Lakeland Industry & Community Association

JUNE 2023

Monthly Ambient Air Quality Monitoring Report

LICA-202306

Operation and Maintenance:

Bureau Veritas Canada

Data Validation and Report:

Lakeland Industry & Community Association

July 24, 2023

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July 24, 2023

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

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

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

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LIST OF ACRONYMS

AAAQOs	Alberta Ambient Air Quality Objectives
AEP	Alberta Environment and Parks
AMD	Air Monitoring Directive
AT	Ambient Temperature
BP	Barometric Pressure
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 June 2023

Cold Lake South

- All data collected this month were compliant with the requirements outlined in the AMD 2016.
- All parameters met the 90% operational uptime requirement.
- Measured parameters were below Alberta Ambient Air Quality Objectives (AAAQOs) and/or Alberta Ambient Air Quality Guidelines (AAAQGs) where applicable, except PM2.5. Twenty-three 1-hour and seven 24-hour PM2.5 exceedances were recorded this month. Widespread smoke from wild fires burning throughout western Canada is the cause of the numerous exceedances of the PM2.5 objective and guideline.

Date	Time (MST)	Parameter	Average Period	Concentration (µg/m3)	Wind speed (km/hr)	Wind Direction	Reference #
2-June	-	PM2.5	24-Hour	36	4.9	338° (NNW)	414423
8-June	6	PM2.5	1-Hour	88	5.2	19° (NNE)	414724
8-June	7	PM2.5	1-Hour	96	6.5	23° (NNE)	414724
8-June	8	PM2.5	1-Hour	94	7.7	49° (NE)	414724
8-June	-	PM2.5	24-Hour	51	4.5	49° (NE)	414724
9-June	-	PM2.5	24-Hour	40	3.6	110° (ESE)	414724
12-June	6	PM2.5	1-Hour	91	5.5	25° (NNE)	415193
12-June	7	PM2.5	1-Hour	95	6.5	31° (NNE)	415193

Date	Time (MST)	Parameter	Average Period	Concentration (µg/m3)	Wind speed (km/hr)	Wind Direction	Reference #
12-June	8	PM2.5	1-Hour	94	7.2	43° (NE)	415193
12-June	9	PM2.5	1-Hour	87	7.8	31° (NNE)	415193
12-June	10	PM2.5	1-Hour	89	8.9	43° (NE)	415193
12-June	11	PM2.5	1-Hour	81	8.8	38° (NE)	415193
12-June	12	PM2.5	1-Hour	81	10.8	47° (NE)	415193
12-June	13	PM2.5	1-Hour	91	10.1	41° (NE)	415193
12-June	14	PM2.5	1-Hour	94	11.5	46° (NE)	415193
12-June	15	PM2.5	1-Hour	103	9.3	37° (NE)	415193
12-June	16	PM2.5	1-Hour	102	8.6	39° (NE)	415193
12-June	17	PM2.5	1-Hour	87	7.7	48° (NE)	415193
12-June	-	PM2.5	24-Hour	72	5.5	46° (NE)	415193
13-June	-	PM2.5	24-Hour	45	6.1	112° (ESE)	415193
16-June	-	PM2.5	24-Hour	31	4.2	220° (SW)	415193
18-June	16	PM2.5	1-Hour	147	10.2	69° (ENE)	415193
18-June	17	PM2.5	1-Hour	140	10.4	61° (ENE)	415193
18-June	18	PM2.5	1-Hour	100	10.8	90° (E)	415193
18-June	19	PM2.5	1-Hour	88	13.2	61° (ENE)	415193
18-June	20	PM2.5	1-Hour	133	13.5	51° (NE)	415193
18-June	21	PM2.5	1-Hour	167	6.5	81° (E)	415193
18-June	22	PM2.5	1-Hour	123	15.5	58° (ENE)	415193
18-June	23	PM2.5	1-Hour	87	8.2	46° (NE)	415193

- 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, except PM2.5. Thirty-two 1-hour and six 24-hour PM2.5 exceedances were recorded this month. Widespread smoke from wild fires burning throughout western Canada is the cause of the numerous exceedances of the PM2.5 objective and guideline.

Date	Time (MST)	Parameter	Average Period	Concentration (µg/m3)	Wind speed (km/hr)	Wind Direction	Reference #
1-June	-	PM2.5	24-Hour	30.5	7.0	3° (N)	414427
8-June	3	PM2.5	1-Hour	80.7	2.1	22° (NNE)	414721
8-June	4	PM2.5	1-Hour	95	1.7	40° (NE)	414721
8-June	5	PM2.5	1-Hour	90.3	0.5	121° (ESE)	414721
8-June	6	PM2.5	1-Hour	93.6	0.7	30° (NNE)	414721
8-June	-	PM2.5	24-Hour	42	4.1	34° (NE)	414721

Date	Time (MST)	Parameter	Average Period	Concentration (µg/m3)	Wind speed (km/hr)	Wind Direction	Reference #
11-June	17	PM2.5	1-Hour	96	6.2	306° (NW)	414721
11-June	-	PM2.5	24-Hour	32.7	5.6	217° (SW)	414721
12-June	7	PM2.5	1-Hour	93	4.9	34° (NE)	414190
12-June	8	PM2.5	1-Hour	105.8	4.5	26° (NNE)	414190
12-June	9	PM2.5	1-Hour	97.2	3.3	340° (NNW)	414190
12-June	10	PM2.5	1-Hour	95.1	3.8	347° (NNW)	414190
12-June	11	PM2.5	1-Hour	90.3	6.0	347° (NNW)	414190
12-June	12	PM2.5	1-Hour	118.8	8.4	16° (NNE)	414190
12-June	13	PM2.5	1-Hour	119.3	6.5	17° (NNE)	414190
12-June	14	PM2.5	1-Hour	128.4	5.1	66° (ENE)	414190
12-June	15	PM2.5	1-Hour	152.2	5.6	99° (E)	414190
12-June	16	PM2.5	1-Hour	114.8	6.8	109° (ESE)	414190
12-June	-	PM2.5	24-Hour	77.6	3.7	48° (NE)	414190
13-June	0	PM2.5	1-Hour	99	2.0	118° (ESE)	414190
13-June	6	PM2.5	1-Hour	99.3	4.4	104° (ESE)	414190
13-June	7	PM2.5	1-Hour	111.9	4.9	118° (ESE)	414190
13-June	8	PM2.5	1-Hour	113.2	4.9	108° (ESE)	414190
13-June	9	PM2.5	1-Hour	112.3	5.2	115° (ESE)	414190
13-June	10	PM2.5	1-Hour	108.3	4.8	111° (ESE)	414190
13-June	11	PM2.5	1-Hour	101.4	4.9	117° (ESE)	414190
13-June	12	PM2.5	1-Hour	94.1	6.1	91° (E)	414190
13-June	13	PM2.5	1-Hour	95.8	5.1	94° (E)	414190
13-June	14	PM2.5	1-Hour	88.3	9.0	124° (ESE)	414190
13-June	22	PM2.5	1-Hour	80.6	10.1	99° (E)	414190
13-June	23	PM2.5	1-Hour	101.1	5.2	117° (E)	414190
13-June	-	PM2.5	24-Hour	80.4	6.7	115° (ESE)	414190
14-June	0	PM2.5	1-Hour	88.4	10.9	118° (ESE)	414190
18-June	17	PM2.5	1-Hour	93.7	9.6	71° (ENE)	414190
18-June	18	PM2.5	1-Hour	176.2	9.7	68° (ENE)	414190
18-June	19	PM2.5	1-Hour	83.8	9.5	97° (E)	414190
18-June	20	PM2.5	1-Hour	112.2	7.2	48° (NE)	414190
18-June	-	PM2.5	24-Hour	29.4	7.8	55° (NE)	414190

- No major events were identified this month.

St. Lina Station

- All data collected this month were compliant with the requirements outlined in the AMD 2016.
- All parameters met the 90% operational uptime requirement, except H2S (86.7%). **EPA reference #: 416669**.

- Measured parameters were below Alberta Ambient Air Quality Objectives (AAAQOs) and/or Alberta Ambient Air Quality Guidelines (AAAQGs) where applicable, except O3 and PM2.5. Ten 1-hour ozone exceedance, seventeen 1-hour and seven 24-hour PM2.5 exceedances were recorded this month.
- Ozone concentrations were high at monitoring stations throughout Alberta in June. Conditions were favourable for the formation of ground-level ozone due in part to warm temperatures and the presence of wildfire smoke. Volatile, semi-volatile organic materials, nitrogen oxides and other precursor substances are emitted from wildfires and react in the presence of sunlight and heat to form ground-level ozone.

Date	Time (MST)	Parameter	Average Period	Concentration (ppb)	Wind speed (km/hr)	Wind Direction	Reference #
07-June	18	O3	1-Hour	79.9	6.8	308° (NW)	414435
10-June	14	O3	1-Hour	78.4	13.9	157° (SSE)	414625
10-June	15	O3	1-Hour	81.2	14.8	163° (SSE)	414625
10-June	16	O3	1-Hour	81	13.8	168° (SSE)	414625
10-June	17	O3	1-Hour	80.6	12.2	154° (SSE)	414625
10-June	18	O3	1-Hour	80.3	11.4	152° (SSE)	414625
10-June	19	O3	1-Hour	77.6	10.0	143° (SE)	414625
13-June	14	O3	1-Hour	86.3	15.8	141° (SE)	414828
13-June	15	O3	1-Hour	86.5	17.3	134° (SE)	414828
13-June	16	O3	1-Hour	78.8	12.1	138° (SE)	414828

- The PM2.5 objective and guideline were exceeded due to wildfire smoke.

Date	Time (MST)	Parameter	Average Period	Concentration (µg/m3)	Wind speed (km/hr)	Wind Direction	Reference #
8-June	-	PM2.5	24-Hour	45	7.1	65° (ENE)	415191
9-June	-	PM2.5	24-Hour	31	9.0	106° (ESE)	415191
10-June	-	PM2.5	24-Hour	33	12.5	166° (SSE)	415191
11-June	-	PM2.5	24-Hour	36	9.2	249° (WSW)	415191
12-June	19	PM2.5	1-Hour	97	7.9	106° (ESE)	415191
12-June	20	PM2.5	1-Hour	103	8.1	103° (ESE)	415191
12-June	21	PM2.5	1-Hour	105	9.7	109° (ESE)	415191
12-June	22	PM2.5	1-Hour	107	9.0	130° (SE)	415191
12-June	23	PM2.5	1-Hour	128	2.2	319° (NNW)	415191
12-June	-	PM2.5	24-Hour	75	6.1	64° (ENE)	415191
13-June	0	PM2.5	1-Hour	148	10.6	172° (S)	415191
13-June	1	PM2.5	1-Hour	150	12.3	186° (S)	415191
13-June	2	PM2.5	1-Hour	130	11.8	187° (S)	415191
13-June	3	PM2.5	1-Hour	127	11.4	192° (S)	415191
13-June	4	PM2.5	1-Hour	123	11.0	196° (SSW)	415191
13-June	5	PM2.5	1-Hour	108	12.1	196° (SSW)	415191

Date	Time (MST)	Parameter	Average Period	Concentration (µg/m3)	Wind speed (km/hr)	Wind Direction	Reference #
13-June	6	PM2.5	1-Hour	96	10.5	203° (SSW)	415191
13-June	7	PM2.5	1-Hour	93	8.0	200° (SSW)	415191
13-June	8	PM2.5	1-Hour	95	8.7	187° (S)	415191
13-June	9	PM2.5	1-Hour	98	8.8	186° (S)	415191
13-June	10	PM2.5	1-Hour	97	5.9	138° (SE)	415191
13-June	11	PM2.5	1-Hour	93	6.4	125° (SE)	415191
13-June	-	PM2.5	24-Hour	87	11.6	151° (SSE)	415191
14-June	-	PM2.5	24-Hour	38	9.5	359° (N)	415191

- **H2S:** LICA's Thermo 450i analyzer, s/n: CM18010058, failed due to unstable PMT on June 20. A shut-down calibration was attempted on June 21, but was unsuccessful due to PMT instability. The analyzer was replaced with BV's Teledyne T100 analyzer, s/n: 1014, on June 22. A successful shut down calibration was completed afterward. Fifty-nine hours of downtime were recorded due to this event. Additionally, other downtime events occurred throughout the month, namely intermittent datalogger polling issues and analyzer maintenance; the 90% uptime requirement was not met.

Lac La Biche Station

- All data collected this month were compliant with the requirements outlined in the AMD 2016.
- All parameters met the 90% operational uptime requirement.
- Measured parameters were below Alberta Ambient Air Quality Objectives (AAAQOs) and/or Alberta Ambient Air Quality Guidelines (AAAQGs) where applicable, except O3 and PM2.5. Four 1-hour ozone exceedance, thirty 1-hour and seven 24-hour PM2.5 exceedances were recorded this month.
- Ozone concentrations were high at monitoring stations throughout Alberta in June. Conditions were favourable for the formation of ground-level ozone due in part to warm temperatures and the presence of wildfire smoke. Volatile, semi-volatile organic materials, nitrogen oxides and other precursor substances are emitted from wildfires and react in the presence of sunlight and heat to form ground-level ozone.

Date	Time (MST)	Parameter	Average Period	Concentration (ppb)	Wind speed (km/hr)	Wind Direction	Reference #
10-June	17	O3	1-Hour	76.7	9.1	145° (SE)	416667
10-June	19	O3	1-Hour	76.6	9.3	133° (SE)	416667
13-June	15	O3	1-Hour	83.7	13.5	130° (SE)	414827
13-June	16	O3	1-Hour	85.9	15.4	133° (SE)	414827

- The PM2.5 objective and guideline were exceeded due to wildfire smoke.

Date	Time (MST)	Parameter	Average Period	Concentration (µg/m3)	Wind speed (km/hr)	Wind Direction	Reference #
2-June	17	PM2.5	1-Hour	80.1	7.1	62° (ENE)	414424
2-June	-	PM2.5	24-Hour	52.2	5.2	349° (NNW)	414424
8-June	-	PM2.5	24-Hour	49	4.8	8° (N)	414723

Date	Time (MST)	Parameter	Average Period	Concentration (µg/m3)	Wind speed (km/hr)	Wind Direction	Reference #
10-June	-	PM2.5	24-Hour	35.8	10.7	147° (SE)	414723
11-June	-	PM2.5	24-Hour	49.2	6.7	296° (WNW)	414723
12-June	10	PM2.5	1-Hour	83.1	6.1	357° (N)	415192
12-June	11	PM2.5	1-Hour	104	5.6	2° (N)	415192
12-June	12	PM2.5	1-Hour	127.7	5.6	24° (NNE)	415192
12-June	13	PM2.5	1-Hour	137.6	7.0	342° (NNW)	415192
12-June	14	PM2.5	1-Hour	120.5	5.7	359° (N)	415192
12-June	15	PM2.5	1-Hour	104.5	5.2	3° (N)	415192
12-June	16	PM2.5	1-Hour	93.8	4.2	358° (N)	415192
12-June	17	PM2.5	1-Hour	91.7	3.0	12° (NNE)	415192
12-June	18	PM2.5	1-Hour	99.7	3.4	150° (SSE)	415192
12-June	19	PM2.5	1-Hour	107.1	5.5	138° (SE)	415192
12-June	20	PM2.5	1-Hour	104.5	5.0	135° (SE)	415192
12-June	21	PM2.5	1-Hour	116.2	8.0	140° (SE)	415192
12-June	22	PM2.5	1-Hour	140.8	8.5	143° (SE)	415192
12-June	23	PM2.5	1-Hour	151	6.2	2° (NNE)	415192
12-June	-	PM2.5	24-Hour	90.8	5.3	14° (NNE)	415192
13-June	0	PM2.5	1-Hour	143.1	7.2	154° (SSE)	415192
13-June	1	PM2.5	1-Hour	143.4	6.6	146° (SE)	415192
13-June	2	PM2.5	1-Hour	146	5.0	146° (SE)	415192
13-June	3	PM2.5	1-Hour	146.5	6.1	133° (SE)	415192
13-June	4	PM2.5	1-Hour	152.9	7.8	134° (SE)	415192
13-June	5	PM2.5	1-Hour	149.9	8.2	141° (SE)	415192
13-June	6	PM2.5	1-Hour	139.1	7.4	149° (SSE)	415192
13-June	7	PM2.5	1-Hour	131.5	7.3	154° (SSE)	415192
13-June	8	PM2.5	1-Hour	120.9	7.4	141° (SE)	415192
13-June	9	PM2.5	1-Hour	111.5	4.8	116° (ESE)	415192
13-June	10	PM2.5	1-Hour	91.7	5.3	100° (E)	415192
13-June	11	PM2.5	1-Hour	90	9.1	129° (SE)	415192
13-June	12	PM2.5	1-Hour	86.2	9.4	118° (ESE)	415192
13-June	13	PM2.5	1-Hour	83.8	12.0	134° (SE)	415192
13-June	14	PM2.5	1-Hour	91.6	12.0	137° (SE)	415192
13-June	-	PM2.5	24-Hour	95.1	9.2	127° (SE)	415192
14-June	-	PM2.5	24-Hour	35	10.1	337° (NNW)	415192

- No major events were identified this month.

Integrated Sampling

All the integrated sampling analytical results are included in the June 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 June 2, 11, 17, 23 and 29.
- **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).
  - Four samples were collected this month: on June 11, 17, 23 and 29. Due to a lab error, the scheduled June 5 sample could not be collected.
- **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 June 2, 11, 17, 23 and 29.
- **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 May 28 and June 1, and were removed between June 30 and July 3.
  - A total of 13 duplicate samples were collected: 2 for H2S, 3 for SO2, 2 for NO2, 2 for O3, 2 for HNO3 and 2 for NH3.
  - Station 16: Both HNO3 and NH3 sample media were found on the ground.
  - Station 18: Both H2S and HNO3 sample media were found on the ground; site disturbed by a bear.
  - Station 23: No sample media were collected this month as road to the sampler was closed due to local wildfires.
  - Station 27: All sample media were found on the ground; site disturbed by a bear.
  - Station 28: No sample media were collected this month as the access to the sampler was restricted (gate was locked by landowner).
- **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 May/June monitoring period were installed between April 28 and April 30. They were replaced between June 30 and July 3.
  - The media for the July/August monitoring period were installed between June 30 and July 3. They will be replaced by the end of August or early September.
- **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.

- Two canister events were recorded this month; on June 2 at 22:30, at concentration of 0.30 ppm, and on June 24 at 18:50, at concentration of 0.40ppm. However, due to tech errors, the June 2 sample was not collected properly. Therefore, it was discarded.

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

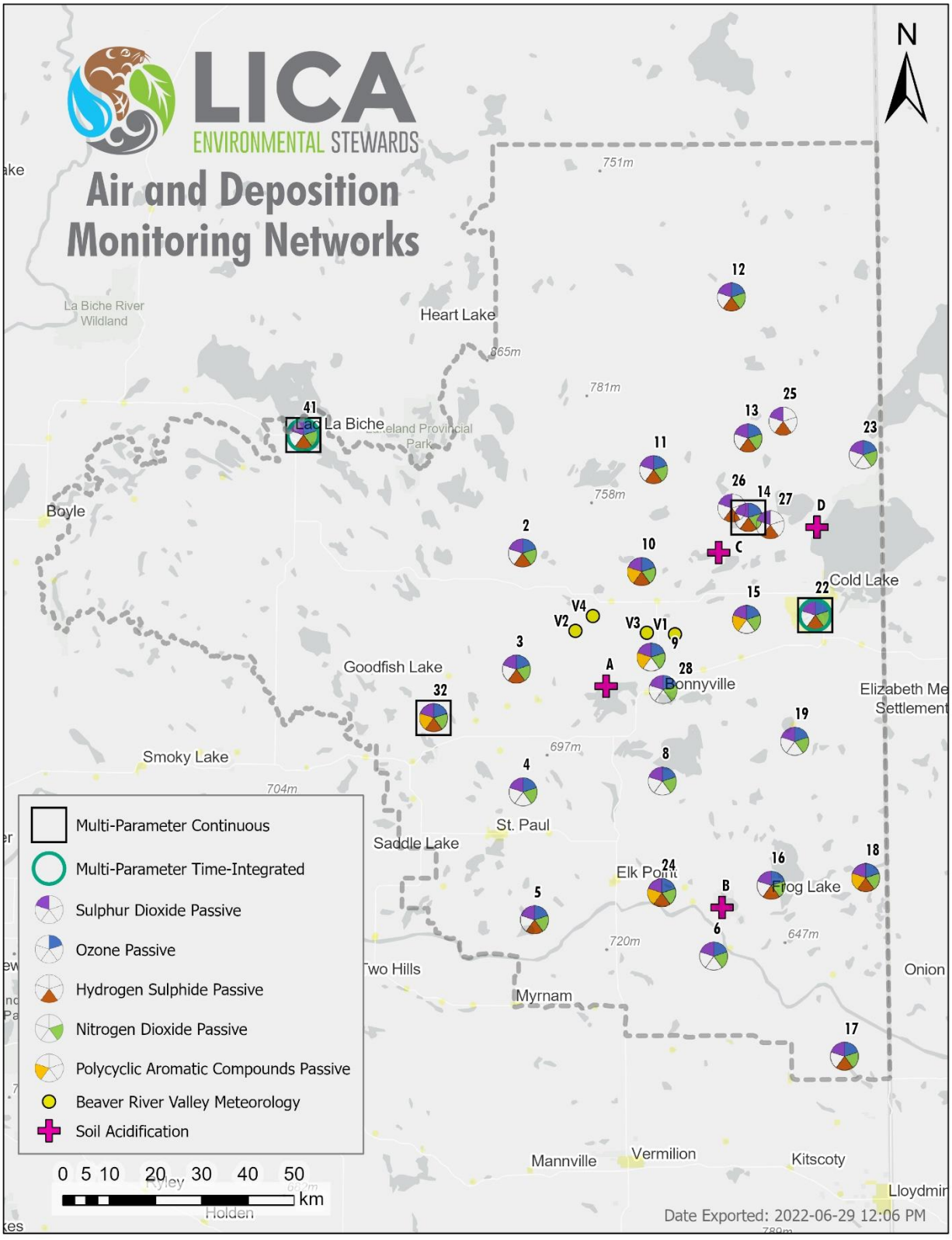
This report was reviewed by Michael Bisaga in accordance with Chapter 9 of the Air Monitoring Directive (AMD 2016).

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

July 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	June 14, 2023	• Due to datalogger error on May 31, no data were collected between May 31 hour 15 and June 1 hour 12. Thirteen hours of downtime were recorded.
TRS Thermo 450i #812728560 **TRS convertor** CD Nova CDN-101 #501	June 14, 2023	• Due to datalogger error on May 31, no data were collected between May 31 hour 15 and June 1 hour 12. Thirteen hours of downtime were recorded.
NOx/NO/NO2 Thermo 42i #1505664393	June 14, 2023	• Due to datalogger error on May 31, no data were collected between May 31 hour 15 and June 1 hour 12. Thirteen hours of downtime were recorded.
O3 Thermo 49iQ #12208316585	June 15, 2023	• Due to datalogger error on May 31, no data were collected between May 31 hour 15 and June 1 hour 12. Thirteen hours of downtime were recorded.
THC/CH4/NMHC Thermo 55i #1180930025 **H2 Generator** HG300 #210567071	June 28, 2023	• Due to datalogger error on May 31, no data were collected between May 31 hour 15 and June 1 hour 12. Thirteen hours of downtime were recorded. • A successful monthly calibration was completed on June 15. • The analyzer failed due to sample pump failure on June 26 hour 5. The sample pump was rebuilt followed by a successful post-repair calibration on June 28. Fifty-six hours of downtime were recorded due to this event.
PM2.5 Teledyne T640 #575	June 15, 2023	• Due to datalogger error on May 31, no data were collected between May 31 hour 15 and June 1 hour 12. Thirteen hours of downtime were recorded. • It was notice that 1-minute data sporadically dropped to zero, starting June 10 hour 5. The PM unit was reset on June 11 hour 11. One- minute data were reviewed and discarded if data quality was compromised by this issue. Hourly data average then were recalculated. Ten hours of downtime were recorded as the 75% data completeness requirement did not meet.

Parameter	Verification Date	Equipment Operational Summary
RH Rotronic HC2A-S3 #20257103	June 15, 2023	• Due to datalogger error (stalled updated) on May 31, no data were collected between May 31 hour 15 and June 1 hour 12. Thirteen hours of downtime were recorded.
BP Met One 092 #Y23368	June 15, 2023	• Due to datalogger error (stalled updated) on May 31, no data were collected between May 31 hour 15 and June 1 hour 12. Thirteen hours of downtime were recorded.
AT Rotronic HC2A-S3 #20257103	June 15, 2023	• Due to datalogger error (stalled updated) on May 31, no data were collected between May 31 hour 15 and June 1 hour 12. Thirteen hours of downtime were recorded.
ST COMET #NA	June 15, 2023	• Due to datalogger error (stalled updated) on May 31, no data were collected between May 31 hour 15 and June 1 hour 12. Thirteen hours of downtime were recorded.
WS/WD/STDWD RM Young 05305AQ #177354	June 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 6, 2022. • Due to datalogger error (stalled updated) on May 31, no data were collected between May 31 hour 15 and June 1 hour 12. Thirteen hours of downtime were recorded. • The wind channels were put offline for two hours on June 21 while the St. Fracis Xavier's (StFX) students were installing their HC analyzer. LICA is supporting StFIX to conduct a multi-year study of reginal CH4 emissions in Bonnyville in collaboration with Environment and Climate Change Canada and the Alberta Energy Regulator.

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	0.1	0	1	Jun 6 at hr 6	7.7	NW	0.3	Jun 13	98.2	93.2
TRS (ppb)	-	-	-	-	-	-	0.3	0	2	Jun 7 at hr 3	0.1	NNW	1.0	Jun 2	98.2	93.2
NOx (ppb)	-	-	-	-	-	-	2.1	0	11	Jun 27 at hr 6	2.9	WSW	3.6	Jun 13	98.2	92.9
NO (ppb)	-	-	-	-	-	-	0.1	0	3	Jun 7 at hr 5	0.6	E	0.5	Jun 27	98.2	92.9
NO2 (ppb)	159	-	-	0	-	-	2.0	0	8	Jun 27 at hr 6	2.9	WSW	3.6	Jun 13	98.2	92.9
O3 (ppb)	76	-	-	0	-	-	32.2	2.0	75.8	Jun 7 at hr 16	8.3	SW	48.9	Jun 11	98.2	93.3
THC (ppm)	-	-	-	-	-	-	1.97	1.87	2.33	Jun 29 at hr 5	0.3	SE	2.06	Jun 13	90.4	85.8
CH4 (ppm)	-	-	-	-	-	-	1.97	1.87	2.33	Jun 29 at hr 5	0.3	SE	2.06	Jun 13	90.4	85.8
NMHC (ppm)	-	-	-	-	-	-	0.00	0.00	0.00	Jun 1 at hr 13	13.2	NNW	0.00	Jun 2	90.4	85.8
PM2.5 (µg/m3)	80	29	-	23	7	-	20.6	1	167	Jun 18 at hr 21	6.5	E	71.9	Jun 12	96.8	96.7
RH (%)	-	-	-	-	-	-	69.6	33	100	Jun 1 at hr 21	3	NNE	93.0	Jun 3	98.2	98.2
BP (millibar)	-	-	-	-	-	-	948	930	957	Jun 9 at hr 8	4	E	955	Jun 3	98.2	98.2
Ext. Temp. (°C)	-	-	-	-	-	-	17.6	4.7	29.0	Jun 5 at hr 14	5.9	SE	22.8	Jun 30	98.2	98.2
Stn. Temp. (°C)	-	-	-	-	-	-	23.0	21.5	24.4	Jun 16 at hr 4	0	E	23.5	Jun 15	98.2	98.2
WSV (km/hr)	-	-	-	-	-	-	0.6	0.0	16.7	Jun 25 at hr 13	16.7	NNE	8.9	Jun 18	97.9	97.9
WDV (sector)	-	-	-	-	-	-	49 (NE)	-	-	-	-	-	-	-	97.9	97.9

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

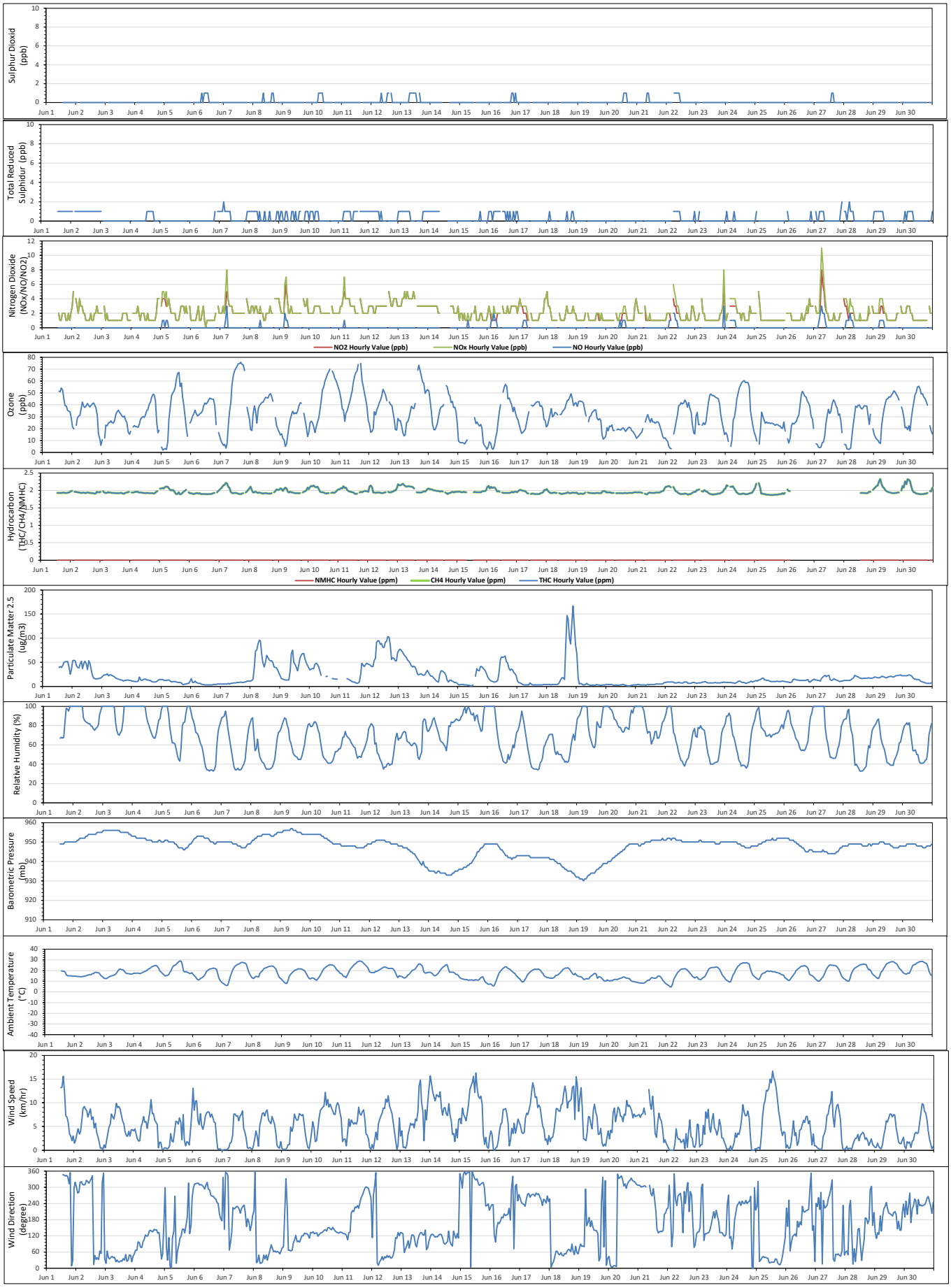
Alberta Ambient Air Quality Objectives (AAAQOs) and/or Alberta Ambient Air Quality Guidelines (AAAQGs) Exceedances

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

Date	Time (MST)	Parameter	Average Period	AAAQOs / AAAQGs	Concentration	Wind speed	Wind Direction	Reference #
Jun 2	-	PM2.5	24-Hour	29 µg/m3	36 µg/m3	4.9 km/hr	338° (NNW)	414423
Jun 8	6	PM2.5	1-Hour	80 µg/m3	88 µg/m3	5.2 km/hr	19° (NNE)	414724
Jun 8	7	PM2.5	1-Hour	80 µg/m3	96 µg/m3	6.5 km/hr	23° (NNE)	414724
Jun 8	8	PM2.5	1-Hour	80 µg/m3	94 µg/m3	7.7 km/hr	49° (NE)	414724
Jun 8	-	PM2.5	24-Hour	29 µg/m3	51 µg/m3	4.5 km/hr	49° (NE)	414724
Jun 9	-	PM2.5	24-Hour	29 µg/m3	40 µg/m3	3.6 km/hr	110° (ESE)	414724
Jun 12	6	PM2.5	1-Hour	80 µg/m3	91 µg/m3	5.5 km/hr	25° (NNE)	415193
Jun 12	7	PM2.5	1-Hour	80 µg/m3	95 µg/m3	6.5 km/hr	31° (NNE)	415193
Jun 12	8	PM2.5	1-Hour	80 µg/m3	94 µg/m3	7.2 km/hr	43° (NE)	415193
Jun 12	9	PM2.5	1-Hour	80 µg/m3	87 µg/m3	7.8 km/hr	31° (NNE)	415193
Jun 12	10	PM2.5	1-Hour	80 µg/m3	89 µg/m3	8.9 km/hr	43° (NE)	415193
Jun 12	11	PM2.5	1-Hour	80 µg/m3	81 µg/m3	8.8 km/hr	38° (NE)	415193
Jun 12	12	PM2.5	1-Hour	80 µg/m3	81 µg/m3	10.8 km/hr	47° (NE)	415193
Jun 12	13	PM2.5	1-Hour	80 µg/m3	91 µg/m3	10.1 km/hr	41° (NE)	415193
Jun 12	14	PM2.5	1-Hour	80 µg/m3	94 µg/m3	11.5 km/hr	46° (NE)	415193
Jun 12	15	PM2.5	1-Hour	80 µg/m3	103 µg/m3	9.3 km/hr	37° (NE)	415193
Jun 12	16	PM2.5	1-Hour	80 µg/m3	102 µg/m3	8.6 km/hr	39° (NE)	415193
Jun 12	17	PM2.5	1-Hour	80 µg/m3	87 µg/m3	7.7 km/hr	48° (NE)	415193
Jun 12	-	PM2.5	24-Hour	29 µg/m3	72 µg/m3	5.5 km/hr	46° (NE)	415193
Jun 13	-	PM2.5	24-Hour	29 µg/m3	45 µg/m3	6.1 km/hr	112° (ESE)	415193
Jun 16	-	PM2.5	24-Hour	29 µg/m3	31 µg/m3	4.2 km/hr	220° (SW)	415193
Jun 18	16	PM2.5	1-Hour	80 µg/m3	147 µg/m3	10.2 km/hr	69° (ENE)	415193
Jun 18	17	PM2.5	1-Hour	80 µg/m3	140 µg/m3	10.4 km/hr	61° (ENE)	415193
Jun 18	18	PM2.5	1-Hour	80 µg/m3	100 µg/m3	10.8 km/hr	90° (E)	415193
Jun 18	19	PM2.5	1-Hour	80 µg/m3	88 µg/m3	13.2 km/hr	61° (ENE)	415193
Jun 18	20	PM2.5	1-Hour	80 µg/m3	133 µg/m3	13.5 km/hr	51° (NE)	415193
Jun 18	21	PM2.5	1-Hour	80 µg/m3	167 µg/m3	6.5 km/hr	81° (E)	415193
Jun 18	22	PM2.5	1-Hour	80 µg/m3	123 µg/m3	15.5 km/hr	58° (ENE)	415193
Jun 18	23	PM2.5	1-Hour	80 µg/m3	87 µg/m3	8.2 km/hr	46° (NE)	415193
Jun 18	-	PM2.5	24-Hour	29 µg/m3	49 µg/m3	8.9 km/hr	57° (ENE)	415193

The source of the exceedances of the PM2.5 objective and guidelines were due to wildfires.

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



Tamarack Station

Equipment Operation Summary

Parameter	Calibration Date	Equipment Operational Summary
SO2 Thermo 43i-TLE #1180930031	June 23, 2023	• No operational issues were recorded.
H2S Thermo 450i #CM17360005	June 23, 2023	• No operational issues were recorded.
NOx/NO/NO2 Thermo 42i #1180930028	June 23, 2023	• No operational issues were recorded.
O3 Thermo 49iQ #1202068570	June 24, 2023	• No data were collected from the analyzer on June 22 between hour 3 and hour 10. The analyzer was reset, and a successful repeat zero-span check was completed afterwards. 10 hours of downtime were recorded due to this event.
THC/CH4/NMHC Thermo 55i #1180930026	June 24, 2023	• No operational issues were recorded. • A new span gas cylinder was installed on June 24.
PM2.5 Thermo Sharp 5030 #CM2209	June 24, 2023	• No operational issues were recorded.
Parameter	**Verification Date**	**Equipment Operational Summary**
RH Rotronic HC2A-S3 #20433166	June 24, 2023	• No operational issues were recorded.
BP Met One 090D #F4497	June 24, 2023	• No operational issues were recorded.
AT Rotronic HC2A-S3 #20433166	June 24, 2023	• No operational issues were recorded.
ST COMET #NA	June 24, 2023	• No operational issues were recorded.

Parameter	Verification Date	Equipment Operational Summary
Precipitation MetOne 387 #C13580	June 24, 2023	• No operational issues were recorded.
WS/WD/STDWD RM Young 05305VK #161465	June 24, 2023	• Wind direction data contained in this report represents where the wind is coming from. • An annual wind system calibration was completed on July 26, 2022. • No operational issues were recorded.

Monitored Data Summary for Tamarack Site

Parameter	Objectives/Guidelines			Exceedances			Monthly Avg.	Min. 1-hr	Max. 1-hr	Date/Time	VWS (km/hr)	VWD (sector)	Max. 24-hr	Date	Operational Uptime (%)	Valid Data (%)
	1-hr	24-hr	30-day	1-hr	24-hr	30-day										
SO2 (ppb)	172	48	11	0	0	0	0.7	0	14	Jun 6 at hr 4	6.7	WNW	3.0	Jun 6	100.0	94.8
H2S (ppb)	10	3	-	0	0	-	0.1	0	2	Jun 4 at hr 11	4.2	ESE	1.0	Jun 13	100.0	94.8
NOx (ppb)	-	-	-	-	-	-	3.7	0	36	Jun 9 at hr 0	2.8	ENE	7.2	Jun 9	100.0	94.6
NO (ppb)	-	-	-	-	-	-	0.5	0	16	Jun 7 at hr 5	0.5	NE	1.8	Jun 9	100.0	94.6
NO2 (ppb)	159	-	-	0	-	-	3.2	0	24	Jun 9 at hr 0	2.8	ENE	5.7	Jun 13	100.0	94.6
O3 (ppb)	76	-	-	0	-	-	30.0	2.0	74.5	Jun 11 at hr 16	5.8	W	48.7	Jun 11	98.5	93.4
THC (ppm)	-	-	-	-	-	-	2.01	1.92	2.39	Jun 25 at hr 2	1.2	NE	2.08	Jun 28	100.0	94.8
CH4 (ppm)	-	-	-	-	-	-	2.01	1.92	2.37	Jun 25 at hr 2	1.2	NE	2.08	Jun 28	100.0	94.8
NMHC (ppm)	-	-	-	-	-	-	0.00	0.00	0.13	Jun 23 at hr 0	0.2	SW	0.01	Jun 23	100.0	94.8
PM2.5 (µg/m3)	80	29	-	32	6	-	19.0	0	176	Jun 18 at hr 18	9.7	ENE	80.4	Jun 13	100.0	99.7
RH (%)	-	-	-	-	-	-	71.7	27	100	Jun 1 at hr 21	1.4	N	94.8	Jun 15	100.0	100.0
BP (millibar)	-	-	-	-	-	-	935	917	945	Jun 3 at hr 11	6	NE	943	Jun 3	100.0	100.0
Ext. Temp. (°C)	-	-	-	-	-	-	16.8	4.3	28.2	Jun 30 at hr 16	7.8	WSW	22.1	Jun 11	100.0	100.0
Stn. Temp. (°C)	-	-	-	-	-	-	22.4	20.8	23.0	Jun 28 at hr 10	5.5	SSE	22.6	Jun 7	100.0	100.0
Precipitation (mm)*	-	-	-	-	-	-	127.2	0.0	20.5	Jun 15 at hr 10	6.8	NNW	43.6	Jun 15	100.0	99.9
WSV (km/hr)	-	-	-	-	-	-	0.4	0.0	16.9	Jun 18 at hr 23	16.9	NE	8.3	Jun 10	100.0	100.0
WDV (sector)	-	-	-	-	-	-	115 (ESE)	-	-	-	-	-	-	-	100.0	100.0

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

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

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

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

Date	Time (MST)	Parameter	Average Period	AAAQOs / AAAQGs	Concentration	Wind speed	Wind Direction	Reference #
Jun 1	-	PM2.5	24-Hour	29 µg/m3	30.5 µg/m3	7.0 km/hr	3° (N)	414427
Jun 8	3	PM2.5	1-Hour	80 µg/m3	80.7 µg/m3	2.1 km/hr	22° (NNE)	414721
Jun 8	4	PM2.5	1-Hour	80 µg/m3	95 µg/m3	1.7 km/hr	40° (NE)	414721
Jun 8	5	PM2.5	1-Hour	80 µg/m3	90.3 µg/m3	0.5 km/hr	121° (ESE)	414721
Jun 8	6	PM2.5	1-Hour	80 µg/m3	93.6 µg/m3	0.7 km/hr	30° (NNE)	414721
Jun 8	-	PM2.5	24-Hour	29 µg/m3	42 µg/m3	4.1 km/hr	34° (NE)	414721
Jun 11	17	PM2.5	1-Hour	80 µg/m3	96 µg/m3	6.2 km/hr	306° (NW)	414721
Jun 11	-	PM2.5	24-Hour	29 µg/m3	32.7 µg/m3	5.6 km/hr	217° (SW)	414721
Jun 12	7	PM2.5	1-Hour	80 µg/m3	93 µg/m3	4.9 km/hr	34° (NE)	414190
Jun 12	8	PM2.5	1-Hour	80 µg/m3	105.8 µg/m3	4.5 km/hr	26° (NNE)	414190
Jun 12	9	PM2.5	1-Hour	80 µg/m3	97.2 µg/m3	3.3 km/hr	340° (NNW)	414190
Jun 12	10	PM2.5	1-Hour	80 µg/m3	95.1 µg/m3	3.8 km/hr	347° (NNW)	414190
Jun 12	11	PM2.5	1-Hour	80 µg/m3	90.3 µg/m3	6.0 km/hr	347° (NNW)	414190
Jun 12	12	PM2.5	1-Hour	80 µg/m3	118.8 µg/m3	8.4 km/hr	16° (NNE)	414190
Jun 12	13	PM2.5	1-Hour	80 µg/m3	119.3 µg/m3	6.5 km/hr	17° (NNE)	414190
Jun 12	14	PM2.5	1-Hour	80 µg/m3	128.4 µg/m3	5.1 km/hr	66° (ENE)	414190
Jun 12	15	PM2.5	1-Hour	80 µg/m3	152.2 µg/m3	5.6 km/hr	99° (E)	414190
Jun 12	16	PM2.5	1-Hour	80 µg/m3	114.8 µg/m3	6.8 km/hr	109° (ESE)	414190
Jun 12	-	PM2.5	24-Hour	29 µg/m3	77.6 µg/m3	3.7 km/hr	48° (NE)	414190
Jun 13	0	PM2.5	1-Hour	80 µg/m3	99 µg/m3	2.0 km/hr	118° (ESE)	414190
Jun 13	6	PM2.5	1-Hour	80 µg/m3	99.3 µg/m3	4.4 km/hr	104° (ESE)	414190
Jun 13	7	PM2.5	1-Hour	80 µg/m3	111.9 µg/m3	4.9 km/hr	118° (ESE)	414190
Jun 13	8	PM2.5	1-Hour	80 µg/m3	113.2 µg/m3	4.9 km/hr	108° (ESE)	414190
Jun 13	9	PM2.5	1-Hour	80 µg/m3	112.3 µg/m3	5.2 km/hr	115° (ESE)	414190
Jun 13	10	PM2.5	1-Hour	80 µg/m3	108.3 µg/m3	4.8 km/hr	111° (ESE)	414190
Jun 13	11	PM2.5	1-Hour	80 µg/m3	101.4 µg/m3	4.9 km/hr	117° (ESE)	414190
Jun 13	12	PM2.5	1-Hour	80 µg/m3	94.1 µg/m3	6.1 km/hr	91° (E)	414190
Jun 13	13	PM2.5	1-Hour	80 µg/m3	95.8 µg/m3	5.1 km/hr	94° (E)	414190
Jun 13	14	PM2.5	1-Hour	80 µg/m3	88.3 µg/m3	9.0 km/hr	124° (ESE)	414190
Jun 13	22	PM2.5	1-Hour	80 µg/m3	80.6 µg/m3	10.1 km/hr	99° (E)	414190

Date	Time (MST)	Parameter	Average Period	AAAQOs / AAAQGs	Concentration	Wind speed	Wind Direction	Reference #
Jun 13	23	PM2.5	1-Hour	80 µg/m3	101.1 µg/m3	5.2 km/hr	117° (E)	414190
Jun 13	-	PM2.5	24-Hour	29 µg/m3	80.4 µg/m3	6.7 km/hr	115° (ESE)	414190
Jun 14	0	PM2.5	1-Hour	80 µg/m3	88.4 µg/m3	10.9 km/hr	118° (ESE)	414190
Jun 18	17	PM2.5	1-Hour	80 µg/m3	93.7 µg/m3	9.6 km/hr	71° (ENE)	414190
Jun 18	18	PM2.5	1-Hour	80 µg/m3	176.2 µg/m3	9.7 km/hr	68° (ENE)	414190
Jun 18	19	PM2.5	1-Hour	80 µg/m3	83.8 µg/m3	9.5 km/hr	97° (E)	414190
Jun 18	20	PM2.5	1-Hour	80 µg/m3	112.2 µg/m3	7.2 km/hr	48° (NE)	414190
Jun 18	-	PM2.5	24-Hour	29 µg/m3	29.4 µg/m3	7.8 km/hr	55° (NE)	414190

The source of the exceedances of the PM2.5 objective and guideline were due to wildfires.

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

St. Lina Station

Equipment Operation Summary

Parameter	Calibration Date	Equipment Operational Summary
SO2 Thermo 43i-TLE #1180930030	June 17, 2023	• Seven hours of downtime were recorded on June 11 and June 12 due to intermittent polling issues.
H2S Thermo 450i #CM18010058 Teledyne T100 #1014	June 22, 2023	• Seven hours of downtime were recorded on June 11 and June 12 due to intermittent polling issues. • The analyzer's daily span check results were either nearing or exceeding upper acceptance limit between June 13 and June 16. A repeat zero-span check was attempted on June 14 hour 6 to assess the drift, but it was interrupted by the scheduled restart of datalogger. One hour of downtime was recorded due to the additional quality check. • In order to correct the span drifts, a successful shut-down calibration was completed to rebuild the sample pump on June 17. The analyzer/pump was allowed time to stabilize overnight. A successful post-repair calibration was completed on June 18. A new permeation tube was also installed. Twenty-five hours of downtime were recorded due to this maintenance activity. • On June 19, a repeat zero-span check was initiated hour 5 and 6 to investigate anomalous results from the June 18's post-calibration span check. Maintenance and testing of the perm oven were conducted at hour 13 and 14 as the glassware of the permeation tube was found broken. The permeation tube was replaced with a low output one. A zero-span check was run to complete the maintenance. Four hours of downtime were recorded due to this event. • The analyzer failed on June 20 hour 4 due to the photomultiplier tube (PMT) instability. On June 21, a shut-down calibration was attempted but failed on the LICA's Thermo 450i analyzer, s/n: CM18010058 due to unstable PMT. The analyzer was replaced with the BV's Teledyne T100 analyzer, s/n: 1014. The analyzer was allowed time to stabilize overnight. A successful installation calibration was completed on June 22. Fifty-nine hours of downtime were recorded due to this event.
NOx/NO/NO2 Thermo 42i #1180930029	June 17, 2023	• Seven hours of downtime were recorded on June 11 and June 12 due to intermittent polling issues.

Parameter	Calibration Date	Equipment Operational Summary
O3 Thermo 49iQ #12208316586	June 18, 2023	• Seven hours of downtime were recorded on June 11 and June 12 due to intermittent polling issues.
THC/CH4/NMHC Thermo 55i #1180030034	June 18, 2023	• Seven hours of downtime were recorded on June 11 and June 12 due to intermittent polling issues.
PM2.5 Thermo Sharp 5030i #CM17091001	June 18, 2023	• No issues were identified this month.
Parameter	**Verification Date**	**Equipment Operational Summary**
RH Rotronic HC2A-S3 #20404750	June 18, 2023	• Seven hours of downtime were recorded on June 11 and June 12 due to intermittent polling issues.
BP Met One 090D #F4498	June 18, 2023	• Seven hours of downtime were recorded on June 11 and June 12 due to intermittent polling issues.
AT Rotronic HC2A-S3 #20404750	June 18, 2023	• Seven hours of downtime were recorded on June 11 and June 12 due to intermittent polling issues.
ST COMET #NA	June 18, 2023	• Seven hours of downtime were recorded on June 11 and June 12 due to intermittent polling issues.
Precipitation MetOne 387D #A23775	June 18, 2023	• Seven hours of downtime were recorded on June 11 and June 12 due to intermittent polling issues.
WS/WD/STDWD RM Young 05305VK #161466	June 18, 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. • Seven hours of downtime were recorded on June 11 and June 12 due to intermittent polling issues. • The wind channels were put offline for two hours on June 22 while the St FX students were installing their HC analyzer.

Monitored Data Summary for Tamarack Site

Parameter	Objectives/Guidelines			Exceedances			Monthly Avg.	Min. 1-hr	Max. 1-hr	Date/Time	VWS (km/hr)	VWD (sector)	Max. 24-hr	Date	Operational Uptime (%)	Valid Data (%)
	1-hr	24-hr	30-day	1-hr	24-hr	30-day										
SO2 (ppb)	172	48	11	0	0	0	0.7	0	14	Jun 6 at hr 4	6.7	WNW	3.0	Jun 6	100.0	94.8
H2S (ppb)	10	3	-	0	0	-	0.1	0	2	Jun 4 at hr 11	4.2	ESE	1.0	Jun 13	100.0	94.8
NOx (ppb)	-	-	-	-	-	-	3.7	0	36	Jun 9 at hr 0	2.8	ENE	7.2	Jun 9	100.0	94.6
NO (ppb)	-	-	-	-	-	-	0.5	0	16	Jun 7 at hr 5	0.5	NE	1.8	Jun 9	100.0	94.6
NO2 (ppb)	159	-	-	0	-	-	3.2	0	24	Jun 9 at hr 0	2.8	ENE	5.7	Jun 13	100.0	94.6
O3 (ppb)	76	-	-	0	-	-	30.0	2.0	74.5	Jun 11 at hr 16	5.8	W	48.7	Jun 11	98.6	93.4
THC (ppm)	-	-	-	-	-	-	2.01	1.92	2.39	Jun 25 at hr 2	1.2	NE	2.08	Jun 28	100.0	94.8
CH4 (ppm)	-	-	-	-	-	-	2.01	1.92	2.37	Jun 25 at hr 2	1.2	NE	2.08	Jun 28	100.0	94.8
NMHC (ppm)	-	-	-	-	-	-	0.00	0.00	0.13	Jun 23 at hr 0	0.2	SW	0.01	Jun 23	100.0	94.8
PM2.5 (µg/m3)	80	29	-	32	6	-	19.0	0	176	Jun 18 at hr 18	9.7	ENE	80.4	Jun 13	100.0	99.7
RH (%)	-	-	-	-	-	-	71.7	27	100	Jun 1 at hr 21	1.4	N	94.8	Jun 15	100.0	100.0
BP (millibar)	-	-	-	-	-	-	935	917	945	Jun 3 at hr 11	6	NE	943	Jun 3	100.0	100.0
Ext. Temp. (°C)	-	-	-	-	-	-	16.8	4.3	28.2	Jun 30 at hr 16	7.8	WSW	22.1	Jun 11	100.0	100.0
Stn. Temp. (°C)	-	-	-	-	-	-	22.4	20.8	23.0	Jun 28 at hr 10	5.5	SSE	22.6	Jun 7	100.0	100.0
Precipitation (mm)*	-	-	-	-	-	-	127.2	0.0	20.5	Jun 15 at hr 10	6.8	NNW	43.6	Jun 15	100.0	99.9
WSV (km/hr)	-	-	-	-	-	-	0.4	0.0	16.9	Jun 18 at hr 23	16.9	NE	8.3	Jun 10	100.0	100.0
WDV (sector)	-	-	-	-	-	-	115 (ESE)	-	-	-	-	-	-	-	100.0	100.0

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

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

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

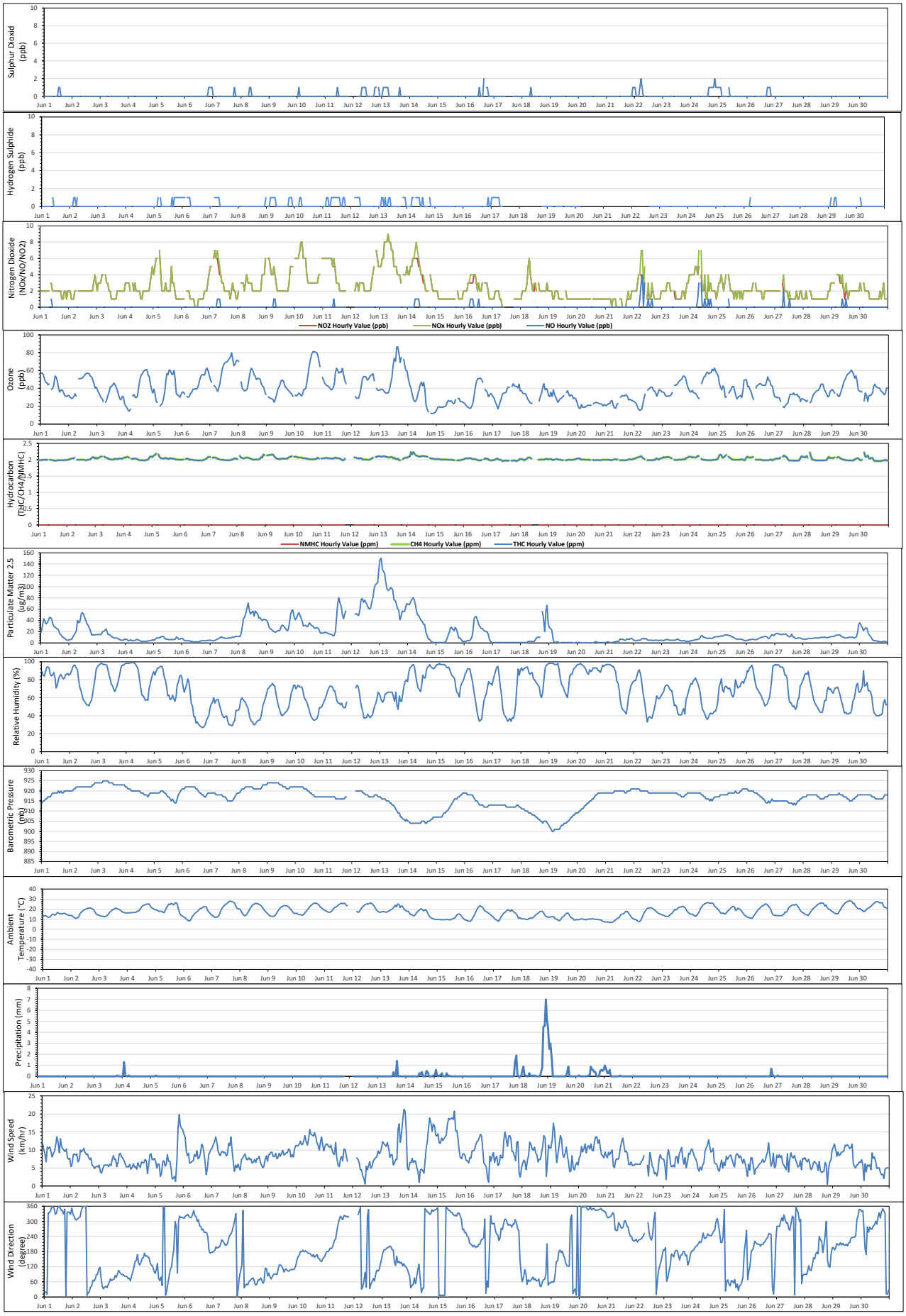
The following exceedances of AAAQOs and AAAQGs were observed at the St. Lina Site.

Date	Time (MST)	Parameter	Average Period	AAAQOs / AAAQGs	Concentration	Wind speed	Wind Direction	Reference #
Jun 7	18	O3	1-Hour	76 ppb	79.9 ppb	6.8 km/hr	308° (NW)	414435
Jun 10	14	O3	1-Hour	76 ppb	78.4 ppb	13.9 km/hr	157° (SSE)	414625
Jun 10	15	O3	1-Hour	76 ppb	81.2 ppb	14.8 km/hr	163° (SSE)	414625
Jun 10	16	O3	1-Hour	76 ppb	81 ppb	13.8 km/hr	168° (SSE)	414625
Jun 10	17	O3	1-Hour	76 ppb	80.6 ppb	12.2 km/hr	154° (SSE)	414625
Jun 10	18	O3	1-Hour	76 ppb	80.3 ppb	11.4 km/hr	152° (SSE)	414625
Jun 10	19	O3	1-Hour	76 ppb	77.6 ppb	10.0 km/hr	143° (SE)	414625
Jun 13	14	O3	1-Hour	76 ppb	86.3 ppb	15.8 km/hr	141° (SE)	414828
Jun 13	15	O3	1-Hour	76 ppb	86.5 ppb	17.3 km/hr	134° (SE)	414828
Jun 13	16	O3	1-Hour	76 ppb	78.8 ppb	12.1 km/hr	138° (SE)	414828
Jun 8	-	PM2.5	24-Hour	29 µg/m3	45 µg/m3	7.1 km/hr	65° (ENE)	415191
Jun 9	-	PM2.5	24-Hour	29 µg/m3	31 µg/m3	9.0 km/hr	106° (ESE)	415191
Jun 10	-	PM2.5	24-Hour	29 µg/m3	33 µg/m3	12.5 km/hr	166° (SSE)	415191
Jun 11	-	PM2.5	24-Hour	29 µg/m3	36 µg/m3	9.2 km/hr	249° (WSW)	415191
Jun 12	19	PM2.5	1-Hour	80 µg/m3	97 µg/m3	7.9 km/hr	106° (ESE)	415191
Jun 12	20	PM2.5	1-Hour	80 µg/m3	103 µg/m3	8.1 km/hr	103° (ESE)	415191
Jun 12	21	PM2.5	1-Hour	80 µg/m3	105 µg/m3	9.7 km/hr	109° (ESE)	415191
Jun 12	22	PM2.5	1-Hour	80 µg/m3	107 µg/m3	9.0 km/hr	130° (SE)	415191
Jun 12	23	PM2.5	1-Hour	80 µg/m3	128 µg/m3	2.2 km/hr	319° (NNW)	415191
Jun 12	-	PM2.5	24-Hour	29 µg/m3	75 µg/m3	6.1 km/hr	64° (ENE)	415191
Jun 13	0	PM2.5	1-Hour	80 µg/m3	148 µg/m3	10.6 km/hr	172° (S)	415191
Jun 13	1	PM2.5	1-Hour	80 µg/m3	150 µg/m3	12.3 km/hr	186° (S)	415191
Jun 13	2	PM2.5	1-Hour	80 µg/m3	130 µg/m3	11.8 km/hr	187° (S)	415191
Jun 13	3	PM2.5	1-Hour	80 µg/m3	127 µg/m3	11.4 km/hr	192° (S)	415191
Jun 13	4	PM2.5	1-Hour	80 µg/m3	123 µg/m3	11.0 km/hr	196° (SSW)	415191
Jun 13	5	PM2.5	1-Hour	80 µg/m3	108 µg/m3	12.1 km/hr	196° (SSW)	415191
Jun 13	6	PM2.5	1-Hour	80 µg/m3	96 µg/m3	10.5 km/hr	203° (SSW)	415191
Jun 13	7	PM2.5	1-Hour	80 µg/m3	93 µg/m3	8.0 km/hr	200° (SSW)	415191
Jun 13	8	PM2.5	1-Hour	80 µg/m3	95 µg/m3	8.7 km/hr	187° (S)	415191
Jun 13	9	PM2.5	1-Hour	80 µg/m3	98 µg/m3	8.8 km/hr	186° (S)	415191
Jun 13	10	PM2.5	1-Hour	80 µg/m3	97 µg/m3	5.9 km/hr	138° (SE)	415191
Jun 13	11	PM2.5	1-Hour	80 µg/m3	93 µg/m3	6.4 km/hr	125° (SE)	415191

Date	Time (MST)	Parameter	Average Period	AAAQOs / AAAQGs	Concentration	Wind speed	Wind Direction	Reference #
Jun 13	-	PM2.5	24-Hour	29 µg/m3	87 µg/m3	11.6 km/hr	151° (SSE)	415191
Jun 14	-	PM2.5	24-Hour	29 µg/m3	38 µg/m3	9.5 km/hr	359° (N)	415191

The cause of the exceedances of the ozone objective was due to wildfires. Large amounts of volatile and semi-volatile organic materials and nitrogen oxides were emitted from wildfires, and react with the sun and heat to form excessive ground-level ozone.
The source of the exceedance of the PM2.5 objectives and guidelines were due to wildfires.

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



Lac La Biche Station

Equipment Operation Summary

Parameter	Calibration Date	Equipment Operational Summary
SO2 Thermo 43i-TLE #1180320043	June 12, 2023	• No operational issues were identified this month.
H2S Thermo 450i #CM17360002	June 12, 2023	• The daily zero check results were either approaching or exceeding the acceptance limited between June 9 and June 11. A repeat zero-span check was initiated on June 10 hour 5 and hour 6 to investigate the drift. The check result showed a similar drift. The drift was corrected during the monthly calibration on June 12. As the analyzer passed the June 12 calibration, data collected between June 9 and June 11 were considered valid. However, two hours of downtime were recorded due to the additional quality check on June 10.
NOx/NO/NO2 Thermo 42i #1180930027	June 12, 2023	• No operational issues were identified this month.
O3 Thermo 49i #1002240372	June 13, 2023	• No operational issues were identified this month.
THC/CH4/NMHC Thermo 55i #1180030044	June 13, 2023	• No operational issues were identified this month.
PM2.5 Thermo Sharp 5030i #CM17071016	June 13, 2023	• No operational issues were recorded this month.
Parameter	**Verification Date**	**Equipment Operational Summary**
RH Rotronic HC2A-S3 #0020357518	June 13, 2023	• No operational issues were recorded this month.
BP Met One 092 #Y23360	June 13, 2023	• No operational issues were recorded this month.

Parameter	Verification Date	Equipment Operational Summary
AT Rotronic HC2A-S3 #0020357518	June 13, 2023	• No operational issues were recorded this month.
ST COMET #NA	June 13, 2023	• No operational issues were recorded this month.
WS/WD/STDWD RM Young 05305VK #56778	June 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 operational issues were recorded this month.

Monitored Data Summary for Lac La Biche Station

Parameter	Objectives/Guidelines			Exceedances			Monthly Avg.	Min. 1-hr	Max. 1-hr	Date/Time	VWS (km/hr)	VWD (sector)	Max. 24-hr	Date	Operational Uptime (%)	Valid Data (%)
	1-hr	24-hr	30-day	1-hr	24-hr	30-day										
SO2 (ppb)	172	48	11	0	0	0	0.1	0	6	Jun 16 at hr 8	7.3	S	0.9	Jun 12	100.0	95.0
H2S (ppb)	10	3	-	0	0	-	0.1	0	2	Jun 12 at hr 4	4.4	NNW	1.0	Jun 12	99.7	94.7
NOx (ppb)	-	-	-	-	-	-	3.3	0	21	Jun 8 at hr 6	2.8	NE	10.0	Jun 8	100.0	94.6
NO (ppb)	-	-	-	-	-	-	0.4	0	10	Jun 8 at hr 8	7.4	N	3.5	Jun 8	100.0	94.6
NO2 (ppb)	159	-	-	0	-	-	2.9	0	13	Jun 8 at hr 16	6	NNE	6.4	Jun 8	100.0	94.6
O3 (ppb)	76	-	-	4	-	-	32.6	6.2	85.9	Jun 13 at hr 16	15.4	SE	52.6	Jun 10	100.0	95.0
THC (ppm)	-	-	-	-	-	-	2.00	1.92	2.28	Jun 3 at hr 2	0.3	NE	2.06	Jun 13	100.0	95.0
CH4 (ppm)	-	-	-	-	-	-	2.00	1.92	2.25	Jun 3 at hr 4	0	ESE	2.06	Jun 13	100.0	95.0
NMHC (ppm)	-	-	-	-	-	-	0.00	0.00	0.10	Jun 24 at hr 18	5.8	W	0.01	Jun 24	100.0	95.0
PM2.5 (µg/m3)	80	29	-	30	7	-	21.3	1	153	Jun 13 at hr 4	7.8	SE	95.1	Jun 13	100.0	99.9
RH (%)	-	-	-	-	-	-	69.1	19	100	Jun 1 at hr 3	11.9	NW	97.7	Jun 14	100.0	100.0
BP (millibar)	-	-	-	-	-	-	945	927	954	Jun 3 at hr 5	1.1	ENE	952	Jun 3	100.0	100.0
Ext. Temp. (°C)	-	-	-	-	-	-	17.7	7.8	28.4	Jun 29 at hr 14	10	WSW	22.3	Jun 29	100.0	100.0
Stn. Temp. (°C)	-	-	-	-	-	-	21.6	18.4	28.4	Jun 13 at hr 13	12	SE	22.8	Jun 12	100.0	100.0
WSV (km/hr)	-	-	-	-	-	-	1.0	0.0	27.2	Jun 15 at hr 10	27.2	NW	15.2	Jun 15	100.0	100.0
WDV (sector)	-	-	-	-	-	-	336 (NNW)	-	-	-	-	-	-	-	100.0	100.0

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

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

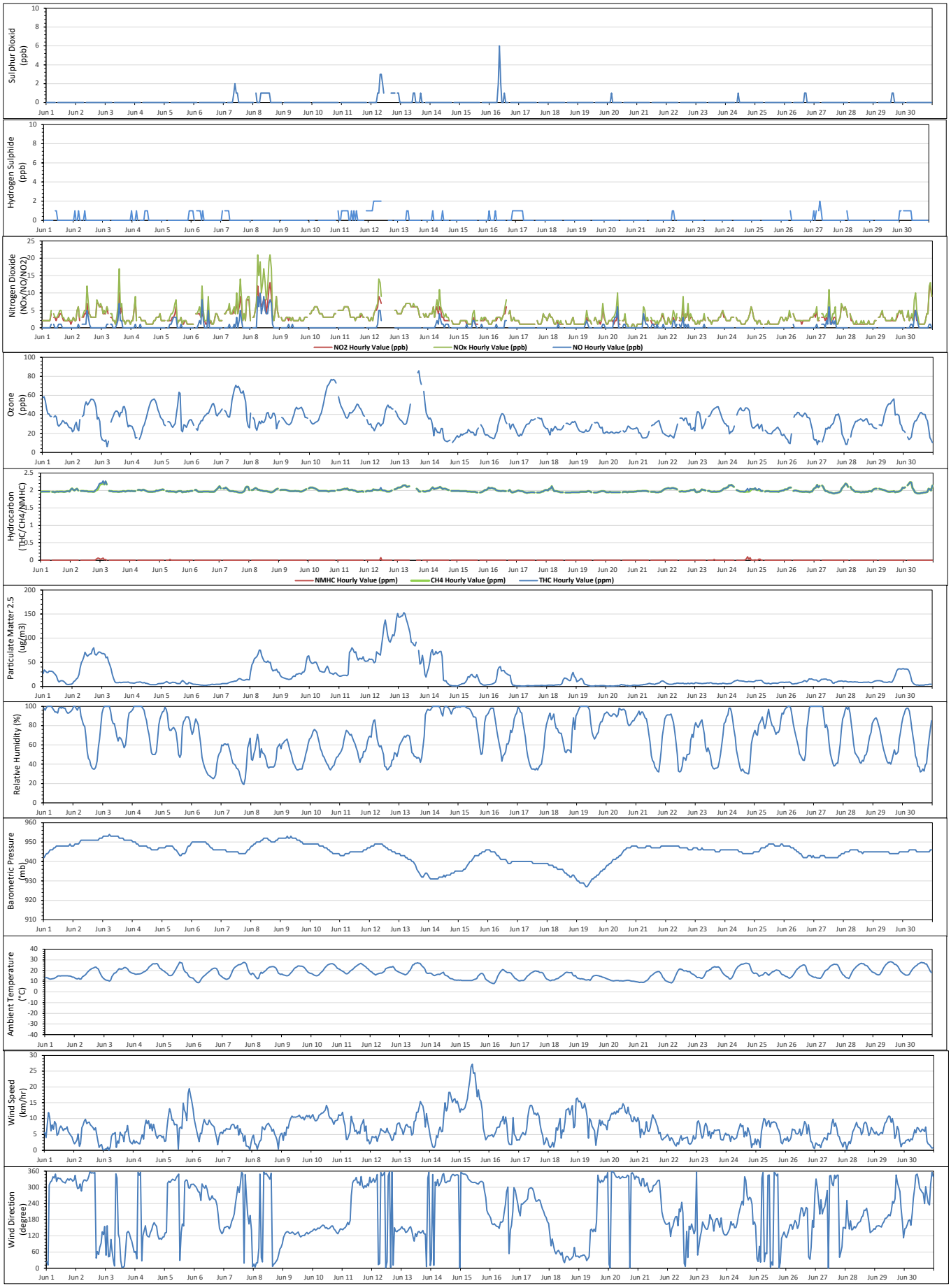
The following exceedances of AAAQOs and AAAQGs were observed at the Lac La Biche Station.

Date	Time (MST)	Parameter	Average Period	AAAQOs / AAAQGs	Concentration	Wind speed	Wind Direction	Reference #
Jun 10	17	O3	1-Hour	76 ppb	76.7 ppb	9.1 km/hr	145° (SE)	416667
Jun 10	19	O3	1-Hour	76 ppb	76.6 ppb	9.3 km/hr	133° (SE)	416667
Jun 13	15	O3	1-Hour	76 ppb	83.7 ppb	13.5 km/hr	130° (SE)	414827
Jun 13	16	O3	1-Hour	76 ppb	85.9 ppb	15.4 km/hr	133° (SE)	414827
Jun 2	17	PM2.5	1-Hour	80 µg/m3	80.1 µg/m3	7.1 km/hr	62° (ENE)	414424
Jun 2	-	PM2.5	24-Hour	29 µg/m3	52.2 µg/m3	5.2 km/hr	349° (NNW)	414424
Jun 8	-	PM2.5	24-Hour	29 µg/m3	49.0 µg/m3	4.8 km/hr	8° (N)	414723
Jun 10	-	PM2.5	24-Hour	29 µg/m3	35.8 µg/m3	10.7 km/hr	147° (SE)	414723
Jun 11	-	PM2.5	24-Hour	29 µg/m3	49.2 µg/m3	6.7 km/hr	296° (WNW)	414723
Jun 12	10	PM2.5	1-Hour	80 µg/m3	83.1 µg/m3	6.1 km/hr	357° (N)	415192
Jun 12	11	PM2.5	1-Hour	80 µg/m3	104.00 µg/m3	5.6 km/hr	2° (N)	415192
Jun 12	12	PM2.5	1-Hour	80 µg/m3	127.7 µg/m3	5.6 km/hr	24° (NNE)	415192
Jun 12	13	PM2.5	1-Hour	80 µg/m3	137.6 µg/m3	7.0 km/hr	342° (NNW)	415192
Jun 12	14	PM2.5	1-Hour	80 µg/m3	120.5 µg/m3	5.7 km/hr	359° (N)	415192
Jun 12	15	PM2.5	1-Hour	80 µg/m3	104.5 µg/m3	5.2 km/hr	3° (N)	415192
Jun 12	16	PM2.5	1-Hour	80 µg/m3	93.8 µg/m3	4.2 km/hr	358° (N)	415192
Jun 12	17	PM2.5	1-Hour	80 µg/m3	91.7 µg/m3	3.0 km/hr	12° (NNE)	415192
Jun 12	18	PM2.5	1-Hour	80 µg/m3	99.7 µg/m3	3.4 km/hr	150° (SSE)	415192
Jun 12	19	PM2.5	1-Hour	80 µg/m3	107.1 µg/m3	5.5 km/hr	138° (SE)	415192
Jun 12	20	PM2.5	1-Hour	80 µg/m3	104.5 µg/m3	5.0 km/hr	135° (SE)	415192
Jun 12	21	PM2.5	1-Hour	80 µg/m3	116.2 µg/m3	8.0 km/hr	140° (SE)	415192
Jun 12	22	PM2.5	1-Hour	80 µg/m3	140.8 µg/m3	8.5 km/hr	143° (SE)	415192
Jun 12	23	PM2.5	1-Hour	80 µg/m3	151 µg/m3	6.2 km/hr	2° (NNE)	415192
Jun 12	-	PM2.5	24-Hour	29 µg/m3	90.8 µg/m3	5.3 km/hr	14° (NNE)	415192
Jun 13	0	PM2.5	1-Hour	80 µg/m3	143.1 µg/m3	7.2 km/hr	154° (SSE)	415192
Jun 13	1	PM2.5	1-Hour	80 µg/m3	143.4 µg/m3	6.6 km/hr	146° (SE)	415192
Jun 13	2	PM2.5	1-Hour	80 µg/m3	146 µg/m3	5.0 km/hr	146° (SE)	415192
Jun 13	3	PM2.5	1-Hour	80 µg/m3	146.5 µg/m3	6.1 km/hr	133° (SE)	415192
Jun 13	4	PM2.5	1-Hour	80 µg/m3	152.9 µg/m3	7.8 km/hr	134° (SE)	415192
Jun 13	5	PM2.5	1-Hour	80 µg/m3	149.9 µg/m3	8.2 km/hr	141° (SE)	415192

Date	Time (MST)	Parameter	Average Period	AAAQOs / AAAQGs	Concentration	Wind speed	Wind Direction	Reference #
Jun 13	6	PM2.5	1-Hour	80 µg/m3	139.1 µg/m3	7.4 km/hr	149° (SSE)	415192
Jun 13	7	PM2.5	1-Hour	80 µg/m3	131.5 µg/m3	7.3 km/hr	154° (SSE)	415192
Jun 13	8	PM2.5	1-Hour	80 µg/m3	120.9 µg/m3	7.4 km/hr	141° (SE)	415192
Jun 13	9	PM2.5	1-Hour	80 µg/m3	111.5 µg/m3	4.8 km/hr	116° (ESE)	415192
Jun 13	10	PM2.5	1-Hour	80 µg/m3	91.7 µg/m3	5.3 km/hr	100° (E)	415192
Jun 13	11	PM2.5	1-Hour	80 µg/m3	90 µg/m3	9.1 km/hr	129° (SE)	415192
Jun 13	12	PM2.5	1-Hour	80 µg/m3	86.2 µg/m3	9.4 km/hr	118° (ESE)	415192
Jun 13	13	PM2.5	1-Hour	80 µg/m3	83.8 µg/m3	12.0 km/hr	134° (SE)	415192
Jun 13	14	PM2.5	1-Hour	80 µg/m3	91.6 µg/m3	12.0 km/hr	137° (SE)	415192
Jun 13	-	PM2.5	24-Hour	29 µg/m3	95.1 µg/m3	9.2 km/hr	127° (SE)	415192
Jun 14	-	PM2.5	24-Hour	29 µg/m3	35 µg/m3	10.1 km/hr	337° (NNW)	415192

The cause of the exceedances of the ozone objective was due to wildfires. Large amounts of volatile and semi-volatile organic materials and nitrogen oxides were emitted from wildfires, and react with the sun and heat to form excessive ground-level ozone.
The source of the exceedance of the PM2.5 objectives and guidelines were due to wildfires.

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



TABLES AND CHARTS

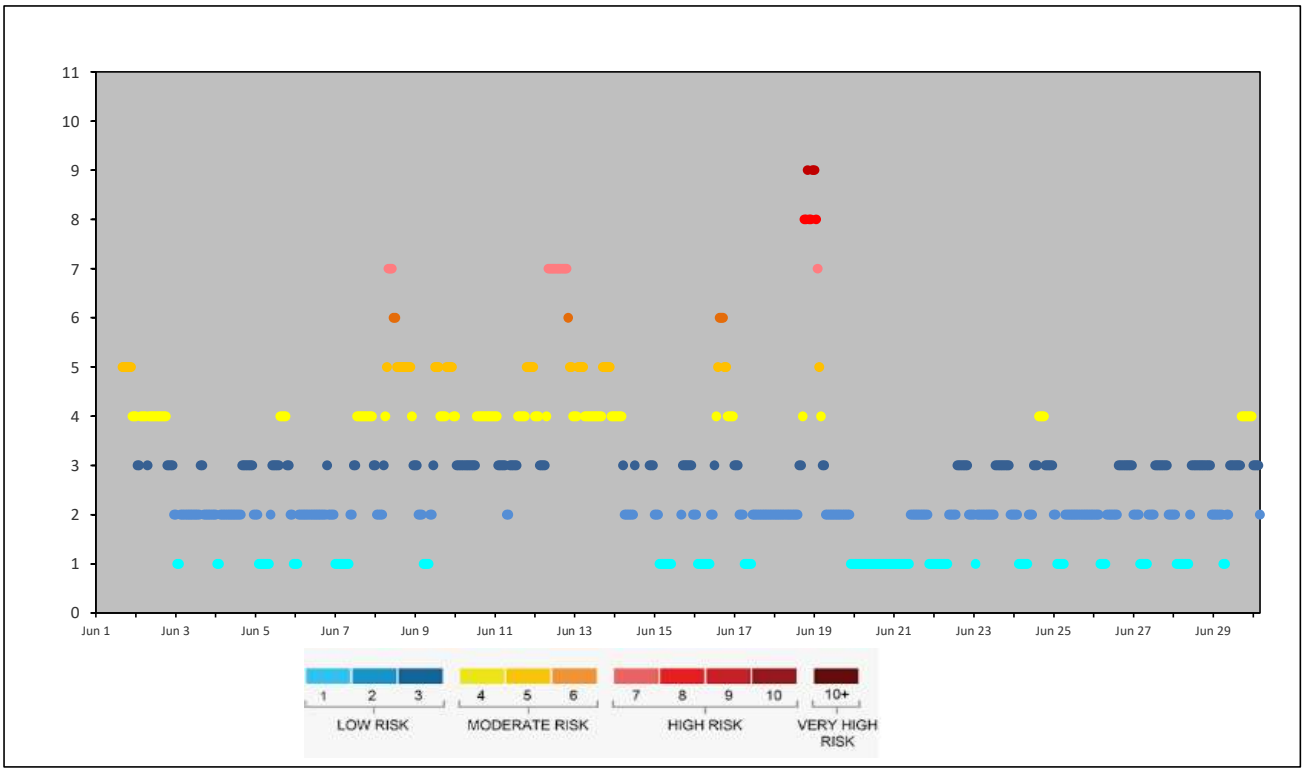
COLD LAKE SOUTH STATION

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - June 2023

AIR QUALITY HEALTH INDEX

Day	Hourly Period Starting at (MST)																							
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Jun 1																	5	5	5	5	5	5	4	4
Jun 2	4	3	3	4	4	4	4	3	4	4	4	4	4	4	4	4	4	4	4	3	3	3	3	2
Jun 3	2	1	1	2	2	2	2	2	2	2	2	2	2	2	2	3	3	2	2	2	2	2	2	2
Jun 4	2	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3	3	3	2
Jun 5	2	2	1	1	1	1	1	1	1	2	3	3	3	3	3	4	4	4	4	3	3	2	2	1
Jun 6	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	2	2	2	1
Jun 7	1	1	1	1	1	1	1	1	1	2	2	3	3	4	4	4	4	4	4	4	4	4	4	3
Jun 8	3	2	2	2	2	3	4	5	7	7	7	6	6	5	5	5	5	5	5	5	5	5	4	3
Jun 9	3	3	2	2	2	1	1	1	1	2	2	3	5	5	5	4	4	4	4	5	5	5	5	4
Jun 10	4	3	3	3	3	3	3	3	3	3	3	3	3	4	4	4	4	4	4	4	4	4	4	4
Jun 11	4	4	3	3	3	3	3	2	2	3	3	3	3	3	4	4	4	4	4	5	5	5	5	5
Jun 12	4	4	4	3	3	3	3	4	7	7	7	7	7	7	7	7	7	7	7	7	6	5	5	4
Jun 13	4	4	5	5	5	5	4	4	4	4	4	4	4	4	4	4	5	5	5	5	5	5	4	4
Jun 14	4	4	4	4	4	3	2	2	2	2	2	2	3									3	3	3
Jun 15	2	2	2	1	1	1	1	1	1	1	1						2	3	3	3	3	3	3	2
Jun 16	2	2	1	1	1	1	1	1	1	1	2	2	3	4	5	6	6	6	5	5	4	4	4	4
Jun 17	3	3	3	2	2	2	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2
Jun 18	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	4	8	8	9	8	8	9
Jun 19	9	8	7	5	4	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1
Jun 20	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Jun 21	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	1	1	1
Jun 22	1	1	1	1	1	1	1	1	1	2	2	2	2	2	3	3	3	3	3	3	3	2	2	2
Jun 23	2	1	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3	3	3	3	3	2	2
Jun 24	2	2	2	1	1	1	1	1	1	2	2	2	3	3	3	4	4	4	4	3	3	3	3	3
Jun 25	2	2	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Jun 26	2	2	2	2	1	1	1	1	2	2	2	2	2	2	2	3	3	3	3	3	3	3	3	3
Jun 27	2	2	2	2	1	1	1	1	1	2	2	2	2	3	3	3	3	3	3	3	3	2	2	2
Jun 28	2	2	1	1	1	1	1	1	1	1	2	3	3	3	3	3	3	3	3	3	3	3	3	2
Jun 29	2	2	2	2	2	2	1	1	2	2	3	3	3	3	3	3	3	4	4	4	4	4	4	4
Jun 30	3	3	3	3	2	2	2	2	2	3	3	3	3	3	4	4	3	3	3	3	3	3	3	2



Lakeland Industry & Community Association

Cold Lake South Station - June 2023

Summary of Hourly Averages

SULPHUR DIOXIDE (SO_2) in ppb

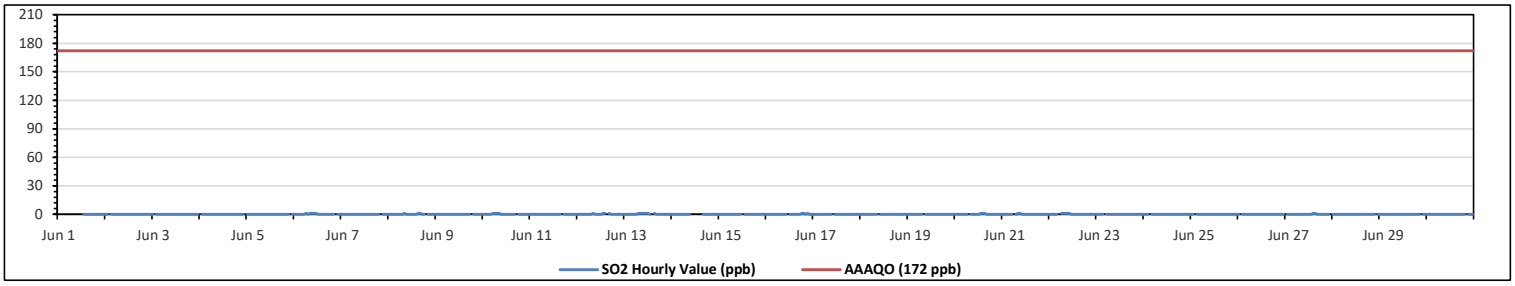
Alberta Ambient Air Quality Objectives (AAAQO): 1-Hour 172 ppb, 24-Hour 48 ppb, 30-Day 11 ppb

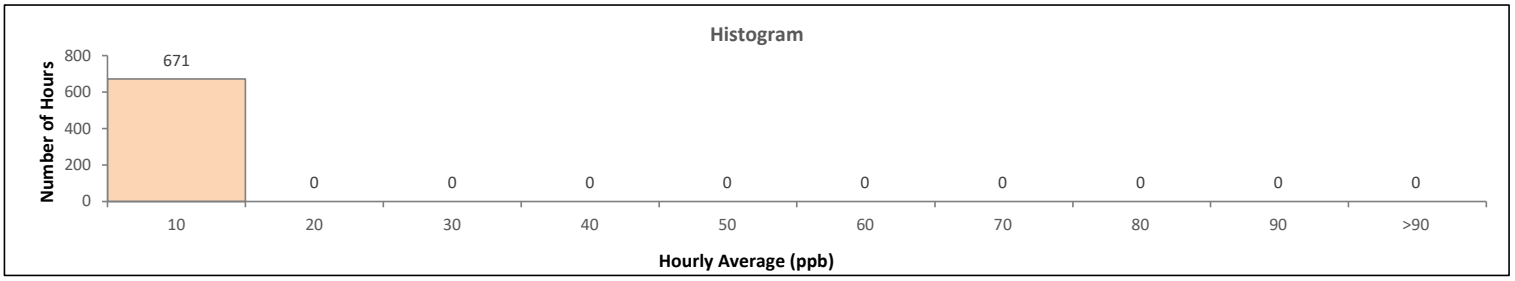
Number of 1-Hour Exceedances:	0	Number of 24-Hour Exceedances:	0	30-Day Exceedence:	0		
Maximum Hourly Value:	1	ppb	on Jun 6 at hr 6	Hours in Service:	720		
Maximum Daily Value:	0.3	ppb	on Jun 13	Hours of Data:	671		
Minimum Hourly Value:	0	ppb	on Jun 1 at hr 13	Hours of Missing Data:	13		
Minimum Daily Value:	0.0	ppb	on Jun 2	Hours of Calibration:	36		
Monthly Average:	0.1	ppb		Operational Uptime:	98.2		

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

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

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



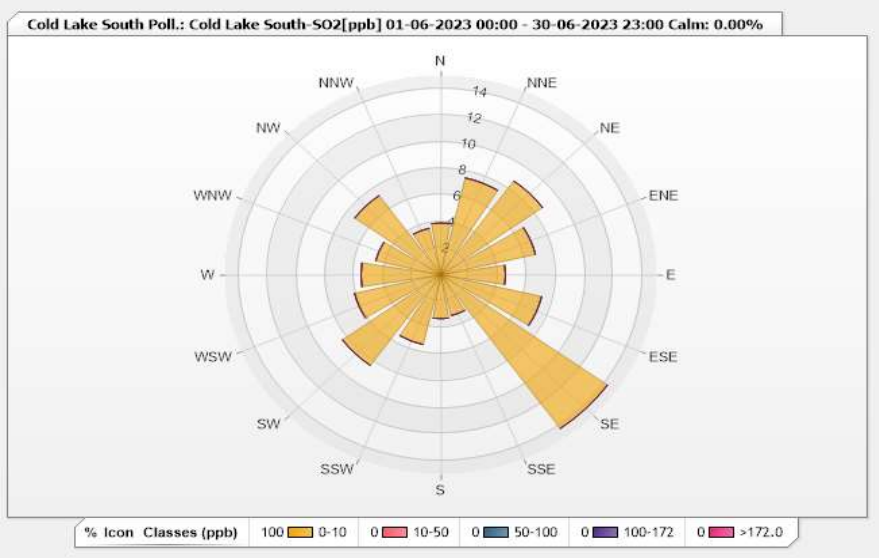


Station: Cold Lake South Poll.: Cold Lake South-SO2[ppb] Monthly: 06-2023

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

Calm: 0.00% Valid Data: 92.92% Calm Avg: 0.00 [ppm]

Direction	0-10	10-50	50-100	100-172	>172.0	Total
N	3.89	0	0	0	0	3.89
NNE	7.47	0	0	0	0	7.47
NE	8.67	0	0	0	0	8.67
ENE	6.73	0	0	0	0	6.73
E	4.48	0	0	0	0	4.48
ESE	7.17	0	0	0	0	7.17
SE	14.2	0	0	0	0	14.2
SSE	3.14	0	0	0	0	3.14
S	3.29	0	0	0	0	3.29
SSW	5.38	0	0	0	0	5.38
SW	8.37	0	0	0	0	8.37
WSW	6.13	0	0	0	0	6.13
W	5.53	0	0	0	0	5.53
WNW	4.63	0	0	0	0	4.63
NW	7.32	0	0	0	0	7.32
NNW	3.59	0	0	0	0	3.59
Summary	100	0	0	0	0	100



Lakeland Industry & Community Association

Cold Lake South Station - June 2023

Summary of Hourly Averages

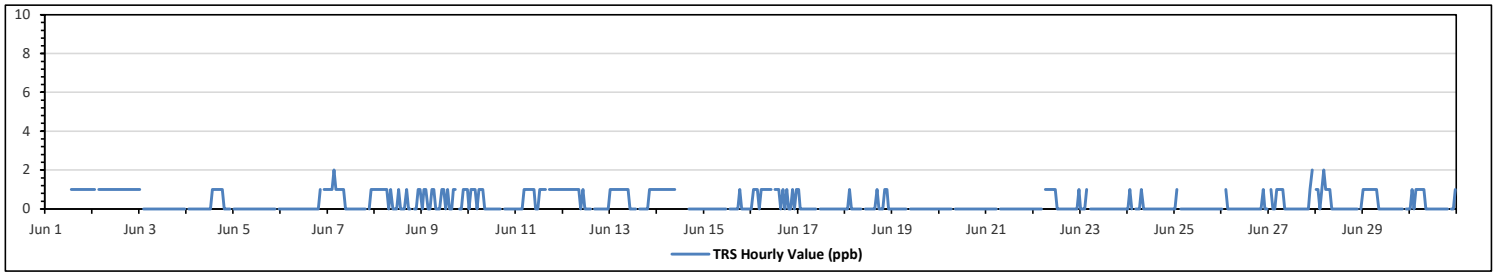
TOTAL REDUCED SULPHUR (TRS) in ppb

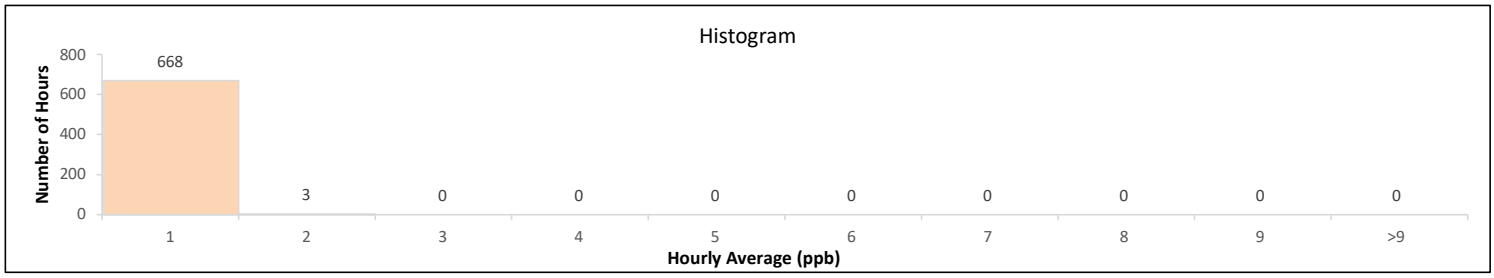
Maximum Hourly Value:	2	ppb	on Jun 7 at hr 3	Hours in Service:	720
Maximum Daily Value:	1.0	ppb	on Jun 2	Hours of Data:	671
Minimum Hourly Value:	0	ppb	on Jun 3 at hr 2	Hours of Missing Data:	13
Minimum Daily Value:	0.0	ppb	on Jun 5	Hours of Calibration:	36
Monthly Average:	0.3	ppb		Operational Uptime:	98.2

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

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.



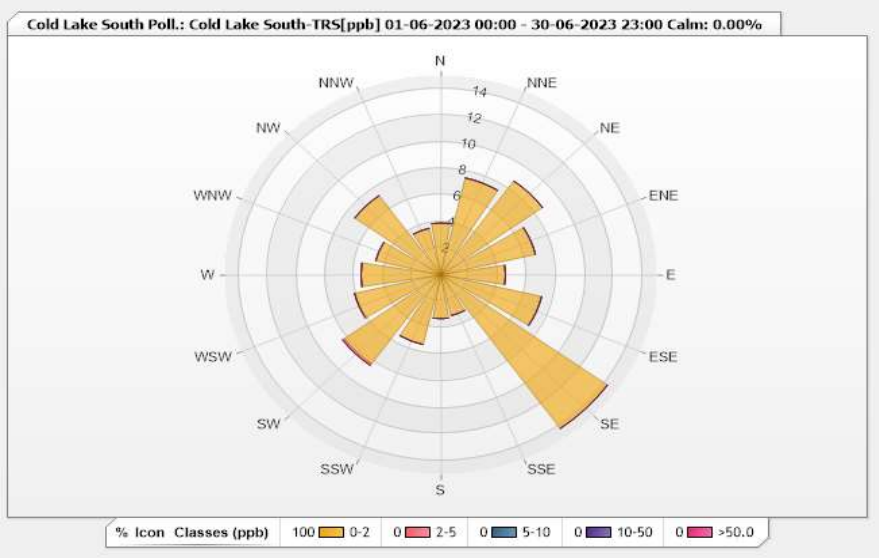


Station: Cold Lake South Poll.: Cold Lake South-TRS[ppb] Monthly: 06-2023

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

Calm: 0.00% Valid Data: 92.92% Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-50	>50.0	Total
N	3.89	0	0	0	0	3.89
NNE	7.47	0	0	0	0	7.47
NE	8.67	0	0	0	0	8.67
ENE	6.73	0	0	0	0	6.73
E	4.48	0	0	0	0	4.48
ESE	7.17	0	0	0	0	7.17
SE	14.2	0	0	0	0	14.2
SSE	3.14	0	0	0	0	3.14
S	3.29	0	0	0	0	3.29
SSW	5.38	0	0	0	0	5.38
SW	8.22	0.15	0	0	0	8.37
WSW	6.13	0	0	0	0	6.13
W	5.53	0	0	0	0	5.53
WNW	4.63	0	0	0	0	4.63
NW	7.32	0	0	0	0	7.32
NNW	3.59	0	0	0	0	3.59
Summary	100	0.15	0	0	0	100



Lakeland Industry & Community Association

Cold Lake South Station - June 2023

Summary of Hourly Averages

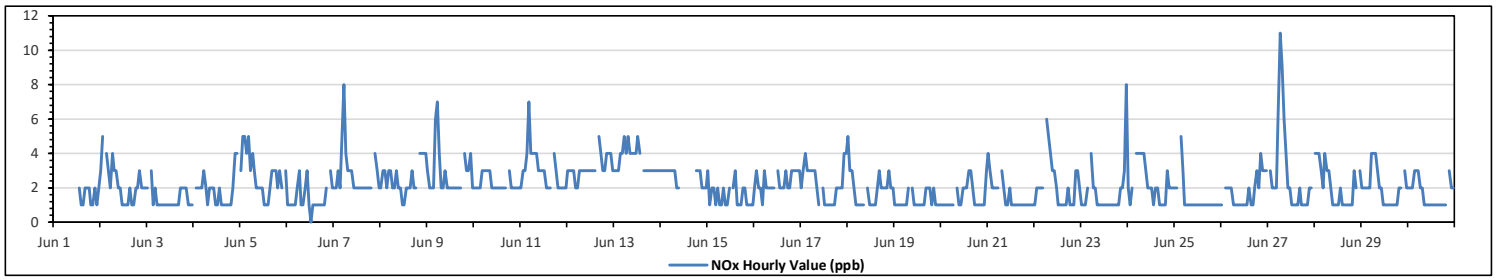
OXIDES OF NITROGEN (NOx) in ppb

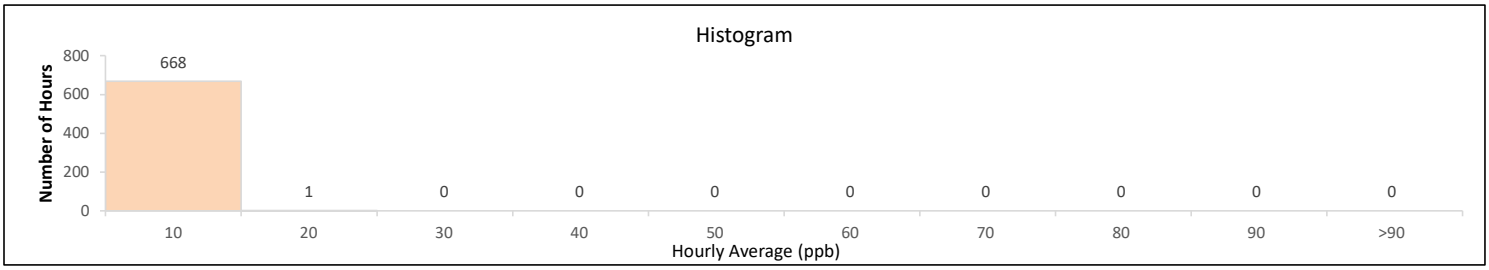
Maximum Hourly Value:	11	ppb	on Jun 27 at hr 6	Hours in Service:	720	
Maximum Daily Value:	3.6	ppb	on Jun 13	Hours of Data:	669	
Minimum Hourly Value:	0	ppb	on Jun 6 at hr 12	Hours of Missing Data:	13	
Minimum Daily Value:	1.3	ppb	on Jun 19	Hours of Calibration:	38	
Monthly Average:	2.1	ppb		Operational Uptime:	98.2	

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Jun 1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2	1	1	2	2	2	1	1	2	1	2	1	2	NA
Jun 2	3	5	S	4	3	2	4	3	3	2	2	1	1	1	1	2	1	1	2	2	3	2	2	2	1	5	2.3
Jun 3	2	S	3	1	2	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	1	1	1	1	3	1.3
Jun 4	S	2	2	2	2	3	2	1	2	2	2	1	1	2	1	1	1	1	1	1	2	4	4	S	1	4	1.8
Jun 5	3	5	5	4	5	3	4	3	2	2	2	2	1	1	1	2	3	3	3	2	3	2	S	3	1	5	2.8
Jun 6	1	1	1	1	1	2	3	1	1	2	3	1	0	1	1	1	1	1	1	1	2	S	3	2	0	3	1.4
Jun 7	2	2	3	2	5	8	4	3	3	3	2	2	2	2	2	2	2	2	2	2	S	4	3	2	2	8	2.8
Jun 8	2	3	3	2	3	3	2	2	3	2	2	1	1	2	2	2	3	2	2	S	4	4	4	4	1	4	2.5
Jun 9	3	2	2	2	6	7	4	2	2	3	2	2	2	2	2	2	2	2	S	4	3	3	4	2	2	7	2.8
Jun 10	2	2	2	2	3	3	3	3	3	2	2	2	2	2	2	2	2	S	3	2	2	2	2	2	2	3	2.3
Jun 11	2	3	3	4	7	4	4	4	4	3	3	3	3	2	2	2	S	4	3	2	2	2	2	2	2	7	3.0
Jun 12	3	3	3	3	2	2	3	3	3	3	3	3	3	3	3	S	5	4	3	3	4	4	4	3	2	5	3.2
Jun 13	3	3	3	4	4	5	4	5	4	4	4	4	5	4	S	3	3	3	3	3	3	3	3	3	3	5	3.6
Jun 14	3	3	3	3	3	3	3	3	2	2	C	C	C	C	C	C	C	C	3	3	3	2	2	2	2	3	NA
Jun 15	3	1	2	2	1	2	1	1	2	1	1	2	S	2	3	1	1	1	2	2	1	1	1	1	1	3	1.5
Jun 16	2	3	2	2	1	3	2	2	2	2	2	S	3	2	2	2	3	2	2	3	3	3	3	3	1	3	2.3
Jun 17	2	3	4	3	3	3	3	3	2	1	S	2	1	1	1	1	1	1	2	2	2	2	4	4	1	4	2.2
Jun 18	5	3	3	2	1	1	1	1	1	S	2	1	1	1	1	2	3	2	2	2	2	3	2	2	1	5	1.9
Jun 19	1	1	1	1	1	1	1	2	S	2	1	1	1	1	1	1	2	2	2	1	2	1	1	1	1	2	1.3
Jun 20	1	1	1	1	1	1	1	S	2	1	1	2	2	2	3	3	2	1	1	1	1	1	1	3	1	3	1.5
Jun 21	4	3	2	2	2	2	S	3	2	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	4	1.6
Jun 22	1	2	2	2	2	S	6	5	4	3	3	2	1	1	1	1	1	2	1	1	1	3	3	2	1	6	2.2
Jun 23	1	1	1	2	S	4	2	2	1	1	1	1	1	1	1	1	1	1	1	1	2	2	3	8	1	8	1.7
Jun 24	2	1	2	S	4	4	4	4	4	3	2	2	2	1	2	2	1	1	1	1	3	2	2	2	1	4	2.3
Jun 25	2	2	S	5	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	5	1.3
Jun 26	1	S	2	2	2	2	1	1	1	1	1	1	1	1	2	1	1	2	3	2	4	3	3	3	1	4	1.8
Jun 27	S	3	2	2	2	6	11	9	6	4	2	2	1	1	1	1	2	1	1	1	1	2	2	S	1	11	2.9
Jun 28	4	4	4	3	2	4	3	3	2	1	1	1	2	1	1	1	1	1	1	1	3	2	S	3	1	4	2.1
Jun 29	2	2	2	2	2	4	4	4	3	2	2	1	1	1	1	1	1	1	1	2	2	S	3	2	1	4	2.0
Jun 30	2	2	2	3	3	3	2	2	1	1	1	1	1	1	1	1	1	1	1	1	S	3	2	2	1	3	1.7
Diurnal Maximum	5	5	5	5	7	8	11	9	6	4	4	4	5	4	3	3	5	4	3	4	4	4	4	8			
Diurnal Average	2.3	2.4	2.4	2.4	2.7	3.1	3.0	2.8	2.4	2.0	1.9	1.7	1.5	1.6	1.5	1.5	1.8	1.7	1.8	1.8	2.3	2.3	2.4	2.4			

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.



