	1.8	2.6	7.4	11.5	9.5	12.9	15.0	14.9	18.2	20.1	23.5	22.9	**24.0**	21.8	18.8	14.1	14.3	8.7	4.9	4.3	6.2	7.1	7.5	9.8	1.8	**24.0**	**12.6**
Jan 27	11.4	10.1	9.9	14.6	14.2	13.9	11.5	11.9	11.2	12.0	10.4	9.1	7.8	6.7	4.9	6.4	4.9	3.1	4.4	5.0	7.5	5.4	7.7	4.4	3.1	14.6	8.7
Jan 28	3.9	4.1	5.2	6.0	8.6	13.0	7.9	7.6	12.6	12.3	14.0	12.0	10.9	14.6	13.0	9.5	7.0	12.9	16.2	14.8	17.2	14.3	13.0	15.6	3.9	17.2	11.1
Jan 29	15.1	11.9	10.6	9.4	5.1	5.1	3.5	3.1	6.7	6.7	8.3	8.2	8.3	10.4	11.1	9.9	7.3	5.9	2.3	3.2	0.9	0.2	0.5	1.1	0.2	15.1	6.5
Jan 30	5.0	5.0	3.8	3.7	2.8	4.2	3.0	4.3	4.4	4.6	4.1	6.4	8.8	10.3	9.0	8.5	5.4	4.6	2.6	2.5	2.2	2.4	0.2	1.3	0.2	10.3	4.5
Jan 31	1.5	0.3	0.3	1.9	4.2	5.2	4.1	4.0	6.7	4.2	3.4	2.9	2.4	3.2	3.2	4.0	1.8	0.5	0.4	**0.0**	0.3	0.1	**0.0**	0.7	**0.0**	6.7	2.3
Diurnal Maximum	15.1	11.9	10.6	14.6	14.2	13.9	15.0	14.9	18.2	20.1	23.5	22.9	24.0	21.8	18.8	15.2	14.7	14.9	17.8	14.8	17.2	14.3	13.0	15.6			
Diurnal Average	3.2	3.3	3.4	3.4	3.6	3.7	3.2	3.6	3.9	4.3	5.1	4.8	5.0	5.6	5.4	5.0	4.2	4.0	4.0	3.8	3.9	3.7	3.2	3.0			

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.
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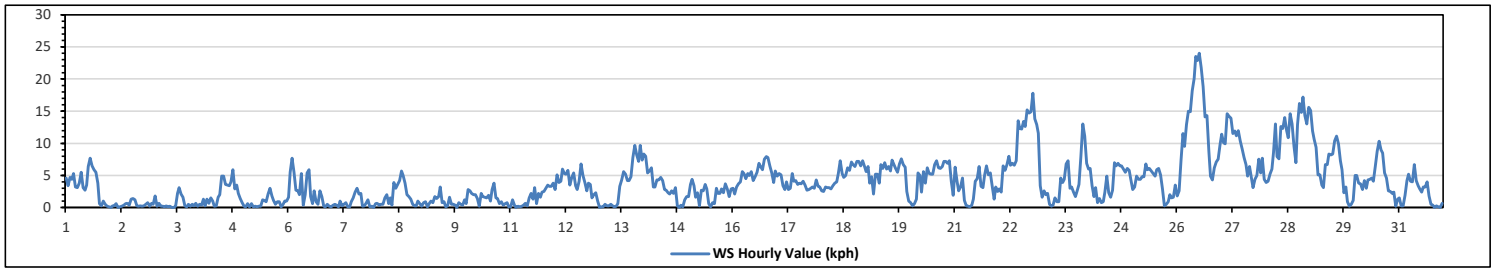
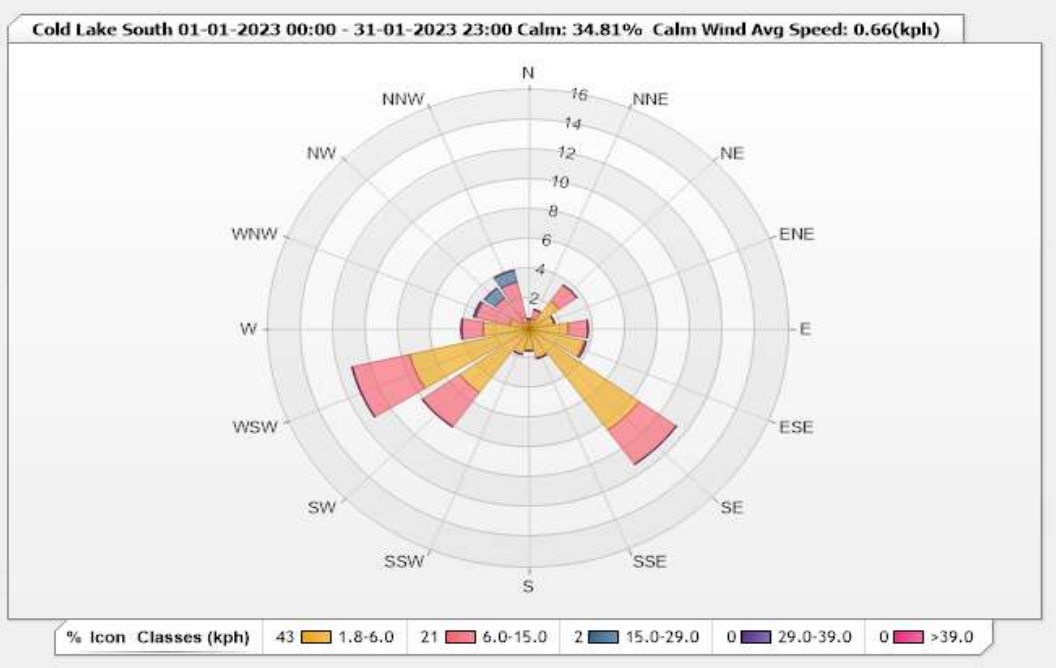


Station: Cold Lake South Monitor: WDS [kph] Monthly: 01-2023

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

Calm (WS<1.8kph): 34.81% Valid Data: 100.00%

Direction	1.8-6.0	6.0-15.0	15.0-29.0	29.0-39.0	>39.0	Total
N	0.4	0.27	0	0	0	0.67
NNE	0.67	0.67	0	0	0	1.34
NE	2.28	1.34	0	0	0	3.62
ENE	1.61	0	0	0	0	1.61
E	2.42	1.21	0	0	0	3.63
ESE	3.49	0.13	0	0	0	3.62
SE	8.33	2.82	0	0	0	11.15
SSE	2.02	0	0	0	0	2.02
S	1.48	0	0	0	0	1.48
SSW	1.75	0	0	0	0	1.75
SW	5.24	2.82	0	0	0	8.06
WSW	7.53	3.63	0	0	0	11.16
W	2.82	1.34	0	0	0	4.16
WNW	1.21	2.15	0.13	0	0	3.49
NW	0.54	2.02	0.81	0	0	3.37
NNW	0.81	2.42	0.81	0	0	4.04
Summary	42.6	20.82	1.75	0	0	65.17



Lakeland Industry & Community Association

Cold Lake South Station - January 2023

Summary of Hourly Averages

WIND DIRECTION (VWD) in sector

Monthly Average:	270 (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
Jan 1	SW	SW	WSW	SW	SW	WSW	WSW	WSW	WSW	WSW	WSW	W	WSW	SW	SW	SW	SW	WSW	SW	SE	WSW	SSW	E	WNW	240	WSW
Jan 2	E	WNW	SW	ESE	S	NE	ENE	NW	SSE	W	WNW	WNW	NE	ENE	ESE	S	E	SSW	SSE	ESE	ENE	NE	ENE	ENE	66	ENE
Jan 3	ENE	E	ENE	NE	ENE	NE	E	NE	NE	NW	S	NE	NE	NE	E	ENE	NNE	WNW	SW	SSE	SE	NNW	SW	NNW	63	ENE
Jan 4	SSE	WNW	W	SE	WSW	W	W	SE	WNW	NNW	W	W	SW	WSW	SW	SW	SW	SW	WSW	WSW	WSW	WSW	WSW	NW	242	WSW
Jan 5	NE	NNW	E	W	NE	E	ENE	WSW	NNE	NNE	NNE	NNE	NE	NNE	NE	NE	NE	WSW	ENE	NE	W	ENE	NE	NE	46	NE
Jan 6	E	ESE	SE	ESE	E	NE	E	SE	NE	ESE	SE	SE	WSW	W	SSW	SSE	SSE	SSW	SW	SSE	SW	SW	SW	E	129	SE
Jan 7	SSE	W	ESE	NW	SSE	NNW	SSE	WSW	NNW	E	W	WNW	W	W	SW	SW	SW	SE	E	ENE	E	E	S	ENE	254	WSW
Jan 8	ENE	E	NE	NE	ENE	ENE	SW	ENE	WNW	ENE	ENE	NE	NE	ENE	E	E	E	E	ENE	ENE	NW	WSW	WSW	SE	67	ENE
Jan 9	NNE	WSW	WSW	SSW	WSW	WSW	WNW	W	WSW	SW	WSW	WSW	W	ENE	WSW	WSW	NNE	NE	ENE	N	W	NNE	NE	ENE	259	WSW
Jan 10	NNE	ENE	ESE	ESE	E	ENE	S	SE	ESE	ESE	ESE	E	ESE	ENE	NE	NE	NE	ESE	W	N	NE	N	W	E	84	E
Jan 11	E	W	W	S	NW	NE	N	WSW	SW	NNW	E	E	SE	SE	WSW	SE	SE	SSE	SSE	SE	SE	SSE	SE	SSE	146	SE
Jan 12	SSE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SSW	SE	SE	SE	SE	SW	SW	SW	SSW	SSW	SE	SSE	147	SE
Jan 13	E	E	N	SE	W	SW	NNW	E	SW	NW	NNE	NE	NE	NE	ENE	NE	E	E	E	E	E	E	E	E	77	ENE
Jan 14	E	E	E	E	E	ESE	E	E	E	ENE	E	ENE	NE	NNE	NNE	NNE	N	NNW	E	SE	SSW	SE	SW	WSW	76	ENE
Jan 15	WSW	SW	SW	SW	SW	SW	SSW	SW	SW	SW	WSW	WNW	SE	ESE	SSE	SE	SE	ESE	ENE	ESE	SE	SE	E	E	186	S
Jan 16	SE	SE	SE	ESE	ESE	ESE	ESE	SE	ESE	ESE	ESE	ESE	ESE	ESE	SE	ESE	ESE	SE	SE	SE	SE	SE	SE	SE	126	SE
Jan 17	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	S	S	SSE	SE	SE	SSE	SSE	SSE	S	SSW	SSW	SSW	151	SSE
Jan 18	S	SSE	SSE	SSW	S	SSE	S	SSE	SSE	SE	SE	SE	SSE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	143	SE
Jan 19	SE	SE	SE	SE	SSW	SW	SW	SW	WSW	WSW	WSW	WSW	SW	WSW	SW	SW	SW	SW	SW	SW	SW	SW	SW	WSW	226	SW
Jan 20	W	SSW	SW	WSW	SW	WSW	WSW	WSW	W	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	SW	WSW	SW	SW	SW	WSW	WSW	246	WSW
Jan 21	SW	WSW	WSW	WSW	WSW	W	NNW	ESE	NNE	WNW	WNW	WSW	WSW	SW	SW	SW	WSW	WSW	SW	WSW	SW	SW	SW	SW	240	WSW
Jan 22	SW	WSW	WSW	W	WSW	W	WNW	WNW	WNW	WNW	WNW	WNW	W	W	WNW	NW	NNW	NW	NW	NNW	NNW	NNW	NW	W	300	WNW
Jan 23	WSW	WSW	WSW	ESE	SE	ESE	E	E	ESE	SE	SE	SE	SE	SE	S	SSW	SW	SW	WSW	W	WNW	NW	NNW	NNW	271	W
Jan 24	NW	NNW	NNW	NNE	NE	SE	SE	ESE	SE	SE	SE	SE	WSW	S	SW	WSW	WSW	W	W	W	W	W	W	WNW	269	W
Jan 25	W	WNW	W	W	WSW	W	WSW	WSW	WSW	WSW	WSW	W	WSW	SW	SW	SW	SW	ENE	ESE	SE	SE	SSE	S	S	246	WSW
Jan 26	SSE	SSW	WSW	WNW	W	W	WNW	WNW	WNW	NW	NW	NNW	NNW	NNW	NNW	NNW	NNW	N	N	NW	NNW	NNW	NNW	NNE	320	NW
Jan 27	NE	NNE	NE	NE	NE	NE	NE	NNE	NNE	NNE	NE	NE	NE	NE	NNE	N	N	NNW	NNW	NNW	NNW	NW	NNW	NNW	23	NNE
Jan 28	WNW	W	WNW	NW	NW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	NW	WNW	NW	NW	NW	NW	NW	NW	NNW	NNW	NNW	309	NW
Jan 29	NNW	NNW	NNW	NW	WNW	WNW	WNW	SW	WSW	WSW	WSW	W	WSW	SW	SW	SW	SW	SW	SSW	SSW	SW	SSE	SW	WSW	269	W
Jan 30	WSW	W	WSW	WSW	W	WNW	WSW	W	W	WNW	WSW	SW	SW	SW	SW	SW	SW	SW	SW	SW	WSW	SW	SSE	ESE	246	WSW
Jan 31	SE	ESE	NE	ENE	ENE	NE	NE	E	SE	ESE	ESE	E	ESE	ESE	ESE	SE	SSE	SSW	SSW	S	SW	SSW	ENE	WSW	98	E

C	Monthly Calibration	**S**	Daily Zero-Span Check	**Q**	Quality Assurance	
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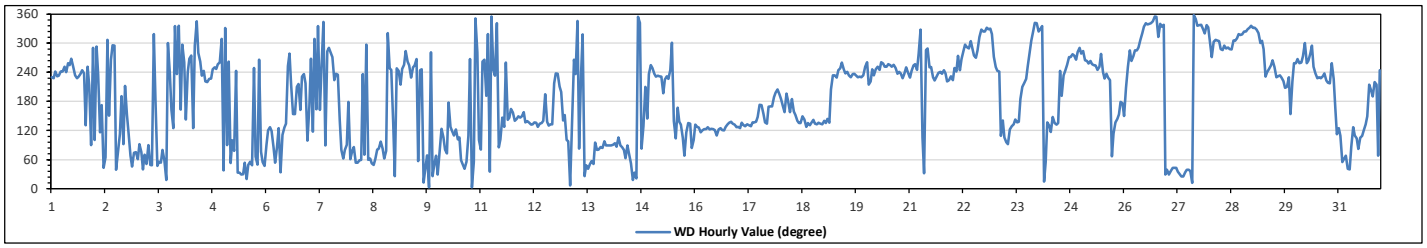

Lakeland Industry & Community Association

Cold Lake South Station - January 2023

Summary of Hourly Averages

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

WIND SPEED					
Maximum Hourly Value:	24.0	kph	on January 26 at hour 12	Hours in Service:	744
Maximum Daily Value:	12.6	kph	on January 26	Hours of Data:	744
Minimum Hourly Value:	0.0	kph	on January 2 at hour 0	Hours of Missing Data:	0
Minimum Daily Value:	0.5	kph	on January 2	Hours of Calibration:	0
Monthly Average:	0.8	kph		Operational Uptime:	100.0
WIND DIRECTION					
Monthly Average:	270	degree (W)			

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
Jan 1	4.6	3.4	4.7	4.4	5.3	3.2	3.1	3.8	5.5	3.1	2.7	3.5	6.4	7.7	6.5	5.9	5.5	3.8	0.6	0.3	1.0	0.5	0.2	0.1	0.1	7.7	3.6
	SW	SW	WSW	SW	SW	WSW	WSW	WSW	WSW	WSW	WSW	W	WSW	SW	SW	SW	SW	WSW	SW	SE	WSW	SSW	E	WNW			
Jan 2	**0.0**	0.3	0.3	0.6	**0.0**	0.1	0.2	0.4	0.6	0.7	0.4	1.3	1.4	1.2	0.3	0.2	0.3	0.2	0.3	0.5	0.8	0.2	0.7	0.5	**0.0**	1.4	**0.5**
	E	WNW	SW	ESE	S	NE	ENE	NW	SSE	W	WNW	WNW	NE	ENE	ESE	S	E	SSW	SSE	ESE	ENE	NE	ENE	ENE			
Jan 3	1.8	0.2	0.7	0.2	0.2	0.1	0.3	0.1	0.2	**0.0**	**0.0**	0.2	2.2	3.1	2.1	1.6	0.3	0.1	0.5	0.2	0.5	0.3	0.7	0.2	**0.0**	3.1	0.7
	ENE	E	ENE	NE	ENE	NE	E	NE	NE	NW	S	NE	NE	NE	E	ENE	NNE	WNW	SW	SSE	SE	NNW	SW	NNW			
Jan 4	0.5	0.4	1.3	0.3	1.3	0.7	1.5	1.0	0.2	0.3	1.6	2.0	4.9	4.9	3.6	3.5	3.4	4.0	5.9	2.9	3.5	2.2	1.4	0.8	0.2	5.9	2.2
	SSE	WNW	W	SE	WSW	W	W	SE	WNW	NNW	W	W	SW	WSW	SW	SW	SW	SW	WSW	WSW	WSW	WSW	WSW	NW			
Jan 5	0.2	0.1	0.6	0.1	0.6	0.1	0.2	0.1	0.2	0.2	1.2	1.1	0.9	2.1	3.0	1.8	1.1	0.5	0.9	0.9	0.1	0.5	1.0	1.0	0.1	3.0	0.8
	NE	NNW	E	W	NE	E	ENE	WSW	NNE	NNE	NNE	NNE	NE	NNE	NE	NE	NE	WSW	ENE	NE	W	ENE	NE	NE			
Jan 6	1.6	5.5	7.7	5.5	2.7	2.6	2.0	5.3	0.4	2.0	5.4	5.9	1.7	0.6	2.6	0.9	0.5	2.6	1.7	0.2	0.1	0.5	0.2	0.1	0.1	7.7	2.4
	E	ESE	SE	ESE	E	NE	E	SE	NE	ESE	SE	SE	WSW	W	SSW	SSE	SSE	SSW	SW	SSE	SW	SW	SW	E			
Jan 7	0.4	0.5	0.4	0.1	1.0	0.3	0.5	0.8	0.1	0.1	0.9	1.5	2.4	3.0	2.1	2.2	0.2	0.3	0.7	1.2	0.1	0.2	**0.0**	0.6	**0.0**	3.0	0.8
	SSE	W	ESE	NW	SSE	NNW	SSE	WSW	NNW	E	W	WNW	W	W	SW	SW	SW	SE	E	ENE	E	E	S	ENE			
Jan 8	0.7	0.4	0.5	0.5	1.5	2.0	0.6	1.5	0.4	3.9	3.0	3.6	4.2	5.7	5.0	3.8	2.0	1.7	1.3	0.5	0.3	0.3	1.0	0.6	0.3	5.7	1.9
	ENE	E	NE	NE	ENE	ENE	SW	ENE	WNW	ENE	ENE	NE	NE	ENE	E	E	E	E	ENE	ENE	NW	WSW	WSW	SE			
Jan 9	0.2	0.8	0.9	0.1	0.7	1.0	0.8	1.7	1.4	1.7	3.2	0.8	0.9	0.1	0.3	1.6	0.5	0.5	0.4	**0.0**	0.8	0.5	0.4	1.2	**0.0**	3.2	0.9
	NNE	WSW	WSW	SSW	WSW	WSW	WNW	W	WSW	SW	WSW	WSW	W	ENE	WSW	WSW	NNE	NE	ENE	N	W	NNE	NE	ENE			
Jan 10	0.6	2.8	2.6	2.2	2.0	2.0	1.4	0.2	2.2	1.7	1.6	1.5	1.9	1.0	2.8	3.8	1.5	1.4	0.6	0.9	0.4	0.6	0.8	0.1	0.1	3.8	1.5
	NNE	ENE	ESE	ESE	E	ENE	S	SE	ESE	ESE	ESE	E	ESE	ENE	NE	NE	NE	ESE	W	N	NE	N	W	E			
Jan 11	0.1	1.2	0.4	**0.0**	0.2	0.1	0.2	0.4	0.7	0.3	1.5	2.2	1.3	3.1	0.6	2.2	1.6	2.4	2.5	3.0	3.5	3.3	3.3	3.8	**0.0**	3.8	1.6
	E	W	W	S	NW	NE	N	WSW	SW	NNW	E	E	SE	SE	WSW	SE	SE	SSE	SSE	SE	SE	SSE	SE	SSE			
Jan 12	2.8	5.1	3.9	4.1	6.0	5.3	5.2	5.8	3.5	4.7	5.4	3.4	2.8	4.1	6.8	5.0	3.9	2.6	3.8	3.6	1.5	2.0	2.3	1.0	1.0	6.8	3.9
	SSE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SSW	SE	SE	SE	SE	SW	SW	SW	SSW	SSW	SE	SSE			
Jan 13	**0.0**	0.1	0.1	0.5	0.3	0.3	0.5	0.3	0.1	0.2	0.6	3.3	4.3	5.6	5.2	4.2	4.2	4.8	7.8	9.7	8.2	7.2	9.7	7.4	**0.0**	9.7	3.5
	E	E	N	SE	W	SW	NNW	E	SW	NW	NNE	NE	NE	NE	ENE	NE	E	E	E	E	E	E	E	E			
Jan 14	8.3	8.0	5.4	5.7	6.2	3.2	3.2	4.3	4.3	4.7	4.2	2.8	2.7	2.3	2.1	2.6	2.2	3.1	0.3	**0.0**	0.4	0.1	1.2	1.7	**0.0**	8.3	3.3
	E	E	E	E	E	ESE	E	E	E	ENE	E	ENE	NE	NNE	NNE	NNE	N	NNW	E	SE	SSW	SE	SW	WSW			
Jan 15	1.7	3.6	4.4	3.4	1.6	2.3	0.3	2.7	2.6	3.6	2.9	0.6	0.1	0.8	0.6	3.0	2.2	2.2	2.9	2.3	3.7	2.9	1.7	2.9	0.1	4.4	2.3
	WSW	SW	SW	SW	SW	SW	SSW	SW	SW	SW	WSW	WNW	SE	ESE	SSE	SE	SE	ESE	ENE	ESE	SE	SE	E	E			
Jan 16	3.0	2.1	3.2	3.7	4.0	5.6	5.3	4.5	5.3	5.0	5.6	4.2	4.8	5.5	6.9	6.4	5.9	7.5	7.9	7.8	6.5	5.4	3.9	5.7	2.1	7.9	5.2
	SE	SE	SE	ESE	ESE	ESE	ESE	SE	ESE	ESE	ESE	ESE	ESE	ESE	SE	ESE	ESE	SE	SE	SE	SE	SE	SE	SE			
Jan 17	4.9	5.3	5.1	3.4	2.8	4.0	2.8	3.0	5.3	4.1	4.2	3.6	3.8	3.7	4.1	3.5	2.7	2.8	3.0	3.2	3.0	4.3	3.3	3.2	2.7	5.3	3.7
	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	S	S	SSE	SE	SE	SSE	SSE	SSE	S	SSW	SSW	SSW			
Jan 18	2.6	2.5	3.2	3.1	3.1	2.9	3.4	3.8	4.0	5.3	7.3	5.3	4.7	5.0	6.2	5.8	7.1	6.7	6.4	7.2	7.2	6.5	7.3	6.4	2.5	7.3	5.1
	S	SSE	SSE	SSW	S	SSE	S	SSE	SSE	SE	SE	SE	SSE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE			
Jan 19	5.6	6.4	3.8	4.8	2.1	5.2	5.2	3.8	6.7	6.1	7.0	6.0	6.4	5.7	7.4	6.8	6.1	5.5	6.8	7.6	6.7	6.3	2.5	1.0	1.0	7.6	5.5
	SE	SE	SE	SE	SSW	SW	SW	SW	WSW	WSW	WSW	WSW	SW	WSW	SW	SW	SW	SW	SW	SW	SW	SW	SW	WSW			
Jan 20	0.8	0.3	0.6	1.3	5.4	5.0	2.4	5.6	3.8	6.2	5.3	5.2	5.2	6.7	7.3	6.2	6.1	6.4	7.2	7.2	6.9	7.3	4.1	1.9	0.3	7.3	4.8
	W	SSW	SW	WSW	SW	WSW	WSW	WSW	W	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	SW	WSW	SW	SW	SW	WSW	WSW			
Jan 21	6.3	4.1	2.6	3.2	4.6	1.1	0.3	0.2	0.1	0.4	1.3	4.1	4.5	6.4	3.3	3.1	5.0	6.5	5.1	5.4	3.3	1.3	3.2	2.5	0.1	6.5	3.2
	SW	WSW	WSW	WSW	WSW	W	NNW	ESE	NNE	WNW	WNW	WSW	WSW	SW	SW	SW	WSW	WSW	SW	WSW	SW	SW	SW	SW			
Jan 22	2.9	2.4	6.5	5.8	6.7	8.0	6.6	6.9	6.6	7.3	13.5	12.3	12.2	13.4	12.6	15.2	14.7	14.9	17.8	13.8	12.9	11.6	3.4	1.6	1.6	17.8	9.6
	SW	WSW	WSW	W	WSW	W	WNW	WNW	WNW	WNW	WNW	WNW	W	W	WNW	NW	NNW	NW	NW	NNW	NNW	NNW	NW	W			
Jan 23	2.6	2.0	2.2	0.5	0.2	0.4	1.5	0.9	0.9	4.6	3.9	4.4	6.8	7.3	3.0	3.2	2.4	1.7	2.7	3.6	7.9	13.0	11.1	6.9	0.2	13.0	3.9
	WSW	WSW	WSW	ESE	SE	ESE	E	E	ESE	SE	SE	SE	SE	SE	S	SSW	SW	SW	WSW	W	WNW	NW	NNW	NNW			
Jan 24	6.0	6.1	3.4	1.7	3.1	0.8	1.4	0.8	0.9	2.4	4.9	2.3	1.6	2.7	7.0	6.5	6.9	6.5	6.5	6.0	5.5	6.1	5.8	4.4	0.8	7.0	4.1
	NW	NNW	NNW	NNE	NE	SE	SE	ESE	SE	SE	SE	SE	WSW	S	SW	WSW	WSW	W	W	W	W	W	W	WNW			
Jan 25	2.8	3.2	4.9	4.4	4.4	4.8	4.8	6.8	5.9	6.1	5.7	5.3	4.9	5.9	6.1	5.1	2.9	0.3	0.5	0.9	2.0	1.5	1.6	3.5	0.3	6.8	3.9
	W	WNW	W	W	WSW	W	WSW	WSW	WSW	WSW	WSW	W	WSW	SW	SW	SW	SW	ENE	ESE	SE	SE	SSE	S	S			
Jan 26	1.8	2.6	7.4	11.5	9.5	12.9	15.0	14.9	18.2	20.1	23.5	22.9	**24.0**	21.8	18.8	14.1	14.3	8.7	4.9	4.3	6.2	7.1	7.5	9.8	1.8	**24.0**	**12.6**
	SSE	SSW	WSW	WNW	W	W	WNW	WNW	WNW	NW	NW	NNW	NNW	NNW	NNW	NNW	NNW	N	N	NW	NNW	NNW	NNW	NNE			
Jan 27	11.4	10.1	9.9	14.6	14.2	13.9	11.5	11.9	11.2	12.0	10.4	9.1	7.8	6.7	4.9	6.4	4.9	3.1	4.4	5.0	7.5	5.4	7.7	4.4	3.1	14.6	8.7
	NE	NNE	NE	NE	NE	NE	NE	NNE	NNE	NNE	NE	NE	NE	NE	NNE	N	N	NNW	NNW	NNW	NNW	NW	NNW	NNW			
Jan 28	3.9	4.1	5.2	6.0	8.6	13.0	7.9	7.6	12.6	12.3	14.0	12.0	10.9	14.6	13.0	9.5	7.0	12.9	16.2	14.8	17.2	14.3	13.0	15.6	3.9	17.2	11.1
	WNW	W	WNW	NW	NW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	NW	WNW	NW	NW	NW	NW	NW	NW	NNW	NNW	NNW			
Jan 29	15.1	11.9	10.6	9.4	5.1	5.1	3.5	3.1	6.7	6.7	8.3	8.2	8.3	10.4	11.1	9.9	7.3	5.9	2.3	3.2	0.9	0.2	0.5	1.1	0.2	15.1	6.5
	NNW	NNW	NNW	NW	WNW	WNW	WNW	SW	WSW	WSW	WSW	W	WSW	SW	SW	SW	SW	SW	SSW	SSW	SW	SSE	SW	WSW			
Jan 30	5.0	5.0	3.8	3.7	2.8	4.2	3.0	4.3	4.4	4.6	4.1	6.4	8.8	10.3	9.0	8.5	5.4	4.6	2.6	2.5	2.2	2.4	0.2	1.3	0.2	10.3	4.5
	WSW	W	WSW	WSW	W	WNW	WSW	W	W	WNW	WSW	SW	SW	SW	SW	SW	SW	SW	SW	SW	WSW	SW	SSE	ESE			
Jan 31	1.5	0.3	0.3	1.9	4.2	5.2	4.1	4.0	6.7	4.2	3.4	2.9	2.4	3.2	3.2	4.0	1.8	0.5	0.4	**0.0**	0.3	0.1	**0.0**	0.7	**0.0**	6.7	2.3
	SE	ESE	NE	ENE	ENE	NE	NE	E	SE	ESE	ESE	E	ESE	ESE	ESE	SE	SSE	SSW	SSW	S	SW	SSW	ENE	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 - January 2023

Summary of Hour Standard Deviations

STANDARD DEVIATION WIND DIRECTION (STDWD) in Degree

Maximum Hourly Value:	81 degree on January 9 at hour 19	Hours in Service:	744
		Hours of Data:	744
Minimum Hourly Value:	0 degree on January 14 at hour 19	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		
Jan 1	10	13	15	18	11	14	17	8	7	11	13	28	10	8	6	7	8	12	50	20	34	52	37	39	6	52
Jan 2	4	21	66	9	63	23	25	46	60	60	72	36	47	46	52	41	35	51	47	19	23	57	19	18	4	72
Jan 3	11	23	32	32	19	5	27	15	24	2	78	37	12	9	22	19	18	67	37	65	5	36	12	17	2	78
Jan 4	46	31	31	50	25	14	13	12	28	56	24	19	6	9	12	11	10	8	8	9	10	14	26	30	6	56
Jan 5	12	61	45	18	10	33	73	75	47	21	31	26	9	25	11	7	8	16	27	46	62	13	49	29	7	75
Jan 6	18	11	4	7	40	22	26	6	65	19	4	13	42	40	17	40	48	10	12	40	47	36	50	14	4	65
Jan 7	41	61	10	75	49	60	54	44	59	74	55	24	21	23	17	23	49	75	56	10	18	48	4	23	4	75
Jan 8	32	45	46	32	10	25	73	56	74	22	30	35	27	13	8	10	32	21	19	28	23	35	35	46	8	74
Jan 9	33	53	31	41	48	41	28	21	32	12	16	22	32	59	40	23	50	60	72	**81**	48	45	13	21	12	**81**
Jan 10	46	21	19	30	37	29	39	70	34	29	18	31	25	33	16	11	27	17	43	20	44	16	24	47	11	70
Jan 11	35	29	21	55	48	27	59	21	9	47	30	35	59	30	65	32	33	38	32	24	24	29	28	26	9	65
Jan 12	29	13	19	16	9	16	11	10	21	10	8	16	33	21	8	9	7	33	11	13	30	33	19	33	7	33
Jan 13	60	74	25	40	68	54	44	61	71	64	55	14	12	12	12	10	30	15	7	7	11	8	7	8	7	74
Jan 14	7	8	10	13	9	18	16	12	14	15	15	35	14	15	20	16	22	8	48	**0**	2	5	10	10	**0**	48
Jan 15	11	10	6	10	15	15	53	9	9	13	17	54	72	27	63	10	10	18	12	28	9	8	21	25	6	72
Jan 16	16	20	10	10	11	8	7	10	9	9	10	12	13	9	9	9	9	7	7	5	9	6	7	6	5	20
Jan 17	6	5	9	8	6	6	7	5	7	8	12	15	37	33	26	10	13	23	24	32	23	23	16	25	5	37
Jan 18	31	25	26	29	30	28	31	28	17	16	10	14	31	29	9	12	9	10	11	8	7	7	5	7	5	31
Jan 19	12	7	22	11	29	13	13	14	15	11	10	11	7	8	6	6	6	6	5	4	6	5	8	23	4	29
Jan 20	36	46	47	16	7	7	12	5	13	5	6	6	10	9	6	6	12	6	4	7	3	7	7	46	3	47
Jan 21	5	8	10	12	10	52	62	67	8	49	23	9	11	6	15	20	6	7	6	7	13	21	14	14	5	67
Jan 22	16	21	11	13	12	7	9	6	7	9	10	12	7	8	11	7	11	6	7	11	8	11	21	18	6	21
Jan 23	14	11	15	15	64	14	13	16	7	5	11	9	6	6	35	16	13	11	10	11	8	6	8	13	5	64
Jan 24	13	15	12	18	12	50	17	33	37	14	6	20	21	38	10	8	9	9	9	10	16	8	10	9	6	50
Jan 25	14	13	11	8	9	8	11	7	7	7	9	27	26	13	15	13	19	60	16	17	16	28	35	16	7	60
Jan 26	39	31	25	12	7	7	7	8	9	7	9	7	7	7	6	9	11	14	11	21	18	11	11	18	6	39
Jan 27	8	11	6	5	6	6	8	5	9	8	9	10	10	14	24	11	10	17	5	6	8	9	6	11	5	24
Jan 28	28	15	11	6	12	6	18	15	7	8	9	11	13	10	9	9	12	7	7	8	5	8	8	7	5	28
Jan 29	8	5	6	5	16	9	14	19	10	7	6	18	15	8	6	7	7	14	13	10	44	54	37	13	5	54
Jan 30	5	7	7	11	15	11	11	9	19	22	18	12	11	9	8	10	10	8	9	16	27	8	57	19	5	57
Jan 31	9	33	21	8	10	7	8	27	7	12	18	37	31	29	22	11	38	19	21	48	13	12	**0**	6	**0**	48
Diurnal Minimum	4	5	4	5	6	5	7	5	7	2	4	6	6	6	6	6	6	6	4	0	2	5	0	6		
Diurnal Maximum	60	74	66	75	68	60	73	75	74	74	78	54	72	59	65	41	50	75	72	81	62	57	57	47		

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)			

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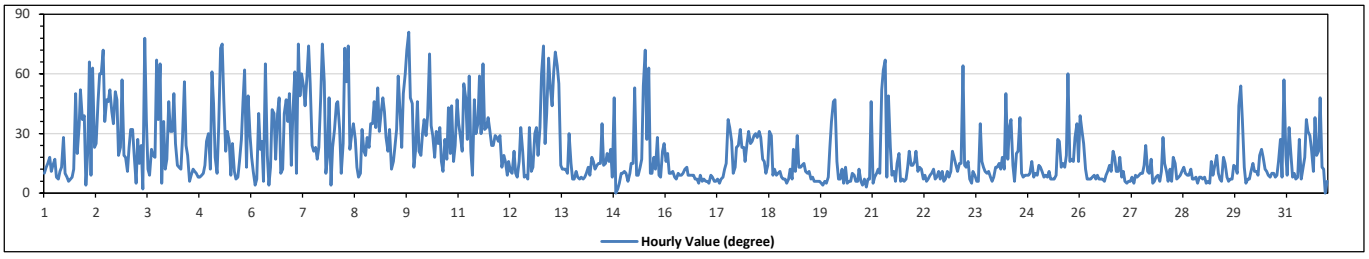
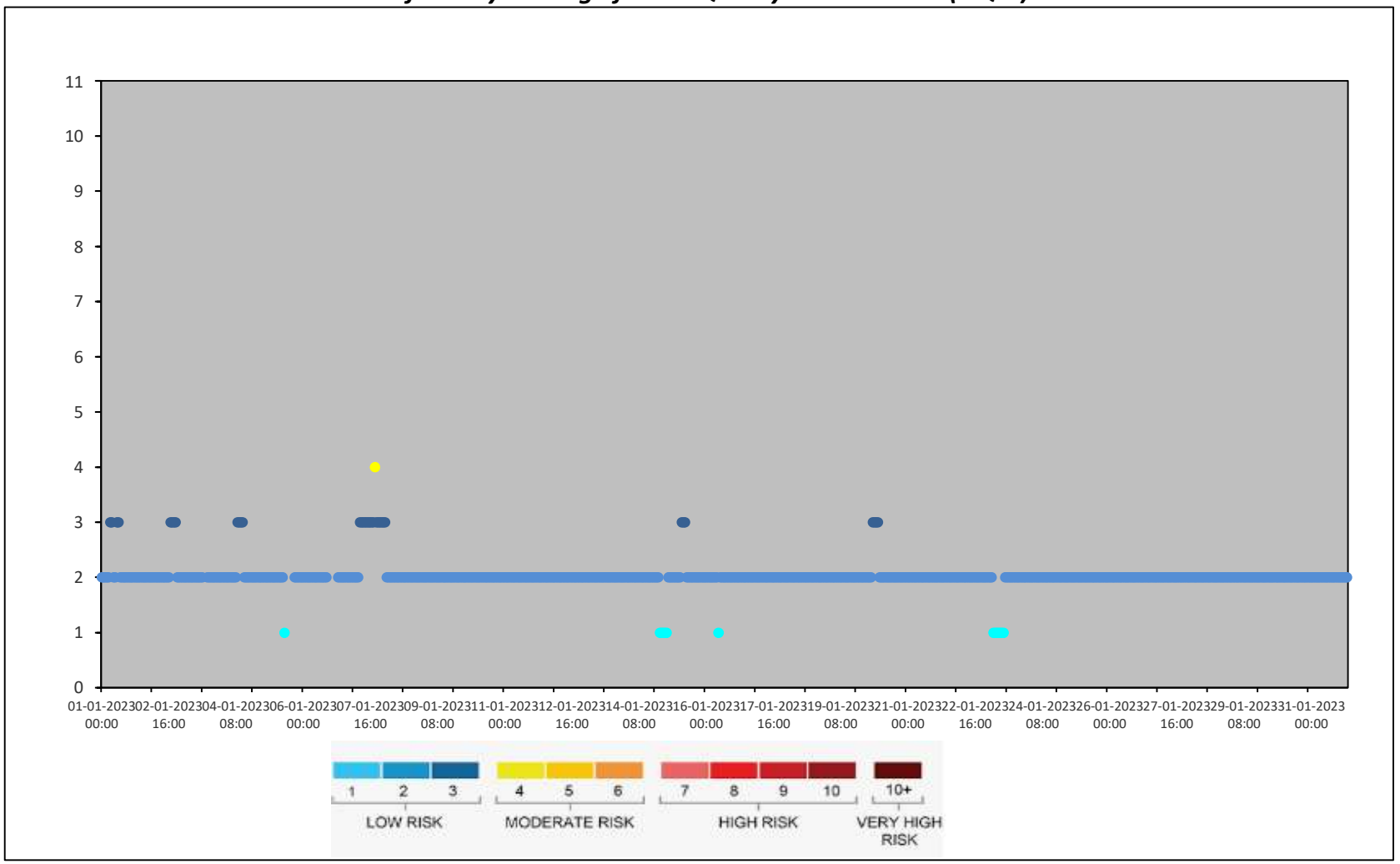


TAMARACK STATION

Timeseries Chart of Hourly Average for Air Quality Health Index (AQHI) - Tamarack Site



Lakeland Industry & Community Association

Tamarack Site - January 2023

Summary of Hourly Averages

SULPHUR DIOXIDE (SO_2) in ppb

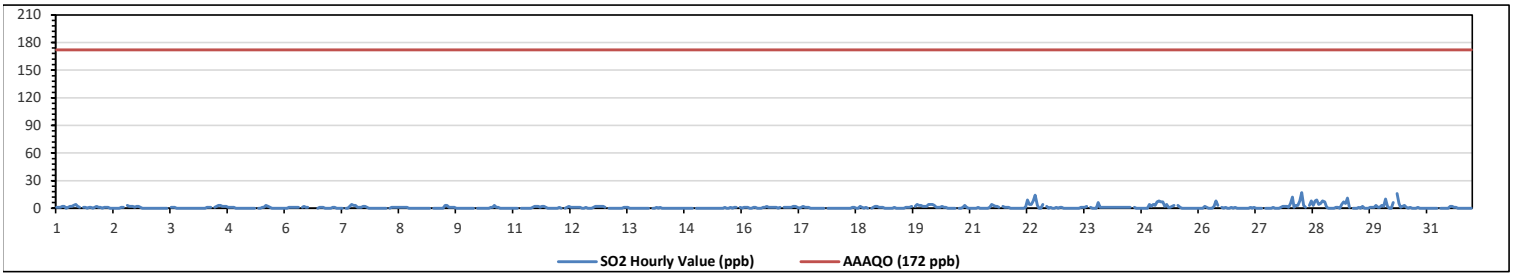
Alberta Ambient Air Quality Objectives (AAAQO): 1-Hour 172 ppb, 24-Hour 48 ppb, 30-Day 11 ppb

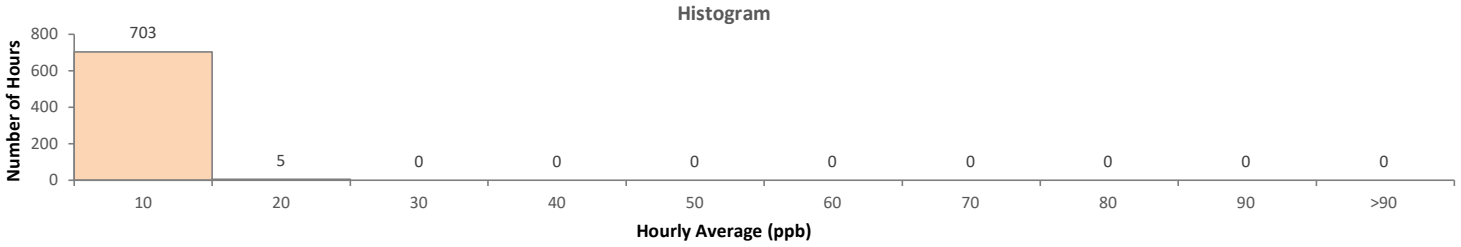
Number of 1-Hour Exceedances:	0	Number of 24-Hour Exceedances:	0	30-Day Exceedence:	0	
Maximum Hourly Value:	17	ppb	on January 28 at hour 6	Hours in Service:	744	
Maximum Daily Value:	4.7	ppb	on January 28	Hours of Data:	708	
Minimum Hourly Value:	0	ppb	on January 1 at hour 5	Hours of Missing Data:	0	
Minimum Daily Value:	0.1	ppb	on January 14	Hours of Calibration:	36	
Monthly Average:	1.0	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			
Jan 1	1	1	1	2	2	0	1	2	2	3	4	2	1	S	1	1	0	1	1	0	1	2	1	1	0	4	1.3
Jan 2	0	1	1	1	0	0	0	0	0	0	1	1	S	3	2	2	2	1	2	2	1	0	0	0	0	3	0.9
Jan 3	0	0	0	0	0	0	0	0	0	0	0	S	1	1	1	0	0	0	0	0	0	0	0	0	0	1	0.1
Jan 4	0	0	0	0	0	0	0	1	1	1	S	1	2	3	3	2	2	2	1	1	1	1	0	0	0	3	1.0
Jan 5	0	0	0	0	0	0	0	0	0	S	0	0	1	1	3	2	1	0	0	0	0	0	0	0	0	3	0.3
Jan 6	0	0	1	1	1	1	1	1	S	1	2	1	1	C	C	C	C	0	1	1	1	0	0	0	0	2	0.7
Jan 7	0	1	1	0	0	0	0	S	0	0	2	4	3	3	1	1	1	2	2	1	0	0	0	0	0	4	1.0
Jan 8	0	0	0	0	0	0	S	0	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	1	0.4
Jan 9	0	0	0	0	0	S	0	0	0	0	0	0	3	3	1	1	1	1	0	0	0	0	0	0	0	3	0.4
Jan 10	0	0	0	0	S	0	0	0	0	0	0	0	1	1	3	1	1	0	0	0	0	0	0	0	0	3	0.3
Jan 11	0	0	0	S	0	0	0	0	0	0	1	2	2	2	1	2	2	1	0	0	0	0	0	0	0	2	0.6
Jan 12	1	0	S	0	1	2	1	1	1	1	1	1	0	0	1	0	0	0	1	2	2	2	2	2	0	2	1.0
Jan 13	1	S	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2
Jan 14	S	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	1	0.1
Jan 15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	1	S	1	0	1	0.2
Jan 16	0	1	1	1	0	0	1	1	0	0	0	1	1	2	1	1	1	1	1	0	1	S	1	1	0	2	0.7
Jan 17	1	1	1	2	2	1	0	1	2	1	1	1	0	0	0	0	0	0	0	0	S	0	0	0	0	2	0.6
Jan 18	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	1	0	1	0	S	0	1	2	2	0	2	0.5
Jan 19	1	1	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	2	S	2	4	3	3	2	0	4	1.0
Jan 20	2	2	4	4	4	3	1	1	1	2	1	1	0	0	0	0	0	S	0	0	1	3	1	0	0	4	1.3
Jan 21	0	0	0	0	1	0	0	0	0	0	1	4	3	2	2	1	S	2	1	1	1	0	0	0	0	4	0.8
Jan 22	0	0	0	0	0	1	9	4	4	8	14	3	0	0	4	S	2	0	1	0	0	1	0	1	0	14	2.3
Jan 23	1	0	0	0	0	0	0	0	0	0	1	1	1	2	S	1	0	0	0	6	1	1	1	1	0	6	0.7
Jan 24	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	0	0	0	0	0	0	0	4	2	0	4	0.9
Jan 25	4	3	7	8	7	7	2	4	1	1	2	3	S	3	1	0	0	0	0	0	0	0	0	0	0	8	2.3
Jan 26	0	0	0	2	1	0	0	0	2	8	3	S	1	0	1	0	0	1	0	1	0	0	0	0	0	8	0.9
Jan 27	0	0	0	1	0	1	0	0	0	0	S	0	0	0	0	1	0	0	0	1	2	2	2	1	0	2	0.5
Jan 28	5	12	1	3	3	8	17	3	1	S	3	8	3	8	9	4	5	8	7	1	0	0	0	0	0	17	4.7
Jan 29	1	1	0	4	7	5	11	1	S	0	0	0	1	0	2	0	0	0	1	1	1	3	1	1	0	11	1.8
Jan 30	3	2	10	2	0	0	6	S	16	5	1	2	3	1	0	1	0	0	0	0	1	0	0	0	0	16	2.3
Jan 31	0	0	0	0	0	0	S	0	0	0	0	0	2	2	1	1	0	0	0	0	0	0	0	0	0	2	0.3
Diurnal Maximum	5	12	10	8	7	8	17	4	16	8	14	8	3	8	9	4	5	8	7	6	4	3	4	2			
Diurnal Average	0.7	0.9	1.0	1.1	1.0	1.0	1.8	0.7	1.2	1.1	1.4	1.4	1.1	1.4	1.5	0.9	0.7	0.8	0.7	0.7	0.6	0.7	0.6	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.



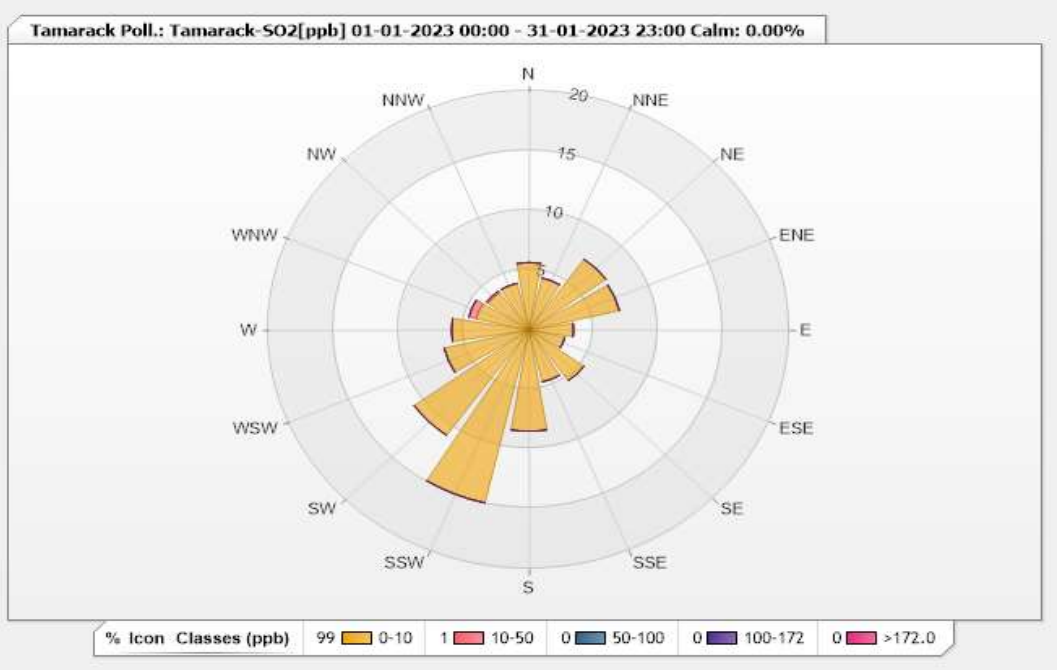


Station: Tamarack Poll.: Tamarack-SO2[ppb] Monthly: 01-2023

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

Calm: 0.00% Valid Data: 90.46% Calm Avg: 0.00 [ppm]

Direction	0-10	10-50	50-100	100-172	>172.0	Total
N	5.65	0	0	0	0	5.65
NNE	4.46	0	0	0	0	4.46
NE	7.28	0	0	0	0	7.28
ENE	7.13	0	0	0	0	7.13
E	3.42	0	0	0	0	3.42
ESE	2.82	0	0	0	0	2.82
SE	5.2	0	0	0	0	5.2
SSE	4.46	0	0	0	0	4.46
S	8.47	0	0	0	0	8.47
SSW	14.86	0	0	0	0	14.86
SW	10.85	0	0	0	0	10.85
WSW	6.69	0	0	0	0	6.69
W	5.94	0	0	0	0	5.94
WNW	4.16	0.59	0	0	0	4.75
NW	3.86	0.15	0	0	0	4.01
NNW	4.01	0	0	0	0	4.01
Summary	99.26	0.74	0	0	0	100



Lakeland Industry & Community Association

Tamarack Site - January 2023

Summary of Hourly Averages

HYDROGEN SULPHIDE (H_2S) in ppb

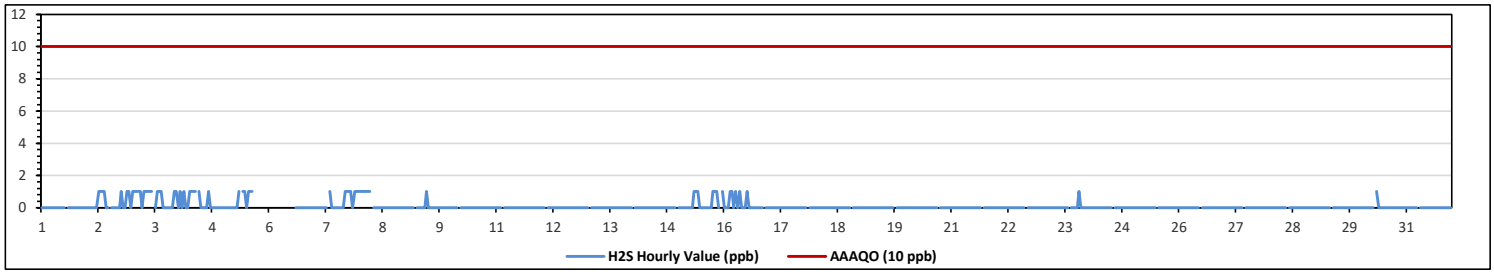
Alberta Ambient Air Quality Objectives (AAAQO): 1-Hour 10 ppb, 24-Hour 3 ppb

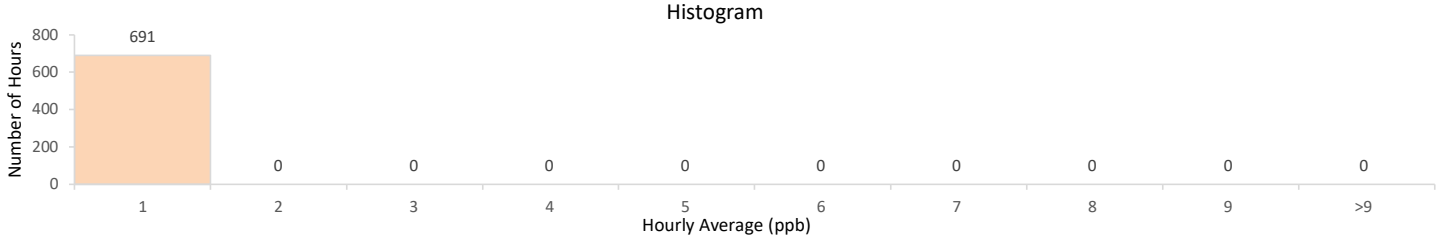
Number of 1-Hour Exceedances:	0		Number of 24-Hour Exceedances:	0	
Maximum Hourly Value:	1	ppb	on January 2 at hour 6	Hours in Service:	744
Maximum Daily Value:	0.7	ppb	on January 3	Hours of Data:	691
Minimum Hourly Value:	0	ppb	on January 1 at hour 0	Hours of Missing Data:	15
Minimum Daily Value:	0.0	ppb	on January 1	Hours of Calibration:	38
Monthly Average:	0.1	ppb		Operational Uptime:	98.0

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			
Jan 1	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
Jan 2	0	0	0	0	0	0	1	1	1	1	0	0	S	0	0	0	0	0	1	0	0	1	1	0	0	1	0.3
Jan 3	1	1	1	1	1	0	1	1	1	1	1	S	0	1	1	1	0	0	0	0	0	0	1	1	0	1	0.7
Jan 4	0	1	0	1	0	0	1	1	1	1	S	1	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0.3
Jan 5	0	0	0	0	0	0	0	0	1	S	1	1	0	1	1	1	C	C	C	NRM	NRM	NRM	NRM	NRM	0	1	-
Jan 6	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	C	C	C	C	0	0	0	0	0	0	0	0	0	0	0	0	-
Jan 7	0	0	0	0	0	0	0	S	1	0	0	0	0	0	0	0	1	1	1	1	0	1	1	1	0	1	0.3
Jan 8	1	1	1	1	1	1	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.3
Jan 9	0	0	0	0	0	S	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0
Jan 10	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Jan 11	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Jan 12	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Jan 13	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Jan 14	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
Jan 15	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	1	1	1	0	S	1	0	1	0.3
Jan 16	0	0	0	1	1	0	1	0	1	0	0	0	1	0	0	0	0	0	0	0	0	S	0	0	0	1	0.2
Jan 17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0.0
Jan 18	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
Jan 19	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
Jan 20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0.0
Jan 21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0.0
Jan 22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0.0
Jan 23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	1	0	0	0	0	0	1	0.0
Jan 24	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Jan 25	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Jan 26	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Jan 27	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Jan 28	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Jan 29	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
Jan 30	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
Jan 31	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Diurnal Maximum	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
Diurnal Average	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.3	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.0	0.1	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.



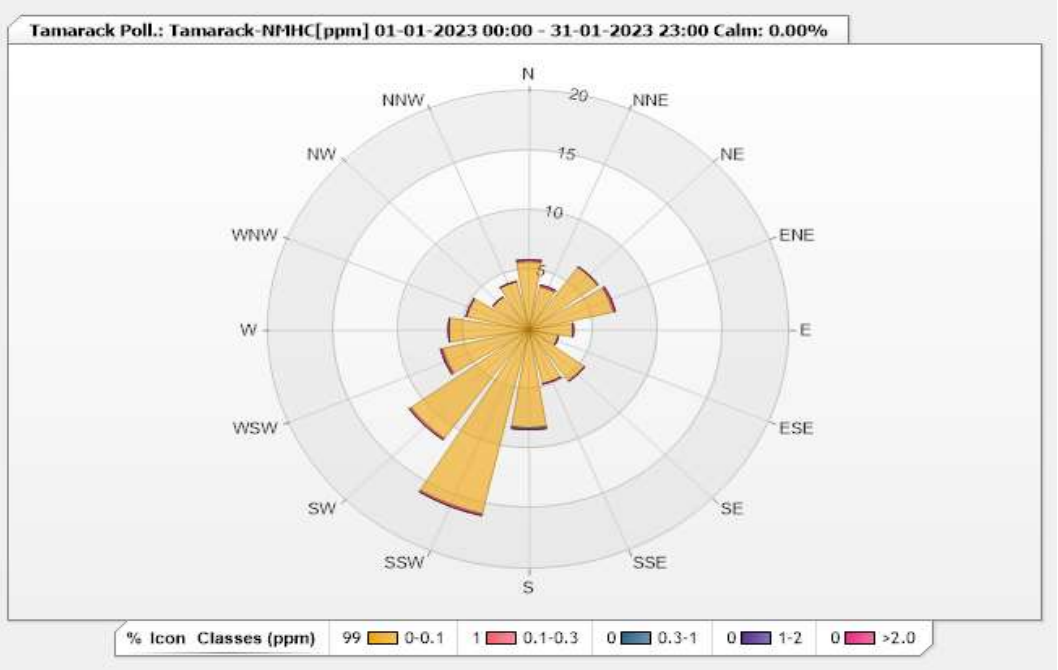


Station: Tamarack Poll.: Tamarack-H2S[ppb] Monthly: 01-2023

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

Calm: 0.00% Valid Data: 88.17% Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-50	>50.0	Total
N	5.79	0	0	0	0	5.79
NNE	4.27	0	0	0	0	4.27
NE	6.55	0	0	0	0	6.55
ENE	6.86	0	0	0	0	6.86
E	3.35	0	0	0	0	3.35
ESE	2.29	0	0	0	0	2.29
SE	5.18	0	0	0	0	5.18
SSE	4.57	0	0	0	0	4.57
S	8.23	0	0	0	0	8.23
SSW	15.7	0	0	0	0	15.7
SW	11.13	0	0	0	0	11.13
WSW	6.86	0	0	0	0	6.86
W	6.1	0	0	0	0	6.1
WNW	4.88	0	0	0	0	4.88
NW	4.12	0	0	0	0	4.12
NNW	4.12	0	0	0	0	4.12
Summary	100	0	0	0	0	100



Lakeland Industry & Community Association

Tamarack Site - January 2023

Summary of Hourly Averages

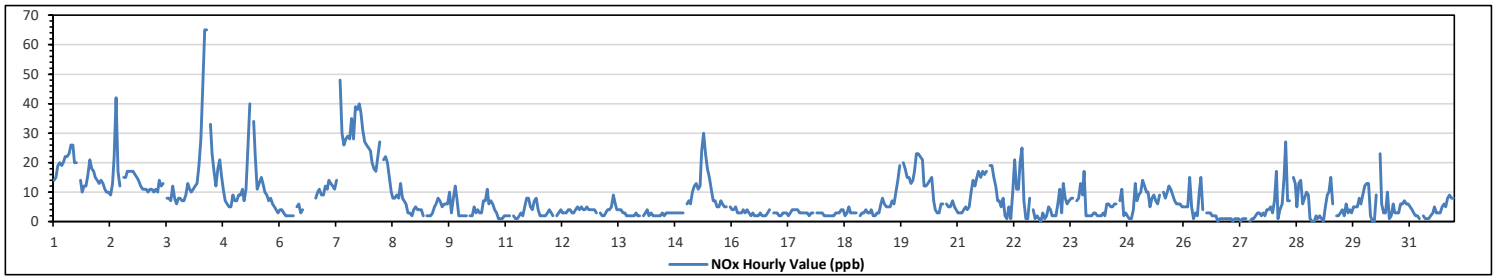
OXIDES OF NITROGEN (NOx) in ppb

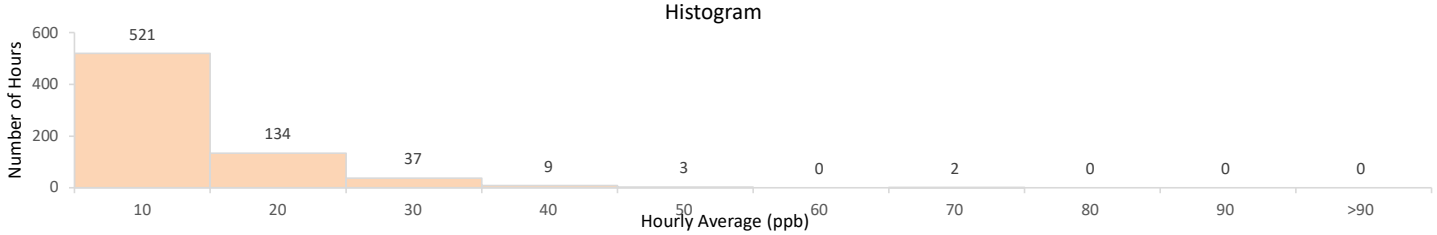
Maximum Hourly Value:	65	ppb	on January 4 at hour 8	Hours in Service:	744	
Maximum Daily Value:	26.2	ppb	on January 7	Hours of Data:	706	
Minimum Hourly Value:	0	ppb	on January 22 at hour 20	Hours of Missing Data:	0	
Minimum Daily Value:	1.8	ppb	on January 27	Hours of Calibration:	38	
Monthly Average:	8.0	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			
Jan 1	14	15	19	20	19	20	22	22	23	26	26	20	20	S	14	10	12	12	16	21	18	17	15	14	10	26	18.0
Jan 2	13	14	13	11	10	10	9	13	22	42	17	12	S	15	15	17	17	17	17	16	15	14	12	11	9	42	15.3
Jan 3	11	11	10	11	11	10	11	10	14	12	13	S	8	8	7	12	8	6	8	8	7	7	9	13	6	14	9.8
Jan 4	11	10	11	12	13	19	28	46	**65**	**65**	S	33	23	17	12	18	21	15	11	7	6	5	5	9	5	**65**	20.1
Jan 5	7	7	9	9	11	7	11	25	40	S	34	22	11	13	15	13	10	9	7	8	6	5	4	3	3	40	12.4
Jan 6	4	4	3	2	2	2	2	2	S	5	6	3	4	C	C	C	C	C	C	8	10	11	9	9	2	11	-
Jan 7	12	11	14	13	12	11	14	S	48	30	26	28	29	28	35	28	39	38	40	37	31	27	26	25	11	48	**26.2**
Jan 8	24	20	18	17	22	27	S	21	22	20	15	10	8	8	9	8	13	8	7	6	3	3	2	4	2	27	12.8
Jan 9	5	4	4	4	2	S	2	2	2	3	5	6	8	7	5	6	6	6	10	3	8	12	8	2	2	12	5.2
Jan 10	2	2	2	2	S	2	2	5	3	4	3	3	7	7	11	6	7	6	4	3	1	1	1	2	1	11	3.7
Jan 11	2	2	2	S	2	1	1	2	3	2	5	8	8	5	4	7	8	4	2	2	2	2	3	4	1	8	3.5
Jan 12	3	2	S	2	3	4	3	3	3	4	4	3	3	4	5	4	5	4	4	5	4	4	4	4	2	5	3.7
Jan 13	3	S	3	2	2	3	4	4	5	9	6	4	4	4	3	3	2	2	2	2	2	3	2	2	2	9	3.3
Jan 14	S	2	3	4	2	3	2	2	2	2	2	3	2	3	3	3	3	3	3	3	3	3	3	S	2	4	2.7
Jan 15	6	7	6	10	12	13	11	12	24	30	23	18	15	11	7	7	5	5	7	6	5	5	S	5	5	30	10.9
Jan 16	4	4	5	3	3	3	4	3	4	3	2	3	2	2	2	3	2	2	2	3	4	S	3	3	2	5	3.0
Jan 17	3	2	2	3	3	3	2	3	4	4	4	4	3	3	3	3	3	2	3	3	S	3	3	3	2	4	3.0
Jan 18	3	2	2	2	2	2	2	3	3	3	4	4	2	3	5	3	3	3	3	S	2	3	3	4	2	5	2.9
Jan 19	3	3	4	2	2	3	3	6	8	6	5	5	5	7	6	10	14	19	S	20	18	15	15	13	2	20	8.3
Jan 20	14	17	23	23	22	21	12	12	13	14	15	7	4	3	3	6	6	S	6	5	5	7	5	4	3	23	10.7
Jan 21	3	3	3	4	5	4	5	10	14	12	15	17	15	17	16	17	S	19	19	15	12	7	7	5	3	19	10.6
Jan 22	8	2	1	5	1	10	21	11	11	20	25	7	1	1	8	S	4	1	2	1	0	3	1	2	0	25	6.3
Jan 23	5	4	2	2	2	6	11	3	13	8	6	7	8	8	S	7	8	13	9	17	2	2	2	2	2	17	6.4
Jan 24	3	3	2	2	2	3	2	6	6	5	5	6	6	S	7	11	2	3	2	1	1	4	13	7	1	13	4.4
Jan 25	9	10	14	12	10	10	5	8	9	7	6	9	S	10	8	10	12	11	9	7	6	6	6	5	5	14	8.7
Jan 26	5	5	5	15	5	1	3	2	10	15	4	S	3	3	3	2	2	2	0	1	1	1	1	1	0	15	3.9
Jan 27	1	1	0	1	1	1	0	1	1	1	S	0	1	1	2	3	3	2	3	2	4	4	5	3	0	5	1.8
Jan 28	7	17	1	4	6	15	27	7	7	S	15	13	5	13	14	6	8	10	9	1	0	0	2	1	0	27	8.2
Jan 29	2	1	0	5	9	10	15	6	S	2	2	3	4	2	6	3	4	3	5	5	5	8	6	9	0	15	5.0
Jan 30	12	13	13	2	0	0	9	S	23	6	3	3	10	1	2	6	3	3	3	6	6	7	6	6	0	23	6.2
Jan 31	5	4	3	2	2	1	S	2	1	1	1	2	3	5	3	3	3	5	6	5	8	9	8	8	1	9	3.9
Diurnal Maximum	24	20	23	23	22	27	28	46	65	65	34	33	29	28	35	28	39	38	40	37	31	27	26	25			
Diurnal Average	6.8	6.7	6.6	6.9	6.6	7.5	8.4	8.7	13.9	12.4	10.2	9.1	7.7	7.5	8.0	8.1	8.0	8.0	7.6	7.6	6.5	6.6	6.3	6.1			

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.



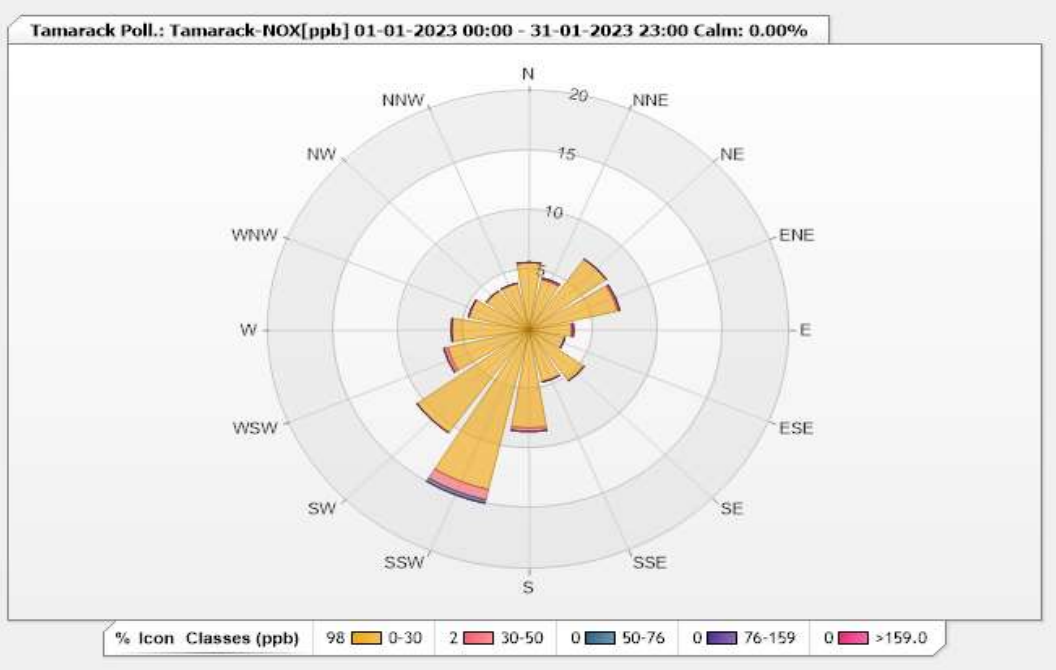


Station: Tamarack Poll.: Tamarack-NOX[ppb] Monthly: 01-2023

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

Calm: 0.00% Valid Data: 90.19% Calm Avg: 0.00 [ppm]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	5.66	0	0	0	0	5.66
NNE	4.32	0.15	0	0	0	4.47
NE	7.3	0	0	0	0	7.3
ENE	7	0.15	0	0	0	7.15
E	3.28	0.15	0	0	0	3.43
ESE	2.83	0	0	0	0	2.83
SE	5.22	0	0	0	0	5.22
SSE	4.47	0	0	0	0	4.47
S	8.2	0.3	0	0	0	8.5
SSW	13.71	0.89	0.3	0	0	14.9
SW	10.58	0	0	0	0	10.58
WSW	6.41	0.3	0	0	0	6.71
W	5.96	0	0	0	0	5.96
WNW	4.77	0	0	0	0	4.77
NW	4.02	0	0	0	0	4.02
NNW	4.02	0	0	0	0	4.02
Summary	97.75	1.94	0.3	0	0	100



Lakeland Industry & Community Association

Tamarack Site - January 2023

Summary of Hourly Averages

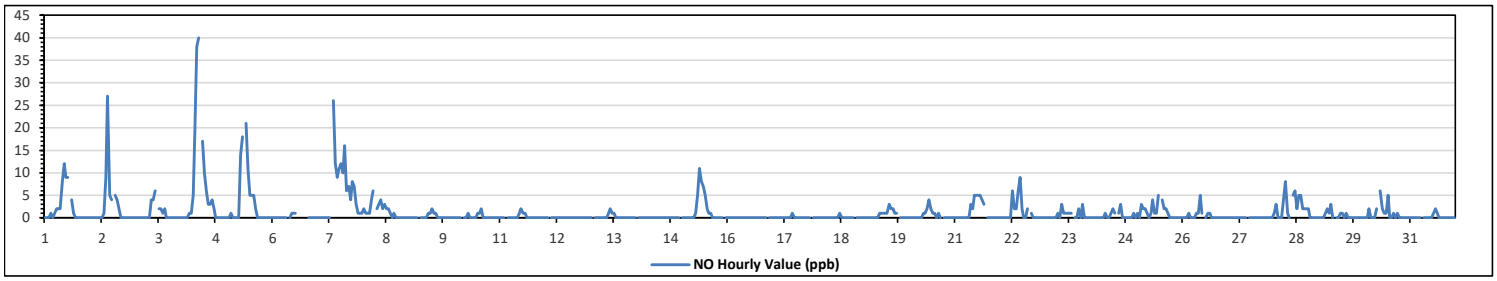
NITRIC OXIDE (NO) in ppb

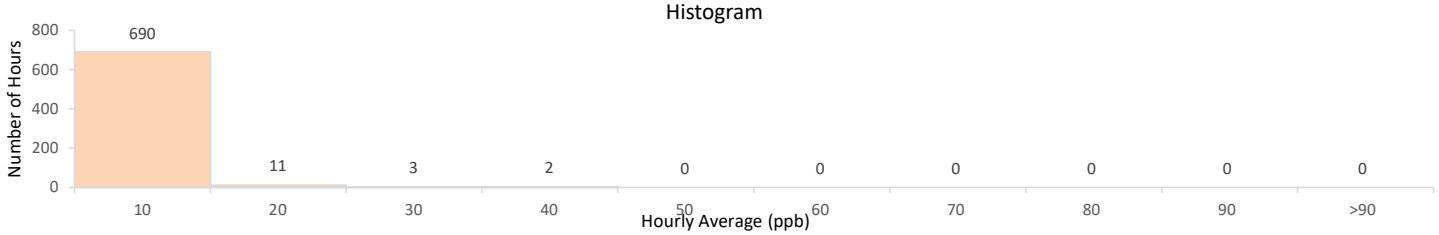
Maximum Hourly Value:	40	ppb	on January 4 at hour 9	Hours in Service:	744
Maximum Daily Value:	6.5	ppb	on January 4	Hours of Data:	706
Minimum Hourly Value:	0	ppb	on January 1 at hour 0	Hours of Missing Data:	0
Minimum Daily Value:	0.0	ppb	on January 12	Hours of Calibration:	38
Monthly Average:	1.2	ppb		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			
Jan 1	0	0	0	1	0	1	2	2	2	8	12	9	9	S	4	1	0	0	0	0	0	0	0	0	0	12	2.2
Jan 2	0	0	0	0	0	0	0	1	9	27	5	4	S	5	4	2	0	0	0	0	0	0	0	0	0	27	2.5
Jan 3	0	0	0	0	0	0	0	0	4	4	6	S	2	2	1	2	0	0	0	0	0	0	0	0	0	6	0.9
Jan 4	0	0	0	0	1	1	5	19	38	**40**	S	17	10	6	3	3	4	2	0	0	0	0	0	0	0	**40**	**6.5**
Jan 5	0	0	1	0	0	0	0	14	18	S	21	11	5	5	5	2	0	0	0	0	0	0	0	0	0	21	3.6
Jan 6	0	0	0	0	0	0	0	0	S	0	1	1	1	C	C	C	C	C	C	0	0	0	0	0	0	1	-
Jan 7	0	0	0	0	0	0	0	S	26	12	9	11	12	10	16	6	7	4	8	7	3	1	1	1	0	26	5.8
Jan 8	2	1	1	1	4	6	S	2	3	4	2	3	2	2	1	0	1	0	0	0	0	0	0	0	0	6	1.5
Jan 9	0	0	0	0	0	S	0	0	0	0	1	1	2	1	1	0	0	0	0	0	0	0	0	0	0	2	0.3
Jan 10	0	0	0	0	S	0	0	1	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0	0	0	2	0.2
Jan 11	0	0	0	S	0	0	0	0	0	0	1	2	1	1	0	0	0	0	0	0	0	0	0	0	0	2	0.2
Jan 12	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Jan 13	0	S	0	0	0	0	0	0	0	1	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	2	0.2
Jan 14	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
Jan 15	0	0	0	0	0	0	0	1	5	11	8	7	5	2	1	1	0	0	0	0	0	0	S	0	0	11	1.8
Jan 16	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
Jan 17	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	S	0	0	0	0	1	0.0
Jan 18	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	S	0	0	0	0	0	1	0.0
Jan 19	0	0	0	0	0	0	0	0	1	1	1	1	1	3	2	2	1	1	S	0	0	0	0	0	0	3	0.6
Jan 20	0	0	0	0	0	0	0	1	1	2	4	2	1	1	0	1	0	S	0	0	0	0	0	0	0	4	0.6
Jan 21	0	0	0	0	0	0	0	0	3	2	5	5	5	5	4	3	S	0	0	0	0	0	0	0	0	5	1.4
Jan 22	0	0	0	0	0	0	6	2	2	6	9	2	0	0	2	S	1	0	0	0	0	0	0	0	0	9	1.3
Jan 23	0	0	0	0	0	0	1	0	3	1	1	1	1	1	S	0	0	2	0	3	0	0	0	0	0	3	0.6
Jan 24	0	0	0	0	0	0	0	1	0	0	1	2	1	S	1	3	0	0	0	0	0	0	1	0	0	3	0.4
Jan 25	1	0	3	2	2	1	0	1	4	1	1	5	S	4	2	2	1	0	0	0	0	0	0	0	0	5	1.3
Jan 26	0	0	0	1	0	0	0	1	1	5	1	S	0	1	1	0	0	0	0	0	0	0	0	0	0	5	0.5
Jan 27	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Jan 28	1	3	0	0	0	4	8	1	0	S	5	6	2	5	5	2	2	2	2	0	0	0	0	0	0	8	2.1
Jan 29	0	0	0	1	2	1	3	0	S	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	3	0.4
Jan 30	0	0	2	0	0	0	2	S	6	2	1	1	5	0	0	1	0	1	0	0	0	0	0	0	0	6	0.9
Jan 31	0	0	0	0	0	0	S	0	0	0	0	0	1	2	1	0	0	0	0	0	0	0	0	0	0	2	0.2
Diurnal Maximum	2	3	3	2	4	6	8	19	38	40	21	17	12	10	16	6	7	4	8	7	3	1	1	1			
Diurnal Average	0.1	0.1	0.2	0.2	0.3	0.5	0.9	1.6	4.3	4.4	3.4	3.2	2.4	2.0	2.0	1.1	0.6	0.4	0.3	0.3	0.1	0.0	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.



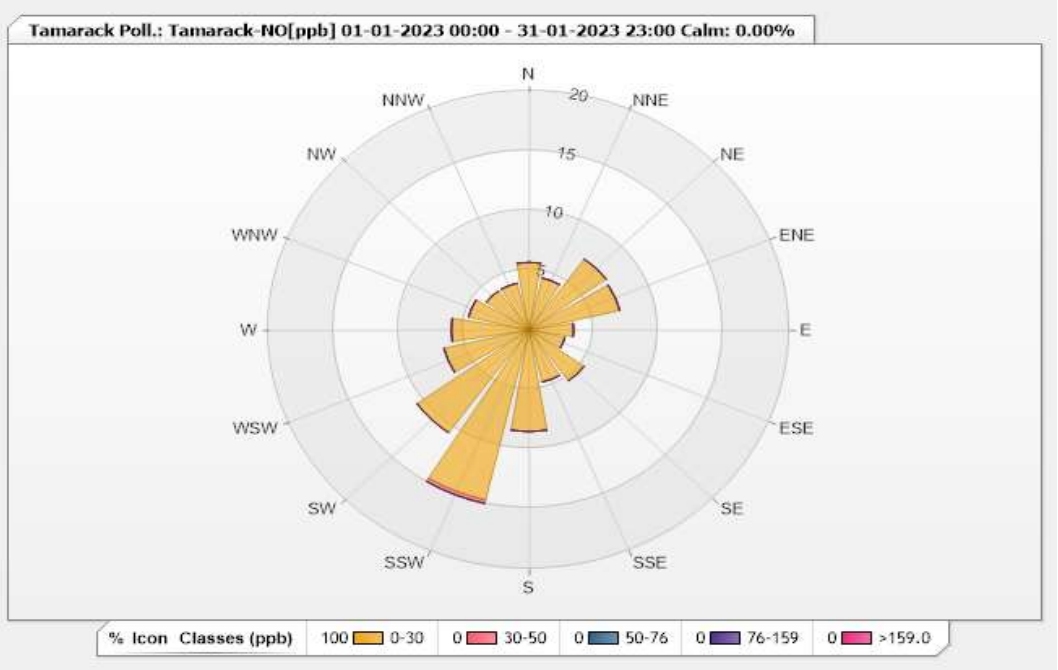


Station: Tamarack Poll.: Tamarack-NO[ppb] Monthly: 01-2023

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

Calm: 0.00% Valid Data: 90.19% Calm Avg: 0.00 [ppm]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	5.66	0	0	0	0	5.66
NNE	4.47	0	0	0	0	4.47
NE	7.3	0	0	0	0	7.3
ENE	7.15	0	0	0	0	7.15
E	3.43	0	0	0	0	3.43
ESE	2.83	0	0	0	0	2.83
SE	5.22	0	0	0	0	5.22
SSE	4.47	0	0	0	0	4.47
S	8.49	0	0	0	0	8.49
SSW	14.61	0.3	0	0	0	14.91
SW	10.58	0	0	0	0	10.58
WSW	6.71	0	0	0	0	6.71
W	5.96	0	0	0	0	5.96
WNW	4.77	0	0	0	0	4.77
NW	4.02	0	0	0	0	4.02
NNW	4.02	0	0	0	0	4.02
Summary	100	0.3	0	0	0	100



Lakeland Industry & Community Association

Tamarack Site - January 2023

Summary of Hourly Averages

NITROGEN DIOXIDE (NO_2) in ppb

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

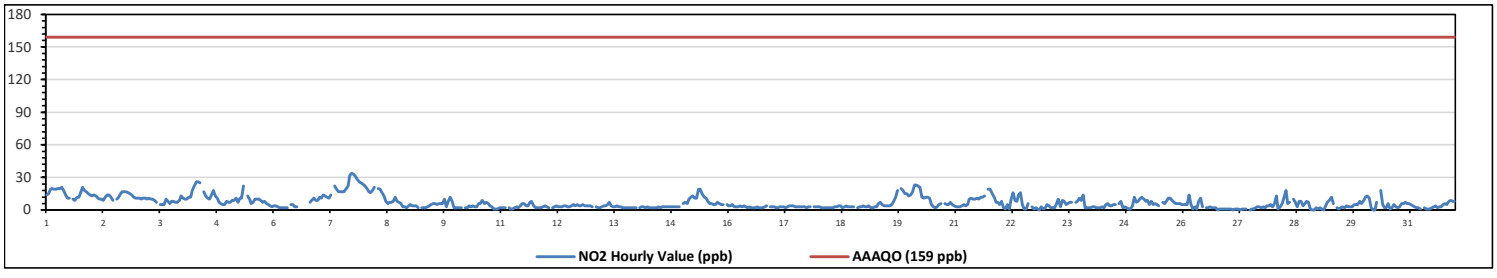
Number of 1-Hour Exceedances: 0

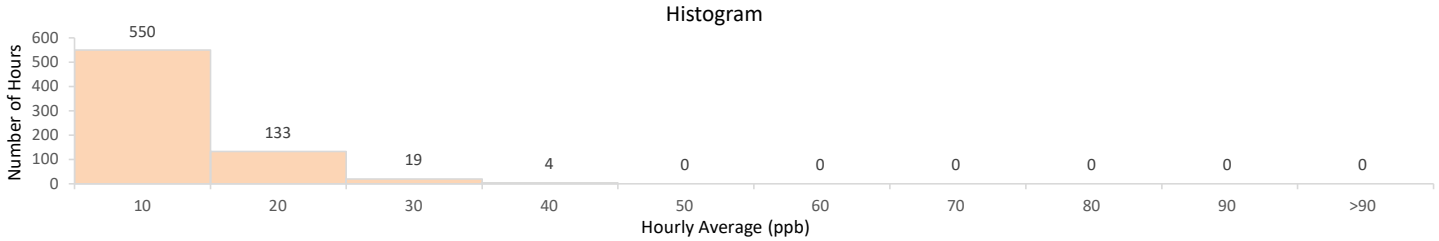
Maximum Hourly Value:	34	ppb	on January 7 at hour 17	Hours in Service:	744
Maximum Daily Value:	20.4	ppb	on January 7	Hours of Data:	706
Minimum Hourly Value:	0	ppb	on January 22 at hour 20	Hours of Missing Data:	0
Minimum Daily Value:	1.8	ppb	on January 27	Hours of Calibration:	38
Monthly Average:	6.8	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			
Jan 1	14	15	19	20	19	19	20	20	21	18	14	11	11	S	10	9	12	12	16	21	18	17	15	14	9	21	15.9
Jan 2	13	14	13	11	10	10	9	12	14	14	12	9	S	10	12	15	17	17	17	16	15	14	12	11	9	17	12.9
Jan 3	11	11	10	11	11	10	11	10	10	9	7	S	5	5	5	10	8	6	8	8	7	7	9	13	5	13	8.8
Jan 4	11	10	10	12	12	18	22	26	26	25	S	17	13	11	10	14	18	13	11	7	6	5	5	8	5	26	13.5
Jan 5	7	7	9	9	11	7	11	11	22	S	13	10	6	7	10	10	10	9	7	8	6	5	4	3	3	22	8.8
Jan 6	4	4	3	2	2	2	2	2	S	5	5	3	3	C	C	C	C	C	C	7	9	11	9	9	2	11	-
Jan 7	12	11	14	13	12	11	14	S	22	19	17	17	17	17	19	22	32	34	33	31	28	26	25	24	11	34	20.4
Jan 8	22	20	17	16	18	21	S	20	19	16	13	8	6	7	7	8	12	8	7	6	3	3	2	4	2	22	11.4
Jan 9	5	4	4	4	2	S	2	2	2	3	4	5	6	6	5	6	6	6	10	3	8	12	8	2	2	12	5.0
Jan 10	2	2	2	2	S	2	2	4	3	4	3	3	6	6	9	6	7	6	4	3	1	1	1	2	1	9	3.5
Jan 11	2	2	2	S	2	1	1	2	3	2	4	6	6	4	4	7	8	4	2	2	2	2	3	4	1	8	3.3
Jan 12	3	2	S	2	3	4	3	3	3	4	4	3	3	4	5	4	5	4	4	5	4	4	4	4	2	5	3.7
Jan 13	3	S	3	2	2	3	4	4	5	7	4	3	3	4	3	3	2	2	2	2	2	2	2	2	2	7	3.0
Jan 14	S	2	3	3	2	3	2	2	2	2	2	3	2	3	3	3	3	3	3	3	3	3	3	S	2	3	2.6
Jan 15	6	7	6	10	12	13	11	11	19	19	15	12	11	8	6	6	5	5	7	6	5	5	S	5	5	19	9.1
Jan 16	4	4	5	3	3	3	4	3	4	3	2	3	2	2	2	3	2	2	2	3	4	S	3	3	2	5	3.0
Jan 17	3	2	2	3	3	3	2	3	4	4	4	3	3	3	3	3	3	2	3	3	S	3	3	3	2	4	3.0
Jan 18	3	2	2	2	2	2	2	2	3	3	4	4	2	3	4	3	3	3	3	S	2	3	3	4	2	4	2.8
Jan 19	3	3	4	2	2	3	3	6	7	5	4	4	4	4	5	8	12	18	S	20	18	15	15	13	2	20	7.7
Jan 20	14	17	23	23	22	21	12	11	12	12	11	5	3	2	3	5	6	S	6	5	5	7	5	4	2	23	10.2
Jan 21	3	3	3	4	5	4	5	10	11	10	10	11	10	12	12	13	S	19	19	15	12	7	7	5	3	19	9.1
Jan 22	8	2	1	5	1	10	16	9	8	14	16	5	1	1	6	S	3	1	2	1	0	3	1	2	0	16	5.0
Jan 23	5	4	2	2	2	6	10	3	9	8	5	6	7	7	S	7	8	11	9	14	2	2	2	2	2	14	5.8
Jan 24	3	3	2	2	2	3	2	5	6	4	4	5	5	S	6	8	2	3	2	1	1	4	12	7	1	12	4.0
Jan 25	8	10	12	10	8	9	5	8	5	6	5	4	S	7	6	8	11	11	9	7	6	6	6	5	4	12	7.5
Jan 26	5	5	5	14	5	1	3	1	8	11	3	S	2	2	3	2	2	2	0	1	1	1	1	1	0	14	3.4
Jan 27	1	1	0	1	1	1	0	1	1	1	S	0	1	1	2	3	3	2	3	2	4	4	5	3	0	5	1.8
Jan 28	6	13	1	3	6	12	18	6	7	S	10	7	3	8	8	4	6	8	7	1	0	0	2	1	0	18	6.0
Jan 29	2	1	0	4	7	9	12	6	S	2	1	2	3	2	4	3	3	3	5	5	5	8	6	9	0	12	4.4
Jan 30	12	13	11	2	0	0	7	S	18	5	2	2	6	1	2	5	3	2	3	6	6	7	6	6	0	18	5.4
Jan 31	5	4	3	2	2	1	S	2	1	1	1	2	3	4	2	3	3	5	6	5	8	9	8	8	1	9	3.8
Diurnal Maximum	22	20	23	23	22	21	22	26	26	25	17	17	17	17	19	22	32	34	33	31	28	26	25	24			
Diurnal Average	6.7	6.6	6.4	6.6	6.3	7.1	7.4	7.1	9.5	8.1	6.9	6.0	5.3	5.4	6.1	6.9	7.4	7.6	7.2	7.2	6.4	6.5	6.2	6.0			

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.



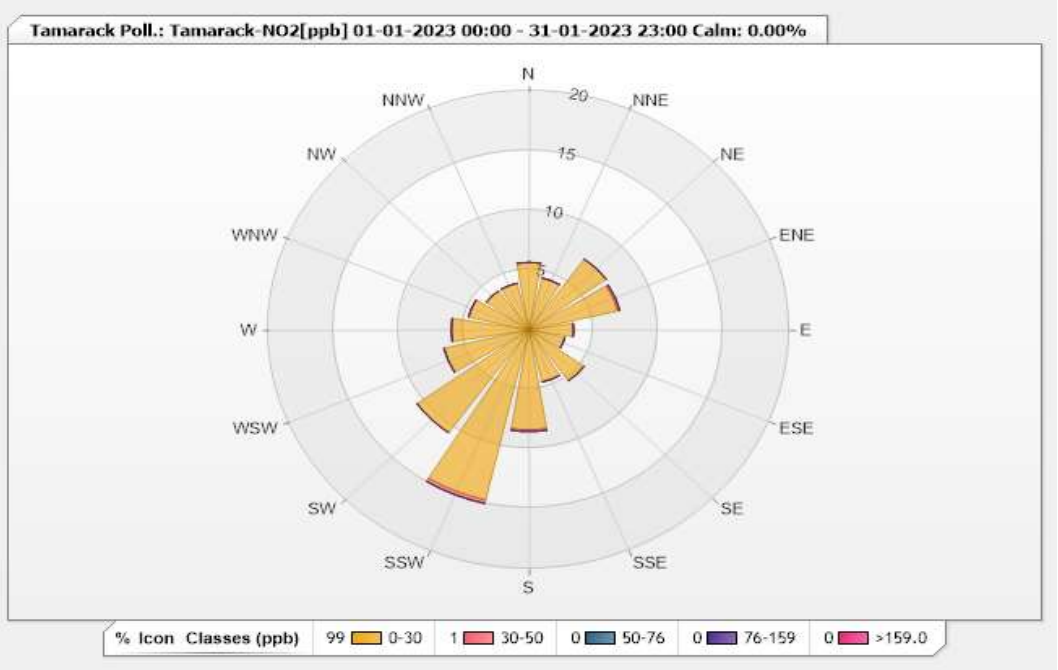


Station: Tamarack Poll.: Tamarack-NO2[ppb] Monthly: 01-2023

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

Calm: 0.00% Valid Data: 90.19% Calm Avg: 0.00 [ppm]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	5.66	0	0	0	0	5.66
NNE	4.47	0	0	0	0	4.47
NE	7.3	0	0	0	0	7.3
ENE	7	0.15	0	0	0	7.15
E	3.43	0	0	0	0	3.43
ESE	2.83	0	0	0	0	2.83
SE	5.22	0	0	0	0	5.22
SSE	4.47	0	0	0	0	4.47
S	8.35	0.15	0	0	0	8.5
SSW	14.61	0.3	0	0	0	14.91
SW	10.58	0	0	0	0	10.58
WSW	6.71	0	0	0	0	6.71
W	5.96	0	0	0	0	5.96
WNW	4.77	0	0	0	0	4.77
NW	4.02	0	0	0	0	4.02
NNW	4.02	0	0	0	0	4.02
Summary	99.4	0.6	0	0	0	100



Lakeland Industry & Community Association

Tamarack Site - January 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

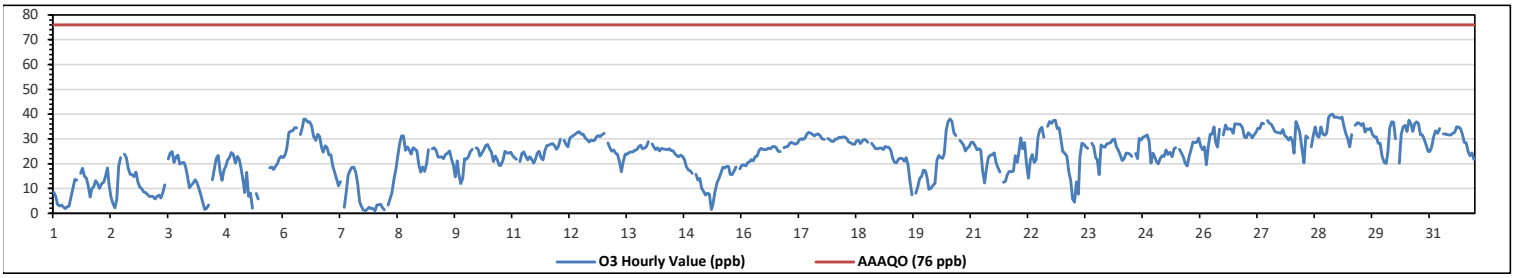
Maximum Hourly Value:	40.0	ppb	on January 28 at hour 21	Hours in Service:	744	
Maximum Daily Value:	33.1	ppb	on January 27	Hours of Data:	707	
Minimum Hourly Value:	1.0	ppb	on January 8 at hour 0	Hours of Missing Data:	0	
Minimum Daily Value:	8.9	ppb	on January 1	Hours of Calibration:	37	
Monthly Average:	23.5	ppb		Operational Uptime:	100.0	

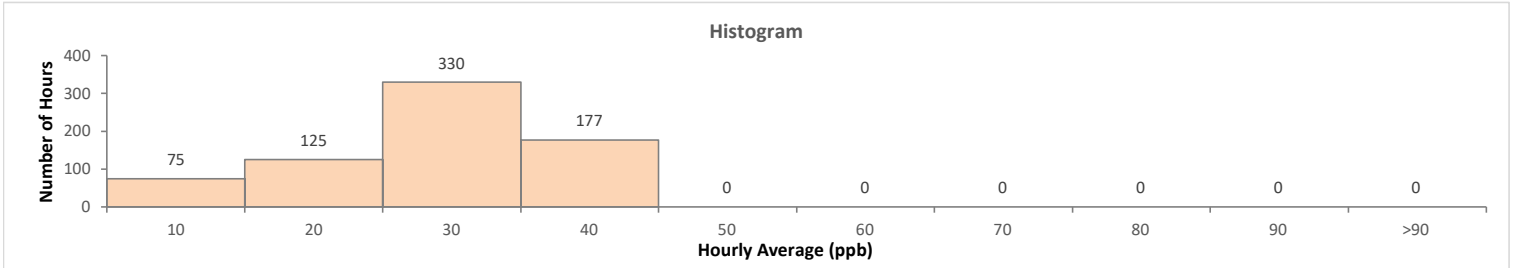
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Jan 1	8.5	6.9	3.6	3	3.3	2.5	1.9	2.6	3	6.6	10	13.7	13.4	S	16.2	18.2	14.9	14.2	10.9	6.6	9.9	10.7	13.2	12	1.9	18.2	8.9
Jan 2	10	12	12.5	14.9	18.4	11.6	6.5	3.9	2.2	5.5	18.9	22.5	S	23.8	22.5	18.1	15.7	15.6	14.8	16.6	12.6	10.5	9.9	8.6	2.2	23.8	13.4
Jan 3	8.3	7.6	6.8	6.8	6.8	5.7	6.8	7.4	6.2	8.3	11.5	S	21.9	24.2	24.9	20.5	22.7	23.4	19.8	20.4	20.5	18.8	14.9	10.3	5.7	24.9	14.1
Jan 4	11.3	12.2	13.6	12.2	9.9	7.4	4.2	1.5	2	3.4	S	13.6	18	22.1	23.3	16.8	13.3	17.4	19	21.4	22.5	24.5	23.8	20.3	1.5	24.5	14.5
Jan 5	22.9	21.7	17.8	12.9	8.3	16.4	6.8	8.1	2	S	7.9	5.8	C	C	C	C	C	18.4	18.7	17.7	18.9	20	22.2	22.9	2.0	22.9	15.0
Jan 6	22.4	23.5	25.9	32.6	33.2	33.3	34.6	34.4	S	31.7	34.7	38	37.8	36.7	36.9	35.2	31.1	29.3	31.8	31	26.6	24.6	27.1	26.6	22.4	38.0	31.3
Jan 7	23.6	23.6	19.1	16.4	13.8	11.1	12.7	S	2.4	8.4	15.4	17.2	18.5	18.5	16.4	11.9	4.6	2.7	1.4	1.1	1.5	2.4	1.9	1.9	1.1	23.6	10.7
Jan 8	1	3.3	3.5	3.6	2.3	1.4	S	3.4	5.7	8.3	13.5	18.4	23.7	28.1	31.2	31.2	25.4	26.8	25.5	23.9	26.4	25.9	25.1	19.6	**1.0**	31.2	16.4
Jan 9	16.6	18.7	16.9	19.8	25.7	S	26	26.4	25.2	22.7	22.7	22.8	22	23.7	24.1	25.1	21.9	19.3	14.7	21.1	15.7	12	14.1	22.1	12.0	26.4	20.8
Jan 10	21.8	22.8	24.9	25.8	S	26.4	25.9	23.1	24.3	25.6	27.3	27.7	25.9	24.7	20.8	23.1	21.7	19.3	19.3	21.4	25	24.4	24.3	24.6	19.3	27.7	23.9
Jan 11	23.3	22.4	21.8	S	20.9	24.1	24.8	23.1	21.5	22.8	21.7	20.3	21.6	24.2	25	22.3	21.5	25.2	27.3	27.5	27.8	28.1	27.3	25.8	20.3	28.1	23.9
Jan 12	27	29.8	S	29.4	27.7	26.8	30.3	31	31.4	31.9	32.6	32.9	32	31.8	30.5	29.6	28.8	29.5	29.2	29.4	30.9	31.3	31	31.7	26.8	32.9	30.3
Jan 13	32.3	S	28.4	26.2	25	25.5	24.3	23.7	20.7	16.7	21	23.8	23.9	24.5	24.8	24.8	25.4	25.6	26.9	27.4	26.1	26.3	26.9	28.9	16.7	32.3	25.2
Jan 14	S	28	26.8	25.6	26.5	25.1	26.2	25.9	25.8	25.6	26	25.2	25.3	24.1	23.2	22.8	23.5	22.9	21.7	18.8	17.5	17.1	16.1	S	16.1	28.0	23.6
Jan 15	15.7	13.4	14.1	10	8.7	7.3	8.1	7.7	1.5	3.6	8.3	12.3	14.1	16.3	18.5	18.4	18.9	18.8	15.8	15.6	17	18.7	S	17.9	1.5	18.9	13.1
Jan 16	19.3	19.6	19.1	20.5	20.7	21.6	21.1	22.8	23	25.3	26.2	25.8	25.6	25.8	26.3	26.1	26.8	27	26.4	25	24.9	S	26.5	26.8	19.1	27.0	24.0
Jan 17	27	28.1	28.7	28.3	27.9	28.3	29.7	30	29.8	30.4	31.9	32.6	32.4	31.8	31.2	31.8	32	31.3	30.1	29.8	S	30.2	29.6	29	27.0	32.6	30.1
Jan 18	29.1	29.9	30.1	30.7	30.6	30.8	30.7	30.1	28.8	28.4	27.9	27.8	29.2	29.3	28.1	29.2	29.8	29.3	28.7	S	28.2	27.2	26.1	26	26.0	30.8	29.0
Jan 19	26.3	26.3	25.7	27	26.7	26.6	25.4	22.1	20.5	20.4	21.9	22.2	22.1	21	22.5	19.3	12.7	7.5	S	8	10.5	14.1	14.8	17.4	7.5	27.0	20.0
Jan 20	17.1	14.5	9.7	10.1	11.4	12.1	21.4	23.3	22.4	22.2	24.1	33.5	37	38	37.1	32.5	31.3	S	29.4	28.6	27.6	25.1	26.3	27	9.7	38.0	24.4
Jan 21	28.6	28.6	27.3	25.6	26.1	25.5	16.9	12.2	18.3	22.6	23.5	23.6	24.4	20.4	18.4	16.6	S	12.5	12.8	15.6	16.8	16.7	17	23.2	12.2	28.6	20.6
Jan 22	20.6	25.4	30.4	26	28.5	19.9	14.2	21.5	23.7	20.5	21.5	30.8	33.8	34.7	30.7	S	35.1	37.1	36.2	37.5	37.6	34.2	34.5	29.5	14.2	37.6	28.9
Jan 23	25	24.1	23	16.9	13.3	5.7	4.5	12.6	7.8	22.8	28.2	27.8	26.9	26.2	S	28.3	27	22.4	21.6	15.6	27.6	26.9	26.7	28	4.5	28.3	21.3
Jan 24	28.3	28.5	29.7	29.9	26.8	25.4	23.4	21.2	22	24.2	24.2	23.8	22.9	S	24.1	22.1	30.2	29.5	30.7	31.1	31.6	29.2	20.3	24.2	20.3	31.6	26.2
Jan 25	22.7	20.9	20	22.2	23.2	22.9	25.5	23.7	24.6	22.8	26.1	26.5	S	25.8	24.4	22.7	20.3	19.1	22.8	25.5	28.8	28.5	28.6	30.3	19.1	30.3	24.3
Jan 26	27.2	25.6	26.8	19.6	27	31.8	32	34.9	28.6	26.7	33.9	S	31.5	35.6	33.9	34	33.9	32.2	36.1	35.9	35.9	35.7	34.5	30.8	19.6	36.1	31.5
Jan 27	30.4	32.5	31.5	30.4	31.6	32.7	34.3	34.2	36.4	36.1	S	37.4	36.3	35.8	34.4	33.1	32.7	32.5	32.3	33.8	31.3	30.7	29.5	30.7	29.5	37.4	**33.1**
Jan 28	29	24.2	37	35.1	32.5	26.7	20.4	31.2	30.4	S	26.9	31.3	34.9	31.3	30.7	34.8	32	31.4	32.4	38.7	39.8	**40**	38.7	38.8	20.4	**40.0**	32.5
Jan 29	38.6	38.3	38.8	35.1	32.1	30.1	26.9	31.7	S	35.5	36.5	36.3	35.5	36.2	32.8	34	33.7	34.3	31.8	30.8	30.9	28.3	28.3	23.1	23.1	38.8	33.0
Jan 30	20.5	20.2	24.5	34.5	36.9	36.7	30.1	S	20.3	32	34.9	35.5	33.1	37.6	36.2	33	36.1	36.9	36.1	31.7	31.6	29.8	27.5	25	20.2	37.6	31.3
Jan 31	24.9	26.7	30.7	33.3	32.3	34.2	S	31.9	32	31.7	31.5	31.5	32.3	32.6	34.8	34.8	34.1	31.9	28.6	28.4	24.9	23.2	24.4	21.8	21.8	34.8	30.1
Diurnal Maximum	38.6	38.3	38.8	35.1	36.9	36.7	34.6	34.9	36.4	36.1	36.5	38.0	37.8	38.0	37.1	35.2	36.1	37.1	36.2	38.7	39.8	40.0	38.7	38.8			
Diurnal Average	22.0	22.0	22.3	22.1	21.9	21.2	20.5	20.9	18.7	21.5	23.8	25.5	27.0	28.0	27.0	25.9	25.4	24.1	24.4	23.9	24.2	23.8	23.7	23.5			

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.