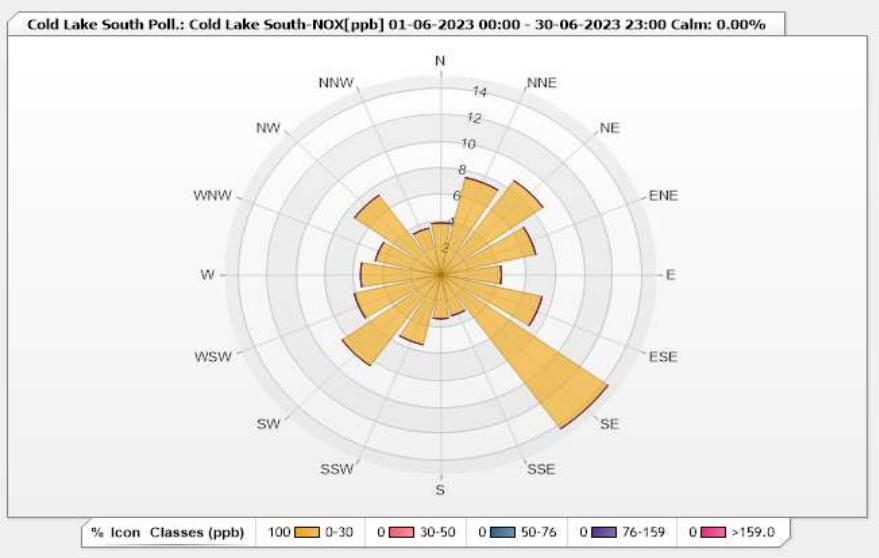


Station: Cold Lake South Poll.: Cold Lake South-NOX[ppb] Monthly: 06-2023

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

Calm: 0.00% Valid Data: 92.64% Calm Avg: 0.00 [ppm]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	3.9	0	0	0	0	3.9
NNE	7.5	0	0	0	0	7.5
NE	8.7	0	0	0	0	8.7
ENE	6.75	0	0	0	0	6.75
E	4.2	0	0	0	0	4.2
ESE	7.2	0	0	0	0	7.2
SE	14.24	0	0	0	0	14.24
SSE	3.15	0	0	0	0	3.15
S	3.3	0	0	0	0	3.3
SSW	5.4	0	0	0	0	5.4
SW	8.4	0	0	0	0	8.4
WSW	6.15	0	0	0	0	6.15
W	5.55	0	0	0	0	5.55
WNW	4.65	0	0	0	0	4.65
NW	7.35	0	0	0	0	7.35
NNW	3.6	0	0	0	0	3.6
Summary	100	0	0	0	0	100



Lakeland Industry & Community Association

Cold Lake South Station - June 2023

Summary of Hourly Averages

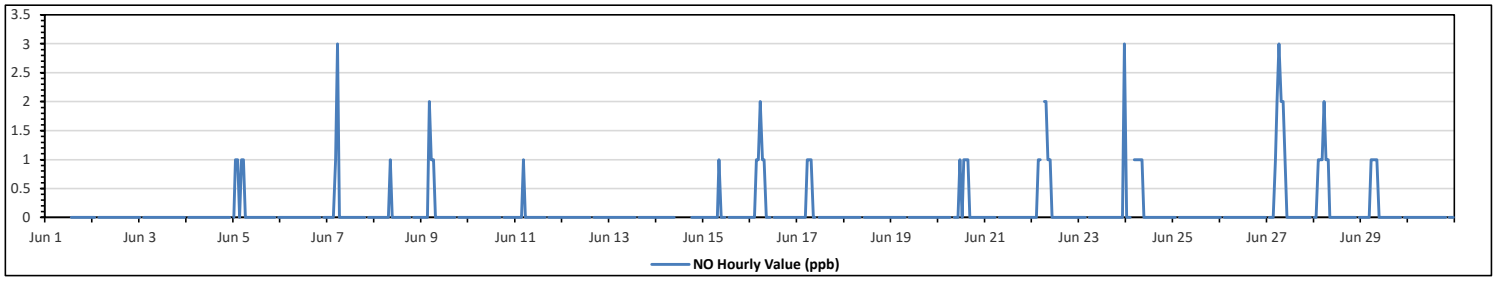
NITRIC OXIDE (NO) in ppb

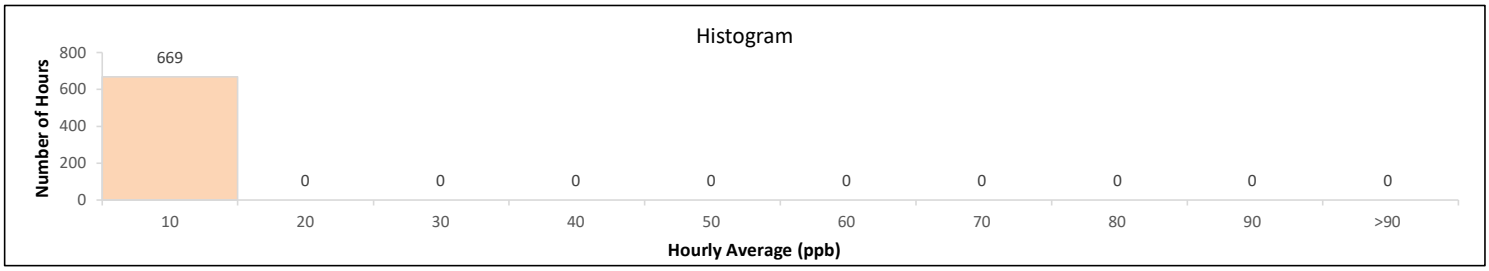
Maximum Hourly Value:	3	ppb	on Jun 7 at hr 5	Hours in Service:	720	
Maximum Daily Value:	0.5	ppb	on Jun 27	Hours of Data:	669	
Minimum Hourly Value:	0	ppb	on Jun 1 at hr 13	Hours of Missing Data:	13	
Minimum Daily Value:	0.0	ppb	on Jun 2	Hours of Calibration:	38	
Monthly Average:	0.1	ppb		Operational Uptime:	98.2	

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

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

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



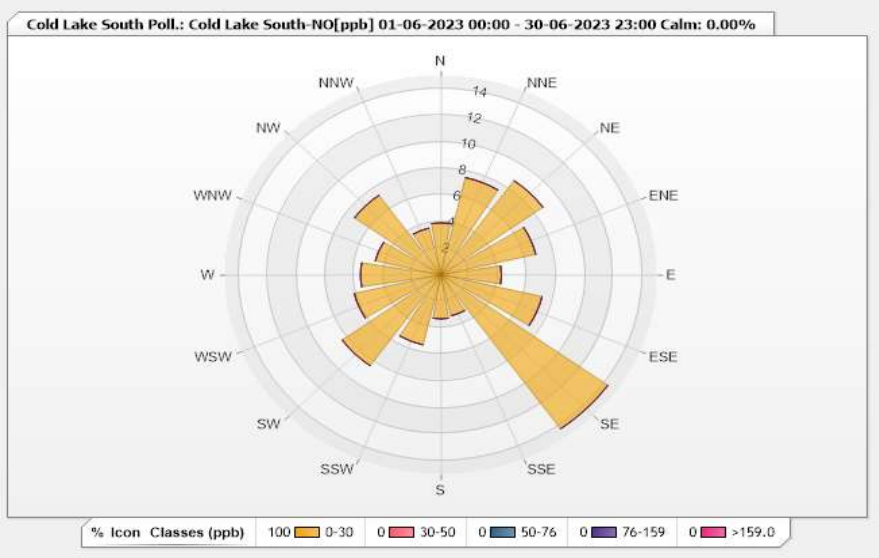


Station: Cold Lake South Poll.: Cold Lake South-NO[ppb] Monthly: 06-2023

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

Calm: 0.00% Valid Data: 92.64% Calm Avg: 0.00 [ppm]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	3.9	0	0	0	0	3.9
NNE	7.5	0	0	0	0	7.5
NE	8.7	0	0	0	0	8.7
ENE	6.75	0	0	0	0	6.75
E	4.2	0	0	0	0	4.2
ESE	7.2	0	0	0	0	7.2
SE	14.24	0	0	0	0	14.24
SSE	3.15	0	0	0	0	3.15
S	3.3	0	0	0	0	3.3
SSW	5.4	0	0	0	0	5.4
SW	8.4	0	0	0	0	8.4
WSW	6.15	0	0	0	0	6.15
W	5.55	0	0	0	0	5.55
WNW	4.65	0	0	0	0	4.65
NW	7.35	0	0	0	0	7.35
NNW	3.6	0	0	0	0	3.6
Summary	100	0	0	0	0	100



Lakeland Industry & Community Association

Cold Lake South Station - June 2023

Summary of Hourly Averages

NITROGEN DIOXIDE (NO_2) in ppb

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

Number of 1-Hour Exceedances: 0

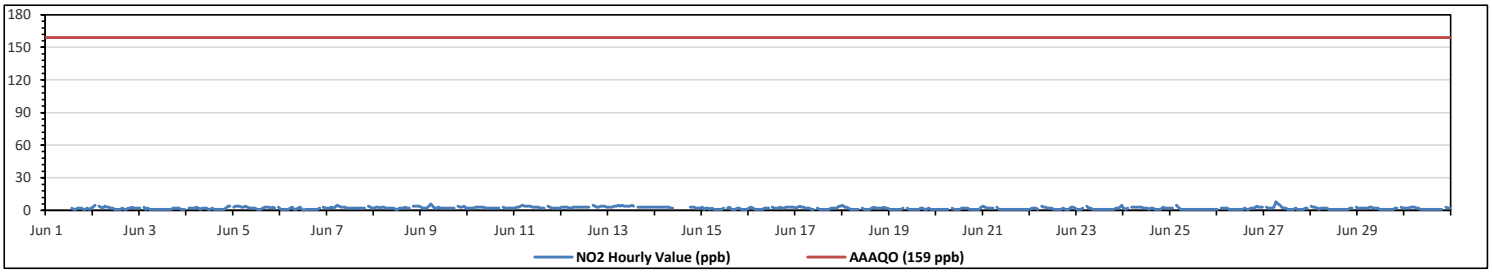
Maximum Hourly Value:	8	ppb	on Jun 27 at hr 6	Hours in Service:	720
Maximum Daily Value:	3.6	ppb	on Jun 13	Hours of Data:	669
Minimum Hourly Value:	0	ppb	on Jun 6 at hr 12	Hours of Missing Data:	13
Minimum Daily Value:	1.2	ppb	on Jun 19	Hours of Calibration:	38
Monthly Average:	2.0	ppb		Operational Uptime:	98.2

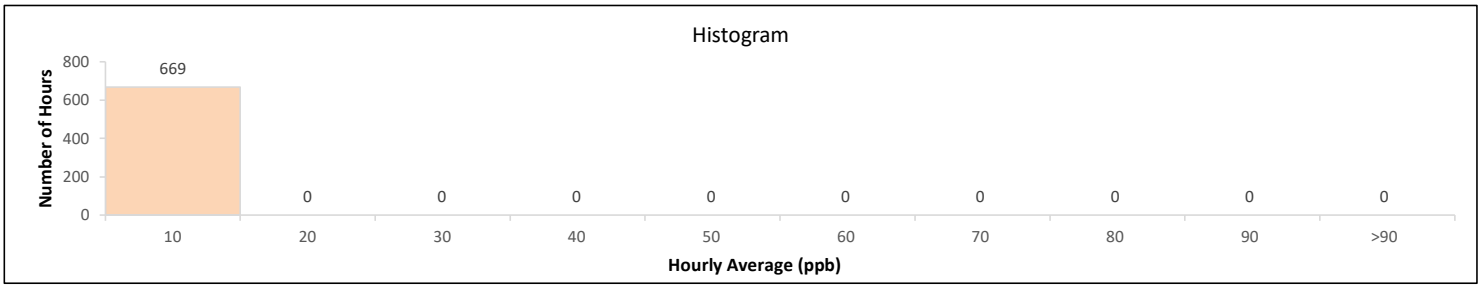
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Jun 1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2	1	1	2	2	2	1	1	2	1	2	1	2	NA
Jun 2	3	5	S	4	3	2	4	3	3	2	2	1	1	1	1	2	1	1	2	2	3	2	2	2	1	5	2.3
Jun 3	2	S	3	1	2	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	1	1	1	1	3	1.3
Jun 4	S	2	2	2	2	3	2	1	2	2	2	1	1	2	1	1	1	1	1	1	2	4	4	S	1	4	1.8
Jun 5	3	4	4	4	3	3	4	3	2	2	2	2	1	1	1	2	3	3	3	2	3	2	S	3	1	4	2.6
Jun 6	1	1	1	1	1	2	3	1	1	2	3	1	0	1	1	1	1	1	1	1	2	S	3	2	0	3	1.4
Jun 7	2	2	3	2	3	5	4	3	3	3	2	2	2	2	2	2	2	2	2	2	S	4	3	2	2	5	2.6
Jun 8	2	3	3	2	3	3	2	2	2	2	2	1	1	2	2	2	3	2	2	S	4	4	4	4	1	4	2.5
Jun 9	3	2	2	2	4	6	4	2	2	3	2	2	2	2	2	2	2	2	S	4	3	3	4	2	2	6	2.7
Jun 10	2	2	2	2	3	3	3	3	3	2	2	2	2	2	2	2	2	S	3	2	2	2	2	2	2	3	2.3
Jun 11	2	3	3	4	5	4	4	4	4	3	3	3	3	2	2	2	S	4	3	2	2	2	2	2	2	5	3.0
Jun 12	3	3	3	3	2	2	3	3	3	3	3	3	3	3	3	S	5	4	3	3	4	4	4	3	2	5	3.2
Jun 13	3	3	3	4	4	5	4	5	4	4	4	4	5	4	S	3	3	3	3	3	3	3	3	3	3	5	3.6
Jun 14	3	3	3	3	3	3	3	3	2	2	C	C	C	C	C	C	C	C	3	3	3	2	2	2	2	3	NA
Jun 15	3	1	2	2	1	2	1	1	1	1	1	2	S	2	3	1	1	1	2	2	1	1	1	1	1	3	1.5
Jun 16	2	3	2	1	1	1	1	1	2	2	2	S	3	2	2	2	3	2	2	3	3	3	3	3	1	3	2.1
Jun 17	2	3	4	3	3	2	2	2	1	1	S	2	1	1	1	1	1	1	2	2	2	2	4	4	1	4	2.0
Jun 18	5	3	3	2	1	1	1	1	1	S	2	1	1	1	1	2	3	2	2	2	2	3	2	2	1	5	1.9
Jun 19	1	1	1	1	1	1	1	2	S	2	1	1	1	1	1	1	2	2	1	1	2	1	1	1	1	2	1.2
Jun 20	1	1	1	1	1	1	1	S	2	1	1	1	1	2	2	2	2	1	1	1	1	1	1	3	1	3	1.3
Jun 21	4	3	2	2	2	2	S	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	4	1.5
Jun 22	1	2	2	2	1	S	4	3	3	2	2	2	1	1	1	1	1	2	1	1	1	3	3	2	1	4	1.8
Jun 23	1	1	1	2	S	4	2	2	1	1	1	1	1	1	1	1	1	1	1	1	2	2	3	5	1	5	1.6
Jun 24	2	1	2	S	3	3	3	3	3	3	2	2	2	1	2	2	1	1	1	1	3	2	2	2	1	3	2.0
Jun 25	2	2	S	5	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	5	1.3
Jun 26	1	S	2	2	2	2	1	1	1	1	1	1	1	1	2	1	1	2	2	2	4	3	3	3	1	4	1.7
Jun 27	S	3	2	2	2	3	8	6	5	3	2	2	1	1	1	1	2	1	1	1	1	2	2	S	1	8	2.4
Jun 28	4	3	3	2	1	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	2	2	S	3	1	4	1.7
Jun 29	2	2	2	2	2	2	3	3	2	2	2	1	1	1	1	1	1	1	1	2	2	S	3	2	1	3	1.8
Jun 30	2	2	2	3	3	3	2	2	1	1	1	1	1	1	1	1	1	1	1	1	S	3	2	2	1	3	1.7
Diurnal Maximum	5	5	4	5	5	6	8	6	5	4	4	4	5	4	3	3	5	4	3	4	4	4	4	5			
Diurnal Average	2.3	2.4	2.3	2.4	2.3	2.6	2.6	2.4	2.1	1.9	1.8	1.6	1.5	1.5	1.5	1.5	1.8	1.7	1.8	1.8	2.2	2.3	2.4	2.3			

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

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

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



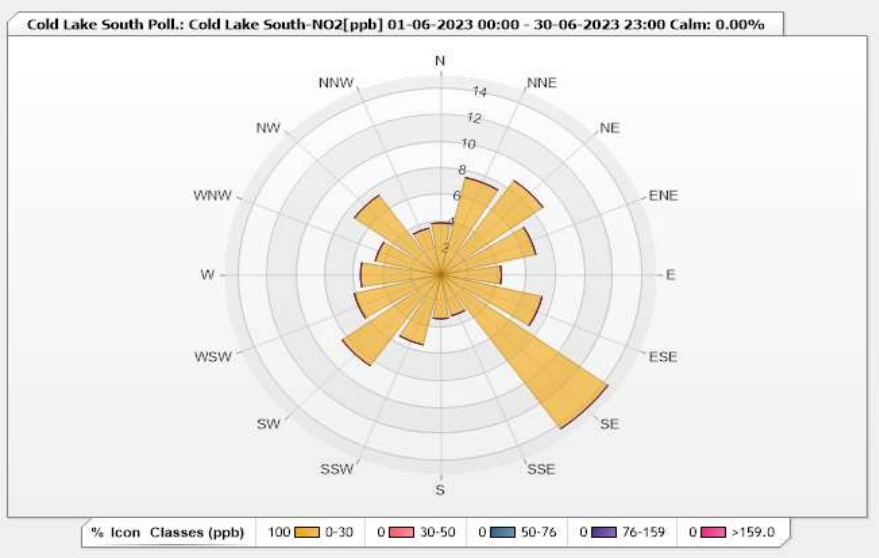


Station: Cold Lake South Poll.: Cold Lake South-NO2[ppb] Monthly: 06-2023

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

Calm: 0.00% Valid Data: 92.64% Calm Avg: 0.00 [ppm]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	3.9	0	0	0	0	3.9
NNE	7.5	0	0	0	0	7.5
NE	8.7	0	0	0	0	8.7
ENE	6.75	0	0	0	0	6.75
E	4.2	0	0	0	0	4.2
ESE	7.2	0	0	0	0	7.2
SE	14.24	0	0	0	0	14.24
SSE	3.15	0	0	0	0	3.15
S	3.3	0	0	0	0	3.3
SSW	5.4	0	0	0	0	5.4
SW	8.4	0	0	0	0	8.4
WSW	6.15	0	0	0	0	6.15
W	5.55	0	0	0	0	5.55
WNW	4.65	0	0	0	0	4.65
NW	7.35	0	0	0	0	7.35
NNW	3.6	0	0	0	0	3.6
Summary	100	0	0	0	0	100



Lakeland Industry & Community Association

Cold Lake South Station - June 2023

Summary of Hourly Averages

OZONE (O_3) in ppb

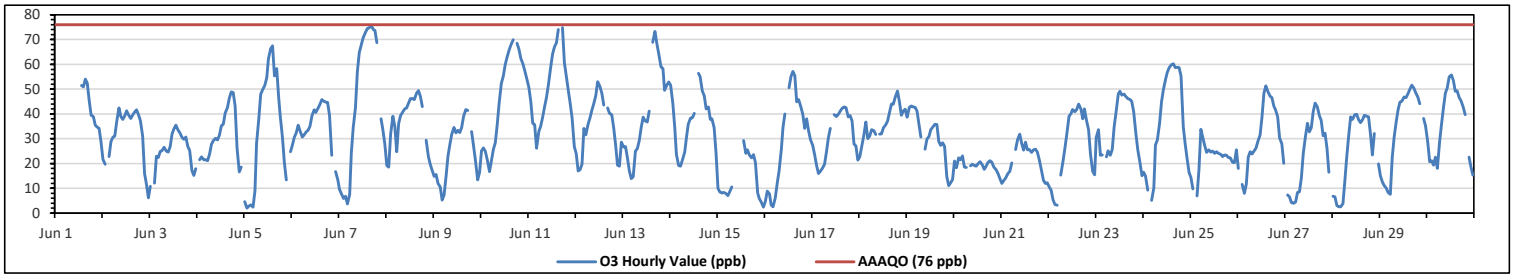
Alberta Ambient Air Quality Objectives (AAAQO): 1-Hour 76 ppb

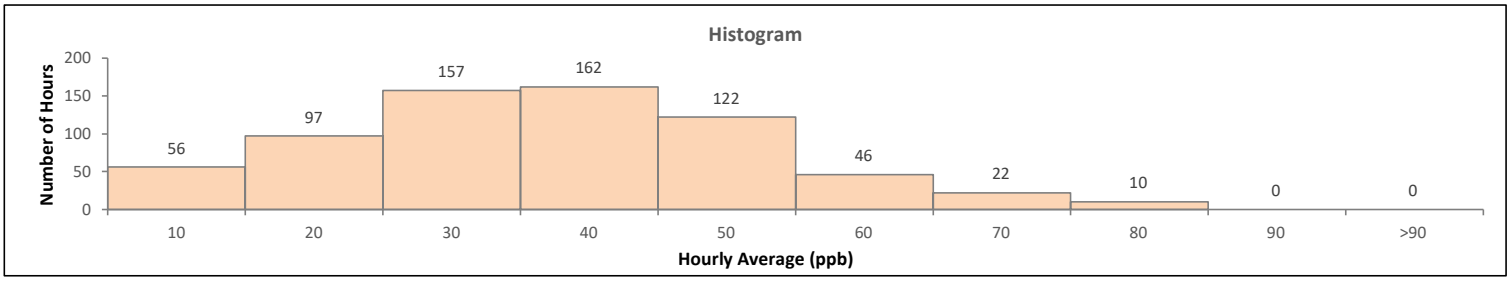
Number of 1-Hour Exceedances:	0				
Maximum Hourly Value:	75.8	ppb	on Jun 7 at hr 16	Hours in Service:	720
Maximum Daily Value:	48.9	ppb	on Jun 11	Hours of Data:	672
Minimum Hourly Value:	2.0	ppb	on Jun 5 at hr 1	Hours of Missing Data:	13
Minimum Daily Value:	13.6	ppb	on Jun 15	Hours of Calibration:	35
Monthly Average:	32.2	ppb		Operational Uptime:	98.2

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Jun 1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	51.5	51	54.1	52.4	45.5	39.4	39	35.4	34.7	34.2	28.6	28.6	54.1	NA
Jun 2	21.7	19.7	S	22.8	28.9	30.6	31	36.9	42.4	39	37.8	39.2	41.3	39.6	38.2	39.6	40.8	41.6	39.7	37.2	31.1	15.9	11.6	6.1	6.1	42.4	31.9
Jun 3	10.8	S	12.1	22.9	22.4	24.8	25.3	26.5	25	24.6	26.8	32	34.1	35.5	33.7	32.3	30.6	29.8	30.7	26.9	25.2	17.2	15.2	17.9	10.8	35.5	25.3
Jun 4	S	21.5	22.6	21.6	21.6	21.1	23.7	27.8	29.3	30.2	29.5	31.5	35.2	35.9	40.4	42.6	46.4	48.9	48.6	43.3	26.4	16.6	18.6	S	16.6	48.9	31.1
Jun 5	4.6	2	2.9	3.3	2.4	9.1	28.1	38	47.9	49.8	51.7	54.7	62.2	66.3	67.4	55.4	58.3	46.9	39.2	30.5	20.2	13.5	S	24.7	**2.0**	67.4	33.9
Jun 6	26.9	30.6	32.4	35.5	32.8	30.7	31.5	32.8	33.4	35	39.2	41.6	40.6	42	43.8	45.8	45.2	44.8	44.7	39.4	23.3	S	16.7	13.5	13.5	45.8	34.9
Jun 7	9.6	7.8	5.9	6.9	3.7	7.5	24	34.4	42.5	57	64.8	68.2	70.8	72.5	74.4	74.7	**75.8**	74	73.7	68.8	S	38	33.4	27.8	3.7	**75.8**	44.2
Jun 8	19.2	18.5	31.9	39.1	35	24.7	36.1	39.3	40.6	42	42.4	44.3	46.2	46.1	45.8	48.4	49.4	47.1	43	S	29.4	22.8	19.6	17.1	17.1	49.4	36.0
Jun 9	14.8	15.6	11.9	10.5	5.2	7.3	14.5	22.8	27.6	31.8	34.6	32.4	33.4	32.5	34.6	39.1	41.7	41.4	S	32.9	27.2	21.3	13.4	16.5	5.2	41.7	24.5
Jun 10	25.1	26.3	24.9	21.5	16.7	21.2	25.7	28.4	35.6	44.2	52.4	55.2	59.9	62.9	65.7	67.8	69.9	S	68.5	66.1	62.4	60.4	57.6	53.9	16.7	69.9	46.6
Jun 11	50.7	45	36.3	35.7	26.2	32.9	35.1	38.7	42.8	46.7	51.8	58.7	64.2	67	68.7	74	S	74.8	60.6	55.2	49.7	44.4	38.4	26.8	26.2	74.8	**48.9**
Jun 12	24	17	17.5	19.8	34.2	31.6	35.9	38.5	41.5	44.2	47.4	53	51.1	48.4	43.5	S	42.5	40.2	39.7	34.4	27.6	19.3	18.9	28.6	17.0	53.0	34.7
Jun 13	26.7	26.8	22.3	17	13.9	14.7	25	26.1	29.2	34.6	38.7	37.2	36.8	41.2	S	69	73.3	68.4	64.1	59	58.4	49.6	51.6	52.9	13.9	73.3	40.7
Jun 14	51.6	44.1	34.3	23.8	19.2	19	21.6	24.6	31	35.9	38.3	38.5	40.2	S	56.3	55.1	49.3	47.4	42	42.9	37.8	38	34.4	24	19.0	56.3	36.9
Jun 15	9.9	8.5	8.1	8.3	7.9	7.1	8.8	10.6	C	C	C	C	C	29.3	24.2	25.6	23.5	22.3	23.6	20.3	8.1	5.9	4.5	2.4	2.4	29.3	**13.6**
Jun 16	4.8	8.9	7.7	3.3	2.6	6.1	12	17.1	25.8	34.4	40	S	50.6	55.1	57.2	55.5	44.9	45.8	42.8	39.8	34.2	38.1	33.2	29.7	2.6	57.2	30.0
Jun 17	27.3	23.6	19.2	16	16.9	18	19.8	24.7	30.5	34.2	S	39.7	39	39.9	41.2	42.3	42.8	42.6	38.8	39.3	37.1	27.9	27.1	21.4	16.0	42.8	30.8
Jun 18	22.6	27.4	31.6	36.8	30	31.1	33.6	33.2	31.7	S	31.8	32	34.5	35.6	37.1	40.7	43.9	44	46.8	49.3	44.9	39.4	41.2	41.9	22.6	49.3	36.6
Jun 19	38.7	42.7	43.3	42.9	42.7	41.2	35.9	30.7	S	25.8	29.9	30.8	33.6	34.7	35.8	35.7	28.9	27.3	28.4	26.9	14.7	11.1	12.2	13.6	11.1	43.3	30.8
Jun 20	21	18.3	22.2	21.6	23.1	18.5	18.4	S	19.1	19.8	19.2	18.9	20	20.7	19.5	17.7	19	20.5	21.2	20.5	18.5	17.5	16	13.9	13.9	23.1	19.4
Jun 21	11.9	13.2	14.2	15.9	16.9	20.2	S	25.7	29.5	31.9	28.1	25.4	28.6	25.6	25.7	24.4	25.6	25.8	24.6	21.6	17.8	13.3	11.9	12.2	11.9	31.9	21.3
Jun 22	10.5	9.3	5.3	3.4	3.2	S	15.4	20.8	26.1	31.9	39.1	40.1	41.7	40.9	41.7	44	42.1	38	42	37.1	33.7	23.9	16.7	15.5	3.2	44.0	27.1
Jun 23	30.6	33.6	23.4	23.5	S	22.7	25.1	23.3	25.7	34.8	41.8	48.1	49.1	47.7	48	47	46.2	45.8	45.1	40.9	32	25.4	20.9	15.1	15.1	49.1	34.6
Jun 24	16.5	14.9	9.3	S	5.1	10.2	27.4	29.5	36.3	44.9	49.9	54.2	56.7	58.6	59.9	60.3	58.7	58.8	58.6	55.2	34.9	27.9	22	16.5	5.1	60.3	37.7
Jun 25	14.3	9.7	S	7	17.6	33.8	30.6	27.2	24.5	25.6	24.6	25	24.2	24.7	24.2	23.8	22.8	23.5	23.4	22.4	22.2	20.5	20.3	25.6	7.0	33.8	22.5
Jun 26	18	S	11.6	7.9	11.7	22.5	24.7	23.9	25	26.2	29.2	31.5	38.8	48.3	51.3	49.2	47.2	46.5	43.3	41.4	38.9	30.3	28	20.1	7.9	51.3	31.1
Jun 27	S	7.3	6.6	4.3	4	4.5	8.4	8.7	14.2	24.2	31.1	36.3	32.8	34.5	40.9	44.3	42.9	39.4	37.4	31.2	32.3	26.3	16.5	S	4.0	44.3	24.0
Jun 28	6.8	6.6	3	2.6	2.6	3.9	13.1	23	31.3	38.9	37.8	39.7	39.8	37.6	36.5	37.7	39.4	39.1	38.9	31.9	23.5	32.1	S	19.9	2.6	39.8	25.5
Jun 29	15.1	12.6	11.1	10.2	8.3	7.5	22.4	30.7	36.5	41.5	44.8	45.2	46.9	46.5	48.1	49.9	51.7	50.6	48.4	46.9	44.1	S	38.2	35.2	7.5	51.7	34.5
Jun 30	28.6	20.7	21.2	19.3	22.5	18	28.7	35.8	42.5	48.3	50.6	54.9	55.7	53.5	49.1	49.3	46.7	45.3	43.1	39.7	S	22.5	18.5	15.4	15.4	55.7	36.1
Diurnal Maximum	51.6	45.0	43.3	42.9	42.7	41.2	36.1	39.3	47.9	57.0	64.8	68.2	70.8	72.5	74.4	74.7	75.8	74.8	73.7	68.8	62.4	60.4	57.6	53.9			
Diurnal Average	20.8	19.7	18.3	18.0	17.0	19.3	24.4	27.8	32.1	36.2	39.0	41.0	43.1	44.0	45.0	46.4	44.9	43.7	42.8	39.3	31.8	26.9	24.7	22.7			

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.



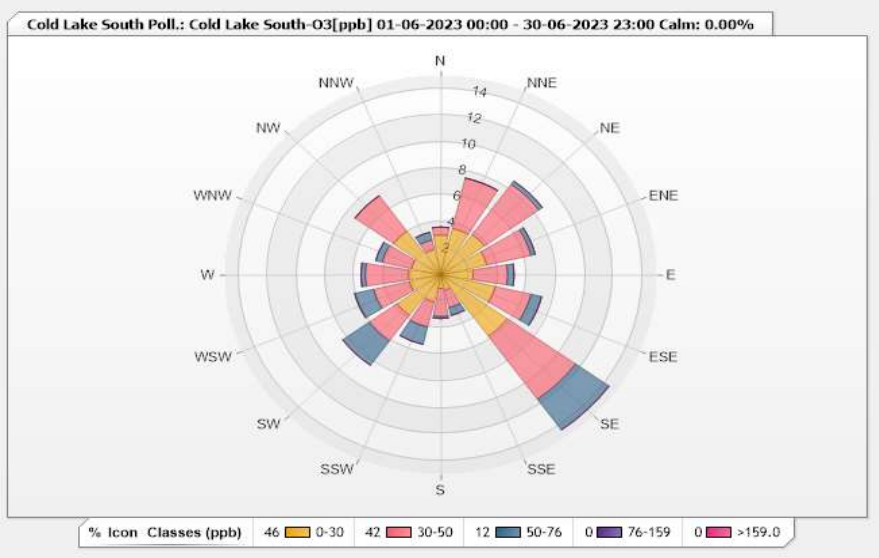


Station: Cold Lake South Poll.: Cold Lake South-O3[ppb] Monthly: 06-2023

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

Calm: 0.00% Valid Data: 93.06% Calm Avg: 0.00 [ppm]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	2.99	0.6	0	0	0	3.59
NNE	3.58	3.88	0	0	0	7.46
NE	3.73	4.63	0.3	0	0	8.66
ENE	3.28	3.13	0.3	0	0	6.71
E	2.24	2.39	0.45	0	0	5.08
ESE	3.88	2.54	0.75	0	0	7.17
SE	5.67	5.82	2.84	0	0	14.33
SSE	1.19	1.34	0.6	0	0	3.13
S	1.04	2.09	0.15	0	0	3.28
SSW	2.09	1.94	1.34	0	0	5.37
SW	3.73	2.39	2.24	0	0	8.36
WSW	2.24	2.54	1.34	0	0	6.12
W	2.24	2.99	0.3	0	0	5.53
WNW	2.09	2.09	0.45	0	0	4.63
NW	4.03	3.28	0	0	0	7.31
NNW	1.94	0.75	0.6	0	0	3.29
Summary	45.96	42.4	11.66	0	0	100



Lakeland Industry & Community Association

Cold Lake South Station - June 2023

Summary of Hourly Averages

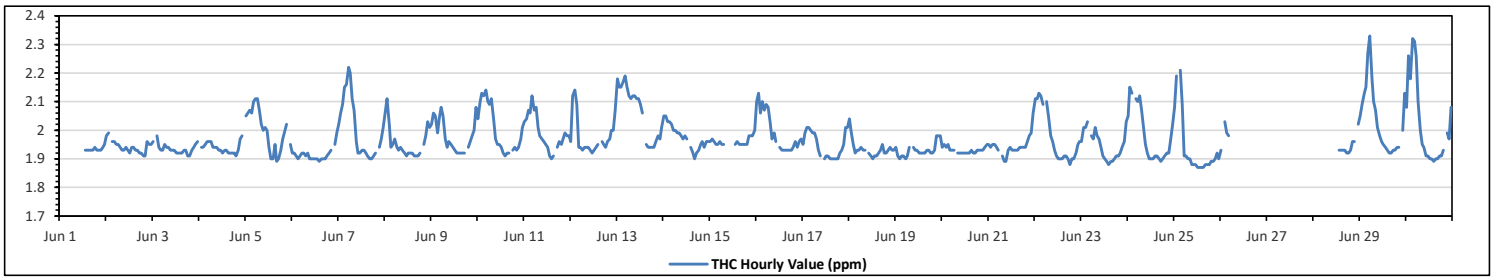
TOTAL HYDROCARBONS (THC) in ppm

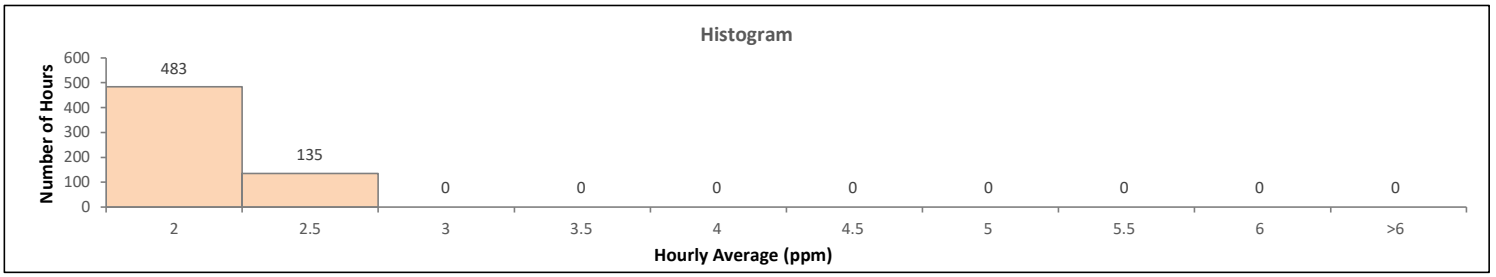
Maximum Hourly Value:	2.33	ppm	on Jun 29 at hr 5	Hours in Service:	720	
Maximum Daily Value:	2.06	ppm	on Jun 13	Hours of Data:	618	
Minimum Hourly Value:	1.87	ppm	on Jun 25 at hr 12	Hours of Missing Data:	69	
Minimum Daily Value:	1.91	ppm	on Jun 6	Hours of Calibration:	33	
Monthly Average:	1.97	ppm		Operational Uptime:	90.4	

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			
Jun 1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.93	1.93	1.93	1.93	1.93	1.94	1.93	1.93	1.93	1.94	1.95	1.93	1.95	NA
Jun 2	1.98	1.99	S	1.96	1.96	1.95	1.95	1.94	1.93	1.93	1.94	1.93	1.92	1.94	1.94	1.93	1.93	1.92	1.92	1.91	1.91	1.96	1.95	1.95	1.91	1.99	1.94
Jun 3	1.96	S	1.98	1.94	1.93	1.93	1.95	1.94	1.94	1.93	1.93	1.93	1.92	1.92	1.92	1.92	1.93	1.93	1.91	1.91	1.93	1.94	1.95	1.96	1.91	1.98	1.93
Jun 4	S	1.94	1.94	1.95	1.96	1.96	1.96	1.94	1.94	1.94	1.93	1.93	1.92	1.93	1.93	1.92	1.92	1.92	1.92	1.91	1.93	1.97	1.98	S	1.91	1.98	1.94
Jun 5	2.05	2.06	2.07	2.06	2.10	2.11	2.11	2.07	2.02	2.00	2.01	2.00	1.94	1.90	1.90	1.95	1.89	1.90	1.93	1.97	1.99	2.02	S	1.95	1.89	2.11	2.00
Jun 6	1.92	1.92	1.91	1.90	1.91	1.92	1.92	1.91	1.92	1.90	1.90	1.90	1.90	1.90	1.89	1.90	1.90	1.90	1.91	1.92	1.93	S	1.95	1.99	1.89	1.99	1.91
Jun 7	2.02	2.06	2.09	2.15	2.16	2.22	2.20	2.11	2.07	1.96	1.92	1.92	1.93	1.93	1.92	1.91	1.90	1.90	1.91	1.92	S	1.94	1.97	2.01	1.90	2.22	2.01
Jun 8	2.06	2.11	2.02	1.94	1.95	1.97	1.94	1.93	1.94	1.93	1.92	1.91	1.92	1.92	1.92	1.91	1.91	1.91	1.92	S	1.95	1.98	2.03	2.01	1.91	2.11	1.96
Jun 9	2.02	2.06	2.05	1.99	2.04	2.08	2.05	1.97	1.94	1.96	1.95	1.94	1.93	1.92	1.92	1.92	1.92	1.92	S	1.94	1.96	1.98	2.00	2.08	1.92	2.08	1.98
Jun 10	2.04	2.10	2.13	2.12	2.14	2.10	2.09	2.11	2.04	1.97	1.95	1.95	1.94	1.92	1.91	1.92	1.92	S	1.93	1.94	1.93	1.94	1.97	2.01	1.91	2.14	2.00
Jun 11	2.03	2.04	2.07	2.06	2.12	2.07	2.08	2.01	1.98	1.97	1.96	1.95	1.94	1.91	1.90	1.91	S	1.94	1.96	1.95	1.97	1.99	1.98	1.98	1.90	2.12	1.99
Jun 12	1.96	2.12	2.14	2.09	1.94	1.94	1.93	1.94	1.94	1.94	1.93	1.92	1.93	1.94	1.95	S	1.96	1.95	1.94	1.96	1.97	2.00	2.00	2.07	1.92	2.14	1.98
Jun 13	2.18	2.15	2.15	2.17	2.19	2.15	2.12	2.11	2.12	2.12	2.11	2.11	2.09	2.06	S	1.95	1.94	1.94	1.94	1.94	1.96	1.98	1.97	2.01	1.94	2.19	**2.06**
Jun 14	2.05	2.05	2.03	2.03	2.02	2.00	2.00	1.99	1.99	1.98	1.97	1.98	1.97	S	1.94	1.92	1.90	1.92	1.93	1.95	1.96	1.94	1.96	1.96	1.90	2.05	1.98
Jun 15	1.96	1.97	1.96	1.95	1.95	1.96	1.95	1.95	C	C	C	C	C	1.95	1.96	1.95	1.95	1.95	1.95	1.95	1.98	1.98	1.98	2.00	1.95	2.00	1.96
Jun 16	2.10	2.13	2.06	2.10	2.07	2.09	2.08	2.03	1.97	1.99	1.96	S	1.94	1.93	1.93	1.93	1.93	1.93	1.93	1.94	1.96	1.94	1.96	1.97	1.93	2.13	1.99
Jun 17	1.95	1.99	2.01	2.01	2.00	1.99	1.99	1.97	1.93	1.91	S	1.90	1.91	1.91	1.90	1.90	1.90	1.90	1.90	1.92	1.93	1.95	2.01	2.01	1.90	2.01	1.95
Jun 18	2.04	1.99	1.95	1.92	1.93	1.93	1.94	1.93	1.93	S	1.92	1.91	1.90	1.91	1.91	1.92	1.93	1.95	1.92	1.92	1.93	1.94	1.93	1.93	1.90	2.04	1.93
Jun 19	1.94	1.91	1.90	1.91	1.91	1.90	1.91	1.94	S	1.94	1.93	1.93	1.92	1.92	1.92	1.92	1.93	1.93	1.92	1.92	1.93	1.98	1.98	1.98	1.90	1.98	1.93
Jun 20	1.94	1.95	1.94	1.95	1.93	1.93	1.93	S	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.93	1.92	1.92	1.93	1.93	1.93	1.93	1.94	1.95	1.92	1.95	1.93
Jun 21	1.95	1.94	1.95	1.95	1.94	1.93	S	1.91	1.89	1.89	1.93	1.94	1.93	1.93	1.93	1.93	1.94	1.94	1.94	1.94	1.96	1.98	1.99	2.06	1.89	2.06	1.94
Jun 22	2.11	2.11	2.13	2.12	2.09	S	2.10	2.04	1.98	1.96	1.93	1.91	1.90	1.90	1.90	1.91	1.91	1.90	1.88	1.90	1.90	1.92	1.95	1.96	1.88	2.13	1.97
Jun 23	1.96	2.01	2.01	2.03	S	1.98	1.97	2.01	1.98	1.97	1.94	1.91	1.90	1.89	1.88	1.89	1.89	1.90	1.91	1.91	1.92	1.94	1.96	2.03	1.88	2.03	1.95
Jun 24	2.05	2.15	2.13	S	2.11	2.10	2.12	2.07	2.01	1.95	1.92	1.90	1.90	1.90	1.91	1.91	1.90	1.89	1.90	1.91	1.92	1.92	1.96	2.02	1.89	2.15	1.98
Jun 25	2.08	2.19	S	2.21	2.09	1.91	1.91	1.90	1.90	1.88	1.88	1.88	1.87	1.87	1.87	1.87	1.88	1.88	1.88	1.89	1.89	1.90	1.92	1.90	1.87	2.21	1.93
Jun 26	1.93	S	2.03	1.99	1.98	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	1.93	2.03	NA
Jun 27	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-
Jun 28	X	X	X	X	X	X	X	X	X	X	NRM	NRM	NRM	1.93	1.93	1.93	1.93	1.92	1.92	1.93	1.96	1.96	S	2.02	1.92	2.02	NA
Jun 29	2.05	2.09	2.13	2.15	2.27	**2.33**	2.18	2.10	2.07	2.01	1.98	1.96	1.95	1.94	1.93	1.92	1.92	1.93	1.93	1.94	1.94	S	2.00	2.13	1.92	**2.33**	2.04
Jun 30	2.08	2.26	2.18	2.32	2.31	2.26	2.10	2.00	1.95	1.94	1.91	1.91	1.90	1.90	1.89	1.90	1.90	1.91	1.91	1.93	S	1.99	1.97	2.08	1.89	2.32	2.02
Diurnal Maximum	2.18	2.26	2.18	2.32	2.31	2.33	2.20	2.11	2.12	2.12	2.11	2.11	2.09	2.06	1.96	1.95	1.96	1.95	1.96	1.97	1.99	2.02	2.03	2.13			
Diurnal Average	2.02	2.05	2.04	2.04	2.04	2.03	2.02	1.99	1.97	1.95	1.94	1.94	1.93	1.92	1.92	1.92	1.92	1.92	1.92	1.93	1.94	1.96	1.97	2.00			

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.



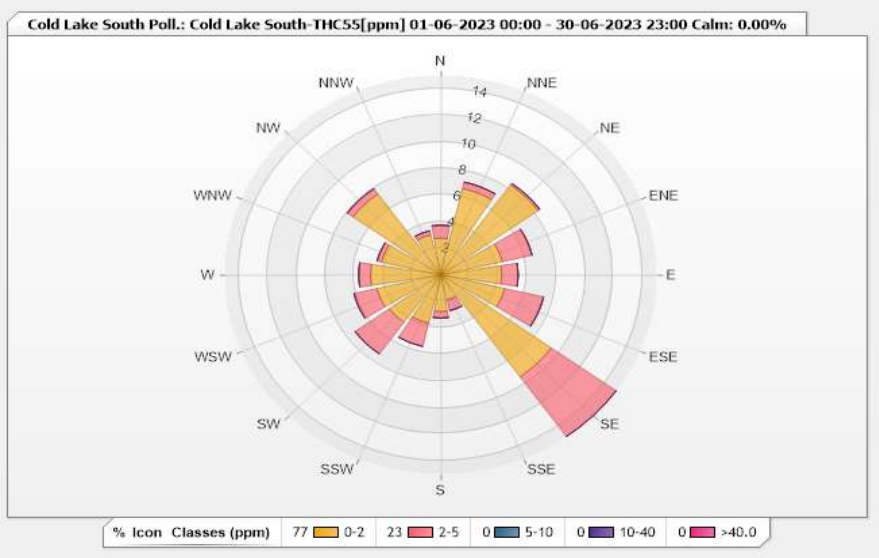


Station: Cold Lake South Poll.: Cold Lake South-THC55[ppm] Monthly: 06-2023

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

Calm: 0.00% Valid Data: 85.56% Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-40	>40.0	Total
N	2.76	0.97	0	0	0	3.73
NNE	6.66	0.49	0	0	0	7.15
NE	8.28	0.16	0	0	0	8.44
ENE	4.38	2.11	0	0	0	6.49
E	4.22	1.14	0	0	0	5.36
ESE	4.55	2.76	0	0	0	7.31
SE	9.42	5.52	0	0	0	14.94
SSE	1.95	0.81	0	0	0	2.76
S	2.76	0.49	0	0	0	3.25
SSW	3.73	1.79	0	0	0	5.52
SW	4.38	2.92	0	0	0	7.3
WSW	4.55	1.62	0	0	0	6.17
W	4.87	0.81	0	0	0	5.68
WNW	4.22	0.32	0	0	0	4.54
NW	7.47	0.49	0	0	0	7.96
NNW	3.08	0.32	0	0	0	3.4
Summary	77.28	22.72	0	0	0	100



Lakeland Industry & Community Association

Cold Lake South Station - June 2023

Summary of Hourly Averages

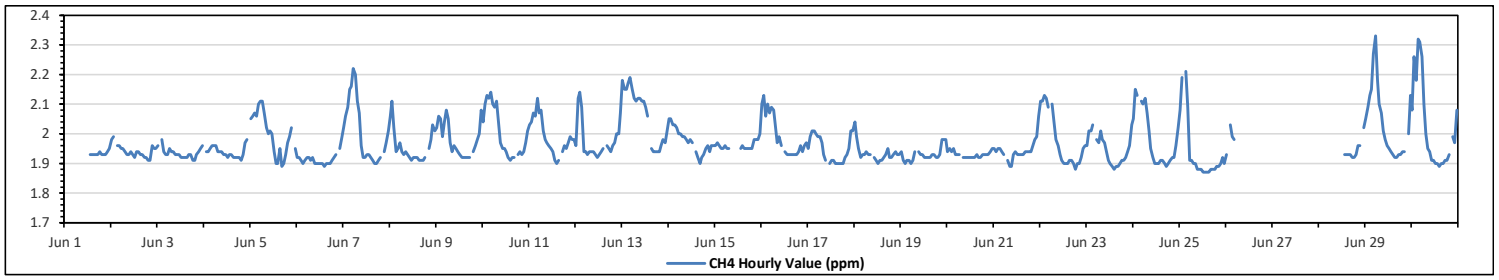
METHANE (CH4) in ppm

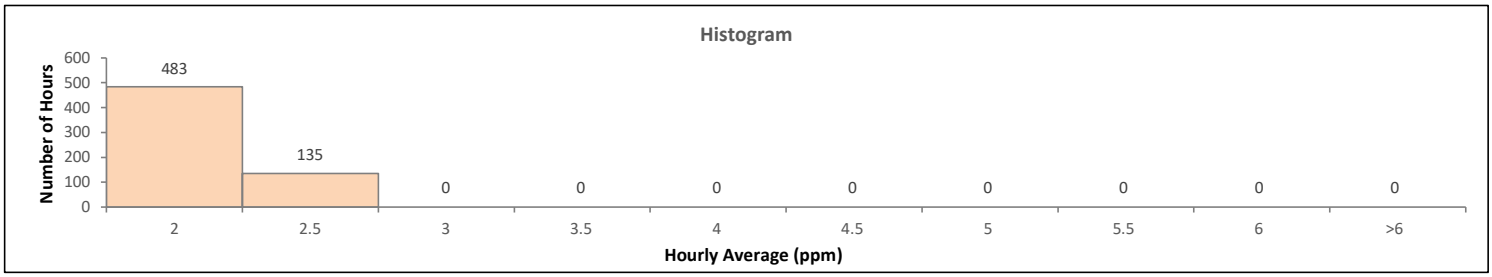
Maximum Hourly Value:	2.33	ppm	on Jun 29 at hr 5	Hours in Service:	720	
Maximum Daily Value:	2.06	ppm	on Jun 13	Hours of Data:	618	
Minimum Hourly Value:	1.87	ppm	on Jun 25 at hr 12	Hours of Missing Data:	69	
Minimum Daily Value:	1.91	ppm	on Jun 6	Hours of Calibration:	33	
Monthly Average:	1.97	ppm		Operational Uptime:	90.4	

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			
Jun 1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.93	1.93	1.93	1.93	1.93	1.94	1.93	1.93	1.93	1.94	1.95	1.93	1.95	NA
Jun 2	1.98	1.99	S	1.96	1.96	1.95	1.95	1.94	1.93	1.93	1.94	1.93	1.92	1.94	1.94	1.93	1.93	1.92	1.92	1.91	1.91	1.96	1.95	1.95	1.91	1.99	1.94
Jun 3	1.96	S	1.98	1.94	1.93	1.93	1.95	1.94	1.94	1.93	1.93	1.93	1.92	1.92	1.92	1.92	1.93	1.93	1.91	1.91	1.93	1.94	1.95	1.96	1.91	1.98	1.93
Jun 4	S	1.94	1.94	1.95	1.96	1.96	1.96	1.94	1.94	1.94	1.93	1.93	1.92	1.93	1.93	1.92	1.92	1.92	1.92	1.91	1.93	1.97	1.98	S	1.91	1.98	1.94
Jun 5	2.05	2.06	2.07	2.06	2.10	2.11	2.11	2.07	2.02	2.00	2.01	2.00	1.94	1.90	1.90	1.95	1.89	1.90	1.93	1.97	1.99	2.02	S	1.95	1.89	2.11	2.00
Jun 6	1.92	1.92	1.91	1.90	1.91	1.92	1.92	1.91	1.92	1.90	1.90	1.90	1.90	1.90	1.89	1.90	1.90	1.90	1.91	1.92	1.93	S	1.95	1.99	1.89	1.99	1.91
Jun 7	2.02	2.06	2.09	2.15	2.16	2.22	2.20	2.11	2.07	1.96	1.92	1.92	1.93	1.93	1.92	1.91	1.90	1.90	1.91	1.92	S	1.94	1.97	2.01	1.90	2.22	2.01
Jun 8	2.06	2.11	2.02	1.94	1.95	1.97	1.94	1.93	1.94	1.93	1.92	1.91	1.92	1.92	1.92	1.91	1.91	1.91	1.92	S	1.95	1.98	2.03	2.01	1.91	2.11	1.96
Jun 9	2.02	2.06	2.05	1.99	2.04	2.08	2.05	1.97	1.94	1.96	1.95	1.94	1.93	1.92	1.92	1.92	1.92	1.92	S	1.94	1.96	1.98	2.00	2.08	1.92	2.08	1.98
Jun 10	2.04	2.10	2.13	2.12	2.14	2.10	2.09	2.11	2.04	1.97	1.95	1.95	1.94	1.92	1.91	1.92	1.92	S	1.93	1.94	1.93	1.94	1.97	2.01	1.91	2.14	2.00
Jun 11	2.03	2.04	2.07	2.06	2.12	2.07	2.08	2.01	1.98	1.97	1.96	1.95	1.94	1.91	1.90	1.91	S	1.94	1.96	1.95	1.97	1.99	1.98	1.98	1.90	2.12	1.99
Jun 12	1.96	2.12	2.14	2.09	1.94	1.94	1.93	1.94	1.94	1.94	1.93	1.92	1.93	1.94	1.95	S	1.96	1.95	1.94	1.96	1.97	2.00	2.00	2.07	1.92	2.14	1.98
Jun 13	2.18	2.15	2.15	2.17	2.19	2.15	2.12	2.11	2.12	2.12	2.11	2.11	2.09	2.06	S	1.95	1.94	1.94	1.94	1.94	1.96	1.98	1.97	2.01	1.94	2.19	**2.06**
Jun 14	2.05	2.05	2.03	2.03	2.02	2.00	2.00	1.99	1.99	1.98	1.97	1.98	1.97	S	1.94	1.92	1.90	1.92	1.93	1.95	1.96	1.94	1.96	1.96	1.90	2.05	1.98
Jun 15	1.96	1.97	1.96	1.95	1.95	1.96	1.95	1.95	C	C	C	C	C	1.95	1.96	1.95	1.95	1.95	1.95	1.95	1.98	1.98	1.98	2.00	1.95	2.00	1.96
Jun 16	2.10	2.13	2.06	2.10	2.07	2.09	2.08	2.03	1.97	1.99	1.96	S	1.94	1.93	1.93	1.93	1.93	1.93	1.93	1.94	1.96	1.94	1.96	1.97	1.93	2.13	1.99
Jun 17	1.95	1.99	2.01	2.01	2.00	1.99	1.99	1.97	1.93	1.91	S	1.90	1.91	1.91	1.90	1.90	1.90	1.90	1.90	1.92	1.93	1.95	2.01	2.01	1.90	2.01	1.95
Jun 18	2.04	1.99	1.95	1.92	1.93	1.93	1.94	1.93	1.93	S	1.92	1.91	1.90	1.91	1.91	1.92	1.93	1.95	1.92	1.92	1.93	1.94	1.93	1.93	1.90	2.04	1.93
Jun 19	1.94	1.91	1.90	1.91	1.91	1.90	1.91	1.94	S	1.94	1.93	1.93	1.92	1.92	1.92	1.92	1.93	1.93	1.92	1.92	1.93	1.98	1.98	1.98	1.90	1.98	1.93
Jun 20	1.94	1.95	1.94	1.95	1.93	1.93	1.93	S	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.93	1.92	1.92	1.93	1.93	1.93	1.93	1.94	1.95	1.92	1.95	1.93
Jun 21	1.95	1.94	1.95	1.95	1.94	1.93	S	1.91	1.89	1.89	1.93	1.94	1.93	1.93	1.93	1.93	1.94	1.94	1.94	1.94	1.96	1.98	1.99	2.06	1.89	2.06	1.94
Jun 22	2.11	2.11	2.13	2.12	2.09	S	2.10	2.04	1.98	1.96	1.93	1.91	1.90	1.90	1.90	1.91	1.91	1.90	1.88	1.90	1.90	1.92	1.95	1.96	1.88	2.13	1.97
Jun 23	1.96	2.01	2.01	2.03	S	1.98	1.97	2.01	1.98	1.97	1.94	1.91	1.90	1.89	1.88	1.89	1.89	1.90	1.91	1.91	1.92	1.94	1.96	2.03	1.88	2.03	1.95
Jun 24	2.05	2.15	2.13	S	2.11	2.10	2.12	2.07	2.01	1.95	1.92	1.90	1.90	1.90	1.91	1.91	1.90	1.89	1.90	1.91	1.92	1.92	1.96	2.02	1.89	2.15	1.98
Jun 25	2.08	2.19	S	2.21	2.09	1.91	1.91	1.90	1.90	1.88	1.88	1.88	1.87	1.87	1.87	1.87	1.88	1.88	1.88	1.89	1.89	1.90	1.92	1.90	1.87	2.21	1.93
Jun 26	1.93	S	2.03	1.99	1.98	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	1.93	2.03	NA
Jun 27	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-
Jun 28	X	X	X	X	X	X	X	X	X	X	NRM	NRM	NRM	1.93	1.93	1.93	1.93	1.92	1.92	1.93	1.96	1.96	S	2.02	1.92	2.02	NA
Jun 29	2.05	2.09	2.13	2.15	2.27	**2.33**	2.18	2.10	2.07	2.01	1.98	1.96	1.95	1.94	1.93	1.92	1.92	1.93	1.93	1.94	1.94	S	2.00	2.13	1.92	**2.33**	2.04
Jun 30	2.08	2.26	2.18	2.32	2.31	2.26	2.10	2.00	1.95	1.94	1.91	1.91	1.90	1.90	1.89	1.90	1.90	1.91	1.91	1.93	S	1.99	1.97	2.08	1.89	2.32	2.02
Diurnal Maximum	2.18	2.26	2.18	2.32	2.31	2.33	2.20	2.11	2.12	2.12	2.11	2.11	2.09	2.06	1.96	1.95	1.96	1.95	1.96	1.97	1.99	2.02	2.03	2.13			
Diurnal Average	2.02	2.05	2.04	2.04	2.04	2.03	2.02	1.99	1.97	1.95	1.94	1.94	1.93	1.92	1.92	1.92	1.92	1.92	1.92	1.93	1.94	1.96	1.97	2.00			

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.



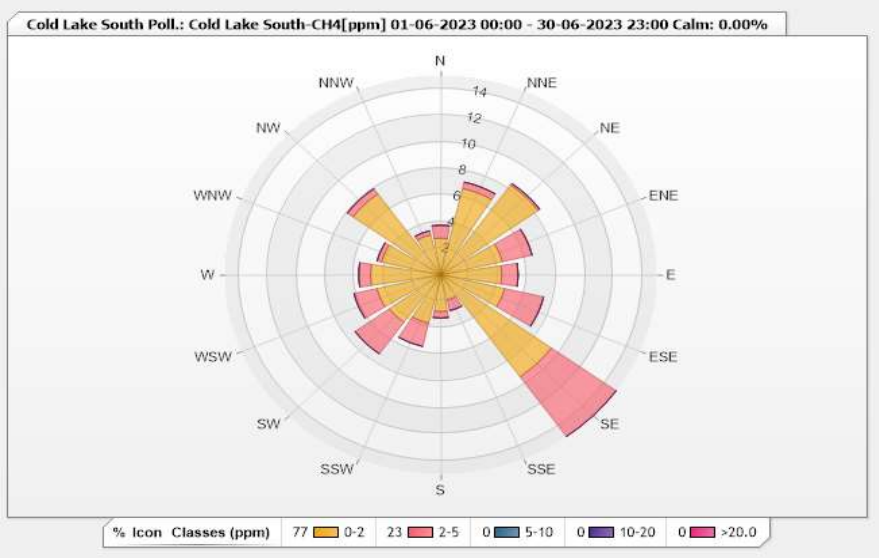


Station: Cold Lake South Poll.: Cold Lake South-CH4[ppm] Monthly: 06-2023

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

Calm: 0.00% Valid Data: 85.56% Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-20	>20.0	Total
N	2.76	0.97	0	0	0	3.73
NNE	6.66	0.49	0	0	0	7.15
NE	8.28	0.16	0	0	0	8.44
ENE	4.38	2.11	0	0	0	6.49
E	4.22	1.14	0	0	0	5.36
ESE	4.55	2.76	0	0	0	7.31
SE	9.42	5.52	0	0	0	14.94
SSE	1.95	0.81	0	0	0	2.76
S	2.76	0.49	0	0	0	3.25
SSW	3.73	1.79	0	0	0	5.52
SW	4.38	2.92	0	0	0	7.3
WSW	4.55	1.62	0	0	0	6.17
W	4.87	0.81	0	0	0	5.68
WNW	4.22	0.32	0	0	0	4.54
NW	7.47	0.49	0	0	0	7.96
NNW	3.08	0.32	0	0	0	3.4
Summary	77.28	22.72	0	0	0	100



Lakeland Industry & Community Association

Cold Lake South Station - June 2023

Summary of Hourly Averages

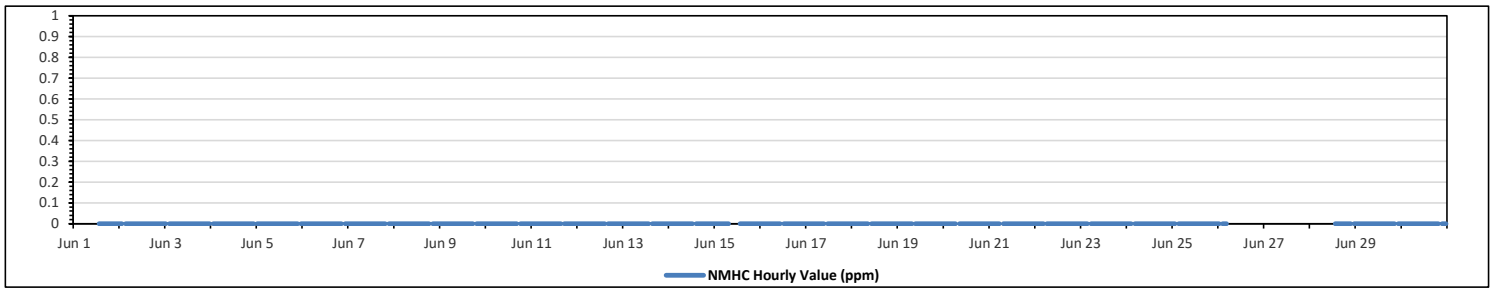
NON-METHANE HYDROCARBONS (NMHC) in ppm

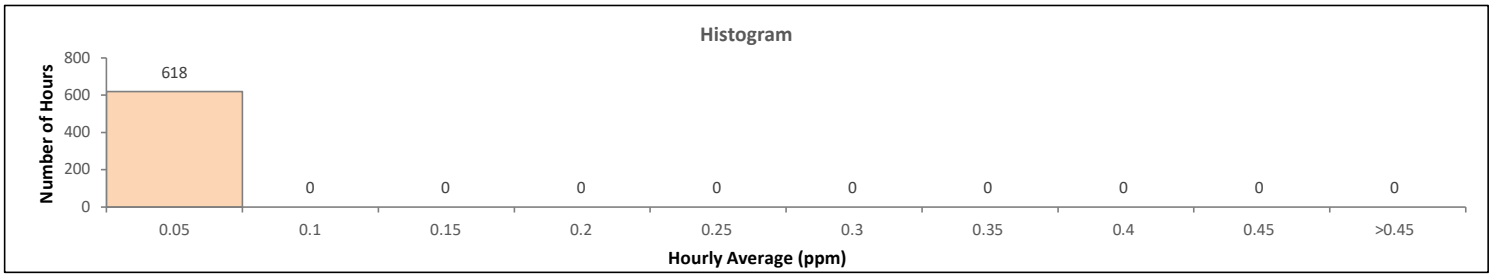
Maximum Hourly Value:	0.00	ppm	on Jun 1 at hr 13	Hours in Service:	720
Maximum Daily Value:	0.00	ppm	on Jun 2	Hours of Data:	618
Minimum Hourly Value:	0.00	ppm	on Jun 1 at hr 13	Hours of Missing Data:	69
Minimum Daily Value:	0.00	ppm	on Jun 2	Hours of Calibration:	33
Monthly Average:	0.00	ppm		Operational Uptime:	90.4

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			
Jun 1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA
Jun 2	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
Jun 3	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
Jun 4	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
Jun 5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00
Jun 6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00
Jun 7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00
Jun 8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jun 9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jun 10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jun 11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jun 12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jun 13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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
Jun 14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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
Jun 15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	C	C	C	C	C	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jun 16	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
Jun 17	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
Jun 18	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
Jun 19	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
Jun 20	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
Jun 21	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
Jun 22	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
Jun 23	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
Jun 24	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
Jun 25	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
Jun 26	0.00	S	0.00	0.00	0.00	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0.00	0.00	NA
Jun 27	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-
Jun 28	X	X	X	X	X	X	X	X	X	X	NRM	NRM	NRM	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	NA
Jun 29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00
Jun 30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	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.



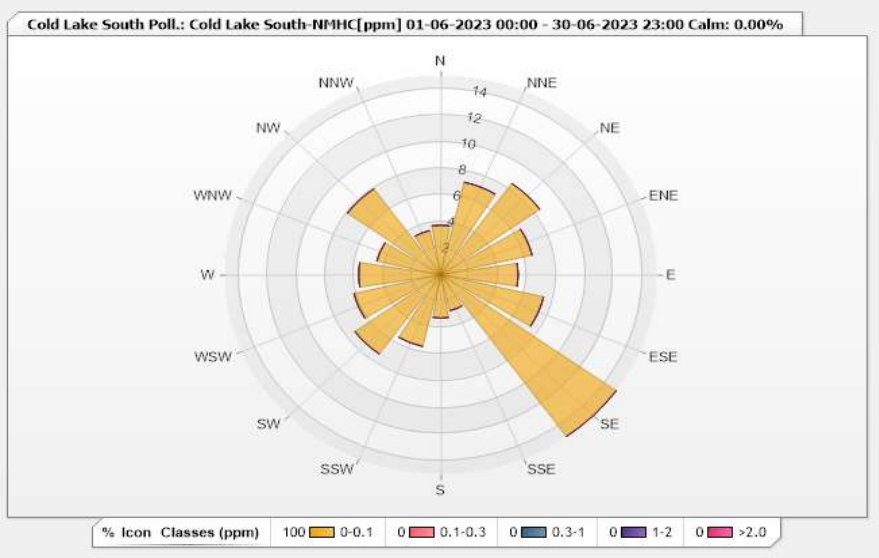


Station: Cold Lake South Poll.: Cold Lake South-NMHC[ppm] Monthly: 06-2023

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

Calm: 0.00% Valid Data: 85.56% Calm Avg: 0.00 [ppm]

Direction	0-0.1	0.1-0.3	0.3-1	1-2	>2.0	Total
N	3.73	0	0	0	0	3.73
NNE	7.14	0	0	0	0	7.14
NE	8.44	0	0	0	0	8.44
ENE	6.49	0	0	0	0	6.49
E	5.36	0	0	0	0	5.36
ESE	7.31	0	0	0	0	7.31
SE	14.94	0	0	0	0	14.94
SSE	2.76	0	0	0	0	2.76
S	3.25	0	0	0	0	3.25
SSW	5.52	0	0	0	0	5.52
SW	7.31	0	0	0	0	7.31
WSW	6.17	0	0	0	0	6.17
W	5.68	0	0	0	0	5.68
WNW	4.55	0	0	0	0	4.55
NW	7.95	0	0	0	0	7.95
NNW	3.41	0	0	0	0	3.41
Summary	100	0	0	0	0	100



Lakeland Industry & Community Association

Cold Lake South Station - June 2023

Summary of Hourly Averages

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

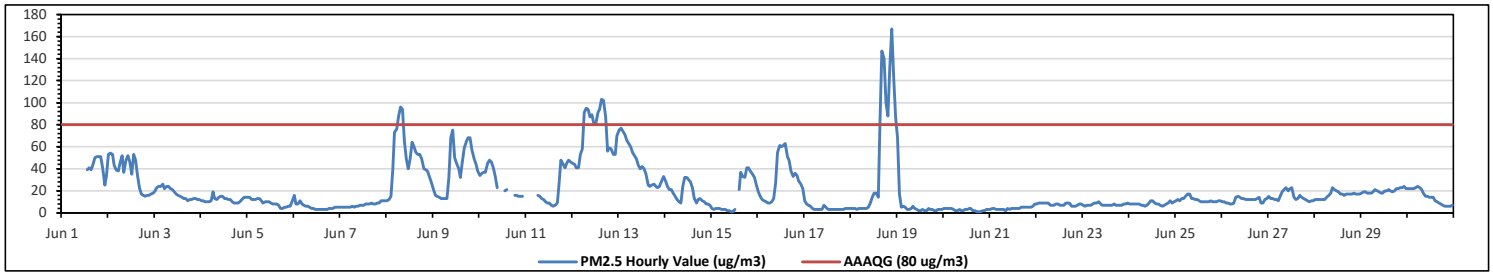
Alberta Ambient Air Quality Guideline (AAAQG): 1-Hour 80 µg/m3, Alberta Ambient Air Quality Objective (AAAQO): 24-Hour 29 µg/m3

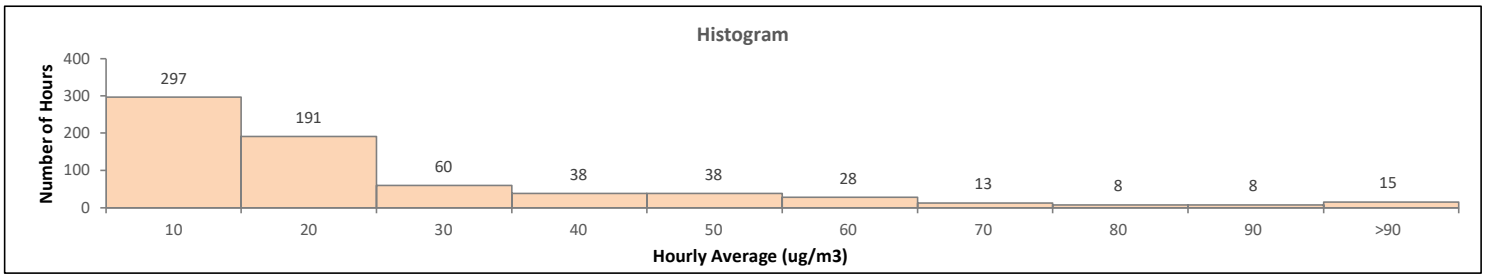
Number of 1-Hour Exceedances:	23	Number of 24-Hour Exceedances:	7
Maximum Hourly Value:	167 µg/m^3 on Jun 18 at hr 21	Hours in Service:	720
Maximum Daily Value:	71.9 µg/m^3 on Jun 12	Hours of Data:	696
Minimum Hourly Value:	1 µg/m^3 on Jun 15 at hr 10	Hours of Missing Data:	23
Minimum Daily Value:	3 µg/m^3 on Jun 20	Hours of Calibration:	1
Monthly Average:	20.6 µg/m^3	Operational Uptime:	96.8

Day	Hourly Period Starting at (MST)																								Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Jun 1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	39	41	39	44	50	51	51	51	41	25	34	25	51	NA
Jun 2	53	54	53	43	39	38	46	52	37	48	52	46	35	53	48	34	23	17	16	15	16	16	17	18	15	54	36.2
Jun 3	20	23	24	24	26	22	24	24	22	21	19	17	16	15	14	13	13	11	12	12	13	13	12	12	11	26	17.6
Jun 4	11	11	10	10	10	11	19	13	12	14	15	15	13	13	12	12	10	9	9	9	10	12	14	14	9	19	12.0
Jun 5	14	14	12	12	12	13	13	11	9	10	10	10	9	8	8	8	7	4	4	5	5	6	6	11	4	14	9.2
Jun 6	16	8	8	11	8	7	6	6	5	4	4	3	3	3	3	3	3	3	4	4	4	5	5	5	3	16	5.5
Jun 7	5	5	5	5	5	5	6	5	6	6	7	7	7	8	8	8	9	8	8	9	9	11	11	11	5	11	7.3
Jun 8	11	12	15	41	73	76	88	96	94	65	49	40	49	64	60	55	53	53	49	40	39	38	33	27	11	96	50.8
Jun 9	21	16	15	14	13	13	13	13	32	68	75	50	45	40	32	46	59	65	68	68	57	49	44	38	13	75	39.8
Jun 10	34	36	37	37	45	48	46	41	33	23	K	K	K	20	21	K	20	K	16	16	15	15	15	K	15	48	28.8
Jun 11	K	K	15	K	16	K	16	15	13	12	10	9	9	7	6	7	9	25	48	44	41	45	48	46	6	48	22.1
Jun 12	45	44	41	41	53	58	91	95	94	87	89	81	81	91	94	103	102	87	56	59	58	53	53	70	41	103	**71.9**
Jun 13	75	77	74	71	66	63	60	55	52	49	43	40	42	40	35	25	24	25	26	24	23	24	29	33	23	77	44.8
Jun 14	29	24	21	21	18	15	12	10	9	24	32	32	30	28	23	13	9	12	13	11	10	8	8	7	7	32	17.5
Jun 15	4	3	4	4	4	3	3	3	2	2	1	1	3	C	21	37	33	32	41	41	38	35	32	25	**1**	41	16.2
Jun 16	19	15	12	11	10	9	9	10	13	27	55	61	60	61	63	51	48	38	33	36	34	29	26	22	9	63	31.3
Jun 17	11	8	7	6	4	3	3	3	3	3	7	5	3	3	3	3	3	3	3	3	3	4	4	4	3	11	4.3
Jun 18	4	4	4	3	4	4	4	4	4	5	9	14	18	18	14	80	147	140	100	88	133	**167**	123	87	3	**167**	49.1
Jun 19	68	17	5	6	5	3	3	4	6	4	3	2	2	3	2	2	4	3	3	2	2	3	3	3	2	68	6.6
Jun 20	4	4	4	4	4	3	2	2	3	2	2	3	3	4	4	2	2	1	1	1	2	2	3	3	**1**	4	**2.7**
Jun 21	3	4	4	3	3	3	3	3	2	4	3	4	4	4	4	4	5	5	5	5	5	5	6	8	2	8	4.1
Jun 22	8	9	9	9	9	9	9	7	7	7	8	8	7	7	7	9	9	9	6	6	6	7	8	8	6	9	7.8
Jun 23	7	6	7	7	7	8	9	9	10	8	7	7	7	7	7	7	8	7	7	7	7	8	8	9	6	10	7.5
Jun 24	8	8	8	8	8	8	7	7	6	7	9	11	11	9	8	8	7	6	7	8	9	11	9	10	6	11	8.3
Jun 25	11	12	11	13	13	15	17	17	13	13	12	12	11	10	10	10	10	10	11	10	10	10	11	11	10	17	11.8
Jun 26	10	10	9	9	8	8	9	14	15	14	13	13	12	12	12	12	12	12	13	14	9	9	12	13	8	15	11.4
Jun 27	15	13	13	12	12	11	16	19	21	23	20	22	23	14	12	13	16	14	13	12	11	10	11	11	10	23	14.9
Jun 28	12	12	12	12	12	12	14	16	18	23	21	20	19	17	17	16	17	17	17	17	18	17	17	17	12	23	16.3
Jun 29	18	19	19	18	18	18	19	21	20	19	18	18	20	20	21	20	19	20	22	22	23	23	24	22	18	24	20.0
Jun 30	22	22	22	22	23	24	23	21	18	15	15	14	14	14	11	10	9	8	7	6	6	6	6	7	6	24	14.4
Diurnal Maximum	75	77	74	71	73	76	91	96	94	87	89	81	81	91	94	103	147	140	100	88	133	167	123	87			
Diurnal Average	19.9	17.5	16.6	17.0	18.2	18.2	20.3	20.6	20.0	20.9	21.7	20.2	19.9	21.8	20.7	22.4	24.5	23.9	22.3	21.5	22.2	22.7	20.8	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.



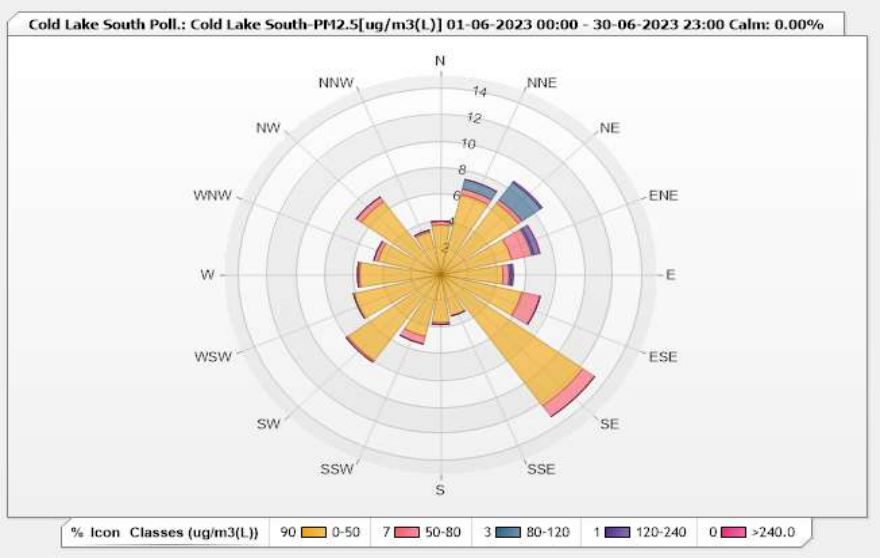


Station: Cold Lake South Poll.: Cold Lake South-PM2.5[ug/m3(L)] Monthly: 06-2023

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

Calm: 0.00% Valid Data: 96.39% Calm Avg: 0.00 [ppm]

Direction	0-50	50-80	80-120	120-240	>240.0	Total
N	3.75	0.29	0	0	0	4.04
NNE	6.2	0.43	0.72	0	0	7.35
NE	6.63	0.29	1.59	0.14	0	8.65
ENE	5.04	1.44	0.14	0.43	0	7.05
E	4.32	0.43	0.14	0.14	0	5.03
ESE	5.76	1.3	0	0	0	7.06
SE	12.1	1.01	0	0	0	13.11
SSE	3.17	0	0	0	0	3.17
S	3.6	0.14	0	0	0	3.74
SSW	4.76	0.58	0	0	0	5.34
SW	7.93	0.14	0	0	0	8.07
WSW	6.2	0	0	0	0	6.2
W	5.62	0.14	0	0	0	5.76
WNW	4.47	0.29	0	0	0	4.76
NW	6.77	0.43	0	0	0	7.2
NNW	3.31	0.14	0	0	0	3.45
Summary	89.63	7.05	2.59	0.71	0	100



Lakeland Industry & Community Association

Cold Lake South Station - June 2023

Summary of Hourly Averages

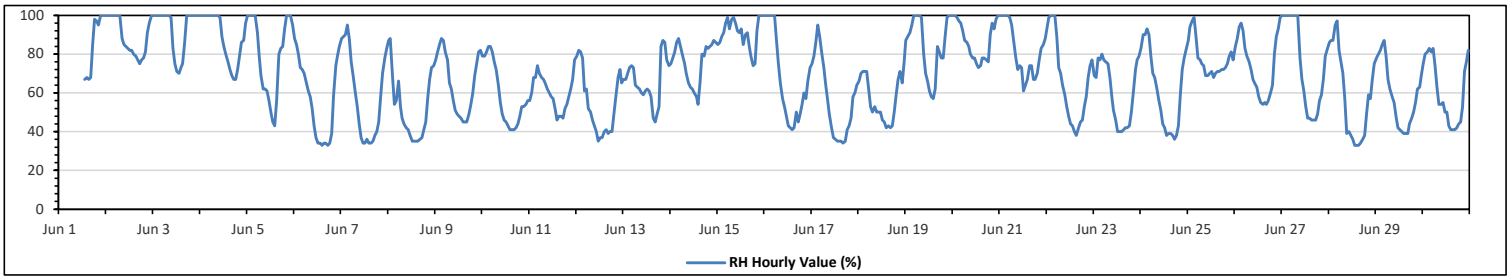
RELATIVE HUMIDITY (RH) in %

Maximum Hourly Value:	100	%	on Jun 1 at hr 21	Hours in Service:	720
Maximum Daily Value:	93.0	%	on Jun 3	Hours of Data:	707
Minimum Hourly Value:	33	%	on Jun 6 at hr 14	Hours of Missing Data:	13
Minimum Daily Value:	52.3	%	on Jun 8	Hours of Calibration:	0
Monthly Average:	69.6	%		Operational Uptime:	98.2

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
Jun 1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	67	68	67	68	85	98	97	95	**100**	**100**	**100**	67	**100**	NA
Jun 2	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	88	85	84	83	82	82	80	79	77	75	77	78	81	91	96	**100**	75	**100**	89.1
Jun 3	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	99	83	75	71	70	73	75	85	**100**	**100**	**100**	**100**	**100**	**100**	**100**	70	**100**	**93.0**
Jun 4	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	99	89	84	80	76	72	69	67	67	72	79	86	87	96	67	**100**	88.5
Jun 5	**100**	**100**	**100**	**100**	**100**	91	78	69	62	62	61	56	49	45	43	56	80	83	84	93	**100**	**100**	**100**	95	43	**100**	79.5
Jun 6	88	85	80	73	72	70	65	61	58	52	43	37	34	34	**33**	34	34	**33**	34	39	59	74	79	84	**33**	88	56.5
Jun 7	88	89	90	95	88	76	69	60	53	44	37	34	34	36	34	34	35	38	40	45	58	70	78	83	34	95	58.7
Jun 8	87	88	69	54	56	66	53	47	44	42	41	38	35	35	35	35	36	37	41	45	57	67	73	74	35	88	**52.3**
Jun 9	77	81	85	88	87	81	77	65	62	56	51	49	48	47	45	45	45	49	54	60	69	76	81	82	45	88	65.0
Jun 10	79	79	81	84	84	81	76	72	64	55	49	46	45	43	41	41	41	42	44	48	53	53	54	56	41	84	58.8
Jun 11	56	60	68	68	74	70	68	67	65	62	60	58	57	51	46	48	48	47	52	54	58	62	67	77	46	77	60.1
Jun 12	79	82	81	78	61	62	52	50	46	43	40	35	37	37	40	41	39	40	40	49	58	68	72	65	35	82	54.0
Jun 13	67	67	70	73	74	73	64	63	62	60	59	61	62	61	58	47	45	49	53	84	87	86	77	74	45	87	65.7
Jun 14	75	78	81	86	88	84	79	75	70	65	63	62	60	58	54	65	80	79	84	83	84	85	87	86	54	88	75.5
Jun 15	85	86	89	91	96	99	93	98	99	96	92	91	93	85	90	91	84	79	74	75	92	**100**	**100**	**100**	74	**100**	90.8
Jun 16	**100**	**100**	**100**	**100**	**100**	**100**	87	75	65	57	53	48	43	42	41	42	50	45	49	54	60	57	66	73	41	**100**	67.0
Jun 17	75	79	86	95	89	81	73	64	56	49	42	37	36	35	35	35	34	35	41	43	47	58	60	64	34	95	56.2
Jun 18	66	70	71	71	71	62	53	50	53	50	50	50	46	45	42	43	42	43	50	59	67	71	65	76	42	76	56.9
Jun 19	87	89	91	95	**100**	**100**	**100**	**100**	99	80	70	66	61	58	57	62	84	81	78	78	89	99	**100**	**100**	57	**100**	84.3
Jun 20	**100**	**100**	99	97	96	92	87	86	84	80	78	78	75	73	74	78	78	77	76	90	96	93	98	**100**	73	**100**	86.9
Jun 21	**100**	**100**	**100**	**100**	**100**	99	95	87	78	72	74	73	61	64	67	74	74	67	67	70	77	83	85	88	61	**100**	81.5
Jun 22	93	99	**100**	**100**	**100**	89	73	70	64	59	53	48	44	43	40	38	42	45	46	53	58	68	74	77	38	**100**	65.7
Jun 23	69	68	78	77	80	77	76	75	68	58	51	46	40	40	40	41	42	42	43	50	60	72	77	79	40	80	60.4
Jun 24	83	90	90	93	90	79	70	68	62	56	51	44	42	38	39	39	38	36	38	43	59	72	78	83	36	93	61.7
Jun 25	87	94	97	99	89	78	77	75	74	69	69	70	71	68	70	71	71	72	72	73	75	79	81	77	68	99	77.4
Jun 26	84	88	94	96	92	83	79	76	72	67	65	63	58	55	54	55	54	56	60	64	80	89	93	99	54	99	74.0
Jun 27	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	78	67	61	53	47	47	46	46	46	49	56	59	67	79	83	46	**100**	74.3
Jun 28	86	87	87	95	97	82	75	70	57	39	40	38	36	**33**	**33**	**33**	34	36	38	49	59	57	67	75	**33**	97	58.5
Jun 29	78	80	82	85	87	79	67	62	58	55	48	42	41	40	39	39	39	44	47	50	55	62	63	69	39	87	58.8
Jun 30	75	80	81	83	81	83	74	63	54	54	55	50	50	43	41	41	41	42	44	45	53	71	76	82	41	83	60.9
Diurnal Maximum	100	100	100	100	100	100	100	100	100	100	99	91	93	85	90	91	85	100	100	100	100	100	100	100			
Diurnal Average	85.0	86.9	87.9	88.8	88.0	84.0	77.9	74.1	69.6	63.6	59.6	56.1	53.4	51.8	51.2	52.2	54.5	55.7	58.0	63.3	70.8	77.2	80.4	83.2			

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

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



Lakeland Industry & Community Association

Cold Lake South Station - June 2023

Summary of Hourly Averages

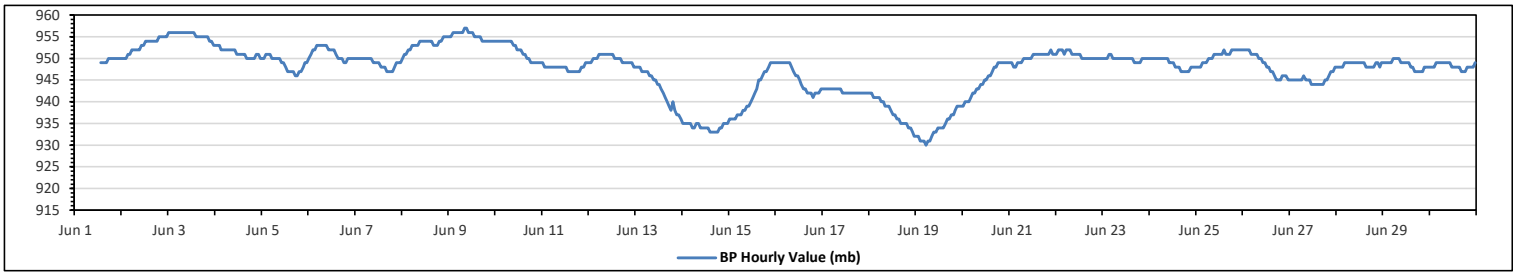
BAROMETRIC PRESSURE (BP) in millibar

Maximum Hourly Value:	957	mb	on Jun 9 at hr 8	Hours in Service:	720
Maximum Daily Value:	955	mb	on Jun 3	Hours of Data:	707
Minimum Hourly Value:	930	mb	on Jun 19 at hr 5	Hours of Missing Data:	13
Minimum Daily Value:	934	mb	on Jun 19	Hours of Calibration:	0
Monthly Average:	948	mb		Operational Uptime:	98.2

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
Jun 1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	949	949	949	949	950	950	950	950	950	950	950	949	950	NA
Jun 2	950	950	950	951	951	952	952	952	952	952	953	953	954	954	954	954	954	954	954	955	955	955	955	955	950	955	953
Jun 3	956	956	956	956	956	956	956	956	956	956	956	956	956	956	955	955	955	955	955	955	955	954	954	953	953	956	**955**
Jun 4	953	953	953	952	952	952	952	952	952	952	952	951	951	951	951	951	950	950	950	950	950	951	951	950	950	953	951
Jun 5	950	950	951	951	951	950	950	950	950	950	949	949	948	947	947	947	947	946	946	947	947	948	949	949	946	951	949
Jun 6	950	951	952	952	953	953	953	953	953	953	952	952	952	952	951	950	950	950	949	949	950	950	950	950	949	953	951
Jun 7	950	950	950	950	950	950	950	950	950	949	949	949	949	948	948	948	947	947	947	947	948	949	949	949	947	950	949
Jun 8	950	951	951	952	952	953	953	953	953	954	954	954	954	954	954	954	953	953	953	954	954	955	955	955	950	955	953
Jun 9	955	955	956	956	956	956	956	956	**957**	**957**	956	956	956	955	955	955	955	954	954	954	954	954	954	954	954	**957**	955
Jun 10	954	954	954	954	954	954	954	954	954	953	953	952	952	952	951	951	950	950	949	949	949	949	949	949	949	954	952
Jun 11	949	948	948	948	948	948	948	948	948	948	948	948	948	947	947	947	947	947	947	947	948	948	949	949	947	949	948
Jun 12	949	949	950	950	950	951	951	951	951	951	951	951	951	950	950	950	950	949	949	949	949	949	949	948	948	951	950
Jun 13	948	948	948	947	947	947	947	946	946	945	945	944	944	943	942	941	940	939	938	940	938	937	937	936	936	948	943
Jun 14	935	935	935	935	935	934	934	935	935	934	934	934	934	934	933	933	933	933	933	934	934	935	935	935	933	935	934
Jun 15	936	936	936	936	937	937	937	938	938	939	939	940	941	942	943	945	945	946	947	947	948	949	949	949	936	949	942
Jun 16	949	949	949	949	949	949	949	949	948	947	946	946	945	944	943	943	942	942	942	941	942	942	942	943	941	949	945
Jun 17	943	943	943	943	943	943	943	943	943	943	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	943	942
Jun 18	942	942	941	941	941	941	940	940	939	939	939	938	937	937	936	936	935	935	935	935	934	934	933	932	932	942	938
Jun 19	932	932	931	931	931	**930**	931	931	932	933	933	934	934	934	934	935	936	936	937	937	938	939	939	939	**930**	939	**934**
Jun 20	939	940	940	940	941	942	942	943	943	944	944	945	945	946	946	947	948	948	949	949	949	949	949	949	939	949	945
Jun 21	949	949	948	948	949	949	949	950	950	950	950	950	951	951	951	951	951	951	951	951	951	952	951	951	948	952	950
Jun 22	951	952	952	952	951	952	952	952	951	951	951	951	951	950	950	950	950	950	950	950	950	950	950	950	950	952	951
Jun 23	950	950	950	951	951	950	950	950	950	950	950	950	950	950	950	950	949	949	949	949	950	950	950	950	949	951	950
Jun 24	950	950	950	950	950	950	950	950	950	950	949	949	949	948	948	948	947	947	947	947	947	948	948	948	947	950	949
Jun 25	948	948	948	949	949	949	950	950	950	951	951	951	951	951	952	951	951	951	952	952	952	952	952	952	948	952	951
Jun 26	952	952	952	952	951	951	951	951	950	950	949	949	948	948	947	947	946	945	945	945	946	946	946	945	945	952	949
Jun 27	945	945	945	945	945	945	945	946	945	945	945	944	944	944	944	944	944	944	945	945	946	947	947	948	944	948	945
Jun 28	948	948	948	948	949	949	949	949	949	949	949	949	949	949	949	948	948	948	948	948	949	949	948	949	948	949	949
Jun 29	949	949	949	949	949	950	950	950	950	949	949	949	949	949	948	948	947	947	947	947	947	948	948	948	947	950	949
Jun 30	948	948	948	949	949	949	949	949	949	949	949	948	948	948	948	948	947	947	947	948	948	948	948	949	947	949	948
Diurnal Maximum	956	956	956	956	956	956	956	956	957	957	956	956	956	956	955	955	955	955	955	955	955	955	955	955			
Diurnal Average	948	948	948	948	948	948	948	948	948	948	948	948	948	948	947	947	947	947	947	947	947	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 - June 2023

Summary of Hourly Averages

AMBIENT TEMPERATURE (AT) in Degree Celsius

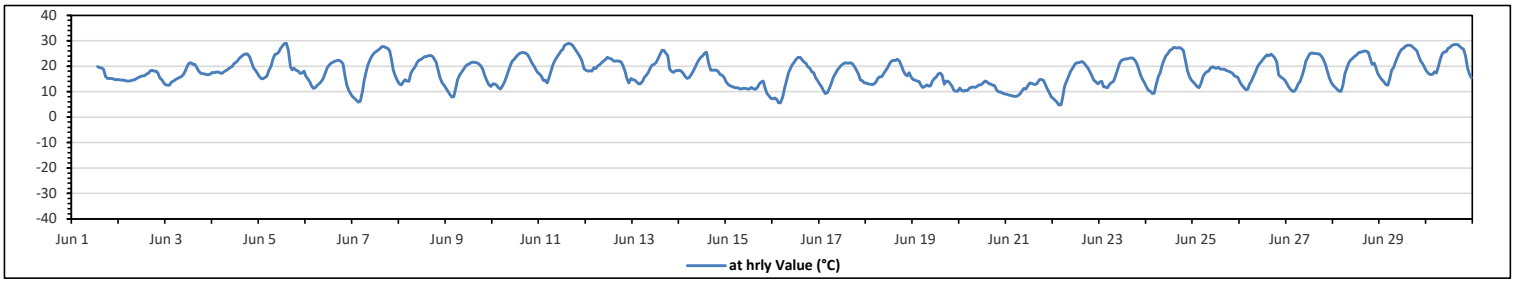
Maximum Hourly Value:	29.0	°C	on Jun 5 at hr 14	Hours in Service:	720	
Maximum Daily Value:	22.8	°C	on Jun 30	Hours of Data:	707	
Minimum Hourly Value:	4.7	°C	on Jun 22 at hr 3	Hours of Missing Data:	13	
Minimum Daily Value:	11.0	°C	on Jun 21	Hours of Calibration:	0	
Monthly Average:	17.6	°C		Operational Uptime:	98.2	

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
Jun 1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	19.8	19.4	19.3	18.7	15.9	15.1	15.1	15.2	15	14.7	14.8	14.7	19.8	NA
Jun 2	14.7	14.6	14.5	14.4	14.2	14.2	14.3	14.6	14.7	15.2	15.5	16	16.2	16.2	16.9	17.2	18.1	18.4	18.1	18	17.2	15.3	14.7	13.4	13.4	18.4	15.7
Jun 3	12.6	12.5	12.5	13.7	14.2	14.8	15.2	15.5	15.9	16.6	18.1	20	21.2	21.3	20.7	20.7	19.5	18	17.2	17.1	16.9	16.7	16.7	16.9	12.5	21.3	16.9
Jun 4	17.6	17.5	17.7	17.7	17.4	17.2	17.8	18.3	18.8	19.4	19.8	20.9	21.5	22.2	23.2	23.8	24.4	24.8	24.7	23.7	21.9	19.5	18.5	17.4	17.2	24.8	20.2
Jun 5	16.1	15.2	15	15.6	16.1	18.2	20	22.7	24.6	24.9	25.5	27	28	28.9	**29**	26.4	19.7	18.6	19.1	18.5	18.1	17.2	17.4	18.1	15.0	**29.0**	20.8
Jun 6	16.1	15	13.9	12.2	11.2	11.6	12.7	13.3	14.2	15.1	17.5	19.4	20.4	21.2	21.6	21.9	22.2	22.3	21.9	21	16.3	12.5	10.5	9.1	9.1	22.3	16.4
Jun 7	8.1	7.3	6.6	5.8	6.3	10.2	14.3	17.7	20.5	22.8	24.2	25.1	25.7	26.3	26.9	27.6	27.7	27.3	27	25.9	22.4	18.6	16.3	14.3	5.8	27.7	19.0
Jun 8	13.1	12.6	13.8	14.7	14.2	14	17.2	18.6	19.7	21.3	22.3	22.6	23.1	23.7	23.9	24.2	24.3	23.8	22.9	21.6	18.6	15.5	13.5	12.5	12.5	24.3	18.8
Jun 9	11.3	10.1	8.9	7.9	8	11.1	14.7	16.6	17.7	18.8	19.9	20.5	21	21.5	21.6	21.5	21.4	20.8	20.1	18.7	16.3	14.2	12.6	12.1	7.9	21.6	16.1
Jun 10	13	13.1	12.5	11.5	11	12.2	13.9	15.5	17.8	20	21.8	22.7	23.7	24.4	25.1	25.4	25.4	25.1	24.5	23.2	21.4	20.2	19	17.7	11.0	25.4	19.2
Jun 11	17.1	16.1	14.4	14.5	13.5	15.6	18	20.6	22.2	23.4	24.7	25.9	26.6	28.1	28.6	**29**	28.8	28.3	27.1	26	24.8	23.6	21.9	19	13.5	**29.0**	22.4
Jun 12	18.3	18.1	18.2	18.1	19.4	19	20.1	20.5	21.3	22.1	22.8	23.5	23.1	22.9	22.1	22	22.1	22	21.7	20.3	18.2	15.1	13.5	15.2	13.5	23.5	20.0
Jun 13	14.7	14.5	13.9	13.1	13.2	14	15.7	16.4	17.6	19.2	20.4	20.7	21.4	23	24.7	26.3	26.2	25.1	24.2	18.8	17.9	17.6	18.3	18.2	13.1	26.3	19.0
Jun 14	18.4	18	17.1	15.8	15.1	15.5	16.6	17.9	19.4	21.1	22.5	23.4	24.3	25.3	25.5	21.5	18.5	18.5	18.4	18.4	17.8	16.6	16.4	15.6	15.1	25.5	19.1
Jun 15	13.9	12.8	12.3	12	11.7	11.5	11.5	11	11.1	11.2	11.3	11	11	11.6	11.1	10.9	11.6	13	13.8	14.2	11.4	9.3	8.4	7.4	7.4	14.2	11.5
Jun 16	7.1	7.5	6.9	5.6	5.6	7.9	11.4	14.3	17.4	19	20.5	21.6	22.7	23.4	23.5	22.5	21.6	21.1	19.9	19.1	17.8	17.5	15.4	14.2	5.6	23.5	16.0
Jun 17	13	12.1	10.5	9.3	9.6	11.2	13.3	15.5	17	18.3	19.3	20.2	20.8	21.4	21.2	21.2	21.3	21	19.7	18.3	16.8	14.6	14.3	13.5	9.3	21.4	16.4
Jun 18	13.4	13	12.9	12.8	13	13.9	15.3	15.8	16	17.2	18.3	19.5	21.2	21.9	22.4	22.2	22.7	21.9	20.2	18.2	16.8	16.2	17.5	15.8	12.8	22.7	17.4
Jun 19	14.8	14.5	14.2	14	12.8	11.6	11.9	12.6	12.2	12.3	14.1	15.1	15.8	17	17.3	16.5	12.9	14.2	14	13.5	12.2	10.6	10.1	10.2	10.1	17.3	13.5
Jun 20	11.4	10.5	10.2	10.6	10.4	11.3	11.8	11.8	11.6	12.2	12.6	12.7	13.5	14.1	13.9	13.1	13	12.5	12.4	10.6	9.9	9.8	9.4	9.2	9.2	14.1	11.6
Jun 21	9	8.7	8.5	8.3	8.2	8.2	8.5	9.2	10.2	11.2	11	12.3	13.4	13.3	12.9	12.8	13.5	14.7	14.8	14.4	12.8	11	9.6	8.1	8.1	14.8	**11.0**
Jun 22	7.4	6.6	5.8	**4.7**	4.8	7.8	12.2	14	16.2	18	19.2	20.5	21.3	21.3	21.6	21.8	21.2	20.3	19	17.6	16.3	14.6	13.8	13	**4.7**	21.8	15.0
Jun 23	13.8	14	11.9	11.8	11.5	12.8	13.6	14	16.2	18.5	20.8	22.1	22.6	22.9	22.9	23.1	23.2	23.2	22.5	21.2	19	16.3	14.7	13.5	11.5	23.2	17.8
Jun 24	11.8	10.6	10.1	9.3	9.4	12.7	15.9	17.6	20.4	22.2	24	25	26.2	26.7	27.3	27.2	27.1	27.4	26.9	26.2	22	18.2	15.9	14.6	9.3	27.4	19.8
Jun 25	13.9	12.9	12	11.5	13.2	16.1	17.1	17.8	18.1	19.3	19.8	19.3	19.2	19.6	18.9	18.8	18.8	18.3	18	17.7	17.3	16.4	16	15.7	11.5	19.8	16.9
Jun 26	13.7	12.5	11.7	10.8	10.9	12.9	14.2	15.9	17.6	19.8	20.9	21.8	22.8	23.6	24.4	24.1	24.7	24.2	23.2	21.6	16.5	15.8	15.3	14.5	10.8	24.7	18.1
Jun 27	13.3	11.9	10.9	10.1	10.2	11.3	13	14	16.5	19.2	21.9	23.5	24.9	25.3	25	25	24.8	24.7	23.8	22.6	20.7	18.1	15.2	13.5	10.1	25.3	18.3
Jun 28	12.4	11.8	10.9	10.1	10.1	12.6	17.1	19.2	21.4	22.5	23.1	23.8	24.5	25.4	25.5	25.7	26	25.8	25.5	23.1	20.7	21.2	19.3	17.1	10.1	26.0	19.8
Jun 29	15.8	14.8	13.8	12.8	12.5	15	18.4	19.5	21.6	23.4	25.3	26.6	27	27.7	28.1	28.3	28.2	27.4	26.8	25.9	23.9	21.9	21	19.5	12.5	28.3	21.9
Jun 30	18	17.1	16.7	16.8	17.8	17.4	19.8	22.7	24.9	25.6	25.7	27	27.4	28.1	28.4	28.5	28.4	27.7	27.1	26.7	24	19.4	17	15.4	15.4	28.5	**22.8**
Diurnal Maximum	18.4	18.1	18.2	18.1	19.4	19.0	20.1	22.7	24.9	25.6	25.7	27.0	28.0	28.9	29.0	29.0	28.8	28.3	27.1	26.7	24.8	23.6	21.9	19.5			
Diurnal Average	13.6	13.0	12.4	11.9	11.9	13.2	15.0	16.3	17.7	19.0	20.1	21.0	21.7	22.3	22.5	22.3	21.9	21.5	21.0	19.9	18.0	16.3	15.2	14.3			

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

Cold Lake South Station - June 2023

Summary of Hourly Averages

STATION TEMPERATURE (ST) in Degree Celsius

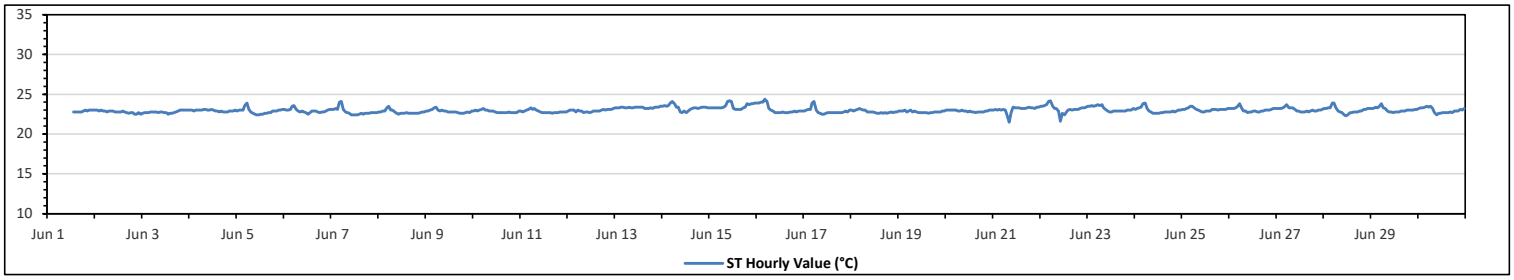
Maximum Hourly Value:	24.4	°C	on Jun 16 at hr 4	Hours in Service:	720
Maximum Daily Value:	23.5	°C	on Jun 15	Hours of Data:	707
Minimum Hourly Value:	21.5	°C	on Jun 21 at hr 8	Hours of Missing Data:	13
Minimum Daily Value:	22.8	°C	on Jun 8	Hours of Calibration:	0
Monthly Average:	23.0	°C		Operational Uptime:	98.2

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
Jun 1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	22.8	22.8	22.8	22.8	22.8	22.9	23.0	22.9	23.0	23.0	23.0	22.8	23.0	NA
Jun 2	23.0	23.0	22.9	23.0	22.9	22.9	22.8	22.9	22.9	22.9	22.8	22.8	22.8	22.8	22.9	22.8	22.7	22.6	22.7	22.7	22.5	22.5	22.7	22.5	22.5	23.0	22.8
Jun 3	22.6	22.7	22.7	22.7	22.8	22.8	22.8	22.8	22.7	22.8	22.8	22.7	22.7	22.5	22.6	22.6	22.7	22.8	22.9	23.0	23.0	23.0	23.0	23.0	22.5	23.0	22.8
Jun 4	23.0	23.0	22.9	23.0	23.0	23.0	23.0	23.1	23.1	23.0	23.0	23.1	23.0	22.9	22.9	22.8	22.9	22.8	22.8	22.8	22.9	22.9	22.9	23.0	22.8	23.1	23.0
Jun 5	22.9	23.0	23.0	23.0	23.6	23.9	23.1	22.8	22.6	22.5	22.4	22.4	22.5	22.5	22.6	22.6	22.7	22.7	22.9	22.9	22.9	23.0	23.0	23.1	22.4	23.9	22.9
Jun 6	23.1	23.0	23.0	23.1	23.5	23.6	23.1	22.9	22.8	22.9	22.8	22.7	22.5	22.7	22.9	22.9	22.9	22.8	22.7	22.8	22.8	22.9	23.0	23.1	22.5	23.6	22.9
Jun 7	23.1	23.1	23.2	23.1	24.0	24.1	23.1	22.8	22.7	22.6	22.4	22.4	22.4	22.4	22.5	22.6	22.5	22.6	22.6	22.6	22.7	22.7	22.7	22.7	22.4	24.1	22.8
Jun 8	22.8	22.8	22.9	22.9	23.3	23.5	23.0	23.0	22.8	22.6	22.5	22.6	22.6	22.6	22.7	22.6	22.6	22.6	22.6	22.6	22.6	22.7	22.8	22.8	22.5	23.5	**22.8**
Jun 9	22.9	22.9	23.0	23.1	23.3	23.4	23.0	22.9	23.0	22.9	22.9	22.8	22.8	22.8	22.8	22.8	22.7	22.6	22.6	22.6	22.7	22.8	22.7	22.9	22.6	23.4	22.9
Jun 10	22.9	23.0	22.9	23.0	23.1	23.2	23.0	23.0	22.9	22.9	22.9	22.8	22.7	22.7	22.7	22.7	22.7	22.7	22.8	22.7	22.7	22.7	22.7	22.9	22.7	23.2	22.8
Jun 11	22.9	22.8	22.9	23.0	23.1	23.3	23.1	23.2	23.0	22.9	22.8	22.7	22.7	22.7	22.7	22.7	22.6	22.7	22.7	22.7	22.8	22.8	22.8	22.8	22.6	23.3	22.9
Jun 12	22.9	23.0	23.0	23.0	22.8	23.0	22.9	22.9	22.7	22.8	22.8	22.7	22.8	22.9	22.9	22.9	22.9	23.0	23.1	23.0	23.1	23.1	23.1	23.2	22.7	23.2	22.9
Jun 13	23.3	23.3	23.3	23.4	23.4	23.3	23.3	23.4	23.3	23.3	23.4	23.4	23.4	23.4	23.4	23.2	23.2	23.2	23.3	23.2	23.4	23.4	23.4	23.5	23.2	23.5	23.3
Jun 14	23.5	23.6	23.5	23.6	23.9	24.1	23.8	23.4	23.4	22.8	22.7	22.9	22.7	22.9	23.1	23.2	23.3	23.3	23.2	23.3	23.4	23.4	23.4	23.3	22.7	24.1	23.3
Jun 15	23.3	23.3	23.3	23.3	23.3	23.3	23.3	23.4	23.6	24.1	24.2	24.1	23.2	23.1	23.1	23.1	23.1	23.3	23.4	23.8	23.7	23.8	23.8	23.9	23.1	24.2	**23.5**
Jun 16	23.9	23.9	24.0	24.0	**24.4**	24.1	23.2	23.0	22.9	22.7	22.7	22.7	22.7	22.8	22.7	22.7	22.7	22.8	22.8	22.9	22.8	22.9	22.9	22.9	22.7	**24.4**	23.1
Jun 17	22.9	23.0	23.1	23.1	23.9	24.1	23.0	22.7	22.6	22.5	22.5	22.6	22.7	22.7	22.7	22.7	22.7	22.7	22.7	22.7	22.8	22.9	22.8	23.0	22.5	24.1	22.9
Jun 18	23.0	22.9	23.0	23.1	23.2	23.1	23.0	23.0	22.8	22.8	22.8	22.8	22.7	22.6	22.6	22.7	22.6	22.7	22.6	22.7	22.8	22.7	22.8	22.8	22.6	23.2	22.8
Jun 19	22.9	22.9	22.9	23.0	22.8	22.9	23.0	22.8	22.9	22.8	22.7	22.7	22.7	22.7	22.7	22.6	22.7	22.7	22.8	22.8	22.8	22.8	22.9	22.9	22.6	23.0	22.8
Jun 20	23.0	23.0	23.0	23.0	23.0	23.0	22.9	22.9	23.0	22.9	22.9	22.8	22.9	22.8	22.8	22.7	22.8	22.8	22.8	22.8	22.9	22.9	23.0	23.0	22.7	23.0	22.9
Jun 21	23.0	23.1	23.0	23.1	23.0	23.1	23.0	22.3	**21.5**	22.7	23.4	23.3	23.3	23.3	23.2	23.2	23.2	23.3	23.4	23.3	23.3	23.2	23.4	23.4	**21.5**	23.4	23.1
Jun 22	23.5	23.5	23.6	23.7	24.1	24.2	23.5	23.2	23.2	22.9	21.6	22.6	22.4	22.8	23.0	23.1	23.0	23.1	23.1	23.1	23.2	23.3	23.3	23.4	21.6	24.2	23.2
Jun 23	23.5	23.5	23.6	23.5	23.6	23.7	23.6	23.7	23.3	23.1	22.9	22.8	22.8	22.9	22.9	22.9	22.9	22.9	22.9	22.9	23.0	23.0	23.0	23.2	22.8	23.7	23.2
Jun 24	23.1	23.2	23.3	23.4	23.8	23.9	23.2	22.9	22.8	22.6	22.6	22.6	22.6	22.7	22.7	22.8	22.8	22.8	22.8	22.9	22.8	22.9	23.0	23.0	22.6	23.9	23.0
Jun 25	23.1	23.1	23.2	23.3	23.5	23.5	23.3	23.1	23.0	22.9	22.8	22.8	22.9	22.9	22.9	23.1	23.1	23.1	23.0	23.1	23.1	23.1	23.1	23.2	22.8	23.5	23.1
Jun 26	23.2	23.2	23.2	23.3	23.5	23.8	23.3	22.9	22.9	22.7	22.8	22.8	22.9	22.9	22.8	22.8	22.9	22.9	23.0	23.0	23.0	23.1	23.2	23.2	22.7	23.8	23.1
Jun 27	23.2	23.2	23.2	23.3	23.5	23.7	23.3	23.3	23.3	23.1	22.9	22.9	22.8	22.8	22.8	22.9	22.8	22.9	23.0	22.9	22.9	23.0	23.0	23.1	22.8	23.7	23.1
Jun 28	23.2	23.2	23.3	23.3	23.9	23.9	23.3	22.9	22.8	22.7	22.4	22.3	22.4	22.7	22.7	22.8	22.8	22.8	22.9	22.9	23.1	23.1	23.2	23.2	22.3	23.9	23.0
Jun 29	23.2	23.2	23.4	23.3	23.5	23.8	23.3	23.2	22.9	22.8	22.8	22.7	22.8	22.8	22.8	22.9	22.9	22.9	23.0	23.0	23.0	23.0	23.1	23.1	22.7	23.8	23.1
Jun 30	23.2	23.3	23.3	23.4	23.5	23.4	23.5	23.2	22.7	22.4	22.6	22.6	22.7	22.7	22.7	22.7	22.8	22.7	22.9	22.9	22.9	23.1	23.0	23.2	22.4	23.5	23.0
Diurnal Maximum	23.9	23.9	24.0	24.0	24.4	24.2	23.8	23.7	23.6	24.1	24.2	24.1	23.4	23.4	23.4	23.2	23.3	23.3	23.4	23.8	23.7	23.8	23.8	23.9			
Diurnal Average	23.1	23.1	23.2	23.2	23.4	23.5	23.2	23.0	22.9	22.8	22.8	22.8	22.8	22.8	22.8	22.8	22.8	22.9	22.9	22.9	23.0	23.0	23.0	23.1			

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 - June 2023

Summary of Hourly Averages

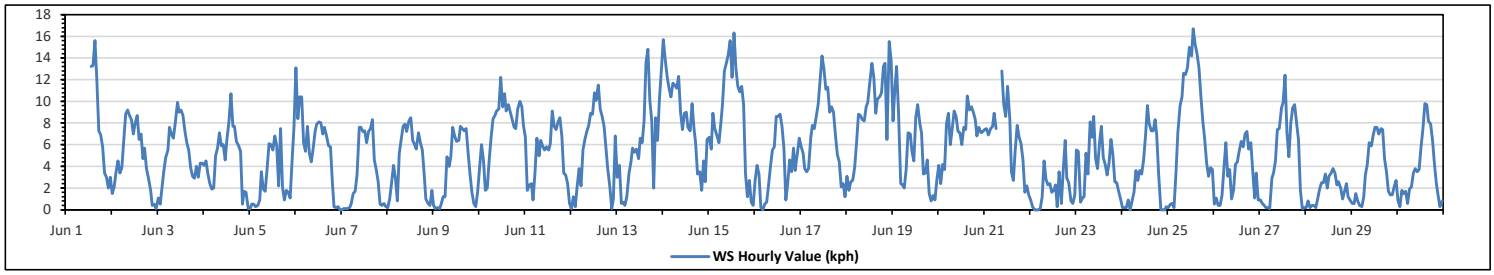
VECTOR WIND SPEED (VWS) in km/hr

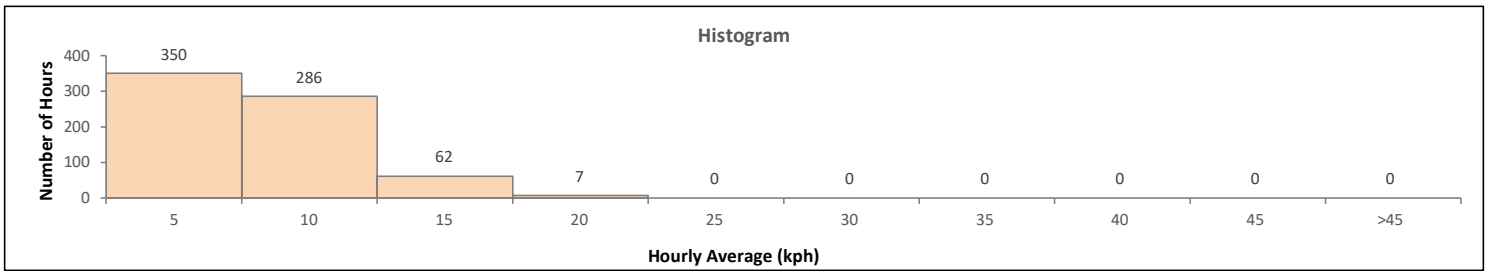
Maximum Hourly Value:	16.7	kph	on Jun 25 at hr 13	Hours in Service:	720	
Maximum Daily Value:	8.9	kph	on Jun 18	Hours of Data:	705	
Minimum Hourly Value:	0.0	kph	on Jun 6 at hr 23	Hours of Missing Data:	15	
Minimum Daily Value:	1.8	kph	on Jun 22	Hours of Calibration:	0	
Monthly Average:	0.6	kph		Operational Uptime:	97.9	

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			
Jun 1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	13.2	13.3	15.6	11.9	7.3	6.9	5.8	3.4	3.0	2.0	3.0	2.0	15.6	NA
Jun 2	1.5	2.1	3.5	4.5	3.4	3.9	6.4	8.8	9.2	8.7	8.3	7.0	7.9	8.7	6.5	7.0	4.7	5.7	3.8	2.8	1.8	0.4	0.5	0.1	0.1	9.2	4.9
Jun 3	1.1	0.5	1.9	3.5	4.8	5.5	7.6	7.0	6.6	8.0	9.9	9.0	9.2	8.7	7.3	6.2	5.5	3.9	3.1	2.9	4.0	3.0	4.3	4.3	0.5	9.9	5.3
Jun 4	4.1	4.5	3.3	2.4	1.9	2.0	5.0	5.7	7.1	5.9	6.0	4.6	6.4	8.2	10.7	7.7	7.7	6.3	5.9	5.4	0.5	1.7	1.6	0.1	0.1	10.7	4.8
Jun 5	0.1	0.5	0.5	0.3	0.4	0.9	3.5	1.9	1.7	3.8	6.1	6.0	5.5	6.8	5.9	2.2	7.5	2.1	0.9	1.8	1.6	1.1	4.5	7.7	0.1	7.7	3.1
Jun 6	13.1	8.4	10.4	10.4	6.2	5.4	7.7	5.2	4.4	5.7	7.2	7.9	8.1	8.0	7.0	7.6	6.9	5.9	5.8	2.5	0.3	0.2	0.3	0.0	0.0	13.1	6.0
Jun 7	0.0	0.1	0.1	0.1	0.2	0.6	1.5	1.7	3.2	7.6	7.6	7.2	7.3	6.2	7.2	7.5	8.3	4.6	3.7	2.6	0.5	0.4	0.6	0.3	0.0	8.3	3.3
Jun 8	0.2	1.0	2.5	4.1	2.9	0.8	5.2	6.5	7.7	7.9	7.2	8.2	8.5	6.4	6.0	5.6	7.1	6.2	5.5	3.6	1.0	0.6	0.4	1.8	0.2	8.5	4.5
Jun 9	0.4	0.1	0.2	0.1	0.5	1.2	1.2	4.9	4.0	4.9	7.6	6.8	6.3	6.4	7.7	7.5	7.3	7.5	5.3	3.3	1.6	0.6	0.3	1.7	0.1	7.7	3.6
Jun 10	3.9	6.0	4.6	1.8	2.0	4.6	6.7	8.4	8.7	9.1	9.3	12.2	9.5	10.7	9.1	9.7	9.0	8.3	7.6	7.5	9.3	10.0	9.5	7.8	1.8	12.2	7.7
Jun 11	6.7	1.8	2.3	2.4	0.9	3.4	6.6	5.0	6.4	5.9	5.5	5.8	5.5	6.1	9.1	7.7	7.4	8.1	8.5	6.8	3.4	3.2	2.4	0.6	0.6	9.1	5.1
Jun 12	0.1	1.2	0.3	2.2	3.8	2.2	5.5	6.5	7.2	7.8	8.9	8.8	10.8	10.1	11.5	9.3	8.6	7.7	6.0	3.9	2.1	0.1	1.0	6.8	0.1	11.5	5.5
Jun 13	3.0	4.1	0.6	0.7	0.4	1.2	3.4	4.4	5.7	5.3	5.6	4.7	6.6	6.2	8.2	13.6	14.8	10.1	8.2	2.0	8.5	6.4	10.2	12.9	0.4	14.8	6.1
Jun 14	15.7	13.9	12.3	11.2	10.4	11.7	11.5	11.2	12.3	9.0	7.4	8.9	9.0	7.6	7.3	9.8	7.5	6.2	3.3	3.5	1.8	4.5	2.6	6.5	1.8	15.7	8.5
Jun 15	6.7	5.6	8.9	7.5	6.9	6.2	8.0	9.7	12.8	13.5	14.3	15.6	12.2	16.3	13.0	11.4	10.9	11.4	9.7	3.3	1.2	2.7	0.7	0.4	0.4	16.3	8.7
Jun 16	2.7	4.1	3.3	0.2	0.0	0.5	0.7	2.0	4.0	5.5	5.8	8.6	8.6	8.8	7.7	5.7	0.9	2.2	4.6	3.5	5.7	3.6	5.0	6.6	0.0	8.8	4.2
Jun 17	5.8	5.2	3.8	3.5	3.8	6.7	7.8	7.5	8.6	9.7	12.3	14.2	13.0	11.1	11.3	9.0	9.5	9.0	6.9	5.1	4.4	2.1	2.4	1.2	1.2	14.2	7.2
Jun 18	3.1	1.8	2.6	2.7	3.9	6.2	8.8	8.7	8.3	8.2	9.5	9.9	11.9	13.5	12.2	8.9	10.2	10.4	10.8	13.2	13.5	6.5	15.5	13.8	1.8	15.5	8.9
Jun 19	8.2	10.8	13.2	9.1	2.4	2.3	2.0	3.7	7.1	7.0	5.4	4.5	8.5	9.7	7.9	7.1	3.3	3.4	4.6	1.5	0.8	1.3	0.9	2.8	0.8	13.2	5.3
Jun 20	4.1	2.4	4.2	3.7	7.9	8.9	6.0	7.5	9.1	8.6	7.2	7.1	6.0	7.6	7.4	10.5	9.2	9.5	9.0	8.3	6.8	7.6	7.1	7.2	2.4	10.5	7.2
Jun 21	7.4	7.5	6.9	7.5	7.7	8.9	7.5	Y	Y	12.8	9.7	8.6	11.4	8.3	3.5	2.7	5.6	7.8	6.7	6.1	4.6	1.6	2.2	1.4	1.4	12.8	6.7
Jun 22	0.9	0.3	0.0	0.0	0.0	0.1	1.2	4.5	2.8	2.3	2.4	1.6	1.8	2.3	0.3	3.5	0.6	3.7	6.4	2.9	2.5	0.8	0.6	1.4	0.0	6.4	1.8
Jun 23	5.5	5.4	0.7	1.1	1.2	5.2	3.3	8.1	6.7	8.6	4.7	3.8	6.4	7.7	4.8	4.2	3.2	4.3	6.5	5.1	2.6	2.5	1.7	1.0	0.7	8.6	4.3
Jun 24	0.2	0.2	0.2	0.9	0.0	0.8	1.6	3.6	2.7	3.6	3.3	4.6	6.8	9.6	8.0	7.3	7.3	8.3	6.9	3.3	0.0	0.0	0.0	0.3	0.0	9.6	3.3
Jun 25	0.2	0.5	0.6	0.2	3.3	7.1	9.6	10.4	12.6	12.5	13.1	15.0	14.2	16.7	15.3	14.4	13.1	10.5	8.2	6.5	4.3	3.1	3.9	3.7	0.2	16.7	8.3
Jun 26	0.5	1.1	0.4	0.4	1.3	3.8	6.2	3.1	3.7	1.0	1.8	4.2	4.4	5.3	6.3	5.8	7.0	7.2	5.6	6.2	3.6	1.1	3.4	0.9	0.4	7.2	3.5
Jun 27	0.9	0.6	0.4	0.2	0.2	0.1	2.9	3.4	4.5	7.4	7.5	9.4	9.9	12.4	7.1	4.9	8.0	9.4	9.7	8.0	6.5	1.8	0.1	0.2	0.1	12.4	4.8
Jun 28	0.2	0.8	0.2	0.4	0.4	0.2	1.0	1.9	2.5	2.5	3.3	2.0	3.1	3.4	3.8	3.4	2.3	2.6	2.0	1.0	1.7	2.4	1.2	0.9	0.2	3.8	1.8
Jun 29	0.6	0.6	1.5	0.8	0.4	0.3	1.2	3.2	4.2	6.2	5.9	6.8	7.6	7.6	7.0	7.5	7.4	4.7	3.5	1.7	1.4	1.4	2.1	2.7	0.3	7.6	3.6
Jun 30	0.8	0.3	1.8	1.5	1.7	0.6	1.9	2.1	3.4	3.8	3.5	3.7	5.8	7.5	9.8	9.7	8.2	7.9	6.4	4.2	2.4	1.4	0.3	0.8	0.3	9.8	3.7
Diurnal Maximum	15.7	13.9	13.2	11.2	10.4	11.7	11.5	11.2	12.8	13.5	14.3	15.6	14.2	16.7	15.3	15.6	14.8	11.4	10.8	13.2	13.5	10.0	15.5	13.8			
Diurnal Average	3.4	3.2	3.1	2.9	2.7	3.5	4.9	5.6	6.3	7.0	7.1	7.5	8.0	8.7	8.1	7.8	7.4	6.7	6.1	4.5	3.4	2.5	2.9	3.3			

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

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



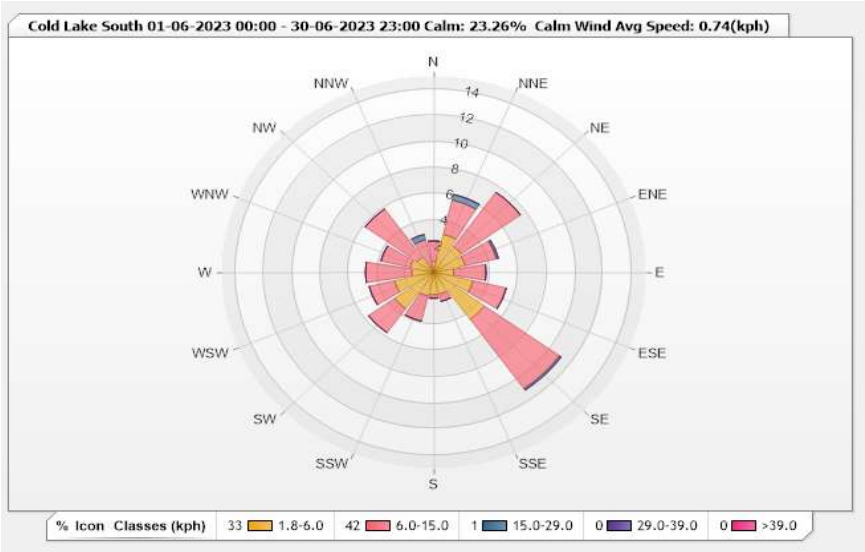


Station: Cold Lake South Monitor: WDS [kph] Monthly: 06-2023

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

Calm (WS<1.8kph): 23.26% Valid Data: 97.92%

Direction	1.8-6.0	6.0-15.0	15.0-29.0	29.0-39.0	>39.0	Total
N	0.85	1.56	0	0	0	2.41
NNE	2.98	2.7	0.43	0	0	6.11
NE	2.41	5.11	0	0	0	7.52
ENE	2.27	2.27	0.14	0	0	4.68
E	1.42	2.27	0	0	0	3.69
ESE	2.84	2.41	0	0	0	5.25
SE	4.4	6.52	0.14	0	0	11.06
SSE	1.7	0.57	0	0	0	2.27
S	1.7	0.28	0	0	0	1.98
SSW	1.84	1.99	0	0	0	3.83
SW	3.4	2.27	0	0	0	5.67
WSW	2.84	1.84	0	0	0	4.68
W	1.56	3.26	0	0	0	4.82
WNW	1.7	2.13	0	0	0	3.83
NW	1.42	4.54	0	0	0	5.96
NNW	0.14	2.41	0.43	0	0	2.98
Summary	33.47	42.13	1.14	0	0	76.74



Lakeland Industry & Community Association

Cold Lake South Station - June 2023

Summary of Hourly Averages

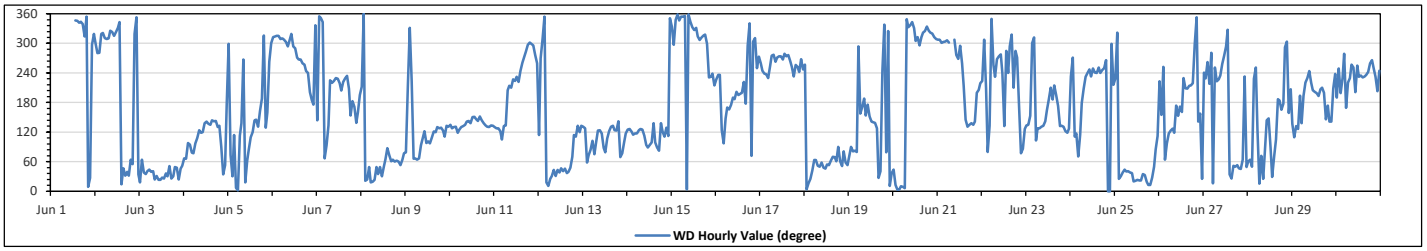
WIND DIRECTION (VWD) in sector

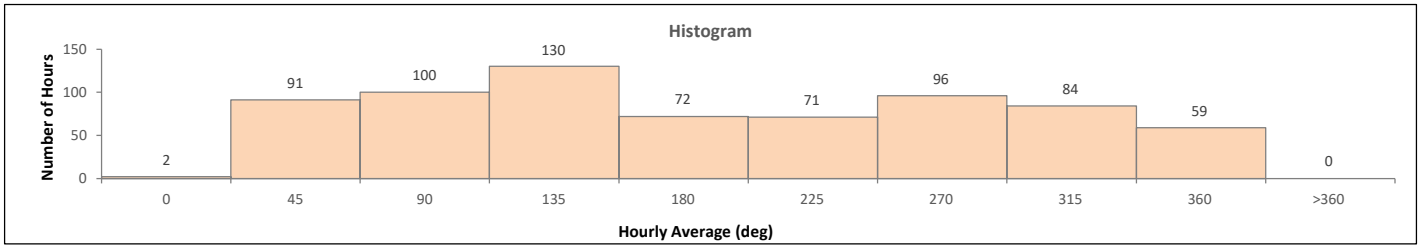
Monthly Average:	49 (NE)	degree	
Hours in Service:	720		
Hours of Data:	705		
Hours of Missing Data:	15		
Hours of Calibration:	0		
Operational Uptime:	97.9		

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
Jun 1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NNW	NNW	NNW	NNW	NNW	NW	N	N	NNE	WNW	NW	NA	NA
Jun 2	WNW	W	W	NW	NW	NW	NW	NW	NW	NW	NW	NW	NNW	NNW	NNE	NE	NNE	NE	NNE	ENE	NE	NW	N	NE	338	NNW
Jun 3	NNE	ENE	NE	NE	NE	NE	NE	NE	NNE	NNE	NNE	NNE	NNE	NNE	NE	NNE	NE	NNE	NNE	NE	NE	NNE	NE	NE	34	NE
Jun 4	ENE	ENE	E	E	ENE	ENE	E	ESE	ESE	ESE	ESE	SE	SE	SE	SE	SE	SE	SE	SE	SE	E	NE	NE	S	121	ESE
Jun 5	WNW	ENE	NNE	ESE	N	N	ESE	SE	W	NNE	ENE	E	ESE	ESE	SE	SE	SE	SSE	S	NW	SE	SSE	W	WNW	112	ESE
Jun 6	NW	NW	NW	NW	NW	NW	NW	WNW	WNW	NW	NW	WNW	WNW	W	W	W	WSW	WSW	WSW	WSW	SSW	S	S	NNW	294	WNW
Jun 7	SE	N	N	NNW	ENE	E	SE	SW	SW	SW	SW	SW	SW	SSW	SW	SW	SW	SSW	SSE	S	S	SE	SSE	SSW	216	SW
Jun 8	SSW	N	NNE	NNE	NE	NNE	NNE	NNE	NE	NE	NE	NNE	NE	ENE	E	ENE	ENE	ENE	ENE	ENE	ENE	NE	ENE	NE	49	NE
Jun 9	ENE	SSW	NNW	SW	ENE	ENE	ENE	ENE	E	ESE	ESE	E	E	E	ESE	ESE	ESE	SE	SE	SE	ESE	ESE	SE	SE	110	ESE
Jun 10	SE	SE	SE	SE	ESE	SE	SE	SE	SE	SE	SE	SE	SSE	SSE	SE	SE	SSE	SE	SE	SE	SE	SE	SE	SE	138	SE
Jun 11	SE	SE	SE	ESE	ESE	SE	SE	SSW	SSW	SSW	SW	SW	SW	SW	WSW	W	W	WNW	WNW	WNW	WNW	WNW	W	WSW	238	SW
Jun 12	ESE	W	NW	N	NNE	NNE	NNE	NNE	NE	NNE	NE	NE	NE	NE	NE	NE	NE	NE	ENE	ESE	ESE	SE	ESE	SE	46	NE
Jun 13	SE	SE	ENE	ENE	E	E	ENE	E	ESE	ESE	ESE	E	ENE	ESE	ESE	SE	SE	ESE	ESE	SE	ENE	ENE	E	ESE	112	ESE
Jun 14	SE	SE	ESE	ESE	ESE	ESE	ESE	SE	SE	ESE	E	E	E	E	SE	E	E	E	SE	ESE	ESE	SE	ESE	N	113	ESE
Jun 15	NNW	WNW	NNW	N	NNW	N	N	N	N	N	NNW	NNW	NW	NNW	NW	NW	NW	NW	NW	WNW	SW	SW	WSW	SSW	333	NNW
Jun 16	SW	SW	SW	ESE	E	SE	SSE	SSE	S	S	S	SSW	SSW	SSW	SSW	SW	S	WNW	NNW	ENE	WNW	NW	WSW	W	220	SW
Jun 17	WSW	WSW	WSW	SW	SW	WSW	W	W	W	W	W	W	W	W	W	W	W	WSW	SW	WSW	WSW	WSW	W	WSW	264	W
Jun 18	WSW	N	NNE	NNE	NE	ENE	ENE	NE	NE	ENE	NE	NE	NE	NE	ENE	ENE	ENE	ENE	E	ENE	NE	E	ENE	NE	57	ENE
Jun 19	ENE	E	E	E	E	WNW	SSE	S	S	SSE	S	SSE	SE	SE	SE	SE	NNE	NE	WSW	NNW	ENE	NW	NNE	NE	117	ESE
Jun 20	NE	NNE	N	N	N	N	N	NNW	NNW	NNW	NNW	NNW	WNW	NW	WNW	NW	NW	NW	NNW	NW	NW	NW	NW	NW	333	NNW
Jun 21	NW	NW	WNW	WNW	WNW	NW	WNW	Y	Y	NW	W	W	WNW	WSW	SSW	SE	SE	SE	SE	SE	SE	SSW	SSW	SW	278	W
Jun 22	SW	NW	SSW	E	SE	N	WSW	SW	W	W	W	WSW	SE	WNW	WSW	WNW	NW	SSW	WNW	W	S	ENE	E	SE	255	WSW
Jun 23	SE	SE	SSE	WNW	NW	ESE	SE	SE	SE	SE	SE	SSE	S	SSW	S	SSW	SSW	S	SE	SE	SE	ESE	ESE	SE	150	SSE
Jun 24	SW	W	ESE	ESE	ENE	ESE	S	SSW	SW	WSW	WSW	SW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	W	N	N	WNW	SW	241	WSW
Jun 25	SW	NW	NNE	NNE	NE	NE	NE	NE	NE	NE	NNE	NNE	NNE	NNE	NNE	NE	NNE	NNE	NNE	NNE	NNE	NE	E	ESE	30	NNE
Jun 26	SW	SSE	WSW	ENE	E	ESE	ESE	SE	ESE	S	SSE	S	SSE	SW	SSW	SSW	SSW	SSW	SW	WNW	N	SE	SSE	NNE	187	S
Jun 27	WSW	SW	W	SW	W	NNE	WSW	SW	SW	SW	WSW	W	WNW	NNW	NE	NNE	NE	NE	NE	NE	NE	ENE	SW	NE	348	NNW
Jun 28	ENE	ENE	NE	SW	WSW	SE	NNE	ENE	NNE	ENE	SE	SE	E	NNE	ENE	ESE	S	S	SSE	S	WNW	WNW	SSE	SSW	104	ESE
Jun 29	SE	ESE	SE	SE	SSW	SE	SSW	SW	SW	WSW	SW	SSW	SSW	SSW	S	SSW	SSW	SSW	SE	S	SE	SE	SSW	SW	203	SSW
Jun 30	S	WSW	SSW	SW	W	SSE	SW	SW	WSW	WSW	SSW	WSW	SW	SW	SW	SW	SW	WSW	WSW	W	WSW	SW	SSW	WSW	238	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 (Machine Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)			

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





Lakeland Industry & Community Association

Cold Lake South Station - June 2023

Summary of Hourly Averages

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

WIND SPEED

Maximum Hourly Value:	16.7	kph	on Jun 25 at hr 13	Hours in Service:	720
Maximum Daily Value:	8.9	kph	on Jun 18	Hours of Data:	705
Minimum Hourly Value:	0.0	kph	on Jun 6 at hr 23	Hours of Missing Data:	15
Minimum Daily Value:	1.8	kph	on Jun 22	Hours of Calibration:	0
Monthly Average:	0.6	kph		Operational Uptime:	97.9

WIND DIRECTION

Monthly Average: 49 degree (NE)

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			
Jun 1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	13.2	13.3	15.6	11.9	7.3	6.9	5.8	3.4	3.0	2.0	3.0	2.0	15.6	NA
	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NNW	NNW	NNW	NNW	NNW	NW	N	N	NNE	WNW	NW			
Jun 2	1.5	2.1	3.5	4.5	3.4	3.9	6.4	8.8	9.2	8.7	8.3	7.0	7.9	8.7	6.5	7.0	4.7	5.7	3.8	2.8	1.8	0.4	0.5	0.1	0.1	9.2	4.9
	WNW	W	W	NW	NW	NW	NW	NW	NW	NW	NW	NW	NNW	NNW	NNE	NE	NNE	NE	NNE	ENE	NE	NW	N	NE			
Jun 3	1.1	0.5	1.9	3.5	4.8	5.5	7.6	7.0	6.6	8.0	9.9	9.0	9.2	8.7	7.3	6.2	5.5	3.9	3.1	2.9	4.0	3.0	4.3	4.3	0.5	9.9	5.3
	NNE	ENE	NE	NE	NE	NE	NE	NE	NNE	NNE	NNE	NNE	NNE	NNE	NE	NNE	NE	NNE	NNE	NE	NE	NNE	NE	NE			
Jun 4	4.1	4.5	3.3	2.4	1.9	2.0	5.0	5.7	7.1	5.9	6.0	4.6	6.4	8.2	10.7	7.7	7.7	6.3	5.9	5.4	0.5	1.7	1.6	0.1	0.1	10.7	4.8
	ENE	ENE	E	E	ENE	ENE	E	ESE	ESE	ESE	ESE	SE	SE	SE	SE	SE	SE	SE	SE	SE	E	NE	NE	S			
Jun 5	0.1	0.5	0.5	0.3	0.4	0.9	3.5	1.9	1.7	3.8	6.1	6.0	5.5	6.8	5.9	2.2	7.5	2.1	0.9	1.8	1.6	1.1	4.5	7.7	0.1	7.7	3.1
	WNW	ENE	NNE	ESE	N	N	ESE	SE	W	NNE	ENE	E	ESE	ESE	SE	SE	SE	SSE	S	NW	SE	SSE	W	WNW			
Jun 6	13.1	8.4	10.4	10.4	6.2	5.4	7.7	5.2	4.4	5.7	7.2	7.9	8.1	8.0	7.0	7.6	6.9	5.9	5.8	2.5	0.3	0.2	0.3	0.0	0.0	13.1	6.0
	NW	NW	NW	NW	NW	NW	NW	WNW	WNW	NW	NW	WNW	WNW	W	W	W	WSW	WSW	WSW	WSW	SSW	S	S	NNW			
Jun 7	0.0	0.1	0.1	0.1	0.2	0.6	1.5	1.7	3.2	7.6	7.6	7.2	7.3	6.2	7.2	7.5	8.3	4.6	3.7	2.6	0.5	0.4	0.6	0.3	0.0	8.3	3.3
	SE	N	N	NNW	ENE	E	SE	SW	SW	SW	SW	SW	SW	SSW	SW	SW	SW	SSW	SSE	S	S	SE	SSE	SSW			
Jun 8	0.2	1.0	2.5	4.1	2.9	0.8	5.2	6.5	7.7	7.9	7.2	8.2	8.5	6.4	6.0	5.6	7.1	6.2	5.5	3.6	1.0	0.6	0.4	1.8	0.2	8.5	4.5
	SSW	N	NNE	NNE	NE	NNE	NNE	NNE	NE	NE	NE	NNE	NE	ENE	E	ENE	ENE	ENE	ENE	ENE	ENE	NE	ENE	ENE			
Jun 9	0.4	0.1	0.2	0.1	0.5	1.2	1.2	4.9	4.0	4.9	7.6	6.8	6.3	6.4	7.7	7.5	7.3	7.5	5.3	3.3	1.6	0.6	0.3	1.7	0.1	7.7	3.6
	ENE	SSW	NNW	SW	ENE	ENE	ENE	ENE	E	ESE	ESE	E	E	E	ESE	ESE	ESE	SE	SE	SE	ESE	ESE	SE	SE			
Jun 10	3.9	6.0	4.6	1.8	2.0	4.6	6.7	8.4	8.7	9.1	9.3	12.2	9.5	10.7	9.1	9.7	9.0	8.3	7.6	7.5	9.3	10.0	9.5	7.8	1.8	12.2	7.7
	SE	SE	SE	SE	ESE	SE	SE	SE	SE	SE	SE	SE	SSE	SSE	SE	SE	SSE	SE	SE	SE	SE	SE	SE	SE			
Jun 11	6.7	1.8	2.3	2.4	0.9	3.4	6.6	5.0	6.4	5.9	5.5	5.8	5.5	6.1	9.1	7.7	7.4	8.1	8.5	6.8	3.4	3.2	2.4	0.6	0.6	9.1	5.1
	SE	SE	SE	ESE	ESE	SE	SE	SSW	SSW	SSW	SW	SW	SW	SW	WSW	W	W	WNW	WNW	WNW	WNW	WNW	W	WSW			
Jun 12	0.1	1.2	0.3	2.2	3.8	2.2	5.5	6.5	7.2	7.8	8.9	8.8	10.8	10.1	11.5	9.3	8.6	7.7	6.0	3.9	2.1	0.1	1.0	6.8	0.1	11.5	5.5
	ESE	W	NW	N	NNE	NNE	NNE	NNE	NE	NNE	NE	NE	NE	NE	NE	NE	NE	NE	ENE	ESE	ESE	SE	ESE	SE			
Jun 13	3.0	4.1	0.6	0.7	0.4	1.2	3.4	4.4	5.7	5.3	5.6	4.7	6.6	6.2	8.2	13.6	14.8	10.1	8.2	2.0	8.5	6.4	10.2	12.9	0.4	14.8	6.1
	SE	SE	ENE	ENE	E	E	ENE	E	ESE	ESE	ESE	E	ENE	ESE	ESE	SE	SE	ESE	ESE	SE	ENE	ENE	E	ESE			
Jun 14	15.7	13.9	12.3	11.2	10.4	11.7	11.5	11.2	12.3	9.0	7.4	8.9	9.0	7.6	7.3	9.8	7.5	6.2	3.3	3.5	1.8	4.5	2.6	6.5	1.8	15.7	8.5
	SE	SE	ESE	ESE	ESE	ESE	ESE	SE	SE	ESE	E	E	E	E	SE	E	E	E	SE	ESE	ESE	SE	ESE	N			
Jun 15	6.7	5.6	8.9	7.5	6.9	6.2	8.0	9.7	12.8	13.5	14.3	15.6	12.2	16.3	13.0	11.4	10.9	11.4	9.7	3.3	1.2	2.7	0.7	0.4	0.4	16.3	8.7
	NNW	WNW	NNW	N	NNW	N	N	N	N	N	NNW	NNW	NW	NNW	NW	NW	NW	NW	NW	WNW	SW	SW	WSW	SSW			
Jun 16	2.7	4.1	3.3	0.2	0.0	0.5	0.7	2.0	4.0	5.5	5.8	8.6	8.6	8.8	7.7	5.7	0.9	2.2	4.6	3.5	5.7	3.6	5.0	6.6	0.0	8.8	4.2
	SW	SW	SW	ESE	E	SE	SSE	SSE	S	S	S	SSW	SSW	SSW	SSW	SW	S	WNW	NNW	ENE	WNW	NW	WSW	W			
Jun 17	5.8	5.2	3.8	3.5	3.8	6.7	7.8	7.5	8.6	9.7	12.3	14.2	13.0	11.1	11.3	9.0	9.5	9.0	6.9	5.1	4.4	2.1	2.4	1.2	1.2	14.2	7.2
	WSW	WSW	WSW	SW	SW	WSW	W	W	W	W	W	W	W	W	W	W	W	WSW	SW	WSW	WSW	WSW	W	WSW			
Jun 18	3.1	1.8	2.6	2.7	3.9	6.2	8.8	8.7	8.3	8.2	9.5	9.9	11.9	13.5	12.2	8.9	10.2	10.4	10.8	13.2	13.5	6.5	15.5	13.8	1.8	15.5	8.9
	WSW	N	NNE	NNE	NE	ENE	ENE	NE	NE	ENE	NE	NE	NE	NE	ENE	ENE	ENE	ENE	E	ENE	NE	E	ENE	NE			
Jun 19	8.2	10.8	13.2	9.1	2.4	2.3	2.0	3.7	7.1	7.0	5.4	4.5	8.5	9.7	7.9	7.1	3.3	3.4	4.6	1.5	0.8	1.3	0.9	2.8	0.8	13.2	5.3
	ENE	E	E	E	E	WNW	SSE	S	S	SSE	S	SSE	SE	SE	SE	SE	NNE	NE	WSW	NNW	ENE	NW	NNE	NE			
Jun 20	4.1	2.4	4.2	3.7	7.9	8.9	6.0	7.5	9.1	8.6	7.2	7.1	6.0	7.6	7.4	10.5	9.2	9.5	9.0	8.3	6.8	7.6	7.1	7.2	2.4	10.5	7.2
	NE	NNE	N	N	N	N	N	NNW	NNW	NNW	NNW	NNW	WNW	NW	WNW	NW	NW	NW	NNW	NW	NW	NW	NW	NW			
Jun 21	7.4	7.5	6.9	7.5	7.7	8.9	7.5	Y	Y	12.8	9.7	8.6	11.4	8.3	3.5	2.7	5.6	7.8	6.7	6.1	4.6	1.6	2.2	1.4	1.4	12.8	6.7
	NW	NW	WNW	WNW	WNW	NW	WNW	Y	Y	NW	W	W	WNW	WSW	SSW	SE	SE	SE	SE	SE	SE	SSW	SSW	SW			
Jun 22	0.9	0.3	0.0	0.0	0.0	0.1	1.2	4.5	2.8	2.3	2.4	1.6	1.8	2.3	0.3	3.5	0.6	3.7	6.4	2.9	2.5	0.8	0.6	1.4	0.0	6.4	1.8
	SW	NW	SSW	E	SE	N	WSW	SW	W	W	W	WSW	SE	WNW	WSW	WNW	NW	SSW	WNW	W	S	ENE	E	SE			
Jun 23	5.5	5.4	0.7	1.1	1.2	5.2	3.3	8.1	6.7	8.6	4.7	3.8	6.4	7.7	4.8	4.2	3.2	4.3	6.5	5.1	2.6	2.5	1.7	1.0	0.7	8.6	4.3
	SE	SE	SSE	WNW	NW	ESE	SE	SE	SE	SE	SE	SSE	S	SSW	S	SSW	SSW	S	SE	SE	SE	ESE	ESE	SE			
Jun 24	0.2	0.2	0.2	0.9	0.0	0.8	1.6	3.6	2.7	3.6	3.3	4.6	6.8	9.6	8.0	7.3	7.3	8.3	6.9	3.3	0.0	0.0	0.0	0.3	0.0	9.6	3.3
	SW	W	ESE	ESE	ENE	ESE	S	SSW	SW	WSW	WSW	SW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	W	N	N	WNW	SW			
Jun 25	0.2	0.5	0.6	0.2	3.3	7.1	9.6	10.4	12.6	12.5	13.1	15.0	14.2	16.7	15.3	14.4	13.1	10.5	8.2	6.5	4.3	3.1	3.9	3.7	0.2	16.7	8.3
	SW	NW	NNE	NNE	NE	NE	NE	NE	NE	NE	NNE	NNE	NNE	NNE	NNE	NE	NNE	NNE	NNE	NNE	NNE	NE	E	ESE			
Jun 26	0.5	1.1	0.4	0.4	1.3	3.8	6.2	3.1	3.7	1.0	1.8	4.2	4.4	5.3	6.3	5.8	7.0	7.2	5.6	6.2	3.6	1.1	3.4	0.9	0.4	7.2	3.5
	SW	SSE	WSW	ENE	E	ESE	ESE	SE	ESE	S	SSE	S	SSE	SW	SSW	SSW	SSW	SSW	SW	WNW	N	SE	SSE	NNE			
Jun 27	0.9	0.6	0.4	0.2	0.2	0.1	2.9	3.4	4.5	7.4	7.5	9.4	9.9	12.4	7.1	4.9	8.0	9.4	9.7	8.0	6.5	1.8	0.1	0.2	0.1	12.4	4.8
	WSW	SW	W	SW	W	NNE	WSW	SW	SW	SW	WSW	W	WNW	NNW	NE	NNE	NE	NE	NE	NE	NE	ENE	SW	NE			
Jun 28	0.2	0.8	0.2	0.4	0.4	0.2	1.0	1.9	2.5	2.5	3.3	2.0	3.1	3.4	3.8	3.4	2.3	2.6	2.0	1.0	1.7	2.4	1.2	0.9	0.2	3.8	1.8
	ENE	ENE	NE	SW	WSW	SE	NNE	ENE	NNE	ENE	SE	SE	E	NNE	ENE	ESE	S	S	SSE	S	WNW	WNW	SSE	SSW			
Jun 29	0.6	0.6	1.5	0.8	0.4	0.3	1.2	3.2	4.2	6.2	5.9	6.8	7.6	7.6	7.0	7.5	7.4	4.7	3.5	1.7	1.4	1.4	2.1	2.7	0.3	7.6	3.6
	SE	ESE	SE	SE	SSW	SE	SSW	SW	SW	WSW	SW	SSW	SSW	SSW	S	SSW	SSW	SSW	SE	S	SE	SE	SSW	SW			
Jun 30	0.8	0.3	1.8	1.5	1.7	0.6	1.9	2.1	3.4	3.8	3.5	3.7	5.8	7.5	9.8	9.7	8.2	7.9	6.4	4.2	2.4	1.4	0.3	0.8	0.3	9.8	3.7
	S	WSW	SSW	SW	W	SSE	SW	SW	WSW	WSW	SSW	WSW	SW	SW	SW	SW	SW	WSW	WSW	W	WSW	SW	SSW	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 - June 2023

Summary of Hour Standard Deviations

STANDARD DEVIATION WIND DIRECTION (STDWD) in Degree

Maximum Hourly Value:	77	degree on Jun 7 at hr 0	Hours in Service:	720		
			Hours of Data:	705		
Minimum Hourly Value:	0	degree on Jun 12 at hr 21	Hours of Missing Data:	15		
			Hours of Calibration:	0		
			Operational Uptime:	97.9		

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		
Jun 1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	9	12	9	8	17	31	20	19	21	32	9	8	32
Jun 2	18	31	15	14	13	16	10	8	9	9	11	11	14	14	18	13	24	16	21	19	31	45	8	63	8	63
Jun 3	27	26	14	9	8	10	11	10	9	11	10	16	18	14	13	12	25	13	10	12	12	10	5	11	5	27
Jun 4	19	27	17	15	17	20	12	13	8	15	10	19	23	12	11	22	17	17	16	6	39	23	8	52	6	52
Jun 5	74	43	39	14	36	58	20	43	51	44	27	27	34	28	34	55	29	50	64	43	52	56	21	13	13	74
Jun 6	9	11	8	6	8	8	13	20	19	16	26	23	22	26	32	24	20	26	16	21	26	49	63	8	6	63
Jun 7	77	46	58	63	12	21	31	26	25	15	20	23	27	31	25	21	15	26	23	47	54	45	52	54	12	77
Jun 8	59	52	26	11	23	37	6	17	14	14	21	16	12	24	20	27	16	15	9	9	11	19	61	30	6	61
Jun 9	39	10	31	18	20	11	23	18	33	22	17	24	23	26	21	13	13	6	6	6	8	22	24	8	6	39
Jun 10	10	4	5	16	9	5	7	8	9	15	16	10	22	25	18	14	22	11	6	4	3	3	4	4	3	25
Jun 11	4	24	23	8	46	17	8	36	14	19	22	26	25	25	19	23	19	16	11	9	13	9	24	38	4	46
Jun 12	62	33	62	19	17	12	10	13	16	15	16	14	9	12	7	11	9	9	13	17	16	0	7	4	0	62
Jun 13	9	9	64	27	34	17	23	13	14	15	20	28	17	14	12	7	6	5	7	68	16	10	12	5	5	68
Jun 14	6	4	6	6	9	9	9	9	9	13	23	16	23	17	13	12	10	22	33	45	48	14	56	14	4	56
Jun 15	16	23	12	11	13	11	14	14	8	7	9	11	7	7	6	6	8	11	8	11	17	5	7	16	5	23
Jun 16	8	12	7	49	0	43	34	28	28	24	23	19	20	21	16	11	42	57	38	27	27	29	21	12	0	57
Jun 17	14	9	13	13	9	8	13	12	18	20	15	17	16	21	16	18	15	18	9	9	8	18	23	38	8	38
Jun 18	16	46	29	12	16	10	7	8	5	8	6	6	10	8	9	8	7	6	19	11	8	25	5	17	5	46
Jun 19	10	11	7	13	63	37	30	25	21	22	32	27	16	14	15	14	24	16	27	50	45	41	39	25	7	63
Jun 20	8	25	12	12	8	7	16	12	9	14	17	12	20	16	15	11	10	11	12	11	5	5	6	6	5	25
Jun 21	8	7	7	8	7	8	10	Y	Y	12	16	13	22	14	39	30	10	6	6	9	6	19	8	12	6	39
Jun 22	11	41	37	35	1	15	29	21	40	50	54	60	61	49	77	30	71	58	21	48	35	44	43	10	1	77
Jun 23	3	8	60	67	51	27	21	7	13	10	31	45	30	22	39	39	33	37	6	4	6	5	9	33	3	67
Jun 24	39	39	11	12	0	11	25	22	32	30	37	33	23	15	17	24	18	14	14	10	0	0	42	33	0	42
Jun 25	53	33	71	74	22	9	11	11	15	12	16	13	9	9	11	13	9	10	7	6	10	12	18	30	6	74
Jun 26	61	45	67	46	40	15	15	35	29	66	60	43	40	23	20	19	16	11	8	47	51	67	32	54	8	67
Jun 27	39	32	39	50	31	71	15	12	11	14	19	17	24	16	22	23	17	12	8	6	5	16	4	17	4	71
Jun 28	8	9	10	27	40	62	45	44	35	47	43	62	50	48	48	38	54	36	44	30	37	30	42	45	8	62
Jun 29	37	34	13	18	60	57	37	18	26	14	23	29	21	24	23	18	16	21	21	25	25	23	19	38	13	60
Jun 30	40	64	33	25	48	67	28	21	33	37	40	38	28	22	13	16	13	19	8	10	11	12	34	30	8	67
Diurnal Minimum	3	4	5	6	0	5	6	7	5	7	6	6	7	7	6	6	6	5	6	4	0	0	4	4		
Diurnal Maximum	77	64	71	74	63	71	45	44	51	66	60	62	61	49	77	55	71	58	64	68	54	67	63	63		

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

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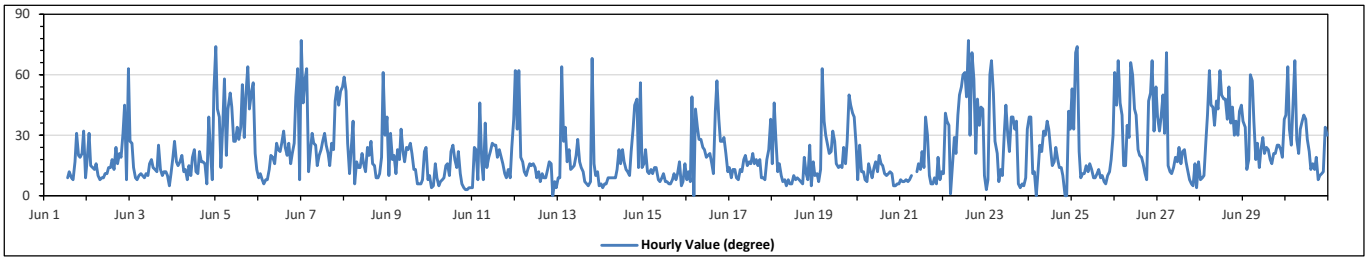


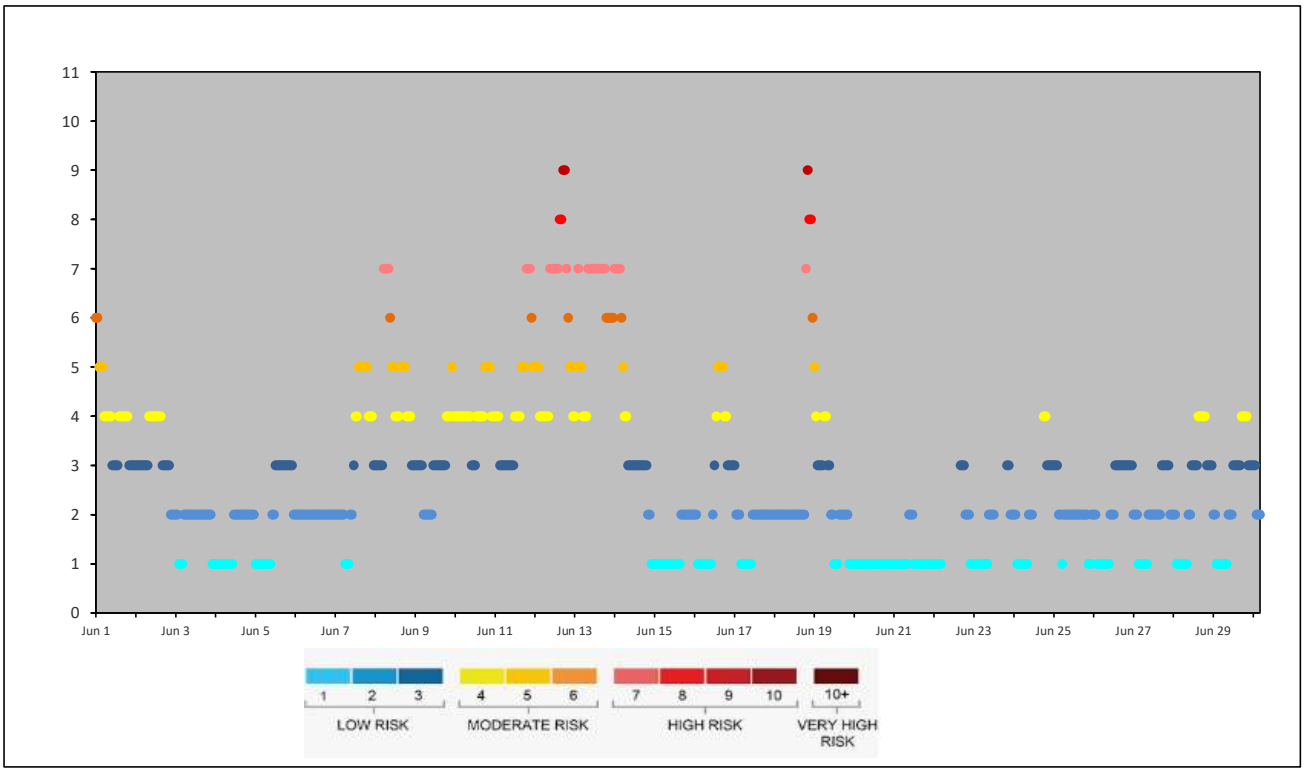
TAMARACK STATION

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Tamarack Site - June 2023

AIR QUALITY HEALTH INDEX

Day	Hourly Period Starting at (MST)																							
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Jun 1	6	6	5	5	5	4	4	4	4	4	3	3	3	3	4	4	4	4	4	4	3	3	3	3
Jun 2	3	3	3	3	3	3	3	3	4	4	4	4	4	4	4	4	3	3	3	3	3	2	2	2
Jun 3	2	2	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1
Jun 4	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2
Jun 5	1	1	1	1	1	1	1	1	1	1	2	2	3	3	3	3	3	3	3	3	3	3	3	2
Jun 6	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1
Jun 7	2	2	2	2	2	2	1	1	1	2	2	3	4	4	5	5	5	5	5	5	4	4	4	3
Jun 8	3	3	3	3	3	7	7	7	7	6	5	5	4	4	4	5	5	5	5	4	4	4	3	3
Jun 9	3	3	3	3	3	2	2	2	2	2	2	3	3	3	3	3	3	3	3	4	4	4	5	4
Jun 10	4	4	4	4	4	4	4	4	4	4	3	3	3	4	4	4	4	4	5	5	5	5	4	4
Jun 11	4	4	4	3	3	3	3	3	3	3	3	3	4	4	4	4	5	5	5	7	7	7	6	5
Jun 12	5	5	5	4	4	4	4	4	4	7	7	7	7	7	7	8	8	9	9	7	6	5	5	4
Jun 13	4	5	7	5	5	4	4	4	7	7	7	7	7	7	7	7	7	7	7	6	6	6	6	6
Jun 14	7	7	7	7	6	5	4	4	3	3	3	3	3	3	3	3	3	3	3	3	2	2	1	1
Jun 15	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2
Jun 16	2	2	1	1	1	1	1	1	1	1	1	2	3	4	5	5	5	5	4	4	3	3	3	3
Jun 17	3	2	2	2	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2
Jun 18	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	7	9	8	8	6
Jun 19	5	4	3	3	3	3	4	4	3	3	2	2	1	1	1	2	2	2	2	2	2	1	1	1
Jun 20	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Jun 21	1	1	1	1	1	1	1	1	1	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1
Jun 22	1	1	1	1	1												3	3	3	2	2	2	1	1
Jun 23	1	1	1	1	1	1	1	1	1	2	2	2	2								3	3	2	2
Jun 24	2	2	1	1	1	1	1	1	1	2	2	2							4	4	3	3	3	3
Jun 25	3	3	3	2	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1	2
Jun 26	2	2	1	1	1	1	1	1	1	1	2	2	2	3	3	3	3	3	3	3	3	3	3	3
Jun 27	2	2	2	1	1	1	1	1	1	2	2	2	2	2	2	2	2	3	3	3	3	3	2	2
Jun 28	2	2	1	1	1	1	1	1	1	2	2	3	3	3	3	4	4	4	4	4	3	3	3	3
Jun 29	2	2	1	1	1	1	1	1	1	2	2	2	3	3	3	3	3	4	4	4	4	3	3	3
Jun 30	3	3	2	2	2	2	2	2	2	2	3	3	3	4	4	4	3	3	3	3	3	2	2	2



Lakeland Industry & Community Association

Tamarack Site - June 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:	14	ppb	on Jun 6 at hr 4	Hours in Service:	720	
Maximum Daily Value:	3.0	ppb	on Jun 6	Hours of Data:	683	
Minimum Hourly Value:	0	ppb	on Jun 1 at hr 1	Hours of Missing Data:	0	
Minimum Daily Value:	0.0	ppb	on Jun 3	Hours of Calibration:	37	
Monthly Average:	0.7	ppb		Operational Uptime:	100.0	

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Jun 1	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	S	0	1	0.0
Jun 2	3	5	3	1	0	1	2	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	5	0.8
Jun 3	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
Jun 4	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	0	0	0	2	1	S	1	0	0	0	2	0.3
Jun 5	0	0	0	0	0	0	0	3	8	3	3	2	0	0	0	1	1	1	1	S	0	0	2	6	0	8	1.3
Jun 6	7	6	2	11	14	12	8	5	3	0	1	1	0	0	0	0	0	0	S	0	0	0	0	0	0	14	3.0
Jun 7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	2	2	0	0	0	0	2	0.2
Jun 8	0	0	0	1	1	1	1	1	0	0	0	1	0	0	1	1	S	0	0	0	0	0	0	0	0	1	0.3
Jun 9	0	0	0	0	0	0	0	0	1	2	2	2	1	2	0	S	0	0	0	0	0	0	0	0	0	2	0.4
Jun 10	3	4	3	3	4	4	3	3	2	2	1	0	0	0	S	0	0	0	1	2	0	0	0	2	0	4	1.6
Jun 11	3	2	3	3	4	3	1	0	0	0	0	0	0	S	0	0	1	1	2	0	0	0	0	0	0	4	1.0
Jun 12	1	0	0	0	0	1	1	1	1	1	1	0	S	1	1	1	1	1	1	0	0	0	0	0	0	1	0.6
Jun 13	0	0	0	0	0	0	1	1	1	2	2	S	1	2	2	1	1	0	3	1	0	0	0	5	0	5	1.0
Jun 14	2	2	2	2	4	2	2	4	2	2	S	0	0	1	0	1	1	0	0	0	0	0	0	0	0	4	1.2
Jun 15	0	0	0	0	0	0	0	0	0	S	0	0	0	0	2	9	4	1	1	0	1	0	0	0	0	9	0.8
Jun 16	1	0	0	1	1	1	1	0	S	0	0	0	0	0	0	0	2	1	1	0	3	0	0	0	0	3	0.5
Jun 17	0	0	0	0	0	0	2	S	0	0	0	2	5	1	0	0	0	0	0	0	0	1	0	6	0	6	0.7
Jun 18	2	1	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	0.2
Jun 19	0	0	0	0	0	S	0	0	0	0	0	0	0	1	0	2	1	0	0	0	0	0	0	0	0	2	0.2
Jun 20	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
Jun 21	1	5	5	S	3	1	6	8	4	4	1	3	2	0	0	0	1	1	0	0	0	1	0	0	0	8	2.0
Jun 22	0	0	S	0	0	1	2	3	5	6	3	3	1	0	0	0	0	0	0	0	0	0	0	0	0	6	1.0
Jun 23	0	S	1	1	1	1	1	2	2	1	C	C	C	C	C	0	0	0	0	0	0	0	0	0	0	2	0.6
Jun 24	S	0	0	0	0	0	1	0	1	2	2	0	0	0	0	0	0	0	0	1	0	0	0	S	0	2	0.3
Jun 25	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
Jun 26	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	1	1	S	0	0	0	2	0.2
Jun 27	0	0	0	0	0	0	0	1	2	1	3	3	1	2	1	1	1	0	0	0	S	0	0	0	0	3	0.7
Jun 28	0	0	0	0	0	0	0	0	1	0	1	0	1	1	0	0	0	0	0	S	6	3	1	0	0	6	0.6
Jun 29	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
Jun 30	0	0	0	0	0	0	1	0	1	0	1	1	0	0	0	0	0	S	0	0	0	0	0	0	0	1	0.2
Diurnal Maximum	7	6	5	11	14	12	8	8	8	6	3	3	5	2	2	9	4	1	3	2	6	3	2	6			
Diurnal Average	0.8	0.9	0.7	0.8	1.1	1.0	1.1	1.1	1.3	0.9	0.8	0.6	0.4	0.4	0.3	0.6	0.5	0.2	0.4	0.4	0.5	0.2	0.1	0.7			

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)			

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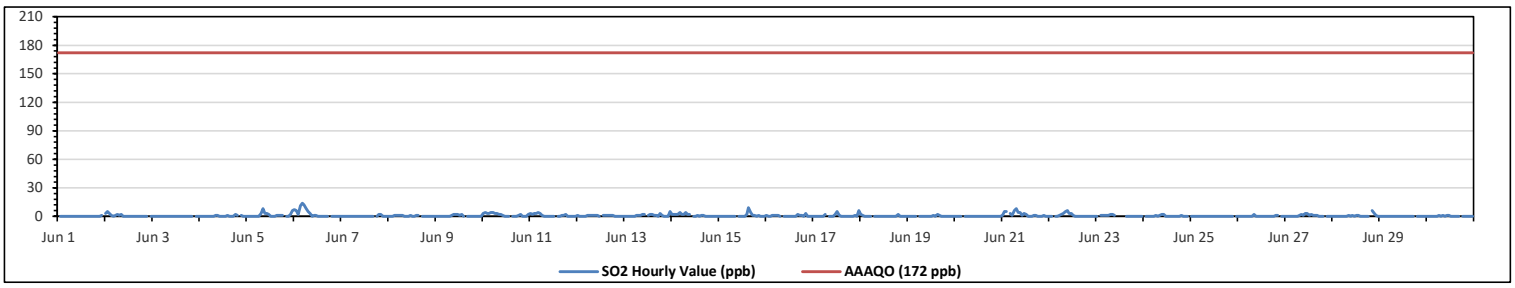
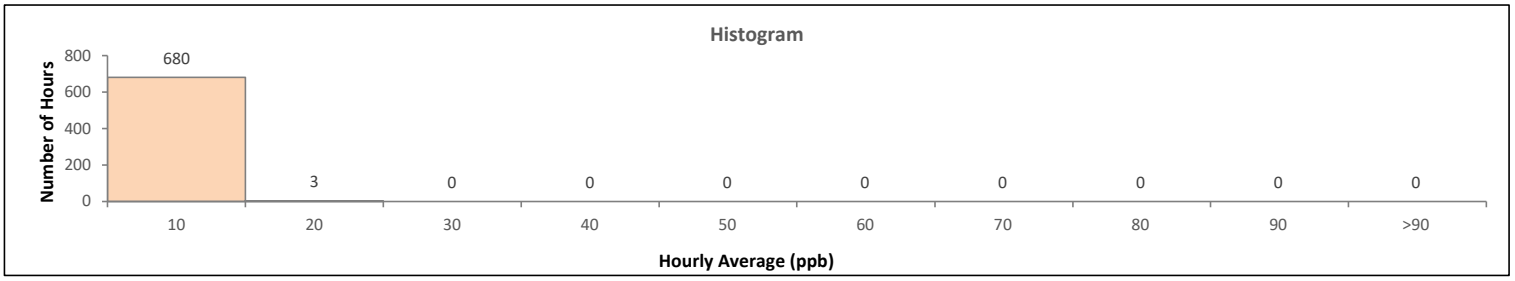


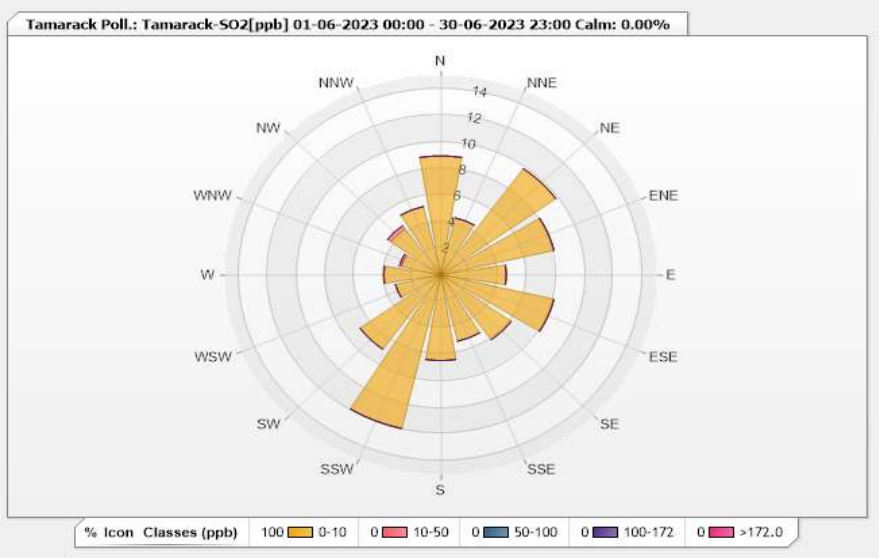


Station: Tamarack Poll.: Tamarack-SO2[ppb] Monthly: 06-2023

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

Calm: 0.00% Valid Data: 94.86% Calm Avg: 0.00 [ppm]

Direction	0-10	10-50	50-100	100-172	>172.0	Total
N	8.93	0	0	0	0	8.93
NNE	4.39	0	0	0	0	4.39
NE	9.81	0	0	0	0	9.81
ENE	8.05	0	0	0	0	8.05
E	4.54	0	0	0	0	4.54
ESE	8.05	0	0	0	0	8.05
SE	6	0	0	0	0	6
SSE	5.12	0	0	0	0	5.12
S	6.44	0	0	0	0	6.44
SSW	11.86	0	0	0	0	11.86
SW	6.88	0	0	0	0	6.88
WSW	3.22	0	0	0	0	3.22
W	3.95	0	0	0	0	3.95
WNW	2.78	0.15	0	0	0	2.93
NW	4.25	0.29	0	0	0	4.54
NNW	5.27	0	0	0	0	5.27
Summary	100	0.44	0	0	0	100



Lakeland Industry & Community Association

Tamarack Site - June 2023

Summary of Hourly Averages

HYDROGEN SULPHIDE (H_2S) in ppb

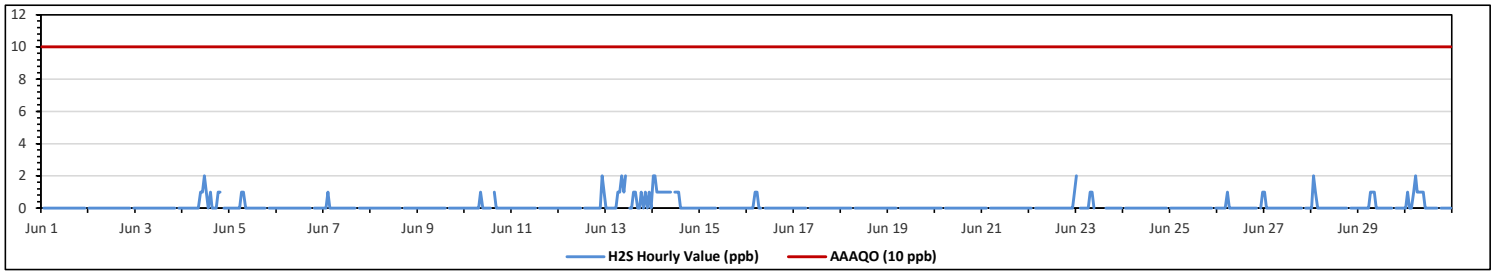
Alberta Ambient Air Quality Objectives (AAAQO): 1-Hour 10 ppb, 24-Hour 3 ppb

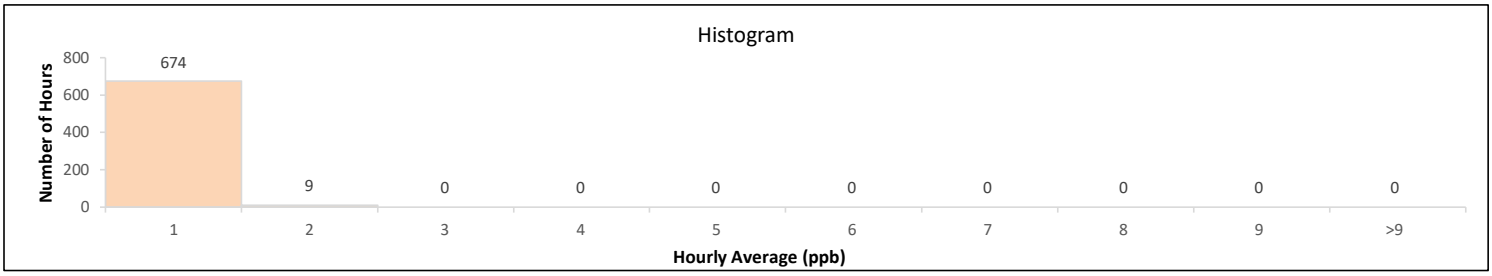
Number of 1-Hour Exceedances:	0		Number of 24-Hour Exceedances:	0	
Maximum Hourly Value:	2	ppb	on Jun 4 at hr 11	Hours in Service:	720
Maximum Daily Value:	1.0	ppb	on Jun 13	Hours of Data:	683
Minimum Hourly Value:	0	ppb	on Jun 1 at hr 1	Hours of Missing Data:	0
Minimum Daily Value:	0.0	ppb	on Jun 1	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			
Jun 1	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
Jun 2	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
Jun 3	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
Jun 4	0	0	0	0	0	0	0	0	0	1	1	2	1	0	1	0	0	0	1	1	S	0	0	0	0	2	0.0
Jun 5	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	1	0.0
Jun 6	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
Jun 7	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	1	0.0
Jun 8	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
Jun 9	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
Jun 10	0	0	0	0	0	0	0	0	1	0	0	0	0	0	S	1	0	0	0	0	0	0	0	0	0	1	0.0
Jun 11	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
Jun 12	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	2	1	0	2	0.0
Jun 13	0	0	0	0	0	0	1	1	2	1	2	S	0	0	1	1	0	0	1	0	1	0	1	0	0	2	1.0
Jun 14	2	2	1	1	1	1	1	1	1	1	S	1	1	1	0	0	0	0	0	0	0	0	0	0	0	2	1.0
Jun 15	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
Jun 16	0	0	0	0	1	1	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0
Jun 17	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
Jun 18	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
Jun 19	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
Jun 20	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
Jun 21	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
Jun 22	0	0	S	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
Jun 23	2	S	0	0	0	0	0	1	1	0	C	C	C	C	C	0	0	0	0	0	0	0	0	0	0	2	0.0
Jun 24	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
Jun 25	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
Jun 26	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	1	0	1	0.0
Jun 27	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	1	0.0
Jun 28	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	2	0.0
Jun 29	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	1	0.0
Jun 30	0	1	0	0	1	2	1	1	1	1	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	2	0.0
Diurnal Maximum	2	2	1	1	1	2	1	1	2	1	2	2	1	1	1	1	0	0	1	1	1	0	2	1			
Diurnal Average	0.2	0.2	0.1	0.0	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.1			

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

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



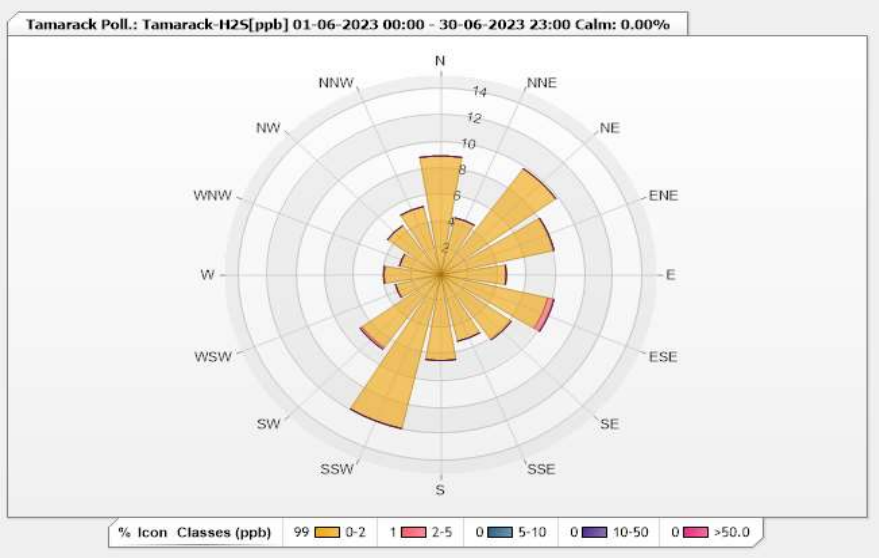


Station: Tamarack Poll.: Tamarack-H2S[ppb] Monthly: 06-2023

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

Calm: 0.00% Valid Data: 94.86% Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-50	>50.0	Total
N	8.93	0	0	0	0	8.93
NNE	4.39	0	0	0	0	4.39
NE	9.81	0	0	0	0	9.81
ENE	8.05	0	0	0	0	8.05
E	4.54	0	0	0	0	4.54
ESE	7.61	0.44	0	0	0	8.05
SE	6	0	0	0	0	6
SSE	5.12	0	0	0	0	5.12
S	6.44	0	0	0	0	6.44
SSW	11.86	0	0	0	0	11.86
SW	6.73	0.15	0	0	0	6.88
WSW	3.22	0	0	0	0	3.22
W	3.95	0	0	0	0	3.95
WNW	2.93	0	0	0	0	2.93
NW	4.54	0	0	0	0	4.54
NNW	5.27	0	0	0	0	5.27
Summary	99.39	0.59	0	0	0	100



Lakeland Industry & Community Association

Tamarack Site - June 2023

Summary of Hourly Averages

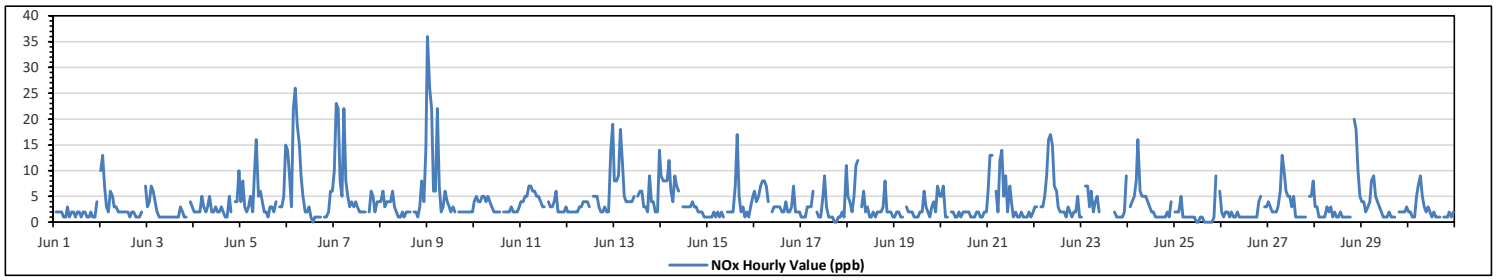
OXIDES OF NITROGEN (NOx) in ppb

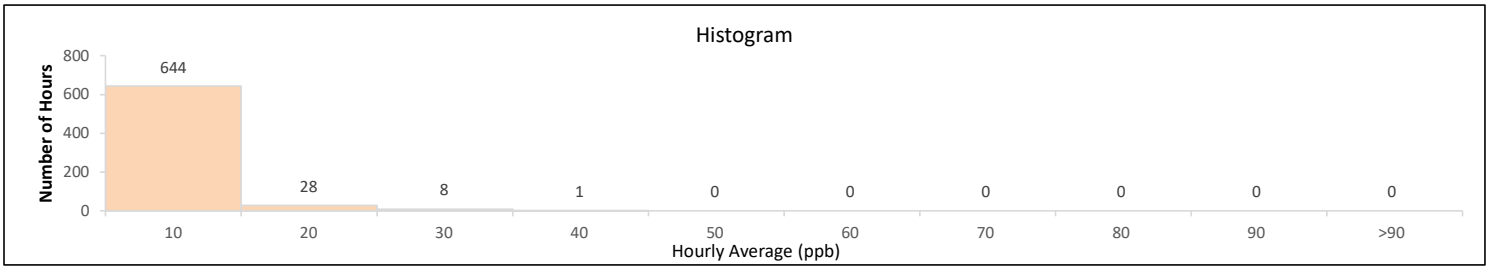
Maximum Hourly Value:	36	ppb	on Jun 9 at hr 0	Hours in Service:	720	
Maximum Daily Value:	7.2	ppb	on Jun 9	Hours of Data:	681	
Minimum Hourly Value:	0	ppb	on Jun 6 at hr 13	Hours of Missing Data:	0	
Minimum Daily Value:	1.6	ppb	on Jun 25	Hours of Calibration:	39	
Monthly Average:	3.7	ppb		Operational Uptime:	100.0	

Day	Hourly Period Starting at (MST)																								Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Jun 1	S	2	2	2	2	1	1	3	1	2	2	1	2	2	1	2	2	1	1	2	1	1	4	S	1	4	1.7
Jun 2	10	13	7	3	2	6	5	3	3	2	2	2	2	2	2	1	2	2	1	1	1	2	S	7	1	13	3.5
Jun 3	3	4	7	6	4	2	1	1	1	1	1	1	1	1	1	1	1	3	2	1	1	S	4	3	1	7	2.2
Jun 4	2	2	2	2	5	3	2	3	5	2	2	3	2	2	3	2	1	1	5	2	S	4	4	10	1	10	3.0
Jun 5	4	8	3	2	3	5	2	9	16	5	6	4	2	2	1	3	3	2	4	S	3	3	5	15	1	16	4.8
Jun 6	14	9	3	22	26	19	15	9	5	2	2	3	1	0	1	1	1	1	S	1	1	2	6	6	0	26	6.5
Jun 7	10	23	22	8	5	22	8	5	3	4	3	4	3	2	2	2	2	S	2	6	5	2	4	4	2	23	6.6
Jun 8	4	6	3	4	4	4	6	3	2	1	1	2	1	2	2	2	S	2	2	1	3	8	4	14	1	14	3.5
Jun 9	36	26	22	6	6	22	7	2	3	6	4	3	2	3	2	S	2	2	2	2	2	2	2	2	2	36	7.2
Jun 10	4	5	4	4	5	5	4	5	4	3	2	2	2	2	S	2	2	2	2	3	2	2	2	3	2	5	3.1
Jun 11	4	4	5	5	7	7	6	6	5	5	4	3	3	S	4	3	3	4	6	2	2	2	2	3	2	7	4.1
Jun 12	2	2	2	2	2	2	3	3	4	4	4	3	S	5	5	5	3	2	2	3	2	2	14	19	2	19	4.1
Jun 13	8	8	9	18	12	5	4	4	4	4	5	S	5	6	6	3	3	2	9	4	4	2	2	14	2	18	6.1
Jun 14	9	8	8	8	12	6	4	9	7	6	S	3	3	3	3	3	4	3	3	2	2	2	1	1	1	12	4.8
Jun 15	1	1	1	2	1	2	1	2	1	S	2	2	2	2	7	17	5	2	3	1	2	1	3	5	1	17	2.9
Jun 16	6	4	5	7	8	8	7	4	S	2	3	3	3	3	2	2	4	2	2	3	7	2	2	2	2	8	4.0
Jun 17	1	1	1	3	3	3	6	S	2	1	1	5	9	3	1	1	1	0	0	1	1	2	1	11	0	11	2.5
Jun 18	5	4	2	5	11	12	S	3	6	2	3	1	1	2	1	2	2	2	3	8	2	2	2	1	1	12	3.6
Jun 19	1	2	2	1	1	S	3	2	2	2	1	1	1	2	2	6	3	2	1	3	4	2	7	5	1	7	2.4
Jun 20	5	7	1	1	S	2	2	1	1	2	1	2	2	2	2	1	1	1	2	2	1	1	2	2	1	7	1.9
Jun 21	6	13	13	S	6	2	12	14	5	9	2	7	4	1	2	1	1	2	1	1	1	2	1	2	1	14	4.7
Jun 22	3	3	S	3	3	5	9	16	17	15	7	6	3	2	2	2	1	3	2	1	2	2	5	1	1	17	4.9
Jun 23	1	S	7	7	3	6	2	4	5	2	C	C	C	C	C	C	C	2	1	1	1	1	2	9	1	9	NA
Jun 24	S	3	4	5	8	16	6	5	5	5	4	3	2	2	1	1	1	1	1	1	2	1	4	S	1	16	3.7
Jun 25	2	2	2	5	1	1	1	1	1	1	1	0	0	1	1	0	0	0	0	0	1	9	S	6	0	9	1.6
Jun 26	2	1	2	2	1	2	1	1	2	1	1	1	1	1	1	1	1	1	1	4	5	S	3	3	1	5	1.7
Jun 27	4	3	2	2	2	3	6	13	10	6	5	5	3	5	1	1	1	1	1	1	S	5	5	8	1	13	4.0
Jun 28	3	3	1	1	1	1	3	2	3	1	2	1	1	2	1	1	1	1	1	S	20	18	10	5	1	20	3.6
Jun 29	4	4	2	3	4	8	9	5	4	3	2	1	1	1	2	1	1	1	S	2	2	2	2	3	1	9	2.9
Jun 30	2	2	1	1	5	7	9	5	3	2	3	2	1	2	1	1	1	S	1	1	1	2	1	2	1	9	2.4
Diurnal Maximum	36	26	22	22	26	22	15	16	17	15	7	7	9	6	7	17	5	4	9	8	20	18	14	19			
Diurnal Average	5.6	6.0	5.0	4.8	5.3	6.4	5.0	4.9	4.5	3.5	2.7	2.6	2.3	2.3	2.1	2.4	1.9	1.7	2.2	2.1	2.9	3.1	3.7	5.9			

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

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



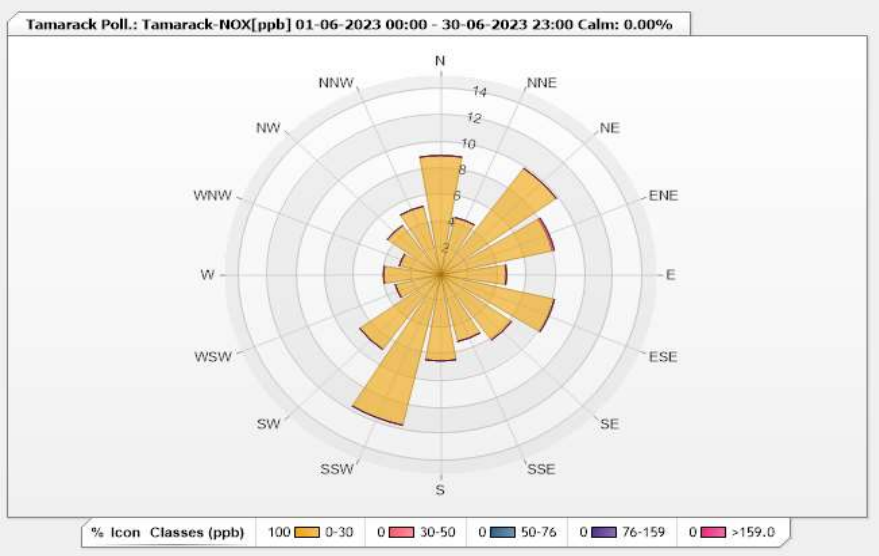


Station: Tamarack Poll.: Tamarack-NOX[ppb] Monthly: 06-2023

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

Calm: 0.00% Valid Data: 94.58% Calm Avg: 0.00 [ppm]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	8.96	0	0	0	0	8.96
NNE	4.41	0	0	0	0	4.41
NE	9.84	0	0	0	0	9.84
ENE	7.93	0.15	0	0	0	8.08
E	4.55	0	0	0	0	4.55
ESE	8.08	0	0	0	0	8.08
SE	6.02	0	0	0	0	6.02
SSE	5.14	0	0	0	0	5.14
S	6.46	0	0	0	0	6.46
SSW	11.6	0	0	0	0	11.6
SW	6.9	0	0	0	0	6.9
WSW	3.23	0	0	0	0	3.23
W	3.96	0	0	0	0	3.96
WNW	2.94	0	0	0	0	2.94
NW	4.55	0	0	0	0	4.55
NNW	5.29	0	0	0	0	5.29
Summary	100	0.15	0	0	0	100



Lakeland Industry & Community Association

Tamarack Site - June 2023

Summary of Hourly Averages

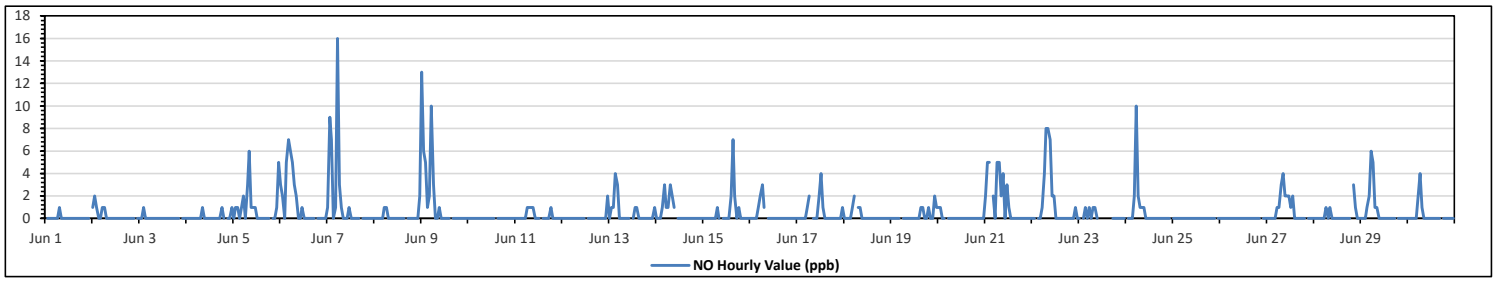
NITRIC OXIDE (NO) in ppb

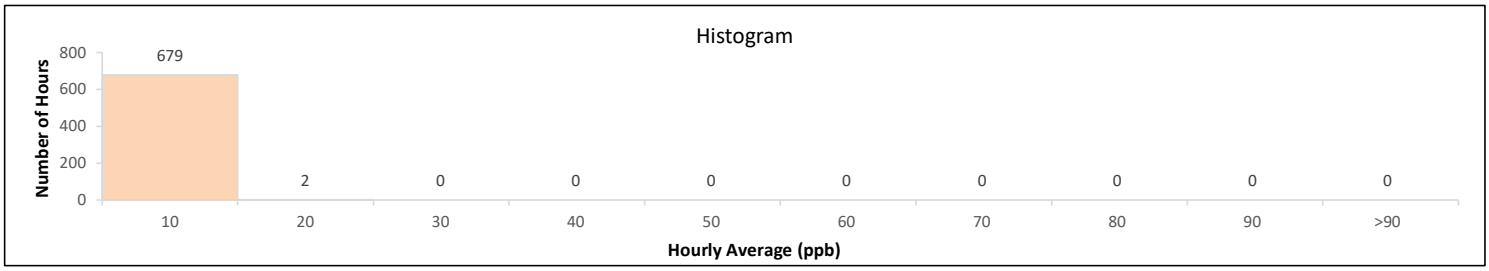
Maximum Hourly Value:	16	ppb	on Jun 7 at hr 5	Hours in Service:	720
Maximum Daily Value:	1.8	ppb	on Jun 9	Hours of Data:	681
Minimum Hourly Value:	0	ppb	on Jun 1 at hr 1	Hours of Missing Data:	0
Minimum Daily Value:	0.0	ppb	on Jun 10	Hours of Calibration:	39
Monthly Average:	0.5	ppb		Operational Uptime:	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			
Jun 1	S	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	1	0.0
Jun 2	1	2	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	2	0.3
Jun 3	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	1	0.0
Jun 4	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	S	0	0	1	0	1	0.1
Jun 5	0	1	1	0	1	2	0	3	6	1	1	1	0	0	0	0	0	0	0	S	0	0	1	5	0	6	1.0
Jun 6	3	2	0	5	7	6	5	3	2	0	0	1	0	0	0	0	0	0	S	0	0	0	0	0	0	7	1.5
Jun 7	1	9	7	0	1	**16**	3	1	0	0	0	1	0	0	0	0	0	S	0	0	0	0	0	0	0	**16**	1.7
Jun 8	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	2	0	2	0.2
Jun 9	13	6	5	1	2	10	3	0	0	1	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	13	**1.8**
Jun 10	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
Jun 11	0	0	0	0	0	0	1	1	1	1	0	0	0	S	0	0	0	0	1	0	0	0	0	0	0	1	0.2
Jun 12	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	2	0	2	0.1
Jun 13	0	1	1	4	3	0	0	0	0	0	0	S	0	1	1	0	0	0	0	0	0	0	0	1	0	4	0.5
Jun 14	0	0	0	1	3	1	1	3	2	1	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0.5
Jun 15	0	0	0	0	0	0	0	1	0	S	0	0	0	0	2	7	2	0	1	0	0	0	0	0	0	7	0.6
Jun 16	0	0	0	0	1	2	3	1	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0.3
Jun 17	0	0	0	0	0	1	2	S	0	0	0	2	4	1	0	0	0	0	0	0	0	0	0	1	0	4	0.5
Jun 18	0	0	0	0	1	2	S	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.2
Jun 19	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0	0	2	1	0	2	0.3
Jun 20	1	1	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1
Jun 21	2	5	5	S	2	0	5	5	2	4	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	5	1.5
Jun 22	0	0	S	0	0	1	4	8	8	7	2	2	0	0	0	0	0	0	0	0	0	0	1	0	0	8	1.4
Jun 23	0	S	0	1	0	1	0	1	1	0	C	C	C	C	C	C	C	0	0	0	0	0	0	0	0	1	NA
Jun 24	S	0	0	0	2	10	2	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	10	0.8
Jun 25	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
Jun 26	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
Jun 27	0	0	0	0	0	1	1	3	4	2	2	2	1	2	0	0	0	0	0	0	S	0	0	0	0	4	0.8
Jun 28	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	S	3	1	0	0	0	3	0.3
Jun 29	0	0	0	1	2	6	5	1	1	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	6	0.7
Jun 30	0	0	0	0	0	2	4	1	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	4	0.3
Diurnal Maximum	13	9	7	5	7	16	5	8	8	7	2	3	4	2	2	7	2	0	1	1	3	1	2	5			
Diurnal Average	0.8	0.9	0.7	0.4	0.9	2.2	1.4	1.2	1.1	0.6	0.2	0.4	0.2	0.1	0.1	0.3	0.1	0.0	0.1	0.0	0.1	0.0	0.1	0.5			

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

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



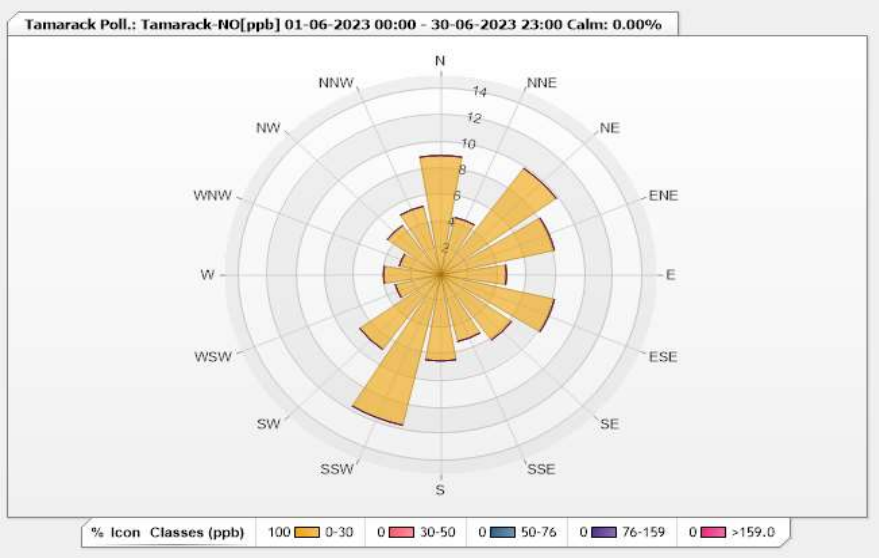


Station: Tamarack Poll.: Tamarack-NO[ppb] Monthly: 06-2023

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

Calm: 0.00% Valid Data: 94.58% Calm Avg: 0.00 [ppm]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	8.96	0	0	0	0	8.96
NNE	4.41	0	0	0	0	4.41
NE	9.84	0	0	0	0	9.84
ENE	8.08	0	0	0	0	8.08
E	4.55	0	0	0	0	4.55
ESE	8.08	0	0	0	0	8.08
SE	6.02	0	0	0	0	6.02
SSE	5.14	0	0	0	0	5.14
S	6.46	0	0	0	0	6.46
SSW	11.6	0	0	0	0	11.6
SW	6.9	0	0	0	0	6.9
WSW	3.23	0	0	0	0	3.23
W	3.96	0	0	0	0	3.96
WNW	2.94	0	0	0	0	2.94
NW	4.55	0	0	0	0	4.55
NNW	5.29	0	0	0	0	5.29
Summary	100	0	0	0	0	100



Lakeland Industry & Community Association

Tamarack Site - June 2023

Summary of Hourly Averages

NITROGEN DIOXIDE (NO_2) in ppb

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

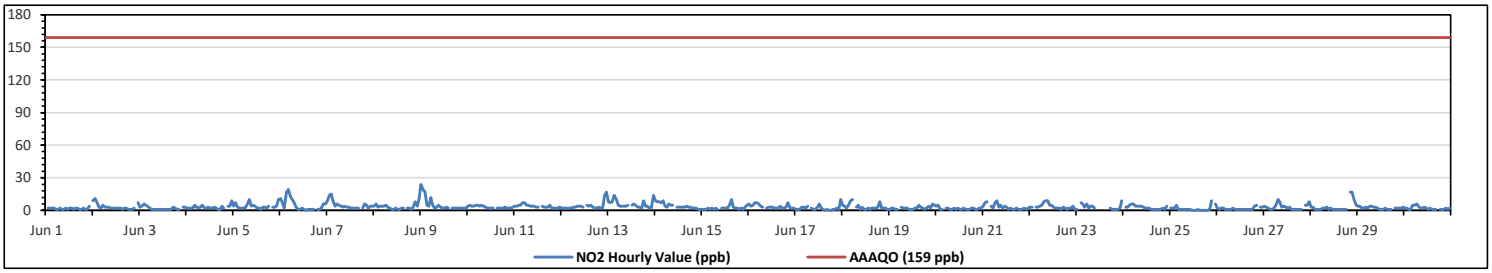
Number of 1-Hour Exceedances: 0

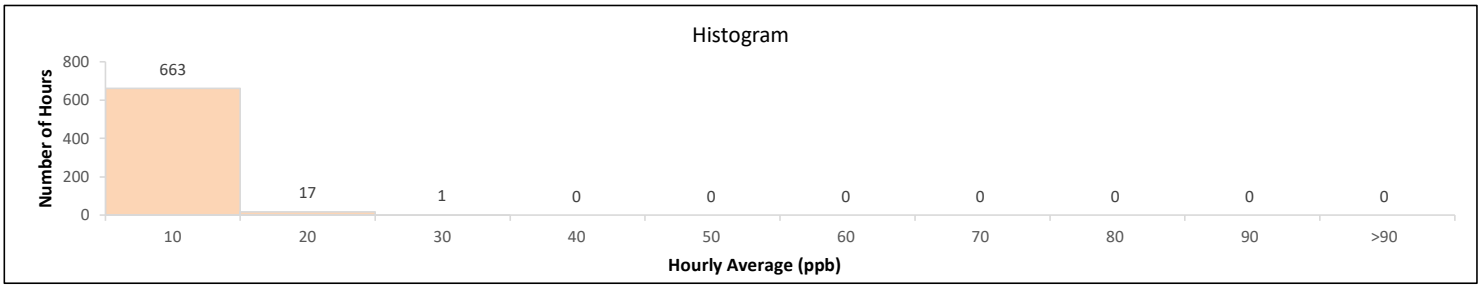
Maximum Hourly Value:	24	ppb	on Jun 9 at hr 0	Hours in Service:	720
Maximum Daily Value:	5.7	ppb	on Jun 13	Hours of Data:	681
Minimum Hourly Value:	0	ppb	on Jun 6 at hr 13	Hours of Missing Data:	0
Minimum Daily Value:	1.5	ppb	on Jun 25	Hours of Calibration:	39
Monthly Average:	3.2	ppb		Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																						Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Jun 1	S	2	2	2	2	1	1	2	1	1	2	1	2	2	1	2	2	1	1	2	1	1	4	S	1	4	1.6
Jun 2	9	11	7	3	2	5	3	3	3	2	2	2	2	2	2	1	2	2	1	1	1	2	S	7	1	11	3.3
Jun 3	3	4	6	5	4	2	1	1	1	1	1	1	1	1	1	1	1	3	2	1	1	S	3	3	1	6	2.1
Jun 4	2	2	2	2	5	3	2	3	5	2	2	3	2	2	3	2	1	1	4	2	S	4	4	9	1	9	2.9
Jun 5	4	7	3	2	2	2	2	6	10	4	5	4	2	2	1	3	3	2	4	S	3	3	4	10	1	10	3.8
Jun 6	11	7	2	17	19	13	10	7	3	1	1	2	1	0	1	1	1	1	S	1	1	2	6	6	0	19	5.0
Jun 7	9	14	15	8	4	6	5	4	3	4	3	3	2	2	2	2	2	S	2	6	5	2	4	4	2	15	4.8
Jun 8	4	6	3	4	4	4	5	3	2	1	1	2	1	1	2	2	S	2	2	1	3	8	4	12	1	12	3.3
Jun 9	24	19	17	5	4	12	5	2	3	5	3	2	2	3	2	S	2	2	2	2	2	2	2	2	2	24	5.4
Jun 10	4	5	4	4	5	5	4	5	4	3	2	2	2	2	S	2	2	2	2	3	2	2	2	3	2	5	3.1
Jun 11	4	4	5	5	7	7	5	5	4	4	4	3	3	S	4	3	3	3	5	2	2	2	2	3	2	7	3.9
Jun 12	2	2	2	2	2	2	3	3	4	4	4	3	S	5	4	5	3	2	2	3	2	2	14	17	2	17	4.0
Jun 13	8	7	8	14	10	5	4	4	4	4	5	S	5	6	5	3	3	2	9	4	4	2	2	14	2	14	5.7
Jun 14	9	8	8	7	9	4	3	6	5	5	S	3	3	3	3	3	4	3	3	2	2	2	1	1	1	9	4.2
Jun 15	1	1	1	2	1	2	1	2	1	S	2	2	2	2	5	10	3	2	2	1	2	1	3	5	1	10	2.3
Jun 16	6	4	5	7	7	6	4	3	S	2	3	3	3	2	2	2	4	2	2	3	7	2	2	2	2	7	3.6
Jun 17	1	1	1	3	3	2	4	S	2	1	1	3	6	2	1	0	1	0	0	1	1	2	1	10	0	10	2.0
Jun 18	5	4	2	5	9	10	S	3	5	1	3	1	1	2	1	2	2	2	3	8	2	2	2	1	1	10	3.3
Jun 19	1	2	2	1	1	S	3	2	2	2	1	1	1	2	2	5	3	2	1	2	4	2	6	5	1	6	2.3
Jun 20	4	5	1	1	S	2	2	1	1	2	1	2	1	1	2	1	1	1	2	2	1	1	2	2	1	5	1.7
Jun 21	4	7	8	S	4	2	7	9	3	5	2	4	3	1	2	1	1	2	1	1	1	2	1	2	1	9	3.2
Jun 22	3	3	S	3	3	4	5	8	9	9	5	5	3	2	2	2	1	3	2	1	2	2	4	1	1	9	3.6
Jun 23	1	S	7	6	3	6	2	4	4	2	C	C	C	C	C	C	C	2	1	1	1	1	2	9	1	9	NA
Jun 24	S	3	3	5	6	6	4	4	4	4	3	2	2	2	1	1	1	1	1	1	2	1	4	S	1	6	2.8
Jun 25	2	2	2	5	1	1	1	1	1	1	1	0	0	0	1	0	0	0	0	0	1	9	S	6	0	9	1.5
Jun 26	2	1	2	2	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	4	5	S	3	3	1	5	1.7
Jun 27	4	3	2	1	1	2	5	10	7	3	4	3	2	3	1	1	1	1	1	1	S	5	5	8	1	10	3.2
Jun 28	3	3	1	1	1	1	2	2	3	1	2	1	1	1	1	1	1	1	1	S	17	17	10	5	1	17	3.3
Jun 29	4	4	2	2	3	2	4	4	3	3	2	1	1	1	2	1	1	1	S	2	2	2	2	3	1	4	2.3
Jun 30	2	2	1	1	5	5	6	4	2	2	3	2	1	2	1	1	1	S	1	1	1	2	1	2	1	6	2.1
Diurnal Maximum	24	19	17	17	19	13	10	10	10	9	5	5	6	6	5	10	4	3	9	8	17	17	14	17			
Diurnal Average	4.9	4.9	4.3	4.3	4.4	4.2	3.6	3.9	3.5	2.8	2.5	2.2	2.0	2.0	2.0	2.1	1.8	1.7	2.1	2.1	2.8	3.0	3.6	5.5			

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.