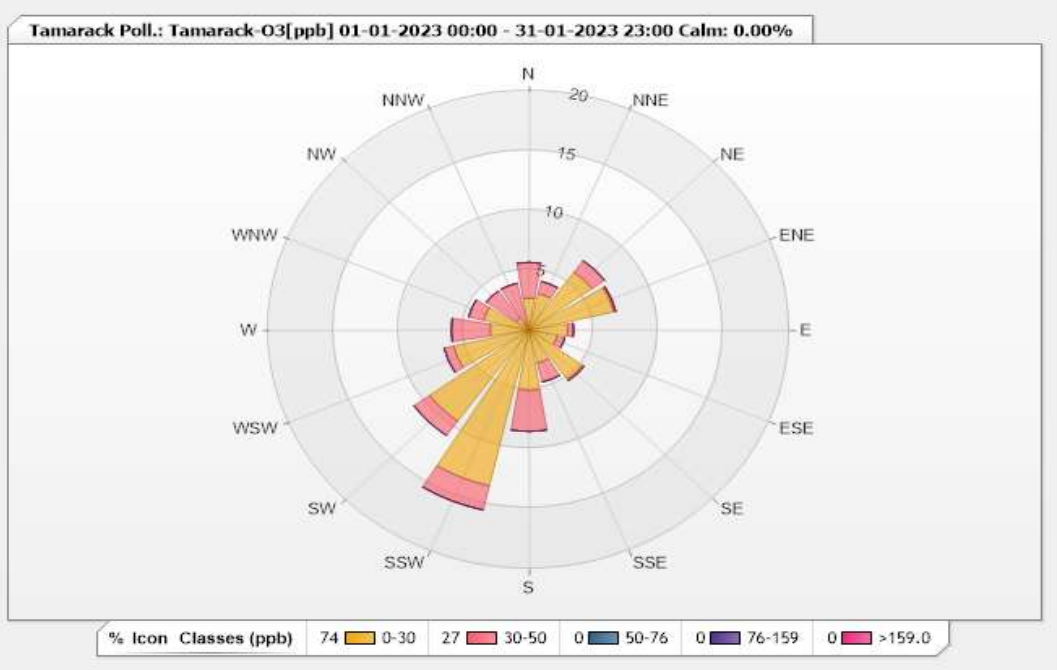


Station: Tamarack Poll.: Tamarack-O3[ppb] Monthly: 01-2023

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

Calm: 0.00% Valid Data: 90.32% Calm Avg: 0.00 [ppm]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	2.68	2.98	0	0	0	5.66
NNE	3.13	1.04	0	0	0	4.17
NE	5.95	1.19	0	0	0	7.14
ENE	6.7	0.15	0	0	0	6.85
E	2.98	0.45	0	0	0	3.43
ESE	2.23	0.6	0	0	0	2.83
SE	5.06	0.15	0	0	0	5.21
SSE	2.83	1.64	0	0	0	4.47
S	5.06	3.42	0	0	0	8.48
SSW	13.39	2.08	0	0	0	15.47
SW	9.38	1.49	0	0	0	10.87
WSW	5.95	0.74	0	0	0	6.69
W	2.98	2.98	0	0	0	5.96
WNW	3.57	1.19	0	0	0	4.76
NW	1.19	2.83	0	0	0	4.02
NNW	0.45	3.57	0	0	0	4.02
Summary	73.53	26.5	0	0	0	100



Lakeland Industry & Community Association

Tamarack Site - January 2023

Summary of Hourly Averages

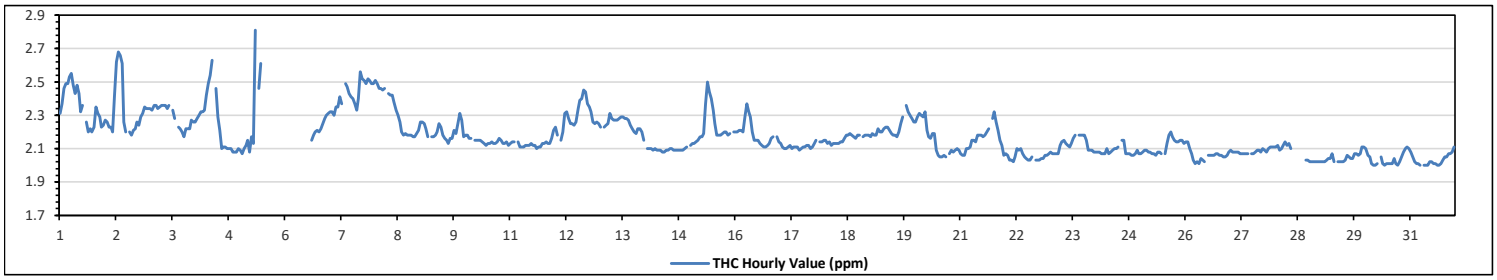
TOTAL HYDROCARBONS (THC) in ppm

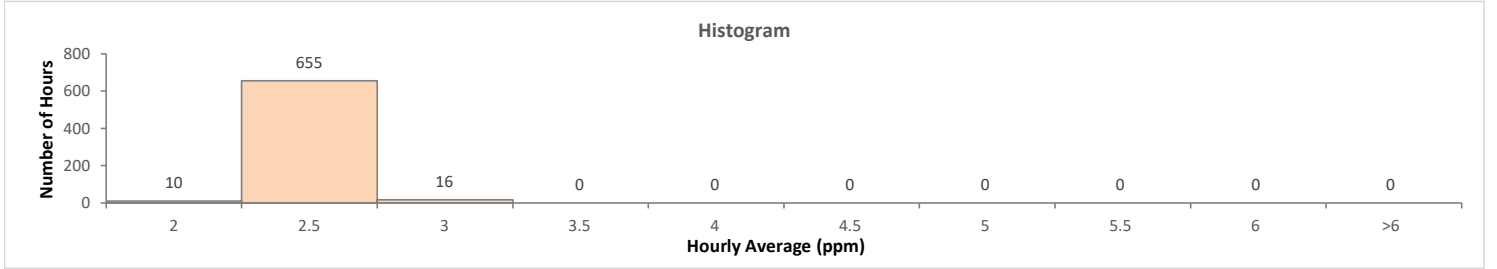
Maximum Hourly Value:	2.81	ppm	on January 5 at hour 8	Hours in Service:	744
Maximum Daily Value:	2.43	ppm	on January 7	Hours of Data:	681
Minimum Hourly Value:	2.00	ppm	on January 30 at hour 4	Hours of Missing Data:	25
Minimum Daily Value:	2.03	ppm	on January 31	Hours of Calibration:	38
Monthly Average:	2.18	ppm		Operational Uptime:	96.6

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Jan 1	2.31	2.37	2.46	2.49	2.49	2.53	2.55	2.48	2.43	2.48	2.43	2.32	2.36	S	2.26	2.20	2.22	2.20	2.23	2.35	2.31	2.29	2.23	2.24	2.20	2.55	2.36
Jan 2	2.27	2.26	2.23	2.23	2.20	2.42	2.62	2.68	2.66	2.61	2.26	2.20	S	2.20	2.18	2.21	2.22	2.26	2.24	2.29	2.31	2.35	2.34	2.34	2.18	2.68	2.33
Jan 3	2.34	2.33	2.36	2.36	2.34	2.35	2.36	2.36	2.36	2.34	2.36	S	2.33	2.28	X	2.23	2.22	2.20	2.17	2.22	2.22	2.22	2.27	2.26	2.17	2.36	2.29
Jan 4	2.26	2.28	2.30	2.32	2.32	2.33	2.42	2.49	2.54	2.63	S	2.46	2.29	2.21	2.10	2.11	2.11	2.10	2.10	2.10	2.08	2.08	2.08	2.10	2.08	2.63	2.25
Jan 5	2.09	2.07	2.10	2.12	2.15	2.08	2.17	2.13	**2.81**	S	2.46	2.61	C	C	C	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	2.07	**2.81**	-
Jan 6	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	C	C	C	C	2.15	2.18	2.20	2.21	2.20	2.22	2.25	2.28	2.30	2.31	2.15	2.31	-
Jan 7	2.32	2.32	2.30	2.35	2.35	2.41	2.37	S	2.49	2.47	2.43	2.41	2.40	2.37	2.33	2.40	2.56	2.52	2.51	2.49	2.52	2.51	2.49	2.49	2.30	2.56	**2.43**
Jan 8	2.51	2.49	2.46	2.46	2.45	2.46	S	2.43	2.42	2.42	2.38	2.33	2.30	2.26	2.20	2.18	2.19	2.18	2.18	2.18	2.17	2.17	2.19	2.21	2.17	2.51	2.31
Jan 9	2.26	2.26	2.25	2.22	2.17	S	2.17	2.17	2.18	2.20	2.25	2.23	2.18	2.16	2.15	2.13	2.16	2.16	2.21	2.19	2.25	2.31	2.27	2.17	2.13	2.31	2.20
Jan 10	2.18	2.18	2.16	2.16	S	2.15	2.15	2.15	2.15	2.14	2.13	2.12	2.13	2.13	2.14	2.13	2.13	2.14	2.16	2.15	2.13	2.13	2.14	2.12	2.12	2.18	2.14
Jan 11	2.13	2.14	2.14	S	2.14	2.11	2.11	2.11	2.12	2.12	2.12	2.13	2.12	2.12	2.10	2.11	2.11	2.13	2.13	2.14	2.13	2.13	2.16	2.21	2.10	2.21	2.13
Jan 12	2.23	2.18	S	2.15	2.20	2.31	2.32	2.28	2.25	2.25	2.24	2.26	2.34	2.39	2.40	2.45	2.44	2.37	2.35	2.32	2.26	2.25	2.26	2.25	2.15	2.45	2.29
Jan 13	2.23	S	2.23	2.24	2.25	2.31	2.28	2.27	2.27	2.27	2.28	2.29	2.29	2.28	2.28	2.27	2.24	2.22	2.20	2.19	2.22	2.22	2.20	2.15	2.15	2.31	2.25
Jan 14	S	2.10	2.10	2.10	2.09	2.10	2.09	2.09	2.09	2.08	2.08	2.09	2.09	2.10	2.10	2.09	2.09	2.09	2.09	2.09	2.09	2.10	2.11	S	2.08	2.11	2.09
Jan 15	2.12	2.13	2.13	2.14	2.15	2.17	2.17	2.19	2.37	2.50	2.44	2.40	2.33	2.25	2.18	2.18	2.18	2.19	2.20	2.20	2.18	2.19	S	2.20	2.12	2.50	2.23
Jan 16	2.20	2.20	2.21	2.21	2.20	2.29	2.37	2.32	2.29	2.20	2.15	2.15	2.15	2.13	2.12	2.11	2.11	2.12	2.13	2.16	2.17	S	2.17	2.14	2.11	2.37	2.19
Jan 17	2.13	2.11	2.10	2.10	2.11	2.12	2.10	2.11	2.11	2.11	2.09	2.10	2.11	2.11	2.12	2.12	2.10	2.11	2.13	2.15	S	2.14	2.14	2.15	2.09	2.15	2.12
Jan 18	2.15	2.13	2.14	2.12	2.13	2.13	2.13	2.13	2.14	2.14	2.16	2.18	2.18	2.19	2.18	2.17	2.16	2.18	2.18	S	2.17	2.18	2.18	2.18	2.12	2.19	2.16
Jan 19	2.17	2.19	2.18	2.18	2.22	2.20	2.20	2.22	2.23	2.23	2.21	2.19	2.18	2.18	2.17	2.20	2.25	2.29	S	2.36	2.32	2.30	2.28	2.26	2.17	2.36	2.23
Jan 20	2.26	2.29	2.31	2.30	2.29	2.32	2.21	2.17	2.16	2.19	2.19	2.09	2.06	2.05	2.05	2.06	2.05	S	2.07	2.09	2.08	2.09	2.10	2.09	2.05	2.32	2.16
Jan 21	2.07	2.06	2.06	2.10	2.10	2.11	2.15	2.15	2.14	2.18	2.18	2.18	2.17	2.18	2.20	2.22	S	2.28	2.32	2.26	2.21	2.15	2.12	2.06	2.06	2.32	2.16
Jan 22	2.07	2.06	2.03	2.03	2.02	2.05	2.10	2.09	2.10	2.07	2.05	2.04	2.03	2.03	2.05	S	2.03	2.03	2.03	2.04	2.04	2.06	2.06	2.07	2.02	2.10	2.05
Jan 23	2.08	2.07	2.07	2.07	2.07	2.12	2.14	2.15	2.13	2.12	2.11	2.13	2.16	2.18	S	2.18	2.18	2.18	2.18	2.15	2.09	2.09	2.09	2.08	2.07	2.18	2.12
Jan 24	2.08	2.08	2.08	2.07	2.07	2.07	2.10	2.07	2.08	2.09	2.10	2.10	2.11	S	2.15	2.15	2.07	2.07	2.07	2.06	2.06	2.07	2.09	2.07	2.06	2.15	2.09
Jan 25	2.07	2.08	2.09	2.09	2.08	2.08	2.07	2.07	2.06	2.08	2.08	2.07	S	2.07	2.13	2.18	2.20	2.17	2.15	2.14	2.14	2.15	2.15	2.13	2.06	2.20	2.11
Jan 26	2.14	2.14	2.10	2.07	2.03	2.01	2.02	2.01	2.04	2.03	2.02	S	2.06	2.06	2.06	2.06	2.07	2.07	2.06	2.06	2.05	2.05	2.06	2.08	2.01	2.14	2.06
Jan 27	2.09	2.08	2.08	2.08	2.08	2.07	2.07	2.07	2.07	2.07	S	2.07	2.07	2.08	2.09	2.09	2.08	2.10	2.09	2.08	2.10	2.11	2.11	2.11	2.07	2.11	2.08
Jan 28	2.11	2.12	2.09	2.10	2.12	2.14	2.12	2.13	2.10	S	2.17	NRM	NRM	NRM	NRM	NRM	2.03	2.03	2.02	2.02	2.02	2.02	2.02	2.02	2.02	2.17	2.08
Jan 29	2.02	2.02	2.02	2.03	2.04	2.04	2.07	2.02	S	2.02	2.02	2.02	2.02	2.03	2.06	2.05	2.04	2.04	2.07	2.07	2.06	2.07	2.11	2.11	2.02	2.11	2.05
Jan 30	2.10	2.06	2.05	2.01	2.00	2.00	2.01	S	2.05	2.01	2.00	2.01	2.01	2.01	2.01	2.04	2.01	2.00	2.02	2.05	2.08	2.10	2.11	2.10	2.00	2.11	2.04
Jan 31	2.08	2.05	2.02	2.01	2.01	2.00	S	2.00	2.00	2.00	2.02	2.02	2.01	2.01	2.00	2.00	2.01	2.03	2.05	2.05	2.07	2.07	2.08	2.11	2.00	2.11	2.03
Diurnal Maximum	2.51	2.49	2.46	2.49	2.49	2.53	2.62	2.68	2.81	2.63	2.46	2.61	2.40	2.39	2.40	2.45	2.56	2.52	2.51	2.49	2.52	2.51	2.49	2.49			
Diurnal Average	2.17	2.17	2.17	2.17	2.17	2.19	2.20	2.20	2.24	2.22	2.19	2.19	2.17	2.16	2.15	2.16	2.15	2.16	2.16	2.17	2.16	2.17	2.17	2.17			

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.



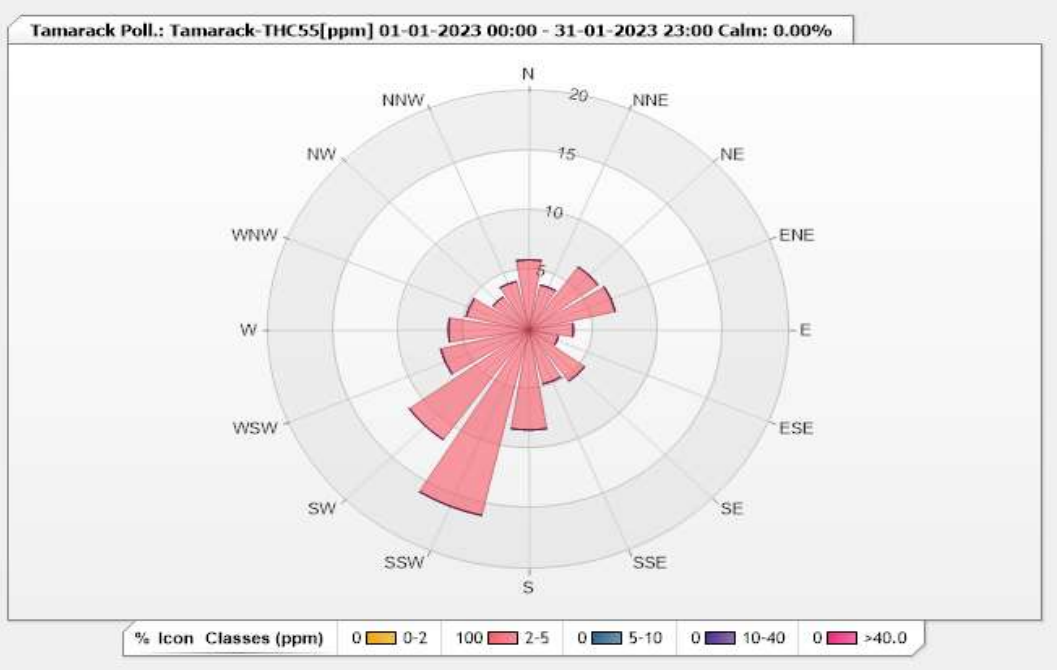


Station: Tamarack Poll.: Tamarack-THC55[ppm] Monthly: 01-2023

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

Calm: 0.00% Valid Data: 86.83% Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-40	>40.0	Total
N	0	5.88	0	0	0	5.88
NNE	0	3.87	0	0	0	3.87
NE	0.15	6.35	0	0	0	6.5
ENE	0	6.81	0	0	0	6.81
E	0	3.41	0	0	0	3.41
ESE	0	2.32	0	0	0	2.32
SE	0	5.26	0	0	0	5.26
SSE	0	4.64	0	0	0	4.64
S	0	8.36	0	0	0	8.36
SSW	0	15.94	0	0	0	15.94
SW	0	11.3	0	0	0	11.3
WSW	0.15	6.81	0	0	0	6.96
W	0	6.19	0	0	0	6.19
WNW	0	4.95	0	0	0	4.95
NW	0	3.41	0	0	0	3.41
NNW	0	4.18	0	0	0	4.18
Summary	0.3	100	0	0	0	100



Lakeland Industry & Community Association

Tamarack Site - January 2023

Summary of Hourly Averages

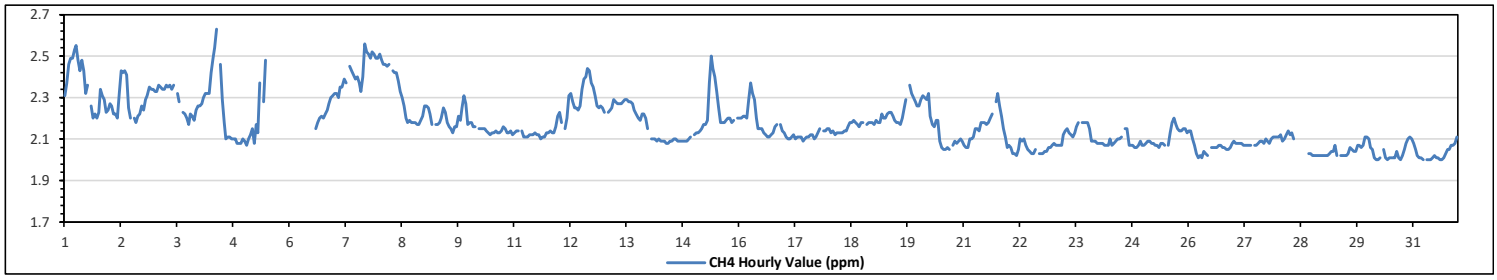
METHANE (CH4) in ppm

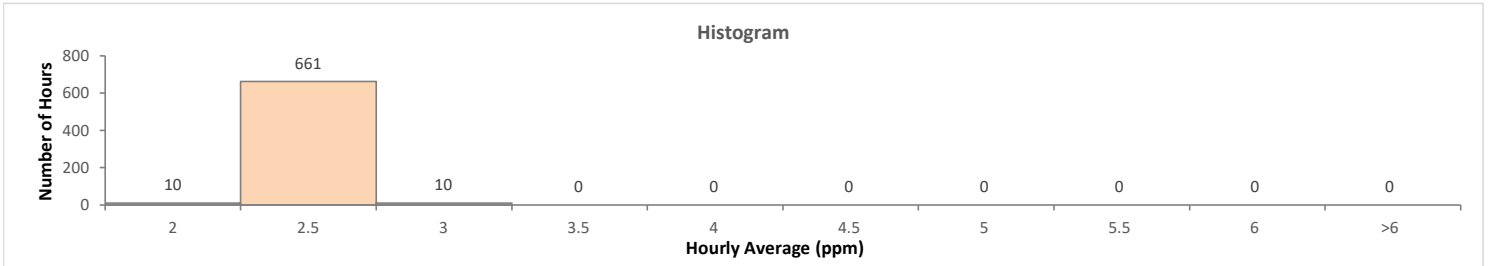
Maximum Hourly Value:	2.63	ppm	on January 4 at hour 9	Hours in Service:	744	
Maximum Daily Value:	2.42	ppm	on January 7	Hours of Data:	681	
Minimum Hourly Value:	2.00	ppm	on January 30 at hour 4	Hours of Missing Data:	25	
Minimum Daily Value:	2.03	ppm	on January 31	Hours of Calibration:	38	
Monthly Average:	2.17	ppm		Operational Uptime:	96.6	

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Jan 1	2.31	2.37	2.46	2.49	2.49	2.53	2.55	2.48	2.43	2.48	2.43	2.32	2.36	S	2.26	2.20	2.22	2.20	2.23	2.34	2.31	2.29	2.23	2.24	2.20	2.55	2.36
Jan 2	2.27	2.26	2.22	2.22	2.20	2.32	2.43	2.42	2.43	2.41	2.25	2.20	S	2.20	2.18	2.21	2.22	2.26	2.24	2.29	2.31	2.35	2.34	2.34	2.18	2.43	2.29
Jan 3	2.33	2.33	2.36	2.35	2.34	2.34	2.36	2.35	2.36	2.34	2.36	S	2.32	2.28	X	2.23	2.22	2.20	2.17	2.22	2.21	2.19	2.24	2.26	2.17	2.36	2.29
Jan 4	2.26	2.27	2.30	2.32	2.32	2.32	2.42	2.49	2.54	**2.63**	S	2.46	2.29	2.18	2.10	2.11	2.11	2.10	2.10	2.10	2.08	2.08	2.08	2.10	2.08	**2.63**	2.25
Jan 5	2.09	2.07	2.10	2.12	2.15	2.08	2.17	2.13	2.37	S	2.28	2.48	C	C	C	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	2.07	2.48	-
Jan 6	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	C	C	C	C	2.15	2.18	2.20	2.21	2.20	2.22	2.24	2.27	2.30	2.31	2.15	2.31	-
Jan 7	2.32	2.32	2.30	2.35	2.35	2.39	2.37	S	2.45	2.43	2.41	2.39	2.40	2.37	2.33	2.40	2.56	2.52	2.51	2.49	2.52	2.51	2.49	2.49	2.30	2.56	**2.42**
Jan 8	2.51	2.48	2.46	2.46	2.45	2.46	S	2.43	2.42	2.42	2.38	2.33	2.30	2.26	2.20	2.18	2.19	2.18	2.18	2.18	2.17	2.17	2.19	2.21	2.17	2.51	2.31
Jan 9	2.26	2.26	2.25	2.22	2.17	S	2.17	2.17	2.18	2.20	2.25	2.23	2.18	2.16	2.15	2.13	2.16	2.16	2.21	2.19	2.25	2.31	2.27	2.17	2.13	2.31	2.20
Jan 10	2.18	2.18	2.16	2.16	S	2.15	2.15	2.15	2.15	2.14	2.13	2.12	2.13	2.13	2.14	2.13	2.13	2.14	2.16	2.15	2.13	2.13	2.14	2.12	2.12	2.18	2.14
Jan 11	2.13	2.14	2.14	S	2.14	2.11	2.11	2.11	2.12	2.12	2.12	2.13	2.12	2.12	2.10	2.11	2.11	2.13	2.13	2.14	2.13	2.13	2.16	2.21	2.10	2.21	2.13
Jan 12	2.23	2.18	S	2.15	2.20	2.31	2.32	2.28	2.25	2.25	2.24	2.26	2.34	2.39	2.40	2.44	2.43	2.37	2.35	2.31	2.26	2.25	2.26	2.25	2.15	2.44	2.29
Jan 13	2.23	S	2.23	2.24	2.25	2.29	2.28	2.27	2.27	2.27	2.28	2.29	2.29	2.28	2.28	2.27	2.24	2.22	2.20	2.19	2.22	2.22	2.20	2.15	2.15	2.29	2.25
Jan 14	S	2.10	2.10	2.10	2.09	2.10	2.09	2.09	2.09	2.08	2.08	2.09	2.09	2.10	2.10	2.09	2.09	2.09	2.09	2.09	2.09	2.10	2.11	S	2.08	2.11	2.09
Jan 15	2.12	2.13	2.13	2.14	2.15	2.17	2.17	2.19	2.37	2.50	2.44	2.40	2.33	2.25	2.18	2.18	2.18	2.19	2.20	2.20	2.18	2.19	S	2.20	2.12	2.50	2.23
Jan 16	2.20	2.20	2.21	2.21	2.20	2.29	2.37	2.32	2.29	2.20	2.15	2.15	2.15	2.13	2.12	2.11	2.11	2.12	2.13	2.16	2.17	S	2.17	2.14	2.11	2.37	2.19
Jan 17	2.13	2.11	2.10	2.10	2.11	2.12	2.10	2.11	2.11	2.11	2.09	2.10	2.11	2.11	2.12	2.12	2.10	2.11	2.13	2.15	S	2.14	2.14	2.15	2.09	2.15	2.12
Jan 18	2.15	2.13	2.14	2.12	2.13	2.13	2.13	2.13	2.14	2.14	2.16	2.18	2.18	2.19	2.18	2.17	2.16	2.18	2.18	S	2.17	2.18	2.18	2.18	2.12	2.19	2.16
Jan 19	2.17	2.19	2.18	2.18	2.22	2.20	2.20	2.22	2.23	2.23	2.21	2.19	2.18	2.18	2.17	2.20	2.25	2.29	S	2.36	2.32	2.30	2.28	2.26	2.17	2.36	2.23
Jan 20	2.26	2.29	2.31	2.30	2.29	2.32	2.21	2.17	2.16	2.19	2.19	2.09	2.06	2.05	2.05	2.06	2.05	S	2.07	2.09	2.08	2.09	2.10	2.09	2.05	2.32	2.16
Jan 21	2.07	2.06	2.06	2.10	2.10	2.11	2.15	2.15	2.14	2.18	2.18	2.18	2.17	2.18	2.20	2.22	S	2.28	2.32	2.26	2.21	2.15	2.11	2.06	2.06	2.32	2.16
Jan 22	2.07	2.06	2.03	2.03	2.02	2.05	2.10	2.09	2.10	2.07	2.05	2.04	2.03	2.03	2.05	S	2.03	2.03	2.03	2.04	2.04	2.06	2.06	2.07	2.02	2.10	2.05
Jan 23	2.08	2.07	2.07	2.07	2.07	2.12	2.14	2.15	2.13	2.12	2.11	2.13	2.16	2.18	S	2.18	2.18	2.18	2.18	2.15	2.09	2.09	2.09	2.08	2.07	2.18	2.12
Jan 24	2.08	2.08	2.08	2.07	2.07	2.07	2.10	2.07	2.08	2.09	2.10	2.10	2.11	S	2.15	2.15	2.07	2.07	2.07	2.06	2.06	2.07	2.09	2.07	2.06	2.15	2.09
Jan 25	2.07	2.08	2.09	2.09	2.08	2.08	2.07	2.07	2.06	2.08	2.08	2.07	S	2.07	2.13	2.18	2.20	2.17	2.15	2.14	2.14	2.15	2.15	2.13	2.06	2.20	2.11
Jan 26	2.14	2.14	2.10	2.07	2.03	2.01	2.02	2.01	2.04	2.03	2.02	S	2.06	2.06	2.06	2.06	2.07	2.07	2.06	2.06	2.05	2.05	2.06	2.08	2.01	2.14	2.06
Jan 27	2.09	2.08	2.08	2.08	2.08	2.07	2.07	2.07	2.07	2.07	S	2.07	2.07	2.08	2.09	2.09	2.08	2.10	2.09	2.08	2.10	2.11	2.11	2.11	2.07	2.11	2.08
Jan 28	2.11	2.12	2.09	2.10	2.12	2.14	2.12	2.13	2.10	S	2.17	NRM	NRM	NRM	NRM	NRM	2.03	2.03	2.02	2.02	2.02	2.02	2.02	2.02	2.02	2.17	2.08
Jan 29	2.02	2.02	2.02	2.03	2.04	2.04	2.07	2.02	S	2.02	2.02	2.02	2.02	2.03	2.06	2.05	2.04	2.04	2.07	2.07	2.06	2.07	2.11	2.11	2.02	2.11	2.05
Jan 30	2.10	2.06	2.05	2.01	2.00	2.00	2.01	S	2.05	2.01	2.00	2.01	2.01	2.01	2.01	2.04	2.01	2.00	2.02	2.05	2.08	2.10	2.11	2.10	2.00	2.11	2.04
Jan 31	2.08	2.05	2.02	2.01	2.01	2.00	S	2.00	2.00	2.00	2.01	2.02	2.01	2.01	2.00	2.00	2.01	2.03	2.05	2.05	2.07	2.07	2.08	2.11	2.00	2.11	2.03
Diurnal Maximum	2.51	2.48	2.46	2.49	2.49	2.53	2.55	2.49	2.54	2.63	2.44	2.48	2.40	2.39	2.40	2.44	2.56	2.52	2.51	2.49	2.52	2.51	2.49	2.49			
Diurnal Average	2.17	2.17	2.17	2.17	2.17	2.18	2.19	2.19	2.21	2.21	2.19	2.19	2.17	2.16	2.15	2.16	2.15	2.16	2.16	2.17	2.16	2.17	2.17	2.17			

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.



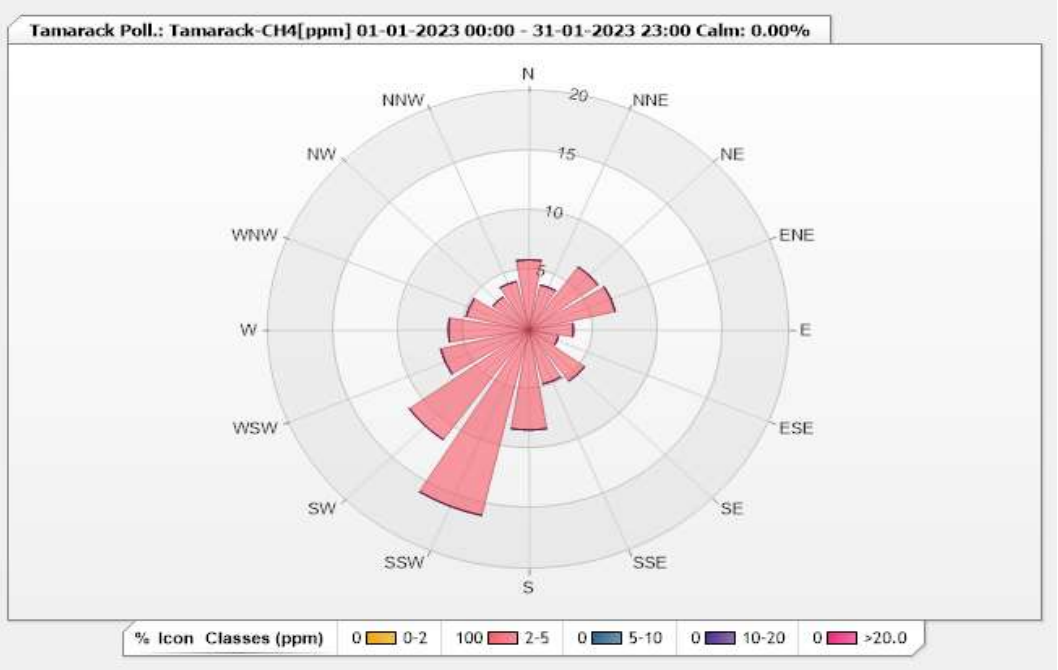


Station: Tamarack Poll.: Tamarack-CH4[ppm] Monthly: 01-2023

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

Calm: 0.00% Valid Data: 86.83% Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-20	>20.0	Total
N	0	5.88	0	0	0	5.88
NNE	0	3.87	0	0	0	3.87
NE	0.15	6.35	0	0	0	6.5
ENE	0	6.81	0	0	0	6.81
E	0	3.41	0	0	0	3.41
ESE	0	2.32	0	0	0	2.32
SE	0	5.26	0	0	0	5.26
SSE	0	4.64	0	0	0	4.64
S	0	8.36	0	0	0	8.36
SSW	0	15.94	0	0	0	15.94
SW	0	11.3	0	0	0	11.3
WSW	0.15	6.81	0	0	0	6.96
W	0	6.19	0	0	0	6.19
WNW	0	4.95	0	0	0	4.95
NW	0	3.41	0	0	0	3.41
NNW	0	4.18	0	0	0	4.18
Summary	0.3	100	0	0	0	100



Lakeland Industry & Community Association

Tamarack Site - January 2023

Summary of Hourly Averages

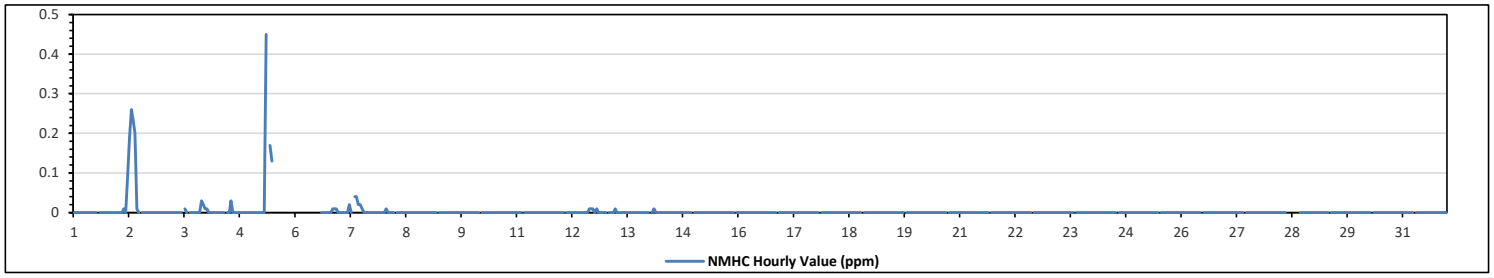
NON-METHANE HYDROCARBONS (NMHC) in ppm

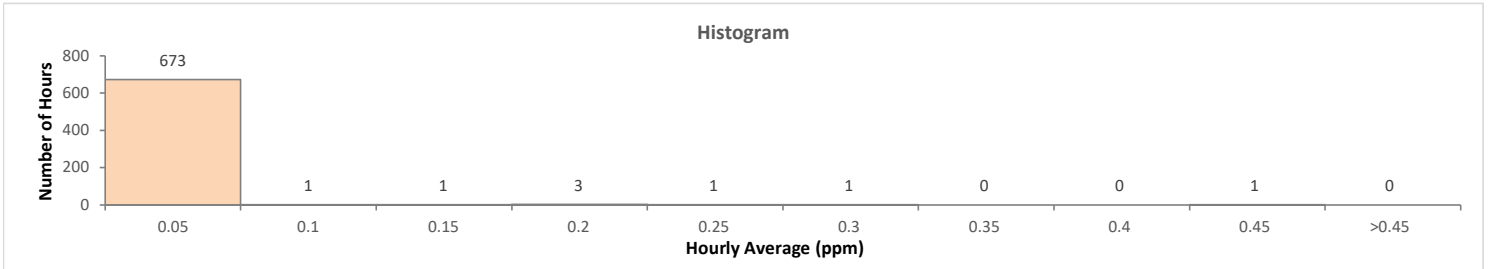
Maximum Hourly Value:	0.45	ppm	on January 5 at hour 8	Hours in Service:	744
Maximum Daily Value:	0.04	ppm	on January 2	Hours of Data:	681
Minimum Hourly Value:	0.00	ppm	on January 1 at hour 0	Hours of Missing Data:	25
Minimum Daily Value:	0.00	ppm	on January 1	Hours of Calibration:	38
Monthly Average:	0.00	ppm		Operational Uptime:	96.6

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Jan 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	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
Jan 2	0.00	0.00	0.00	0.01	0.00	0.09	0.19	0.26	0.23	0.20	0.01	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.26	**0.04**
Jan 3	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	X	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.02	0.01	0.00	0.03	0.00
Jan 4	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.03	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
Jan 5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.45**	S	0.17	0.13	C	C	C	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	0.00	**0.45**	-
Jan 6	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	C	C	C	C	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.00	0.00	0.01	-
Jan 7	0.00	0.00	0.00	0.00	0.00	0.02	0.00	S	0.04	0.04	0.02	0.02	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	0.04	0.01
Jan 8	0.00	0.01	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	0.01	0.00
Jan 9	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jan 10	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jan 11	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jan 12	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Jan 13	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	0.00	0.00	0.01	0.00
Jan 14	S	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.01	0.00
Jan 15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00
Jan 16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00
Jan 17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00
Jan 18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jan 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	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jan 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	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jan 21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jan 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	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jan 23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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
Jan 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	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
Jan 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	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
Jan 26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jan 27	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
Jan 28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	NRM	NRM	NRM	NRM	NRM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jan 29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jan 30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jan 31	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diurnal Maximum	0.01	0.01	0.01	0.01	0.00	0.09	0.19	0.26	0.45	0.20	0.17	0.13	0.01	0.03	0.00	0.01	0.01	0.01	0.00	0.01	0.01	0.03	0.02	0.01			
Diurnal Average	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.02	0.01	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			

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.



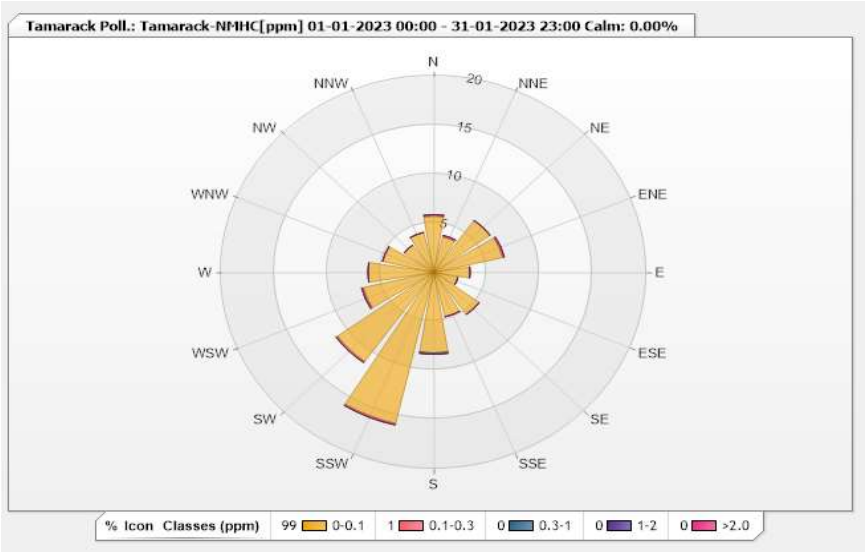


Station: Tamarack Poll.: Tamarack-NMHC[ppm] Monthly: 01-2023

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

Calm (WS<1.8kph): 0.00% Valid Data: 86.83%

Direction	0-0.1	0.1-0.3	0.3-1	1-2	>2.0	Total
N	5.73	0.15	0	0	0	5.88
NNE	3.72	0.15	0	0	0	3.87
NE	6.5	0	0	0	0	6.5
ENE	6.66	0.15	0	0	0	6.81
E	3.41	0	0	0	0	3.41
ESE	2.32	0	0	0	0	2.32
SE	5.26	0	0	0	0	5.26
SSE	4.64	0	0	0	0	4.64
S	8.2	0	0.15	0	0	8.35
SSW	15.79	0.15	0	0	0	15.94
SW	11.15	0.15	0	0	0	11.3
WSW	6.81	0.15	0	0	0	6.96
W	6.19	0	0	0	0	6.19
WNW	4.95	0	0	0	0	4.95
NW	3.41	0	0	0	0	3.41
NNW	4.18	0	0	0	0	4.18
Summary	98.92	0.9	0.15	0	0	100



Lakeland Industry & Community Association

Tamarack Site - January 2023

Summary of Hourly Averages

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

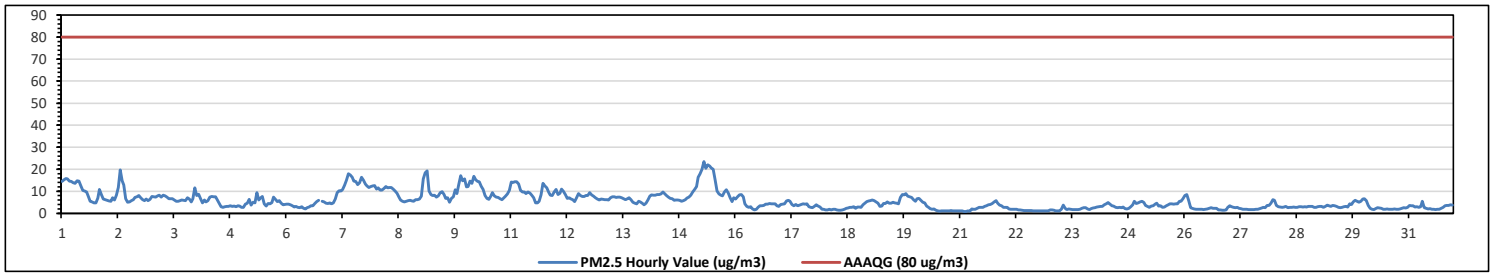
Alberta Ambient Air Quality Guideline (AAAQG): 1-Hour 80 µg/m3, Alberta Ambient Air Quality Objective (AAAQO): 24-Hour 29 µg/m3

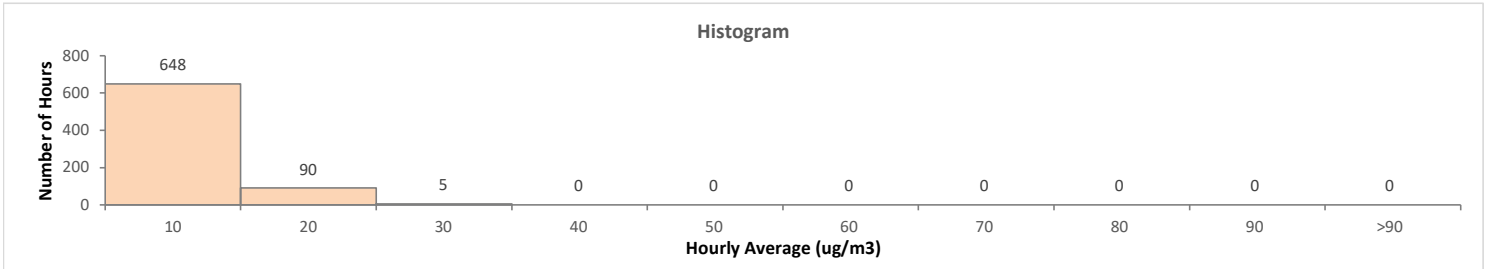
Number of 1-Hour Exceedances:	0	Number of 24-Hour Exceedances:	0
Maximum Hourly Value:	24 µg/m^3 on January 15 at hour 7	Hours in Service:	744
Maximum Daily Value:	13.4 µg/m^3 on January 15	Hours of Data:	743
Minimum Hourly Value:	1 µg/m^3 on January 21 at hour 2	Hours of Missing Data:	0
Minimum Daily Value:	1 µg/m^3 on January 22	Hours of Calibration:	1
Monthly Average:	5.7 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			
Jan 1	14	15	16	16	15	15	14	14	15	15	13	10	10	10	8	6	5	5	5	7	11	9	7	6	5	16	10.7
Jan 2	6	6	5	7	6	8	12	20	15	13	7	5	5	6	6	7	8	8	7	6	6	7	6	6	5	20	7.8
Jan 3	8	8	7	8	8	7	8	8	7	7	7	7	6	6	5	6	6	6	6	7	7	5	7	12	5	12	6.9
Jan 4	8	9	7	5	6	5	6	7	8	8	8	6	5	3	3	3	3	3	3	3	3	3	3	3	3	9	5.0
Jan 5	3	3	4	5	6	4	5	5	9	6	7	8	4	3	4	4	5	7	6	5	6	5	4	4	3	9	5.1
Jan 6	4	4	4	3	3	3	3	3	3	2	2	3	3	3	4	4	5	6	C	5	5	5	4	5	2	6	3.7
Jan 7	4	5	7	9	10	10	11	13	15	18	17	16	15	14	13	14	16	15	13	12	12	12	12	13	4	18	12.4
Jan 8	11	12	11	11	11	12	12	12	12	11	10	9	7	6	6	5	6	6	6	6	5	6	6	7	5	12	8.5
Jan 9	8	16	18	19	10	9	8	8	7	8	9	10	9	7	7	5	7	8	11	9	13	17	15	16	5	19	10.5
Jan 10	12	12	15	14	17	15	15	14	12	11	8	7	6	8	9	8	7	7	7	6	7	8	9	10	6	17	10.2
Jan 11	14	14	14	14	13	10	10	10	9	10	9	8	7	5	5	6	8	14	13	12	10	8	8	10	5	14	10.0
Jan 12	11	9	9	11	10	9	7	7	7	6	5	7	9	8	8	8	8	8	9	8	8	7	7	6	5	11	7.9
Jan 13	7	6	6	6	6	7	8	8	7	7	7	7	7	6	7	7	6	5	5	4	5	5	5	4	4	8	6.2
Jan 14	5	6	8	8	8	8	9	9	9	10	9	8	7	7	7	6	6	6	6	6	6	6	7	7	5	10	7.2
Jan 15	8	10	11	12	16	18	20	**24**	21	22	21	21	20	15	10	9	8	8	10	11	9	7	5	7	5	**24**	**13.4**
Jan 16	7	8	8	9	8	4	3	3	3	2	2	2	3	3	4	4	4	4	4	4	4	4	3	3	2	9	4.3
Jan 17	4	4	4	6	6	6	4	4	4	3	4	4	4	4	4	3	3	3	3	4	3	3	2	2	2	6	3.7
Jan 18	2	2	2	2	2	2	2	1	1	2	2	2	2	3	3	3	2	3	3	3	4	5	5	6	1	6	2.5
Jan 19	6	6	6	5	5	3	3	4	4	5	5	5	5	5	5	4	7	9	8	9	8	8	7	6	3	9	5.7
Jan 20	5	7	7	6	5	5	3	3	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	7	2.6
Jan 21	1	1	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	6	5	4	3	3	**1**	6	2.7
Jan 22	3	3	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	1.5
Jan 23	2	2	1	1	1	1	2	4	2	2	2	2	2	2	2	2	2	2	3	3	2	2	2	2	1	4	1.9
Jan 24	3	3	3	3	3	4	4	5	4	3	3	3	3	3	3	3	2	2	2	3	4	6	4	5	2	6	3.3
Jan 25	5	5	5	4	3	3	3	4	4	5	3	4	3	3	4	4	4	4	4	4	4	6	5	7	3	7	4.1
Jan 26	8	9	6	3	2	2	2	2	2	2	2	2	2	2	3	2	2	2	2	2	1	1	2	3	1	9	2.7
Jan 27	4	3	3	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	4	4	5	6	2	6	2.6
Jan 28	6	4	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	6	3.1
Jan 29	3	3	3	3	4	4	3	4	4	3	3	3	3	3	3	3	4	4	5	6	6	5	6	7	3	7	3.8
Jan 30	7	6	4	2	2	2	2	3	2	2	2	2	2	2	2	2	2	2	2	2	2	3	2	3	2	7	2.5
Jan 31	4	4	3	3	3	3	3	5	3	2	2	2	2	2	2	2	2	2	3	3	4	4	4	4	2	5	2.9
Diurnal Maximum	14	16	18	19	17	18	20	24	21	22	21	21	20	15	13	14	16	15	13	12	13	17	15	16			
Diurnal Average	6.1	6.4	6.5	6.5	6.4	6.0	6.1	6.7	6.4	6.3	5.8	5.5	5.1	4.8	4.6	4.5	4.9	5.2	5.3	5.3	5.4	5.4	5.2	5.7			

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.



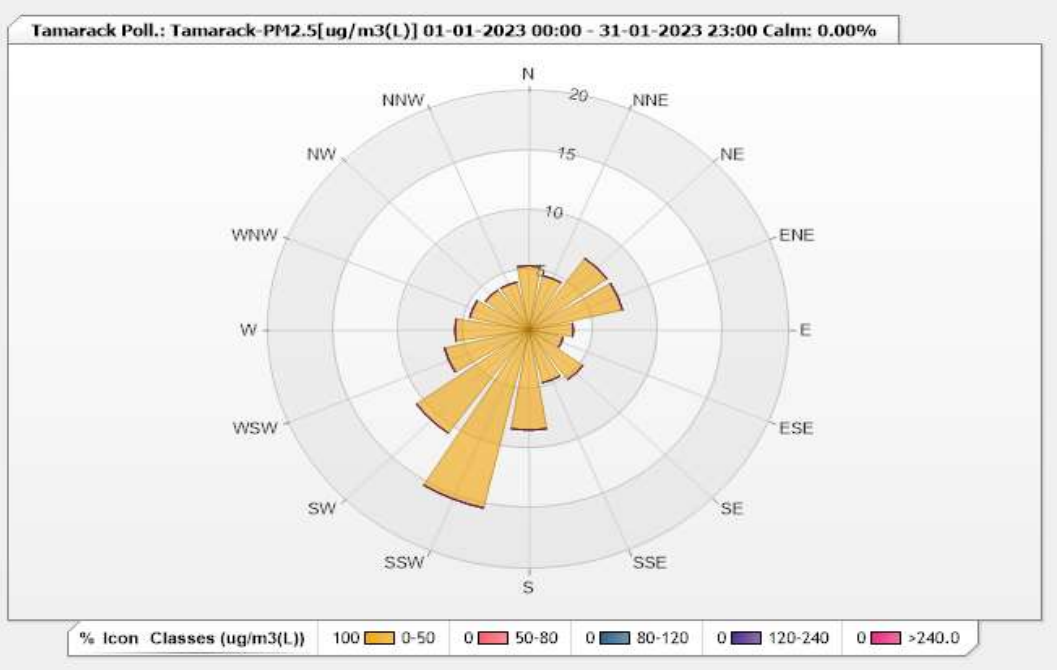


Station: Tamarack Poll.: Tamarack-PM2.5[ug/m3(L)] Monthly: 01-2023

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	0-50	50-80	80-120	120-240	>240.0	Total
N	5.38	0	0	0	0	5.38
NNE	4.67	0	0	0	0	4.67
NE	7.37	0	0	0	0	7.37
ENE	7.37	0	0	0	0	7.37
E	3.4	0	0	0	0	3.4
ESE	2.69	0	0	0	0	2.69
SE	5.1	0	0	0	0	5.1
SSE	4.53	0	0	0	0	4.53
S	8.36	0	0	0	0	8.36
SSW	15.3	0	0	0	0	15.3
SW	10.62	0	0	0	0	10.62
WSW	6.66	0	0	0	0	6.66
W	5.67	0	0	0	0	5.67
WNW	4.67	0	0	0	0	4.67
NW	4.11	0	0	0	0	4.11
NNW	4.11	0	0	0	0	4.11
Summary	100	0	0	0	0	100



Lakeland Industry & Community Association

Tamarack Site - January 2023

Summary of Hourly Averages

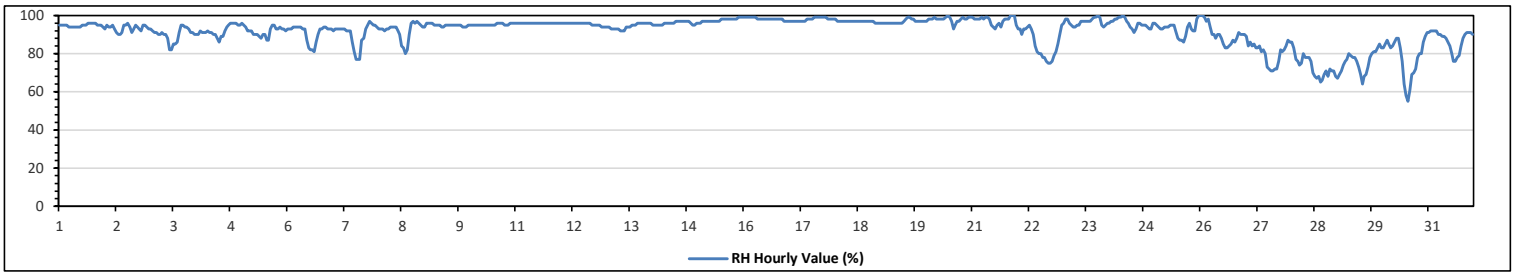
RELATIVE HUMIDITY (RH) in %

Maximum Hourly Value:	100	%	on January 20 at hour 11	Hours in Service:	744	
Maximum Daily Value:	98.2	%	on January 16	Hours of Data:	744	
Minimum Hourly Value:	55	%	on January 30 at hour 13	Hours of Missing Data:	0	
Minimum Daily Value:	73.1	%	on January 28	Hours of Calibration:	0	
Monthly Average:	91.8	%		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
Jan 1	95	95	95	95	95	94	94	94	94	94	94	94	95	95	95	96	96	96	96	96	95	95	95	94	94	96	94.9
Jan 2	93	95	94	94	95	93	91	90	90	91	95	95	96	94	91	93	95	94	93	92	95	95	94	93	90	96	93.4
Jan 3	93	92	91	91	90	90	91	90	90	88	82	82	85	85	86	91	95	95	94	94	93	91	91	90	82	95	90.0
Jan 4	90	90	92	91	91	91	92	91	91	90	90	88	86	89	89	92	94	95	96	96	96	96	95	95	86	96	91.9
Jan 5	96	95	94	92	92	92	90	90	90	89	88	90	90	87	87	93	95	95	93	93	94	93	93	92	87	96	91.8
Jan 6	93	93	93	94	94	94	94	94	93	93	87	83	82	82	81	86	90	93	93	94	94	93	93	93	81	94	90.8
Jan 7	92	93	93	93	93	93	93	92	92	92	86	81	77	77	77	87	88	93	95	97	96	95	95	94	77	97	90.2
Jan 8	93	93	93	92	93	93	94	94	94	94	92	90	84	83	80	82	90	96	97	96	97	96	95	94	80	97	91.9
Jan 9	94	96	96	96	96	95	95	95	95	94	94	95	95	95	95	95	95	95	95	95	94	94	94	95	94	96	94.9
Jan 10	95	95	95	95	95	95	95	95	95	95	95	95	95	95	96	96	96	96	95	95	95	96	96	96	95	96	95.3
Jan 11	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96.0
Jan 12	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	95	95	95	95	95	94	94	94	94	96	95.5
Jan 13	94	94	93	93	93	93	93	92	92	92	94	94	94	95	95	95	96	96	96	96	96	96	96	96	92	96	94.3
Jan 14	95	95	95	95	95	95	96	96	96	96	96	96	97	97	97	97	97	97	97	97	96	95	95	96	95	97	96.0
Jan 15	96	96	97	97	97	97	97	97	97	97	97	97	98	98	98	98	98	98	98	98	98	99	99	99	96	99	97.5
Jan 16	99	99	99	99	99	99	99	98	98	98	98	98	98	98	98	98	98	98	98	98	98	97	97	97	97	99	**98.2**
Jan 17	97	97	97	97	97	97	97	97	97	98	98	98	98	99	99	99	99	99	99	99	98	98	98	98	97	99	97.9
Jan 18	98	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97	96	96	96	96	98	96.9
Jan 19	96	96	96	96	96	96	96	96	96	96	96	96	97	98	99	99	98	98	97	97	97	97	97	97	96	99	96.8
Jan 20	97	98	98	98	99	98	98	98	98	98	99	**100**	99	97	93	95	97	97	98	99	98	98	99	99	93	**100**	97.8
Jan 21	99	98	98	98	98	99	98	99	99	98	95	94	93	95	96	94	97	98	98	98	**100**	**100**	**100**	95	93	**100**	97.4
Jan 22	93	93	90	93	93	94	95	93	90	84	81	80	80	78	78	76	75	75	76	79	81	85	90	95	75	95	85.3
Jan 23	96	98	98	96	95	94	94	95	95	97	97	97	97	97	97	98	99	99	**100**	99	95	94	95	96	94	**100**	96.6
Jan 24	96	97	97	98	98	99	99	**100**	99	97	96	94	93	91	93	96	96	95	95	95	94	93	93	96	91	**100**	95.8
Jan 25	96	95	94	93	93	94	94	94	95	95	95	92	88	87	87	86	89	94	96	93	92	92	98	**100**	86	**100**	93.0
Jan 26	**100**	**100**	99	97	98	94	90	90	88	90	90	88	85	83	83	84	85	87	86	88	91	90	90	90	83	**100**	90.3
Jan 27	89	84	86	84	85	83	83	84	81	82	80	73	72	71	71	72	72	76	82	81	82	84	87	86	71	89	80.4
Jan 28	86	83	77	76	74	75	80	78	78	78	76	70	68	67	68	65	66	69	71	68	72	71	71	68	65	86	73.1
Jan 29	67	69	71	74	76	77	80	79	78	78	76	73	69	64	68	69	73	78	80	81	81	83	85	83	64	85	75.5
Jan 30	83	85	87	85	83	84	86	88	88	83	76	64	58	**55**	61	69	70	72	78	80	80	86	89	91	**55**	91	78.4
Jan 31	91	92	92	92	92	90	90	89	89	88	86	84	80	76	76	78	79	84	88	90	91	91	91	90	76	92	87.0
Diurnal Maximum	100	100	99	99	99	99	99	100	99	98	99	100	99	99	99	99	99	99	100	99	100	100	100	100			
Diurnal Average	93.4	93.4	93.2	93.0	93.0	92.8	93.0	92.8	92.5	92.1	90.9	89.4	88.3	87.6	87.8	89.3	90.5	91.8	92.5	92.6	92.8	92.9	93.5	93.4			

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.



Lakeland Industry & Community Association

Tamarack Site - January 2023

Summary of Hourly Averages

BAROMETRIC PRESSURE (BP) in millibar

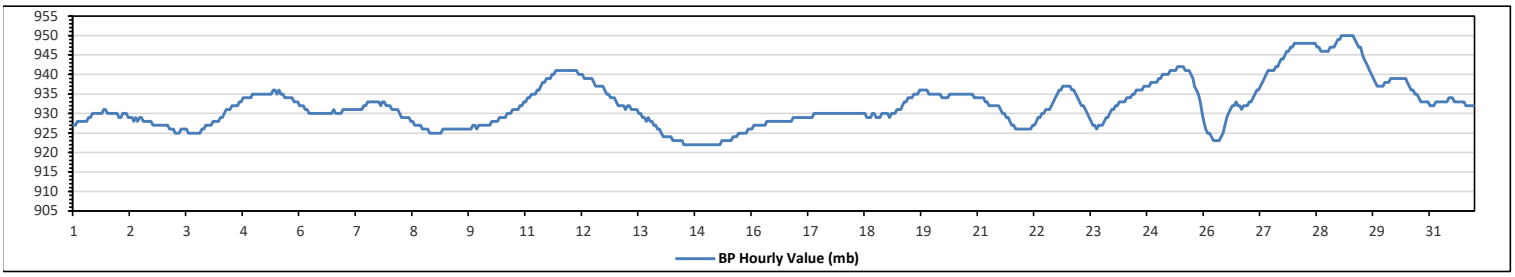
Maximum Hourly Value:	950 mb	on January 29 at hour 1	Hours in Service:	744		
Maximum Daily Value:	947 mb	on January 28	Hours of Data:	744		
Minimum Hourly Value:	922 mb	on January 14 at hour 12	Hours of Missing Data:	0		
Minimum Daily Value:	923 mb	on January 14	Hours of Calibration:	0		
Monthly Average:	932 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
Jan 1	927	927	928	928	928	928	928	928	929	929	930	930	930	930	930	930	931	931	930	930	930	930	930	930	927	931	929
Jan 2	929	929	930	930	930	929	929	929	928	929	928	929	929	928	928	928	928	928	927	927	927	927	927	927	927	930	928
Jan 3	927	927	927	926	926	926	925	925	925	926	926	926	926	925	925	925	925	925	925	925	926	926	927	927	925	927	926
Jan 4	927	927	928	928	928	928	929	929	930	931	931	931	932	932	932	932	933	933	934	934	934	934	934	935	927	935	931
Jan 5	935	935	935	935	935	935	935	935	935	935	936	936	935	936	935	935	934	934	934	934	934	933	933	933	933	936	935
Jan 6	932	932	932	931	931	930	930	930	930	930	930	930	930	930	930	930	930	930	931	930	930	930	930	931	930	932	930
Jan 7	931	931	931	931	931	931	931	931	931	931	932	932	933	933	933	933	933	933	933	932	933	933	932	932	931	933	932
Jan 8	932	931	931	931	931	930	929	929	929	929	929	928	928	927	927	927	927	926	926	926	926	925	925	925	925	932	928
Jan 9	925	925	925	925	926	926	926	926	926	926	926	926	926	926	926	926	926	926	926	926	927	927	926	927	925	927	926
Jan 10	927	927	927	927	927	927	928	928	928	928	929	929	929	929	930	930	930	931	931	931	931	932	932	933	927	933	929
Jan 11	933	934	934	935	935	935	936	936	937	938	938	939	939	939	940	940	941	941	941	941	941	941	941	941	933	941	938
Jan 12	941	941	941	941	940	940	940	939	939	939	939	939	938	937	937	937	937	937	936	935	935	934	934	934	934	941	938
Jan 13	933	932	932	932	932	931	932	932	931	931	931	931	930	930	929	929	928	929	928	928	927	927	926	926	926	933	930
Jan 14	925	924	924	924	924	924	923	923	923	923	923	923	**922**	**922**	**922**	**922**	**922**	**922**	**922**	**922**	**922**	**922**	**922**	**922**	**922**	925	923
Jan 15	**922**	**922**	**922**	**922**	**922**	**922**	**922**	**922**	923	923	923	923	923	923	924	924	924	925	925	925	925	925	926	926	**922**	926	923
Jan 16	926	927	927	927	927	927	927	927	928	928	928	928	928	928	928	928	928	928	928	928	928	928	929	929	926	929	928
Jan 17	929	929	929	929	929	929	929	929	929	930	930	930	930	930	930	930	930	930	930	930	930	930	930	930	929	930	930
Jan 18	930	930	930	930	930	930	930	930	930	930	930	930	930	929	929	929	930	930	929	929	929	930	930	930	929	930	930
Jan 19	930	929	930	930	930	931	931	931	932	933	933	934	934	934	935	935	935	936	936	936	936	936	935	935	929	936	933
Jan 20	935	935	935	935	935	934	934	934	934	935	935	935	935	935	935	935	935	935	935	935	935	935	934	934	934	935	935
Jan 21	934	934	934	934	933	933	932	932	932	932	932	932	931	930	930	929	929	928	927	927	926	926	926	926	926	934	930
Jan 22	926	926	926	926	926	927	927	928	929	929	930	930	931	931	931	932	933	934	935	936	936	937	937	937	926	937	931
Jan 23	937	937	936	936	935	934	933	932	932	931	930	929	928	927	927	926	927	927	927	928	929	929	930	931	926	937	931
Jan 24	931	932	932	933	933	933	933	934	934	934	935	935	936	936	936	936	937	937	937	937	938	938	938	938	931	938	935
Jan 25	939	939	940	940	940	940	941	941	941	941	942	942	942	942	941	941	941	940	939	937	936	935	933	930	930	942	939
Jan 26	928	926	925	925	924	923	923	923	923	924	925	927	929	930	931	932	932	933	932	932	931	932	932	932	923	933	928
Jan 27	933	933	934	935	936	936	937	938	939	940	941	941	941	941	942	942	943	944	944	945	946	946	947	947	933	947	940
Jan 28	948	948	948	948	948	948	948	948	948	948	948	948	947	947	946	946	946	946	946	947	947	947	948	949	946	949	**947**
Jan 29	949	**950**	**950**	**950**	**950**	**950**	**950**	**950**	949	948	947	947	945	944	943	942	941	940	939	938	937	937	937	937	937	**950**	945
Jan 30	938	938	938	939	939	939	939	939	939	939	939	939	938	937	936	936	935	935	934	933	933	933	933	933	933	939	937
Jan 31	932	932	932	933	933	933	933	933	933	933	934	934	934	933	933	933	933	933	933	932	932	932	932	932	932	934	933
Diurnal Maximum	949	950	950	950	950	950	950	950	949	948	948	948	947	947	946	946	946	946	946	947	947	947	948	949			
Diurnal Average	932	932	932	932	932	932	932	932	932	932	933	933	933	932	932	932	932	932	932	932	932	932	932	932			

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 - January 2023

Summary of Hourly Averages

AMBIENT TEMPERATURE (AT) in Degree Celsius

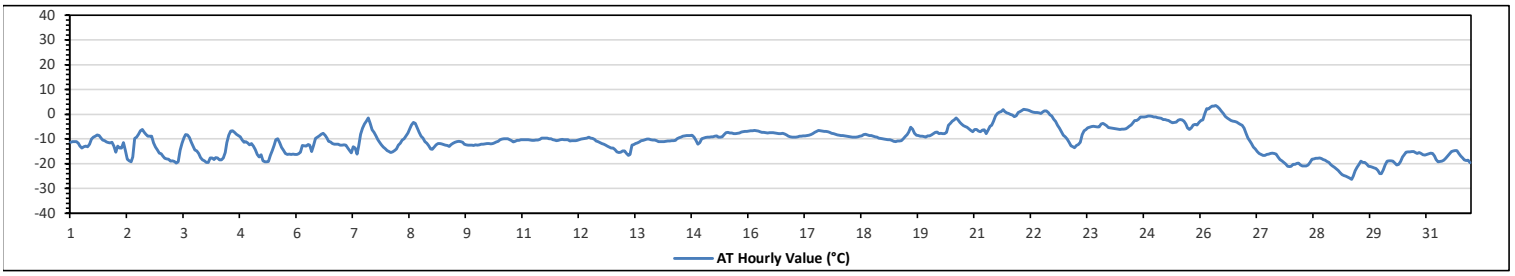
Maximum Hourly Value:	3.5	°C	on January 26 at hour 8	Hours in Service:	744	
Maximum Daily Value:	-0.6	°C	on January 22	Hours of Data:	744	
Minimum Hourly Value:	-26.3	°C	on January 29 at hour 8	Hours of Missing Data:	0	
Minimum Daily Value:	-22.6	°C	on January 29	Hours of Calibration:	0	
Monthly Average:	-10.5	°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
Jan 1	-11.3	-11	-11.1	-11.1	-11.7	-12.9	-13.7	-13.1	-12.9	-13.1	-12.1	-10.1	-9.3	-8.9	-8.4	-8.6	-9.7	-10.5	-10.7	-11.2	-11.4	-11.6	-11.3	-12.9	-13.7	-8.4	-11.2
Jan 2	-15.3	-12.9	-13.7	-13.6	-11.5	-14.8	-18.2	-18.9	-19.2	-17.2	-9.8	-9.2	-8.1	-6.6	-6.2	-7.3	-8.2	-8.8	-8.9	-8.8	-11.6	-13.3	-14.4	-15.7	-19.2	-6.2	-12.2
Jan 3	-16	-16.9	-17.8	-18	-18.2	-19	-18.8	-19.1	-19.7	-19.2	-14.6	-11.7	-9.5	-8.3	-8.4	-9.4	-11.3	-12.8	-14.4	-14.9	-15.8	-17.5	-18.5	-18.8	-19.7	-8.3	-15.4
Jan 4	-19.4	-19.4	-17.7	-17.7	-18.3	-17.5	-17.7	-18.4	-18.5	-17.7	-15.5	-11.4	-8.5	-6.8	-6.7	-7.4	-8.1	-8.6	-9.1	-10.5	-11.3	-11.1	-11.6	-12.4	-19.4	-6.7	-13.4
Jan 5	-11.8	-12.9	-14.3	-16.3	-17.2	-16.4	-18.9	-19.2	-19.3	-19.1	-16.6	-14.7	-12.5	-10.4	-9.9	-11.4	-13.4	-14.6	-15.8	-16.3	-16.1	-16.3	-16.1	-16.3	-19.3	-9.9	-15.2
Jan 6	-16.2	-16	-15.3	-12.7	-12.8	-12.9	-12.3	-12.6	-15.1	-12.7	-9.8	-9.2	-8.7	-8.2	-7.7	-8.5	-9.7	-10.9	-11.2	-11.9	-12.1	-12.1	-12.2	-12.5	-16.2	-7.7	-11.8
Jan 7	-12.5	-12.4	-12.6	-13.7	-14.6	-15.6	-13.1	-13.6	-16.1	-12.9	-8.2	-5.7	-4	-2.8	-1.5	-3.7	-6.3	-7.4	-8.7	-10.3	-11.5	-12.4	-13.2	-13.9	-16.1	-1.5	-10.3
Jan 8	-14.7	-15.1	-15.4	-15.2	-14.7	-14	-12.5	-11.7	-10.5	-9.9	-8.7	-7.6	-5.8	-4.3	-3.4	-3.8	-5.6	-7.4	-8.8	-9.7	-11	-11.7	-12.8	-14.1	-15.4	-3.4	-10.4
Jan 9	-14.2	-13.3	-12.4	-11.8	-11.8	-12	-12.3	-12.5	-12.7	-13	-12.3	-11.7	-11.3	-11	-10.9	-11	-11.3	-12.1	-12.4	-12.5	-12.6	-12.6	-12.7	-12.4	-14.2	-10.9	-12.2
Jan 10	-12.5	-12.4	-12.2	-12.1	-12	-11.9	-11.9	-12	-11.9	-11.6	-11.2	-10.9	-10.3	-10.1	-9.9	-9.9	-10	-10.4	-10.7	-11.2	-10.9	-10.6	-10.6	-10.4	-12.5	-9.9	-11.2
Jan 11	-10.4	-10.3	-10.3	-10.4	-10.5	-10.6	-10.6	-10.5	-10.5	-10.2	-9.7	-9.7	-9.6	-9.7	-9.9	-10	-10.3	-10.5	-10.7	-10.6	-10.4	-10.2	-10.3	-10.3	-10.7	-9.6	-10.3
Jan 12	-10.4	-10.8	-10.7	-10.7	-10.7	-10.6	-10.4	-10.1	-10	-9.8	-9.6	-9.3	-9.6	-9.8	-10.2	-10.8	-11.1	-11.5	-11.8	-12.1	-12.5	-12.9	-13.3	-13.6	-13.6	-9.3	-10.9
Jan 13	-13.6	-14.3	-15.2	-15.5	-15.3	-14.9	-14.9	-15.8	-16.7	-16.3	-12.6	-12.3	-11.8	-11.6	-11.2	-10.7	-10.6	-10.3	-10.1	-10.1	-10.4	-10.5	-10.5	-10.7	-16.7	-10.1	-12.7
Jan 14	-11	-11	-11	-11	-10.9	-10.8	-10.8	-10.7	-10.7	-10.6	-10	-9.5	-9.2	-8.8	-8.7	-8.6	-8.6	-8.6	-8.5	-9.3	-10.6	-12.1	-11.5	-10	-12.1	-8.5	-10.1
Jan 15	-9.6	-9.4	-9.2	-9.2	-9.1	-9.1	-8.9	-8.7	-9.3	-9.2	-9.1	-8.3	-7.5	-7.4	-7.6	-7.6	-7.9	-7.9	-7.7	-7.6	-7.2	-7.1	-6.9	-6.9	-9.6	-6.9	-8.3
Jan 16	-6.8	-6.7	-6.6	-6.5	-6.6	-6.8	-7.1	-7.4	-7.4	-7.5	-7.6	-7.5	-7.5	-7.5	-7.6	-7.7	-7.9	-7.9	-7.8	-8	-8.4	-8.9	-9.1	-9.2	-9.2	-6.5	-7.6
Jan 17	-9.2	-9.2	-9.1	-8.9	-8.8	-8.7	-8.7	-8.6	-8.5	-8.3	-7.9	-7.3	-6.9	-6.5	-6.7	-6.8	-6.9	-6.9	-7	-7.3	-7.7	-7.9	-8.2	-8.4	-9.2	-6.5	-7.9
Jan 18	-8.5	-8.6	-8.6	-8.7	-8.9	-9	-9.1	-9.2	-9.3	-9.3	-9.1	-8.9	-8.7	-8.3	-8.2	-8.4	-8.6	-8.6	-8.8	-9.1	-9.3	-9.7	-9.8	-9.9	-9.9	-8.2	-8.9
Jan 19	-10.1	-10.2	-10.3	-10.3	-10.6	-10.9	-11	-10.8	-10.8	-10.7	-10	-9	-8.3	-7.2	-5.3	-6.1	-7.8	-8.5	-8.6	-8.8	-8.8	-9	-9.3	-8.7	-11.0	-5.3	-9.2
Jan 20	-8.7	-8.4	-7.9	-7.4	-7.2	-7.9	-7.8	-7.9	-7.9	-7.3	-4.5	-3.8	-2.8	-2.2	-1.6	-2.3	-3.3	-4	-4.6	-5	-5.3	-5.9	-6.5	-7	-8.7	-1.6	-5.7
Jan 21	-6.2	-6.2	-6.8	-7	-6.4	-6.3	-7.9	-6.4	-4.9	-4.4	-2.8	-0.8	0.3	0.8	1.1	1.8	1	0.5	0.3	-0.1	-0.4	-1	-0.6	0.7	-7.9	1.8	-2.6
Jan 22	1.1	1.4	2	1.9	1.7	1.4	1	0.8	0.6	0.6	0.5	0.3	0.9	1.3	1.3	0.6	-0.2	-0.7	-2	-2.9	-4.4	-5.7	-7.1	-8.5	-8.5	2.0	**-0.6**
Jan 23	-9.1	-10.1	-11.3	-12.8	-13.1	-13.5	-12.7	-12.3	-11.3	-8.3	-6.6	-6.2	-5.6	-5.3	-5	-4.9	-5	-5.1	-5.1	-4	-3.8	-4.1	-4.6	-5.4	-13.5	-3.8	-7.7
Jan 24	-5.6	-5.7	-5.8	-6	-6.1	-6.2	-6.1	-6.1	-6	-5.6	-4.9	-4.3	-3.6	-2.6	-2.5	-2	-1.2	-1.2	-1.1	-1	-0.8	-0.8	-0.9	-1.1	-6.2	-0.8	-3.6
Jan 25	-1.2	-1.4	-1.5	-1.7	-2.1	-2.1	-2.4	-2.6	-3.1	-3.5	-3.4	-3.2	-2.4	-2.1	-2.3	-2.8	-4	-5.6	-6.2	-5.5	-4.3	-4.1	-4.3	-3.3	-6.2	-1.2	-3.1
Jan 26	-2.6	-2.2	0.2	2.3	2.1	2.7	3.2	3.2	**3.5**	3	2.3	1.2	0.3	-0.9	-1.6	-2	-2.6	-2.8	-2.9	-3.2	-3.7	-4.1	-4.5	-5.7	-5.7	**3.5**	-0.6
Jan 27	-7.8	-9.6	-10.8	-11.9	-13.2	-14	-15.1	-15.9	-16.3	-16.6	-16.7	-16.3	-16.1	-15.8	-15.7	-15.8	-16.1	-17.3	-18.3	-18.9	-19.4	-20.1	-21	-21.2	-21.2	-7.8	-15.8
Jan 28	-21.1	-20.3	-20.3	-19.8	-19.7	-20.5	-20.9	-20.9	-20.9	-20.5	-19.5	-18.2	-18	-17.8	-17.8	-17.7	-17.9	-18.3	-18.6	-19.1	-19.5	-20.4	-20.9	-21.5	-21.5	-17.7	-19.6
Jan 29	-22	-22.7	-23.7	-24.4	-24.8	-25.1	-25.5	-25.9	**-26.3**	-25.1	-22.8	-21.4	-20.3	-19	-19.5	-19.5	-20.1	-21.1	-21.2	-21.5	-21.6	-21.9	-22.7	-24	**-26.3**	-19.0	-22.6
Jan 30	-24	-22.4	-20.4	-19	-18.9	-18.8	-19	-19.7	-20.5	-20.3	-19.1	-17.2	-16.2	-15.3	-15.2	-15.2	-15	-15.1	-15.5	-15.9	-15.5	-15.9	-16.4	-16.5	-24.0	-15.0	-17.8
Jan 31	-16.2	-16	-15.7	-15.8	-16.9	-18.3	-19.3	-19.1	-19	-18.6	-17.8	-16.9	-16	-15	-14.9	-14.8	-14.8	-15.8	-16.9	-17.7	-18.4	-18.7	-18.6	-19.6	-19.6	-14.8	-17.1
Diurnal Maximum	1.1	1.4	2.0	2.3	2.1	2.7	3.2	3.2	3.5	3.0	2.3	1.2	0.9	1.3	1.3	1.8	1.0	0.5	0.3	-0.1	-0.4	-0.8	-0.6	0.7			
Diurnal Average	-11.5	-11.5	-11.5	-11.5	-11.6	-11.8	-12.0	-12.1	-12.3	-11.8	-10.3	-9.4	-8.6	-8.0	-7.8	-8.1	-8.8	-9.4	-9.8	-10.2	-10.5	-11.0	-11.3	-11.6			

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

Tamarack Site - January 2023

Summary of Hourly Averages

STATION TEMPERATURE (ST) in Degree Celsius

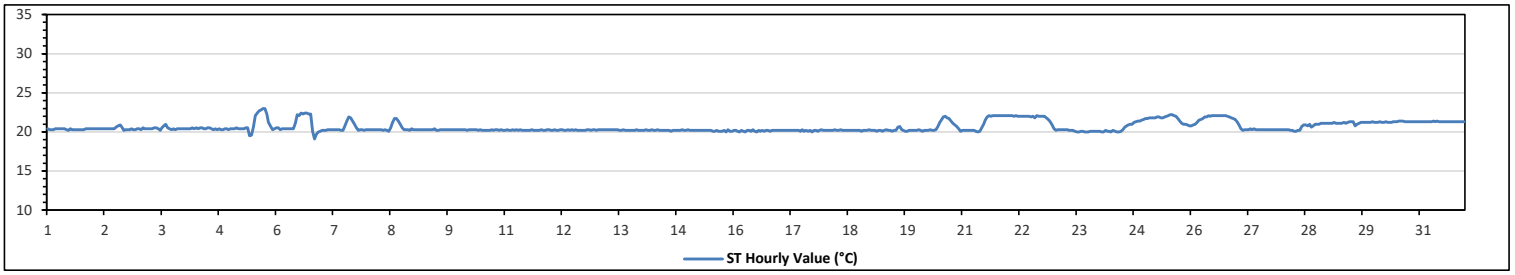
Maximum Hourly Value:	23.0	°C	on January 5 at hour 17	Hours in Service:	744	
Maximum Daily Value:	21.9	°C	on January 22	Hours of Data:	744	
Minimum Hourly Value:	19.1	°C	on January 6 at hour 20	Hours of Missing Data:	0	
Minimum Daily Value:	20.2	°C	on January 16	Hours of Calibration:	0	
Monthly Average:	20.6	°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
Jan 1	20.4	20.3	20.3	20.3	20.4	20.4	20.4	20.4	20.4	20.4	20.3	20.2	20.4	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.4	20.4	20.4	20.4	20.2	20.4	20.3
Jan 2	20.4	20.4	20.4	20.4	20.4	20.4	20.4	20.4	20.4	20.4	20.4	20.4	20.6	20.8	20.9	20.6	20.2	20.3	20.3	20.3	20.4	20.3	20.3	20.4	20.2	20.9	20.4
Jan 3	20.4	20.3	20.5	20.4	20.4	20.4	20.4	20.4	20.5	20.5	20.4	20.2	20.5	20.8	21.0	20.5	20.4	20.3	20.4	20.3	20.4	20.4	20.4	20.4	20.2	21.0	20.4
Jan 4	20.4	20.4	20.4	20.4	20.5	20.4	20.5	20.4	20.5	20.5	20.4	20.4	20.5	20.5	20.4	20.3	20.4	20.3	20.4	20.3	20.3	20.4	20.4	20.3	20.3	20.5	20.4
Jan 5	20.4	20.4	20.4	20.5	20.4	20.4	20.4	20.4	20.5	20.5	19.5	19.6	20.6	22.1	22.4	22.7	22.8	**23.0**	**23.0**	22.3	21.2	20.8	20.3	20.4	19.5	**23.0**	21.0
Jan 6	20.5	20.5	20.3	20.4	20.4	20.4	20.4	20.4	20.4	20.4	21.1	22.2	22.1	22.4	22.3	22.4	22.4	22.3	22.3	20.1	**19.1**	19.7	20.0	20.1	**19.1**	22.4	20.9
Jan 7	20.2	20.2	20.2	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.2	20.2	20.8	21.4	21.9	21.8	21.4	21.0	20.5	20.2	20.3	20.3	20.2	20.3	20.2	21.9	20.6
Jan 8	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.2	20.3	20.2	20.1	20.5	21.2	21.7	21.7	21.4	21.0	20.5	20.3	20.3	20.3	20.2	20.4	20.1	21.7	20.5
Jan 9	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.4	20.2	20.2	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.2	20.4	20.3
Jan 10	20.3	20.3	20.3	20.3	20.2	20.3	20.3	20.3	20.3	20.3	20.2	20.3	20.2	20.2	20.2	20.2	20.2	20.3	20.2	20.3	20.3	20.2	20.3	20.2	20.2	20.3	20.3
Jan 11	20.2	20.3	20.2	20.2	20.3	20.2	20.3	20.2	20.3	20.2	20.2	20.2	20.2	20.2	20.3	20.2	20.2	20.2	20.2	20.3	20.2	20.2	20.3	20.3	20.2	20.3	20.2
Jan 12	20.2	20.2	20.3	20.2	20.2	20.3	20.3	20.2	20.2	20.3	20.2	20.3	20.2	20.3	20.2	20.2	20.2	20.2	20.2	20.3	20.3	20.2	20.3	20.3	20.2	20.3	20.2
Jan 13	20.2	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.2	20.2	20.3	20.2	20.2	20.2	20.2	20.2	20.3	20.2	20.2	20.3	20.2	20.3	20.3
Jan 14	20.2	20.2	20.3	20.2	20.2	20.3	20.2	20.2	20.3	20.2	20.2	20.2	20.2	20.2	20.2	20.1	20.2	20.2	20.2	20.2	20.2	20.3	20.2	20.2	20.1	20.3	20.2
Jan 15	20.3	20.2	20.2	20.2	20.2	20.2	20.2	20.2	20.2	20.2	20.2	20.2	20.2	20.1	20.1	20.2	20.1	20.1	20.1	20.2	20.0	20.3	20.1	20.1	20.0	20.3	20.2
Jan 16	20.2	20.2	20.1	20.0	20.2	20.1	20.0	20.2	20.2	20.1	20.3	20.1	20.0	20.2	20.1	20.2	20.1	20.2	20.2	20.1	20.2	20.2	20.2	20.2	20.0	20.3	20.2
Jan 17	20.2	20.2	20.2	20.2	20.2	20.2	20.2	20.2	20.2	20.2	20.2	20.1	20.3	20.1	20.2	20.1	20.2	20.0	20.2	20.2	20.1	20.2	20.3	20.2	20.0	20.3	20.2
Jan 18	20.2	20.2	20.2	20.2	20.2	20.3	20.2	20.2	20.3	20.2	20.2	20.2	20.2	20.2	20.2	20.2	20.2	20.2	20.2	20.1	20.2	20.2	20.2	20.3	20.1	20.3	20.2
Jan 19	20.2	20.2	20.2	20.1	20.2	20.2	20.1	20.2	20.3	20.2	20.2	20.1	20.2	20.2	20.6	20.7	20.3	20.2	20.1	20.1	20.2	20.2	20.2	20.2	20.1	20.7	20.2
Jan 20	20.2	20.3	20.2	20.1	20.2	20.2	20.2	20.3	20.2	20.2	20.3	20.7	21.2	21.6	21.9	22.0	21.8	21.7	21.4	21.1	20.9	20.7	20.4	20.1	20.1	22.0	20.7
Jan 21	20.2	20.2	20.2	20.2	20.2	20.2	20.2	20.1	20.0	20.1	20.5	21.0	21.5	21.9	22.1	22.0	22.1	22.1	22.1	22.1	22.1	22.1	22.1	22.1	20.0	22.1	21.1
Jan 22	22.1	22.1	22.1	22.0	22.1	22.0	22.0	22.0	22.0	22.0	22.0	22.0	21.9	22.0	21.8	22.1	22.0	22.0	22.0	22.0	21.8	21.6	21.3	20.9	20.9	22.1	**21.9**
Jan 23	20.4	20.2	20.3	20.3	20.3	20.3	20.3	20.3	20.2	20.2	20.2	20.1	20.0	20.0	20.1	20.1	20.0	20.0	20.0	20.1	20.1	20.1	20.1	20.1	20.0	20.4	20.2
Jan 24	20.1	20.0	20.0	20.2	20.1	20.1	20.0	20.2	20.1	20.0	20.0	20.1	20.3	20.6	20.8	20.9	21.0	21.0	21.2	21.3	21.4	21.4	21.5	21.6	20.0	21.6	20.6
Jan 25	21.7	21.7	21.8	21.8	21.8	21.8	21.9	21.9	21.8	21.8	21.9	22.0	22.1	22.2	22.2	22.1	22.0	21.7	21.4	21.1	21.0	21.0	20.9	20.8	20.8	22.2	21.7
Jan 26	20.8	20.9	21.0	21.2	21.5	21.6	21.7	21.9	21.9	22.1	22.0	22.1	22.1	22.1	22.1	22.1	22.1	22.1	22.1	22.0	21.9	21.8	21.7	21.6	20.8	22.1	21.8
Jan 27	21.3	20.9	20.4	20.2	20.3	20.3	20.3	20.4	20.3	20.4	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.2	21.3	20.4
Jan 28	20.3	20.3	20.3	20.3	20.2	20.2	20.1	20.1	20.2	20.2	20.7	20.9	20.9	20.8	21.0	20.6	20.8	21.0	21.0	21.0	21.1	21.1	21.1	21.1	20.1	21.1	20.6
Jan 29	21.1	21.1	21.1	21.2	21.1	21.1	21.1	21.1	21.2	21.1	21.2	21.3	21.3	21.3	20.8	21.0	21.1	21.2	21.2	21.2	21.2	21.2	21.2	21.3	20.8	21.3	21.2
Jan 30	21.2	21.2	21.2	21.3	21.2	21.2	21.3	21.2	21.2	21.2	21.3	21.3	21.3	21.4	21.4	21.4	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.2	21.4	21.3
Jan 31	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.4	21.3	21.4	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.4	21.3
Diurnal Maximum	22.1	22.1	22.1	22.0	22.1	22.0	22.0	22.0	22.0	22.1	22.0	22.2	22.1	22.4	22.4	22.7	22.8	23.0	23.0	22.3	22.1	22.1	22.1	22.1			
Diurnal Average	20.5	20.5	20.5	20.5	20.5	20.5	20.5	20.5	20.5	20.5	20.5	20.6	20.7	20.9	20.9	20.9	20.9	20.8	20.8	20.7	20.6	20.6	20.6	20.6			

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

Tamarack Site - January 2023

Summary of Hourly Averages

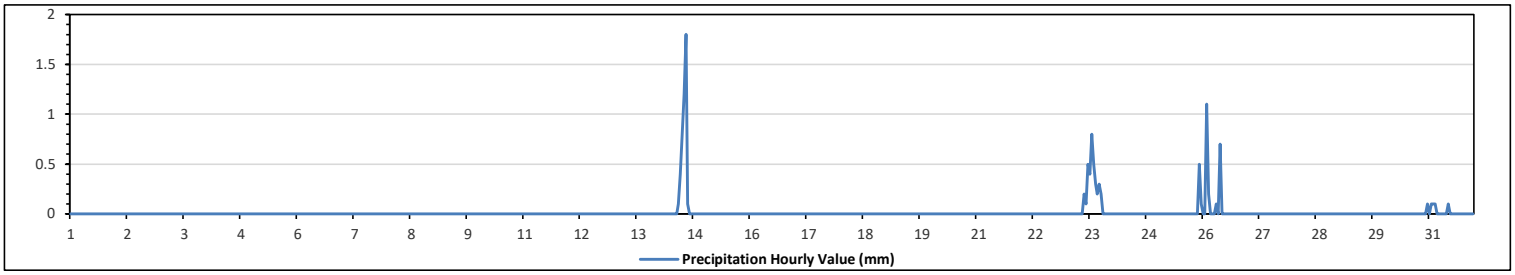
PRECIPITATION in mm

Maximum Hourly Value:	1.8	mm	on January 14 at hour 14	Hours in Service:	744	
Maximum Daily Value:	4.4	mm	on January 14	Hours of Data:	744	
Minimum Hourly Value:	0.0	mm	on January 1 at hour 0	Hours of Missing Data:	0	
Minimum Daily Value:	0.0	mm	on January 1	Hours of Calibration:	0	
Monthly Total:	11.1	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			
Jan 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
Jan 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
Jan 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Jan 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Jan 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
Jan 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
Jan 7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Jan 8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Jan 9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Jan 10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Jan 11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Jan 12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Jan 13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Jan 14	0	0	0	0	0	0	0	0	0	0	0.1	0.4	0.8	1.2	**1.8**	0.1	0	0	0	0	0	0	0	0	0.0	**1.8**	**4.4**
Jan 15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Jan 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
Jan 17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Jan 18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Jan 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
Jan 20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Jan 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
Jan 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
Jan 23	0	0	0	0	0	0	0	0	0	0.2	0.1	0.5	0.4	0.8	0.5	0.3	0.2	0.3	0.2	0.0	0	0	0	0	0.0	0.8	3.5
Jan 24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Jan 25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	0.1	0.0	0.5	0.6
Jan 26	0	0	1.1	0.2	0	0	0	0.1	0	0.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	1.1	2.1
Jan 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
Jan 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
Jan 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
Jan 30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.0	0.1	0.1
Jan 31	0	0.1	0.1	0.1	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1	0.4
Diurnal Maximum	0.0	0.1	1.1	0.2	0.0	0.0	0.0	0.1	0.0	0.7	0.1	0.5	0.8	1.2	1.8	0.3	0.2	0.3	0.2	0.0	0.0	0.0	0.5	0.1			
Diurnal Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			

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

Summary of Hourly Averages

VECTOR WIND SPEED (VWS) in km/hr

Maximum Hourly Value:	18.8	kph	on January 26 at hour 8	Hours in Service:	744	
Maximum Daily Value:	8.9	kph	on January 28	Hours of Data:	707	
Minimum Hourly Value:	0.0	kph	on January 2 at hour 7	Hours of Missing Data:	37	
Minimum Daily Value:	0.5	kph	on January 31	Hours of Calibration:	0	
Monthly Average:	1.2	kph		Operational Uptime:	95.0	

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			
Jan 1	3.5	4.2	3.0	3.2	4.9	5.3	5.9	4.5	4.3	4.3	2.4	3.4	4.4	6.2	5.1	5.0	4.2	4.3	6.4	5.7	2.2	3.5	4.0	1.4	1.4	6.4	4.2
Jan 2	3.0	3.8	2.6	5.4	5.1	2.5	1.9	**0.0**	0.7	3.5	6.0	3.9	4.5	4.8	4.4	4.6	3.7	2.5	4.4	3.6	X	X	X	X	**0.0**	6.0	3.5
Jan 3	X	X	X	X	X	X	X	X	X	X	X	X	X	3.1	2.3	1.8	0.7	1.1	0.1	1.1	0.1	0.1	**0.0**	0.1	**0.0**	3.1	-
Jan 4	0.3	1.0	1.7	0.9	2.8	4.2	4.4	3.4	3.9	1.8	2.9	3.1	3.6	6.2	5.4	5.6	6.4	4.2	4.5	2.8	2.8	4.4	3.7	4.2	0.3	6.4	3.2
Jan 5	5.0	2.6	1.6	0.8	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.4	1.9	1.6	2.8	2.7	1.8	0.1	1.0	2.4	3.7	2.4	2.1	2.8	0.1	5.0	0.7
Jan 6	2.8	1.8	2.0	3.3	2.6	4.0	4.6	1.8	0.3	3.4	6.1	7.6	6.9	6.3	4.9	4.8	1.3	1.2	1.7	2.1	2.7	3.0	3.0	1.7	0.3	7.6	2.1
Jan 7	3.7	4.3	3.1	1.2	1.3	0.6	3.8	2.6	2.8	4.4	4.7	4.4	3.3	2.6	1.1	5.1	3.0	1.7	1.1	0.1	**0.0**	**0.0**	0.1	**0.0**	**0.0**	5.1	2.3
Jan 8	**0.0**	**0.0**	0.1	**0.0**	0.4	2.5	2.1	1.6	1.3	3.5	3.6	5.0	5.0	5.2	5.5	2.1	0.7	2.4	1.9	2.6	0.6	2.2	**0.0**	1.5	**0.0**	5.5	2.0
Jan 9	0.1	0.1	0.7	2.7	2.3	2.3	1.7	1.0	1.3	2.1	0.7	0.6	0.7	2.1	1.1	0.8	0.1	0.1	1.6	0.7	0.8	**0.0**	0.1	1.5	**0.0**	2.7	0.8
Jan 10	0.5	2.0	1.9	1.7	1.7	1.9	1.6	2.2	2.1	1.3	1.0	0.8	0.3	0.6	0.5	2.6	0.5	0.1	0.1	1.3	1.4	0.9	0.1	2.5	0.1	2.6	1.0
Jan 11	1.2	0.9	0.2	0.1	1.7	2.2	0.8	0.1	0.1	0.1	0.2	1.7	1.7	2.7	2.7	2.8	3.8	4.7	3.4	3.8	3.9	3.1	4.1	4.4	0.1	4.7	1.4
Jan 12	4.0	4.6	4.5	4.0	4.2	4.7	4.6	4.8	3.9	4.1	5.3	6.0	5.9	5.6	5.1	5.5	5.3	4.8	3.7	3.9	4.1	4.6	2.8	2.7	2.7	6.0	4.4
Jan 13	0.7	**0.0**	0.1	0.1	**0.0**	0.4	0.1	0.1	0.1	0.3	1.3	5.7	5.7	5.9	5.8	4.8	4.0	2.9	5.5	7.0	6.5	6.1	6.6	7.9	**0.0**	7.9	3.1
Jan 14	8.2	7.3	6.0	4.7	5.0	3.2	2.4	1.8	3.1	3.1	3.0	1.6	X	X	X	X	X	X	X	X	X	X	X	X	1.6	8.2	-
Jan 15	X	X	X	X	X	X	X	X	3.2	2.4	4.2	1.5	0.1	2.4	3.8	3.7	2.2	0.2	1.4	0.5	2.2	1.6	0.5	1.9	0.1	4.2	-
Jan 16	2.3	1.8	2.1	3.5	2.7	3.1	4.0	5.4	5.0	5.9	5.8	4.9	5.4	5.4	5.6	6.2	5.6	5.1	5.6	7.1	5.9	6.1	4.9	4.8	1.8	7.1	4.6
Jan 17	4.0	4.0	3.5	2.8	3.5	3.9	3.9	4.5	4.2	3.0	4.3	5.2	5.8	5.8	5.3	4.6	4.8	4.5	4.3	5.0	5.1	5.1	6.3	6.1	2.8	6.3	4.4
Jan 18	4.8	5.3	4.0	3.9	4.7	5.2	4.1	4.8	4.5	4.4	3.2	4.6	4.6	3.7	4.5	3.9	4.2	4.5	5.0	4.3	3.7	4.0	2.6	2.0	2.0	5.3	4.0
Jan 19	3.5	3.1	2.9	1.8	2.1	2.6	2.9	2.3	3.9	3.9	4.5	3.1	3.8	2.8	2.7	3.4	4.9	4.0	4.3	5.6	4.9	5.3	5.5	4.7	1.8	5.6	3.1
Jan 20	4.2	5.1	4.1	3.9	4.7	4.3	4.3	4.5	4.1	4.8	3.2	6.0	7.8	8.3	8.5	5.0	4.8	4.2	4.9	4.8	5.5	3.7	3.2	2.5	2.5	8.5	4.5
Jan 21	3.9	4.0	3.0	4.2	3.6	2.4	0.4	2.0	3.5	5.0	3.8	3.9	4.2	4.2	4.7	4.7	5.3	6.0	6.0	5.0	3.7	0.5	3.6	4.6	0.4	6.0	3.7
Jan 22	4.3	5.7	6.4	5.6	8.6	9.5	7.3	8.9	9.3	11.4	12.8	12.5	13.1	14.9	10.3	8.6	9.5	9.4	10.4	8.0	5.4	4.3	2.0	1.1	1.1	14.9	7.7
Jan 23	3.6	1.6	2.3	**0.0**	0.2	**0.0**	0.2	0.1	0.3	3.7	5.1	4.9	4.1	4.2	5.0	5.6	3.9	1.0	2.1	6.1	6.3	8.7	7.0	5.0	**0.0**	8.7	0.7
Jan 24	4.7	4.2	4.5	3.1	0.4	0.5	0.3	1.1	3.7	5.6	4.3	2.6	3.0	5.0	6.0	6.1	10.1	8.8	8.0	6.6	6.6	7.5	5.7	3.6	0.3	10.1	3.1
Jan 25	5.3	3.8	6.0	5.8	5.5	4.2	5.0	4.3	3.6	4.2	5.4	5.3	1.5	3.0	4.7	6.0	4.6	3.0	3.8	5.5	6.6	4.3	8.5	12.6	1.5	12.6	3.4
Jan 26	2.4	6.3	9.6	14.4	12.5	14.0	16.7	17.3	**18.8**	14.0	14.8	13.7	14.0	13.1	10.3	10.4	8.4	5.6	6.3	4.8	5.6	5.5	6.3	10.0	2.4	**18.8**	8.6
Jan 27	10.6	10.0	10.7	13.1	12.9	12.4	12.6	10.6	11.0	10.2	8.6	8.3	9.1	7.6	6.3	5.6	4.5	1.9	2.1	4.1	5.8	3.7	1.3	2.7	1.3	13.1	7.5
Jan 28	4.3	7.7	6.3	8.0	11.1	10.9	10.2	12.6	10.1	10.8	11.1	11.9	10.6	9.8	9.7	8.3	7.8	9.1	9.0	9.0	10.7	8.2	10.0	9.1	4.3	12.6	**8.9**
Jan 29	9.2	7.2	6.4	5.6	5.9	6.8	6.7	6.7	5.6	6.7	9.2	9.2	7.5	6.8	8.3	7.5	5.9	7.7	7.1	5.0	4.7	4.1	4.5	2.3	2.3	9.2	4.7
Jan 30	3.3	4.4	3.6	5.6	6.9	7.5	6.3	7.2	7.4	5.5	5.7	3.5	4.8	7.4	7.0	6.0	5.8	5.0	3.6	3.9	2.5	2.3	**0.0**	0.6	**0.0**	7.5	3.9
Jan 31	1.7	0.4	1.8	3.7	4.3	4.2	2.7	1.4	3.4	2.8	1.0	1.4	0.6	1.7	4.2	4.0	4.4	3.7	3.7	4.5	3.4	3.1	2.9	0.7	0.4	4.5	**0.5**
Diurnal Maximum	10.6	10.0	10.7	14.4	12.9	14.0	16.7	17.3	18.8	14.0	14.8	13.7	14.0	14.9	10.3	10.4	10.1	9.4	10.4	9.0	10.7	8.7	10.0	12.6			
Diurnal Average	3.6	3.7	3.6	3.9	4.2	4.3	4.2	4.1	4.2	4.5	4.8	4.9	5.0	5.3	5.1	4.9	4.4	3.8	4.1	4.2	4.0	3.7	3.5	3.6			

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.
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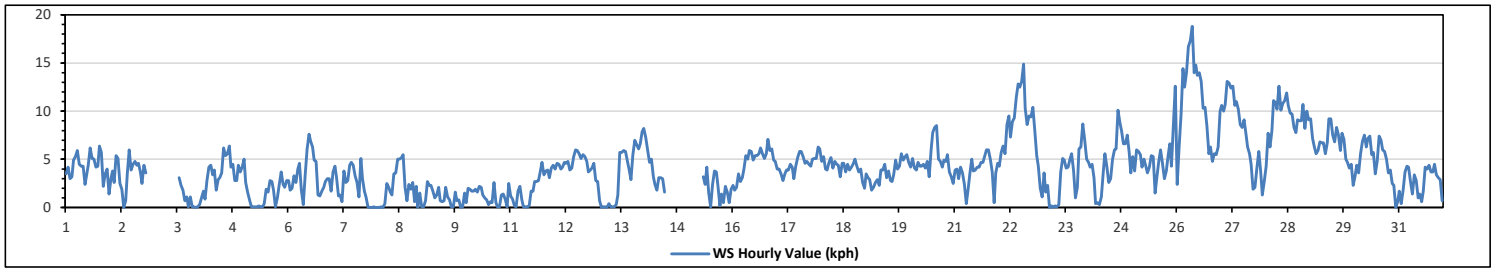
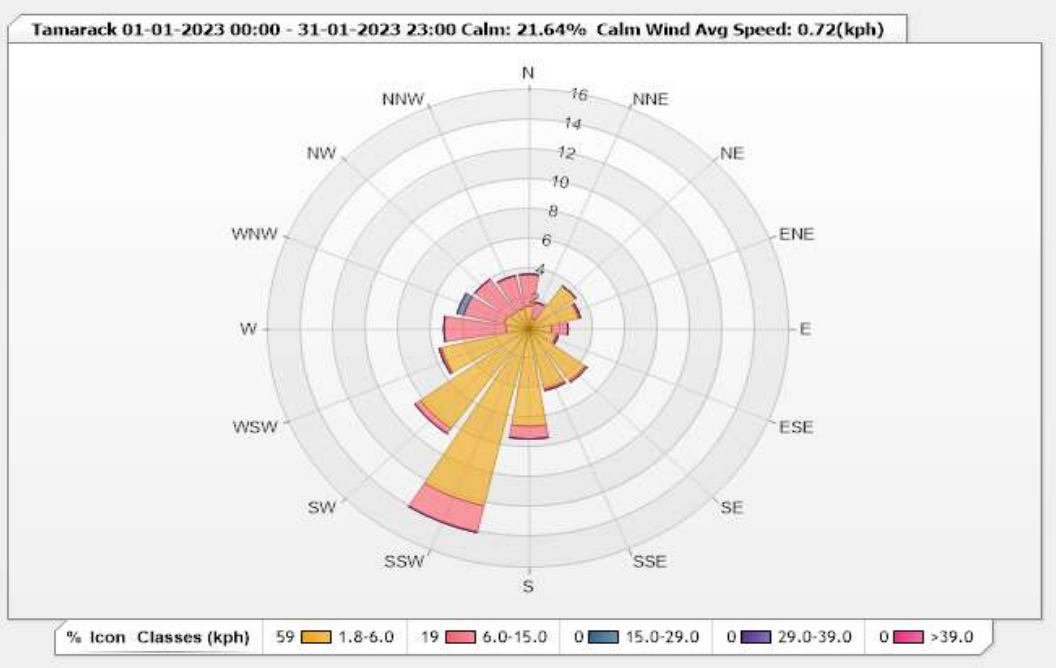


Station: Tamarack Monitor: WDS [kph] Monthly: 01-2023

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

Calm (WS<1.8kph): 21.64% Valid Data: 95.03%

Direction	1.8-6.0	6.0-15.0	15.0-29.0	29.0-39.0	>39.0	Total
N	1.56	2.12	0	0	0	3.68
NNE	0.71	1.13	0	0	0	1.84
NE	3.54	0	0	0	0	3.54
ENE	3.11	0.14	0	0	0	3.25
E	1.41	0.99	0	0	0	2.4
ESE	1.7	0.14	0	0	0	1.84
SE	4.24	0.14	0	0	0	4.38
SSE	4.1	0.14	0	0	0	4.24
S	6.51	0.85	0	0	0	7.36
SSW	12.16	1.84	0	0	0	14
SW	8.2	0.42	0	0	0	8.62
WSW	5.52	0.14	0	0	0	5.66
W	1.41	3.82	0	0	0	5.23
WNW	1.56	2.55	0.42	0	0	4.53
NW	1.41	2.69	0	0	0	4.1
NNW	1.41	2.26	0	0	0	3.67
Summary	58.55	19.37	0.42	0	0	78.34



Lakeland Industry & Community Association

Tamarack Site - January 2023

Summary of Hourly Averages

WIND DIRECTION (VWD) in sector

Monthly Average:	251 (WSW) degree	Hours in Service:	744
		Hours of Data:	707
		Hours of Missing Data:	37
		Hours of Calibration:	0
		Operational Uptime:	95.0

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
Jan 1	SSW	SSW	WSW	SW	SSW	SSW	SSW	SW	SSW	SW	SSW	SW	SSW	SSW	SSW	SSW	SW	SSW	SSW	SSW	WSW	SSW	SSW	SW	213	SSW
Jan 2	SSW	SSW	SW	SSW	SSW	SW	WSW	N	SW	SSW	SSW	SSW	SSW	SSW	SW	SSW	SSW	SW	SSW	SSW	X	X	X	X	211	SSW
Jan 3	X	X	X	X	X	X	X	X	X	X	X	X	X	NE	NNE	NE	ENE	E	N	SSW	ESE	NNE	WSW	S	-	-
Jan 4	S	SW	WSW	SW	SW	SSW	SSW	SSW	SSW	SSW	WSW	WSW	WSW	W	W	WSW	W	W	WSW	WSW	SW	SW	WSW	WSW	243	WSW
Jan 5	WSW	WSW	SW	SW	ENE	ESE	NNE	W	S	NE	NNE	ENE	NNE	NNE	ENE	NE	ENE	NNE	ENE	NE	NE	NE	NE	NNE	35	NE
Jan 6	NE	NE	ENE	ESE	ESE	E	ESE	ESE	ENE	SE	S	S	S	SSW	SSW	SSW	SSW	SW	SW	SW	SW	SW	SSW	SW	175	S
Jan 7	SW	SSW	SSW	SW	SW	SW	SW	SW	SSW	SSW	SSW	SSW	SSW	SW	SW	SSW	SSW	S	SSW	ENE	E	WSW	NNE	ENE	213	SSW
Jan 8	N	E	N	NW	ENE	ENE	ENE	ENE	ENE	NE	NE	NE	NE	ENE	E	E	ENE	ENE	ENE	ENE	ENE	ENE	ENE	E	64	ENE
Jan 9	NNE	NNE	NE	NE	ENE	ENE	ENE	NE	NNE	NE	ESE	NNE	NNE	NE	NE	ENE	ENE	NE	S	ENE	SW	N	ENE	NE	55	NE
Jan 10	NE	NNE	ENE	ENE	NE	NE	NNE	ENE	NE	ESE	SSE	SSW	N	N	NE	NE	SE	NE	NE	ENE	NE	NNE	N	NNE	54	NE
Jan 11	NNE	N	NNE	NNE	NE	E	E	ENE	N	NE	NE	NE	ESE	S	SSW	S	S	SSW	S	S	S	S	S	S	170	SSE
Jan 12	SSE	SSE	SSE	SSE	SE	SSE	SSE	SSE	SSE	SSE	SSE	S	S	S	S	S	S	S	S	S	S	S	S	SSW	173	S
Jan 13	S	NNE	NNE	NE	E	SSW	N	NE	NE	ENE	NE	NE	NE	ENE	NE	ENE	NE	ENE	ENE	E	E	E	ENE	E	71	ENE
Jan 14	E	E	E	E	E	E	E	ENE	E	E	ENE	NE	X	X	X	X	X	X	X	X	X	X	X	X	-	-
Jan 15	X	X	X	X	X	X	X	X	S	SSW	SSW	SSW	NNE	S	S	S	S	ENE	ENE	E	SE	SE	ENE	ENE	-	-
Jan 16	SE	SE	SE	ESE	ESE	ESE	ESE	SE	ESE	SE	ESE	SE	SE	SE	ESE	ESE	ESE	SE	SE	SE	SSE	SSE	SSE	SSE	132	SE
Jan 17	SE	SE	SE	SE	SE	SSE	SSE	SSE	SSE	SSE	S	S	S	S	S	SSE	SSE	S	SSE	S	S	S	S	S	167	SSE
Jan 18	S	S	S	SSE	S	S	SSE	SSE	SSE	SSE	SSE	S	SSE	SSE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	156	SSE
Jan 19	SE	SE	SSE	S	SSW	SW	WSW	SW	WSW	WSW	WSW	WSW	WSW	WSW	SW	SW	SSW	SW	SSW	SSW	SSW	SSW	SSW	SSW	217	SW
Jan 20	SSW	SSW	SSW	SW	SSW	SW	SW	SW	SW	SSW	SW	WSW	W	W	W	WSW	WSW	SW	SW	SW	SW	SW	SW	WSW	236	SW
Jan 21	WSW	WSW	SW	SW	SW	SW	SSW	SW	SSW	SSW	SSW	SSW	SW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SW	WSW	SW	WSW	219	SW
Jan 22	W	WSW	W	W	W	W	WNW	WNW	WNW	WNW	WNW	W	W	W	WNW	NW	NW	NNW	NW	NNW	NW	NNW	NNW	WNW	297	WNW
Jan 23	W	WSW	SSW	SW	SE	W	NE	NNE	SSW	S	S	S	SSE	SE	S	SSW	SSW	SW	WSW	WNW	NNW	N	N	N	239	WSW
Jan 24	N	N	N	N	ENE	ENE	SE	S	S	SSW	S	SW	SSW	SSW	SSW	WSW	W	W	W	W	W	W	W	WNW	263	W
Jan 25	W	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	W	WNW	WNW	NNW	WSW	SW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	S	247	WSW
Jan 26	WSW	SSW	W	WNW	W	W	WNW	WNW	WNW	NW	NW	NNW	N	NNW	NNW	N	N	NNW	NNW	NW	N	N	N	N	317	NW
Jan 27	N	N	NNE	NNE	NNE	NNE	NNE	NNE	NNE	NNE	NNE	N	N	N	N	NNW	NNW	N	N	NNW	N	N	NNW	NNW	9	N
Jan 28	NW	NW	NW	NW	WNW	WNW	WNW	WNW	W	W	WNW	NW	NW	NW	NW	NW	NW	NW	NW	NNW	NNW	NNW	NNW	N	312	NW
Jan 29	NNW	NNW	NNW	NW	NW	WNW	WNW	WSW	WSW	WSW	W	W	W	SW	SSW	SSW	SSW	SSW	SSW	SW	SW	WSW	SW	W	263	W
Jan 30	W	W	NW	NNW	NNW	NNW	NW	WNW	WNW	NW	NW	NW	WNW	W	W	SW	WSW	WSW	SW	SW	WSW	WSW	W	SE	291	WNW
Jan 31	ENE	E	ENE	NE	NE	NE	NE	NE	NE	NE	N	NE	SSW	SSW	SSW	SW	SW	SSW	SW	SSW	SSW	SSW	SW	SW	172	S