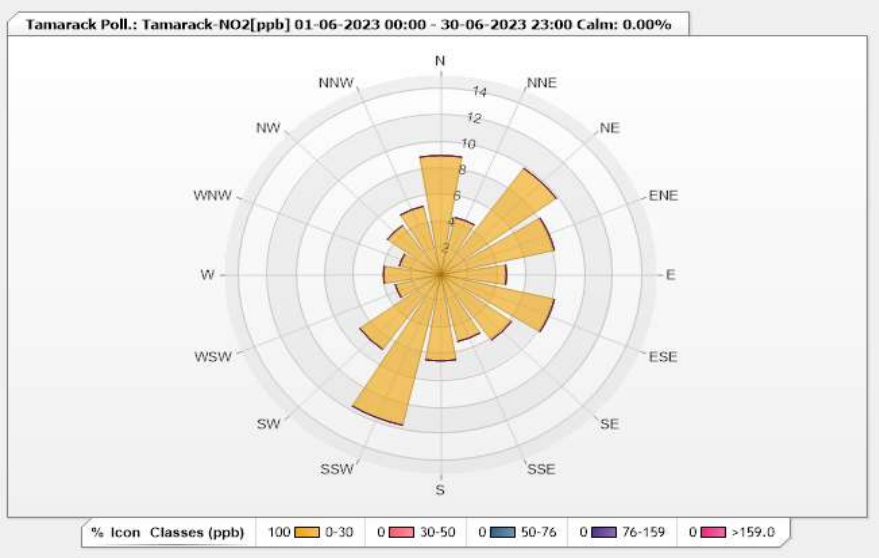


Station: Tamarack Poll.: Tamarack-NO2[ppb] Monthly: 06-2023

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

Calm: 0.00% Valid Data: 94.58% Calm Avg: 0.00 [ppm]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	8.96	0	0	0	0	8.96
NNE	4.41	0	0	0	0	4.41
NE	9.84	0	0	0	0	9.84
ENE	8.08	0	0	0	0	8.08
E	4.55	0	0	0	0	4.55
ESE	8.08	0	0	0	0	8.08
SE	6.02	0	0	0	0	6.02
SSE	5.14	0	0	0	0	5.14
S	6.46	0	0	0	0	6.46
SSW	11.6	0	0	0	0	11.6
SW	6.9	0	0	0	0	6.9
WSW	3.23	0	0	0	0	3.23
W	3.96	0	0	0	0	3.96
WNW	2.94	0	0	0	0	2.94
NW	4.55	0	0	0	0	4.55
NNW	5.29	0	0	0	0	5.29
Summary	100	0	0	0	0	100



Lakeland Industry & Community Association

Tamarack Site - June 2023

Summary of Hourly Averages

OZONE (O_3) in ppb

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

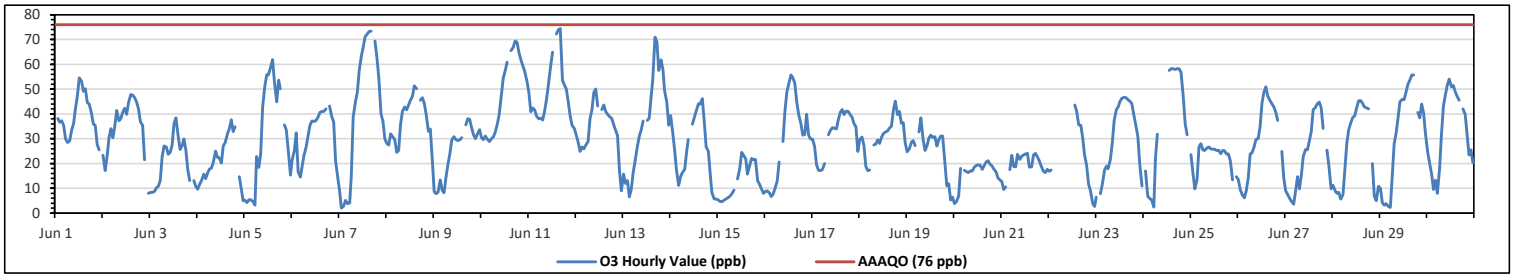
Number of 1-Hour Exceedances: 0

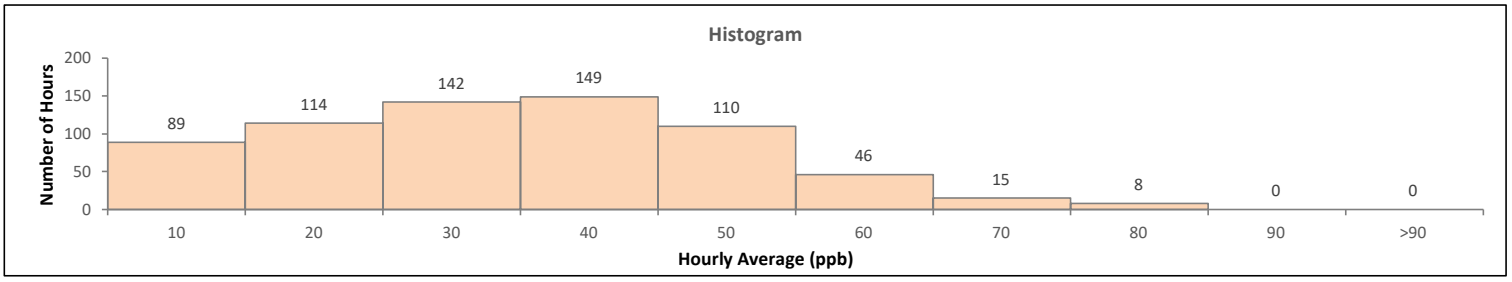
Maximum Hourly Value:	74.5	ppb	on Jun 11 at hr 16	Hours in Service:	720	
Maximum Daily Value:	48.7	ppb	on Jun 11	Hours of Data:	673	
Minimum Hourly Value:	2.0	ppb	on Jun 7 at hr 1	Hours of Missing Data:	11	
Minimum Daily Value:	13.0	ppb	on Jun 15	Hours of Calibration:	36	
Monthly Average:	30.0	ppb		Operational Uptime:	98.5	

Day	Hourly Period Starting at (MST)																						Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Jun 1	S	38.2	36.6	37.2	35.4	30.1	28.5	29.1	33.4	36	42.1	47.2	54.5	53.3	49.2	50.1	44.7	43.9	40.9	36	35.3	27.7	25.5	S	25.5	54.5	38.9
Jun 2	23.3	17.1	23.1	30.5	34	30.5	35	41.4	37.2	38.2	40.8	42.3	39.9	44.6	47.8	47.6	46.6	44.9	42.1	36.9	35.3	21.5	S	7.9	7.9	47.8	35.2
Jun 3	8.4	8.4	8.8	10.1	10.8	13.1	22.8	27	26.7	23.7	24.5	27.3	36	38.4	32.1	25.7	27.1	29.9	25.5	17.7	13.1	S	13.2	10.8	8.4	38.4	20.9
Jun 4	9.6	11.6	13.2	15.7	13.9	16.2	17.8	18.2	20.6	25	22.4	22.3	20.2	27.1	28.5	32	34	37.7	32.9	34.9	S	14.7	10	5	5.0	37.7	21.0
Jun 5	5.2	4.2	5.3	5.3	4.6	3.2	22.8	18.4	24.2	42.8	51.4	55.9	55.7	58.8	62	52.7	44.9	53.7	50.2	S	35.6	33.5	24	15.3	3.2	62.0	31.7
Jun 6	21.3	25.1	32.4	16.6	14.5	19.3	23.2	26.7	31.2	35.5	37.1	37	37.2	38.5	40.6	41	41	42	S	43.2	39	36.8	21	14	14.0	43.2	31.1
Jun 7	9.5	2	2.9	5.1	3.9	4.1	14.9	38.8	44.9	48.9	57.8	63.7	66.8	71.2	72.2	73.3	73.4	S	69.4	62.9	54.5	40	37	29.9	**2.0**	73.4	41.2
Jun 8	28.2	27.4	32	30.7	29.7	24.4	25.2	35.8	41.2	42.8	41.6	43.5	45.6	47.1	51.3	50.2	S	45.6	46.6	44.3	39.9	33	33.9	22	22.0	51.3	37.5
Jun 9	8.8	7.8	8.4	13.4	9.3	8.2	14.5	19.6	23.9	29.5	30.8	29.6	29.3	29.5	30.5	S	35.6	38	37.8	34.4	31.6	30.1	32.1	33.6	7.8	38.0	24.6
Jun 10	30.5	29.7	31.1	29.8	28.8	30	30.7	32.8	35.7	39.6	47.7	54.6	57.4	60.8	S	65.5	66.9	69.4	69	64.8	61.9	59.5	57.2	53.2	28.8	69.4	48.1
Jun 11	48.6	40.9	42.5	41.6	39.1	38.1	38.3	37.5	41	45.8	51.8	59.4	64.9	S	72.2	73.9	**74.5**	53.5	51.8	50	44.9	39.2	35.3	34.2	34.2	**74.5**	**48.7**
Jun 12	31.4	28.6	24.9	26.6	26	27.5	28.9	38	41.6	48.8	50	43.3	S	41.8	43.6	41.1	39.9	39	38.2	35.7	33.4	31.3	17.4	9.1	9.1	50.0	34.2
Jun 13	15.7	11.9	13.1	6.6	9.6	16.4	22	26.8	30.9	33.5	37.1	S	37.4	38.3	47	53.5	71	69.1	57.5	61.8	58	49.4	44.8	35.5	6.6	71.0	36.8
Jun 14	39.3	32	24.7	17.7	11.2	14.7	16.4	17.7	24.7	29.7	S	35.9	38.6	41.6	44.1	44	46.1	37	26.6	24.9	15.3	8.2	5.8	5.6	5.6	46.1	26.2
Jun 15	5.3	4.8	4.7	5.1	5.6	6.1	6.9	7.7	9.3	S	13.8	18	24.4	23.4	21.8	15.7	18.8	22.1	21.5	21.7	13	11.8	10	7.9	4.7	24.4	**13.0**
Jun 16	8.8	9.1	8.1	6.7	7.6	10.3	12.9	20.6	S	28.9	40.8	48.7	52.6	55.7	54.5	52.3	44.9	39.9	36.1	31.4	31.7	39.8	31.4	29.9	6.7	55.7	30.6
Jun 17	29.8	26.6	19.5	17.3	17.2	17.5	20	S	31.6	33.3	34.5	34.3	33.9	37.7	40.6	41.8	39.7	41.2	41	39.7	38.7	36.1	34.8	24.8	17.2	41.8	31.8
Jun 18	29.7	30.7	27.3	18.8	17.2	17.4	S	27.4	27.9	29.5	28.1	30.6	32.1	32.8	33.1	34.3	35.1	41.4	45.2	39.7	41.1	36.2	36.5	28.4	17.2	45.2	31.3
Jun 19	24.7	25.9	28.5	29.2	27.2	S	32.8	38.5	29.7	25.2	27.1	30.3	31.4	30.6	30.8	27.1	29.5	31	31	22	11.1	11.8	5.2	6.4	5.2	38.5	25.5
Jun 20	3.8	4.7	6.8	18	S	17.3	16.7	16.3	17	17	18.6	19.2	19.5	19.3	17.7	19.2	20.6	21.2	19.7	19.1	17.8	16.6	14.2	13.4	3.8	21.2	16.2
Jun 21	12.7	9.5	10.5	S	17.6	23.3	18.8	18.7	23.7	21.7	22.9	23.5	23.9	24.1	18.6	18.7	23.5	24.2	22.7	21.2	19	16.9	16.4	17.7	9.5	24.2	19.6
Jun 22	16.9	17.4	X	X	X	X	X	X	X	X	X	NRM	NRM	43.5	41	35.7	35.3	30.1	23.9	19.2	11.7	9	3.8	2.7	2.7	43.5	NA
Jun 23	6.5	S	7.8	11.5	17.4	18.9	17.9	21.6	28.2	37.3	41.8	43	45	46.3	46.7	46.6	45.7	45	44.2	40	35.2	30.9	19.8	10.9	6.5	46.7	30.8
Jun 24	S	17	6.8	5.9	5.4	2.5	22.1	31.8	C	C	C	C	C	57.5	58.3	58.2	57.9	58.3	58.2	56.7	46.9	36	31.6	S	2.5	58.3	NA
Jun 25	23.6	16.4	9.7	13.4	26.6	28	25.6	25.3	26.2	26.7	26	25.8	25.8	25.3	25.4	24	25.3	25.1	23.9	23.9	21.1	13.4	S	14.7	9.7	28.0	22.7
Jun 26	13.6	9.5	7.4	6.2	9.2	14.2	23.9	24.3	26.5	29.7	30.1	34.8	44.3	48.7	51	47.3	45.4	44.1	42.8	40.8	37.4	S	24.8	14.1	6.2	51.0	29.1
Jun 27	9.1	7.5	6	4.8	3.6	9	14.7	9.7	15.3	22.9	25.7	25.5	29.1	32.9	41.7	42.5	44.1	44.8	42.4	34.2	S	25.4	19.2	9.7	3.6	44.8	22.6
Jun 28	11.2	9.2	8	8.4	5.6	7.4	17.7	28.2	33.7	36.2	38.4	39.3	42.6	45.3	45.4	44.3	42.9	42.5	42.1	S	20	6.9	5	10.8	5.0	45.4	25.7
Jun 29	10	4.3	3.1	3.8	2.9	2.3	14.8	28	32.3	38.2	44.9	45.8	45.8	48.8	52	53.7	55.8	55.7	S	40.7	38.5	44	40.4	31.9	2.3	55.8	32.1
Jun 30	24.3	20	15.8	9.5	13.3	8	18	32.1	43.2	47.7	51.6	54.1	51	51.5	48.9	47.1	45.6	S	42	39.8	31.6	23.5	25.5	20.3	8.0	54.1	33.2
Diurnal Maximum	48.6	40.9	42.5	41.6	39.1	38.1	38.3	41.4	44.9	48.9	57.8	63.7	66.8	71.2	72.2	73.9	74.5	69.4	69.4	64.8	61.9	59.5	57.2	53.2			
Diurnal Average	18.2	17.2	16.2	15.9	16.0	16.4	21.6	26.4	29.7	33.9	36.3	38.3	40.2	41.9	43.1	43.4	43.3	41.8	40.2	37.1	32.6	28.0	24.1	18.6			

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

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



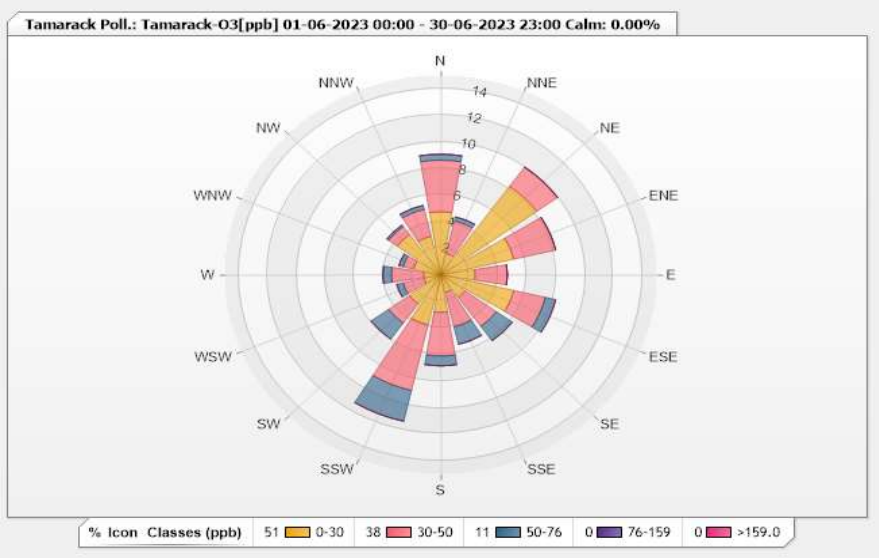


Station: Tamarack Poll.: Tamarack-O3[ppb] Monthly: 06-2023

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

Calm: 0.00% Valid Data: 93.47% Calm Avg: 0.00 [ppm]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	4.75	3.86	0.45	0	0	9.06
NNE	1.63	2.53	0.3	0	0	4.46
NE	8.17	1.78	0	0	0	9.95
ENE	5.2	2.97	0	0	0	8.17
E	2.38	2.23	0	0	0	4.61
ESE	5.2	2.23	0.74	0	0	8.17
SE	2.08	2.67	1.34	0	0	6.09
SSE	1.34	2.67	1.34	0	0	5.35
S	2.82	3.27	0.74	0	0	6.83
SSW	3.86	5.05	2.38	0	0	11.29
SW	2.67	1.78	1.49	0	0	5.94
WSW	1.19	1.49	0.45	0	0	3.13
W	1.19	2.23	0.59	0	0	4.01
WNW	1.93	0.74	0.3	0	0	2.97
NW	3.71	0.74	0.15	0	0	4.6
NNW	2.97	2.08	0.3	0	0	5.35
Summary	51.09	38.32	10.57	0	0	100



Lakeland Industry & Community Association

Tamarack Site - June 2023

Summary of Hourly Averages

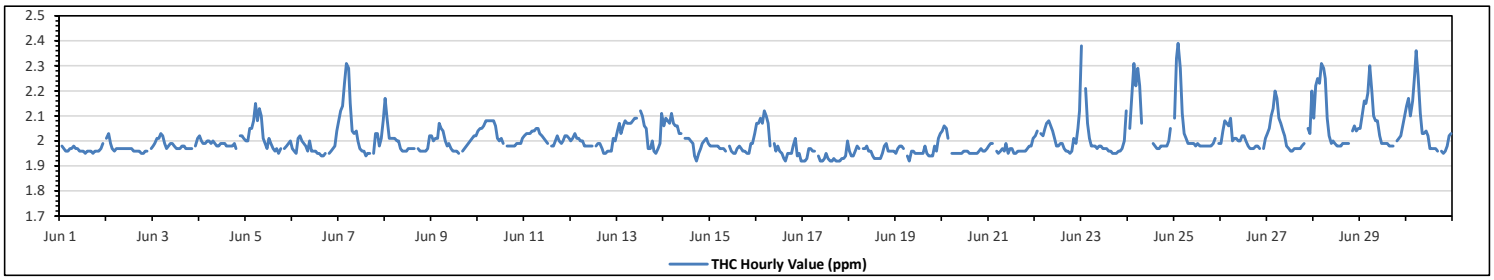
TOTAL HYDROCARBONS (THC) in ppm

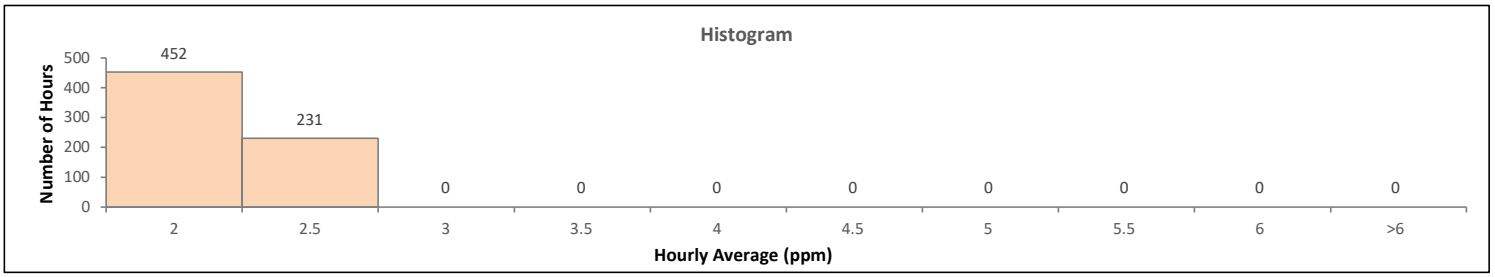
Maximum Hourly Value:	2.39	ppm	on Jun 25 at hr 2	Hours in Service:	720
Maximum Daily Value:	2.08	ppm	on Jun 28	Hours of Data:	683
Minimum Hourly Value:	1.92	ppm	on Jun 14 at hr 17	Hours of Missing Data:	0
Minimum Daily Value:	1.94	ppm	on Jun 17	Hours of Calibration:	37
Monthly Average:	2.01	ppm		Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Jun 1	S	1.98	1.97	1.96	1.96	1.97	1.97	1.98	1.97	1.97	1.96	1.96	1.96	1.95	1.96	1.96	1.96	1.95	1.96	1.96	1.97	1.99	S	1.95	1.99	1.97
Jun 2	2.01	2.03	1.99	1.97	1.96	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.96	1.96	1.96	1.96	1.95	1.95	1.96	1.96	S	1.97	1.95	2.03	1.97
Jun 3	1.98	1.99	2.01	2.01	2.03	2.02	1.99	1.97	1.98	1.99	1.99	1.98	1.97	1.97	1.97	1.98	1.98	1.97	1.97	1.97	1.97	S	1.98	2.01	1.97	2.03	1.99
Jun 4	2.02	2.00	1.99	1.99	2.00	2.00	1.99	2.00	1.99	1.98	1.98	1.99	1.99	1.99	1.98	1.98	1.98	1.98	1.99	1.97	S	2.02	2.02	2.01	1.97	2.02	1.99
Jun 5	2.00	2.00	2.05	2.05	2.08	2.15	2.08	2.13	2.10	2.01	1.99	1.97	2.01	1.99	1.97	1.96	1.97	1.95	1.97	S	1.97	1.98	1.99	2.00	1.95	2.15	2.02
Jun 6	1.97	1.96	1.95	2.01	2.02	2.00	1.99	1.98	1.96	2.00	1.96	1.96	1.96	1.95	1.95	1.94	1.94	1.95	S	1.95	1.96	1.97	1.98	2.04	1.94	2.04	1.97
Jun 7	2.08	2.12	2.14	2.23	2.31	2.29	2.15	2.04	2.03	2.04	2.00	1.97	1.96	1.96	1.94	1.95	1.95	S	1.95	2.03	2.03	1.98	2.01	2.08	1.94	2.31	2.05
Jun 8	2.17	2.09	2.01	2.01	2.01	2.01	2.00	2.00	1.97	1.96	1.96	1.96	1.97	1.97	1.97	1.97	S	1.97	1.96	1.96	1.96	1.96	1.97	2.02	1.96	2.17	1.99
Jun 9	2.02	2.00	2.01	2.01	2.07	2.05	2.04	2.00	1.98	1.99	1.97	1.96	1.96	1.96	1.95	S	1.96	1.97	1.98	1.99	2.00	2.01	2.02	2.02	1.95	2.07	2.00
Jun 10	2.04	2.05	2.05	2.06	2.08	2.08	2.08	2.08	2.08	2.06	2.01	2.00	2.01	1.99	S	1.98	1.98	1.98	1.98	1.98	1.99	1.99	1.99	2.01	1.98	2.08	2.02
Jun 11	2.02	2.03	2.03	2.03	2.04	2.04	2.05	2.05	2.03	2.02	2.01	2.00	1.99	S	1.98	1.98	2.00	2.02	2.00	1.99	2.00	2.02	2.02	2.01	1.98	2.05	2.02
Jun 12	2.00	2.01	2.03	2.01	2.01	2.00	2.00	1.98	1.98	1.98	1.98	1.98	S	1.98	1.99	1.99	1.97	1.95	1.95	1.96	1.96	1.96	2.01	2.00	1.95	2.03	1.99
Jun 13	2.04	2.07	2.03	2.06	2.08	2.07	2.07	2.07	2.08	2.09	2.09	S	2.12	2.10	2.06	2.05	1.97	1.97	2.00	1.96	1.95	1.97	1.99	2.11	1.95	2.12	2.04
Jun 14	2.06	2.09	2.08	2.07	2.11	2.07	2.06	2.06	2.03	2.03	S	2.01	2.01	2.01	2.00	1.99	1.94	1.92	1.95	1.97	1.99	2.00	2.01	1.99	1.92	2.11	2.02
Jun 15	1.98	1.98	1.98	1.98	1.98	1.97	1.97	1.97	1.96	S	1.98	1.96	1.95	1.95	1.97	1.98	1.97	1.96	1.96	1.95	1.95	1.99	1.99	2.03	1.95	2.03	1.97
Jun 16	2.07	2.07	2.09	2.07	2.12	2.10	2.07	1.98	S	1.99	1.96	1.98	1.96	1.95	1.93	1.92	1.95	1.95	1.95	1.98	2.01	1.94	1.95	1.92	1.92	2.12	2.00
Jun 17	1.92	1.92	1.93	1.97	1.97	1.96	1.96	S	1.94	1.92	1.92	1.93	1.95	1.93	1.92	1.92	1.93	1.92	1.92	1.92	1.93	1.93	1.94	2.00	1.92	2.00	1.94
Jun 18	1.96	1.94	1.94	1.96	1.98	1.97	S	1.97	1.97	1.98	1.96	1.96	1.94	1.93	1.93	1.93	1.93	1.95	1.98	1.99	1.96	1.96	1.96	1.96	1.93	1.99	1.96
Jun 19	1.95	1.97	1.98	1.98	1.97	S	1.94	1.92	1.96	1.96	1.95	1.95	1.95	1.95	1.95	1.98	1.95	1.94	1.94	1.94	1.98	1.96	2.01	2.03	1.92	2.03	1.96
Jun 20	2.04	2.06	2.05	2.01	S	1.95	1.95	1.95	1.95	1.95	1.95	1.96	1.96	1.96	1.95	1.95	1.95	1.95	1.95	1.96	1.97	1.96	1.96	1.97	1.95	2.06	1.97
Jun 21	1.98	1.99	1.99	S	1.96	1.95	1.96	1.97	1.96	1.99	1.95	1.97	1.97	1.95	1.95	1.96	1.96	1.96	1.96	1.96	1.97	1.98	1.98	2.01	1.95	2.01	1.97
Jun 22	2.02	2.04	S	2.03	2.02	2.05	2.07	2.08	2.06	2.04	2.01	1.98	1.98	1.99	1.99	1.97	1.96	1.96	1.95	2.01	1.99	2.05	2.12	1.95	2.12	2.01
Jun 23	2.38	S	2.21	2.07	2.01	1.98	1.98	1.98	1.97	1.98	1.98	1.97	1.97	1.97	1.96	1.96	1.95	1.95	1.95	1.96	1.96	1.97	2.00	2.12	1.95	2.38	2.01
Jun 24	S	2.05	2.19	2.31	2.22	2.29	2.22	2.07	C	C	C	C	C	1.99	1.98	1.97	1.97	1.98	1.98	1.98	1.98	2.00	2.05	S	1.97	2.31	NA
Jun 25	2.09	2.33	2.39	2.29	2.11	2.03	2.01	1.99	1.99	1.99	1.98	1.99	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.99	2.01	S	1.99	1.98	2.39	2.04
Jun 26	1.99	2.04	2.08	2.07	2.06	2.09	2.00	2.01	2.01	2.00	2.00	2.02	2.02	2.00	1.98	1.97	1.97	1.97	1.98	1.98	1.97	S	1.97	2.01	1.97	2.09	2.01
Jun 27	2.03	2.05	2.10	2.13	2.20	2.17	2.09	2.07	2.04	2.02	1.98	1.97	1.96	1.96	1.97	1.97	1.97	1.97	1.98	1.99	S	2.05	2.03	2.20	1.96	2.20	2.04
Jun 28	2.09	2.22	2.25	2.23	2.31	2.29	2.25	2.09	2.02	1.99	2.00	1.99	1.98	1.98	1.98	1.99	1.99	1.99	1.99	S	2.04	2.06	2.04	2.05	1.98	2.31	2.08
Jun 29	2.05	2.10	2.16	2.15	2.19	2.30	2.19	2.10	2.08	2.08	2.02	1.99	1.99	1.99	1.99	1.98	1.98	1.98	S	2.00	2.01	2.02	2.06	2.10	1.98	2.30	2.07
Jun 30	2.14	2.17	2.10	2.16	2.26	2.36	2.26	2.11	2.03	2.03	2.04	2.02	1.97	1.97	1.97	1.97	1.96	S	1.96	1.95	1.96	1.98	2.02	2.03	1.95	2.36	2.06
Diurnal Maximum	2.38	2.33	2.39	2.31	2.31	2.36	2.26	2.13	2.10	2.09	2.09	2.02	2.12	2.10	2.06	2.05	2.00	2.02	2.00	2.03	2.04	2.06	2.06	2.20			
Diurnal Average	2.04	2.05	2.06	2.06	2.07	2.08	2.05	2.02	2.00	2.00	1.98	1.98	1.98	1.97	1.97	1.97	1.96	1.96	1.97	1.97	1.98	1.99	2.00	2.03			

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.



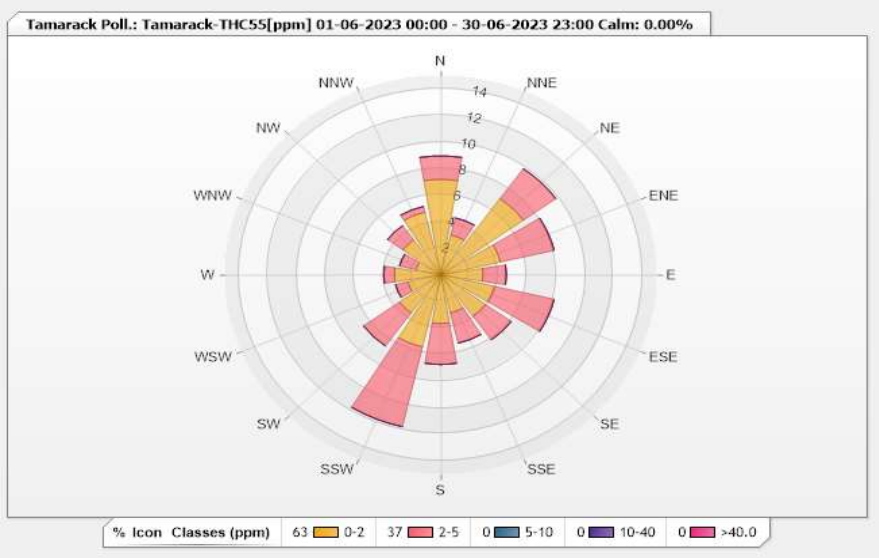


Station: Tamarack Poll.: Tamarack-THC55[ppm] Monthly: 06-2023

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

Calm: 0.00% Valid Data: 94.86% Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-40	>40.0	Total
N	7.17	1.76	0	0	0	8.93
NNE	3.07	1.32	0	0	0	4.39
NE	7.03	2.78	0	0	0	9.81
ENE	4.25	3.81	0	0	0	8.06
E	2.93	1.61	0	0	0	4.54
ESE	3.81	4.25	0	0	0	8.06
SE	3.81	2.2	0	0	0	6.01
SSE	2.93	2.34	0	0	0	5.27
S	3.66	3.07	0	0	0	6.73
SSW	5.56	6.15	0	0	0	11.71
SW	3.51	3.07	0	0	0	6.58
WSW	2.34	0.88	0	0	0	3.22
W	3.22	0.73	0	0	0	3.95
WNW	1.76	1.17	0	0	0	2.93
NW	3.22	1.32	0	0	0	4.54
NNW	4.83	0.44	0	0	0	5.27
Summary	63.1	36.9	0	0	0	100



Lakeland Industry & Community Association

Tamarack Site - June 2023

Summary of Hourly Averages

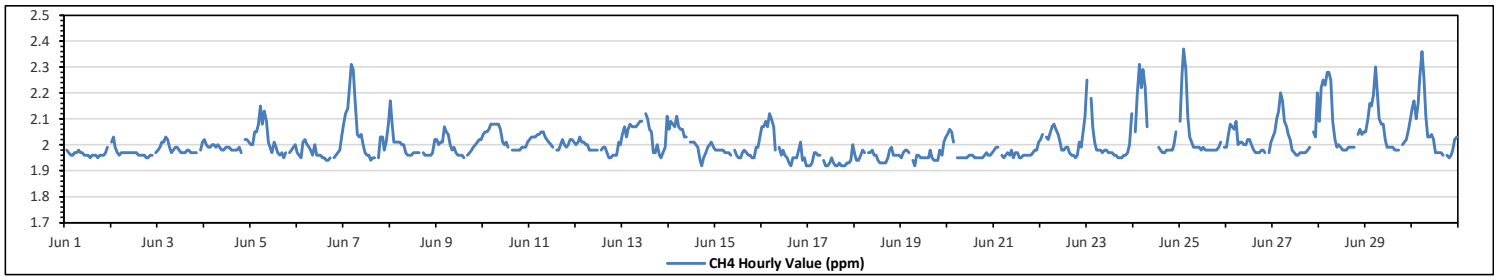
METHANE (CH4) in ppm

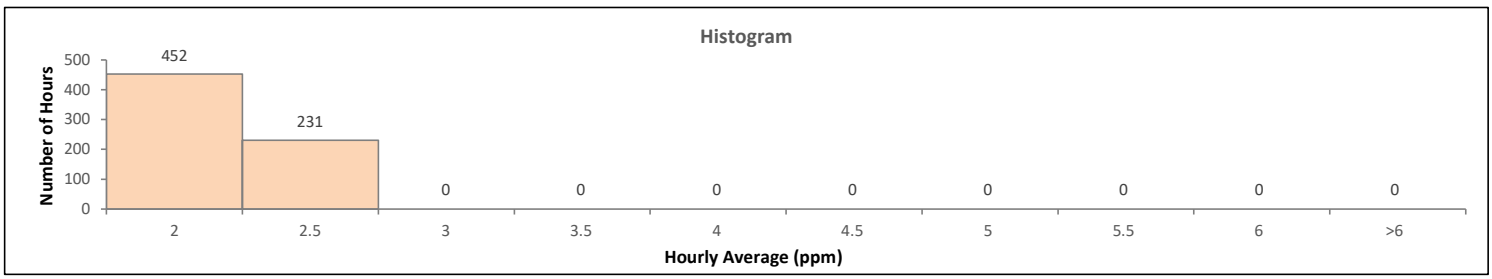
Maximum Hourly Value:	2.37	ppm	on Jun 25 at hr 2	Hours in Service:	720	
Maximum Daily Value:	2.08	ppm	on Jun 28	Hours of Data:	683	
Minimum Hourly Value:	1.92	ppm	on Jun 14 at hr 17	Hours of Missing Data:	0	
Minimum Daily Value:	1.94	ppm	on Jun 17	Hours of Calibration:	37	
Monthly Average:	2.01	ppm		Operational Uptime:	100.0	

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Jun 1	S	1.98	1.97	1.96	1.96	1.97	1.97	1.98	1.97	1.97	1.96	1.96	1.96	1.95	1.96	1.96	1.96	1.95	1.96	1.96	1.97	1.99	S	1.95	1.99	1.97
Jun 2	2.01	2.03	1.99	1.97	1.96	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.96	1.96	1.96	1.96	1.95	1.95	1.96	1.96	S	1.97	1.95	2.03	1.97
Jun 3	1.98	1.99	2.01	2.01	2.03	2.02	1.99	1.97	1.98	1.99	1.99	1.98	1.97	1.97	1.97	1.98	1.98	1.97	1.97	1.97	1.97	S	1.98	2.01	1.97	2.03	1.99
Jun 4	2.02	2.00	1.99	1.99	2.00	2.00	1.99	2.00	1.99	1.98	1.98	1.99	1.99	1.99	1.98	1.98	1.98	1.98	1.99	1.97	S	2.02	2.02	2.01	1.97	2.02	1.99
Jun 5	2.00	2.00	2.05	2.05	2.08	2.15	2.08	2.13	2.09	2.01	1.99	1.97	2.01	1.99	1.97	1.96	1.97	1.95	1.97	S	1.97	1.98	1.99	2.00	1.95	2.15	2.02
Jun 6	1.97	1.96	1.95	2.01	2.02	2.00	1.99	1.98	1.96	2.00	1.96	1.96	1.96	1.95	1.95	1.94	1.94	1.95	S	1.95	1.96	1.97	1.98	2.04	1.94	2.04	1.97
Jun 7	2.08	2.12	2.14	2.23	2.31	2.29	2.15	2.04	2.03	2.04	2.00	1.97	1.96	1.96	1.94	1.95	1.95	S	1.95	2.03	2.03	1.98	2.01	2.08	1.94	2.31	2.05
Jun 8	2.17	2.09	2.01	2.01	2.01	2.01	2.00	2.00	1.97	1.96	1.96	1.96	1.97	1.97	1.97	1.97	S	1.97	1.96	1.96	1.96	1.96	1.97	2.02	1.96	2.17	1.99
Jun 9	2.02	2.00	2.01	2.01	2.07	2.05	2.04	2.00	1.98	1.99	1.97	1.96	1.96	1.96	1.95	S	1.96	1.97	1.98	1.99	2.00	2.01	2.02	2.02	1.95	2.07	2.00
Jun 10	2.04	2.05	2.05	2.06	2.08	2.08	2.08	2.08	2.08	2.06	2.01	2.00	2.01	1.99	S	1.98	1.98	1.98	1.98	1.98	1.99	1.99	1.99	2.01	1.98	2.08	2.02
Jun 11	2.02	2.03	2.03	2.03	2.04	2.04	2.05	2.05	2.03	2.02	2.01	2.00	1.99	S	1.98	1.98	2.00	2.02	2.00	1.99	2.00	2.02	2.02	2.01	1.98	2.05	2.02
Jun 12	2.00	2.01	2.03	2.01	2.01	2.00	2.00	1.98	1.98	1.98	1.98	1.98	S	1.98	1.99	1.99	1.97	1.95	1.95	1.96	1.96	1.96	2.01	2.00	1.95	2.03	1.99
Jun 13	2.04	2.07	2.03	2.06	2.08	2.07	2.07	2.07	2.08	2.09	2.09	S	2.12	2.10	2.06	2.05	1.97	1.97	2.00	1.96	1.95	1.97	1.99	2.11	1.95	2.12	2.04
Jun 14	2.06	2.09	2.08	2.07	2.11	2.07	2.06	2.06	2.03	2.03	S	2.01	2.01	2.01	2.00	1.99	1.94	1.92	1.95	1.97	1.99	2.00	2.01	1.99	1.92	2.11	2.02
Jun 15	1.98	1.98	1.98	1.98	1.98	1.97	1.97	1.97	1.96	S	1.98	1.96	1.95	1.95	1.97	1.98	1.97	1.96	1.96	1.95	1.95	1.99	1.99	2.03	1.95	2.03	1.97
Jun 16	2.07	2.07	2.09	2.07	2.12	2.10	2.07	1.98	S	1.99	1.96	1.98	1.96	1.95	1.93	1.92	1.95	1.95	1.95	1.98	2.01	1.94	1.95	1.92	1.92	2.12	2.00
Jun 17	1.92	1.92	1.93	1.97	1.97	1.96	1.96	S	1.94	1.92	1.92	1.93	1.95	1.93	1.92	1.92	1.93	1.92	1.92	1.92	1.93	1.93	1.94	2.00	1.92	2.00	1.94
Jun 18	1.96	1.94	1.94	1.96	1.98	1.97	S	1.97	1.97	1.98	1.96	1.96	1.94	1.93	1.93	1.93	1.93	1.95	1.98	1.99	1.96	1.96	1.96	1.96	1.93	1.99	1.96
Jun 19	1.95	1.97	1.98	1.98	1.97	S	1.94	1.92	1.96	1.96	1.95	1.95	1.95	1.95	1.95	1.98	1.95	1.94	1.94	1.94	1.98	1.96	2.01	2.03	1.92	2.03	1.96
Jun 20	2.04	2.06	2.05	2.01	S	1.95	1.95	1.95	1.95	1.95	1.95	1.96	1.96	1.96	1.95	1.95	1.95	1.95	1.95	1.96	1.97	1.96	1.96	1.97	1.95	2.06	1.97
Jun 21	1.98	1.99	1.99	S	1.96	1.95	1.96	1.97	1.96	1.98	1.95	1.97	1.97	1.95	1.95	1.96	1.96	1.96	1.96	1.96	1.97	1.98	1.98	2.01	1.95	2.01	1.97
Jun 22	2.02	2.04	S	2.03	2.02	2.05	2.07	2.08	2.06	2.04	2.01	1.98	1.98	1.99	1.99	1.97	1.96	1.96	1.95	2.01	1.99	2.05	2.11	1.95	2.11	2.01
Jun 23	2.25	S	2.18	2.07	2.01	1.98	1.98	1.98	1.97	1.98	1.98	1.97	1.97	1.97	1.96	1.96	1.95	1.95	1.95	1.96	1.96	1.97	2.00	2.12	1.95	2.25	2.00
Jun 24	S	2.05	2.19	2.31	2.22	2.29	2.22	2.07	C	C	C	C	C	1.99	1.98	1.97	1.97	1.98	1.98	1.98	1.98	2.00	2.05	S	1.97	2.31	NA
Jun 25	2.09	2.27	**2.37**	2.29	2.11	2.03	2.01	1.99	1.99	1.99	1.98	1.99	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.99	2.01	S	1.99	1.98	**2.37**	2.04
Jun 26	1.99	2.04	2.08	2.07	2.06	2.09	2.00	2.01	2.01	2.00	2.00	2.02	2.02	2.00	1.98	1.97	1.97	1.97	1.98	1.98	1.97	S	1.97	2.01	1.97	2.09	2.01
Jun 27	2.03	2.05	2.10	2.13	2.20	2.17	2.09	2.07	2.04	2.02	1.98	1.97	1.96	1.96	1.97	1.97	1.97	1.97	1.98	1.99	S	2.05	2.03	2.20	1.96	2.20	2.04
Jun 28	2.09	2.22	2.25	2.23	2.28	2.28	2.25	2.09	2.02	1.99	2.00	1.99	1.98	1.98	1.98	1.99	1.99	1.99	1.99	S	2.04	2.06	2.04	2.05	1.98	2.28	**2.08**
Jun 29	2.05	2.10	2.16	2.15	2.19	2.30	2.19	2.10	2.08	2.08	2.02	1.99	1.99	1.99	1.99	1.98	1.98	1.98	S	2.00	2.01	2.02	2.06	2.10	1.98	2.30	2.07
Jun 30	2.14	2.17	2.10	2.16	2.26	2.36	2.26	2.11	2.03	2.03	2.04	2.02	1.97	1.97	1.97	1.97	1.96	S	1.96	1.95	1.96	1.98	2.02	2.03	1.95	2.36	2.06
Diurnal Maximum	2.25	2.27	2.37	2.31	2.31	2.36	2.26	2.13	2.09	2.09	2.09	2.02	2.12	2.10	2.06	2.05	2.00	2.02	2.00	2.03	2.04	2.06	2.06	2.20			
Diurnal Average	2.03	2.04	2.06	2.06	2.07	2.07	2.05	2.02	2.00	2.00	1.98	1.98	1.98	1.97	1.97	1.97	1.96	1.96	1.97	1.97	1.98	1.99	2.00	2.03			

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.



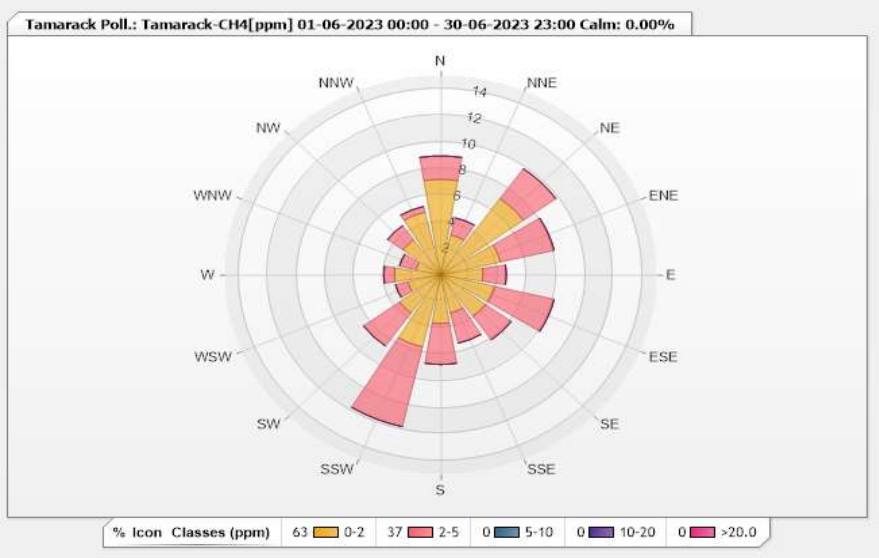


Station: Tamarack Poll.: Tamarack-CH4[ppm] Monthly: 06-2023

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

Calm: 0.00% Valid Data: 94.86% Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-20	>20.0	Total
N	7.17	1.76	0	0	0	8.93
NNE	3.07	1.32	0	0	0	4.39
NE	7.03	2.78	0	0	0	9.81
ENE	4.25	3.81	0	0	0	8.06
E	2.93	1.61	0	0	0	4.54
ESE	3.81	4.25	0	0	0	8.06
SE	3.81	2.2	0	0	0	6.01
SSE	2.93	2.34	0	0	0	5.27
S	3.66	3.07	0	0	0	6.73
SSW	5.56	6.15	0	0	0	11.71
SW	3.51	3.07	0	0	0	6.58
WSW	2.34	0.88	0	0	0	3.22
W	3.22	0.73	0	0	0	3.95
WNW	1.76	1.17	0	0	0	2.93
NW	3.22	1.32	0	0	0	4.54
NNW	4.83	0.44	0	0	0	5.27
Summary	63.1	36.9	0	0	0	100



Lakeland Industry & Community Association

Tamarack Site - June 2023

Summary of Hourly Averages

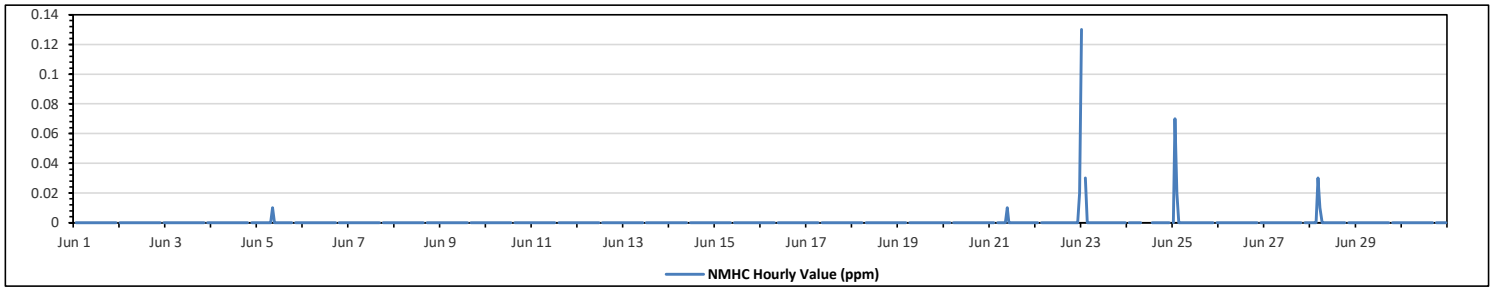
NON-METHANE HYDROCARBONS (NMHC) in ppm

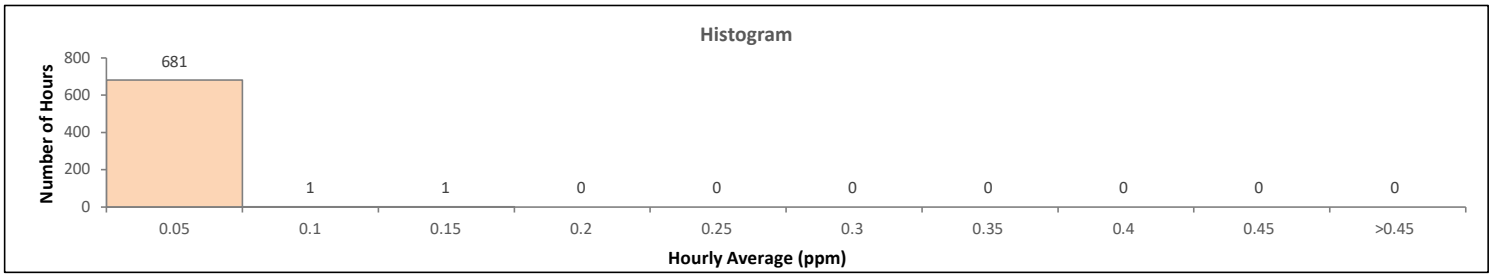
Maximum Hourly Value:	0.13	ppm	on Jun 23 at hr 0	Hours in Service:	720
Maximum Daily Value:	0.01	ppm	on Jun 23	Hours of Data:	683
Minimum Hourly Value:	0.00	ppm	on Jun 1 at hr 1	Hours of Missing Data:	0
Minimum Daily Value:	0.00	ppm	on Jun 1	Hours of Calibration:	37
Monthly Average:	0.00	ppm		Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Jun 1	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
Jun 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	0.00	0.00	S	0.00	0.00	0.00	0.00
Jun 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	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00
Jun 4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00
Jun 5	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	S	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Jun 6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jun 7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jun 8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jun 9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jun 10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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
Jun 11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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
Jun 12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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
Jun 13	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
Jun 14	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
Jun 15	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
Jun 16	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
Jun 17	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
Jun 18	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
Jun 19	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
Jun 20	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
Jun 21	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Jun 22	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	0.02	0.00	0.02	0.00
Jun 23	**0.13**	S	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.13**	**0.01**
Jun 24	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	C	C	C	C	C	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	NA
Jun 25	0.00	0.07	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.07	0.00
Jun 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	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00
Jun 27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00
Jun 28	0.00	0.00	0.00	0.00	0.03	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	S	0.00	0.00	0.00	0.00	0.00	0.03	0.00
Jun 29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jun 30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diurnal Maximum	0.13	0.07	0.03	0.00	0.03	0.01	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02			
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.



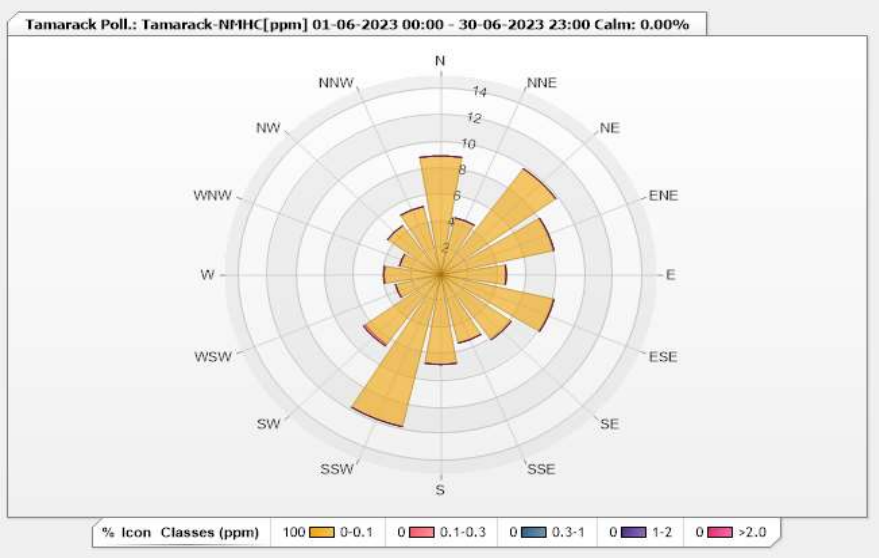


Station: Tamarack Poll.: Tamarack-NMHC[ppm] Monthly: 06-2023

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

Calm: 0.00% Valid Data: 94.86% Calm Avg: 0.00 [ppm]

Direction	0-0.1	0.1-0.3	0.3-1	1-2	>2.0	Total
N	8.93	0	0	0	0	8.93
NNE	4.39	0	0	0	0	4.39
NE	9.81	0	0	0	0	9.81
ENE	8.05	0	0	0	0	8.05
E	4.54	0	0	0	0	4.54
ESE	8.05	0	0	0	0	8.05
SE	6	0	0	0	0	6
SSE	5.27	0	0	0	0	5.27
S	6.73	0	0	0	0	6.73
SSW	11.71	0	0	0	0	11.71
SW	6.44	0.15	0	0	0	6.59
WSW	3.22	0	0	0	0	3.22
W	3.95	0	0	0	0	3.95
WNW	2.93	0	0	0	0	2.93
NW	4.54	0	0	0	0	4.54
NNW	5.27	0	0	0	0	5.27
Summary	100	0.15	0	0	0	100



Lakeland Industry & Community Association

Tamarack Site - June 2023

Summary of Hourly Averages

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

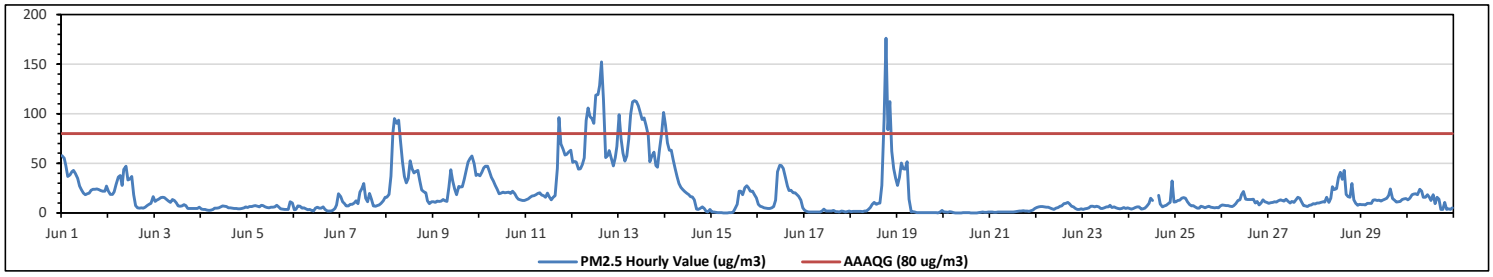
Alberta Ambient Air Quality Guideline (AAAQG): 1-Hour 80 µg/m3, Alberta Ambient Air Quality Objective (AAAQO): 24-Hour 29 µg/m3

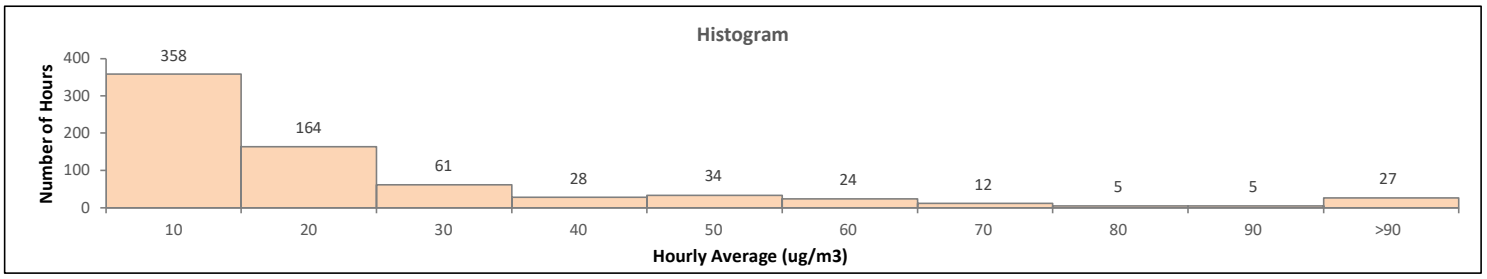
Number of 1-Hour Exceedances:	32	Number of 24-Hour Exceedances:	6
Maximum Hourly Value:	176 µg/m^3 on Jun 18 at hr 18	Hours in Service:	720
Maximum Daily Value:	80.4 µg/m^3 on Jun 13	Hours of Data:	718
Minimum Hourly Value:	0 µg/m^3 on Jun 19 at hr 21	Hours of Missing Data:	0
Minimum Daily Value:	0 µg/m^3 on Jun 20	Hours of Calibration:	2
Monthly Average:	19.0 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			
Jun 1	58	55	48	37	39	42	43	40	35	27	23	20	18	19	20	23	24	24	24	24	22	22	22	27	18	58	30.5
Jun 2	22	19	19	21	29	36	38	28	44	47	33	34	37	18	7	5	5	5	5	6	7	9	10	16	5	47	20.7
Jun 3	12	13	14	15	16	15	13	12	11	13	13	10	7	7	7	8	7	4	4	5	5	4	5	6	4	16	9.4
Jun 4	4	3	3	3	3	3	3	5	5	5	6	7	7	6	5	5	5	5	4	4	4	4	5	6	3	7	4.5
Jun 5	6	6	6	7	7	7	6	8	7	6	5	5	6	6	6	8	6	4	4	4	3	4	11	10	3	11	6.1
Jun 6	3	3	7	7	5	5	4	3	3	2	2	5	6	5	5	6	3	2	2	2	2	4	8	19	2	19	4.7
Jun 7	16	11	9	7	7	9	9	10	12	9	21	25	30	15	11	20	14	7	7	7	8	10	12	16	7	30	12.5
Jun 8	16	19	37	81	95	90	94	72	52	37	30	35	53	45	40	42	43	33	23	21	20	12	9	11	9	95	42.0
Jun 9	11	11	12	12	12	14	12	12	26	44	32	24	18	27	26	27	34	44	51	55	57	50	38	39	11	57	28.6
Jun 10	37	41	46	47	47	41	36	32	28	24	19	20	21	20	21	21	20	22	19	16	14	13	12	12	12	47	26.2
Jun 11	13	14	16	17	17	18	20	20	18	18	16	20	16	13	16	17	45	96	70	64	58	59	61	63	13	96	32.7
Jun 12	51	52	51	44	45	49	55	93	106	97	95	90	119	119	128	152	115	56	57	63	56	47	56	67	44	152	77.6
Jun 13	99	75	60	52	57	74	99	112	113	112	108	101	94	96	88	78	51	57	61	48	46	63	81	101	46	113	**80.4**
Jun 14	88	70	63	63	53	45	37	30	26	23	22	20	18	17	16	13	4	4	4	6	4	1	1	3	1	88	26.3
Jun 15	1	1	0	0	0	0	0	0	0	0	0	0	4	9	22	22	19	25	27	25	22	22	19	15	0	27	9.7
Jun 16	9	7	6	5	5	4	4	5	6	13	42	48	48	45	37	27	22	23	20	20	18	17	13	5	4	48	18.7
Jun 17	2	1	1	1	1	1	1	1	1	2	4	2	2	2	2	3	1	1	1	2	1	1	1	2	1	4	1.5
Jun 18	1	1	1	1	1	1	1	2	2	3	6	9	10	9	10	10	28	94	**176**	84	112	62	45	35	1	**176**	29.4
Jun 19	28	36	50	44	44	51	14	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	3	**0**	51	11.5
Jun 20	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	**0**	1	**0.4**
Jun 21	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	3	4	1	4	1.3
Jun 22	6	6	6	6	6	6	6	5	4	4	5	6	7	7	9	10	10	9	7	6	4	3	3	4	3	10	6.0
Jun 23	4	4	4	5	7	7	6	7	6	5	4	5	6	6	8	6	6	5	4	4	5	6	5	5	4	8	5.3
Jun 24	5	4	4	5	6	6	4	4	5	7	9	15	12	C	C	18	9	6	7	8	9	10	32	11	4	32	8.9
Jun 25	11	12	13	15	15	15	11	8	7	7	6	5	5	7	6	5	6	7	6	5	5	5	5	7	5	15	8.1
Jun 26	8	8	7	7	7	6	7	9	12	13	18	21	14	13	14	13	14	10	12	8	10	13	11	11	6	21	11.1
Jun 27	10	10	10	11	11	12	13	13	12	14	12	10	12	10	13	16	15	11	7	7	6	8	8	9	6	16	10.8
Jun 28	9	10	10	11	11	11	16	10	15	26	23	25	36	41	34	43	19	17	16	30	13	10	8	9	8	43	18.7
Jun 29	8	8	8	10	10	10	13	13	13	13	12	13	14	15	18	24	14	13	11	11	12	14	14	14	8	24	12.6
Jun 30	13	15	18	19	19	18	24	22	16	16	18	16	13	19	9	16	14	3	3	11	3	4	3	5	3	24	13.2
Diurnal Maximum	99	75	63	81	95	90	99	112	113	112	108	101	119	119	128	152	115	96	176	84	112	63	81	101			
Diurnal Average	18.3	17.2	17.7	18.5	19.2	19.9	19.6	19.1	19.5	19.6	19.5	19.7	21.0	20.5	20.0	21.2	18.4	19.6	21.2	18.2	17.7	16.0	16.7	17.9			

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

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



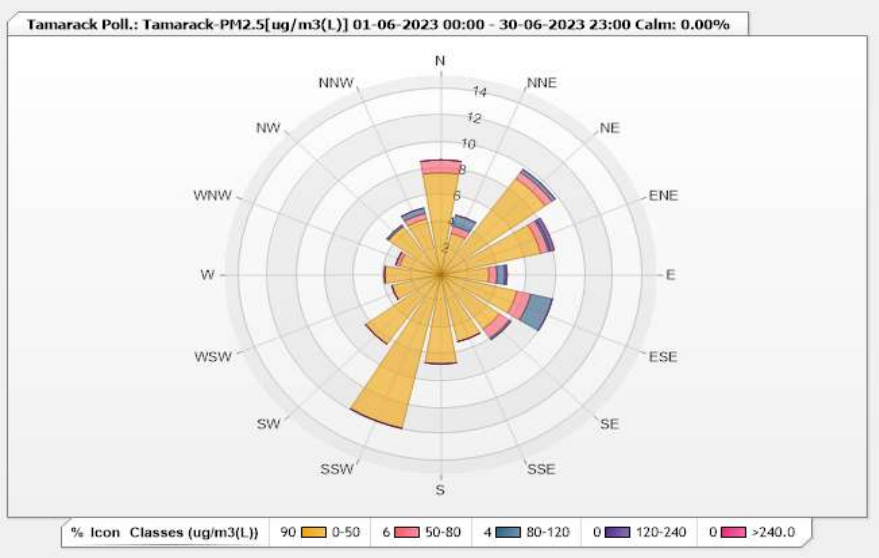


Station: Tamarack Poll.: Tamarack-PM2.5[ug/m3(L)] Monthly: 06-2023

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

Calm: 0.00% Valid Data: 99.72% Calm Avg: 0.00 [ppm]

Direction	0-50	50-80	80-120	120-240	>240.0	Total
N	7.66	0.97	0	0	0	8.63
NNE	3.2	0.56	0.84	0	0	4.6
NE	8.91	0.56	0.28	0	0	9.75
ENE	7.1	0.56	0.14	0.28	0	8.08
E	3.34	0.56	0.56	0.14	0	4.6
ESE	5.43	0.97	1.53	0	0	7.93
SE	5.01	0.84	0.14	0	0	5.99
SSE	5.15	0	0	0	0	5.15
S	6.69	0	0	0	0	6.69
SSW	11.84	0	0	0	0	11.84
SW	6.41	0	0	0	0	6.41
WSW	3.48	0	0	0	0	3.48
W	3.9	0	0	0	0	3.9
WNW	2.92	0.28	0	0	0	3.2
NW	4.46	0	0.14	0	0	4.6
NNW	4.32	0.42	0.42	0	0	5.16
Summary	89.82	5.72	4.05	0.42	0	100



Lakeland Industry & Community Association

Tamarack Site - June 2023

Summary of Hourly Averages

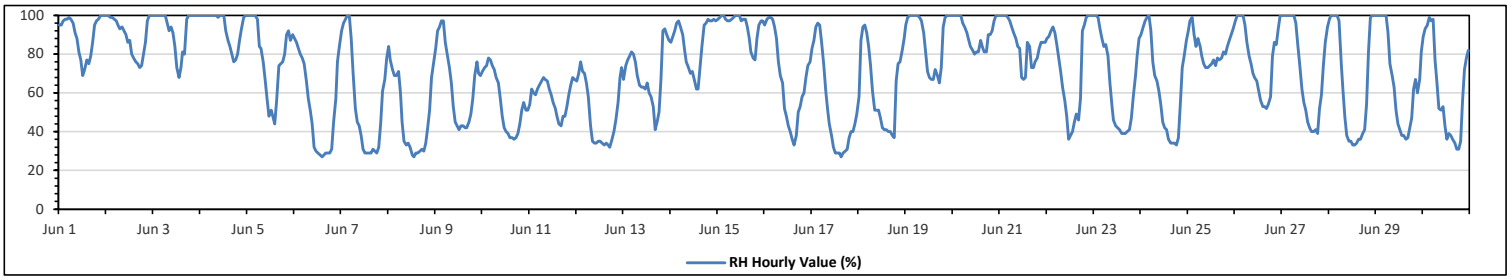
RELATIVE HUMIDITY (RH) in %

Maximum Hourly Value:	100	%	on Jun 1 at hr 21	Hours in Service:	720
Maximum Daily Value:	94.8	%	on Jun 15	Hours of Data:	720
Minimum Hourly Value:	27	%	on Jun 6 at hr 14	Hours of Missing Data:	0
Minimum Daily Value:	48.2	%	on Jun 8	Hours of Calibration:	0
Monthly Average:	71.7	%		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
Jun 1	95	95	97	98	98	99	98	96	91	88	81	77	69	72	77	75	79	86	95	97	98	**100**	**100**	**100**	69	**100**	90.0
Jun 2	**100**	**100**	99	99	98	97	95	93	94	92	90	86	87	80	78	76	75	73	74	80	86	97	**100**	**100**	73	**100**	89.5
Jun 3	**100**	**100**	**100**	**100**	**100**	**100**	**100**	96	92	94	91	84	73	68	73	81	80	98	**100**	**100**	**100**	**100**	**100**	**100**	68	**100**	92.9
Jun 4	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	99	**100**	**100**	**100**	92	87	84	80	76	77	80	87	93	99	**100**	76	**100**	93.9
Jun 5	**100**	**100**	**100**	**100**	**100**	98	84	83	76	67	57	48	51	48	44	56	74	75	76	80	90	92	87	90	44	**100**	78.2
Jun 6	88	86	83	80	78	75	66	57	51	44	32	30	29	28	**27**	28	29	29	29	31	45	57	76	84	**27**	88	52.6
Jun 7	92	96	98	**100**	**100**	88	70	52	45	43	38	31	29	29	29	29	31	30	29	32	44	61	67	78	29	**100**	55.9
Jun 8	84	77	72	69	69	71	60	45	35	33	34	32	28	**27**	29	29	30	31	30	34	42	51	68	76	**27**	84	**48.2**
Jun 9	83	92	94	97	97	86	79	73	65	53	45	43	41	43	43	42	42	45	49	57	69	76	70	69	41	97	64.7
Jun 10	71	73	74	78	77	74	72	68	65	57	48	42	40	39	37	37	36	37	39	44	51	55	51	51	36	78	54.8
Jun 11	54	62	60	59	62	64	66	68	67	66	62	59	55	52	48	44	43	48	48	53	59	64	68	67	43	68	58.3
Jun 12	66	70	76	71	70	65	58	43	35	34	34	35	35	34	33	34	33	32	36	40	46	55	68	73	32	76	49.0
Jun 13	67	74	77	79	81	80	76	69	64	63	63	62	65	60	58	53	41	45	50	67	92	93	90	87	41	93	69.0
Jun 14	86	89	92	96	97	94	90	82	76	73	70	71	67	62	62	73	84	95	96	98	97	97	98	97	62	98	85.1
Jun 15	98	99	**100**	**100**	98	97	97	98	99	**100**	**100**	**100**	97	98	98	94	88	81	78	77	88	95	97	97	77	**100**	**94.8**
Jun 16	95	98	99	99	98	94	88	76	69	65	52	48	43	40	36	33	38	50	53	58	60	68	74	76	33	99	67.1
Jun 17	83	87	94	96	95	86	74	61	51	44	38	32	29	29	29	**27**	29	30	31	37	40	40	44	49	**27**	96	52.3
Jun 18	58	87	94	95	91	84	74	61	51	51	51	47	42	41	41	40	40	38	37	66	75	76	82	88	37	95	62.9
Jun 19	95	99	**100**	**100**	**100**	**100**	**100**	99	97	91	81	71	68	67	67	72	69	65	73	94	99	**100**	**100**	**100**	65	**100**	87.8
Jun 20	**100**	**100**	**100**	**100**	**100**	96	94	91	87	84	82	80	81	81	87	84	81	81	90	90	92	97	**100**	**100**	80	**100**	90.8
Jun 21	**100**	**100**	**100**	**100**	99	97	94	91	88	84	83	68	67	68	86	84	73	73	76	78	83	86	86	86	67	**100**	85.4
Jun 22	88	89	92	94	91	85	78	71	63	56	48	36	38	40	45	49	46	57	92	95	99	**100**	**100**	**100**	36	**100**	73.0
Jun 23	**100**	**100**	99	93	88	84	85	79	65	54	46	43	42	41	39	39	39	40	41	47	58	69	79	88	39	**100**	64.9
Jun 24	90	94	97	99	**100**	92	76	69	66	61	54	45	42	41	36	34	34	34	33	37	54	73	79	87	33	**100**	63.6
Jun 25	92	97	99	90	84	88	84	79	75	73	73	74	75	77	74	78	77	78	81	80	84	87	90	93	73	99	82.6
Jun 26	97	**100**	**100**	**100**	**100**	95	86	79	75	70	68	66	61	56	53	53	52	54	58	79	86	85	93	**100**	52	**100**	77.8
Jun 27	**100**	**100**	**100**	**100**	**100**	**100**	**100**	96	85	73	62	55	51	45	42	40	40	41	39	52	59	74	86	94	39	**100**	72.3
Jun 28	98	**100**	**100**	**100**	**100**	97	75	62	48	38	35	35	33	33	34	36	36	39	41	54	81	99	**100**	**100**	33	**100**	65.6
Jun 29	**100**	**100**	**100**	**100**	**100**	**100**	91	75	69	63	51	44	41	38	38	36	37	41	47	62	67	60	67	81	36	**100**	67.0
Jun 30	89	93	95	99	97	98	77	65	52	51	53	43	36	39	38	36	34	31	31	35	56	72	78	82	31	99	61.7
Diurnal Maximum	100	100	100	100	100	100	100	100	100	100	100	100	100	98	98	94	88	98	100	100	100	100	100	100			
Diurnal Average	89.0	91.9	93.0	93.0	92.3	89.5	82.9	75.9	69.9	65.5	60.7	56.2	53.8	52.3	52.3	52.5	52.3	54.4	57.6	64.5	72.9	79.1	83.2	86.4			

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 - June 2023

Summary of Hourly Averages

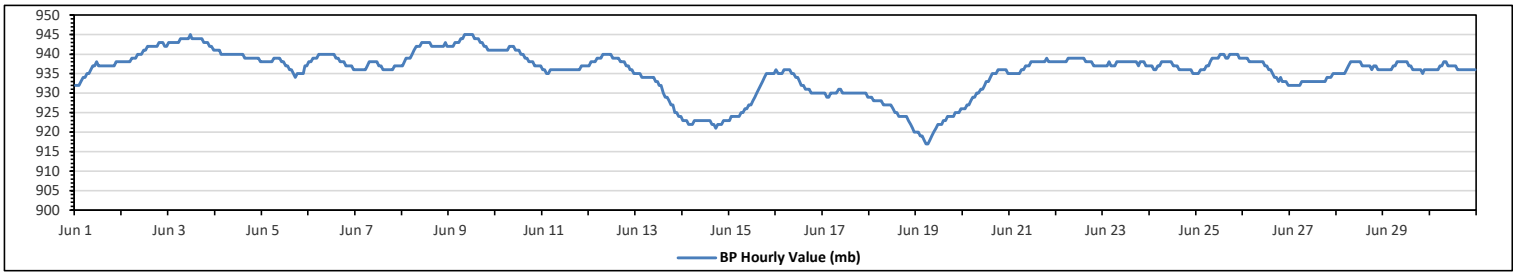
BAROMETRIC PRESSURE (BP) in millibar

Maximum Hourly Value:	945	mb	on Jun 3 at hr 11	Hours in Service:	720	
Maximum Daily Value:	943	mb	on Jun 3	Hours of Data:	720	
Minimum Hourly Value:	917	mb	on Jun 19 at hr 5	Hours of Missing Data:	0	
Minimum Daily Value:	922	mb	on Jun 19	Hours of Calibration:	0	
Monthly Average:	935	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
Jun 1	932	932	932	933	934	934	935	935	936	937	937	938	937	937	937	937	937	937	937	937	938	938	938	938	932	938	936
Jun 2	938	938	938	938	938	939	939	939	940	940	940	941	941	942	942	942	942	942	942	943	943	943	942	942	938	943	941
Jun 3	943	943	943	943	943	943	944	944	944	944	944	**945**	944	944	944	944	944	944	943	943	943	942	942	941	941	**945**	**943**
Jun 4	941	941	941	940	940	940	940	940	940	940	940	940	940	940	940	939	939	939	939	939	939	939	939	938	938	941	940
Jun 5	938	938	938	938	938	938	939	939	939	939	938	938	937	937	936	936	935	934	935	935	935	935	937	937	934	939	937
Jun 6	938	938	939	939	939	940	940	940	940	940	940	940	940	940	939	939	938	938	938	937	937	937	937	936	936	940	939
Jun 7	936	936	936	936	936	936	937	938	938	938	938	938	937	937	936	936	936	936	936	936	937	937	937	937	936	938	937
Jun 8	937	938	939	939	939	940	941	942	942	942	943	943	943	943	943	942	942	942	942	942	942	942	943	942	937	943	941
Jun 9	942	942	942	943	943	943	944	944	**945**	**945**	**945**	**945**	**945**	944	944	944	943	943	942	942	941	941	941	941	941	**945**	943
Jun 10	941	941	941	941	941	941	941	942	942	942	941	941	941	940	940	939	939	938	938	938	937	937	937	937	937	942	940
Jun 11	936	936	935	935	936	936	936	936	936	936	936	936	936	936	936	936	936	936	936	936	937	937	937	937	935	937	936
Jun 12	937	938	938	938	939	939	939	940	940	940	940	940	939	939	939	939	938	938	938	937	937	936	936	935	935	940	938
Jun 13	935	935	935	934	934	934	934	934	934	934	933	933	932	932	930	929	929	928	927	927	925	925	924	924	924	935	931
Jun 14	923	923	923	922	922	922	923	923	923	923	923	923	923	923	923	922	922	921	922	922	922	923	923	923	921	923	923
Jun 15	923	924	924	924	924	924	925	925	926	926	927	927	928	929	930	931	932	933	934	935	935	935	935	935	923	935	929
Jun 16	936	935	935	935	936	936	936	936	935	935	934	934	933	932	932	931	931	931	930	930	930	930	930	930	930	936	933
Jun 17	930	930	929	929	930	930	930	930	931	931	930	930	930	930	930	930	930	930	930	930	930	930	930	929	929	931	930
Jun 18	929	929	928	928	928	928	928	927	927	927	927	927	926	925	925	924	924	924	924	924	923	922	921	920	920	929	926
Jun 19	920	920	919	919	918	**917**	**917**	918	919	920	921	922	922	922	923	923	924	924	924	924	925	925	925	926	**917**	926	**922**
Jun 20	926	926	927	927	928	929	929	930	930	931	931	932	933	933	934	935	935	935	936	936	936	936	936	935	926	936	932
Jun 21	935	935	935	935	935	935	936	936	937	937	937	938	938	938	938	938	938	938	938	939	938	938	938	938	935	939	937
Jun 22	938	938	938	938	938	938	939	939	939	939	939	939	939	939	939	938	938	938	938	937	937	937	937	937	937	939	938
Jun 23	937	937	937	938	937	937	937	938	938	938	938	938	938	938	938	938	938	938	937	938	938	938	937	937	937	938	938
Jun 24	937	937	936	936	937	937	938	938	938	938	938	938	937	937	937	936	936	936	936	936	936	936	935	935	935	938	937
Jun 25	935	935	936	936	936	937	937	938	939	939	939	939	940	940	940	939	939	940	940	940	940	940	939	939	935	940	938
Jun 26	939	939	939	938	938	938	938	938	938	938	938	937	937	936	936	935	934	934	933	934	933	933	933	932	932	939	936
Jun 27	932	932	932	932	932	932	933	933	933	933	933	933	933	933	933	933	933	933	933	934	934	934	935	935	932	935	933
Jun 28	935	935	935	935	935	936	937	938	938	938	938	938	938	937	937	937	937	937	936	937	937	936	936	936	935	938	937
Jun 29	936	936	936	936	936	937	937	938	938	938	938	938	938	937	937	936	936	936	936	936	935	936	936	936	935	938	937
Jun 30	936	936	936	936	936	937	937	938	938	937	937	937	937	937	936	936	936	936	936	936	936	936	936	936	936	938	936
Diurnal Maximum	943	943	943	943	943	943	944	944	945	945	945	945	945	944	944	944	944	944	943	943	943	943	943	942			
Diurnal Average	935	935	935	935	935	935	936	936	936	936	936	936	936	936	935	935	935	935	935	935	935	935	935	935			

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 - June 2023

Summary of Hourly Averages

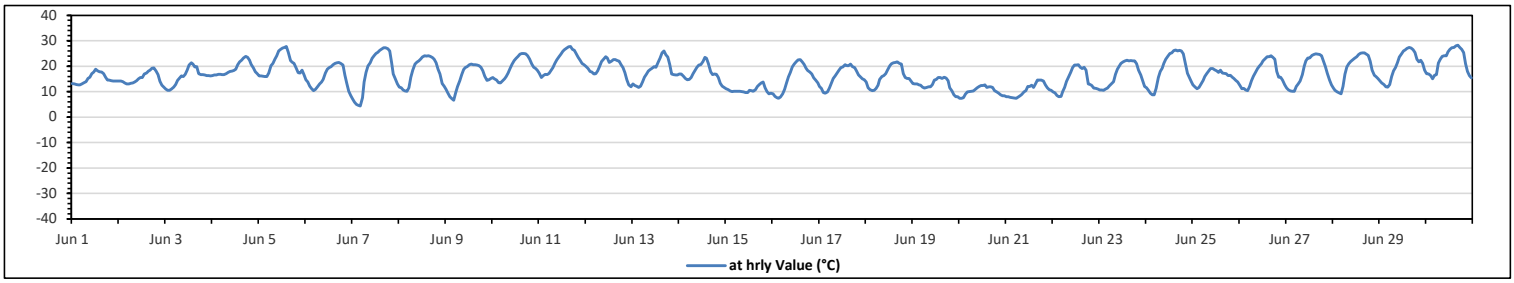
AMBIENT TEMPERATURE (AT) in Degree Celsius

Maximum Hourly Value:	28.2	°C	on Jun 30 at hr 16	Hours in Service:	720
Maximum Daily Value:	22.1	°C	on Jun 11	Hours of Data:	720
Minimum Hourly Value:	4.3	°C	on Jun 7 at hr 4	Hours of Missing Data:	0
Minimum Daily Value:	10.2	°C	on Jun 20	Hours of Calibration:	0
Monthly Average:	16.8	°C		Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																							Daily	Daily	Daily
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Minimum	Maximum	Average
Jun 1	13.2	13.1	12.8	12.6	12.7	13.1	13.6	13.9	15.1	15.7	17.1	17.7	18.8	18.2	17.8	17.7	17.1	15.7	14.6	14.5	14.3	14.1	14.2	14.2	12.6	18.8	15.1
Jun 2	14.1	14.1	13.9	13.5	13.1	13	13.3	13.5	13.7	14.3	15	15.6	15.6	16.9	17.4	18.1	18.5	19.2	19.3	18.1	16.7	14	12.5	11.8	11.8	19.3	15.2
Jun 3	11	10.6	10.6	11	11.8	12.8	14.4	15.3	16.2	16	16.8	18.4	20.4	21.3	20.8	19.7	19.8	17.1	16.6	16.7	16.5	16.3	16.3	16.2	10.6	21.3	15.9
Jun 4	16.3	16.5	16.5	16.8	16.8	16.7	16.7	17.1	17.6	17.9	18	18.3	18.8	20.5	21.7	22.3	23.2	23.8	23.4	22.4	20.7	19.3	17.8	17.1	16.3	23.8	19.0
Jun 5	16.2	16.2	16.1	16	15.9	17.3	20.3	21.1	22.7	24.2	26	26.7	27.1	27.3	27.8	25.5	22.2	21.6	21.1	19.4	17.5	17.3	18.4	16.6	15.9	27.8	20.9
Jun 6	14.7	13.8	12.2	11.1	10.4	10.9	12.1	13	13.8	14.9	17.4	18.9	19.4	19.9	20.5	21.1	21.3	21.5	21.1	20.4	16.4	13.2	10.1	8.5	8.5	21.5	15.7
Jun 7	7.1	5.8	5	4.6	**4.3**	7.6	13.7	17.6	20.1	21.4	23	24.1	25	25.5	26.3	26.8	27.2	27.2	26.9	26	21.3	17	15.1	13	**4.3**	27.2	18.0
Jun 8	11.8	11.5	10.7	10.3	10.2	11.5	15.7	18.5	20.8	21.6	22.1	22.9	23.6	24.1	24	24.1	23.8	23.3	22.7	21.3	18.9	16.9	13.2	12.2	10.2	24.1	18.2
Jun 9	10.9	9.4	8.1	7.2	6.7	9.5	12	14.3	16.7	18.7	19.5	19.8	20.5	20.8	20.6	20.6	20.4	20.2	19.6	18.2	16.1	14.4	14.7	15.2	6.7	20.8	15.6
Jun 10	15.6	15	14.5	13.6	13.5	14.2	15	16	17.3	19	20.7	22.2	23.1	23.8	24.7	25	25	24.8	24.1	22.9	20.8	19.6	19.1	18.4	13.5	25.0	19.5
Jun 11	17.4	15.5	16.3	16.8	16.6	17.2	18.3	19.5	21.1	22.5	23.7	24.7	25.8	26.5	27.1	27.6	27.8	26.7	26.3	24.9	23.5	22.4	21.1	20.5	15.5	27.8	**22.1**
Jun 12	19.9	19	17.9	17.7	17	17.1	18.2	20	21.8	22.9	23.7	23.2	21.5	21.9	22.6	22.6	22.2	21.9	20.6	19.4	17.5	14.7	12.7	11.9	11.9	23.7	19.5
Jun 13	13.1	12.4	12.2	11.7	12.2	13.7	15.7	16.8	18	18.7	19.2	19.9	19.6	21.6	23.2	25.3	25.9	24.4	23.6	20.7	16.9	16.6	16.5	16.5	11.7	25.9	18.1
Jun 14	16.9	16.9	16.1	15.2	14.7	14.8	15.6	17.1	18.3	19.6	20.4	20.5	21.8	23.4	23.1	21	17.8	16.6	16.9	16.8	15.5	13.3	12.2	11.6	11.6	23.4	17.3
Jun 15	11.1	10.8	10.3	10	10.1	10.2	10.2	10.1	10	9.8	9.6	9.6	10.6	10.4	10.1	10.8	12	12.8	13.5	13.8	11.5	10	9.2	9.4	9.2	13.8	10.7
Jun 16	9.2	8.2	7.7	7.4	7.9	9.1	10.9	13.5	15.8	17.6	19.7	20.8	21.7	22.5	22.6	21.7	20.7	19.1	18.3	17.7	17	15.4	14.6	13.4	7.4	22.6	15.5
Jun 17	12	11.2	9.6	9.4	9.8	11.4	13.3	15.1	16.2	17.3	18.4	19.5	19.7	20.5	20.3	20.3	20.8	19.9	19.4	18	16.5	15.8	15	14.7	9.4	20.8	16.0
Jun 18	13.7	11.5	10.8	10.4	10.5	11.2	12.5	14.8	16	16.3	17.1	18.6	20.3	20.9	21.3	21.5	21.7	21.1	20.8	17.1	15.5	15.2	15.1	14.1	10.4	21.7	16.2
Jun 19	13.2	13	13	12.7	12.5	11.8	11.4	11.7	11.9	11.9	12.8	14.5	14.9	15.6	15.6	15.2	15.7	15.3	14.3	11.5	10.3	8.8	8	8	8.0	15.7	12.7
Jun 20	7.3	7.3	7.6	9	9.8	10	10.1	10.3	10.9	11.5	12	12.4	12.4	12.6	11.7	11.9	11.9	11.6	10.4	9.8	9.4	8.8	8.4	8.3	7.3	12.6	**10.2**
Jun 21	8.1	8	7.8	7.7	7.5	7.3	7.9	8.3	8.9	9.9	10.4	12.1	12	12.5	11.7	13	14.6	14.6	14.5	14.1	12.7	11.5	10.8	10.5	7.3	14.6	10.7
Jun 22	9.9	9.5	8.5	8	8.2	10	11.7	14	16	17.6	19.4	20.4	20.4	20.5	19.6	19	19.6	18.4	13	12.8	12.4	11.4	11.3	11	8.0	20.5	14.3
Jun 23	10.7	10.7	10.5	11	11.4	12.3	13	13.9	16.8	18.9	20.1	21.1	21.7	22.1	22.4	22.1	22.2	22.1	22.1	20.9	18.5	16.5	14.3	12.1	10.5	22.4	17.0
Jun 24	11.5	10.5	9.4	8.7	8.7	11.3	15.6	17.9	19.2	21.1	22.7	24	25	25.3	26.1	26.4	25.9	26.2	25.9	24.8	20.7	17.2	15.6	13.9	8.7	26.4	18.9
Jun 25	12.7	11.8	11.1	11.6	12.9	14.4	15.9	17.1	18.1	19	19	18.6	18.2	17.6	18.5	17.3	17.2	17.1	16.3	16.4	15.7	15.1	14.4	13.8	11.1	19.0	15.8
Jun 26	12.4	11.1	11.2	10.7	10.4	12	14.3	16.1	17.5	19	20.1	21	22.1	22.9	23.7	23.7	24.1	23.4	22.8	17.9	15.7	15.7	14.5	12.6	10.4	24.1	17.3
Jun 27	11.4	10.7	10.3	10.1	10.2	12	13	14.1	16.7	20.1	22.1	23.2	23.2	24.3	24.6	24.9	24.7	24.6	24.1	21.9	19.8	17.2	14.5	12.6	10.1	24.9	17.9
Jun 28	11.4	10.6	9.9	9.5	9.2	12	16.8	19.7	21	21.8	22.5	23.1	23.7	24.6	25.1	25.3	25.2	24.7	24.3	21.9	18.5	16.4	15.9	15.2	9.2	25.3	18.7
Jun 29	14.3	13.4	12.8	11.9	11.8	12.8	16	18.2	19.4	21.3	23.6	24.9	26	26.4	27	27.4	27.1	26.5	25.4	22.8	21.7	22.3	21.1	18.5	11.8	27.4	20.5
Jun 30	17.1	17	16.3	15	16.4	16.7	21.2	22.7	23.8	24.1	24.1	25.6	26.7	27.2	27.4	28	**28.2**	27.3	26.6	25.4	21	17.9	16.3	15.4	15.0	**28.2**	22.0
Diurnal Maximum	19.9	19.0	17.9	17.7	17.0	17.3	21.2	22.7	23.8	24.2	26.0	26.7	27.1	27.3	27.8	28.0	28.2	27.3	26.9	26.0	23.5	22.4	21.1	20.5			
Diurnal Average	12.8	12.2	11.7	11.4	11.4	12.5	14.3	15.7	17.0	18.2	19.2	20.1	20.7	21.3	21.5	21.5	21.5	21.0	20.3	19.0	17.0	15.5	14.4	13.6			

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 - June 2023

Summary of Hourly Averages

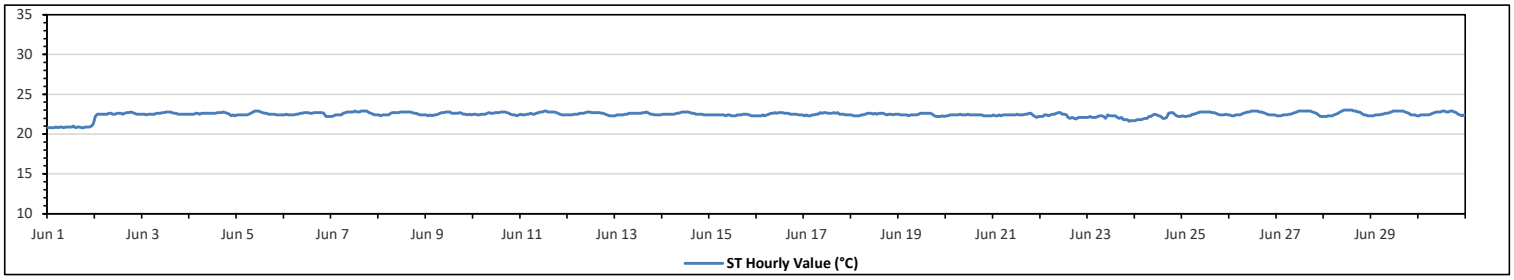
STATION TEMPERATURE (ST) in Degree Celsius