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)			

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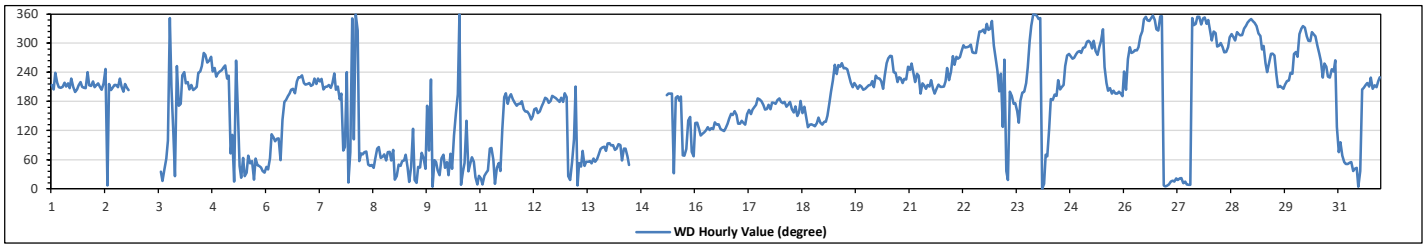


Lakeland Industry & Community Association

Tamarack Site - January 2023

Summary of Hourly Averages

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

WIND SPEED						
Maximum Hourly Value:	18.8	kph	on January 26 at hour 8	Hours in Service:	744	
Maximum Daily Value:	8.9	kph	on January 28	Hours of Data:	707	
Minimum Hourly Value:	0.0	kph	on January 2 at hour 7	Hours of Missing Data:	37	
Minimum Daily Value:	0.5	kph	on January 31	Hours of Calibration:	0	
Monthly Average:	1.2	kph		Operational Uptime:	95.0	
WIND DIRECTION						
Monthly Average:	251	degree	(WSW)			

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
Jan 1	3.5	4.2	3.0	3.2	4.9	5.3	5.9	4.5	4.3	4.3	2.4	3.4	4.4	6.2	5.1	5.0	4.2	4.3	6.4	5.7	2.2	3.5	4.0	1.4	1.4	6.4	4.2
	SSW	SSW	WSW	SW	SSW	SSW	SSW	SW	SSW	SW	SSW	SW	SSW	SSW	SSW	SSW	SW	SSW	SSW	SSW	WSW	SSW	SSW	SW			
Jan 2	3.0	3.8	2.6	5.4	5.1	2.5	1.9	**0.0**	0.7	3.5	6.0	3.9	4.5	4.8	4.4	4.6	3.7	2.5	4.4	3.6	**X**	**X**	**X**	**X**	**0.0**	6.0	3.5
	SSW	SSW	SW	SSW	SSW	SW	WSW	N	SW	SSW	SSW	SSW	SSW	SSW	SW	SSW	SSW	SW	SSW	SSW	**X**	**X**	**X**	**X**			
Jan 3	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	3.1	2.3	1.8	0.7	1.1	0.1	1.1	0.1	0.1	**0.0**	0.1	**0.0**	3.1	-
	X	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	NE	NNE	NE	ENE	E	N	SSW	ESE	NNE	WSW	S			
Jan 4	0.3	1.0	1.7	0.9	2.8	4.2	4.4	3.4	3.9	1.8	2.9	3.1	3.6	6.2	5.4	5.6	6.4	4.2	4.5	2.8	2.8	4.4	3.7	4.2	0.3	6.4	3.2
	S	SW	WSW	SW	SW	SSW	SSW	SSW	SSW	SSW	WSW	WSW	WSW	W	W	WSW	W	W	WSW	WSW	SW	SW	WSW	WSW			
Jan 5	5.0	2.6	1.6	0.8	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.4	1.9	1.6	2.8	2.7	1.8	0.1	1.0	2.4	3.7	2.4	2.1	2.8	0.1	5.0	0.7
	WSW	WSW	SW	SW	ENE	ESE	NNE	W	S	NE	NNE	ENE	NNE	NNE	ENE	NE	ENE	NNE	ENE	NE	NE	NE	NE	NNE			
Jan 6	2.8	1.8	2.0	3.3	2.6	4.0	4.6	1.8	0.3	3.4	6.1	7.6	6.9	6.3	4.9	4.8	1.3	1.2	1.7	2.1	2.7	3.0	3.0	1.7	0.3	7.6	2.1
	NE	NE	ENE	ESE	ESE	E	ESE	ESE	ENE	SE	S	S	S	SSW	SSW	SSW	SSW	SW	SW	SW	SW	SW	SSW	SW			
Jan 7	3.7	4.3	3.1	1.2	1.3	0.6	3.8	2.6	2.8	4.4	4.7	4.4	3.3	2.6	1.1	5.1	3.0	1.7	1.1	0.1	**0.0**	**0.0**	0.1	**0.0**	**0.0**	5.1	2.3
	SW	SSW	SSW	SW	SW	SW	SW	SW	SSW	SSW	SSW	SSW	SSW	SW	SW	SSW	SSW	S	SSW	ENE	E	WSW	NNE	ENE			
Jan 8	**0.0**	**0.0**	0.1	**0.0**	0.4	2.5	2.1	1.6	1.3	3.5	3.6	5.0	5.0	5.2	5.5	2.1	0.7	2.4	1.9	2.6	0.6	2.2	**0.0**	1.5	**0.0**	5.5	2.0
	N	E	N	NW	ENE	ENE	ENE	ENE	ENE	NE	NE	NE	NE	ENE	E	E	ENE	ENE	ENE	ENE	ENE	ENE	ENE	E			
Jan 9	0.1	0.1	0.7	2.7	2.3	2.3	1.7	1.0	1.3	2.1	0.7	0.6	0.7	2.1	1.1	0.8	0.1	0.1	1.6	0.7	0.8	**0.0**	0.1	1.5	**0.0**	2.7	0.8
	NNE	NNE	NE	NE	ENE	ENE	ENE	NE	NNE	NE	ESE	NNE	NNE	NE	NE	ENE	ENE	NE	S	ENE	SW	N	ENE	NE			
Jan 10	0.5	2.0	1.9	1.7	1.7	1.9	1.6	2.2	2.1	1.3	1.0	0.8	0.3	0.6	0.5	2.6	0.5	0.1	0.1	1.3	1.4	0.9	0.1	2.5	0.1	2.6	1.0
	NE	NNE	ENE	ENE	NE	NE	NNE	ENE	NE	ESE	SSE	SSW	N	N	NE	NE	SE	NE	NE	ENE	NE	NNE	N	NNE			
Jan 11	1.2	0.9	0.2	0.1	1.7	2.2	0.8	0.1	0.1	0.1	0.2	1.7	1.7	2.7	2.7	2.8	3.8	4.7	3.4	3.8	3.9	3.1	4.1	4.4	0.1	4.7	1.4
	NNE	N	NNE	NNE	NE	E	E	ENE	N	NE	NE	NE	ESE	S	SSW	S	S	SSW	S	S	S	S	S	S			
Jan 12	4.0	4.6	4.5	4.0	4.2	4.7	4.6	4.8	3.9	4.1	5.3	6.0	5.9	5.6	5.1	5.5	5.3	4.8	3.7	3.9	4.1	4.6	2.8	2.7	2.7	6.0	4.4
	SSE	SSE	SSE	SSE	SE	SSE	SSE	SSE	SSE	SSE	SSE	S	S	S	S	S	S	S	S	S	S	S	S	SSW			
Jan 13	0.7	**0.0**	0.1	0.1	**0.0**	0.4	0.1	0.1	0.1	0.3	1.3	5.7	5.7	5.9	5.8	4.8	4.0	2.9	5.5	7.0	6.5	6.1	6.6	7.9	**0.0**	7.9	3.1
	S	NNE	NNE	NE	E	SSW	N	NE	NE	ENE	NE	NE	NE	ENE	NE	ENE	NE	ENE	ENE	E	E	E	ENE	E			
Jan 14	8.2	7.3	6.0	4.7	5.0	3.2	2.4	1.8	3.1	3.1	3.0	1.6	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	1.6	8.2	-
	E	E	E	E	E	E	E	ENE	E	E	ENE	NE	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**			
Jan 15	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	3.2	2.4	4.2	1.5	0.1	2.4	3.8	3.7	2.2	0.2	1.4	0.5	2.2	1.6	0.5	1.9	0.1	4.2	-
	X	**X**	**X**	**X**	**X**	**X**	**X**	**X**	S	SSW	SSW	SSW	NNE	S	S	S	S	ENE	ENE	E	SE	SE	ENE	ENE			
Jan 16	2.3	1.8	2.1	3.5	2.7	3.1	4.0	5.4	5.0	5.9	5.8	4.9	5.4	5.4	5.6	6.2	5.6	5.1	5.6	7.1	5.9	6.1	4.9	4.8	1.8	7.1	4.6
	SE	SE	SE	ESE	ESE	ESE	ESE	SE	ESE	SE	ESE	SE	SE	SE	ESE	ESE	ESE	SE	SE	SE	SSE	SSE	SSE	SSE			
Jan 17	4.0	4.0	3.5	2.8	3.5	3.9	3.9	4.5	4.2	3.0	4.3	5.2	5.8	5.8	5.3	4.6	4.8	4.5	4.3	5.0	5.1	5.1	6.3	6.1	2.8	6.3	4.4
	SE	SE	SE	SE	SE	SSE	SSE	SSE	SSE	SSE	S	S	S	S	S	SSE	SSE	S	SSE	S	S	S	S	S			
Jan 18	4.8	5.3	4.0	3.9	4.7	5.2	4.1	4.8	4.5	4.4	3.2	4.6	4.6	3.7	4.5	3.9	4.2	4.5	5.0	4.3	3.7	4.0	2.6	2.0	2.0	5.3	4.0
	S	S	S	SSE	S	S	SSE	SSE	SSE	SSE	SSE	S	SSE	SSE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE			
Jan 19	3.5	3.1	2.9	1.8	2.1	2.6	2.9	2.3	3.9	3.9	4.5	3.1	3.8	2.8	2.7	3.4	4.9	4.0	4.3	5.6	4.9	5.3	5.5	4.7	1.8	5.6	3.1
	SE	SE	SSE	S	SSW	SW	WSW	SW	WSW	WSW	WSW	WSW	WSW	WSW	SW	SW	SSW	SW	SSW	SSW	SSW	SSW	SSW	SSW			
Jan 20	4.2	5.1	4.1	3.9	4.7	4.3	4.3	4.5	4.1	4.8	3.2	6.0	7.8	8.3	8.5	5.0	4.8	4.2	4.9	4.8	5.5	3.7	3.2	2.5	2.5	8.5	4.5
	SSW	SSW	SSW	SW	SSW	SW	SW	SW	SW	SSW	SW	WSW	W	W	W	WSW	WSW	SW	SW	SW	SW	SW	SW	WSW			
Jan 21	3.9	4.0	3.0	4.2	3.6	2.4	0.4	2.0	3.5	5.0	3.8	3.9	4.2	4.2	4.7	4.7	5.3	6.0	6.0	5.0	3.7	0.5	3.6	4.6	0.4	6.0	3.7
	WSW	WSW	SW	SW	SW	SW	SSW	SW	SSW	SSW	SSW	SSW	SW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SW	WSW	SW	WSW			
Jan 22	4.3	5.7	6.4	5.6	8.6	9.5	7.3	8.9	9.3	11.4	12.8	12.5	13.1	14.9	10.3	8.6	9.5	9.4	10.4	8.0	5.4	4.3	2.0	1.1	1.1	14.9	7.7
	W	WSW	W	W	W	W	WNW	WNW	WNW	WNW	WNW	W	W	W	WNW	NW	NW	NNW	NW	NNW	NW	NNW	NW	WNW				
Jan 23	3.6	1.6	2.3	**0.0**	0.2	**0.0**	0.2	0.1	0.3	3.7	5.1	4.9	4.1	4.2	5.0	5.6	3.9	1.0	2.1	6.1	6.3	8.7	7.0	5.0	**0.0**	8.7	0.7
	W	WSW	SSW	SW	SE	W	NE	NNE	SSW	S	S	S	SSE	SE	S	SSW	SSW	SW	WSW	WNW	NNW	N	N	N			
Jan 24	4.7	4.2	4.5	3.1	0.4	0.5	0.3	1.1	3.7	5.6	4.3	2.6	3.0	5.0	6.0	6.1	10.1	8.8	8.0	6.6	6.6	7.5	5.7	3.6	0.3	10.1	3.1
	N	N	N	N	ENE	ENE	SE	S	S	SSW	S	SW	SSW	SSW	SSW	WSW	W	W	W	W	W	W	W	WNW			
Jan 25	5.3	3.8	6.0	5.8	5.5	4.2	5.0	4.3	3.6	4.2	5.4	5.3	1.5	3.0	4.7	6.0	4.6	3.0	3.8	5.5	6.6	4.3	8.5	12.6	1.5	12.6	3.4
	W	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	W	WNW	WNW	NNW	WSW	SW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	S			
Jan 26	2.4	6.3	9.6	14.4	12.5	14.0	16.7	17.3	**18.8**	14.0	14.8	13.7	14.0	13.1	10.3	10.4	8.4	5.6	6.3	4.8	5.6	5.5	6.3	10.0	2.4	**18.8**	8.6
	WSW	SSW	W	WNW	W	W	WNW	WNW	WNW	NW	NW	NNW	N	NNW	NNW	N	N	NNW	NNW	NW	N	N	N	N			
Jan 27	10.6	10.0	10.7	13.1	12.9	12.4	12.6	10.6	11.0	10.2	8.6	8.3	9.1	7.6	6.3	5.6	4.5	1.9	2.1	4.1	5.8	3.7	1.3	2.7	1.3	13.1	7.5
	N	N	NNE	NNE	NNE	NNE	NNE	NNE	NNE	NNE	NNE	N	N	N	N	NNW	NNW	N	N	NNW	N	N	NNW	NNW			
Jan 28	4.3	7.7	6.3	8.0	11.1	10.9	10.2	12.6	10.1	10.8	11.1	11.9	10.6	9.8	9.7	8.3	7.8	9.1	9.0	9.0	10.7	8.2	10.0	9.1	4.3	12.6	**8.9**
	NW	NW	NW	NW	WNW	WNW	WNW	WNW	W	W	WNW	NW	NW	NW	NW	NW	NW	NW	NW	NNW	NNW	NNW	NNW	N			
Jan 29	9.2	7.2	6.4	5.6	5.9	6.8	6.7	6.7	5.6	6.7	9.2	9.2	7.5	6.8	8.3	7.5	5.9	7.7	7.1	5.0	4.7	4.1	4.5	2.3	2.3	9.2	4.7
	NNW	NNW	NNW	NW	NW	WNW	WNW	WSW	WSW	WSW	W	W	W	SW	SSW	SSW	SSW	SSW	SSW	SW	SW	WSW	SW	W			
Jan 30	3.3	4.4	3.6	5.6	6.9	7.5	6.3	7.2	7.4	5.5	5.7	3.5	4.8	7.4	7.0	6.0	5.8	5.0	3.6	3.9	2.5	2.3	**0.0**	0.6	**0.0**	7.5	3.9
	W	W	NW	NNW	NNW	NNW	NW	WNW	WNW	NW	NW	NW	WNW	W	W	SW	WSW	WSW	SW	SW	WSW	WSW	W	SE			
Jan 31	1.7	0.4	1.8	3.7	4.3	4.2	2.7	1.4	3.4	2.8	1.0	1.4	0.6	1.7	4.2	4.0	4.4	3.7	3.7	4.5	3.4	3.1	2.9	0.7	0.4	4.5	**0.5**
	ENE	E	ENE	NE	NE	NE	NE	NE	NE	NE	NE	N	NE	SSW	SSW	SSW	SW	SSW	SW	SSW	SSW	SSW	SW	SW			

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 - January 2023

Summary of Hour Standard Deviations

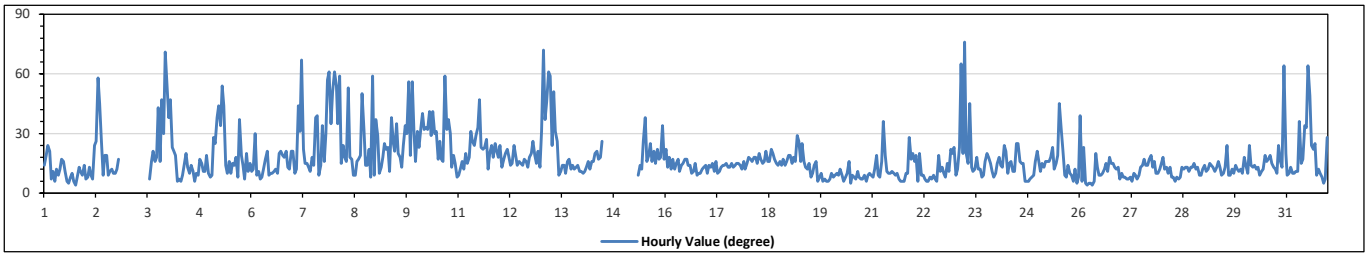
STANDARD DEVIATION WIND DIRECTION (STDWD) in Degree

Maximum Hourly Value:	76 degree	on January 23 at hour 5	Hours in Service: 744
			Hours of Data: 707
Minimum Hourly Value:	4 degree	on January 1 at hour 18	Hours of Missing Data: 37
			Hours of Calibration: 0
			Operational Uptime: 95.0

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		
Jan 1	14	19	24	21	7	11	6	12	9	12	17	16	11	6	5	8	10	6	4	8	13	11	9	14	4	24
Jan 2	7	8	13	9	7	24	26	58	45	28	9	19	19	9	11	12	10	10	12	17	X	X	X	X	7	58
Jan 3	X	X	X	X	X	X	X	X	X	X	X	X	X	7	16	21	16	18	43	16	47	30	71	56	7	71
Jan 4	38	47	23	21	19	6	7	6	9	15	20	13	10	14	11	6	10	9	17	15	11	11	19	10	6	47
Jan 5	8	9	28	25	38	44	34	54	44	14	10	16	10	15	14	18	8	37	19	14	7	20	11	15	7	54
Jan 6	11	12	30	9	11	7	8	12	17	21	9	10	10	11	12	10	20	21	19	18	21	13	12	21	7	30
Jan 7	21	10	12	44	31	67	22	15	15	13	11	18	14	38	39	9	14	34	16	30	57	61	35	51	9	67
Jan 8	61	54	35	59	15	24	18	16	53	18	17	9	9	16	17	19	50	32	14	14	22	8	59	9	8	61
Jan 9	37	29	10	13	18	25	22	23	11	38	25	21	35	20	18	13	24	34	30	56	19	56	32	16	10	56
Jan 10	31	23	33	40	32	33	32	41	29	41	30	31	17	26	17	16	59	32	37	30	13	19	15	8	8	59
Jan 11	9	12	16	12	20	15	18	31	26	24	29	33	47	23	22	23	27	12	20	24	18	25	21	18	9	47
Jan 12	24	13	17	20	22	19	14	15	24	19	14	16	15	14	17	16	13	18	20	26	19	15	21	13	13	26
Jan 13	31	72	37	46	61	59	24	51	31	26	9	11	14	14	10	16	17	12	14	12	13	14	11	11	9	72
Jan 14	10	11	13	16	12	16	16	20	21	17	18	26	X	X	X	X	X	X	X	X	X	X	X	X	10	26
Jan 15	X	X	X	X	X	X	X	X	9	14	12	26	38	16	19	25	16	21	15	22	17	18	34	17	9	38
Jan 16	22	13	18	12	17	12	15	17	11	14	15	17	17	14	14	10	11	15	9	10	10	12	13	14	9	22
Jan 17	10	14	13	15	11	16	10	11	13	14	14	15	13	13	15	13	14	15	15	14	12	16	12	15	10	16
Jan 18	18	17	16	18	18	15	20	17	15	16	21	16	16	22	20	17	15	14	16	14	17	14	16	19	14	22
Jan 19	19	15	18	16	29	26	16	25	16	13	12	15	8	10	14	16	6	8	10	6	7	6	6	7	6	29
Jan 20	10	8	9	10	9	12	9	6	8	10	16	5	9	8	7	11	8	7	7	9	6	9	10	9	5	16
Jan 21	8	12	19	9	8	16	36	19	11	10	10	11	10	9	10	7	6	6	6	10	10	28	17	20	6	36
Jan 22	16	19	6	20	9	9	7	6	6	8	7	9	7	6	19	11	13	10	8	15	11	22	20	23	6	23
Jan 23	9	12	23	65	20	76	20	15	45	13	11	12	18	12	12	8	9	16	20	18	15	11	8	10	8	76
Jan 24	15	18	14	13	24	21	10	15	16	11	11	25	25	16	15	15	6	6	6	7	8	9	16	21	6	25
Jan 25	16	11	15	13	16	16	16	18	23	12	15	19	45	32	22	9	8	14	10	9	6	12	5	8	5	45
Jan 26	39	6	23	5	4	5	5	4	6	20	13	9	9	10	12	15	11	18	15	15	13	12	13	7	4	39
Jan 27	10	8	8	7	7	8	6	10	9	7	9	13	14	17	14	14	17	19	13	16	10	10	12	15	6	19
Jan 28	18	12	13	10	13	8	8	6	8	7	8	13	12	13	13	11	13	13	15	12	13	9	9	12	6	18
Jan 29	14	11	12	15	14	13	11	13	16	13	9	10	13	24	9	9	12	10	14	12	11	12	10	18	9	24
Jan 30	14	10	24	14	13	14	12	13	9	11	12	19	16	17	19	15	13	12	10	24	16	13	64	20	9	64
Jan 31	9	10	13	10	10	11	11	36	15	17	34	33	64	49	24	22	25	9	12	10	8	5	7	28	5	64
Diurnal Minimum	7	6	6	5	4	5	5	4	6	7	7	5	7	6	5	6	6	6	4	6	6	5	5	7		
Diurnal Maximum	61	72	37	65	61	76	36	58	53	41	34	33	64	49	39	25	59	37	43	56	57	61	71	56		

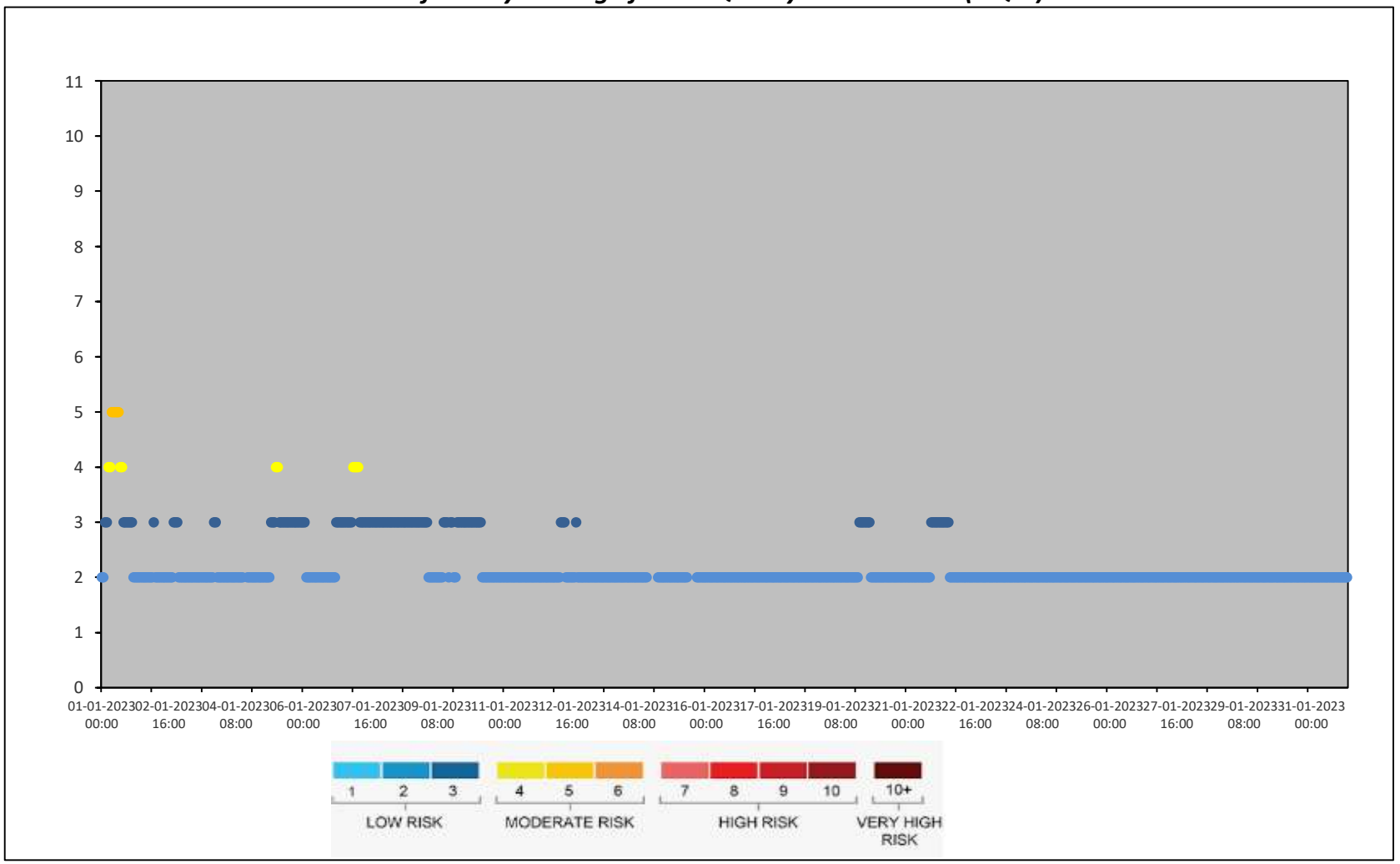
C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	ND	No Data (Machine Not in Service)	Y	Routine Maintenance	P Power Failure
X	InValid Data (Machine Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)			

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

Timeseries Chart of Hourly Average for Air Quality Health Index (AQHI) - St. Lina Site



Lakeland Industry & Community Association

St. Lina Site - January 2023

Summary of Hourly Averages

SULPHUR DIOXIDE (SO_2) in ppb

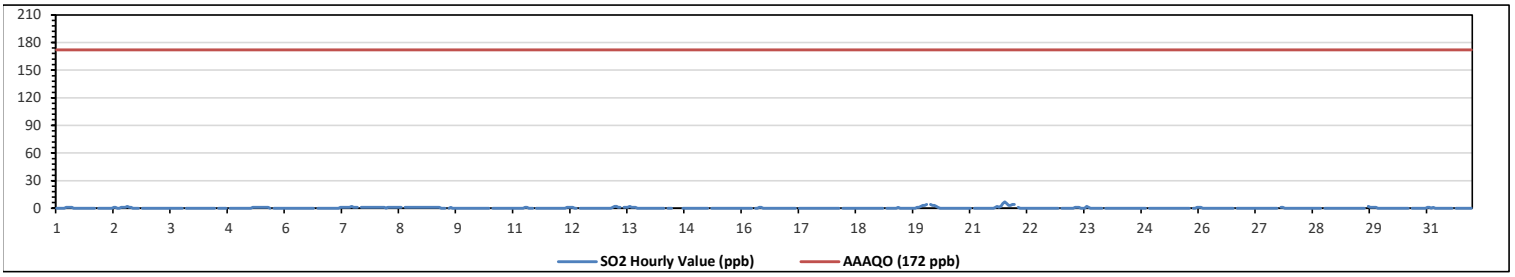
Alberta Ambient Air Quality Objectives (AAAQO): 1-Hour 172 ppb, 24-Hour 48 ppb, 30-Day 11 ppb

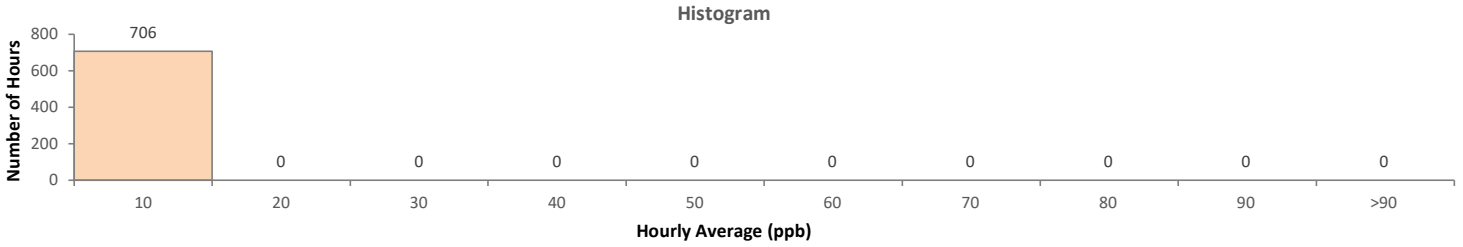
Number of 1-Hour Exceedances:	0	Number of 24-Hour Exceedances:	0	30-Day Exceedence:	0		
Maximum Hourly Value:	7	ppb	on January 21 at hour 18	Hours in Service:	744		
Maximum Daily Value:	1.6	ppb	on January 21	Hours of Data:	706		
Minimum Hourly Value:	0	ppb	on January 1 at hour 0	Hours of Missing Data:	1		
Minimum Daily Value:	0.0	ppb	on January 3	Hours of Calibration:	37		
Monthly Average:	0.3	ppb		Operational Uptime:	99.9		

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Jan 1	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	1	0.2
Jan 2	0	0	0	0	0	0	1	1	0	0	1	1	1	2	1	1	0	0	0	0	S	0	0	0	0	2	0.4
Jan 3	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
Jan 4	0	0	0	0	0	0	0	0	0	0	0	0	K	0	0	0	0	0	S	0	0	0	0	0	0	0	0.0
Jan 5	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	0	S	0	0	0	0	0	0	0	1	0.4
Jan 6	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
Jan 7	0	0	0	0	0	1	1	1	1	1	1	2	1	1	1	S	1	1	1	1	1	1	1	1	0	2	0.8
Jan 8	1	1	1	1	1	0	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	0	1	1.0
Jan 9	1	1	1	1	1	1	1	1	1	1	0	0	0	S	0	1	0	0	0	0	0	0	0	0	0	1	0.5
Jan 10	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
Jan 11	0	0	0	0	0	0	1	1	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1
Jan 12	0	0	0	0	1	1	1	1	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2
Jan 13	0	0	0	0	1	2	2	1	1	S	1	1	1	2	1	1	1	0	0	0	0	0	0	0	0	2	0.7
Jan 14	0	0	0	0	0	0	0	0	S	0	0	0	C	C	C	C	C	0	0	0	0	0	0	0	0	0	0.0
Jan 15	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
Jan 16	0	0	0	0	0	0	S	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1
Jan 17	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
Jan 18	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
Jan 19	0	0	0	S	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	2	3	0	3	0.3
Jan 20	3	4	S	4	3	3	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0.9
Jan 21	0	S	0	0	0	0	0	0	0	0	0	0	0	1	2	1	2	5	7	5	3	3	4	4	0	7	1.6
Jan 22	S	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	1	0.0
Jan 23	0	0	0	0	0	0	0	1	1	1	0	0	0	2	1	0	0	0	0	0	0	0	S	0	0	2	0.3
Jan 24	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
Jan 25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	1	0	1	0.0
Jan 26	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	1	0.1
Jan 27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	1	1	0	0	0	0	1	0.1
Jan 28	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
Jan 29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	2	1	1	1	1	0	0	0	2	0.3
Jan 30	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
Jan 31	1	1	0	1	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	1	0.1
Diurnal Maximum	3	4	1	4	3	3	2	1	1	1	1	2	1	2	2	1	2	5	7	5	3	3	4	4			
Diurnal Average	0.2	0.3	0.1	0.2	0.2	0.3	0.4	0.4	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.2	0.2	0.3	0.3	0.3	0.3	0.2	0.3	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.



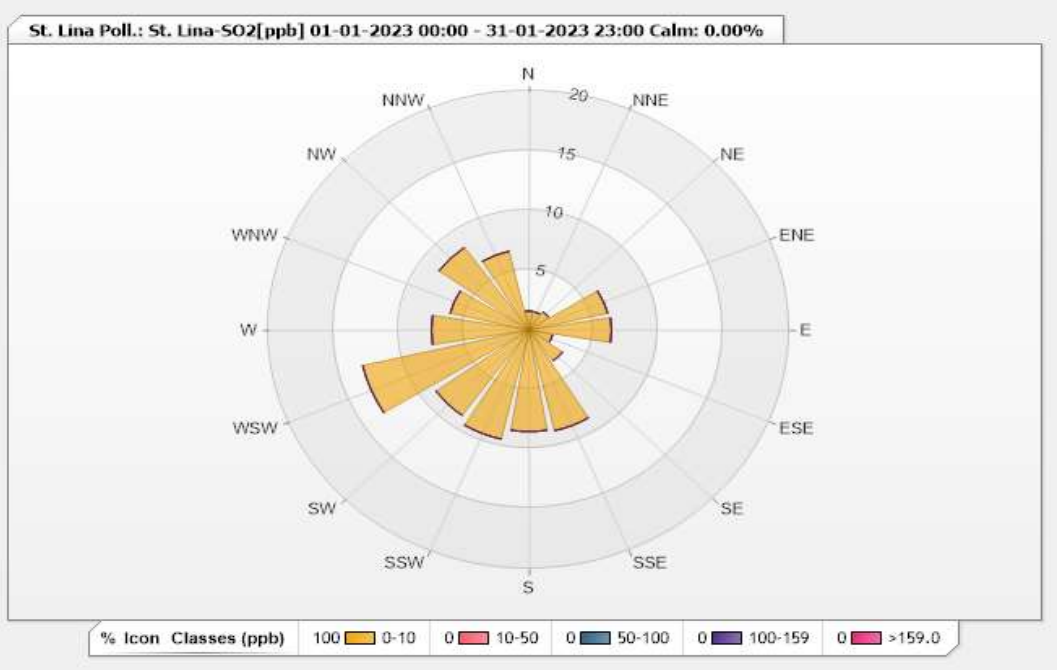


Station: St. Lina Poll.: St. Lina-SO2[ppb] Monthly: 01-2023

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

Calm: 0.00% Valid Data: 93.28% Calm Avg: 0.00 [ppm]

Direction	0-10	10-50	50-100	100-159	>159.0	Total
N	1.59	0	0	0	0	1.59
NNE	1.59	0	0	0	0	1.59
NE	1.87	0	0	0	0	1.87
ENE	6.2	0	0	0	0	6.2
E	6.34	0	0	0	0	6.34
ESE	1.87	0	0	0	0	1.87
SE	3.17	0	0	0	0	3.17
SSE	8.65	0	0	0	0	8.65
S	8.5	0	0	0	0	8.5
SSW	9.37	0	0	0	0	9.37
SW	8.79	0	0	0	0	8.79
WSW	13.11	0	0	0	0	13.11
W	7.49	0	0	0	0	7.49
WNW	6.2	0	0	0	0	6.2
NW	8.5	0	0	0	0	8.5
NNW	6.77	0	0	0	0	6.77
Summary	100	0	0	0	0	100



Lakeland Industry & Community Association

St. Lina Site - January 2023

Summary of Hourly Averages

HYDROGEN SULPHIDE (H_2S) in ppb

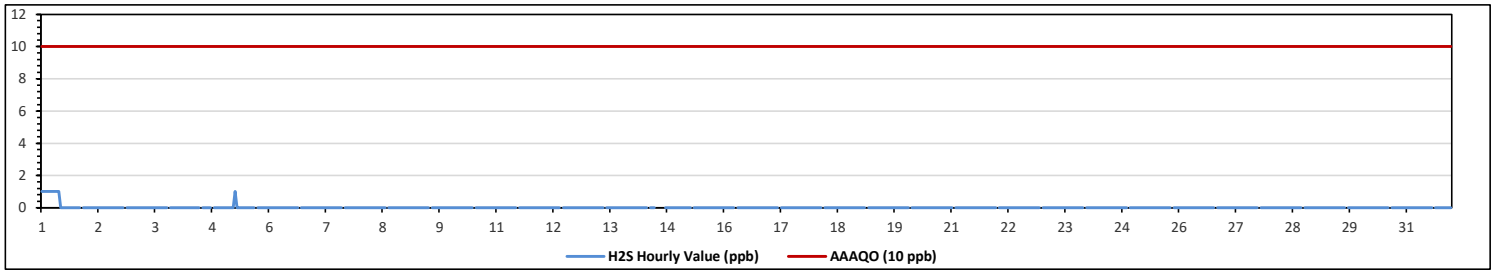
Alberta Ambient Air Quality Objectives (AAAQO): 1-Hour 10 ppb, 24-Hour 3 ppb

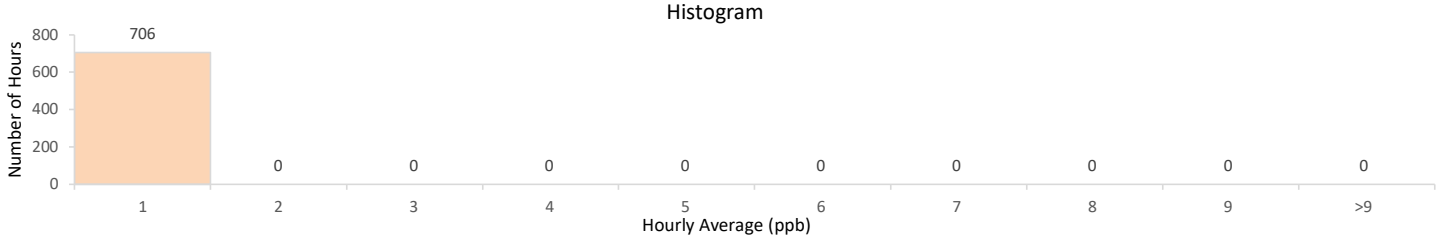
Number of 1-Hour Exceedances:	0		Number of 24-Hour Exceedances:	0	
Maximum Hourly Value:	1	ppb	on January 1 at hour 0	Hours in Service:	744
Maximum Daily Value:	0.0	ppb	on January 1	Hours of Data:	706
Minimum Hourly Value:	0	ppb	on January 1 at hour 10	Hours of Missing Data:	1
Minimum Daily Value:	0.0	ppb	on January 1	Hours of Calibration:	37
Monthly Average:	0.0	ppb		Operational Uptime:	99.9

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



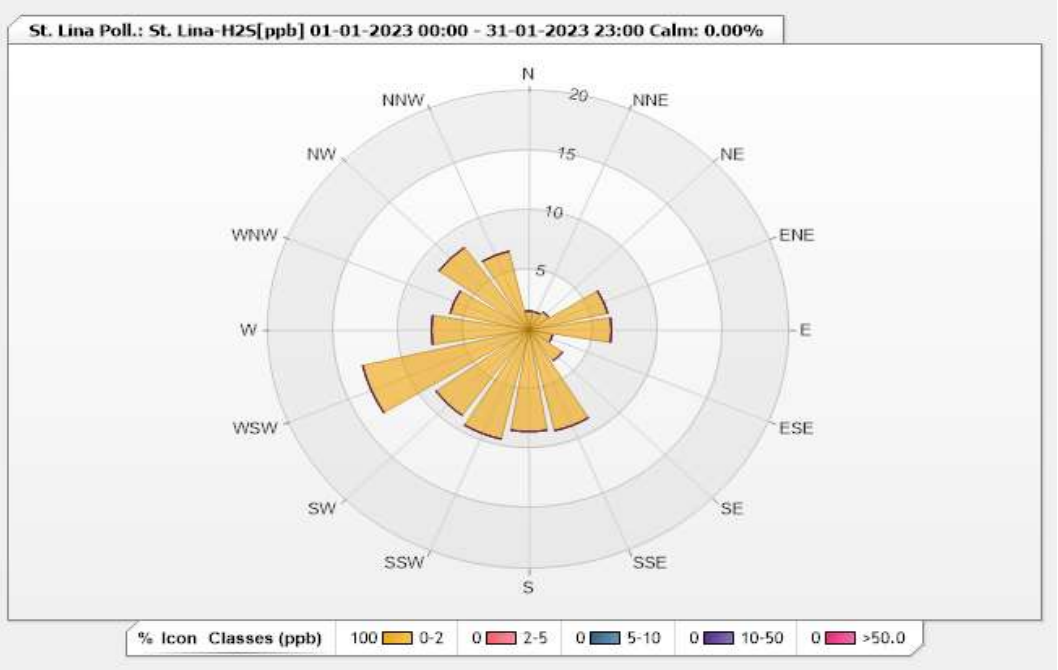


Station: St. Lina Poll.: St. Lina-H2S[ppb] Monthly: 01-2023

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

Calm: 0.00% Valid Data: 93.28% Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-50	>50.0	Total
N	1.59	0	0	0	0	1.59
NNE	1.59	0	0	0	0	1.59
NE	1.87	0	0	0	0	1.87
ENE	6.2	0	0	0	0	6.2
E	6.34	0	0	0	0	6.34
ESE	1.87	0	0	0	0	1.87
SE	3.17	0	0	0	0	3.17
SSE	8.65	0	0	0	0	8.65
S	8.5	0	0	0	0	8.5
SSW	9.37	0	0	0	0	9.37
SW	8.79	0	0	0	0	8.79
WSW	13.11	0	0	0	0	13.11
W	7.49	0	0	0	0	7.49
WNW	6.2	0	0	0	0	6.2
NW	8.5	0	0	0	0	8.5
NNW	6.77	0	0	0	0	6.77
Summary	100	0	0	0	0	100



Lakeland Industry & Community Association

St. Lina Site - January 2023

Summary of Hourly Averages

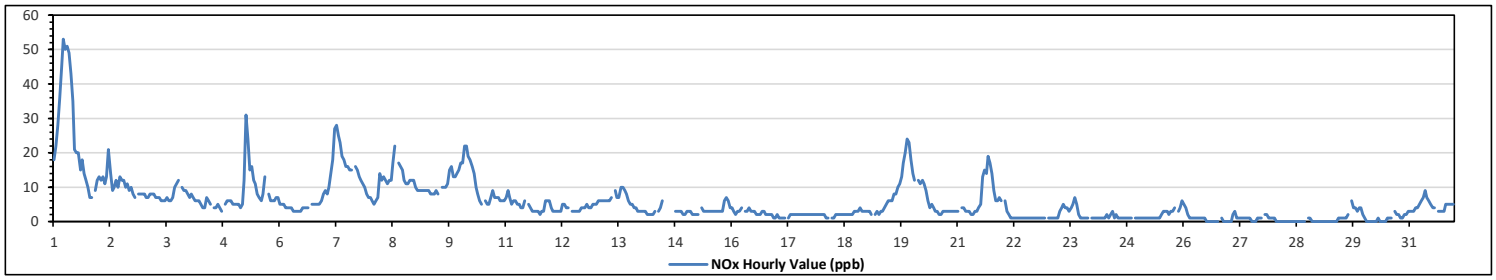
OXIDES OF NITROGEN (NOx) in ppb

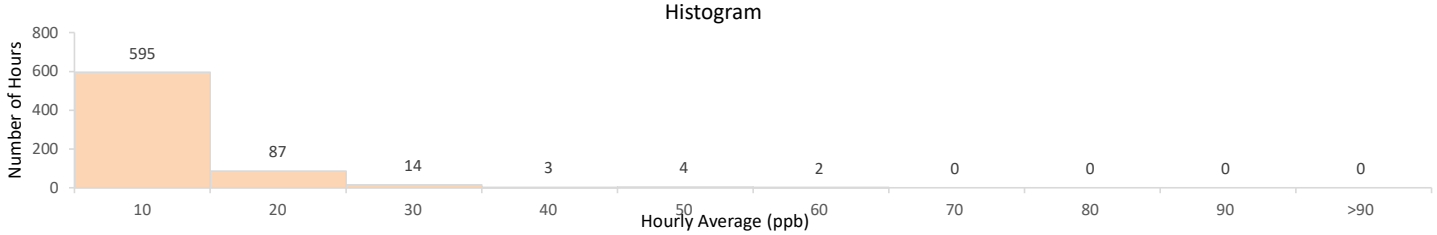
Maximum Hourly Value:	53	ppb	on January 1 at hour 5	Hours in Service:	744	
Maximum Daily Value:	25.9	ppb	on January 1	Hours of Data:	705	
Minimum Hourly Value:	0	ppb	on January 26 at hour 12	Hours of Missing Data:	1	
Minimum Daily Value:	0.1	ppb	on January 28	Hours of Calibration:	38	
Monthly Average:	5.8	ppb		Operational Uptime:	99.9	

Day	Hourly Period Starting at (MST)																								Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Jan 1	18	22	28	36	45	**53**	50	51	49	43	35	21	20	20	15	18	14	12	10	7	7	S	9	12	7	**53**	**25.9**
Jan 2	13	12	13	11	13	21	14	9	10	12	10	13	12	12	10	11	9	10	8	7	S	8	8	8	7	21	11.0
Jan 3	8	7	7	8	8	8	7	7	7	6	6	6	7	6	6	7	10	11	12	S	10	9	9	8	6	12	7.8
Jan 4	7	8	7	6	6	6	5	4	4	7	6	5	K	4	4	5	4	3	S	5	6	6	6	5	3	8	5.4
Jan 5	5	5	5	4	5	12	31	24	15	16	12	11	8	7	6	8	13	S	8	6	6	6	7	7	4	31	9.9
Jan 6	5	5	5	4	4	4	4	3	3	3	3	3	4	4	4	4	S	5	5	5	5	5	6	8	3	8	4.4
Jan 7	9	8	10	14	18	27	28	25	23	19	18	16	16	15	15	S	16	15	13	12	11	10	8	7	7	28	15.3
Jan 8	7	6	5	6	7	14	12	13	12	11	12	12	17	22	S	17	16	15	12	11	11	12	12	12	5	22	11.9
Jan 9	10	9	9	9	9	9	9	9	8	8	8	9	8	S	10	10	10	11	15	16	13	13	14	15	8	16	10.5
Jan 10	17	17	22	22	19	18	16	14	10	8	6	5	S	6	5	5	7	9	7	7	7	6	6	6	5	22	10.7
Jan 11	7	9	7	5	6	6	5	5	4	4	6	S	5	4	3	3	3	3	2	3	3	6	6	6	2	9	4.8
Jan 12	4	3	3	3	3	3	5	5	4	4	S	3	3	3	3	3	4	4	4	5	4	4	5	5	3	5	3.8
Jan 13	5	6	6	6	6	6	6	6	7	S	9	7	7	10	10	9	8	6	5	5	4	4	3	3	3	10	6.3
Jan 14	3	3	3	2	2	2	2	3	S	3	4	6	C	C	C	C	C	C	3	3	3	3	2	2	2	6	NA
Jan 15	3	3	3	2	2	2	2	S	4	3	3	3	3	3	3	3	3	3	3	3	6	7	6	4	2	7	3.3
Jan 16	4	3	2	3	3	4	S	3	3	4	3	3	3	2	2	2	3	3	2	2	2	2	1	1	1	4	2.6
Jan 17	2	1	1	1	1	S	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	2	1.8
Jan 18	2	2	1	1	S	1	1	2	2	2	2	2	2	2	2	2	2	3	3	3	4	3	3	3	1	4	2.2
Jan 19	3	3	2	S	2	3	2	3	3	4	5	6	6	6	8	8	10	11	13	17	20	24	23	18	2	24	8.7
Jan 20	14	12	S	12	11	12	11	9	6	4	5	4	3	3	2	2	3	3	3	3	3	3	3	3	2	14	5.8
Jan 21	3	S	4	4	3	3	3	2	2	3	3	4	5	13	15	14	19	17	14	9	6	6	7	6	2	19	7.2
Jan 22	S	6	3	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	6	1.4
Jan 23	1	1	1	1	1	1	3	4	5	4	4	3	4	5	7	5	2	1	1	1	1	1	S	1	1	7	2.5
Jan 24	1	1	1	1	1	1	1	2	1	2	3	1	2	1	1	1	1	1	1	1	1	S	1	1	1	3	1.2
Jan 25	1	1	1	1	1	1	1	1	1	1	1	1	2	3	3	3	2	3	3	4	S	3	4	6	1	6	2.1
Jan 26	5	4	2	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	S	1	0	0	0	**0**	5	0.9
Jan 27	0	0	2	3	1	1	1	1	1	1	1	1	0	0	0	1	1	1	S	2	2	1	1	1	**0**	3	1.0
Jan 28	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	1	1	0	0	0	0	**0**	1	**0.1**
Jan 29	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	S	6	4	4	3	4	4	2	**0**	6	1.5
Jan 30	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	S	3	2	2	1	1	2	2	3	**0**	3	0.9
Jan 31	3	3	3	4	4	5	6	7	9	7	6	5	4	4	S	3	3	3	3	5	5	5	5	5	3	9	4.7
Diurnal Maximum	18	22	28	36	45	53	50	51	49	43	35	21	20	22	15	18	19	17	15	17	20	24	23	18			
Diurnal Average	5.4	5.3	5.2	5.7	6.1	7.5	7.6	7.2	6.6	6.1	5.9	5.2	5.2	5.5	5.0	5.3	6.0	5.9	5.5	5.2	5.1	5.4	5.5	5.3			

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.



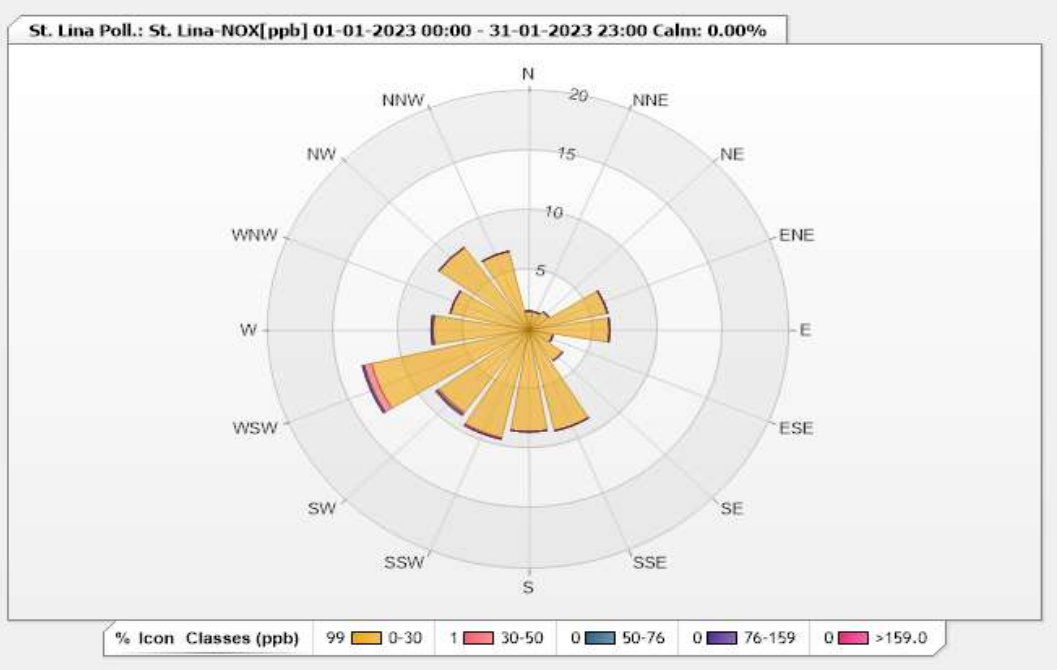


Station: St. Lina Poll.: St. Lina-NOX[ppb] Monthly: 01-2023

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

Calm: 0.00% Valid Data: 93.15% Calm Avg: 0.00 [ppm]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	1.59	0	0	0	0	1.59
NNE	1.59	0	0	0	0	1.59
NE	1.88	0	0	0	0	1.88
ENE	6.2	0	0	0	0	6.2
E	6.2	0	0	0	0	6.2
ESE	1.88	0	0	0	0	1.88
SE	3.17	0	0	0	0	3.17
SSE	8.66	0	0	0	0	8.66
S	8.51	0	0	0	0	8.51
SSW	9.24	0.14	0	0	0	9.38
SW	8.51	0.14	0.14	0	0	8.79
WSW	12.41	0.58	0.14	0	0	13.13
W	7.36	0	0.14	0	0	7.5
WNW	6.2	0	0	0	0	6.2
NW	8.51	0	0	0	0	8.51
NNW	6.78	0	0	0	0	6.78
Summary	98.69	0.86	0.42	0	0	100



Lakeland Industry & Community Association

St. Lina Site - January 2023

Summary of Hourly Averages

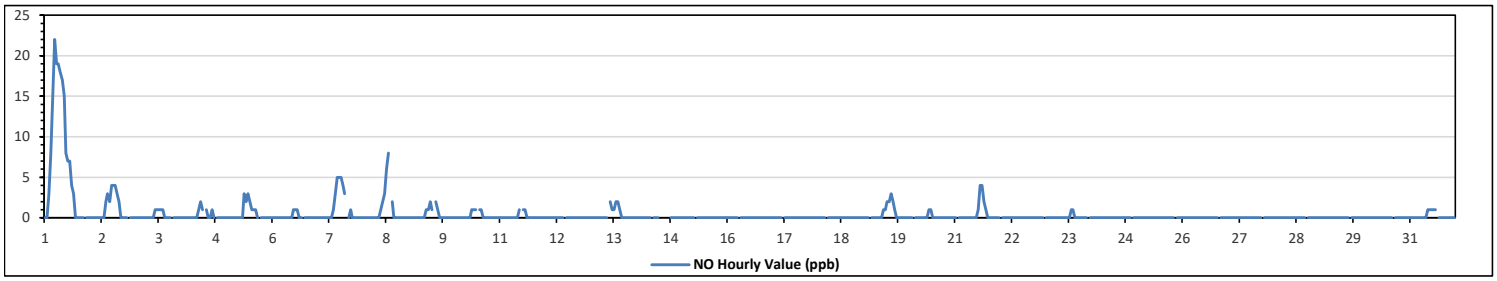
NITRIC OXIDE (NO) in ppb

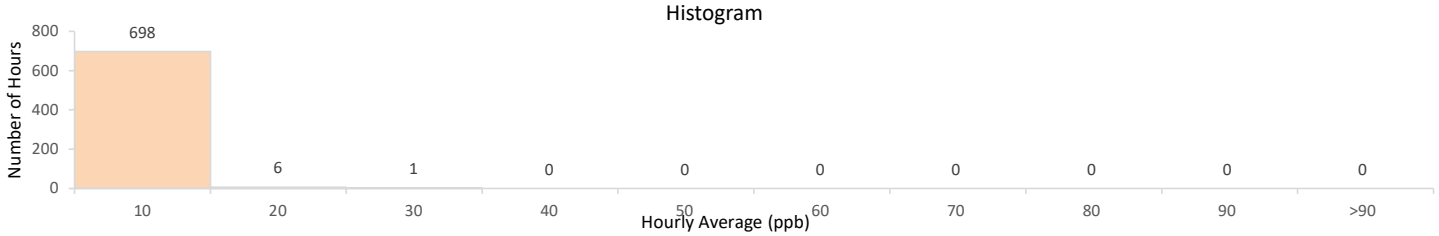
Maximum Hourly Value:	22	ppb	on January 1 at hour 5	Hours in Service:	744
Maximum Daily Value:	7.2	ppb	on January 1	Hours of Data:	705
Minimum Hourly Value:	0	ppb	on January 1 at hour 0	Hours of Missing Data:	1
Minimum Daily Value:	0.0	ppb	on January 12	Hours of Calibration:	38
Monthly Average:	0.5	ppb		Operational Uptime:	99.9

Day	Hourly Period Starting at (MST)																								Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Jan 1	0	0	3	8	15	**22**	19	19	18	17	15	8	7	7	4	3	0	0	0	0	0	S	0	0	0	**22**	**7.2**
Jan 2	0	0	0	0	0	0	0	0	2	3	2	4	4	4	3	2	0	0	0	0	S	0	0	0	0	4	1.0
Jan 3	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	S	0	0	0	0	0	1	0.2
Jan 4	0	0	0	0	0	0	0	0	0	1	2	1	K	1	0	0	1	0	S	0	0	0	0	0	0	2	0.3
Jan 5	0	0	0	0	0	0	0	0	0	3	2	3	2	1	1	1	0	S	0	0	0	0	0	0	0	3	0.6
Jan 6	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	S	0	0	0	0	0	0	0	0	1	0.1
Jan 7	0	0	0	0	0	0	0	0	1	3	5	5	5	4	3	S	0	1	0	0	0	0	0	0	0	5	1.2
Jan 8	0	0	0	0	0	0	0	0	0	1	2	3	6	8	S	2	0	0	0	0	0	0	0	0	0	8	1.0
Jan 9	0	0	0	0	0	0	0	0	0	1	1	2	1	S	2	1	0	0	0	0	0	0	0	0	0	2	0.3
Jan 10	0	0	0	0	0	0	0	0	0	1	1	1	S	1	1	0	0	0	0	0	0	0	0	0	0	1	0.2
Jan 11	0	0	0	0	0	0	0	0	0	0	1	S	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0.1
Jan 12	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
Jan 13	0	0	0	0	0	0	0	0	0	S	2	1	1	2	2	1	0	0	0	0	0	0	0	0	0	2	0.4
Jan 14	0	0	0	0	0	0	0	0	S	0	0	0	C	C	C	C	C	C	0	0	0	0	0	0	0	0	NA
Jan 15	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
Jan 16	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
Jan 17	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
Jan 18	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
Jan 19	0	0	0	S	0	0	0	0	0	0	1	1	2	2	3	2	1	0	0	0	0	0	0	0	0	3	0.5
Jan 20	0	0	S	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1
Jan 21	0	S	0	0	0	0	0	0	0	0	0	0	1	4	4	2	1	0	0	0	0	0	0	0	0	4	0.5
Jan 22	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
Jan 23	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
Jan 24	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
Jan 25	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
Jan 26	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
Jan 27	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
Jan 28	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
Jan 29	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
Jan 30	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
Jan 31	0	0	0	0	0	0	0	0	0	1	1	1	1	1	S	0	0	0	0	0	0	0	0	0	0	1	0.2
Diurnal Maximum	0	0	3	8	15	22	19	19	18	17	15	8	7	8	4	3	1	1	0	0	0	0	0	0			
Diurnal Average	0.0	0.0	0.1	0.3	0.5	0.7	0.6	0.6	0.7	1.0	1.2	1.1	1.2	1.3	0.9	0.5	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.



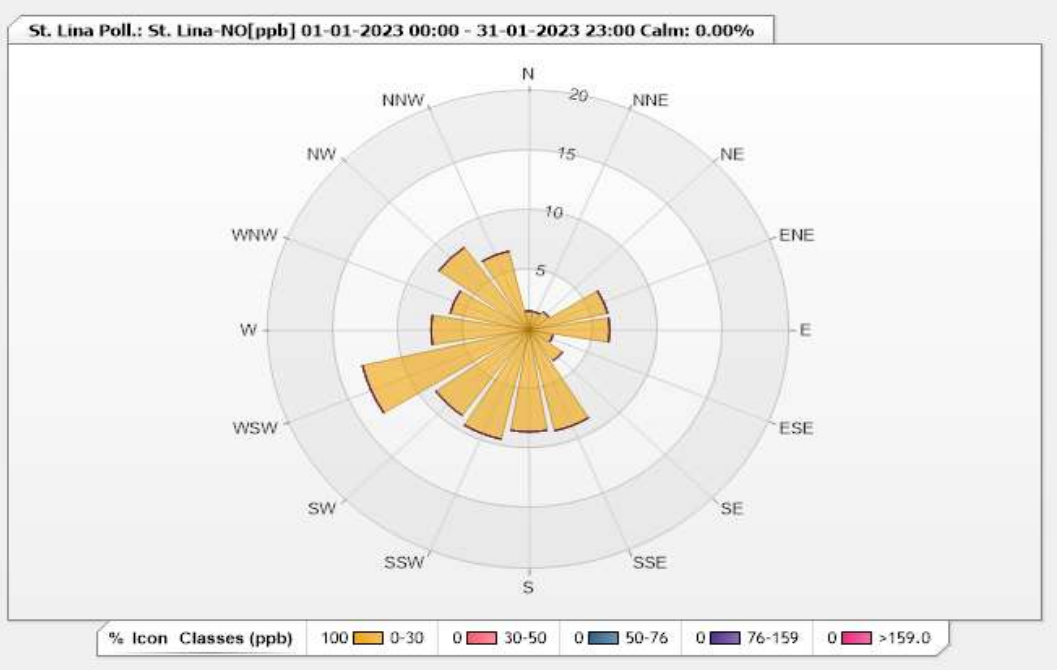


Station: St. Lina Poll.: St. Lina-NO[ppb] Monthly: 01-2023

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

Calm: 0.00% Valid Data: 93.15% Calm Avg: 0.00 [ppm]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	1.59	0	0	0	0	1.59
NNE	1.59	0	0	0	0	1.59
NE	1.88	0	0	0	0	1.88
ENE	6.2	0	0	0	0	6.2
E	6.2	0	0	0	0	6.2
ESE	1.88	0	0	0	0	1.88
SE	3.17	0	0	0	0	3.17
SSE	8.66	0	0	0	0	8.66
S	8.51	0	0	0	0	8.51
SSW	9.38	0	0	0	0	9.38
SW	8.8	0	0	0	0	8.8
WSW	13.13	0	0	0	0	13.13
W	7.5	0	0	0	0	7.5
WNW	6.2	0	0	0	0	6.2
NW	8.51	0	0	0	0	8.51
NNW	6.78	0	0	0	0	6.78
Summary	100	0	0	0	0	100



Lakeland Industry & Community Association

St. Lina Site - January 2023

Summary of Hourly Averages

NITROGEN DIOXIDE (NO_2) in ppb

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

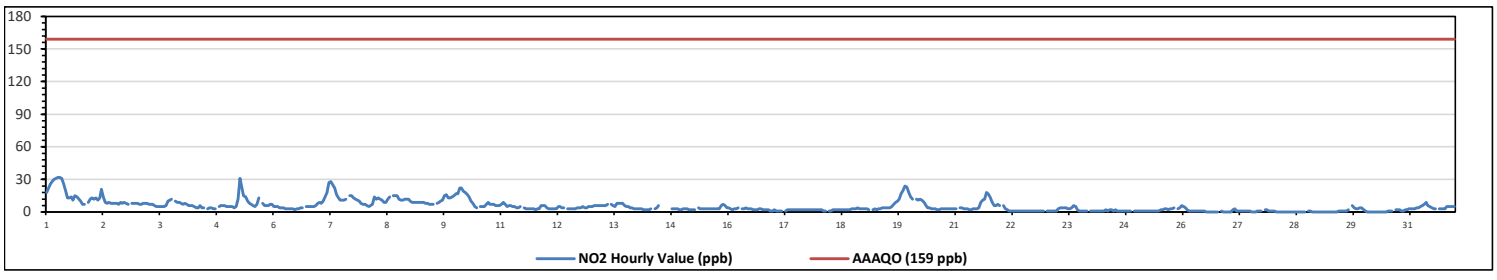
Number of 1-Hour Exceedances: 0

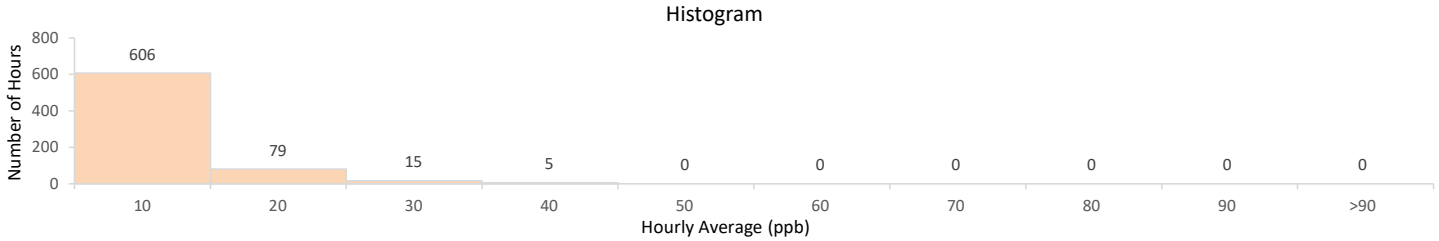
Maximum Hourly Value:	32	ppb	on January 1 at hour 6	Hours in Service:	744		
Maximum Daily Value:	18.8	ppb	on January 1	Hours of Data:	705		
Minimum Hourly Value:	0	ppb	on January 26 at hour 12	Hours of Missing Data:	1		
Minimum Daily Value:	0.1	ppb	on January 28	Hours of Calibration:	38		
Monthly Average:	5.3	ppb		Operational Uptime:	99.9		

Day	Hourly Period Starting at (MST)																						Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Jan 1	18	22	26	28	30	31	32	32	31	26	20	13	13	14	11	15	14	12	10	7	7	S	9	12	7	32	18.8
Jan 2	13	12	13	11	13	21	14	9	8	9	8	8	8	8	7	9	8	9	8	7	S	8	8	8	7	21	9.9
Jan 3	8	7	7	8	8	8	7	7	7	6	5	5	5	5	5	6	10	11	12	S	10	9	9	8	5	12	7.5
Jan 4	7	8	7	6	6	6	5	4	4	6	4	4	K	3	4	4	3	3	S	5	6	6	6	5	3	8	5.1
Jan 5	5	5	5	4	5	12	31	24	15	14	10	8	7	6	5	7	13	S	8	6	6	6	7	7	4	31	9.4
Jan 6	5	5	5	4	4	4	3	3	3	3	3	2	3	3	4	4	S	5	5	5	5	5	6	8	2	8	4.2
Jan 7	9	8	10	14	18	27	28	25	22	16	13	11	11	11	12	S	15	15	13	12	11	10	8	7	7	28	14.2
Jan 8	7	6	5	6	7	14	12	13	12	11	9	9	12	14	S	15	15	15	12	11	11	12	12	12	5	15	11.0
Jan 9	10	9	9	9	9	9	9	9	8	8	7	7	7	S	8	9	10	11	15	16	13	13	14	15	7	16	10.2
Jan 10	17	17	22	22	19	18	16	14	10	8	5	4	S	5	5	5	7	9	7	7	7	6	6	6	4	22	10.5
Jan 11	7	9	7	5	6	6	5	5	4	4	5	S	4	3	3	3	3	3	2	3	3	6	6	6	2	9	4.7
Jan 12	4	3	3	3	3	3	5	5	4	4	S	3	3	3	3	3	4	4	4	5	4	4	5	5	3	5	3.8
Jan 13	5	6	6	6	6	6	6	6	7	S	7	6	5	8	8	8	8	6	5	5	4	4	3	3	3	8	5.8
Jan 14	3	3	3	2	2	2	2	3	S	3	4	6	C	C	C	C	C	C	3	3	3	3	2	2	2	6	NA
Jan 15	3	3	3	2	2	2	2	S	4	3	3	3	3	3	3	3	3	3	3	3	6	7	6	4	2	7	3.3
Jan 16	4	3	2	3	3	4	S	3	3	4	3	3	3	2	2	2	3	3	2	2	2	2	1	1	1	4	2.6
Jan 17	2	1	1	1	1	S	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	2	1.8
Jan 18	2	2	1	1	S	1	1	2	2	2	2	2	2	2	2	2	2	3	3	3	4	3	3	3	1	4	2.2
Jan 19	3	3	2	S	2	3	2	3	3	4	4	4	4	4	5	7	9	10	12	17	20	24	23	18	2	24	8.1
Jan 20	14	12	S	12	11	12	11	9	6	4	4	3	3	3	2	2	3	3	3	3	3	3	3	3	2	14	5.7
Jan 21	3	S	4	4	3	3	3	2	2	3	3	3	4	9	11	12	18	17	14	9	6	6	7	6	2	18	6.6
Jan 22	S	6	3	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	6	1.4
Jan 23	1	1	1	1	1	1	3	4	4	4	4	3	3	4	6	5	2	1	1	1	1	1	S	1	1	6	2.3
Jan 24	1	1	1	1	1	1	1	2	1	2	2	1	2	1	1	1	1	1	1	1	1	S	1	1	1	2	1.2
Jan 25	1	1	1	1	1	1	1	1	1	1	1	1	2	2	3	3	2	3	3	4	S	3	4	6	1	6	2.0
Jan 26	5	4	2	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	S	1	0	0	0	0	5	0.9
Jan 27	0	0	2	3	1	1	1	1	1	1	1	1	0	0	0	1	1	1	S	2	2	1	1	1	0	3	1.0
Jan 28	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	1	1	0	0	0	0	0	1	0.1
Jan 29	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	S	6	4	3	3	4	4	2	0	6	1.4
Jan 30	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	S	2	2	2	1	1	2	2	3	0	3	0.8
Jan 31	3	3	3	4	4	5	6	7	9	6	5	4	3	3	S	3	3	3	3	5	5	5	5	5	3	9	4.4
Diurnal Maximum	18	22	26	28	30	31	32	32	31	26	20	13	13	14	12	15	18	17	15	17	20	24	23	18			
Diurnal Average	5.4	5.3	5.1	5.5	5.6	6.8	7.0	6.6	5.8	5.2	4.6	4.0	4.0	4.2	4.1	4.8	5.8	5.8	5.5	5.2	5.1	5.4	5.5	5.3			

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.



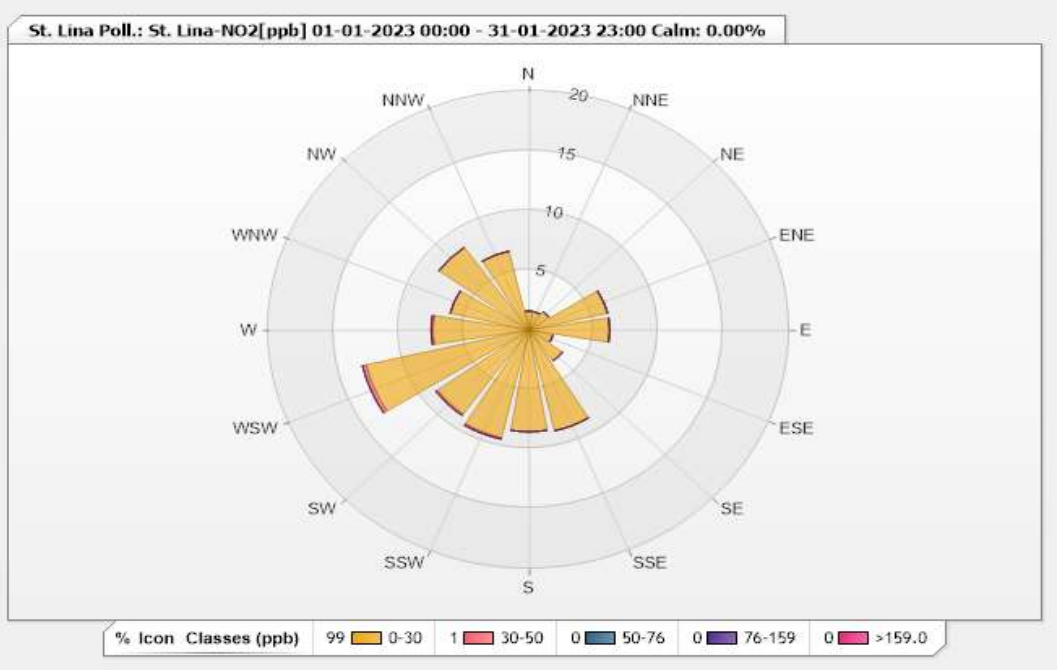


Station: St. Lina Poll.: St. Lina-NO2[ppb] Monthly: 01-2023

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

Calm: 0.00% Valid Data: 93.15% Calm Avg: 0.00 [ppm]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	1.59	0	0	0	0	1.59
NNE	1.59	0	0	0	0	1.59
NE	1.88	0	0	0	0	1.88
ENE	6.2	0	0	0	0	6.2
E	6.2	0	0	0	0	6.2
ESE	1.88	0	0	0	0	1.88
SE	3.17	0	0	0	0	3.17
SSE	8.66	0	0	0	0	8.66
S	8.51	0	0	0	0	8.51
SSW	9.24	0.14	0	0	0	9.38
SW	8.66	0.14	0	0	0	8.8
WSW	12.84	0.29	0	0	0	13.13
W	7.36	0.14	0	0	0	7.5
WNW	6.2	0	0	0	0	6.2
NW	8.51	0	0	0	0	8.51
NNW	6.78	0	0	0	0	6.78
Summary	99.27	0.71	0	0	0	100



Lakeland Industry & Community Association

St. Lina Site - January 2023

Summary of Hourly Averages

OZONE (O_3) in ppb

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

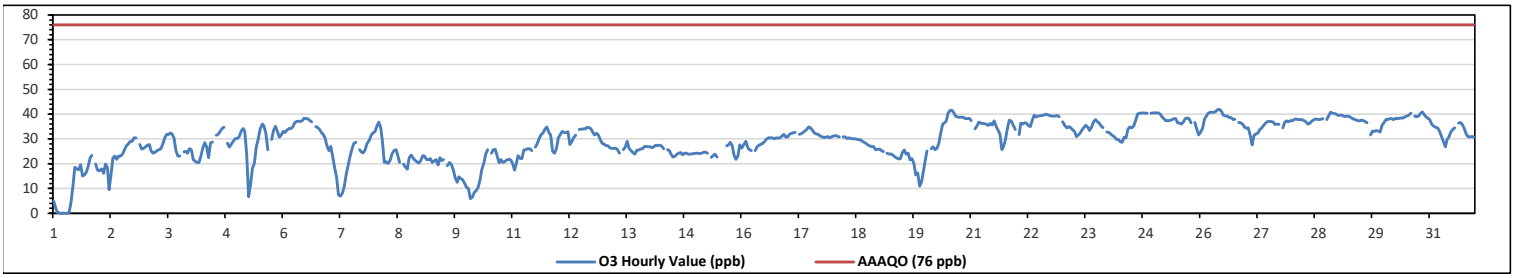
Number of 1-Hour Exceedances: 0

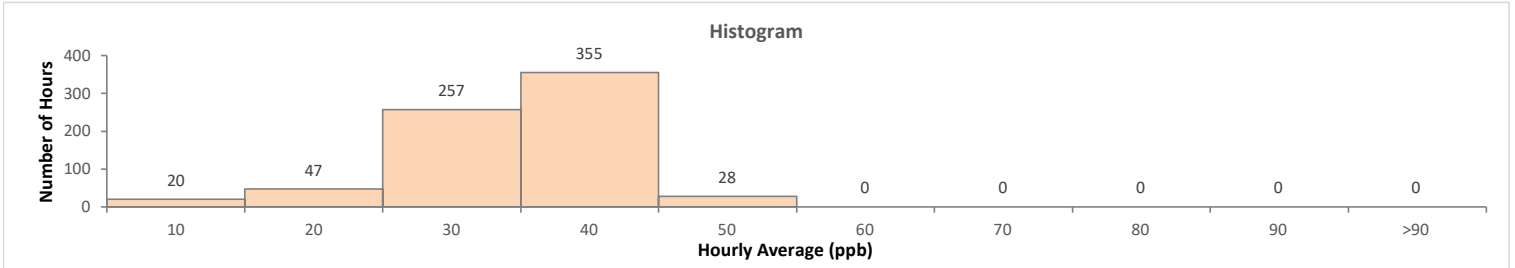
Maximum Hourly Value:	41.9	ppb	on January 26 at hour 10	Hours in Service:	744
Maximum Daily Value:	38.8	ppb	on January 30	Hours of Data:	707
Minimum Hourly Value:	0.0	ppb	on January 1 at hour 4	Hours of Missing Data:	1
Minimum Daily Value:	10.7	ppb	on January 1	Hours of Calibration:	36
Monthly Average:	29.5	ppb		Operational Uptime:	99.9

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Jan 1	4.9	2.2	0.2	0.1	0	0.1	0	0	0.3	4.3	10.9	18.5	18	17.5	19.6	15.1	15.5	16.6	19.1	22.5	23.3	S	19.9	17.4	**0.0**	23.3	**10.7**
Jan 2	17.1	18	16.2	19.9	18.4	9.5	15.5	22.3	23	21.8	23	23	23.9	25.5	27.2	28	29	29	30.5	30.4	S	27.7	25.9	26.2	9.5	30.5	23.1
Jan 3	26.8	27.5	27.7	25.3	24.2	24.7	25.2	25.6	26	28	30.4	31.8	31.7	32.4	31.9	30.3	25.2	23.1	23.1	S	24.8	25	24.3	26.1	23.1	32.4	27.0
Jan 4	25.7	21.7	21	20.6	20.6	23	26.4	28.5	26.7	22.4	28.4	28.8	K	31.4	31.8	33	34.2	34.7	S	28.3	26.7	27.8	29	30.2	20.6	34.7	27.3
Jan 5	30.2	31	33.2	34.1	33	23.8	6.7	11.5	18.2	20.3	26.7	29.9	33.9	35.9	35.3	32.3	25.7	S	29.8	33.4	35.1	33	30.7	31.6	6.7	35.9	28.5
Jan 6	33.1	32.6	33.4	34.1	34.2	34.9	36.5	37	37.2	37	37.5	38.3	38.1	38.2	37.5	36.9	S	35	34.6	33.7	32.5	31.8	30.3	27.2	27.2	38.3	34.9
Jan 7	25.3	27	22.7	18.4	14.5	7.4	7	8.1	10.8	15.7	19.2	22.9	25.9	28.2	28.6	S	25.6	24.7	24.4	25.5	28.1	29.3	31.4	32.5	7.0	32.5	21.9
Jan 8	32.9	35.2	36.7	34.4	29.2	20.6	20.7	20.2	21.2	23.9	25.2	25.6	22.9	20.5	S	19.8	18.7	17.8	22.4	23.5	22.3	21.4	20.7	20.3	17.8	36.7	24.2
Jan 9	21.3	23.2	23.1	21.6	21.7	22.1	20.6	21.1	21.7	19.5	22.5	21.3	21.6	S	19.2	20.5	19.6	17.4	14.2	12.5	14.6	14.1	13.6	12.1	12.1	23.2	19.1
Jan 10	10.4	10	5.9	6.4	8.3	9.2	10.3	13.3	17.8	20.2	23.8	25.6	S	24.3	25.6	25.8	22.9	20.4	21.6	20.6	20.9	21.5	21.8	21.5	5.9	25.8	17.7
Jan 11	20.1	17.4	20.3	23.2	22.2	22	25.5	25.6	26.1	26	25.2	S	26.7	28.1	30.2	31.7	32.4	33.9	34.8	32.8	31.4	25	24.3	26	17.4	34.8	26.6
Jan 12	30.4	31.7	33.1	32.7	32.5	32.9	27.7	28.9	30.6	31.4	S	33.8	33.9	34	34	34.7	34.6	34	32.6	31.5	32.3	31.5	29.7	28.3	27.7	34.7	32.0
Jan 13	27.9	27.3	27.1	26.3	26.2	26.2	26.3	25.7	24.3	S	25.6	26.7	29	26.2	25.2	24.5	23.9	25.4	25.5	25.9	26	27	27	26.9	23.9	29.0	26.2
Jan 14	26.8	26.5	26.9	27.4	27.3	27.4	27.2	26	S	25.7	25.3	23.8	22.7	22.9	23.7	24.3	24.5	23.6	24.2	24.2	23.9	23.9	24	24.1	22.7	27.4	25.1
Jan 15	24.2	24.3	24.1	24.3	24.7	24.7	24.3	S	22.6	23.2	23.9	22.7	C	C	C	C	27.1	27.6	28.7	27.5	23.4	21.8	23.1	27.6	21.8	28.7	24.7
Jan 16	26.3	27.8	29	26.4	25.6	25.3	S	25.3	26.8	27.5	27.9	28.2	29.1	30.1	30.4	30.5	30.4	30.1	30.4	30.3	30.5	31.2	31.8	30.7	25.3	31.8	28.8
Jan 17	30.9	31.8	32.3	32.5	32.6	S	31.8	32.1	32.7	33.3	33.9	34.8	34.4	33.5	32.4	32	31.8	31.2	30.8	30.6	30.7	31	30.4	30.9	30.4	34.8	32.1
Jan 18	31.2	31.3	31.1	30.8	S	30.8	30.8	30.2	30.4	30.2	30.1	30	29.9	29.6	29.7	29	28.6	28.1	27.6	27.1	26.9	27	25.7	25.8	25.7	31.3	29.2
Jan 19	25.9	25.3	24.9	S	24.2	23.9	24	23.5	22.8	22.3	21.9	22	24.5	25.5	23.9	24.3	21.5	22.1	20.2	15.5	16.3	11	12.6	17.1	11.0	25.9	21.5
Jan 20	21.6	25.1	S	26	26.9	25.7	26.2	28.3	32.5	35.9	36.3	37.2	40.3	41.5	41.5	40.5	39.1	38.8	38.7	38.8	38.7	38.2	38.2	38.3	21.6	41.5	34.5
Jan 21	37.4	S	34	35.2	36.7	36.3	36.2	36.1	35.8	35.5	36.2	35.6	37.3	35.1	33.5	31.8	25.7	26.8	29.7	34	37.6	37.2	35.4	33.8	25.7	37.6	34.5
Jan 22	S	31.7	36.4	35.9	36.5	36.4	35.4	35	37.6	39.6	38.8	39.2	39.4	39.5	39.7	39.9	39.8	39.5	39.3	39.3	39.3	39.5	39	S	31.7	39.9	38.0
Jan 23	36.9	35.4	34.5	35	34.6	33.6	33	31	31.5	32.2	33.5	34.6	35.5	34.9	33.4	35	37	37.8	37.1	36.4	35.2	34.6	S	32.8	31.0	37.8	34.6
Jan 24	32.6	32	31.3	30.9	29.8	29.8	28.9	28.6	30.7	30.5	33.9	34.8	34.5	35.2	37.5	40	40.4	40.4	40.5	40.3	40.3	S	40.4	40.5	28.6	40.5	34.9
Jan 25	40.5	40.5	40.5	40	38.8	38	37.3	37.4	37.4	37.7	38.2	38.2	36.5	36.3	36	36.7	38.1	38.4	38.1	36.5	S	36.6	33.9	31.5	31.5	40.5	37.5
Jan 26	32.8	34.2	37.9	39.3	40.3	40.7	40.8	40.7	41	41.8	**41.9**	41.2	39.7	39.2	39.3	38.6	38.6	37.8	37.9	S	36.6	36.5	36	34.8	32.8	**41.9**	38.6
Jan 27	34.3	34.4	31	27.6	31.4	31.9	32.4	33.8	34.5	35.5	36.4	37	37.1	37	36.7	35.8	36	35.8	S	34.5	36.7	37.3	36.9	37.5	27.6	37.5	34.8
Jan 28	37.3	37.7	38	37.8	37.7	37.8	37.5	36.9	36	36.2	37	37.6	38	37.9	37.7	37.9	38.1	S	37.8	39.3	40.7	40.4	40.2	40	36.0	40.7	38.1
Jan 29	39.5	39.7	39.6	39.1	39.1	39.3	39	38.4	38	37.7	37.5	37.3	37.6	37.4	37	36.5	S	31.6	33.2	33.1	33.4	33.2	32.8	35.5	31.6	39.7	36.8
Jan 30	36.8	37.9	37.7	38.2	38.2	37.8	38.3	38.2	38.3	38.4	38.4	39	39.2	39.6	40.4	S	39.3	38.9	39.2	40.2	40.9	39.8	38.8	38.3	36.8	40.9	**38.8**
Jan 31	37.7	36	35.3	34.7	34.5	33.1	31	28.9	26.8	29.6	30.9	32.8	33.8	34.5	S	36.4	36.6	35.8	34.2	31.9	30.8	30.9	31	30.7	26.8	37.7	33.0
Diurnal Maximum	40.5	40.5	40.5	40.0	40.3	40.7	40.8	40.7	41.0	41.8	41.9	41.2	40.3	41.5	41.5	40.5	40.4	40.4	40.5	40.3	40.9	40.4	40.4	40.5			
Diurnal Average	28.6	28.5	28.8	28.6	28.1	27.0	26.8	27.3	28.0	28.8	30.0	31.1	32.0	32.1	32.1	31.5	30.3	30.2	30.4	30.3	30.3	29.8	29.3	29.2			

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.



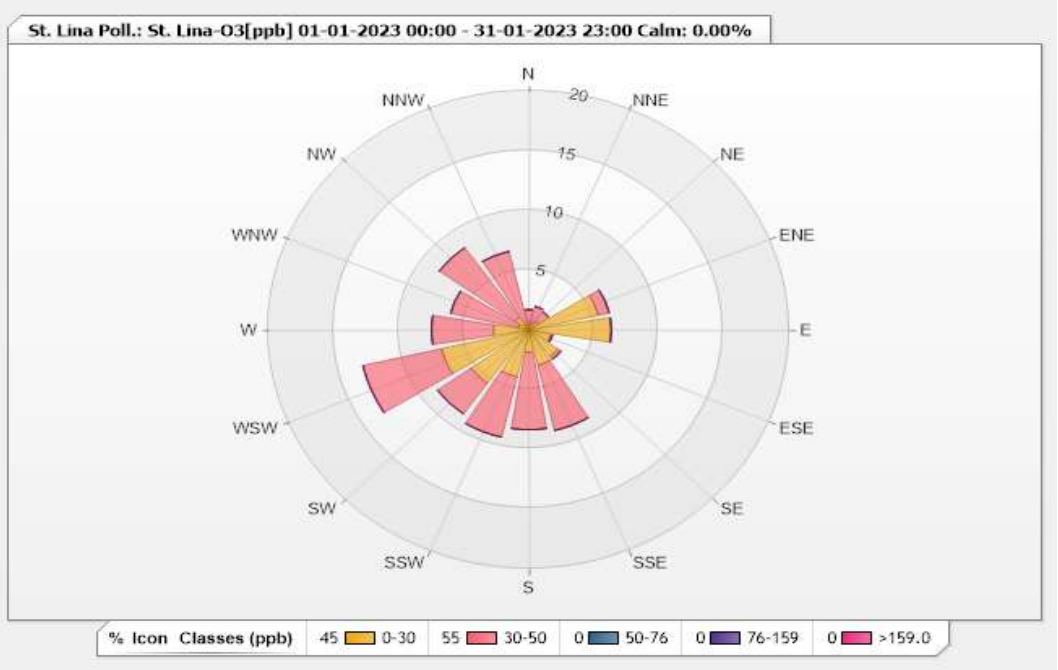


Station: St. Lina Poll.: St. Lina-O3[ppb] Monthly: 01-2023

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

Calm: 0.00% Valid Data: 93.41% Calm Avg: 0.00 [ppm]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	0.43	1.29	0	0	0	1.72
NNE	0.58	1.44	0	0	0	2.02
NE	0.86	1.01	0	0	0	1.87
ENE	5.47	0.86	0	0	0	6.33
E	6.33	0	0	0	0	6.33
ESE	1.73	0.14	0	0	0	1.87
SE	2.73	0.29	0	0	0	3.02
SSE	3.02	5.61	0	0	0	8.63
S	1.87	6.47	0	0	0	8.34
SSW	4.03	5.18	0	0	0	9.21
SW	5.47	3.17	0	0	0	8.64
WSW	6.91	6.19	0	0	0	13.1
W	2.73	4.75	0	0	0	7.48
WNW	0.86	5.32	0	0	0	6.18
NW	1.29	7.19	0	0	0	8.48
NNW	0.43	6.33	0	0	0	6.76
Summary	44.74	55.24	0	0	0	100



Lakeland Industry & Community Association

St. Lina Site - January 2023

Summary of Hourly Averages

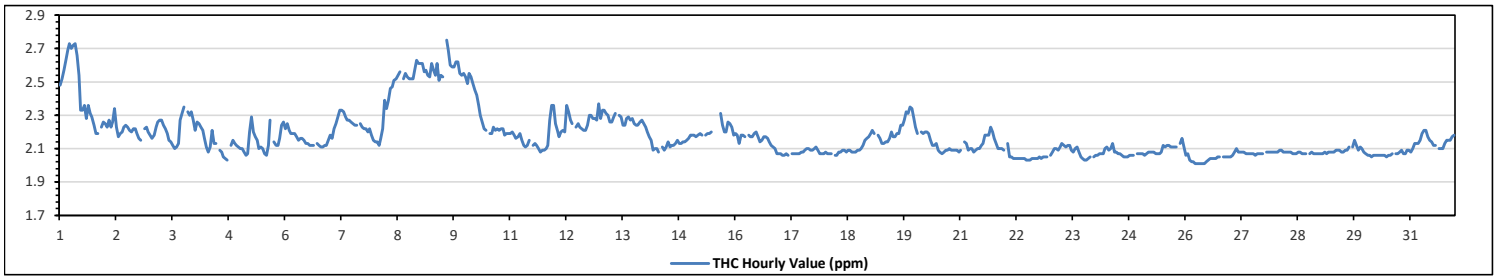
TOTAL HYDROCARBONS (THC) in ppm

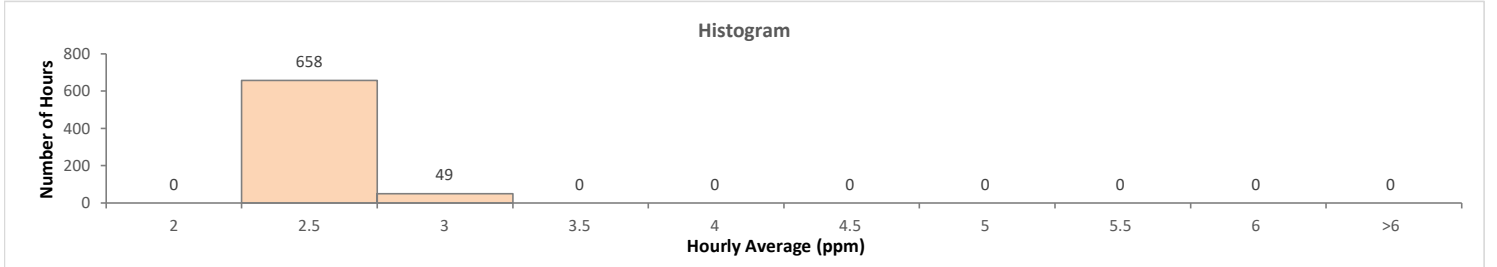
Maximum Hourly Value:	2.75	ppm	on January 9 at hour 14	Hours in Service:	744
Maximum Daily Value:	2.58	ppm	on January 9	Hours of Data:	707
Minimum Hourly Value:	2.01	ppm	on January 26 at hour 5	Hours of Missing Data:	1
Minimum Daily Value:	2.03	ppm	on January 26	Hours of Calibration:	36
Monthly Average:	2.18	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			
Jan 1	2.48	2.52	2.57	2.63	2.69	2.73	2.70	2.72	2.73	2.66	2.54	2.33	2.33	2.36	2.28	2.36	2.31	2.29	2.24	2.19	2.19	S	2.23	2.26	2.19	2.73	2.45
Jan 2	2.25	2.23	2.27	2.23	2.26	2.34	2.23	2.17	2.19	2.20	2.23	2.24	2.23	2.21	2.20	2.22	2.22	2.19	2.16	2.15	S	2.22	2.23	2.20	2.15	2.34	2.22
Jan 3	2.18	2.16	2.18	2.23	2.26	2.27	2.27	2.24	2.22	2.19	2.15	2.14	2.12	2.10	2.11	2.13	2.27	2.31	2.35	S	2.32	2.30	2.32	2.27	2.10	2.35	2.22
Jan 4	2.21	2.26	2.25	2.23	2.21	2.16	2.11	2.08	2.11	2.21	2.13	2.13	K	2.09	2.08	2.05	2.04	2.03	S	2.12	2.15	2.13	2.12	2.11	2.03	2.26	2.14
Jan 5	2.10	2.10	2.08	2.06	2.07	2.20	2.29	2.20	2.17	2.15	2.10	2.11	2.10	2.07	2.06	2.12	2.27	S	2.14	2.12	2.12	2.16	2.24	2.26	2.06	2.29	2.14
Jan 6	2.22	2.25	2.21	2.19	2.19	2.19	2.17	2.15	2.16	2.16	2.15	2.13	2.13	2.12	2.12	2.12	S	2.13	2.12	2.11	2.11	2.12	2.12	2.15	2.11	2.25	2.15
Jan 7	2.18	2.16	2.22	2.25	2.29	2.33	2.33	2.32	2.29	2.27	2.27	2.26	2.25	2.24	2.24	S	2.25	2.23	2.22	2.22	2.20	2.22	2.18	2.15	2.15	2.33	2.24
Jan 8	2.14	2.14	2.12	2.16	2.22	2.39	2.34	2.39	2.46	2.47	2.51	2.52	2.54	2.56	S	2.52	2.55	2.53	2.52	2.52	2.52	2.57	2.63	2.61	2.12	2.63	2.43
Jan 9	2.61	2.61	2.56	2.57	2.54	2.53	2.61	2.57	2.54	2.61	2.51	2.54	2.53	S	**2.75**	2.69	2.60	2.59	2.59	2.62	2.62	2.55	2.54	2.55	2.51	**2.75**	**2.58**
Jan 10	2.53	2.49	2.55	2.53	2.49	2.45	2.42	2.36	2.30	2.26	2.22	2.21	S	2.19	2.19	2.23	2.21	2.22	2.21	2.22	2.22	2.18	2.19	2.19	2.18	2.55	2.31
Jan 11	2.19	2.20	2.18	2.16	2.17	2.19	2.15	2.12	2.11	2.12	2.15	S	2.12	2.13	2.12	2.10	2.08	2.09	2.09	2.10	2.12	2.27	2.36	2.36	2.08	2.36	2.16
Jan 12	2.25	2.21	2.17	2.20	2.21	2.20	2.36	2.32	2.27	2.25	S	2.23	2.25	2.23	2.22	2.21	2.21	2.24	2.30	2.30	2.28	2.28	2.27	2.37	2.17	2.37	2.25
Jan 13	2.28	2.33	2.33	2.31	2.30	2.26	2.26	2.29	2.31	S	2.30	2.29	2.24	2.24	2.28	2.29	2.27	2.28	2.25	2.24	2.24	2.26	2.27	2.25	2.24	2.33	2.28
Jan 14	2.23	2.20	2.17	2.15	2.09	2.10	2.10	2.08	S	2.11	2.09	2.11	2.14	2.11	2.12	2.12	2.13	2.15	2.13	2.13	2.14	2.14	2.15	2.16	2.08	2.23	2.13
Jan 15	2.18	2.18	2.18	2.17	2.18	2.19	2.18	S	2.18	2.19	2.19	2.20	C	C	C	C	2.31	2.24	2.20	2.20	2.26	2.25	2.23	2.18	2.17	2.31	2.20
Jan 16	2.19	2.18	2.13	2.18	2.18	2.17	S	2.18	2.17	2.17	2.19	2.20	2.17	2.14	2.15	2.17	2.17	2.16	2.14	2.12	2.11	2.10	2.07	2.07	2.07	2.20	2.15
Jan 17	2.07	2.06	2.06	2.07	2.06	S	2.07	2.07	2.07	2.07	2.07	2.08	2.08	2.09	2.10	2.10	2.09	2.09	2.10	2.11	2.09	2.07	2.07	2.07	2.06	2.11	2.08
Jan 18	2.08	2.07	2.07	2.07	S	2.06	2.06	2.08	2.08	2.09	2.09	2.08	2.09	2.09	2.08	2.08	2.08	2.09	2.09	2.10	2.12	2.15	2.16	2.17	2.06	2.17	2.09
Jan 19	2.19	2.21	2.19	S	2.18	2.16	2.13	2.13	2.14	2.14	2.16	2.20	2.17	2.17	2.19	2.19	2.24	2.24	2.27	2.32	2.31	2.35	2.34	2.28	2.13	2.35	2.21
Jan 20	2.23	2.19	S	2.20	2.19	2.20	2.20	2.19	2.15	2.12	2.12	2.13	2.09	2.08	2.07	2.08	2.09	2.09	2.10	2.09	2.09	2.09	2.09	2.08	2.07	2.23	2.13
Jan 21	2.09	S	2.14	2.13	2.09	2.10	2.10	2.08	2.09	2.10	2.10	2.12	2.13	2.18	2.18	2.18	2.23	2.20	2.16	2.13	2.10	2.10	2.10	2.09	2.08	2.23	2.13
Jan 22	S	2.13	2.05	2.05	2.04	2.04	2.04	2.04	2.04	2.04	2.04	2.03	2.03	2.03	2.04	2.04	2.04	2.04	2.05	2.04	2.05	2.05	2.05	S	2.03	2.13	2.05
Jan 23	2.06	2.08	2.10	2.10	2.09	2.11	2.13	2.12	2.11	2.12	2.12	2.09	2.08	2.10	2.11	2.08	2.05	2.04	2.03	2.03	2.04	2.05	S	2.05	2.03	2.13	2.08
Jan 24	2.06	2.06	2.07	2.07	2.07	2.10	2.11	2.09	2.10	2.13	2.08	2.08	2.07	2.07	2.06	2.05	2.05	2.05	2.06	2.06	2.06	S	2.07	2.07	2.05	2.13	2.07
Jan 25	2.07	2.07	2.06	2.07	2.08	2.08	2.08	2.08	2.07	2.07	2.07	2.08	2.12	2.11	2.12	2.12	2.11	2.11	2.11	2.11	S	2.13	2.16	2.11	2.06	2.16	2.10
Jan 26	2.06	2.07	2.03	2.02	2.02	2.01	2.01	2.01	2.01	2.01	2.01	2.02	2.03	2.04	2.04	2.04	2.04	2.05	2.05	S	2.05	2.05	2.05	2.05	2.01	2.07	2.03
Jan 27	2.05	2.06	2.08	2.10	2.08	2.08	2.08	2.08	2.07	2.07	2.07	2.07	2.07	2.06	2.07	2.07	2.07	2.07	S	2.08	2.08	2.08	2.08	2.08	2.05	2.10	2.07
Jan 28	2.08	2.08	2.09	2.09	2.08	2.08	2.08	2.08	2.08	2.07	2.07	2.07	2.08	2.08	2.07	2.07	2.07	S	2.07	2.08	2.07	2.07	2.07	2.07	2.07	2.09	2.08
Jan 29	2.07	2.07	2.08	2.07	2.08	2.08	2.08	2.08	2.09	2.09	2.09	2.08	2.08	2.09	2.09	2.11	S	2.11	2.15	2.12	2.09	2.11	2.10	2.08	2.07	2.15	2.09
Jan 30	2.07	2.06	2.06	2.05	2.06	2.06	2.06	2.06	2.06	2.06	2.06	2.05	2.06	2.06	2.07	S	2.07	2.07	2.08	2.09	2.07	2.07	2.09	2.09	2.05	2.09	2.07
Jan 31	2.08	2.10	2.13	2.13	2.13	2.15	2.19	2.21	2.21	2.17	2.15	2.14	2.12	2.12	S	2.10	2.10	2.10	2.13	2.15	2.15	2.15	2.17	2.18	2.08	2.21	2.14
Diurnal Maximum	2.61	2.61	2.57	2.63	2.69	2.73	2.70	2.72	2.73	2.66	2.54	2.54	2.54	2.56	2.75	2.69	2.60	2.59	2.59	2.62	2.62	2.57	2.63	2.61			
Diurnal Average	2.18	2.18	2.18	2.18	2.19	2.20	2.20	2.19	2.19	2.18	2.17	2.17	2.16	2.14	2.15	2.17	2.18	2.17	2.18	2.17	2.17	2.18	2.19	2.19			

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.