Maximum Hourly Value:	23.0	°C	on Jun 28 at hr 10	Hours in Service:	720
Maximum Daily Value:	22.6	°C	on Jun 7	Hours of Data:	720
Minimum Hourly Value:	20.8	°C	on Jun 1 at hr 0	Hours of Missing Data:	0
Minimum Daily Value:	20.9	°C	on Jun 1	Hours of Calibration:	0
Monthly Average:	22.4	°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			
Jun 1	**20.8**	**20.8**	**20.8**	**20.8**	20.9	**20.8**	20.9	20.9	**20.8**	20.9	20.9	20.9	20.9	21.0	**20.8**	20.9	20.9	**20.8**	**20.8**	20.9	20.9	20.9	21.0	21.3	**20.8**	21.3	**20.9**
Jun 2	22.2	22.5	22.5	22.5	22.5	22.5	22.5	22.6	22.6	22.5	22.5	22.6	22.6	22.6	22.5	22.6	22.7	22.7	22.8	22.7	22.6	22.5	22.5	22.5	22.2	22.8	22.6
Jun 3	22.5	22.5	22.4	22.5	22.5	22.5	22.5	22.6	22.6	22.6	22.7	22.7	22.8	22.8	22.8	22.7	22.6	22.6	22.5	22.5	22.5	22.5	22.5	22.5	22.4	22.8	22.6
Jun 4	22.5	22.5	22.5	22.6	22.6	22.5	22.6	22.6	22.6	22.6	22.6	22.6	22.6	22.6	22.7	22.7	22.7	22.8	22.7	22.6	22.5	22.3	22.4	22.3	22.3	22.8	22.6
Jun 5	22.4	22.4	22.4	22.4	22.4	22.4	22.5	22.6	22.8	22.9	22.9	22.9	22.8	22.7	22.6	22.6	22.5	22.5	22.5	22.5	22.4	22.4	22.4	22.4	22.4	22.9	22.6
Jun 6	22.4	22.5	22.4	22.4	22.4	22.4	22.5	22.5	22.6	22.6	22.7	22.7	22.7	22.6	22.6	22.7	22.7	22.7	22.7	22.7	22.6	22.2	22.2	22.2	22.2	22.7	22.5
Jun 7	22.2	22.3	22.4	22.4	22.4	22.4	22.6	22.7	22.8	22.8	22.8	22.8	22.9	22.8	22.8	22.9	22.9	22.9	22.9	22.7	22.6	22.5	22.4	22.4	22.2	22.9	**22.6**
Jun 8	22.4	22.3	22.4	22.4	22.4	22.4	22.6	22.7	22.7	22.7	22.7	22.8	22.8	22.8	22.8	22.8	22.8	22.7	22.6	22.6	22.5	22.4	22.4	22.4	22.3	22.8	22.6
Jun 9	22.4	22.3	22.4	22.3	22.4	22.4	22.5	22.6	22.7	22.7	22.8	22.8	22.8	22.6	22.6	22.6	22.6	22.7	22.6	22.5	22.5	22.4	22.5	22.4	22.3	22.8	22.5
Jun 10	22.5	22.5	22.4	22.4	22.5	22.5	22.5	22.6	22.7	22.6	22.6	22.7	22.7	22.7	22.8	22.8	22.8	22.7	22.6	22.5	22.4	22.4	22.3	22.4	22.3	22.8	22.6
Jun 11	22.5	22.4	22.4	22.5	22.5	22.6	22.5	22.5	22.6	22.7	22.8	22.8	22.9	22.9	22.8	22.8	22.8	22.8	22.7	22.6	22.5	22.4	22.4	22.4	22.4	22.9	22.6
Jun 12	22.4	22.4	22.4	22.5	22.5	22.5	22.6	22.6	22.6	22.7	22.8	22.8	22.7	22.7	22.7	22.7	22.7	22.6	22.6	22.5	22.4	22.3	22.3	22.3	22.3	22.8	22.6
Jun 13	22.3	22.4	22.4	22.4	22.4	22.5	22.5	22.6	22.6	22.6	22.6	22.6	22.6	22.6	22.7	22.7	22.8	22.6	22.5	22.5	22.4	22.4	22.4	22.4	22.3	22.8	22.5
Jun 14	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.6	22.6	22.7	22.8	22.8	22.8	22.8	22.7	22.6	22.6	22.5	22.5	22.5	22.5	22.4	22.4	22.4	22.4	22.8	22.6
Jun 15	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.3	22.4	22.4	22.3	22.3	22.3	22.4	22.4	22.4	22.5	22.5	22.5	22.4	22.3	22.3	22.3	22.3	22.5	22.4
Jun 16	22.3	22.3	22.3	22.4	22.3	22.4	22.5	22.6	22.6	22.7	22.6	22.7	22.7	22.7	22.6	22.6	22.6	22.5	22.5	22.5	22.5	22.4	22.4	22.4	22.3	22.7	22.5
Jun 17	22.3	22.4	22.3	22.3	22.4	22.4	22.5	22.5	22.7	22.6	22.7	22.7	22.6	22.6	22.6	22.7	22.6	22.7	22.5	22.5	22.5	22.4	22.4	22.4	22.3	22.7	22.5
Jun 18	22.4	22.3	22.3	22.3	22.3	22.4	22.4	22.5	22.6	22.6	22.6	22.5	22.6	22.5	22.6	22.6	22.6	22.5	22.4	22.5	22.5	22.4	22.5	22.5	22.3	22.6	22.5
Jun 19	22.5	22.4	22.4	22.4	22.4	22.3	22.4	22.4	22.4	22.4	22.5	22.6	22.6	22.6	22.6	22.6	22.6	22.5	22.3	22.2	22.2	22.2	22.3	22.2	22.2	22.6	22.4
Jun 20	22.3	22.3	22.4	22.4	22.4	22.4	22.4	22.5	22.4	22.4	22.4	22.5	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.3	22.3	22.3	22.3	22.3	22.3	22.5	22.4
Jun 21	22.4	22.3	22.3	22.4	22.3	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.5	22.4	22.4	22.4	22.5	22.5	22.6	22.6	22.4	22.2	22.1	22.2	22.1	22.6	22.4
Jun 22	22.2	22.2	22.4	22.4	22.3	22.4	22.5	22.5	22.6	22.7	22.7	22.5	22.5	22.4	22.1	22.0	22.1	22.0	21.9	22.1	22.1	22.1	22.1	22.1	21.9	22.7	22.3
Jun 23	22.1	22.2	22.1	22.1	22.1	22.2	22.3	22.3	22.2	22.0	22.4	22.3	22.3	22.3	22.3	22.1	22.0	22.1	21.8	21.8	21.8	21.6	21.7	21.7	21.6	22.4	22.1
Jun 24	21.7	21.8	21.8	21.8	21.9	22.0	22.0	22.2	22.2	22.4	22.5	22.4	22.3	22.2	22.0	22.0	22.1	22.6	22.7	22.7	22.5	22.3	22.2	22.2	21.7	22.7	22.2
Jun 25	22.3	22.2	22.2	22.3	22.3	22.5	22.5	22.6	22.7	22.8	22.8	22.8	22.8	22.8	22.8	22.7	22.7	22.6	22.5	22.4	22.4	22.4	22.5	22.4	22.2	22.8	22.5
Jun 26	22.4	22.3	22.3	22.4	22.4	22.4	22.5	22.6	22.7	22.8	22.8	22.9	22.9	22.9	22.9	22.8	22.8	22.7	22.6	22.5	22.4	22.4	22.4	22.4	22.3	22.9	22.6
Jun 27	22.3	22.3	22.3	22.4	22.4	22.4	22.5	22.5	22.6	22.7	22.8	22.9	22.9	22.9	22.9	22.9	22.9	22.9	22.8	22.7	22.6	22.4	22.2	22.2	22.2	22.9	22.6
Jun 28	22.2	22.2	22.3	22.3	22.3	22.4	22.5	22.6	22.8	22.9	**23.0**	**23.0**	**23.0**	**23.0**	**23.0**	22.9	22.9	22.8	22.8	22.6	22.4	22.4	22.3	22.3	22.2	**23.0**	22.6
Jun 29	22.3	22.3	22.4	22.4	22.4	22.5	22.5	22.6	22.6	22.7	22.8	22.9	22.9	22.9	22.9	22.9	22.9	22.8	22.7	22.6	22.4	22.4	22.4	22.3	22.3	22.9	22.6
Jun 30	22.3	22.4	22.4	22.4	22.4	22.4	22.5	22.6	22.7	22.8	22.8	22.8	22.9	22.9	22.8	22.8	22.9	22.9	22.8	22.7	22.5	22.4	22.3	22.4	22.3	22.9	22.6
Diurnal Maximum	22.5	22.5	22.5	22.6	22.6	22.6	22.6	22.7	22.8	22.9	23.0	23.0	23.0	23.0	23.0	22.9	22.9	22.9	22.9	22.7	22.6	22.5	22.5	22.5			
Diurnal Average	22.3	22.3	22.3	22.3	22.3	22.4	22.4	22.5	22.5	22.6	22.6	22.6	22.6	22.6	22.6	22.6	22.6	22.6	22.5	22.5	22.4	22.3	22.3	22.3			

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

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



Lakeland Industry & Community Association

Tamarack Site - June 2023

Summary of Hourly Averages

PRECIPITATION in mm

Maximum Hourly Value:	20.5	mm	on Jun 15 at hr 10	Hours in Service:	720	
Maximum Daily Value:	43.6	mm	on Jun 15	Hours of Data:	719	
Minimum Hourly Value:	0.0	mm	on Jun 1 at hr 0	Hours of Missing Data:	0	
Minimum Daily Value:	0.0	mm	on Jun 2	Hours of Calibration:	1	
Monthly Total:	127.2	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			
Jun 1	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0.4	1.4	0.1	0.5	0.7	0.7	0.3	0.0	1.4	4.2
Jun 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
Jun 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	6.6	0.6	0.4	0	0	0	0	0.0	6.6	7.7
Jun 4	0.1	0.3	0	0	0	0	0	0	0	0	0.2	0.3	0.5	0	0	0	0	0	0	0	0	0	0	0	0.0	0.5	1.4
Jun 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0	0.1	0	0	0	0	0	0	0.0	0.2	0.3
Jun 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
Jun 7	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1	0.1
Jun 8	0	0.1	0	0	0	0	0.2	0.1	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.2	0.5
Jun 9	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0	0	0	0	0	0.1	0	0	0	0	0	0.0	0.3	0.4
Jun 10	0	0	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	0.1	0.2
Jun 11	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1	0.1
Jun 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
Jun 13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.7	1.2	0	0	0	0.0	1.7	2.9
Jun 14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.8	2.1	0	0.1	0	0	0	0	0	0.0	2.1	3.0
Jun 15	0	0	0	0.1	0	0	0.2	0.6	0.9	15.4	**20.5**	2.6	0.2	2.1	0.9	0	0.1	0	0	0	0	0	0	0	0.0	**20.5**	**43.6**
Jun 16	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1	0.1
Jun 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
Jun 18	0	1	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.5	0	0.7	0.4	0.0	1.0	3.0
Jun 19	3.3	7.9	1.9	3.6	6.6	13.4	3	0.1	0	0	0	0	0	0	0.2	0	0	0	2.5	0.3	0	0	0	0	0.0	13.4	42.8
Jun 20	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.6	0.9	0.0	0.9	1.7
Jun 21	2.3	1.7	1.5	0.2	0.1	0.1	0	0	0	0	0	0	0	0	0.3	0	0	0	0	0	0	0	0	0	0.0	2.3	6.2
Jun 22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.9	2.4	0.2	0	0	0	0	0.0	2.4	4.5
Jun 23	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1	0.1
Jun 24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	C	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Jun 25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Jun 26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.7	0	0.3	0	0	0.0	0.7	1.0
Jun 27	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1	0.1
Jun 28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.8	0.4	0	0	0.0	2.8	3.2
Jun 29	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1	0.1
Jun 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
Diurnal Maximum	3.3	7.9	1.9	3.6	6.6	13.4	3.0	0.6	0.9	15.4	20.5	2.6	0.5	2.1	0.9	0.8	2.1	6.6	2.5	1.7	2.8	0.7	0.7	0.9			
Diurnal Average	0.2	0.4	0.1	0.1	0.2	0.5	0.1	0.0	0.0	0.5	0.7	0.1	0.0	0.1	0.0	0.0	0.1	0.3	0.2	0.1	0.2	0.1	0.1	0.1			

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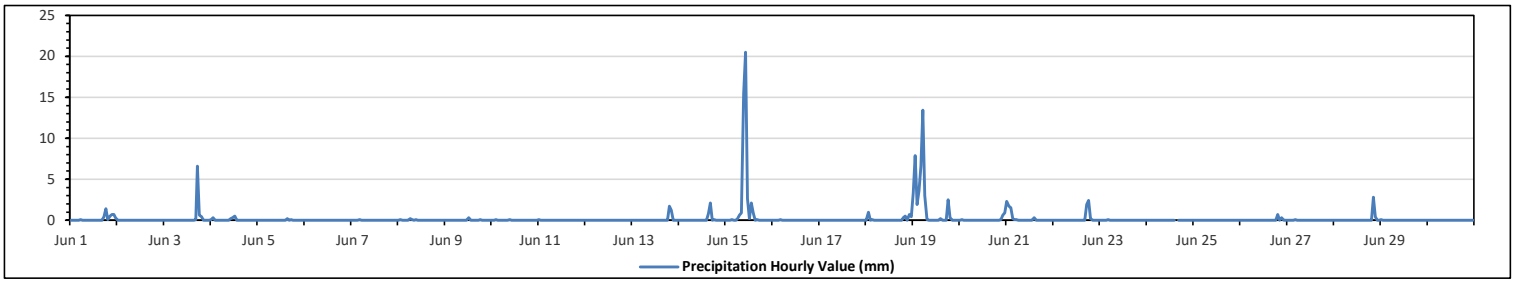

Lakeland Industry & Community Association

Tamarack Site - June 2023

Summary of Hourly Averages

VECTOR WIND SPEED (VWS) in km/hr

Maximum Hourly Value:	16.9	kph	on Jun 18 at hr 23	Hours in Service:	720
Maximum Daily Value:	8.3	kph	on Jun 10	Hours of Data:	720
Minimum Hourly Value:	0.0	kph	on Jun 28 at hr 5	Hours of Missing Data:	0
Minimum Daily Value:	3.2	kph	on Jun 28	Hours of Calibration:	0
Monthly Average:	0.4	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
Jun 1	8.4	6.9	4.9	6.3	6.9	4.0	5.2	7.8	9.8	10.3	10.2	7.9	13.8	11.0	9.3	7.7	6.8	6.9	5.8	5.8	6.2	1.4	2.5	2.2	1.4	13.8	7.0
Jun 2	3.0	3.1	4.0	4.5	6.8	3.3	4.3	6.0	6.4	8.1	7.3	9.0	6.7	10.0	9.1	9.1	7.3	5.6	6.2	3.4	2.6	0.1	0.1	0.4	0.1	10.0	5.3
Jun 3	1.2	0.3	1.8	2.2	2.0	1.1	6.1	6.9	7.4	7.0	8.0	6.0	4.9	6.1	7.3	5.0	5.6	5.1	3.2	2.2	2.7	2.6	3.5	3.8	0.3	8.0	4.3
Jun 4	2.7	4.1	3.3	3.4	3.7	2.7	3.1	5.4	6.1	6.3	4.4	4.2	2.3	3.2	4.1	5.6	6.0	5.5	5.0	4.8	3.3	2.1	1.5	1.0	1.0	6.3	3.9
Jun 5	0.8	1.3	1.4	2.9	2.2	1.5	1.4	2.5	2.5	2.1	5.1	8.8	8.9	8.1	5.6	4.6	5.0	4.2	2.8	3.3	1.4	3.3	6.3	9.9	0.8	9.9	4.0
Jun 6	8.5	8.1	7.6	6.2	6.7	4.7	6.4	4.8	4.4	4.9	7.0	5.6	8.1	9.7	6.8	9.3	8.0	7.1	6.9	4.2	3.7	4.1	2.3	1.5	1.5	9.7	6.1
Jun 7	0.1	0.5	0.3	0.3	0.1	0.5	0.3	5.0	6.8	9.3	7.4	10.5	11.3	12.1	9.3	8.5	8.0	7.0	8.3	5.1	0.6	1.7	2.6	1.8	0.1	12.1	4.9
Jun 8	0.1	1.4	1.5	2.1	1.7	0.5	0.7	4.4	8.9	7.3	5.7	3.9	6.3	4.6	6.8	6.7	7.6	8.1	5.3	3.5	3.0	3.0	1.2	3.0	0.1	8.9	4.1
Jun 9	2.8	0.6	0.5	2.8	1.6	2.7	3.4	4.6	4.2	4.7	6.3	7.0	7.1	6.4	6.6	7.2	7.0	5.4	3.9	2.6	3.2	3.4	4.5	5.6	0.5	7.2	4.3
Jun 10	6.9	7.0	5.8	4.9	6.6	6.9	6.0	6.5	6.7	8.9	10.1	9.4	10.2	11.7	10.9	12.3	12.3	11.1	9.3	6.4	5.7	6.7	8.8	7.0	4.9	12.3	**8.3**
Jun 11	4.1	2.9	3.3	4.8	4.2	4.3	5.8	8.2	8.6	7.8	9.1	8.5	7.8	8.7	8.8	7.7	5.8	6.2	6.7	3.5	1.7	1.3	1.3	2.4	1.3	9.1	5.6
Jun 12	1.4	0.7	0.8	1.5	0.8	1.6	4.2	4.9	4.5	3.3	3.8	6.0	8.4	6.5	5.1	5.6	6.8	6.2	6.3	3.2	2.5	1.8	0.2	1.8	0.2	8.4	3.7
Jun 13	2.0	1.2	2.0	3.1	3.1	3.0	4.4	4.9	4.9	5.2	4.8	4.9	6.1	5.1	9.0	10.1	12.2	8.7	7.8	16.3	12.2	9.4	10.1	10.7	1.2	16.3	6.7
Jun 14	10.9	8.9	9.5	10.1	7.7	7.0	8.2	8.5	9.6	8.2	5.9	8.9	8.8	7.0	5.5	4.4	9.7	3.9	0.7	4.2	9.4	5.4	5.4	5.6	0.7	10.9	7.2
Jun 15	7.0	5.6	5.9	6.5	5.8	7.5	7.8	8.2	5.6	6.5	6.8	7.5	10.2	9.5	7.7	9.9	8.6	8.1	4.5	2.4	3.0	4.6	4.7	5.0	2.4	10.2	6.6
Jun 16	4.3	3.8	5.1	4.6	4.4	5.8	5.8	6.6	8.6	8.8	9.4	11.8	13.9	12.5	11.6	9.4	6.6	3.3	2.5	1.9	6.1	3.1	8.3	6.9	1.9	13.9	6.9
Jun 17	5.7	5.3	3.4	4.7	4.4	5.6	9.4	9.1	10.8	11.1	11.4	11.3	12.2	9.6	11.6	10.6	8.0	7.9	6.7	5.0	4.1	4.6	4.5	3.0	3.0	12.2	7.5
Jun 18	2.1	2.1	2.5	2.8	3.3	4.1	5.3	8.1	8.7	9.5	8.4	10.2	11.6	8.3	8.3	8.4	8.7	9.6	9.7	9.5	7.2	7.8	14.2	**16.9**	2.1	**16.9**	7.8
Jun 19	11.3	11.4	10.7	11.0	13.1	4.9	4.6	8.0	8.6	10.5	9.2	8.9	7.5	6.0	4.3	3.4	6.2	4.4	2.5	1.2	0.5	1.3	1.6	1.0	0.5	13.1	6.3
Jun 20	1.3	1.5	3.3	6.7	8.2	8.2	7.6	7.7	8.8	6.4	7.0	5.3	4.5	6.8	7.0	6.0	7.8	8.8	7.0	7.7	5.8	4.7	4.3	5.2	1.3	8.8	6.2
Jun 21	5.5	6.0	6.5	6.9	6.8	5.7	6.6	7.3	6.4	8.6	8.9	9.8	7.1	5.8	3.3	5.0	6.0	5.4	5.5	5.5	4.8	5.8	5.4	7.0	3.3	9.8	6.3
Jun 22	5.6	8.2	6.5	4.8	3.7	1.6	2.7	1.1	1.8	3.9	4.4	1.4	2.1	7.1	5.8	3.9	3.4	4.4	5.5	1.2	3.3	1.3	1.1	2.9	1.1	8.2	3.7
Jun 23	0.2	0.2	0.8	2.1	3.8	4.4	2.7	5.1	5.8	6.0	5.3	5.7	6.0	8.8	7.7	8.0	5.6	5.3	5.8	3.7	3.3	3.5	1.3	1.4	0.2	8.8	4.3
Jun 24	0.4	1.0	1.4	0.8	0.3	0.2	1.6	3.1	5.4	4.7	5.9	7.1	8.1	8.1	9.6	9.1	9.5	8.2	7.8	4.7	3.3	1.5	1.0	1.0	0.2	9.6	4.3
Jun 25	1.3	1.0	1.2	3.3	4.5	7.1	8.1	10.6	9.4	10.0	10.6	11.3	12.4	12.7	12.3	11.4	11.6	9.0	7.6	6.1	3.5	2.7	2.1	2.2	1.0	12.7	7.2
Jun 26	1.3	1.2	0.9	1.5	2.5	2.2	3.7	3.2	3.8	3.5	5.7	7.1	8.1	8.5	9.1	10.1	9.5	7.3	5.0	8.9	3.2	7.3	2.1	0.5	0.5	10.1	4.8
Jun 27	0.1	1.7	1.5	2.7	1.9	1.7	2.1	3.2	4.6	4.9	7.4	8.8	6.5	7.3	7.8	8.9	10.1	10.7	10.1	7.3	3.9	3.0	0.2	0.5	0.1	10.7	4.9
Jun 28	0.5	1.3	0.2	0.3	0.4	**0.0**	0.1	1.1	3.8	4.9	5.5	3.5	4.2	6.4	5.3	7.1	7.1	7.6	5.8	2.0	3.4	2.1	0.9	2.3	**0.0**	7.6	**3.2**
Jun 29	0.1	1.5	0.7	**0.0**	0.4	0.3	2.9	4.4	4.9	6.4	9.9	9.6	9.6	11.5	11.4	11.0	9.3	7.3	3.9	2.7	3.5	5.5	3.7	1.8	**0.0**	11.5	5.1
Jun 30	1.3	0.4	0.5	3.3	4.6	0.2	0.2	4.6	5.4	5.9	5.8	6.1	6.6	7.3	6.6	6.2	7.8	8.2	6.1	5.3	1.6	1.7	2.1	2.4	0.2	8.2	4.2
Diurnal Maximum	11.3	11.4	10.7	11.0	13.1	8.2	9.4	10.6	10.8	11.1	11.4	11.8	13.9	12.7	12.3	12.3	12.3	11.1	10.1	16.3	12.2	9.4	14.2	16.9			
Diurnal Average	3.4	3.3	3.3	3.9	4.1	3.4	4.4	5.7	6.4	6.8	7.2	7.5	8.0	8.2	7.8	7.7	7.8	6.9	5.8	4.8	4.0	3.6	3.6	3.9			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance	
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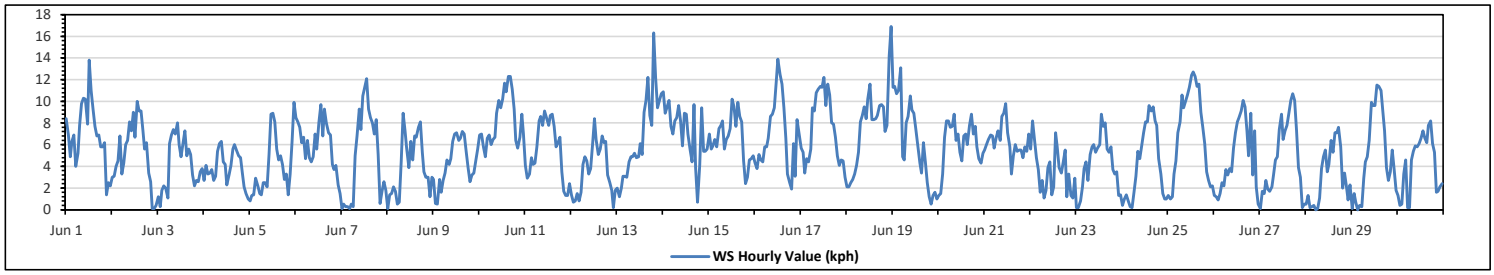
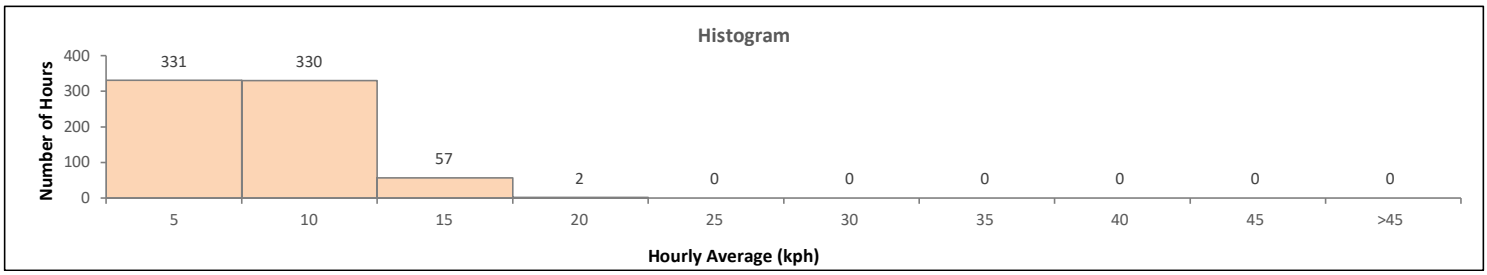
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.



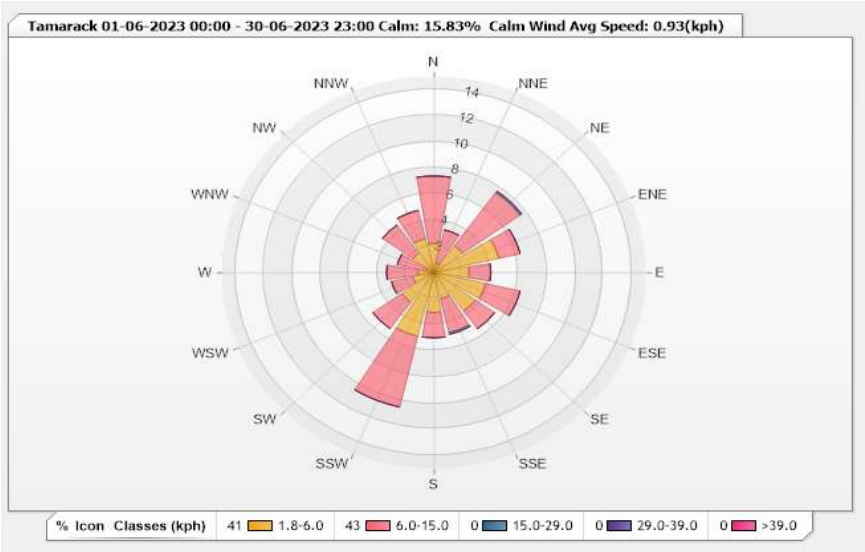


Station: Tamarack Monitor: WDS [kph] Monthly: 06-2023

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

Calm (WS<1.8kph): 15.83% Valid Data: 100.00%

Direction	1.8-6.0	6.0-15.0	15.0-29.0	29.0-39.0	>39.0	Total
N	2.22	5.14	0	0	0	7.36
NNE	0.69	2.64	0	0	0	3.33
NE	2.5	5	0.14	0	0	7.64
ENE	4.72	1.53	0	0	0	6.25
E	2.5	1.53	0	0	0	4.03
ESE	3.75	2.5	0	0	0	6.25
SE	3.61	1.67	0	0	0	5.28
SSE	2.08	2.64	0.14	0	0	4.86
S	3.06	1.94	0	0	0	5
SSW	5	5.56	0	0	0	10.56
SW	2.78	2.5	0	0	0	5.28
WSW	1.53	1.53	0	0	0	3.06
W	1.11	2.22	0	0	0	3.33
WNW	0.56	2.08	0	0	0	2.64
NW	1.81	2.64	0	0	0	4.45
NNW	2.64	2.22	0	0	0	4.86
Summary	40.56	43.34	0.28	0	0	84.18



Lakeland Industry & Community Association

Tamarack Site - June 2023

Summary of Hourly Averages

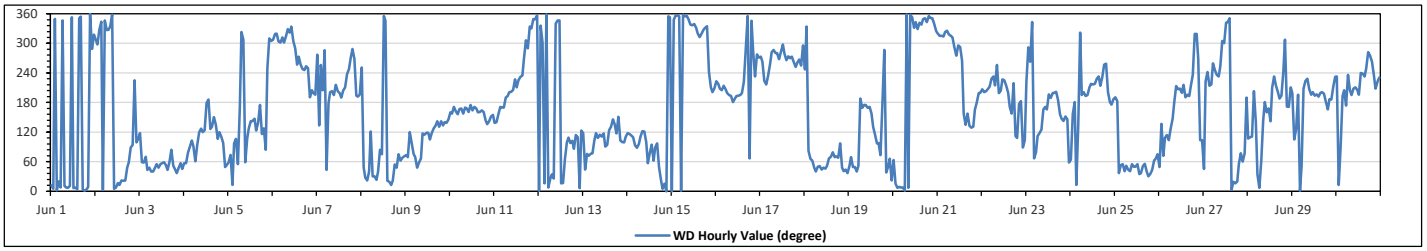
WIND DIRECTION (VWD) in sector

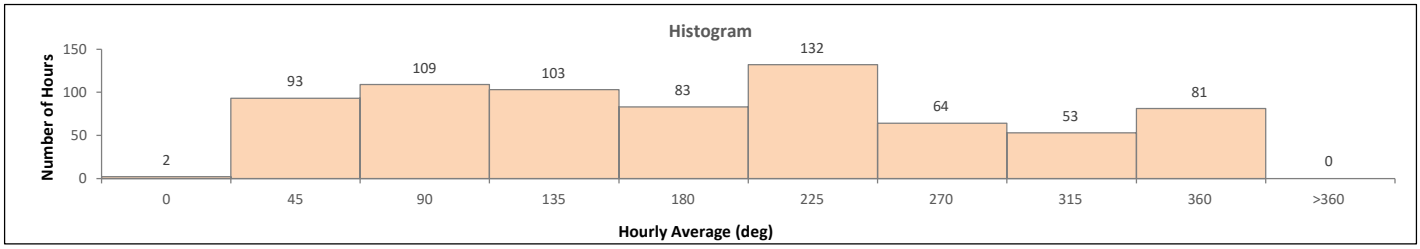
Monthly Average:	115 (ESE)	degree	
Hours in Service:	720		
Hours of Data:	720		
Hours of Missing Data:	0		
Hours of Calibration:	0		
Operational Uptime:	100.0		

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
Jun 1	NNE	N	N	N	NNE	N	NNW	NNE	N	N	NNE	N	N	N	N	N	N	N	N	N	N	N	WNW	NW	3	N
Jun 2	NW	WNW	NNW	NNW	N	NNW	NW	NNW	NNW	N	N	N	NNE	NNE	NNE	NNE	NNE	NE	ENE	E	E	SW	E	ESE	8	N
Jun 3	ESE	ENE	ENE	ENE	NE	NE	NE	NE	NE	NE	NE	NE	ENE	ENE	NE	NE	ENE	E	NE	NE	NE	NE	ENE	NE	53	NE
Jun 4	ENE	ENE	ENE	E	ESE	E	ENE	E	ESE	SE	ESE	ESE	S	S	SE	SE	SSE	SE	ESE	ESE	ESE	E	NE	NE	113	ESE
Jun 5	ENE	ENE	NNE	E	ESE	NE	SSE	NW	NW	ENE	ESE	SE	SE	SE	SE	ESE	SE	S	ESE	SE	E	WSW	NW	WNW	129	SE
Jun 6	NW	NW	NW	WNW	WNW	NW	WNW	NW	NNW	NW	NNW	WNW	WNW	WSW	W	WSW	WSW	WSW	WSW	WSW	S	SSW	SSW	SSW	285	WNW
Jun 7	W	SE	WSW	SSW	WNW	NE	S	SSW	SSW	SSW	SW	SSW	SSW	S	SSW	SSW	SW	WSW	W	WNW	W	SSW	S	SSW	214	SSW
Jun 8	WSW	NE	NNE	NNE	NE	ESE	NNE	NNE	NNE	NE	E	ENE	N	NNW	NNE	NNE	NNE	NNE	NE	NE	ENE	ENE	ENE	ENE	34	NE
Jun 9	ENE	ENE	ESE	E	ENE	ENE	NE	ENE	ENE	ESE	ESE	ESE	ESE	ESE	ESE	SE	SE	SE	SE	SE	SE	SE	SE	SE	115	ESE
Jun 10	SSE	SSE	S	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	S	SSE	S	SSE	SSE	SSE	SSE	SSE	SE	SE	SE	SSE	SSE	161	SSE
Jun 11	SE	SE	SSE	S	SSE	SSE	S	S	SSW	SSW	SSW	SW	SSW	SW	SW	SW	W	NW	WNW	NNW	NNW	NNW	NNW	N	217	SW
Jun 12	N	NNW	WNW	NNE	N	N	NNE	NE	NNE	NNW	NNW	NNW	NNE	NNE	ENE	E	ESE	E	E	E	ESE	ESE	N	ESE	48	NE
Jun 13	ESE	NE	ENE	ENE	ENE	ENE	ESE	ESE	ESE	ESE	ESE	ESE	E	E	ESE	SE	SE	SE	ESE	SSE	ESE	E	E	ESE	115	ESE
Jun 14	ESE	ESE	ESE	ESE	E	E	E	ESE	ESE	ESE	E	ENE	ENE	E	ENE	E	E	NE	NNE	N	NNE	N	N	N	86	E
Jun 15	N	NNW	N	N	N	N	N	N	N	NNW	NNW	NNW	NNW	NNW	NW	NW	NW	NNW	NNW	NNW	WSW	SSW	SSW	SSW	336	NNW
Jun 16	SW	SW	SSW	SSW	SSW	SSW	SSW	SSW	S	S	S	S	SSW	SSW	SSW	SW	WNW	N	ENE	NNW	WNW	SW	W	W	213	SSW
Jun 17	W	W	SW	SW	SW	WSW	W	WNW	W	W	W	W	WNW	W	W	W	W	W	W	WSW	W	W	WSW	WNW	272	W
Jun 18	WSW	NNW	E	ENE	ENE	NE	NE	NE	NE	NE	NE	NE	NE	ENE	ENE	ENE	ENE	ENE	ENE	E	NE	NE	NE	NE	55	NE
Jun 19	NE	ENE	NE	NE	NE	NE	S	SSE	S	S	SSE	S	SSE	SE	ESE	E	E	ENE	S	WNW	NE	NE	ENE	NNE	106	ESE
Jun 20	ENE	NNE	N	N	N	N	N	N	N	N	N	NNW	NNW	NNW	NNW	NNW	NNW	N	NNW	N	N	N	NNW	NW	353	N
Jun 21	NW	NW	NW	NW	NW	NW	NW	NW	NW	WNW	W	WNW	WNW	W	SSE	SE	SSE	SE	SE	SE	SSE	S	SSW	SSW	277	W
Jun 22	SSW	SSW	SSW	SSW	SSW	SW	SW	SSW	WSW	SSW	SSW	SW	SW	SSW	SSW	S	SSE	SW	ESE	ESE	S	S	E	ESE	196	SSW
Jun 23	SW	WNW	W	NNW	ENE	ENE	ESE	ESE	SE	SSE	S	SSE	SSW	S	SSW	SSW	SSW	S	SSE	SE	SE	SSE	SE	ENE	164	SSE
Jun 24	ENE	SSE	S	NNE	SE	NW	SSW	SSW	S	SSW	SSW	SW	SW	SW	SW	SW	SSW	SW	WSW	WSW	SSW	S	S	S	219	SW
Jun 25	S	S	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NNE	NE	NE	ENE	ENE	ENE	47	NE
Jun 26	NE	SE	ENE	ESE	ESE	ESE	SE	SE	S	SSW	SSW	SSW	SSW	SW	S	SSW	S	SSW	SW	NW	NW	W	ESE	ESE	204	SSW
Jun 27	NE	SW	WSW	SSW	SW	WSW	WSW	SW	SW	WSW	WNW	WNW	NNW	NNW	N	N	NNE	NNE	NNE	NE	ENE	ENE	ENE	S	345	NNW
Jun 28	ESE	ESE	ESE	SSW	SE	NE	N	ENE	SE	S	SSE	SSE	SE	SSW	SW	SSW	SSW	S	SSW	WSW	NW	S	S	SSW	191	S
Jun 29	SSW	ESE	SE	SSW	N	NE	SSW	SW	SW	SSW	SSW	SSW	SSW	SSW	S	SSW	SSW	SSW	S	SSE	S	S	SSW	SW	198	SSW
Jun 30	SW	NNE	E	S	SSW	S	SW	SSW	SSW	SSW	SSW	SSW	SSW	WSW	WSW	SW	WSW	W	W	W	SW	SSW	SW	SW	229	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 (Machine Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)			

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





Lakeland Industry & Community Association

Tamarack Site - June 2023

Summary of Hourly Averages

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

WIND SPEED

Maximum Hourly Value:	16.9	kph	on Jun 18 at hr 23	Hours in Service:	720
Maximum Daily Value:	8.3	kph	on Jun 10	Hours of Data:	720
Minimum Hourly Value:	0.0	kph	on Jun 28 at hr 5	Hours of Missing Data:	0
Minimum Daily Value:	3.2	kph	on Jun 28	Hours of Calibration:	0
Monthly Average:	0.4	kph		Operational Uptime:	100.0

WIND DIRECTION

Monthly Average: 115 degree (ESE)

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			
Jun 1	8.4	6.9	4.9	6.3	6.9	4.0	5.2	7.8	9.8	10.3	10.2	7.9	13.8	11.0	9.3	7.7	6.8	6.9	5.8	5.8	6.2	1.4	2.5	2.2	1.4	13.8	7.0
	NNE	N	N	N	NNE	N	NNW	NNE	N	N	NNE	N	N	N	N	N	N	N	N	N	N	N	WNW	NW			
Jun 2	3.0	3.1	4.0	4.5	6.8	3.3	4.3	6.0	6.4	8.1	7.3	9.0	6.7	10.0	9.1	9.1	7.3	5.6	6.2	3.4	2.6	0.1	0.1	0.4	0.1	10.0	5.3
	NW	WNW	NNW	NNW	N	NNW	NW	NNW	NNW	N	N	N	NNE	NNE	NNE	NNE	NNE	NE	ENE	E	E	SW	E	ESE			
Jun 3	1.2	0.3	1.8	2.2	2.0	1.1	6.1	6.9	7.4	7.0	8.0	6.0	4.9	6.1	7.3	5.0	5.6	5.1	3.2	2.2	2.7	2.6	3.5	3.8	0.3	8.0	4.3
	ESE	ENE	ENE	ENE	NE	NE	NE	NE	NE	NE	NE	NE	ENE	ENE	NE	NE	ENE	E	NE	NE	NE	NE	ENE	NE			
Jun 4	2.7	4.1	3.3	3.4	3.7	2.7	3.1	5.4	6.1	6.3	4.4	4.2	2.3	3.2	4.1	5.6	6.0	5.5	5.0	4.8	3.3	2.1	1.5	1.0	1.0	6.3	3.9
	ENE	ENE	ENE	E	ESE	E	ENE	E	ESE	SE	ESE	ESE	S	S	SE	SE	SSE	SE	ESE	ESE	ESE	E	NE	NE			
Jun 5	0.8	1.3	1.4	2.9	2.2	1.5	1.4	2.5	2.5	2.1	5.1	8.8	8.9	8.1	5.6	4.6	5.0	4.2	2.8	3.3	1.4	3.3	6.3	9.9	0.8	9.9	4.0
	ENE	ENE	NNE	E	ESE	NE	SSE	NW	NW	ENE	ESE	SE	SE	SE	SE	ESE	SE	S	ESE	SE	E	WSW	NW	WNW			
Jun 6	8.5	8.1	7.6	6.2	6.7	4.7	6.4	4.8	4.4	4.9	7.0	5.6	8.1	9.7	6.8	9.3	8.0	7.1	6.9	4.2	3.7	4.1	2.3	1.5	1.5	9.7	6.1
	NW	NW	NW	WNW	WNW	NW	WNW	NW	NNW	NW	NNW	WNW	WNW	WSW	W	WSW	WSW	WSW	WSW	WSW	S	SSW	SSW	SSW			
Jun 7	0.1	0.5	0.3	0.3	0.1	0.5	0.3	5.0	6.8	9.3	7.4	10.5	11.3	12.1	9.3	8.5	8.0	7.0	8.3	5.1	0.6	1.7	2.6	1.8	0.1	12.1	4.9
	W	SE	WSW	SSW	WNW	NE	S	SSW	SSW	SSW	SW	SSW	SSW	S	SSW	SSW	SW	WSW	W	WNW	W	SSW	S	SSW			
Jun 8	0.1	1.4	1.5	2.1	1.7	0.5	0.7	4.4	8.9	7.3	5.7	3.9	6.3	4.6	6.8	6.7	7.6	8.1	5.3	3.5	3.0	3.0	1.2	3.0	0.1	8.9	4.1
	WSW	NE	NNE	NNE	NE	ESE	NNE	NNE	NNE	NE	E	ENE	N	NNW	NNE	NNE	NNE	NNE	NE	NE	ENE	ENE	ENE	ENE			
Jun 9	2.8	0.6	0.5	2.8	1.6	2.7	3.4	4.6	4.2	4.7	6.3	7.0	7.1	6.4	6.6	7.2	7.0	5.4	3.9	2.6	3.2	3.4	4.5	5.6	0.5	7.2	4.3
	ENE	ENE	ESE	E	ENE	ENE	NE	ENE	ENE	ESE	ESE	ESE	ESE	ESE	ESE	SE	SE	SE	SE	SE	SE	SE	SE	SE			
Jun 10	6.9	7.0	5.8	4.9	6.6	6.9	6.0	6.5	6.7	8.9	10.1	9.4	10.2	11.7	10.9	12.3	12.3	11.1	9.3	6.4	5.7	6.7	8.8	7.0	4.9	12.3	**8.3**
	SSE	SSE	S	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	S	SSE	S	SSE	SSE	SSE	SSE	SSE	SE	SE	SE	SSE	SSE			
Jun 11	4.1	2.9	3.3	4.8	4.2	4.3	5.8	8.2	8.6	7.8	9.1	8.5	7.8	8.7	8.8	7.7	5.8	6.2	6.7	3.5	1.7	1.3	1.3	2.4	1.3	9.1	5.6
	SE	SE	SSE	S	SSE	SSE	S	S	SSW	SSW	SSW	SW	SSW	SW	SW	SW	W	NW	WNW	NNW	NNW	NNW	NNW	N			
Jun 12	1.4	0.7	0.8	1.5	0.8	1.6	4.2	4.9	4.5	3.3	3.8	6.0	8.4	6.5	5.1	5.6	6.8	6.2	6.3	3.2	2.5	1.8	0.2	1.8	0.2	8.4	3.7
	N	NNW	WNW	NNE	N	N	NNE	NE	NNE	NNW	NNW	NNW	NNE	NNE	ENE	E	ESE	E	E	E	ESE	ESE	N	ESE			
Jun 13	2.0	1.2	2.0	3.1	3.1	3.0	4.4	4.9	4.9	5.2	4.8	4.9	6.1	5.1	9.0	10.1	12.2	8.7	7.8	16.3	12.2	9.4	10.1	10.7	1.2	16.3	6.7
	ESE	NE	ENE	ENE	ENE	ENE	ESE	ESE	ESE	ESE	ESE	ESE	E	E	ESE	SE	SE	SE	ESE	SSE	ESE	E	E	ESE			
Jun 14	10.9	8.9	9.5	10.1	7.7	7.0	8.2	8.5	9.6	8.2	5.9	8.9	8.8	7.0	5.5	4.4	9.7	3.9	0.7	4.2	9.4	5.4	5.4	5.6	0.7	10.9	7.2
	ESE	ESE	ESE	ESE	E	E	E	ESE	ESE	ESE	E	ENE	ENE	E	ENE	E	E	NE	NNE	N	NNE	N	N	N			
Jun 15	7.0	5.6	5.9	6.5	5.8	7.5	7.8	8.2	5.6	6.5	6.8	7.5	10.2	9.5	7.7	9.9	8.6	8.1	4.5	2.4	3.0	4.6	4.7	5.0	2.4	10.2	6.6
	N	NNW	N	N	N	N	N	N	N	NNW	NNW	NNW	NNW	NNW	NW	NW	NW	NNW	NNW	NNW	WSW	SSW	SSW	SSW			
Jun 16	4.3	3.8	5.1	4.6	4.4	5.8	5.8	6.6	8.6	8.8	9.4	11.8	13.9	12.5	11.6	9.4	6.6	3.3	2.5	1.9	6.1	3.1	8.3	6.9	1.9	13.9	6.9
	SW	SW	SSW	SSW	SSW	SSW	SSW	SSW	S	S	S	S	SSW	SSW	SSW	SW	WNW	N	ENE	NNW	WNW	SW	W	W			
Jun 17	5.7	5.3	3.4	4.7	4.4	5.6	9.4	9.1	10.8	11.1	11.4	11.3	12.2	9.6	11.6	10.6	8.0	7.9	6.7	5.0	4.1	4.6	4.5	3.0	3.0	12.2	7.5
	W	W	SW	SW	SW	WSW	W	WNW	W	W	W	W	WNW	W	W	W	W	W	W	WSW	W	W	WSW	WNW			
Jun 18	2.1	2.1	2.5	2.8	3.3	4.1	5.3	8.1	8.7	9.5	8.4	10.2	11.6	8.3	8.3	8.4	8.7	9.6	9.7	9.5	7.2	7.8	14.2	**16.9**	2.1	**16.9**	7.8
	WSW	NNW	E	ENE	ENE	NE	NE	NE	NE	NE	NE	NE	NE	ENE	ENE	ENE	ENE	ENE	ENE	E	NE	NE	NE	NE			
Jun 19	11.3	11.4	10.7	11.0	13.1	4.9	4.6	8.0	8.6	10.5	9.2	8.9	7.5	6.0	4.3	3.4	6.2	4.4	2.5	1.2	0.5	1.3	1.6	1.0	0.5	13.1	6.3
	NE	ENE	NE	NE	NE	NE	S	SSE	S	S	SSE	S	SSE	SE	ESE	E	E	ENE	S	WNW	NE	NE	ENE	NNE			
Jun 20	1.3	1.5	3.3	6.7	8.2	8.2	7.6	7.7	8.8	6.4	7.0	5.3	4.5	6.8	7.0	6.0	7.8	8.8	7.0	7.7	5.8	4.7	4.3	5.2	1.3	8.8	6.2
	ENE	NNE	N	N	N	N	N	N	N	N	N	NNW	NNW	NNW	NNW	NNW	NNW	N	NNW	N	N	N	NNW	NW			
Jun 21	5.5	6.0	6.5	6.9	6.8	5.7	6.6	7.3	6.4	8.6	8.9	9.8	7.1	5.8	3.3	5.0	6.0	5.4	5.5	5.5	4.8	5.8	5.4	7.0	3.3	9.8	6.3
	NW	NW	NW	NW	NW	NW	NW	NW	NW	WNW	W	WNW	WNW	W	SSE	SE	SSE	SE	SE	SE	SSE	S	SSW	SSW			
Jun 22	5.6	8.2	6.5	4.8	3.7	1.6	2.7	1.1	1.8	3.9	4.4	1.4	2.1	7.1	5.8	3.9	3.4	4.4	5.5	1.2	3.3	1.3	1.1	2.9	1.1	8.2	3.7
	SSW	SSW	SSW	SSW	SSW	SW	SW	SSW	WSW	SSW	SSW	SW	SW	SSW	SSW	S	SSE	SW	ESE	ESE	S	S	E	ESE			
Jun 23	0.2	0.2	0.8	2.1	3.8	4.4	2.7	5.1	5.8	6.0	5.3	5.7	6.0	8.8	7.7	8.0	5.6	5.3	5.8	3.7	3.3	3.5	1.3	1.4	0.2	8.8	4.3
	SW	WNW	W	NNW	ENE	ENE	ESE	ESE	SE	SSE	S	SSE	SSW	S	SSW	SSW	SSW	S	SSE	SE	SE	SSE	SE	ENE			
Jun 24	0.4	1.0	1.4	0.8	0.3	0.2	1.6	3.1	5.4	4.7	5.9	7.1	8.1	8.1	9.6	9.1	9.5	8.2	7.8	4.7	3.3	1.5	1.0	1.0	0.2	9.6	4.3
	ENE	SSE	S	NNE	SE	NW	SSW	SSW	S	SSW	SSW	SW	SW	SW	SW	SW	SSW	SW	WSW	WSW	SSW	S	S	S			
Jun 25	1.3	1.0	1.2	3.3	4.5	7.1	8.1	10.6	9.4	10.0	10.6	11.3	12.4	12.7	12.3	11.4	11.6	9.0	7.6	6.1	3.5	2.7	2.1	2.2	1.0	12.7	7.2
	S	S	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NNE	NE	NE	ENE	ENE	ENE			
Jun 26	1.3	1.2	0.9	1.5	2.5	2.2	3.7	3.2	3.8	3.5	5.7	7.1	8.1	8.5	9.1	10.1	9.5	7.3	5.0	8.9	3.2	7.3	2.1	0.5	0.5	10.1	4.8
	NE	SE	ENE	ESE	ESE	ESE	SE	SE	S	SSW	SSW	SSW	SSW	SW	S	SSW	S	SSW	SW	NW	NW	W	ESE	ESE			
Jun 27	0.1	1.7	1.5	2.7	1.9	1.7	2.1	3.2	4.6	4.9	7.4	8.8	6.5	7.3	7.8	8.9	10.1	10.7	10.1	7.3	3.9	3.0	0.2	0.5	0.1	10.7	4.9
	NE	SW	WSW	SSW	SW	WSW	WSW	SW	SW	WSW	WNW	WNW	NNW	NNW	N	N	NNE	NNE	NNE	NE	ENE	ENE	ENE	S			
Jun 28	0.5	1.3	0.2	0.3	0.4	**0.0**	0.1	1.1	3.8	4.9	5.5	3.5	4.2	6.4	5.3	7.1	7.1	7.6	5.8	2.0	3.4	2.1	0.9	2.3	**0.0**	7.6	**3.2**
	ESE	ESE	ESE	SSW	SE	NE	N	ENE	SE	S	SSE	SSE	SE	SSW	SW	SSW	SSW	S	SSW	WSW	NW	S	S	SSW			
Jun 29	0.1	1.5	0.7	**0.0**	0.4	0.3	2.9	4.4	4.9	6.4	9.9	9.6	9.6	11.5	11.4	11.0	9.3	7.3	3.9	2.7	3.5	5.5	3.7	1.8	**0.0**	11.5	5.1
	SSW	ESE	SE	SSW	N	NE	SSW	SW	SW	SSW	SSW	SSW	SSW	SSW	S	SSW	SSW	SSW	S	SSE	S	S	SSW	SW			
Jun 30	1.3	0.4	0.5	3.3	4.6	0.2	0.2	4.6	5.4	5.9	5.8	6.1	6.6	7.3	6.6	6.2	7.8	8.2	6.1	5.3	1.6	1.7	2.1	2.4	0.2	8.2	4.2
	SW	NNE	E	S	SSW	S	SW	SSW	SSW	SSW	SSW	SSW	SSW	WSW	WSW	SW	WSW	W	W	W	SW	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 - June 2023

Summary of Hour Standard Deviations

STANDARD DEVIATION WIND DIRECTION (STDWD) in Degree

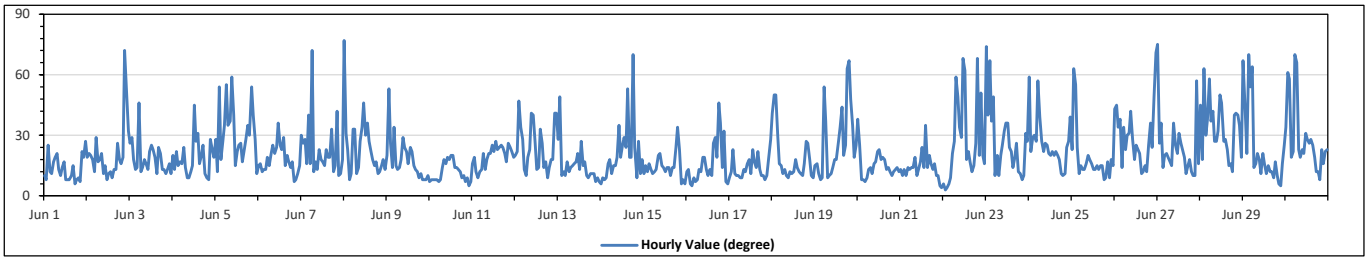
Maximum Hourly Value:	77 degree on Jun 8 at hr 0	Hours in Service:	720
		Hours of Data:	720
Minimum Hourly Value:	3 degree on Jun 22 at hr 1	Hours of Missing Data:	0
		Hours of Calibration:	0
		Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																								Daily Minimum	Daily Maximum
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
Jun 1	10	8	25	12	11	17	19	21	13	10	14	17	8	8	8	10	15	6	8	9	7	22	19	27	6	27
Jun 2	19	21	20	18	12	29	17	18	21	11	15	8	11	12	9	13	13	26	18	16	19	72	52	32	8	72
Jun 3	26	29	18	13	14	46	12	14	18	16	13	22	25	23	19	11	24	21	13	13	11	13	16	11	11	46
Jun 4	20	13	22	15	17	16	24	14	9	9	12	15	45	27	31	16	20	25	11	9	8	28	23	19	8	45
Jun 5	28	12	54	18	27	35	55	35	37	59	40	15	22	25	26	17	23	28	35	30	54	40	28	11	11	59
Jun 6	15	16	12	13	13	19	15	20	25	21	24	36	25	23	29	15	20	17	14	17	7	8	11	15	7	36
Jun 7	30	26	28	16	40	16	72	12	17	13	23	18	17	15	23	19	19	33	12	15	42	10	11	18	10	72
Jun 8	**77**	31	23	8	11	33	33	11	14	27	34	46	30	36	27	22	18	15	17	11	12	15	18	13	8	**77**
Jun 9	20	53	26	14	34	15	13	14	18	29	24	22	16	24	22	15	13	12	9	11	8	8	8	10	8	53
Jun 10	7	8	8	8	8	7	8	14	18	16	19	18	20	20	14	14	13	12	9	10	7	9	5	7	5	20
Jun 11	16	19	12	9	12	13	21	13	18	21	21	25	22	27	23	24	25	24	21	17	26	24	22	19	9	27
Jun 12	20	22	47	34	28	13	10	19	23	41	40	26	13	14	33	26	14	17	9	14	18	18	41	41	9	47
Jun 13	28	49	10	12	10	17	12	14	15	16	17	21	13	27	15	17	10	9	11	11	11	7	9	7	7	49
Jun 14	6	9	8	9	16	18	11	15	15	19	35	19	25	29	24	53	19	19	70	24	9	27	11	18	6	70
Jun 15	11	15	12	16	13	11	12	13	20	21	15	14	12	14	14	10	14	14	24	34	23	6	8	6	6	34
Jun 16	12	13	6	5	9	7	8	13	12	19	19	13	10	13	10	26	29	19	46	36	14	32	7	6	5	46
Jun 17	9	12	23	11	10	10	9	9	13	12	16	18	11	23	17	14	22	13	10	10	8	10	19	28	8	28
Jun 18	41	50	50	30	16	15	11	13	10	9	12	11	12	18	14	12	11	10	16	27	26	18	10	9	9	50
Jun 19	15	16	11	8	9	54	37	9	10	11	14	18	18	27	34	44	20	25	63	67	48	35	19	25	8	67
Jun 20	38	25	8	8	7	9	13	14	11	16	17	22	23	18	19	18	13	14	12	10	12	13	14	12	7	38
Jun 21	13	10	13	10	14	13	14	14	19	10	13	17	24	14	35	14	20	16	13	16	10	10	5	4	4	35
Jun 22	6	**3**	4	6	9	21	27	59	49	34	29	68	62	18	22	17	12	15	26	68	20	51	20	16	**3**	68
Jun 23	74	40	67	37	49	10	20	10	20	25	32	36	36	24	22	14	19	26	12	11	8	10	31	27	8	74
Jun 24	59	22	29	30	27	57	39	27	22	26	25	21	20	22	20	22	20	18	11	10	11	24	27	39	10	59
Jun 25	23	63	55	24	11	15	13	13	16	20	18	16	13	13	15	13	15	15	8	9	17	9	18	15	8	63
Jun 26	43	45	34	38	14	34	23	30	31	42	28	18	25	23	21	11	12	15	12	25	36	24	49	71	11	71
Jun 27	75	26	36	14	20	21	19	17	15	36	25	21	31	26	23	19	11	15	18	12	10	10	57	16	10	75
Jun 28	45	18	63	30	38	58	37	42	27	27	32	50	46	27	28	23	15	16	12	40	41	40	35	19	12	63
Jun 29	67	42	21	70	54	64	14	16	21	18	11	21	16	11	15	12	12	9	17	10	6	5	16	25	5	70
Jun 30	34	61	58	19	22	70	66	23	19	23	21	31	28	26	28	25	19	12	12	8	23	16	22	23	8	70
Diurnal Minimum	6	3	4	5	7	7	8	9	9	9	11	8	8	8	8	10	10	6	8	8	6	5	5	4		
Diurnal Maximum	77	63	67	70	54	70	72	59	49	59	40	68	62	36	35	53	29	33	70	68	54	72	57	71		

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

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

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



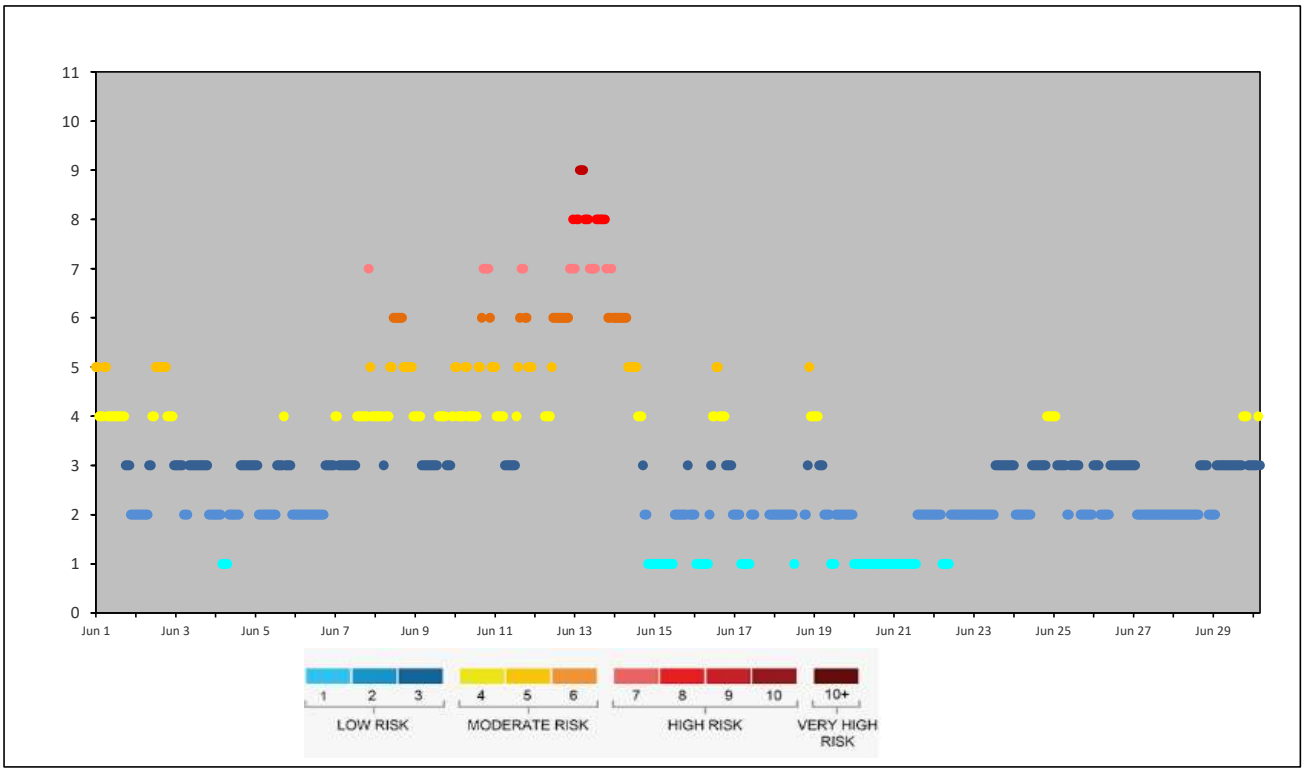
ST. LINA STATION

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - June 2023

AIR QUALITY HEALTH INDEX

Day	Hourly Period Starting at (MST)																							
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Jun 1	5	5	4	4	4	5	5	4	4	4	4	4	4	4	4	4	4	4	3	3	3	2	2	2
Jun 2	2	2	2	2	2	2	2	2	3	3	4	4	5	5	5	5	5	5	5	4	4	4	4	3
Jun 3	3	3	3	3	3	2	2	2	3	3	3	3	3	3	3	3	3	3	3	3	2	2	2	2
Jun 4	2	2	2	2	1	1	1	1	2	2	2	2	2	2	2	3	3	3	3	3	3	3	3	3
Jun 5	3	3	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3	4	3	3	3	3	2	2
Jun 6	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3	2
Jun 7	4	4	3	3	3	3	3	3	3	3	3	3	3	4	4	4	4	4	4	4	7	5	4	4
Jun 8	4	4	4	4	4	3	4	4	4	5	5	6	6	6	6	6	6	5	5	5	5	5	5	4
Jun 9	4	4	4	4	3	3	3	3	3	3	3	3	3	3	4	4	4	4	4	3	3	3	4	4
Jun 10	5	5	4	4	4	4	5	5	4	4	4	4	4	4	5	5	6	7	7	7	7	6	5	5
Jun 11	5	4	4	4	4	4	3	3	3	3	3	3	3	4	5	6	7	7	6	6	5	5	5	
Jun 12							4	4	4	4	5	6	6	6	6	6	6	6	6	6	6	7	7	8
Jun 13	7	8	8	9	9	9	8	8	8	7	7	7	7	8	8	8	8	8	8	7	6	6	7	6
Jun 14	6	6	6	6	6	6	6	6	5	5	5	5	5	5	4	4	4	3	2	2	1	1	1	1
Jun 15	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	3	2	2	2
Jun 16	2	1	1	1	1	1	1	1	1	2	3	4	4	5	5	4	4	4	4	3	3	3	3	2
Jun 17	2	2	2	2	1	1	1	1	1	1	2	2	2									2	2	2
Jun 18	2	2	2	2	2	2	2	2	2	2	2	2	1						2	2	3	5	4	4
Jun 19	4	4	4	3	3	3	2	2	2	2	1	1	1	2	2	2	2	2	2	2	2	2	2	2
Jun 20	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Jun 21	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2
Jun 22	2	2	2	2	2	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Jun 23	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3	3	3	3	3	3	3
Jun 24	3	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3	3	3	3	3	4	4	4	4
Jun 25	4	4	3	3	3	3	3	3	2	2	3	3	3	3	3	3	2	2	2	2	2	2	2	2
Jun 26	3	3	3	3	2	2	2	2	2	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Jun 27	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Jun 28	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3	2	2	2
Jun 29	2	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	4	4	3	3	3
Jun 30	3	3	3	4	3	3	3	3	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2



Lakeland Industry & Community Association

St. Lina Site - June 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 Jun 16 at hr 15		Hours in Service:	720	
Maximum Daily Value:	0.4 ppb	on Jun 24		Hours of Data:	678	
Minimum Hourly Value:	0 ppb	on Jun 1 at hr 0		Hours of Missing Data:	7	
Minimum Daily Value:	0.0 ppb	on Jun 2		Hours of Calibration:	35	
Monthly Average:	0.1 ppb			Operational Uptime:	99.0	

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			
Jun 1	0	0	0	0	0	0	0	0	S	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0.1
Jun 2	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
Jun 3	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Jun 4	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Jun 5	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Jun 6	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	1	0.2
Jun 7	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0.0
Jun 8	0	S	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1
Jun 9	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
Jun 10	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	1	0.0
Jun 11	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	K	K	K	K	0	1	0.1
Jun 12	K	K	K	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	1	1	S	1	0	0	0	1	0.4
Jun 13	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0	S	0	0	0	0	0	1	0.3
Jun 14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0.0
Jun 15	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
Jun 16	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	S	1	1	0	0	0	0	0	0	2	0.2
Jun 17	0	0	0	0	0	0	0	0	0	0	C	C	C	C	C	C	0	0	0	0	0	0	0	0	0	0	0.0
Jun 18	0	0	0	0	0	0	0	1	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	1	0.0
Jun 19	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
Jun 20	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Jun 21	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0.1
Jun 22	1	0	0	0	1	2	1	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.2
Jun 23	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
Jun 24	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	1	1	1	1	1	2	1	1	1	0	2	0.4
Jun 25	1	1	0	0	0	0	0	S	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1
Jun 26	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	1	0.1
Jun 27	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Jun 28	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Jun 29	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
Jun 30	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Diurnal Maximum	1	1	1	1	1	2	1	1	1	1	1	1	1	1	0	2	1	1	1	1	2	1	1	1			
Diurnal Average	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.2	0.1	0.1	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.
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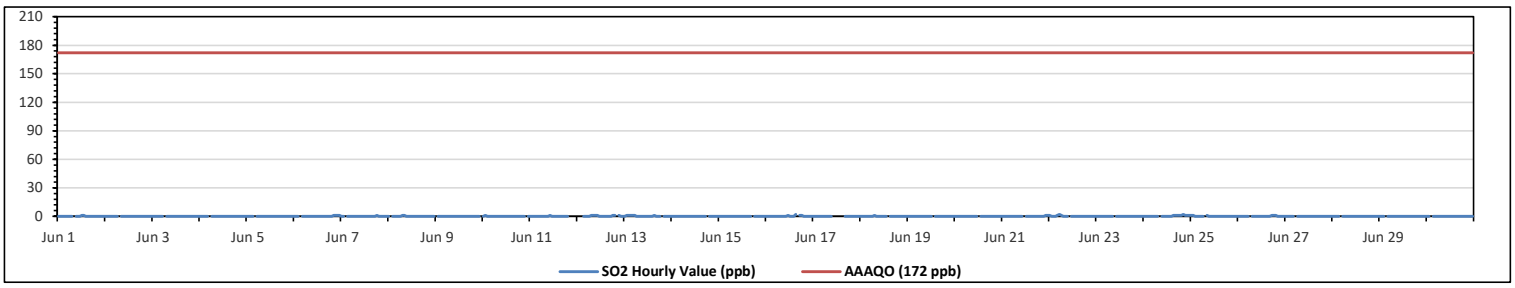
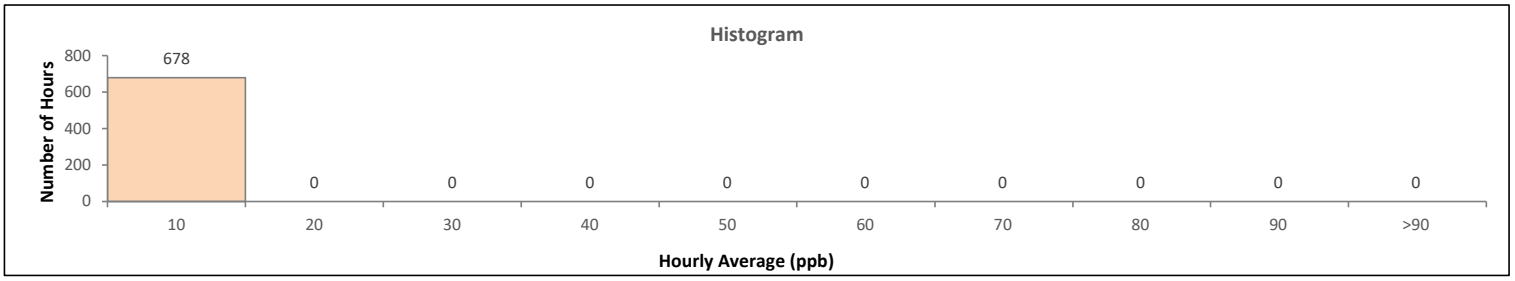


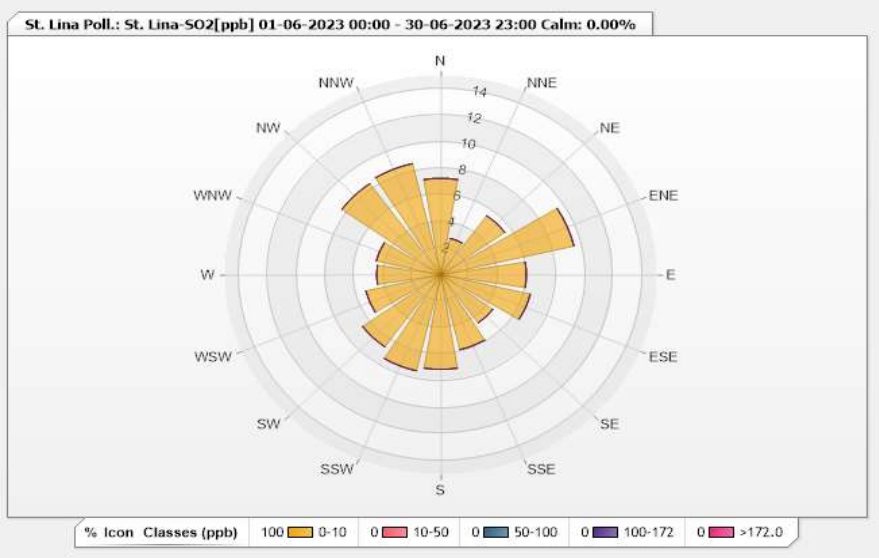


Station: St. Lina Poll.: St. Lina-SO2[ppb] Monthly: 06-2023

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

Calm: 0.00% Valid Data: 93.89% Calm Avg: 0.00 [ppm]

Direction	0-10	10-50	50-100	100-172	>172.0	Total
N	7.25	0	0	0	0	7.25
NNE	2.81	0	0	0	0	2.81
NE	5.47	0	0	0	0	5.47
ENE	9.47	0	0	0	0	9.47
E	5.92	0	0	0	0	5.92
ESE	6.36	0	0	0	0	6.36
SE	4.44	0	0	0	0	4.44
SSE	5.77	0	0	0	0	5.77
S	7.1	0	0	0	0	7.1
SSW	7.4	0	0	0	0	7.4
SW	6.66	0	0	0	0	6.66
WSW	5.33	0	0	0	0	5.33
W	4.44	0	0	0	0	4.44
WNW	4.59	0	0	0	0	4.59
NW	8.43	0	0	0	0	8.43
NNW	8.58	0	0	0	0	8.58
Summary	100	0	0	0	0	100



Lakeland Industry & Community Association

St. Lina Site - June 2023

Summary of Hourly Averages

HYDROGEN SULPHIDE (H_2S) in ppb

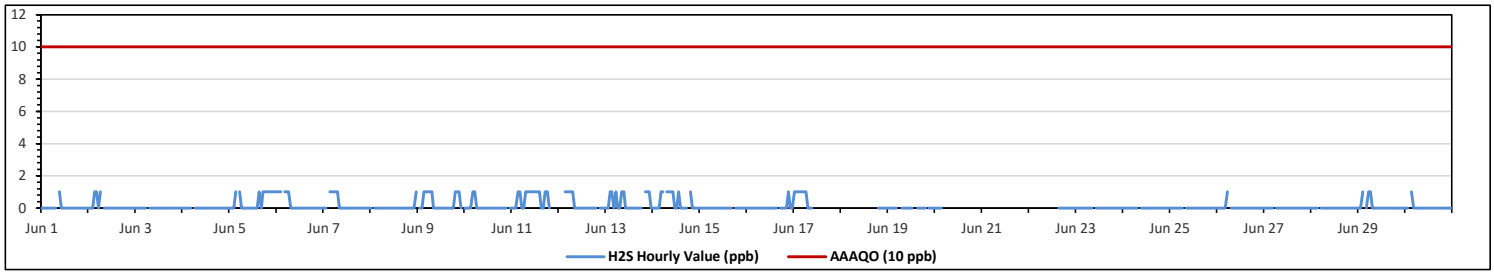
Alberta Ambient Air Quality Objectives (AAAQO): 1-Hour 10 ppb, 24-Hour 3 ppb

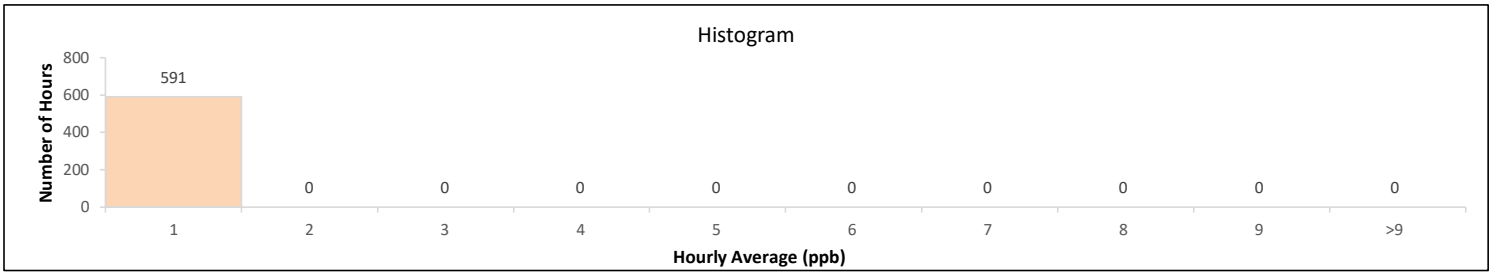
Number of 1-Hour Exceedances:	0	Number of 24-Hour Exceedances:	0		
Maximum Hourly Value:	1 ppb	on Jun 1 at hr 9		Hours in Service:	720
Maximum Daily Value:	1.0 ppb	on Jun 11		Hours of Data:	591
Minimum Hourly Value:	0 ppb	on Jun 1 at hr 0		Hours of Missing Data:	96
Minimum Daily Value:	0.0 ppb	on Jun 1		Hours of Calibration:	33
Monthly Average:	0.1 ppb			Operational Uptime:	86.7

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			
Jun 1	0	0	0	0	0	0	0	0	S	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0
Jun 2	0	0	0	1	1	0	1	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0
Jun 3	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Jun 4	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Jun 5	0	0	0	1	S	1	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	1	1	0	1	0.0
Jun 6	1	1	1	S	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0
Jun 7	0	0	S	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0
Jun 8	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0.0
Jun 9	S	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	S	0	1	0.0
Jun 10	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	1	0.0
Jun 11	0	0	0	1	1	0	0	1	1	1	1	1	1	1	1	0	0	1	1	0	K	K	K	K	0	1	1.0
Jun 12	K	K	K	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	1	0.0
Jun 13	0	0	1	1	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	S	1	1	1	0	0	1	0.0
Jun 14	0	0	0	0	1	1	NRM	1	1	1	1	0	0	1	0	0	0	0	S	1	0	0	0	0	0	1	0.0
Jun 15	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
Jun 16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	1	0	0	0	1	0.0
Jun 17	1	1	1	1	1	1	1	0	0	0	C	C	C	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	0	1	-
Jun 18	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	C	C	C	C	C	0	0	0	0	0	0	0	-
Jun 19	0	0	0	0	0	NRM	NRM	0	0	0	0	0	0	NRM	NRM	0	0	0	0	0	S	0	0	0	0	0	0.0
Jun 20	0	0	0	0	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0	0	-
Jun 21	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0	0	-
Jun 22	X	X	X	X	X	X	X	X	X	X	X	NRM	NRM	NRM	NRM	0	0	0	0	0	0	0	0	0	0	0	-
Jun 23	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
Jun 24	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Jun 25	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Jun 26	0	0	0	0	0	1	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0
Jun 27	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Jun 28	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Jun 29	0	0	1	S	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0
Jun 30	0	0	S	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0
Diurnal Maximum	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1			
Diurnal Average	0.1	0.1	0.2	0.4	0.4	0.5	0.3	0.2	0.1	0.2	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.1	0.1			

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

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



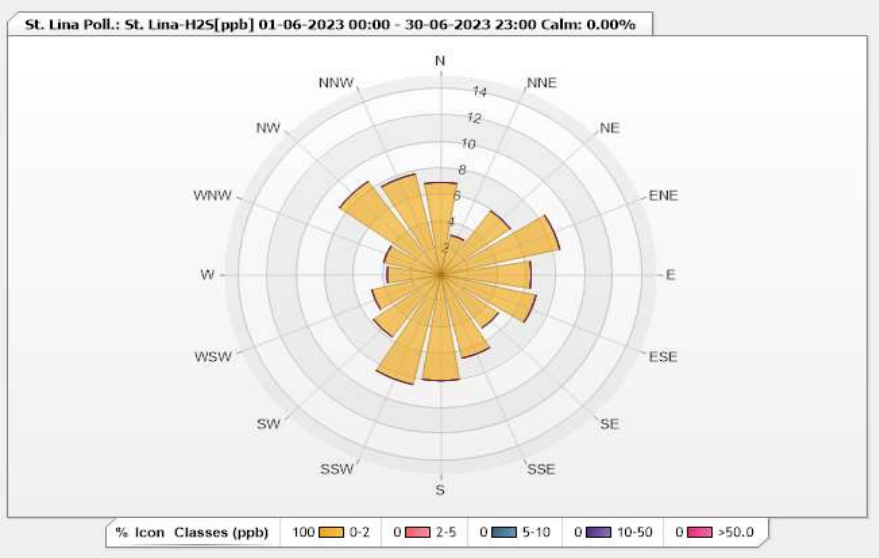


Station: St. Lina Poll.: St. Lina-H2S[ppb] Monthly: 06-2023

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

Calm: 0.00% Valid Data: 82.08% Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-50	>50.0	Total
N	6.94	0	0	0	0	6.94
NNE	3.05	0	0	0	0	3.05
NE	5.92	0	0	0	0	5.92
ENE	8.46	0	0	0	0	8.46
E	6.26	0	0	0	0	6.26
ESE	6.77	0	0	0	0	6.77
SE	4.91	0	0	0	0	4.91
SSE	6.43	0	0	0	0	6.43
S	7.95	0	0	0	0	7.95
SSW	8.46	0	0	0	0	8.46
SW	5.75	0	0	0	0	5.75
WSW	4.91	0	0	0	0	4.91
W	3.72	0	0	0	0	3.72
WNW	4.06	0	0	0	0	4.06
NW	8.63	0	0	0	0	8.63
NNW	7.78	0	0	0	0	7.78
Summary	100	0	0	0	0	100



Lakeland Industry & Community Association

St. Lina Site - June 2023

Summary of Hourly Averages

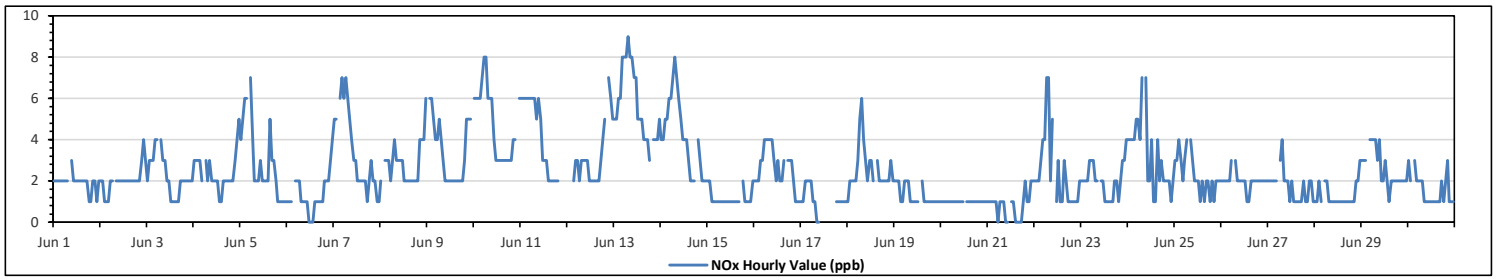
OXIDES OF NITROGEN (NOx) in ppb

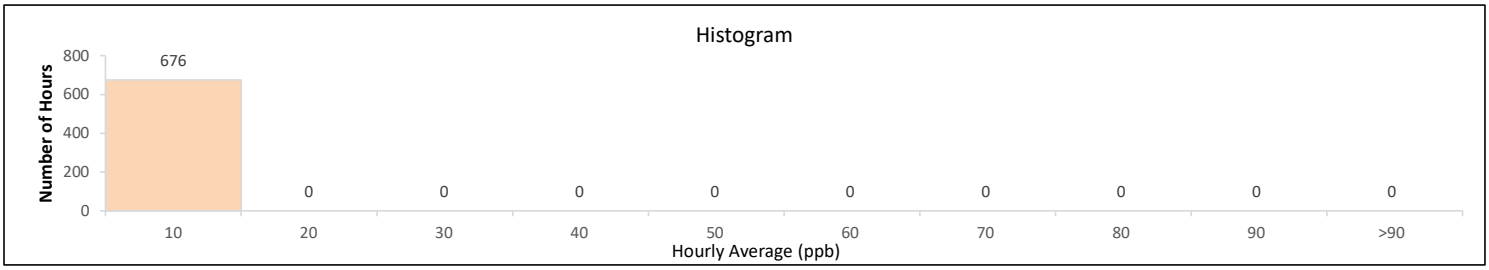
Maximum Hourly Value:	9	ppb	on Jun 13 at hr 7	Hours in Service:	720	
Maximum Daily Value:	5.7	ppb	on Jun 13	Hours of Data:	676	
Minimum Hourly Value:	0	ppb	on Jun 6 at hr 11	Hours of Missing Data:	7	
Minimum Daily Value:	0.8	ppb	on Jun 21	Hours of Calibration:	37	
Monthly Average:	2.5	ppb		Operational Uptime:	99.0	

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			
Jun 1	2	2	2	2	2	2	2	2	S	3	2	2	2	2	2	2	2	2	1	1	2	2	1	2	1	3	1.9
Jun 2	2	2	1	1	1	2	2	S	2	2	2	2	2	2	2	2	2	2	2	2	2	3	4	3	1	4	2.0
Jun 3	2	3	3	3	4	4	S	4	3	3	2	2	1	1	1	1	1	2	2	2	2	2	2	2	1	4	2.3
Jun 4	3	3	3	3	2	S	3	2	3	2	2	2	2	1	1	2	2	2	2	2	2	3	4	5	1	5	2.4
Jun 5	4	5	6	6	S	7	4	2	2	2	3	2	2	2	2	5	3	3	2	1	1	1	1	1	1	7	2.9
Jun 6	1	1	1	S	2	2	2	1	1	1	1	0	0	0	1	1	1	1	1	2	2	2	3	4	0	4	1.3
Jun 7	5	5	S	6	7	6	7	6	5	4	3	3	2	2	2	2	2	1	2	3	2	2	1	1	1	7	3.4
Jun 8	2	S	3	3	3	2	3	4	3	3	3	3	2	2	2	2	2	2	2	2	4	4	4	6	2	6	2.9
Jun 9	S	6	6	5	4	4	5	4	3	2	2	2	2	2	2	2	2	2	2	3	5	5	5	S	2	6	3.4
Jun 10	6	6	6	6	7	8	8	6	6	6	4	3	3	3	3	3	3	3	3	3	4	4	S	6	3	8	4.8
Jun 11	6	6	6	6	6	6	6	6	5	6	5	3	3	3	2	2	2	2	2	2	K	K	K	K	2	6	4.3
Jun 12	K	K	K	2	3	3	2	3	3	3	3	2	2	2	2	2	2	3	4	5	S	7	6	5	2	7	3.2
Jun 13	5	5	6	6	8	8	8	9	8	8	7	7	5	5	5	4	4	4	3	S	4	4	4	5	3	9	5.7
Jun 14	4	4	5	5	6	6	7	8	7	6	5	4	4	4	3	2	2	2	S	4	3	2	2	2	2	8	4.2
Jun 15	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	2	1	1	1	1	2	1	2	1.2
Jun 16	2	2	2	3	3	4	4	4	4	4	3	2	3	2	2	3	S	3	3	3	2	1	1	1	1	4	2.7
Jun 17	1	1	2	2	2	2	1	1	0	0	C	C	C	C	C	C	C	C	1	1	1	1	1	1	0	2	NA
Jun 18	1	2	2	2	2	3	5	6	4	3	2	3	3	2	S	3	2	2	2	2	2	2	3	2	1	6	2.6
Jun 19	2	2	2	1	1	2	2	2	1	1	1	1	1	S	2	1	1	1	1	1	1	1	1	1	1	2	1.3
Jun 20	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0
Jun 21	1	1	1	1	1	0	1	1	1	0	0	S	1	1	0	0	0	0	1	2	1	1	2	2	0	2	0.8
Jun 22	2	2	2	3	4	4	7	7	2	5	S	1	3	1	1	3	2	1	1	1	1	1	1	2	1	7	2.5
Jun 23	2	2	2	2	3	3	3	2	2	S	2	2	1	1	1	1	1	2	2	1	2	3	3	4	1	4	2.0
Jun 24	4	4	4	4	5	5	4	7	S	7	2	2	4	1	1	4	2	3	2	2	2	2	1	2	1	7	3.2
Jun 25	3	3	4	3	2	3	4	S	4	3	2	2	2	1	2	1	2	2	1	2	1	2	2	2	1	4	2.3
Jun 26	2	2	2	2	2	3	S	3	2	2	2	2	2	1	1	2	2	2	2	2	2	2	2	2	1	3	2.0
Jun 27	2	2	2	2	2	S	3	4	2	2	2	1	2	1	1	1	1	1	2	1	1	2	2	1	1	4	1.7
Jun 28	1	1	2	1	S	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	3	1	3	1.3
Jun 29	3	3	3	S	4	4	4	4	3	4	2	2	3	2	1	2	2	2	2	2	2	2	2	2	1	4	2.6
Jun 30	3	2	S	3	2	2	2	2	1	1	1	1	1	1	1	1	1	2	1	2	3	1	1	1	1	3	1.6
Diurnal Maximum	6	6	6	6	8	8	8	9	8	8	7	7	5	5	5	5	4	4	4	5	5	7	6	6			
Diurnal Average	2.6	2.9	3.0	3.0	3.2	3.5	3.7	3.7	2.9	3.0	2.4	2.1	2.1	1.7	1.6	2.0	1.8	1.9	1.8	2.0	2.0	2.3	2.3	2.5			

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

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



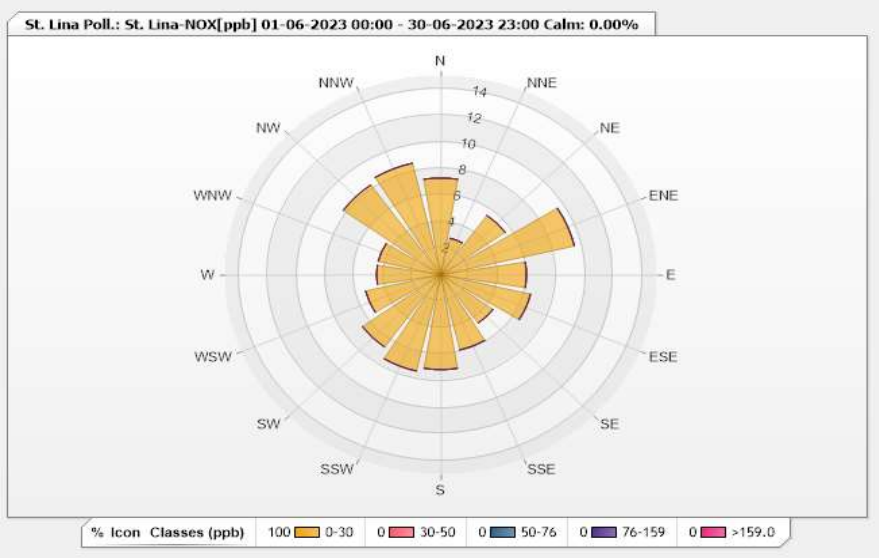


Station: St. Lina Poll.: St. Lina-NOX[ppb] Monthly: 06-2023

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

Calm: 0.00% Valid Data: 93.61% Calm Avg: 0.00 [ppm]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	7.27	0	0	0	0	7.27
NNE	2.82	0	0	0	0	2.82
NE	5.49	0	0	0	0	5.49
ENE	9.5	0	0	0	0	9.5
E	5.93	0	0	0	0	5.93
ESE	6.38	0	0	0	0	6.38
SE	4.45	0	0	0	0	4.45
SSE	5.79	0	0	0	0	5.79
S	7.12	0	0	0	0	7.12
SSW	7.42	0	0	0	0	7.42
SW	6.68	0	0	0	0	6.68
WSW	5.34	0	0	0	0	5.34
W	4.45	0	0	0	0	4.45
WNW	4.45	0	0	0	0	4.45
NW	8.31	0	0	0	0	8.31
NNW	8.61	0	0	0	0	8.61
Summary	100	0	0	0	0	100



Lakeland Industry & Community Association

St. Lina Site - June 2023

Summary of Hourly Averages

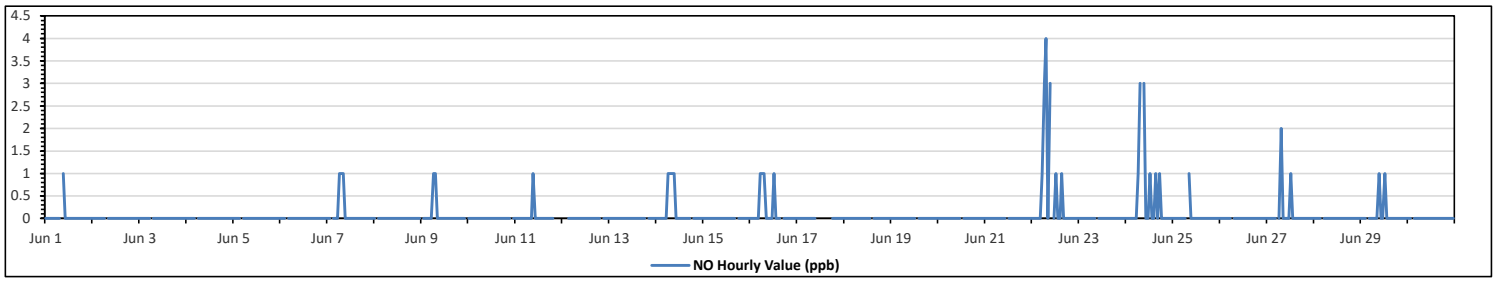
NITRIC OXIDE (NO) in ppb

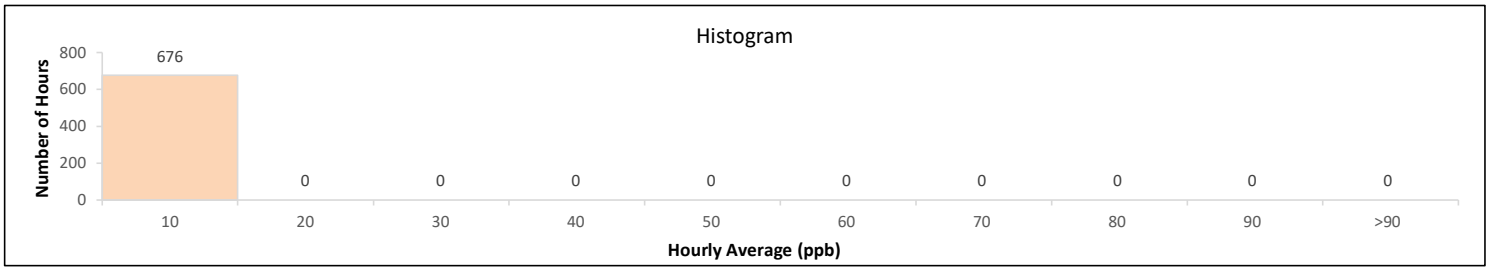
Maximum Hourly Value:	4	ppb	on Jun 22 at hr 7	Hours in Service:	720	
Maximum Daily Value:	0.6	ppb	on Jun 22	Hours of Data:	676	
Minimum Hourly Value:	0	ppb	on Jun 1 at hr 0	Hours of Missing Data:	7	
Minimum Daily Value:	0.0	ppb	on Jun 2	Hours of Calibration:	37	
Monthly Average:	0.1	ppb		Operational Uptime:	99.0	

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			
Jun 1	0	0	0	0	0	0	0	0	S	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0
Jun 2	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
Jun 3	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Jun 4	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Jun 5	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Jun 6	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
Jun 7	0	0	S	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1
Jun 8	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
Jun 9	S	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	1	0.1
Jun 10	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
Jun 11	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	K	K	K	K	0	1	0.1
Jun 12	K	K	K	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
Jun 13	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
Jun 14	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	1	0.2
Jun 15	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
Jun 16	0	0	0	0	0	1	1	1	0	0	0	0	1	0	0	0	S	0	0	0	0	0	0	0	0	1	0.2
Jun 17	0	0	0	0	0	0	0	0	0	0	C	C	C	C	C	C	C	C	0	0	0	0	0	0	0	0	NA
Jun 18	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
Jun 19	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
Jun 20	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Jun 21	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
Jun 22	0	0	0	0	0	1	3	4	0	3	S	0	1	0	0	1	0	0	0	0	0	0	0	0	0	4	0.6
Jun 23	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
Jun 24	0	0	0	0	0	0	1	3	S	3	0	0	1	0	0	1	0	1	0	0	0	0	0	0	0	3	0.4
Jun 25	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
Jun 26	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
Jun 27	0	0	0	0	0	S	0	2	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2	0.1
Jun 28	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Jun 29	0	0	0	S	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1
Jun 30	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Diurnal Maximum	0	0	0	0	0	1	3	4	1	3	0	0	1	0	0	1	0	1	0	0	0	0	0	0			
Diurnal Average	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.5	0.1	0.3	0.0	0.0	0.2	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			

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

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



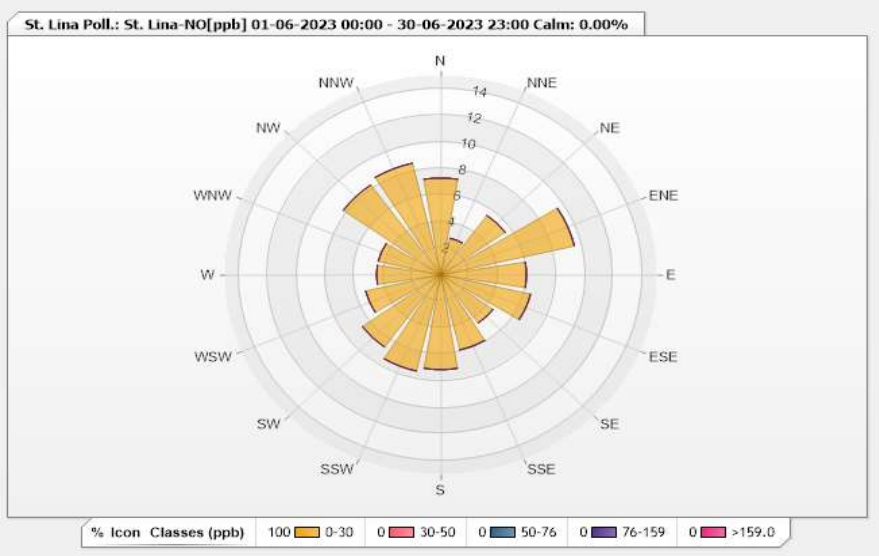


Station: St. Lina Poll.: St. Lina-NO[ppb] Monthly: 06-2023

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

Calm: 0.00% Valid Data: 93.61% Calm Avg: 0.00 [ppm]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	7.27	0	0	0	0	7.27
NNE	2.82	0	0	0	0	2.82
NE	5.49	0	0	0	0	5.49
ENE	9.5	0	0	0	0	9.5
E	5.93	0	0	0	0	5.93
ESE	6.38	0	0	0	0	6.38
SE	4.45	0	0	0	0	4.45
SSE	5.79	0	0	0	0	5.79
S	7.12	0	0	0	0	7.12
SSW	7.42	0	0	0	0	7.42
SW	6.68	0	0	0	0	6.68
WSW	5.34	0	0	0	0	5.34
W	4.45	0	0	0	0	4.45
WNW	4.45	0	0	0	0	4.45
NW	8.31	0	0	0	0	8.31
NNW	8.61	0	0	0	0	8.61
Summary	100	0	0	0	0	100



Lakeland Industry & Community Association

St. Lina Site - June 2023

Summary of Hourly Averages

NITROGEN DIOXIDE (NO_2) in ppb

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

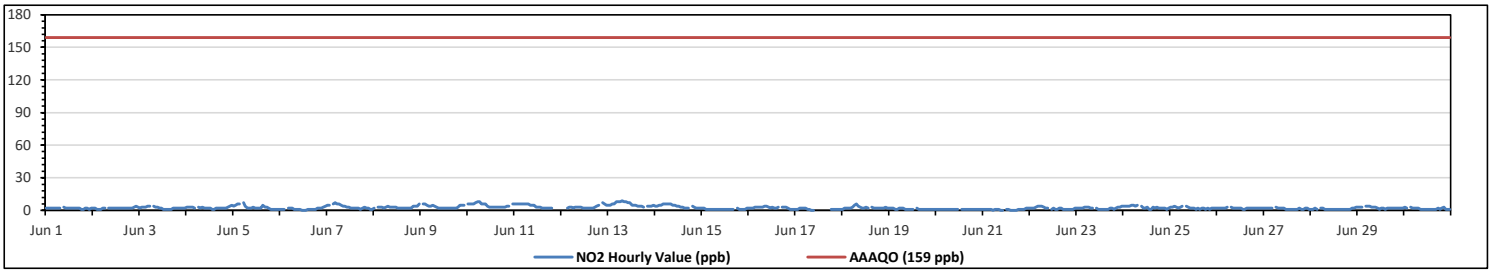
Number of 1-Hour Exceedances: 0

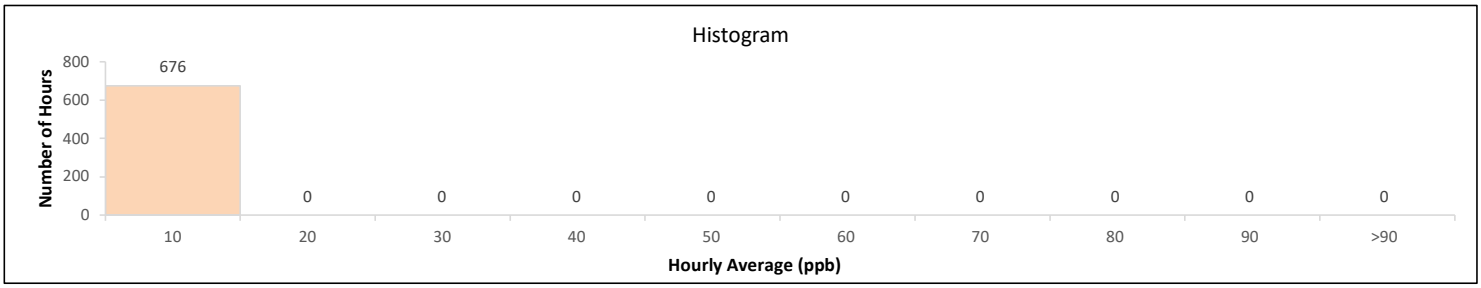
Maximum Hourly Value:	9	ppb	on Jun 13 at hr 7	Hours in Service:	720
Maximum Daily Value:	5.7	ppb	on Jun 13	Hours of Data:	676
Minimum Hourly Value:	0	ppb	on Jun 6 at hr 11	Hours of Missing Data:	7
Minimum Daily Value:	0.8	ppb	on Jun 21	Hours of Calibration:	37
Monthly Average:	2.4	ppb		Operational Uptime:	99.0

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			
Jun 1	2	2	2	2	2	2	2	2	S	3	2	2	2	2	2	2	2	2	1	1	2	2	1	2	1	3	1.9
Jun 2	2	2	1	1	1	2	2	S	2	2	2	2	2	2	2	2	2	2	2	2	2	3	4	3	1	4	2.0
Jun 3	2	3	3	3	4	4	S	4	3	3	2	2	1	1	1	1	1	2	2	2	2	2	2	2	1	4	2.3
Jun 4	3	3	3	3	2	S	3	2	3	2	2	2	2	1	1	2	2	2	2	2	2	3	4	5	1	5	2.4
Jun 5	4	5	6	6	S	7	4	2	2	2	3	2	2	2	2	5	3	3	2	1	1	1	1	1	1	7	2.9
Jun 6	1	1	1	S	2	2	2	1	1	1	1	0	0	0	1	1	1	1	1	2	2	2	3	4	0	4	1.3
Jun 7	5	5	S	6	7	6	6	5	4	4	3	3	2	2	2	2	2	1	2	3	2	2	1	1	1	7	3.3
Jun 8	2	S	3	3	3	2	3	4	3	3	3	3	2	2	2	2	2	2	2	2	4	4	4	6	2	6	2.9
Jun 9	S	6	6	5	4	4	5	4	3	2	2	2	2	2	2	2	2	2	2	3	5	5	5	S	2	6	3.4
Jun 10	6	6	6	6	7	8	8	6	6	6	4	3	3	3	3	3	3	3	3	3	4	4	S	6	3	8	4.8
Jun 11	6	6	6	6	6	6	6	6	5	5	5	3	3	3	2	2	2	2	2	2	K	K	K	K	2	6	4.2
Jun 12	K	K	K	2	3	3	2	3	3	3	3	2	2	2	2	2	2	3	4	5	S	7	6	5	2	7	3.2
Jun 13	5	5	6	6	8	8	8	9	8	8	7	7	5	5	5	4	4	4	3	S	4	4	4	5	3	9	5.7
Jun 14	4	4	5	5	6	6	6	6	6	5	5	4	4	3	3	2	2	2	S	4	3	2	2	2	2	6	4.0
Jun 15	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	2	1	1	1	1	2	1	2	1.2
Jun 16	2	2	2	3	3	3	3	3	4	4	3	2	3	2	2	3	S	3	3	3	2	1	1	1	1	4	2.5
Jun 17	1	1	2	2	2	2	1	1	0	0	C	C	C	C	C	C	C	C	1	1	1	1	1	1	0	2	NA
Jun 18	1	2	2	2	2	3	5	6	4	3	2	2	3	2	S	3	2	2	2	2	2	2	3	2	1	6	2.6
Jun 19	2	2	2	1	1	2	2	2	1	1	1	1	1	S	2	1	1	1	1	1	1	1	1	1	1	2	1.3
Jun 20	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0
Jun 21	1	1	1	1	1	0	1	1	1	0	0	S	1	1	0	0	0	0	1	1	1	1	2	2	0	2	0.8
Jun 22	2	2	2	3	4	4	4	3	2	2	S	1	2	1	1	2	2	1	1	1	1	1	1	2	1	4	2.0
Jun 23	2	2	2	2	3	3	3	2	2	S	2	1	1	1	1	1	1	2	2	1	2	3	3	4	1	4	2.0
Jun 24	4	4	4	4	5	5	4	5	S	4	2	2	3	1	1	3	2	3	2	2	2	2	1	2	1	5	2.9
Jun 25	3	3	4	3	2	3	4	S	4	3	2	2	2	1	2	1	2	2	1	2	1	2	2	2	1	4	2.3
Jun 26	2	2	2	2	2	3	S	3	2	2	2	2	2	1	1	2	2	2	2	2	2	2	2	2	1	3	2.0
Jun 27	2	2	2	2	2	S	3	2	2	2	2	1	1	1	1	1	1	1	2	1	1	2	2	1	1	3	1.6
Jun 28	1	1	2	1	S	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	3	1	3	1.3
Jun 29	3	3	3	S	4	4	4	3	3	3	2	1	2	2	1	2	2	2	2	2	2	2	2	2	1	4	2.4
Jun 30	3	2	S	3	2	2	2	2	1	1	1	1	1	1	1	1	1	2	1	2	3	1	1	1	1	3	1.6
Diurnal Maximum	6	6	6	6	8	8	8	9	8	8	7	7	5	5	5	5	4	4	4	5	5	7	6	6			
Diurnal Average	2.6	2.9	3.0	3.0	3.2	3.5	3.5	3.2	2.8	2.7	2.4	2.0	2.0	1.7	1.6	1.9	1.8	1.9	1.8	1.9	2.0	2.3	2.3	2.5			

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

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



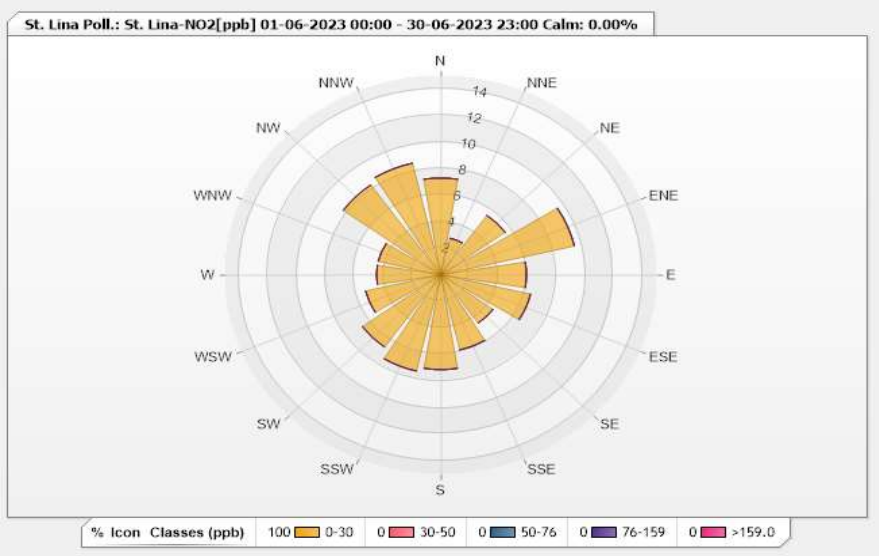


Station: St. Lina Poll.: St. Lina-NO2[ppb] Monthly: 06-2023

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

Calm: 0.00% Valid Data: 93.61% Calm Avg: 0.00 [ppm]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	7.27	0	0	0	0	7.27
NNE	2.82	0	0	0	0	2.82
NE	5.49	0	0	0	0	5.49
ENE	9.5	0	0	0	0	9.5
E	5.93	0	0	0	0	5.93
ESE	6.38	0	0	0	0	6.38
SE	4.45	0	0	0	0	4.45
SSE	5.79	0	0	0	0	5.79
S	7.12	0	0	0	0	7.12
SSW	7.42	0	0	0	0	7.42
SW	6.68	0	0	0	0	6.68
WSW	5.34	0	0	0	0	5.34
W	4.45	0	0	0	0	4.45
WNW	4.45	0	0	0	0	4.45
NW	8.31	0	0	0	0	8.31
NNW	8.61	0	0	0	0	8.61
Summary	100	0	0	0	0	100



Lakeland Industry & Community Association

Tamarack Site - June 2023

Summary of Hourly Averages

OZONE (O_3) in ppb

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

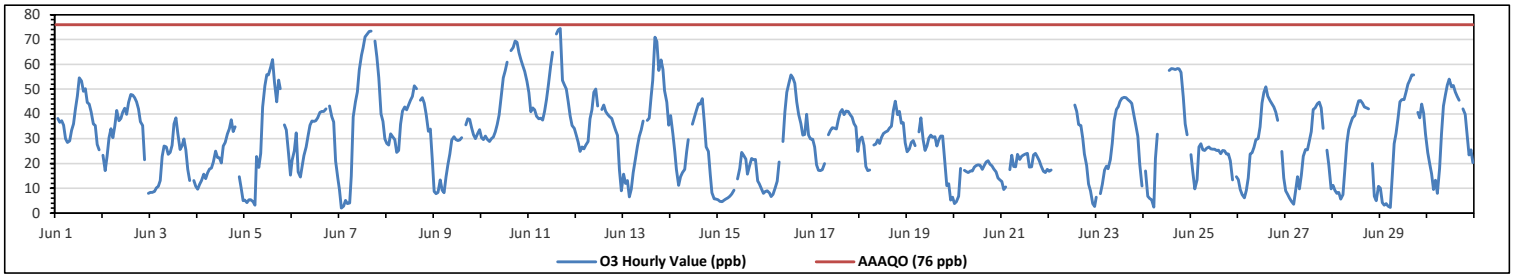
Number of 1-Hour Exceedances: 0

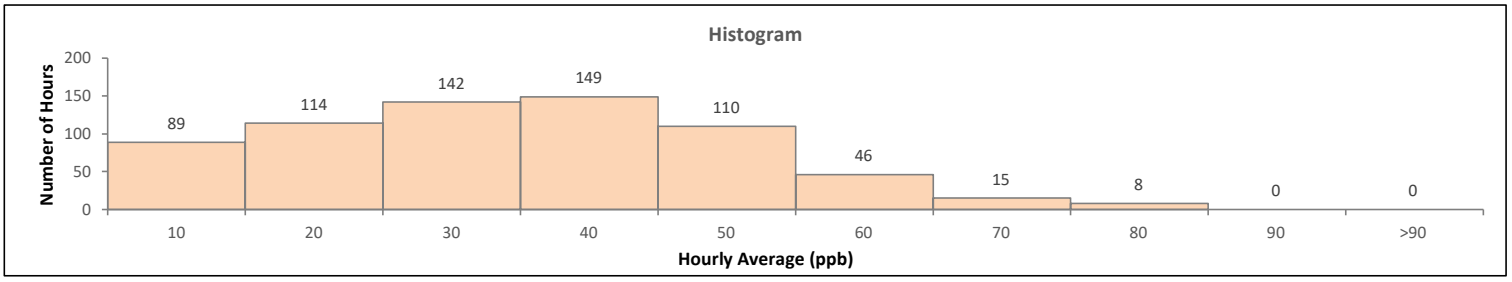
Maximum Hourly Value:	74.5	ppb	on Jun 11 at hr 16	Hours in Service:	720
Maximum Daily Value:	48.7	ppb	on Jun 11	Hours of Data:	673
Minimum Hourly Value:	2.0	ppb	on Jun 7 at hr 1	Hours of Missing Data:	10
Minimum Daily Value:	13.0	ppb	on Jun 15	Hours of Calibration:	37
Monthly Average:	30.0	ppb		Operational Uptime:	98.6

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			
Jun 1	S	38.2	36.6	37.2	35.4	30.1	28.5	29.1	33.4	36	42.1	47.2	54.5	53.3	49.2	50.1	44.7	43.9	40.9	36	35.3	27.7	25.5	S	25.5	54.5	38.9
Jun 2	23.3	17.1	23.1	30.5	34	30.5	35	41.4	37.2	38.2	40.8	42.3	39.9	44.6	47.8	47.6	46.6	44.9	42.1	36.9	35.3	21.5	S	7.9	7.9	47.8	35.2
Jun 3	8.4	8.4	8.8	10.1	10.8	13.1	22.8	27	26.7	23.7	24.5	27.3	36	38.4	32.1	25.7	27.1	29.9	25.5	17.7	13.1	S	13.2	10.8	8.4	38.4	20.9
Jun 4	9.6	11.6	13.2	15.7	13.9	16.2	17.8	18.2	20.6	25	22.4	22.3	20.2	27.1	28.5	32	34	37.7	32.9	34.9	S	14.7	10	5	5.0	37.7	21.0
Jun 5	5.2	4.2	5.3	5.3	4.6	3.2	22.8	18.4	24.2	42.8	51.4	55.9	55.7	58.8	62	52.7	44.9	53.7	50.2	S	35.6	33.5	24	15.3	3.2	62.0	31.7
Jun 6	21.3	25.1	32.4	16.6	14.5	19.3	23.2	26.7	31.2	35.5	37.1	37	37.2	38.5	40.6	41	41	42	S	43.2	39	36.8	21	14	14.0	43.2	31.1
Jun 7	9.5	2	2.9	5.1	3.9	4.1	14.9	38.8	44.9	48.9	57.8	63.7	66.8	71.2	72.2	73.3	73.4	S	69.4	62.9	54.5	40	37	29.9	**2.0**	73.4	41.2
Jun 8	28.2	27.4	32	30.7	29.7	24.4	25.2	35.8	41.2	42.8	41.6	43.5	45.6	47.1	51.3	50.2	S	45.6	46.6	44.3	39.9	33	33.9	22	22.0	51.3	37.5
Jun 9	8.8	7.8	8.4	13.4	9.3	8.2	14.5	19.6	23.9	29.5	30.8	29.6	29.3	29.5	30.5	S	35.6	38	37.8	34.4	31.6	30.1	32.1	33.6	7.8	38.0	24.6
Jun 10	30.5	29.7	31.1	29.8	28.8	30	30.7	32.8	35.7	39.6	47.7	54.6	57.4	60.8	S	65.5	66.9	69.4	69	64.8	61.9	59.5	57.2	53.2	28.8	69.4	48.1
Jun 11	48.6	40.9	42.5	41.6	39.1	38.1	38.3	37.5	41	45.8	51.8	59.4	64.9	S	72.2	73.9	**74.5**	53.5	51.8	50	44.9	39.2	35.3	34.2	34.2	**74.5**	**48.7**
Jun 12	31.4	28.6	24.9	26.6	26	27.5	28.9	38	41.6	48.8	50	43.3	S	41.8	43.6	41.1	39.9	39	38.2	35.7	33.4	31.3	17.4	9.1	9.1	50.0	34.2
Jun 13	15.7	11.9	13.1	6.6	9.6	16.4	22	26.8	30.9	33.5	37.1	S	37.4	38.3	47	53.5	71	69.1	57.5	61.8	58	49.4	44.8	35.5	6.6	71.0	36.8
Jun 14	39.3	32	24.7	17.7	11.2	14.7	16.4	17.7	24.7	29.7	S	35.9	38.6	41.6	44.1	44	46.1	37	26.6	24.9	15.3	8.2	5.8	5.6	5.6	46.1	26.2
Jun 15	5.3	4.8	4.7	5.1	5.6	6.1	6.9	7.7	9.3	S	13.8	18	24.4	23.4	21.8	15.7	18.8	22.1	21.5	21.7	13	11.8	10	7.9	4.7	24.4	**13.0**
Jun 16	8.8	9.1	8.1	6.7	7.6	10.3	12.9	20.6	S	28.9	40.8	48.7	52.6	55.7	54.5	52.3	44.9	39.9	36.1	31.4	31.7	39.8	31.4	29.9	6.7	55.7	30.6
Jun 17	29.8	26.6	19.5	17.3	17.2	17.5	20	S	31.6	33.3	34.5	34.3	33.9	37.7	40.6	41.8	39.7	41.2	41	39.7	38.7	36.1	34.8	24.8	17.2	41.8	31.8
Jun 18	29.7	30.7	27.3	18.8	17.2	17.4	S	27.4	27.9	29.5	28.1	30.6	32.1	32.8	33.1	34.3	35.1	41.4	45.2	39.7	41.1	36.2	36.5	28.4	17.2	45.2	31.3
Jun 19	24.7	25.9	28.5	29.2	27.2	S	32.8	38.5	29.7	25.2	27.1	30.3	31.4	30.6	30.8	27.1	29.5	31	31	22	11.1	11.8	5.2	6.4	5.2	38.5	25.5
Jun 20	3.8	4.7	6.8	18	S	17.3	16.7	16.3	17	17	18.6	19.2	19.5	19.3	17.7	19.2	20.6	21.2	19.7	19.1	17.8	16.6	14.2	13.4	3.8	21.2	16.2
Jun 21	12.7	9.5	10.5	S	17.6	23.3	18.8	18.7	23.7	21.7	22.9	23.5	23.9	24.1	18.6	18.7	23.5	24.2	22.7	21.2	19	16.9	16.4	17.7	9.5	24.2	19.6
Jun 22	16.9	17.4	S	X	X	X	X	X	X	X	X	NRM	NRM	43.5	41	35.7	35.3	30.1	23.9	19.2	11.7	9	3.8	2.7	2.7	43.5	NA
Jun 23	6.5	S	7.8	11.5	17.4	18.9	17.9	21.6	28.2	37.3	41.8	43	45	46.3	46.7	46.6	45.7	45	44.2	40	35.2	30.9	19.8	10.9	6.5	46.7	30.8
Jun 24	S	17	6.8	5.9	5.4	2.5	22.1	31.8	C	C	C	C	C	57.5	58.3	58.2	57.9	58.3	58.2	56.7	46.9	36	31.6	S	2.5	58.3	NA
Jun 25	23.6	16.4	9.7	13.4	26.6	28	25.6	25.3	26.2	26.7	26	25.8	25.8	25.3	25.4	24	25.3	25.1	23.9	23.9	21.1	13.4	S	14.7	9.7	28.0	22.7
Jun 26	13.6	9.5	7.4	6.2	9.2	14.2	23.9	24.3	26.5	29.7	30.1	34.8	44.3	48.7	51	47.3	45.4	44.1	42.8	40.8	37.4	S	24.8	14.1	6.2	51.0	29.1
Jun 27	9.1	7.5	6	4.8	3.6	9	14.7	9.7	15.3	22.9	25.7	25.5	29.1	32.9	41.7	42.5	44.1	44.8	42.4	34.2	S	25.4	19.2	9.7	3.6	44.8	22.6
Jun 28	11.2	9.2	8	8.4	5.6	7.4	17.7	28.2	33.7	36.2	38.4	39.3	42.6	45.3	45.4	44.3	42.9	42.5	42.1	S	20	6.9	5	10.8	5.0	45.4	25.7
Jun 29	10	4.3	3.1	3.8	2.9	2.3	14.8	28	32.3	38.2	44.9	45.8	45.8	48.8	52	53.7	55.8	55.7	S	40.7	38.5	44	40.4	31.9	2.3	55.8	32.1
Jun 30	24.3	20	15.8	9.5	13.3	8	18	32.1	43.2	47.7	51.6	54.1	51	51.5	48.9	47.1	45.6	S	42	39.8	31.6	23.5	25.5	20.3	8.0	54.1	33.2
Diurnal Maximum	48.6	40.9	42.5	41.6	39.1	38.1	38.3	41.4	44.9	48.9	57.8	63.7	66.8	71.2	72.2	73.9	74.5	69.4	69.4	64.8	61.9	59.5	57.2	53.2			
Diurnal Average	18.2	17.2	16.2	15.9	16.0	16.4	21.6	26.4	29.7	33.9	36.3	38.3	40.2	41.9	43.1	43.4	43.3	41.8	40.2	37.1	32.6	28.0	24.1	18.6			

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.



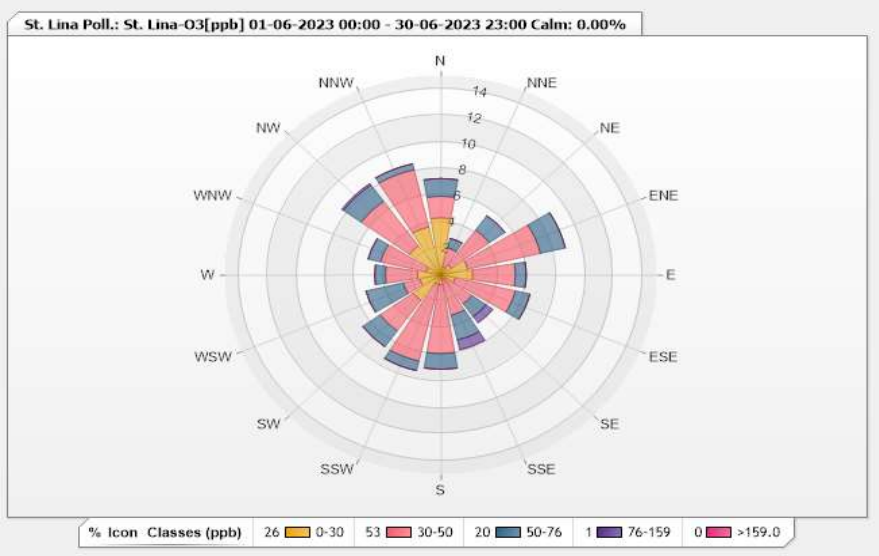


Station: St. Lina Poll.: St. Lina-O3[ppb] Monthly: 06-2023

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

Calm: 0.00% Valid Data: 94.03% Calm Avg: 0.00 [ppm]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	4.28	1.62	1.33	0	0	7.23
NNE	0.59	1.48	0.74	0	0	2.81
NE	0.89	3.25	1.33	0	0	5.47
ENE	1.92	5.17	1.77	0	0	8.86
E	2.22	2.95	0.74	0	0	5.91
ESE	1.03	4.28	1.03	0	0	6.34
SE	0.44	2.22	1.18	0.59	0	4.43
SSE	0.3	2.81	1.92	0.74	0	5.77
S	0.74	5.17	1.18	0	0	7.09
SSW	0.74	5.91	0.74	0	0	7.39
SW	2.36	2.81	1.48	0	0	6.65
WSW	1.48	1.18	2.66	0	0	5.32
W	1.62	2.22	0.74	0	0	4.58
WNW	1.03	3.25	0.89	0	0	5.17
NW	2.66	4.14	1.48	0.15	0	8.43
NNW	3.69	4.43	0.44	0	0	8.56
Summary	25.99	52.89	19.65	1.48	0	100



Lakeland Industry & Community Association

St. Lina Site - June 2023

Summary of Hourly Averages

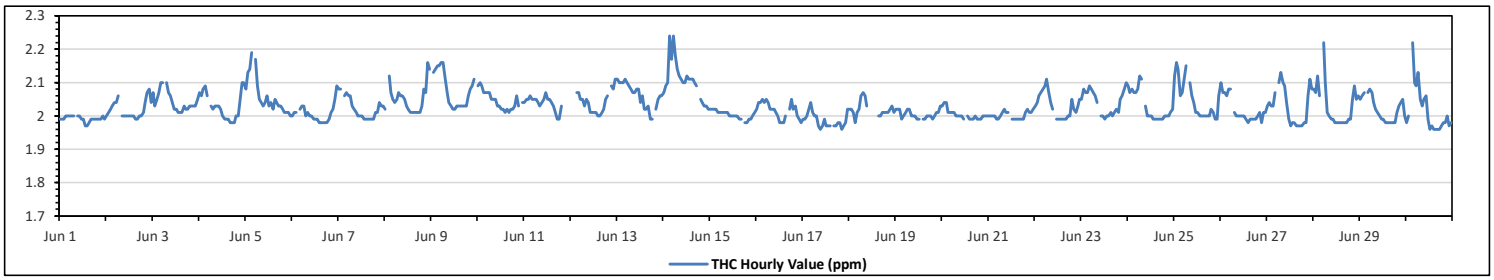
TOTAL HYDROCARBONS (THC) in ppm

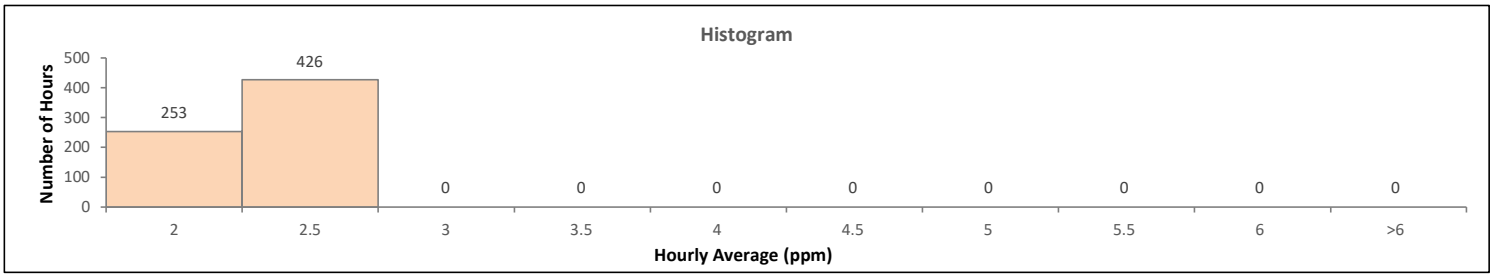
Maximum Hourly Value:	2.24	ppm	on Jun 14 at hr 3	Hours in Service:	720
Maximum Daily Value:	2.11	ppm	on Jun 14	Hours of Data:	679
Minimum Hourly Value:	1.96	ppm	on Jun 17 at hr 9	Hours of Missing Data:	7
Minimum Daily Value:	1.99	ppm	on Jun 17	Hours of Calibration:	34
Monthly Average:	2.03	ppm		Operational Uptime:	99.0

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			
Jun 1	1.99	1.99	1.99	2.00	2.00	2.00	2.00	2.00	S	2.00	2.00	1.99	1.99	1.97	1.97	1.98	1.99	1.99	1.99	1.99	1.99	2.00	1.99	1.97	2.00	1.99
Jun 2	2.00	2.01	2.02	2.03	2.04	2.04	2.06	S	2.00	2.00	2.00	2.00	2.00	2.00	2.00	1.99	1.99	2.00	2.00	2.01	2.04	2.07	2.08	2.04	1.99	2.08	2.02
Jun 3	2.07	2.03	2.05	2.07	2.10	2.10	S	2.10	2.07	2.06	2.04	2.02	2.02	2.01	2.01	2.01	2.03	2.02	2.02	2.03	2.03	2.03	2.03	2.05	2.01	2.10	2.04
Jun 4	2.07	2.06	2.08	2.09	2.06	S	2.03	2.02	2.03	2.03	2.03	2.02	2.00	1.99	1.99	1.99	1.98	1.98	1.98	2.00	2.00	2.05	2.10	2.10	1.98	2.10	2.03
Jun 5	2.08	2.13	2.14	2.19	S	2.17	2.09	2.05	2.04	2.03	2.04	2.06	2.03	2.04	2.02	2.05	2.04	2.03	2.03	2.02	2.01	2.01	2.01	2.00	2.00	2.19	2.06
Jun 6	2.00	2.01	2.01	S	2.02	2.03	2.03	2.00	2.01	2.00	2.00	1.99	1.99	1.99	1.98	1.98	1.98	1.98	1.98	1.99	2.01	2.02	2.05	2.09	1.98	2.09	2.01
Jun 7	2.08	2.08	S	2.06	2.07	2.06	2.06	2.03	2.02	2.01	2.00	2.00	2.00	1.99	1.99	1.99	1.99	1.99	1.99	2.01	2.01	2.04	2.03	2.03	1.99	2.08	2.02
Jun 8	2.02	S	2.12	2.07	2.05	2.04	2.05	2.07	2.06	2.06	2.05	2.03	2.02	2.01	2.01	2.01	2.01	2.01	2.01	2.03	2.08	2.07	2.16	2.14	2.01	2.16	2.05
Jun 9	S	2.13	2.14	2.15	2.15	2.16	2.16	2.11	2.07	2.04	2.03	2.02	2.02	2.03	2.03	2.03	2.03	2.03	2.03	2.06	2.08	2.09	2.11	S	2.02	2.16	2.08
Jun 10	2.09	2.10	2.09	2.07	2.07	2.07	2.07	2.05	2.05	2.05	2.03	2.03	2.02	2.02	2.01	2.02	2.01	2.02	2.02	2.03	2.06	2.03	S	2.04	2.01	2.10	2.05
Jun 11	2.04	2.05	2.05	2.06	2.05	2.05	2.05	2.04	2.03	2.04	2.05	2.07	2.05	2.05	2.04	2.03	2.01	1.99	1.99	2.03	K	K	K	K	1.99	2.07	2.04
Jun 12	K	K	K	2.07	2.07	2.05	2.05	2.03	2.05	2.04	2.01	2.01	2.01	2.01	2.00	2.00	2.01	2.02	2.05	2.06	S	2.09	2.08	2.11	2.00	2.11	2.04
Jun 13	2.11	2.10	2.10	2.10	2.11	2.10	2.09	2.08	2.07	2.07	2.08	2.08	2.04	2.06	2.02	2.02	2.03	1.99	1.99	S	2.02	2.05	2.06	2.06	1.99	2.11	2.06
Jun 14	2.07	2.09	2.10	**2.24**	2.17	**2.24**	2.18	2.14	2.12	2.11	2.10	2.10	2.12	2.11	2.11	2.11	2.10	2.09	S	2.05	2.04	2.03	2.03	2.02	2.02	**2.24**	**2.11**
Jun 15	2.02	2.02	2.02	2.02	2.01	2.01	2.01	2.01	2.01	2.01	2.00	2.00	2.00	2.00	2.00	1.99	1.99	S	1.98	1.98	1.99	1.99	2.00	2.01	1.98	2.02	2.00
Jun 16	2.02	2.04	2.04	2.05	2.04	2.05	2.04	2.02	2.02	2.02	2.01	2.00	1.98	1.98	1.98	2.00	S	2.02	2.05	2.02	2.03	2.00	1.99	1.98	1.98	2.05	2.02
Jun 17	1.99	1.99	2.00	2.02	2.04	2.01	2.00	2.00	1.97	1.96	1.97	1.99	1.97	1.97	1.97	S	1.97	1.97	1.98	1.98	1.96	1.97	1.98	2.02	1.96	2.04	1.99
Jun 18	2.02	2.02	2.01	1.98	2.01	2.02	2.06	2.07	2.06	2.03	C	C	C	C	C	2.00	2.00	2.01	2.01	2.01	2.01	2.02	2.03	2.01	1.98	2.07	2.02
Jun 19	2.02	2.02	2.02	1.99	2.00	2.01	2.02	2.02	2.00	2.00	2.00	1.99	1.99	S	1.99	1.99	2.00	2.00	2.00	1.99	2.00	2.01	2.01	2.03	1.99	2.03	2.00
Jun 20	2.03	2.04	2.04	2.01	2.01	2.01	2.01	2.00	2.00	2.00	2.00	1.99	S	2.00	1.99	1.99	1.99	2.00	1.99	1.99	1.99	2.00	2.00	2.00	1.99	2.04	2.00
Jun 21	2.00	2.00	2.00	2.00	1.99	1.99	2.00	2.01	2.02	2.01	2.01	S	1.99	1.99	1.99	1.99	1.99	1.99	1.99	2.01	2.02	2.01	2.01	2.02	1.99	2.02	2.00
Jun 22	2.03	2.04	2.06	2.07	2.08	2.09	2.11	2.07	2.04	2.02	S	1.99	1.99	1.99	1.99	1.99	2.00	2.00	2.05	2.02	2.01	2.03	2.05	1.99	2.11	2.03
Jun 23	2.05	2.08	2.07	2.07	2.09	2.08	2.07	2.06	2.04	S	2.00	2.00	1.99	2.00	2.00	2.01	2.00	2.01	2.02	2.01	2.05	2.06	2.08	2.10	1.99	2.10	2.04
Jun 24	2.09	2.07	2.08	2.07	2.07	2.08	2.12	2.11	S	2.03	2.00	2.00	2.00	1.99	1.99	1.99	1.99	1.99	1.99	2.00	2.00	2.00	2.01	2.02	1.99	2.12	2.03
Jun 25	2.12	2.16	2.14	2.06	2.07	2.11	2.15	S	2.10	2.06	2.04	2.01	2.01	2.00	2.00	2.00	2.00	2.00	2.00	2.02	2.01	1.99	1.99	2.06	1.99	2.16	2.05
Jun 26	2.10	2.07	2.07	2.06	2.08	2.08	S	2.01	2.00	2.00	2.00	2.00	2.00	1.99	1.98	1.99	1.99	1.99	1.99	2.00	2.01	1.98	2.01	2.01	1.98	2.10	2.02
Jun 27	2.03	2.04	2.03	2.03	2.07	S	2.10	2.13	2.10	2.09	2.04	1.99	1.97	1.98	1.98	1.97	1.97	1.97	1.97	1.98	1.98	2.06	2.11	2.08	1.97	2.13	2.03
Jun 28	2.08	2.07	2.12	2.06	S	2.22	2.10	2.01	2.00	1.99	1.99	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.99	1.99	2.05	2.09	2.05	2.06	1.98	2.22	2.03
Jun 29	2.05	2.06	2.07	S	2.07	2.08	2.07	2.04	2.02	2.01	2.00	1.99	1.99	1.98	1.98	1.98	1.98	1.98	1.98	2.01	2.03	2.04	2.05	2.00	1.98	2.08	2.02
Jun 30	1.98	2.00	S	2.22	2.10	2.09	2.13	2.05	2.03	2.05	2.06	1.99	1.96	1.97	1.96	1.96	1.96	1.96	1.97	1.98	1.98	2.00	1.97	1.98	1.96	2.22	2.02
Diurnal Maximum	2.12	2.16	2.14	2.24	2.17	2.24	2.18	2.14	2.12	2.11	2.10	2.10	2.12	2.11	2.11	2.11	2.10	2.09	2.05	2.06	2.08	2.09	2.16	2.14			
Diurnal Average	2.04	2.05	2.06	2.07	2.06	2.07	2.07	2.05	2.04	2.03	2.02	2.01	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.01	2.02	2.03	2.04	2.04			

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.



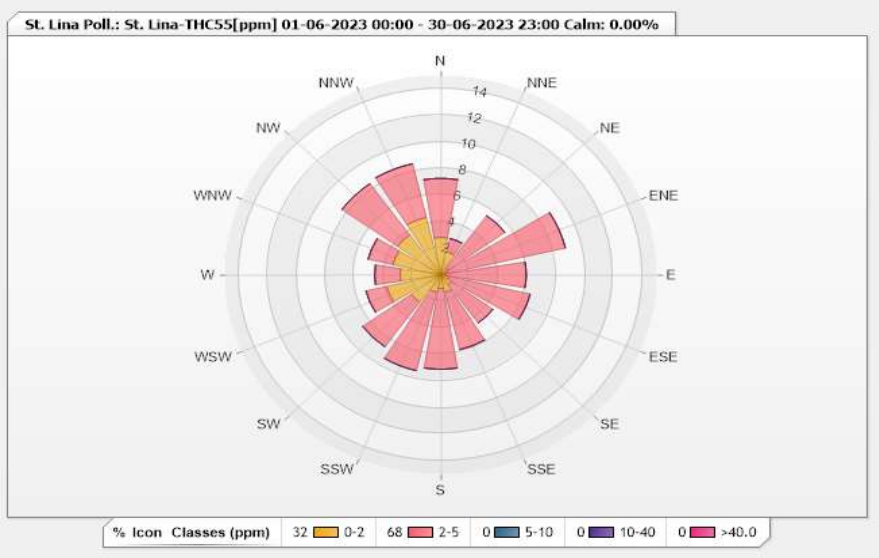


Station: St. Lina Poll.: St. Lina-THC55[ppm] Monthly: 06-2023

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

Calm: 0.00% Valid Data: 94.03% Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-40	>40.0	Total
N	2.81	4.43	0	0	0	7.24
NNE	1.77	1.03	0	0	0	2.8
NE	0.59	4.87	0	0	0	5.46
ENE	0.44	8.42	0	0	0	8.86
E	0.3	5.61	0	0	0	5.91
ESE	0.59	5.76	0	0	0	6.35
SE	0.89	3.55	0	0	0	4.44
SSE	1.33	4.43	0	0	0	5.76
S	1.03	6.06	0	0	0	7.09
SSW	1.33	6.06	0	0	0	7.39
SW	2.51	4.14	0	0	0	6.65
WSW	3.84	1.48	0	0	0	5.32
W	2.81	1.77	0	0	0	4.58
WNW	3.4	1.77	0	0	0	5.17
NW	3.69	4.73	0	0	0	8.42
NNW	4.43	4.14	0	0	0	8.57
Summary	31.76	68.25	0	0	0	100



Lakeland Industry & Community Association

St. Lina Site - June 2023

Summary of Hourly Averages

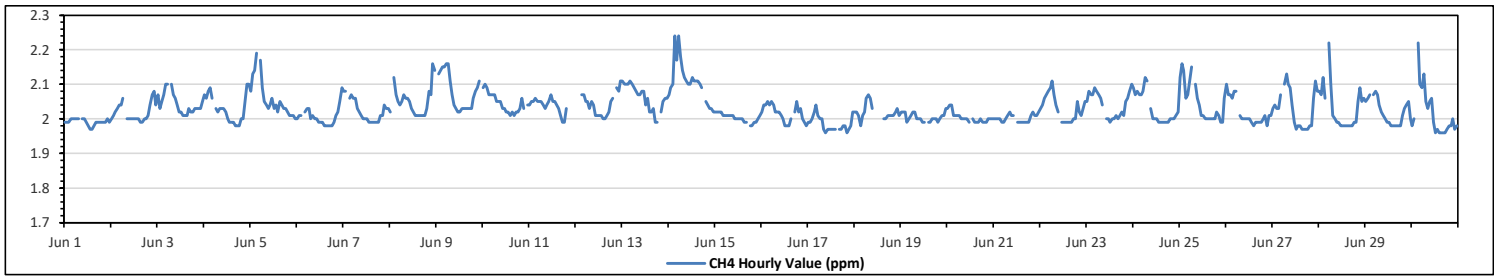
METHANE (CH4) in ppm

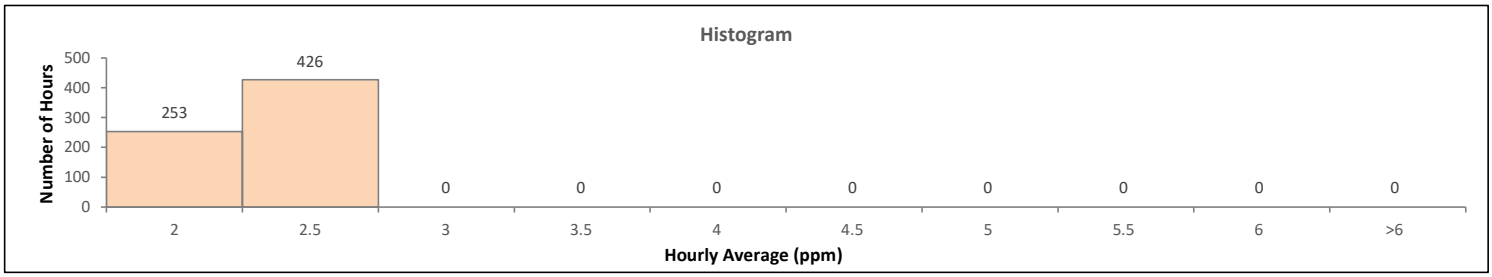
Maximum Hourly Value:	2.24	ppm	on Jun 14 at hr 3	Hours in Service:	720
Maximum Daily Value:	2.11	ppm	on Jun 14	Hours of Data:	679
Minimum Hourly Value:	1.96	ppm	on Jun 17 at hr 9	Hours of Missing Data:	7
Minimum Daily Value:	1.99	ppm	on Jun 17	Hours of Calibration:	34
Monthly Average:	2.03	ppm		Operational Uptime:	99.0

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			
Jun 1	1.99	1.99	1.99	2.00	2.00	2.00	2.00	2.00	S	2.00	2.00	1.99	1.98	1.97	1.97	1.98	1.99	1.99	1.99	1.99	1.99	2.00	1.99	1.97	2.00	1.99
Jun 2	2.00	2.01	2.02	2.03	2.04	2.04	2.06	S	2.00	2.00	2.00	2.00	2.00	2.00	2.00	1.99	1.99	2.00	2.00	2.01	2.04	2.07	2.08	2.04	1.99	2.08	2.02
Jun 3	2.07	2.03	2.05	2.07	2.10	2.10	S	2.10	2.07	2.06	2.04	2.02	2.02	2.01	2.01	2.01	2.03	2.02	2.02	2.03	2.03	2.03	2.03	2.05	2.01	2.10	2.04
Jun 4	2.07	2.06	2.08	2.09	2.06	S	2.03	2.02	2.03	2.03	2.03	2.02	2.00	1.99	1.99	1.99	1.98	1.98	1.98	2.00	2.00	2.05	2.10	2.10	1.98	2.10	2.03
Jun 5	2.08	2.13	2.14	2.19	S	2.17	2.09	2.05	2.04	2.03	2.04	2.06	2.03	2.04	2.02	2.05	2.04	2.03	2.03	2.02	2.01	2.01	2.01	2.00	2.00	2.19	2.06
Jun 6	2.00	2.01	2.01	S	2.02	2.03	2.03	2.00	2.01	2.00	2.00	1.99	1.99	1.99	1.98	1.98	1.98	1.98	1.98	1.99	2.01	2.02	2.05	2.09	1.98	2.09	2.01
Jun 7	2.08	2.08	S	2.06	2.07	2.06	2.06	2.03	2.02	2.01	2.00	2.00	2.00	1.99	1.99	1.99	1.99	1.99	1.99	2.01	2.01	2.04	2.03	2.03	1.99	2.08	2.02
Jun 8	2.02	S	2.12	2.07	2.05	2.04	2.05	2.07	2.06	2.06	2.05	2.03	2.02	2.01	2.01	2.01	2.01	2.01	2.01	2.03	2.08	2.07	2.16	2.14	2.01	2.16	2.05
Jun 9	S	2.13	2.14	2.15	2.15	2.16	2.16	2.11	2.07	2.04	2.03	2.02	2.02	2.03	2.03	2.03	2.03	2.03	2.03	2.06	2.08	2.09	2.11	S	2.02	2.16	2.08
Jun 10	2.09	2.10	2.09	2.07	2.07	2.07	2.07	2.05	2.05	2.05	2.03	2.03	2.02	2.02	2.01	2.02	2.01	2.02	2.02	2.03	2.06	2.03	S	2.04	2.01	2.10	2.05
Jun 11	2.04	2.05	2.05	2.06	2.05	2.05	2.05	2.04	2.03	2.04	2.05	2.07	2.05	2.05	2.04	2.03	2.01	1.99	1.99	2.03	K	K	K	K	1.99	2.07	2.04
Jun 12	K	K	K	2.07	2.07	2.05	2.05	2.03	2.05	2.04	2.01	2.01	2.01	2.01	2.00	2.00	2.01	2.02	2.05	2.06	S	2.09	2.08	2.11	2.00	2.11	2.04
Jun 13	2.11	2.10	2.10	2.10	2.11	2.10	2.09	2.08	2.07	2.07	2.08	2.08	2.04	2.06	2.02	2.02	2.03	1.99	1.99	S	2.02	2.05	2.06	2.06	1.99	2.11	2.06
Jun 14	2.07	2.09	2.10	**2.24**	2.17	**2.24**	2.18	2.14	2.12	2.11	2.10	2.10	2.12	2.11	2.11	2.11	2.10	2.09	S	2.05	2.04	2.03	2.03	2.02	2.02	**2.24**	**2.11**
Jun 15	2.02	2.02	2.02	2.02	2.01	2.01	2.01	2.01	2.01	2.01	2.00	2.00	2.00	2.00	2.00	1.99	1.99	S	1.98	1.98	1.99	1.99	2.00	2.01	1.98	2.02	2.00
Jun 16	2.02	2.04	2.04	2.05	2.04	2.05	2.04	2.02	2.02	2.02	2.01	2.00	1.98	1.98	1.98	2.00	S	2.02	2.05	2.02	2.03	2.00	1.99	1.98	1.98	2.05	2.02
Jun 17	1.99	1.99	2.00	2.02	2.04	2.01	2.00	2.00	1.97	1.96	1.97	1.97	1.97	1.97	1.97	S	1.97	1.97	1.98	1.98	1.96	1.97	1.98	2.02	1.96	2.04	1.99
Jun 18	2.02	2.02	2.01	1.98	2.01	2.02	2.06	2.07	2.06	2.03	C	C	C	C	C	2.00	2.00	2.01	2.01	2.01	2.01	2.02	2.03	2.01	1.98	2.07	2.02
Jun 19	2.02	2.02	2.02	1.99	2.00	2.01	2.02	2.02	2.00	2.00	2.00	1.99	1.99	S	1.99	1.99	2.00	2.00	2.00	1.99	2.00	2.01	2.01	2.03	1.99	2.03	2.00
Jun 20	2.03	2.04	2.04	2.01	2.01	2.01	2.01	2.00	2.00	2.00	2.00	1.99	S	2.00	1.99	1.99	1.99	2.00	1.99	1.99	1.99	2.00	2.00	2.00	1.99	2.04	2.00
Jun 21	2.00	2.00	2.00	2.00	1.99	1.99	2.00	2.01	2.02	2.01	2.01	S	1.99	1.99	1.99	1.99	1.99	1.99	1.99	2.01	2.02	2.01	2.01	2.02	1.99	2.02	2.00
Jun 22	2.03	2.04	2.06	2.07	2.08	2.09	2.11	2.07	2.04	2.02	S	1.99	1.99	1.99	1.99	1.99	1.99	2.00	2.00	2.05	2.02	2.01	2.03	2.05	1.99	2.11	2.03
Jun 23	2.05	2.08	2.07	2.07	2.09	2.08	2.07	2.06	2.04	S	2.00	2.00	1.99	2.00	2.00	2.01	2.00	2.01	2.02	2.01	2.05	2.06	2.08	2.10	1.99	2.10	2.04
Jun 24	2.09	2.07	2.08	2.07	2.07	2.08	2.12	2.11	S	2.03	2.00	2.00	2.00	1.99	1.99	1.99	1.99	1.99	1.99	2.00	2.00	2.00	2.01	2.02	1.99	2.12	2.03
Jun 25	2.12	2.16	2.14	2.06	2.07	2.11	2.15	S	2.10	2.06	2.04	2.01	2.01	2.00	2.00	2.00	2.00	2.00	2.00	2.02	2.01	1.99	1.99	2.06	1.99	2.16	2.05
Jun 26	2.10	2.07	2.07	2.06	2.08	2.08	S	2.01	2.00	2.00	2.00	2.00	2.00	1.99	1.98	1.99	1.99	1.99	1.99	2.00	2.01	1.98	2.01	2.01	1.98	2.10	2.02
Jun 27	2.03	2.04	2.03	2.03	2.07	S	2.10	2.13	2.10	2.09	2.04	1.99	1.97	1.98	1.98	1.97	1.97	1.97	1.97	1.98	1.98	2.06	2.11	2.08	1.97	2.13	2.03
Jun 28	2.08	2.07	2.12	2.06	S	2.22	2.10	2.01	2.00	1.99	1.99	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.99	1.99	2.05	2.09	2.05	2.06	1.98	2.22	2.03
Jun 29	2.05	2.06	2.07	S	2.07	2.08	2.07	2.04	2.02	2.01	2.00	1.99	1.99	1.98	1.98	1.98	1.98	1.98	1.98	2.01	2.03	2.04	2.05	2.00	1.98	2.08	2.02
Jun 30	1.98	2.00	S	2.22	2.10	2.09	2.13	2.05	2.03	2.05	2.06	1.99	1.96	1.97	1.96	1.96	1.96	1.96	1.97	1.98	1.98	2.00	1.97	1.98	1.96	2.22	2.02
Diurnal Maximum	2.12	2.16	2.14	2.24	2.17	2.24	2.18	2.14	2.12	2.11	2.10	2.10	2.12	2.11	2.11	2.11	2.10	2.09	2.05	2.06	2.08	2.09	2.16	2.14			
Diurnal Average	2.04	2.05	2.06	2.07	2.06	2.07	2.07	2.05	2.04	2.03	2.02	2.01	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.01	2.02	2.03	2.04	2.04			

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.



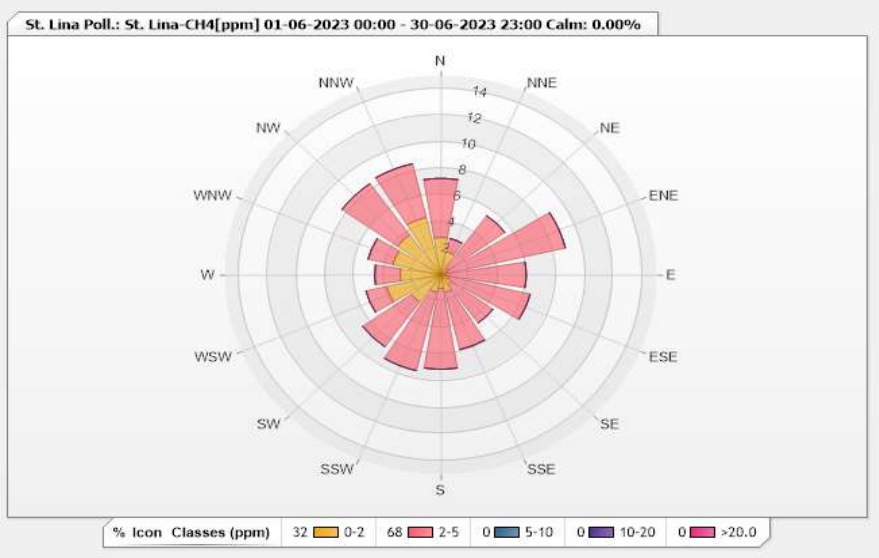


Station: St. Lina Poll.: St. Lina-CH4[ppm] Monthly: 06-2023

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

Calm: 0.00% Valid Data: 94.03% Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-20	>20.0	Total
N	2.81	4.43	0	0	0	7.24
NNE	1.77	1.03	0	0	0	2.8
NE	0.59	4.87	0	0	0	5.46
ENE	0.44	8.42	0	0	0	8.86
E	0.3	5.61	0	0	0	5.91
ESE	0.59	5.76	0	0	0	6.35
SE	0.89	3.55	0	0	0	4.44
SSE	1.33	4.43	0	0	0	5.76
S	1.03	6.06	0	0	0	7.09
SSW	1.33	6.06	0	0	0	7.39
SW	2.51	4.14	0	0	0	6.65
WSW	3.84	1.48	0	0	0	5.32
W	2.81	1.77	0	0	0	4.58
WNW	3.4	1.77	0	0	0	5.17
NW	3.69	4.73	0	0	0	8.42
NNW	4.43	4.14	0	0	0	8.57
Summary	31.76	68.25	0	0	0	100



Lakeland Industry & Community Association

St. Lina Site - June 2023

Summary of Hourly Averages

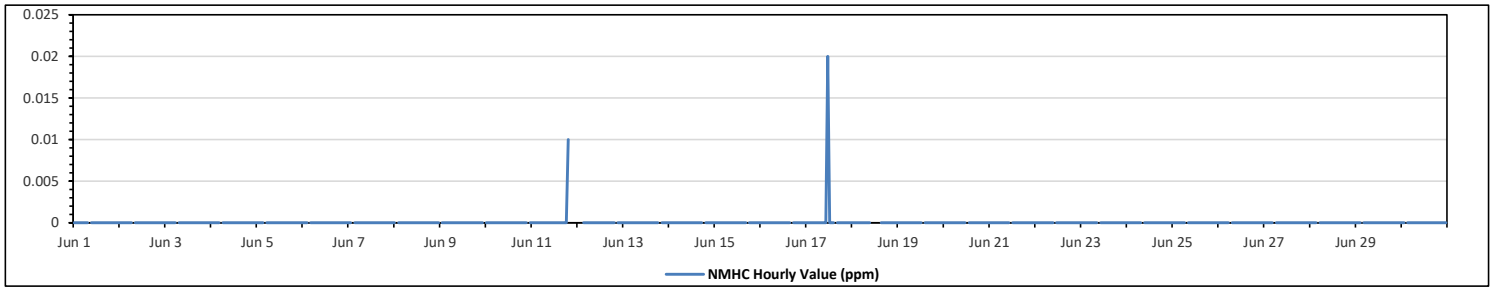
NON-METHANE HYDROCARBONS (NMHC) in ppm

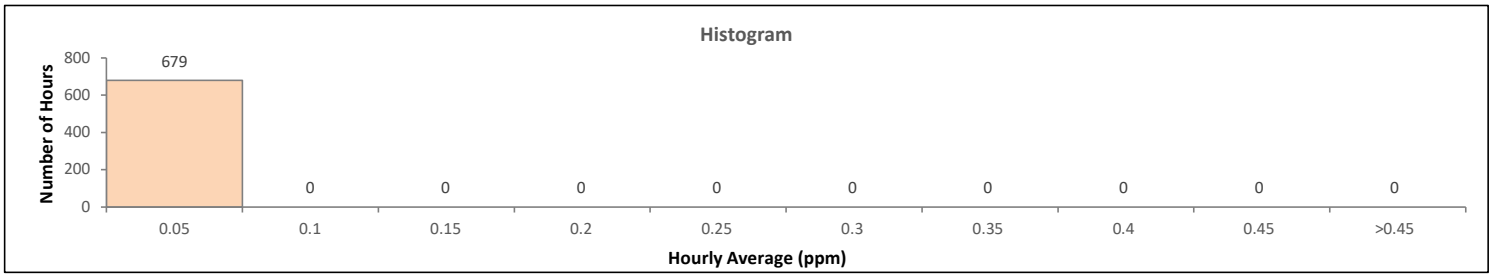
Maximum Hourly Value:	0.02	ppm	on Jun 17 at hr 11	Hours in Service:	720
Maximum Daily Value:	0.00	ppm	on Jun 17	Hours of Data:	679
Minimum Hourly Value:	0.00	ppm	on Jun 1 at hr 0	Hours of Missing Data:	7
Minimum Daily Value:	0.00	ppm	on Jun 1	Hours of Calibration:	34
Monthly Average:	0.00	ppm		Operational Uptime:	99.0

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			
Jun 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jun 2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jun 3	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jun 4	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jun 5	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jun 6	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
Jun 7	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jun 8	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
Jun 9	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00
Jun 10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00
Jun 11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	K	K	K	K	0.00	0.01	0.00
Jun 12	K	K	K	0.00	0.00	0.00	0.00	0.00	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
Jun 13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jun 14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jun 15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jun 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	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jun 17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.02**	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.02**	**0.00**
Jun 18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	C	C	C	C	C	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jun 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	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
Jun 20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jun 21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jun 22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jun 23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jun 24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jun 25	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
Jun 26	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jun 27	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jun 28	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jun 29	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jun 30	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diurnal Maximum	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	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.



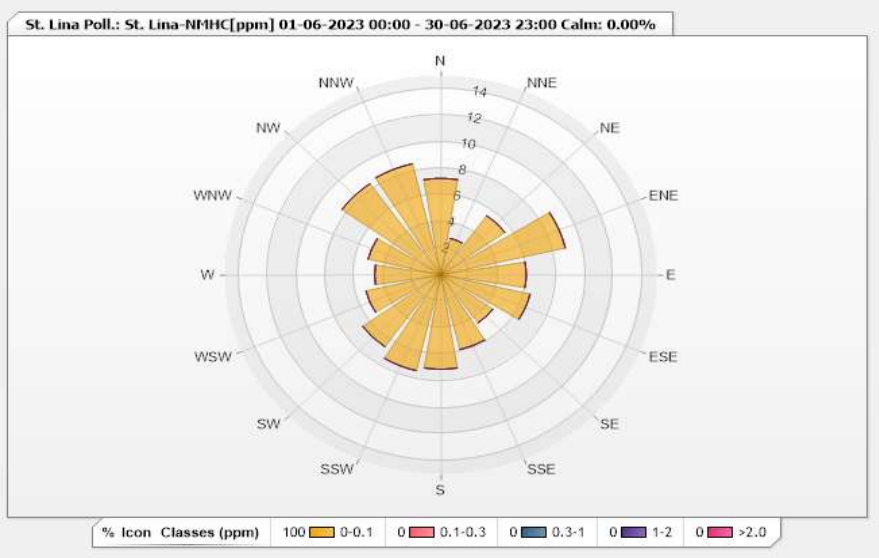


Station: St. Lina Poll.: St. Lina-NMHC[ppm] Monthly: 06-2023

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

Calm: 0.00% Valid Data: 94.03% Calm Avg: 0.00 [ppm]

Direction	0-0.1	0.1-0.3	0.3-1	1-2	>2.0	Total
N	7.24	0	0	0	0	7.24
NNE	2.81	0	0	0	0	2.81
NE	5.47	0	0	0	0	5.47
ENE	8.86	0	0	0	0	8.86
E	5.91	0	0	0	0	5.91
ESE	6.35	0	0	0	0	6.35
SE	4.43	0	0	0	0	4.43
SSE	5.76	0	0	0	0	5.76
S	7.09	0	0	0	0	7.09
SSW	7.39	0	0	0	0	7.39
SW	6.65	0	0	0	0	6.65
WSW	5.32	0	0	0	0	5.32
W	4.58	0	0	0	0	4.58
WNW	5.17	0	0	0	0	5.17
NW	8.42	0	0	0	0	8.42
NNW	8.57	0	0	0	0	8.57
Summary	100	0	0	0	0	100



Lakeland Industry & Community Association

St. Lina Site - June 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

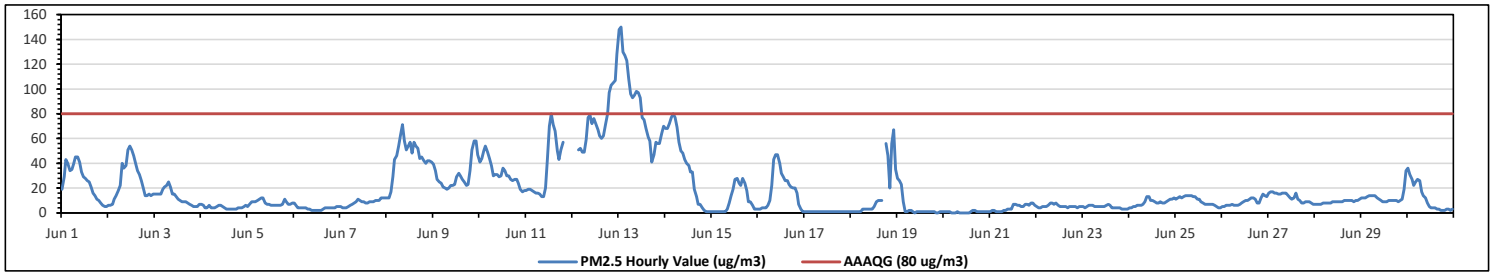
Number of 1-Hour Exceedances: 17 Number of 24-Hour Exceedances: 7

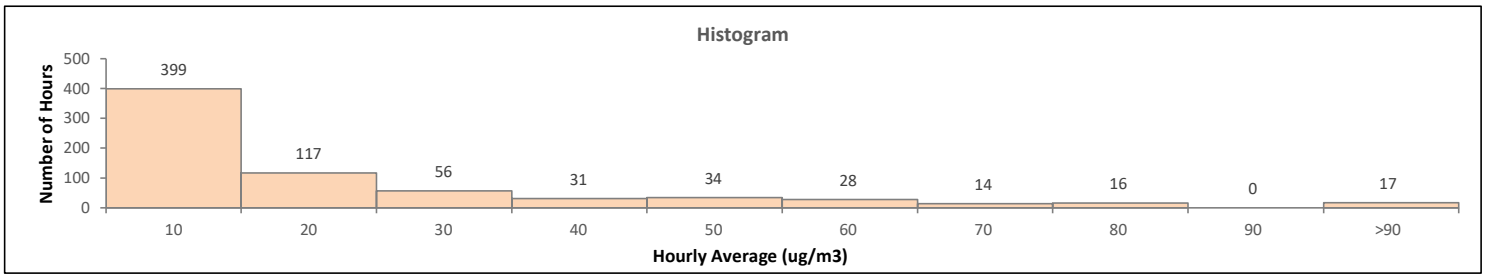
Maximum Hourly Value:	150 µg/m^3 on Jun 13 at hr 1	Hours in Service:	720
Maximum Daily Value:	87.0 µg/m^3 on Jun 13	Hours of Data:	712
Minimum Hourly Value:	0 µg/m^3 on Jun 19 at hr 9	Hours of Missing Data:	7
Minimum Daily Value:	1 µg/m^3 on Jun 20	Hours of Calibration:	1
Monthly Average:	18.7 µg/m^3	Operational Uptime:	99.0

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			
Jun 1	19	29	43	40	34	35	39	45	45	41	33	29	28	26	25	21	16	14	11	10	8	6	5	5	5	45	25.3
Jun 2	6	6	7	11	14	18	22	40	36	38	51	54	51	46	40	34	31	26	20	14	14	15	14	15	6	54	26.0
Jun 3	15	15	15	15	19	21	22	25	21	15	15	13	11	10	9	9	9	8	7	6	5	5	5	7	5	25	12.6
Jun 4	7	6	4	4	6	4	4	4	5	6	6	5	4	3	3	3	3	3	3	4	4	4	5	6	3	7	4.4
Jun 5	5	7	9	9	9	10	11	12	12	8	7	7	6	6	6	6	6	6	7	11	9	7	7	8	5	12	8.0
Jun 6	8	6	4	4	4	4	4	3	3	2	2	2	2	2	2	3	4	4	4	4	4	4	5	5	2	8	3.7
Jun 7	5	4	4	4	5	6	7	8	9	11	10	9	9	8	8	9	9	9	10	10	10	12	12	12	4	12	8.3
Jun 8	12	12	17	29	43	46	54	63	71	58	51	54	57	48	57	54	52	44	45	42	40	42	42	41	12	71	44.8
Jun 9	39	34	27	25	24	21	20	19	20	22	22	23	29	32	30	27	25	22	23	34	51	58	58	47	19	58	30.5
Jun 10	41	44	50	54	49	44	38	30	31	31	29	30	36	34	30	30	27	26	27	27	24	19	17	18	17	54	32.8
Jun 11	18	19	19	18	17	16	16	15	13	13	20	44	70	80	71	66	50	43	51	57	K	K	K	K	13	80	35.8
Jun 12	K	K	K	51	52	49	49	59	77	79	72	76	72	67	62	60	62	72	80	97	103	105	107	128	49	128	75.2
Jun 13	148	**150**	130	127	123	108	96	93	95	98	97	93	77	75	68	61	58	41	47	57	56	56	64	70	41	**150**	**87.0**
Jun 14	68	68	72	77	80	77	69	57	50	48	43	40	38	33	33	19	13	7	7	4	2	1	1	1	1	80	37.8
Jun 15	1	1	1	1	1	1	1	1	3	8	14	19	27	28	24	22	28	24	18	9	9	6	3	3	1	28	10.5
Jun 16	3	3	4	4	4	6	10	22	43	47	47	40	32	29	26	26	23	21	20	20	16	7	3	1	1	47	19.0
Jun 17	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0
Jun 18	1	1	1	1	1	1	3	3	3	3	3	3	5	9	10	10	10	C	56	46	20	56	67	35	1	67	15.1
Jun 19	28	26	23	9	1	1	2	2	1	0	1	1	1	1	1	1	1	1	1	1	0	0	1	1	**0**	28	4.4
Jun 20	1	1	1	1	0	0	0	1	0	0	0	0	0	0	1	2	2	1	1	1	1	1	1	1	**0**	2	**0.7**
Jun 21	1	2	2	1	1	1	1	2	2	3	3	3	7	7	6	6	5	5	7	7	6	8	8	6	1	8	4.2
Jun 22	5	4	4	5	5	5	6	8	8	7	8	6	5	5	5	5	4	5	5	5	5	4	5	5	4	8	5.4
Jun 23	5	4	5	6	6	6	5	5	5	5	5	5	6	7	6	4	4	4	4	4	3	3	3	3	3	7	4.7
Jun 24	4	4	5	5	6	6	6	7	9	13	13	10	10	9	8	8	9	8	8	9	10	11	11	12	4	13	8.4
Jun 25	11	12	13	12	13	14	14	14	14	13	13	11	11	9	8	7	7	7	7	7	6	5	4	4	4	14	9.8
Jun 26	5	5	6	6	6	7	6	6	6	7	8	9	10	10	11	12	12	11	8	8	12	15	14	13	5	15	8.9
Jun 27	16	17	17	16	16	15	15	16	16	16	14	12	11	12	16	11	10	8	8	9	9	9	8	7	7	17	12.7
Jun 28	7	7	7	7	8	8	8	8	8	9	9	9	9	9	9	10	10	10	10	10	9	10	10	11	7	11	8.8
Jun 29	12	12	12	13	14	14	14	14	12	11	10	9	9	9	10	10	10	10	10	9	10	11	19	34	9	34	12.4
Jun 30	36	31	27	22	25	27	26	17	14	12	8	5	4	4	4	3	3	2	2	2	3	3	2	3	2	36	11.9
Diurnal Maximum	148	150	130	127	123	108	96	93	95	98	97	93	77	80	71	66	62	72	80	97	103	105	107	128			
Diurnal Average	18.2	18.3	18.3	19.3	19.6	19.1	19.0	20.0	21.1	20.8	20.5	20.7	21.3	20.6	19.7	18.0	16.8	15.3	16.9	17.5	15.5	16.7	17.3	17.3			

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.



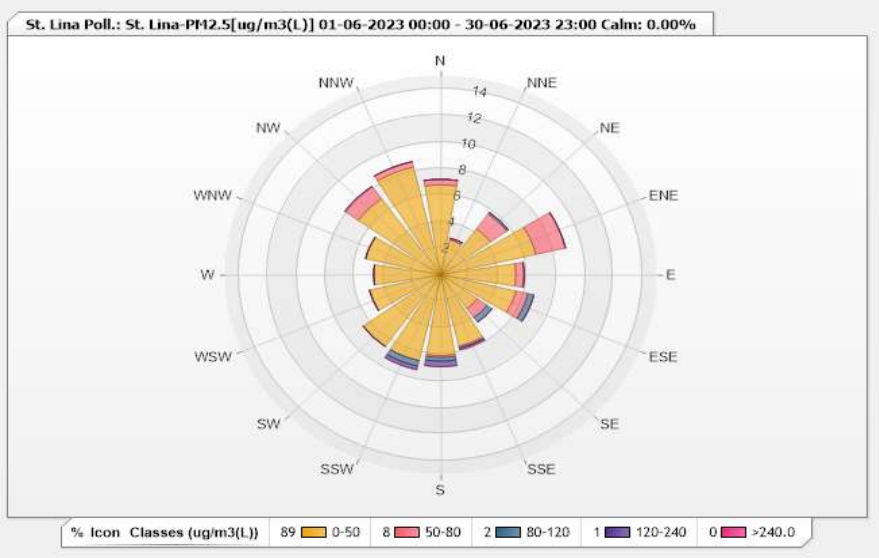


Station: St. Lina Poll.: St. Lina-PM2.5[ug/m3(L)] Monthly: 06-2023

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

Calm: 0.00% Valid Data: 98.61% Calm Avg: 0.00 [ppm]

Direction	0-50	50-80	80-120	120-240	>240.0	Total
N	6.76	0.42	0	0	0	7.18
NNE	2.68	0.14	0	0	0	2.82
NE	4.23	1.41	0.14	0	0	5.78
ENE	6.76	2.11	0	0	0	8.87
E	5.21	0.56	0	0	0	5.77
ESE	5.35	0.85	0.42	0	0	6.62
SE	3.1	0.85	0.42	0	0	4.37
SSE	5.49	0.14	0	0.14	0	5.77
S	6.06	0.14	0.28	0.42	0	6.9
SSW	6.62	0	0.42	0.28	0	7.32
SW	6.62	0	0	0	0	6.62
WSW	5.07	0	0	0	0	5.07
W	4.65	0	0	0	0	4.65
WNW	5.35	0	0	0	0	5.35
NW	7.04	1.13	0	0	0	8.17
NNW	8.31	0.42	0	0	0	8.73
Summary	89.3	8.17	1.68	0.84	0	100



Lakeland Industry & Community Association

St. Lina Site - June 2023

Summary of Hourly Averages

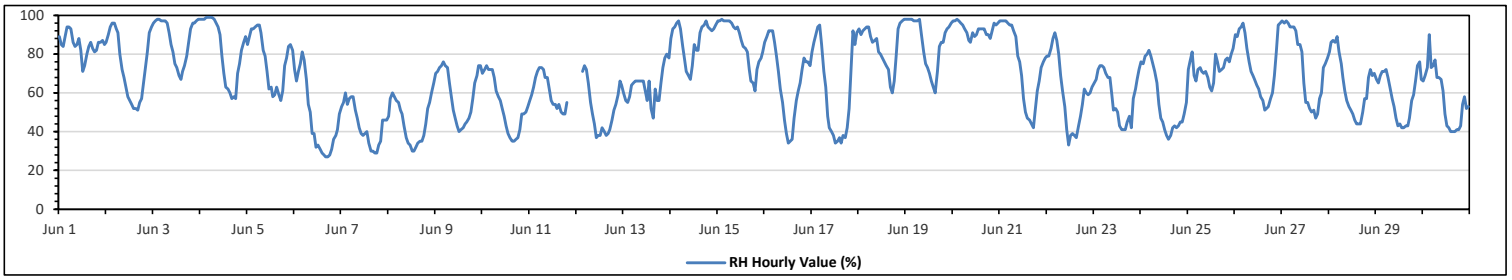
RELATIVE HUMIDITY (RH) in %

Maximum Hourly Value:	99	%	on Jun 4 at hr 3	Hours in Service:	720	
Maximum Daily Value:	92.8	%	on Jun 20	Hours of Data:	713	
Minimum Hourly Value:	27	%	on Jun 6 at hr 16	Hours of Missing Data:	7	
Minimum Daily Value:	43.7	%	on Jun 7	Hours of Calibration:	0	
Monthly Average:	68.2	%		Operational Uptime:	99.0	

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			
Jun 1	89	85	84	89	94	94	93	86	84	85	88	82	71	74	80	84	86	83	81	82	86	86	87	85	71	94	84.9
Jun 2	86	90	94	96	96	93	91	80	72	68	63	58	56	54	52	52	51	55	57	65	73	81	91	94	51	96	73.7
Jun 3	96	97	98	98	97	97	97	96	91	85	81	75	73	69	67	71	74	79	86	93	96	96	97	98	67	98	87.8
Jun 4	98	98	98	**99**	**99**	**99**	**99**	98	96	94	90	79	70	63	62	60	57	58	57	70	75	82	86	89	57	**99**	82.3
Jun 5	85	89	93	93	94	95	95	91	82	79	71	62	63	58	59	63	59	56	61	74	78	84	85	82	56	95	77.1
Jun 6	72	66	71	75	81	77	67	54	50	39	39	32	33	31	29	28	**27**	**27**	28	31	36	38	41	49	**27**	81	46.7
Jun 7	53	55	60	54	57	58	58	51	47	42	39	38	39	40	34	30	30	29	29	33	35	46	46	46	29	60	**43.7**
Jun 8	48	57	60	58	56	55	51	49	43	37	34	33	30	30	32	34	35	35	38	44	52	55	60	65	30	65	45.5
Jun 9	70	71	73	74	76	74	73	65	58	51	47	43	40	41	42	44	45	47	50	57	65	69	74	74	40	76	59.3
Jun 10	70	72	74	72	72	72	68	61	58	56	52	48	43	39	37	35	35	36	37	41	49	49	50	53	35	74	53.3
Jun 11	56	59	63	68	71	73	73	72	68	68	62	56	54	54	52	54	50	49	49	55	**K**	**K**	**K**	**K**	49	73	60.3
Jun 12	**K**	**K**	**K**	71	74	72	65	55	49	44	37	38	38	42	40	38	39	41	46	51	54	59	66	64	37	74	51.6
Jun 13	60	56	55	58	64	65	66	66	66	66	66	61	56	66	52	47	62	56	56	65	73	78	80	78	47	80	63.3
Jun 14	88	93	94	96	97	93	84	77	71	69	67	74	85	82	82	91	94	95	97	94	93	92	93	95	67	97	87.3
Jun 15	97	97	98	97	97	97	97	96	94	93	94	91	87	84	83	81	72	66	65	61	72	76	78	81	61	98	85.6
Jun 16	86	89	92	92	92	86	79	71	62	55	46	39	34	35	36	47	56	61	65	72	78	76	76	74	34	92	66.6
Jun 17	81	86	90	94	95	85	71	63	48	42	40	38	34	35	37	34	38	37	42	52	72	92	85	91	34	95	61.8
Jun 18	93	90	92	93	94	94	89	86	87	88	81	80	78	76	74	72	63	60	66	79	93	96	97	98	60	98	84.1
Jun 19	98	98	98	98	97	97	97	98	90	81	75	73	70	66	63	60	71	84	86	86	91	93	94	96	60	98	85.8
Jun 20	97	97	98	97	96	95	93	91	87	86	91	89	90	93	93	93	93	90	90	88	92	96	95	96	86	98	**92.8**
Jun 21	97	97	97	97	96	95	95	92	89	79	76	69	57	50	47	46	44	42	50	61	66	73	76	78	42	97	73.7
Jun 22	79	79	83	88	91	87	80	69	61	53	41	33	38	39	38	37	43	48	54	62	60	59	60	63	33	91	60.2
Jun 23	65	67	72	74	74	73	70	68	68	59	51	52	50	43	41	41	41	45	48	42	57	62	67	72	41	74	58.4
Jun 24	76	75	79	80	82	79	75	71	65	54	47	45	41	38	36	38	42	43	42	43	45	45	49	55	36	82	56.0
Jun 25	72	76	81	69	66	72	73	71	70	71	68	63	61	65	80	76	71	72	73	77	78	76	80	83	61	83	72.7
Jun 26	90	89	93	94	96	91	83	76	71	69	67	64	62	58	56	51	52	53	57	60	69	81	95	96	51	96	73.9
Jun 27	97	96	97	96	94	94	94	92	85	85	81	65	55	55	52	50	51	47	49	57	60	73	75	78	47	97	74.1
Jun 28	81	86	87	86	89	81	75	68	61	56	53	51	49	46	44	44	44	50	57	57	68	72	69	70	44	89	64.3
Jun 29	67	65	69	71	71	72	68	63	57	53	47	43	44	42	42	43	43	47	56	59	66	74	76	67	42	76	58.5
Jun 30	66	69	73	90	73	74	77	68	68	67	61	49	43	42	40	40	40	41	41	43	54	58	52	53	40	90	57.6
Diurnal Maximum	98	98	98	99	99	99	99	98	96	94	94	91	90	93	93	93	94	95	97	94	96	96	97	98			
Diurnal Average	79.8	80.8	83.3	83.9	84.4	83.0	79.9	74.8	69.9	65.8	61.8	57.4	54.8	53.7	52.7	52.8	53.6	54.4	57.1	61.8	68.5	73.0	75.2	76.7			

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

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



Lakeland Industry & Community Association

St. Lina Site - June 2023

Summary of Hourly Averages

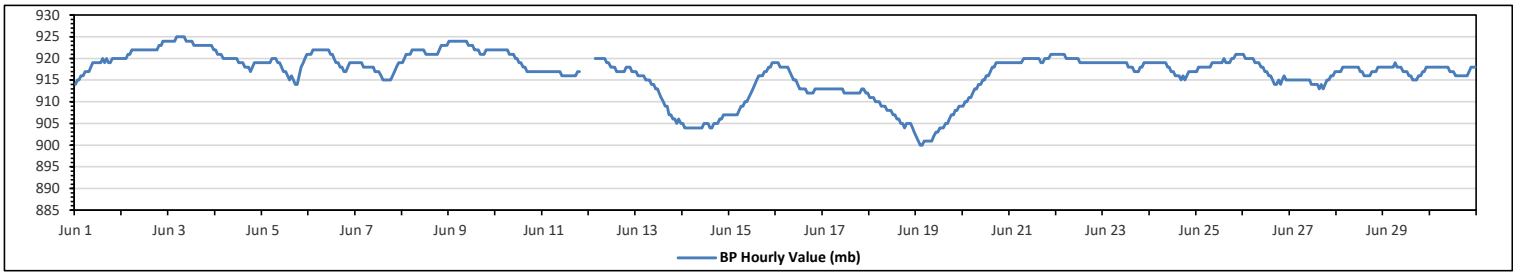
BAROMETRIC PRESSURE (BP) in millibar

Maximum Hourly Value:	925	mb	on Jun 3 at hr 4	Hours in Service:	720	
Maximum Daily Value:	924	mb	on Jun 3	Hours of Data:	713	
Minimum Hourly Value:	900	mb	on Jun 19 at hr 2	Hours of Missing Data:	7	
Minimum Daily Value:	904	mb	on Jun 19	Hours of Calibration:	0	
Monthly Average:	917	mb		Operational Uptime:	99.0	

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
Jun 1	914	915	915	916	916	917	917	917	918	919	919	919	919	919	920	919	920	919	919	920	920	920	920	920	914	920	918
Jun 2	920	920	920	921	921	922	922	922	922	922	922	922	922	922	922	922	922	922	922	923	923	924	924	924	920	924	922
Jun 3	924	924	924	924	**925**	**925**	**925**	**925**	**925**	924	924	924	924	923	923	923	923	923	923	923	923	923	923	922	922	**925**	**924**
Jun 4	922	921	921	921	920	920	920	920	920	920	920	920	919	919	919	918	918	918	917	918	919	919	919	919	917	922	919
Jun 5	919	919	919	919	919	920	920	920	919	919	918	917	917	916	915	916	915	914	914	916	918	919	920	921	914	921	918
Jun 6	921	921	922	922	922	922	922	922	922	922	922	921	921	920	919	919	918	918	917	917	918	919	919	919	917	922	920
Jun 7	919	919	919	919	918	918	918	918	918	918	917	917	917	916	915	915	915	915	915	916	917	918	919	919	915	919	917
Jun 8	919	920	921	921	921	922	922	922	922	922	922	922	921	921	921	921	921	921	921	922	923	923	923	923	919	923	922
Jun 9	924	924	924	924	924	924	924	924	924	924	923	923	923	922	922	922	921	921	921	922	922	922	922	922	921	924	923
Jun 10	922	922	922	922	922	922	922	921	921	921	920	920	919	919	918	918	917	917	917	917	917	917	917	917	917	922	919
Jun 11	917	917	917	917	917	917	917	917	917	917	916	916	916	916	916	916	916	916	917	917	**K**	**K**	**K**	**K**	916	917	917
Jun 12	**K**	**K**	**K**	920	920	920	920	920	920	919	919	918	918	918	917	917	917	917	917	918	918	918	917	917	917	920	918
Jun 13	917	916	916	916	916	915	915	915	914	914	913	913	912	911	910	909	909	907	907	906	906	905	906	905	905	917	911
Jun 14	905	904	904	904	904	904	904	904	904	904	904	905	905	905	904	904	905	905	905	906	906	907	907	907	904	907	905
Jun 15	907	907	907	907	907	908	909	909	910	910	911	912	913	914	915	916	916	916	917	917	918	918	919	919	907	919	913
Jun 16	919	919	918	918	918	918	918	917	916	915	915	914	913	913	913	913	912	912	912	912	913	913	913	913	912	919	915
Jun 17	913	913	913	913	913	913	913	913	913	913	913	912	912	912	912	912	912	912	912	912	913	913	912	912	912	913	913
Jun 18	911	911	911	910	910	910	909	909	909	908	908	908	907	907	906	906	905	905	904	905	905	905	904	903	903	911	907
Jun 19	902	901	**900**	**900**	901	901	901	901	901	902	903	903	904	904	904	905	905	906	907	907	908	908	909	909	**900**	909	**904**
Jun 20	909	910	910	911	911	912	913	913	914	914	915	915	916	916	917	918	918	919	919	919	919	919	919	919	909	919	915
Jun 21	919	919	919	919	919	919	919	920	920	920	920	920	920	920	920	920	919	919	920	920	920	921	921	921	919	921	920
Jun 22	921	921	921	921	921	920	920	920	920	920	920	920	919	919	919	919	919	919	919	919	919	919	919	919	919	921	920
Jun 23	919	919	919	919	919	919	919	919	919	919	919	919	919	918	918	918	917	917	917	918	918	919	919	919	917	919	919
Jun 24	919	919	919	919	919	919	919	919	919	918	918	917	917	916	916	916	915	916	915	916	917	917	917	917	915	919	917
Jun 25	917	918	918	918	918	918	918	918	919	919	919	919	919	919	920	919	919	919	920	920	921	921	921	921	917	921	919
Jun 26	921	920	920	920	920	920	919	919	919	918	918	917	917	916	916	915	914	914	915	914	915	916	915	915	914	921	917
Jun 27	915	915	915	915	915	915	915	915	915	915	915	914	914	914	914	913	914	913	914	915	915	916	916	917	913	917	915
Jun 28	917	917	917	918	918	918	918	918	918	918	918	918	917	917	916	916	916	916	917	917	917	918	918	918	916	918	917
Jun 29	918	918	918	918	918	918	919	918	918	918	917	917	917	916	916	915	915	915	916	916	917	917	918	918	915	919	917
Jun 30	918	918	918	918	918	918	918	918	918	918	917	917	917	916	916	916	916	916	916	916	917	918	918	918	916	918	917
Diurnal Maximum	924	924	924	924	925	925	925	925	925	924	924	924	924	923	923	923	923	923	923	923	923	924	924	924			
Diurnal Average	917	917	917	917	917	917	917	917	917	917	917	917	916	916	916	916	916	916	916	916	917	917	917	917			

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 - June 2023

Summary of Hourly Averages

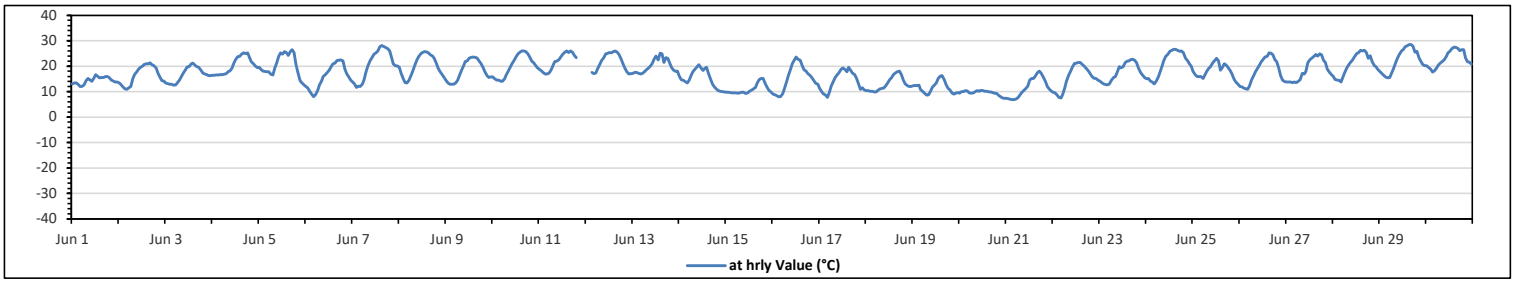
AMBIENT TEMPERATURE (AT) in Degree Celsius

Maximum Hourly Value:	28.5	°C	on Jun 29 at hr 15	Hours in Service:	720
Maximum Daily Value:	22.9	°C	on Jun 30	Hours of Data:	713
Minimum Hourly Value:	6.9	°C	on Jun 21 at hr 3	Hours of Missing Data:	7
Minimum Daily Value:	9.6	°C	on Jun 20	Hours of Calibration:	0
Monthly Average:	17.4	°C		Operational Uptime:	99.0

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
Jun 1	13.1	13.5	13.4	12.8	12.1	12.1	12.6	14.3	15.1	14.7	14	15.2	16.7	16.1	15.4	15.5	15.5	15.9	15.9	15.5	14.5	14.2	13.8	13.8	12.1	16.7	14.4
Jun 2	13.5	12.8	11.9	11.1	10.9	11.5	12.1	15	16.8	17.7	18.8	19.6	20	20.7	21	21	21.3	20.5	20.2	19.3	17.2	15.7	14.3	14.2	10.9	21.3	16.5
Jun 3	13.5	13.2	12.9	12.9	12.5	12.7	13.6	14.5	15.9	17.4	18.4	19.7	19.8	20.9	21.2	20.4	19.9	19.6	18.5	17.4	17	16.6	16.3	16.3	12.5	21.2	16.7
Jun 4	16.4	16.4	16.5	16.5	16.6	16.7	16.8	17.1	17.8	18.2	19.2	21.2	22.8	23.7	23.9	24.7	25.2	25	25.3	23.3	21.8	21	20.1	19.4	16.4	25.3	20.2
Jun 5	19.6	18.7	18.1	17.9	17.8	17.8	16.8	16.5	19.3	21.3	23.8	25.2	24.7	25.7	25.4	24.3	25.8	26.5	25.4	20.7	17.1	14.3	13.4	12.6	12.6	26.5	20.4
Jun 6	12	11.4	10.1	9	8.1	8.7	10.5	12.8	14.1	15.9	16.7	17.6	18.5	19.9	20.9	21.2	22.2	22.4	22.5	22.1	18.9	17	15.8	14.5	8.1	22.5	16.0
Jun 7	13.8	13.1	11.7	12.2	12	13	14.8	17.8	20.2	22.2	23.5	24.7	25.2	26	27.6	28.2	27.8	27.4	26.9	26	23.3	20.9	20.3	20.1	11.7	28.2	20.8
Jun 8	19.6	17.1	15.1	13.6	13.5	14.4	16.2	18.1	20.6	22.5	23.9	24.8	25.4	25.7	25.6	25.3	24.5	24	23	21.3	19.3	17.9	16.7	15.6	13.5	25.7	20.2
Jun 9	14.4	13.4	12.9	12.9	12.9	13.4	14.4	16.6	18.6	20.2	21.8	22.1	23.2	23.5	23.6	23.5	23.2	22.1	21.1	19.7	17.9	16.3	15.6	15.8	12.9	23.6	18.3
Jun 10	15.8	15.2	14.6	14.6	14.2	14	15	16.5	17.9	19.4	20.9	22.3	23.7	24.8	25.5	25.9	25.9	25.7	25	23.7	22	21.3	20.4	19.5	14.0	25.9	20.2
Jun 11	18.9	18.2	17.5	16.9	16.9	17.4	18.4	20.2	21.8	21.9	22.6	23.7	24.7	25.4	25.9	25.4	25.9	25.5	24.3	23.3	K	K	K	K	16.9	25.9	21.7
Jun 12	K	K	K	17.6	17.1	17.3	19	20.6	22.2	23.3	24.8	25	25.4	25.2	25.7	25.9	25.5	24.4	22.9	21	19.1	17.8	17	17.1	17.0	25.9	21.6
Jun 13	17.2	17.6	17.6	17.2	16.9	17.2	17.8	18.6	19.2	20	21	22.8	24	22.5	25.1	24.9	21.5	23.3	23	21.2	19.5	18.5	17.9	18	16.9	25.1	20.1
Jun 14	16.1	14.7	14.4	13.9	13.4	14.5	16.4	17.9	18.9	19.7	20.5	19.5	18.3	19.1	19.6	17.2	14.9	12.9	11.8	11	10.4	10.1	10	9.8	9.8	20.5	15.2
Jun 15	9.7	9.7	9.6	9.5	9.5	9.5	9.4	9.5	9.7	9.7	9.3	9.5	10.1	10.5	11	11.6	13.6	14.9	15.2	15.1	13.3	11.8	10.6	9.8	9.3	15.2	10.9
Jun 16	9	8.8	8.3	8	8.1	9.1	11.4	13.7	16.4	18.6	20.9	22.4	23.6	22.8	22.3	20.3	18.6	18	17.2	16.4	15.5	14.4	13.3	12.9	8.0	23.6	15.4
Jun 17	11.4	10.1	9.2	8.7	7.8	9.7	12.3	13.9	15.6	16.5	17.5	18.7	19.3	18.7	17.8	19.6	18.4	17.3	16.6	15.1	13.1	10.9	11.5	10.7	7.8	19.6	14.2
Jun 18	10.4	10.4	10.2	10.1	9.8	9.9	10.6	11	11.2	11.4	12.3	13.5	14.9	15.4	16.6	17.4	17.8	18	16.7	14.5	13.1	12.4	12	12	9.8	18.0	13.0
Jun 19	12.3	12.4	12.4	12.5	10.8	10.2	9.4	8.6	8.7	10.1	11.8	12.5	13.5	15.1	16.1	16.3	14.7	12.6	11.2	10.8	9.5	9	9.4	9.6	8.6	16.3	11.6
Jun 20	9.4	10	10	10.4	10.3	9.5	9.4	9.5	10	10.4	10.1	10.5	10.4	10.2	10.1	9.8	9.9	9.6	9.4	9.3	8.5	8	7.5	7.3	7.3	10.5	**9.6**
Jun 21	7.3	7.2	7	**6.9**	**6.9**	7.1	7.8	8.8	9.6	10.6	11.3	12.2	14.5	15.2	15.1	16.2	17.5	18	17.2	15.5	14	12.1	11	10.3	**6.9**	18.0	11.6
Jun 22	9.7	9.5	8.7	7.8	7.5	8.9	11.3	14.1	16.5	18.1	19.9	21.1	21.2	21.5	21.5	20.7	20.1	19.2	18.2	17.1	16.1	15.3	15.2	14.6	7.5	21.5	15.6
Jun 23	14.2	13.6	13	12.8	12.6	13	14.4	15.5	16	17.8	19.8	19.3	19.9	21.4	22	22.1	22.6	22.7	22.3	21.3	19.1	17.5	16.4	15.6	12.6	22.7	17.7
Jun 24	15	15.1	14.1	13.7	13	14	15.8	17.9	20.3	22.2	23.9	24.7	25.8	26.2	26.6	26.6	26.2	25.8	26	25.4	23.1	22.2	20.9	20	13.0	26.6	21.0
Jun 25	18.1	16.6	15.9	16	15.9	15.2	16.4	17.9	19	19.9	21.3	22.2	23	22.1	18.5	19.5	21	20.4	19.5	18.2	16.6	15	13.7	13	13.0	23.0	18.1
Jun 26	12	11.9	11.4	11.1	10.9	12.3	14.5	16.1	17.7	19.2	20.4	21.8	22.6	23.6	23.8	25.2	25.1	24.5	22.6	21.7	19.3	16.3	14.6	13.9	10.9	25.2	18.0
Jun 27	13.8	13.7	13.7	13.6	13.7	13.6	14	14.7	17.2	16.9	17.9	21.4	22.5	23.2	23.9	24.6	24	24.8	24.4	22.3	21.5	18.8	17.6	16.6	13.6	24.8	18.7
Jun 28	16	14.9	14.5	14.4	13.7	15.8	17.7	19.3	20.5	21.6	22.5	23.7	25	25.4	26.2	26	26.3	25.4	23.1	24.2	21.8	20.2	19.8	18.7	13.7	26.3	20.7
Jun 29	17.9	17.2	16.3	15.7	15.4	15.5	17.3	19	21.2	23.1	24.6	25.9	26.7	27.6	28	**28.5**	28.4	27.8	25.5	25.8	23.4	21.9	20.7	20.3	15.4	**28.5**	22.2
Jun 30	20.3	19.5	18.8	17.7	18.2	19.1	20.4	21.2	21.8	22.5	23.8	25.2	25.8	26.9	27.5	27.3	27	26.1	26.5	26.5	23.2	21.7	21.6	20.8	17.7	27.5	**22.9**
Diurnal Maximum	20.3	19.5	18.8	17.9	18.2	19.1	20.4	21.2	22.2	23.3	24.8	25.9	26.7	27.6	28.0	28.5	28.4	27.8	26.9	26.5	23.4	22.2	21.6	20.8			
Diurnal Average	14.2	13.7	13.1	12.9	12.6	13.1	14.2	15.6	17.0	18.1	19.2	20.3	21.0	21.5	21.8	21.8	21.7	21.3	20.6	19.5	17.6	16.2	15.4	14.9			

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 - June 2023

Summary of Hourly Averages

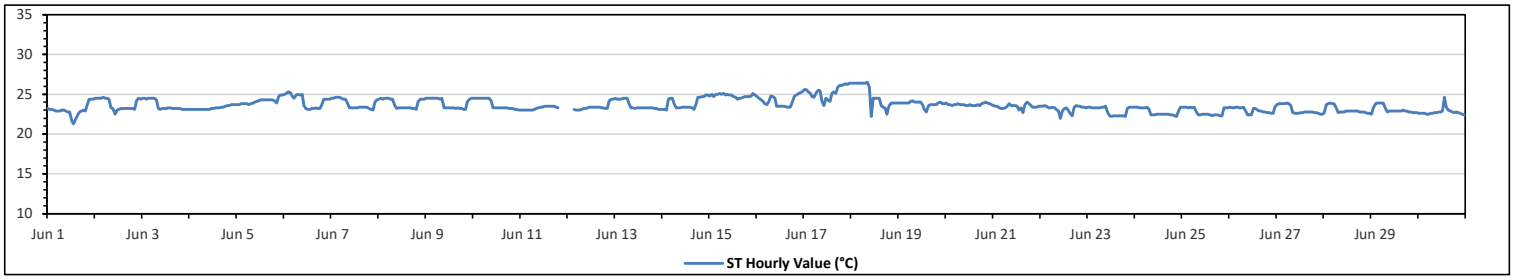
STATION TEMPERATURE (ST) in Degree Celsius

Maximum Hourly Value:	26.5	°C	on Jun 18 at hr 8	Hours in Service:	720	
Maximum Daily Value:	25.3	°C	on Jun 17	Hours of Data:	713	
Minimum Hourly Value:	21.3	°C	on Jun 1 at hr 13	Hours of Missing Data:	7	
Minimum Daily Value:	22.8	°C	on Jun 24	Hours of Calibration:	0	
Monthly Average:	23.6	°C		Operational Uptime:	99.0	

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
Jun 1	23.2	23.1	23.1	23.0	22.9	22.9	22.9	23.0	23.0	22.9	22.8	22.8	21.6	**21.3**	21.8	22.4	22.8	22.9	23.0	22.9	23.7	24.4	24.4	24.4	**21.3**	24.4	23.0
Jun 2	24.5	24.5	24.5	24.5	24.6	24.5	24.5	24.4	23.3	23.2	22.5	23.0	23.1	23.2	23.2	23.2	23.2	23.2	23.2	23.2	23.1	24.2	24.5	24.4	22.5	24.6	23.7
Jun 3	24.5	24.5	24.4	24.5	24.5	24.5	24.5	24.3	23.2	23.1	23.2	23.2	23.2	23.3	23.3	23.2	23.2	23.2	23.2	23.2	23.1	23.1	23.1	23.1	23.1	24.5	23.6
Jun 4	23.1	23.1	23.1	23.1	23.1	23.1	23.1	23.1	23.1	23.1	23.1	23.2	23.2	23.3	23.3	23.3	23.4	23.4	23.5	23.6	23.6	23.7	23.7	23.7	23.1	23.7	23.3
Jun 5	23.7	23.7	23.8	23.8	23.8	23.8	23.7	23.8	23.9	24.0	24.1	24.2	24.3	24.3	24.3	24.3	24.3	24.3	24.3	24.2	23.9	24.7	24.9	24.9	23.7	24.9	24.1
Jun 6	25.0	25.1	25.3	25.2	24.8	24.5	24.9	25.0	24.9	25.0	23.6	23.2	23.1	23.1	23.2	23.2	23.3	23.2	23.2	23.7	24.4	24.4	24.4	24.4	23.1	25.3	24.2
Jun 7	24.5	24.5	24.6	24.6	24.6	24.5	24.4	24.4	23.9	23.3	23.3	23.3	23.3	23.3	23.4	23.4	23.4	23.4	23.4	23.2	23.1	23.0	24.0	24.3	23.0	24.6	23.8
Jun 8	24.4	24.5	24.4	24.5	24.5	24.5	24.4	24.4	23.6	23.2	23.3	23.3	23.3	23.3	23.3	23.3	23.3	23.2	23.2	23.1	24.1	24.4	24.4	24.4	23.1	24.5	23.8
Jun 9	24.5	24.5	24.5	24.5	24.5	24.5	24.5	24.4	24.5	23.3	23.3	23.3	23.3	23.3	23.3	23.2	23.3	23.2	23.2	23.1	23.1	24.1	24.4	24.5	23.1	24.5	23.8
Jun 10	24.5	24.5	24.5	24.5	24.5	24.5	24.5	24.5	24.5	24.2	23.3	23.3	23.3	23.3	23.3	23.3	23.3	23.3	23.2	23.2	23.2	23.1	23.1	23.0	23.0	24.5	23.7
Jun 11	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.1	23.2	23.3	23.4	23.4	23.5	23.5	23.5	23.5	23.5	23.5	23.4	23.3	K	K	K	K	23.0	23.5	23.3
Jun 12	K	K	K	23.1	23.0	23.0	23.0	23.1	23.2	23.2	23.3	23.4	23.4	23.4	23.4	23.4	23.4	23.3	23.3	23.2	23.2	24.2	24.4	24.4	23.0	24.4	23.4
Jun 13	24.5	24.4	24.4	24.4	24.5	24.5	24.5	23.8	23.3	23.3	23.2	23.3	23.3	23.3	23.3	23.3	23.3	23.3	23.3	23.3	23.2	23.2	23.1	23.1	23.1	24.5	23.6
Jun 14	23.1	23.1	23.0	24.4	24.5	24.5	23.7	23.3	23.3	23.3	23.4	23.4	23.4	23.4	23.4	23.3	23.1	23.7	24.6	24.6	24.7	24.7	24.9	24.9	23.0	24.9	23.8
Jun 15	24.8	25.0	24.7	25.0	25.0	25.1	25.0	25.1	24.9	25.0	24.9	24.9	24.7	24.6	24.4	24.5	24.5	24.6	24.7	24.7	24.7	24.8	25.1	24.9	24.4	25.1	24.8
Jun 16	24.7	24.5	24.3	24.1	23.8	23.7	24.1	24.8	24.7	24.5	23.5	23.5	23.5	23.5	23.5	23.4	23.4	23.4	24.1	24.8	24.9	25.1	25.2	25.3	23.4	25.3	24.2
Jun 17	25.6	25.6	25.3	25.1	24.7	24.6	25.2	25.5	25.4	24.1	23.6	24.5	24.3	24.1	25.1	25.3	25.1	25.9	26.1	26.1	26.2	26.3	26.2	26.4	23.6	26.4	**25.3**
Jun 18	26.4	26.4	26.4	26.4	26.4	26.4	26.4	26.4	**26.5**	25.9	22.2	24.5	24.5	24.5	24.5	23.6	23.4	23.3	22.5	23.5	23.9	23.9	23.9	23.9	22.2	**26.5**	24.8
Jun 19	23.9	23.9	23.9	23.9	23.9	23.9	24.1	24.2	24.0	24.0	24.0	24.0	23.7	23.1	22.8	23.6	23.7	23.7	23.7	23.7	23.9	24.0	23.8	23.8	22.8	24.2	23.8
Jun 20	23.9	23.7	23.7	23.6	23.7	23.7	23.8	23.7	23.7	23.7	23.6	23.6	23.7	23.6	23.6	23.6	23.7	23.6	23.8	23.9	24.0	23.9	23.8	23.7	23.6	24.0	23.7
Jun 21	23.6	23.5	23.5	23.3	23.2	23.2	23.3	23.5	23.8	23.6	23.6	23.6	23.5	23.0	23.3	22.7	23.7	24.0	23.8	23.6	23.4	23.4	23.4	23.5	22.7	24.0	23.5
Jun 22	23.5	23.5	23.6	23.5	23.3	23.3	23.4	23.3	23.1	22.9	22.0	22.9	23.2	23.3	23.0	22.6	22.3	23.4	23.6	23.5	23.5	23.4	23.4	23.3	22.0	23.6	23.2
Jun 23	23.4	23.4	23.3	23.3	23.3	23.3	23.3	23.4	23.4	23.5	22.7	22.3	22.2	22.3	22.3	22.3	22.3	22.3	22.3	22.2	23.2	23.4	23.4	23.4	22.2	23.5	22.9
Jun 24	23.4	23.4	23.3	23.3	23.3	23.3	23.4	23.1	22.4	22.4	22.4	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.4	22.4	22.3	22.2	22.9	23.4	22.2	23.4	**22.8**
Jun 25	23.4	23.4	23.4	23.3	23.4	23.3	23.4	22.8	22.4	22.4	22.5	22.5	22.5	22.5	22.4	22.3	22.4	22.4	22.4	22.3	22.3	23.3	23.3	23.3	22.3	23.4	22.8
Jun 26	23.4	23.3	23.3	23.4	23.4	23.3	23.3	23.4	22.9	22.4	22.4	22.4	23.2	23.2	23.0	22.9	22.9	22.8	22.8	22.7	22.7	22.6	22.6	23.4	22.4	23.4	23.0
Jun 27	23.7	23.8	23.8	23.8	23.8	23.9	23.8	23.6	22.7	22.6	22.6	22.6	22.7	22.7	22.8	22.8	22.8	22.8	22.8	22.7	22.7	22.6	22.5	22.5	22.5	23.9	23.0
Jun 28	22.6	23.7	23.8	23.9	23.8	23.8	23.4	22.7	22.8	22.8	22.8	22.9	22.9	22.9	22.9	22.9	22.9	22.9	22.8	22.8	22.8	22.7	22.6	22.6	22.6	23.9	23.0
Jun 29	22.5	23.3	23.8	23.9	23.9	23.9	23.9	23.3	22.8	22.9	22.9	22.9	22.9	22.9	22.9	22.9	23.0	22.9	22.9	22.8	22.8	22.7	22.7	22.7	22.5	23.9	23.1
Jun 30	22.6	22.6	22.6	22.6	22.5	22.5	22.6	22.6	22.7	22.7	22.8	22.8	22.9	24.6	23.4	23.0	22.9	22.8	22.7	22.8	22.7	22.6	22.5	22.4	22.4	24.6	22.8
Diurnal Maximum	26.4	26.4	26.4	26.4	26.4	26.4	26.4	26.4	26.5	25.9	24.9	24.9	24.7	24.6	25.1	25.3	25.1	25.9	26.1	26.1	26.2	26.3	26.2	26.4			
Diurnal Average	23.9	24.0	24.0	24.0	23.9	23.9	23.9	23.9	23.6	23.5	23.1	23.3	23.3	23.3	23.3	23.2	23.3	23.3	23.4	23.4	23.5	23.7	23.8	23.9			