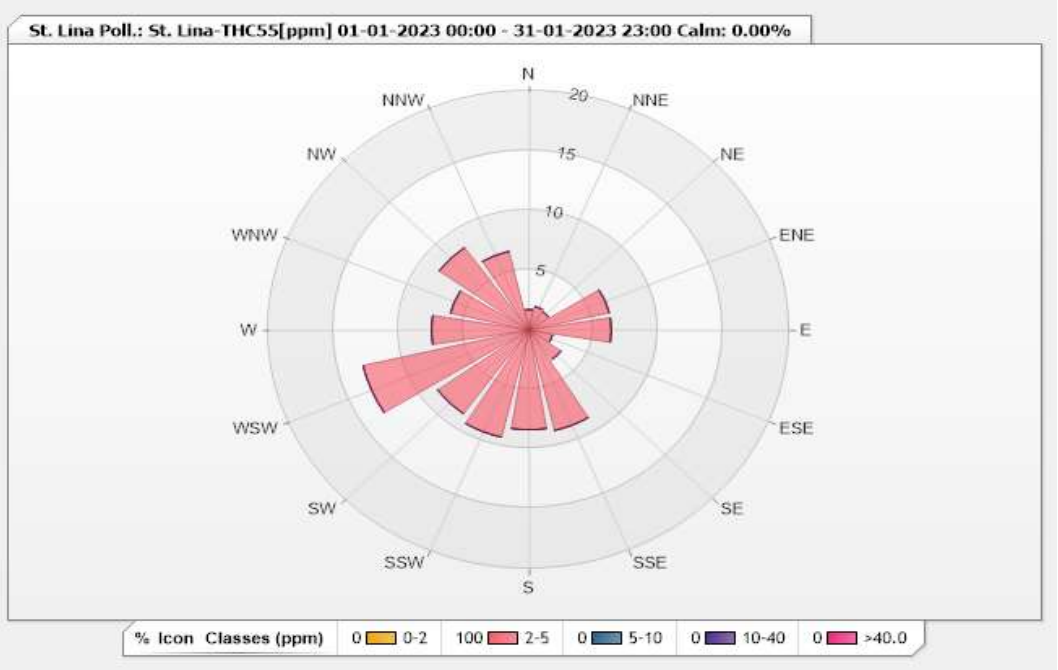


Station: St. Lina Poll.: St. Lina-THC55[ppm] Monthly: 01-2023

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

Calm: 0.00% Valid Data: 93.41% Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-40	>40.0	Total
N	0	1.73	0	0	0	1.73
NNE	0	2.01	0	0	0	2.01
NE	0	1.87	0	0	0	1.87
ENE	0	6.33	0	0	0	6.33
E	0	6.33	0	0	0	6.33
ESE	0	1.87	0	0	0	1.87
SE	0	3.02	0	0	0	3.02
SSE	0	8.63	0	0	0	8.63
S	0	8.35	0	0	0	8.35
SSW	0	9.21	0	0	0	9.21
SW	0	8.63	0	0	0	8.63
WSW	0	13.09	0	0	0	13.09
W	0	7.48	0	0	0	7.48
WNW	0	6.19	0	0	0	6.19
NW	0	8.49	0	0	0	8.49
NNW	0	6.76	0	0	0	6.76
Summary	0	100	0	0	0	100



Lakeland Industry & Community Association

St. Lina Site - January 2023

Summary of Hourly Averages

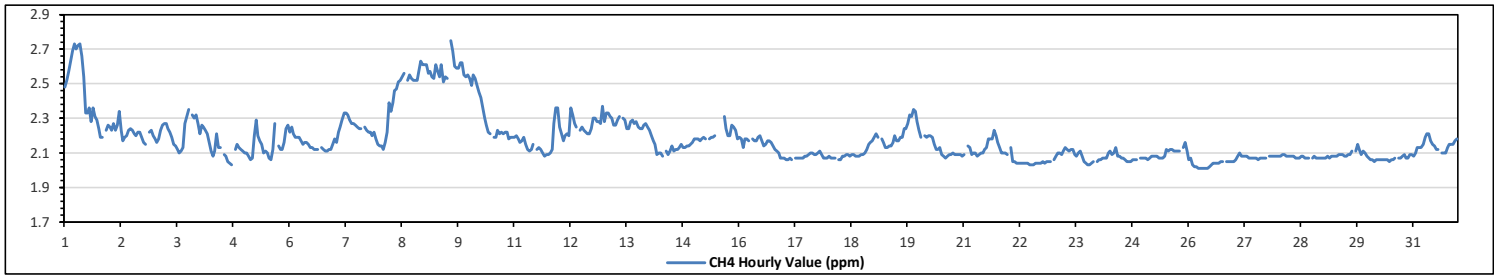
METHANE (CH4) in ppm

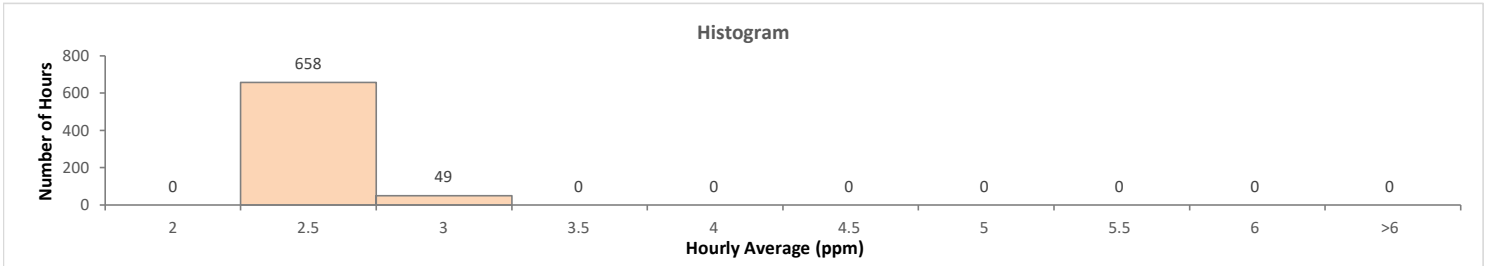
Maximum Hourly Value:	2.75	ppm	on January 9 at hour 14	Hours in Service:	744	
Maximum Daily Value:	2.58	ppm	on January 9	Hours of Data:	707	
Minimum Hourly Value:	2.01	ppm	on January 26 at hour 5	Hours of Missing Data:	1	
Minimum Daily Value:	2.03	ppm	on January 26	Hours of Calibration:	36	
Monthly Average:	2.18	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			
Jan 1	2.48	2.52	2.57	2.63	2.69	2.73	2.70	2.72	2.73	2.66	2.54	2.33	2.33	2.36	2.28	2.36	2.31	2.29	2.24	2.19	2.19	S	2.23	2.26	2.19	2.73	2.45
Jan 2	2.25	2.23	2.27	2.23	2.26	2.34	2.23	2.17	2.19	2.20	2.23	2.24	2.23	2.21	2.20	2.22	2.22	2.19	2.16	2.15	S	2.22	2.23	2.20	2.15	2.34	2.22
Jan 3	2.18	2.16	2.18	2.23	2.26	2.27	2.27	2.24	2.22	2.19	2.15	2.14	2.12	2.10	2.11	2.13	2.27	2.31	2.35	S	2.32	2.30	2.32	2.27	2.10	2.35	2.22
Jan 4	2.21	2.26	2.25	2.23	2.21	2.16	2.11	2.08	2.11	2.21	2.13	2.13	K	2.09	2.08	2.05	2.04	2.03	S	2.12	2.15	2.13	2.12	2.11	2.03	2.26	2.14
Jan 5	2.10	2.10	2.08	2.06	2.07	2.20	2.29	2.20	2.17	2.15	2.10	2.11	2.10	2.07	2.06	2.12	2.27	S	2.14	2.12	2.12	2.16	2.24	2.26	2.06	2.29	2.14
Jan 6	2.22	2.25	2.21	2.19	2.19	2.19	2.17	2.15	2.16	2.16	2.15	2.13	2.13	2.12	2.12	2.12	S	2.13	2.12	2.11	2.11	2.12	2.12	2.15	2.11	2.25	2.15
Jan 7	2.18	2.16	2.22	2.25	2.29	2.33	2.33	2.32	2.29	2.27	2.27	2.26	2.25	2.24	2.24	S	2.25	2.23	2.22	2.22	2.20	2.22	2.18	2.15	2.15	2.33	2.24
Jan 8	2.14	2.14	2.12	2.16	2.22	2.39	2.34	2.39	2.46	2.47	2.51	2.52	2.54	2.56	S	2.52	2.55	2.53	2.52	2.52	2.52	2.57	2.63	2.61	2.12	2.63	2.43
Jan 9	2.61	2.61	2.56	2.57	2.54	2.53	2.61	2.57	2.54	2.61	2.51	2.54	2.53	S	**2.75**	2.69	2.60	2.59	2.59	2.62	2.62	2.55	2.54	2.55	2.51	**2.75**	**2.58**
Jan 10	2.53	2.49	2.55	2.53	2.49	2.45	2.42	2.36	2.30	2.26	2.22	2.21	S	2.19	2.19	2.23	2.21	2.22	2.21	2.22	2.22	2.18	2.19	2.19	2.18	2.55	2.31
Jan 11	2.19	2.20	2.18	2.16	2.17	2.19	2.15	2.12	2.11	2.12	2.15	S	2.12	2.13	2.12	2.10	2.08	2.09	2.09	2.10	2.12	2.27	2.36	2.36	2.08	2.36	2.16
Jan 12	2.25	2.21	2.17	2.20	2.21	2.20	2.36	2.32	2.27	2.25	S	2.23	2.25	2.23	2.22	2.21	2.21	2.24	2.30	2.30	2.28	2.28	2.27	2.37	2.17	2.37	2.25
Jan 13	2.28	2.33	2.33	2.31	2.30	2.26	2.26	2.29	2.31	S	2.30	2.29	2.24	2.24	2.28	2.29	2.27	2.28	2.25	2.24	2.24	2.26	2.27	2.25	2.24	2.33	2.28
Jan 14	2.23	2.20	2.17	2.15	2.09	2.10	2.10	2.08	S	2.11	2.09	2.11	2.14	2.11	2.12	2.12	2.13	2.15	2.13	2.13	2.14	2.14	2.15	2.16	2.08	2.23	2.13
Jan 15	2.18	2.18	2.18	2.17	2.18	2.19	2.18	S	2.18	2.19	2.19	2.20	C	C	C	C	2.31	2.24	2.20	2.20	2.26	2.25	2.23	2.18	2.17	2.31	2.20
Jan 16	2.19	2.18	2.13	2.18	2.18	2.17	S	2.18	2.17	2.17	2.19	2.20	2.17	2.14	2.15	2.17	2.17	2.16	2.14	2.12	2.11	2.10	2.07	2.07	2.07	2.20	2.15
Jan 17	2.07	2.06	2.06	2.07	2.06	S	2.07	2.07	2.07	2.07	2.07	2.08	2.08	2.09	2.10	2.10	2.09	2.09	2.10	2.11	2.09	2.07	2.07	2.07	2.06	2.11	2.08
Jan 18	2.08	2.07	2.07	2.07	S	2.06	2.06	2.08	2.08	2.09	2.09	2.08	2.09	2.09	2.08	2.08	2.08	2.09	2.09	2.10	2.12	2.15	2.16	2.17	2.06	2.17	2.09
Jan 19	2.19	2.21	2.19	S	2.18	2.16	2.13	2.13	2.14	2.14	2.16	2.20	2.17	2.17	2.19	2.19	2.24	2.24	2.27	2.32	2.31	2.35	2.34	2.28	2.13	2.35	2.21
Jan 20	2.23	2.19	S	2.20	2.19	2.20	2.20	2.19	2.15	2.12	2.12	2.13	2.09	2.08	2.07	2.08	2.09	2.09	2.10	2.09	2.09	2.09	2.09	2.08	2.07	2.23	2.13
Jan 21	2.09	S	2.14	2.13	2.09	2.10	2.10	2.08	2.09	2.10	2.10	2.12	2.13	2.18	2.18	2.18	2.23	2.20	2.16	2.13	2.10	2.10	2.10	2.09	2.08	2.23	2.13
Jan 22	S	2.13	2.05	2.05	2.04	2.04	2.04	2.04	2.04	2.04	2.04	2.03	2.03	2.03	2.04	2.04	2.04	2.04	2.05	2.04	2.05	2.05	2.05	S	2.03	2.13	2.05
Jan 23	2.06	2.08	2.10	2.10	2.09	2.11	2.13	2.12	2.11	2.12	2.12	2.09	2.08	2.10	2.11	2.08	2.05	2.04	2.03	2.03	2.04	2.05	S	2.05	2.03	2.13	2.08
Jan 24	2.06	2.06	2.07	2.07	2.07	2.10	2.11	2.09	2.10	2.13	2.08	2.08	2.07	2.07	2.06	2.05	2.05	2.05	2.06	2.06	2.06	S	2.07	2.07	2.05	2.13	2.07
Jan 25	2.07	2.07	2.06	2.07	2.08	2.08	2.08	2.08	2.07	2.07	2.07	2.08	2.12	2.11	2.12	2.12	2.11	2.11	2.11	2.11	S	2.13	2.16	2.11	2.06	2.16	2.10
Jan 26	2.06	2.07	2.03	2.02	2.02	2.01	2.01	2.01	2.01	2.01	2.01	2.02	2.03	2.04	2.04	2.04	2.04	2.05	2.05	S	2.05	2.05	2.05	2.05	2.01	2.07	2.03
Jan 27	2.05	2.06	2.08	2.10	2.08	2.08	2.08	2.08	2.07	2.07	2.07	2.07	2.07	2.06	2.07	2.07	2.07	2.07	S	2.08	2.08	2.08	2.08	2.08	2.05	2.10	2.07
Jan 28	2.08	2.08	2.09	2.09	2.08	2.08	2.08	2.08	2.08	2.07	2.07	2.07	2.08	2.08	2.07	2.07	2.07	S	2.07	2.08	2.07	2.07	2.07	2.07	2.07	2.09	2.08
Jan 29	2.07	2.07	2.08	2.07	2.08	2.08	2.08	2.08	2.09	2.09	2.09	2.08	2.08	2.09	2.09	2.11	S	2.11	2.15	2.12	2.09	2.11	2.10	2.08	2.07	2.15	2.09
Jan 30	2.07	2.06	2.06	2.05	2.06	2.06	2.06	2.06	2.06	2.06	2.06	2.05	2.06	2.06	2.07	S	2.07	2.07	2.08	2.09	2.07	2.07	2.09	2.09	2.05	2.09	2.07
Jan 31	2.08	2.10	2.13	2.13	2.13	2.15	2.19	2.21	2.21	2.17	2.15	2.14	2.12	2.12	S	2.10	2.10	2.10	2.13	2.15	2.15	2.15	2.17	2.18	2.08	2.21	2.14
Diurnal Maximum	2.61	2.61	2.57	2.63	2.69	2.73	2.70	2.72	2.73	2.66	2.54	2.54	2.54	2.56	2.75	2.69	2.60	2.59	2.59	2.62	2.62	2.57	2.63	2.61			
Diurnal Average	2.18	2.18	2.18	2.18	2.19	2.20	2.20	2.19	2.19	2.18	2.17	2.17	2.16	2.14	2.15	2.17	2.18	2.17	2.18	2.17	2.17	2.18	2.19	2.19			

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.



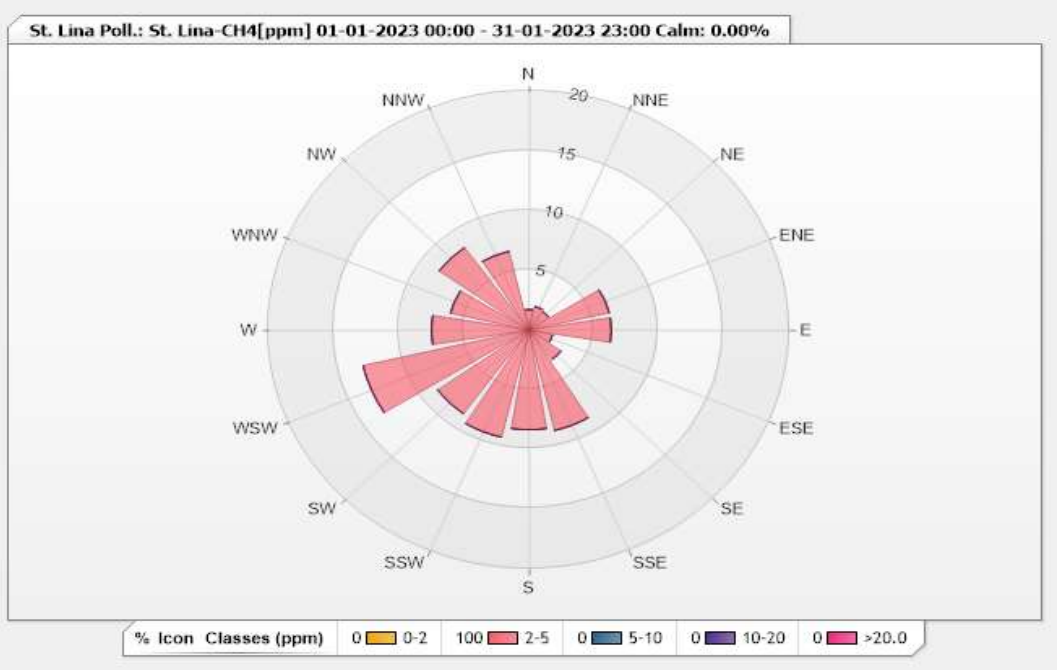


Station: St. Lina Poll.: St. Lina-CH4[ppm] Monthly: 01-2023

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

Calm: 0.00% Valid Data: 93.41% Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-20	>20.0	Total
N	0	1.73	0	0	0	1.73
NNE	0	2.01	0	0	0	2.01
NE	0	1.87	0	0	0	1.87
ENE	0	6.33	0	0	0	6.33
E	0	6.33	0	0	0	6.33
ESE	0	1.87	0	0	0	1.87
SE	0	3.02	0	0	0	3.02
SSE	0	8.63	0	0	0	8.63
S	0	8.35	0	0	0	8.35
SSW	0	9.21	0	0	0	9.21
SW	0	8.63	0	0	0	8.63
WSW	0	13.09	0	0	0	13.09
W	0	7.48	0	0	0	7.48
WNW	0	6.19	0	0	0	6.19
NW	0	8.49	0	0	0	8.49
NNW	0	6.76	0	0	0	6.76
Summary	0	100	0	0	0	100



Lakeland Industry & Community Association

St. Lina Site - January 2023

Summary of Hourly Averages

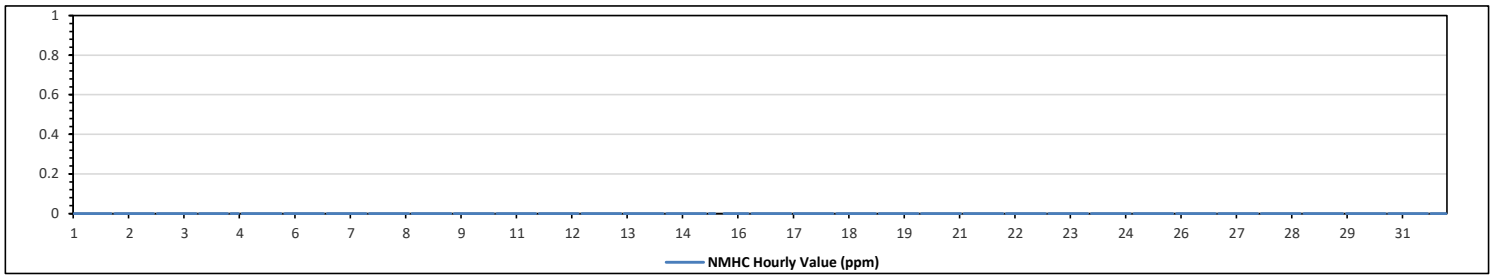
NON-METHANE HYDROCARBONS (NMHC) in ppm

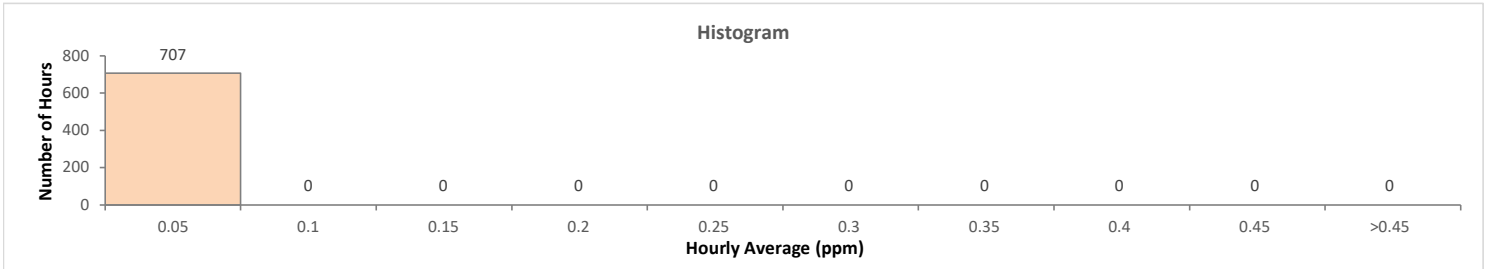
Maximum Hourly Value:	0.00	ppm	on January 1 at hour 0	Hours in Service:	744
Maximum Daily Value:	0.00	ppm	on January 1	Hours of Data:	707
Minimum Hourly Value:	0.00	ppm	on January 1 at hour 0	Hours of Missing Data:	1
Minimum Daily Value:	0.00	ppm	on January 1	Hours of Calibration:	36
Monthly Average:	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			
Jan 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00
Jan 2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00
Jan 3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jan 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	K	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
Jan 5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jan 6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jan 7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jan 8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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
Jan 9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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
Jan 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	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
Jan 11	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
Jan 12	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
Jan 13	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
Jan 14	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
Jan 15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	C	C	C	C	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jan 16	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
Jan 17	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
Jan 18	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
Jan 19	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
Jan 20	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
Jan 21	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
Jan 22	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
Jan 23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00
Jan 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	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00
Jan 25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00
Jan 26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jan 27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jan 28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jan 29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jan 30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jan 31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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
Diurnal Maximum	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
Diurnal Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			

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.



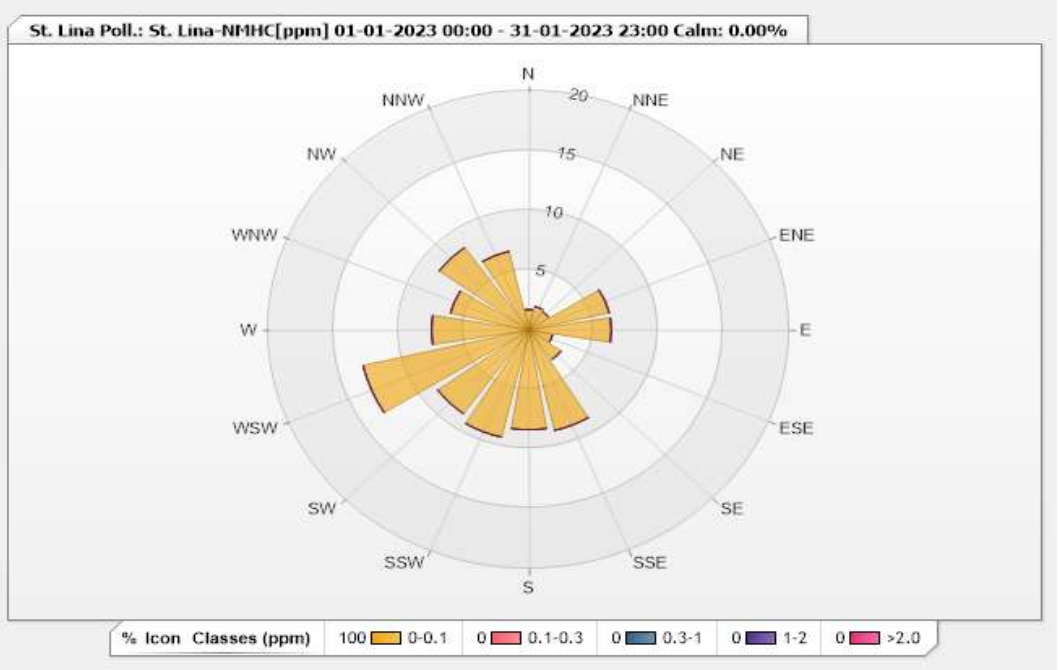


Station: St. Lina Poll.: St. Lina-NMHC[ppm] Monthly: 01-2023

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

Calm: 0.00% Valid Data: 93.41% Calm Avg: 0.00 [ppm]

Direction	0-0.1	0.1-0.3	0.3-1	1-2	>2.0	Total
N	1.73	0	0	0	0	1.73
NNE	2.01	0	0	0	0	2.01
NE	1.87	0	0	0	0	1.87
ENE	6.33	0	0	0	0	6.33
E	6.33	0	0	0	0	6.33
ESE	1.87	0	0	0	0	1.87
SE	3.02	0	0	0	0	3.02
SSE	8.63	0	0	0	0	8.63
S	8.35	0	0	0	0	8.35
SSW	9.21	0	0	0	0	9.21
SW	8.63	0	0	0	0	8.63
WSW	13.09	0	0	0	0	13.09
W	7.48	0	0	0	0	7.48
WNW	6.19	0	0	0	0	6.19
NW	8.49	0	0	0	0	8.49
NNW	6.76	0	0	0	0	6.76
Summary	100	0	0	0	0	100



Lakeland Industry & Community Association

St. Lina Site - January 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

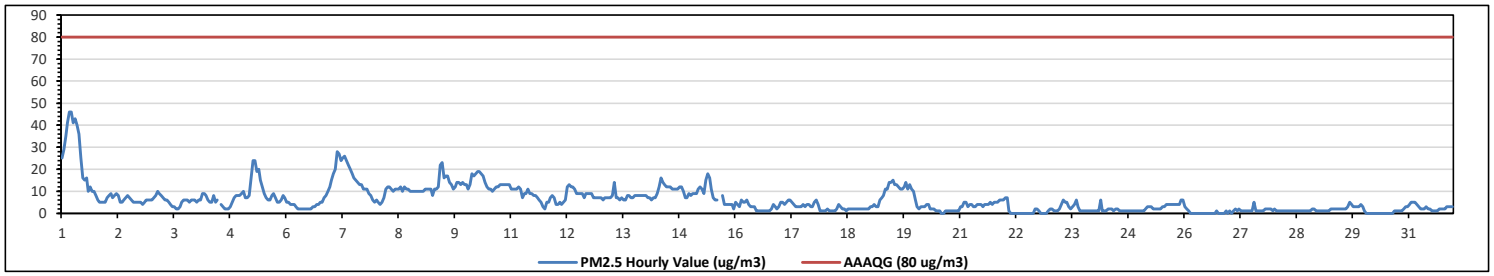
Number of 1-Hour Exceedances: 0 Number of 24-Hour Exceedances: 0

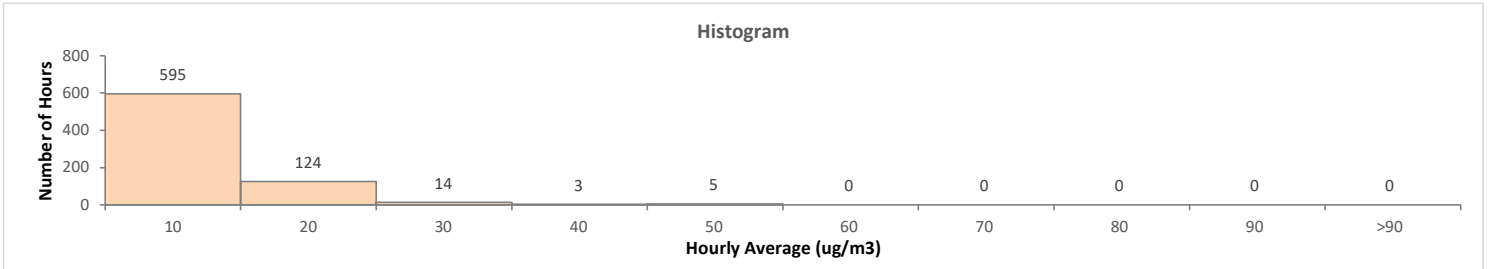
Maximum Hourly Value:	46	µg/m^3	on January 1 at hour 4	Hours in Service:	744
Maximum Daily Value:	22.1	µg/m^3	on January 1	Hours of Data:	741
Minimum Hourly Value:	0	µg/m^3	on January 20 at hour 14	Hours of Missing Data:	1
Minimum Daily Value:	0	µg/m^3	on January 26	Hours of Calibration:	2
Monthly Average:	6.1	µg/m^3		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			
Jan 1	25	29	35	41	**46**	**46**	41	43	40	36	25	16	15	16	10	12	10	10	8	6	5	5	5	5	5	**46**	**22.1**
Jan 2	7	8	9	7	8	9	8	5	5	6	7	8	7	6	5	5	5	5	5	4	5	6	6	6	4	9	6.3
Jan 3	6	7	8	10	9	8	7	6	6	5	4	3	3	2	2	3	5	6	6	6	5	6	6	6	2	10	5.6
Jan 4	5	6	6	9	9	8	6	5	5	8	5	6	**K**	4	3	2	2	2	3	5	7	8	8	8	2	9	5.7
Jan 5	9	10	7	7	8	16	24	24	19	20	15	12	9	7	6	6	8	9	7	5	5	6	8	7	5	24	10.6
Jan 6	5	5	4	4	4	3	2	2	2	2	2	2	2	2	3	3	4	4	5	5	7	8	10	12	2	12	4.3
Jan 7	15	18	20	28	27	24	25	26	24	22	20	18	16	15	14	13	13	11	11	11	9	8	6	5	5	28	16.6
Jan 8	6	5	4	5	7	11	12	12	11	10	11	11	11	12	10	12	11	11	10	10	10	10	10	10	4	12	9.7
Jan 9	10	10	11	11	11	11	8	11	11	12	22	23	16	17	17	14	13	11	12	14	14	13	14	13	8	23	13.3
Jan 10	13	11	13	18	17	18	19	19	18	17	14	12	11	11	10	11	12	12	13	13	13	13	13	13	10	19	13.9
Jan 11	11	11	11	11	12	11	7	9	9	11	9	9	8	8	7	6	5	3	2	5	5	7	8	7	2	12	8.0
Jan 12	4	4	5	4	5	6	12	13	12	12	11	9	9	9	9	7	9	9	9	9	7	7	7	7	4	13	8.1
Jan 13	7	6	7	7	7	7	8	14	7	7	6	7	6	6	8	8	7	7	8	8	8	8	8	8	6	14	7.5
Jan 14	8	7	7	6	7	7	9	12	16	14	13	12	12	12	11	11	11	11	12	12	10	7	7	9	6	16	10.1
Jan 15	8	9	9	9	11	12	11	9	15	18	16	11	7	6	6	**C**	**C**	8	4	4	4	4	4	2	2	18	8.5
Jan 16	5	4	3	6	5	5	6	4	3	3	3	1	1	1	1	1	1	1	1	2	4	3	2	3	1	6	2.9
Jan 17	5	5	4	5	6	6	5	4	3	3	3	3	4	3	4	4	3	3	5	6	4	1	1	1	1	6	3.8
Jan 18	1	2	1	1	1	1	2	4	3	2	2	1	2	2	2	2	2	2	2	2	2	2	2	2	1	4	1.9
Jan 19	3	3	4	3	3	6	7	8	11	11	14	14	15	13	13	12	11	11	12	14	11	13	11	10	3	15	9.7
Jan 20	6	3	2	3	3	3	4	4	2	2	2	1	1	1	0	0	1	1	1	1	1	1	1	1	**0**	6	1.9
Jan 21	3	3	5	5	3	4	4	3	3	4	4	4	3	4	4	4	5	4	5	5	5	6	6	6	3	6	4.3
Jan 22	7	7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	1	0	0	0	0	1	**0**	7	0.9
Jan 23	2	2	1	1	1	2	4	6	5	5	3	2	3	4	6	3	1	1	1	1	1	1	1	1	1	6	2.4
Jan 24	1	1	1	6	1	1	1	2	2	2	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	6	1.4
Jan 25	1	1	1	2	3	3	3	2	2	2	2	2	3	3	4	4	4	4	4	4	4	4	6	6	1	6	3.1
Jan 26	3	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	**0**	3	**0.3**
Jan 27	1	0	1	2	1	2	1	1	1	1	1	1	1	5	1	1	1	1	1	2	2	2	2	1	**0**	5	1.4
Jan 28	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	2	1.1
Jan 29	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	3	5	4	3	3	3	3	4	3	1	5	2.3
Jan 30	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	3	3	**0**	3	0.6
Jan 31	4	5	5	5	4	3	2	2	2	3	2	2	1	1	1	1	2	2	2	2	3	3	3	3	1	5	2.6
Diurnal Maximum	25	29	35	41	46	46	41	43	40	36	25	23	16	17	17	14	13	12	13	14	14	13	14	13			
Diurnal Average	6.0	6.0	6.1	7.0	7.1	7.6	7.8	8.2	7.7	7.8	7.1	6.3	5.7	5.6	5.2	5.0	5.2	5.1	5.0	5.2	5.1	5.2	5.3	5.2			

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.



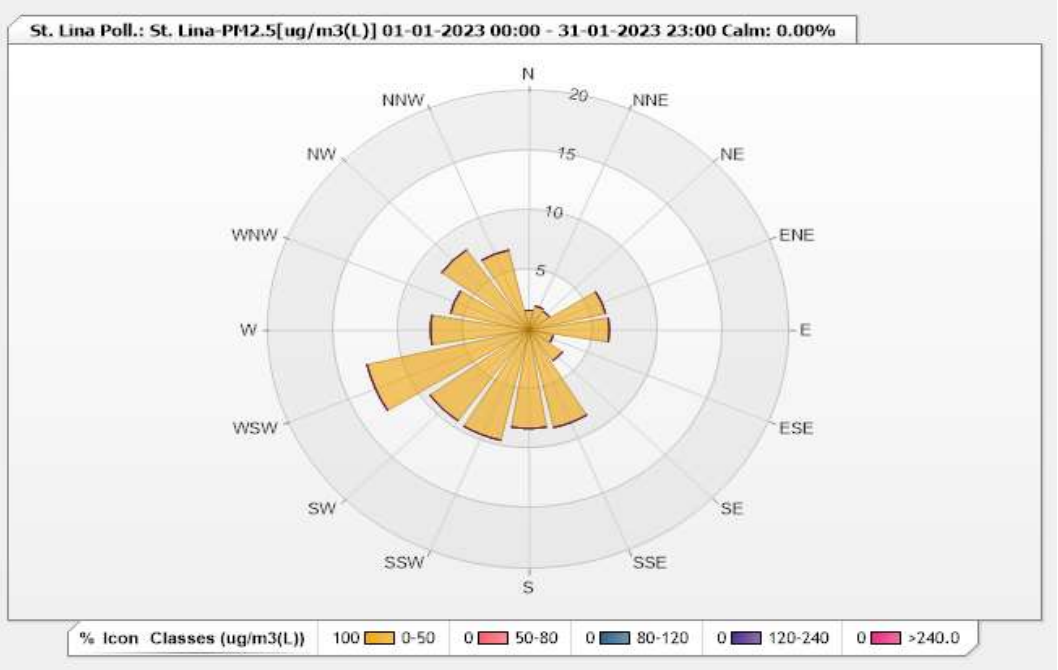


Station: St. Lina Poll.: St. Lina-PM2.5[ug/m3(L)] Monthly: 01-2023

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

Calm: 0.00% Valid Data: 97.85% Calm Avg: 0.00 [ppm]

Direction	0-50	50-80	80-120	120-240	>240.0	Total
N	1.65	0	0	0	0	1.65
NNE	2.06	0	0	0	0	2.06
NE	1.92	0	0	0	0	1.92
ENE	6.04	0	0	0	0	6.04
E	6.18	0	0	0	0	6.18
ESE	1.92	0	0	0	0	1.92
SE	3.16	0	0	0	0	3.16
SSE	8.38	0	0	0	0	8.38
S	8.24	0	0	0	0	8.24
SSW	9.48	0	0	0	0	9.48
SW	9.34	0	0	0	0	9.34
WSW	12.77	0	0	0	0	12.77
W	7.55	0	0	0	0	7.55
WNW	6.18	0	0	0	0	6.18
NW	8.24	0	0	0	0	8.24
NNW	6.87	0	0	0	0	6.87
Summary	100	0	0	0	0	100



Lakeland Industry & Community Association

St. Lina Site - January 2023

Summary of Hourly Averages

RELATIVE HUMIDITY (RH) in %

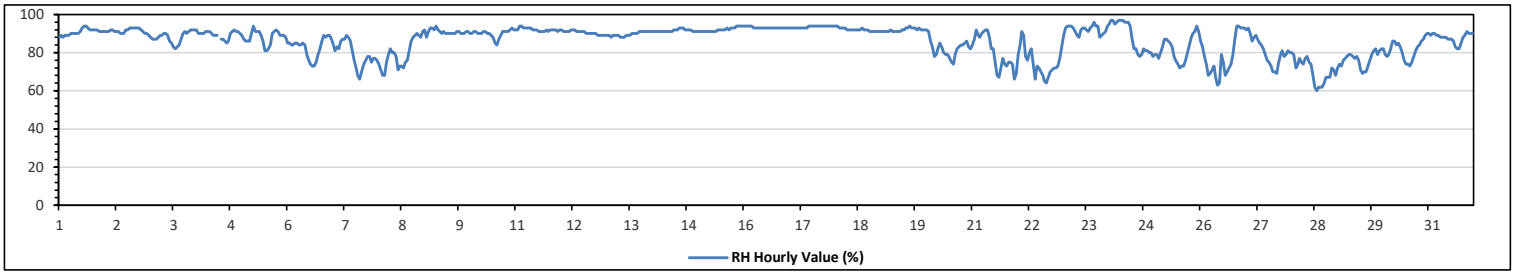
Maximum Hourly Value:	97	%	on January 24 at hour 1	Hours in Service:	744	
Maximum Daily Value:	93.6	%	on January 17	Hours of Data:	743	
Minimum Hourly Value:	60	%	on January 28 at hour 13	Hours of Missing Data:	1	
Minimum Daily Value:	70.3	%	on January 28	Hours of Calibration:	0	
Monthly Average:	86.1	%		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			
Jan 1	88	89	88	89	89	89	90	90	90	90	90	91	93	94	94	93	92	92	92	92	92	91	91	91	88	94	90.8
Jan 2	91	91	91	92	92	91	91	91	90	90	90	92	92	93	93	93	93	93	93	92	91	90	90	89	89	93	91.4
Jan 3	88	87	87	87	88	89	89	90	90	89	86	85	83	82	83	84	87	90	91	90	91	92	92	92	82	92	88.0
Jan 4	92	90	90	90	90	91	91	91	90	89	89	89	K	87	87	86	85	86	90	91	92	91	91	90	85	92	89.5
Jan 5	89	87	86	86	86	90	94	91	91	91	89	86	81	81	82	84	90	91	92	91	89	89	89	88	81	94	88.0
Jan 6	85	85	84	84	85	85	84	84	85	84	79	76	74	73	73	75	79	82	86	89	88	89	89	87	73	89	82.7
Jan 7	84	81	83	82	86	87	87	89	88	86	81	76	72	68	66	70	74	76	78	78	75	77	77	76	66	89	79.0
Jan 8	74	71	68	68	75	79	82	80	80	78	71	73	73	72	75	76	81	86	88	89	90	89	88	91	68	91	79.0
Jan 9	92	88	91	93	93	92	94	92	91	90	91	90	90	90	90	90	90	91	91	90	90	90	91	91	88	94	90.9
Jan 10	90	90	91	91	90	90	90	91	91	90	90	89	88	85	84	87	89	91	91	91	91	92	93	92	84	93	89.9
Jan 11	92	92	94	94	93	93	93	93	93	92	92	92	91	91	91	91	92	91	92	92	92	92	91	92	91	94	92.1
Jan 12	92	91	91	91	91	92	92	92	91	91	91	91	91	90	90	90	90	90	90	89	89	89	89	89	89	92	90.5
Jan 13	89	89	88	89	89	89	89	88	88	88	89	89	89	90	90	90	90	91	91	91	91	91	91	91	88	91	89.6
Jan 14	91	91	91	91	91	91	91	91	91	91	91	92	92	92	93	93	93	92	92	92	92	91	91	91	91	93	91.5
Jan 15	91	91	91	91	91	91	91	91	91	91	92	92	92	92	92	93	92	93	93	93	94	94	94	94	91	94	92.1
Jan 16	94	94	94	94	94	93	93	93	93	93	93	93	93	93	93	93	93	93	93	93	93	93	93	93	93	94	93.2
Jan 17	93	93	93	93	93	93	93	93	93	93	94	94	94	94	94	94	94	94	94	94	94	94	94	94	93	94	**93.6**
Jan 18	94	94	93	93	93	93	92	92	92	92	92	92	92	92	93	92	92	92	91	91	91	91	91	91	91	94	92.1
Jan 19	91	91	91	91	91	92	91	91	91	91	91	92	92	93	93	94	93	93	93	92	93	92	92	92	91	94	91.9
Jan 20	92	91	86	83	78	79	82	85	83	80	79	79	77	75	74	79	82	83	84	84	85	86	83	82	74	92	82.1
Jan 21	84	87	92	89	88	90	91	92	92	88	82	82	75	68	67	72	77	74	73	75	75	74	66	69	66	92	80.1
Jan 22	79	84	91	89	78	76	80	82	74	66	73	72	70	68	65	64	67	70	71	72	72	73	77	83	64	91	74.8
Jan 23	89	93	94	94	94	93	91	89	88	92	93	93	92	91	93	94	96	94	94	88	89	90	91	94	88	96	92.0
Jan 24	95	**97**	**97**	95	96	**97**	**97**	**97**	96	96	96	94	87	82	82	79	78	79	82	81	81	80	80	78	78	**97**	88.4
Jan 25	79	79	77	80	83	87	87	86	85	83	78	76	74	72	73	73	76	80	84	88	90	91	94	91	72	94	81.9
Jan 26	86	83	78	74	68	69	71	73	67	63	64	79	75	68	70	72	74	79	87	94	94	93	93	93	63	94	77.8
Jan 27	92	93	90	86	88	89	87	85	84	82	79	76	75	73	70	70	69	75	79	81	78	79	81	80	69	93	80.9
Jan 28	80	79	72	74	77	75	74	77	78	75	74	68	62	**60**	62	62	62	64	67	67	67	72	71	68	**60**	80	**70.3**
Jan 29	72	74	73	76	77	78	79	79	78	77	78	76	71	69	70	70	73	76	79	81	82	79	81	82	69	82	76.3
Jan 30	82	79	78	79	82	86	86	84	85	83	80	76	74	74	73	75	78	81	83	84	86	87	89	90	73	90	81.4
Jan 31	90	89	90	90	89	89	88	88	88	88	87	87	87	86	83	82	82	85	88	89	91	90	90	90	82	91	87.8
Diurnal Maximum	95	97	97	95	96	97	97	97	96	96	96	94	94	94	94	94	96	94	94	94	94	94	94	94			
Diurnal Average	87.7	87.5	87.2	87.0	87.0	87.7	88.1	88.1	87.3	86.2	85.3	84.9	83.0	81.9	81.9	82.6	84.0	85.4	86.8	87.2	87.4	87.5	87.5	87.5			

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.



Lakeland Industry & Community Association

St. Lina Site - January 2023

Summary of Hourly Averages

BAROMETRIC PRESSURE (BP) in millibar

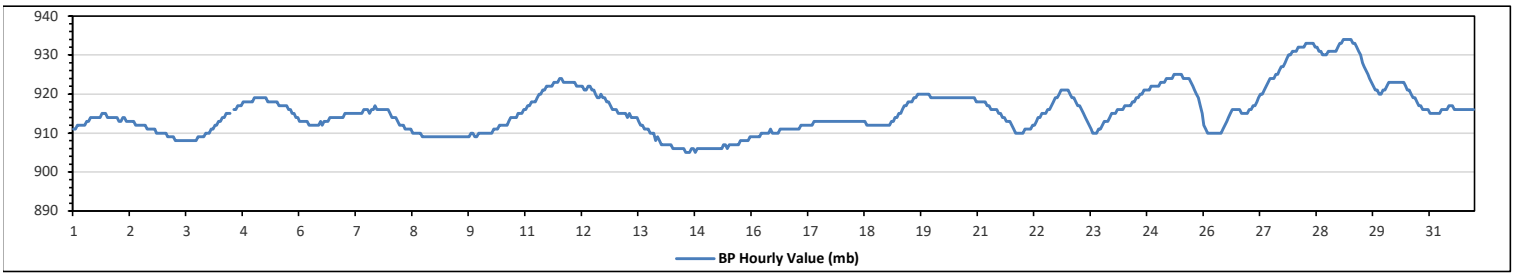
Maximum Hourly Value:	934	mb	on January 29 at hour 2	Hours in Service:	744	
Maximum Daily Value:	932	mb	on January 28	Hours of Data:	743	
Minimum Hourly Value:	905	mb	on January 14 at hour 13	Hours of Missing Data:	1	
Minimum Daily Value:	906	mb	on January 14	Hours of Calibration:	0	
Monthly Average:	916	mb		Operational Uptime:	99.9	

Day	Hourly Period Starting at (MST)																							Daily	Daily	Daily
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Minimum	Maximum	Average
Jan 1	911	911	912	912	912	912	912	913	913	914	914	914	914	914	914	915	915	915	914	914	914	914	914	914	911	915	913
Jan 2	913	913	914	914	913	913	913	913	913	912	912	912	912	912	912	911	911	911	911	911	910	910	910	910	910	914	912
Jan 3	910	910	909	909	909	909	908	908	908	908	908	908	908	908	908	908	908	908	909	909	909	909	910	910	908	910	909
Jan 4	910	911	911	912	912	913	913	914	914	915	915	915	K	916	916	917	917	917	918	918	918	918	918	918	910	918	915
Jan 5	919	919	919	919	919	919	919	918	918	918	918	918	918	917	917	917	917	917	916	916	915	915	914	914	914	919	917
Jan 6	913	913	913	913	913	912	912	912	912	912	912	913	912	913	913	913	914	914	914	914	914	914	914	914	912	914	913
Jan 7	915	915	915	915	915	915	915	915	915	915	916	916	916	915	916	916	917	916	916	916	916	916	916	916	915	917	916
Jan 8	915	914	914	914	913	912	912	912	911	911	911	911	910	910	910	910	910	909	909	909	909	909	909	909	909	915	911
Jan 9	909	909	909	909	909	909	909	909	909	909	909	909	909	909	909	909	909	909	909	910	910	909	909	910	909	910	909
Jan 10	910	910	910	910	910	910	910	911	911	911	912	912	912	912	912	913	914	914	914	914	915	915	915	916	910	916	912
Jan 11	916	917	917	918	918	918	919	920	920	921	921	922	922	922	922	923	923	923	924	924	923	923	923	923	916	924	921
Jan 12	923	923	923	922	922	922	922	921	921	922	922	921	921	920	919	919	920	919	919	918	918	917	916	916	916	923	920
Jan 13	916	915	915	915	915	915	914	915	914	914	914	914	913	912	912	911	911	911	910	910	910	908	909	908	908	916	913
Jan 14	907	907	907	907	907	907	906	906	906	906	906	906	906	**905**	**905**	**905**	906	906	**905**	906	906	906	906	906	**905**	907	**906**
Jan 15	906	906	906	906	906	906	906	906	906	907	907	906	907	907	907	907	907	907	908	908	908	908	908	909	906	909	907
Jan 16	909	909	909	909	909	910	910	910	910	910	911	910	910	910	910	911	911	911	911	911	911	911	911	911	909	911	910
Jan 17	911	911	912	912	912	912	912	912	912	913	913	913	913	913	913	913	913	913	913	913	913	913	913	913	911	913	913
Jan 18	913	913	913	913	913	913	913	913	913	913	913	913	913	912	912	912	912	912	912	912	912	912	912	912	912	913	913
Jan 19	912	912	913	913	914	914	915	915	916	917	917	918	918	918	919	919	920	920	920	920	920	920	920	919	912	920	917
Jan 20	919	919	919	919	919	919	919	919	919	919	919	919	919	919	919	919	919	919	919	919	919	919	919	918	918	919	919
Jan 21	918	918	918	918	918	917	917	916	916	916	916	915	915	914	914	913	913	913	912	911	910	910	910	910	910	918	915
Jan 22	910	911	911	911	911	912	912	913	914	914	915	915	915	916	916	917	918	919	919	920	921	921	921	921	910	921	916
Jan 23	921	920	919	919	918	917	917	916	915	914	913	912	911	910	910	910	911	911	912	913	913	913	914	915	910	921	914
Jan 24	915	915	916	916	916	916	917	917	917	917	918	918	919	919	920	920	921	921	921	921	922	922	922	922	915	922	919
Jan 25	922	923	923	923	924	924	924	924	925	925	925	925	925	924	924	924	924	923	922	921	920	919	917	915	915	925	923
Jan 26	912	911	910	910	910	910	910	910	910	910	911	912	913	914	915	916	916	916	916	916	915	915	915	915	910	916	913
Jan 27	916	916	917	917	918	919	920	920	921	922	923	924	924	924	925	925	926	927	927	928	929	930	930	931	916	931	923
Jan 28	931	931	932	932	932	932	933	933	933	933	933	932	932	931	931	930	930	930	931	931	931	931	931	932	930	933	**932**
Jan 29	933	933	**934**	**934**	**934**	**934**	**934**	933	933	932	931	930	928	927	926	925	924	923	922	921	921	920	920	921	920	**934**	928
Jan 30	921	922	923	923	923	923	923	923	923	923	923	922	921	921	920	919	919	918	917	917	916	916	916	916	916	923	920
Jan 31	915	915	915	915	915	915	916	916	916	916	917	917	917	916	916	916	916	916	916	916	916	916	916	916	915	917	916
Diurnal Maximum	933	933	934	934	934	934	934	933	933	933	933	932	932	931	931	930	930	930	931	931	931	931	931	932			
Diurnal Average	915	915	915	915	915	915	916	916	916	916	916	916	916	915	916	916	916	916	916	916	916	915	915	915			

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 - January 2023

Summary of Hourly Averages

AMBIENT TEMPERATURE (AT) in Degree Celsius

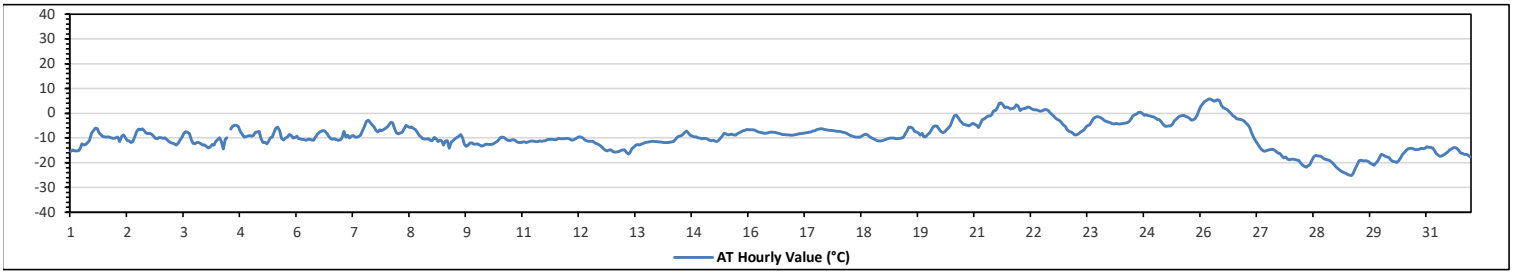
Maximum Hourly Value:	5.7	°C	on January 26 at hour 4	Hours in Service:	744	
Maximum Daily Value:	2.0	°C	on January 26	Hours of Data:	743	
Minimum Hourly Value:	-25.2	°C	on January 29 at hour 8	Hours of Missing Data:	1	
Minimum Daily Value:	-21.5	°C	on January 29	Hours of Calibration:	0	
Monthly Average:	-9.2	°C		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			
Jan 1	-15.5	-14.9	-15.2	-15.2	-15.2	-14.4	-12.4	-12.9	-12.7	-11.8	-10.9	-8.2	-7	-6.1	-6.2	-8	-8.7	-9.4	-9.5	-9.6	-9.5	-9.8	-10.1	-10.2	-15.5	-6.1	-11.0
Jan 2	-9.9	-9.7	-11.5	-9.4	-8.7	-10	-11	-11.2	-11.9	-11.5	-9.6	-7.5	-6.4	-6.6	-6.3	-7.1	-8	-8.3	-8.2	-8.5	-9.3	-10.2	-10.4	-9.8	-11.9	-6.3	-9.2
Jan 3	-10	-10.2	-10	-10.6	-11.3	-11.8	-12.1	-12.4	-12.9	-12.2	-10.8	-9.6	-8.2	-7.5	-7.8	-8.3	-10.7	-12.2	-12.4	-11.8	-11.9	-12.3	-12.9	-12.8	-12.9	-7.5	-10.9
Jan 4	-13.4	-14.1	-13.6	-12.7	-12.9	-11.5	-10.7	-9.9	-11.5	-14.4	-10.6	-9.9	K	-6.4	-5.3	-4.8	-4.9	-5.4	-7.3	-8.5	-9.7	-9.5	-9.2	-9	-14.4	-4.8	-9.8
Jan 5	-9.3	-9	-7.8	-7.6	-7.4	-10.4	-11.8	-11.7	-12.4	-11.4	-10	-9.6	-7.6	-6.1	-5.7	-7.1	-10.2	-10.8	-10.1	-9.7	-8.6	-8.9	-10.1	-9.8	-12.4	-5.7	-9.3
Jan 6	-9.3	-10.3	-10.5	-10.6	-10.7	-10.9	-10.6	-10.5	-10.8	-10.9	-9.7	-8.5	-7.8	-7.3	-6.9	-7.3	-8.3	-9.2	-10.2	-10.6	-10.4	-10.7	-10.9	-10.8	-10.9	-6.9	-9.7
Jan 7	-10	-7.3	-9.6	-8.9	-10.1	-9.3	-9	-9.7	-9.6	-9.4	-8.8	-7	-5.4	-3.3	-2.8	-3.7	-4.7	-5.6	-6.9	-7.6	-6.7	-7	-6.7	-6.2	-10.1	-2.8	-7.3
Jan 8	-5.7	-4.6	-3.8	-3.9	-6.2	-8	-8.4	-8	-7.7	-6.3	-4.9	-5.4	-5.8	-5.6	-6.2	-6.5	-7.8	-8.9	-9.7	-10.3	-10.5	-10.5	-10.3	-11.1	-11.1	-3.8	-7.3
Jan 9	-11	-9.8	-10.4	-11.5	-10.9	-11	-12.9	-11.2	-11	-14.2	-11.7	-11.1	-10.3	-9.8	-9.3	-8.6	-10.1	-12.6	-13.4	-12.9	-12	-12	-12.5	-12.5	-14.2	-8.6	-11.4
Jan 10	-12.4	-12.8	-13.2	-13.1	-12.7	-12.6	-12.7	-12.7	-12.6	-12.1	-11.6	-11	-10	-9.6	-9.8	-10.5	-10.9	-11	-10.8	-10.7	-10.9	-11.6	-11.8	-11.9	-13.2	-9.6	-11.6
Jan 11	-11.6	-11.6	-11.8	-11.6	-11.3	-11.2	-11.3	-11.4	-11.5	-11.2	-11.3	-11.2	-11	-10.7	-10.6	-10.6	-10.6	-10.7	-10.7	-10.2	-10.4	-10.3	-10.4	-10.2	-11.8	-10.2	-11.0
Jan 12	-10.2	-10.5	-10.9	-10.7	-10.4	-9.9	-9.5	-9.7	-10.1	-10.8	-11.2	-11.3	-11.3	-11.3	-11.9	-12.3	-12.5	-13	-13.6	-14.4	-15	-15.2	-14.9	-14.9	-15.2	-9.5	-11.9
Jan 13	-15.6	-15.7	-15.6	-15.4	-15.1	-14.9	-14.9	-15.9	-16.5	-15.9	-14.3	-13.6	-13	-12.7	-12.9	-12.5	-12.3	-11.9	-11.7	-11.6	-11.4	-11.3	-11.4	-11.5	-16.5	-11.3	-13.7
Jan 14	-11.6	-11.6	-11.7	-11.8	-11.8	-11.8	-11.7	-11.6	-11.4	-10.6	-9.8	-9.3	-9.1	-8.6	-7.8	-7.2	-8.2	-8.8	-9.3	-9.5	-9.5	-10	-10.1	-10.3	-11.8	-7.2	-10.1
Jan 15	-10.2	-10.2	-10.5	-10.9	-11	-10.9	-11.2	-11.5	-11	-10.2	-9.2	-8.2	-8.4	-8.7	-8.6	-8.5	-8.7	-8.8	-8.3	-7.9	-7.5	-7.1	-6.9	-6.5	-11.5	-6.5	-9.2
Jan 16	-6.7	-6.7	-6.6	-6.8	-7.2	-7.6	-7.8	-7.9	-8.1	-8.2	-8	-7.7	-7.6	-7.7	-7.8	-8	-8.2	-8.4	-8.6	-8.6	-8.7	-8.7	-8.8	-8.8	-8.8	-6.6	-7.9
Jan 17	-8.7	-8.6	-8.5	-8.3	-8.3	-8.1	-8	-7.9	-7.8	-7.6	-7.2	-7	-6.7	-6.4	-6.3	-6.3	-6.5	-6.7	-6.8	-6.9	-6.9	-7.1	-7.2	-7.3	-8.7	-6.3	-7.4
Jan 18	-7.4	-7.5	-7.7	-7.9	-8.2	-8.6	-9	-9.2	-9.5	-9.7	-9.6	-9.6	-9.2	-8.7	-8.5	-8.7	-9.4	-9.9	-10.3	-10.7	-11.1	-11.2	-11.2	-11	-11.2	-7.4	-9.3
Jan 19	-10.8	-10.6	-10.4	-10.1	-10.1	-10.1	-10.3	-10.4	-10.2	-10.1	-9.8	-8.4	-7	-5.7	-5.7	-6.1	-7.4	-7.6	-8	-8.9	-8.1	-9.5	-9.5	-8.6	-10.8	-5.7	-8.9
Jan 20	-8	-6.6	-5.4	-5.1	-5.3	-6.3	-7.3	-7.9	-7.6	-6.7	-6	-5	-2.9	-1.2	-0.7	-1.7	-3	-3.8	-4.4	-4.6	-4.9	-5.2	-4.6	-4.1	-8.0	-0.7	-4.9
Jan 21	-4.5	-4.9	-5.8	-4.2	-2.5	-2.2	-1.7	-1.1	-1.2	-0.6	0.9	1	2.3	4	4.2	3.3	2.3	2.5	2.2	1.7	1.9	2.1	3.4	2.9	-5.8	4.2	0.3
Jan 22	1	1.6	1.9	2	2.5	2.4	1.9	1.5	1.3	1.3	0.9	0.8	1	1.5	1.5	1.1	0.3	-0.5	-1.2	-2	-2.5	-2.9	-3.7	-4.7	-4.7	2.5	0.3
Jan 23	-5.3	-6.6	-7.3	-7.6	-8.2	-8.7	-8.7	-8.4	-7.7	-7.2	-6.6	-5.6	-5	-4.7	-3.5	-2.1	-1.7	-1.4	-1.6	-1.9	-2.4	-3.1	-3.4	-3.6	-8.7	-1.4	-5.1
Jan 24	-3.9	-4.2	-4.3	-4.1	-4.3	-4.3	-4.2	-4.1	-4	-3.9	-3.3	-2.3	-1.2	-0.6	-0.4	0.3	0.4	0	-0.9	-0.6	-1	-1.2	-1.4	-1.6	-4.3	0.4	-2.3
Jan 25	-2	-2.5	-2.6	-3.5	-4.4	-5.3	-5.3	-5.1	-5.1	-4.5	-3.1	-2.4	-1.7	-1.1	-1	-0.9	-1.4	-1.6	-2	-2.8	-2.7	-2.1	-0.9	1.2	-5.3	1.2	-2.6
Jan 26	2.8	3.8	4.8	5.2	**5.7**	**5.7**	5.3	4.8	5.1	5.4	5.1	3.1	2.3	1.8	1.4	0.7	-0.1	-1	-1.6	-2.2	-2.4	-2.6	-2.7	-3.2	-3.2	**5.7**	**2.0**
Jan 27	-4	-4.7	-5.9	-7.9	-9.5	-11.1	-12.1	-13.4	-14.5	-15.2	-15.3	-15.1	-14.9	-14.7	-14.6	-14.9	-15.5	-16.1	-16.3	-17.3	-18	-17.6	-18.6	-18.9	-18.9	-4.0	-13.6
Jan 28	-18.6	-18.6	-18.7	-19	-19	-20	-20.9	-21.4	-21.8	-21.3	-20.6	-19	-17.5	-17.1	-17.2	-17.3	-17.5	-18.2	-18.6	-18.8	-19	-19.4	-20	-20.9	-21.8	-17.1	-19.2
Jan 29	-21.8	-22.4	-23.1	-23.6	-24	-24.3	-24.8	-25.1	**-25.2**	-24.2	-22.5	-20.9	-19.2	-19	-19.3	-19.3	-19.3	-19.6	-20.2	-20.7	-21	-20.1	-19.2	-17.6	**-25.2**	-17.6	**-21.5**
Jan 30	-16.6	-16.9	-17.4	-17.7	-17.9	-19	-19.5	-19.6	-19.9	-19.2	-18	-16.6	-15.9	-15.1	-14.4	-14.2	-14.2	-14.4	-14.7	-14.7	-14.6	-14.2	-14.3	-14.2	-19.9	-14.2	-16.4
Jan 31	-13.5	-13.8	-13.8	-14.1	-15	-16.2	-16.9	-17.4	-17.2	-16.8	-16.2	-15.7	-14.9	-14.5	-13.9	-13.9	-14.2	-15.1	-16.1	-16.3	-16.6	-16.6	-17	-17.7	-17.7	-13.5	-15.6
Diurnal Maximum	2.8	3.8	4.8	5.2	5.7	5.7	5.3	4.8	5.1	5.4	5.1	3.1	2.3	4.0	4.2	3.3	2.3	2.5	2.2	1.7	1.9	2.1	3.4	2.9			
Diurnal Average	-9.5	-9.4	-9.6	-9.6	-9.7	-10.1	-10.3	-10.4	-10.5	-10.4	-9.5	-8.8	-8.0	-7.4	-7.2	-7.5	-8.1	-8.7	-9.1	-9.3	-9.4	-9.5	-9.6	-9.5			

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.



Lakeland Industry & Community Association

St. Lina Site - January 2023

Summary of Hourly Averages

STATION TEMPERATURE (ST) in Degree Celsius

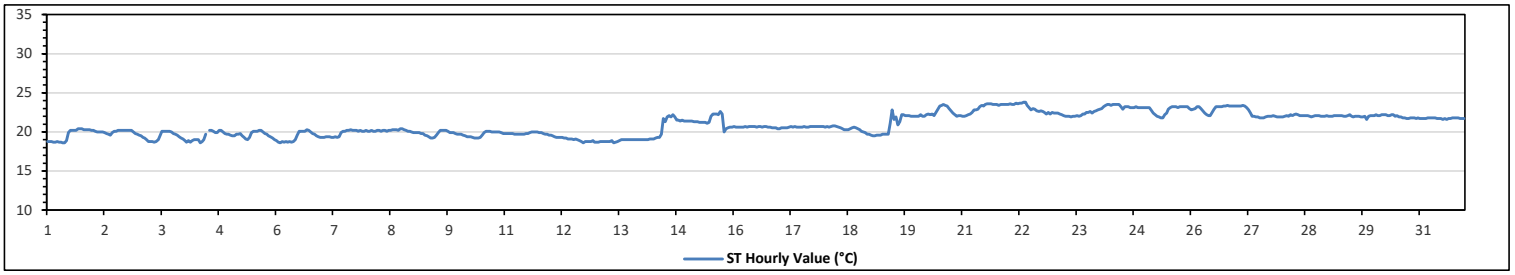
Maximum Hourly Value:	23.8	°C	on January 22 at hour 8	Hours in Service:	744	
Maximum Daily Value:	23.2	°C	on January 24	Hours of Data:	743	
Minimum Hourly Value:	18.6	°C	on January 1 at hour 8	Hours of Missing Data:	1	
Minimum Daily Value:	18.9	°C	on January 13	Hours of Calibration:	0	
Monthly Average:	20.9	°C		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			
Jan 1	18.8	18.8	18.8	18.7	18.7	18.8	18.7	18.7	**18.6**	**18.6**	18.9	19.9	20.2	20.2	20.2	20.2	20.4	20.4	20.4	20.3	20.3	20.3	20.3	20.2	**18.6**	20.4	19.6
Jan 2	20.2	20.1	20.0	20.0	20.0	20.0	19.9	19.8	19.7	19.6	19.9	20.1	20.1	20.2	20.2	20.2	20.2	20.2	20.2	20.2	20.2	20.0	19.8	19.7	19.6	20.2	20.0
Jan 3	19.6	19.5	19.3	19.2	19.0	18.8	18.8	18.8	18.7	18.8	19.0	19.6	20.1	20.1	20.1	20.1	20.1	20.0	19.8	19.7	19.6	19.4	19.2	19.1	18.7	20.1	19.4
Jan 4	18.9	18.7	18.9	18.7	18.9	19.0	19.0	19.0	**18.6**	18.8	19.0	19.7	K	20.2	20.2	20.1	19.9	19.9	20.2	20.2	20.0	19.8	19.7	19.7	**18.6**	20.2	19.4
Jan 5	19.6	19.5	19.5	19.7	19.7	19.8	19.5	19.3	19.1	19.0	19.3	19.9	20.1	20.1	20.1	20.2	20.2	20.0	19.8	19.7	19.5	19.4	19.2	19.0	19.0	20.2	19.6
Jan 6	18.9	18.7	**18.6**	18.8	18.7	18.8	18.7	18.8	18.7	18.8	19.0	19.6	20.1	20.1	20.1	20.1	20.3	20.2	20.0	19.8	19.7	19.5	19.4	19.3	**18.6**	20.3	19.4
Jan 7	19.3	19.3	19.4	19.4	19.4	19.3	19.3	19.4	19.3	19.4	19.9	20.1	20.1	20.2	20.2	20.3	20.2	20.2	20.2	20.1	20.2	20.1	20.1	20.2	19.3	20.3	19.8
Jan 8	20.1	20.1	20.2	20.1	20.1	20.2	20.2	20.1	20.2	20.2	20.1	20.2	20.2	20.3	20.3	20.3	20.2	20.4	20.4	20.3	20.2	20.1	20.1	20.0	20.0	20.4	20.2
Jan 9	19.9	19.9	19.9	19.9	19.8	19.8	19.6	19.5	19.4	19.2	19.2	19.3	19.6	19.9	20.2	20.2	20.2	20.2	20.1	19.9	19.9	19.9	19.8	19.7	19.2	20.2	19.8
Jan 10	19.7	19.7	19.6	19.5	19.4	19.4	19.4	19.3	19.2	19.2	19.2	19.3	19.6	19.9	20.1	20.1	20.1	20.0	20.0	20.0	20.0	20.0	19.9	19.8	19.2	20.1	19.7
Jan 11	19.8	19.8	19.8	19.8	19.8	19.7	19.7	19.7	19.7	19.7	19.7	19.8	19.8	19.9	20.0	20.0	20.0	20.0	19.9	19.9	19.8	19.7	19.7	19.6	19.6	20.0	19.8
Jan 12	19.6	19.5	19.4	19.3	19.3	19.3	19.3	19.2	19.2	19.1	19.1	19.1	19.0	19.1	19.0	18.9	18.8	**18.6**	18.8	18.8	18.8	18.8	18.9	18.7	**18.6**	19.6	19.1
Jan 13	18.7	18.7	18.8	18.8	18.8	18.8	18.8	18.8	18.9	**18.6**	18.7	18.8	18.9	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	**18.6**	19.0	**18.9**
Jan 14	19.0	19.0	19.0	19.0	19.1	19.1	19.1	19.2	19.3	19.3	19.7	21.7	21.3	21.9	22.1	21.9	22.2	21.9	21.5	21.5	21.4	21.5	21.4	21.4	19.0	22.2	20.5
Jan 15	21.4	21.4	21.4	21.3	21.3	21.3	21.2	21.2	21.2	21.2	21.1	21.2	22.0	22.3	22.3	22.3	22.2	22.6	22.3	20.0	20.4	20.5	20.6	20.6	20.0	22.6	21.4
Jan 16	20.7	20.6	20.6	20.6	20.6	20.6	20.7	20.6	20.7	20.7	20.7	20.7	20.6	20.7	20.7	20.6	20.7	20.7	20.6	20.6	20.5	20.5	20.5	20.4	20.4	20.7	20.6
Jan 17	20.4	20.5	20.5	20.5	20.5	20.6	20.7	20.6	20.7	20.6	20.6	20.6	20.6	20.7	20.6	20.6	20.7	20.7	20.7	20.7	20.7	20.7	20.7	20.7	20.4	20.7	20.6
Jan 18	20.6	20.7	20.6	20.7	20.8	20.8	20.7	20.6	20.5	20.4	20.3	20.3	20.3	20.4	20.5	20.6	20.5	20.4	20.3	20.1	20.0	19.9	19.7	19.7	19.7	20.8	20.4
Jan 19	19.6	19.5	19.5	19.6	19.6	19.6	19.7	19.7	19.7	19.7	21.1	22.8	21.6	21.9	20.9	21.3	22.2	22.2	22.1	22.1	22.1	22.0	22.0	22.0	19.5	22.8	20.9
Jan 20	22.0	22.0	22.2	22.0	22.0	22.2	22.3	22.2	22.3	22.1	22.5	22.9	23.3	23.4	23.5	23.4	23.3	23.0	22.7	22.4	22.2	22.0	22.1	22.1	22.0	23.5	22.5
Jan 21	22.0	22.0	22.1	22.2	22.3	22.5	22.8	22.8	22.9	23.2	23.4	23.3	23.5	23.6	23.6	23.6	23.5	23.5	23.5	23.4	23.5	23.5	23.5	23.5	22.0	23.6	23.1
Jan 22	23.5	23.6	23.5	23.5	23.7	23.6	23.7	23.7	**23.8**	**23.8**	23.4	23.1	22.8	23.0	22.9	22.7	22.6	22.7	22.6	22.5	22.3	22.5	22.3	22.5	22.3	**23.8**	23.1
Jan 23	22.4	22.4	22.4	22.3	22.2	22.1	22.0	22.0	22.0	21.9	22.0	22.0	22.1	22.0	22.1	22.3	22.3	22.5	22.5	22.6	22.4	22.6	22.7	22.8	21.9	22.8	22.3
Jan 24	22.9	23.0	23.2	23.4	23.5	23.5	23.4	23.5	23.5	23.5	23.5	23.2	22.9	23.2	23.2	23.2	23.1	23.1	23.1	23.2	23.1	23.1	23.1	23.1	22.9	23.5	**23.2**
Jan 25	23.1	23.1	23.1	22.8	22.4	22.2	22.0	21.9	21.8	21.8	22.2	22.4	22.9	23.1	23.2	23.2	23.2	23.1	23.2	23.2	23.2	23.2	23.2	23.0	21.8	23.2	22.8
Jan 26	22.8	22.9	23.0	23.2	23.2	23.0	22.7	22.4	22.2	22.1	22.1	22.5	22.9	23.2	23.2	23.2	23.2	23.3	23.3	23.4	23.3	23.3	23.3	23.3	22.1	23.4	23.0
Jan 27	23.3	23.3	23.3	23.4	23.3	23.1	22.8	22.4	22.0	22.0	21.9	21.9	21.8	21.8	21.8	21.9	22.0	22.0	22.0	22.1	22.0	21.9	21.9	21.9	21.8	23.4	22.3
Jan 28	21.9	22.0	22.1	22.0	22.2	22.1	22.2	22.3	22.2	22.1	22.1	22.1	22.1	22.1	22.0	21.9	22.0	22.1	22.1	22.1	22.0	22.0	22.0	22.1	21.9	22.3	22.1
Jan 29	22.0	22.0	22.0	22.1	22.1	22.1	22.1	22.1	22.0	22.0	22.1	22.2	22.0	21.9	22.0	22.0	22.0	21.9	21.9	22.0	21.6	22.0	22.1	22.1	21.6	22.2	22.0
Jan 30	22.1	22.2	22.1	22.1	22.2	22.2	22.2	22.1	22.1	22.2	22.2	22.0	22.1	21.9	21.9	21.8	21.8	21.7	21.7	21.8	21.8	21.8	21.7	21.8	21.7	22.2	22.0
Jan 31	21.7	21.7	21.7	21.7	21.8	21.8	21.8	21.8	21.8	21.7	21.7	21.7	21.6	21.7	21.6	21.7	21.7	21.8	21.8	21.8	21.8	21.7	21.7	21.7	21.6	21.8	21.7
Diurnal Maximum	23.5	23.6	23.5	23.5	23.7	23.6	23.7	23.7	23.8	23.8	23.5	23.3	23.5	23.6	23.6	23.6	23.5	23.5	23.5	23.4	23.5	23.5	23.5	23.5			
Diurnal Average	20.8	20.8	20.8	20.8	20.8	20.8	20.7	20.7	20.6	20.6	20.8	21.0	21.1	21.2	21.2	21.2	21.3	21.2	21.2	21.1	21.0	21.0	21.0	20.9			

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

St. Lina Site - January 2023

Summary of Hourly Averages

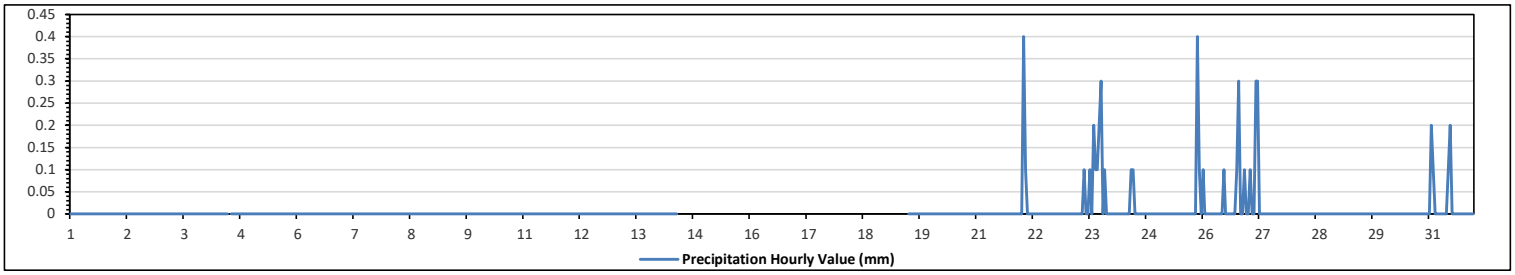
PRECIPITATION in mm

Maximum Hourly Value:	0.4	mm	on January 22 at hour 1	Hours in Service:	744	
Maximum Daily Value:	1.2	mm	on January 23	Hours of Data:	621	
Minimum Hourly Value:	0.0	mm	on January 1 at hour 0	Hours of Missing Data:	122	
Minimum Daily Value:	0.0	mm	on January 1	Hours of Calibration:	1	
Monthly Total:	4.4	mm		Operational Uptime:	83.6	

Day	Hourly Period Starting at (MST)																							Daily	Daily	Daily
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Minimum	Maximum	Total
Jan 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
Jan 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
Jan 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Jan 4	0	0	0	0	0	0	0	0	0	0	0	0	K	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Jan 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
Jan 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
Jan 7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Jan 8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Jan 9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Jan 10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Jan 11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Jan 12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Jan 13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Jan 14	0	0	0	0	0	0	0	0	0	0	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0.0	0.0	NA
Jan 15	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-
Jan 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	-	-	-
Jan 17	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-
Jan 18	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-
Jan 19	X	X	X	X	X	X	X	X	X	X	NRM	C	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	NA
Jan 20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Jan 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
Jan 22	0	**0.4**	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	**0.4**	0.5
Jan 23	0	0	0	0	0	0	0	0	0	0.1	0	0	0.1	0	0.2	0.1	0.1	0.2	0.3	0	0.1	0	0	0	0.0	0.3	**1.2**
Jan 24	0	0	0	0	0	0	0	0	0	0	0.1	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1	0.2
Jan 25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.4**	0.1	0	0.0	**0.4**	0.5
Jan 26	0.1	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0.1	0.3	0	0	0.1	0	0.0	0.3	0.7
Jan 27	0	0.1	0	0	0.3	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.3	0.7
Jan 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
Jan 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
Jan 30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Jan 31	0	0.2	0.1	0	0	0	0	0	0	0	0.1	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.2	0.6
Diurnal Maximum	0.1	0.4	0.1	0.0	0.3	0.3	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.0	0.2	0.1	0.1	0.2	0.3	0.3	0.1	0.4	0.1	0.0			
Diurnal Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			

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

Summary of Hourly Averages

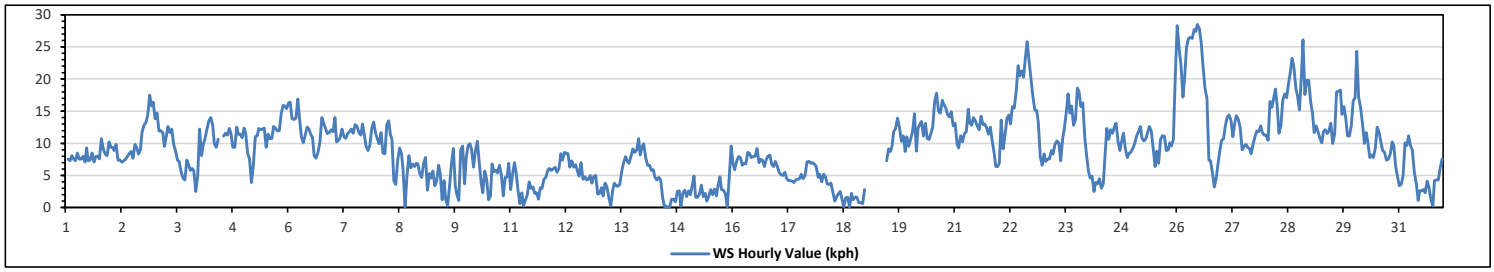
VECTOR WIND SPEED (VWS) in km/hr

Maximum Hourly Value:	28.5	kph	on January 26 at hour 11	Hours in Service:	744	
Maximum Daily Value:	19.0	kph	on January 26	Hours of Data:	730	
Minimum Hourly Value:	0.0	kph	on January 14 at hour 13	Hours of Missing Data:	14	
Minimum Daily Value:	2.1	kph	on January 18	Hours of Calibration:	0	
Monthly Average:	3.6	kph		Operational Uptime:	98.1	

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			
Jan 1	X	7.5	7.3	8.1	7.6	7.3	8.5	7.5	7.5	8.0	7.1	9.3	7.3	7.4	8.5	7.1	8.0	8.0	7.6	10.7	9.1	8.3	8.1	10.2	7.1	10.7	8.1
Jan 2	9.4	9.4	8.9	9.8	7.4	7.4	7.1	7.3	7.5	7.9	8.4	8.7	7.7	9.8	9.3	8.3	9.0	11.7	12.8	13.2	14.4	17.5	15.8	16.4	7.1	17.5	10.2
Jan 3	13.8	14.7	11.9	12.0	11.7	9.5	11.1	12.6	11.7	12.2	9.8	8.8	7.4	7.2	5.6	4.6	4.3	7.4	6.8	5.8	6.1	5.7	2.5	4.9	2.5	14.7	8.7
Jan 4	12.2	8.1	9.9	10.7	12.2	13.5	14.0	12.8	9.9	9.4	10.6	K	K	11.1	11.6	11.3	12.3	11.5	9.4	9.4	12.5	11.4	11.4	10.9	8.1	14.0	11.2
Jan 5	12.4	11.6	8.5	7.6	3.9	6.6	11.0	11.2	12.3	12.1	12.2	12.4	9.4	11.4	10.7	10.8	12.6	12.4	11.9	12.0	14.6	15.9	15.8	15.4	3.9	15.9	11.4
Jan 6	16.3	16.4	13.8	13.7	13.9	16.9	14.0	11.0	10.1	11.3	12.5	12.2	11.4	10.9	8.1	7.7	8.6	10.2	14.0	13.1	12.4	11.5	11.7	12.1	7.7	16.9	12.2
Jan 7	11.8	14.0	10.2	10.5	10.9	12.2	11.0	10.8	11.6	11.8	12.2	11.6	12.9	12.6	11.7	11.3	13.0	11.3	9.6	8.9	9.7	12.3	13.3	11.6	8.9	14.0	11.5
Jan 8	10.8	9.9	11.7	8.5	8.4	12.9	13.5	11.4	10.6	4.2	3.6	7.4	9.3	8.4	5.8	0.1	4.9	8.1	6.2	6.8	6.4	6.9	6.8	5.3	0.1	13.5	7.8
Jan 9	4.7	6.9	7.8	2.7	5.3	4.6	5.7	3.4	4.2	6.6	5.3	1.2	4.2	1.3	0.3	3.3	6.8	9.2	3.4	2.0	1.1	9.0	9.6	3.7	0.3	9.6	4.7
Jan 10	7.7	9.7	9.9	9.0	6.3	8.9	10.3	7.0	3.8	2.3	5.7	4.4	1.2	1.8	6.8	5.6	5.8	5.4	6.6	5.1	1.8	4.7	4.8	6.9	1.2	10.3	5.9
Jan 11	2.8	5.2	7.0	5.5	2.7	0.6	2.3	0.3	1.1	2.0	4.0	3.0	3.2	2.2	2.3	1.3	3.1	3.0	4.4	4.7	5.8	6.1	5.8	6.0	0.3	7.0	3.5
Jan 12	6.3	5.5	6.1	8.4	7.4	8.6	8.5	8.4	6.3	7.3	6.3	6.7	5.8	4.9	7.0	4.4	4.8	4.3	4.4	5.0	3.8	4.9	5.0	2.1	2.1	8.6	5.9
Jan 13	2.2	3.1	1.8	3.8	3.2	1.5	0.3	2.7	3.8	3.4	3.3	3.6	5.6	7.0	7.9	7.2	6.9	8.0	9.1	8.6	9.0	10.7	8.2	9.5	0.3	10.7	5.4
Jan 14	9.9	7.8	6.6	6.6	5.8	5.9	4.7	4.3	4.7	4.3	1.5	0.1	0.2	**0.0**	0.1	1.3	1.3	0.9	2.5	2.6	0.2	2.2	2.7	1.7	**0.0**	9.9	3.2
Jan 15	2.6	2.0	3.3	4.9	1.6	1.6	2.1	3.5	1.7	2.2	1.0	1.7	2.8	2.0	2.9	1.8	3.4	4.8	2.8	2.7	2.2	0.1	4.6	9.6	0.1	9.6	2.8
Jan 16	6.8	5.9	7.2	7.9	7.8	6.6	6.9	6.8	8.6	8.5	7.8	7.9	8.0	9.2	7.0	7.5	7.4	6.4	7.5	8.0	8.2	6.7	6.4	7.2	5.9	9.2	7.4
Jan 17	6.5	5.5	5.1	5.0	5.5	4.6	4.2	4.2	4.1	3.9	4.3	4.4	4.5	5.2	4.5	5.0	7.1	7.2	6.9	7.0	6.8	6.4	4.7	5.2	3.9	7.2	5.3
Jan 18	4.0	5.2	4.8	3.7	3.6	3.8	2.4	1.0	1.7	2.1	2.5	1.2	0.1	1.5	1.6	0.1	2.2	1.2	1.6	1.6	0.8	0.8	0.6	2.8	0.1	5.2	**2.1**
Jan 19	X	X	X	X	X	X	X	X	X	X	X	7.3	9.1	8.7	9.6	11.8	12.3	13.9	12.5	10.3	11.2	8.7	11.0	9.5	7.3	13.9	NA
Jan 20	10.6	11.8	14.6	8.8	12.3	13.0	13.4	11.1	13.1	10.7	10.6	11.7	12.5	16.5	17.8	15.0	14.7	16.7	16.0	15.5	14.5	14.1	14.9	12.7	8.8	17.8	13.4
Jan 21	13.1	9.9	9.3	11.2	10.2	11.5	11.8	15.3	13.1	12.8	14.0	13.5	12.7	12.1	14.2	12.9	13.0	12.5	11.4	12.5	10.3	8.5	6.4	6.4	6.4	15.3	11.6
Jan 22	6.9	13.6	9.1	11.3	13.9	14.4	13.0	15.7	15.5	18.2	22.1	20.5	21.3	20.3	23.0	25.8	22.9	20.1	17.3	15.2	15.1	13.2	8.0	6.6	6.6	25.8	16.0
Jan 23	8.3	7.2	7.5	7.6	8.9	8.3	9.8	10.4	10.1	7.3	10.7	12.2	14.6	17.7	14.7	15.8	12.8	13.7	18.6	18.1	15.7	16.3	11.0	8.0	7.2	18.6	11.9
Jan 24	5.6	4.6	4.9	2.5	3.9	3.7	4.5	3.0	3.7	7.7	12.3	10.6	12.1	11.6	12.6	13.1	10.3	8.9	10.2	11.6	9.2	7.8	8.5	8.6	2.5	13.1	8.0
Jan 25	9.2	9.9	11.1	11.8	12.6	10.8	10.4	10.7	11.6	12.6	11.9	9.2	6.4	8.8	6.9	10.6	11.2	11.1	8.9	9.0	10.1	9.6	10.6	20.5	6.4	20.5	10.6
Jan 26	28.3	24.8	22.1	17.2	20.0	24.9	26.3	26.5	26.3	27.7	27.4	**28.5**	27.9	25.7	21.8	18.5	17.0	7.4	7.3	5.5	3.2	4.6	7.0	9.1	3.2	**28.5**	**19.0**
Jan 27	10.5	10.7	12.6	14.0	14.4	13.6	11.0	13.2	14.3	13.7	12.4	9.0	9.6	9.8	9.4	9.2	8.4	9.8	11.0	11.9	11.8	12.7	11.7	11.3	8.4	14.4	11.5
Jan 28	11.3	10.5	16.5	15.6	16.9	18.4	16.1	11.6	12.7	16.7	17.7	17.1	19.0	20.9	23.2	21.7	18.5	17.4	15.2	20.3	26.1	17.6	19.8	19.8	10.5	26.1	17.5
Jan 29	16.5	14.6	11.7	12.7	11.8	10.8	10.1	11.8	12.1	11.5	11.9	13.1	10.0	11.4	18.0	18.1	18.3	14.5	15.7	13.8	11.2	11.1	12.7	16.6	10.0	18.3	13.3
Jan 30	17.1	24.3	17.2	15.6	13.1	10.0	11.7	10.1	7.8	8.2	7.8	9.2	12.5	11.7	10.1	8.9	8.6	7.4	7.5	8.4	10.2	9.6	6.3	4.7	4.7	24.3	10.8
Jan 31	3.4	3.6	5.0	10.1	9.7	11.2	9.7	8.9	5.5	3.8	1.1	2.6	2.6	2.8	2.3	4.1	3.1	1.2	0.3	4.2	4.3	4.3	6.2	7.6	0.3	11.2	4.9
Diurnal Maximum	28.3	24.8	22.1	17.2	20.0	24.9	26.3	26.5	26.3	27.7	27.4	28.5	27.9	25.7	23.2	25.8	22.9	20.1	18.6	20.3	26.1	17.6	19.8	20.5			
Diurnal Average	9.7	9.8	9.4	9.2	9.1	9.5	9.5	9.2	8.9	9.0	9.3	9.0	9.0	9.4	9.5	9.2	9.4	9.2	9.0	9.1	9.0	9.0	8.8	9.1			

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.

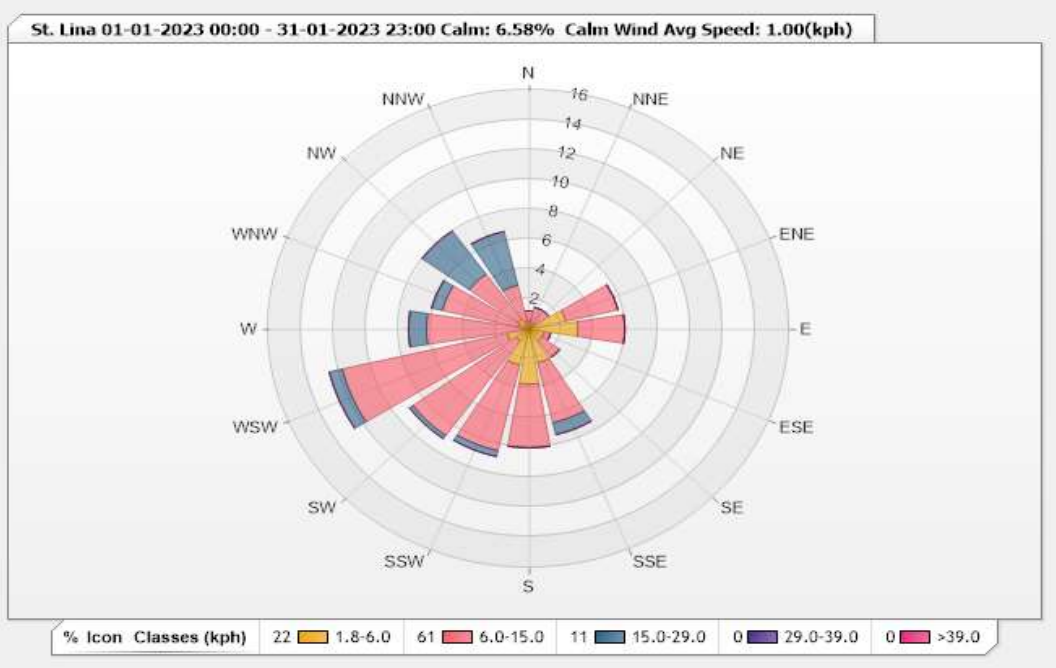


Station: St. Lina Monitor: WDS [kph] Monthly: 01-2023

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

Calm (WS<1.8kph): 6.58% Valid Data: 98.12%

Direction	1.8-6.0	6.0-15.0	15.0-29.0	29.0-39.0	>39.0	Total
N	0.55	0.68	0	0	0	1.23
NNE	0.27	1.23	0	0	0	1.5
NE	0.41	1.1	0	0	0	1.51
ENE	2.33	3.29	0	0	0	5.62
E	3.01	2.88	0	0	0	5.89
ESE	0.96	0.41	0	0	0	1.37
SE	0.96	1.37	0	0	0	2.33
SSE	2.33	4.11	0.82	0	0	7.26
S	3.7	4.25	0	0	0	7.95
SSW	2.47	5.89	0.41	0	0	8.77
SW	0.96	7.81	0.27	0	0	9.04
WSW	1.37	10.41	0.82	0	0	12.6
W	0.27	6.03	1.1	0	0	7.4
WNW	0.68	4.79	0.68	0	0	6.15
NW	0.82	3.7	3.56	0	0	8.08
NNW	0.41	2.6	3.7	0	0	6.71
Summary	21.5	60.55	11.36	0	0	93.41



Lakeland Industry & Community Association

St. Lina Site - January 2023

Summary of Hourly Averages

WIND DIRECTION (VWD) in sector

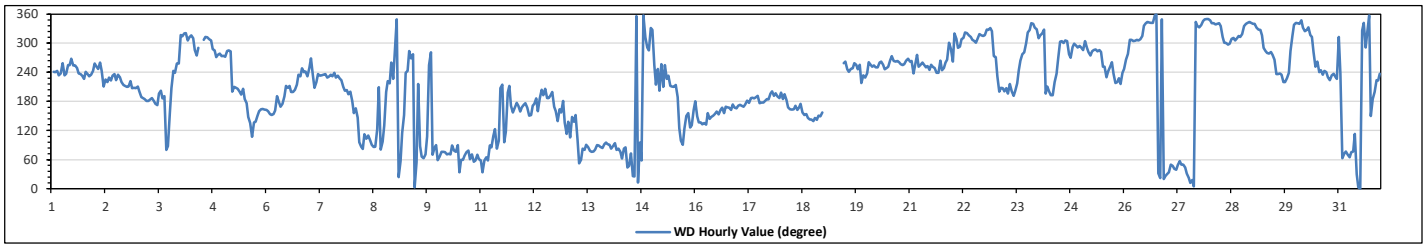
Monthly Average:	260 (WSW) degree	Hours in Service:	744
		Hours of Data:	730
		Hours of Missing Data:	14
		Hours of Calibration:	0
		Operational Uptime:	98.1

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
Jan 1	X	WSW	WSW	WSW	SW	SW	WSW	SW	SW	WSW	WSW	W	WSW	WSW	WSW	SW	SW	SW	SW	WSW	SW	SW	SW	WSW	243	WSW
Jan 2	WSW	WSW	WSW	WSW	WSW	SSW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SSW	SSW	SSW	SSW	SW	SSW	SSW	SSW	224	SW
Jan 3	SSW	SSW	S	S	S	S	S	S	S	S	S	S	SSW	SSW	S	S	E	E	SSE	SSW	WSW	WSW	WSW	WSW	189	S
Jan 4	NW	NW	NW	NW	NW	NW	NW	NW	WNW	W	WNW	K	K	NW	NW	NW	NW	NW	WNW	WNW	W	W	W	W	300	WNW
Jan 5	W	W	WNW	WNW	W	SSW	SSW	SSW	SSW	SSW	SSW	SSW	S	S	SE	SE	ESE	SE	SE	SSE	SSE	SSE	SSE	SSE	183	S
Jan 6	SSE	SSE	SSE	SSE	SSE	SSE	S	S	SSE	S	S	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SW	SW	WSW	WSW	WSW	SW	194	SSW
Jan 7	WSW	W	SW	SSW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	WSW	SW	SW	SW	SW	SSW	SSW	SSW	SSW	SSW	227	SW
Jan 8	S	SSE	SSE	SE	E	E	E	ESE	ESE	ESE	E	E	E	E	ESE	SSW	E	E	SE	SSW	SW	SW	WSW	SW	126	SE
Jan 9	W	NNW	NNE	ENE	ESE	SSE	WSW	WSW	WNW	W	W	N	NE	SW	E	ENE	ENE	ENE	ESE	WSW	W	ENE	E	E	52	NE
Jan 10	ENE	ENE	ENE	ENE	ENE	ENE	ENE	ENE	E	ENE	ENE	E	NE	ENE	ENE	ENE	ENE	ENE	ENE	ENE	NE	ENE	ENE	ENE	70	ENE
Jan 11	ENE	NE	ENE	ENE	ENE	E	E	ESE	ESE	E	E	SSW	SSW	E	ESE	SSW	SSW	S	SSE	SSE	S	S	SSE	SSE	133	SE
Jan 12	S	S	SSE	SSE	SSE	S	S	S	SSE	S	SSW	S	SSW	S	S	S	SSW	SSE	SSE	SE	SSE	SSE	S	SE	175	S
Jan 13	ESE	SE	ESE	SE	SE	SSE	E	NE	ENE	E	E	E	E	ENE	ENE	ENE	E	E	E	E	E	E	E	E	90	E
Jan 14	E	E	E	E	E	E	ENE	ENE	E	E	NE	NE	ENE	NNE	NNE	N	NNE	E	ENE	N	NW	WNW	WNW	NNW	74	ENE
Jan 15	NW	WSW	SSW	WSW	SSW	WSW	SSW	WSW	SW	SW	SSW	SSW	SSW	SSW	S	SE	E	E	ESE	SSE	SSE	SE	SE	SSE	184	S
Jan 16	S	SSE	SE	SE	SE	SE	SE	SSE	SE	SE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	S	SSE	SSE	155	SSE
Jan 17	S	S	S	SSE	S	S	S	S	S	S	S	S	S	S	S	S	S	S	SSW	SSW	S	SSW	S	S	184	S
Jan 18	SSW	S	SSW	S	SSE	SSE	SSE	SSE	S	SSE	SSE	S	SSE	SSE	SSE	SE	SE	SE	SE	SE	SSE	SSE	SSE	SSE	169	SSE
Jan 19	X	X	X	X	X	X	X	X	X	X	X	WSW	W	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	SW	SW	SW	-	-
Jan 20	SW	W	WSW	WSW	WSW	WSW	WSW	WSW	W	WSW	WSW	WSW	WSW	W	W	W	W	W	W	WSW	WSW	WSW	W	W	258	WSW
Jan 21	W	W	SW	WSW	W	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	W	WSW	WSW	WSW	W	WNW	WNW	255	WSW
Jan 22	W	NW	NW	WNW	WNW	NW	NW	NW	NW	NW	NW	NW	WNW	WNW	NW	NW	NW	NW	NW	NNW	NW	NNW	NW	W	312	NW
Jan 23	W	SW	SSW	SSW	SSW	SSW	SSW	SSW	SW	SSW	S	SSW	SW	WSW	W	W	W	WNW	NW	NW	NNW	NNW	NNW	NNW	263	W
Jan 24	NW	NW	NW	NNW	SSW	SSW	SSW	S	S	SW	SW	W	WNW	WNW	WNW	NW	WNW	W	W	WNW	WNW	WNW	WNW	WNW	283	W
Jan 25	WNW	WNW	WNW	WNW	W	W	W	WNW	WNW	W	WNW	W	WSW	WSW	SW	WSW	WSW	W	SW	SW	SW	SW	SW	WSW	263	W
Jan 26	WSW	W	W	NW	NW	WNW	WNW	NW	NW	NW	NW	NNW	NNW	NNW	NNW	NNW	NNW	N	N	NNE	NNE	NNW	NNE	NNE	317	NW
Jan 27	NNE	NE	NE	NE	NE	NE	NE	ENE	NE	NE	NE	NNE	NNE	NNE	NNE	N	NNW	NNW	NNW	NNW	NNW	NNW	N	N	21	NNE
Jan 28	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NW	WNW	WNW	WNW	WNW	NW	NW	NW	NW	NW	NW	NW	NNW	NNW	NNW	NNW	NNW	324	NW
Jan 29	NNW	NNW	NNW	NNW	NW	NW	WNW	WNW	W	W	W	W	W	SW	SW	SW	SW	SW	SW	SW	WSW	WNW	NW	NNW	278	W
Jan 30	NNW	NNW	NNW	NNW	NNW	NW	NW	NNW	NW	NW	W	WSW	W	WSW	WSW	SW	WSW	WSW	SW	SW	SW	SW	SW	SW	292	WNW
Jan 31	NW	SW	ENE	ENE	ENE	ENE	ENE	ENE	ENE	ESE	NNE	N	N	NW	NNW	WNW	NW	N	SSE	S	SSW	SW	SW	SW	67	ENE

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 - January 2023

Summary of Hourly Averages

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

WIND SPEED

Maximum Hourly Value:	28.5	kph	on January 26 at hour 11	Hours in Service:	744
Maximum Daily Value:	19.0	kph	on January 26	Hours of Data:	730
Minimum Hourly Value:	0.0	kph	on January 14 at hour 13	Hours of Missing Data:	14
Minimum Daily Value:	2.1	kph	on January 18	Hours of Calibration:	0
Monthly Average:	3.6	kph		Operational Uptime:	98.1

WIND DIRECTION

Monthly Average: 260 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			
Jan 1	X	7.5	7.3	8.1	7.6	7.3	8.5	7.5	7.5	8.0	7.1	9.3	7.3	7.4	8.5	7.1	8.0	8.0	7.6	10.7	9.1	8.3	8.1	10.2	7.1	10.7	8.1
	X	WSW	WSW	WSW	SW	SW	WSW	SW	SW	WSW	WSW	W	WSW	WSW	WSW	SW	SW	SW	SW	WSW	SW	SW	SW	WSW			
Jan 2	9.4	9.4	8.9	9.8	7.4	7.4	7.1	7.3	7.5	7.9	8.4	8.7	7.7	9.8	9.3	8.3	9.0	11.7	12.8	13.2	14.4	17.5	15.8	16.4	7.1	17.5	10.2
	WSW	WSW	WSW	WSW	WSW	SSW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SSW	SSW	SSW	SSW	SW	SSW	SSW	SSW			
Jan 3	13.8	14.7	11.9	12.0	11.7	9.5	11.1	12.6	11.7	12.2	9.8	8.8	7.4	7.2	5.6	4.6	4.3	7.4	6.8	5.8	6.1	5.7	2.5	4.9	2.5	14.7	8.7
	SSW	SSW	S	S	S	S	S	S	S	S	S	S	SSW	SSW	S	S	E	E	SSE	SSW	WSW	WSW	WSW	WSW			
Jan 4	12.2	8.1	9.9	10.7	12.2	13.5	14.0	12.8	9.9	9.4	10.6	K	K	11.1	11.6	11.3	12.3	11.5	9.4	9.4	12.5	11.4	11.4	10.9	8.1	14.0	11.2
	NW	NW	NW	NW	NW	NW	NW	NW	WNW	W	WNW	K	K	NW	NW	NW	NW	NW	WNW	WNW	W	W	W	W			
Jan 5	12.4	11.6	8.5	7.6	3.9	6.6	11.0	11.2	12.3	12.1	12.2	12.4	9.4	11.4	10.7	10.8	12.6	12.4	11.9	12.0	14.6	15.9	15.8	15.4	3.9	15.9	11.4
	W	W	WNW	WNW	W	SSW	SSW	SSW	SSW	SSW	SSW	SSW	S	S	SE	SE	ESE	SE	SE	SSE	SSE	SSE	SSE	SSE			
Jan 6	16.3	16.4	13.8	13.7	13.9	16.9	14.0	11.0	10.1	11.3	12.5	12.2	11.4	10.9	8.1	7.7	8.6	10.2	14.0	13.1	12.4	11.5	11.7	12.1	7.7	16.9	12.2
	SSE	SSE	SSE	SSE	SSE	SSE	S	S	SSE	S	S	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SW	SW	WSW	WSW	WSW	SW			
Jan 7	11.8	14.0	10.2	10.5	10.9	12.2	11.0	10.8	11.6	11.8	12.2	11.6	12.9	12.6	11.7	11.3	13.0	11.3	9.6	8.9	9.7	12.3	13.3	11.6	8.9	14.0	11.5
	WSW	W	SW	SSW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	WSW	SW	SW	SW	SW	SSW	SSW	SSW	SSW	SSW			
Jan 8	10.8	9.9	11.7	8.5	8.4	12.9	13.5	11.4	10.6	4.2	3.6	7.4	9.3	8.4	5.8	0.1	4.9	8.1	6.2	6.8	6.4	6.9	6.8	5.3	0.1	13.5	7.8
	S	SSE	SSE	SE	E	E	E	ESE	ESE	ESE	E	E	E	E	ESE	SSW	E	E	SE	SSW	SW	SW	WSW	SW			
Jan 9	4.7	6.9	7.8	2.7	5.3	4.6	5.7	3.4	4.2	6.6	5.3	1.2	4.2	1.3	0.3	3.3	6.8	9.2	3.4	2.0	1.1	9.0	9.6	3.7	0.3	9.6	4.7
	W	NNW	NNE	ENE	ESE	SSE	WSW	WSW	WNW	W	W	N	NE	SW	E	ENE	ENE	ENE	ESE	WSW	W	ENE	E	E			
Jan 10	7.7	9.7	9.9	9.0	6.3	8.9	10.3	7.0	3.8	2.3	5.7	4.4	1.2	1.8	6.8	5.6	5.8	5.4	6.6	5.1	1.8	4.7	4.8	6.9	1.2	10.3	5.9
	ENE	ENE	ENE	ENE	ENE	ENE	ENE	ENE	E	ENE	ENE	E	NE	ENE	ENE	ENE	ENE	ENE	ENE	ENE	NE	ENE	ENE	ENE			
Jan 11	2.8	5.2	7.0	5.5	2.7	0.6	2.3	0.3	1.1	2.0	4.0	3.0	3.2	2.2	2.3	1.3	3.1	3.0	4.4	4.7	5.8	6.1	5.8	6.0	0.3	7.0	3.5
	ENE	NE	ENE	ENE	ENE	E	E	ESE	ESE	E	E	SSW	SSW	E	ESE	SSW	SSW	S	SSE	SSE	S	S	SSE	SSE			
Jan 12	6.3	5.5	6.1	8.4	7.4	8.6	8.5	8.4	6.3	7.3	6.3	6.7	5.8	4.9	7.0	4.4	4.8	4.3	4.4	5.0	3.8	4.9	5.0	2.1	2.1	8.6	5.9
	S	S	SSE	SSE	SSE	S	S	S	SSE	S	SSW	S	SSW	S	S	S	SSW	SSE	SSE	SE	SSE	SSE	S	SE			
Jan 13	2.2	3.1	1.8	3.8	3.2	1.5	0.3	2.7	3.8	3.4	3.3	3.6	5.6	7.0	7.9	7.2	6.9	8.0	9.1	8.6	9.0	10.7	8.2	9.5	0.3	10.7	5.4
	ESE	SE	ESE	SE	SE	SSE	E	NE	ENE	E	E	E	E	ENE	ENE	ENE	E	E	E	E	E	E	E	E			
Jan 14	9.9	7.8	6.6	6.6	5.8	5.9	4.7	4.3	4.7	4.3	1.5	0.1	0.2	**0.0**	0.1	1.3	1.3	0.9	2.5	2.6	0.2	2.2	2.7	1.7	**0.0**	9.9	3.2
	E	E	E	E	E	E	ENE	ENE	E	E	NE	NE	ENE	NNE	NNE	N	NNE	E	ENE	N	NW	WNW	WNW	NNW			
Jan 15	2.6	2.0	3.3	4.9	1.6	1.6	2.1	3.5	1.7	2.2	1.0	1.7	2.8	2.0	2.9	1.8	3.4	4.8	2.8	2.7	2.2	0.1	4.6	9.6	0.1	9.6	2.8
	NW	WSW	SSW	WSW	SSW	WSW	SSW	WSW	SW	SW	SSW	SSW	SSW	SSW	S	SE	E	E	ESE	SSE	SSE	SE	SE	SSE			
Jan 16	6.8	5.9	7.2	7.9	7.8	6.6	6.9	6.8	8.6	8.5	7.8	7.9	8.0	9.2	7.0	7.5	7.4	6.4	7.5	8.0	8.2	6.7	6.4	7.2	5.9	9.2	7.4
	S	SSE	SE	SE	SE	SE	SE	SSE	SE	SE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	S	SSE	SSE			
Jan 17	6.5	5.5	5.1	5.0	5.5	4.6	4.2	4.2	4.1	3.9	4.3	4.4	4.5	5.2	4.5	5.0	7.1	7.2	6.9	7.0	6.8	6.4	4.7	5.2	3.9	7.2	5.3
	S	S	S	SSE	S	S	S	S	S	S	S	S	S	S	S	S	S	S	SSW	SSW	S	SSW	S	S			
Jan 18	4.0	5.2	4.8	3.7	3.6	3.8	2.4	1.0	1.7	2.1	2.5	1.2	0.1	1.5	1.6	0.1	2.2	1.2	1.6	1.6	0.8	0.8	0.6	2.8	0.1	5.2	**2.1**
	SSW	S	SSW	S	SSE	SSE	SSE	SSE	S	SSE	SSE	S	SSE	SSE	SSE	SE	SE	SE	SE	SE	SE	SSE	SSE	SSE			
Jan 19	X	X	X	X	X	X	X	X	X	X	X	7.3	9.1	8.7	9.6	11.8	12.3	13.9	12.5	10.3	11.2	8.7	11.0	9.5	7.3	13.9	NA
	X	X	X	X	X	X	X	X	X	X	X	WSW	W	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	SW	SW	SW			
Jan 20	10.6	11.8	14.6	8.8	12.3	13.0	13.4	11.1	13.1	10.7	10.6	11.7	12.5	16.5	17.8	15.0	14.7	16.7	16.0	15.5	14.5	14.1	14.9	12.7	8.8	17.8	13.4
	SW	W	WSW	WSW	WSW	WSW	WSW	WSW	W	WSW	WSW	WSW	WSW	W	W	W	W	W	W	WSW	WSW	WSW	W	W			
Jan 21	13.1	9.9	9.3	11.2	10.2	11.5	11.8	15.3	13.1	12.8	14.0	13.5	12.7	12.1	14.2	12.9	13.0	12.5	11.4	12.5	10.3	8.5	6.4	6.4	6.4	15.3	11.6
	W	W	SW	WSW	W	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	W	WSW	WSW	WSW	W	WNW	WNW			
Jan 22	6.9	13.6	9.1	11.3	13.9	14.4	13.0	15.7	15.5	18.2	22.1	20.5	21.3	20.3	23.0	25.8	22.9	20.1	17.3	15.2	15.1	13.2	8.0	6.6	6.6	25.8	16.0
	W	NW	NW	WNW	WNW	NW	NW	NW	NW	NW	NW	NW	WNW	WNW	NW	NW	NW	NW	NW	NNW	NW	NNW	NW	W			
Jan 23	8.3	7.2	7.5	7.6	8.9	8.3	9.8	10.4	10.1	7.3	10.7	12.2	14.6	17.7	14.7	15.8	12.8	13.7	18.6	18.1	15.7	16.3	11.0	8.0	7.2	18.6	11.9
	W	SW	SSW	SSW	SSW	SSW	SSW	SSW	SW	SSW	S	SSW	SW	WSW	W	W	W	WNW	NW	NW	NNW	NNW	NNW	NNW			
Jan 24	5.6	4.6	4.9	2.5	3.9	3.7	4.5	3.0	3.7	7.7	12.3	10.6	12.1	11.6	12.6	13.1	10.3	8.9	10.2	11.6	9.2	7.8	8.5	8.6	2.5	13.1	8.0
	NW	NW	NW	NNW	SSW	SSW	SSW	S	S	SW	SW	W	WNW	WNW	WNW	NW	WNW	W	W	WNW	WNW	WNW	WNW	WNW			
Jan 25	9.2	9.9	11.1	11.8	12.6	10.8	10.4	10.7	11.6	12.6	11.9	9.2	6.4	8.8	6.9	10.6	11.2	11.1	8.9	9.0	10.1	9.6	10.6	20.5	6.4	20.5	10.6
	WNW	WNW	WNW	WNW	W	W	W	WNW	WNW	W	WNW	W	WSW	WSW	SW	WSW	WSW	W	SW	SW	SW	SW	SW	WSW			
Jan 26	28.3	24.8	22.1	17.2	20.0	24.9	26.3	26.5	26.3	27.7	27.4	**28.5**	27.9	25.7	21.8	18.5	17.0	7.4	7.3	5.5	3.2	4.6	7.0	9.1	3.2	**28.5**	**19.0**
	WSW	W	W	NW	NW	WNW	WNW	NW	NW	NW	NW	NNW	NNW	NNW	NNW	NNW	NNW	N	N	NNE	NNE	NNW	NNE	NNE			
Jan 27	10.5	10.7	12.6	14.0	14.4	13.6	11.0	13.2	14.3	13.7	12.4	9.0	9.6	9.8	9.4	9.2	8.4	9.8	11.0	11.9	11.8	12.7	11.7	11.3	8.4	14.4	11.5
	NNE	NE	NE	NE	NE	NE	NE	ENE	NE	NE	NE	NNE	NNE	NNE	NNE	N	NNW	NNW	NNW	NNW	NNW	NNW	N	N			
Jan 28	11.3	10.5	16.5	15.6	16.9	18.4	16.1	11.6	12.7	16.7	17.7	17.1	19.0	20.9	23.2	21.7	18.5	17.4	15.2	20.3	26.1	17.6	19.8	19.8	10.5	26.1	17.5
	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NW	WNW	WNW	WNW	WNW	NW	NW	NW	NW	NW	NW	NW	NNW	NNW	NNW	NNW	NNW			
Jan 29	16.5	14.6	11.7	12.7	11.8	10.8	10.1	11.8	12.1	11.5	11.9	13.1	10.0	11.4	18.0	18.1	18.3	14.5	15.7	13.8	11.2	11.1	12.7	16.6	10.0	18.3	13.3
	NNW	NNW	NNW	NNW	NW	NW	WNW	WNW	W	W	W	W	W	SW	SW	SW	SW	SW	SW	SW	WSW	WNW	NW	NNW			
Jan 30	17.1	24.3	17.2	15.6	13.1	10.0	11.7	10.1	7.8	8.2	7.8	9.2	12.5	11.7	10.1	8.9	8.6	7.4	7.5	8.4	10.2	9.6	6.3	4.7	4.7	24.3	10.8
	NNW	NNW	NNW	NNW	NNW	NW	NW	NNW	NW	NW	W	WSW	W	WSW	WSW	SW	WSW	WSW	SW	SW	SW	SW	SW	SW			
Jan 31	3.4	3.6	5.0	10.1	9.7	11.2	9.7	8.9	5.5	3.8	1.1	2.6	2.6	2.8	2.3	4.1	3.1	1.2	0.3	4.2	4.3	4.3	6.2	7.6	0.3	11.2	4.9
	NW	SW	ENE	ENE	ENE	ENE	ENE	ENE	ENE	ESE	NNE	N	N	NW	NNW	WNW	NW	N	SSE	S	SSW	SW	SW	SW			