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

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



Lakeland Industry & Community Association

St. Lina Site - June 2023

Summary of Hourly Averages

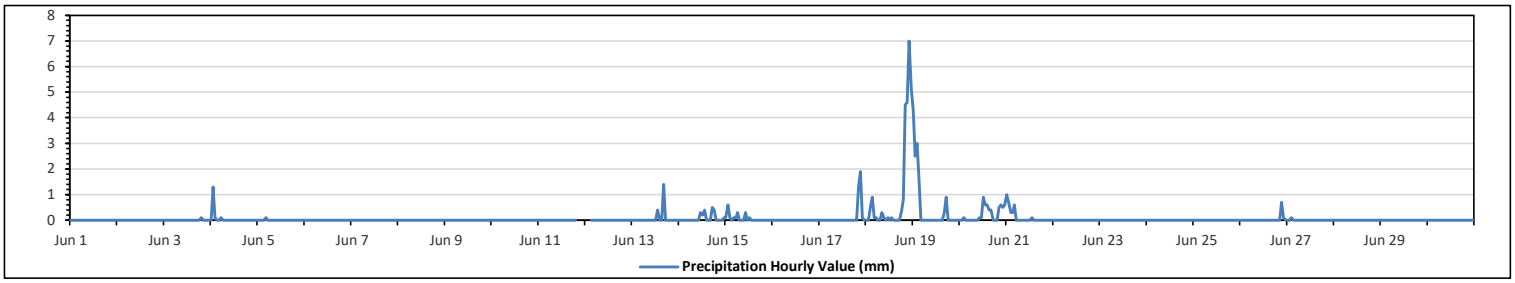
PRECIPITATION in mm

Maximum Hourly Value:	7.0	mm	on Jun 18 at hr 22	Hours in Service:	720		
Maximum Daily Value:	24.6	mm	on Jun 18	Hours of Data:	713		
Minimum Hourly Value:	0.0	mm	on Jun 1 at hr 0	Hours of Missing Data:	7		
Minimum Daily Value:	0.0	mm	on Jun 1	Hours of Calibration:	0		
Monthly Total:	56.9	mm		Operational Uptime:	99.0		

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			
Jun 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
Jun 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
Jun 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0.0	0.1	0.1
Jun 4	0	1.3	0.1	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	1.3	1.5
Jun 5	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1	0.1
Jun 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
Jun 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
Jun 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
Jun 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
Jun 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
Jun 11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	K	K	K	K	0.0	0.0	0.0
Jun 12	K	K	K	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Jun 13	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0	0	1.4	0	0	0	0	0	0	0	0.0	1.4	1.8
Jun 14	0	0	0	0	0	0	0	0	0	0	0	0.3	0.2	0.4	0	0	0	0.5	0.4	0	0	0	0	0.1	0.0	0.5	1.9
Jun 15	0.1	0.6	0.1	0	0.1	0.1	0.3	0	0	0	0.3	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0.0	0.6	1.7
Jun 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
Jun 17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.3	1.9	0.1	0	0.0	1.9	3.3
Jun 18	0	0	0.5	0.9	0.1	0.1	0	0	0.3	0.1	0	0.1	0	0.1	0	0	0	0	0.4	0.8	4.5	4.6	7	5.1	0.0	**7.0**	**24.6**
Jun 19	4.3	2.5	3	1.6	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.9	0	0	0	0	0	0	0.0	4.3	12.6
Jun 20	0	0	0.1	0	0	0	0	0	0	0	0.1	0.1	0.9	0.6	0.6	0.4	0.4	0	0	0	0.5	0.6	0.5	0.6	0.0	0.9	5.4
Jun 21	1	0.7	0.3	0.3	0.6	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0.0	1.0	3.0
Jun 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
Jun 23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Jun 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
Jun 25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Jun 26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.7	0.1	0	0.0	0.7	0.8
Jun 27	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1	0.1
Jun 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
Jun 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
Jun 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
Diurnal Maximum	4.3	2.5	3.0	1.6	0.6	0.1	0.3	0.0	0.3	0.1	0.3	0.3	0.9	0.6	0.6	0.4	1.4	0.9	0.4	0.8	4.5	4.6	7.0	5.1			
Diurnal Average	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.2	0.3	0.3	0.2			

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

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



Lakeland Industry & Community Association

St. Lina Site - June 2023

Summary of Hourly Averages

VECTOR WIND SPEED (VWS) in km/hr

Maximum Hourly Value:	21.3	kph	on Jun 13 at hr 19	Hours in Service:	720
Maximum Daily Value:	13.8	kph	on Jun 15	Hours of Data:	711
Minimum Hourly Value:	0.5	kph	on Jun 28 at hr 19	Hours of Missing Data:	9
Minimum Daily Value:	5.2	kph	on Jun 30	Hours of Calibration:	0
Monthly Average:	0.4	kph		Operational Uptime:	98.8

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
Jun 1	11.7	10.1	8.7	6.7	10.9	10.4	10.9	9.6	8.1	9.1	9.7	11.5	13.7	12.3	9.3	13.1	11.0	10.4	9.9	9.6	10.3	7.8	7.5	7.7	6.7	13.7	10.0
Jun 2	5.4	6.1	8.8	8.9	8.6	8.9	6.7	7.4	10.0	9.5	10.0	10.5	9.4	8.7	8.9	8.0	7.3	7.8	5.8	5.5	4.8	5.3	5.5	5.3	4.8	10.5	7.6
Jun 3	5.8	3.9	3.6	4.7	5.8	5.8	5.8	5.9	5.4	6.1	5.7	7.5	8.5	7.3	7.5	5.4	6.7	8.9	9.1	8.1	7.8	7.2	6.2	5.3	3.6	9.1	6.4
Jun 4	5.4	5.3	6.0	4.7	5.2	6.2	5.3	5.4	4.7	6.5	5.6	5.2	6.7	6.5	6.4	7.4	7.1	3.5	5.6	8.7	9.0	7.3	7.3	7.7	3.5	9.0	6.2
Jun 5	6.8	5.0	6.2	6.0	2.7	3.5	6.8	7.0	5.5	6.1	8.8	6.9	6.9	4.9	2.0	2.2	2.7	1.3	7.4	16.2	19.8	16.8	16.0	15.7	1.3	19.8	7.6
Jun 6	14.4	13.7	9.9	8.5	9.1	6.3	6.6	6.9	7.0	8.8	8.2	9.8	7.6	7.9	9.0	11.6	11.1	9.2	6.6	3.2	4.9	8.8	9.4	10.2	3.2	14.4	8.7
Jun 7	10.5	11.5	12.2	13.6	12.1	9.8	8.9	8.5	9.5	9.6	9.2	9.4	8.4	8.7	11.9	11.2	13.6	9.8	6.8	4.1	5.8	5.1	6.1	5.2	4.1	13.6	9.2
Jun 8	4.5	7.3	7.8	8.4	8.9	7.4	7.3	7.9	7.3	7.6	6.4	6.7	7.4	6.6	7.6	7.6	8.3	6.5	5.8	5.1	5.5	7.2	8.4	6.9	4.5	8.9	7.1
Jun 9	8.8	8.8	9.4	9.4	8.2	8.2	9.1	7.6	7.9	9.1	8.3	9.1	9.9	8.6	8.8	9.2	9.2	10.3	10.0	8.1	8.7	8.1	10.2	11.2	7.6	11.2	9.0
Jun 10	11.2	11.1	11.6	12.5	11.5	11.6	12.6	14.0	12.2	11.4	13.1	15.7	14.4	14.1	13.9	14.8	13.8	12.2	11.4	10.0	12.2	13.6	11.3	9.8	9.8	15.7	12.5
Jun 11	11.1	11.7	11.6	11.0	10.7	11.4	10.1	9.0	8.8	12.1	7.8	5.8	5.4	7.5	8.2	7.0	10.3	10.1	8.4	6.9	K	K	K	K	5.4	12.1	9.2
Jun 12	K	K	K	7.8	7.4	6.3	4.5	4.5	3.0	2.2	0.6	5.5	4.5	5.6	6.8	4.9	5.6	7.0	7.5	7.9	8.1	9.7	9.0	9.4	0.6	9.7	6.1
Jun 13	10.6	12.3	11.8	11.4	11.0	12.1	10.5	8.0	8.7	8.8	5.9	6.4	7.4	7.4	15.8	17.3	12.1	14.5	18.6	**21.3**	20.7	15.6	5.1	4.5	4.5	**21.3**	11.6
Jun 14	6.6	6.5	7.7	6.5	7.0	6.9	5.0	3.9	1.0	4.4	4.7	4.3	3.6	7.0	10.5	12.5	15.9	18.9	17.5	15.2	17.2	16.6	14.1	13.9	1.0	18.9	9.5
Jun 15	14.5	12.0	11.9	13.3	12.6	13.1	13.6	14.0	17.0	18.8	18.5	18.7	18.9	18.5	20.8	15.3	15.4	13.1	9.9	8.0	7.6	8.9	9.0	8.5	7.6	20.8	**13.8**
Jun 16	7.1	7.1	6.4	7.9	7.7	9.8	9.8	10.0	11.4	12.4	12.5	13.3	14.4	13.8	10.2	6.3	6.0	5.2	2.2	1.1	8.3	6.9	8.2	9.3	1.1	14.4	8.6
Jun 17	6.5	7.8	8.3	5.7	6.1	8.6	7.8	7.8	12.9	15.0	13.1	11.0	13.9	14.0	13.1	9.6	9.5	8.2	7.0	12.2	12.4	3.6	2.5	5.1	2.5	15.0	9.2
Jun 18	6.4	7.2	6.7	4.6	7.2	8.6	12.2	11.6	10.2	9.9	10.8	9.3	8.7	6.7	7.5	7.4	9.3	11.0	14.0	13.3	2.7	6.7	11.4	10.6	2.7	14.0	8.9
Jun 19	10.5	12.8	17.5	15.6	10.5	6.5	8.8	11.7	14.0	13.1	9.0	8.0	8.9	10.8	8.4	6.6	4.0	4.2	8.4	5.0	4.5	5.9	6.6	5.8	4.0	17.5	9.0
Jun 20	7.9	8.5	11.0	9.5	10.4	11.7	9.2	10.8	11.2	10.3	11.7	9.9	9.8	12.3	13.6	13.7	11.9	12.9	10.6	8.7	8.5	7.8	9.5	8.4	7.8	13.7	10.4
Jun 21	7.8	9.4	8.7	9.4	10.0	5.6	5.1	7.0	7.6	7.4	8.2	10.6	12.1	13.3	11.2	9.5	9.7	9.0	6.1	5.9	6.7	5.7	5.8	5.8	5.1	13.3	8.2
Jun 22	6.2	6.0	6.1	6.1	6.0	6.8	7.3	8.5	Y	Y	5.8	2.8	9.3	7.8	5.7	5.1	3.4	3.8	2.8	4.2	7.6	8.7	7.7	7.6	2.8	9.3	6.2
Jun 23	7.3	5.4	1.8	8.5	10.1	7.9	5.5	5.4	5.8	5.3	8.1	8.2	6.3	8.8	9.6	10.7	7.7	6.1	7.9	5.1	6.8	9.1	8.8	10.0	1.8	10.7	7.3
Jun 24	10.3	9.3	8.1	7.6	6.6	4.8	4.1	5.3	4.5	5.9	6.5	9.6	10.6	11.2	12.9	10.9	9.4	9.7	10.5	6.5	6.2	6.0	4.7	4.1	4.1	12.9	7.7
Jun 25	5.9	7.2	5.0	6.6	5.7	8.3	7.4	8.0	8.5	8.6	7.4	6.0	5.3	8.2	9.0	8.8	7.8	8.4	7.5	6.3	7.5	6.5	5.0	2.7	2.7	9.0	7.0
Jun 26	6.1	4.4	7.8	7.8	5.9	3.3	4.8	5.0	5.4	6.0	6.3	6.7	7.5	6.6	7.1	8.4	9.4	12.0	8.8	5.5	6.4	9.1	5.1	5.5	3.3	12.0	6.7
Jun 27	8.6	7.9	8.7	7.9	8.4	6.4	5.9	5.1	4.6	9.0	3.9	7.3	9.2	8.0	7.8	8.5	7.3	6.5	5.3	5.6	7.1	4.6	7.7	7.5	3.9	9.2	7.0
Jun 28	7.9	7.0	6.7	7.5	6.3	4.6	5.0	6.3	6.9	6.4	6.0	4.3	6.8	4.3	3.8	3.9	4.1	6.6	5.9	**0.5**	4.8	6.5	7.3	10.1	**0.5**	10.1	5.8
Jun 29	10.7	11.7	10.2	8.3	9.5	8.5	8.8	9.5	9.5	9.7	11.4	11.1	11.5	11.1	10.4	10.7	11.7	6.3	5.5	5.0	5.8	6.0	6.7	6.5	5.0	11.7	9.0
Jun 30	7.3	5.9	1.6	6.2	3.9	5.9	5.5	5.9	4.6	9.2	7.7	8.1	6.7	4.8	5.1	5.1	3.9	3.2	3.3	2.1	4.6	5.0	5.1	5.0	1.6	9.2	**5.2**
Diurnal Maximum	14.5	13.7	17.5	15.6	12.6	13.1	13.6	14.0	17.0	18.8	18.5	18.7	18.9	18.5	20.8	17.3	15.9	18.9	18.6	21.3	20.7	16.8	16.0	15.7			
Diurnal Average	8.4	8.4	8.3	8.4	8.2	7.8	7.7	7.9	8.0	8.9	8.4	8.6	9.1	9.1	9.4	9.1	8.8	8.6	8.2	7.5	8.4	8.1	7.8	7.8			

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

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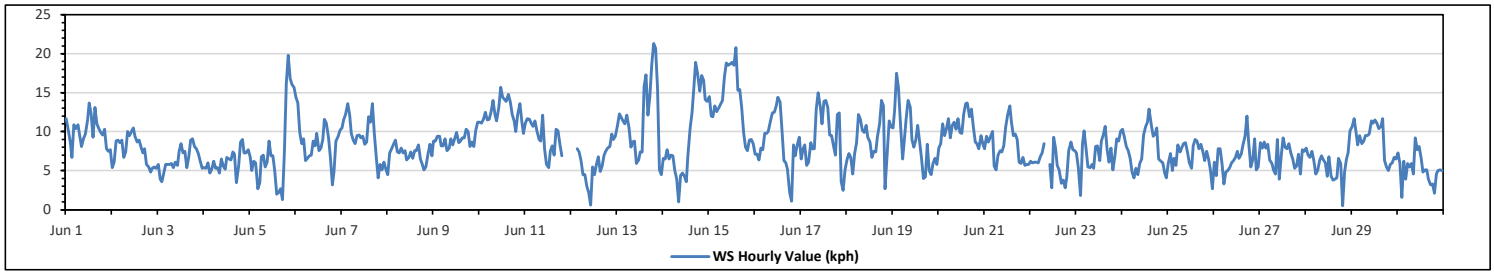
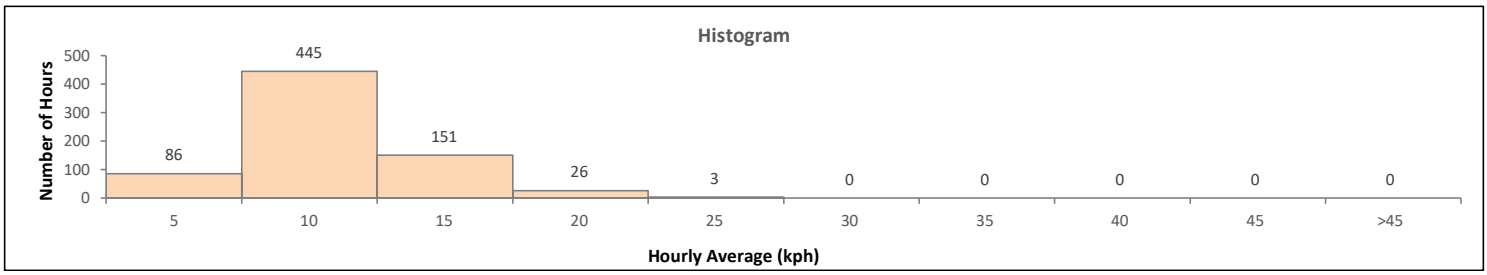


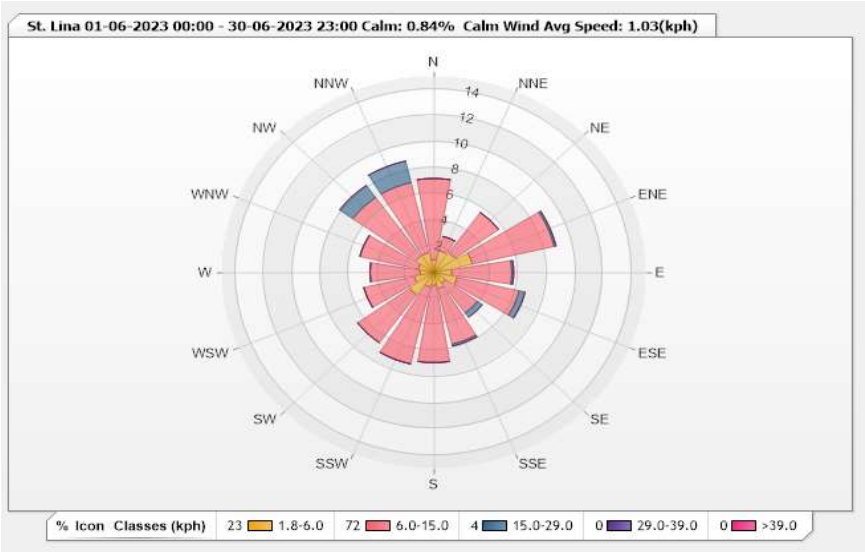


Station: St. Lina Monitor: WDS [kph] Monthly: 06-2023

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

Calm (WS<1.8kph): 0.84% Valid Data: 98.75%

Direction	1.8-6.0	6.0-15.0	15.0-29.0	29.0-39.0	>39.0	Total
N	0.98	6.19	0	0	0	7.17
NNE	1.69	1.13	0	0	0	2.82
NE	1.83	3.8	0	0	0	5.63
ENE	2.81	5.91	0.14	0	0	8.86
E	1.27	4.22	0.14	0	0	5.63
ESE	1.69	4.5	0.42	0	0	6.61
SE	0.98	2.81	0.42	0	0	4.21
SSE	1.27	4.36	0.14	0	0	5.77
S	0.98	5.91	0	0	0	6.89
SSW	1.13	6.05	0	0	0	7.18
SW	2.11	4.5	0	0	0	6.61
WSW	1.41	3.66	0	0	0	5.07
W	0.98	3.52	0	0	0	4.5
WNW	1.13	4.22	0	0	0	5.35
NW	1.55	5.49	1.13	0	0	8.17
NNW	1.55	5.49	1.69	0	0	8.73
Summary	23.36	71.76	4.08	0	0	99.2



Lakeland Industry & Community Association

St. Lina Site - June 2023

Summary of Hourly Averages

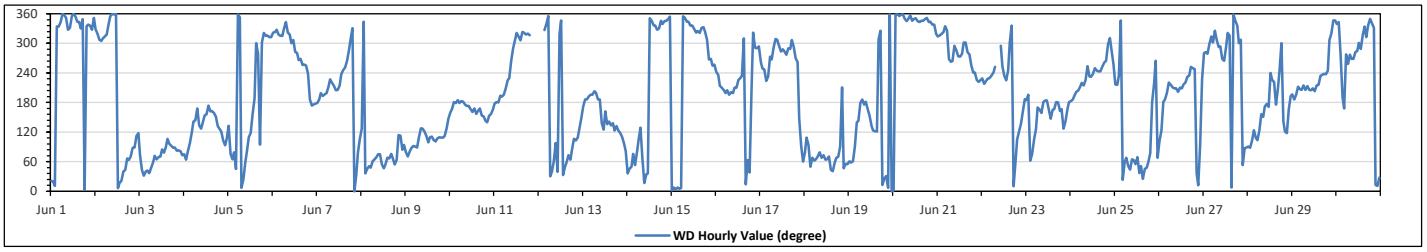
WIND DIRECTION (VWD) in sector

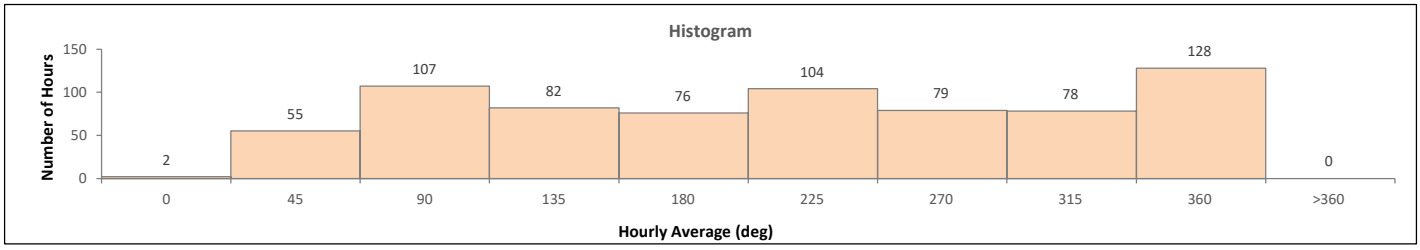
Monthly Average:	301 (WNW) degree	Hours in Service:	720
		Hours of Data:	711
		Hours of Missing Data:	9
		Hours of Calibration:	0
		Operational Uptime:	98.8

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
Jun 1	NNE	NNE	NNE	NNW	NNW	NNW	N	N	N	NNW	NNW	N	N	N	NNW	NNW	NNW	NNW	N	NNW	NNW	NNW	NNW	N	349	NNW
Jun 2	NNW	NW	NW	WNW	NW	NW	NW	NNW	N	N	N	N	N	NNE	NNE	NE	NE	ENE	ENE	ENE	E	E	ESE	ESE	6	N
Jun 3	ENE	NE	NNE	NE	NE	NE	NE	ENE	ENE	ENE	ENE	ENE	E	ENE	E	ESE	E	E	E	E	E	E	E	ENE	74	ENE
Jun 4	ENE	ENE	E	E	ESE	SE	SE	SSE	SE	SE	SE	SSE	SSE	S	SSE	SSE	SSE	SSE	SE	SE	ESE	ESE	E	ESE	130	SE
Jun 5	SE	ENE	ENE	ENE	NE	N	N	N	NNE	ENE	E	ESE	ESE	SSE	S	WNW	W	E	WNW	NW	NW	NW	NW	NW	350	N
Jun 6	NW	NW	NNW	NW	NW	NW	NNW	NNW	NW	NW	WNW	NW	W	W	W	W	WSW	WSW	WSW	WSW	S	S	S	S	288	WNW
Jun 7	S	S	SSW	S	SSW	SSW	SSW	SW	SW	SSW	SSW	SSW	SSW	SW	WSW	WSW	W	WNW	NW	NNW	N	NE	ENE	ESE	220	SW
Jun 8	SE	NNW	NE	NE	NE	NE	ENE	ENE	ENE	ENE	ENE	NE	NE	NE	ENE	ENE	ENE	ENE	NE	ENE	ESE	ESE	E	E	65	ENE
Jun 9	ENE	ENE	E	E	E	E	E	ESE	SE	SE	ESE	ESE	E	ESE	ESE	ESE	E	ESE	ESE	ESE	ESE	ESE	SE	SE	106	ESE
Jun 10	SSE	SSE	S	S	S	S	S	S	S	S	S	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SE	SE	SSE	SSE	SSE	166	SSE
Jun 11	S	S	S	SSW	S	SSW	SSW	SW	SW	W	WNW	NW	NW	NW	NW	NW	NW	NW	NW	NW	K	K	K	K	249	WSW
Jun 12	K	K	K	NW	NNW	N	NNE	NE	ENE	E	NE	NW	NNW	NNE	NE	ENE	ENE	ENE	E	ESE	ESE	ESE	SE	SE	64	ENE
Jun 13	S	S	S	S	SSW	SSW	SSW	SSW	S	S	SE	SE	SSE	SE	SE	SE	SE	ESE	SE	ESE	ESE	ESE	E	E	151	SSE
Jun 14	NE	NE	NE	ENE	NE	ENE	ESE	SE	ENE	NNE	NE	NE	N	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	N	N	359	N
Jun 15	N	N	N	N	N	N	N	N	NNW	NNW	NNW	NNW	NNW	NW	NW	NW	NNW	NNW	NW	NW	W	W	WSW	WSW	335	NNW
Jun 16	WSW	SW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SW	SW	SW	NW	NNE	ENE	NE	SSW	NW	WNW	WNW	WNW	229	SW
Jun 17	W	WSW	WSW	SW	SW	W	W	WNW	NW	NW	WNW	WNW	WNW	WNW	W	WNW	WNW	NW	WNW	W	W	SE	E	ENE	280	W
Jun 18	ENE	ESE	E	NE	ENE	ENE	ENE	ENE	ENE	ENE	ENE	ENE	ENE	ENE	NE	NE	ENE	ENE	ENE	E	SSW	NE	NE	NE	68	ENE
Jun 19	ENE	ENE	ENE	E	SE	SE	S	S	S	S	SSE	SSE	SE	ESE	ESE	ESE	NW	NW	NNE	NNE	NNE	N	N	N	110	ESE
Jun 20	N	N	N	N	N	N	N	NNW	N	N	NNW	N	N	NNW	NNW	NNW	NNW	NNW	N	NNW	NNW	NNW	NNW	NW	349	NNW
Jun 21	NW	NW	NW	NW	NNW	NW	W	W	W	WNW	WNW	W	W	W	WNW	WNW	W	W	WSW	WSW	WSW	SW	SW	SW	284	WNW
Jun 22	SW	SW	SW	SW	SW	SW	WSW	WSW	Y	Y	WNW	WSW	SW	SW	WSW	WNW	NNW	N	ENE	ESE	ESE	SE	SSE	S	222	SW
Jun 23	S	SSW	ENE	ENE	ESE	SE	SSE	SSE	SSE	S	S	S	SSE	SE	SSE	SSE	S	S	SSE	SSE	SE	SE	SSE	S	159	SSE
Jun 24	S	S	SSW	SSW	SSW	SSW	SW	SSW	SW	WSW	SW	SW	SW	WSW	WSW	WSW	WSW	WSW	W	W	WNW	NW	WNW	WSW	236	SW
Jun 25	SW	SW	SW	NNW	NNE	ENE	ENE	NE	NE	ENE	ENE	NE	ENE	NE	NE	NNE	NE	NE	ENE	ENE	S	SW	W	ENE	54	NE
Jun 26	E	ESE	S	S	SSW	SW	SW	SSW	SSW	SSW	SSW	SSW	SSW	SW	SW	SW	SW	WSW	WSW	WSW	NE	NNE	E	SW	214	SSW
Jun 27	W	W	W	WNW	NW	WNW	NW	NW	WNW	WNW	W	W	WNW	NW	NW	N	N	NNW	NNW	WNW	NW	NE	E	E	313	NW
Jun 28	E	E	E	ESE	ESE	ESE	ESE	SSE	SSE	S	S	S	WSW	SW	SW	S	SSW	WSW	WNW	SE	ESE	ESE	SSE	S	156	SSE
Jun 29	SSW	S	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SW	SW	SW	SW	SW	WSW	NW	NW	NNW	NNW	219	SW
Jun 30	NNW	NNW	W	S	SSE	W	WSW	W	W	W	W	WNW	WNW	WNW	NW	NNW	NW	NNW	N	NNW	NNW	NNE	NNE	NNE	304	WNW

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

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





Lakeland Industry & Community Association

St. Lina Site - June 2023

Summary of Hourly Averages

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

WIND SPEED

Maximum Hourly Value:	21.3	kph	on Jun 13 at hr 19	Hours in Service:	720
Maximum Daily Value:	13.8	kph	on Jun 15	Hours of Data:	711
Minimum Hourly Value:	0.5	kph	on Jun 28 at hr 19	Hours of Missing Data:	9
Minimum Daily Value:	5.2	kph	on Jun 30	Hours of Calibration:	0
Monthly Average:	0.4	kph		Operational Uptime:	98.8

WIND DIRECTION

Monthly Average: 301 degree (WNW)

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			
Jun 1	11.7	10.1	8.7	6.7	10.9	10.4	10.9	9.6	8.1	9.1	9.7	11.5	13.7	12.3	9.3	13.1	11.0	10.4	9.9	9.6	10.3	7.8	7.5	7.7	6.7	13.7	10.0
	NNE	NNE	NNE	NNW	NNW	NNW	N	N	N	NNW	NNW	N	N	N	NNW	NNW	NNW	NNW	N	NNW	NNW	NNW	NNW	N			
Jun 2	5.4	6.1	8.8	8.9	8.6	8.9	6.7	7.4	10.0	9.5	10.0	10.5	9.4	8.7	8.9	8.0	7.3	7.8	5.8	5.5	4.8	5.3	5.5	5.3	4.8	10.5	7.6
	NNW	NW	NW	WNW	NW	NW	NW	NNW	N	N	N	N	N	NNE	NNE	NE	NE	ENE	ENE	ENE	E	E	ESE	ESE			
Jun 3	5.8	3.9	3.6	4.7	5.8	5.8	5.8	5.9	5.4	6.1	5.7	7.5	8.5	7.3	7.5	5.4	6.7	8.9	9.1	8.1	7.8	7.2	6.2	5.3	3.6	9.1	6.4
	ENE	NE	NNE	NE	NE	NE	NE	ENE	ENE	ENE	ENE	ENE	E	ENE	E	ESE	E	E	E	E	E	E	E	ENE			
Jun 4	5.4	5.3	6.0	4.7	5.2	6.2	5.3	5.4	4.7	6.5	5.6	5.2	6.7	6.5	6.4	7.4	7.1	3.5	5.6	8.7	9.0	7.3	7.3	7.7	3.5	9.0	6.2
	ENE	ENE	E	E	ESE	SE	SE	SSE	SE	SE	SE	SSE	SSE	S	SSE	SSE	SSE	SSE	SE	SE	ESE	ESE	E	ESE			
Jun 5	6.8	5.0	6.2	6.0	2.7	3.5	6.8	7.0	5.5	6.1	8.8	6.9	6.9	4.9	2.0	2.2	2.7	1.3	7.4	16.2	19.8	16.8	16.0	15.7	1.3	19.8	7.6
	SE	ENE	ENE	ENE	NE	N	N	N	NNE	ENE	E	ESE	ESE	SSE	S	WNW	W	E	WNW	NW	NW	NW	NW	NW			
Jun 6	14.4	13.7	9.9	8.5	9.1	6.3	6.6	6.9	7.0	8.8	8.2	9.8	7.6	7.9	9.0	11.6	11.1	9.2	6.6	3.2	4.9	8.8	9.4	10.2	3.2	14.4	8.7
	NW	NW	NNW	NW	NW	NW	NNW	NNW	NW	NW	WNW	NW	W	W	W	W	WSW	WSW	WSW	WSW	S	S	S	S			
Jun 7	10.5	11.5	12.2	13.6	12.1	9.8	8.9	8.5	9.5	9.6	9.2	9.4	8.4	8.7	11.9	11.2	13.6	9.8	6.8	4.1	5.8	5.1	6.1	5.2	4.1	13.6	9.2
	S	S	SSW	S	SSW	SSW	SSW	SW	SW	SSW	SSW	SSW	SSW	SW	WSW	WSW	W	WNW	NW	NNW	N	NE	ENE	ESE			
Jun 8	4.5	7.3	7.8	8.4	8.9	7.4	7.3	7.9	7.3	7.6	6.4	6.7	7.4	6.6	7.6	7.6	8.3	6.5	5.8	5.1	5.5	7.2	8.4	6.9	4.5	8.9	7.1
	SE	NNW	NE	NE	NE	NE	ENE	ENE	ENE	ENE	ENE	NE	NE	NE	ENE	ENE	ENE	ENE	NE	ENE	ESE	ESE	E	E			
Jun 9	8.8	8.8	9.4	9.4	8.2	8.2	9.1	7.6	7.9	9.1	8.3	9.1	9.9	8.6	8.8	9.2	9.2	10.3	10.0	8.1	8.7	8.1	10.2	11.2	7.6	11.2	9.0
	ENE	ENE	E	E	E	E	E	ESE	SE	SE	ESE	ESE	E	ESE	ESE	ESE	E	ESE	ESE	ESE	ESE	ESE	SE	SE			
Jun 10	11.2	11.1	11.6	12.5	11.5	11.6	12.6	14.0	12.2	11.4	13.1	15.7	14.4	14.1	13.9	14.8	13.8	12.2	11.4	10.0	12.2	13.6	11.3	9.8	9.8	15.7	12.5
	SSE	SSE	S	S	S	S	S	S	S	S	S	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SE	SE	SSE	SSE	SSE			
Jun 11	11.1	11.7	11.6	11.0	10.7	11.4	10.1	9.0	8.8	12.1	7.8	5.8	5.4	7.5	8.2	7.0	10.3	10.1	8.4	6.9	K	K	K	K	5.4	12.1	9.2
	S	S	S	SSW	S	SSW	SSW	SW	SW	W	WNW	NW	NW	NW	NW	NW	NW	NW	NW	NW	K	K	K	K			
Jun 12	K	K	K	7.8	7.4	6.3	4.5	4.5	3.0	2.2	0.6	5.5	4.5	5.6	6.8	4.9	5.6	7.0	7.5	7.9	8.1	9.7	9.0	9.4	0.6	9.7	6.1
	K	K	K	NW	NNW	N	NNE	NE	ENE	E	NE	NW	NNW	NNE	NE	ENE	ENE	ENE	E	ESE	ESE	ESE	SE	SE			
Jun 13	10.6	12.3	11.8	11.4	11.0	12.1	10.5	8.0	8.7	8.8	5.9	6.4	7.4	7.4	15.8	17.3	12.1	14.5	18.6	**21.3**	20.7	15.6	5.1	4.5	4.5	**21.3**	11.6
	S	S	S	S	SSW	SSW	SSW	SSW	S	S	SE	SE	SSE	SE	SE	SE	SE	ESE	SE	ESE	ESE	ESE	E	E			
Jun 14	6.6	6.5	7.7	6.5	7.0	6.9	5.0	3.9	1.0	4.4	4.7	4.3	3.6	7.0	10.5	12.5	15.9	18.9	17.5	15.2	17.2	16.6	14.1	13.9	1.0	18.9	9.5
	NE	NE	NE	ENE	NE	ENE	ESE	SE	ENE	NNE	NE	NE	N	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	N	N			
Jun 15	14.5	12.0	11.9	13.3	12.6	13.1	13.6	14.0	17.0	18.8	18.5	18.7	18.9	18.5	20.8	15.3	15.4	13.1	9.9	8.0	7.6	8.9	9.0	8.5	7.6	20.8	**13.8**
	N	N	N	N	N	N	N	N	NNW	NNW	NNW	NNW	NNW	NW	NW	NW	NNW	NNW	NW	NW	W	W	WSW	WSW			
Jun 16	7.1	7.1	6.4	7.9	7.7	9.8	9.8	10.0	11.4	12.4	12.5	13.3	14.4	13.8	10.2	6.3	6.0	5.2	2.2	1.1	8.3	6.9	8.2	9.3	1.1	14.4	8.6
	WSW	SW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SW	SW	SW	NW	NNE	ENE	NE	SSW	NW	WNW	WNW	WNW			
Jun 17	6.5	7.8	8.3	5.7	6.1	8.6	7.8	7.8	12.9	15.0	13.1	11.0	13.9	14.0	13.1	9.6	9.5	8.2	7.0	12.2	12.4	3.6	2.5	5.1	2.5	15.0	9.2
	W	WSW	WSW	SW	SW	W	W	WNW	NW	NW	WNW	WNW	WNW	WNW	W	WNW	WNW	NW	WNW	W	W	SE	E	ENE			
Jun 18	6.4	7.2	6.7	4.6	7.2	8.6	12.2	11.6	10.2	9.9	10.8	9.3	8.7	6.7	7.5	7.4	9.3	11.0	14.0	13.3	2.7	6.7	11.4	10.6	2.7	14.0	8.9
	ENE	ESE	E	NE	ENE	ENE	ENE	ENE	ENE	ENE	ENE	ENE	ENE	ENE	NE	NE	ENE	ENE	ENE	E	SSW	NE	NE	NE			
Jun 19	10.5	12.8	17.5	15.6	10.5	6.5	8.8	11.7	14.0	13.1	9.0	8.0	8.9	10.8	8.4	6.6	4.0	4.2	8.4	5.0	4.5	5.9	6.6	5.8	4.0	17.5	9.0
	ENE	ENE	ENE	E	SE	SE	S	S	S	S	SSE	SSE	SE	ESE	ESE	ESE	NW	NW	NNE	NNE	NNE	N	N	N			
Jun 20	7.9	8.5	11.0	9.5	10.4	11.7	9.2	10.8	11.2	10.3	11.7	9.9	9.8	12.3	13.6	13.7	11.9	12.9	10.6	8.7	8.5	7.8	9.5	8.4	7.8	13.7	10.4
	N	N	N	N	N	N	N	NNW	N	N	NNW	N	N	NNW	NNW	NNW	NNW	NNW	N	NNW	NNW	NNW	NNW	NW			
Jun 21	7.8	9.4	8.7	9.4	10.0	5.6	5.1	7.0	7.6	7.4	8.2	10.6	12.1	13.3	11.2	9.5	9.7	9.0	6.1	5.9	6.7	5.7	5.8	5.8	5.1	13.3	8.2
	NW	NW	NW	NW	NNW	NW	W	W	W	WNW	WNW	W	W	W	WNW	WNW	W	W	WSW	WSW	WSW	SW	SW	SW			
Jun 22	6.2	6.0	6.1	6.1	6.0	6.8	7.3	8.5	Y	Y	5.8	2.8	9.3	7.8	5.7	5.1	3.4	3.8	2.8	4.2	7.6	8.7	7.7	7.6	2.8	9.3	6.2
	SW	SW	SW	SW	SW	SW	WSW	WSW	Y	Y	WNW	WSW	SW	SW	WSW	WNW	NNW	N	ENE	ESE	ESE	SE	SSE	S			
Jun 23	7.3	5.4	1.8	8.5	10.1	7.9	5.5	5.4	5.8	5.3	8.1	8.2	6.3	8.8	9.6	10.7	7.7	6.1	7.9	5.1	6.8	9.1	8.8	10.0	1.8	10.7	7.3
	S	SSW	ENE	ENE	ESE	SE	SSE	SSE	SSE	S	S	S	SSE	SE	SSE	SSE	S	S	SSE	SSE	SE	SE	SSE	S			
Jun 24	10.3	9.3	8.1	7.6	6.6	4.8	4.1	5.3	4.5	5.9	6.5	9.6	10.6	11.2	12.9	10.9	9.4	9.7	10.5	6.5	6.2	6.0	4.7	4.1	4.1	12.9	7.7
	S	S	SSW	SSW	SSW	SSW	SW	SSW	SW	WSW	SW	SW	SW	WSW	WSW	WSW	WSW	WSW	W	W	WNW	NW	WNW	WSW			
Jun 25	5.9	7.2	5.0	6.6	5.7	8.3	7.4	8.0	8.5	8.6	7.4	6.0	5.3	8.2	9.0	8.8	7.8	8.4	7.5	6.3	7.5	6.5	5.0	2.7	2.7	9.0	7.0
	SW	SW	SW	NNW	NNE	ENE	ENE	NE	NE	ENE	ENE	NE	ENE	NE	NE	NNE	NE	NE	ENE	ENE	S	SW	W	ENE			
Jun 26	6.1	4.4	7.8	7.8	5.9	3.3	4.8	5.0	5.4	6.0	6.3	6.7	7.5	6.6	7.1	8.4	9.4	12.0	8.8	5.5	6.4	9.1	5.1	5.5	3.3	12.0	6.7
	E	ESE	S	S	SSW	SW	SW	SSW	SSW	SSW	SSW	SSW	SSW	SW	SW	SW	SW	WSW	WSW	WSW	NE	NNE	E	SW			
Jun 27	8.6	7.9	8.7	7.9	8.4	6.4	5.9	5.1	4.6	9.0	3.9	7.3	9.2	8.0	7.8	8.5	7.3	6.5	5.3	5.6	7.1	4.6	7.7	7.5	3.9	9.2	7.0
	W	W	W	WNW	NW	WNW	NW	NW	WNW	WNW	W	W	WNW	NW	NW	N	N	NNW	NNW	WNW	NW	NE	E	E			
Jun 28	7.9	7.0	6.7	7.5	6.3	4.6	5.0	6.3	6.9	6.4	6.0	4.3	6.8	4.3	3.8	3.9	4.1	6.6	5.9	**0.5**	4.8	6.5	7.3	10.1	**0.5**	10.1	5.8
	E	E	E	ESE	ESE	ESE	ESE	SSE	SSE	S	S	S	WSW	SW	SW	S	SSW	WSW	WNW	SE	ESE	ESE	SSE	S			
Jun 29	10.7	11.7	10.2	8.3	9.5	8.5	8.8	9.5	9.5	9.7	11.4	11.1	11.5	11.1	10.4	10.7	11.7	6.3	5.5	5.0	5.8	6.0	6.7	6.5	5.0	11.7	9.0
	SSW	S	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SW	SW	SW	SW	SW	WSW	NW	NW	NNW	NNW			
Jun 30	7.3	5.9	1.6	6.2	3.9	5.9	5.5	5.9	4.6	9.2	7.7	8.1	6.7	4.8	5.1	5.1	3.9	3.2	3.3	2.1	4.6	5.0	5.1	5.0	1.6	9.2	**5.2**
	NNW	NNW	W	S	SSE	W	WSW	W	W	W	W	WNW	WNW	WNW	NW	NNW	NW	NNW	N	NNW	NNW	NNE	NNE	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 (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 - June 2023

Summary of Hour Standard Deviations

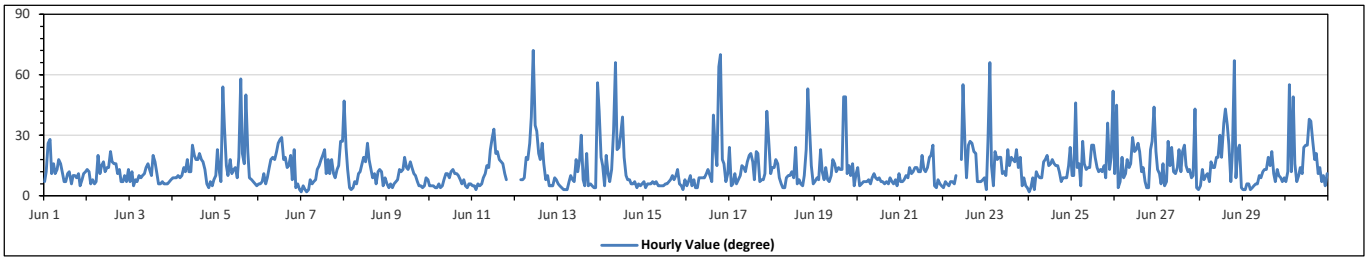
STANDARD DEVIATION WIND DIRECTION (STDWD) in Degree

Maximum Hourly Value:	72	degree on Jun 12 at hr 10	Hours in Service:	720		
			Hours of Data:	711		
Minimum Hourly Value:	2	degree on Jun 7 at hr 0	Hours of Missing Data:	9		
			Hours of Calibration:	0		
			Operational Uptime:	98.8		

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		
Jun 1	7	12	26	28	11	16	11	13	18	16	12	7	7	11	12	6	10	10	9	11	5	8	11	12	5	28
Jun 2	13	12	6	8	6	7	20	11	15	17	12	14	14	22	17	16	16	11	13	7	7	10	7	13	6	22
Jun 3	7	12	5	8	7	10	9	10	11	14	16	13	10	20	17	11	6	6	7	6	6	6	7	8	5	20
Jun 4	9	9	9	10	9	10	14	12	18	12	12	25	20	18	18	21	18	17	13	6	4	7	5	8	4	25
Jun 5	10	23	12	7	54	34	15	10	18	11	13	14	9	19	58	21	16	50	22	9	8	7	6	5	5	58
Jun 6	6	6	7	11	6	9	14	18	19	18	22	26	28	29	18	19	14	15	20	8	23	4	6	3	3	29
Jun 7	2	5	3	2	3	8	6	7	8	13	15	18	20	23	11	18	11	18	11	9	13	15	27	27	2	27
Jun 8	47	24	13	4	3	4	7	6	11	12	16	19	17	26	18	13	9	11	6	12	13	12	5	9	3	47
Jun 9	6	4	6	4	6	7	8	13	12	13	19	14	13	17	14	11	10	7	5	5	4	5	9	8	4	19
Jun 10	5	5	5	4	4	6	4	5	8	11	11	9	12	13	11	11	10	8	6	8	5	4	6	6	4	13
Jun 11	5	5	3	6	5	6	9	11	15	14	23	29	33	21	22	18	17	16	11	8	K	K	K	K	3	33
Jun 12	K	K	K	8	8	9	19	18	26	39	72	35	32	21	18	26	16	8	10	5	5	5	9	8	5	72
Jun 13	6	5	4	3	3	3	7	10	8	7	18	12	18	30	8	5	21	5	6	5	4	4	56	42	3	56
Jun 14	19	15	5	20	11	7	13	32	66	23	24	30	39	19	10	8	8	6	6	7	4	6	5	6	4	66
Jun 15	7	4	6	6	6	7	6	7	5	5	5	5	6	6	7	8	10	8	10	13	6	5	3	8	3	13
Jun 16	5	7	10	5	8	4	4	9	9	9	9	11	13	10	7	40	23	15	64	70	18	16	7	11	4	70
Jun 17	24	5	6	11	6	8	10	15	14	12	17	20	21	17	8	22	21	7	8	8	11	42	27	11	5	42
Jun 18	14	14	18	16	9	6	4	4	9	10	10	12	9	24	6	8	6	5	10	23	53	32	15	6	4	53
Jun 19	7	9	8	23	12	8	14	8	7	10	18	16	12	14	13	13	49	49	11	15	10	16	5	11	5	49
Jun 20	14	5	6	7	7	7	8	6	9	11	9	8	9	7	7	6	7	6	9	7	6	8	5	11	5	14
Jun 21	7	7	8	10	9	14	11	12	14	14	12	12	20	13	12	14	19	20	25	5	4	8	6	5	4	25
Jun 22	4	7	6	5	7	7	6	10	Y	Y	18	55	26	9	25	27	26	22	21	7	7	7	8	9	4	55
Jun 23	3	27	66	15	5	22	18	19	19	11	12	10	23	15	19	18	17	23	14	19	5	9	5	4	3	66
Jun 24	2	4	9	3	12	10	9	9	17	18	20	15	16	18	16	15	15	12	7	9	9	9	15	24	2	24
Jun 25	10	10	46	14	16	5	27	16	13	14	14	25	25	19	14	12	13	12	15	9	36	13	19	52	5	52
Jun 26	11	45	4	7	19	9	11	18	14	16	29	22	23	26	22	12	14	7	4	4	23	27	44	22	4	45
Jun 27	13	11	6	16	5	7	27	15	24	12	11	14	23	12	22	25	15	12	13	9	10	43	4	3	3	43
Jun 28	5	13	8	10	11	7	17	14	14	19	19	30	19	36	43	35	25	7	22	67	9	23	25	4	4	67
Jun 29	3	3	6	6	3	4	5	6	6	10	9	12	13	13	19	15	22	11	7	13	10	9	7	9	3	22
Jun 30	7	12	55	12	49	16	7	10	14	11	24	25	25	38	37	27	18	21	11	14	7	10	5	11	5	55
Diurnal Minimum	2	3	3	2	3	3	4	4	5	5	5	5	6	6	6	5	6	5	4	4	4	4	3	3		
Diurnal Maximum	47	45	66	28	54	34	27	32	66	39	72	55	39	38	58	40	49	50	64	70	53	43	56	52		

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

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



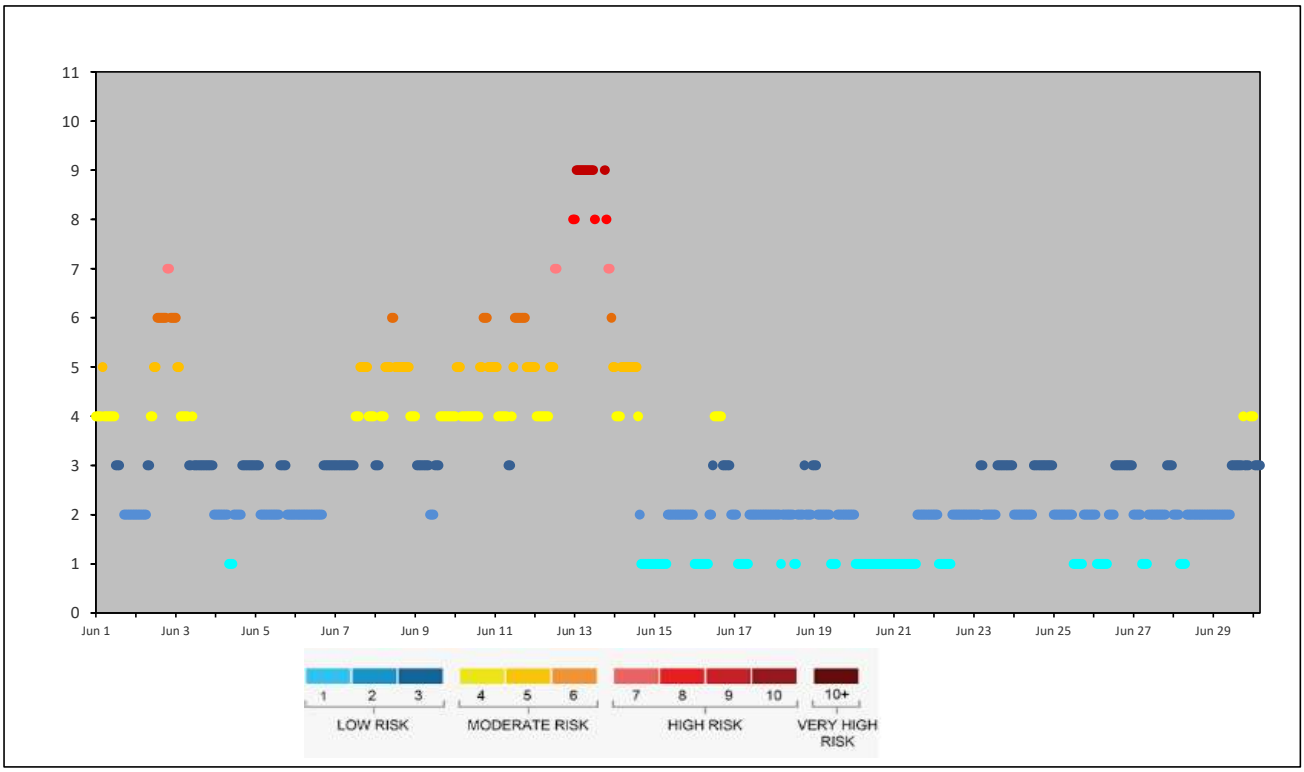
LAC LA BICHE STATION

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Lac La Biche Station - June 2023

AIR QUALITY HEALTH INDEX

Day	Hourly Period Starting at (MST)																							
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Jun 1	4	4	4	4	5	4	4	4	4	4	4	4	3	3	3			2	2	2	2	2	2	2
Jun 2	2	2	2	2	2	2	2	3	3	4	4	5	5	6	6	6	6	6	6	7	7	6	6	6
Jun 3	6	5	5	4	4	4	4	4	3	3	4	3	3	3	3	3	3	3	3	3	3	3	3	2
Jun 4	2	2	2	2	2	2	2	2	1	1	1	2	2	2	2	2	3	3	3	3	3	3	3	3
Jun 5	3	3	3	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3	2	2	2	2	2
Jun 6	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3	3	2
Jun 7	3	3	3	3	3	3	3	3	3	3	3	3	4	4	4	5	5	5	5	5	4	4	4	4
Jun 8	3	3	3	4	4	4	5	5	5	5	6	6	5	5	5	5	5	5	5	5	5	4	4	4
Jun 9	4	3	3	3	3	3	3	3	3	2	2	2	3	3	3	4	4	4	4	4	4	4	4	4
Jun 10	4	5	5	5	4	4	4	4	4	4	4	4	4	4	4	5	5	6	6	6	5	5	5	5
Jun 11	5	5	4	4	4	4	4	4	3	3	4	5	6	6	6	6	6	6	6	5	5	5	5	5
Jun 12	5	4	4	4	4	4	4	4	4	5	5	5	7	7										8
Jun 13	8	9	9	9	9	9	9	9	9	9	9	9	8						9	8	7	7	6	5
Jun 14	5	4	4	4	5	5	5	5	5	5	5	5	5	5	4	2	1	1	1	1	1	1	1	1
Jun 15	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Jun 16	1	1	1	1	1	1	1	1	1	2	2	3	4	4	4	4	4	3	3	3	3	3	2	2
Jun 17	2	2	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Jun 18	2	2	2	2	1	2	2	2	2	2	2	2	1	1	2	2	2	2	3	2	2	2	2	3
Jun 19	3	3	2	2	2	2	2	2	2	2	1	1	1	1	2	2	2	2	2	2	2	2	2	2
Jun 20	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Jun 21	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2
Jun 22	2	2	2	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2
Jun 23	2	2	2	2	3	3	2	2	2	2	2	2	2	2	3	3	3	3	3	3	3	3	3	3
Jun 24	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3	3	3	3	3	3	3	3
Jun 25	2	2	2	2	2	2	2	2	2	2	2	2	1	1	1	1	1	1	2	2	2	2	2	2
Jun 26	2	2	1	1	1	1	1	1	1	2	2	2	2	3	3	3	3	3	3	3	3	3	3	3
Jun 27	2	2	2	2	2	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3
Jun 28	2	2	2	2	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Jun 29	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3	3	3	4	3	3	3	4	4
Jun 30	4	3	3	3	3	3	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2



Lakeland Industry & Community Association

Lac La Biche Station - June 2023

Summary of Hourly Averages

SULPHUR DIOXIDE (SO_2) in ppb

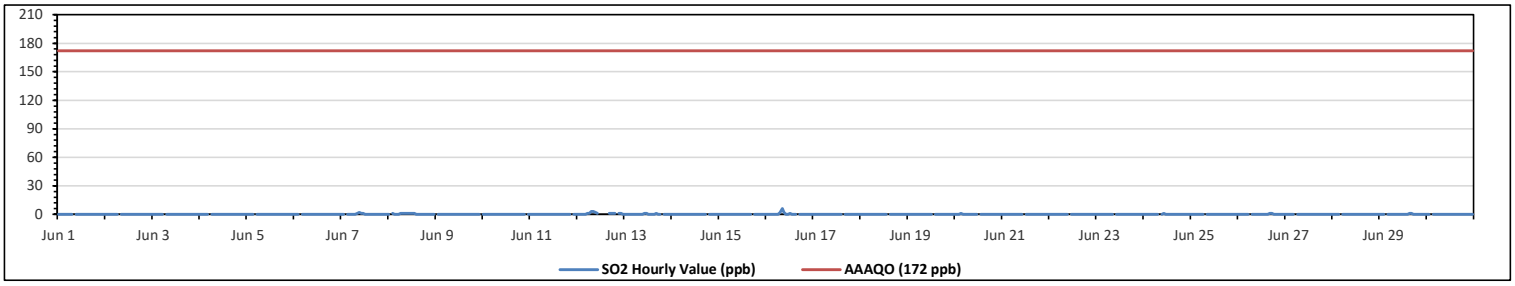
Alberta Ambient Air Quality Objectives (AAAQO): 1-Hour 172 ppb, 24-Hour 48 ppb, 30-Day 11 ppb

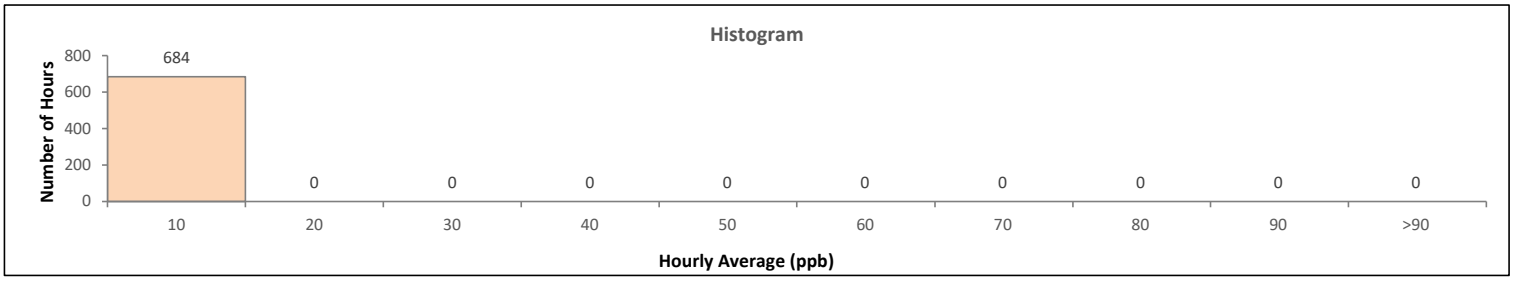
Number of 1-Hour Exceedances:	0	Number of 24-Hour Exceedances:	0	30-Day Exceedence:	0	
Maximum Hourly Value:	6	ppb	on Jun 16 at hr 8	Hours in Service:	720	
Maximum Daily Value:	0.9	ppb	on Jun 12	Hours of Data:	684	
Minimum Hourly Value:	0	ppb	on Jun 1 at hr 0	Hours of Missing Data:	0	
Minimum Daily Value:	0.0	ppb	on Jun 1	Hours of Calibration:	36	
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			
Jun 1	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Jun 2	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
Jun 3	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Jun 4	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Jun 5	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Jun 6	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
Jun 7	0	0	S	0	0	0	0	0	1	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.2
Jun 8	0	S	1	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0.4
Jun 9	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
Jun 10	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
Jun 11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0.0
Jun 12	0	0	0	0	0	1	1	3	3	2	1	C	C	C	C	C	1	1	1	1	S	1	1	0	0	3	0.9
Jun 13	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	0	0	S	0	0	0	0	0	1	0.1
Jun 14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0.0
Jun 15	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
Jun 16	0	0	0	0	0	0	0	2	6	2	0	0	1	0	0	0	S	0	0	0	0	0	0	0	0	6	0.5
Jun 17	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
Jun 18	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
Jun 19	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
Jun 20	0	0	0	1	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0
Jun 21	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
Jun 22	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
Jun 23	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
Jun 24	0	0	0	0	0	0	0	0	S	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0
Jun 25	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Jun 26	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0.1
Jun 27	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Jun 28	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Jun 29	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0.1
Jun 30	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Diurnal Maximum	0	0	1	1	0	1	1	3	6	2	1	1	1	1	0	1	1	1	1	1	0	1	1	0			
Diurnal Average	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.4	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0			

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



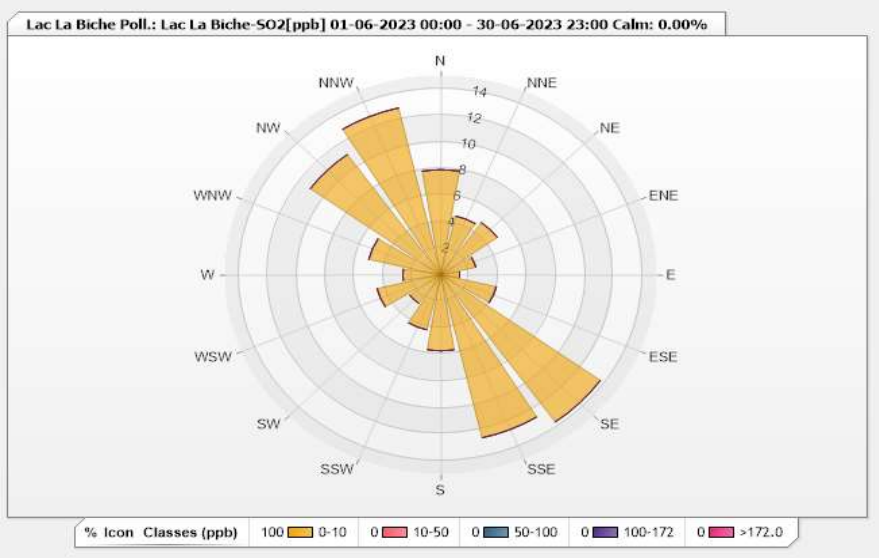


Station: Lac La Biche Poll.: Lac La Biche-SO2[ppb] Monthly: 06-2023

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

Calm: 0.00% Valid Data: 95.00% Calm Avg: 0.00 [ppm]

Direction	0-10	10-50	50-100	100-172	>172.0	Total
N	7.89	0	0	0	0	7.89
NNE	4.53	0	0	0	0	4.53
NE	4.82	0	0	0	0	4.82
ENE	2.49	0	0	0	0	2.49
E	1.32	0	0	0	0	1.32
ESE	3.95	0	0	0	0	3.95
SE	13.6	0	0	0	0	13.6
SSE	12.57	0	0	0	0	12.57
S	5.7	0	0	0	0	5.7
SSW	4.24	0	0	0	0	4.24
SW	2.63	0	0	0	0	2.63
WSW	4.53	0	0	0	0	4.53
W	2.63	0	0	0	0	2.63
WNW	5.12	0	0	0	0	5.12
NW	11.11	0	0	0	0	11.11
NNW	12.87	0	0	0	0	12.87
Summary	100	0	0	0	0	100



Lakeland Industry & Community Association

Lac La Biche Station - June 2023

Summary of Hourly Averages

HYDROGEN SULPHIDE (H_2S) in ppb

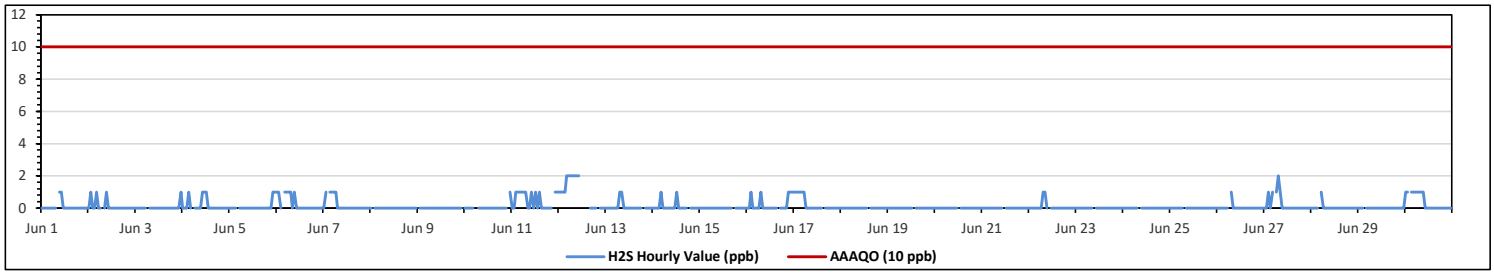
Alberta Ambient Air Quality Objectives (AAAQO): 1-Hour 10 ppb, 24-Hour 3 ppb

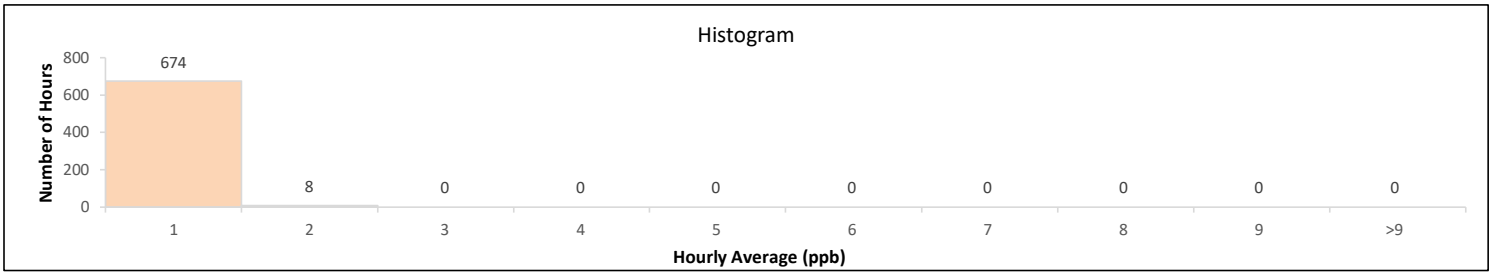
Number of 1-Hour Exceedances:	0		Number of 24-Hour Exceedances:	0	
Maximum Hourly Value:	2	ppb	on Jun 12 at hr 4	Hours in Service:	720
Maximum Daily Value:	1.0	ppb	on Jun 12	Hours of Data:	682
Minimum Hourly Value:	0	ppb	on Jun 1 at hr 0	Hours of Missing Data:	2
Minimum Daily Value:	0.0	ppb	on Jun 1	Hours of Calibration:	36
Monthly Average:	0.1	ppb		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			
Jun 1	0	0	0	0	0	0	0	0	S	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0
Jun 2	0	1	0	0	1	0	0	S	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0
Jun 3	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0.0
Jun 4	0	0	0	1	0	S	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0
Jun 5	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0.0
Jun 6	1	1	0	S	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0
Jun 7	0	1	S	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0
Jun 8	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
Jun 9	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
Jun 10	0	0	0	0	0	NRM	NRM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	1	0	1	0.0
Jun 11	0	0	1	1	1	1	1	1	0	0	1	0	1	0	1	0	0	0	0	0	0	S	1	1	0	1	0.0
Jun 12	1	1	1	1	2	2	2	2	2	2	2	C	C	C	C	C	0	0	0	0	S	0	0	0	0	2	1.0
Jun 13	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	1	0.0
Jun 14	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	S	0	0	0	0	0	0	1	0.0
Jun 15	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
Jun 16	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	S	0	0	0	0	1	1	1	0	1	0.0
Jun 17	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	1	0.0
Jun 18	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
Jun 19	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
Jun 20	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Jun 21	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
Jun 22	0	0	0	0	0	0	0	1	1	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0
Jun 23	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
Jun 24	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Jun 25	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Jun 26	0	0	0	0	0	0	S	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0
Jun 27	0	0	1	0	1	S	1	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.0
Jun 28	0	0	0	0	S	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0
Jun 29	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
Jun 30	1	1	S	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0
Diurnal Maximum	1	1	1	1	2	2	2	2	2	2	2	1	1	0	1	0	0	0	0	0	0	1	1	1			
Diurnal Average	0.1	0.2	0.2	0.2	0.4	0.3	0.3	0.4	0.2	0.2	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2			

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.



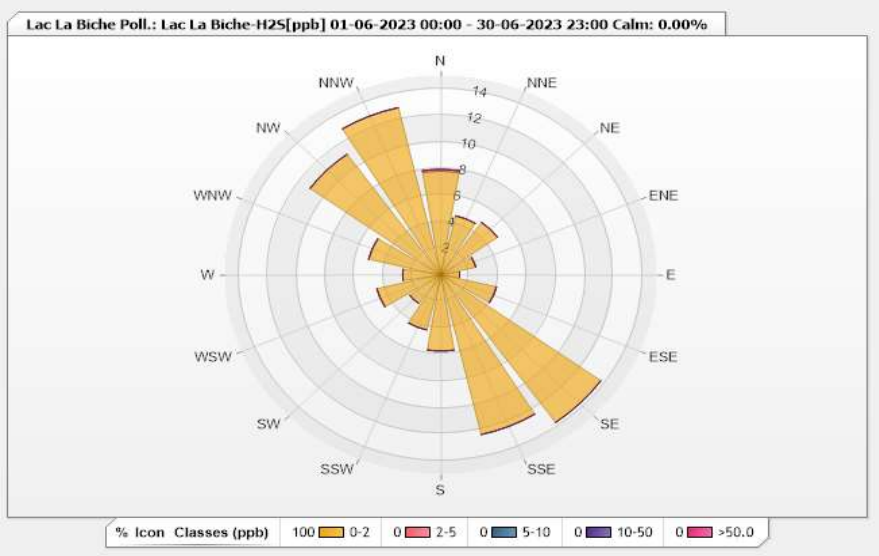


Station: Lac La Biche Poll.: Lac La Biche-H2S[ppb] Monthly: 06-2023

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

Calm: 0.00% Valid Data: 94.72% Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-50	>50.0	Total
N	7.77	0.15	0	0	0	7.92
NNE	4.55	0	0	0	0	4.55
NE	4.84	0	0	0	0	4.84
ENE	2.49	0	0	0	0	2.49
E	1.32	0	0	0	0	1.32
ESE	3.96	0	0	0	0	3.96
SE	13.64	0	0	0	0	13.64
SSE	12.32	0	0	0	0	12.32
S	5.72	0	0	0	0	5.72
SSW	4.25	0	0	0	0	4.25
SW	2.64	0	0	0	0	2.64
WSW	4.55	0	0	0	0	4.55
W	2.64	0	0	0	0	2.64
WNW	5.13	0	0	0	0	5.13
NW	11.14	0	0	0	0	11.14
NNW	12.9	0	0	0	0	12.9
Summary	100	0.15	0	0	0	100



Lakeland Industry & Community Association

Lac La Biche Station - June 2023

Summary of Hourly Averages

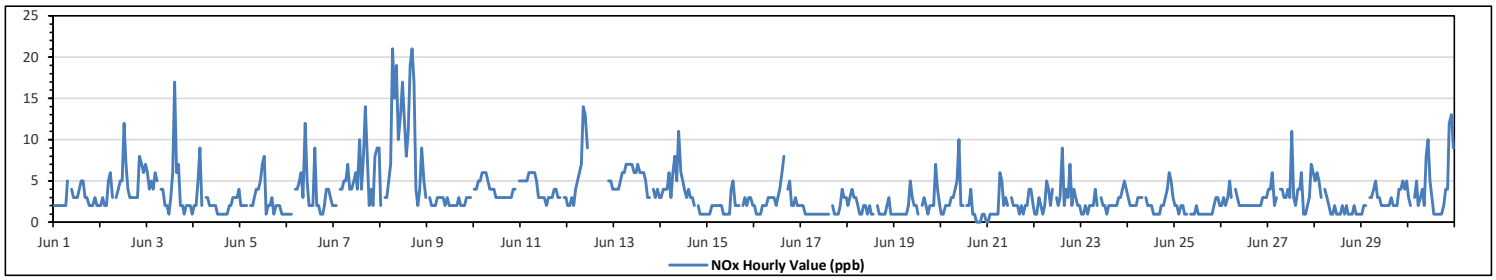
OXIDES OF NITROGEN (NOx) in ppb

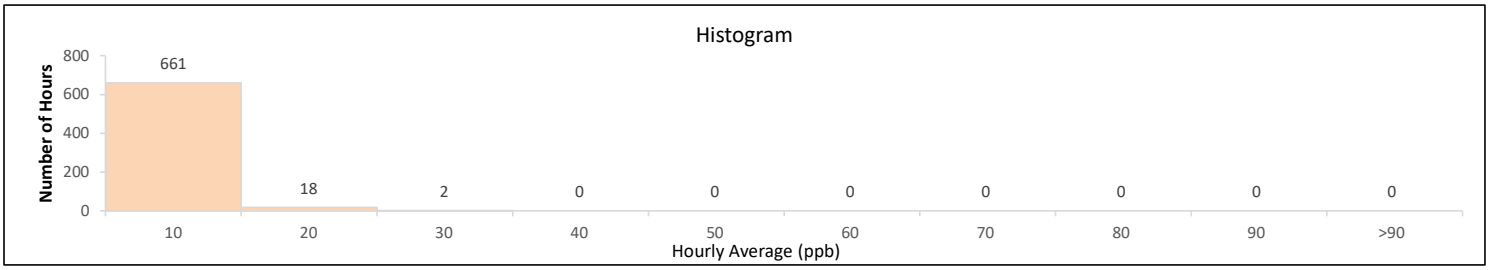
Maximum Hourly Value:	21	ppb	on Jun 8 at hr 6	Hours in Service:	720	
Maximum Daily Value:	10.0	ppb	on Jun 8	Hours of Data:	681	
Minimum Hourly Value:	0	ppb	on Jun 20 at hr 18	Hours of Missing Data:	0	
Minimum Daily Value:	1.5	ppb	on Jun 17	Hours of Calibration:	39	
Monthly Average:	3.3	ppb		Operational 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			
Jun 1	2	2	2	2	2	2	2	5	S	4	3	3	3	4	5	5	3	3	2	2	2	3	2	2	2	5	2.8
Jun 2	2	3	2	2	5	6	3	S	3	4	5	5	12	7	4	3	3	3	3	3	8	7	6	7	2	12	4.6
Jun 3	6	4	5	4	6	5	S	4	4	2	2	1	3	6	17	6	7	2	2	1	2	2	2	1	1	17	4.1
Jun 4	2	2	5	9	2	S	3	3	2	2	2	2	1	1	1	1	1	1	2	2	3	3	3	4	1	9	2.5
Jun 5	2	2	2	2	S	2	2	3	4	4	5	7	8	1	2	2	3	1	2	2	2	1	1	1	1	8	2.7
Jun 6	1	1	1	S	4	4	5	6	3	12	5	2	2	2	9	2	2	1	1	2	4	4	3	2	1	12	3.4
Jun 7	2	2	S	4	4	5	5	7	4	4	5	6	4	10	4	8	14	8	2	4	2	8	9	9	2	14	5.7
Jun 8	2	S	3	3	5	7	21	15	19	10	13	17	13	8	11	19	21	17	4	2	4	9	5	3	2	21	10.0
Jun 9	S	3	2	2	2	3	3	3	3	2	3	2	2	2	2	2	3	2	2	2	3	3	3	S	2	3	2.5
Jun 10	4	4	5	5	6	6	6	5	4	4	4	3	3	3	3	3	3	3	3	3	4	4	S	5	3	6	4.0
Jun 11	5	5	5	5	6	6	6	6	5	3	3	3	3	2	3	3	3	4	4	3	3	S	3	3	2	6	4.0
Jun 12	2	2	3	2	4	5	6	7	14	13	9	C	C	C	C	C	C	C	C	3	S	5	5	4	2	14	NA
Jun 13	4	4	4	5	6	6	7	7	7	7	6	6	7	6	6	6	5	3	3	S	4	3	4	3	3	7	5.2
Jun 14	3	4	4	4	6	3	6	8	5	11	6	5	4	3	4	3	3	2	S	2	1	1	1	1	1	11	3.9
Jun 15	1	1	2	2	2	2	2	2	1	1	1	1	4	5	2	2	2	S	2	3	2	3	3	2	1	5	2.1
Jun 16	2	1	1	1	2	2	2	3	3	3	3	2	3	4	6	8	S	4	5	2	2	3	2	2	1	8	2.9
Jun 17	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	S	2	1	1	1	2	4	3	3	1	4	1.5
Jun 18	2	3	4	3	3	2	1	1	2	2	1	2	1	1	S	2	1	1	1	1	2	3	1	1	1	4	1.8
Jun 19	1	1	1	1	1	1	1	2	5	3	2	2	1	S	2	3	2	1	2	2	2	7	4	2	1	7	2.1
Jun 20	1	1	2	2	2	3	3	4	5	10	2	2	S	2	2	4	1	1	0	0	0	1	1	0	0	10	2.1
Jun 21	0	1	1	1	1	1	6	5	2	3	2	S	3	2	2	2	1	2	1	2	2	4	4	2	0	6	2.2
Jun 22	1	1	3	2	1	2	5	4	2	4	S	3	2	3	9	2	4	3	7	2	4	3	2	2	1	9	3.1
Jun 23	1	1	2	1	2	2	2	4	2	S	3	2	2	1	2	2	2	2	2	3	3	4	5	4	1	5	2.3
Jun 24	3	2	2	2	2	3	3	3	S	3	2	2	2	1	1	1	1	2	2	3	4	6	5	3	1	6	2.5
Jun 25	2	2	1	2	2	1	1	S	1	1	1	2	1	1	1	1	1	1	1	1	2	3	3	2	1	3	1.5
Jun 26	2	3	2	3	5	3	S	4	3	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	2	5	2.5
Jun 27	4	4	6	2	3	S	4	4	3	3	4	3	11	3	2	4	4	6	1	1	2	3	7	6	1	11	3.9
Jun 28	5	6	5	3	S	4	3	2	1	1	2	1	1	1	2	1	2	1	1	1	2	1	1	1	1	6	2.1
Jun 29	1	2	2	S	3	3	4	5	3	3	2	2	2	2	2	3	2	2	2	4	4	5	4	5	1	5	2.9
Jun 30	3	2	S	3	5	2	3	4	2	8	10	5	3	1	1	1	1	1	2	4	4	12	13	9	1	13	4.3
Diurnal Maximum	6	6	6	9	6	7	21	15	19	13	13	17	13	10	17	19	21	17	7	4	8	12	13	9			
Diurnal Average	2.3	2.4	2.8	2.8	3.3	3.3	4.1	4.5	4.0	4.5	3.8	3.4	3.7	3.0	3.9	3.6	3.5	2.9	2.2	2.2	2.8	4.1	3.7	3.2			

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.



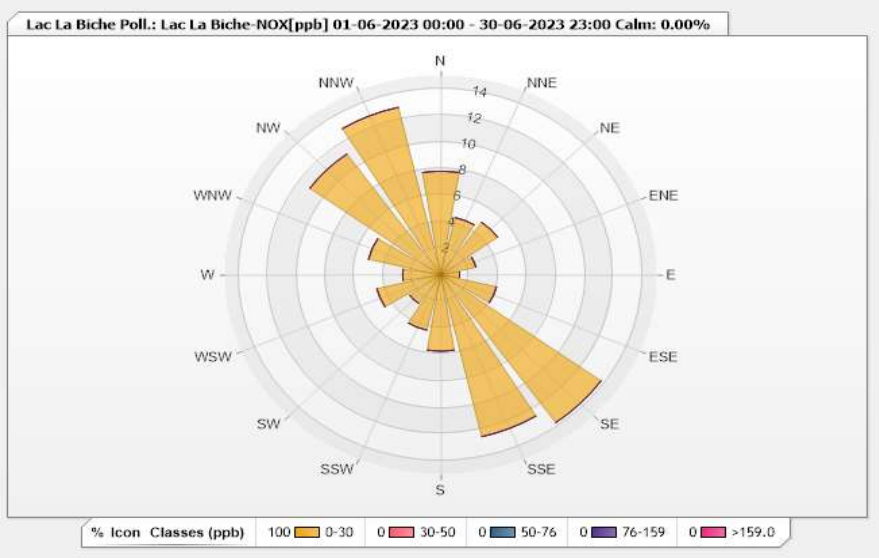


Station: Lac La Biche Poll.: Lac La Biche-NOX[ppb] Monthly: 06-2023

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

Calm: 0.00% Valid Data: 94.58% Calm Avg: 0.00 [ppm]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	7.78	0	0	0	0	7.78
NNE	4.41	0	0	0	0	4.41
NE	4.85	0	0	0	0	4.85
ENE	2.5	0	0	0	0	2.5
E	1.32	0	0	0	0	1.32
ESE	3.96	0	0	0	0	3.96
SE	13.66	0	0	0	0	13.66
SSE	12.48	0	0	0	0	12.48
S	5.73	0	0	0	0	5.73
SSW	4.26	0	0	0	0	4.26
SW	2.64	0	0	0	0	2.64
WSW	4.55	0	0	0	0	4.55
W	2.64	0	0	0	0	2.64
WNW	5.14	0	0	0	0	5.14
NW	11.16	0	0	0	0	11.16
NNW	12.92	0	0	0	0	12.92
Summary	100	0	0	0	0	100



Lakeland Industry & Community Association

Lac La Biche Station - June 2023

Summary of Hourly Averages

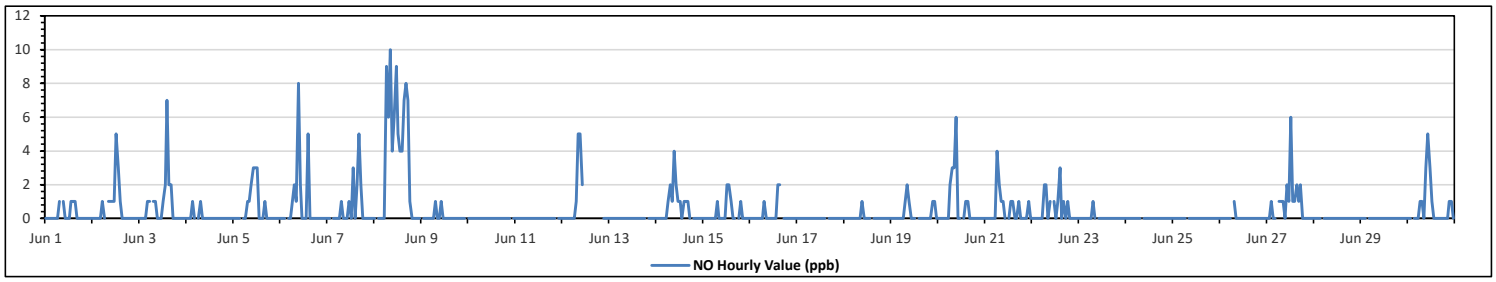
NITRIC OXIDE (NO) in ppb

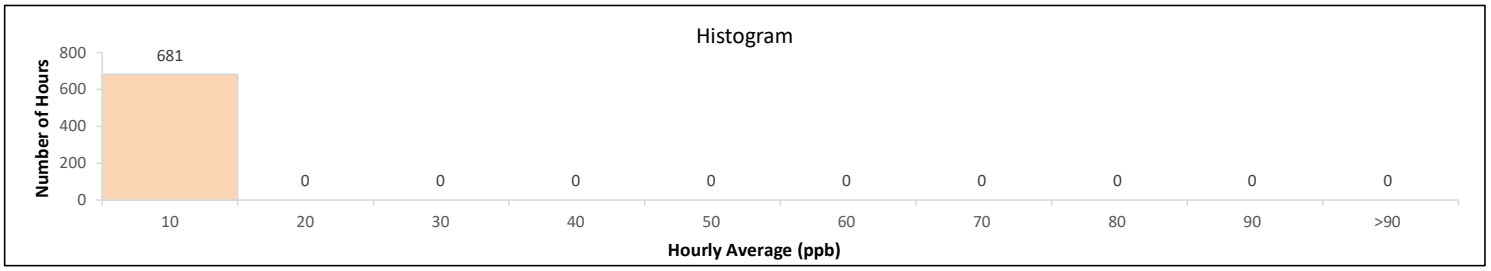
Maximum Hourly Value:	10	ppb	on Jun 8 at hr 8	Hours in Service:	720	
Maximum Daily Value:	3.5	ppb	on Jun 8	Hours of Data:	681	
Minimum Hourly Value:	0	ppb	on Jun 1 at hr 0	Hours of Missing Data:	0	
Minimum Daily Value:	0.0	ppb	on Jun 10	Hours of Calibration:	39	
Monthly Average:	0.4	ppb		Operational Uptime:	100.0	

Day	Hourly Period Starting at (MST)																								Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Jun 1	0	0	0	0	0	0	0	1	S	1	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	1	0.2
Jun 2	0	0	0	0	0	1	0	S	1	1	1	1	5	3	1	0	0	0	0	0	0	0	0	0	0	5	0.6
Jun 3	0	0	0	0	1	1	S	1	1	0	0	0	1	2	7	2	2	0	0	0	0	0	0	0	0	7	0.8
Jun 4	0	0	0	1	0	S	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1
Jun 5	0	0	0	0	S	0	0	1	1	2	3	3	3	0	0	0	1	0	0	0	0	0	0	0	0	3	0.6
Jun 6	0	0	0	S	0	0	1	2	1	8	2	0	0	0	5	0	0	0	0	0	0	0	0	0	0	8	0.8
Jun 7	0	0	S	0	0	0	0	1	0	0	0	1	0	3	0	2	5	2	0	0	0	0	0	0	0	5	0.6
Jun 8	0	S	0	0	0	0	9	6	**10**	4	6	9	5	4	4	7	8	7	1	0	0	0	0	0	0	**10**	**3.5**
Jun 9	S	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	S	0	1	0.1
Jun 10	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
Jun 11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0.0
Jun 12	0	0	0	0	0	0	0	1	5	5	2	C	C	C	C	C	C	C	C	0	S	0	0	0	0	5	NA
Jun 13	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
Jun 14	0	0	0	0	0	0	1	2	1	4	2	1	1	0	1	1	1	0	S	0	0	0	0	0	0	4	0.7
Jun 15	0	0	0	0	0	0	0	1	0	0	0	0	2	2	1	0	0	S	0	1	0	0	0	0	0	2	0.3
Jun 16	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2	2	S	0	0	0	0	0	0	0	0	2	0.2
Jun 17	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
Jun 18	0	0	0	0	0	0	0	0	0	1	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	1	0.0
Jun 19	0	0	0	0	0	0	0	1	2	1	0	0	0	S	0	0	0	0	0	0	0	1	1	0	0	2	0.3
Jun 20	0	0	0	0	0	0	2	3	3	6	0	0	S	0	1	1	0	0	0	0	0	0	0	0	0	6	0.7
Jun 21	0	0	0	0	0	0	4	2	1	1	0	S	0	1	1	0	0	1	0	0	0	0	1	0	0	4	0.5
Jun 22	0	0	0	0	0	0	2	2	0	1	S	1	0	1	3	0	1	0	1	0	0	0	0	0	0	3	0.5
Jun 23	0	0	0	0	0	0	0	1	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0
Jun 24	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Jun 25	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Jun 26	0	0	0	0	0	0	S	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0
Jun 27	0	0	1	0	0	S	1	1	1	0	2	1	6	1	1	2	1	2	0	0	0	0	0	0	0	6	0.9
Jun 28	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Jun 29	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
Jun 30	0	0	S	0	0	0	1	1	0	3	5	3	1	0	0	0	0	0	0	0	0	1	1	0	0	5	0.7
Diurnal Maximum	0	0	1	1	1	1	9	6	10	8	6	9	6	4	7	7	8	7	1	1	0	1	1	0			
Diurnal Average	0.0	0.0	0.0	0.0	0.0	0.1	0.8	1.1	1.0	1.3	0.8	0.7	0.9	0.6	1.0	0.6	0.7	0.4	0.1	0.0	0.0	0.1	0.1	0.0			

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

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



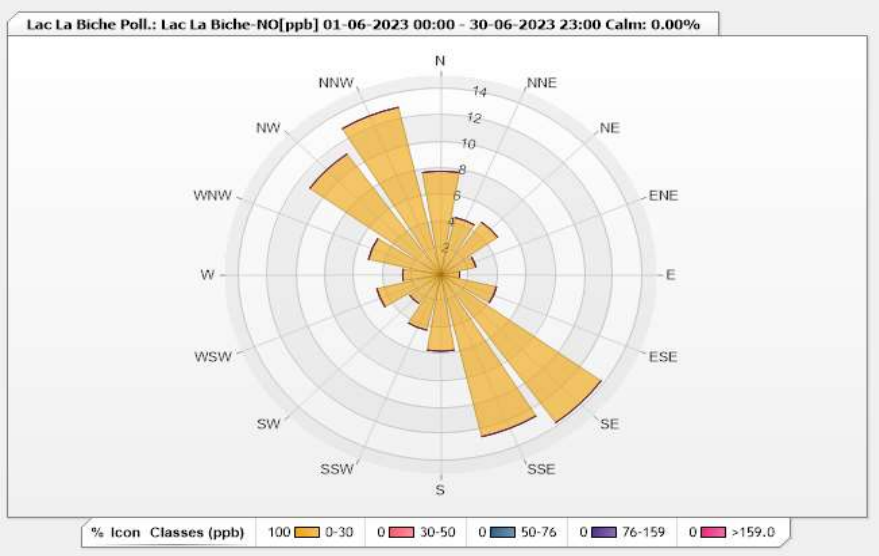


Station: Lac La Biche Poll.: Lac La Biche-NO[ppb] Monthly: 06-2023

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

Calm: 0.00% Valid Data: 94.58% Calm Avg: 0.00 [ppm]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	7.78	0	0	0	0	7.78
NNE	4.41	0	0	0	0	4.41
NE	4.85	0	0	0	0	4.85
ENE	2.5	0	0	0	0	2.5
E	1.32	0	0	0	0	1.32
ESE	3.96	0	0	0	0	3.96
SE	13.66	0	0	0	0	13.66
SSE	12.48	0	0	0	0	12.48
S	5.73	0	0	0	0	5.73
SSW	4.26	0	0	0	0	4.26
SW	2.64	0	0	0	0	2.64
WSW	4.55	0	0	0	0	4.55
W	2.64	0	0	0	0	2.64
WNW	5.14	0	0	0	0	5.14
NW	11.16	0	0	0	0	11.16
NNW	12.92	0	0	0	0	12.92
Summary	100	0	0	0	0	100



Lakeland Industry & Community Association

Lac La Biche Station - June 2023

Summary of Hourly Averages

NITROGEN DIOXIDE (NO_2) in ppb

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

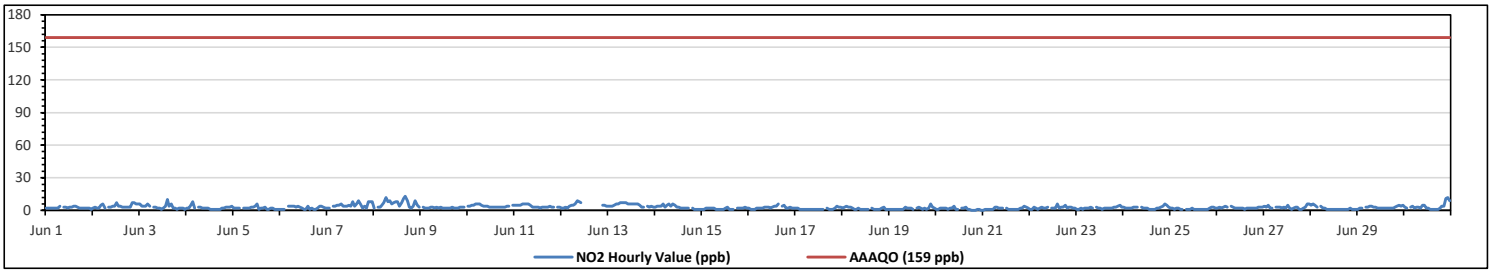
Number of 1-Hour Exceedances: 0

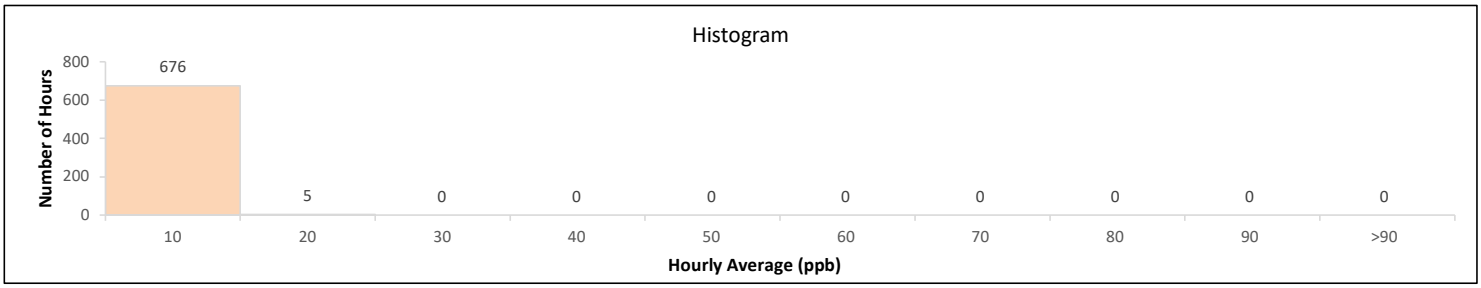
Maximum Hourly Value:	13	ppb	on Jun 8 at hr 16	Hours in Service:	720
Maximum Daily Value:	6.4	ppb	on Jun 8	Hours of Data:	681
Minimum Hourly Value:	0	ppb	on Jun 20 at hr 18	Hours of Missing Data:	0
Minimum Daily Value:	1.4	ppb	on Jun 20	Hours of Calibration:	39
Monthly Average:	2.9	ppb		Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																						Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Jun 1	2	2	2	2	2	2	2	4	S	3	3	2	3	3	4	4	3	2	2	2	2	2	2	1	1	4	2.4
Jun 2	2	3	2	2	5	6	2	S	3	3	4	4	7	4	4	3	3	3	3	3	7	7	6	6	2	7	4.0
Jun 3	6	4	4	4	6	4	S	3	3	2	2	1	2	4	10	4	6	2	2	1	2	2	2	1	1	10	3.3
Jun 4	2	2	5	8	2	S	3	3	2	2	2	2	1	1	1	1	1	1	2	2	3	3	3	4	1	8	2.4
Jun 5	2	2	2	2	S	2	2	2	2	3	3	4	6	1	2	2	3	1	1	2	2	1	1	1	1	6	2.1
Jun 6	1	1	1	S	4	4	4	4	3	4	3	2	1	1	4	1	2	1	1	2	4	4	3	2	1	4	2.5
Jun 7	2	2	S	4	4	5	5	6	4	4	4	5	4	8	4	6	9	6	2	4	2	8	8	8	2	9	5.0
Jun 8	2	S	3	3	5	7	12	8	9	6	7	8	8	4	7	11	**13**	9	3	2	4	9	5	3	2	**13**	**6.4**
Jun 9	S	3	2	2	2	3	3	2	3	2	3	2	2	2	2	2	3	2	2	2	3	3	3	S	2	3	2.4
Jun 10	4	4	5	5	6	6	6	5	4	4	4	3	3	3	3	3	3	3	3	3	3	4	4	5	3	6	4.0
Jun 11	5	5	5	5	6	6	6	6	5	3	3	3	3	2	3	3	3	3	4	3	3	3	S	3	2	6	4.0
Jun 12	2	2	3	2	4	5	5	6	9	8	7	C	C	C	C	C	C	C	C	3	S	5	5	4	2	9	NA
Jun 13	4	4	4	5	6	6	7	7	7	7	6	6	6	6	6	6	5	3	3	S	4	3	4	3	3	7	5.1
Jun 14	3	4	4	4	6	3	5	6	4	6	5	3	3	2	2	2	2	2	S	2	1	1	1	1	1	6	3.1
Jun 15	1	1	2	2	2	2	2	1	1	1	1	1	2	3	1	1	1	S	2	2	2	2	3	2	1	3	1.7
Jun 16	2	1	1	1	2	2	2	2	3	3	3	2	3	4	4	6	S	4	5	2	2	3	2	2	1	6	2.7
Jun 17	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	S	2	1	1	1	2	4	3	3	1	4	1.5
Jun 18	2	3	4	3	3	2	1	1	2	1	1	1	1	1	S	2	1	1	1	1	2	3	1	1	1	4	1.7
Jun 19	1	1	1	1	1	1	1	1	3	2	2	2	1	S	2	3	2	1	2	1	2	6	3	2	1	6	1.8
Jun 20	1	1	2	2	2	2	1	2	2	4	1	1	S	2	2	3	1	1	0	0	0	1	1	0	**0**	4	**1.4**
Jun 21	0	1	1	1	1	1	3	3	2	2	2	S	2	1	1	1	1	1	1	2	2	4	3	2	**0**	4	1.7
Jun 22	1	1	3	2	1	2	3	2	2	3	S	2	2	2	6	2	3	3	5	2	3	3	2	2	1	6	2.5
Jun 23	1	1	2	1	2	2	2	3	2	S	3	2	2	1	2	2	2	2	2	3	3	4	5	3	1	5	2.3
Jun 24	3	2	2	2	2	3	3	3	S	3	2	2	2	1	1	1	1	2	2	3	4	6	5	3	1	6	2.5
Jun 25	2	2	1	2	2	1	1	S	1	1	1	2	1	1	1	1	1	1	1	1	2	3	3	2	1	3	1.5
Jun 26	2	3	2	3	4	3	S	4	3	2	2	2	2	2	1	2	2	2	2	2	2	3	3	3	1	4	2.4
Jun 27	4	3	5	2	2	S	3	3	3	2	3	2	5	2	1	2	3	3	1	1	2	3	6	6	1	6	2.9
Jun 28	5	6	5	3	S	4	2	2	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	6	1.9
Jun 29	1	2	2	S	3	3	4	4	3	3	2	2	2	2	2	2	2	2	2	2	3	4	5	4	5	1	5	2.8
Jun 30	3	2	S	3	4	2	3	3	2	5	5	2	2	1	1	1	1	1	2	4	4	11	12	9	1	12	3.6
Diurnal Maximum	6	6	5	8	6	7	12	8	9	8	7	8	8	8	10	11	13	9	5	4	7	11	12	9			
Diurnal Average	2.3	2.4	2.7	2.8	3.2	3.2	3.4	3.5	3.2	3.1	3.0	2.5	2.8	2.4	2.8	2.8	2.9	2.3	2.1	2.1	2.7	3.9	3.6	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.
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.