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 - January 2023

Summary of Hour Standard Deviations

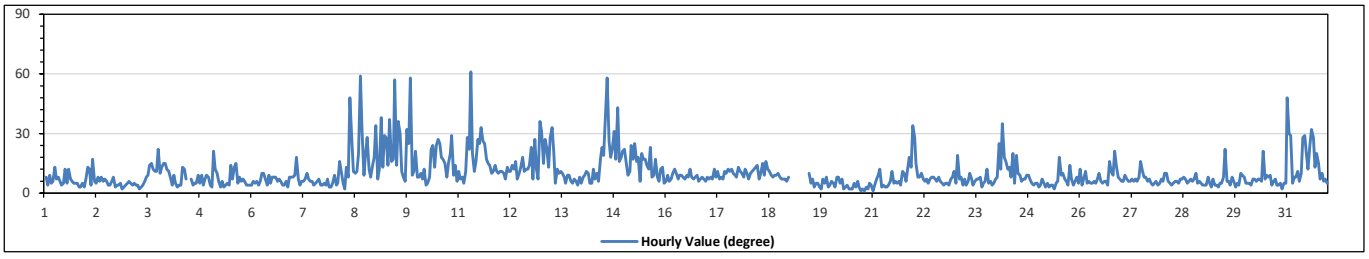
STANDARD DEVIATION WIND DIRECTION (STDWD) in Degree

Maximum Hourly Value:	61 degree	on January 11 at hour 7	Hours in Service: 744
			Hours of Data: 730
Minimum Hourly Value:	1 degree	on January 20 at hour 17	Hours of Missing Data: 14
			Hours of Calibration: 0
			Operational Uptime: 98.1

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	
Jan 1	X	8	4	9	5	6	13	7	8	6	4	5	12	5	12	7	6	5	5	5	3	3	5	3	3	13
Jan 2	7	13	12	4	17	6	5	8	6	8	6	7	6	4	4	6	8	3	4	4	5	2	3	4	2	17
Jan 3	5	6	5	4	5	4	4	2	3	4	6	8	9	14	15	12	11	11	22	10	13	15	15	12	2	22
Jan 4	11	8	4	9	5	3	4	4	13	12	7	K	K	7	4	5	5	9	5	9	4	7	9	8	3	13
Jan 5	4	3	21	12	10	6	3	6	3	4	5	4	14	7	13	15	5	8	6	7	6	4	4	4	3	21
Jan 6	4	6	5	6	4	6	10	10	7	4	9	5	8	8	8	6	7	6	4	4	6	3	8	8	3	10
Jan 7	8	9	18	7	4	6	6	7	10	7	6	6	4	5	6	7	4	4	5	4	7	3	3	5	3	18
Jan 8	9	4	5	16	11	5	2	13	8	48	27	11	10	11	20	59	31	9	20	28	12	8	14	18	2	59
Jan 9	34	7	12	38	13	29	28	14	37	16	17	57	14	36	30	11	8	6	32	25	58	9	11	21	6	58
Jan 10	8	8	10	7	12	4	5	8	22	24	13	24	27	25	18	17	15	8	15	20	29	9	14	6	4	29
Jan 11	11	7	8	5	11	28	22	61	20	11	16	27	25	33	26	25	17	15	14	10	11	14	11	10	5	61
Jan 12	11	11	10	7	13	11	11	14	12	16	7	10	13	18	11	12	12	14	23	7	27	12	7	36	7	36
Jan 13	31	15	27	23	13	28	33	21	5	12	10	11	10	8	5	9	9	6	5	7	6	4	8	5	4	33
Jan 14	8	9	11	10	5	5	12	7	10	6	17	23	19	40	58	26	18	22	31	17	43	16	18	21	5	58
Jan 15	22	16	9	11	24	17	25	16	18	6	20	17	17	14	12	23	8	9	17	8	6	12	13	5	5	25
Jan 16	6	9	6	7	10	12	10	7	9	9	8	7	9	8	12	8	7	8	9	6	7	8	7	6	6	12
Jan 17	8	7	8	7	12	8	11	7	8	7	11	10	12	11	12	10	9	8	13	11	10	8	12	10	7	13
Jan 18	7	10	11	12	13	14	7	10	15	9	16	12	11	9	8	9	9	10	8	7	7	7	6	8	6	16
Jan 19	X	X	X	X	X	X	X	X	X	X	X	10	5	7	3	5	5	3	2	7	5	8	3	4	2	10
Jan 20	6	5	3	8	8	5	7	2	3	4	2	2	2	5	3	6	3	1	2	1	3	2	5	4	1	8
Jan 21	1	4	7	9	12	3	4	3	3	4	6	11	5	6	5	6	4	11	10	6	12	18	13	34	1	34
Jan 22	28	15	8	8	10	7	6	7	5	7	8	8	7	6	8	6	5	4	5	5	4	7	8	11	4	28
Jan 23	5	19	7	8	4	7	4	6	10	7	4	6	7	7	8	3	5	6	12	5	6	4	5	7	3	19
Jan 24	8	25	12	35	18	16	12	13	8	20	5	19	10	9	6	7	7	9	9	7	5	4	5	5	4	35
Jan 25	3	4	7	5	3	5	3	4	4	2	5	6	18	9	10	7	6	4	14	7	4	6	8	5	2	18
Jan 26	12	4	7	11	5	6	5	5	6	5	7	10	6	5	6	6	4	16	11	9	21	14	8	7	4	21
Jan 27	6	6	9	7	6	6	7	6	7	6	8	16	11	8	8	6	7	5	4	5	6	4	5	7	4	16
Jan 28	6	10	10	6	5	4	5	6	6	5	7	7	8	7	5	6	7	6	7	10	5	6	5	4	4	10
Jan 29	4	4	8	5	3	7	4	4	3	5	5	8	22	6	6	4	8	6	3	5	4	10	9	8	3	22
Jan 30	5	5	5	4	7	7	6	7	7	6	21	7	9	8	9	4	6	7	4	4	5	2	5	5	2	21
Jan 31	48	30	29	5	8	8	11	6	10	28	29	20	12	24	32	28	13	20	15	7	10	6	7	5	5	48
Diurnal Minimum	1	3	3	4	3	3	2	2	3	2	2	2	2	4	3	3	3	1	2	1	3	2	3	3		
Diurnal Maximum	48	30	29	38	24	29	33	61	37	48	29	57	27	40	58	59	31	22	32	28	58	18	18	36		

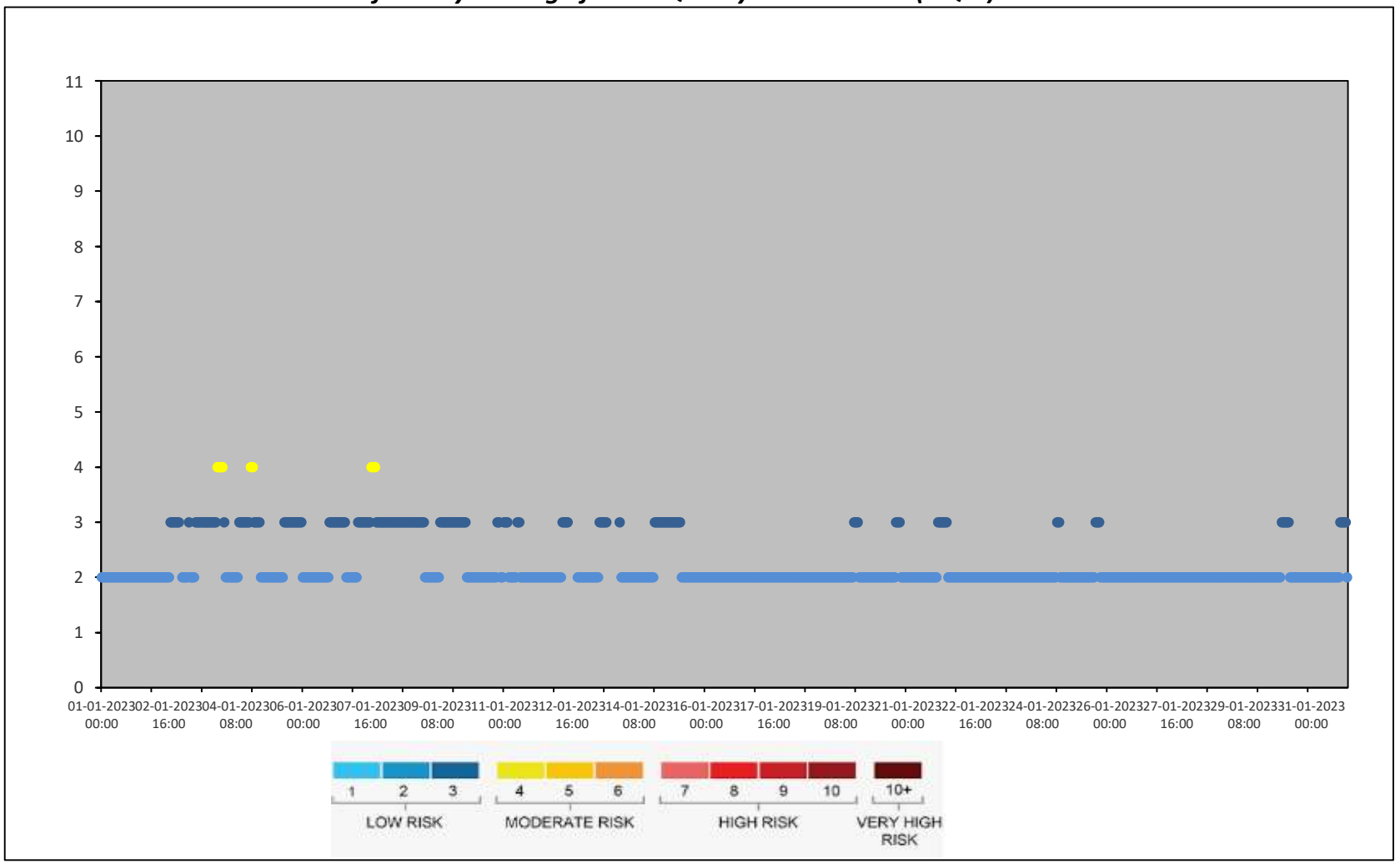
C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
K	Collection Error	ND	No Data (Machine Not in Service)	Y	Routine Maintenance	P Power Failure
X	InValid Data (Machine Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)			

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

Timeseries Chart of Hourly Average for Air Quality Health Index (AQHI) - Lac La Biche Station



Lakeland Industry & Community Association

Lac La Biche Station - January 2023

Summary of Hourly Averages

SULPHUR DIOXIDE (SO_2) in ppb

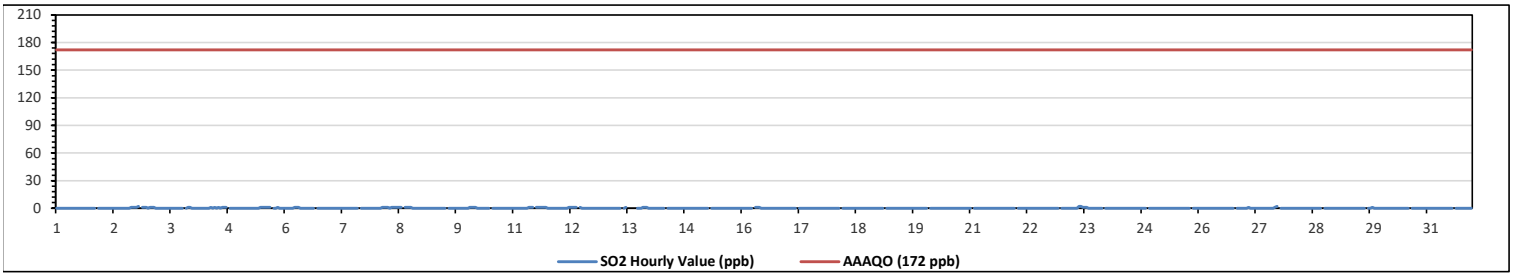
Alberta Ambient Air Quality Objectives (AAAQO): 1-Hour 172 ppb, 24-Hour 48 ppb, 30-Day 11 ppb

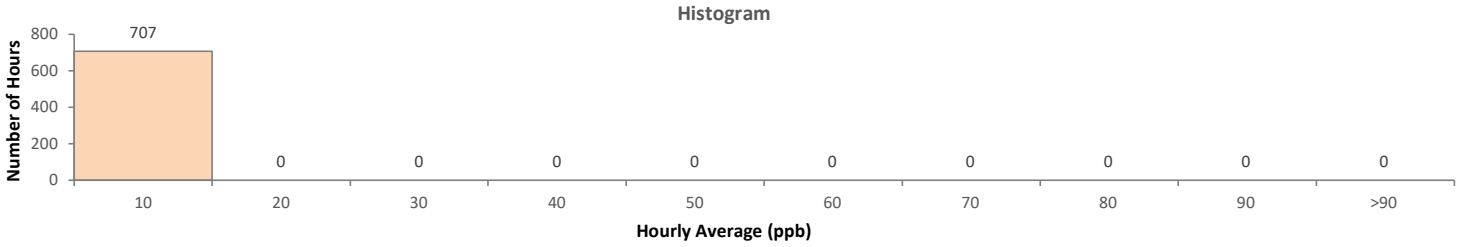
Number of 1-Hour Exceedances:	0	Number of 24-Hour Exceedances:	0	30-Day Exceedence:	0		
Maximum Hourly Value:	2	ppb	on January 2 at hour 19	Hours in Service:	744		
Maximum Daily Value:	0.6	ppb	on January 8	Hours of Data:	707		
Minimum Hourly Value:	0	ppb	on January 1 at hour 0	Hours of Missing Data: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



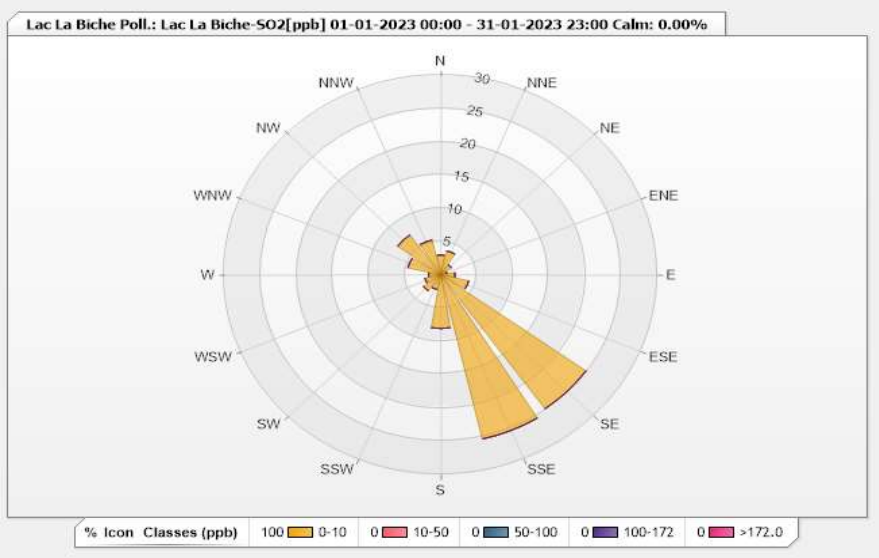


Station: Lac La Biche Poll.: Lac La Biche-SO2[ppb] Monthly: 01-2023

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	2.97	0	0	0	0	2.97
NNE	3.68	0	0	0	0	3.68
NE	1.84	0	0	0	0	1.84
ENE	0.85	0	0	0	0	0.85
E	1.98	0	0	0	0	1.98
ESE	3.96	0	0	0	0	3.96
SE	24.75	0	0	0	0	24.75
SSE	25.32	0	0	0	0	25.32
S	8.06	0	0	0	0	8.06
SSW	2.26	0	0	0	0	2.26
SW	2.97	0	0	0	0	2.97
WSW	2.26	0	0	0	0	2.26
W	1.7	0	0	0	0	1.7
WNW	4.67	0	0	0	0	4.67
NW	7.36	0	0	0	0	7.36
NNW	5.37	0	0	0	0	5.37
Summary	100	0	0	0	0	100



Lakeland Industry & Community Association

Lac La Biche Station - January 2023

Summary of Hourly Averages

HYDROGEN SULPHIDE (H_2S) in ppb

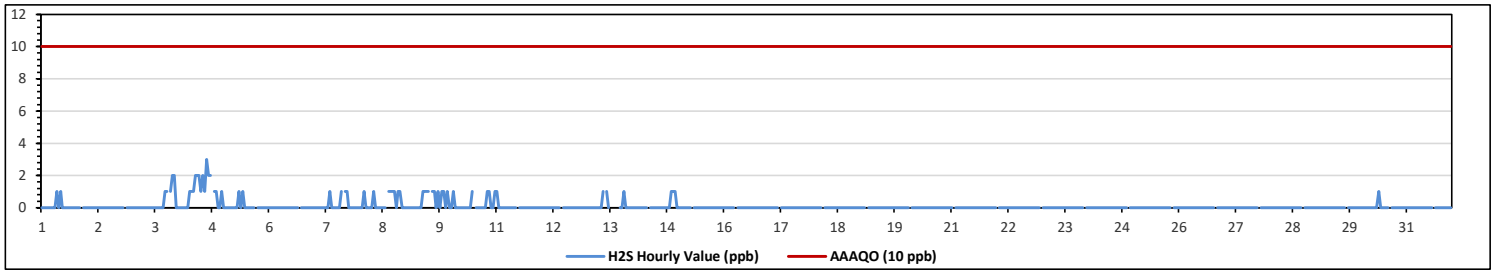
Alberta Ambient Air Quality Objectives (AAAQO): 1-Hour 10 ppb, 24-Hour 3 ppb

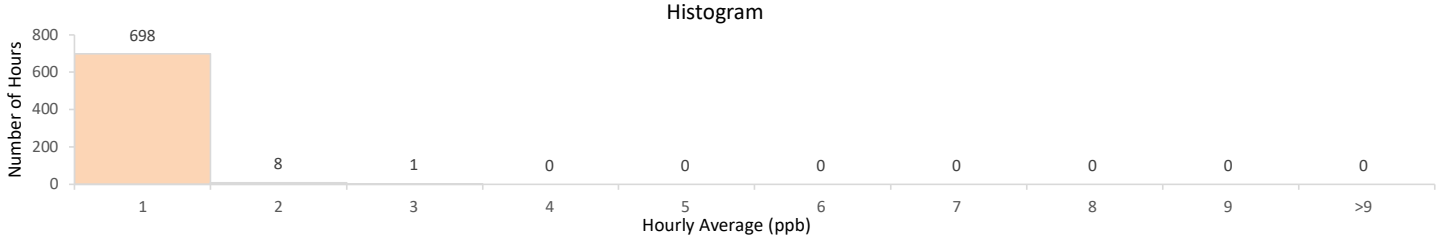
Number of 1-Hour Exceedances:	0		Number of 24-Hour Exceedances:	0	
Maximum Hourly Value:	3	ppb	on January 4 at hour 15	Hours in Service:	744
Maximum Daily Value:	1.0	ppb	on January 4	Hours of Data:	707
Minimum Hourly Value:	0	ppb	on January 1 at hour 0	Hours of Missing Data:	0
Minimum Daily Value:	0.0	ppb	on January 1	Hours of Calibration:	37
Monthly Average:	0.1	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			
Jan 1	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	S	0	0	0.0	1.0	0.0
Jan 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0.0	0.0	0.0
Jan 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	S	1	2	2	0	0.0	2.0	0.0
Jan 4	0	0	0	0	0	0	1	1	1	2	2	2	1	2	1	3	2	2	S	1	1	0	0	1	0.0	3.0	**1.0**
Jan 5	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	S	0	0	0	0	0	0	0.0	1.0	0.0
Jan 6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0.0	0.0	0.0
Jan 7	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	S	1	1	0	0	0	0	0	0	0.0	1.0	0.0
Jan 8	0	0	1	0	0	0	0	1	0	0	0	0	0	0	S	1	1	1	1	0	1	1	0	0	0.0	1.0	0.0
Jan 9	0	0	0	0	0	0	0	0	0	1	1	1	1	S	1	1	0	1	0	1	1	0	1	0	0.0	1.0	0.0
Jan 10	0	1	0	0	0	0	0	0	0	0	0	1	S	0	0	0	0	0	0	1	1	0	0	1	0.0	1.0	0.0
Jan 11	1	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	1.0	0.0
Jan 12	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Jan 13	0	0	0	0	0	0	0	0	1	S	1	0	C	C	C	C	C	0	0	1	0	0	0	0	0.0	1.0	0.0
Jan 14	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0.0	1.0	0.0
Jan 15	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Jan 16	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Jan 17	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Jan 18	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Jan 19	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Jan 20	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Jan 21	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Jan 22	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	0.0
Jan 23	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	0.0
Jan 24	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	0.0
Jan 25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0.0	0.0	0.0
Jan 26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0.0	0.0	0.0
Jan 27	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	0.0
Jan 28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0.0	0.0	0.0
Jan 29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0.0	0.0	0.0
Jan 30	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0.0	1.0	0.0
Jan 31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Diurnal Maximum	1	1	1	0	0	0	1	1	1	2	2	2	1	2	1	3	2	2	1	1	1	2	2	1			
Diurnal Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.1	0.1	0.2	0.1	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.



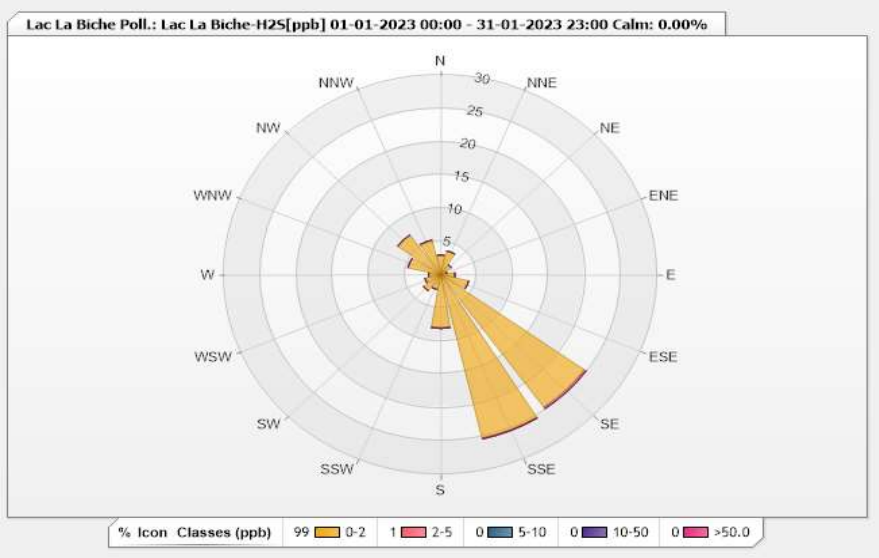


Station: Lac La Biche Poll.: Lac La Biche-H2S[ppb] Monthly: 01-2023

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	2.97	0	0	0	0	2.97
NNE	3.68	0	0	0	0	3.68
NE	1.84	0	0	0	0	1.84
ENE	0.85	0	0	0	0	0.85
E	1.98	0	0	0	0	1.98
ESE	3.96	0	0	0	0	3.96
SE	24.47	0.28	0	0	0	24.75
SSE	25.18	0.14	0	0	0	25.32
S	7.92	0.14	0	0	0	8.06
SSW	2.26	0	0	0	0	2.26
SW	2.97	0	0	0	0	2.97
WSW	2.26	0	0	0	0	2.26
W	1.7	0	0	0	0	1.7
WNW	4.67	0	0	0	0	4.67
NW	7.36	0	0	0	0	7.36
NNW	5.37	0	0	0	0	5.37
Summary	99.44	0.56	0	0	0	100



Lakeland Industry & Community Association

Lac La Biche Station - January 2023

Summary of Hourly Averages

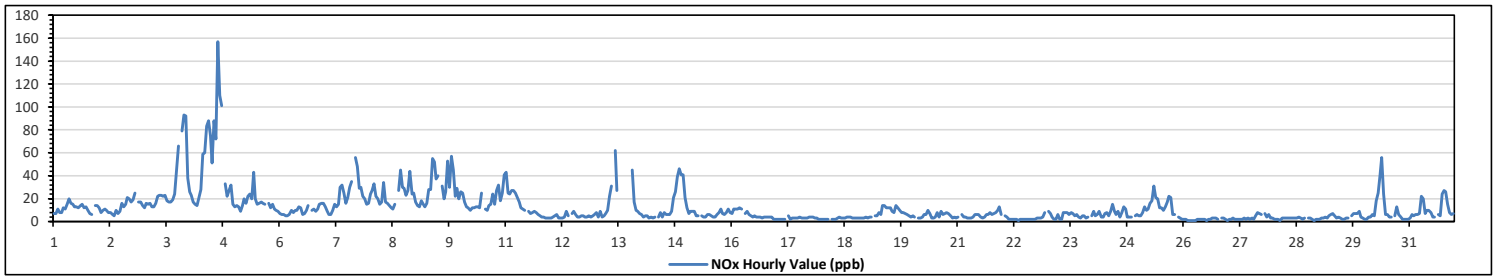
OXIDES OF NITROGEN (NOx) in ppb

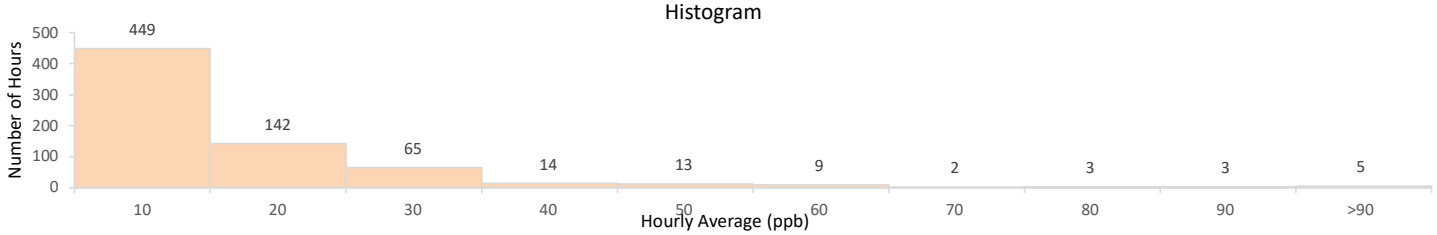
Maximum Hourly Value:	157	ppb	on January 4 at hour 15	Hours in Service:	744	
Maximum Daily Value:	52.9	ppb	on January 4	Hours of Data:	705	
Minimum Hourly Value:	1	ppb	on January 22 at hour 8	Hours of Missing Data:	0	
Minimum Daily Value:	1.9	ppb	on January 26	Hours of Calibration:	39	
Monthly Average:	12.2	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			
Jan 1	7	7	11	8	8	12	11	15	20	16	15	13	13	12	14	15	12	13	10	7	6	S	14	14	6	20	11.9
Jan 2	12	8	10	11	10	8	8	6	5	10	7	9	16	13	15	21	20	17	19	25	S	17	17	14	5	25	13.0
Jan 3	12	16	15	16	13	13	16	22	23	23	22	23	18	17	17	19	24	45	66	S	79	93	92	38	12	93	31.4
Jan 4	26	23	17	15	14	21	28	59	60	83	88	75	51	88	72	**157**	110	101	S	33	22	27	32	15	14	**157**	**52.9**
Jan 5	13	14	13	9	14	20	16	22	24	20	43	20	15	16	17	16	15	S	16	12	15	11	10	9	9	43	16.5
Jan 6	7	6	6	5	5	6	10	8	10	10	13	12	6	7	10	14	S	10	11	9	11	15	16	16	5	16	9.7
Jan 7	13	9	6	6	10	15	13	15	30	32	25	16	21	30	35	S	56	48	29	30	22	20	15	16	6	56	22.3
Jan 8	24	27	33	22	20	15	17	34	17	16	14	12	11	15	S	27	45	30	29	23	27	44	24	25	11	45	24.0
Jan 9	17	14	13	18	15	13	16	28	28	55	52	37	40	S	31	20	26	53	30	57	45	22	29	20	13	57	29.5
Jan 10	26	25	17	13	12	10	12	12	13	13	12	25	S	11	10	14	15	24	15	27	32	18	25	41	10	41	18.3
Jan 11	43	25	24	27	27	25	21	17	12	11	10	S	9	7	8	9	8	6	5	4	4	3	3	3	3	43	13.5
Jan 12	3	4	5	6	3	3	3	4	9	5	S	7	9	6	4	4	5	5	4	4	5	4	5	6	3	9	4.9
Jan 13	8	4	9	4	5	7	10	22	31	S	62	27	C	C	C	C	C	C	C	45	17	10	9	7	4	62	NA
Jan 14	6	4	5	5	3	4	3	4	S	4	8	4	8	6	6	6	9	21	26	39	46	41	41	21	3	46	13.9
Jan 15	12	7	9	9	9	5	5	S	5	4	4	6	6	5	4	4	6	8	11	7	6	8	11	8	4	12	6.9
Jan 16	7	11	11	11	12	11	S	7	9	6	5	4	5	4	4	4	3	4	4	4	4	4	2	2	2	12	6.0
Jan 17	2	2	2	2	2	S	5	2	3	3	3	3	4	3	3	3	3	4	4	4	3	3	2	2	2	5	2.9
Jan 18	2	2	2	2	S	2	2	2	3	4	3	3	3	4	4	4	3	3	3	3	3	3	3	4	2	4	2.9
Jan 19	3	4	4	S	5	5	8	6	14	14	12	12	12	9	8	14	12	10	8	8	7	6	5	4	3	14	8.3
Jan 20	5	4	S	3	3	4	6	6	10	7	3	3	4	8	4	9	6	7	8	7	5	3	4	3	3	10	5.3
Jan 21	4	S	6	4	4	3	3	3	4	6	6	6	4	3	4	6	6	8	6	7	8	10	13	6	3	13	5.7
Jan 22	S	5	4	2	2	2	2	2	1	2	2	2	2	2	2	2	2	2	3	3	3	4	8	S	**1**	8	2.7
Jan 23	9	7	4	2	2	6	2	2	8	8	8	6	8	7	5	6	4	3	5	5	3	4	S	5	2	9	5.2
Jan 24	9	5	6	9	4	4	7	8	5	9	15	9	6	9	4	8	13	11	4	4	4	S	5	6	4	15	7.1
Jan 25	5	5	8	13	10	11	16	18	31	21	20	12	12	10	13	17	22	21	6	6	S	4	3	2	2	31	12.4
Jan 26	2	2	1	1	1	1	1	2	2	2	2	2	1	2	2	3	3	3	2	S	3	3	2	1	**1**	3	**1.9**
Jan 27	2	2	3	2	2	2	2	2	3	2	3	2	3	2	5	8	7	6	S	7	4	6	3	3	2	8	3.5
Jan 28	2	2	2	1	3	3	3	3	3	3	3	3	3	4	3	2	3	S	3	3	2	1	2	2	**1**	4	2.6
Jan 29	2	3	3	4	3	5	6	7	5	3	4	3	2	2	3	3	S	5	7	7	7	9	4	3	2	9	4.3
Jan 30	2	2	4	4	6	5	18	25	41	56	24	6	6	4	4	S	5	13	6	4	2	2	2	2	2	56	10.6
Jan 31	3	6	5	6	6	7	22	20	7	10	10	8	4	4	S	6	5	24	27	26	15	8	6	7	3	27	10.5
Diurnal Maximum	43	27	33	27	27	25	28	59	60	83	88	75	51	88	72	157	110	101	66	57	79	93	92	41			
Diurnal Average	9.6	8.5	8.6	8.0	7.8	8.3	9.7	12.8	14.5	15.3	16.6	12.3	10.4	10.7	11.1	15.0	16.0	18.0	13.1	14.5	14.1	13.9	13.6	10.2			

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.



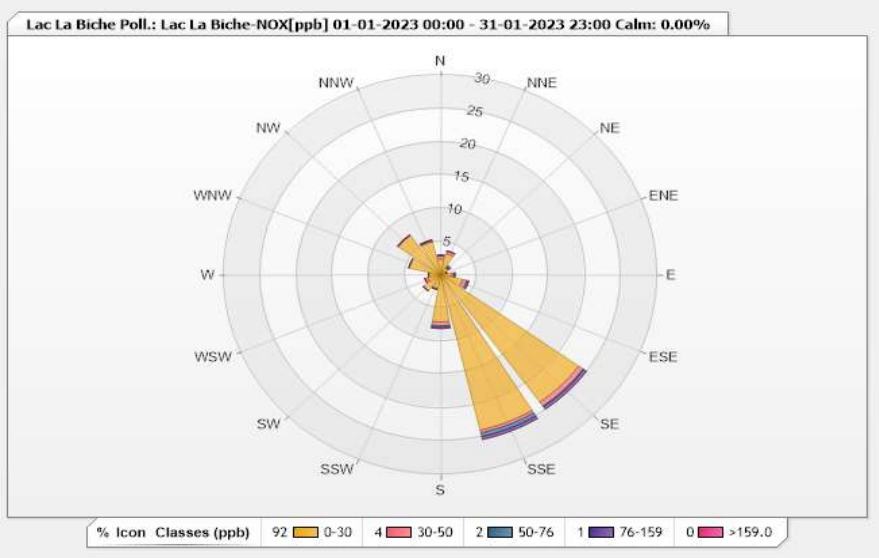


Station: Lac La Biche Poll.: Lac La Biche-NOX[ppb] Monthly: 01-2023

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	0.43	0.14	0	0	2.98
NNE	3.26	0.43	0	0	0	3.69
NE	1.28	0	0.14	0.28	0	1.7
ENE	0.71	0.14	0	0	0	0.85
E	1.56	0.28	0.14	0	0	1.98
ESE	3.12	0.57	0.28	0	0	3.97
SE	23.55	0.71	0.14	0.43	0	24.83
SSE	23.97	0.43	0.57	0.43	0	25.4
S	7.09	0.57	0.28	0.14	0	8.08
SSW	2.13	0.14	0	0	0	2.27
SW	2.98	0	0	0	0	2.98
WSW	1.84	0.43	0	0	0	2.27
W	1.7	0	0	0	0	1.7
WNW	4.54	0	0	0	0	4.54
NW	7.23	0.14	0	0	0	7.37
NNW	5.11	0.14	0.14	0	0	5.39
Summary	92.48	4.41	1.83	1.28	0	100



Lakeland Industry & Community Association

Lac La Biche Station - January 2023

Summary of Hourly Averages

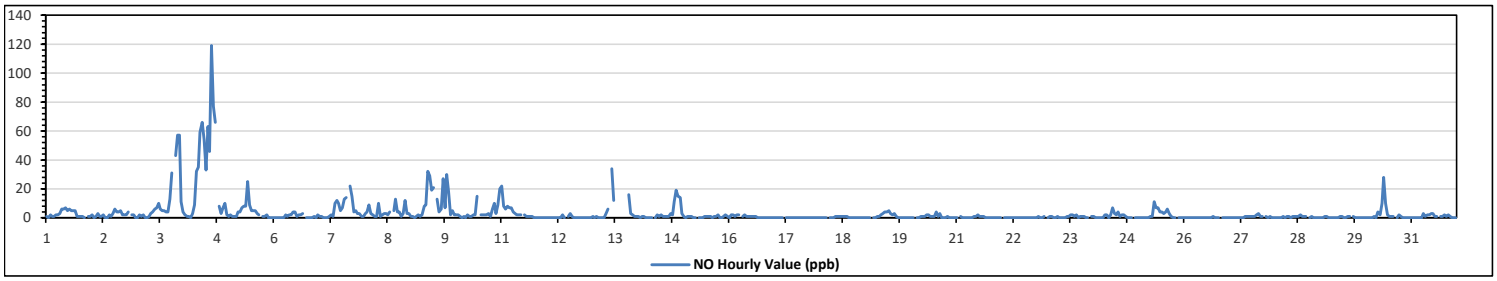
NITRIC OXIDE (NO) in ppb

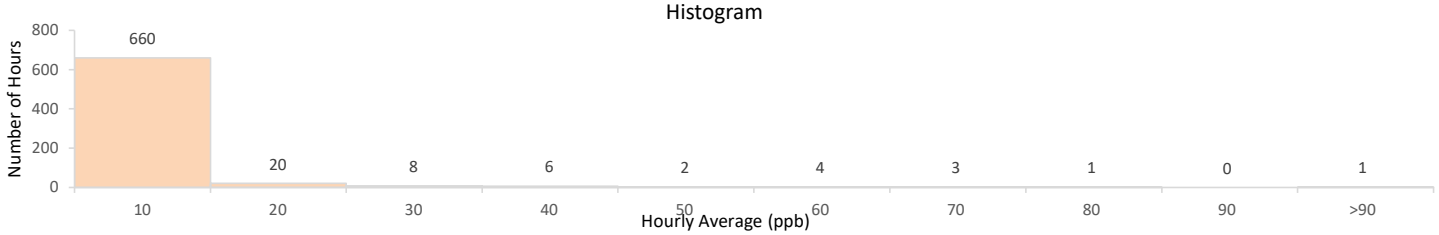
Maximum Hourly Value:	119	ppb	on January 4 at hour 15	Hours in Service:	744
Maximum Daily Value:	30.4	ppb	on January 4	Hours of Data:	705
Minimum Hourly Value:	0	ppb	on January 1 at hour 1	Hours of Missing Data:	0
Minimum Daily Value:	0.0	ppb	on January 17	Hours of Calibration:	39
Monthly Average:	3.3	ppb		Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																								Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Jan 1	1	0	2	1	1	2	2	3	6	6	7	5	6	5	5	5	1	1	1	1	0	S	1	1	0	7	2.7
Jan 2	2	0	1	3	1	1	2	0	0	2	1	3	6	4	4	5	2	2	2	4	S	2	2	0	0	6	2.1
Jan 3	0	2	1	2	0	0	1	3	4	6	7	10	6	5	5	4	4	13	31	S	43	57	57	11	0	57	11.8
Jan 4	4	2	1	1	0	3	9	32	35	59	66	54	33	63	46	**119**	77	66	S	8	3	7	10	2	0	**119**	**30.4**
Jan 5	1	2	1	1	1	4	4	7	8	8	25	9	5	5	5	3	2	S	1	1	2	0	0	0	0	25	4.1
Jan 6	0	0	0	0	0	0	2	1	2	2	4	4	1	2	2	3	S	0	0	0	0	1	0	2	0	4	1.1
Jan 7	1	1	0	0	0	1	2	1	10	12	10	5	7	13	14	S	22	15	4	5	3	3	1	1	0	22	5.7
Jan 8	3	4	9	3	2	1	1	10	1	2	3	3	2	4	S	5	13	4	4	1	3	12	3	3	1	13	4.2
Jan 9	1	1	0	1	2	1	2	8	9	32	29	19	21	S	13	4	6	27	7	30	18	2	5	2	0	32	10.4
Jan 10	2	2	1	0	1	0	2	1	1	2	2	15	S	2	2	2	2	3	1	6	10	3	9	20	0	20	3.9
Jan 11	22	8	6	8	7	7	4	3	2	2	2	S	2	1	1	1	1	0	0	0	0	0	0	0	0	22	3.3
Jan 12	0	0	0	0	0	0	0	0	2	0	S	1	3	1	0	0	0	0	0	0	0	0	0	0	0	3	0.3
Jan 13	1	0	1	0	0	0	0	3	6	S	34	12	C	C	C	C	C	C	C	16	3	2	1	1	0	34	NA
Jan 14	1	0	1	1	0	0	0	0	S	0	2	1	2	1	1	1	1	3	2	11	19	15	14	3	0	19	3.4
Jan 15	1	0	1	1	1	0	0	S	0	0	0	1	1	1	1	0	1	1	2	0	0	1	2	1	0	2	0.7
Jan 16	0	2	2	1	2	2	S	1	2	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	2	0.8
Jan 17	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
Jan 18	0	0	0	0	S	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	1	0.3
Jan 19	0	0	0	S	0	0	1	1	2	3	4	4	5	3	2	3	1	0	0	0	0	0	0	0	0	5	1.3
Jan 20	0	0	S	0	0	1	1	1	2	2	1	1	1	4	1	3	0	0	0	1	0	0	0	0	0	4	0.8
Jan 21	0	S	1	0	0	0	0	0	0	1	1	2	1	1	1	0	0	0	0	0	0	0	0	0	0	2	0.3
Jan 22	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	S	0	1	0.1
Jan 23	0	1	1	0	0	1	0	0	0	0	1	1	2	2	1	2	0	1	1	1	0	0	S	1	0	2	0.7
Jan 24	1	0	0	0	0	0	2	2	0	2	7	3	2	4	1	2	2	1	0	0	0	S	0	0	0	7	1.3
Jan 25	0	0	0	0	0	0	1	1	11	7	7	4	4	3	4	6	3	1	0	0	S	0	0	0	0	11	2.3
Jan 26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	S	0	0	0	0	0	1	0.0
Jan 27	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2	3	1	1	S	1	0	1	0	0	0	3	0.7
Jan 28	0	0	0	0	1	0	1	1	0	1	1	1	1	2	1	1	1	S	0	1	0	0	0	0	0	2	0.6
Jan 29	0	0	1	1	0	0	0	0	0	0	1	1	0	0	1	1	S	1	0	0	0	0	0	0	0	1	0.3
Jan 30	0	0	0	0	1	0	4	2	10	28	10	2	1	1	1	S	0	2	1	0	0	0	0	0	0	28	2.7
Jan 31	0	0	0	0	0	0	3	1	2	2	3	3	1	1	S	1	1	2	1	2	1	0	0	0	0	3	1.0
Diurnal Maximum	22	8	9	8	7	7	9	32	35	59	66	54	33	63	46	119	77	66	31	30	43	57	57	20			
Diurnal Average	1.4	0.8	1.0	0.8	0.7	0.8	1.5	2.7	3.9	6.1	7.7	5.6	4.0	4.5	4.1	6.3	5.0	5.1	2.1	3.1	3.6	3.7	3.5	1.6			

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.



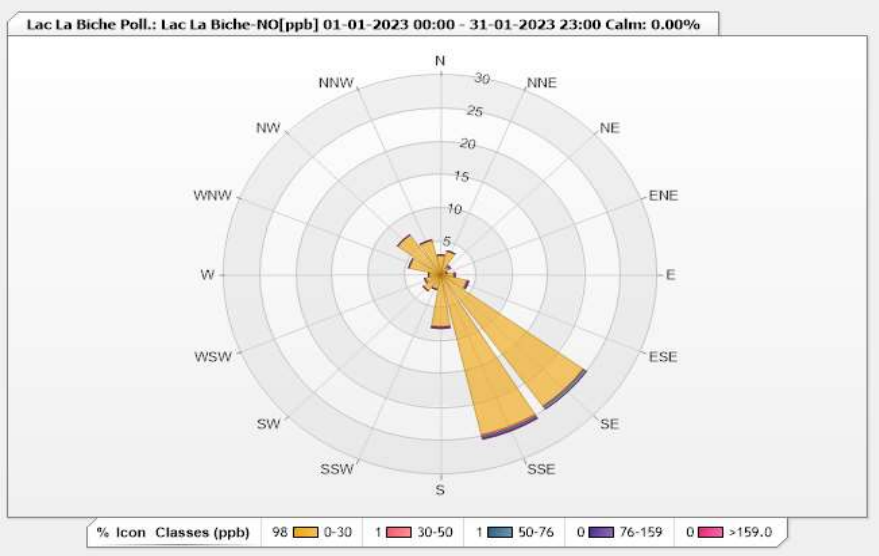


Station: Lac La Biche Poll.: Lac La Biche-NO[ppb] Monthly: 01-2023

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	2.98	0	0	0	0	2.98
NNE	3.69	0	0	0	0	3.69
NE	1.28	0.28	0.14	0	0	1.7
ENE	0.85	0	0	0	0	0.85
E	1.84	0.14	0	0	0	1.98
ESE	3.69	0.14	0.14	0	0	3.97
SE	24.26	0.14	0.43	0	0	24.83
SSE	24.68	0.28	0.28	0.14	0	25.38
S	7.8	0.14	0	0.14	0	8.08
SSW	2.27	0	0	0	0	2.27
SW	2.98	0	0	0	0	2.98
WSW	2.27	0	0	0	0	2.27
W	1.7	0	0	0	0	1.7
WNW	4.54	0	0	0	0	4.54
NW	7.38	0	0	0	0	7.38
NNW	5.39	0	0	0	0	5.39
Summary	97.6	1.12	0.99	0.28	0	100



Lakeland Industry & Community Association

Lac La Biche Station - January 2023

Summary of Hourly Averages

NITROGEN DIOXIDE (NO_2) in ppb

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

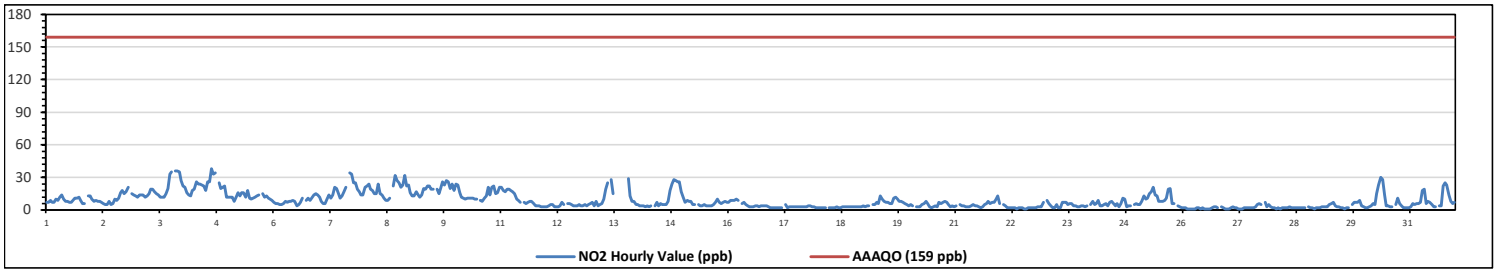
Number of 1-Hour Exceedances: 0

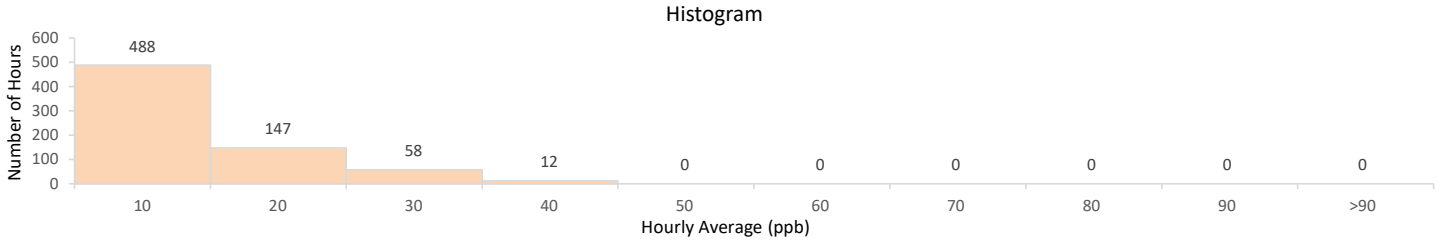
Maximum Hourly Value:	38	ppb	on January 4 at hour 15	Hours in Service:	744
Maximum Daily Value:	22.5	ppb	on January 4	Hours of Data:	705
Minimum Hourly Value:	1	ppb	on January 22 at hour 8	Hours of Missing Data:	0
Minimum Daily Value:	1.6	ppb	on January 26	Hours of Calibration:	39
Monthly Average:	8.8	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			
Jan 1	7	7	9	7	7	10	9	12	14	10	8	8	7	7	9	11	11	12	9	6	6	S	13	13	6	14	9.2
Jan 2	10	8	9	8	8	7	6	5	5	8	5	6	10	9	11	16	18	15	17	21	S	15	14	13	5	21	10.6
Jan 3	12	14	14	14	12	13	15	19	19	17	15	14	12	12	12	15	20	33	35	S	36	36	35	27	12	36	19.6
Jan 4	22	21	16	14	13	18	19	26	24	24	23	22	18	26	26	38	33	34	S	25	20	21	22	12	12	38	22.5
Jan 5	12	12	12	8	12	16	13	16	16	12	18	11	10	11	12	13	14	S	15	12	13	11	10	9	8	18	12.5
Jan 6	7	6	6	5	5	6	8	7	8	8	9	8	4	5	7	11	S	9	11	9	11	14	15	14	4	15	8.4
Jan 7	12	8	6	6	10	14	11	14	21	20	15	11	13	17	21	S	34	33	25	25	19	17	14	14	6	34	16.5
Jan 8	21	22	24	19	18	15	15	24	15	14	11	9	9	11	S	22	32	27	25	21	23	32	22	23	9	32	19.7
Jan 9	16	13	13	17	14	12	14	20	19	22	22	19	19	S	19	15	20	26	23	27	26	20	24	18	12	27	19.0
Jan 10	24	23	16	12	11	10	11	11	11	11	10	10	S	9	8	11	13	21	14	21	22	15	16	21	8	24	14.4
Jan 11	21	18	17	19	19	18	17	15	10	9	7	S	7	6	7	8	8	6	4	4	4	3	3	3	3	21	10.1
Jan 12	3	4	5	5	3	3	3	4	7	5	S	6	6	5	4	4	4	5	4	4	5	4	5	6	3	7	4.5
Jan 13	7	4	8	4	5	6	10	19	25	S	28	15	C	C	C	C	C	C	C	29	13	8	8	5	4	29	NA
Jan 14	5	4	4	4	3	4	3	4	S	4	7	4	6	5	5	5	8	18	24	28	27	26	26	17	3	28	10.5
Jan 15	12	7	9	8	8	5	5	S	5	4	4	5	4	4	4	4	5	7	10	7	6	7	8	7	4	12	6.3
Jan 16	7	9	9	9	10	9	S	6	7	5	4	3	3	3	4	4	3	4	4	4	4	3	2	2	2	10	5.1
Jan 17	2	2	2	2	2	S	5	2	3	3	3	3	3	3	3	3	3	3	4	4	3	3	2	2	2	5	2.8
Jan 18	2	2	2	2	S	2	2	2	2	3	2	2	3	3	3	3	3	3	3	3	3	3	3	4	2	4	2.6
Jan 19	3	4	4	S	5	5	7	6	13	10	8	7	7	6	6	11	12	10	8	8	7	6	5	4	3	13	7.0
Jan 20	5	4	S	3	3	3	5	6	8	6	3	2	3	4	3	7	6	7	8	7	5	3	4	3	2	8	4.7
Jan 21	4	S	5	4	4	3	3	3	4	5	4	4	3	2	3	5	6	8	6	7	7	10	13	6	2	13	5.2
Jan 22	S	5	4	2	2	2	2	2	1	2	2	2	1	1	2	2	2	2	2	3	3	3	7	S	1	7	2.5
Jan 23	9	6	4	2	2	5	2	2	7	7	7	5	6	6	4	4	3	3	4	4	3	4	S	5	2	9	4.5
Jan 24	8	5	6	9	4	4	5	6	4	7	8	6	4	6	3	6	11	10	3	4	4	S	5	6	3	11	5.8
Jan 25	5	5	8	13	10	11	15	17	21	14	13	8	8	8	9	11	19	20	6	6	S	4	3	2	2	21	10.3
Jan 26	2	2	1	1	1	1	1	2	2	1	2	1	1	1	1	2	3	3	2	S	3	2	1	1	1	3	1.6
Jan 27	1	2	3	2	2	1	1	1	2	2	2	2	2	2	3	5	6	5	S	7	3	5	3	2	1	7	2.8
Jan 28	2	1	2	1	2	2	2	2	3	2	2	2	2	2	2	2	2	S	3	2	2	1	2	2	1	3	2.0
Jan 29	2	3	3	3	3	5	6	7	4	3	3	2	2	1	2	2	S	5	7	7	7	9	4	3	1	9	4.0
Jan 30	2	2	3	4	6	5	15	23	30	28	14	4	4	3	3	S	5	11	6	4	2	2	2	2	2	30	7.8
Jan 31	3	6	5	6	6	7	18	19	6	8	7	5	3	3	S	4	4	22	25	23	14	8	6	7	3	25	9.3
Diurnal Maximum	24	23	24	19	19	18	19	26	30	28	28	22	19	26	26	38	34	34	35	29	36	36	35	27			
Diurnal Average	8.3	7.6	7.6	7.1	7.0	7.4	8.3	10.1	10.5	9.1	8.9	6.9	6.2	6.2	7.0	8.7	11.0	12.9	11.0	11.4	10.4	10.2	9.9	8.4			

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.



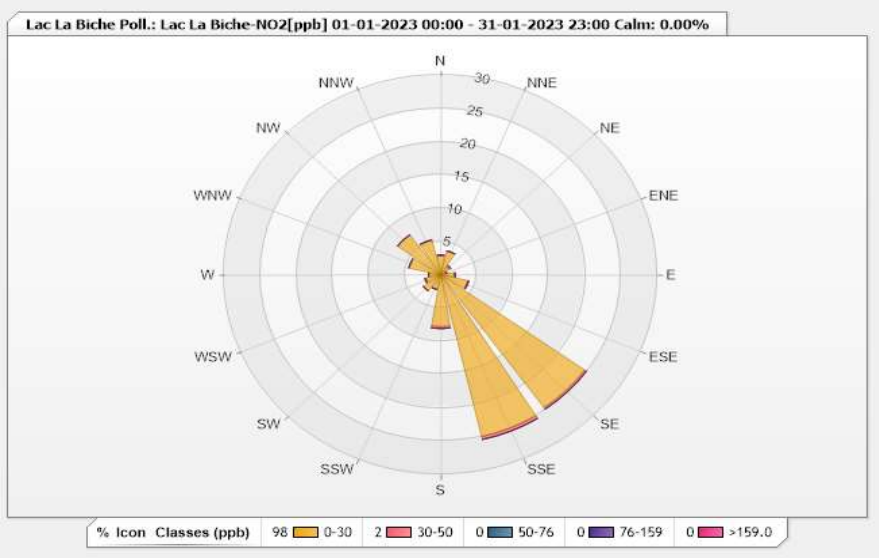


Station: Lac La Biche Poll.: Lac La Biche-NO2[ppb] Monthly: 01-2023

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	2.84	0.14	0	0	0	2.98
NNE	3.69	0	0	0	0	3.69
NE	1.42	0.28	0	0	0	1.7
ENE	0.71	0.14	0	0	0	0.85
E	1.99	0	0	0	0	1.99
ESE	3.83	0.14	0	0	0	3.97
SE	24.54	0.28	0	0	0	24.82
SSE	24.96	0.43	0	0	0	25.39
S	7.8	0.28	0	0	0	8.08
SSW	2.27	0	0	0	0	2.27
SW	2.98	0	0	0	0	2.98
WSW	2.13	0.14	0	0	0	2.27
W	1.7	0	0	0	0	1.7
WNW	4.54	0	0	0	0	4.54
NW	7.38	0	0	0	0	7.38
NNW	5.39	0	0	0	0	5.39
Summary	98.17	1.83	0	0	0	100



Lakeland Industry & Community Association

Lac La Biche Station - January 2023

Summary of Hourly Averages

OZONE (O_3) in ppb

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

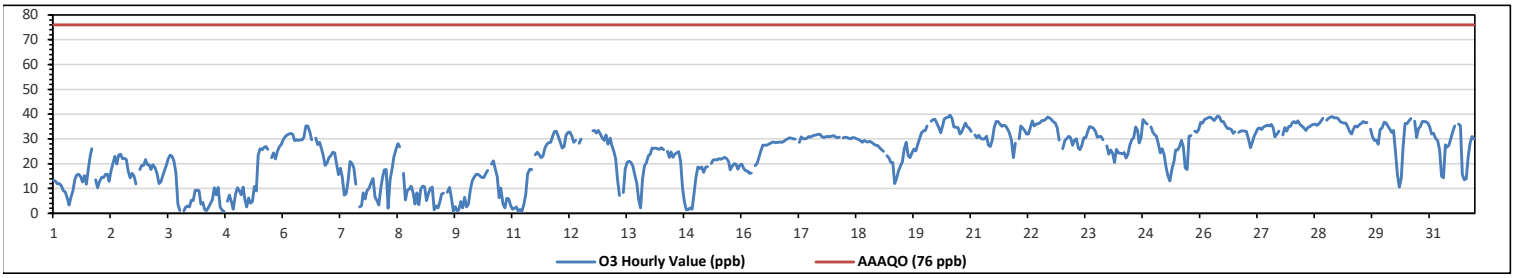
Number of 1-Hour Exceedances: 0

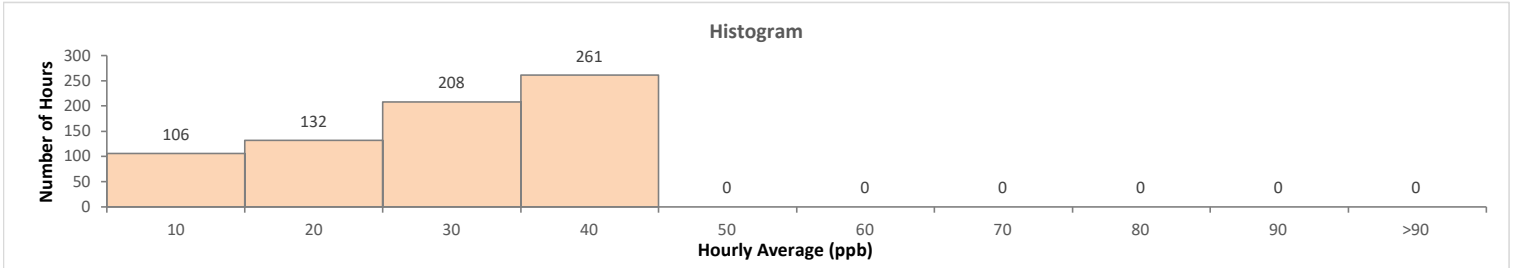
Maximum Hourly Value:	39.6	ppb	on January 20 at hour 13	Hours in Service:	744	
Maximum Daily Value:	36.6	ppb	on January 28	Hours of Data:	707	
Minimum Hourly Value:	0.8	ppb	on January 4 at hour 17	Hours of Missing Data:	0	
Minimum Daily Value:	5.2	ppb	on January 4	Hours of Calibration:	37	
Monthly Average:	23.8	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			
Jan 1	13.3	12.9	11.9	12	11.1	9.2	8.6	6.3	3.4	6.6	9	13.7	15.5	15.8	14.8	12.6	15.2	11.8	17.7	23.1	26	S	13.6	10.2	3.4	26.0	12.8
Jan 2	12.7	14.5	14.4	15.8	15.7	12.8	17	20.2	22.9	19.9	23.4	23.9	22.1	22.2	21.6	16.8	14.3	16.2	14.9	11.9	S	17.6	19.3	19.3	11.9	23.9	17.8
Jan 3	21.6	19.6	19.4	17.6	19.6	18.4	16	12	12.7	15.2	17.5	19.8	22	23.5	22.9	20.8	16.2	3.7	1.2	S	1	2.4	2.9	2.5	1.0	23.5	14.3
Jan 4	5.3	5.2	9.3	9.3	9.1	3.7	4.4	1.4	1.2	2.4	4	5.6	10.2	7.5	10.4	2.5	1.3	0.8	S	4.9	7.3	4.8	1.6	7.6	**0.8**	10.4	**5.2**
Jan 5	10.3	9.1	7.5	10.5	5.8	2.6	6.2	4.1	4.8	10.8	9	23.4	26	25.7	26.6	27	25.8	S	22.4	24.4	21.9	25	26.8	27.7	2.6	27.7	16.7
Jan 6	29.6	30.9	31.4	31.9	32.3	31.8	29.2	29.7	29.3	29.6	29.6	30.8	35.3	35.3	33.1	29.7	S	30.3	27.7	28.7	25.9	23.4	19.3	20.3	19.3	35.3	29.4
Jan 7	22.4	23.2	24.6	24.4	19.8	15.6	18.2	14.4	7.3	7.9	13.1	20.9	20.1	18.3	11.7	S	2.5	3.1	8.2	5.7	9.2	10.1	12.5	14.1	2.5	24.6	14.2
Jan 8	6.6	5.2	3.4	10	14.1	17.5	17.6	2	13.4	17.6	22.7	26	28.1	26.8	S	16.2	5.4	9.3	9.8	11	8.3	3.7	8.2	3.5	2.0	28.1	12.5
Jan 9	9.8	11	10.7	5.2	7.9	10	10.5	1.4	2.9	2.1	4.7	7.8	8.1	S	8.5	10.4	6	0.8	2.7	1.1	1.4	4.8	2.1	6.4	**0.8**	11.0	5.9
Jan 10	2.6	3.7	9.6	13.1	14.5	15.8	15.8	15	14.4	14.4	16	17.3	S	19.9	21.1	17.8	14.8	6.3	10.1	3.7	2.1	6	5.8	3.1	2.1	21.1	11.4
Jan 11	1.6	2	2.5	0.9	1.5	0.9	3.5	7.6	16	17.8	17.7	S	23.6	24.6	23.7	22.5	23.1	26.3	27.8	28.5	28.7	31.1	33	33.1	0.9	33.1	17.3
Jan 12	31	28.6	26.3	27	31.4	32.7	32.8	31.2	28.7	29.4	S	28.3	29.9	C	C	C	C	C	33.3	33.4	32.4	33.4	31.9	30.5	26.3	33.4	30.7
Jan 13	29.4	31.6	27.9	30.3	27.3	25.1	22.1	13.6	7.2	S	8.4	18	20.5	21	20.6	18.9	15.3	12.2	5.6	2.2	13.8	19.1	20.4	23	2.2	31.6	18.8
Jan 14	23.9	26.3	26.2	26.3	26.1	25.8	26.4	25.6	S	25	22.6	24.8	22.6	23.8	24.4	24.9	21	10.3	4.5	1.4	1.5	2.2	1.6	7.9	1.4	26.4	18.5
Jan 15	14.5	18.6	18.1	18.7	16.4	18.5	18.8	S	20.1	21.4	21.6	21.5	22	21.8	22.2	22.6	22	20.9	17.5	18.9	20	19.8	17.8	19.3	14.5	22.6	19.7
Jan 16	19.9	18	17.1	17	16.1	16.3	S	19.2	20.1	22.6	25.3	27.4	27.5	27.4	27.9	28.3	28.8	28.6	28.5	28.6	28.8	28.6	29.1	29.7	16.1	29.7	24.4
Jan 17	30	30.5	30.3	30	29.9	S	28.6	30.9	30	30	30.3	31	30.7	31.2	31.4	31.6	31.8	31.8	30.9	30.6	31	31	31	31.1	28.6	31.8	30.7
Jan 18	31.3	30.9	30.4	30.7	S	30.5	30.7	30.6	30.3	30	30.6	30.4	30.1	29.8	29.2	28.7	29.3	28.9	28.8	29	28.6	28	27.4	27.3	27.3	31.3	29.6
Jan 19	26.4	25.6	25	S	23.2	22.3	20.5	20.6	12	14.1	17.1	19.1	20.7	26	28.6	23.3	22.5	24.4	25.9	25.1	27.7	30.2	32.5	33.3	12.0	33.3	23.7
Jan 20	33.4	35.2	S	37.2	37.7	37.9	36.2	34.6	32.5	35.4	38	38.6	38.7	**39.6**	38.3	34.9	34.7	34.6	32	32.8	34.6	36.4	35	34.3	32.0	**39.6**	35.8
Jan 21	33.1	S	31.5	30.5	31.4	30.2	29.9	30.1	31.1	27.5	27	29.5	34.6	37.1	37.1	36	35.1	35.5	35.4	34.1	32.6	29.3	22.4	28.2	22.4	37.1	31.7
Jan 22	S	30	35.2	34.5	33.4	32	31.9	34.6	37.3	35.3	36	36.1	36.5	37.4	37.4	37.9	38.8	38.4	37.8	36.9	36.3	34.5	29.5	S	29.5	38.8	35.4
Jan 23	26.1	29.4	30.2	31.1	30.4	27.4	29.5	30.1	26.3	25.7	27.4	30.4	30.4	32.9	35	34.7	34.2	32.9	30.7	31	31	29.6	S	27.2	25.7	35.0	30.2
Jan 24	23.8	25.5	24.3	20.5	25.8	24.4	24.2	24	24.5	22.3	23.9	27.6	29.6	30.6	34.9	33.5	28.4	30.5	37.7	36.6	36	S	34.9	32.6	20.5	37.7	28.5
Jan 25	31.6	31.1	28	24.4	26.1	23.6	18.6	15	13	18.2	21	25.5	25.5	26.8	29.3	26.8	18.4	17.7	31.1	31.3	S	33.2	32.7	33.7	13.0	33.7	25.3
Jan 26	36.6	36.3	37.8	38.2	38.6	38.8	38.2	37.5	38.2	39.3	39	37	37	35.4	34.1	34.1	33.7	32.3	32.9	S	32.7	33.2	33.3	33.2	32.3	39.3	36.0
Jan 27	33	30.3	26.5	28.4	31	32.7	34.1	34.5	33.8	34.8	35.2	35.6	35.2	35.8	34.5	30.9	32	33.2	S	31.6	34.6	33.2	35	35.1	26.5	35.8	33.1
Jan 28	36.6	37.1	36.3	37.3	36	35.2	34.4	33.4	34.6	35	35.5	35.8	35.9	35.5	36.1	37.2	38.3	S	37.6	38.3	38.8	39	38.4	38.6	33.4	39.0	**36.6**
Jan 29	38.2	37	36.6	36.4	36.4	34.8	32.9	31.9	33.7	35.3	34.9	35.7	36.2	37	36.5	36.6	S	33.9	31	29.4	29.5	27.9	33.8	34.5	27.9	38.2	34.4
Jan 30	36.7	36.3	35.2	34	32.7	33.4	24.8	15.7	10.6	14.1	27.1	36.2	36.1	37.3	38.2	S	37.2	30.6	34.1	35.1	37.1	37	36.9	36.2	10.6	38.2	31.9
Jan 31	34.9	32	32.2	30.3	29.2	25.4	14.9	14.3	27.6	26.7	27.4	30.2	32.9	35.3	S	36	35.4	15.6	13.6	13.9	22.6	28.3	31	30	13.6	36.0	26.9
Diurnal Maximum	38.2	37.1	37.8	38.2	38.6	38.8	38.2	37.5	38.2	39.3	39.0	38.6	38.7	39.6	38.3	37.9	38.8	38.4	37.8	38.3	38.8	39.0	38.4	38.6			
Diurnal Average	23.5	23.6	23.3	23.8	23.7	22.8	22.6	20.7	20.7	22.2	23.2	26.3	27.5	28.3	27.5	26.2	23.6	21.5	23.2	22.9	23.5	23.5	23.3	23.8			

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.



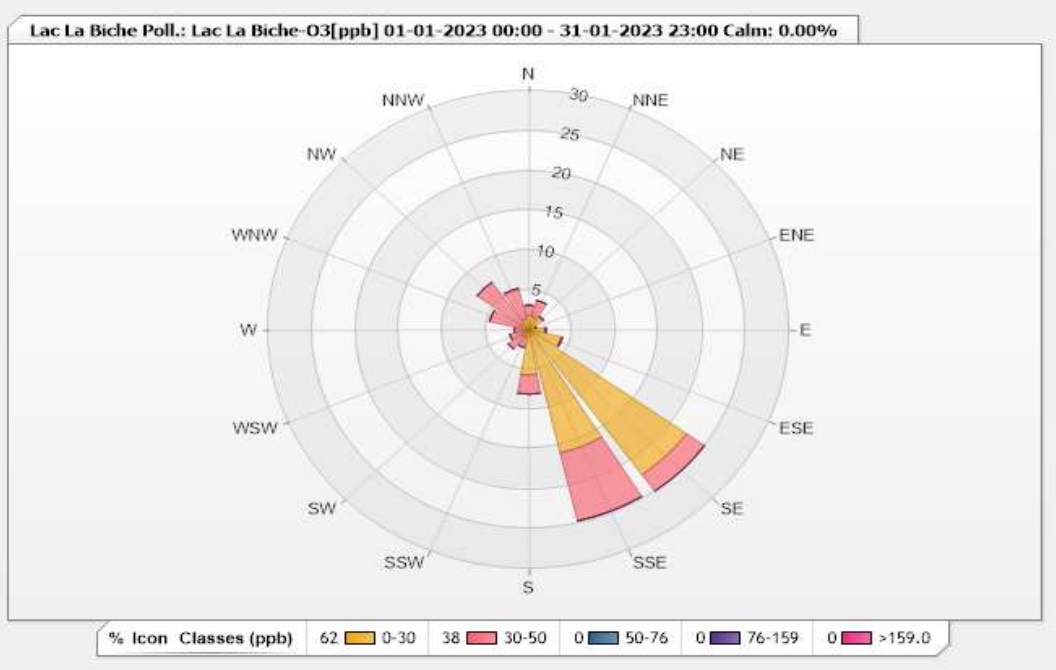


Station: Lac La Biche Poll.: Lac La Biche-O3[ppb] Monthly: 01-2023

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	0-30	30-50	50-76	76-159	>159.0	Total
N	1.84	1.27	0	0	0	3.11
NNE	1.7	2.12	0	0	0	3.82
NE	1.98	0.14	0	0	0	2.12
ENE	0.85	0	0	0	0	0.85
E	1.84	0.14	0	0	0	1.98
ESE	3.82	0.14	0	0	0	3.96
SE	22.35	2.55	0	0	0	24.9
SSE	15.84	8.77	0	0	0	24.61
S	5.66	2.4	0	0	0	8.06
SSW	0.85	1.41	0	0	0	2.26
SW	0.99	1.98	0	0	0	2.97
WSW	0.71	1.56	0	0	0	2.27
W	0.42	1.27	0	0	0	1.69
WNW	1.13	3.54	0	0	0	4.67
NW	0.99	6.36	0	0	0	7.35
NNW	1.41	3.96	0	0	0	5.37
Summary	62.38	37.61	0	0	0	100



Lakeland Industry & Community Association

Lac La Biche Station - January 2023

Summary of Hourly Averages

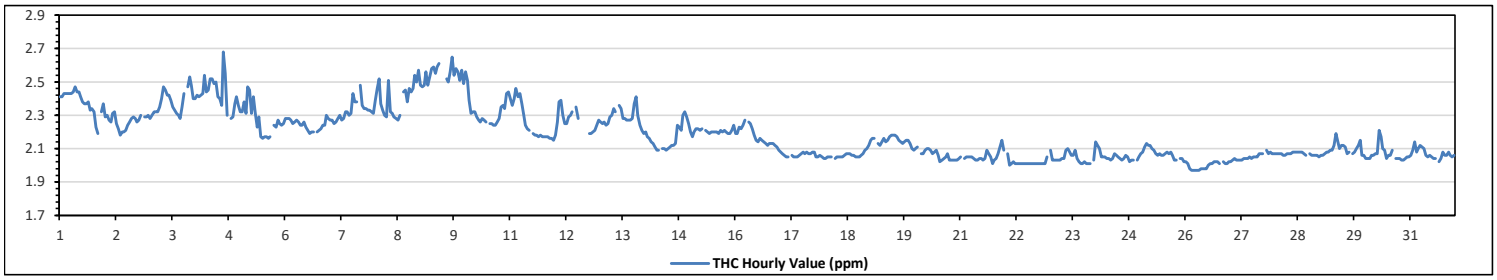
TOTAL HYDROCARBONS (THC) in ppm

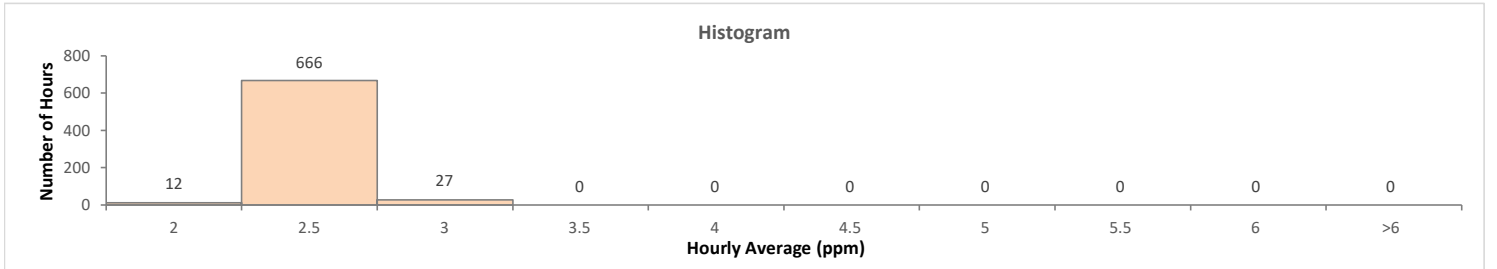
Maximum Hourly Value:	2.68	ppm	on January 4 at hour 15	Hours in Service:	744
Maximum Daily Value:	2.54	ppm	on January 9	Hours of Data:	705
Minimum Hourly Value:	1.97	ppm	on January 26 at hour 3	Hours of Missing Data:	2
Minimum Daily Value:	2.00	ppm	on January 26	Hours of Calibration:	37
Monthly Average:	2.19	ppm		Operational Uptime:	99.7

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Jan 1	2.41	2.41	2.43	2.43	2.43	2.43	2.43	2.44	2.47	2.44	2.44	2.41	2.38	2.37	2.37	2.38	2.33	2.34	2.32	2.23	2.19	S	2.32	2.37	2.19	2.47	2.38
Jan 2	2.29	2.30	2.27	2.26	2.31	2.32	2.25	2.22	2.18	2.20	2.20	2.21	2.24	2.26	2.28	2.29	2.28	2.26	2.27	2.30	S	2.29	2.29	2.30	2.18	2.32	2.26
Jan 3	2.28	2.30	2.32	2.32	2.32	2.35	2.40	2.47	2.45	2.42	2.42	2.39	2.35	2.33	2.31	2.30	2.28	2.35	2.43	S	2.47	2.53	2.48	2.40	2.28	2.53	2.38
Jan 4	2.40	2.42	2.41	2.42	2.43	2.54	2.44	2.45	2.52	2.52	2.49	2.50	2.41	2.40	2.36	**2.68**	2.55	2.30	S	2.28	2.29	2.37	2.41	2.36	2.28	**2.68**	2.43
Jan 5	2.32	2.32	2.38	2.31	2.47	2.45	2.31	2.41	2.31	2.23	2.29	2.17	2.16	2.17	2.17	2.16	2.17	S	2.24	2.23	2.27	2.25	2.24	2.25	2.16	2.47	2.27
Jan 6	2.28	2.28	2.28	2.27	2.25	2.26	2.27	2.26	2.24	2.24	2.26	2.23	2.21	2.19	2.20	2.20	S	2.20	2.21	2.22	2.24	2.24	2.30	2.28	2.19	2.30	2.24
Jan 7	2.27	2.27	2.25	2.26	2.28	2.30	2.27	2.28	2.32	2.32	2.30	2.31	2.43	2.38	2.38	S	2.48	2.36	2.34	2.34	2.33	2.33	2.32	2.31	2.25	2.48	2.32
Jan 8	2.39	2.46	2.52	2.37	2.33	2.30	2.29	2.51	2.32	2.31	2.29	2.28	2.27	2.30	S	2.44	2.45	2.38	2.46	2.44	2.46	2.54	2.50	2.57	2.27	2.57	2.40
Jan 9	2.48	2.47	2.48	2.56	2.48	2.53	2.58	2.59	2.55	2.59	2.61	NRM	NRM	S	2.52	2.50	2.56	2.65	2.54	2.58	2.56	2.51	2.57	2.49	2.47	2.65	**2.54**
Jan 10	2.56	2.51	2.39	2.31	2.32	2.32	2.29	2.27	2.26	2.28	2.27	2.26	S	2.25	2.25	2.24	2.24	2.26	2.28	2.35	2.36	2.34	2.43	2.44	2.24	2.56	2.33
Jan 11	2.40	2.36	2.40	2.46	2.41	2.43	2.37	2.30	2.24	2.22	2.21	S	2.19	2.18	2.18	2.17	2.18	2.17	2.17	2.17	2.17	2.16	2.16	2.15	2.15	2.46	2.25
Jan 12	2.18	2.26	2.38	2.39	2.30	2.25	2.25	2.29	2.30	2.32	S	2.35	2.28	C	C	C	C	C	2.19	2.19	2.20	2.21	2.24	2.27	2.18	2.39	2.27
Jan 13	2.26	2.25	2.26	2.24	2.25	2.29	2.30	2.34	2.32	S	2.36	2.34	2.28	2.28	2.27	2.27	2.27	2.28	2.37	2.41	2.30	2.24	2.21	2.19	2.19	2.41	2.29
Jan 14	2.20	2.17	2.16	2.14	2.13	2.11	2.09	2.09	S	2.10	2.10	2.09	2.10	2.11	2.12	2.12	2.13	2.24	2.23	2.21	2.30	2.32	2.29	2.25	2.09	2.32	2.17
Jan 15	2.20	2.17	2.20	2.22	2.22	2.21	2.22	S	2.21	2.20	2.19	2.20	2.20	2.20	2.20	2.19	2.21	2.20	2.21	2.20	2.19	2.19	2.21	2.24	2.17	2.24	2.20
Jan 16	2.19	2.19	2.23	2.22	2.24	2.27	S	2.26	2.25	2.22	2.18	2.15	2.14	2.16	2.15	2.14	2.13	2.12	2.13	2.13	2.13	2.12	2.11	2.09	2.09	2.27	2.17
Jan 17	2.08	2.07	2.06	2.05	2.05	S	2.06	2.05	2.05	2.05	2.06	2.07	2.08	2.07	2.08	2.07	2.07	2.08	2.08	2.05	2.05	2.06	2.05	2.04	2.04	2.08	2.06
Jan 18	2.04	2.05	2.05	2.05	S	2.04	2.05	2.05	2.05	2.05	2.06	2.07	2.07	2.07	2.06	2.06	2.05	2.05	2.05	2.06	2.07	2.09	2.10	2.12	2.04	2.12	2.06
Jan 19	2.15	2.16	2.16	S	2.13	2.12	2.14	2.16	2.14	2.15	2.17	2.18	2.18	2.18	2.17	2.15	2.14	2.13	2.14	2.15	2.15	2.13	2.10	2.09	2.09	2.18	2.15
Jan 20	2.10	2.11	S	2.07	2.07	2.09	2.10	2.10	2.09	2.07	2.08	2.09	2.06	2.02	2.03	2.04	2.05	2.07	2.03	2.03	2.03	2.03	2.03	2.04	2.02	2.11	2.06
Jan 21	2.05	S	2.04	2.05	2.05	2.05	2.05	2.04	2.03	2.03	2.04	2.04	2.03	2.04	2.09	2.07	2.05	2.01	2.03	2.04	2.07	2.11	2.15	2.09	2.01	2.15	2.05
Jan 22	S	2.07	2.00	2.01	2.02	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	2.01	2.01	2.05	S	2.00	2.07	2.01
Jan 23	2.09	2.03	2.03	2.03	2.03	2.03	2.04	2.04	2.09	2.10	2.08	2.06	2.06	2.09	2.04	2.02	2.01	2.01	2.02	2.01	2.01	2.01	S	2.03	2.01	2.10	2.04
Jan 24	2.14	2.12	2.10	2.05	2.05	2.05	2.04	2.04	2.03	2.04	2.07	2.06	2.05	2.04	2.03	2.04	2.06	2.05	2.02	2.03	2.03	S	2.03	2.05	2.02	2.14	2.05
Jan 25	2.07	2.08	2.11	2.13	2.12	2.12	2.10	2.09	2.07	2.06	2.07	2.06	2.06	2.07	2.08	2.07	2.08	2.06	2.03	2.03	S	2.04	2.04	2.02	2.02	2.13	2.07
Jan 26	2.02	2.01	1.98	1.97	1.97	1.97	1.97	1.97	1.98	1.98	1.98	1.98	2.00	2.01	2.01	2.02	2.02	2.02	2.01	S	2.02	2.01	2.01	2.02	1.97	2.02	2.00
Jan 27	2.02	2.03	2.04	2.03	2.03	2.03	2.03	2.04	2.04	2.04	2.05	2.04	2.05	2.05	2.05	2.07	2.07	2.07	S	2.09	2.07	2.08	2.07	2.07	2.02	2.09	2.05
Jan 28	2.07	2.07	2.07	2.07	2.06	2.06	2.07	2.07	2.07	2.08	2.08	2.08	2.08	2.08	2.08	2.07	2.06	S	2.07	2.06	2.06	2.06	2.06	2.05	2.05	2.08	2.07
Jan 29	2.06	2.06	2.07	2.08	2.08	2.09	2.09	2.12	2.19	2.14	2.10	2.12	2.12	2.11	2.07	2.08	S	2.07	2.08	2.10	2.12	2.15	2.06	2.06	2.06	2.19	2.10
Jan 30	2.04	2.04	2.04	2.06	2.06	2.07	2.07	2.21	2.17	2.10	2.09	2.04	2.06	2.06	2.09	S	2.04	2.04	2.04	2.03	2.03	2.04	2.05	2.05	2.03	2.21	2.07
Jan 31	2.06	2.09	2.14	2.08	2.10	2.12	2.11	2.10	2.06	2.05	2.06	2.05	2.04	2.04	S	2.02	2.04	2.08	2.06	2.06	2.08	2.06	2.05	2.06	2.02	2.14	2.07
Diurnal Maximum	2.56	2.51	2.52	2.56	2.48	2.54	2.58	2.59	2.55	2.59	2.61	2.50	2.43	2.40	2.52	2.68	2.56	2.65	2.54	2.58	2.56	2.54	2.57	2.57			
Diurnal Average	2.20	2.20	2.21	2.20	2.20	2.21	2.19	2.21	2.20	2.19	2.19	2.17	2.16	2.16	2.17	2.17	2.18	2.17	2.17	2.17	2.18	2.19	2.20	2.19			

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.



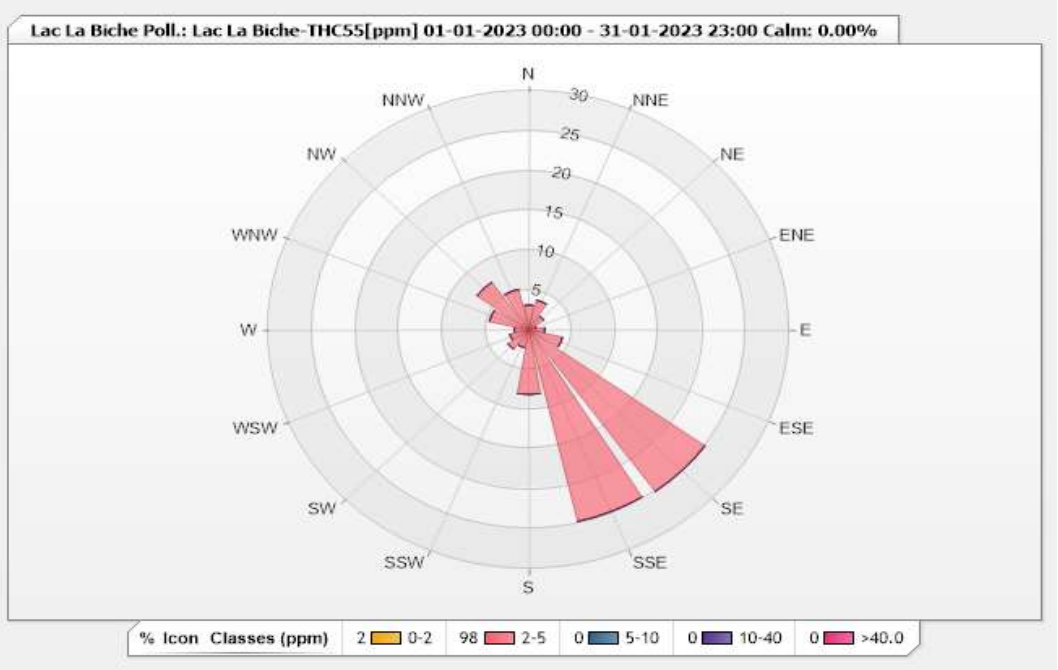


Station: Lac La Biche Poll.: Lac La Biche-THC55[ppm] Monthly: 01-2023

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	0-2	2-5	5-10	10-40	>40.0	Total
N	0	3.12	0	0	0	3.12
NNE	0	3.83	0	0	0	3.83
NE	0	2.13	0	0	0	2.13
ENE	0	0.85	0	0	0	0.85
E	0	1.84	0	0	0	1.84
ESE	0	3.97	0	0	0	3.97
SE	0	24.96	0	0	0	24.96
SSE	0	24.68	0	0	0	24.68
S	0	8.09	0	0	0	8.09
SSW	0	2.27	0	0	0	2.27
SW	0	2.98	0	0	0	2.98
WSW	0	2.27	0	0	0	2.27
W	0	1.7	0	0	0	1.7
WNW	0.85	3.83	0	0	0	4.68
NW	0.28	7.09	0	0	0	7.37
NNW	0.43	4.82	0	0	0	5.25
Summary	1.56	98.43	0	0	0	100



Lakeland Industry & Community Association

Lac La Biche Station - January 2023

Summary of Hourly Averages

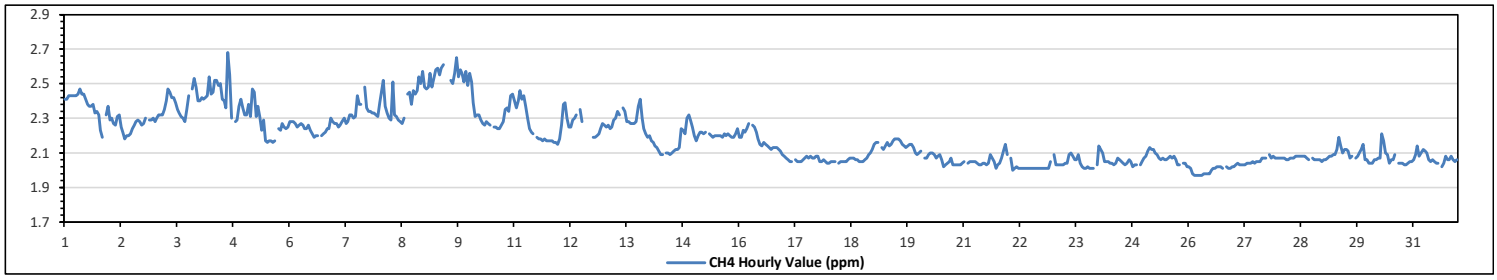
METHANE (CH4) in ppm

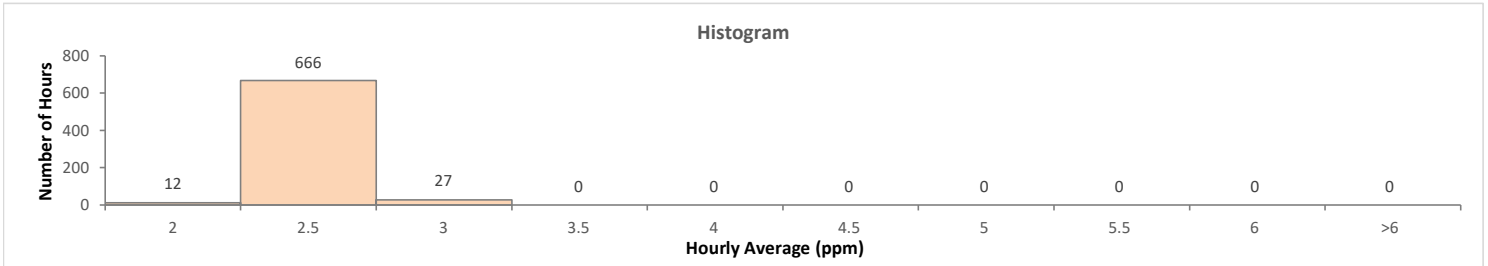
Maximum Hourly Value:	2.68	ppm	on January 4 at hour 15	Hours in Service:	744
Maximum Daily Value:	2.54	ppm	on January 9	Hours of Data:	705
Minimum Hourly Value:	1.97	ppm	on January 26 at hour 3	Hours of Missing Data:	2
Minimum Daily Value:	2.00	ppm	on January 26	Hours of Calibration:	37
Monthly Average:	2.19	ppm		Operational Uptime:	99.7

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Jan 1	2.41	2.41	2.43	2.43	2.43	2.43	2.43	2.44	2.47	2.44	2.44	2.41	2.38	2.37	2.37	2.38	2.33	2.34	2.32	2.23	2.19	S	2.32	2.37	2.19	2.47	2.38
Jan 2	2.29	2.30	2.27	2.26	2.31	2.32	2.25	2.22	2.18	2.20	2.20	2.21	2.24	2.26	2.28	2.29	2.28	2.26	2.27	2.30	S	2.29	2.29	2.30	2.18	2.32	2.26
Jan 3	2.28	2.30	2.32	2.32	2.32	2.35	2.40	2.47	2.45	2.42	2.42	2.39	2.35	2.33	2.31	2.30	2.28	2.35	2.43	S	2.47	2.53	2.48	2.40	2.28	2.53	2.38
Jan 4	2.40	2.42	2.41	2.42	2.43	2.54	2.44	2.45	2.52	2.52	2.49	2.50	2.41	2.40	2.36	**2.68**	2.55	2.30	S	2.28	2.29	2.37	2.41	2.36	2.28	**2.68**	2.43
Jan 5	2.32	2.32	2.38	2.31	2.47	2.45	2.31	2.37	2.31	2.23	2.29	2.17	2.16	2.17	2.17	2.16	2.17	S	2.24	2.23	2.27	2.25	2.24	2.25	2.16	2.47	2.27
Jan 6	2.28	2.28	2.28	2.27	2.25	2.26	2.27	2.26	2.24	2.24	2.26	2.23	2.21	2.19	2.20	2.20	S	2.20	2.21	2.22	2.24	2.24	2.30	2.28	2.19	2.30	2.24
Jan 7	2.27	2.27	2.25	2.26	2.28	2.30	2.27	2.28	2.32	2.32	2.30	2.31	2.43	2.38	2.38	S	2.48	2.36	2.34	2.34	2.33	2.33	2.32	2.31	2.25	2.48	2.32
Jan 8	2.39	2.46	2.52	2.37	2.33	2.30	2.29	2.51	2.32	2.31	2.29	2.28	2.27	2.30	S	2.44	2.45	2.38	2.46	2.44	2.46	2.54	2.50	2.57	2.27	2.57	2.40
Jan 9	2.48	2.47	2.48	2.56	2.48	2.53	2.58	2.59	2.55	2.59	2.61	NRM	NRM	S	2.52	2.50	2.56	2.65	2.54	2.58	2.56	2.51	2.57	2.49	2.47	2.65	**2.54**
Jan 10	2.56	2.51	2.39	2.31	2.32	2.32	2.29	2.27	2.26	2.28	2.27	2.26	S	2.25	2.25	2.24	2.24	2.26	2.28	2.35	2.36	2.34	2.43	2.44	2.24	2.56	2.33
Jan 11	2.40	2.36	2.40	2.46	2.41	2.43	2.37	2.30	2.24	2.22	2.21	S	2.19	2.18	2.18	2.17	2.18	2.17	2.17	2.17	2.17	2.16	2.16	2.15	2.15	2.46	2.25
Jan 12	2.18	2.26	2.38	2.39	2.30	2.25	2.25	2.29	2.30	2.32	S	2.35	2.28	C	C	C	C	C	2.19	2.19	2.20	2.21	2.24	2.27	2.18	2.39	2.27
Jan 13	2.26	2.25	2.26	2.24	2.25	2.29	2.30	2.34	2.32	S	2.36	2.34	2.28	2.28	2.27	2.27	2.27	2.28	2.37	2.41	2.30	2.24	2.21	2.19	2.19	2.41	2.29
Jan 14	2.20	2.17	2.16	2.14	2.13	2.11	2.09	2.09	S	2.10	2.10	2.09	2.10	2.11	2.12	2.12	2.13	2.24	2.23	2.21	2.30	2.32	2.29	2.25	2.09	2.32	2.17
Jan 15	2.20	2.17	2.20	2.22	2.22	2.21	2.22	S	2.21	2.20	2.19	2.20	2.20	2.20	2.20	2.19	2.21	2.20	2.21	2.20	2.19	2.19	2.21	2.24	2.17	2.24	2.20
Jan 16	2.19	2.19	2.23	2.22	2.24	2.27	S	2.26	2.25	2.22	2.18	2.15	2.14	2.16	2.15	2.14	2.13	2.12	2.13	2.13	2.13	2.12	2.11	2.09	2.09	2.27	2.17
Jan 17	2.08	2.07	2.06	2.05	2.05	S	2.06	2.05	2.05	2.05	2.06	2.07	2.08	2.07	2.08	2.07	2.07	2.08	2.08	2.05	2.05	2.06	2.05	2.04	2.04	2.08	2.06
Jan 18	2.04	2.05	2.05	2.05	S	2.04	2.05	2.05	2.05	2.05	2.06	2.07	2.07	2.07	2.06	2.06	2.05	2.05	2.05	2.06	2.07	2.09	2.10	2.12	2.04	2.12	2.06
Jan 19	2.15	2.16	2.16	S	2.13	2.12	2.14	2.16	2.14	2.15	2.17	2.18	2.18	2.18	2.17	2.15	2.14	2.13	2.14	2.15	2.15	2.13	2.10	2.09	2.09	2.18	2.15
Jan 20	2.10	2.11	S	2.07	2.07	2.09	2.10	2.10	2.09	2.07	2.08	2.09	2.06	2.02	2.03	2.04	2.05	2.07	2.03	2.03	2.03	2.03	2.03	2.04	2.02	2.11	2.06
Jan 21	2.05	S	2.04	2.05	2.05	2.05	2.05	2.04	2.03	2.03	2.04	2.04	2.03	2.04	2.09	2.07	2.05	2.01	2.03	2.04	2.07	2.11	2.15	2.09	2.01	2.15	2.05
Jan 22	S	2.07	2.00	2.01	2.02	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	2.01	2.01	2.05	S	2.00	2.07	2.01
Jan 23	2.09	2.03	2.03	2.03	2.03	2.03	2.04	2.04	2.09	2.10	2.08	2.06	2.06	2.09	2.04	2.02	2.01	2.01	2.02	2.01	2.01	2.01	S	2.03	2.01	2.10	2.04
Jan 24	2.14	2.12	2.10	2.05	2.05	2.05	2.04	2.04	2.03	2.04	2.07	2.06	2.05	2.04	2.03	2.04	2.06	2.05	2.02	2.03	2.03	S	2.03	2.05	2.02	2.14	2.05
Jan 25	2.07	2.08	2.11	2.13	2.12	2.12	2.10	2.09	2.07	2.06	2.07	2.06	2.06	2.07	2.08	2.07	2.08	2.06	2.03	2.03	S	2.04	2.04	2.02	2.02	2.13	2.07
Jan 26	2.02	2.01	1.98	1.97	1.97	1.97	1.97	1.97	1.98	1.98	1.98	1.98	2.00	2.01	2.01	2.02	2.02	2.02	2.01	S	2.02	2.01	2.01	2.02	1.97	2.02	2.00
Jan 27	2.02	2.03	2.04	2.03	2.03	2.03	2.03	2.04	2.04	2.04	2.05	2.04	2.05	2.05	2.05	2.07	2.07	2.07	S	2.09	2.07	2.08	2.07	2.07	2.02	2.09	2.05
Jan 28	2.07	2.07	2.07	2.07	2.06	2.06	2.07	2.07	2.07	2.08	2.08	2.08	2.08	2.08	2.08	2.07	2.06	S	2.07	2.06	2.06	2.06	2.06	2.05	2.05	2.08	2.07
Jan 29	2.06	2.06	2.07	2.08	2.08	2.09	2.09	2.12	2.19	2.14	2.10	2.12	2.12	2.11	2.07	2.08	S	2.07	2.08	2.10	2.12	2.15	2.06	2.06	2.06	2.19	2.10
Jan 30	2.04	2.04	2.04	2.06	2.06	2.07	2.07	2.21	2.17	2.10	2.09	2.04	2.06	2.06	2.09	S	2.04	2.04	2.04	2.03	2.03	2.04	2.05	2.05	2.03	2.21	2.07
Jan 31	2.06	2.09	2.14	2.08	2.10	2.12	2.11	2.10	2.06	2.05	2.06	2.05	2.04	2.04	S	2.02	2.04	2.08	2.06	2.06	2.08	2.06	2.05	2.06	2.02	2.14	2.07
Diurnal Maximum	2.56	2.51	2.52	2.56	2.48	2.54	2.58	2.59	2.55	2.59	2.61	2.50	2.43	2.40	2.52	2.68	2.56	2.65	2.54	2.58	2.56	2.54	2.57	2.57			
Diurnal Average	2.20	2.20	2.21	2.20	2.20	2.21	2.19	2.21	2.20	2.19	2.19	2.17	2.16	2.16	2.17	2.17	2.18	2.17	2.17	2.17	2.18	2.19	2.20	2.19			

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.



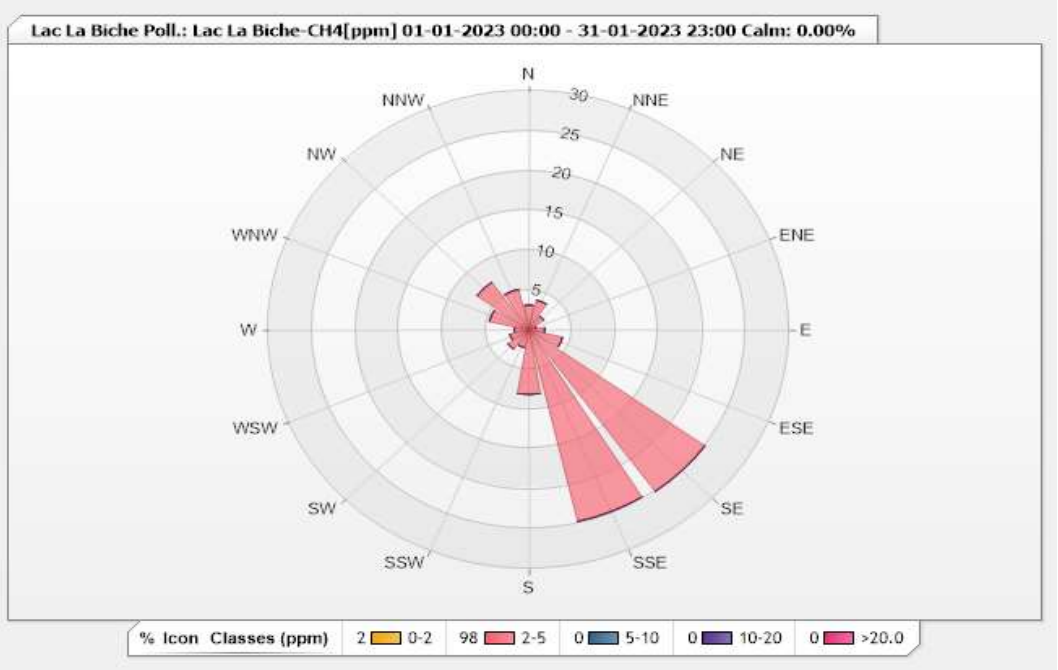


Station: Lac La Biche Poll.: Lac La Biche-CH4[ppm] Monthly: 01-2023

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	0-2	2-5	5-10	10-20	>20.0	Total
N	0	3.12	0	0	0	3.12
NNE	0	3.83	0	0	0	3.83
NE	0	2.13	0	0	0	2.13
ENE	0	0.85	0	0	0	0.85
E	0	1.84	0	0	0	1.84
ESE	0	3.97	0	0	0	3.97
SE	0	24.96	0	0	0	24.96
SSE	0	24.68	0	0	0	24.68
S	0	8.09	0	0	0	8.09
SSW	0	2.27	0	0	0	2.27
SW	0	2.98	0	0	0	2.98
WSW	0	2.27	0	0	0	2.27
W	0	1.7	0	0	0	1.7
WNW	0.85	3.83	0	0	0	4.68
NW	0.28	7.09	0	0	0	7.37
NNW	0.43	4.82	0	0	0	5.25
Summary	1.56	98.43	0	0	0	100



Lakeland Industry & Community Association

Lac La Biche Station - January 2023

Summary of Hourly Averages

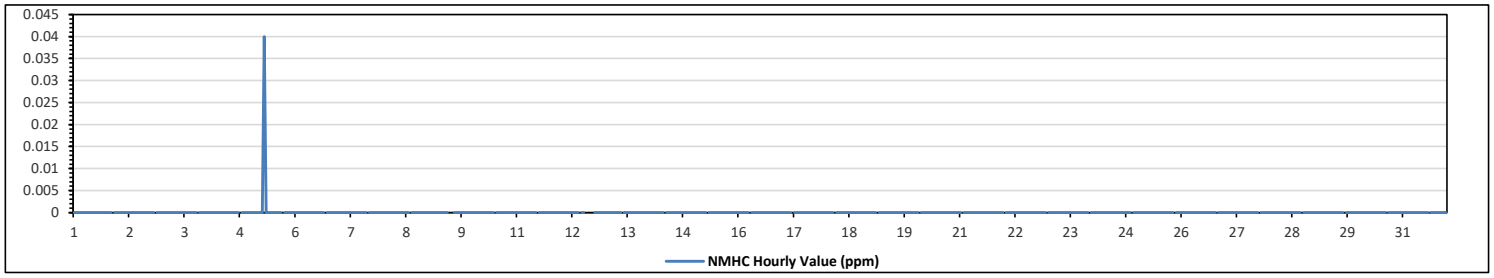
NON-METHANE HYDROCARBONS (NMHC) in ppm

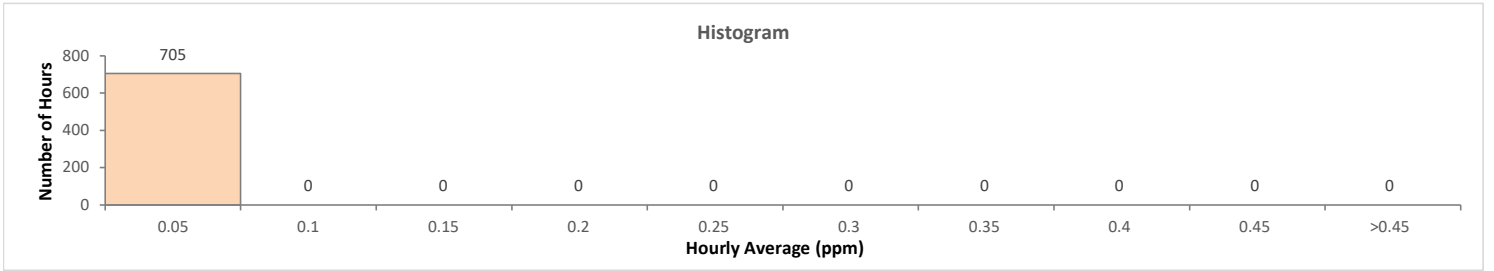
Maximum Hourly Value:	0.04	ppm	on January 5 at hour 7	Hours in Service:	744
Maximum Daily Value:	0.00	ppm	on January 5	Hours of Data:	705
Minimum Hourly Value:	0.00	ppm	on January 1 at hour 0	Hours of Missing Data:	2
Minimum Daily Value:	0.00	ppm	on January 1	Hours of Calibration:	37
Monthly Average:	0.00	ppm		Operational Uptime:	99.7

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Jan 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00
Jan 2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00
Jan 3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jan 4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jan 5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.04**	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.04**	**0.00**
Jan 6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jan 7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jan 8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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
Jan 9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NRM	NRM	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
Jan 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	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
Jan 11	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
Jan 12	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	C	C	C	C	C	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jan 13	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
Jan 14	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
Jan 15	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
Jan 16	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
Jan 17	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
Jan 18	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
Jan 19	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
Jan 20	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
Jan 21	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
Jan 22	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
Jan 23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00
Jan 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	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00
Jan 25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00
Jan 26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jan 27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jan 28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jan 29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jan 30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jan 31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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
Diurnal Maximum	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
Diurnal Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			

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.



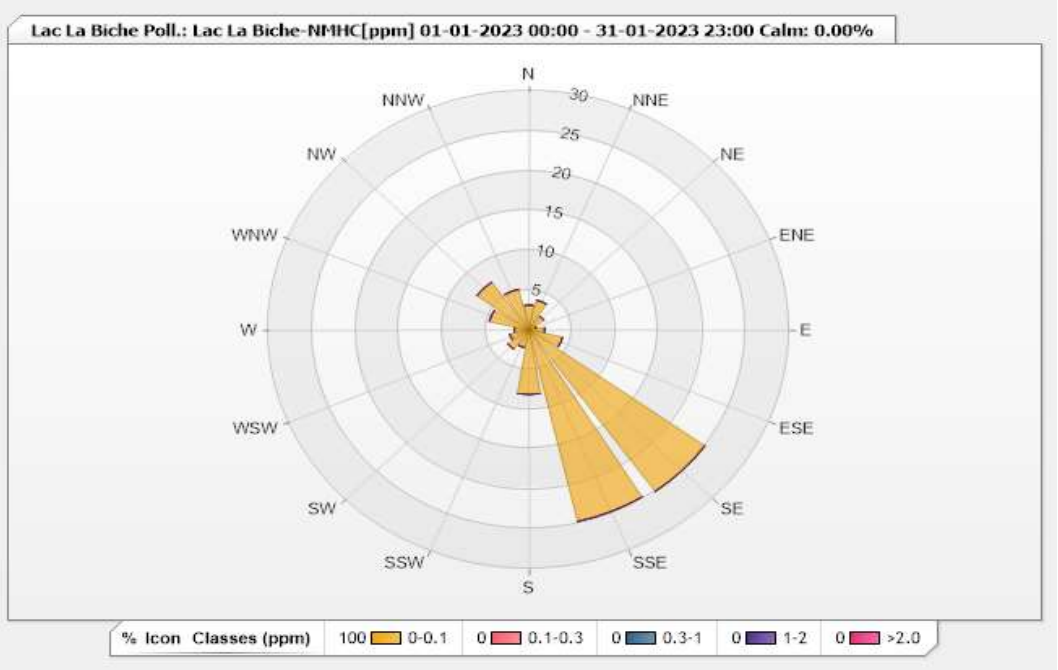


Station: Lac La Biche Poll.: Lac La Biche-NMHC[ppm] Monthly: 01-2023

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	0-0.1	0.1-0.3	0.3-1	1-2	>2.0	Total
N	3.12	0	0	0	0	3.12
NNE	3.83	0	0	0	0	3.83
NE	2.13	0	0	0	0	2.13
ENE	0.85	0	0	0	0	0.85
E	1.84	0	0	0	0	1.84
ESE	3.97	0	0	0	0	3.97
SE	24.96	0	0	0	0	24.96
SSE	24.68	0	0	0	0	24.68
S	8.09	0	0	0	0	8.09
SSW	2.27	0	0	0	0	2.27
SW	2.98	0	0	0	0	2.98
WSW	2.27	0	0	0	0	2.27
W	1.7	0	0	0	0	1.7
WNW	4.68	0	0	0	0	4.68
NW	7.38	0	0	0	0	7.38
NNW	5.25	0	0	0	0	5.25
Summary	100	0	0	0	0	100



Lakeland Industry & Community Association

Lac La Biche Station - January 2023

Summary of Hourly Averages

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

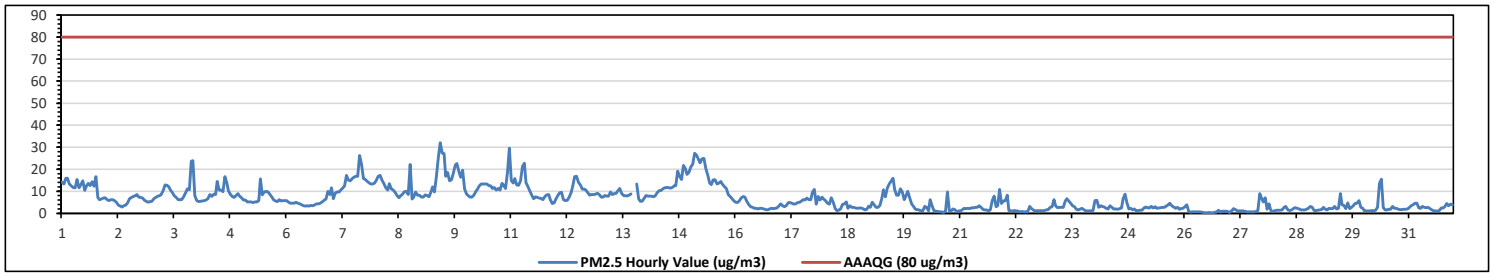
Alberta Ambient Air Quality Guideline (AAAQG): 1-Hour 80 µg/m3, Alberta Ambient Air Quality Objective (AAAQO): 24-Hour 29 µg/m3

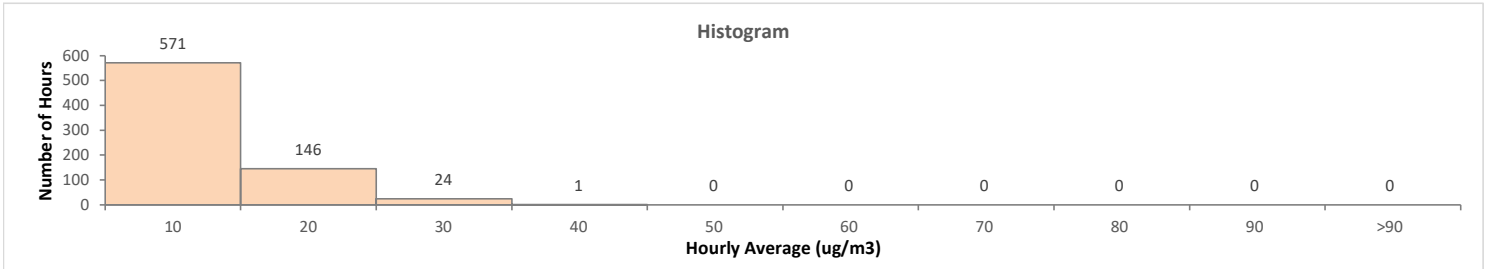
Number of 1-Hour Exceedances:	0	Number of 24-Hour Exceedances:	0
Maximum Hourly Value:	32 µg/m^3 on January 9 at hour 10	Hours in Service:	744
Maximum Daily Value:	16.5 µg/m^3 on January 15	Hours of Data:	742
Minimum Hourly Value:	0 µg/m^3 on January 26 at hour 11	Hours of Missing Data:	0
Minimum Daily Value:	1 µg/m^3 on January 26	Hours of Calibration:	2
Monthly Average:	6.7 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			
Jan 1	14	13	16	16	13	12	12	12	15	12	13	15	10	13	14	13	14	12	17	7	6	7	7	7	6	17	12.1
Jan 2	6	6	6	6	6	5	4	3	3	3	4	5	7	7	8	8	9	7	7	7	6	5	5	5	3	9	5.8
Jan 3	6	7	7	8	8	9	10	13	13	12	11	9	8	7	6	6	6	8	9	11	11	24	24	8	6	24	10.0
Jan 4	6	5	5	6	6	6	7	9	8	9	9	14	11	11	10	17	14	10	9	8	7	8	9	8	5	17	8.7
Jan 5	7	6	6	5	5	5	5	5	5	6	16	8	10	10	10	9	7	6	6	5	6	6	6	6	5	16	6.9
Jan 6	6	5	5	5	5	5	5	4	4	3	3	3	3	4	4	4	4	4	5	5	6	7	10	9	3	10	4.8
Jan 7	12	7	9	10	10	11	11	12	17	15	15	16	16	17	17	26	22	16	15	15	14	13	13	14	7	26	14.3
Jan 8	15	17	17	15	14	12	11	14	11	11	10	8	7	8	9	10	10	9	22	7	7	10	8	8	7	22	11.1
Jan 9	7	7	8	8	8	10	12	10	17	25	32	27	27	17	19	15	15	18	22	23	19	16	20	11	7	32	16.4
Jan 10	9	8	7	7	8	10	11	13	13	13	13	13	13	13	11	12	11	11	11	14	13	11	18	30	7	30	12.2
Jan 11	15	14	16	13	13	15	21	23	14	12	10	8	7	8	7	7	7	6	8	8	9	6	4	5	4	23	10.6
Jan 12	7	8	9	10	6	6	6	7	9	12	17	17	14	13	11	11	11	9	8	9	9	9	9	9	6	17	9.8
Jan 13	7	7	8	8	8	10	9	9	9	10	11	9	8	8	8	8	9	C	C	13	7	6	6	7	6	13	8.4
Jan 14	8	8	8	8	8	8	9	10	10	11	12	12	12	11	12	13	13	19	17	15	22	20	18	19	8	22	12.5
Jan 15	21	22	27	26	25	23	25	25	20	17	14	13	15	15	13	14	15	13	12	11	9	8	7	6	6	27	16.5
Jan 16	5	5	6	7	8	7	5	4	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	3	2	8	3.5
Jan 17	4	4	3	4	5	5	5	4	4	5	5	6	6	6	7	6	6	10	11	4	8	6	7	7	3	11	5.7
Jan 18	6	5	4	7	5	2	1	1	2	4	4	5	2	4	3	3	2	2	2	2	2	2	2	3	1	7	3.2
Jan 19	3	5	4	3	3	4	7	11	8	11	13	15	16	11	8	8	11	10	6	8	10	7	4	3	3	16	7.8
Jan 20	2	2	2	1	1	3	3	1	6	4	1	1	1	1	1	0	1	10	1	1	2	2	1	1	0	10	2.0
Jan 21	1	2	2	2	2	2	3	2	3	3	3	3	2	2	2	1	2	6	8	3	4	11	4	6	1	11	3.2
Jan 22	6	8	1	1	1	1	1	1	1	1	1	1	1	3	2	2	1	1	1	1	1	1	2	2	1	8	1.8
Jan 23	3	3	6	3	3	3	3	3	6	7	6	5	3	3	2	2	2	2	2	1	1	1	1	1	1	7	2.9
Jan 24	6	6	3	4	3	3	2	2	3	3	2	2	2	2	2	7	9	5	2	2	2	2	1	1	1	9	3.1
Jan 25	1	1	2	3	3	2	3	2	3	2	2	3	3	3	3	4	5	4	3	2	3	2	2	2	1	5	2.6
Jan 26	3	4	1	1	1	1	1	1	1	1	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	4	0.8
Jan 27	0	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	9	7	5	7	2	4	1	1	0	9	2.2
Jan 28	1	1	1	1	2	3	3	2	1	2	2	3	2	2	2	2	2	2	2	3	3	1	1	1	1	3	1.8
Jan 29	2	2	3	2	2	2	2	2	3	2	2	9	4	4	2	5	2	3	4	4	5	6	3	2	2	9	3.1
Jan 30	1	1	1	1	1	1	1	3	14	16	3	2	2	2	2	3	2	2	2	2	2	2	2	2	1	16	2.8
Jan 31	3	4	4	5	5	2	2	3	3	3	3	2	2	1	1	1	1	2	2	3	4	3	4	4	1	5	2.8
Diurnal Maximum	21	22	27	26	25	23	25	25	20	25	32	27	27	17	19	26	22	19	22	23	22	24	24	30			
Diurnal Average	6.2	6.2	6.5	6.3	5.9	6.1	6.4	6.8	7.4	7.6	7.7	7.6	6.9	6.6	6.3	7.0	7.2	7.2	7.4	6.6	6.4	6.7	6.5	6.1			

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.



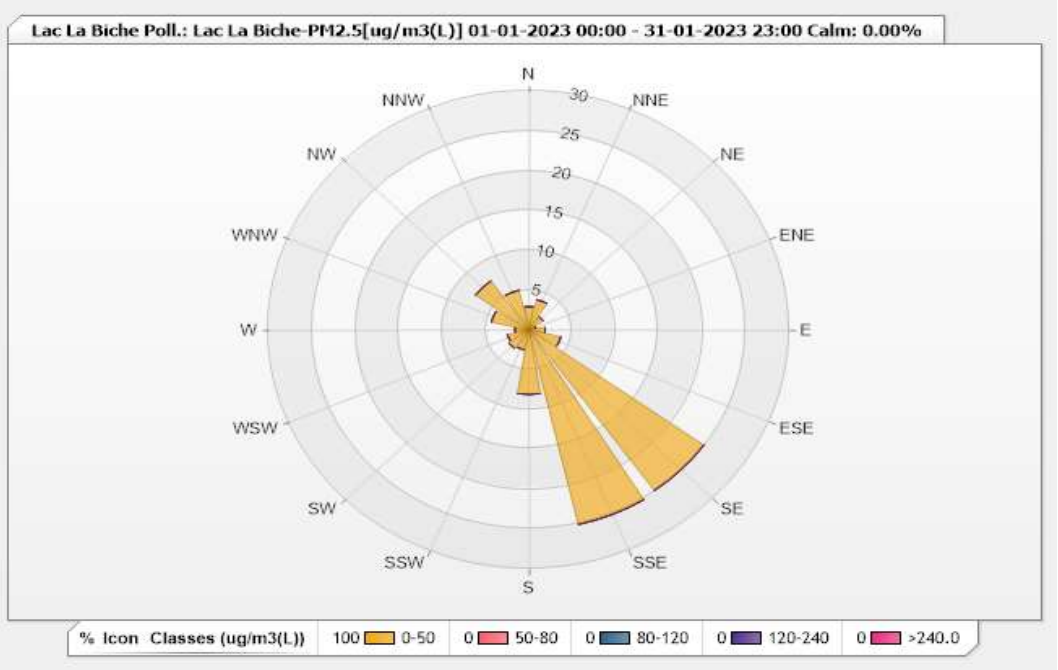


Station: Lac La Biche Poll.: Lac La Biche-PM2.5[ug/m3(L)] Monthly: 01-2023

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	2.96	0	0	0	0	2.96
NNE	3.91	0	0	0	0	3.91
NE	2.02	0	0	0	0	2.02
ENE	0.81	0	0	0	0	0.81
E	1.89	0	0	0	0	1.89
ESE	3.77	0	0	0	0	3.77
SE	24.8	0	0	0	0	24.8
SSE	25.07	0	0	0	0	25.07
S	8.09	0	0	0	0	8.09
SSW	2.56	0	0	0	0	2.56
SW	2.83	0	0	0	0	2.83
WSW	2.56	0	0	0	0	2.56
W	1.62	0	0	0	0	1.62
WNW	4.45	0	0	0	0	4.45
NW	7.55	0	0	0	0	7.55
NNW	5.12	0	0	0	0	5.12
Summary	100	0	0	0	0	100



Lakeland Industry & Community Association

Lac La Biche Station - January 2023

Summary of Hourly Averages

RELATIVE HUMIDITY (RH) in %

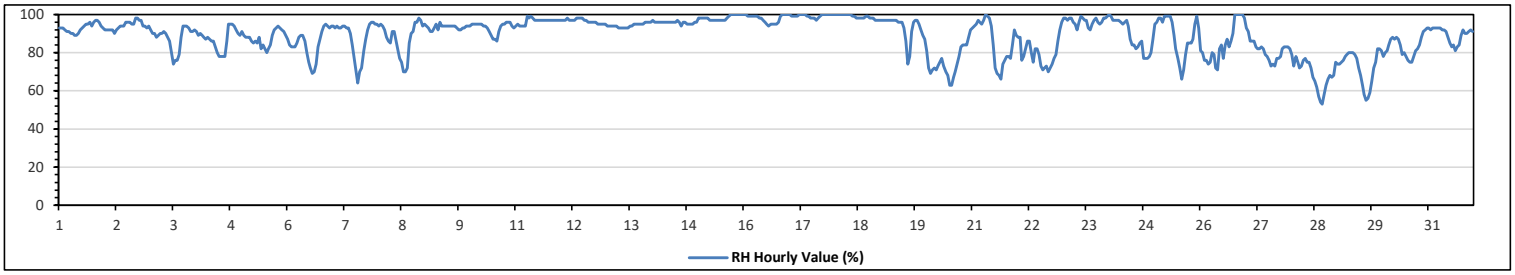
Maximum Hourly Value:	100	%	on January 15 at hour 17	Hours in Service:	744	
Maximum Daily Value:	99.3	%	on January 17	Hours of Data:	744	
Minimum Hourly Value:	53	%	on January 28 at hour 16	Hours of Missing Data:	0	
Minimum Daily Value:	68.7	%	on January 28	Hours of Calibration:	0	
Monthly Average:	89.1	%		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			
Jan 1	93	93	93	92	91	91	90	90	89	89	90	92	93	94	95	95	96	94	96	97	97	96	94	93	89	97	93.0
Jan 2	92	92	92	92	92	90	92	93	94	94	94	96	96	96	95	95	98	98	97	97	94	94	93	94	90	98	94.2
Jan 3	92	90	90	88	89	90	90	91	90	88	86	80	74	76	76	79	88	94	94	94	93	91	91	92	74	94	87.8
Jan 4	91	89	90	89	88	87	88	87	86	86	83	80	78	78	78	78	86	95	95	95	94	92	90	89	78	95	87.2
Jan 5	91	89	88	88	88	86	85	86	85	88	82	84	82	80	82	84	89	92	93	94	93	92	91	89	80	94	87.5
Jan 6	87	84	83	83	83	85	88	89	89	86	80	75	72	69	70	74	83	87	91	94	95	94	93	94	69	95	84.5
Jan 7	94	93	94	93	93	94	94	93	93	90	84	77	70	64	70	72	81	87	92	95	96	96	95	95	64	96	87.7
Jan 8	94	95	94	92	88	86	85	91	91	86	81	77	75	70	70	72	85	90	91	96	96	98	97	94	70	98	87.3
Jan 9	95	94	93	91	91	93	95	92	96	94	94	94	94	94	94	94	94	93	92	92	93	93	94	94	91	96	93.5
Jan 10	94	95	95	95	95	95	95	94	94	93	91	89	87	87	86	91	94	95	95	96	96	96	94	93	86	96	93.1
Jan 11	94	95	94	94	94	94	99	98	99	98	97	97	97	97	97	97	97	97	97	97	97	97	97	97	94	99	96.5
Jan 12	97	97	97	98	97	97	97	97	98	98	98	98	97	97	96	96	96	96	96	95	95	95	95	95	95	98	96.6
Jan 13	94	94	94	94	94	94	93	93	93	93	93	93	94	94	95	95	95	95	95	95	96	96	96	96	93	96	94.3
Jan 14	97	96	96	96	96	96	96	96	96	96	96	96	96	97	96	94	96	96	95	95	95	95	96	96	94	97	95.8
Jan 15	98	98	98	98	98	98	97	97	97	97	97	97	97	97	97	98	99	**100**	**100**	**100**	**100**	**100**	**100**	**100**	97	**100**	98.3
Jan 16	**100**	**100**	99	99	99	99	99	99	98	98	97	96	95	94	95	95	95	95	96	99	**100**	**100**	**100**	**100**	94	**100**	97.8
Jan 17	**100**	99	99	99	99	**100**	**100**	**100**	**100**	99	99	98	98	98	97	98	99	**100**	**100**	**100**	**100**	**100**	**100**	**100**	97	**100**	**99.3**
Jan 18	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	99	99	98	98	98	98	98	99	99	98	98	98	97	97	97	97	**100**	98.8
Jan 19	97	97	97	97	97	97	97	97	97	96	96	96	93	86	74	78	91	96	97	97	95	92	89	87	74	97	93.2
Jan 20	81	72	69	71	72	71	73	75	77	73	70	68	63	63	67	70	74	78	83	84	84	84	88	92	63	92	75.1
Jan 21	93	94	95	97	96	95	97	**100**	99	98	94	84	72	69	68	66	74	76	78	78	77	84	92	89	66	**100**	86.0
Jan 22	88	88	76	78	82	86	86	80	75	82	82	79	73	71	72	73	70	72	74	77	79	86	92	96	70	96	79.9
Jan 23	98	98	97	98	98	96	95	92	96	99	98	97	97	93	92	95	97	98	96	95	96	98	98	99	92	99	96.5
Jan 24	**100**	99	97	97	97	97	96	95	96	97	94	87	84	84	82	83	85	86	77	77	77	78	80	87	77	**100**	88.8
Jan 25	95	96	98	98	96	99	99	99	99	96	89	82	77	72	66	71	79	85	85	85	87	95	99	93	66	99	89.2
Jan 26	81	80	76	76	74	75	80	79	72	71	82	84	77	84	87	83	86	90	**100**	**100**	**100**	**100**	**100**	98	71	**100**	84.8
Jan 27	93	91	86	86	86	83	82	82	83	82	79	78	76	73	74	73	77	77	78	82	83	83	83	82	73	93	81.3
Jan 28	79	73	78	75	72	73	76	77	75	75	72	67	65	62	57	54	**53**	58	63	66	68	67	68	75	**53**	79	**68.7**
Jan 29	74	74	75	76	78	79	80	80	80	79	77	72	68	63	58	55	56	59	65	72	75	82	82	81	55	82	72.5
Jan 30	78	80	81	84	87	88	87	88	87	84	79	80	78	76	75	75	78	81	82	84	88	91	92	93	75	93	83.2
Jan 31	93	92	93	93	93	93	93	92	92	91	88	85	83	84	81	83	84	89	92	90	90	91	92	91	81	93	89.5
Diurnal Maximum	100	100	100	100	100	100	100	100	100	99	99	98	98	98	98	98	99	100	100	100	100	100	100	100			
Diurnal Average	92.0	91.2	90.5	90.5	90.4	90.5	91.1	91.0	90.8	90.2	88.4	86.3	83.8	82.6	81.9	82.7	86.3	88.6	89.8	90.8	91.2	92.0	92.5	92.6			

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 - January 2023

Summary of Hourly Averages

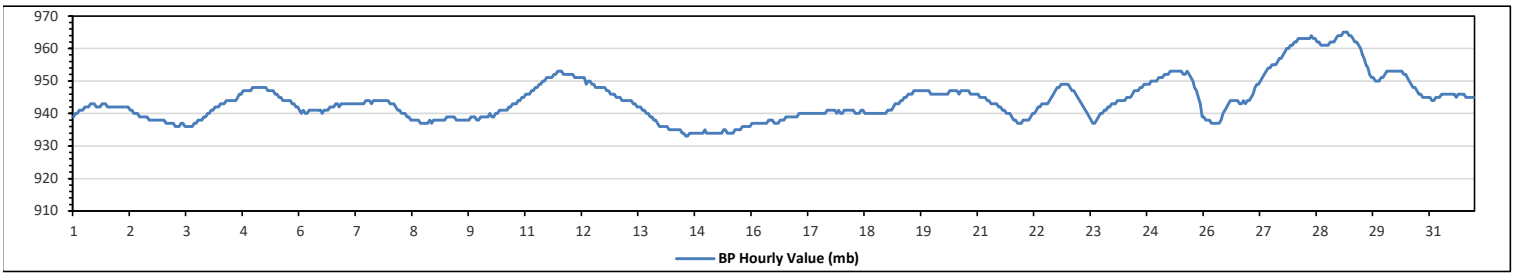
BAROMETRIC PRESSURE (BP) in millibar

Maximum Hourly Value:	965	mb	on January 29 at hour 2	Hours in Service:	744	
Maximum Daily Value:	962	mb	on January 28	Hours of Data:	744	
Minimum Hourly Value:	933	mb	on January 14 at hour 13	Hours of Missing Data:	0	
Minimum Daily Value:	935	mb	on January 14	Hours of Calibration:	0	
Monthly Average:	944	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
Jan 1	939	940	940	941	941	941	942	942	942	943	943	943	942	942	942	943	943	943	942	942	942	942	942	942	939	943	942
Jan 2	942	942	942	942	942	942	941	941	940	940	940	939	939	939	939	939	938	938	938	938	938	938	938	938	938	942	940
Jan 3	938	937	937	937	937	937	936	936	936	937	937	936	936	936	936	936	937	937	938	938	938	939	939	940	936	940	937
Jan 4	940	941	941	942	942	942	943	943	943	944	944	944	944	944	944	945	946	946	947	947	947	947	947	948	940	948	944
Jan 5	948	948	948	948	948	948	948	947	947	947	947	946	946	945	945	944	944	944	944	944	943	943	942	942	942	948	946
Jan 6	941	940	941	940	940	941	941	941	941	941	941	941	940	941	941	941	942	942	942	943	943	942	943	943	940	943	941
Jan 7	943	943	943	943	943	943	943	943	943	943	943	944	944	944	943	944	944	944	944	944	944	944	944	944	943	944	944
Jan 8	943	943	943	942	941	941	940	940	940	939	939	938	938	938	938	938	937	937	937	937	937	938	937	938	937	943	939
Jan 9	938	938	938	938	938	938	939	939	939	939	939	938	938	938	938	938	938	938	938	939	939	939	938	938	938	939	938
Jan 10	939	939	939	939	939	940	939	939	940	940	941	941	941	941	941	942	942	943	943	943	944	944	945	945	939	945	941
Jan 11	946	946	946	947	947	948	948	949	949	950	950	951	951	951	951	952	952	953	953	953	952	952	952	952	946	953	950
Jan 12	952	952	951	951	951	951	951	951	949	950	950	949	949	948	948	948	948	948	948	947	947	946	946	946	946	952	949
Jan 13	945	945	945	944	944	944	944	944	944	943	943	942	942	942	941	941	940	940	939	939	938	938	937	936	936	945	942
Jan 14	936	936	936	936	935	935	935	935	935	935	935	934	934	**933**	**933**	934	934	934	934	934	934	934	934	935	**933**	936	**935**
Jan 15	934	934	934	934	934	934	934	934	934	935	935	934	934	934	934	935	935	935	935	936	936	936	936	936	934	936	935
Jan 16	937	937	937	937	937	937	937	937	937	938	938	938	937	937	937	938	938	938	939	939	939	939	939	939	937	939	938
Jan 17	939	940	940	940	940	940	940	940	940	940	940	940	940	940	940	940	941	941	941	941	941	940	941	940	939	941	940
Jan 18	940	941	941	941	941	941	941	940	940	940	941	941	940	940	940	940	940	940	940	940	940	940	940	940	940	941	940
Jan 19	941	941	941	942	943	943	943	944	944	945	945	946	946	946	947	947	947	947	947	947	947	947	947	946	941	947	945
Jan 20	946	946	946	946	946	946	946	946	946	947	947	947	947	947	946	947	947	947	947	947	946	946	946	946	946	947	946
Jan 21	946	945	945	945	945	944	944	943	943	943	943	942	942	941	941	940	940	940	939	938	938	937	937	937	937	946	942
Jan 22	938	938	938	938	939	940	940	941	942	942	943	943	943	943	944	945	946	947	948	948	949	949	949	949	938	949	943
Jan 23	949	948	947	947	946	945	944	943	942	941	940	939	938	937	937	938	939	940	940	941	941	942	942	943	937	949	942
Jan 24	943	943	944	944	944	944	944	945	945	945	946	947	947	947	948	948	949	949	949	949	950	950	950	950	943	950	947
Jan 25	951	951	951	952	952	952	953	953	953	953	953	953	953	952	952	953	952	951	950	948	947	945	943	939	939	953	951
Jan 26	939	938	938	938	937	937	937	937	937	938	940	941	942	943	944	944	944	944	944	943	943	944	943	944	937	944	941
Jan 27	944	945	946	948	949	949	950	951	952	953	954	954	955	955	955	956	957	957	958	959	960	960	961	961	944	961	954
Jan 28	962	962	963	963	963	963	963	963	963	964	963	963	962	962	961	961	961	961	961	962	962	962	963	964	961	964	**962**
Jan 29	964	964	**965**	**965**	**965**	964	964	963	962	962	961	960	958	957	955	954	952	951	951	950	950	950	951	951	950	**965**	958
Jan 30	952	953	953	953	953	953	953	953	953	953	952	952	951	950	949	948	948	947	946	946	945	945	945	945	945	953	950
Jan 31	945	944	944	945	945	945	946	946	946	946	946	946	946	946	945	946	946	946	946	945	945	945	945	945	944	946	945
Diurnal Maximum	964	964	965	965	965	964	964	963	963	964	963	963	962	962	961	961	961	961	961	962	962	962	963	964			
Diurnal Average	944	944	944	944	944	944	944	944	944	944	944	944	944	944	944	944	944	944	944	944	944	944	944	944			

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 - January 2023

Summary of Hourly Averages

AMBIENT TEMPERATURE (AT) in Degree Celsius

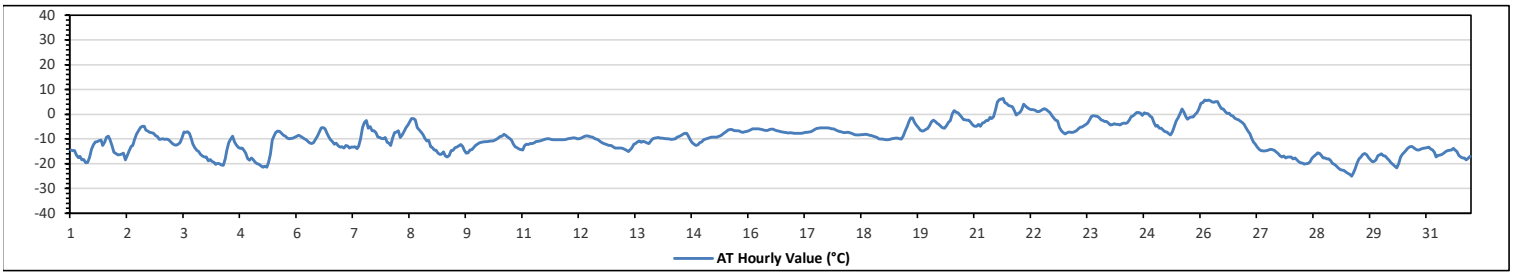
Maximum Hourly Value:	6.4	°C	on January 21 at hour 15	Hours in Service:	744	
Maximum Daily Value:	1.8	°C	on January 26	Hours of Data:	744	
Minimum Hourly Value:	-25.0	°C	on January 29 at hour 8	Hours of Missing Data:	0	
Minimum Daily Value:	-20.1	°C	on January 29	Hours of Calibration:	0	
Monthly Average:	-9.4	°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
Jan 1	-14.5	-14.8	-14.7	-16.5	-17.5	-17.1	-18.4	-18.3	-19.6	-19.4	-17.4	-14.2	-12.4	-11.2	-11.1	-10.7	-10.5	-12.7	-11.3	-9.2	-8.9	-10.4	-12.7	-15.3	-19.6	-8.9	-14.1
Jan 2	-15.8	-16.4	-16.4	-16.1	-15.7	-18.5	-16.7	-14.7	-13	-12.7	-10.1	-8	-6.6	-5.4	-4.8	-4.9	-6.4	-6.8	-7.3	-7.5	-7.8	-8.6	-9	-10.2	-18.5	-4.8	-10.8
Jan 3	-10.1	-10	-10.2	-10.1	-10.4	-11.1	-11.9	-12.4	-12.5	-12.1	-11.5	-9.5	-7.2	-7.3	-7.1	-7.7	-9.9	-12.2	-13.5	-14.6	-15.1	-16.2	-17	-17.3	-17.3	-7.1	-11.5
Jan 4	-17.3	-18.9	-18.3	-19.1	-19.5	-20.3	-19.9	-20	-20.5	-20.6	-18.1	-14.6	-11.4	-10.1	-8.9	-11.2	-12.6	-13.4	-13.8	-13.6	-14.7	-15.7	-17.9	-18.6	-20.6	-8.9	-16.2
Jan 5	-17.7	-18.4	-19.5	-20	-20.2	-20.9	-21.4	-21	-21.4	-19.6	-16.2	-10.5	-8.6	-7.3	-6.8	-6.9	-7.8	-8.5	-8.8	-9.6	-10	-9.8	-9.6	-9.3	-21.4	-6.8	-13.7
Jan 6	-8.9	-8.5	-8.8	-9.4	-9.9	-10.4	-11	-11.6	-11.9	-11.4	-10.2	-8.8	-7.2	-5.6	-5.4	-5.9	-7.8	-9	-10.3	-11	-12.1	-11.7	-12.8	-13.2	-13.2	-5.4	-9.7
Jan 7	-13.1	-13.7	-12.7	-12.9	-13.6	-13.3	-13.3	-13.1	-13.9	-12.9	-10	-5.4	-3.3	-2.5	-5.7	-5	-6.7	-6.7	-7.5	-9.2	-9.4	-9.8	-9.9	-9.4	-13.9	-2.5	-9.7
Jan 8	-11.3	-11.7	-12.7	-9.6	-7.5	-7.2	-6.7	-9.4	-8.4	-6.9	-5.4	-4.3	-2.9	-1.8	-1.8	-2.3	-5.4	-6.3	-7.2	-8.3	-9.8	-10.8	-10.6	-13.1	-13.1	-1.8	-7.6
Jan 9	-13.4	-14.5	-14.6	-15.7	-16.3	-16.1	-15.2	-17	-17.2	-16.7	-14.8	-14.6	-13.5	-13.3	-12.8	-12.3	-13	-14.6	-15.7	-15.6	-14.5	-14.3	-13.5	-12.7	-17.2	-12.3	-14.7
Jan 10	-12.2	-11.6	-11.3	-11.2	-11.1	-11.1	-10.9	-10.8	-10.8	-10.6	-10.2	-9.6	-9	-8.8	-8.2	-8.6	-9.3	-9.8	-10.6	-12	-13.1	-13.5	-14	-14.3	-14.3	-8.2	-10.9
Jan 11	-14.5	-12.8	-12.1	-12.3	-11.8	-11.9	-11.6	-11.1	-10.9	-10.8	-10.6	-10.4	-10.1	-10	-10	-10.2	-10.3	-10.3	-10.3	-10.3	-10.4	-10.4	-10.3	-10.2	-14.5	-10.0	-11.0
Jan 12	-9.9	-9.8	-9.6	-9.5	-9.6	-10	-10	-9.6	-9.3	-8.9	-8.7	-8.9	-9.1	-9.3	-9.8	-10.1	-10.4	-10.9	-11.4	-11.9	-12.1	-12.4	-12.7	-12.7	-12.7	-8.7	-10.3
Jan 13	-13.1	-13.6	-13.6	-13.7	-13.7	-13.8	-14.2	-14.6	-15.1	-14.5	-13.5	-12.1	-11.8	-11.2	-10.8	-11.3	-10.9	-11.2	-11.6	-11.8	-10.8	-9.9	-9.6	-9.5	-15.1	-9.5	-12.3
Jan 14	-9.4	-9.6	-9.7	-9.8	-9.9	-10	-10.1	-10.2	-10.1	-9.9	-9.3	-9	-8.6	-8.2	-7.7	-7.8	-9	-10.4	-11.5	-12.2	-12.7	-12.4	-11.5	-11.2	-12.7	-7.7	-10.0
Jan 15	-10.4	-10.1	-9.8	-9.5	-9.3	-9.3	-9.3	-9.2	-9	-8.7	-8.3	-7.6	-7	-6.4	-6.2	-6.2	-6.5	-6.7	-6.7	-6.8	-7.2	-7.3	-7.1	-6.9	-10.4	-6.2	-8.0
Jan 16	-6.7	-6.3	-6	-5.9	-5.9	-6	-6.1	-6.2	-6.4	-6.5	-6.5	-6.2	-6.1	-6.1	-6.4	-6.6	-6.8	-7	-7.2	-7.4	-7.5	-7.6	-7.5	-7.6	-7.6	-5.9	-6.6
Jan 17	-7.7	-7.7	-7.7	-7.7	-7.7	-7.6	-7.4	-7.3	-7.2	-7	-6.6	-6.2	-5.8	-5.7	-5.5	-5.5	-5.5	-5.5	-5.5	-5.7	-5.9	-6	-6.3	-6.6	-7.7	-5.5	-6.6
Jan 18	-6.9	-7.1	-7.3	-7.5	-7.3	-7.4	-7.6	-7.9	-8.3	-8.4	-8.4	-8.4	-8.3	-8.3	-8.2	-8.3	-8.5	-8.6	-8.8	-9.1	-9.4	-10	-10.1	-10.1	-10.1	-6.9	-8.3
Jan 19	-10.2	-10.4	-10.4	-10.2	-10	-9.8	-9.7	-9.7	-9.9	-10.1	-8.7	-6.6	-5	-3.2	-1.6	-1.5	-3.4	-4.5	-5.4	-6.4	-6.8	-6.6	-6.2	-5.8	-10.4	-1.5	-7.2
Jan 20	-4.6	-3.1	-2.4	-3	-3.7	-4.1	-4.9	-5.5	-5.7	-4.6	-3.4	-2.5	0.2	1.4	0.8	0.5	-0.4	-1.1	-2.1	-2.3	-2.4	-2.4	-3.3	-4.3	-5.7	1.4	-2.6
Jan 21	-4.8	-4.8	-4.1	-4.8	-3.6	-3.3	-2.6	-2.5	-1.3	-1.8	-1	1.7	4.9	5.9	6.1	**6.4**	4.7	4.3	3.5	3.2	3	1.5	-0.4	0.3	-4.8	**6.4**	0.4
Jan 22	0.8	1.9	4.1	3.3	2.6	2.1	1.9	1.8	1.6	1.1	1	1.5	2	2.2	1.8	1.2	0.6	-0.5	-1.6	-2.4	-2.7	-5.4	-6.6	-7.5	-7.5	4.1	0.2
Jan 23	-8	-7.5	-7.2	-7.4	-7.3	-7	-6.7	-5.9	-5.3	-5.1	-4.6	-4.1	-3.6	-2.3	-0.9	-0.6	-0.7	-0.9	-1.4	-2.3	-2.6	-3	-2.9	-3.6	-8.0	-0.6	-4.2
Jan 24	-4.3	-4.2	-3.9	-4.1	-4.1	-4.3	-3.9	-3.6	-3.7	-3.5	-2.4	-1	-0.8	-0.1	0.6	0.7	0.4	-0.5	0.5	0.3	0.2	-0.7	-1.3	-3.3	-4.3	0.7	-2.0
Jan 25	-4.8	-4.5	-5.7	-5.7	-6.4	-7.1	-7.2	-7.9	-8.4	-7	-4.8	-2.7	-1.4	0.3	2.1	0.8	-1	-2	-1.4	-1.1	-1.1	-0.1	0.7	2.2	-8.4	2.2	-3.1
Jan 26	4.4	4.7	5.7	5.5	5.7	5.4	4.9	4.8	5.1	5	3.5	2.3	2.1	1.1	0.3	0.4	-0.5	-0.8	-1.7	-2	-2.3	-2.8	-3.4	-4.1	-4.1	5.7	**1.8**
Jan 27	-5.5	-6.8	-7.9	-9.5	-11.2	-12.1	-13.2	-14.2	-14.7	-14.9	-14.9	-14.7	-14.5	-14.2	-14.3	-14.6	-15.2	-15.8	-16.8	-17.2	-16.9	-17.7	-17.2	-17.2	-17.7	-5.5	-13.8
Jan 28	-17.3	-18	-17.7	-18.5	-19.1	-19.6	-19.7	-20.1	-20	-19.8	-19.2	-17.8	-17.1	-16.4	-15.6	-15.8	-16.8	-17.6	-17.7	-18	-18	-18.9	-19.8	-20.3	-20.3	-15.6	-18.3
Jan 29	-20.9	-21.6	-22.3	-22.6	-22.7	-23.4	-23.8	-24.3	**-25**	-23.8	-22	-19.7	-18	-17.2	-16.2	-15.9	-16.4	-17.5	-18.4	-19.3	-19.1	-18.5	-16.8	-16.4	**-25.0**	-15.9	**-20.1**
Jan 30	-16	-16.8	-17	-17.8	-18.6	-19.6	-20.3	-21	-21.7	-20	-17.2	-16.1	-15.3	-14.6	-13.7	-13.1	-13	-13.5	-14	-14.5	-14.5	-14	-13.8	-13.6	-21.7	-13.0	-16.2
Jan 31	-13.5	-13.3	-14	-14.5	-15.5	-17.3	-16.6	-16.5	-16.3	-15.7	-15.1	-14.8	-14.6	-14.4	-13.8	-14.4	-15.1	-16.7	-17.2	-17.7	-17.7	-18.5	-17.8	-17.1	-18.5	-13.3	-15.8
Diurnal Maximum	4.4	4.7	5.7	5.5	5.7	5.4	4.9	4.8	5.1	5.0	3.5	2.3	4.9	5.9	6.1	6.4	4.7	4.3	3.5	3.2	3.0	1.5	0.7	2.2			
Diurnal Average	-10.2	-10.3	-10.3	-10.5	-10.7	-11.0	-11.1	-11.3	-11.3	-10.9	-9.8	-8.5	-7.4	-6.8	-6.5	-6.7	-7.6	-8.3	-8.8	-9.2	-9.4	-9.8	-10.0	-10.3			

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

Lac La Biche Station - January 2023

Summary of Hourly Averages

STATION TEMPERATURE (ST) in Degree Celsius

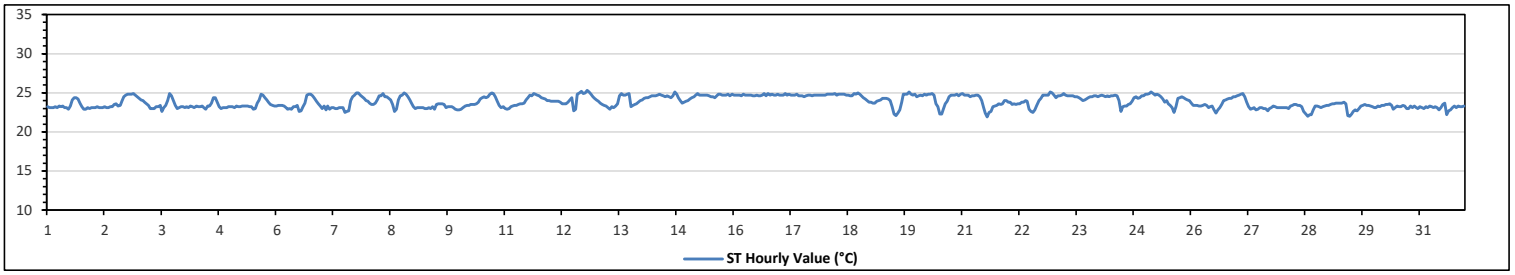
Maximum Hourly Value:	25.3	°C	on January 12 at hour 19	Hours in Service:	744
Maximum Daily Value:	24.7	°C	on January 16	Hours of Data:	744
Minimum Hourly Value:	21.9	°C	on January 21 at hour 13	Hours of Missing Data:	0
Minimum Daily Value:	23.0	°C	on January 28	Hours of Calibration:	0
Monthly Average:	23.8	°C		Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Jan 1	23.2	23.1	23.1	23.1	23.2	23.1	23.3	23.2	23.3	23.1	23.1	22.9	23.3	24.1	24.4	24.4	24.2	23.7	23.2	22.9	22.9	23.1	23.0	23.1	22.9	24.4	23.3
Jan 2	23.1	23.1	23.2	23.1	23.1	23.1	23.2	23.1	23.1	23.2	23.2	23.5	23.6	23.3	23.4	23.9	24.5	24.7	24.8	24.8	24.8	24.9	24.7	24.5	23.1	24.9	23.7
Jan 3	24.3	24.1	24.0	23.8	23.6	23.4	23.0	23.0	23.0	23.2	23.2	23.4	22.6	23.1	23.4	24.0	24.9	24.6	24.0	23.4	23.0	23.1	23.2	23.2	22.6	24.9	23.5
Jan 4	23.1	23.2	23.1	23.3	23.2	23.1	23.3	23.2	23.2	23.3	23.1	22.9	23.3	23.3	23.7	24.4	24.4	23.8	23.2	23.0	23.1	23.1	23.1	23.2	22.9	24.4	23.3
Jan 5	23.2	23.2	23.1	23.3	23.2	23.2	23.3	23.3	23.3	23.3	23.2	23.2	22.9	23.0	23.7	24.1	24.8	24.7	24.4	24.1	23.8	23.5	23.4	23.3	22.9	24.8	23.5
Jan 6	23.3	23.4	23.4	23.4	23.3	23.1	22.9	23.0	22.9	23.2	23.2	23.4	22.6	22.7	23.2	23.7	24.7	24.8	24.8	24.6	24.3	23.9	23.6	23.3	22.6	24.8	23.5
Jan 7	23.0	23.3	22.8	23.3	22.9	23.1	23.1	23.0	23.0	23.1	23.1	23.1	22.5	22.6	22.7	24.0	24.5	24.7	25.0	25.0	24.7	24.5	24.3	24.0	22.5	25.0	23.6
Jan 8	23.9	23.7	23.5	23.5	23.7	24.1	24.6	24.6	24.9	24.5	24.5	24.3	24.1	23.5	22.6	22.9	24.1	24.6	24.7	25.0	24.8	24.5	24.1	23.7	22.6	25.0	24.1
Jan 9	23.2	23.0	23.1	23.1	23.1	23.1	23.0	23.0	23.1	23.0	23.2	22.9	23.5	23.6	23.6	23.6	23.5	23.1	23.2	23.2	23.2	23.1	22.9	22.8	22.8	23.6	23.2
Jan 10	22.8	22.9	23.1	23.3	23.4	23.4	23.5	23.5	23.5	23.6	23.8	24.2	24.4	24.5	24.4	24.5	24.8	25.0	24.9	24.5	23.9	23.4	23.1	23.2	22.8	25.0	23.8
Jan 11	23.0	22.9	23.0	23.2	23.3	23.4	23.4	23.5	23.6	23.6	23.7	24.1	24.4	24.7	24.6	24.9	24.8	24.7	24.6	24.4	24.3	24.2	24.0	24.0	22.9	24.9	23.9
Jan 12	23.9	23.9	23.9	23.9	23.9	23.8	23.6	23.6	23.6	23.8	24.1	24.4	22.7	22.9	24.8	25.0	25.2	24.9	25.0	**25.3**	25.1	24.8	24.5	24.3	22.7	**25.3**	24.2
Jan 13	24.1	23.9	23.7	23.5	23.4	23.3	23.1	22.9	23.2	23.1	23.3	23.6	24.6	24.9	24.7	24.7	24.8	24.9	23.2	23.4	23.5	23.6	23.8	24.0	22.9	24.9	23.8
Jan 14	24.1	24.3	24.4	24.4	24.5	24.6	24.6	24.6	24.7	24.8	24.7	24.6	24.5	24.6	24.5	24.4	24.6	25.1	24.8	24.4	24.0	23.7	23.8	23.9	23.7	25.1	24.4
Jan 15	24.0	24.2	24.4	24.5	24.7	24.9	24.7	24.7	24.7	24.7	24.7	24.6	24.5	24.5	24.4	24.6	24.8	24.8	24.7	24.7	24.7	24.8	24.6	24.8	24.0	24.9	24.6
Jan 16	24.7	24.7	24.7	24.7	24.6	24.8	24.7	24.7	24.7	24.7	24.6	24.6	24.7	24.6	24.6	24.7	24.9	24.6	24.9	24.7	24.8	24.7	24.7	24.8	24.6	24.9	**24.7**
Jan 17	24.7	24.7	24.7	24.9	24.7	24.8	24.7	24.7	24.7	24.8	24.6	24.6	24.6	24.5	24.6	24.7	24.7	24.6	24.7	24.7	24.7	24.7	24.7	24.7	24.5	24.9	24.7
Jan 18	24.7	24.8	24.8	24.8	24.8	24.9	24.7	24.8	24.8	24.8	24.8	24.7	24.7	24.6	24.6	24.9	24.8	25.0	24.8	24.6	24.4	24.2	24.0	23.8	23.8	25.0	24.7
Jan 19	23.8	23.7	23.7	23.9	24.0	24.1	24.3	24.3	24.3	24.2	24.0	23.2	22.3	22.1	22.4	22.8	23.8	24.8	24.8	24.8	25.1	24.8	24.7	24.8	22.1	25.1	23.9
Jan 20	24.5	24.6	24.7	24.6	24.8	24.7	24.8	24.8	24.9	24.7	23.6	23.2	22.3	22.3	22.9	23.6	23.9	24.5	24.7	24.7	24.7	24.8	24.6	24.8	22.3	24.9	24.2
Jan 21	24.9	24.7	24.7	24.7	24.5	24.6	24.6	24.7	24.7	24.5	24.0	23.1	22.4	**21.9**	22.5	22.6	23.2	23.3	23.4	23.6	23.5	23.6	24.0	24.0	**21.9**	24.9	23.8
Jan 22	23.8	23.8	23.5	23.6	23.5	23.6	23.6	23.8	23.8	24.0	23.9	22.9	22.6	22.5	22.8	23.4	24.0	24.3	24.7	24.7	24.7	24.7	25.1	25.0	22.5	25.1	23.8
Jan 23	24.7	24.4	24.6	24.6	24.7	24.9	24.7	24.6	24.6	24.6	24.6	24.5	24.5	24.4	24.2	24.0	24.1	24.2	24.4	24.5	24.5	24.6	24.6	24.5	24.0	24.9	24.5
Jan 24	24.6	24.7	24.6	24.5	24.6	24.5	24.6	24.6	24.7	24.6	24.0	22.6	23.2	23.3	23.3	23.5	23.6	23.9	24.4	24.5	24.3	24.4	24.6	24.6	22.6	24.7	24.2
Jan 25	24.8	24.8	24.9	25.1	24.9	24.7	24.8	24.7	24.5	24.2	23.8	24.0	23.6	23.4	23.1	22.5	23.2	24.3	24.4	24.5	24.4	24.2	24.1	24.0	22.5	25.1	24.2
Jan 26	23.7	23.4	23.4	23.4	23.3	23.3	23.4	23.5	23.4	23.1	23.2	23.3	22.8	22.4	22.8	23.1	23.5	24.0	24.1	24.2	24.3	24.3	24.5	24.5	22.4	24.5	23.5
Jan 27	24.6	24.7	24.8	24.9	24.5	23.8	23.2	22.9	23.0	23.1	22.8	22.9	23.1	23.1	23.0	23.0	22.7	23.0	23.1	23.3	23.2	23.1	23.1	23.1	22.7	24.9	23.4
Jan 28	23.1	23.1	23.1	23.0	23.3	23.4	23.5	23.5	23.4	23.4	23.2	22.6	22.3	22.0	22.2	22.2	22.8	23.3	23.3	23.2	23.1	23.2	23.3	23.4	22.0	23.5	**23.0**
Jan 29	23.4	23.5	23.6	23.6	23.7	23.7	23.7	23.7	23.8	23.6	22.1	22.0	22.3	22.6	22.8	22.7	23.0	23.3	23.4	23.5	23.4	23.4	23.3	23.2	22.0	23.8	23.2
Jan 30	23.1	23.1	23.3	23.2	23.4	23.4	23.5	23.5	23.6	23.4	22.9	23.1	23.3	23.2	23.2	23.4	23.3	23.0	23.0	23.3	23.1	23.3	23.1	23.0	22.9	23.6	23.2
Jan 31	23.2	23.1	23.0	23.2	23.1	23.3	23.2	23.1	23.2	23.1	22.8	23.1	23.5	23.7	22.2	22.7	22.8	23.1	23.3	23.1	23.3	23.2	23.2	23.3	22.2	23.7	23.1
Diurnal Maximum	24.9	24.8	24.9	25.1	24.9	24.9	24.8	24.8	24.9	24.8	24.8	24.7	24.7	24.9	24.8	25.0	25.2	25.1	25.0	25.3	25.1	24.9	25.1	25.0			
Diurnal Average	23.8	23.8	23.8	23.9	23.8	23.8	23.8	23.8	23.8	23.8	23.6	23.5	23.4	23.4	23.5	23.8	24.1	24.2	24.2	24.1	24.1	24.0	23.9	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

Lac La Biche Station - January 2023

Summary of Hourly Averages

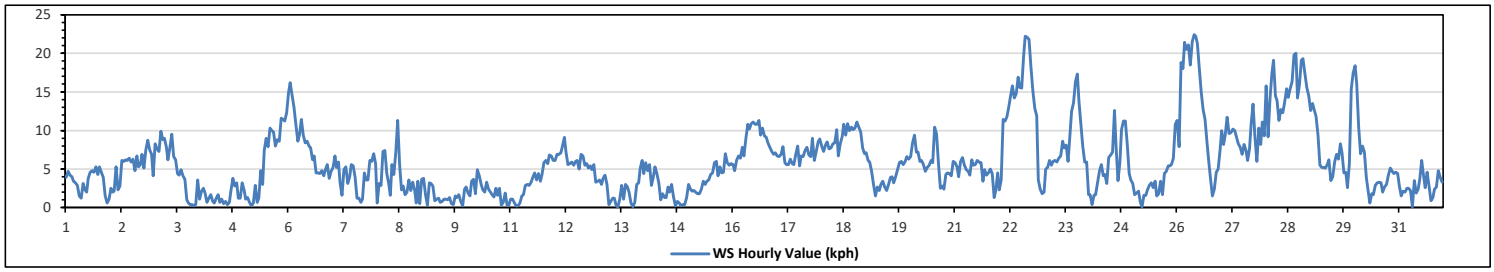
VECTOR WIND SPEED (VWS) in km/hr

Maximum Hourly Value:	22.4	kph	on January 26 at hour 9	Hours in Service:	744	
Maximum Daily Value:	15.5	kph	on January 28	Hours of Data:	744	
Minimum Hourly Value:	0.1	kph	on January 13 at hour 10	Hours of Missing Data:	0	
Minimum Daily Value:	1.5	kph	on January 9	Hours of Calibration:	0	
Monthly Average:	1.2	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			
Jan 1	3.9	4.7	4.2	4.0	3.4	3.2	2.9	1.5	1.2	3.1	2.3	2.0	3.8	4.6	4.8	4.6	5.3	4.3	5.3	4.6	3.9	1.5	0.6	1.1	0.6	5.3	3.4
Jan 2	2.5	2.0	2.1	5.3	2.3	2.8	6.1	6.0	6.2	6.1	6.4	5.9	6.3	4.8	6.7	5.3	5.6	6.9	5.1	7.5	8.7	7.5	6.9	4.1	2.0	8.7	5.4
Jan 3	8.3	7.6	7.3	9.9	8.8	9.0	7.9	6.2	7.7	9.5	6.6	6.2	4.4	4.2	4.9	4.1	3.7	1.0	0.6	0.4	0.4	0.2	0.4	3.6	0.2	9.9	5.1
Jan 4	1.1	2.1	2.5	1.9	0.7	1.2	1.7	0.8	0.6	1.2	1.7	0.7	1.1	0.5	0.8	0.4	0.7	2.2	3.8	2.8	3.2	1.2	1.2	3.2	0.4	3.8	1.6
Jan 5	2.3	1.1	1.3	0.7	0.2	0.6	2.9	0.7	1.2	4.8	3.0	7.4	9.0	7.9	10.3	10.0	9.8	8.0	8.8	8.6	11.6	11.4	11.2	12.3	0.2	12.3	6.0
Jan 6	14.9	16.2	14.6	13.0	10.7	8.6	9.4	11.4	9.4	8.4	8.6	8.0	7.7	6.2	6.7	4.5	4.5	4.4	4.8	4.1	4.9	5.6	3.8	4.7	3.8	16.2	8.1
Jan 7	5.2	6.7	5.2	5.9	3.2	1.6	4.9	5.3	3.1	4.0	5.6	5.4	3.9	1.2	1.2	0.7	1.1	4.5	3.6	3.6	6.1	6.0	7.0	5.7	0.7	7.0	4.2
Jan 8	0.6	3.1	2.9	7.3	7.4	4.4	3.1	1.6	5.6	4.3	7.1	11.3	5.6	2.3	2.8	1.7	2.0	3.6	2.2	3.3	2.3	0.6	3.4	0.5	0.5	11.3	3.7
Jan 9	3.7	3.8	1.7	0.3	3.2	3.1	2.8	0.9	1.1	1.2	0.7	0.8	1.1	1.1	1.0	1.3	0.5	0.4	1.5	1.3	1.7	0.8	0.2	2.4	0.2	3.8	**1.5**
Jan 10	2.7	1.9	1.5	3.4	3.7	1.8	4.9	4.1	3.0	2.3	2.0	3.3	2.4	2.0	1.7	1.4	2.5	1.6	2.5	0.3	0.7	1.9	0.3	0.3	0.3	4.9	2.2
Jan 11	1.1	1.1	0.6	0.2	0.2	0.6	1.5	1.7	2.9	3.0	2.9	3.3	4.0	4.5	3.6	4.4	3.4	4.3	5.8	6.1	5.7	6.8	6.7	6.1	0.2	6.8	3.4
Jan 12	6.1	6.9	6.9	7.1	8.0	9.1	7.2	5.6	5.7	5.9	5.5	6.0	6.1	5.0	6.9	6.7	5.5	5.7	5.1	5.4	4.9	5.6	3.3	3.4	3.3	9.1	6.0
Jan 13	3.6	3.0	3.8	4.2	3.0	0.4	0.8	1.2	1.2	0.2	**0.1**	1.1	2.9	1.1	3.0	2.7	2.0	0.6	**0.1**	0.7	3.0	3.2	5.1	6.1	**0.1**	6.1	2.2
Jan 14	4.4	5.8	4.8	5.6	2.9	4.0	5.3	4.4	3.2	1.0	1.8	1.3	1.3	2.7	2.0	3.0	1.4	0.2	0.8	0.6	0.2	0.4	0.4	1.3	0.2	5.8	2.5
Jan 15	3.0	2.4	2.1	2.2	2.0	1.8	1.8	2.4	3.4	3.0	3.4	3.6	4.3	4.5	5.8	6.0	4.1	5.3	4.5	4.6	7.0	5.8	5.5	5.7	1.8	7.0	3.9
Jan 16	5.6	4.8	6.1	6.7	6.4	7.8	6.7	8.9	10.8	10.2	10.9	11.1	10.8	10.8	11.3	9.4	10.3	9.3	9.1	8.4	7.8	7.3	6.9	7.1	4.8	11.3	8.5
Jan 17	6.7	6.6	6.9	7.9	5.8	5.6	5.6	6.3	5.7	5.6	6.9	8.0	5.4	6.7	6.6	7.4	7.8	6.8	6.6	9.0	6.1	7.3	8.5	8.9	5.4	9.0	6.9
Jan 18	8.0	7.3	8.1	8.5	7.6	7.7	8.3	8.4	10.1	6.7	8.3	9.2	10.8	9.4	10.9	10.0	10.4	10.1	10.3	11.1	10.4	9.8	7.7	7.0	6.7	11.1	9.0
Jan 19	7.1	6.1	5.9	4.7	3.0	1.5	2.7	2.2	3.0	3.4	2.7	2.2	3.0	3.9	4.0	3.2	4.0	4.9	5.8	6.0	5.6	6.0	6.6	6.3	1.5	7.1	4.3
Jan 20	6.6	8.4	9.4	7.2	7.2	6.0	6.1	5.6	4.7	5.2	5.5	6.1	5.8	10.4	9.5	5.7	2.5	2.8	2.4	4.3	4.5	4.4	4.1	6.0	2.4	10.4	5.9
Jan 21	5.8	5.3	4.0	6.0	6.5	5.5	4.9	4.7	4.2	6.2	5.5	5.6	6.1	5.9	5.8	3.4	4.9	4.2	4.5	5.0	4.4	1.3	2.2	4.5	1.3	6.5	4.9
Jan 22	2.3	3.6	11.4	11.2	11.8	13.1	14.4	15.8	14.2	14.8	16.9	15.6	15.5	19.6	22.2	22.1	21.8	18.2	15.1	12.9	11.9	3.6	2.4	1.8	1.8	22.2	13.0
Jan 23	2.0	5.0	5.2	6.1	5.5	6.0	6.1	5.9	6.4	6.7	8.6	7.7	8.1	6.0	9.5	12.5	13.6	16.3	17.3	13.8	10.8	7.9	5.9	5.9	2.0	17.3	8.3
Jan 24	1.7	1.7	0.4	1.6	1.7	3.2	4.7	5.6	4.1	4.3	3.1	6.5	6.8	7.2	12.6	7.9	3.5	5.9	10.1	11.2	11.2	8.2	4.4	3.6	0.4	12.6	5.5
Jan 25	3.1	1.7	1.9	2.1	0.7	**0.1**	1.6	1.6	2.3	2.9	3.2	2.6	3.4	1.5	1.8	3.4	1.7	4.4	4.7	5.4	5.4	5.6	6.4	10.8	**0.1**	10.8	3.3
Jan 26	11.3	7.9	18.8	18.0	21.4	20.5	21.1	18.5	21.5	**22.4**	22.2	21.3	18.1	15.0	12.7	11.4	8.5	5.8	3.8	1.5	2.4	4.6	5.0	7.5	1.5	**22.4**	13.4
Jan 27	10.0	8.2	9.4	11.7	9.6	9.7	10.2	10.0	9.2	8.3	7.8	6.9	8.2	7.4	6.1	7.6	10.8	13.4	9.1	6.0	10.3	8.2	11.1	9.3	6.0	13.4	9.1
Jan 28	15.8	9.2	14.1	17.4	19.1	14.5	13.9	11.3	12.7	12.3	13.7	15.4	14.3	15.4	16.3	19.8	20.0	14.2	15.9	19.1	19.3	17.4	15.6	14.5	9.2	20.0	**15.5**
Jan 29	12.6	13.5	12.7	11.8	9.4	5.5	5.2	5.2	5.1	5.6	6.2	3.5	4.0	5.9	6.9	6.3	8.3	7.1	4.5	4.6	2.6	5.7	15.4	17.5	2.6	17.5	7.7
Jan 30	18.4	16.0	10.5	7.0	8.0	7.2	3.9	2.4	0.6	1.8	1.7	2.9	3.2	3.3	3.2	2.0	2.7	3.0	4.2	5.1	4.7	4.4	4.6	4.4	0.6	18.4	5.2
Jan 31	2.9	1.5	2.1	2.0	2.5	2.5	2.2	**0.1**	3.5	1.9	2.4	3.7	6.1	4.4	2.6	4.6	2.8	0.9	1.3	2.4	2.7	4.8	3.9	3.3	**0.1**	6.1	2.8
Diurnal Maximum	18.4	16.2	18.8	18.0	21.4	20.5	21.1	18.5	21.5	22.4	22.2	21.3	18.1	19.6	22.2	22.1	21.8	18.2	17.3	19.1	19.3	17.4	15.6	17.5			
Diurnal Average	5.9	5.7	6.1	6.5	6.0	5.4	5.8	5.4	5.6	5.7	5.9	6.3	6.2	6.0	6.6	6.2	6.0	5.8	5.8	5.8	5.9	5.3	5.4	5.8			

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.

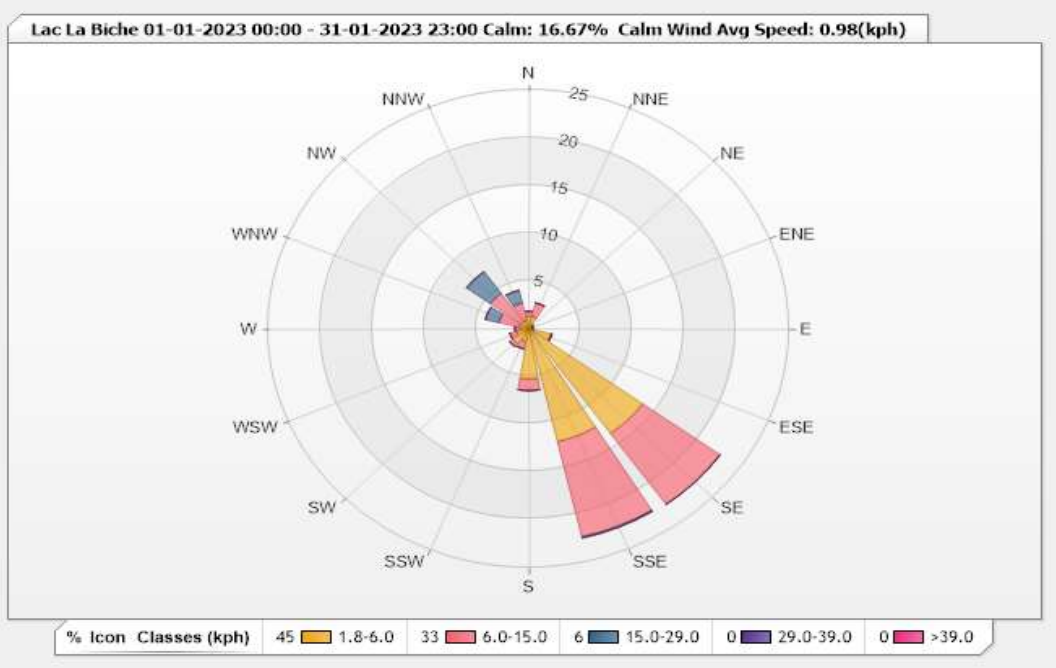


Station: Lac La Biche Monitor: WDS [kph] Monthly: 01-2023

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

Calm (WS<1.8kph): 16.67% 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	1.34	0.54	0	0	0	1.88
NNE	1.34	1.48	0	0	0	2.82
NE	0.4	0.13	0	0	0	0.53
ENE	0.4	0	0	0	0	0.4
E	0.4	0	0	0	0	0.4
ESE	2.15	0.13	0	0	0	2.28
SE	13.44	9.14	0	0	0	22.58
SSE	12.1	10.22	0.13	0	0	22.45
S	5.24	1.21	0	0	0	6.45
SSW	1.34	0.81	0	0	0	2.15
SW	1.88	0.4	0	0	0	2.28
WSW	1.21	0.67	0	0	0	1.88
W	0.81	0.54	0	0	0	1.35
WNW	0.94	2.02	1.34	0	0	4.3
NW	0.94	3.63	2.82	0	0	7.39
NNW	0.94	1.88	1.34	0	0	4.16
Summary	44.87	32.8	5.63	0	0	83.3



Lakeland Industry & Community Association

Lac La Biche Station - January 2023

Summary of Hourly Averages

WIND DIRECTION (VWD) in sector

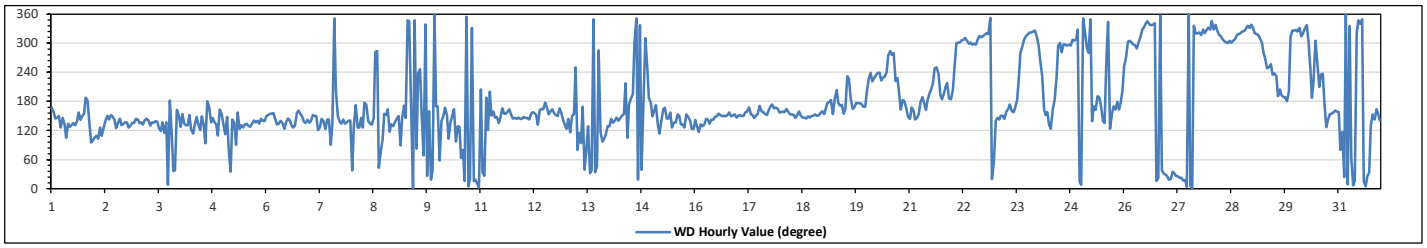
Monthly Average:	176 (S)	degree	
Hours in Service:	744		
Hours of Data:	744		
Hours of Missing Data:	0		
Hours of Calibration:	0		
Operational Uptime:	100.0		

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
Jan 1	SSE	SSE	SE	SE	SSE	SE	SE	SE	ESE	SE	SE	SE	SE	SE	SE	SSE	SE	SSE	SSE	S	S	SE	E	E	147	SE
Jan 2	ESE	ESE	ESE	SE	ESE	SE	SE	SSE	SE	SSE	SSE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	135	SE
Jan 3	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	ESE	SE	ESE	SE	N	S	ESE	NE	NE	SSE	SSE	136	SE
Jan 4	SE	SSE	SE	SE	SE	SSE	ESE	ESE	SE	SE	SE	ESE	SSE	SE	E	S	SSE	SE	SE	SE	SE	ESE	SSE	SSE	138	SE
Jan 5	SE	ESE	SE	E	NE	SE	SE	E	SSE	ESE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	135	SE
Jan 6	SSE	SSE	SSE	SSE	SSE	SE	SE	SE	SE	SE	ESE	SE	SE	SE	SE	SE	SE	SSE	SSE	SSE	SSE	SE	SE	SE	144	SE
Jan 7	SE	SE	SSE	SSE	SSE	ESE	SE	SE	SE	ESE	SE	SE	E	SE	N	SSW	SSE	SE	SE	SE	SE	SE	SE	SE	138	SE
Jan 8	NE	SE	S	SE	SE	SE	SE	S	S	SE	SE	SE	SE	W	WNW	NE	ENE	E	SSE	SSE	SSE	ESE	SE	SE	138	SE
Jan 9	SE	SE	SSE	E	SE	S	SE	NNW	NNW	SSE	N	NNW	E	WSW	WSW	SSE	ENE	NNW	NNE	SSE	NNE	NE	N	SSE	140	SE
Jan 10	SSE	ENE	SE	SSE	SSE	SSE	ESE	SE	SSE	SSE	E	SE	SE	ENE	E	NNE	N	N	NNE	NNW	NNE	NNE	N	N	112	ESE
Jan 11	SSW	NE	NNE	S	ESE	SSW	SSE	SSE	SE	SE	SE	SE	SSE	SSE	SSE	SSE	SSE	SSE	SE	SE	SE	SE	SE	SE	149	SSE
Jan 12	SE	SE	SE	SE	SSE	SSE	SSE	SSE	SE	SSE	SSE	SSE	S	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SE	SE	155	SSE
Jan 13	ESE	SE	ESE	SSE	SSE	WSW	E	ESE	E	SSE	NE	ENE	SE	NNE	NE	NNW	NE	NE	WNW	ESE	E	ESE	ESE	SE	111	ESE
Jan 14	SE	SE	SE	SE	SE	SE	SE	SSE	SSE	SW	ESE	S	S	SSW	WNW	N	NNE	NNW	NE	S	NW	WSW	S	S	146	SE
Jan 15	SSE	SSE	S	SE	ESE	SE	SSE	SSE	SE	SE	SSE	SE	SE	SE	SSE	SSE	SE	SE	SE	SSE	SE	SE	ESE	ESE	141	SE
Jan 16	SE	SE	ESE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SE	145	SE
Jan 17	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SE	SSE	SSE	S	SSE	SSE	SSE	SSE	SSE	SSE	S	SSE	SSE	SSE	SSE	158	SSE
Jan 18	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SE	SSE	SSE	SSE	SE	SE	SE	SSE	SE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	153	SSE
Jan 19	SSE	SSE	S	S	S	SSE	S	SSW	S	S	S	SSE	SSE	SW	SW	S	SSE	SSE	S	S	S	S	SSE	SSE	176	S
Jan 20	SSW	SW	WSW	SW	SW	SW	WSW	WSW	SW	SW	SW	WSW	W	WNW	W	W	SW	SW	SSW	SSE	S	S	SSE	SE	230	SW
Jan 21	SE	SSE	SSE	SE	SE	SSE	S	S	S	SSE	S	SSW	SSW	SW	WSW	WSW	SW	S	S	SSW	SSW	SW	S	S	186	S
Jan 22	SSW	WSW	WNW	WNW	WNW	NW	NW	NW	WNW	WNW	WNW	WNW	WNW	WNW	NW	NW	NW	NW	NW	NW	NW	N	NNE	NE	307	NW
Jan 23	SE	SE	SE	SSE	SSE	SE	SSE	SSE	S	SSE	SSE	SSE	S	SW	W	WNW	NW	NW	NW	NW	NW	NW	NW	NW	268	W
Jan 24	WNW	W	SW	SSE	SSE	SSE	SE	ESE	SSE	S	SW	WNW	WNW	W	WNW	WNW	WNW	WNW	WNW	NW	NW	NW	NNW	NNE	291	WNW
Jan 25	N	N	NW	WNW	W	NNW	SE	SSE	SSE	S	S	SSE	SE	SE	W	NNW	ESE	SSE	SSE	SSE	S	SSE	S	SSW	177	S
Jan 26	WSW	W	WNW	WNW	WNW	WNW	WNW	WNW	WNW	NW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNE	NNE	N	NE	NNE	NNE	317	NW
Jan 27	NNE	NNE	NNE	NE	NNE	NNE	NNE	NNE	NNE	NNE	NNE	N	N	N	N	NNW	NW	NW	NW	NW	NNW	NW	NW	NNW	359	N
Jan 28	NNW	NNW	NNW	NNW	NW	NW	NW	NW	WNW	WNW	WNW	WNW	WNW	NW	NW	NW	NW	NW	NW	NW	NNW	NNW	NNW	NNW	320	NW
Jan 29	NNW	NW	NW	NW	NW	WNW	W	W	WSW	WSW	WSW	SW	SW	SW	S	SSW	S	S	S	S	SSW	NW	NW	NW	284	WNW
Jan 30	NW	NW	NNW	NW	NW	NNW	NNW	NW	WSW	S	SW	WNW	WSW	SSW	SW	SW	S	SE	SE	SSE	SSE	SSE	SSE	SSE	299	WNW
Jan 31	SSE	E	ESE	NNE	N	N	NNW	ENE	N	NNE	NW	NNW	NNW	NNW	NNE	N	NNE	NE	SE	SSE	SE	SSE	SSE	SE	30	NNE

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 - January 2023

Summary of Hourly Averages

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

WIND SPEED						
Maximum Hourly Value:	22.4	kph	on January 26 at hour 9	Hours in Service:	744	
Maximum Daily Value:	15.5	kph	on January 28	Hours of Data:	744	
Minimum Hourly Value:	0.1	kph	on January 13 at hour 10	Hours of Missing Data:	0	
Minimum Daily Value:	1.5	kph	on January 9	Hours of Calibration:	0	
Monthly Average:	1.2	kph		Operational Uptime:	100.0	
WIND DIRECTION						
Monthly Average:	176	degree (S)				

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			
Jan 1	3.9	4.7	4.2	4.0	3.4	3.2	2.9	1.5	1.2	3.1	2.3	2.0	3.8	4.6	4.8	4.6	5.3	4.3	5.3	4.6	3.9	1.5	0.6	1.1	0.6	5.3	3.4
	SSE	SSE	SE	SE	SSE	SE	SE	SE	ESE	SE	SE	SE	SE	SE	SE	SSE	SE	SSE	SSE	S	S	SE	E	E			
Jan 2	2.5	2.0	2.1	5.3	2.3	2.8	6.1	6.0	6.2	6.1	6.4	5.9	6.3	4.8	6.7	5.3	5.6	6.9	5.1	7.5	8.7	7.5	6.9	4.1	2.0	8.7	5.4
	ESE	ESE	ESE	SE	ESE	SE	SE	SSE	SE	SSE	SSE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE			
Jan 3	8.3	7.6	7.3	9.9	8.8	9.0	7.9	6.2	7.7	9.5	6.6	6.2	4.4	4.2	4.9	4.1	3.7	1.0	0.6	0.4	0.4	0.2	0.4	3.6	0.2	9.9	5.1
	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	ESE	SE	ESE	SE	N	S	ESE	NE	NE	SSE	SSE			
Jan 4	1.1	2.1	2.5	1.9	0.7	1.2	1.7	0.8	0.6	1.2	1.7	0.7	1.1	0.5	0.8	0.4	0.7	2.2	3.8	2.8	3.2	1.2	1.2	3.2	0.4	3.8	1.6
	SE	SSE	SE	SE	SE	SSE	ESE	ESE	SE	SE	SE	ESE	SSE	SE	E	S	SSE	SE	SE	SE	SE	ESE	SSE	SSE			
Jan 5	2.3	1.1	1.3	0.7	0.2	0.6	2.9	0.7	1.2	4.8	3.0	7.4	9.0	7.9	10.3	10.0	9.8	8.0	8.8	8.6	11.6	11.4	11.2	12.3	0.2	12.3	6.0
	SE	ESE	SE	E	NE	SE	SE	E	SSE	ESE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE			
Jan 6	14.9	16.2	14.6	13.0	10.7	8.6	9.4	11.4	9.4	8.4	8.6	8.0	7.7	6.2	6.7	4.5	4.5	4.4	4.8	4.1	4.9	5.6	3.8	4.7	3.8	16.2	8.1
	SSE	SSE	SSE	SSE	SSE	SE	SE	SE	SE	SE	ESE	SE	SE	SE	SE	SE	SE	SSE	SSE	SSE	SSE	SE	SE	SE			
Jan 7	5.2	6.7	5.2	5.9	3.2	1.6	4.9	5.3	3.1	4.0	5.6	5.4	3.9	1.2	1.2	0.7	1.1	4.5	3.6	3.6	6.1	6.0	7.0	5.7	0.7	7.0	4.2
	SE	SE	SSE	SSE	SSE	ESE	SE	SE	SE	ESE	SE	SE	E	SE	N	SSW	SSE	SE	SE	SE	SE	SE	SE	SE			
Jan 8	0.6	3.1	2.9	7.3	7.4	4.4	3.1	1.6	5.6	4.3	7.1	11.3	5.6	2.3	2.8	1.7	2.0	3.6	2.2	3.3	2.3	0.6	3.4	0.5	0.5	11.3	3.7
	NE	SE	S	SE	SE	SE	SE	S	S	SE	SE	SE	SE	W	WNW	NE	ENE	E	SSE	SSE	SSE	ESE	SE	SE			
Jan 9	3.7	3.8	1.7	0.3	3.2	3.1	2.8	0.9	1.1	1.2	0.7	0.8	1.1	1.1	1.0	1.3	0.5	0.4	1.5	1.3	1.7	0.8	0.2	2.4	0.2	3.8	**1.5**
	SE	SE	SSE	E	SE	S	SE	NNW	NNW	SSE	N	NNW	E	WSW	WSW	SSE	ENE	NNW	NNE	SSE	NNE	NE	N	SSE			
Jan 10	2.7	1.9	1.5	3.4	3.7	1.8	4.9	4.1	3.0	2.3	2.0	3.3	2.4	2.0	1.7	1.4	2.5	1.6	2.5	0.3	0.7	1.9	0.3	0.3	0.3	4.9	2.2
	SSE	ENE	SE	SSE	SSE	SSE	ESE	SE	SSE	SSE	E	SE	SE	ENE	E	NNE	N	N	NNE	NNW	NNE	NNE	N	N			
Jan 11	1.1	1.1	0.6	0.2	0.2	0.6	1.5	1.7	2.9	3.0	2.9	3.3	4.0	4.5	3.6	4.4	3.4	4.3	5.8	6.1	5.7	6.8	6.7	6.1	0.2	6.8	3.4
	SSW	NE	NNE	S	ESE	SSW	SSE	SSE	SE	SE	SE	SE	SSE	SSE	SSE	SSE	SSE	SSE	SE	SE	SE	SE	SE	SE			
Jan 12	6.1	6.9	6.9	7.1	8.0	9.1	7.2	5.6	5.7	5.9	5.5	6.0	6.1	5.0	6.9	6.7	5.5	5.7	5.1	5.4	4.9	5.6	3.3	3.4	3.3	9.1	6.0
	SE	SE	SE	SE	SSE	SSE	SSE	SSE	SE	SSE	SSE	SSE	S	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SE	SE			
Jan 13	3.6	3.0	3.8	4.2	3.0	0.4	0.8	1.2	1.2	0.2	**0.1**	1.1	2.9	1.1	3.0	2.7	2.0	0.6	**0.1**	0.7	3.0	3.2	5.1	6.1	**0.1**	6.1	2.2
	ESE	SE	ESE	SSE	SSE	WSW	E	ESE	E	SSE	NE	ENE	SE	NNE	NE	NNW	NE	NE	WNW	ESE	E	ESE	ESE	SE			
Jan 14	4.4	5.8	4.8	5.6	2.9	4.0	5.3	4.4	3.2	1.0	1.8	1.3	1.3	2.7	2.0	3.0	1.4	0.2	0.8	0.6	0.2	0.4	0.4	1.3	0.2	5.8	2.5
	SE	SE	SE	SE	SE	SE	SE	SSE	SSE	SW	ESE	S	S	SSW	WNW	N	NNE	NNW	NE	S	NW	WSW	S	S			
Jan 15	3.0	2.4	2.1	2.2	2.0	1.8	1.8	2.4	3.4	3.0	3.4	3.6	4.3	4.5	5.8	6.0	4.1	5.3	4.5	4.6	7.0	5.8	5.5	5.7	1.8	7.0	3.9
	SSE	SSE	S	SE	ESE	SE	SSE	SSE	SE	SE	SSE	SE	SE	SE	SSE	SSE	SE	SE	SE	SSE	SE	SE	ESE	ESE			
Jan 16	5.6	4.8	6.1	6.7	6.4	7.8	6.7	8.9	10.8	10.2	10.9	11.1	10.8	10.8	11.3	9.4	10.3	9.3	9.1	8.4	7.8	7.3	6.9	7.1	4.8	11.3	8.5
	SE	SE	ESE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SE			
Jan 17	6.7	6.6	6.9	7.9	5.8	5.6	5.6	6.3	5.7	5.6	6.9	8.0	5.4	6.7	6.6	7.4	7.8	6.8	6.6	9.0	6.1	7.3	8.5	8.9	5.4	9.0	6.9
	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SE	SSE	SSE	S	SSE	SSE	SSE	SSE	SSE	SSE	S	SSE	SSE	SSE	SSE			
Jan 18	8.0	7.3	8.1	8.5	7.6	7.7	8.3	8.4	10.1	6.7	8.3	9.2	10.8	9.4	10.9	10.0	10.4	10.1	10.3	11.1	10.4	9.8	7.7	7.0	6.7	11.1	9.0
	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SE	SSE	SSE	SSE	SE	SE	SE	SSE	SE	SSE	SSE	SSE	SSE	SSE	SSE	SSE			
Jan 19	7.1	6.1	5.9	4.7	3.0	1.5	2.7	2.2	3.0	3.4	2.7	2.2	3.0	3.9	4.0	3.2	4.0	4.9	5.8	6.0	5.6	6.0	6.6	6.3	1.5	7.1	4.3
	SSE	SSE	S	S	S	SSE	S	SSW	S	S	S	SSE	SSE	SW	SW	S	SSE	SSE	S	S	S	S	SSE	SSE			
Jan 20	6.6	8.4	9.4	7.2	7.2	6.0	6.1	5.6	4.7	5.2	5.5	6.1	5.8	10.4	9.5	5.7	2.5	2.8	2.4	4.3	4.5	4.4	4.1	6.0	2.4	10.4	5.9
	SSW	SW	WSW	SW	SW	SW	WSW	WSW	SW	SW	SW	WSW	W	WNW	W	W	SW	SW	SSW	SSE	S	S	SSE	SE			
Jan 21	5.8	5.3	4.0	6.0	6.5	5.5	4.9	4.7	4.2	6.2	5.5	5.6	6.1	5.9	5.8	3.4	4.9	4.2	4.5	5.0	4.4	1.3	2.2	4.5	1.3	6.5	4.9
	SE	SSE	SSE	SE	SE	SSE	S	S	S	SSE	S	SSW	SSW	SW	WSW	WSW	SW	S	S	SSW	SSW	SW	S	S			
Jan 22	2.3	3.6	11.4	11.2	11.8	13.1	14.4	15.8	14.2	14.8	16.9	15.6	15.5	19.6	22.2	22.1	21.8	18.2	15.1	12.9	11.9	3.6	2.4	1.8	1.8	22.2	13.0
	SSW	WSW	WNW	WNW	WNW	NW	NW	NW	WNW	WNW	WNW	WNW	WNW	WNW	NW	NW	NW	NW	NW	NW	NW	N	NNE	NE			
Jan 23	2.0	5.0	5.2	6.1	5.5	6.0	6.1	5.9	6.4	6.7	8.6	7.7	8.1	6.0	9.5	12.5	13.6	16.3	17.3	13.8	10.8	7.9	5.9	5.9	2.0	17.3	8.3
	SE	SE	SE	SSE	SSE	SE	SSE	SSE	S	SSE	SSE	SSE	S	SW	W	WNW	NW	NW	NW	NW	NW	NW	NW	NW			
Jan 24	1.7	1.7	0.4	1.6	1.7	3.2	4.7	5.6	4.1	4.3	3.1	6.5	6.8	7.2	12.6	7.9	3.5	5.9	10.1	11.2	11.2	8.2	4.4	3.6	0.4	12.6	5.5
	WNW	W	SW	SSE	SSE	SSE	SE	ESE	SSE	S	SW	WNW	WNW	W	WNW	WNW	WNW	WNW	WNW	NW	NW	NW	NNW	NNE			
Jan 25	3.1	1.7	1.9	2.1	0.7	**0.1**	1.6	1.6	2.3	2.9	3.2	2.6	3.4	1.5	1.8	3.4	1.7	4.4	4.7	5.4	5.4	5.6	6.4	10.8	**0.1**	10.8	3.3
	N	N	NW	WNW	W	NNW	SE	SSE	SSE	S	S	SSE	SE	SE	W	NNW	ESE	SSE	SSE	SSE	S	SSE	S	SSW			
Jan 26	11.3	7.9	18.8	18.0	21.4	20.5	21.1	18.5	21.5	**22.4**	22.2	21.3	18.1	15.0	12.7	11.4	8.5	5.8	3.8	1.5	2.4	4.6	5.0	7.5	1.5	**22.4**	13.4
	WSW	W	WNW	WNW	WNW	WNW	WNW	WNW	WNW	NW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNE	NNE	N	NE	NNE	NNE			
Jan 27	10.0	8.2	9.4	11.7	9.6	9.7	10.2	10.0	9.2	8.3	7.8	6.9	8.2	7.4	6.1	7.6	10.8	13.4	9.1	6.0	10.3	8.2	11.1	9.3	6.0	13.4	9.1
	NNE	NNE	NNE	NE	NNE	NNE	NNE	NNE	NNE	NNE	NNE	N	N	N	N	NNW	NW	NW	NW	NW	NW	NNW	NW	NW	NNW		
Jan 28	15.8	9.2	14.1	17.4	19.1	14.5	13.9	11.3	12.7	12.3	13.7	15.4	14.3	15.4	16.3	19.8	20.0	14.2	15.9	19.1	19.3	17.4	15.6	14.5	9.2	20.0	**15.5**
	NNW	NNW	NNW	NNW	NW	NW	NW	NW	WNW	WNW	WNW	WNW	WNW	NW	NW	NW	NW	NW	NW	NW	NNW	NNW	NNW	NNW			
Jan 29	12.6	13.5	12.7	11.8	9.4	5.5	5.2	5.2	5.1	5.6	6.2	3.5	4.0	5.9	6.9	6.3	8.3	7.1	4.5	4.6	2.6	5.7	15.4	17.5	2.6	17.5	7.7
	NNW	NW	NW	NW	NW	WNW	W	W	WSW	WSW	WSW	SW	SW	SW	S	SSW	S	S	S	S	SSW	NW	NW	NW			
Jan 30	18.4	16.0	10.5	7.0	8.0	7.2	3.9	2.4	0.6	1.8	1.7	2.9	3.2	3.3	3.2	2.0	2.7	3.0	4.2	5.1	4.7	4.4	4.6	4.4	0.6	18.4	5.2
	NW	NW	NNW	NW	NW	NNW	NNW	NW	WSW	S	SW	WNW	WSW	SSW	SW	SW	S	SE	SE	SSE	SSE	SSE	SSE	SSE			
Jan 31	2.9	1.5	2.1	2.0	2.5	2.5	2.2	**0.1**	3.5	1.9	2.4	3.7	6.1	4.4	2.6	4.6	2.8	0.9	1.3	2.4	2.7	4.8	3.9	3.3	**0.1**	6.1	2.8
	SSE	E	ESE	NNE	N	N	NNW	ENE	N	NNE	NW	NNW	NNW	NNW	NNE	N	NNE	NE	SE	SSE	SE	SSE	SSE	SE			

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 - January 2023

Summary of Hour Standard Deviations

STANDARD DEVIATION WIND DIRECTION (STDWD) in Degree

Maximum Hourly Value:	79 degree on January 31 at hour 7	Hours in Service:	744
		Hours of Data:	744
Minimum Hourly Value:	3 degree on January 2 at hour 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		
Jan 1	11	6	18	15	11	13	23	39	50	19	23	22	11	9	12	13	6	11	8	11	7	15	36	25	6	50
Jan 2	13	32	15	10	30	24	13	8	7	5	4	8	8	19	7	7	7	4	7	4	6	**3**	**3**	10	**3**	32
Jan 3	**3**	4	5	**3**	**3**	6	4	5	7	4	8	10	20	12	10	13	20	54	57	41	49	70	45	11	**3**	70
Jan 4	20	16	8	9	32	25	20	24	53	20	39	34	15	57	24	40	28	14	5	10	16	29	47	23	5	57
Jan 5	23	28	37	35	40	60	17	33	23	7	17	6	7	7	4	4	6	9	7	8	4	5	6	5	4	60
Jan 6	5	4	4	9	6	8	4	5	**3**	4	4	10	6	15	9	7	11	8	9	8	7	10	7	27	**3**	27
Jan 7	13	11	12	7	27	48	8	9	14	23	10	12	24	52	35	26	17	9	9	14	6	8	7	11	6	52
Jan 8	64	12	22	8	11	16	17	47	19	18	10	8	15	23	19	40	22	11	42	12	20	48	14	52	8	64
Jan 9	15	16	17	51	23	10	14	29	42	22	43	54	33	41	45	17	57	56	13	46	25	53	73	31	10	73
Jan 10	30	29	39	17	29	36	23	13	16	20	38	23	30	33	25	52	22	16	7	70	26	11	34	66	7	70
Jan 11	37	9	45	28	76	36	28	22	18	26	23	22	20	19	24	26	22	12	11	10	8	10	9	9	8	76
Jan 12	10	8	9	9	10	7	10	13	10	14	11	16	18	18	11	14	11	14	10	12	13	10	13	19	7	19
Jan 13	17	9	14	11	16	73	39	50	32	73	78	39	21	57	21	20	19	51	73	59	22	21	21	10	9	78
Jan 14	13	12	13	13	12	10	7	8	13	48	50	44	54	17	35	29	39	65	47	36	50	13	66	22	7	66
Jan 15	14	13	20	12	19	16	30	18	9	10	14	15	12	7	8	8	14	8	11	10	8	9	9	14	7	30
Jan 16	6	8	9	9	7	6	11	6	6	8	7	8	7	7	7	6	6	8	6	7	6	5	7	6	5	11
Jan 17	7	6	6	6	9	10	13	6	8	6	8	8	14	8	12	10	8	12	10	9	10	13	11	8	6	14
Jan 18	9	10	11	9	9	9	8	6	6	11	9	10	7	11	7	7	7	7	8	6	7	7	8	11	6	11
Jan 19	9	10	12	13	14	21	22	14	9	11	16	21	14	16	16	13	9	5	5	4	4	7	5	5	4	22
Jan 20	14	5	5	13	11	6	4	7	9	6	14	8	23	9	7	15	26	14	12	7	7	13	10	10	4	26
Jan 21	11	12	22	6	7	11	5	16	18	5	6	12	9	13	7	14	9	17	10	7	9	51	43	6	5	51
Jan 22	48	39	7	6	6	4	4	4	4	7	7	6	6	7	5	5	**3**	4	**3**	**3**	6	11	36	29	**3**	48
Jan 23	32	14	11	6	6	8	7	9	8	6	6	7	13	22	16	8	9	4	4	4	5	4	8	6	4	32
Jan 24	21	16	39	26	21	15	16	12	11	17	29	19	10	11	7	8	9	11	7	4	4	5	18	20	4	39
Jan 25	10	24	16	17	24	58	27	10	13	20	17	25	13	22	27	26	30	7	13	12	15	13	5	17	5	58
Jan 26	12	19	6	4	5	6	6	5	6	7	10	6	6	7	6	5	8	8	14	18	21	8	11	8	4	21
Jan 27	10	9	7	8	10	7	6	7	9	7	9	10	8	10	8	14	4	**3**	**3**	8	5	7	5	7	**3**	14
Jan 28	8	7	7	6	5	4	4	4	6	7	7	6	8	8	9	5	4	**3**	5	5	5	5	4	11	**3**	11
Jan 29	6	**3**	**3**	4	4	9	9	9	9	9	7	16	10	13	15	7	8	8	6	6	26	18	6	**3**	**3**	26
Jan 30	4	**3**	6	8	6	6	22	22	28	20	40	35	22	24	19	25	25	12	11	9	5	4	8	8	**3**	40
Jan 31	14	13	26	45	18	27	31	**79**	16	26	19	29	18	21	28	18	12	12	41	21	24	5	8	18	5	**79**
Diurnal Minimum	3	3	3	3	3	4	4	4	3	4	4	6	6	7	4	4	3	3	3	3	4	3	3	3		
Diurnal Maximum	64	39	45	51	76	73	39	79	53	73	78	54	54	57	45	52	57	65	73	70	50	70	73	66		

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)			

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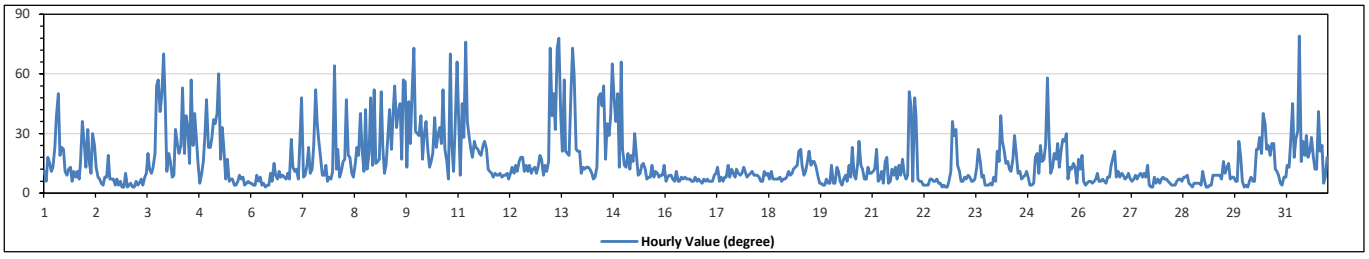
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.



END OF REPORT

This page, 155 of 155, ends the January 2023 Monthly Ambient Air Quality Monitoring Report.

Lakeland Industry & Community Association

JANUARY 2023

Ambient Air Monitoring Calibration Report

- COLD LAKE SOUTH STATION-

CAL-LICA-202301-01174

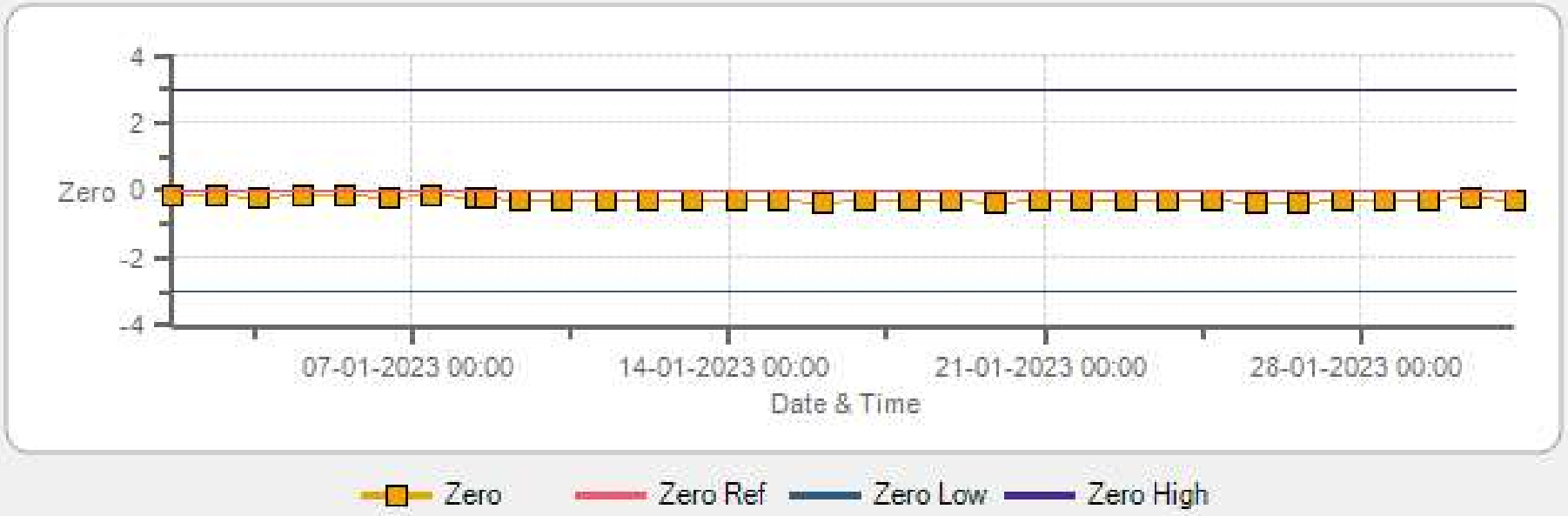
Station Operation and Maintenance:
Bureau Veritas Canada

Data Validation and Report:
LICA / Bureau Veritas Canada

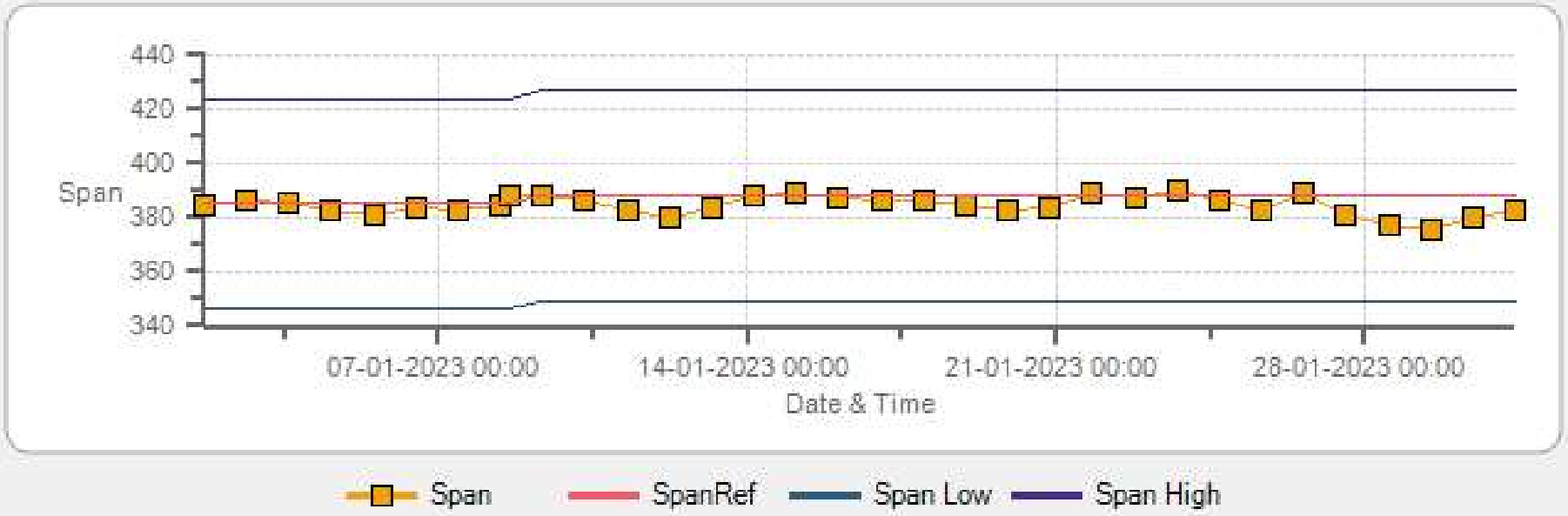
February 7, 2023

DAILY INTERNAL ZERO-SPAN CALIBRATION RECORDS

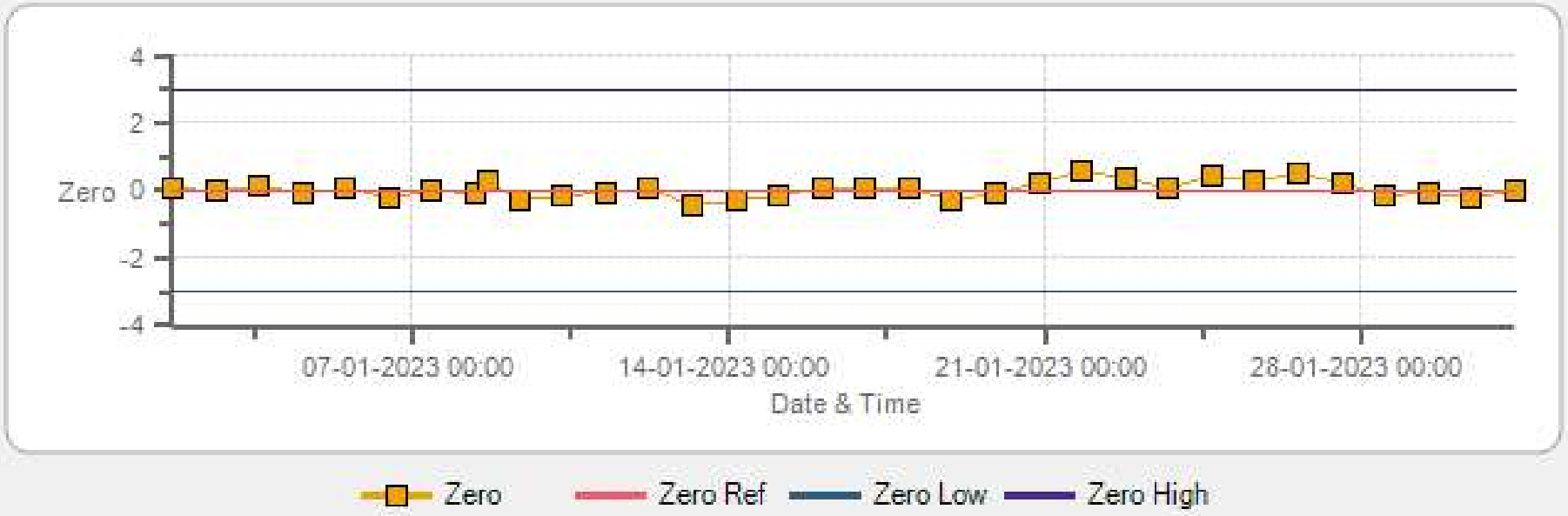
SO2[ppb] Calibration: Cold Lake South Monthly: 01-2023 Type: SpanAndZero - Zero



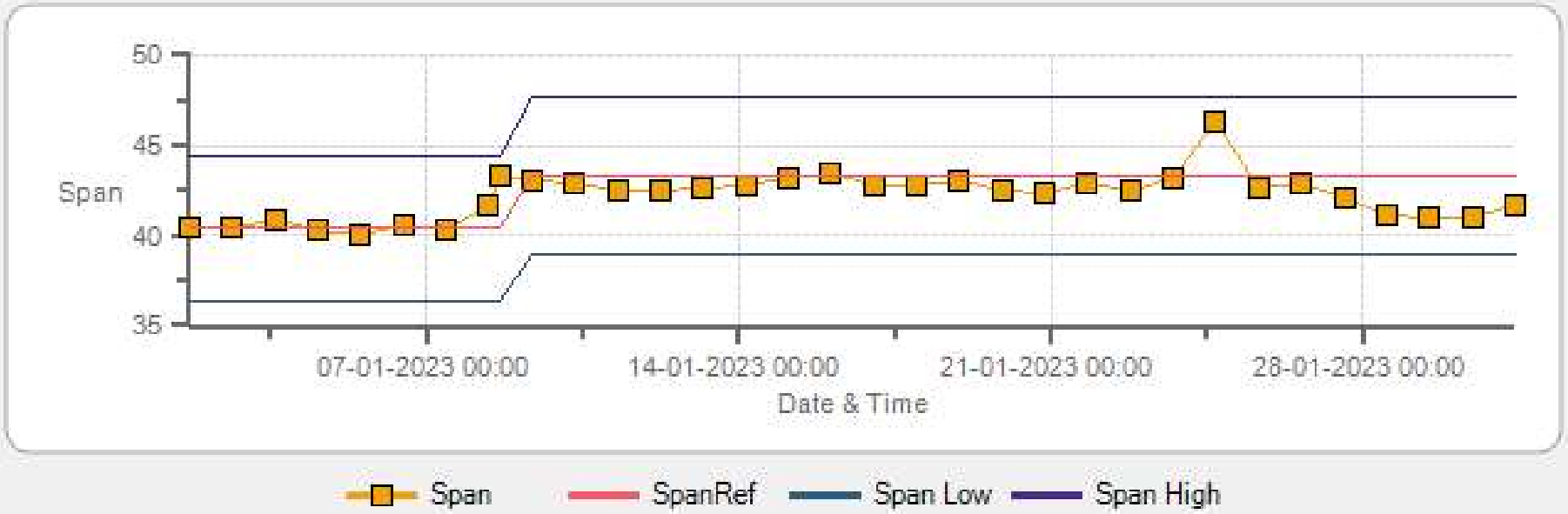
SO2[ppb] Calibration: Cold Lake South Monthly: 01-2023 Type: SpanAndZero - Span

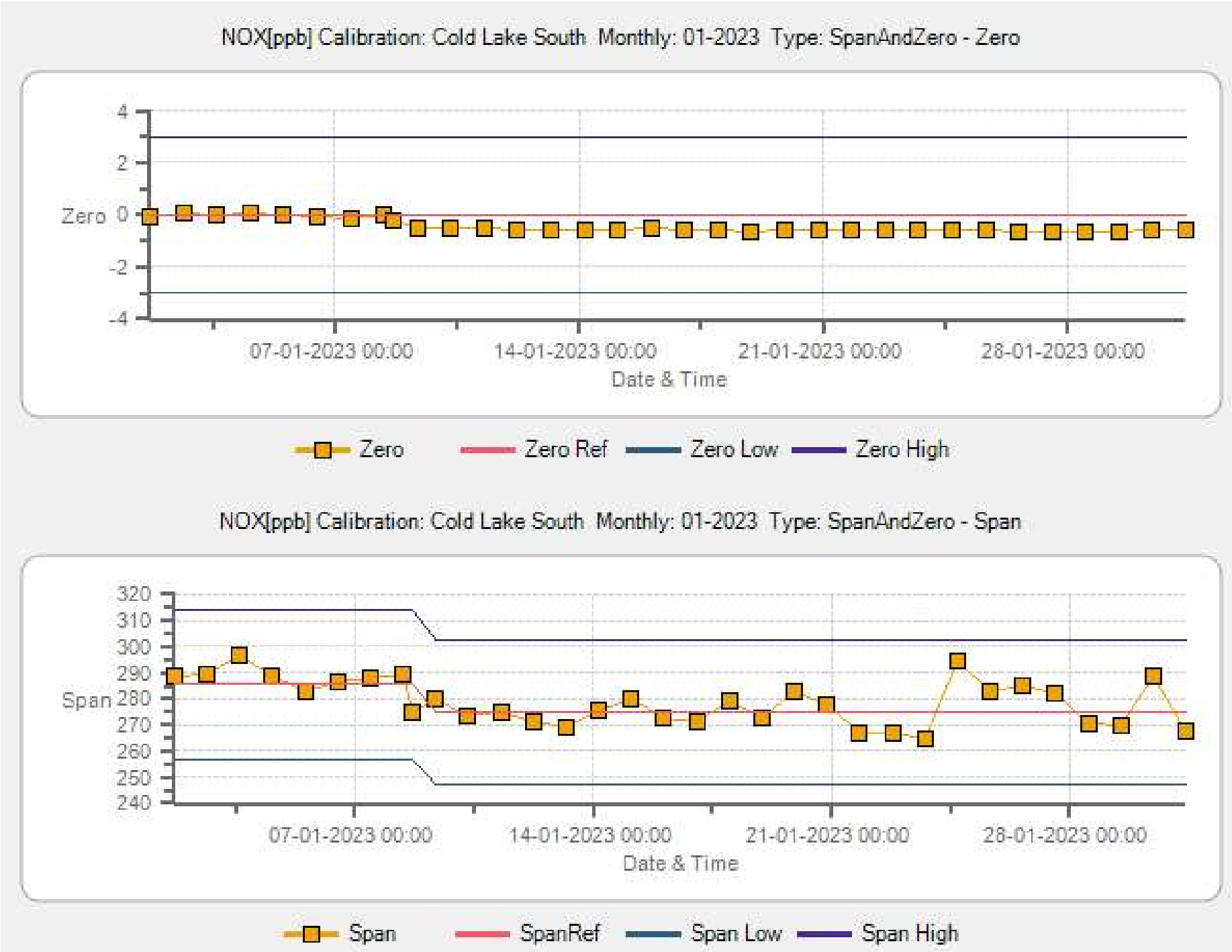


TRS[ppb] Calibration: Cold Lake South Monthly: 01-2023 Type: SpanAndZero - Zero

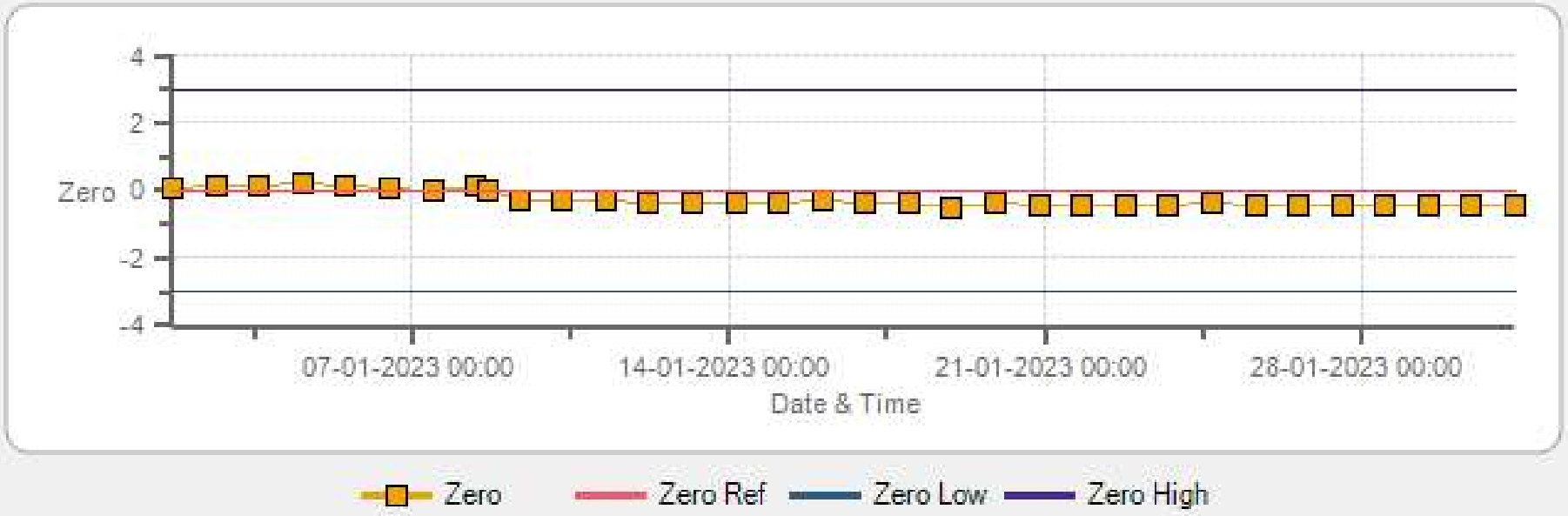


TRS[ppb] Calibration: Cold Lake South Monthly: 01-2023 Type: SpanAndZero - Span



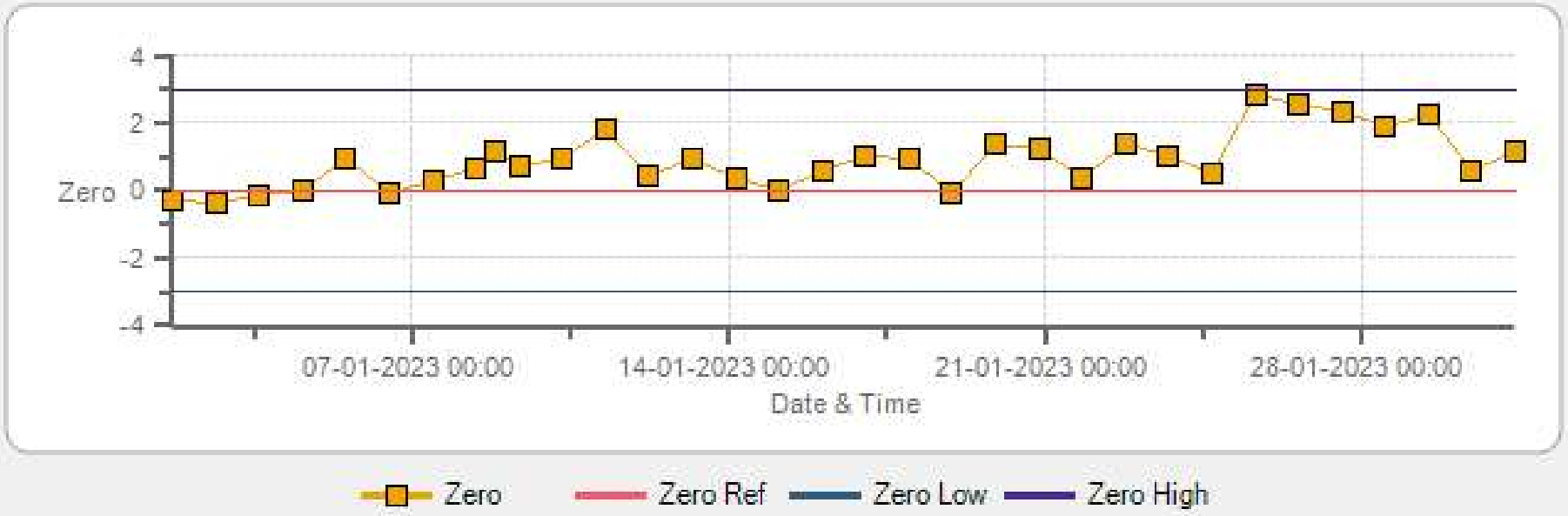

NOX[ppb] Calibration: Cold Lake South Monthly: 01-2023 Type: SpanAndZero - Zero
4
2
Zero 0
-2
-4
07-01-2023 00:00
14-01-2023 00:00
21-01-2023 00:00
28-01-2023 00:00
Date & Time
Zero
Zero Ref
Zero Low
Zero High
NOX[ppb] Calibration: Cold Lake South Monthly: 01-2023 Type: SpanAndZero - Span
320
310
300
290
Span 280
270
260
250
240
07-01-2023 00:00
14-01-2023 00:00
21-01-2023 00:00
28-01-2023 00:00
Date & Time
Span
SpanRef
Span Low
Span High

NO2[ppb] Calibration: Cold Lake South Monthly: 01-2023 Type: SpanAndZero - Zero

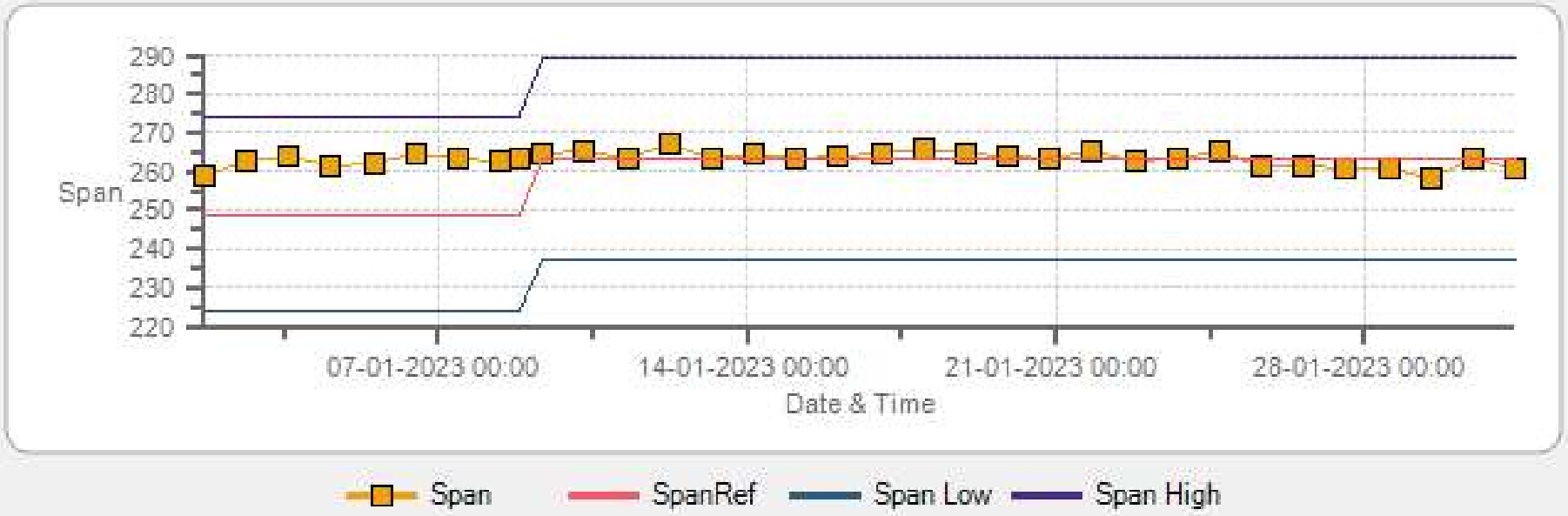


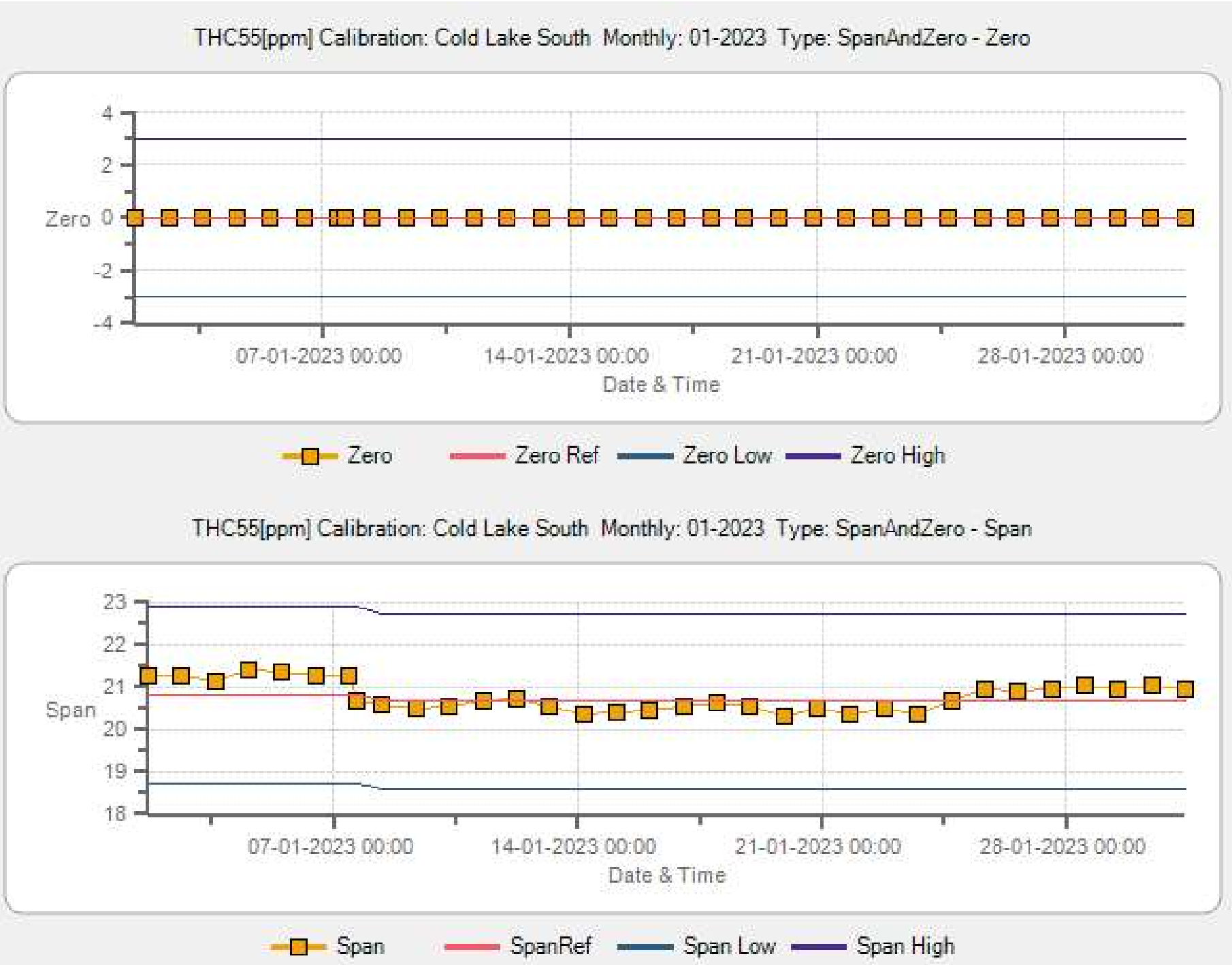
NO2[ppb] Calibration: Cold Lake South Monthly: 01-2023 Type: SpanAndZero - Span

O3[ppb] Calibration: Cold Lake South Monthly: 01-2023 Type: SpanAndZero - Zero

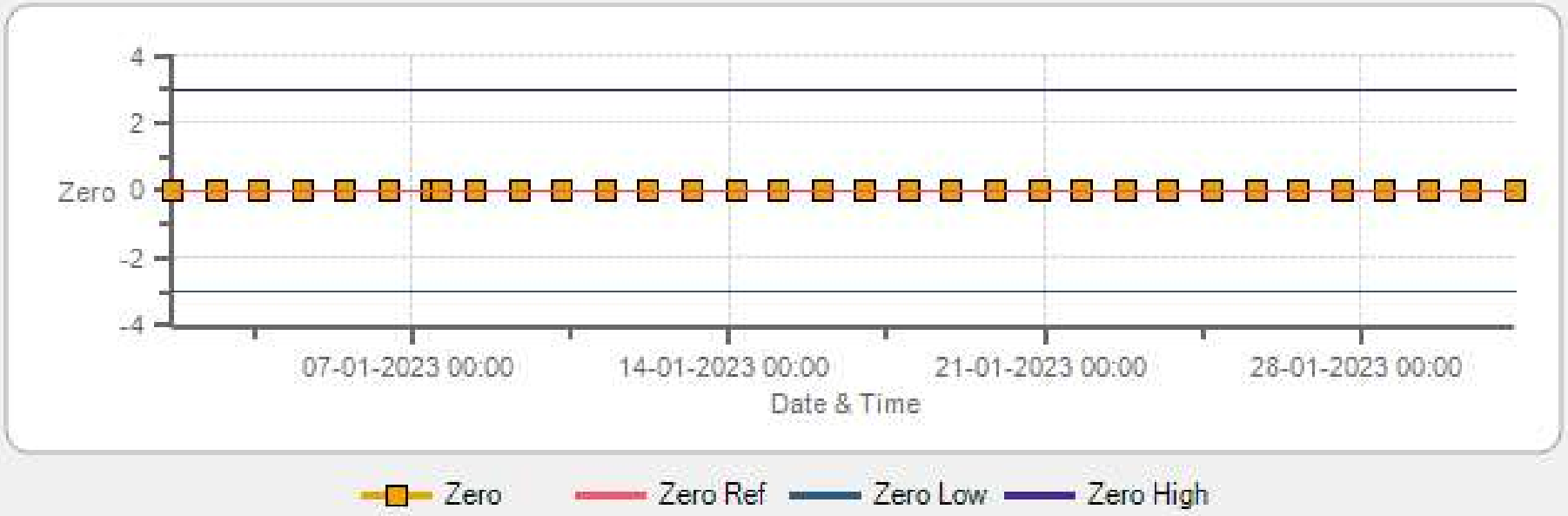


O3[ppb] Calibration: Cold Lake South Monthly: 01-2023 Type: SpanAndZero - Span

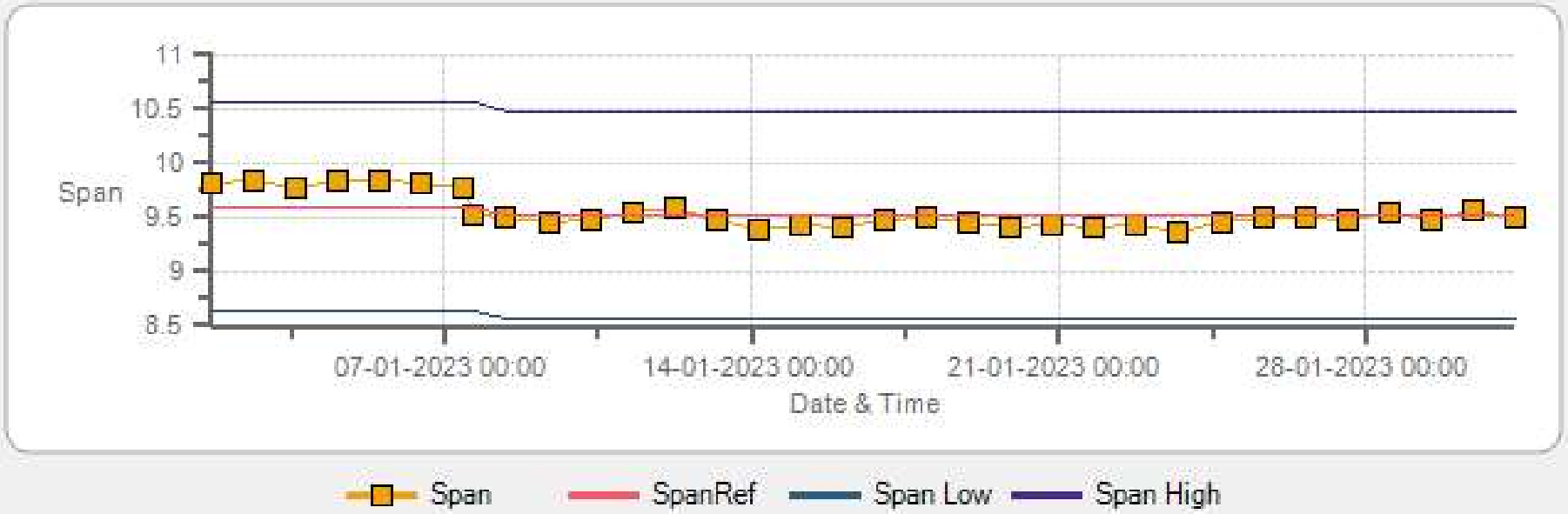



THC55[ppm] Calibration: Cold Lake South Monthly: 01-2023 Type: SpanAndZero - Zero
4
2
Zero 0
-2
-4
07-01-2023 00:00
14-01-2023 00:00
21-01-2023 00:00
28-01-2023 00:00
Date & Time
Zero
Zero Ref
Zero Low
Zero High
THC55[ppm] Calibration: Cold Lake South Monthly: 01-2023 Type: SpanAndZero - Span
23
22
21
Span
20
19
18
07-01-2023 00:00
14-01-2023 00:00
21-01-2023 00:00
28-01-2023 00:00
Date & Time
Span
SpanRef
Span Low
Span High

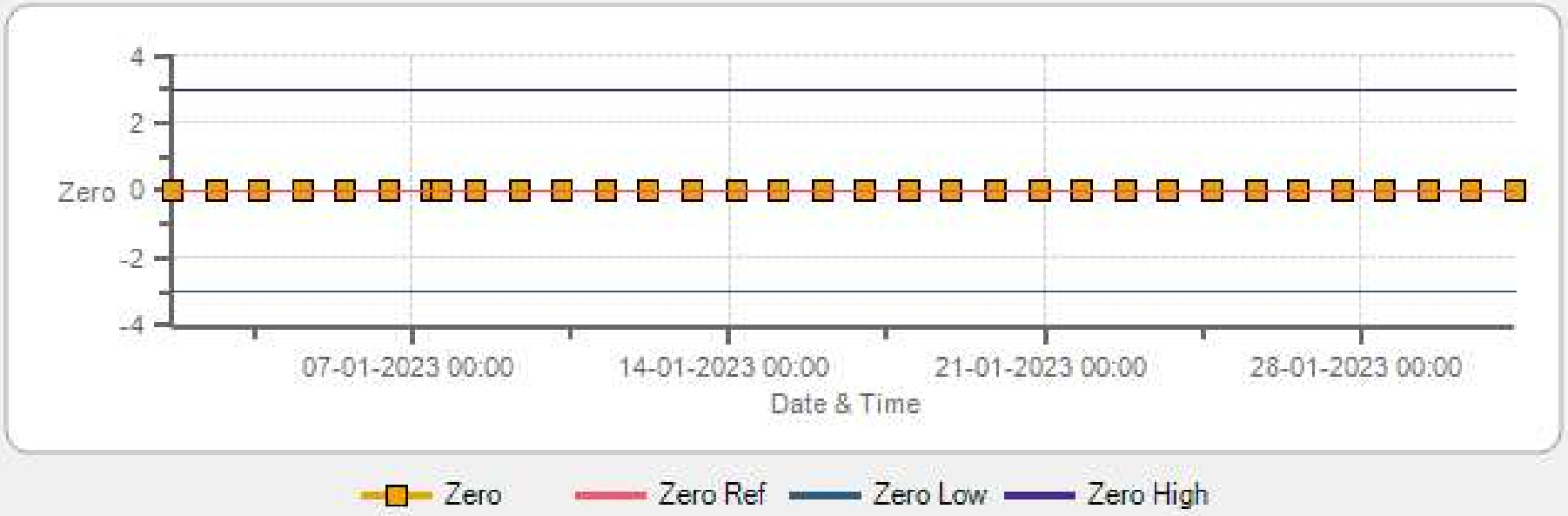
CH4[ppm] Calibration: Cold Lake South Monthly: 01-2023 Type: SpanAndZero - Zero



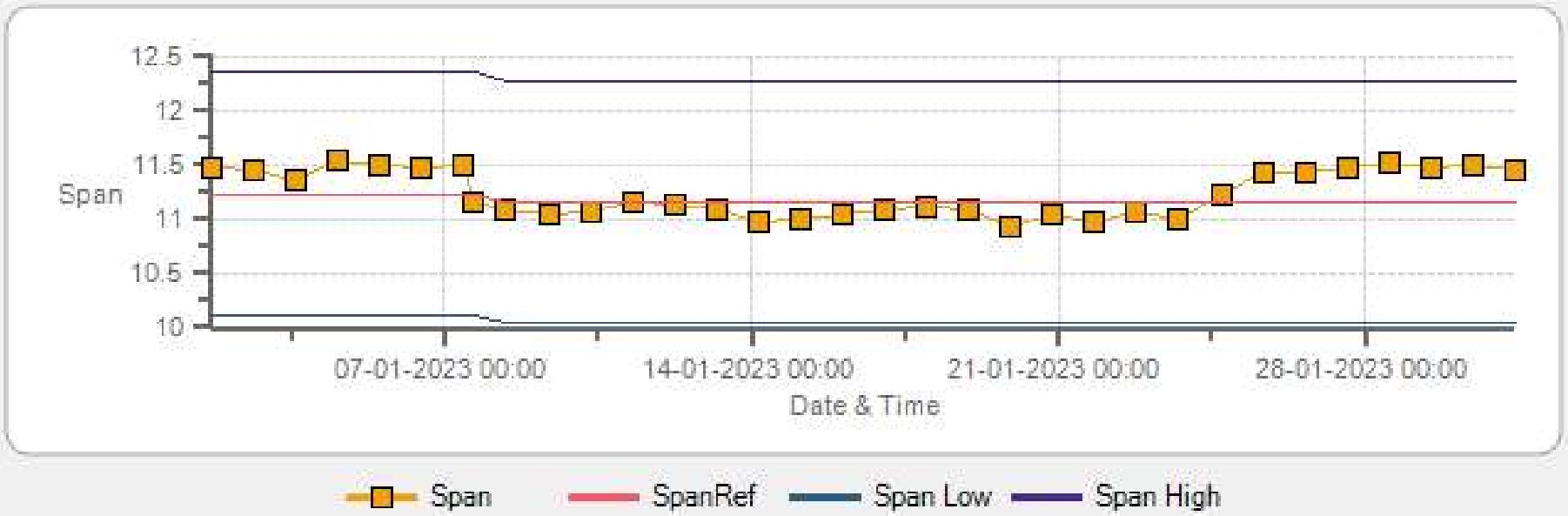
CH4[ppm] Calibration: Cold Lake South Monthly: 01-2023 Type: SpanAndZero - Span



NMHC[ppm] Calibration: Cold Lake South Monthly: 01-2023 Type: SpanAndZero - Zero



NMHC[ppm] Calibration: Cold Lake South Monthly: 01-2023 Type: SpanAndZero - Span



MULTI-POINT CALIBRATION RECORDS

SO2 Analyzer Calibration by Dilution

DATE:	08-Jan-2023	PREVIOUS CALIBRATION DATE:	09-Dec-2022
PARAMETER:	SO2	PREVIOUS CORRECTION FACTOR:	0.999
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	CLS	BAROMETRIC (mBar):	944
PURPOSE	Routine	START TIME (MST):	10:13
PERFORMED BY:	Alex Yakupov	END TIME (MST):	14:50

ANALYZER:

MAKE/MODEL	Thermo 43I-TLE	RANGE	500 ppb
SERIAL #	1180260018	FLOW (mL/min)	433
INITIAL		FINAL	
BKG/OFFSET	2.47	BKG/OFFSET	2.55
COEF/SLOPE	1.008	COEF/SLOPE	1.013
Expected (reference) Value	385.1	Expected (reference) Value	388.3

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010	MODEL:	T701
ID:	17100415	ID:	132
MFC CALIBRATION DATE:	02-Sep-2022	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):	2000	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:

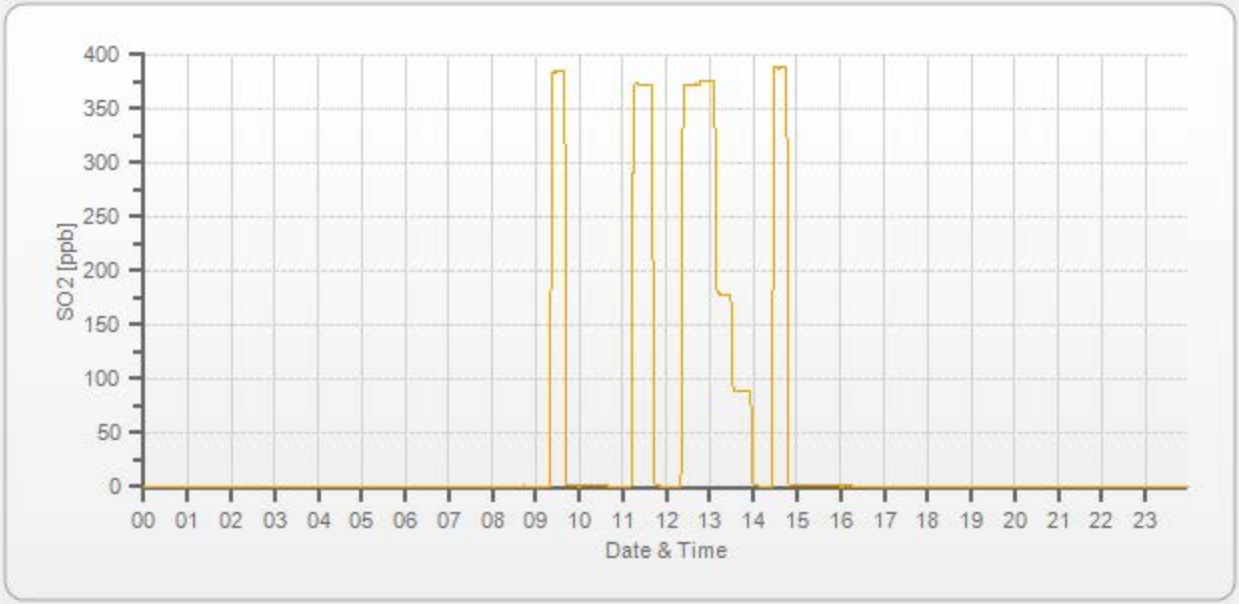
FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
			ACTUAL	INDICATED		Initial	Final
DILUENT	GAS	TOTAL		Initial	Final		
5000		5000	0.00	0	0		
4961	37.20	4998	375.13	372.2	375.3	1.008	1.000
4982	17.60	5000	177.41	n/a	177.3	n/a	1.001
4990	8.80	4999	88.72	n/a	87.8	n/a	1.010

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.001	-0.1%

COMMENTS:

Sample inlet filter was changed.


SO2[ppb] Station: Cold Lake South Daily: 08-01-2023 Type: AVG 1 Min. [1 Min.]
400
350
300
250
200
150
100
50
0
SO2 [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
SO2 [ppb]

TRS Analyzer Calibration by Dilution

DATE:	07-Jan-2023	PREVIOUS CALIBRATION DATE:	08-Dec-2022
PARAMETER:	TRS	PREVIOUS CORRECTION FACTOR:	1.005
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	CLS	BAROMETRIC (mBar):	947
PURPOSE	Removal/Shut-down	START TIME (MST):	12:15
PERFORMED BY:	Alex Yakupov	END TIME (MST):	14:28

ANALYZER:

MAKE/MODEL	Thermo 450i	RANGE	100 ppb
SERIAL #	812728560	FLOW (mL/min)	491
INITIAL		FINAL	
BKG/OFFSET	24.4	BKG/OFFSET	n/a
COEF/SLOPE	1.104	COEF/SLOPE	n/a
Expected (reference) Value	40.4	Expected (reference) Value	n/a

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010 D	MODEL:	T701
ID:	11900613	ID:	132
MFC CALIBRATION DATE:	21-Oct-2022	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	EY 0002287	HIGH ID	n/a
CONC (ppm):	10.10	EXPIRY DATE	n/a
CYLINDER (psi):	1400	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:	12:17	SO2 Conc (ppb)	380
END TIME:	12:32	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	n/a		
7442	57.90	7500	77.97	75.8	n/a	1.029	n/a
7472	28.20	7500	37.98	37.5	n/a	1.013	n/a
7486	14.10	7500	18.99	18.2	n/a	1.043	n/a

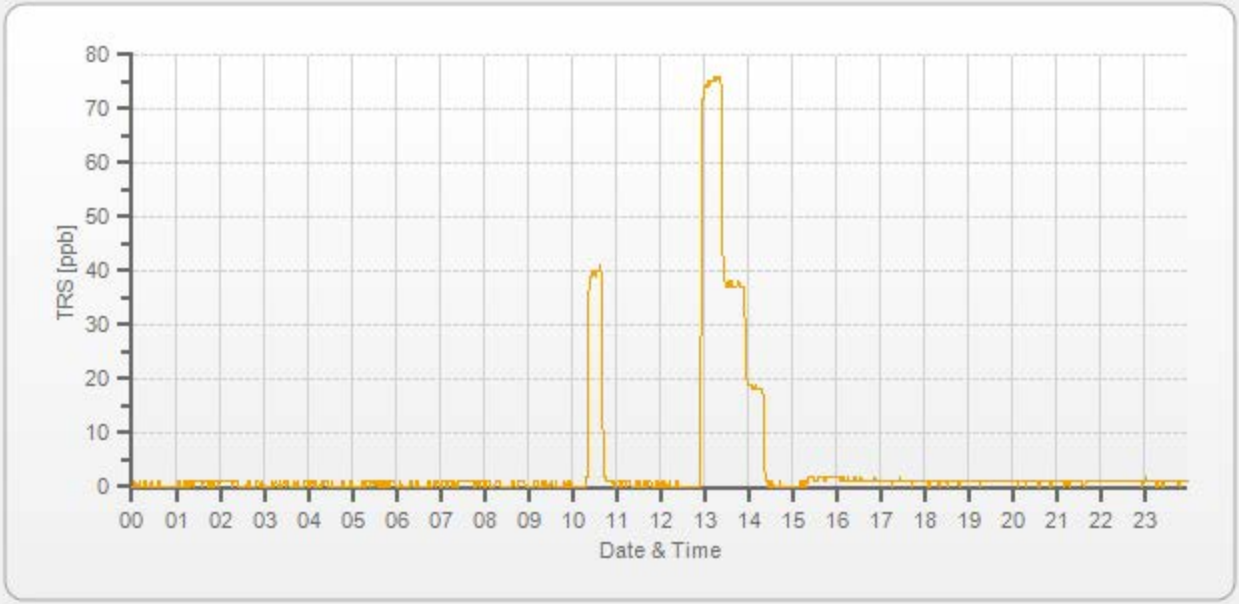
LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	0.974	0.0%

COMMENTS:

Shutdown calibration was completed to renew SO2 scrubber beads.

TRS[ppb] Station: Cold Lake South Daily: 07-01-2023 Type: AVG 1 Min. [1 Min.]



TRS Analyzer Calibration by Dilution

DATE:	08-Jan-2023	PREVIOUS CALIBRATION DATE:	n/a
PARAMETER:	TRS	PREVIOUS CORRECTION FACTOR:	n/a
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	CLS	BAROMETRIC (mBar):	944
PURPOSE	Install/Post-Repair	START TIME (MST):	10:11
PERFORMED BY:	Alex Yakupov	END TIME (MST):	15:52

ANALYZER:

MAKE/MODEL	Thermo 450i	RANGE	100 ppb
SERIAL #	812728560	FLOW (mL/min)	491
INITIAL		FINAL	
BKG/OFFSET	n/a	BKG/OFFSET	25.1
COEF/SLOPE	n/a	COEF/SLOPE	1.132
Expected (reference) Value	n/a	Expected (reference) Value	43.3

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010 D	MODEL:	T701
ID:	11900613	ID:	132
MFC CALIBRATION DATE:	21-Oct-2022	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	EY 0002287	HIGH ID	n/a
CONC (ppm):	10.10	EXPIRY DATE	n/a
CYLINDER (psi):	1500	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:	10:17	SO2 Conc (ppb)	380
END TIME:	10:32	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	n/a	0		
7442	57.90	7500	77.97	n/a	78.1	n/a	0.998
7472	28.20	7500	37.98	n/a	37.8	n/a	1.005
7486	14.10	7500	18.99	n/a	19.3	n/a	0.984

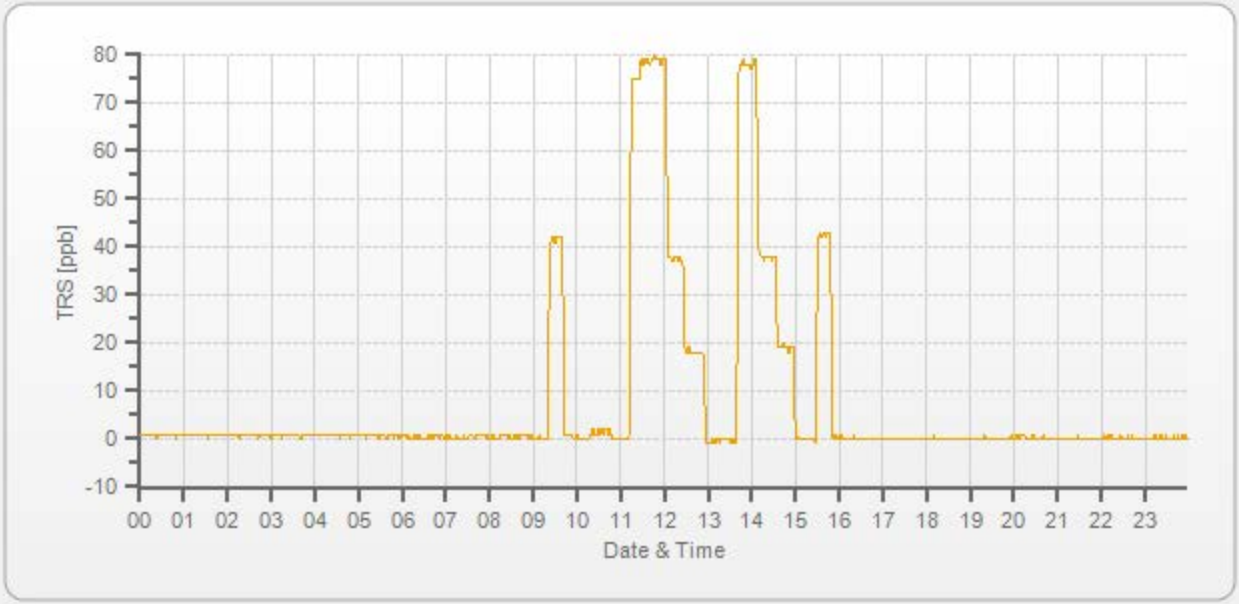
LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.000	0.1%

COMMENTS:

Sample inlet filter was changed. SO2 scrubber beads were renewed.
Initial calibration attempt failed at low point. Calibration was repeated starting at 12:54 without further issue.

TRS[ppb] Station: Cold Lake South Daily: 08-01-2023 Type: AVG 1 Min. [1 Min.]



NOx Calibration by Dilution/Gas-Phase Titration

CALIBRATION:

DATE:	08-Jan-2023	PREVIOUS CALIBRATION DATE:	09-Dec-2022
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	CLS	BAROMETRIC (mBar):	944
PURPOSE	Routine	START TIME (MST):	10:14
PERFORMED BY:	Alex Yakupov	END TIME (MST):	16:30

ANALYZER:

MAKE/MODEL:	Thermo 42i	PREVIOUS CF.	
SERIAL #:	1505664393	NOx	0.999
FLOW (mL/min)	736	NO	1.001
RANGE (ppb)	500	NO2	0.998
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):	2000		LOW ID:	n/a
MFC CALIBRATION DATE:	02-Sep-2022	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:	5.2	4.6	n/a
SLOPE/COEF/CE:	1.001	1.038	0.999	SLOPE/COEF/CE:	1.008	0.995	0.999

EXPECTED (REFERENCE) VALUE:

INITIAL	NOx	NO	NO2	FINAL	NOx	NO	NO2
	285.6	2.9	282.7		275.0	2.4	272.6

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	0.3	0.3	0.0	0.0	0.0	0.0						
4961	37.20	4998	380.3	384.1	3.7	396.2	398.0	1.7	379.6	383.2	3.6	0.961	0.966		1.002	1.002	
4982	17.60	5000	179.9	181.6	1.8	n/a	n/a	n/a	180.0	181.5	1.5	n/a	n/a		0.999	1.001	
4990	8.80	4999	90.0	90.8	0.9	n/a	n/a	n/a	89.8	90.6	0.8	n/a	n/a		1.002	1.003	

GPT CALIBRATION:

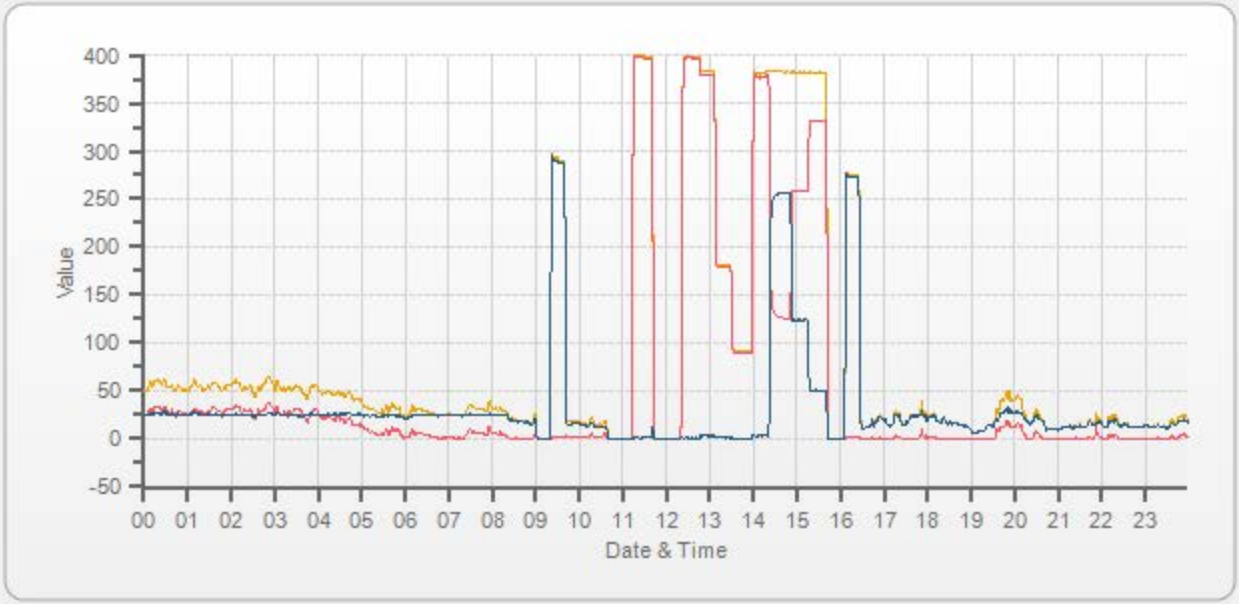
Point	CALIBRATOR			INDICATED (ppb)			NO DROP / O3 Conc (ppb)	NO2 GAIN (ppb)	NO2 Corr. FACTOR	CONV. EFFICIENCY
	GAS	TOTAL	O3 SETPOINT	NO	NOx	NO2				
REFERENCE	37.20	4998	0	378.6	382.3	3.7				
AS-FOUND HIGH	37.20	4998	235	125.4	382.5	257.0	253.2	253.3	1.000	100.04%
ADJUSTED HIGH	n/a	n/a	n/a	n/a	n/a	n/a	n/a	**n/a**	**n/a**	n/a
MID	37.20	4998	110	258.4	381.6	123.1	120.2	119.4	1.007	99.33%
LOW	37.20	4998	40	331.1	382.0	50.9	47.5	47.2	1.006	99.37%
NO2 adjustment not required.									AVERAGE:	99.58%

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
NO	1.000	0.998	0.02%
NOx	1.000	0.998	0.01%
NO2	1.000	1.003	-0.14%

COMMENTS:

Sample inlet filter was changed.


Station: Cold Lake South Daily: 08-01-2023 Type: AVG 1 Min. [1 Min.]
Value
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
NOX [ppb]
NO [ppb]
NO2 [ppb]

Ozone Calibration by Photometer (Varying UV Lamp)

DATE:	08-Jan-2023	PREVIOUS CALIBRATION DATE:	09-Dec-2022
PARAMETER:	O3	PREVIOUS CORRECTION FACTOR:	0.999
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	CLS	BAROMETRIC (mBar):	944
PURPOSE	Routine	START TIME (MST):	15:46
PERFORMED BY:	Alex Yakupov	END TIME (MST):	19:52

ANALYZER:

MAKE/MODEL	Thermo 49iQ	RANGE	500	ppb
SERIAL #	12208316585	FLOW (mL/min)	1270	
INITIAL		FINAL		
BKG/OFFSET	1.1	BKG/OFFSET	1.2	
COEF/SLOPE	1.027	COEF/SLOPE	1.042	
Expected (reference) Value	248.9	Expected (reference) Value	263.3	

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010 D	MODEL:	T701
ID:	11900613	ID:	132
MFC CALIBRATION DATE:	21-Oct-2022	OXIDIZER ID:	n/a
CALIBRATION METHOD:		Photometer (Varying UV Lamp)	
GPT DATE:	n/a	GPT END TIME:	n/a

CALIBRATION PARAMETERS:

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

CALIBRATION:

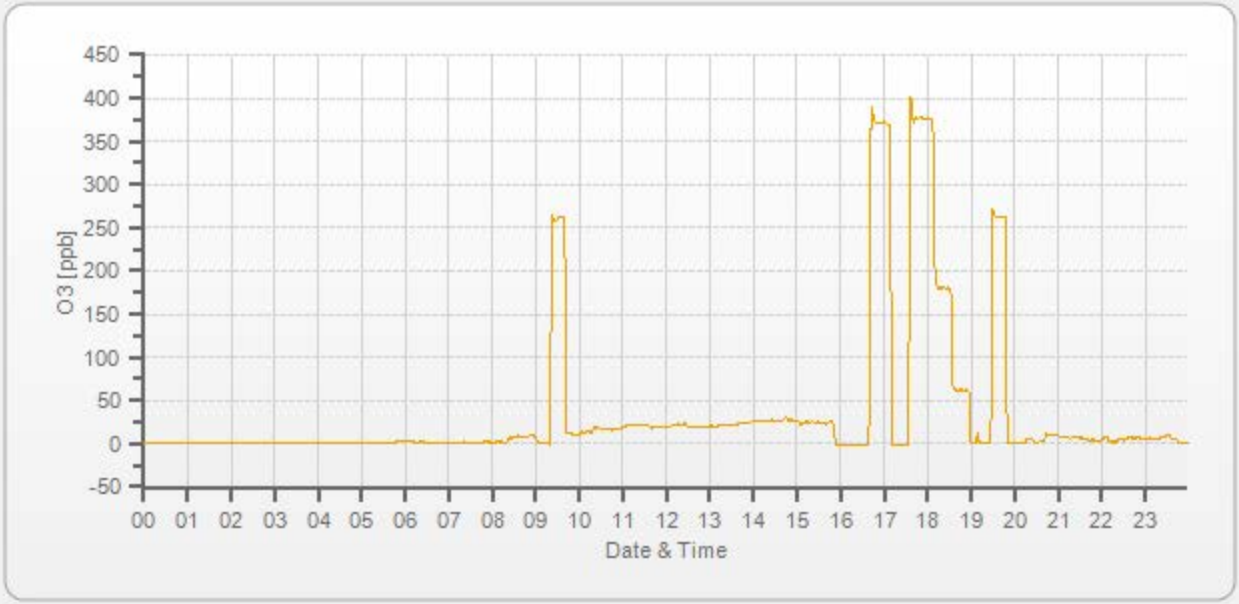
FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
			ACTUAL	INDICATED		Initial	Final
DILUENT	GAS	TOTAL		Initial	Final		
5000		5000	0.0	-0.4	0.0		
5000		5000	378.0	372.0	377.1	1.015	1.002
5000		5000	180.0	n/a	180.7	n/a	0.996
5000		5000	61.0	n/a	62.5	n/a	0.976

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	0.996	0.2%

COMMENTS:

Sample inlet filter was changed.


O3[ppb] Station: Cold Lake South Daily: 08-01-2023 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:	07-Jan-2023	PREVIOUS CALIBRATION DATE:	08-Dec-2022
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	CLS	BAROMETRIC (mBar):	947
PURPOSE	Routine	START TIME (MST):	12:16
PERFORMED BY:	Alex Yakupov	END TIME (MST):	15:56

ANALYZER:

VALUE	MAKE/MODEL	SERIAL	FLOW (mL/min)
	Thermo 55i	1180930025	1135
PARAMETER:	CH4	NMHC	THC
RANGE (ppm):	20	20	40
PREVIOUS CF:	0.999	1.001	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):	1500		LOW ID:	n/a
MFC CALIBRATION DATE:	02-Sep-2022	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
	9.60	11.23	20.83		9.52	11.16	20.68

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	14.88	13.91	28.79	14.49	13.50	28.00	0.975	0.971	0.973	1.001	1.000	1.000
3063	37.30	3100	7.26	6.75	14.01	n/a	n/a	n/a	7.17	6.79	13.97	n/a	n/a	n/a	1.012	0.994	1.003
3081	18.60	3100	3.62	3.37	6.98	n/a	n/a	n/a	3.58	3.45	7.03	n/a	n/a	n/a	1.011	0.976	0.993

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
CH4	1.000	0.999	-0.1%
NMHC	1.000	0.998	0.2%
THC	1.000	0.999	0.0%

Comments:

Sample inlet filter was changed.

Use Zero Chrom? **Yes**

Station: Cold Lake South Daily: 07-01-2023 Type: AVG 1 Min. [1 Min.]

Teledyne T640 Audit/Calibration

Date/Previous Audit Date:	January 9, 2023	December 9, 2022	**Weather Conditions:**	A few clouds	
Company:	LICA		**Start Time (mst):**	15:26	
Station:	Cold Lake South		**End Time (mst):**	18:26	
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):**	Yes

Reference Standards/I.D./Expiry Date:

Flow Standard: DeltaCal DC1 S/N 177246 / Sep 03, 2023
Digital Manometer: DeltaCal DC1 S/N 177246 / Sep 03, 2023
Temperature: Vaisala / HM70 / #T1640130/ Jun 14, 2023
Pressure: Fisher Scientific / FB 61291 / #130168457/ Feb 17, 2023

DIAGNOSTICS:

Ambient Pressure (mmHg)	705.2	Ambient Temp (°C)	-12.0	ASC Heater Duty (%)	0.0
Box Temp (°C)	26.8	Current PMT HV (V)	1439	LED Temp (°C)	35.10
P3 Value	48	PMT Setting (V)	1444	Pump PWM (%)	91
Sample Flow (L/min)	5.00	Sample RH (%RH)	7.4	Sample Temp (°C)	23.8

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)	705.8	705.2	705.8	705.2	+/- 10 mm Hg
Ambient Temperature (°C)	-12.40	-12.3	n/a		+/- 2°C
Sample Flow (L/min)	5.05	5	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 sample pump was installed but failed to function properly. The original pump was re-installed.

Meteorological System Checklist

Date:	January 9, 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 14, 2023
Reference Temperature (^{o}C):	-12.1
Station - Ambient Temperature (^{o}C):	-12.7
Temperature Difference (^{o}C):	0.6

BAROMETRIC PRESSURE SENSOR CHECK

Reference Barometer ID:	Fisher Scientific / FB 61291 / #130168457/ Feb 17, 2023	
Reference Pressure - Units/Reading:	millibar	942
Station Pressure - Units/Reading:	millibar	942
Pressure Tolerance +/- 15% of error:	801 - 1083	0.00%

RELATIVE HUMIDITY (HYGROMETER) SENSOR CHECK

Reference Hygrometer ID:	Vaisala HMP76B #T1640130, Exp. Date: Jun 14, 2023	
Reference Hygrometer % RH- Reading:	84.00	
Station Hygrometer % RH- Reading:	88.10	
RH Tolerance +/- 15% of difference:	71.40 - 96.60	-4.9%

ANEMOMETER - WIND SPEED & WIND DIRECTION SENSOR CHECK

WIND SPEED		WIND DIRECTION	
Previous check date:	December 9, 2022	Previous check date:	December 9, 2022
Wind Speed Observed (kph):	0 - 10	Wind Direction Observed:	NE
Wind speed on Data Logger (kph):	1.6	Wind Direction on Data Logger:	NE
	Annual audit: Jul 6, 2022	Wind Direction Pass/Fail?:	Pass

Comments

Station (Trailer) temperature vs Reference gauge: 21.9 vs 22.4, 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

JANUARY 2023

Ambient Air Monitoring Calibration Report

- TAMARACK STATION-

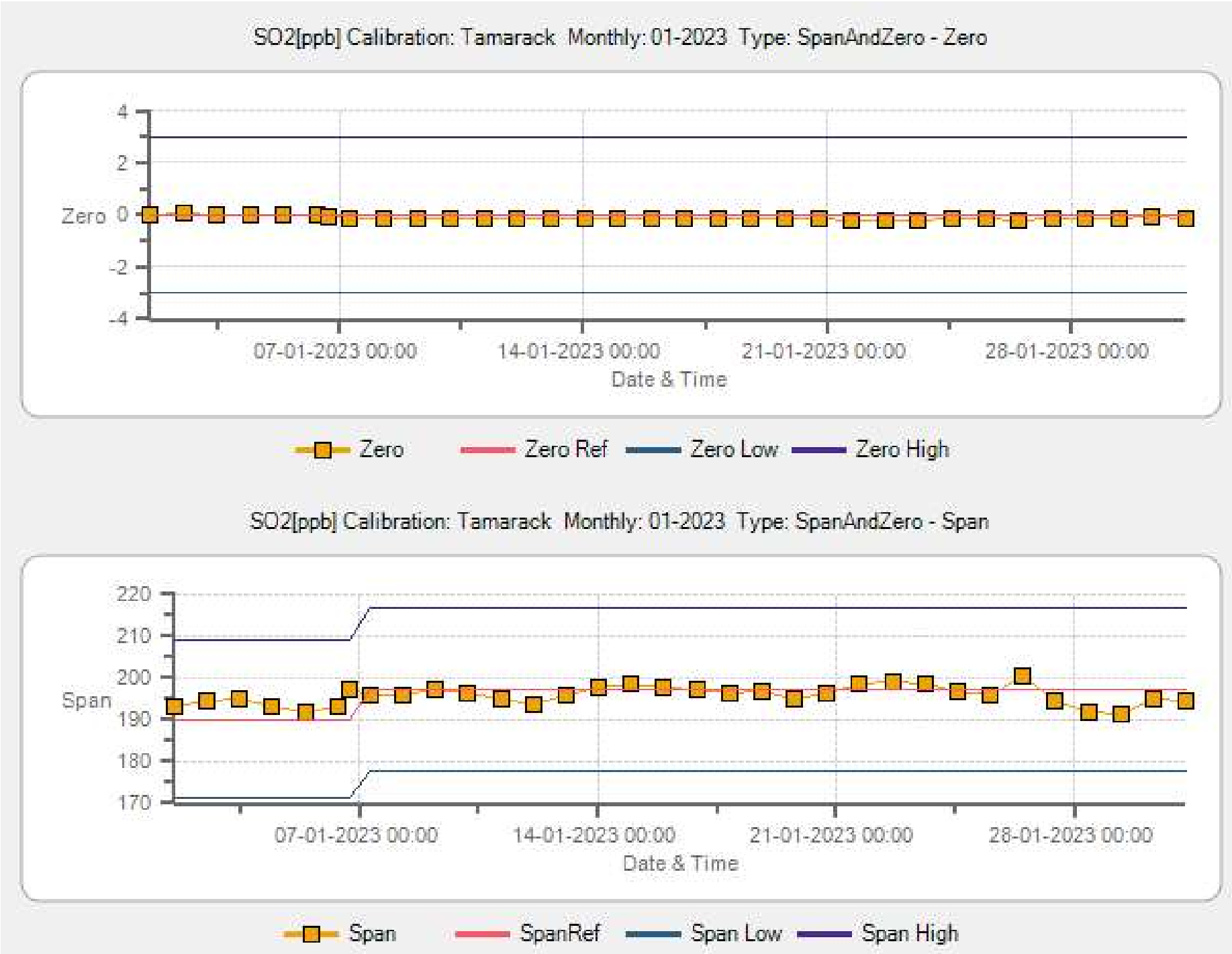
CAL-LICA-202301-01248

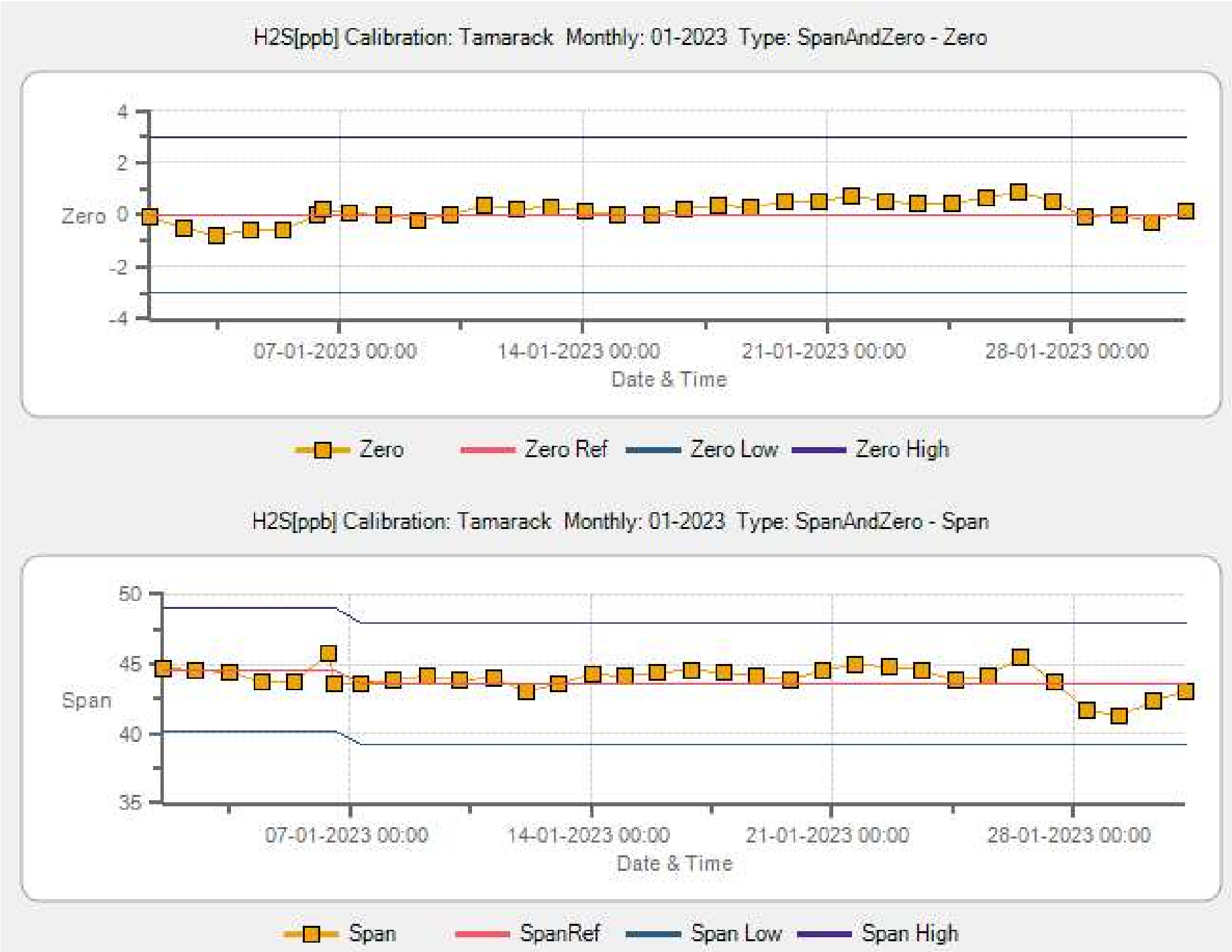
Station Operation and Maintenance:
Bureau Veritas Canada

Data Validation and Report:
LICA / Bureau Veritas Canada

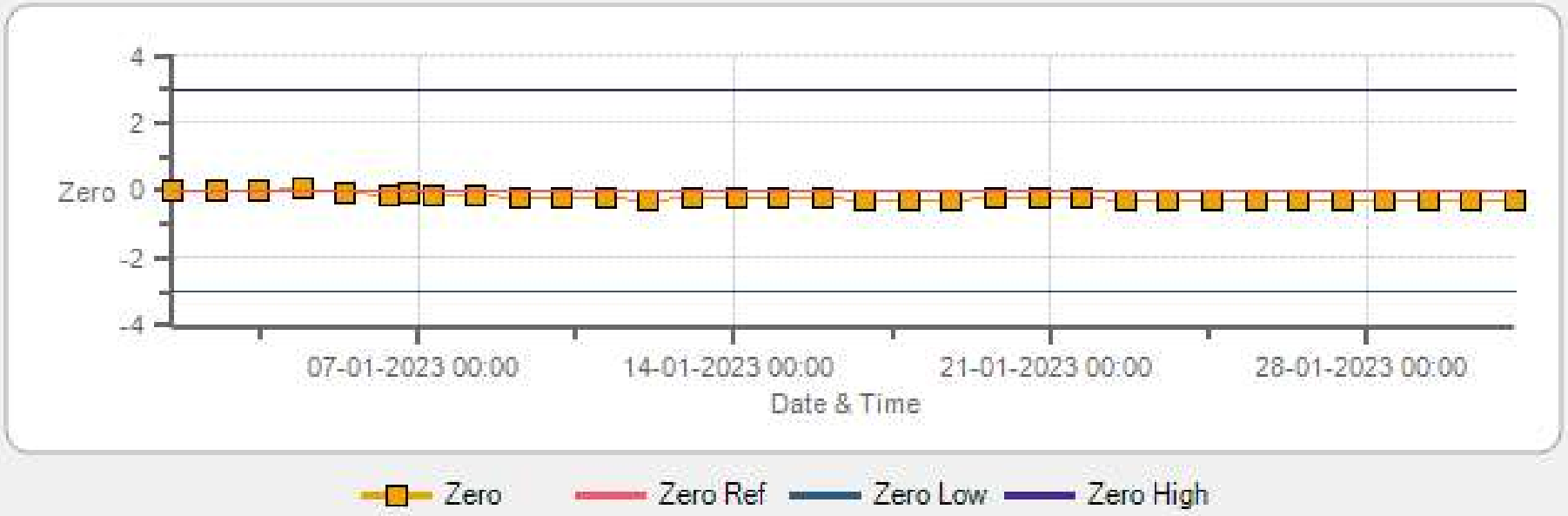
February 7, 2023

DAILY INTERNAL ZERO-SPAN CALIBRATION RECORDS

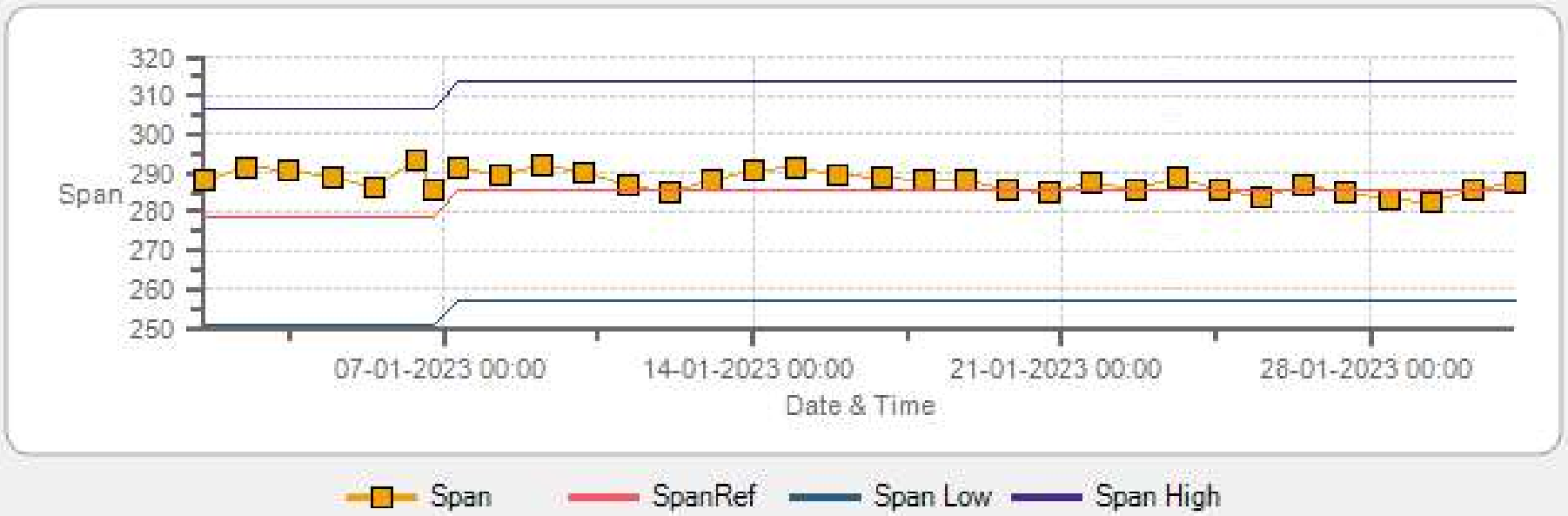

SO2[ppb] Calibration: Tamarack Monthly: 01-2023 Type: SpanAndZero - Zero
4
2
Zero 0
-2
-4
07-01-2023 00:00
14-01-2023 00:00
21-01-2023 00:00
28-01-2023 00:00
Date & Time
Zero
Zero Ref
Zero Low
Zero High
SO2[ppb] Calibration: Tamarack Monthly: 01-2023 Type: SpanAndZero - Span
220
210
200
Span
190
180
170
07-01-2023 00:00
14-01-2023 00:00
21-01-2023 00:00
28-01-2023 00:00
Date & Time
Span
SpanRef
Span Low
Span High


H2S[ppb] Calibration: Tamarack Monthly: 01-2023 Type: SpanAndZero - Zero
4
2
Zero 0
-2
-4
07-01-2023 00:00
14-01-2023 00:00
21-01-2023 00:00
28-01-2023 00:00
Date & Time
Zero
Zero Ref
Zero Low
Zero High
H2S[ppb] Calibration: Tamarack Monthly: 01-2023 Type: SpanAndZero - Span
50
45
Span
40
35
07-01-2023 00:00
14-01-2023 00:00
21-01-2023 00:00
28-01-2023 00:00
Date & Time
Span
SpanRef
Span Low
Span High

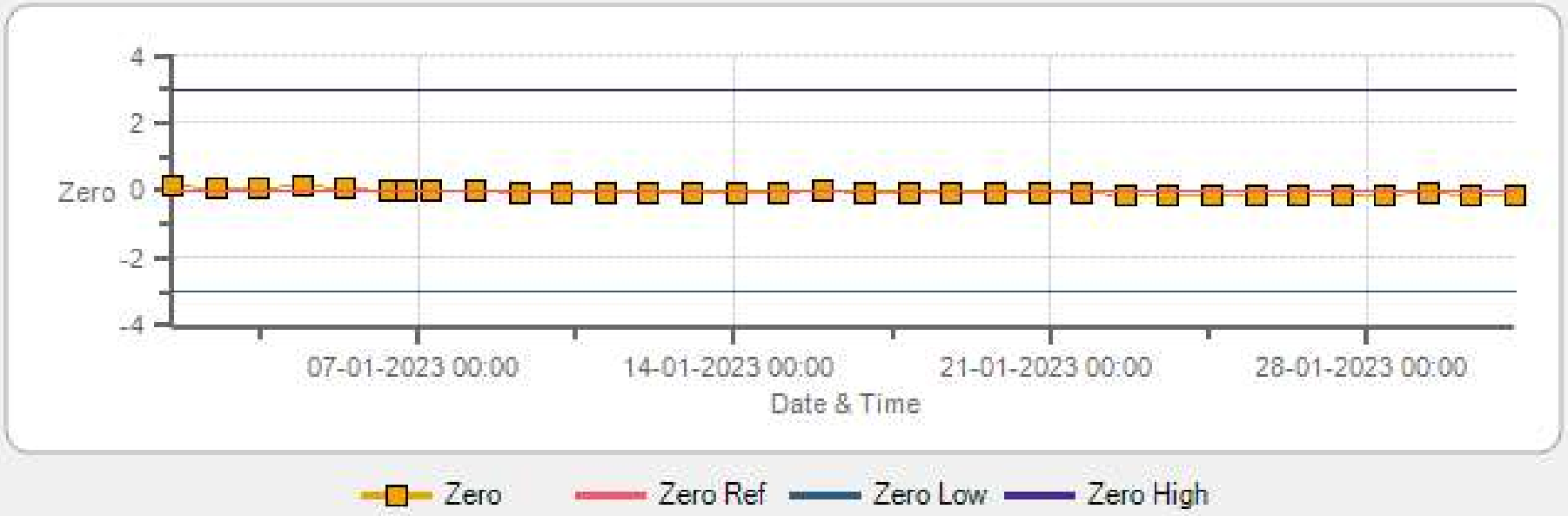
NOX[ppb] Calibration: Tamarack Monthly: 01-2023 Type: SpanAndZero - Zero



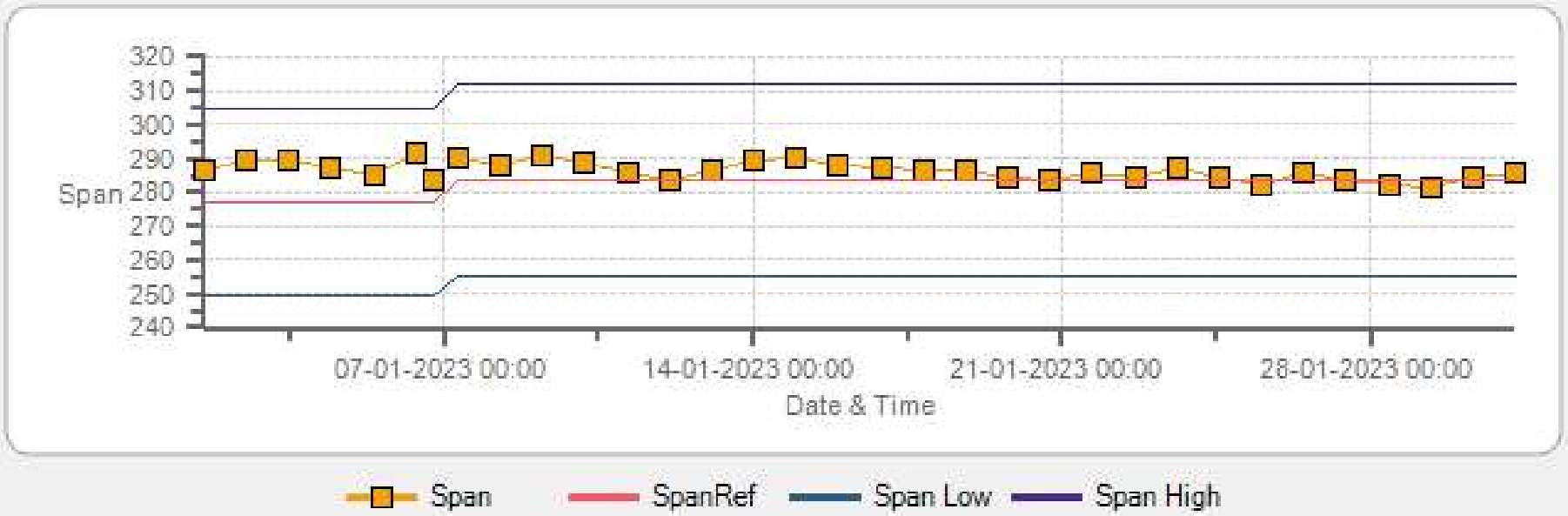
NOX[ppb] Calibration: Tamarack Monthly: 01-2023 Type: SpanAndZero - Span

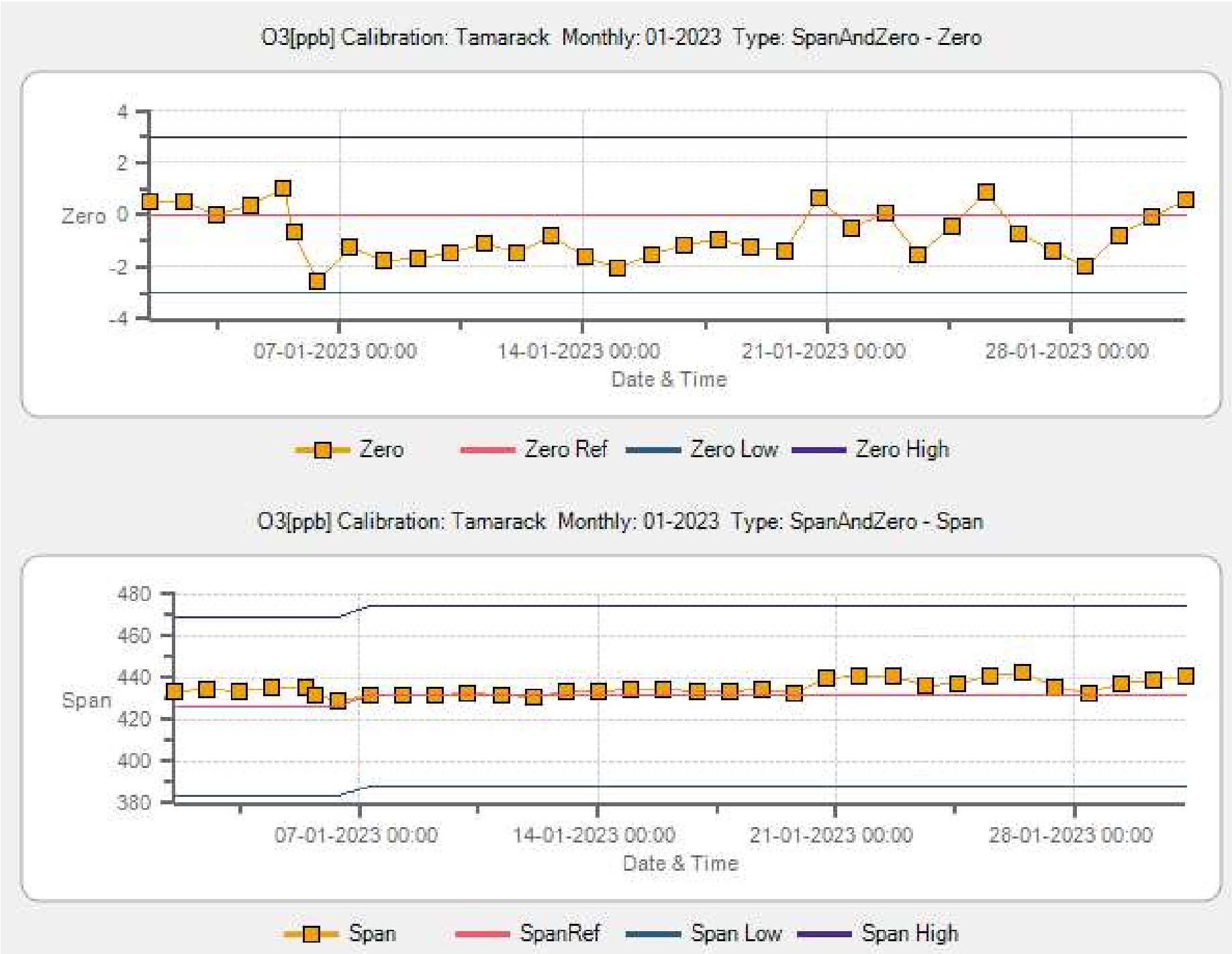


NO2[ppb] Calibration: Tamarack Monthly: 01-2023 Type: SpanAndZero - Zero

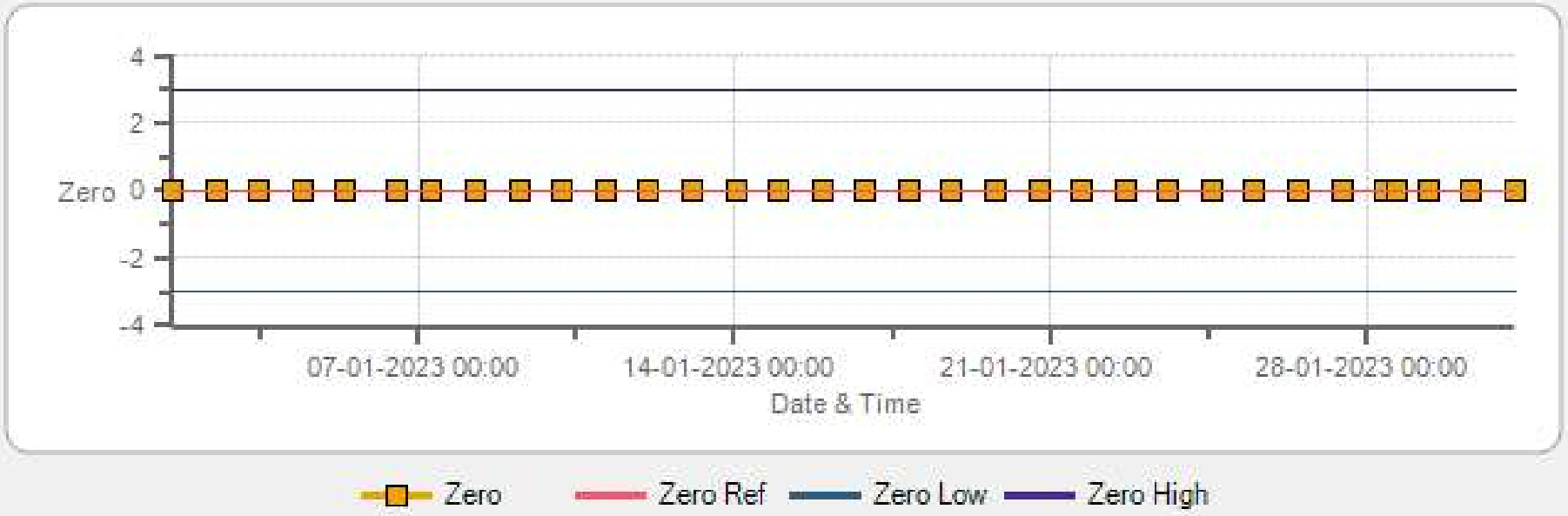


NO2[ppb] Calibration: Tamarack Monthly: 01-2023 Type: SpanAndZero - Span

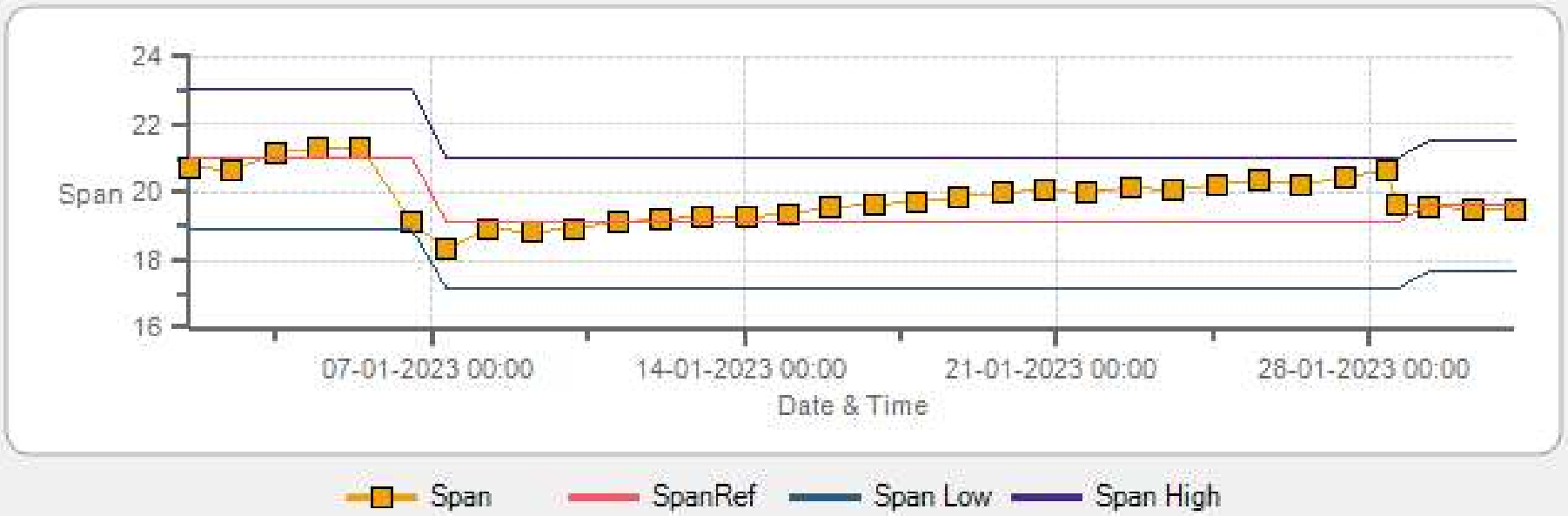



O3[ppb] Calibration: Tamarack Monthly: 01-2023 Type: SpanAndZero - Zero
Zero
4
2
0
-2
-4
07-01-2023 00:00
14-01-2023 00:00
21-01-2023 00:00
28-01-2023 00:00
Date & Time
Zero
Zero Ref
Zero Low
Zero High
O3[ppb] Calibration: Tamarack Monthly: 01-2023 Type: SpanAndZero - Span
Span
480
460
440
420
400
380
07-01-2023 00:00
14-01-2023 00:00
21-01-2023 00:00
28-01-2023 00:00
Date & Time
Span
SpanRef
Span Low
Span High

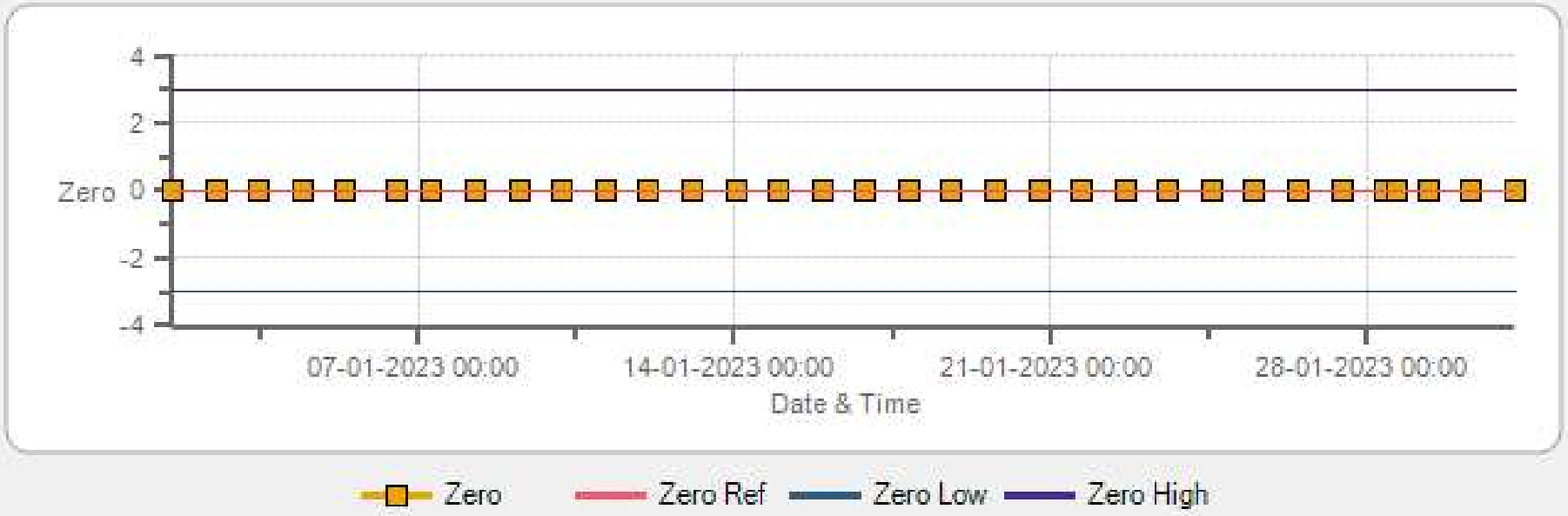
THC55[ppm] Calibration: Tamarack Monthly: 01-2023 Type: SpanAndZero - Zero



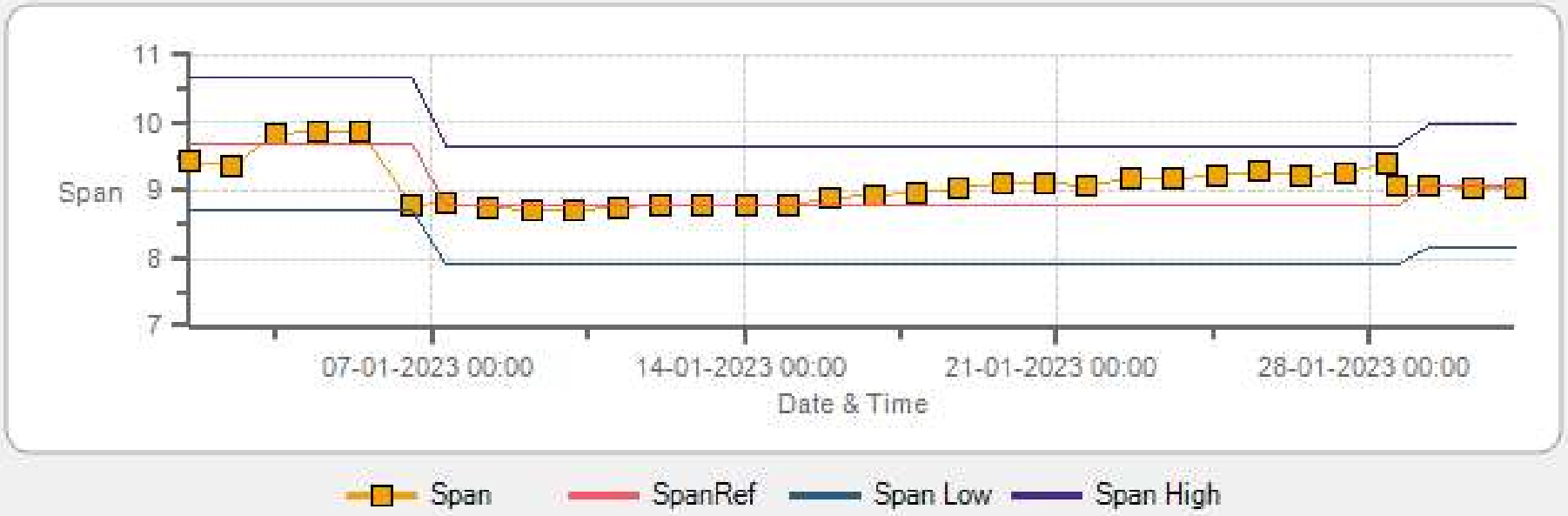
THC55[ppm] Calibration: Tamarack Monthly: 01-2023 Type: SpanAndZero - Span



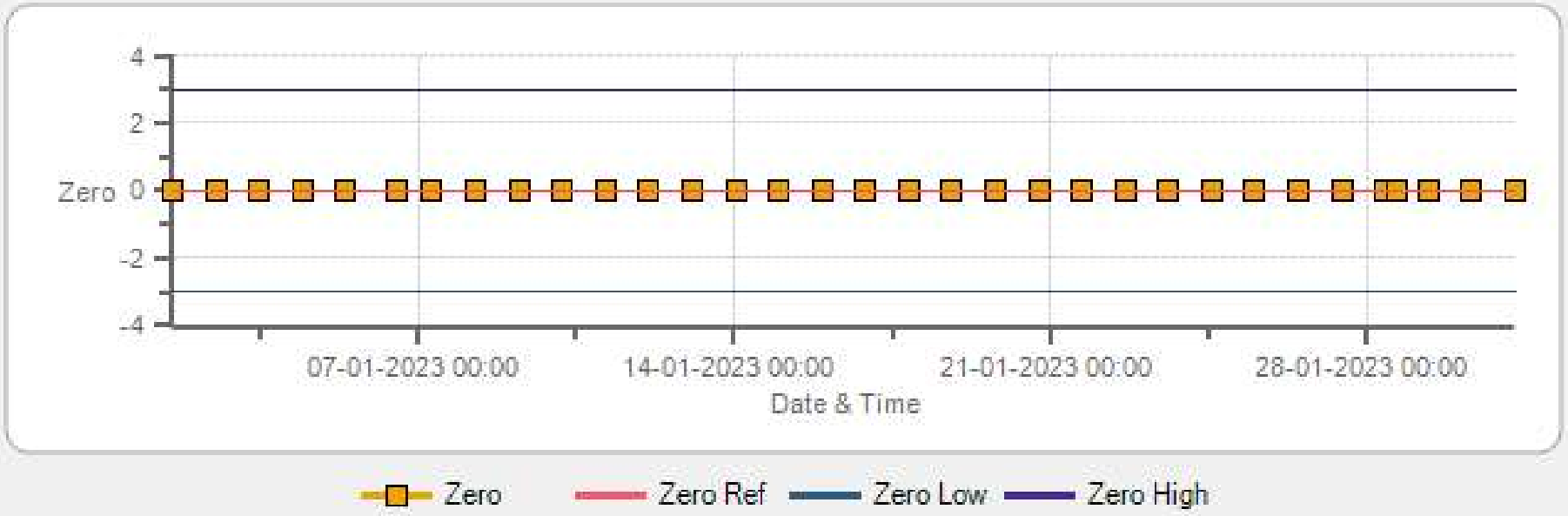
CH4[ppm] Calibration: Tamarack Monthly: 01-2023 Type: SpanAndZero - Zero



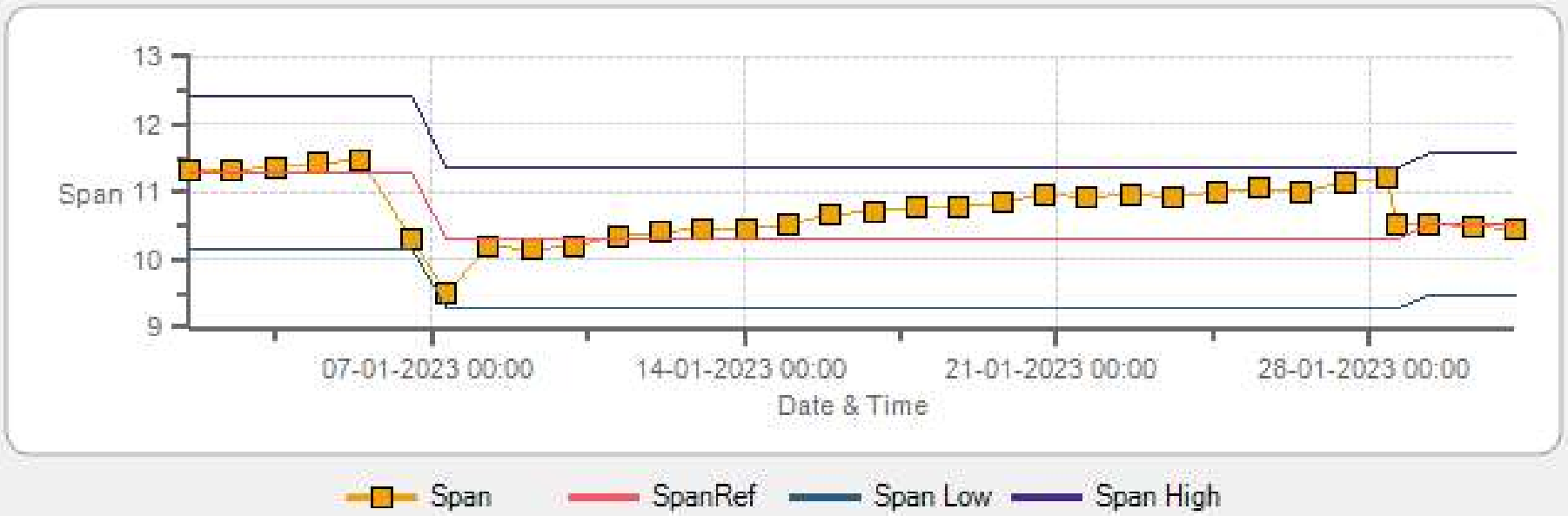
CH4[ppm] Calibration: Tamarack Monthly: 01-2023 Type: SpanAndZero - Span



NMHC[ppm] Calibration: Tamarack Monthly: 01-2023 Type: SpanAndZero - Zero



NMHC[ppm] Calibration: Tamarack Monthly: 01-2023 Type: SpanAndZero - Span



MULTI-POINT CALIBRATION RECORDS

SO2 Analyzer Calibration by Dilution

DATE:	06-Jan-2023	PREVIOUS CALIBRATION DATE:	17-Dec-2022
PARAMETER:	SO2	PREVIOUS CORRECTION FACTOR:	0.998
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	Tamarack	BAROMETRIC (mBar):	930
PURPOSE	Routine	START TIME (MST):	13:01
PERFORMED BY:	Alex Yakupov	END TIME (MST):	17:03

ANALYZER:

MAKE/MODEL	Thermo 43I-TLE	RANGE	500 ppb
SERIAL #	1180930031	FLOW (mL/min)	442
INITIAL		FINAL	
BKG/OFFSET	2.69	BKG/OFFSET	2.86
COEF/SLOPE	1.02	COEF/SLOPE	1.034
Expected (reference) Value	190.2	Expected (reference) Value	197.3

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010	MODEL:	T701
ID:	17100415	ID:	132
MFC CALIBRATION DATE:	02-Sep-2022	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):	2000	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:

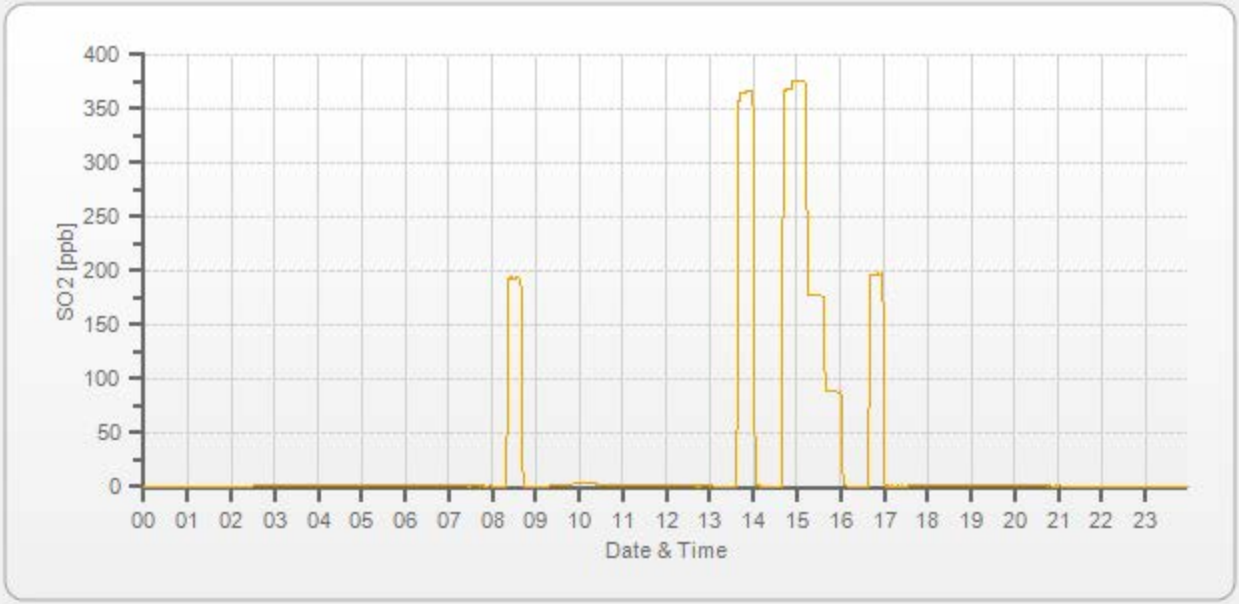
FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
			ACTUAL	INDICATED		Initial	Final
DILUENT	GAS	TOTAL		Initial	Final		
5000		5000	0.00	0	0		
4961	37.20	4998	375.13	365.8	375.2	1.025	1.000
4982	17.60	5000	177.41	n/a	176.5	n/a	1.005
4990	8.80	4999	88.72	n/a	87.3	n/a	1.016

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.001	-0.2%

COMMENTS:

Sample inlet filter was changed.


SO2[ppb] Station: Tamarack Daily: 06-01-2023 Type: AVG 1 Min. [1 Min.]
400
350
300
250
200
150
100
50
0
SO2 [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
SO2 [ppb]

H2S Analyzer Calibration by Dilution

DATE:	05-Jan-2023	PREVIOUS CALIBRATION DATE:	16-Dec-2022
PARAMETER:	H2S	PREVIOUS CORRECTION FACTOR:	0.996
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	Tamarack	BAROMETRIC (mBar):	935
PURPOSE	Removal/Shut-down	START TIME (MST):	16:15
PERFORMED BY:	Alex Yakupov	END TIME (MST):	18:27

ANALYZER:

MAKE/MODEL	Thermo 450i	RANGE	100 ppb
SERIAL #	CM 17360005	FLOW (mL/min)	920
INITIAL		FINAL	
BKG/OFFSET	34.3	BKG/OFFSET	n/a
COEF/SLOPE	0.831	COEF/SLOPE	n/a
Expected (reference) Value	44.6	Expected (reference) Value	n/a

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010 D	MODEL:	T701
ID:	11900613	ID:	134
MFC CALIBRATION DATE:	21-Oct-2022	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	EY 0002287	HIGH ID	n/a
CONC (ppm):	10.10	EXPIRY DATE	n/a
CYLINDER (psi):	1500	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:	16:22	SO2 Conc (ppb)	380
END TIME:	16:37	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	-0.4	n/a		
7442	57.90	7500	77.97	78.2	n/a	0.992	n/a
7472	28.20	7500	37.98	38	n/a	0.989	n/a
7486	14.10	7500	18.99	18.5	n/a	1.005	n/a

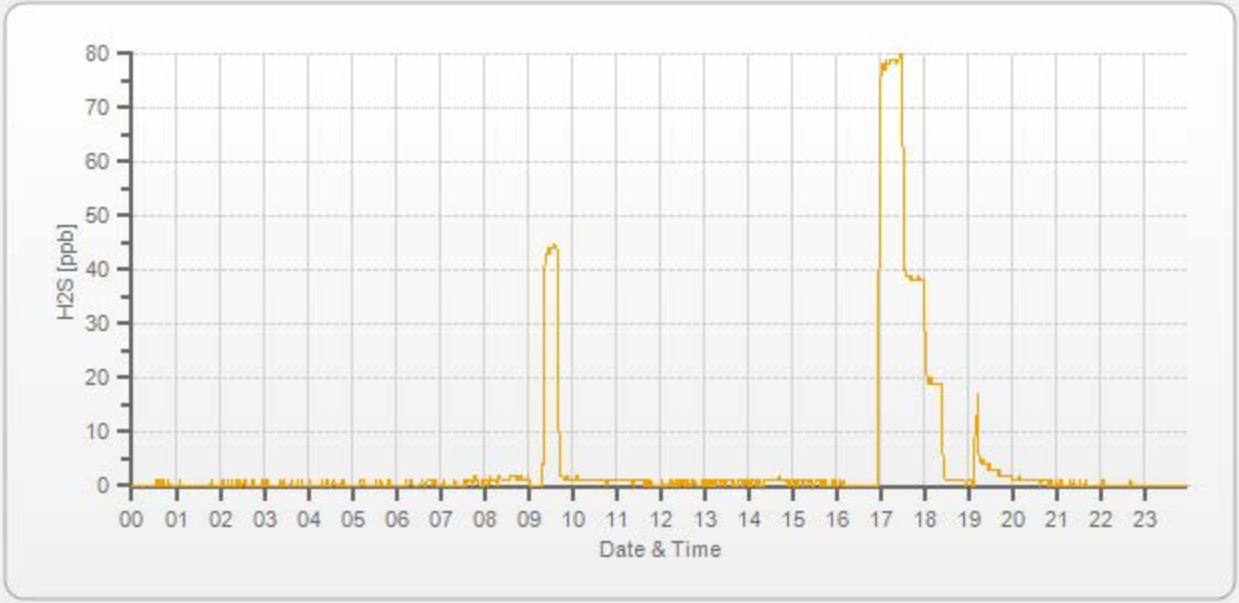
LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.009	-0.5%

COMMENTS:

Shutdown calibration was completed to renew SO2 scrubber beads.

H2S[ppb] Station: Tamarack Daily: 05-01-2023 Type: AVG 1 Min. [1 Min.]



H2S Analyzer Calibration by Dilution

DATE:	06-Jan-2023	PREVIOUS CALIBRATION DATE:	n/a
PARAMETER:	H2S	PREVIOUS CORRECTION FACTOR:	n/a
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	Tamarack	BAROMETRIC (mBar):	930
PURPOSE	Install/Post-Repair	START TIME (MST):	10:14
PERFORMED BY:	Alex Yakupov	END TIME (MST):	13:26

ANALYZER:

MAKE/MODEL	Thermo 450i	RANGE	100 ppb
SERIAL #	CM 17360005	FLOW (mL/min)	915
INITIAL		FINAL	
BKG/OFFSET	n/a	BKG/OFFSET	32.3
COEF/SLOPE	n/a	COEF/SLOPE	0.785
Expected (reference) Value	n/a	Expected (reference) Value	43.6

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010 D	MODEL:	T701
ID:	11900613	ID:	134
MFC CALIBRATION DATE:	21-Oct-2022	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	EY 0002287	HIGH ID	n/a
CONC (ppm):	10.10	EXPIRY DATE	n/a
CYLINDER (psi):	1500	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:	10:20	SO2 Conc (ppb)	380
END TIME:	10:35	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	n/a	0		
7442	57.90	7500	77.97	n/a	78.5	n/a	0.993
7472	28.20	7500	37.98	n/a	38.1	n/a	0.997
7486	14.10	7500	18.99	n/a	19.1	n/a	0.994

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.007	0.0%

COMMENTS:

Sample inlet filter was changed.


H2S[ppb] Station: Tamarack Daily: 06-01-2023 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:	06-Jan-2023	PREVIOUS CALIBRATION DATE:	17-Dec-2022
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	Tamarack	BAROMETRIC (mBar):	930
PURPOSE	Routine	START TIME (MST):	13:03
PERFORMED BY:	Alex Yakupov	END TIME (MST):	18:41

ANALYZER:

MAKE/MODEL:	Thermo 42i	PREVIOUS CF.	
SERIAL #:	1180930028	NOx	0.999
FLOW (mL/min)	838	NO	0.999
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):	2000		LOW ID:	n/a
MFC CALIBRATION DATE:	02-Sep-2022	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:	1.8	1.7	n/a	BKG/OFFSET:	1.9	1.7	n/a
SLOPE/COEF/CE:	1	1.019	1	SLOPE/COEF/CE:	1.009	1.017	1

EXPECTED (REFERENCE) VALUE:

INITIAL	NOx	NO	NO2	FINAL	NOx	NO	NO2
	278.5	1.7	276.8		285.4	1.6	283.8

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	0.3	0.2	-0.1	0.0	0.0	0.0						
4961	37.20	4998	380.3	384.1	3.7	379.5	380.5	1.0	380.3	384.1	3.8	1.003	1.010		1.000	1.000	
4982	17.60	5000	179.9	181.6	1.8	n/a	n/a	n/a	180.3	182.4	2.0	n/a	n/a		0.998	0.996	
4990	8.80	4999	90.0	90.8	0.9	n/a	n/a	n/a	90.2	91.0	0.8	n/a	n/a		0.997	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	379.0	382.6	3.6				
AS-FOUND HIGH	37.20	4998	235	129.5	383.0	253.5	249.5	249.9	0.998	100.16%
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	260.6	383.4	122.8	118.4	119.2	0.993	100.68%
LOW	37.20	4998	40	332.6	383.8	51.1	46.4	47.5	0.977	102.37%
NO2 adjustment not required.									AVERAGE:	101.07%

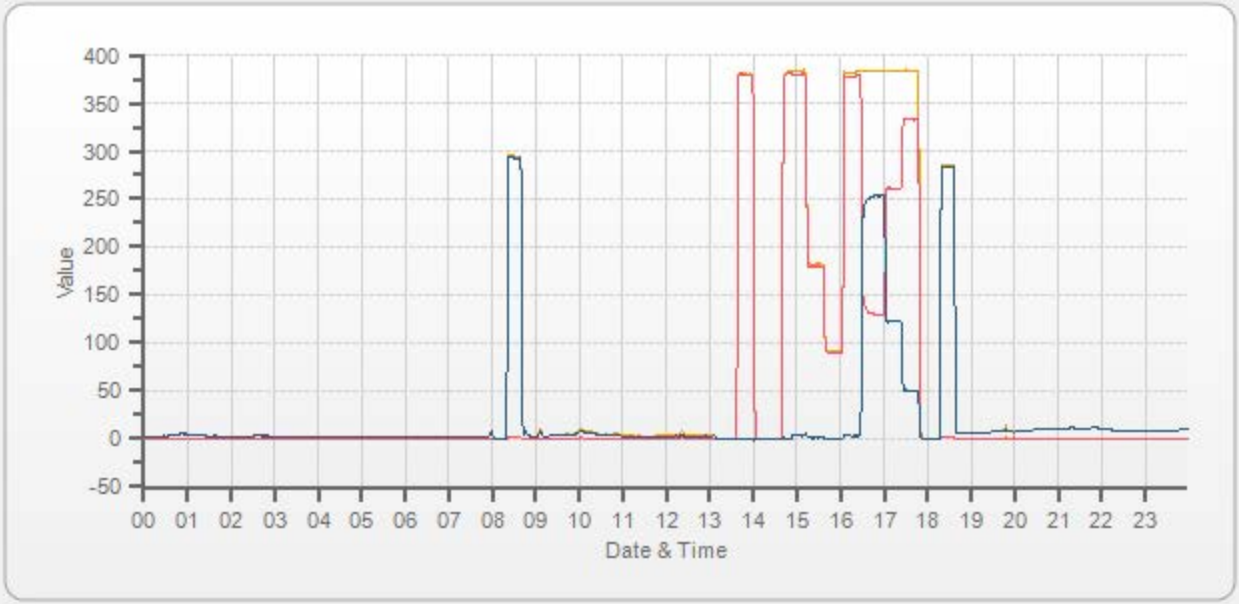
LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
NO	1.000	1.000	0.04%
NOx	1.000	1.000	0.04%
NO2	1.000	0.997	0.25%

COMMENTS:

Sample inlet filter was changed.

Station: Tamarack Daily: 06-01-2023 Type: AVG 1 Min. [1 Min.]



Ozone Calibration by Photometer (Varying UV Lamp)

DATE:	05-Jan-2023	PREVIOUS CALIBRATION DATE:	17-Dec-2022
PARAMETER:	O3	PREVIOUS CORRECTION FACTOR:	1.001
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	Tamarack	BAROMETRIC (mBar):	935
PURPOSE	Routine	START TIME (MST):	12:14
PERFORMED BY:	Alex Yakupov	END TIME (MST):	16:32

ANALYZER:

MAKE/MODEL	Thermo 49iQ	RANGE	500 ppb
SERIAL #	1202068570	FLOW (mL/min)	1370
INITIAL		FINAL	
BKG/OFFSET	2.2	BKG/OFFSET	4.5
COEF/SLOPE	1.031	COEF/SLOPE	1.027
Expected (reference) Value	426.4	Expected (reference) Value	431.4

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010 D	MODEL:	T701
ID:	11900613	ID:	134
MFC CALIBRATION DATE:	21-Oct-2022	OXIDIZER ID:	n/a
CALIBRATION METHOD:		Photometer (Varying UV Lamp)	
GPT DATE:	n/a	GPT END TIME:	n/a

CALIBRATION PARAMETERS:

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

CALIBRATION:

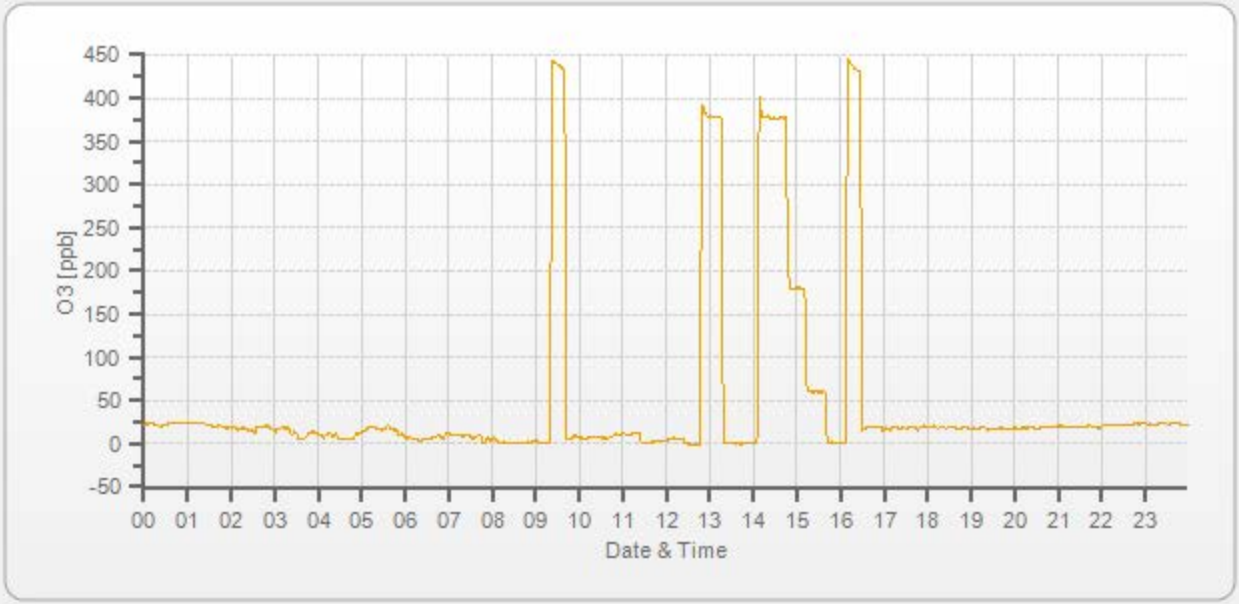
FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
			ACTUAL	INDICATED		Initial	Final
DILUENT	GAS	TOTAL		Initial	Final		
5000		5000	0.0	-0.2	0.0		
5000		5000	378.0	379.1	376.8	0.997	1.003
5000		5000	180.0	n/a	179.4	n/a	1.003
5000		5000	60.0	n/a	59.8	n/a	1.003

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	0.997	0.0%

COMMENTS:

Sample inlet filter was changed.


O3[ppb] Station: Tamarack Daily: 05-01-2023 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:	05-Jan-2023	PREVIOUS CALIBRATION DATE:	16-Dec-2022
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	Tamarack	BAROMETRIC (mBar):	935
PURPOSE	Removal/Shut-down	START TIME (MST):	12:16
PERFORMED BY:	Alex Yakupov	END TIME (MST):	14:33

ANALYZER:

VALUE	MAKE/MODEL	SERIAL	FLOW (mL/min)
	Thermo 55i	1314057759	1219
PARAMETER:	CH4	NMHC	THC
RANGE (ppm):	20	20	40
PREVIOUS CF:	0.999	0.999	0.999

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:		CALIBRATION GAS:			FLOWMETERS (if applicable):	
MAKE:	SABIO	MAKE:	Teledyne	CYLINDER ID:	LL 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):	1400		LOW ID:	n/a
MFC CALIBRATION DATE:	02-Sep-2022	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
	9.69	11.29	20.99		n/a	n/a	n/a

CALIBRATION:

FLOW RATE (mL/min)			CONCENTRATION (PPM)									CORRECTION FACTOR (CF.)					
			CALCULATED			INITIAL INDICATED			FINAL INDICATED			INITIAL			FINAL		
DILUENT	GAS	TOTAL	CH4	NMHC	THC	CH4	NMHC	THC	CH4	NMHC	THC	CH4	NMHC	THC	CH4	NMHC	THC
3100		3100	0.00	0.00	0.00	0.00	0.00	0.00	n/a	n/a	n/a						
3025	74.60	3100	14.51	13.50	28.01	14.63	13.56	28.19	n/a	n/a	n/a	0.992	0.996	0.994	n/a	n/a	n/a
3063	37.30	3100	7.26	6.75	14.01	7.30	6.77	14.07	n/a	n/a	n/a	0.994	0.997	0.995	n/a	n/a	n/a
3081	18.60	3100	3.62	3.37	6.98	3.46	3.37	6.85	n/a	n/a	n/a	1.046	0.999	1.020	n/a	n/a	n/a

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
CH4	1.000	1.013	-0.4%
NMHC	1.000	1.005	0.0%
THC	1.000	1.008	-0.2%

Comments:

Shutdown calibration was completed to change the analyzer. Reason - frequest bad injections

Use Zero Chrom? **Yes**

Station: Tamarack Daily: 05-01-2023 Type: AVG 1 Min. [1 Min.]

Methane/Non-Methane Analyzer Calibration by Dilution

CALIBRATION:

DATE:	06-Jan-2023	PREVIOUS CALIBRATION DATE:	n/a
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	Tamarack	BAROMETRIC (mBar):	930
PURPOSE	Install/Post-Repair	START TIME (MST):	10:12
PERFORMED BY:	Alex Yakupov	END TIME (MST):	13:25

ANALYZER:

VALUE	MAKE/MODEL	SERIAL	FLOW (mL/min)
	Thermo 55i	1180930026	1212
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):	1400		LOW ID:	n/a
MFC CALIBRATION DATE:	02-Sep-2022	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		8.79	10.32	19.11

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	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	14.47	13.53	28.00	n/a	n/a	n/a	1.003	0.998	1.000
3063	37.30	3100	7.26	6.75	14.01	n/a	n/a	n/a	7.24	6.73	13.98	n/a	n/a	n/a	1.002	1.003	1.002
3081	18.60	3100	3.62	3.37	6.98	n/a	n/a	n/a	3.59	3.34	6.92	n/a	n/a	n/a	1.008	1.008	1.009

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
CH4	1.000	0.998	0.0%
NMHC	1.000	1.003	-0.1%
THC	1.000	1.000	-0.1%

Comments:

Sample inlet filter was changed.

Use Zero Chrom? **Yes**

Station: Tamarack Daily: 06-01-2023 Type: AVG 1 Min. [1 Min.]

Methane/Non-Methane Analyzer Calibration by Dilution

CALIBRATION:

DATE:	28-Jan-2023	PREVIOUS CALIBRATION DATE:	06-Jan-2023
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	Tamarack	BAROMETRIC (mBar):	949
PURPOSE	Repeat	START TIME (MST):	11:05
PERFORMED BY:	Alex Yakupov	END TIME (MST):	15:30

ANALYZER:

VALUE	MAKE/MODEL	SERIAL	FLOW (mL/min)
	Thermo 55i	1180930026	1212
PARAMETER:	CH4	NMHC	THC
RANGE (ppm):	20	20	40
PREVIOUS CF:	1.003	0.998	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:	132	CYLINDER (psi):	1400		LOW ID:	n/a
MFC CALIBRATION DATE:	02-Sep-2022	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
	8.79	10.32	19.11		9.08	10.52	19.60

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	14.94	14.37	29.31	14.52	13.50	28.02	0.971	0.939	0.956	0.999	1.000	1.000
3063	37.30	3100	7.26	6.75	14.01	n/a	n/a	n/a	7.24	6.71	13.95	n/a	n/a	n/a	1.002	1.006	1.004
3081	18.60	3100	3.62	3.37	6.98	n/a	n/a	n/a	3.63	3.35	6.98	n/a	n/a	n/a	0.997	1.005	1.001

LINEAR REGRESSION ANALYSIS:

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

Comments:

Repeat calibration due to span drift

11:54 = calibrator reset. AF high restarted.

Use Zero Chrom? **Yes**

Station: Tamarack Daily: 28-01-2023 Type: AVG 1 Min. [1 Min.]

Thermo 5030 SHARP Monitor Monthly Check

Date:	January 6, 2023	**Performed By/Reviewer:**	Alex Yakupov / Chris Wesson
Company:	LICA	**Start Time (mst):**	17:59
Station Name/Location:	Tamarack	**End Time (mst):**	18:41
Previous Audit Date:	December 17, 2022	**Calibration Purpose:**	routine monthly
Parameter:	PM 2.5	**Weather Conditions:**	A few clouds

SHARP Information and Status:

Serial Number:	CM-2209	**Status:**	0.00
Approx Tape remaining:	5/10	**Error Code:**	0.00

Reference Standards:

	Air Flow			
	Manometer	**Orifice**	**Pressure:**	**Temperature:**
Make:	DeltaCal	DeltaCal	Fisher Scientific	Vaisala
Model:	DC1	DC1	FB 61291	HM70
Serial Number:	177246	177246	#130168457	T1640130
Calibration Expiration Date:	September 7, 2023	September 7, 2023	February 17, 2023	June 14, 2023

As found temperature and pressure:

Tolerance +/- 4°C		**Tolerance +/- 13.33 hPa**	
SHARP T1 °C:	-10.0	**SHARP P3 (hPa):**	935.000
Reference °C:	-11.0	**Reference (hPa):**	933.000
Difference °C:	-1.0	**Difference (hPa) :**	2.000

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

Tolerance +/- 4°C		**Tolerance +/- 13.33 hPa**	
SHARP T1 °C:	-10.0	**SHARP P3 (hPa):**	935.000
Reference °C:	-11.0	**Reference (hPa):**	933.000
Difference °C:	-1.0	**Difference :**	2.000

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 (%)	53.80	**Reference AirFlow (l/min)**	16.69
		Difference (l/min)	0.02

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 (%)	53.80	**Reference AirFlow (l/min)**	16.69
		Difference (l/min)	0.02

Inlet Assembly:

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

Comments:

Leak check: 16.58 vs 16.64, 0.06 < 0.80 lpm, passed.

Meteorological System Checklist

Date:	January 6, 2023		
Technician:	Alex Yakupov		
Station:	Tamarack / Audit time: 18:46 - 19:24		
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	18:58 - test with water and snow. 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 ml)

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

AMBIENT TEMPERATURE SENSOR CHECK

Parameter:	Temperature @ 2 metres
Reference Thermometer ID:	Vaisala HMP76B #T1640130, Exp. Date: Jun 14, 2023
Reference Temperature (°C):	-11.2
Station - Ambient Temperature (°C):	-11.6
Temperature Difference (°C):	0.4

BAROMETRIC PRESSURE SENSOR CHECK

Reference Barometer ID:	Fisher Scientific / FB 61291 / #130168457 / Exp. Date: Feb 17, 2023	
Reference Pressure - Units/Reading:	millibar	933
Station Pressure - Units/Reading:	millibar	932
Pressure Tolerance +/- 15% of error:	793 - 1073	0.11%

RELATIVE HUMIDITY (HYGROMETER) SENSOR CHECK

Reference Hygrometer ID:	Vaisala HMP76B #T1640130, Exp. Date: Jun 14, 2023	
Reference Hygrometer % RH- Reading:	86.00	
Station Hygrometer % RH- Reading:	92.00	
RH Tolerance +/- 15% of difference:	73.10 - 98.90	-7.0%

ANEMOMETER - WIND SPEED & WIND DIRECTION SENSOR CHECK

WIND SPEED		WIND DIRECTION	
Previous check date:	December 17, 2022	Previous check date:	December 17, 2022
Wind Speed Observed (kph):	1~10	Wind Direction Observed:	SW
Wind speed on Data Logger (kph):	1.9	Wind Direction on Data Logger:	SW
	Annual audit: Jul 26, 2022	Wind Direction Pass/Fail?:	Pass

Comments

Station (Trailer) temperature vs Reference gauge temperature: 22.3 vs 22.8, difference = 0.5 => 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

JANUARY 2023

Ambient Air Monitoring Calibration Report

- ST. LINA STATION-

CAL-LICA-202301-01250

Station Operation and Maintenance:
Bureau Veritas Canada

Data Validation and Report:
LICA / Bureau Veritas Canada

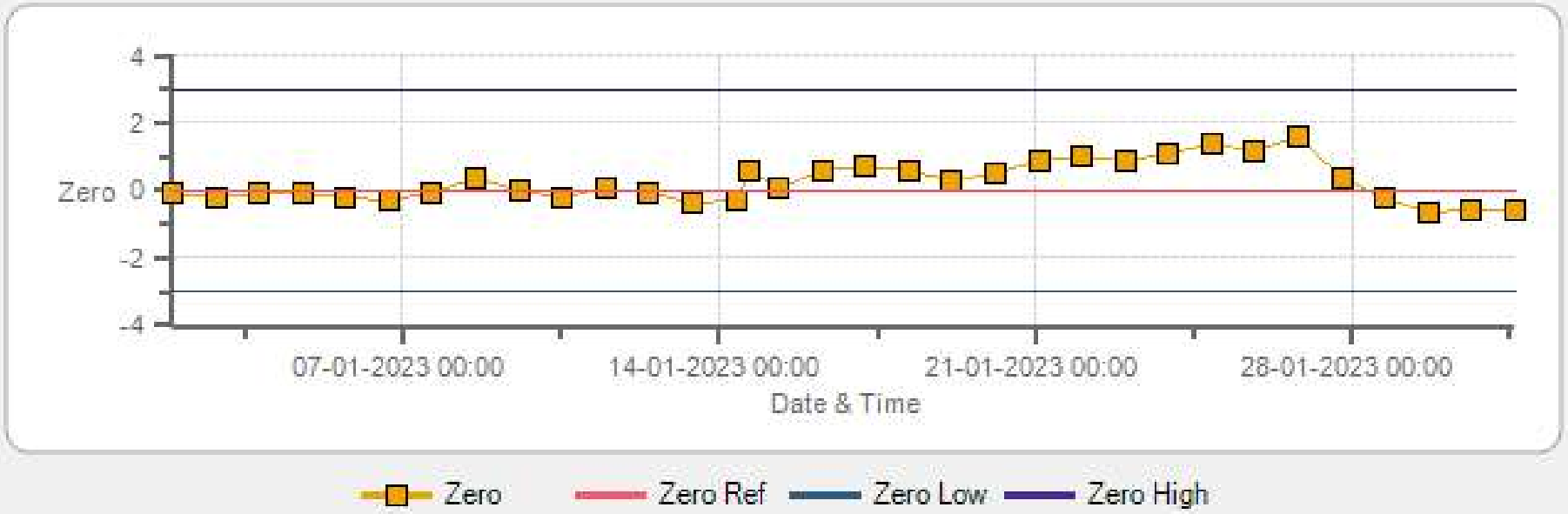
February 7, 2023

DAILY INTERNAL ZERO-SPAN CALIBRATION RECORDS

SO2[ppb] Calibration: St. Lina Monthly: 01-2023 Type: SpanAndZero - Zero

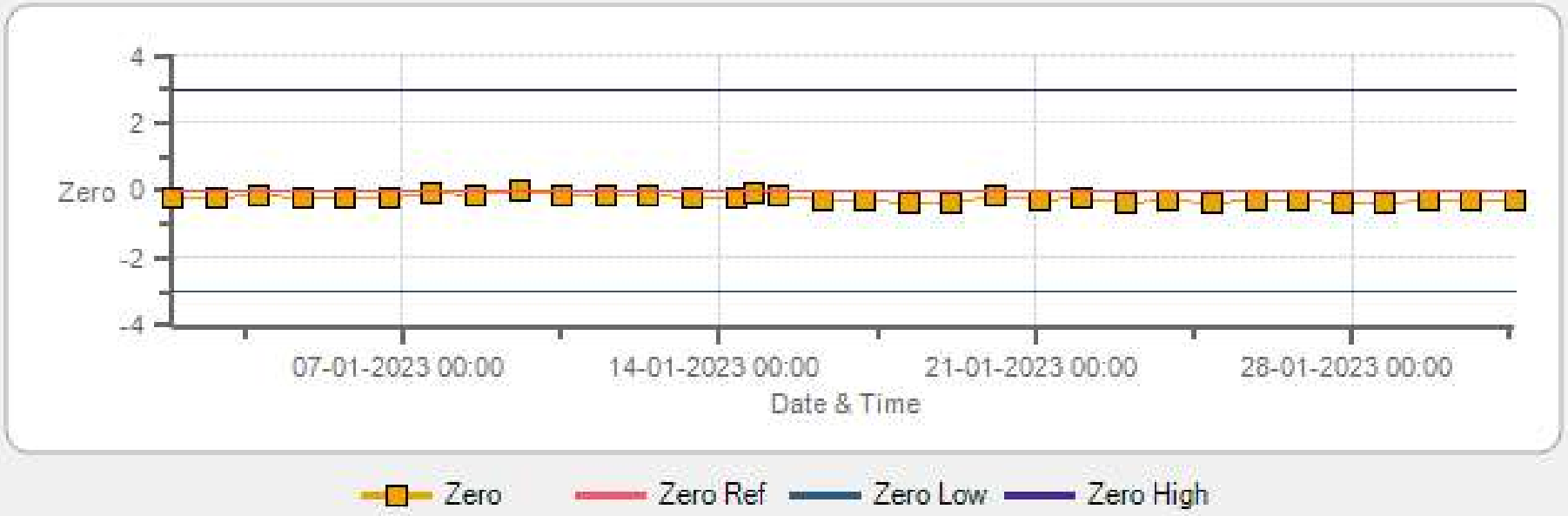
SO2[ppb] Calibration: St. Lina Monthly: 01-2023 Type: SpanAndZero - Span

H2S[ppb] Calibration: St. Lina Monthly: 01-2023 Type: SpanAndZero - Zero



H2S[ppb] Calibration: St. Lina Monthly: 01-2023 Type: SpanAndZero - Span

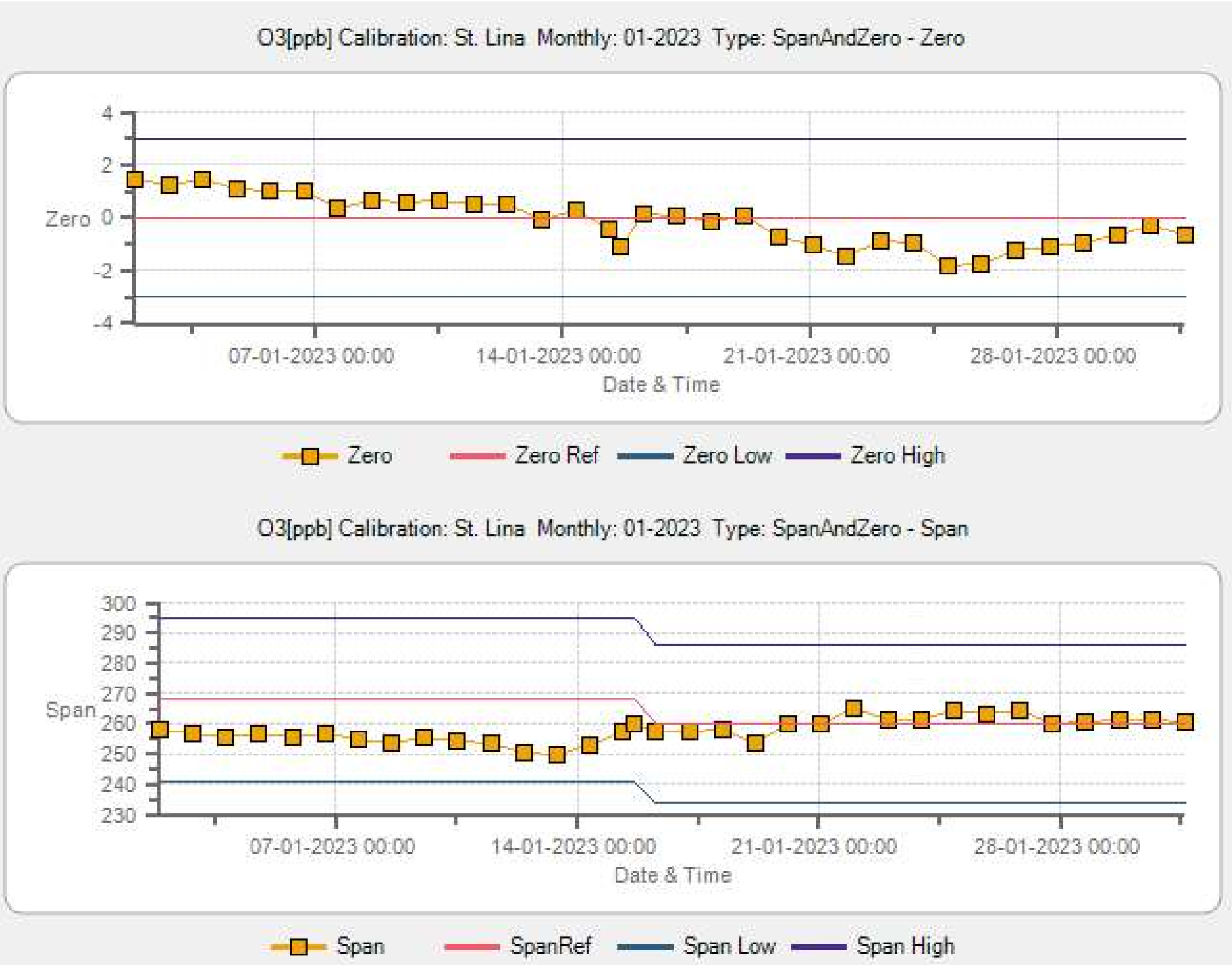
NOX[ppb] Calibration: St. Lina Monthly: 01-2023 Type: SpanAndZero - Zero



NOX[ppb] Calibration: St. Lina Monthly: 01-2023 Type: SpanAndZero - Span

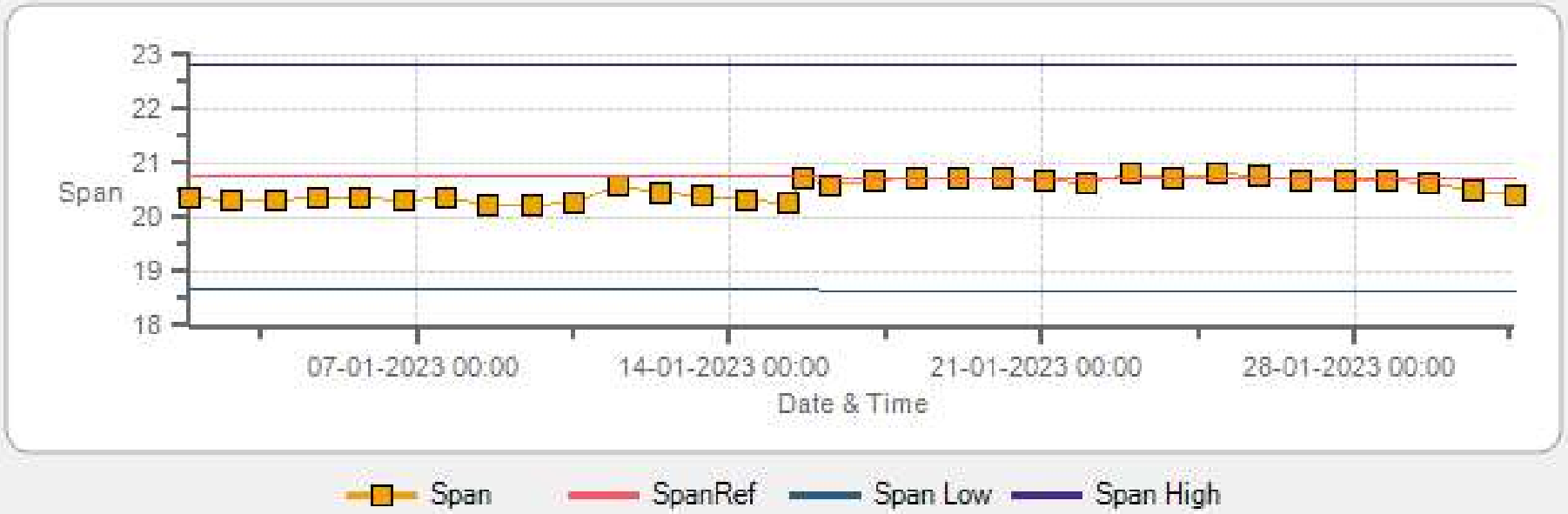
NO2[ppb] Calibration: St. Lina Monthly: 01-2023 Type: SpanAndZero - Zero

NO2[ppb] Calibration: St. Lina Monthly: 01-2023 Type: SpanAndZero - Span


O3[ppb] Calibration: St. Lina Monthly: 01-2023 Type: SpanAndZero - Zero
Zero
4
2
0
-2
-4
07-01-2023 00:00
14-01-2023 00:00
21-01-2023 00:00
28-01-2023 00:00
Date & Time
Zero
Zero Ref
Zero Low
Zero High
O3[ppb] Calibration: St. Lina Monthly: 01-2023 Type: SpanAndZero - Span
Span
300
290
280
270
260
250
240
230
07-01-2023 00:00
14-01-2023 00:00
21-01-2023 00:00
28-01-2023 00:00
Date & Time
Span
SpanRef
Span Low
Span High

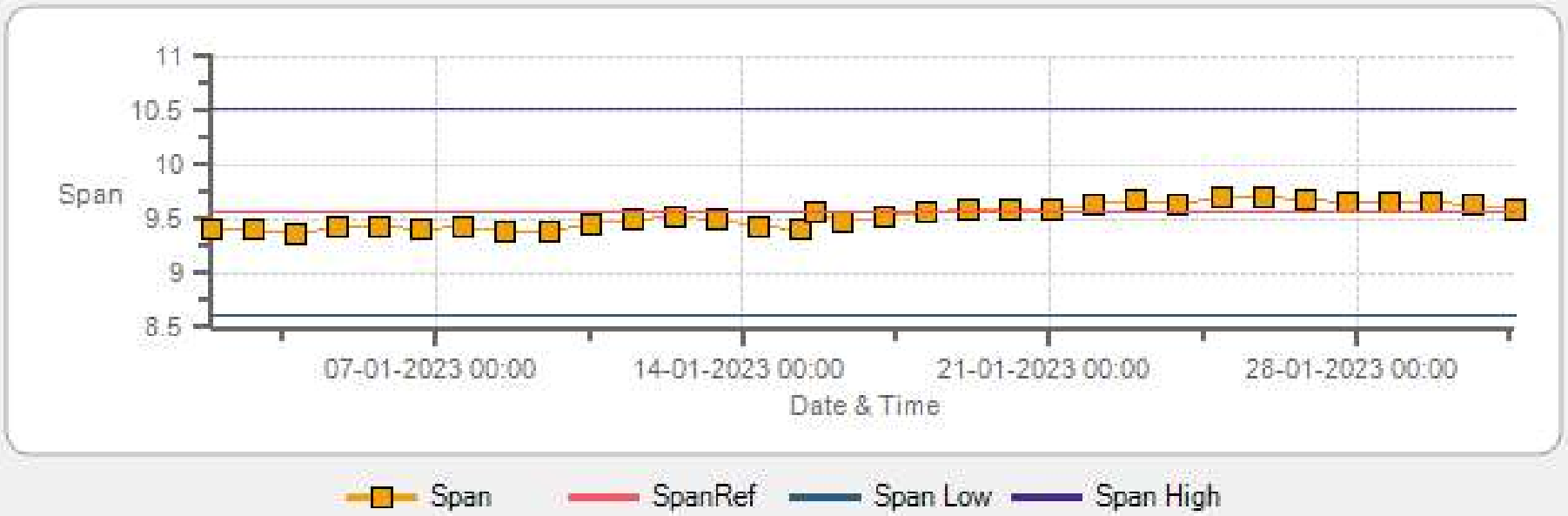
THC55[ppm] Calibration: St. Lina Monthly: 01-2023 Type: SpanAndZero - Zero

THC55[ppm] Calibration: St. Lina Monthly: 01-2023 Type: SpanAndZero - Span



CH4[ppm] Calibration: St. Lina Monthly: 01-2023 Type: SpanAndZero - Zero

CH4[ppm] Calibration: St. Lina Monthly: 01-2023 Type: SpanAndZero - Span



NMHC[ppm] Calibration: St. Lina Monthly: 01-2023 Type: SpanAndZero - Zero

NMHC[ppm] Calibration: St. Lina Monthly: 01-2023 Type: SpanAndZero - Span

MULTI-POINT CALIBRATION RECORDS

SO2 Analyzer Calibration by Dilution

DATE:	14-Jan-2023	PREVIOUS CALIBRATION DATE:	11-Dec-2022
PARAMETER:	SO2	PREVIOUS CORRECTION FACTOR:	1.001
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	St. Lina	BAROMETRIC (mBar):	906
PURPOSE	Routine	START TIME (MST):	12:08
PERFORMED BY:	Alex Yakupov	END TIME (MST):	16:29

ANALYZER:

MAKE/MODEL	Thermo 43I-TLE	RANGE	500 ppb
SERIAL #	1180930030	FLOW (mL/min)	428
INITIAL		FINAL	
BKG/OFFSET	5.06	BKG/OFFSET	5.26
COEF/SLOPE	1.216	COEF/SLOPE	1.23
Expected (reference) Value	338.8	Expected (reference) Value	348

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010	MODEL:	T701
ID:	17100415	ID:	132
MFC CALIBRATION DATE:	02-Sep-2022	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):	2000	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	369.8	375.2	1.014	1.000
4982	17.60	5000	177.41	n/a	177.3	n/a	1.001
4990	8.80	4999	88.72	n/a	87.7	n/a	1.012

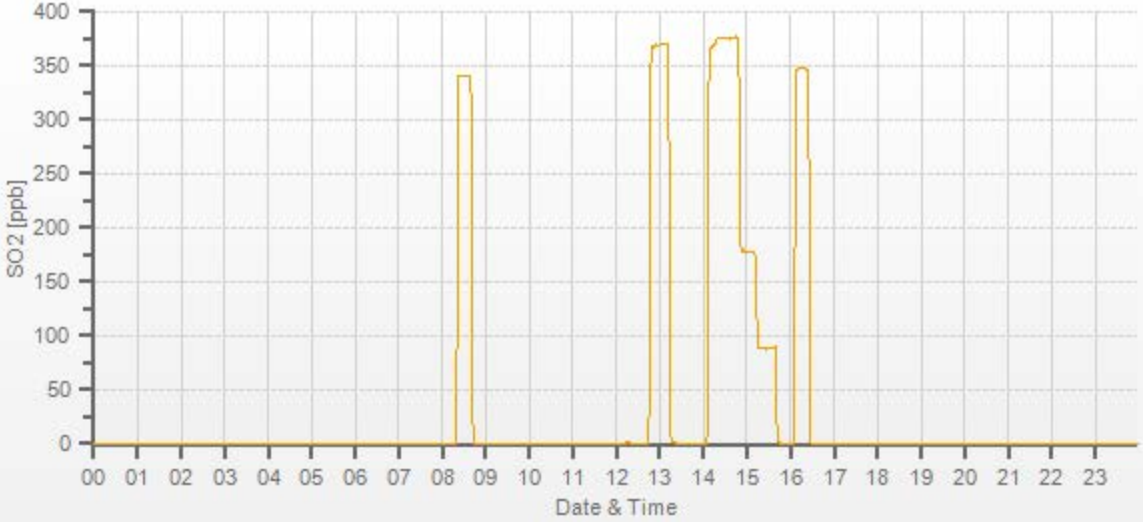
LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.001	-0.1%

COMMENTS:

Sample inlet filter was changed.

SO2[ppb] Station: St. Lina Daily: 14-01-2023 Type: AVG 1 Min. [1 Min.]



H2S Analyzer Calibration by Dilution

DATE:	14-Jan-2023	PREVIOUS CALIBRATION DATE:	10-Dec-2022
PARAMETER:	H2S	PREVIOUS CORRECTION FACTOR:	0.996
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	St. Lina	BAROMETRIC (mBar):	906
PURPOSE	Routine	START TIME (MST):	12:07
PERFORMED BY:	Alex Yakupov	END TIME (MST):	16:29

ANALYZER:

MAKE/MODEL	Thermo 450i	RANGE	100 ppb
SERIAL #	CM18010058	FLOW (mL/min)	789
INITIAL		FINAL	
BKG/OFFSET	54.7	BKG/OFFSET	53.6
COEF/SLOPE	1.017	COEF/SLOPE	0.995
Expected (reference) Value	85	Expected (reference) Value	89.9

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010 D	MODEL:	T701
ID:	11900613	ID:	132
MFC CALIBRATION DATE:	21-Oct-2022	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	EY 0002287	HIGH ID	n/a
CONC (ppm):	10.10	EXPIRY DATE	n/a
CYLINDER (psi):	1400	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:	12:09	SO2 Conc (ppb)	n/a
END TIME:	12:24	Analyzer Response (ppb)	n/a

CALIBRATION:

FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
			ACTUAL	INDICATED		Initial	Final
DILUENT	GAS	TOTAL		Initial	Final		
7500		7500	0.00	0.1	0		
7442	57.90	7500	77.97	79.9	78.1	0.977	0.998
7472	28.20	7500	37.98	n/a	38.2	n/a	0.994
7486	14.10	7500	18.99	n/a	18.7	n/a	1.015

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.003	-0.1%

COMMENTS:

Sample inlet filter was changed.

H2S[ppb] Station: St. Lina Daily: 14-01-2023 Type: AVG 1 Min. [1 Min.]

NOx Calibration by Dilution/Gas-Phase Titration

CALIBRATION:

DATE:	14-Jan-2023	PREVIOUS CALIBRATION DATE:	11-Dec-2022
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	St. Lina	BAROMETRIC (mBar):	906
PURPOSE	Routine	START TIME (MST):	12:09
PERFORMED BY:	Alex Yakupov	END TIME (MST):	18:07

ANALYZER:

MAKE/MODEL:	Thermo 42i	PREVIOUS CF.	
SERIAL #:	1180930029	NOx	1.000
FLOW (mL/min)	810	NO	1.000
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):	2000	LOW ID:	n/a
MFC CALIBRATION DATE:	02-Sep-2022	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:	4.3	4	n/a	BKG/OFFSET:	4.3	4.1	n/a
SLOPE/COEF/CE:	1.003	0.883	1	SLOPE/COEF/CE:	1.009	0.86	1

EXPECTED (REFERENCE) VALUE:

INITIAL	NOx	NO	NO2	FINAL	NOx	NO	NO2
	309.4	1.5	307.9		320.6	1.5	319.1

CALIBRATION PARAMETERS:

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

NO/NOx CALIBRATION:

FLOW RATE (mL/min)			CONCENTRATION (ppb)									CORRECTION FACTOR (CF.)					
			CALCULATED			INITIAL INDICATED			FINAL INDICATED			INITIAL			FINAL		
DILUENT	GAS	TOTAL	NO	NOx	NO2	NO	NOx	NO2	NO	NOx	NO2	NO	NOx	NO2	NO	NOx	NO2
5000		5000	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0						
4961	37.20	4998	380.3	384.1	3.7	389.7	391.4	1.8	379.3	382.8	3.6	0.976	0.981		1.003	1.003	
4982	17.60	5000	179.9	181.6	1.8	n/a	n/a	n/a	179.6	181.5	1.9	n/a	n/a		1.002	1.001	
4990	8.80	4999	90.0	90.8	0.9	n/a	n/a	n/a	89.8	90.7	0.9	n/a	n/a		1.002	1.001	

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	378.0	381.5	3.5				
AS-FOUND HIGH	37.20	4998	240	130.0	382.3	252.2	248	248.7	0.997	100.28%
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	259.8	382.3	122.5	118.2	119	0.993	100.68%
LOW	37.20	4998	45	330.5	382.9	52.4	47.5	48.9	0.971	102.95%
NO2 adjustment not required.									AVERAGE:	101.30%

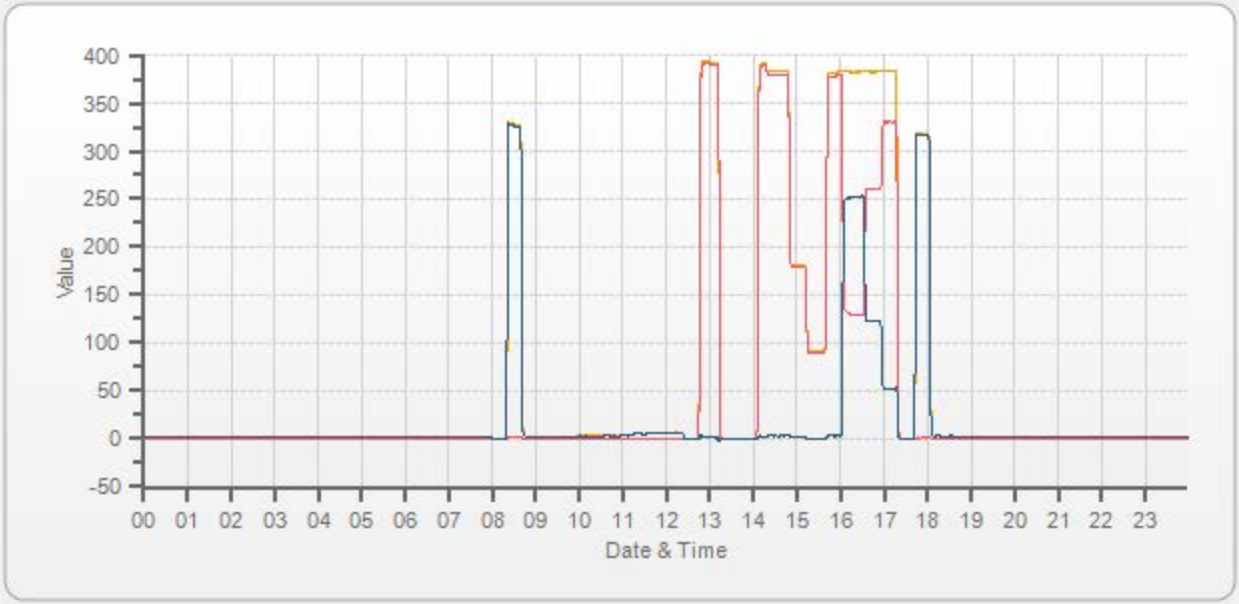
LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
NO	1.000	0.997	0.02%
NOx	1.000	0.997	0.03%
NO2	1.000	0.997	0.28%

COMMENTS:

Sample inlet filter was changed.

Station: St. Lina Daily: 14-01-2023 Type: AVG 1 Min. [1 Min.]



Ozone Calibration by Photometer (Varying UV Lamp)

DATE:	15-Jan-2023	PREVIOUS CALIBRATION DATE:	11-Dec-2022
PARAMETER:	O3	PREVIOUS CORRECTION FACTOR:	1.001
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	St. Lina	BAROMETRIC (mBar):	906
PURPOSE	Routine	START TIME (MST):	11:53
PERFORMED BY:	Alex Yakupov	END TIME (MST):	15:54

ANALYZER:

MAKE/MODEL	Thermo 49iQ	RANGE	500 ppb
SERIAL #	12208316586	FLOW (mL/min)	1310
INITIAL		FINAL	
BKG/OFFSET	0.3	BKG/OFFSET	0.3
COEF/SLOPE	1.018	COEF/SLOPE	1.023
Expected (reference) Value	267.9	Expected (reference) Value	260.1

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010 D	MODEL:	T701
ID:	11900613	ID:	132
MFC CALIBRATION DATE:	21-Oct-2022	OXIDIZER ID:	n/a
CALIBRATION METHOD:		Photometer (Varying UV Lamp)	
GPT DATE:	n/a	GPT END TIME:	n/a

CALIBRATION PARAMETERS:

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

CALIBRATION:

FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
			ACTUAL	INDICATED		Initial	Final
DILUENT	GAS	TOTAL		Initial	Final		
5000		5000	0.0	0.2	0.0		
5000		5000	378.0	375.5	377.7	1.007	1.001
5000		5000	180.0	n/a	181.3	n/a	0.993
5000		5000	60.0	n/a	60.3	n/a	0.995

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: 15-01-2023 Type: AVG 1 Min. [1 Min.]
O3 [ppb]
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:	15-Jan-2023	PREVIOUS CALIBRATION DATE:	10-Dec-2022
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	St. Lina	BAROMETRIC (mBar):	906
PURPOSE	Routine	START TIME (MST):	11:54
PERFORMED BY:	Alex Yakupov	END TIME (MST):	15:54

ANALYZER:

VALUE	MAKE/MODEL	SERIAL	FLOW (mL/min)
	Thermo 55i	1180030034	1020
PARAMETER:	CH4	NMHC	THC
RANGE (ppm):	20	20	40
PREVIOUS CF:	1.001	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):	1600		LOW ID:	n/a
MFC CALIBRATION DATE:	02-Sep-2022	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
	9.57	11.20	20.76		9.56	11.16	20.73

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	14.28	13.20	27.48	14.49	13.53	28.02	1.016	1.023	1.019	1.001	0.998	1.000
3063	37.30	3100	7.26	6.75	14.01	n/a	n/a	n/a	7.29	6.82	14.11	n/a	n/a	n/a	0.995	0.990	0.993
3081	18.60	3100	3.62	3.37	6.98	n/a	n/a	n/a	3.69	3.48	7.16	n/a	n/a	n/a	0.980	0.967	0.975

LINEAR REGRESSION ANALYSIS:

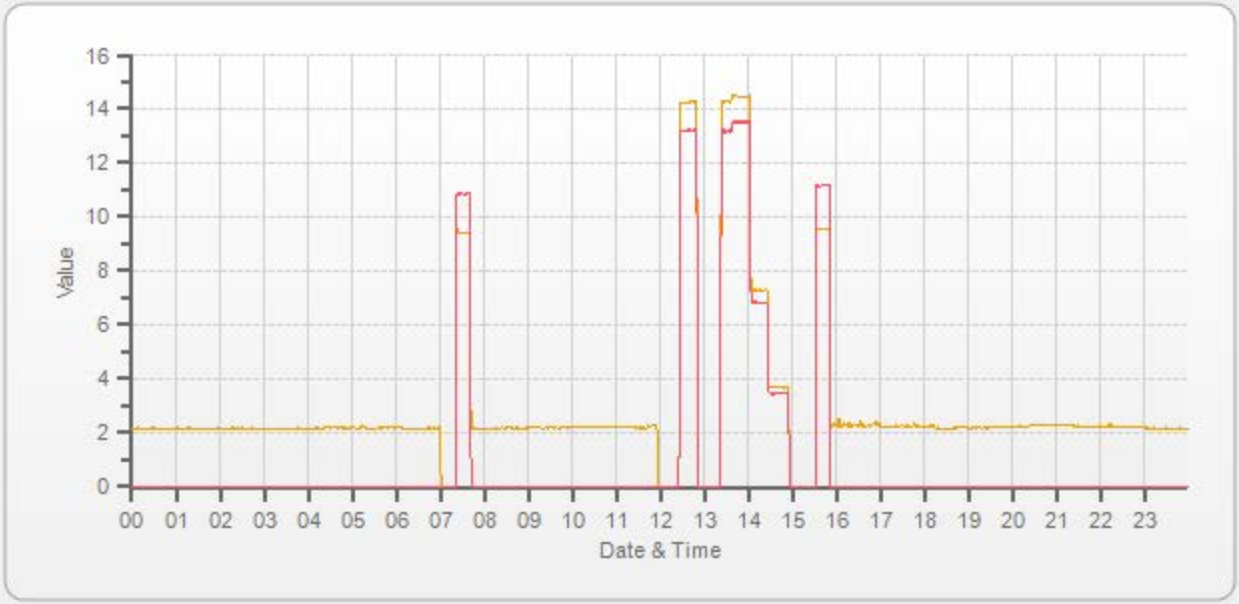
	CORRELATION	SLOPE	INTERCEPT
CH4	1.000	0.997	0.2%
NMHC	1.000	1.000	0.3%
THC	1.000	0.999	0.2%

Comments:

Sample inlet filter was changed.

Use Zero Chrom? **Yes**

Station: St. Lina Daily: 15-01-2023 Type: AVG 1 Min. [1 Min.]



Thermo 5030i SHARP Monitor Monthly Check

Date:	January 15, 2023	**Performed By/Reviewer:**	Alex Yakupov / Chris Wesson
Company:	LICA	**Start Time (mst):**	15:09
Station Name/Location:	St. Lina	**End Time (mst):**	16:24
Previous Audit Date:	December 10, 2022	**Calibration Purpose:**	routine monthly
Parameter:	PM 2.5	**Weather Conditions:**	A few clouds

SHARP 5030i Information and Status:

Serial Number: CM 17091001 **Filter Tape Counter** 26

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	February 17, 2023	June 14, 2023

Ambient Temperature (°C)

	Reference	SHARP	Difference
#1	-8.60	-8.9	0.3

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

Ambient Relative Humidity (%RH)

As Found:

	Reference	SHARP	Difference
#1	92.10	90.5	1.6

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

Barometric Pressure (mmHg)

As Found:

	Reference	SHARP	Difference
#1	681.0	680.5	0.5

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

Flow Audit (L/min)

As Found:

	Reference	SHARP
#1	16.70	16.67
#2	16.71	16.67
#3	16.71	16.67
Average	16.71	16.67

% Difference -0.22%

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	16.71	16.67	0.04	16.59	16.63	-0.04
					LEAK RATE:	**-0.08**

Leak Limit: 0.80 L/min

Meteorological System Checklist

Date:	January 15, 2023
Technician:	Alex Yakupov / Audit time: 16:31 - 16:28
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	17:32 - tested with snow. The gauge does not respond. Not able to identify the problem.
Is the screen on the housing? (screen should be on between July and September	no	Further troubleshooting is required.
Is the housing clean?	yes	
Is the area around the housing clean and free from obstacles?	yes	

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

# of Tips	Data Logger Response (ml):	Manual Specification = +/- 0.2 ml
1	0.00	FALSE

AMBIENT TEMPERATURE SENSOR CHECK

Parameter:	Temperature @ 2 metres
Reference Thermometer ID:	Vaisala / HM70 / #T1640130/ Jun 14, 2023
Reference Temperature (°C):	-7.8
Station - Ambient Temperature (°C):	-8.5
Temperature Difference (°C):	0.7

BAROMETRIC PRESSURE SENSOR CHECK

Reference Barometer ID:	Fisher Scientific #130168457, Exp. Date: Feb 17, 2023	
Reference Pressure - Units/Reading:	millibar	906
Station Pressure - Units/Reading:	millibar	907
Pressure Tolerance +/- 15% of error:	770 - 1042	-0.11%

RELATIVE HUMIDITY (HYGROMETER) SENSOR CHECK

Reference Hygrometer ID:	Vaisala / HM70 / #T1640130/ Jun 14, 2023	
Reference Hygrometer % RH- Reading:	89.00	
Station Hygrometer % RH- Reading:	92.00	
RH Tolerance +/- 15% of difference:	75.65 - 102.35	-3.4%

ANEMOMETER - WIND SPEED & WIND DIRECTION SENSOR CHECK

WIND SPEED		WIND DIRECTION	
Previous check date:	December 11, 2022	Previous check date:	December 11, 2022
Wind Speed Observed (kph):	1-10	Wind Direction Observed:	SE
Wind speed on Data Logger (kph):	3.6	Wind Direction on Data Logger:	SE
	Annual audit: Jul 22, 2022	Wind Direction Pass/Fail?:	Pass

Comments

Station (Trailer) temperature vs Reference gauge temperature: 22.3 vs 22.6

Meteorological System Checklist

Date:	January 19, 2023		
Technician:	Alex Yakupov / Maintenance time 10:47 - 11:52		
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	
Is the screen on the housing? (screen should be on between July and September	no	11:46 and 11:52 test with snow and water. 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 ml)

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

Comments

Loose negative cable was fixed at the ADAM side. Water and snow test were completed. Battery was renewed. Issue fixed.

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

JANUARY 2023

Ambient Air Monitoring Calibration Report

- LAC LA BICHE STATION-

CAL-LICA-202301-01690

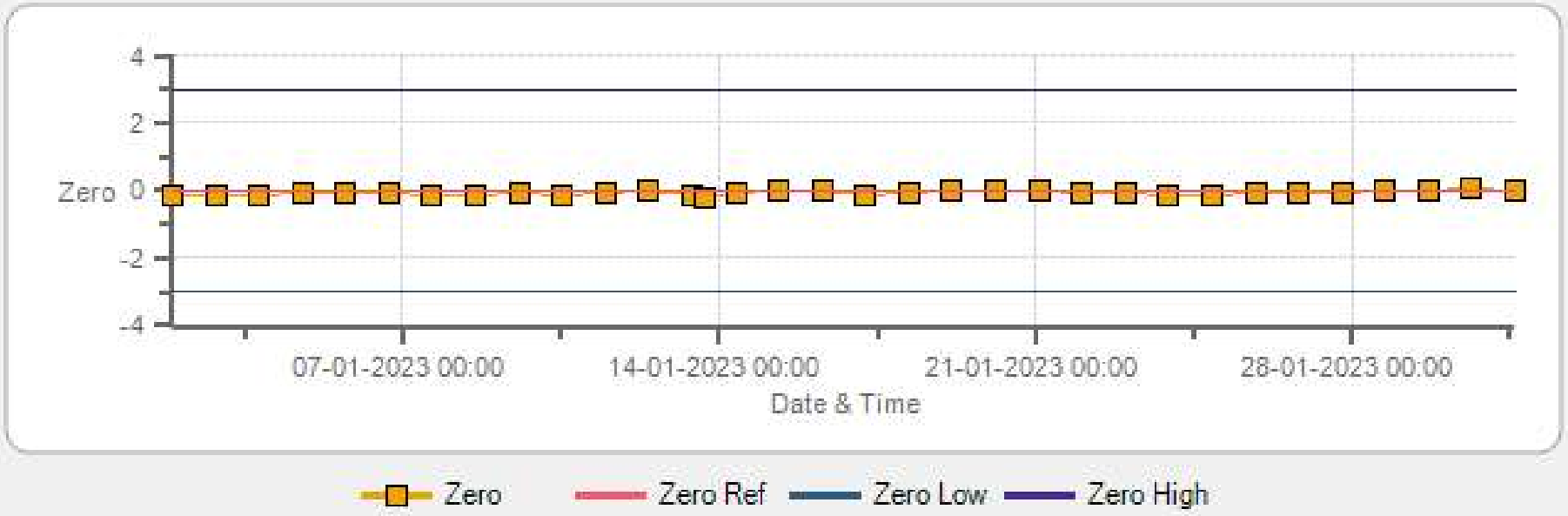
Station Operation and Maintenance:
Bureau Veritas Canada

Data Validation and Report:
LICA / Bureau Veritas Canada

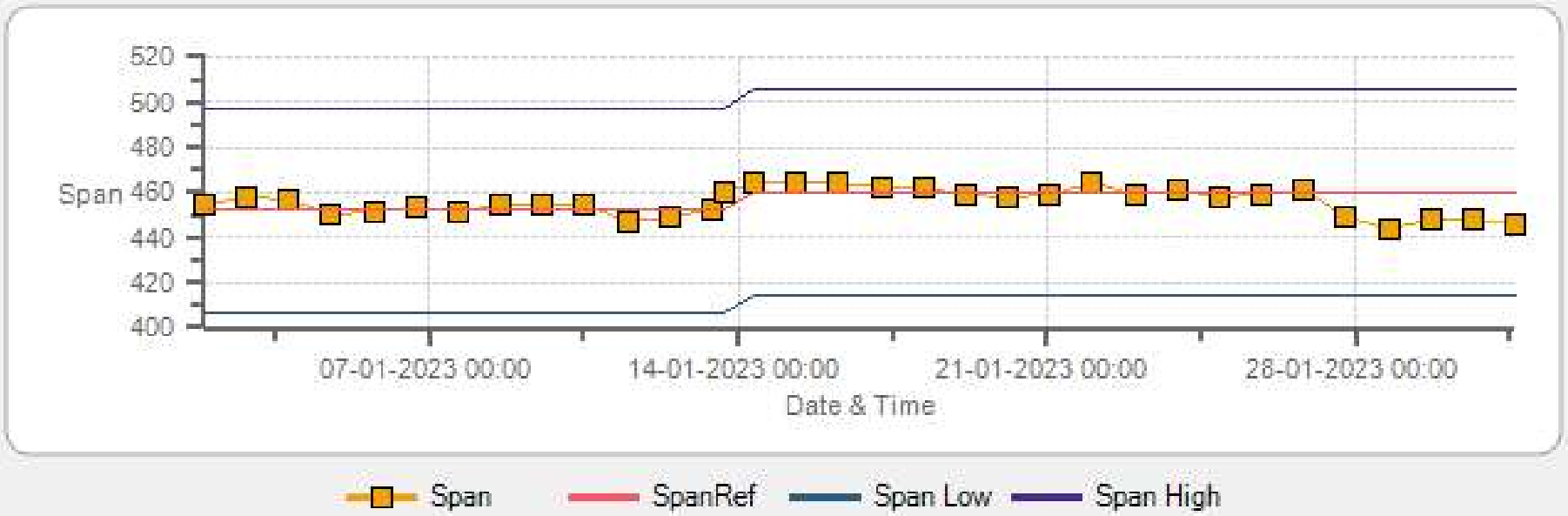
February 7, 2023

DAILY INTERNAL ZERO-SPAN CALIBRATION RECORDS

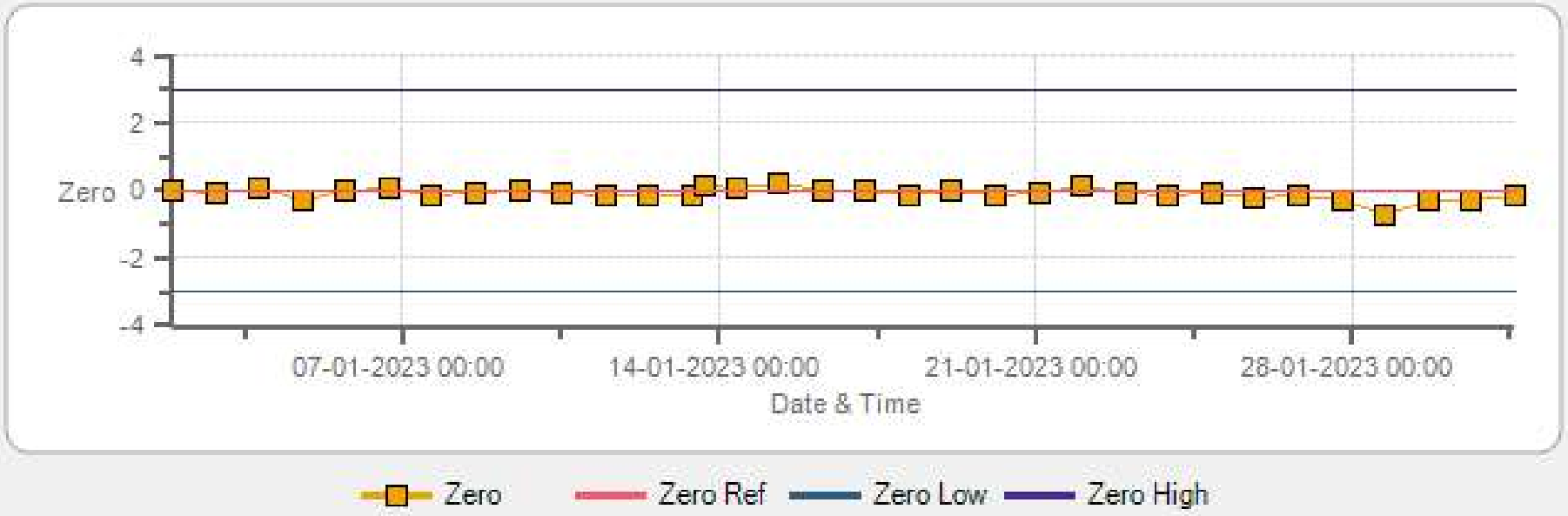
SO2[ppb] Calibration: Lac La Biche Monthly: 01-2023 Type: SpanAndZero - Zero



SO2[ppb] Calibration: Lac La Biche Monthly: 01-2023 Type: SpanAndZero - Span

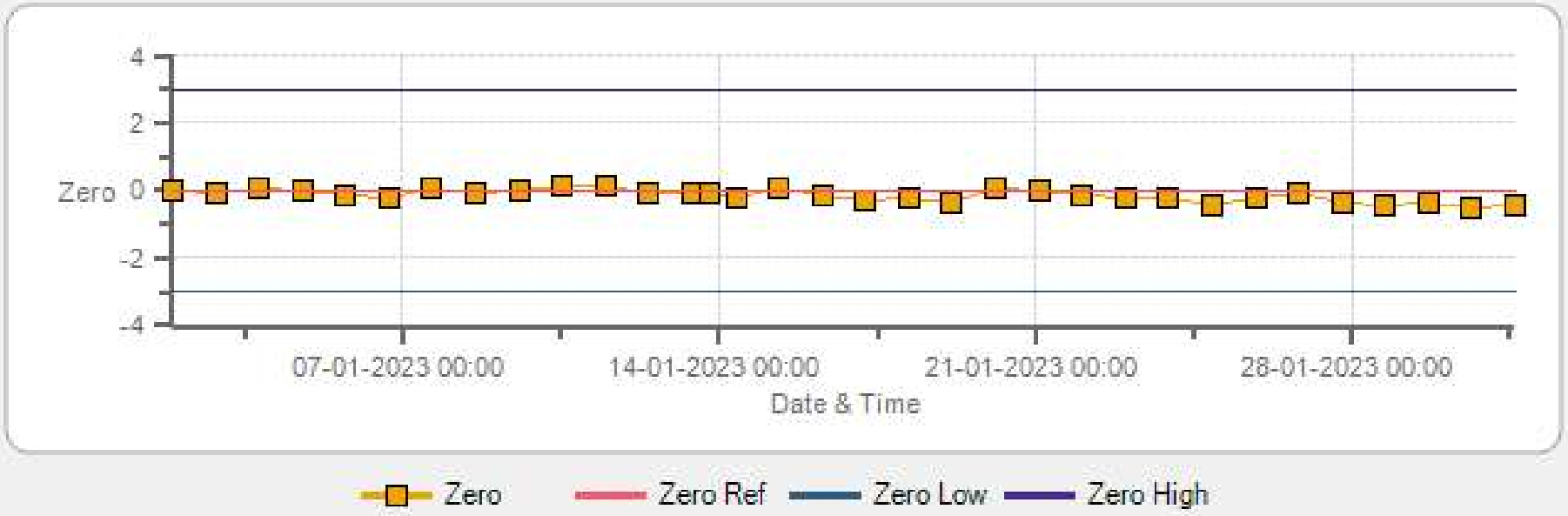


H2S[ppb] Calibration: Lac La Biche Monthly: 01-2023 Type: SpanAndZero - Zero

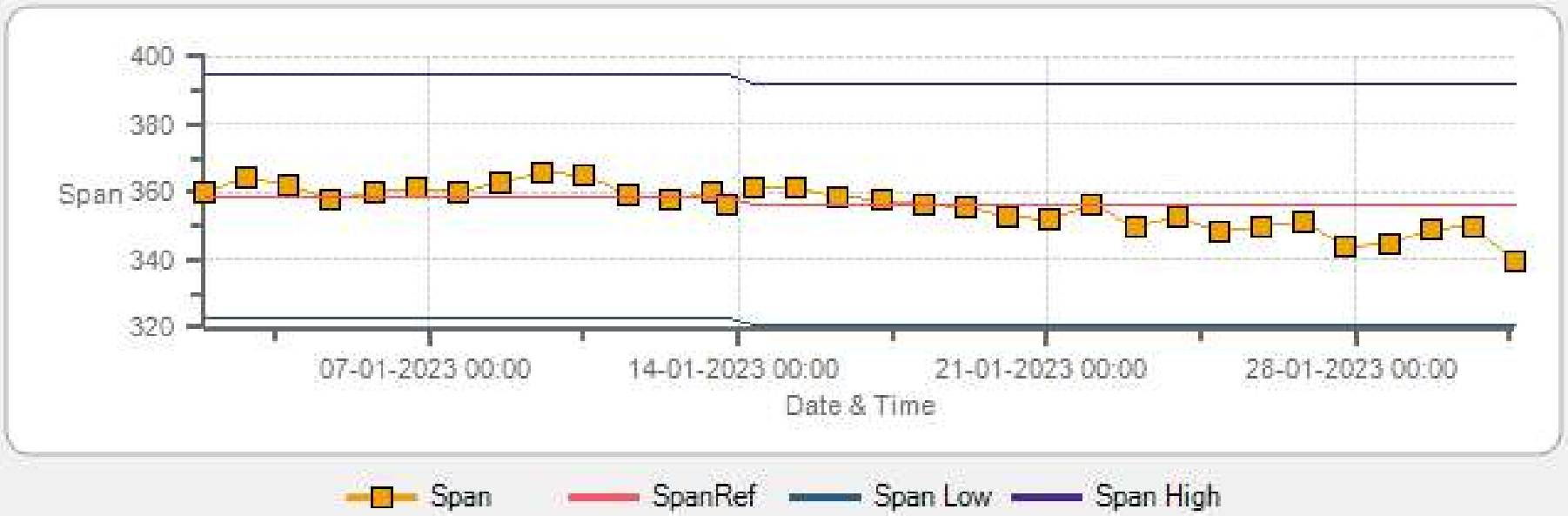


H2S[ppb] Calibration: Lac La Biche Monthly: 01-2023 Type: SpanAndZero - Span

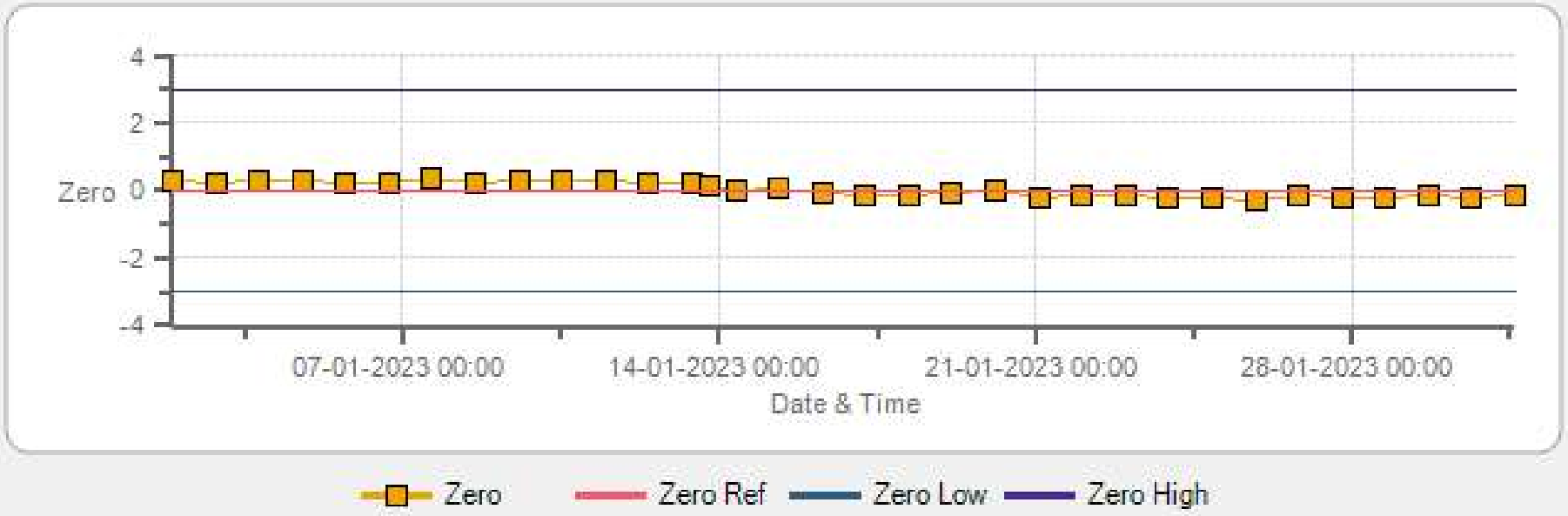
NOX[ppb] Calibration: Lac La Biche Monthly: 01-2023 Type: SpanAndZero - Zero



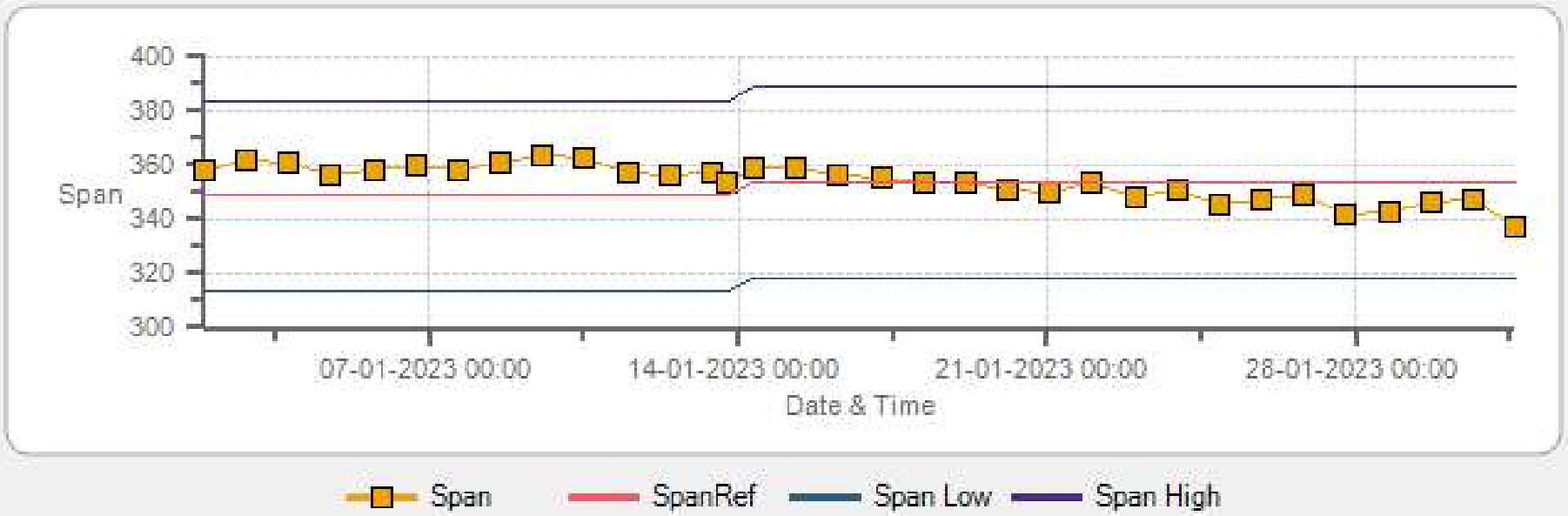
NOX[ppb] Calibration: Lac La Biche Monthly: 01-2023 Type: SpanAndZero - Span

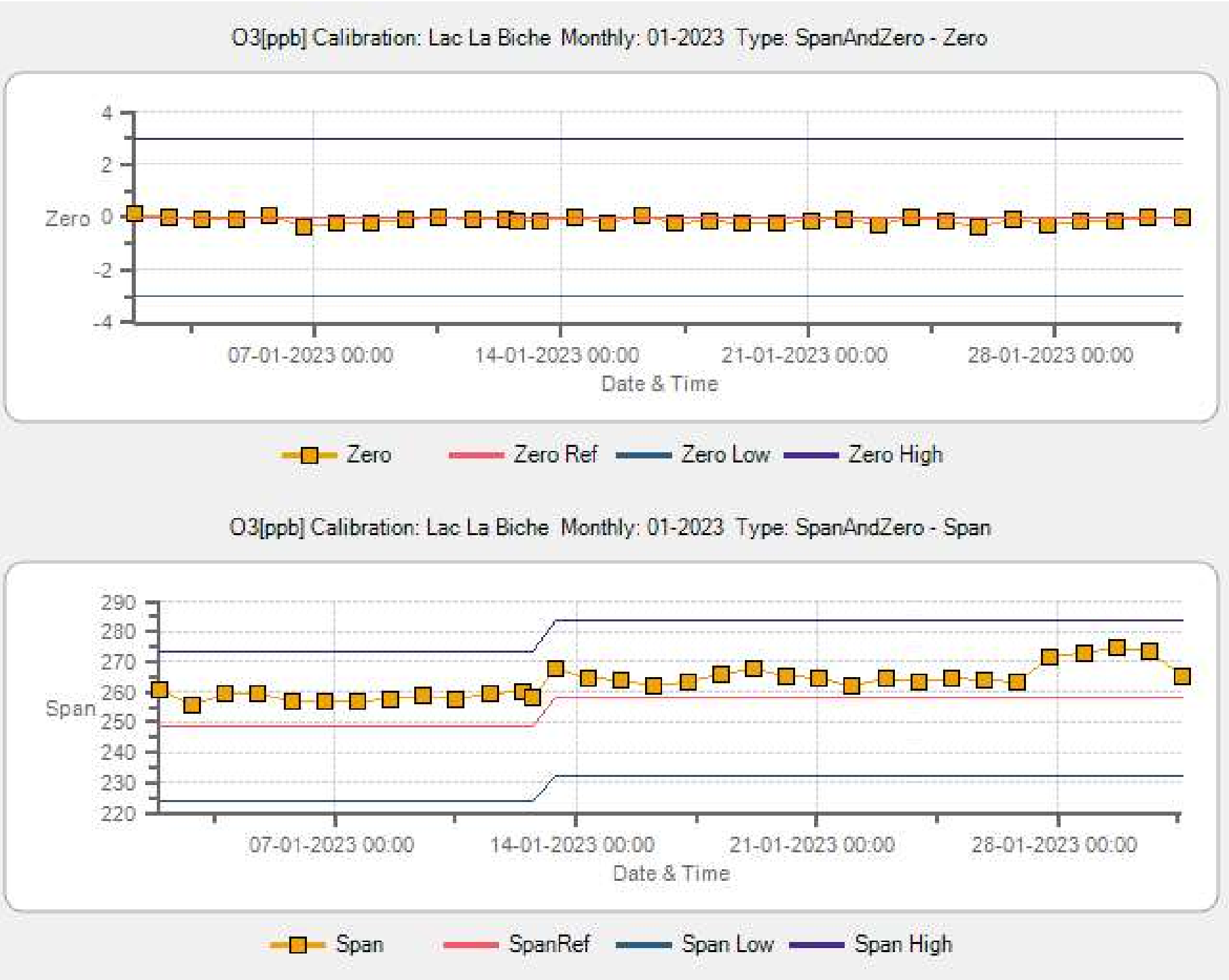


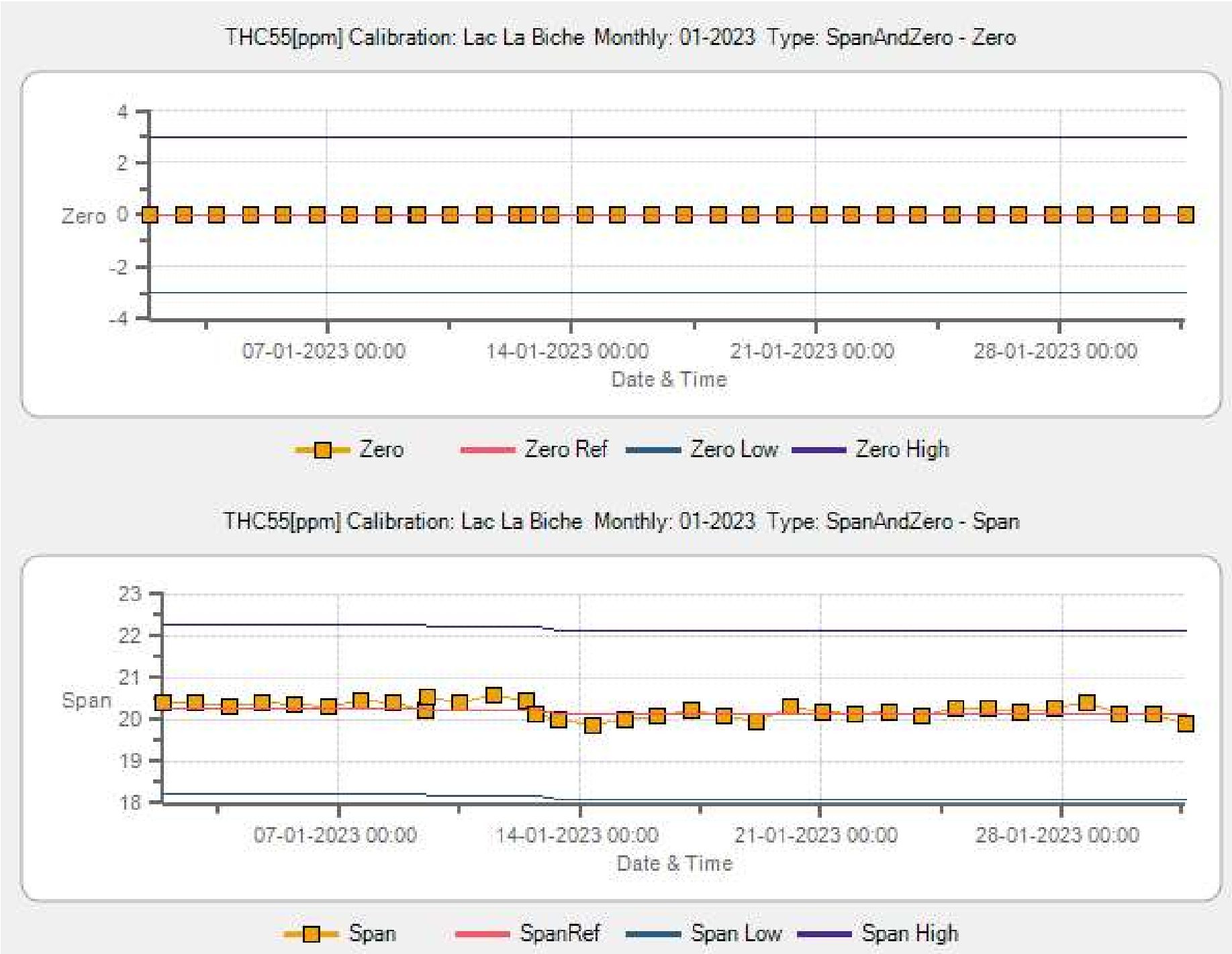
NO2[ppb] Calibration: Lac La Biche Monthly: 01-2023 Type: SpanAndZero - Zero



NO2[ppb] Calibration: Lac La Biche Monthly: 01-2023 Type: SpanAndZero - Span

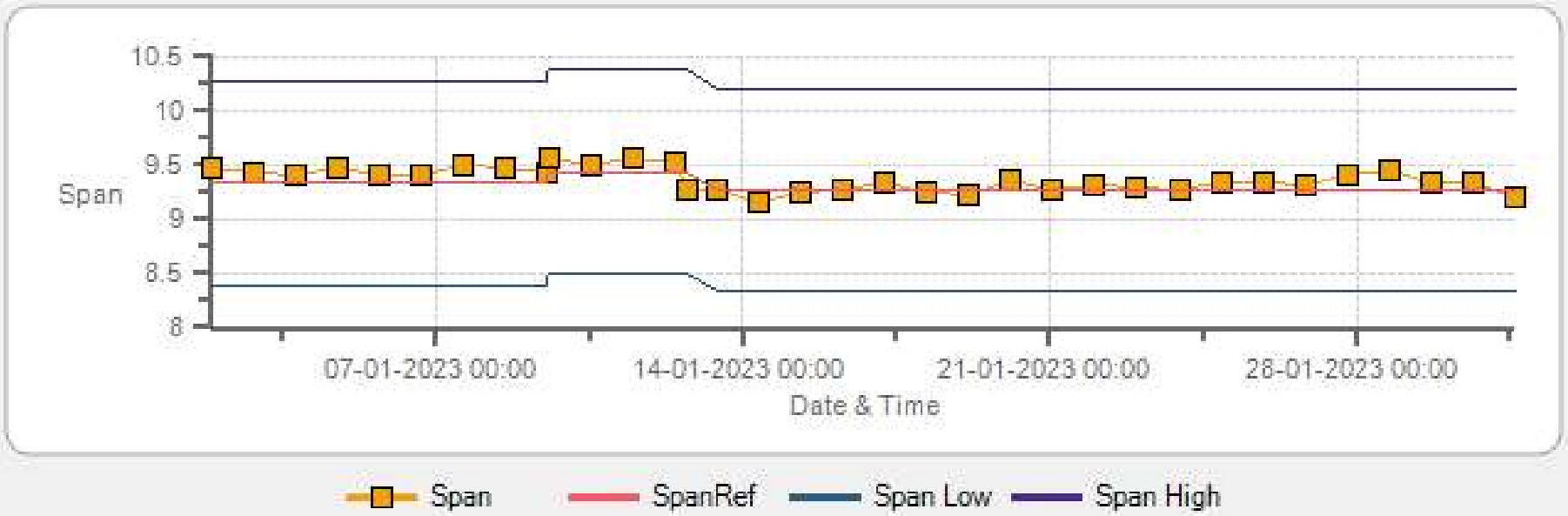



O3[ppb] Calibration: Lac La Biche Monthly: 01-2023 Type: SpanAndZero - Zero
4
2
Zero 0
-2
-4
07-01-2023 00:00
14-01-2023 00:00
21-01-2023 00:00
28-01-2023 00:00
Date & Time
Zero
Zero Ref
Zero Low
Zero High
O3[ppb] Calibration: Lac La Biche Monthly: 01-2023 Type: SpanAndZero - Span
290
280
270
260
Span 250
240
230
220
07-01-2023 00:00
14-01-2023 00:00
21-01-2023 00:00
28-01-2023 00:00
Date & Time
Span
SpanRef
Span Low
Span High


THC55[ppm] Calibration: Lac La Biche Monthly: 01-2023 Type: SpanAndZero - Zero
4
2
Zero 0
-2
-4
07-01-2023 00:00
14-01-2023 00:00
21-01-2023 00:00
28-01-2023 00:00
Date & Time
Zero
Zero Ref
Zero Low
Zero High
THC55[ppm] Calibration: Lac La Biche Monthly: 01-2023 Type: SpanAndZero - Span
23
22
21
Span
20
19
18
07-01-2023 00:00
14-01-2023 00:00
21-01-2023 00:00
28-01-2023 00:00
Date & Time
Span
SpanRef
Span Low
Span High

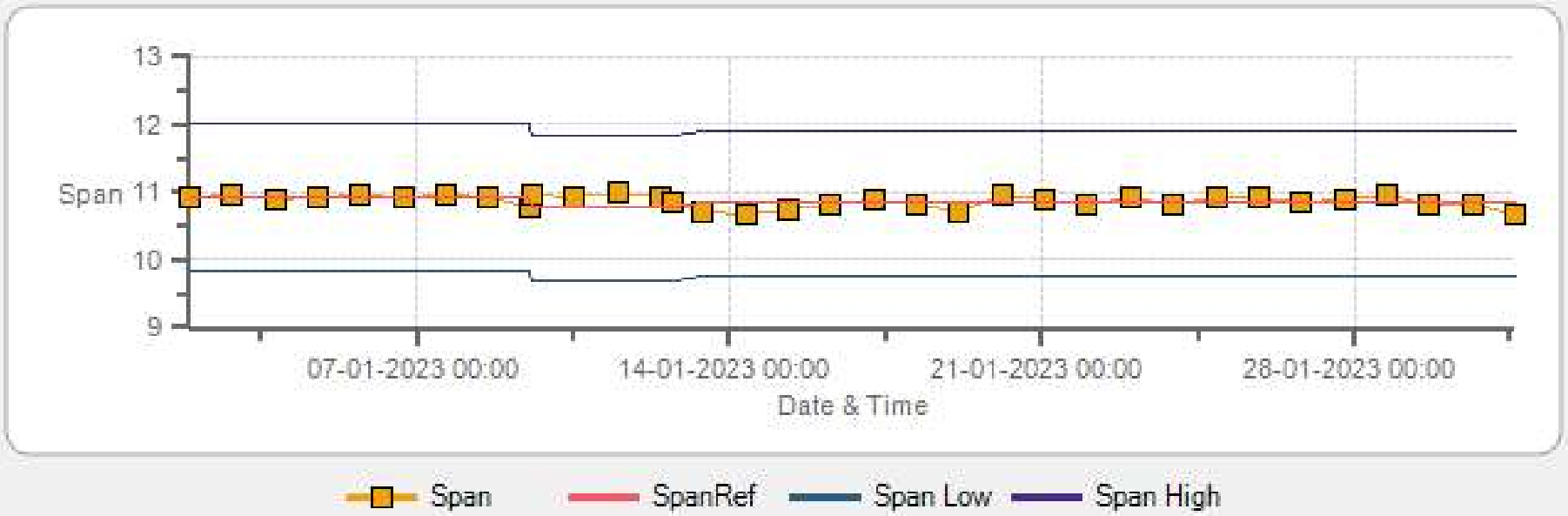
CH4[ppm] Calibration: Lac La Biche Monthly: 01-2023 Type: SpanAndZero - Zero

CH4[ppm] Calibration: Lac La Biche Monthly: 01-2023 Type: SpanAndZero - Span



NMHC[ppm] Calibration: Lac La Biche Monthly: 01-2023 Type: SpanAndZero - Zero

NMHC[ppm] Calibration: Lac La Biche Monthly: 01-2023 Type: SpanAndZero - Span



MULTI-POINT CALIBRATION RECORDS

SO2 Analyzer Calibration by Dilution

DATE:	13-Jan-2023	PREVIOUS CALIBRATION DATE:	06-Dec-2022
PARAMETER:	SO2	PREVIOUS CORRECTION FACTOR:	1.002
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	Lac La Biche	BAROMETRIC (mBar):	942
PURPOSE	Routine	START TIME (MST):	12:03
PERFORMED BY:	Alex Yakupov	END TIME (MST):	16:24

ANALYZER:

MAKE/MODEL	Thermo 43I-TLE	RANGE	500 ppb
SERIAL #	1180320043	FLOW (mL/min)	455
INITIAL		FINAL	
BKG/OFFSET	6.76	BKG/OFFSET	6.76
COEF/SLOPE	1.185	COEF/SLOPE	1.196
Expected (reference) Value	452.2	Expected (reference) Value	460

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010	MODEL:	T701
ID:	26801218	ID:	132
MFC CALIBRATION DATE:	02-Sep-2022	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):	2000	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	-0.15	0		
4961	37.20	4998	375.13	370.13	375.6	1.013	0.999
4982	17.60	5000	177.41	n/a	176.76	n/a	1.004
4990	8.80	4999	88.72	n/a	87.22	n/a	1.017

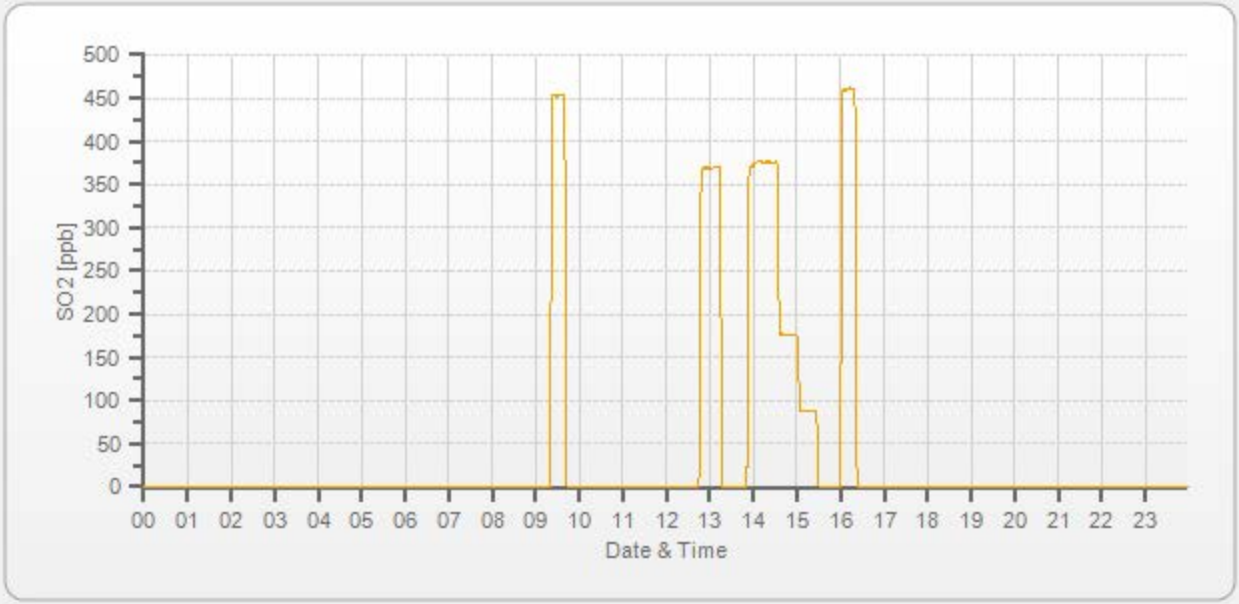
LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.003	-0.2%

COMMENTS:

Sample inlet filter was changed.

SO2[ppb] Station: Lac La Biche Daily: 13-01-2023 Type: AVG 1 Min. [1 Min.]



H2S Analyzer Calibration by Dilution

DATE:	13-Jan-2023	PREVIOUS CALIBRATION DATE:	06-Dec-2022
PARAMETER:	H2S	PREVIOUS CORRECTION FACTOR:	0.998
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	Lac La Biche	BAROMETRIC (mBar):	942
PURPOSE	Routine	START TIME (MST):	12:02
PERFORMED BY:	Alex Yakupov	END TIME (MST):	16:25

ANALYZER:

MAKE/MODEL	API 101A	RANGE	100 ppb
SERIAL #	324	FLOW (mL/min)	506
INITIAL		FINAL	
BKG/OFFSET	31.4	BKG/OFFSET	31.4
COEF/SLOPE	1.034	COEF/SLOPE	1.02
Expected (reference) Value	28.9	Expected (reference) Value	29.1

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010 D	MODEL:	T701
ID:	11900613	ID:	132
MFC CALIBRATION DATE:	21-Oct-2022	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	EY 0002287	HIGH ID	n/a
CONC (ppm):	10.10	EXPIRY DATE	n/a
CYLINDER (psi):	1700	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	-0.1	0		
7442	57.90	7500	77.97	79.1	78	0.984	1.000
7472	28.20	7500	37.98	n/a	37.9	n/a	1.002
7486	14.10	7500	18.99	n/a	18.8	n/a	1.010

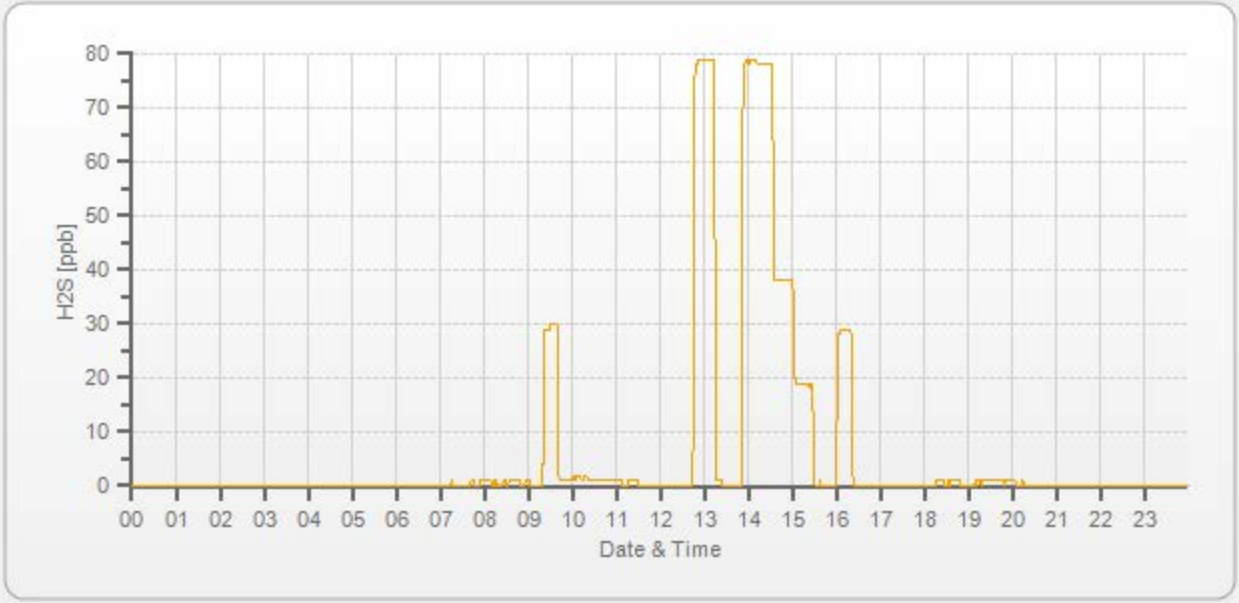
LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.001	-0.1%

COMMENTS:

Sample inlet filter was changed.

H2S[ppb] Station: Lac La Biche Daily: 13-01-2023 Type: AVG 1 Min. [1 Min.]



NOx Calibration by Dilution/Gas-Phase Titration

CALIBRATION:

DATE:	13-Jan-2023	PREVIOUS CALIBRATION DATE:	06-Dec-2022
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	Lac La Biche	BAROMETRIC (mBar):	942
PURPOSE	Routine	START TIME (MST):	12:04
PERFORMED BY:	Alex Yakupov	END TIME (MST):	18:22

ANALYZER:

MAKE/MODEL:	Thermo 42i	PREVIOUS CF.	
SERIAL #:	1180930027	NOx	0.999
FLOW (mL/min)	704	NO	1.001
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:	26801218	ID:	132	CYLINDER (psi):	2000		LOW ID:	n/a
MFC CALIBRATION DATE:	02-Sep-2022	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:	8.6	8.5	n/a	BKG/OFFSET:	8.7	8.4	n/a
SLOPE/COEF/CE:	1.001	0.888	0.993	SLOPE/COEF/CE:	1.009	0.88	1.002

EXPECTED (REFERENCE) VALUE:

INITIAL	NOx	NO	NO2	FINAL	NOx	NO	NO2
	358.8	2.3	348.9		356.1	2.3	353.8

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	-0.2	0.2	0.4	0.0	0.0	0.0						
4961	37.20	4998	380.3	384.1	3.7	382.5	383.9	1.5	379.8	383.7	3.8	0.994	1.001		1.001	1.001	
4982	17.60	5000	179.9	181.6	1.8	n/a	n/a	n/a	178.8	180.4	1.6	n/a	n/a		1.006	1.007	
4990	8.80	4999	90.0	90.8	0.9	n/a	n/a	n/a	88.4	89.4	1.0	n/a	n/a		1.018	1.016	

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	379.6	383.7	4.1				
AS-FOUND HIGH	37.20	4998	235	124.0	386.2	262.3	255.6	258.2	0.990	101.02%
ADJUSTED HIGH	37.20	4998	235	123.9	384.5	260.6	255.7	256.5	0.997	100.31%
MID	37.20	4998	110	259.1	384.3	125.2	120.5	121.1	0.995	100.50%
LOW	37.20	4998	40	333.7	385.3	51.6	45.9	47.5	0.966	103.49%
NO2 adjustment not required.									AVERAGE:	101.67%

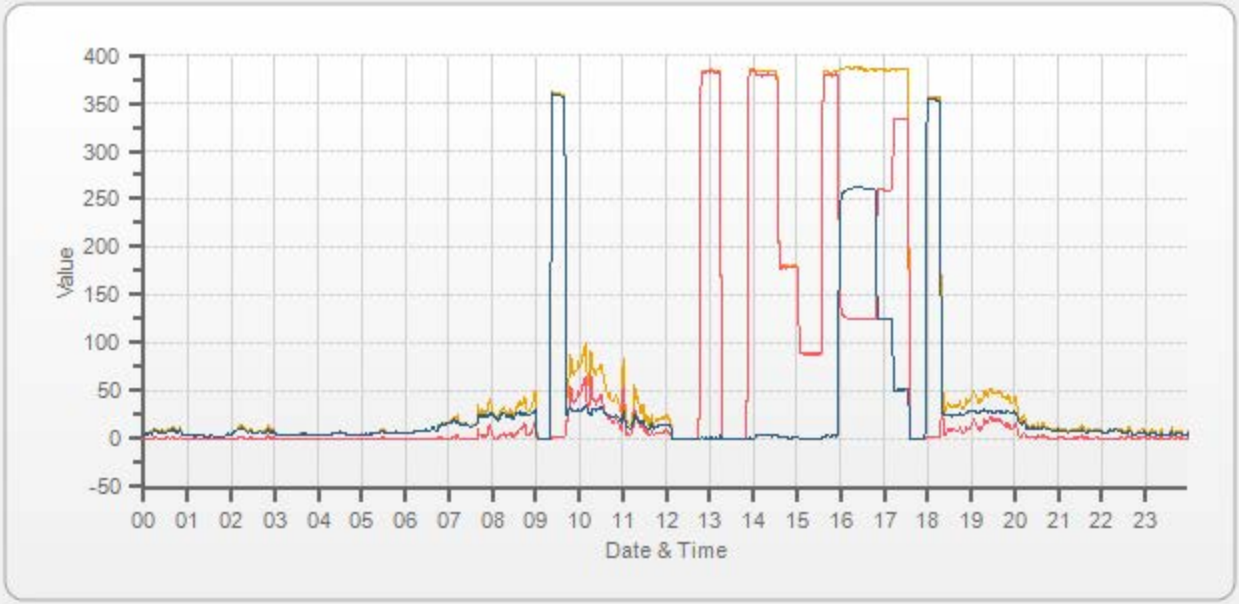
LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
NO	1.000	1.000	-0.15%
NOx	1.000	1.000	-0.15%
NO2	1.000	1.006	0.15%

COMMENTS:

Sample inlet filter was changed.

Station: Lac La Biche Daily: 13-01-2023 Type: AVG 1 Min. [1 Min.]



Ozone Calibration by Photometer (Varying UV Lamp)

DATE:	12-Jan-2023	PREVIOUS CALIBRATION DATE:	07-Dec-2022
PARAMETER:	O3	PREVIOUS CORRECTION FACTOR:	1.001
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	Lac La Biche	BAROMETRIC (mBar):	948
PURPOSE	Routine	START TIME (MST):	13:26
PERFORMED BY:	Alex Yakupov	END TIME (MST):	17:54

ANALYZER:

MAKE/MODEL	Thermo 49i	RANGE	500	ppb
SERIAL #	1002240372	FLOW (mL/min)	1455	
INITIAL		FINAL		
BKG/OFFSET	0	BKG/OFFSET	0	
COEF/SLOPE	1.029	COEF/SLOPE	1.047	
Expected (reference) Value	248.7	Expected (reference) Value	258	

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010 D	MODEL:	T701
ID:	11900613	ID:	132
MFC CALIBRATION DATE:	21-Oct-2022	OXIDIZER ID:	n/a
CALIBRATION METHOD:		Photometer (Varying UV Lamp)	
GPT DATE:	n/a	GPT END TIME:	n/a

CALIBRATION PARAMETERS:

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

CALIBRATION:

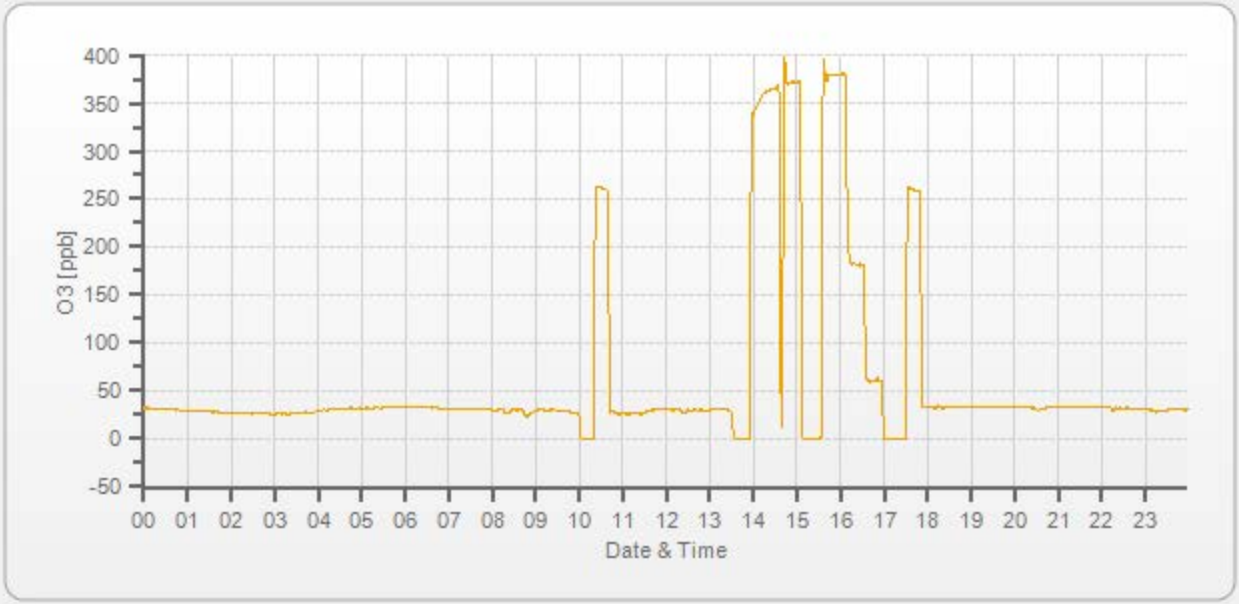
FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
			ACTUAL	INDICATED		Initial	Final
DILUENT	GAS	TOTAL		Initial	Final		
5000		5000	0.0	0.0	0.0		
5000		5000	378.0	371.3	379.9	1.018	0.995
5000		5000	180.0	n/a	181.2	n/a	0.993
5000		5000	60.0	n/a	60.1	n/a	0.998

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.005	0.0%

COMMENTS:

14:36 = Calibrator reset and AF high restarted.


O3[ppb] Station: Lac La Biche Daily: 12-01-2023 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:	12-Jan-2023	PREVIOUS CALIBRATION DATE:	07-Dec-2022
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	Lac La Biche	BAROMETRIC (mBar):	948
PURPOSE	Routine	START TIME (MST):	13:27
PERFORMED BY:	Alex Yakupov	END TIME (MST):	17:55

ANALYZER:

VALUE	MAKE/MODEL	SERIAL	FLOW (mL/min)
	Thermo 55i	1180320044	1022
PARAMETER:	CH4	NMHC	THC
RANGE (ppm):	20	20	40
PREVIOUS CF:	1.000	0.994	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):	1500		LOW ID:	n/a
MFC CALIBRATION DATE:	02-Sep-2022	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
	9.33	10.93	20.26		9.28	10.84	20.12

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	14.97	13.71	28.68	14.49	13.58	28.07	0.969	0.985	0.977	1.001	0.994	0.998
3063	37.30	3100	7.26	6.75	14.01	n/a	n/a	n/a	7.20	6.75	13.95	n/a	n/a	n/a	1.008	1.000	1.004
3081	18.60	3100	3.62	3.37	6.98	n/a	n/a	n/a	3.59	3.35	6.94	n/a	n/a	n/a	1.008	1.005	1.006

LINEAR REGRESSION ANALYSIS:

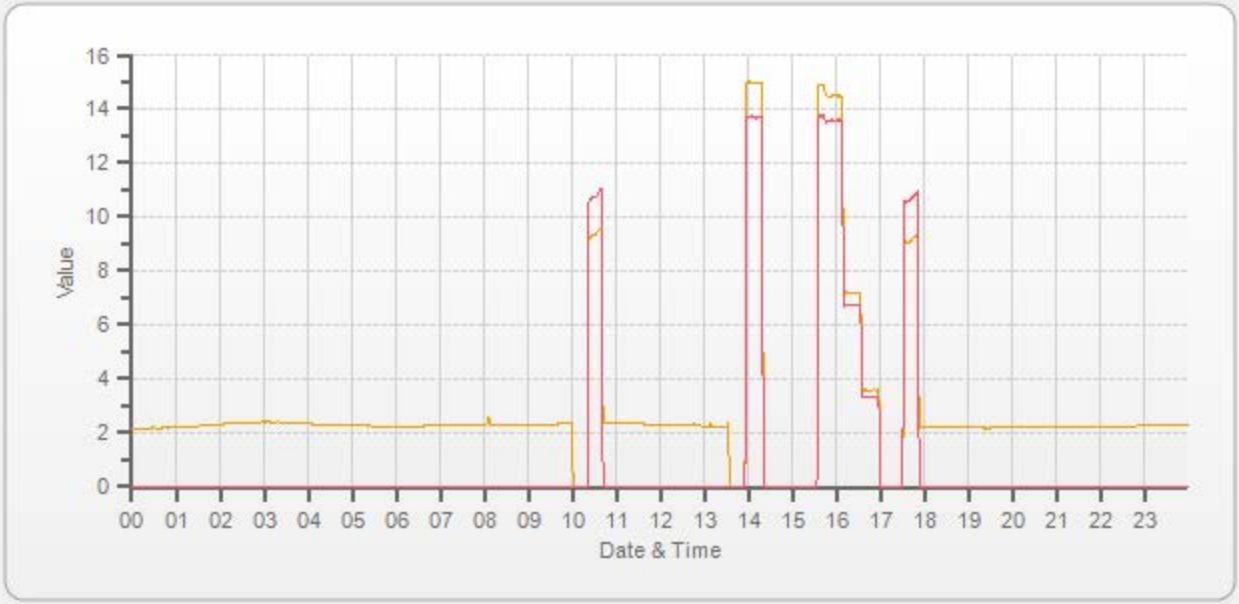
	CORRELATION	SLOPE	INTERCEPT
CH4	1.000	0.999	-0.1%
NMHC	1.000	1.006	-0.1%
THC	1.000	1.002	-0.1%

Comments:

Sample inlet filter was changed.

Use Zero Chrom? **Yes**

Station: Lac La Biche Daily: 12-01-2023 Type: AVG 1 Min. [1 Min.]



Thermo 5030i SHARP Monitor Monthly Check

Date:	January 13, 2023	**Performed By/Reviewer:**	Alex Yakupov / Chris Wesson
Company:	LICA	**Start Time (mst):**	17:39
Station Name/Location:	Lac La Biche	**End Time (mst):**	18:36
Previous Audit Date:	December 7, 2022	**Calibration Purpose:**	routine monthly
Parameter:	PM 2.5	**Weather Conditions:**	A few clouds

SHARP 5030i Information and Status:

Serial Number: CM 17071016 **Filter Tape Counter** 206

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	February 17, 2023	June 14, 2023

Ambient Temperature (°C)

	Reference	SHARP	Difference
#1	-11.40	-11.3	-0.1

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

Ambient Relative Humidity (%RH)

As Found:

	Reference	SHARP	Difference
#1	87.40	86.7	0.7

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

Barometric Pressure (mmHg)

As Found:

	Reference	SHARP	Difference
#1	705.6	705.2	0.4

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

Flow Audit (L/min)

As Found:

	Reference	SHARP
#1	16.70	16.67
#2	16.69	16.67
#3	16.69	16.67
Average	16.69	16.67

% Difference -0.14%

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	16.69	16.67	0.02	16.54	16.60	-0.06
					LEAK RATE:	**-0.08**

Leak Limit: 0.80 L/min

Meteorological System Checklist

Date:	January 13, 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 14, 2023
Reference Temperature (^{o}C):	-9.2
Station - Ambient Temperature (^{o}C):	-10.8
Temperature Difference (^{o}C):	1.6

BAROMETRIC PRESSURE SENSOR CHECK

Reference Barometer ID:	Fisher Scientific / FB 61291 / #130168457/ Feb 17, 2023	
Reference Pressure - Units/Reading:	millibar	942
Station Pressure - Units/Reading:	millibar	940
Pressure Tolerance +/- 15% of error:	801 - 1083	0.21%

RELATIVE HUMIDITY (HYGROMETER) SENSOR CHECK

Reference Hygrometer ID:	Vaisala / HM70 / #T1640130/ Jun 14, 2023	
Reference Hygrometer % RH- Reading:	84.00	
Station Hygrometer % RH- Reading:	94.30	
RH Tolerance +/- 15% of difference:	71.40 - 96.60	-12.3%

ANEMOMETER - WIND SPEED & WIND DIRECTION SENSOR CHECK

WIND SPEED		WIND DIRECTION	
Previous check date:	December 7, 2022	Previous check date:	December 7, 2022
Wind Speed Observed (kph):	1-10	Wind Direction Observed:	N
Wind speed on Data Logger (kph):	3.4	Wind Direction on Data Logger:	N
	Annual audit: May 22, 2022	Wind Direction Pass/Fail?:	Pass

Comments

Station (Trailer) temperature vs Reference gauge: 24.0 vs 23.6 - 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