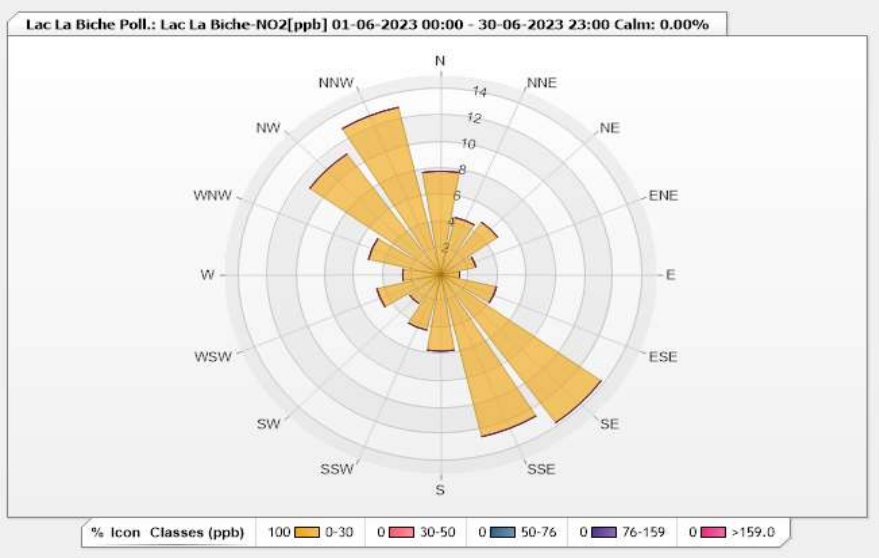


Station: Lac La Biche Poll.: Lac La Biche-NO2[ppb] Monthly: 06-2023

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

Calm: 0.00% Valid Data: 94.58% Calm Avg: 0.00 [ppm]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	7.78	0	0	0	0	7.78
NNE	4.41	0	0	0	0	4.41
NE	4.85	0	0	0	0	4.85
ENE	2.5	0	0	0	0	2.5
E	1.32	0	0	0	0	1.32
ESE	3.96	0	0	0	0	3.96
SE	13.66	0	0	0	0	13.66
SSE	12.48	0	0	0	0	12.48
S	5.73	0	0	0	0	5.73
SSW	4.26	0	0	0	0	4.26
SW	2.64	0	0	0	0	2.64
WSW	4.55	0	0	0	0	4.55
W	2.64	0	0	0	0	2.64
WNW	5.14	0	0	0	0	5.14
NW	11.16	0	0	0	0	11.16
NNW	12.92	0	0	0	0	12.92
Summary	100	0	0	0	0	100



Lakeland Industry & Community Association

Lac La Biche Station - June 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: 4

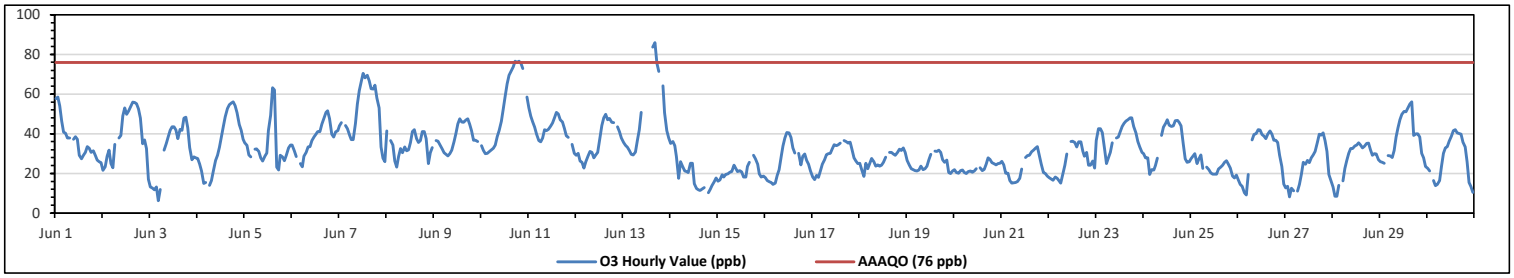
Maximum Hourly Value:	85.9	ppb	on Jun 13 at hr 16	Hours in Service:	720
Maximum Daily Value:	52.6	ppb	on Jun 10	Hours of Data:	684
Minimum Hourly Value:	6.2	ppb	on Jun 3 at hr 4	Hours of Missing Data:	0
Minimum Daily Value:	19.9	ppb	on Jun 14	Hours of Calibration:	36
Monthly Average:	32.6	ppb		Operational Uptime:	100.0

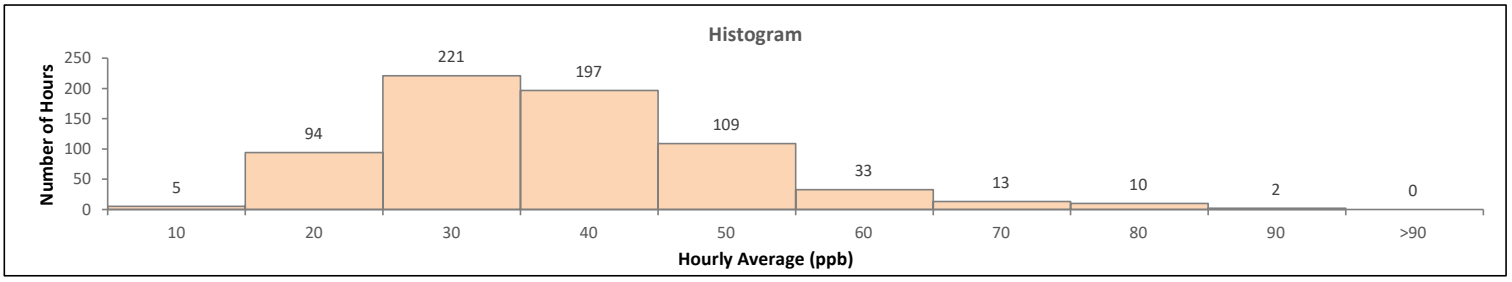
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Jun 1	57.8	58.5	53.9	46.4	40.8	40.4	37.9	37.9	S	37.2	38.6	37.2	29.2	27.5	29.3	30.6	33.5	32.7	30.7	31.4	29.1	26.7	25.9	25.4	25.4	58.5	36.5
Jun 2	21.6	23.4	28.6	31.8	24.9	22.9	34.7	S	38	39.2	48.9	53.1	49.8	51.4	53.8	56	55.7	55.2	52.5	47.9	35	36.9	32.6	17.1	17.1	56.0	39.6
Jun 3	13.1	12.8	11.7	13.3	6.2	11.9	S	31.7	35.2	38.6	41.8	43.5	43.6	41.9	37.5	42.2	41.8	47.9	48.3	43.1	33.1	26.9	28.4	27.8	**6.2**	48.3	31.4
Jun 4	27.6	24.8	21.2	15	15.5	S	13.9	16.5	21.3	26.6	29.2	33.2	38.3	43.4	48.5	52.8	54.7	55.5	56.1	54.2	50.6	44.7	41.8	37.2	13.9	56.1	35.8
Jun 5	35.5	34.1	29.4	28.3	S	32.2	32.4	31.1	27.8	26.3	28.8	30.3	41.5	49.3	63.3	62.1	23.2	21.7	29.2	28.4	26.4	29.3	33	34.3	21.7	63.3	33.8
Jun 6	34.3	31.4	28.5	S	25	23.4	28.8	30.6	33.4	33.5	36.6	38.5	39.6	41.2	41.1	44.9	47.6	50.8	51.6	47.8	39.7	38.3	40.9	41.7	23.4	51.6	37.8
Jun 7	44	45.6	S	44.2	42.5	39.2	37.1	37.1	45.1	55	61.7	66.8	70.5	68.2	69.5	66.7	62.7	62.6	64.6	58	53.1	33.4	27.7	25.9	25.9	70.5	51.4
Jun 8	41.4	S	36.7	34.4	26.3	23.2	28.7	32.6	30.4	33.3	31.4	32	35.6	41.1	42	37.6	35.7	36.7	41.2	41.2	37.6	24.9	30.4	33.1	23.2	42.0	34.2
Jun 9	S	36.7	36.3	34.1	32.4	30.4	29.6	28.9	30	31.8	35.9	40.1	45	47.5	45.9	45.8	46.9	47.5	44.8	41.4	36.8	36.8	36.1	S	28.9	47.5	38.2
Jun 10	34	31.6	29.9	30.1	31.2	31.9	32.7	34.2	38.5	41.5	46.3	52.6	59	65.2	69.5	71.4	73.7	76.7	75.9	76.6	75.7	72.8	S	58.5	29.9	76.7	**52.6**
Jun 11	53.1	48.8	45.9	43.3	39.8	36.6	35.9	38	42.1	41.5	42.2	43.8	45.5	48	50.9	50	47.1	45.9	42.7	39	38.2	S	34.7	30.2	30.2	53.1	42.7
Jun 12	29.2	30.1	26.3	25.5	22.8	25.9	28.9	31	30.6	27.8	29.4	30.5	37.8	44.2	48	49.8	47	47.8	45.8	45.6	S	43.6	41.1	38	22.8	49.8	35.9
Jun 13	35.7	34.1	33.2	31.5	29.6	29.4	30.8	36.6	41.9	50.7	C	C	C	C	C	83.7	**85.9**	75.7	71.4	S	64.2	50.6	41.5	37.8	29.4	**85.9**	48.0
Jun 14	35.1	36.2	34	28.5	17.5	26	23.6	21.3	20.9	20.4	25.2	25.1	14.8	12.4	11.8	11.4	12.2	12.9	S	10.3	12	13.8	15.7	17.7	10.3	36.2	**19.9**
Jun 15	16.1	16.7	19.3	18.2	19.4	19.8	20.6	21	24.2	22.7	21	21.4	20.8	18.2	18.2	23.5	25.6	S	29.2	27.3	24.7	19.8	18.1	18.7	16.1	29.2	21.1
Jun 16	17.9	16.5	15.7	15.4	14.4	15.2	19	22	29	33.8	37.9	40.7	40.5	38.2	32.9	30.3	S	30.1	24.4	28.7	29.8	26.6	24.6	21.2	14.4	40.7	26.3
Jun 17	18.2	17	19	18	21.2	24.6	27	29.5	30	30.2	32.5	34.5	34	34.5	35.3	S	36.5	36.2	35.3	35.8	31.9	27.8	26.3	25	17.0	36.5	28.7
Jun 18	25.1	21.4	18.5	25.1	22.4	24.9	27.6	26	23.8	24.3	23.7	24.1	25.6	28.2	S	30.7	30.7	29.8	29.3	30.6	32.2	31.6	32.8	30.6	18.5	32.8	26.9
Jun 19	26.6	24.1	22.4	21.8	21.5	21.2	21.7	23.7	22	22.3	23.6	27	29.6	S	31.3	31	31.7	30.7	26.9	25.6	26.7	20.5	20.1	21.3	20.1	31.7	24.9
Jun 20	22	20.4	20.2	21.4	21.7	20.5	20	20.9	21.3	20.6	21.3	22.4	S	22.9	21.4	22.1	24.6	27.8	27.1	25.4	25	24.4	24.9	25.2	20.0	27.8	22.8
Jun 21	26.1	24.4	20.2	20.2	16.4	15.2	15.3	15.4	15.9	17.5	22.2	S	28	29	29.3	30.9	31.7	32.7	33.5	29.3	24.8	20.4	19.9	18.7	15.2	33.5	23.3
Jun 22	17.9	17.2	16.6	18.3	17.5	16.2	15.1	20	24.2	29.8	S	36	36.3	35.7	33.4	35.9	35.9	31.3	28.7	30.7	24.2	24.2	26.2	22.7	15.1	36.3	25.8
Jun 23	36.7	42.6	42.6	40.6	32.3	25	27.3	30.5	35.4	S	37.8	38.4	40.6	43.7	45.2	46.4	47	48.1	48.1	43.7	40.5	36	33.4	30.5	25.0	48.1	38.8
Jun 24	30	27.8	27.8	19.5	21.8	21.7	24	27.7	S	39.2	43.3	45.2	47	44.4	43.7	44	46.7	46.8	45.8	44	34.8	27.3	25.6	26	19.5	47.0	35.0
Jun 25	27.4	28.6	30	24.9	27.4	29.4	22.6	S	23.3	22	20.3	19.7	19.7	19.6	22.2	23.1	24.1	25.5	26.5	24.7	22.7	18.7	17.6	19.1	17.6	30.0	23.4
Jun 26	16.8	14.6	13.5	10.2	9.2	19.5	S	36.9	39.6	40.1	42	41.9	39.6	38.9	37.6	39.8	41.4	39.9	36.8	36.8	35.6	29.1	23.5	14.7	9.2	42.0	30.3
Jun 27	12.8	13.5	8.2	12.5	11.3	S	11.1	14.6	19.5	25.5	24.6	26.6	25.4	27.9	29.4	31	35.7	39.8	39.4	40.5	36.6	31.1	19.4	16.1	8.2	40.5	24.0
Jun 28	13.3	8.5	8.6	14	S	16.2	22.6	26.6	30.2	32.6	32.6	33.9	34.3	35.4	34.4	32.9	33.6	35.1	35.3	32	29.1	30	29.8	27	8.5	35.4	27.3
Jun 29	26	25.5	25.1	S	29	28.9	28.1	31.6	38.3	43	47.2	49.8	51.3	51.1	53.1	55	56.1	39.2	40	40	38.3	30.1	27.9	23.5	23.5	56.1	38.2
Jun 30	22.6	21.3	S	16.3	13.8	14.5	16.3	23.8	30.1	32.9	33.5	36.3	38.8	41.5	42.1	40.5	40.1	39.9	35.8	33.3	25.8	15.5	13.4	10.4	10.4	42.1	27.8
Diurnal Maximum	57.8	58.5	53.9	46.4	42.5	40.4	37.9	38.0	45.1	55.0	61.7	66.8	70.5	68.2	69.5	83.7	85.9	76.7	75.9	76.6	75.7	72.8	41.8	58.5			
Diurnal Average	28.2	27.2	25.8	25.1	23.4	24.5	25.5	27.8	30.1	32.4	34.3	36.6	37.9	38.9	40.0	42.1	41.7	41.5	41.3	37.7	35.0	30.8	28.0	26.7			

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

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

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



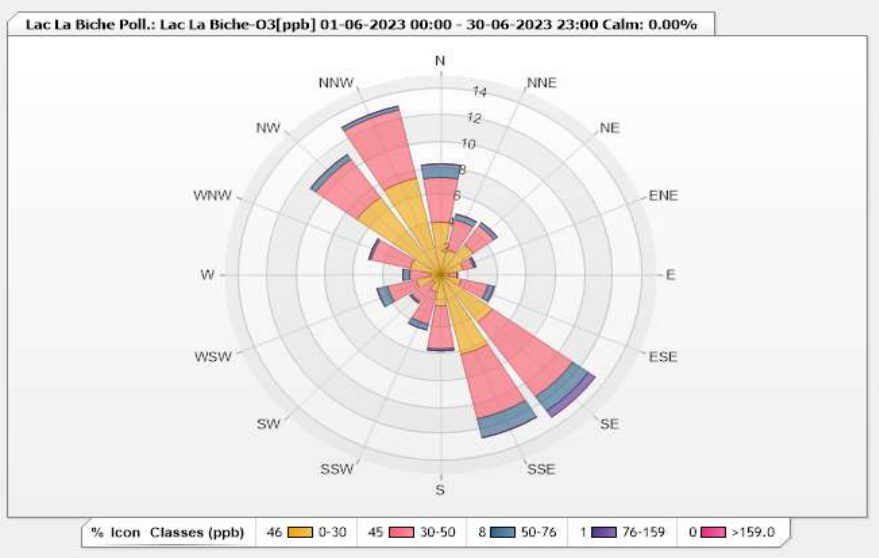


Station: Lac La Biche Poll.: Lac La Biche-O3[ppb] Monthly: 06-2023

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

Calm: 0.00% Valid Data: 95.00% Calm Avg: 0.00 [ppm]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	3.95	3.36	1.02	0	0	8.33
NNE	1.9	2.34	0.44	0	0	4.68
NE	2.78	1.75	0.29	0	0	4.82
ENE	1.61	0.73	0.15	0	0	2.49
E	0.58	0.58	0	0	0	1.16
ESE	1.46	1.9	0.44	0	0	3.8
SE	4.39	6.87	1.32	0.58	0	13.16
SSE	6.14	4.97	1.46	0	0	12.57
S	2.34	3.22	0.15	0	0	5.71
SSW	1.32	2.49	0.44	0	0	4.25
SW	0.73	1.75	0.15	0	0	2.63
WSW	1.75	2.05	0.73	0	0	4.53
W	0.73	1.46	0.44	0	0	2.63
WNW	2.19	2.78	0.15	0	0	5.12
NW	7.16	3.51	0.44	0	0	11.11
NNW	7.46	5.26	0.29	0	0	13.01
Summary	46.49	45.02	7.91	0.58	0	100



Lakeland Industry & Community Association

Lac La Biche Station - June 2023

Summary of Hourly Averages

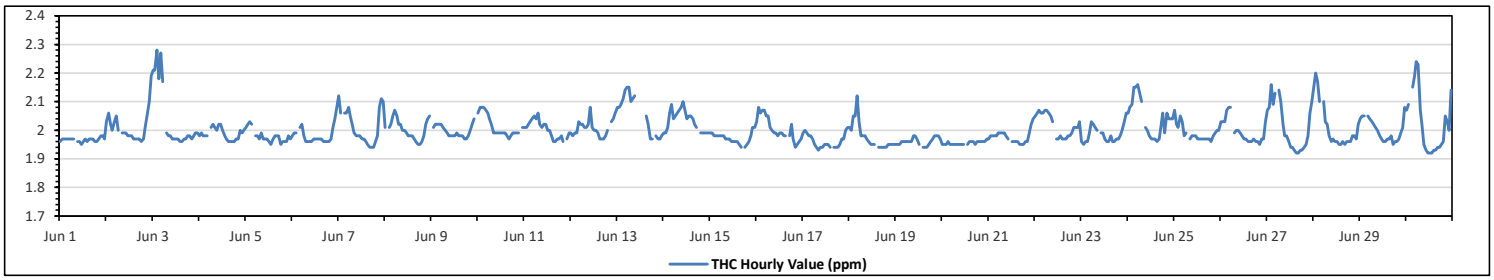
TOTAL HYDROCARBONS (THC) in ppm

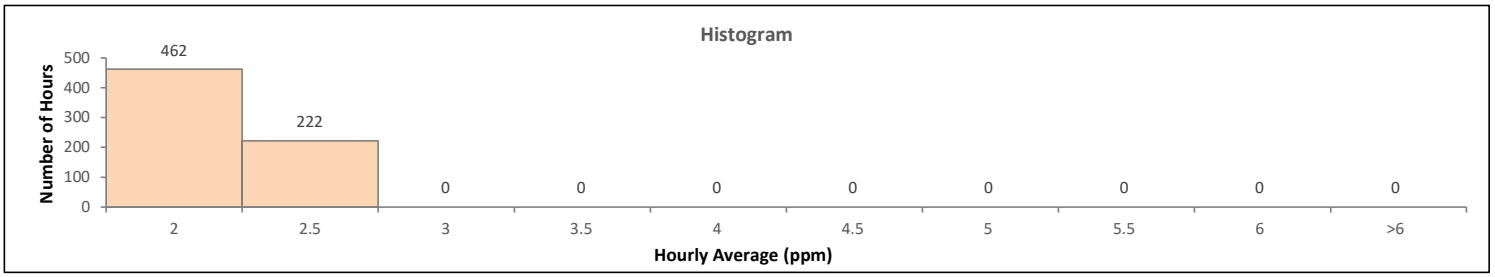
Maximum Hourly Value:	2.28	ppm	on Jun 3 at hr 2	Hours in Service:	720
Maximum Daily Value:	2.06	ppm	on Jun 13	Hours of Data:	684
Minimum Hourly Value:	1.92	ppm	on Jun 27 at hr 15	Hours of Missing Data:	0
Minimum Daily Value:	1.95	ppm	on Jun 20	Hours of Calibration:	36
Monthly Average:	2.00	ppm		Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Jun 1	1.96	1.97	1.97	1.97	1.97	1.97	1.97	1.97	S	1.96	1.96	1.95	1.96	1.97	1.96	1.97	1.97	1.97	1.96	1.96	1.97	1.98	1.98	1.97	1.95	1.98	1.97
Jun 2	2.03	2.06	2.02	2.00	2.03	2.05	2.00	S	1.99	1.99	1.99	1.98	1.98	1.98	1.97	1.97	1.97	1.97	1.96	1.97	2.01	2.05	2.10	2.19	1.96	2.19	2.01
Jun 3	2.21	2.21	2.28	2.18	2.27	2.17	S	1.99	1.98	1.98	1.97	1.97	1.97	1.97	1.96	1.96	1.97	1.97	1.98	1.98	1.97	1.98	1.99	1.99	1.96	2.28	2.04
Jun 4	1.98	1.99	1.98	1.98	1.98	S	2.01	2.02	2.01	2.00	2.02	2.02	2.00	1.98	1.97	1.96	1.96	1.96	1.96	1.97	1.97	2.00	1.99	2.00	1.96	2.02	1.99
Jun 5	2.01	2.02	2.03	2.02	S	1.98	1.98	1.97	1.99	1.97	1.97	1.97	1.96	1.95	1.97	1.98	1.98	1.98	1.95	1.96	1.96	1.96	1.98	1.97	1.95	2.03	1.98
Jun 6	1.98	1.99	1.99	S	2.01	2.02	1.98	1.96	1.96	1.96	1.96	1.97	1.97	1.97	1.97	1.97	1.96	1.96	1.96	1.96	1.97	2.01	2.04	2.08	1.96	2.08	1.98
Jun 7	2.12	2.06	S	2.06	2.06	2.08	2.05	2.02	1.99	1.98	1.98	1.98	1.97	1.97	1.96	1.95	1.94	1.94	1.94	1.96	1.98	2.08	2.11	2.10	1.94	2.12	2.01
Jun 8	2.01	S	2.01	2.02	2.05	2.07	2.05	2.02	2.02	2.00	2.00	1.99	1.98	1.98	1.98	1.97	1.96	1.95	1.95	1.96	1.98	2.02	2.04	2.05	1.95	2.07	2.00
Jun 9	S	2.01	2.02	2.02	2.02	2.02	2.01	2.00	1.99	1.98	1.98	1.98	1.98	1.99	1.98	1.98	1.98	1.97	1.97	1.98	2.00	2.02	2.04	S	1.97	2.04	2.00
Jun 10	2.06	2.08	2.08	2.08	2.07	2.06	2.04	2.02	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.98	1.97	1.98	1.99	1.99	1.99	1.99	S	2.01	1.97	2.08	2.01
Jun 11	2.01	2.01	2.02	2.03	2.04	2.05	2.04	2.06	2.02	2.01	2.02	2.02	2.00	2.00	1.98	1.96	1.96	1.97	1.97	1.98	1.96	S	1.97	1.99	1.96	2.06	2.00
Jun 12	1.99	1.98	1.99	1.99	2.03	2.02	2.02	2.01	2.01	2.02	2.08	2.01	2.00	2.00	1.99	1.97	1.97	1.97	1.98	2.00	S	2.03	2.04	2.06	1.97	2.08	2.01
Jun 13	2.08	2.08	2.09	2.11	2.14	2.15	2.15	2.10	2.11	2.12	C	C	C	C	C	2.05	2.02	1.97	1.97	S	1.98	1.97	1.97	1.98	1.97	2.15	2.06
Jun 14	1.99	1.99	2.01	2.06	2.09	2.04	2.05	2.06	2.07	2.08	2.10	2.07	2.04	2.05	2.05	2.04	2.02	2.01	S	1.99	1.99	1.99	1.99	1.99	1.99	2.10	2.03
Jun 15	1.99	1.99	1.98	1.98	1.98	1.98	1.98	1.98	1.97	1.97	1.97	1.96	1.96	1.96	1.96	1.95	1.94	S	1.94	1.95	1.96	1.98	2.01	2.01	1.94	2.01	1.97
Jun 16	2.03	2.08	2.06	2.07	2.07	2.05	2.05	2.01	2.00	1.99	1.99	1.98	1.99	1.99	1.98	1.98	S	1.98	2.02	1.97	1.94	1.95	1.96	1.97	1.94	2.08	2.00
Jun 17	1.99	2.00	1.99	1.98	1.98	1.97	1.95	1.94	1.93	1.94	1.94	1.95	1.95	1.95	1.94	S	1.94	1.94	1.94	1.95	1.97	1.97	2.00	2.01	1.93	2.01	1.96
Jun 18	2.01	2.00	2.05	2.05	2.12	2.03	1.98	1.98	1.98	1.97	1.96	1.95	1.95	1.95	S	1.94	1.94	1.94	1.94	1.94	1.95	1.95	1.95	1.95	1.94	2.12	1.98
Jun 19	1.95	1.95	1.95	1.96	1.96	1.96	1.96	1.96	1.96	1.98	1.98	1.97	1.95	S	1.94	1.94	1.94	1.95	1.96	1.97	1.98	1.98	1.98	1.97	1.94	1.98	1.96
Jun 20	1.95	1.95	1.95	1.96	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	S	1.95	1.96	1.96	1.96	1.95	1.96	1.96	1.96	1.96	1.96	1.97	1.95	1.97	1.95
Jun 21	1.97	1.98	1.98	1.98	1.98	1.99	1.99	1.99	1.99	1.98	1.97	S	1.96	1.96	1.96	1.96	1.95	1.95	1.95	1.96	1.96	1.99	2.02	2.04	1.95	2.04	1.98
Jun 22	2.05	2.06	2.07	2.06	2.06	2.07	2.07	2.06	2.05	2.03	S	1.97	1.97	1.98	1.97	1.97	1.97	1.98	1.98	1.99	2.01	2.01	2.01	2.03	1.97	2.07	2.02
Jun 23	1.96	1.95	1.96	1.96	1.99	2.03	2.02	2.01	2.00	S	1.99	1.99	1.97	1.96	1.96	1.98	1.96	1.96	1.97	1.97	1.98	2.00	2.03	2.06	1.95	2.06	1.99
Jun 24	2.06	2.08	2.09	2.15	2.15	2.16	2.13	2.10	S	2.01	2.00	1.98	1.97	1.97	1.97	1.96	1.97	2.01	2.06	1.99	2.06	2.04	2.04	2.04	1.96	2.16	2.04
Jun 25	2.07	2.02	2.01	2.05	2.03	1.98	1.99	S	1.97	1.98	1.98	1.98	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.96	1.98	1.99	2.00	2.00	1.96	2.07	1.99
Jun 26	2.03	2.03	2.03	2.07	2.08	2.08	S	1.99	2.00	2.00	1.99	1.98	1.97	1.97	1.96	1.96	1.96	1.97	1.96	1.96	1.95	1.97	1.97	2.03	1.95	2.08	2.00
Jun 27	2.07	2.08	2.16	2.09	2.13	S	2.14	2.10	2.02	1.98	1.98	1.96	1.94	1.94	1.93	1.92	1.92	1.93	1.93	1.94	1.95	1.98	2.06	2.10	1.92	2.16	2.01
Jun 28	2.15	2.20	2.17	2.10	S	2.10	2.03	2.02	1.98	1.96	1.97	1.96	1.96	1.95	1.95	1.96	1.95	1.96	1.96	1.96	1.98	1.98	1.97	2.02	1.95	2.20	2.01
Jun 29	2.04	2.05	2.05	S	2.05	2.04	2.03	2.02	2.01	2.00	1.98	1.97	1.96	1.96	1.97	1.97	1.98	1.95	1.96	1.96	1.97	1.99	2.01	2.08	1.95	2.08	2.00
Jun 30	2.07	2.09	S	2.15	2.19	2.24	2.23	2.07	2.01	1.95	1.93	1.92	1.92	1.92	1.93	1.93	1.94	1.94	1.95	1.96	2.05	2.03	2.00	2.14	1.92	2.24	2.02
Diurnal Maximum	2.21	2.21	2.28	2.18	2.27	2.24	2.23	2.10	2.11	2.12	2.10	2.07	2.04	2.05	2.05	2.05	2.02	2.01	2.06	2.00	2.06	2.08	2.11	2.19			
Diurnal Average	2.03	2.03	2.04	2.04	2.05	2.05	2.03	2.01	2.00	1.99	1.99	1.98	1.97	1.97	1.97	1.97	1.96	1.96	1.97	1.97	1.98	1.99	2.01	2.03			

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.



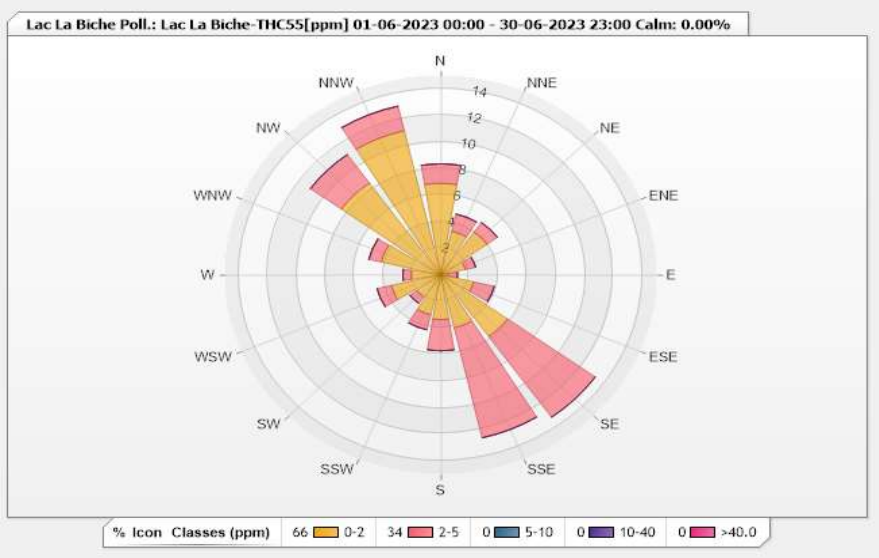


Station: Lac La Biche Poll.: Lac La Biche-THC55[ppm] Monthly: 06-2023

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

Calm: 0.00% Valid Data: 95.00% Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-40	>40.0	Total
N	6.87	1.46	0	0	0	8.33
NNE	3.36	1.32	0	0	0	4.68
NE	3.95	0.88	0	0	0	4.83
ENE	1.75	0.73	0	0	0	2.48
E	0.44	0.73	0	0	0	1.17
ESE	2.34	1.46	0	0	0	3.8
SE	5.7	7.46	0	0	0	13.16
SSE	4.09	8.48	0	0	0	12.57
S	3.36	2.34	0	0	0	5.7
SSW	3.07	1.17	0	0	0	4.24
SW	2.05	0.58	0	0	0	2.63
WSW	3.51	1.02	0	0	0	4.53
W	2.05	0.58	0	0	0	2.63
WNW	4.24	0.88	0	0	0	5.12
NW	8.48	2.63	0	0	0	11.11
NNW	11.11	1.9	0	0	0	13.01
Summary	66.37	33.62	0	0	0	100



Lakeland Industry & Community Association

Lac La Biche Station - June 2023

Summary of Hourly Averages

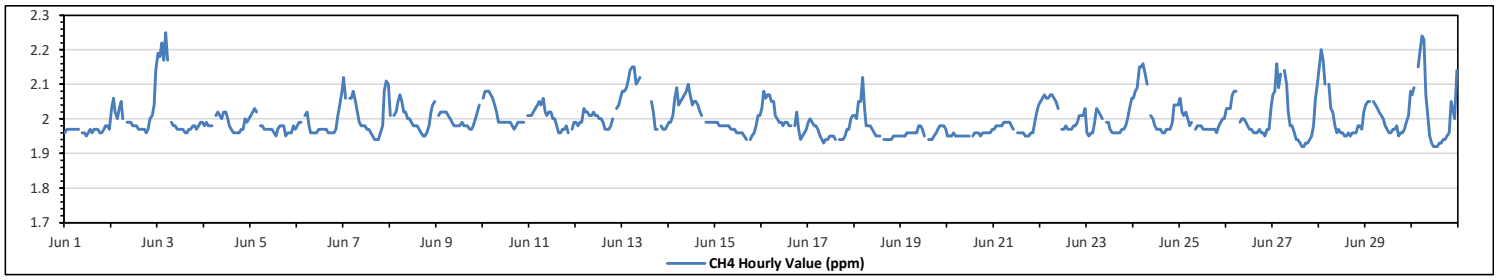
METHANE (CH4) in ppm

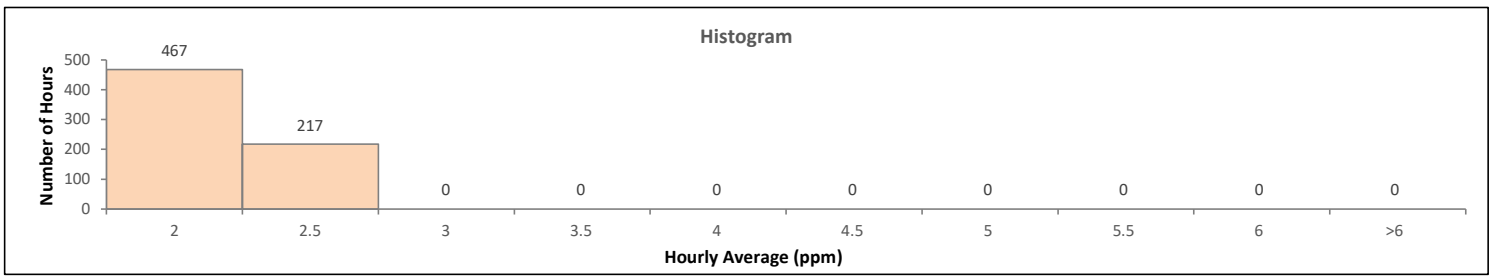
Maximum Hourly Value:	2.25	ppm	on Jun 3 at hr 4	Hours in Service:	720	
Maximum Daily Value:	2.06	ppm	on Jun 13	Hours of Data:	684	
Minimum Hourly Value:	1.92	ppm	on Jun 27 at hr 15	Hours of Missing Data:	0	
Minimum Daily Value:	1.95	ppm	on Jun 20	Hours of Calibration:	36	
Monthly Average:	2.00	ppm		Operational Uptime:	100.0	

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Jun 1	1.96	1.97	1.97	1.97	1.97	1.97	1.97	1.97	S	1.96	1.96	1.95	1.96	1.97	1.96	1.97	1.97	1.97	1.96	1.96	1.97	1.98	1.98	1.97	1.95	1.98	1.97
Jun 2	2.03	2.06	2.02	2.00	2.03	2.05	2.00	S	1.99	1.99	1.99	1.98	1.98	1.98	1.97	1.97	1.97	1.97	1.96	1.97	2.00	2.01	2.04	2.14	1.96	2.14	2.00
Jun 3	2.19	2.18	2.22	2.17	**2.25**	2.17	S	1.99	1.98	1.98	1.97	1.97	1.97	1.97	1.96	1.96	1.97	1.97	1.98	1.98	1.97	1.98	1.99	1.99	1.96	**2.25**	2.03
Jun 4	1.98	1.99	1.98	1.98	1.98	S	2.01	2.02	2.01	2.00	2.02	2.02	2.00	1.98	1.97	1.96	1.96	1.96	1.96	1.97	1.97	2.00	1.99	2.00	1.96	2.02	1.99
Jun 5	2.01	2.02	2.03	2.02	S	1.98	1.98	1.97	1.97	1.97	1.97	1.97	1.96	1.95	1.97	1.98	1.98	1.98	1.95	1.96	1.96	1.96	1.98	1.97	1.95	2.03	1.98
Jun 6	1.98	1.99	1.99	S	2.01	2.02	1.98	1.96	1.96	1.96	1.96	1.97	1.97	1.97	1.97	1.97	1.96	1.96	1.96	1.96	1.97	2.01	2.04	2.08	1.96	2.08	1.98
Jun 7	2.12	2.06	S	2.06	2.06	2.08	2.05	2.02	1.99	1.98	1.98	1.98	1.97	1.97	1.96	1.95	1.94	1.94	1.94	1.96	1.98	2.08	2.11	2.10	1.94	2.12	2.01
Jun 8	2.01	S	2.01	2.02	2.05	2.07	2.05	2.02	2.02	2.00	2.00	1.99	1.98	1.98	1.98	1.97	1.96	1.95	1.95	1.96	1.98	2.02	2.04	2.05	1.95	2.07	2.00
Jun 9	S	2.01	2.02	2.02	2.02	2.02	2.01	2.00	1.99	1.98	1.98	1.98	1.98	1.99	1.98	1.98	1.98	1.97	1.97	1.98	2.00	2.02	2.04	S	1.97	2.04	2.00
Jun 10	2.06	2.08	2.08	2.08	2.07	2.06	2.04	2.02	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.98	1.97	1.98	1.99	1.99	1.99	1.99	S	2.01	1.97	2.08	2.01
Jun 11	2.01	2.01	2.02	2.03	2.04	2.05	2.04	2.06	2.02	2.01	2.02	2.02	2.00	2.00	1.98	1.96	1.96	1.97	1.97	1.98	1.96	S	1.97	1.99	1.96	2.06	2.00
Jun 12	1.99	1.98	1.99	1.99	2.03	2.02	2.02	2.01	2.01	2.02	2.01	2.01	2.00	2.00	1.99	1.97	1.97	1.97	1.98	2.00	S	2.03	2.04	2.06	1.97	2.06	2.00
Jun 13	2.08	2.08	2.09	2.11	2.14	2.15	2.15	2.10	2.11	2.12	C	C	C	C	C	2.05	2.02	1.97	1.97	S	1.98	1.97	1.97	1.98	1.97	2.15	**2.06**
Jun 14	1.99	1.99	2.01	2.06	2.09	2.04	2.05	2.06	2.07	2.08	2.10	2.07	2.04	2.05	2.05	2.04	2.02	2.01	S	1.99	1.99	1.99	1.99	1.99	1.99	2.10	2.03
Jun 15	1.99	1.99	1.98	1.98	1.98	1.98	1.98	1.98	1.97	1.97	1.97	1.96	1.96	1.96	1.96	1.95	1.94	S	1.94	1.95	1.96	1.98	2.01	2.01	1.94	2.01	1.97
Jun 16	2.03	2.08	2.06	2.07	2.07	2.05	2.05	2.01	2.00	1.99	1.99	1.98	1.99	1.99	1.98	1.98	S	1.98	2.02	1.97	1.94	1.95	1.96	1.97	1.94	2.08	2.00
Jun 17	1.99	2.00	1.99	1.98	1.98	1.97	1.95	1.94	1.93	1.94	1.94	1.95	1.95	1.95	1.94	S	1.94	1.94	1.94	1.95	1.97	1.97	2.00	2.01	1.93	2.01	1.96
Jun 18	2.01	2.00	2.05	2.05	2.12	2.03	1.98	1.98	1.98	1.97	1.96	1.95	1.95	1.95	S	1.94	1.94	1.94	1.94	1.94	1.95	1.95	1.95	1.95	1.94	2.12	1.98
Jun 19	1.95	1.95	1.95	1.96	1.96	1.96	1.96	1.96	1.96	1.98	1.98	1.97	1.95	S	1.94	1.94	1.94	1.95	1.96	1.97	1.98	1.98	1.98	1.97	1.94	1.98	1.96
Jun 20	1.95	1.95	1.95	1.96	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	S	1.95	1.96	1.96	1.96	1.95	1.96	1.96	1.96	1.96	1.96	1.97	1.95	1.97	1.95
Jun 21	1.97	1.98	1.98	1.98	1.98	1.99	1.99	1.99	1.99	1.98	1.97	S	1.96	1.96	1.96	1.96	1.95	1.95	1.95	1.96	1.96	1.99	2.02	2.04	1.95	2.04	1.98
Jun 22	2.05	2.06	2.07	2.06	2.06	2.07	2.07	2.06	2.05	2.03	S	1.97	1.97	1.98	1.97	1.97	1.97	1.98	1.98	1.99	2.01	2.01	2.01	2.03	1.97	2.07	2.02
Jun 23	1.96	1.95	1.96	1.96	1.99	2.03	2.02	2.01	2.00	S	1.99	1.99	1.97	1.96	1.96	1.96	1.96	1.96	1.97	1.97	1.98	2.00	2.03	2.06	1.95	2.06	1.98
Jun 24	2.06	2.08	2.09	2.15	2.15	2.16	2.13	2.10	S	2.01	2.00	1.98	1.97	1.97	1.97	1.96	1.96	1.97	1.97	1.97	1.99	2.04	2.04	2.04	1.96	2.16	2.03
Jun 25	2.06	2.02	2.01	2.02	2.00	1.98	1.99	S	1.97	1.98	1.98	1.98	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.96	1.98	1.99	2.00	2.00	1.96	2.06	1.99
Jun 26	2.03	2.03	2.03	2.07	2.08	2.08	S	1.99	2.00	2.00	1.99	1.98	1.97	1.97	1.96	1.96	1.96	1.97	1.96	1.96	1.95	1.97	1.97	2.03	1.95	2.08	2.00
Jun 27	2.07	2.08	2.16	2.09	2.13	S	2.14	2.10	2.02	1.98	1.98	1.96	1.94	1.94	1.93	1.92	1.92	1.93	1.93	1.94	1.95	1.98	2.06	2.10	1.92	2.16	2.01
Jun 28	2.15	2.20	2.17	2.10	S	2.10	2.03	2.02	1.98	1.96	1.97	1.96	1.96	1.95	1.95	1.96	1.95	1.96	1.96	1.96	1.98	1.98	1.97	2.02	1.95	2.20	2.01
Jun 29	2.04	2.05	2.05	S	2.05	2.04	2.03	2.02	2.01	2.00	1.98	1.97	1.96	1.96	1.97	1.97	1.98	1.95	1.96	1.96	1.97	1.99	2.01	2.08	1.95	2.08	2.00
Jun 30	2.07	2.09	S	2.15	2.19	2.24	2.23	2.07	2.01	1.95	1.93	1.92	1.92	1.92	1.93	1.93	1.94	1.94	1.95	1.96	2.05	2.03	2.00	2.14	1.92	2.24	2.02
Diurnal Maximum	2.19	2.20	2.22	2.17	2.25	2.24	2.23	2.10	2.11	2.12	2.10	2.07	2.04	2.05	2.05	2.05	2.02	2.01	2.02	2.00	2.05	2.08	2.11	2.14			
Diurnal Average	2.03	2.03	2.03	2.04	2.05	2.05	2.03	2.01	2.00	1.99	1.98	1.98	1.97	1.97	1.97	1.97	1.96	1.96	1.96	1.97	1.98	1.99	2.01	2.03			

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.



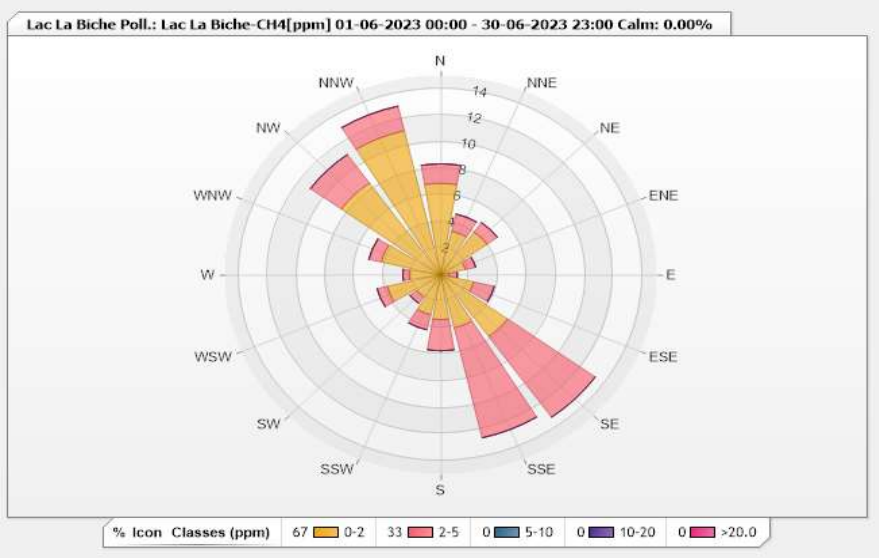


Station: Lac La Biche Poll.: Lac La Biche-CH4[ppm] Monthly: 06-2023

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

Calm: 0.00% Valid Data: 95.00% Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-20	>20.0	Total
N	6.87	1.46	0	0	0	8.33
NNE	3.36	1.32	0	0	0	4.68
NE	3.95	0.88	0	0	0	4.83
ENE	1.75	0.73	0	0	0	2.48
E	0.58	0.58	0	0	0	1.16
ESE	2.34	1.46	0	0	0	3.8
SE	5.7	7.46	0	0	0	13.16
SSE	4.09	8.48	0	0	0	12.57
S	3.36	2.34	0	0	0	5.7
SSW	3.07	1.17	0	0	0	4.24
SW	2.05	0.58	0	0	0	2.63
WSW	3.8	0.73	0	0	0	4.53
W	2.19	0.44	0	0	0	2.63
WNW	4.24	0.88	0	0	0	5.12
NW	8.48	2.63	0	0	0	11.11
NNW	11.11	1.9	0	0	0	13.01
Summary	66.94	33.04	0	0	0	100



Lakeland Industry & Community Association

Lac La Biche Station - June 2023

Summary of Hourly Averages

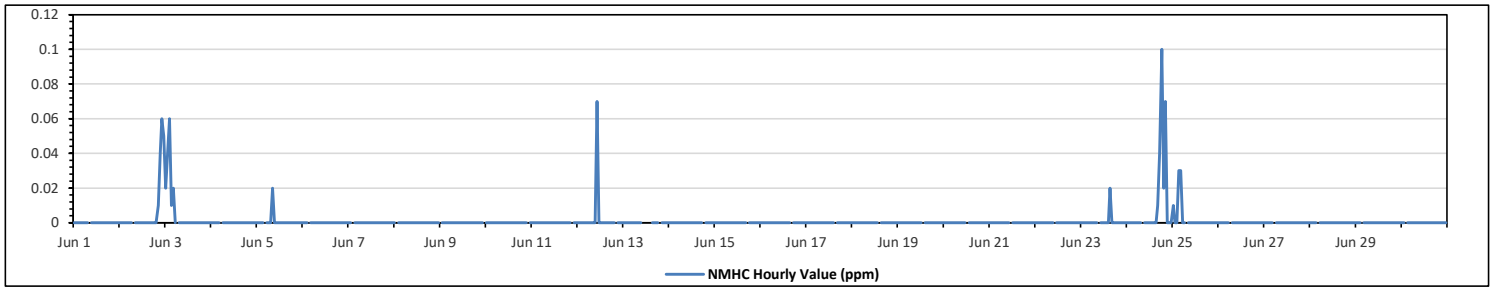
NON-METHANE HYDROCARBONS (NMHC) in ppm

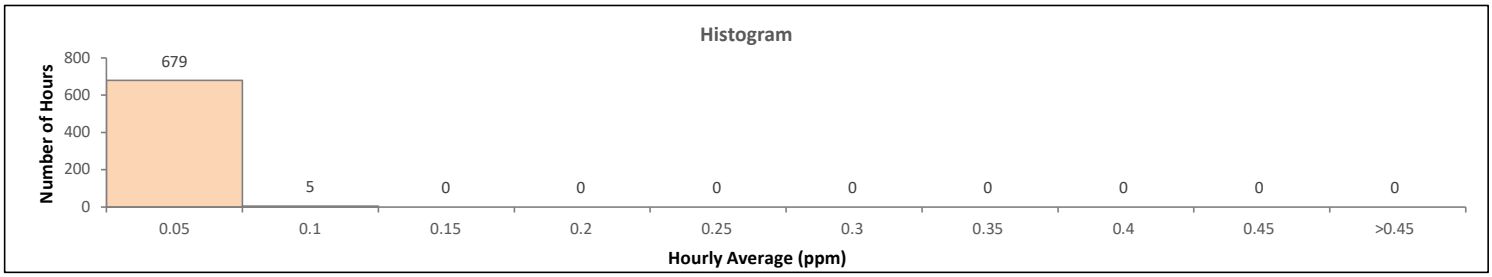
Maximum Hourly Value:	0.10	ppm	on Jun 24 at hr 18	Hours in Service:	720
Maximum Daily Value:	0.01	ppm	on Jun 24	Hours of Data:	684
Minimum Hourly Value:	0.00	ppm	on Jun 1 at hr 0	Hours of Missing Data:	0
Minimum Daily Value:	0.00	ppm	on Jun 1	Hours of Calibration:	36
Monthly Average:	0.00	ppm		Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Jun 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jun 2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.04	0.06	0.05	0.00	0.06	0.01
Jun 3	0.02	0.04	0.06	0.01	0.02	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.01
Jun 4	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jun 5	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00
Jun 6	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
Jun 7	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jun 8	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
Jun 9	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00
Jun 10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00
Jun 11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00
Jun 12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	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	0.07	0.00
Jun 13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	C	C	C	C	C	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jun 14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jun 15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jun 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	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jun 17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jun 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	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
Jun 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	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
Jun 20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jun 21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jun 22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jun 23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00
Jun 24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.04	**0.10**	0.02	0.07	0.00	0.00	0.00	0.00	**0.10**	**0.01**
Jun 25	0.01	0.00	0.00	0.03	0.03	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	0.03	0.00
Jun 26	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jun 27	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jun 28	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jun 29	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jun 30	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diurnal Maximum	0.02	0.04	0.06	0.03	0.03	0.00	0.00	0.00	0.02	0.00	0.07	0.00	0.00	0.00	0.00	0.02	0.01	0.04	0.10	0.02	0.07	0.04	0.06	0.05			
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.



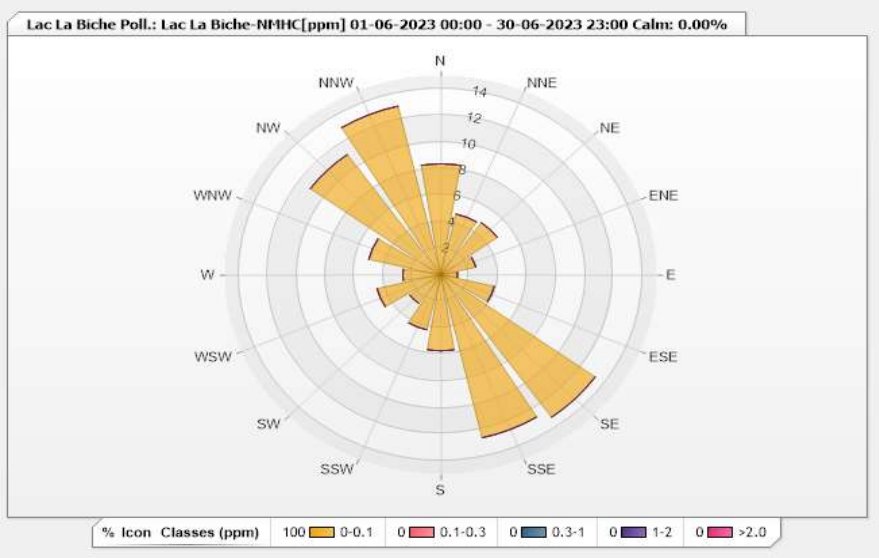


Station: Lac La Biche Poll.: Lac La Biche-NMHC[ppm] Monthly: 06-2023

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

Calm: 0.00% Valid Data: 95.00% Calm Avg: 0.00 [ppm]

Direction	0-0.1	0.1-0.3	0.3-1	1-2	>2.0	Total
N	8.33	0	0	0	0	8.33
NNE	4.68	0	0	0	0	4.68
NE	4.82	0	0	0	0	4.82
ENE	2.49	0	0	0	0	2.49
E	1.17	0	0	0	0	1.17
ESE	3.8	0	0	0	0	3.8
SE	13.16	0	0	0	0	13.16
SSE	12.57	0	0	0	0	12.57
S	5.7	0	0	0	0	5.7
SSW	4.24	0	0	0	0	4.24
SW	2.63	0	0	0	0	2.63
WSW	4.53	0	0	0	0	4.53
W	2.63	0	0	0	0	2.63
WNW	5.12	0	0	0	0	5.12
NW	11.11	0	0	0	0	11.11
NNW	13.01	0	0	0	0	13.01
Summary	100	0	0	0	0	100



Lakeland Industry & Community Association

Lac La Biche Station - June 2023

Summary of Hourly Averages

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

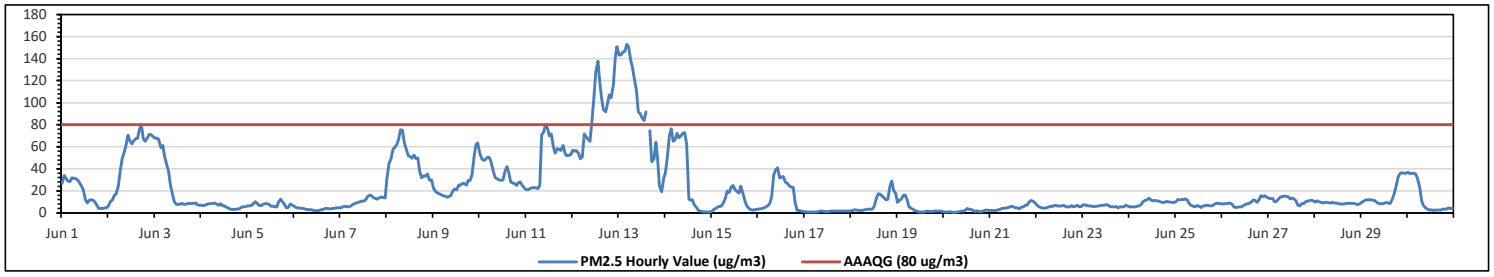
Alberta Ambient Air Quality Guideline (AAAQG): 1-Hour 80 µg/m3, Alberta Ambient Air Quality Objective (AAAQO): 24-Hour 29 µg/m3

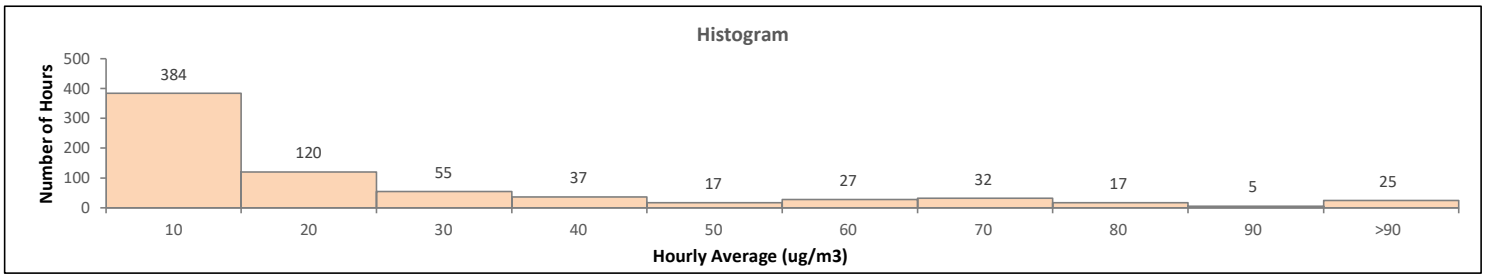
Number of 1-Hour Exceedances:	30	Number of 24-Hour Exceedances:	7
Maximum Hourly Value:	153 µg/m^3 on Jun 13 at hr 4	Hours in Service:	720
Maximum Daily Value:	95.1 µg/m^3 on Jun 13	Hours of Data:	719
Minimum Hourly Value:	1 µg/m^3 on Jun 20 at hr 5	Hours of Missing Data:	0
Minimum Daily Value:	1 µg/m^3 on Jun 17	Hours of Calibration:	1
Monthly Average:	21.3 µg/m^3	Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Jun 1	27	34	32	29	29	32	31	31	30	27	24	21	12	9	11	12	11	10	7	4	4	4	4	5	4	34	18.3
Jun 2	6	10	12	15	18	25	38	49	54	61	71	66	63	65	67	68	76	80	67	65	68	71	71	69	6	80	52.2
Jun 3	68	68	67	59	61	52	44	38	25	17	10	8	8	8	9	8	8	9	8	9	9	9	7	7	7	68	25.6
Jun 4	7	7	7	8	8	8	9	9	8	7	8	6	6	5	4	3	3	3	4	4	4	5	6	6	3	9	6.0
Jun 5	6	6	7	9	10	8	7	7	8	8	8	8	6	6	6	6	10	12	10	8	5	5	8	7	5	12	7.5
Jun 6	6	5	4	4	4	4	3	3	3	3	2	2	2	2	3	3	4	4	4	4	4	4	4	5	2	6	3.6
Jun 7	5	6	6	6	6	6	7	8	9	10	10	11	11	12	15	16	16	14	13	13	14	15	14	14	5	16	10.5
Jun 8	30	45	49	57	59	62	67	76	75	63	58	52	51	50	53	50	50	37	32	34	33	35	30	30	30	76	49.0
Jun 9	22	20	18	18	17	16	15	14	15	16	20	22	21	25	25	27	27	25	29	29	34	52	62	64	14	64	26.3
Jun 10	54	49	48	48	50	50	45	37	32	31	30	30	30	37	42	37	28	27	26	25	27	28	25	22	22	54	35.8
Jun 11	21	21	22	23	23	23	22	25	71	73	80	77	70	72	61	54	58	58	57	61	54	52	52	53	21	80	49.2
Jun 12	57	56	56	54	49	51	72	69	67	65	83	104	128	138	121	105	94	92	100	107	105	116	141	151	49	151	90.8
Jun 13	143	143	146	147	**153**	150	139	132	121	112	92	90	86	84	92	**C**	75	46	49	64	50	25	19	31	19	**153**	**95.1**
Jun 14	37	51	70	76	65	67	72	68	70	72	73	62	13	12	12	7	5	3	2	1	1	1	1	1	1	76	35.0
Jun 15	1	3	4	5	6	6	9	13	20	19	23	25	21	19	18	24	19	11	6	5	3	3	3	3	1	25	11.2
Jun 16	3	4	4	5	5	7	9	15	34	39	41	32	33	33	28	27	25	24	23	9	2	2	2	1	1	41	16.9
Jun 17	1	1	1	1	1	1	1	1	2	2	1	1	1	1	2	2	2	1	2	2	2	2	2	2	1	2	**1.3**
Jun 18	2	2	3	3	2	2	2	3	3	3	3	4	6	13	17	17	16	14	12	12	24	29	20	18	2	29	9.6
Jun 19	9	11	13	16	16	12	5	4	4	2	1	1	1	1	1	1	1	1	1	2	2	2	2	1	1	16	4.6
Jun 20	1	1	1	1	1	1	1	1	1	2	1	2	4	3	3	3	1	2	1	1	1	2	3	2	**1**	4	1.6
Jun 21	2	2	2	2	3	3	4	4	4	5	6	6	5	5	5	4	5	6	7	7	10	11	11	9	2	11	5.3
Jun 22	7	6	5	4	4	4	5	6	6	7	7	6	6	6	7	5	6	5	7	5	6	7	6	6	4	7	5.7
Jun 23	8	7	7	6	6	6	6	6	6	7	7	7	7	7	6	6	6	6	5	5	6	5	7	6	5	8	6.2
Jun 24	6	5	5	6	6	6	8	10	11	12	13	12	11	11	11	11	10	10	10	10	10	10	10	10	5	13	9.3
Jun 25	10	12	12	12	12	13	11	8	7	6	6	7	6	5	6	7	7	7	6	7	8	8	9	8	5	13	8.3
Jun 26	8	8	8	8	9	8	5	5	5	6	6	7	8	8	9	10	12	11	10	12	15	15	15	14	5	15	9.2
Jun 27	13	13	13	10	10	12	15	15	15	15	15	13	14	13	11	7	6	8	8	10	11	11	12	11	6	15	11.7
Jun 28	10	11	10	9	9	9	9	9	9	9	9	9	8	8	8	8	9	8	8	9	9	8	8	8	8	11	8.8
Jun 29	9	11	11	12	12	12	12	11	9	8	8	8	9	9	9	9	13	18	26	33	36	36	36	36	8	36	16.3
Jun 30	37	36	36	36	35	31	23	11	7	5	4	3	3	2	3	3	3	3	3	3	3	5	4	4	2	37	12.5
Diurnal Maximum	143	143	146	147	153	150	139	132	121	112	92	104	128	138	121	105	94	92	100	107	105	116	141	151			
Diurnal Average	20.5	21.7	22.6	23.0	23.0	22.8	23.2	22.9	24.3	23.7	24.0	23.2	21.6	22.3	22.0	18.4	20.1	18.4	18.0	18.6	18.6	19.2	19.7	20.1			

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.



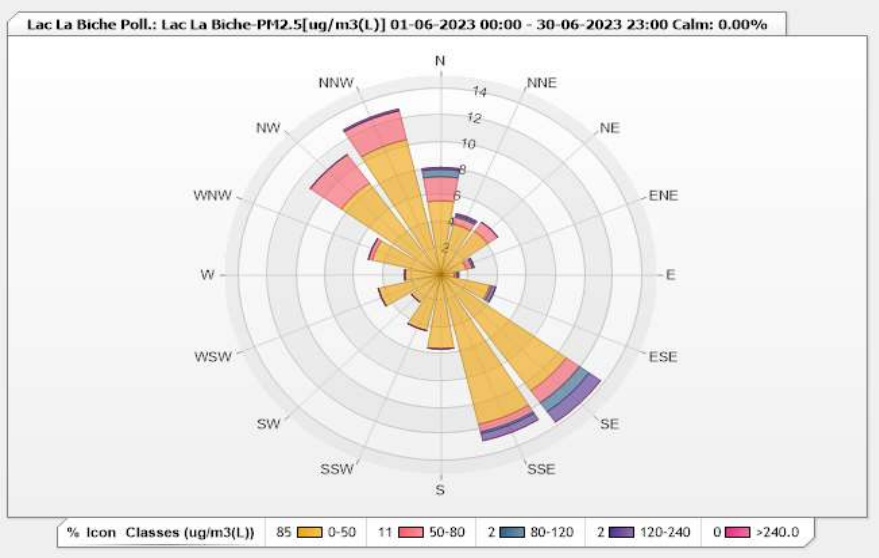


Station: Lac La Biche Poll.: Lac La Biche-PM2.5[ug/m3(L)] Monthly: 06-2023

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

Calm: 0.00% Valid Data: 99.86% Calm Avg: 0.00 [ppm]

Direction	0-50	50-80	80-120	120-240	>240.0	Total
N	5.56	1.81	0.56	0.14	0	8.07
NNE	3.89	0.56	0.14	0.14	0	4.73
NE	4.03	0.83	0	0	0	4.86
ENE	1.81	0.42	0.14	0	0	2.37
E	0.97	0.14	0.14	0	0	1.25
ESE	3.48	0.14	0.28	0	0	3.9
SE	10.71	1.11	0.83	0.97	0	13.62
SSE	11.54	0.56	0.14	0.56	0	12.8
S	5.56	0	0	0	0	5.56
SSW	4.31	0	0	0	0	4.31
SW	2.5	0	0	0	0	2.5
WSW	4.45	0	0	0	0	4.45
W	2.5	0	0	0	0	2.5
WNW	4.87	0.28	0	0	0	5.15
NW	8.48	2.64	0	0	0	11.12
NNW	10.43	2.23	0	0.14	0	12.8
Summary	85.09	10.72	2.23	1.95	0	100



Lakeland Industry & Community Association

Lac La Biche Station - June 2023

Summary of Hourly Averages

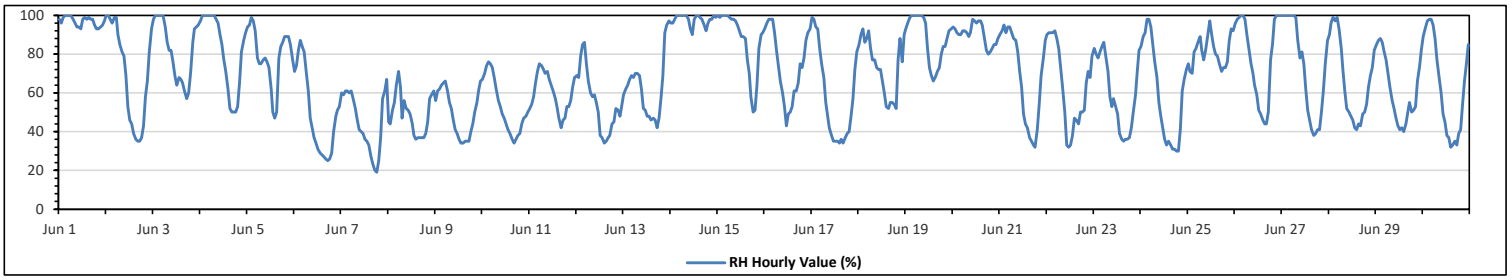
RELATIVE HUMIDITY (RH) in %

Maximum Hourly Value:	100	%	on Jun 1 at hr 3	Hours in Service:	720
Maximum Daily Value:	97.7	%	on Jun 14	Hours of Data:	720
Minimum Hourly Value:	19	%	on Jun 7 at hr 18	Hours of Missing Data:	0
Minimum Daily Value:	44.9	%	on Jun 7	Hours of Calibration:	0
Monthly Average:	69.1	%		Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																								Daily	Daily	Daily
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Minimum	Maximum	Average
Jun 1	98	96	99	**100**	**100**	**100**	**100**	98	96	94	94	93	98	99	98	99	98	98	95	93	93	94	95	97	93	**100**	96.9
Jun 2	**100**	**100**	98	96	99	99	90	85	81	79	69	53	46	44	39	36	35	35	37	43	58	66	81	93	35	**100**	69.3
Jun 3	98	**100**	**100**	**100**	**100**	**100**	94	86	82	82	76	69	64	68	67	65	61	57	60	70	86	93	94	95	57	**100**	82.0
Jun 4	97	**100**	**100**	**100**	**100**	**100**	**100**	**100**	98	96	90	85	77	71	62	52	50	50	50	53	65	81	87	91	50	**100**	81.5
Jun 5	94	95	99	97	92	78	75	75	77	78	76	73	62	50	47	50	78	84	86	89	89	89	85	77	47	99	79.0
Jun 6	71	74	82	87	84	81	70	61	47	42	37	34	31	29	28	27	26	25	26	29	40	48	51	53	25	87	49.3
Jun 7	60	59	61	61	60	61	57	52	46	41	40	39	36	35	33	27	23	20	**19**	25	37	57	61	67	**19**	67	**44.9**
Jun 8	45	44	51	55	64	71	63	47	56	52	51	49	44	38	36	37	37	37	37	39	45	57	59	61	36	71	49.0
Jun 9	56	61	62	64	65	66	61	55	52	46	41	39	36	34	34	35	35	35	40	44	50	55	61	66	34	66	49.7
Jun 10	67	70	74	76	75	73	68	62	56	53	49	47	44	41	39	36	34	36	38	39	44	47	48	50	34	76	52.8
Jun 11	52	54	58	65	71	75	74	72	70	71	67	64	61	57	53	47	42	46	47	53	53	56	63	68	42	75	60.0
Jun 12	69	68	79	85	86	75	66	60	58	59	55	50	38	37	34	35	37	38	44	45	52	51	48	53	34	86	55.1
Jun 13	59	62	64	67	69	68	70	70	69	62	52	51	48	48	46	47	46	42	47	57	69	91	95	97	42	97	62.3
Jun 14	96	96	98	**100**	**100**	**100**	**100**	**100**	**100**	98	93	90	98	**100**	**100**	99	98	95	92	96	98	98	**100**	99	90	**100**	**97.7**
Jun 15	**100**	99	**100**	**100**	**100**	**100**	99	98	98	97	95	92	89	89	88	77	70	58	50	51	64	83	90	91	50	**100**	86.6
Jun 16	93	96	98	98	98	91	82	74	66	60	53	43	49	50	53	61	61	65	75	73	78	87	91	93	43	98	74.5
Jun 17	99	98	94	93	83	75	68	55	48	42	38	35	35	35	34	36	34	37	39	40	48	57	72	81	34	99	57.3
Jun 18	85	90	93	86	88	92	83	77	77	73	72	72	66	60	53	52	55	55	54	52	77	88	76	90	52	93	73.6
Jun 19	93	96	99	**100**	**100**	**100**	**100**	**100**	**100**	99	96	83	73	69	66	68	71	73	80	84	84	88	92	93	66	**100**	87.8
Jun 20	94	93	91	90	90	92	92	91	89	91	98	97	96	97	97	95	89	82	80	81	83	85	85	88	80	98	90.3
Jun 21	90	92	95	91	94	94	91	88	87	81	71	63	49	44	42	37	35	33	32	41	54	69	78	87	32	95	68.3
Jun 22	90	91	91	91	92	88	83	73	63	50	33	32	33	38	47	46	44	50	50	51	65	71	68	79	32	92	63.3
Jun 23	83	80	78	81	84	86	79	71	58	53	57	53	49	39	36	35	36	36	37	42	50	59	70	82	35	86	59.8
Jun 24	84	89	91	98	98	94	85	76	68	55	48	42	36	33	35	33	31	31	30	30	41	61	67	72	30	98	59.5
Jun 25	75	71	70	81	83	86	89	82	77	82	90	97	90	84	80	79	75	71	73	73	76	87	93	92	70	97	81.5
Jun 26	96	98	99	**100**	**100**	98	90	82	75	70	64	59	51	49	46	44	44	50	77	85	98	**100**	**100**	**100**	44	**100**	78.1
Jun 27	**100**	**100**	**100**	**100**	**100**	**100**	**100**	99	87	78	81	75	62	51	46	41	38	39	41	41	50	61	75	87	38	**100**	73.0
Jun 28	90	96	99	97	99	93	83	72	61	52	50	48	46	42	41	44	43	49	50	54	63	69	73	82	41	99	66.5
Jun 29	85	87	88	86	81	77	70	63	56	52	47	43	41	42	40	44	50	55	50	51	53	66	74	82	40	88	61.8
Jun 30	89	93	97	98	98	95	88	77	69	60	49	45	38	37	32	33	35	33	39	41	54	66	75	85	32	98	63.6
Diurnal Maximum	100	100	100	100	100	100	100	100	100	99	98	97	98	100	100	99	98	98	95	96	98	100	100	100			
Diurnal Average	83.6	84.9	86.9	88.1	88.4	86.9	82.3	76.7	72.2	68.3	64.4	60.5	56.2	53.7	51.7	50.6	50.4	50.5	52.5	55.5	63.9	72.7	76.9	81.7			

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

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



Lakeland Industry & Community Association

Lac La Biche Station - June 2023

Summary of Hourly Averages

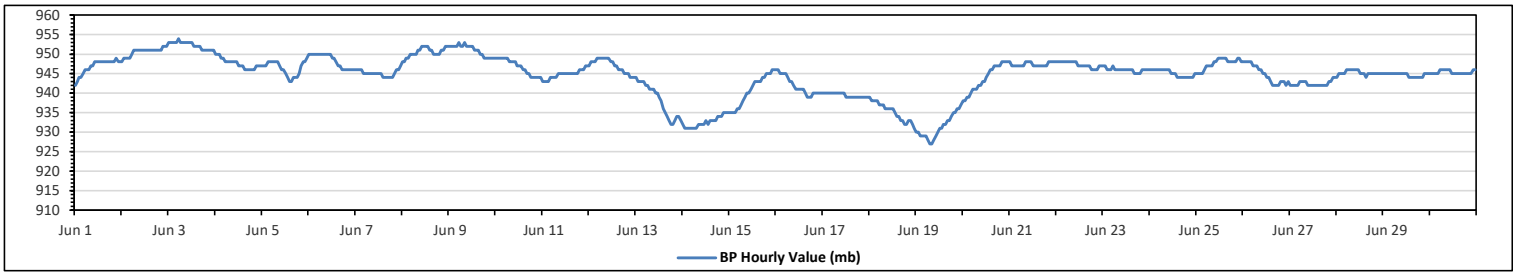
BAROMETRIC PRESSURE (BP) in millibar

Maximum Hourly Value:	954	mb	on Jun 3 at hr 5	Hours in Service:	720	
Maximum Daily Value:	952	mb	on Jun 3	Hours of Data:	720	
Minimum Hourly Value:	927	mb	on Jun 19 at hr 7	Hours of Missing Data:	0	
Minimum Daily Value:	931	mb	on Jun 19	Hours of Calibration:	0	
Monthly Average:	945	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
Jun 1	942	943	944	944	945	946	946	946	947	947	948	948	948	948	948	948	948	948	948	948	948	949	948	948	942	949	947
Jun 2	948	949	949	949	949	950	951	951	951	951	951	951	951	951	951	951	951	951	951	951	951	952	952	952	948	952	951
Jun 3	953	953	953	953	953	**954**	953	953	953	953	953	953	953	952	952	952	952	951	951	951	951	951	951	951	951	**954**	**952**
Jun 4	950	950	950	949	949	948	948	948	948	948	948	948	947	947	947	946	946	946	946	946	946	947	947	947	946	950	948
Jun 5	947	947	947	948	948	948	948	948	948	947	946	946	945	944	943	943	944	944	944	945	947	948	948	949	943	949	946
Jun 6	950	950	950	950	950	950	950	950	950	950	950	950	949	949	948	947	947	946	946	946	946	946	946	946	946	950	948
Jun 7	946	946	946	946	945	945	945	945	945	945	945	945	945	945	944	944	944	944	944	944	945	946	946	947	944	947	945
Jun 8	948	948	949	949	950	950	950	950	951	951	952	952	952	952	951	951	950	950	950	950	951	951	952	952	948	952	951
Jun 9	952	952	952	952	952	953	952	952	953	952	952	952	952	951	951	951	950	950	949	949	949	949	949	949	949	953	951
Jun 10	949	949	949	949	949	949	949	948	948	948	948	947	947	947	946	946	945	945	944	944	944	944	944	944	944	949	947
Jun 11	943	943	943	943	944	944	944	944	945	945	945	945	945	945	945	945	945	945	945	946	946	946	947	947	943	947	945
Jun 12	947	948	948	948	949	949	949	949	949	949	949	948	948	947	947	946	946	946	945	945	945	944	944	944	944	949	947
Jun 13	944	943	943	943	943	942	942	941	941	941	940	940	939	938	936	935	934	933	932	932	933	934	934	933	932	944	938
Jun 14	932	931	931	931	931	931	931	931	932	932	932	932	933	932	933	933	933	933	934	934	934	935	935	935	931	935	933
Jun 15	935	935	935	935	936	936	937	938	939	940	940	941	942	943	943	943	943	944	944	945	945	945	946	946	935	946	941
Jun 16	946	946	945	945	945	945	944	943	943	942	941	941	941	941	941	940	939	939	939	940	940	940	940	940	939	946	942
Jun 17	940	940	940	940	940	940	940	940	940	940	940	940	939	939	939	939	939	939	939	939	939	939	939	939	939	940	940
Jun 18	939	938	938	938	938	937	937	937	936	936	936	936	936	935	934	934	933	933	932	932	933	933	932	931	931	939	935
Jun 19	930	930	929	929	929	929	928	**927**	**927**	928	929	930	931	931	932	932	933	933	934	935	935	936	936	937	**927**	937	**931**
Jun 20	938	938	939	939	940	941	941	941	942	942	943	943	944	945	946	946	947	947	947	947	948	948	948	948	938	948	944
Jun 21	948	947	947	947	947	947	947	947	948	948	948	948	947	947	947	947	947	947	947	947	948	948	948	948	947	948	947
Jun 22	948	948	948	948	948	948	948	948	948	948	948	947	947	947	947	947	947	947	946	946	946	946	947	947	946	948	947
Jun 23	947	947	946	946	946	947	946	946	946	946	946	946	946	946	946	946	945	945	945	945	946	946	946	946	945	947	946
Jun 24	946	946	946	946	946	946	946	946	946	946	946	945	945	945	944	944	944	944	944	944	944	944	944	945	944	946	945
Jun 25	945	945	945	945	946	947	947	947	947	948	948	949	949	949	949	949	948	948	948	948	948	949	949	948	945	949	948
Jun 26	948	948	948	948	948	947	947	947	946	946	945	945	944	944	943	942	942	942	942	943	943	943	942	943	942	948	945
Jun 27	942	942	942	942	942	943	943	943	943	942	942	942	942	942	942	942	942	942	942	942	943	943	944	944	942	944	942
Jun 28	944	945	945	945	945	946	946	946	946	946	946	946	945	945	945	944	945	945	945	945	945	945	945	945	944	946	945
Jun 29	945	945	945	945	945	945	945	945	945	945	945	945	945	944	944	944	944	944	944	944	944	945	945	945	944	945	945
Jun 30	945	945	945	945	945	946	946	946	946	946	946	945	945	945	945	945	945	945	945	945	945	945	946	946	945	946	945
Diurnal Maximum	953	953	953	953	953	954	953	953	953	953	953	953	953	952	952	952	952	951	951	951	951	952	952	952			
Diurnal Average	945	945	945	945	945	945	945	945	945	945	945	945	945	944	944	944	944	944	944	944	944	945	945	945			

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 - June 2023

Summary of Hourly Averages

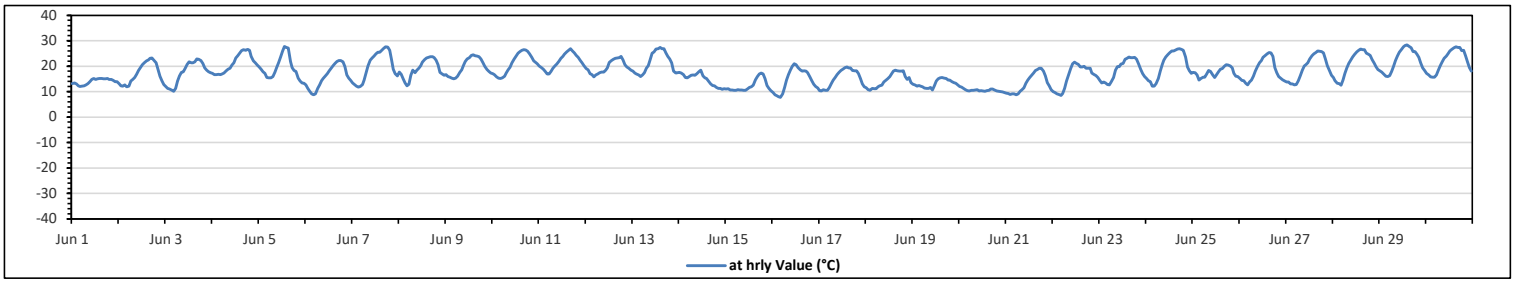
AMBIENT TEMPERATURE (AT) in Degree Celsius

Maximum Hourly Value:	28.4	°C	on Jun 29 at hr 14	Hours in Service:	720	
Maximum Daily Value:	22.3	°C	on Jun 29	Hours of Data:	720	
Minimum Hourly Value:	7.8	°C	on Jun 16 at hr 4	Hours of Missing Data:	0	
Minimum Daily Value:	10.6	°C	on Jun 20	Hours of Calibration:	0	
Monthly Average:	17.7	°C		Operational Uptime:	100.0	

Day	Hourly Period Starting at (MST)																							Daily	Daily	Daily
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Minimum	Maximum	Average
Jun 1	13.2	13.4	13.1	12.3	12	12.2	12.3	12.6	13.2	13.9	14.8	15.2	14.9	15	15.1	15.1	15	15	15.1	14.9	14.8	14.4	13.9	13.9	12.0	15.2	14.0
Jun 2	13	12.3	12.2	12.7	11.9	12.2	14.1	14.8	15.5	16.8	18.3	19.5	20.5	21.4	22.1	22.5	23.1	23.2	22.3	21.3	18.7	16.1	14.3	12.8	11.9	23.2	17.2
Jun 3	12	11.2	11	10.7	10.1	11.2	14.2	16.2	17.6	17.8	19.1	20.7	21.7	21.3	21.4	21.7	22.9	22.8	22.2	21.1	19.3	18.5	17.8	17.5	10.1	22.9	17.5
Jun 4	17.2	16.6	16.6	16.8	16.7	16.9	17.3	18.2	18.9	19.2	20.4	21.3	23.2	24.1	25.1	26.1	26.5	26.3	26.6	26.2	23.9	22.1	21.3	20.4	16.6	26.6	21.2
Jun 5	19.7	18.8	17.8	17.2	15.5	15.4	15.4	16	17.6	19.6	21.5	23.6	25.8	27.8	27.3	27.1	21.8	19.5	18.3	17.9	15.3	14.1	13.5	13.3	13.3	27.8	19.2
Jun 6	12.7	11.3	10.1	9.1	8.7	9.1	11.2	12.7	14.3	15.2	16.2	17.1	18.2	19.1	20.2	21.1	21.8	22.2	22.2	21.7	19.8	16.5	15.3	14.4	8.7	22.2	15.8
Jun 7	13.4	12.8	12.2	11.8	12.1	12.8	14.6	17.3	20.1	22.3	23.2	24	24.9	25.5	25.5	26.3	27	27.6	27.5	26.3	22.4	18.8	17.1	16.2	11.8	27.6	20.1
Jun 8	17.7	16.8	15	13.4	12.3	12.9	16.4	18.4	17.5	18.4	19.2	20.3	21.6	22.6	23.2	23.5	23.7	23.7	23.3	22.4	20.5	17.6	16.9	16.4	12.3	23.7	18.9
Jun 9	16.7	15.9	15.7	15.3	15	15.3	16.1	17.6	18.6	20.4	21.8	22.9	23.3	24.3	24.4	24.1	24	23.7	22.9	21.5	20	18.7	17.9	17.3	15.0	24.4	19.7
Jun 10	17.1	16.6	15.8	15.3	15.2	15.4	16.1	17.3	18.6	19.6	21.3	22.9	24	25.1	25.7	26.3	26.5	26.4	25.8	24.9	23.4	22.1	21.6	20.9	15.2	26.5	21.0
Jun 11	20.1	19.5	18.8	17.9	17	16.9	17.9	19.1	20.1	20.8	21.9	23	23.8	24.7	25.6	26.3	26.9	25.9	25.2	24.3	23.5	22.3	21.3	20.2	16.9	26.9	21.8
Jun 12	19	18.6	17.1	16.7	15.8	16.5	17	17.5	17.7	17.7	18.4	19.3	21.5	22.2	22.7	23	23.2	23.3	23.8	22.5	20.6	19.7	19.1	18.4	15.8	23.8	19.6
Jun 13	18.1	17.4	17	16.5	15.9	16.5	17.5	19.2	20.3	22.6	25.1	25.6	26.8	26.9	27.3	26.9	26.9	25.2	23.9	22.9	21.3	18.1	17.4	17.5	15.9	27.3	21.4
Jun 14	17.6	17.4	16.6	15.6	15.4	16	16.4	16.5	16.4	17.1	17.8	18.5	16.2	15.4	15.2	14.2	13.1	12.4	12.3	11.7	11.2	11.2	10.9	11.1	10.9	18.5	14.8
Jun 15	11	11.1	10.7	10.7	10.6	10.6	10.8	10.7	10.7	10.6	10.6	11.1	11.7	11.9	12.5	14.7	16	16.9	17.3	16.9	15	12.4	11.2	10.4	10.4	17.3	12.3
Jun 16	9.6	8.8	8.4	8	**7.8**	9.1	11.6	14.5	16.7	18.5	20	21	20.6	19.5	18.6	18.1	18.2	18.1	17.5	15.8	14.3	12.9	12.1	11.4	**7.8**	21.0	14.6
Jun 17	10.4	10.3	10.8	10.6	10.6	11.6	13.2	14.6	15.6	16.6	17.6	18.3	18.9	19.4	19.7	19.3	19.3	18.3	18.2	18.2	17.1	15.1	13.1	11.9	10.3	19.7	15.4
Jun 18	11.5	10.8	10.5	11.2	11.1	11.1	11.9	12.3	12.5	13.7	14.4	15	15.9	17	18.1	18.4	18.2	18.1	18.1	18.2	16	14.8	15.6	13.6	10.5	18.4	14.5
Jun 19	12.9	12.6	12.2	12.4	12.2	11.9	11.4	11.2	11.3	11.6	10.7	12.3	14.2	15	15.4	15.5	15.3	15.2	14.6	14.5	13.9	13.6	13.3	12.6	10.7	15.5	13.2
Jun 20	12.1	11.8	11.3	10.8	10.4	10.3	10.5	10.6	10.7	10.8	10.3	10.4	10.3	10.2	10.4	10.6	11	11	10.7	10.3	10.1	10	9.9	9.6	9.6	12.1	**10.6**
Jun 21	9.4	9.3	8.9	9.1	9.1	8.8	9.2	10.1	10.7	11.5	13.3	14.6	15.6	16.4	17.4	18.3	18.7	19.1	19.1	18.1	16.2	13.6	12.3	10.8	8.8	19.1	13.3
Jun 22	10	9.6	9.1	8.9	8.5	9.3	11.3	14.1	16.8	19	20.9	21.6	21.1	20.7	19.7	19.7	20	19.1	19.1	19.1	17.4	16.8	16.3	15.6	8.5	21.6	16.0
Jun 23	14.4	13.5	13.7	13.5	12.8	12.7	13.9	15.6	18.5	19.8	19.8	20.8	21.1	22.8	23.1	23.6	23.3	23.3	23.4	22.7	21	18.7	17.1	16	12.7	23.6	18.5
Jun 24	15.2	14.3	13.9	12.2	12.2	13.2	15.2	18.1	20.5	22.3	23.6	24.6	25.4	26	26	26.4	26.8	26.9	26.7	26.2	23.6	19.7	18.2	17.2	12.2	26.9	20.6
Jun 25	17.6	17.5	16.5	14.6	15.1	15.7	15.7	17	18.3	17.9	16.5	15.5	16.7	17.8	18.8	19	20	20.5	20.4	20.1	19.3	17.2	16.1	15.9	14.6	20.5	17.5
Jun 26	15.1	14.4	14.3	13.3	12.7	13.7	14.5	16.1	18.1	20	21.3	22.2	23.4	24.2	24.8	25.4	25.2	23.8	19.4	17.5	15.9	15.3	14.7	14.1	12.7	25.4	18.3
Jun 27	13.7	13.8	13.1	13.1	12.7	12.8	14.2	16.1	18.5	20.1	20.5	21.4	22.9	24.2	24.9	25.4	25.9	25.8	25.7	25.2	22.9	20.2	18.2	16.4	12.7	25.9	19.5
Jun 28	15.6	14.3	13.3	13.2	12.5	14.5	17.2	19.3	21.1	22.3	23.6	24.6	25.6	26.3	26.8	26.5	26.5	25.1	24.7	24.3	22.6	21.1	19.9	18.7	12.5	26.8	20.8
Jun 29	18.2	17.7	16.8	16.1	15.9	16.3	17.9	20	22.2	24	25.5	26.7	27.6	28.1	**28.4**	27.8	27.2	25.7	25.7	24.7	23.4	21.2	19.3	18.3	15.9	**28.4**	**22.3**
Jun 30	17.2	16.5	15.8	15.7	15.7	16.5	18.4	20.3	21.7	23	24	24.8	25.9	26.6	27.2	27.6	27.3	27.3	26.1	26.2	24.2	21.7	19.4	18.1	15.7	27.6	22.0
Diurnal Maximum	20.1	19.5	18.8	17.9	17.0	16.9	18.4	20.3	22.2	24.0	25.5	26.7	27.6	28.1	28.4	27.8	27.3	27.6	27.5	26.3	24.2	22.3	21.6	20.9			
Diurnal Average	14.7	14.2	13.6	13.2	12.8	13.2	14.4	15.8	17.0	18.1	19.1	20.0	20.8	21.4	21.8	22.0	22.0	21.7	21.3	20.6	18.9	17.2	16.2	15.4			

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

Lac La Biche Station - June 2023

Summary of Hourly Averages

STATION TEMPERATURE (ST) in Degree Celsius

Maximum Hourly Value:	28.4	°C	on Jun 13 at hr 13	Hours in Service:	720	
Maximum Daily Value:	22.8	°C	on Jun 12	Hours of Data:	720	
Minimum Hourly Value:	18.4	°C	on Jun 30 at hr 11	Hours of Missing Data:	0	
Minimum Daily Value:	20.6	°C	on Jun 30	Hours of Calibration:	0	
Monthly Average:	21.6	°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
Jun 1	22.3	22.3	22.3	22.3	22.5	22.4	22.3	22.3	22.2	22.0	22.1	21.5	22.1	22.2	22.3	22.3	22.3	22.5	22.3	22.7	22.5	22.4	22.3	22.3	21.5	22.7	22.3
Jun 2	22.4	22.5	22.5	22.4	22.7	22.5	22.3	21.9	21.3	20.7	20.5	20.2	20.3	20.5	20.7	21.3	21.5	21.5	21.6	22.1	22.3	22.4	22.4	22.5	20.2	22.7	21.7
Jun 3	22.5	22.4	22.7	22.6	22.5	22.6	22.3	21.3	21.1	21.2	21.5	21.4	20.7	20.7	20.8	21.1	21.2	21.3	21.5	21.4	22.0	22.0	22.2	22.2	20.7	22.7	21.7
Jun 4	22.1	22.4	22.1	22.3	22.2	22.3	22.0	22.0	21.8	21.8	21.5	21.2	20.8	20.7	21.0	21.2	21.4	21.5	21.6	21.6	21.4	21.6	21.9	21.9	20.7	22.4	21.7
Jun 5	22.2	22.1	22.4	22.1	22.5	22.6	22.3	21.9	20.9	20.5	20.2	20.1	19.9	20.4	20.8	21.1	20.9	21.5	21.7	22.0	22.2	22.6	22.4	22.2	19.9	22.6	21.6
Jun 6	22.4	22.5	22.7	22.6	22.5	22.8	22.6	22.0	21.5	21.2	20.8	20.7	20.9	20.6	21.2	21.7	22.2	21.9	21.8	21.9	22.4	22.2	22.5	22.5	20.6	22.8	21.9
Jun 7	22.5	22.5	22.6	22.6	22.5	22.5	22.3	21.7	21.0	20.6	20.4	19.9	20.2	20.4	20.5	21.1	21.5	21.6	21.5	21.5	21.8	22.4	22.3	22.4	19.9	22.6	21.6
Jun 8	22.5	22.4	22.6	22.5	22.5	22.6	22.3	21.5	21.3	20.9	20.6	20.5	20.3	20.6	20.7	21.0	21.5	21.5	21.5	21.6	22.2	22.4	22.3	22.3	20.3	22.6	21.7
Jun 9	22.5	22.4	22.4	22.4	22.3	22.4	22.2	22.1	21.8	21.2	20.5	20.4	20.6	20.8	20.9	21.3	21.3	21.6	21.5	21.8	22.4	22.1	22.2	22.3	20.4	22.5	21.7
Jun 10	22.2	22.2	22.3	22.4	22.2	22.4	22.3	22.0	21.7	21.2	20.8	20.9	20.7	20.8	20.9	21.2	21.3	21.4	21.3	21.5	21.5	21.9	21.9	22.0	20.7	22.4	21.6
Jun 11	22.0	22.3	22.4	22.3	22.2	22.1	21.7	21.7	21.3	20.9	20.7	20.4	20.6	20.5	20.6	21.1	21.2	21.2	21.3	21.4	21.5	21.9	21.8	22.1	20.4	22.4	21.5
Jun 12	22.1	22.3	22.6	22.2	22.7	22.5	22.2	22.0	21.5	21.0	21.6	23.1	24.4	25.0	25.1	25.5	25.5	25.2	23.1	20.5	21.5	22.0	21.9	21.8	20.5	25.5	**22.8**
Jun 13	21.8	21.8	21.9	21.9	22.0	21.9	21.4	20.9	20.9	20.6	24.6	26.6	27.7	**28.4**	26.0	22.9	22.4	20.1	20.4	20.9	21.2	21.3	21.7	21.4	20.1	**28.4**	22.5
Jun 14	21.6	21.7	21.6	22.0	22.1	21.7	21.7	21.6	21.4	21.6	21.1	20.5	20.8	21.5	21.5	22.3	22.4	22.3	22.3	22.5	22.4	22.7	22.4	22.7	20.5	22.7	21.9
Jun 15	22.4	22.6	22.4	22.6	22.4	22.6	22.4	22.6	22.4	22.6	22.5	22.3	22.2	22.2	22.1	21.7	21.7	21.8	21.9	21.6	21.8	22.4	22.6	22.8	21.6	22.8	22.3
Jun 16	22.8	22.8	22.8	23.1	22.8	22.7	22.4	21.6	21.2	20.0	19.9	20.0	20.4	20.9	21.4	21.7	21.5	21.5	21.5	21.6	22.1	22.3	22.4	22.7	19.9	23.1	21.8
Jun 17	22.8	22.7	22.7	22.8	22.8	22.5	22.2	21.7	21.0	20.8	20.1	20.2	19.7	19.6	20.3	20.5	21.1	21.7	21.8	21.8	21.5	21.9	22.4	22.6	19.6	22.8	21.6
Jun 18	22.6	22.5	22.5	22.6	22.3	22.6	22.2	22.3	22.3	21.9	21.8	21.7	21.7	21.5	21.4	21.5	21.4	21.4	21.6	21.7	22.0	22.2	22.1	22.5	21.4	22.6	22.0
Jun 19	22.4	22.4	22.3	22.6	22.3	22.4	22.5	22.4	22.4	22.1	22.2	21.7	21.2	20.8	21.3	21.2	21.2	21.5	21.7	22.0	22.1	22.4	22.3	22.3	20.8	22.6	22.0
Jun 20	22.4	22.2	22.5	22.5	22.5	22.5	22.2	22.4	22.4	22.3	22.3	22.4	22.3	22.4	22.4	22.3	22.0	22.0	22.4	22.4	22.4	22.6	22.5	22.6	22.0	22.6	22.4
Jun 21	22.6	22.7	22.7	22.7	22.5	22.7	22.4	22.3	22.0	22.1	21.2	20.6	20.5	20.8	20.6	21.0	21.3	21.1	21.6	21.4	21.6	22.3	22.5	22.6	20.5	22.7	21.8
Jun 22	22.7	22.8	22.8	22.8	22.9	22.8	22.4	21.6	20.9	19.9	19.0	18.9	19.8	21.5	21.1	21.1	21.2	20.9	21.4	21.7	21.5	21.8	21.9	22.0	18.9	22.9	21.5
Jun 23	22.0	22.4	22.3	22.2	22.4	22.3	22.1	21.8	21.1	19.5	19.7	19.6	19.7	19.3	19.8	20.2	20.5	20.6	20.8	20.9	21.3	22.0	22.1	22.1	19.3	22.4	21.1
Jun 24	22.3	22.2	22.4	22.5	22.5	22.2	21.7	20.8	20.4	19.5	19.2	19.1	19.0	19.1	19.4	19.9	20.3	20.4	20.4	20.6	20.7	21.5	22.4	22.1	19.0	22.5	20.9
Jun 25	22.1	22.1	22.1	22.3	22.2	22.0	21.1	21.2	20.5	20.6	20.5	21.3	21.4	20.4	20.2	20.3	20.6	20.8	20.9	20.7	21.2	21.6	21.8	22.1	20.2	22.3	21.3
Jun 26	22.5	22.7	22.5	22.5	22.3	22.2	22.0	20.9	20.5	19.7	19.1	19.0	19.0	19.2	19.7	20.0	20.4	20.4	20.7	21.5	21.7	21.8	22.2	22.1	19.0	22.7	21.0
Jun 27	23.0	22.8	22.0	22.4	22.4	22.2	21.5	21.3	20.6	19.9	19.5	19.1	18.8	19.0	19.8	20.1	20.3	20.4	20.6	20.4	20.8	21.3	21.5	22.6	18.8	23.0	20.9
Jun 28	22.5	22.4	22.5	22.4	22.5	22.2	21.3	21.2	20.4	19.9	19.3	18.9	18.7	19.3	19.3	20.1	20.4	20.5	20.5	20.6	20.7	21.0	21.5	21.5	18.7	22.5	20.8
Jun 29	21.7	21.9	21.7	22.6	22.4	22.1	21.4	21.0	20.4	19.7	19.5	19.0	19.1	19.3	19.5	20.2	20.1	20.4	20.3	20.7	20.7	21.0	21.7	21.6	19.0	22.6	20.8
Jun 30	21.8	21.9	21.8	22.1	22.1	21.8	21.8	21.0	20.6	19.5	18.8	**18.4**	18.7	19.0	19.4	20.2	20.2	20.1	20.4	20.8	20.7	21.1	21.4	21.9	**18.4**	22.1	**20.6**
Diurnal Maximum	23.0	22.8	22.8	23.1	22.9	22.8	22.6	22.6	22.4	22.6	24.6	26.6	27.7	28.4	26.0	25.5	25.5	25.2	23.1	22.7	22.5	22.7	22.6	22.8			
Diurnal Average	22.3	22.4	22.4	22.4	22.4	22.4	22.1	21.7	21.3	20.8	20.7	20.7	20.7	20.9	21.0	21.2	21.4	21.4	21.4	21.5	21.7	22.0	22.1	22.2			

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)					

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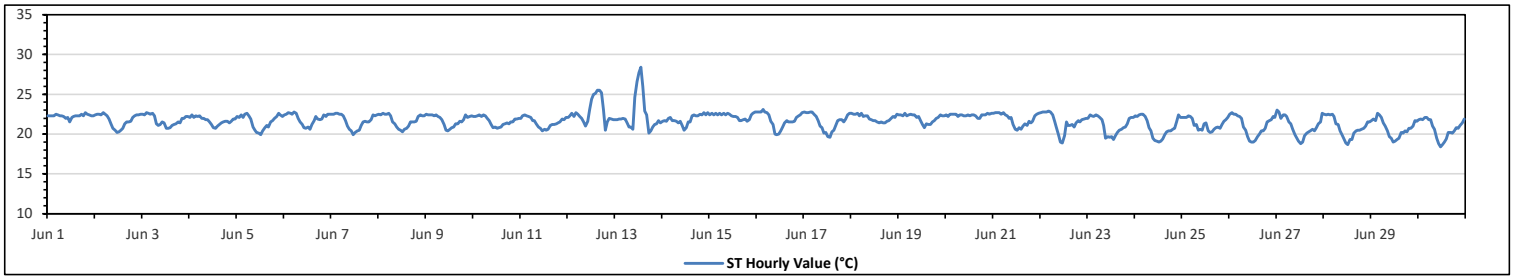
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.



Lakeland Industry & Community Association

Lac La Biche Station - June 2023

Summary of Hourly Averages

VECTOR WIND SPEED (VWS) in km/hr

Maximum Hourly Value:	27.2	kph	on Jun 15 at hr 10	Hours in Service:	720	
Maximum Daily Value:	15.2	kph	on Jun 15	Hours of Data:	720	
Minimum Hourly Value:	0.0	kph	on Jun 3 at hr 4	Hours of Missing Data:	0	
Minimum Daily Value:	3.2	kph	on Jun 22	Hours of Calibration:	0	
Monthly Average:	1.0	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
Jun 1	5.6	4.0	7.9	11.9	10.4	6.1	8.0	6.6	9.1	8.3	4.7	5.3	6.9	7.7	7.1	6.2	6.8	6.7	7.4	5.9	5.3	4.7	4.1	2.9	2.9	11.9	6.7
Jun 2	2.0	2.5	3.2	5.1	1.2	2.1	7.1	7.9	9.2	9.8	8.4	8.7	8.9	8.0	7.6	7.1	6.4	7.1	5.1	2.8	0.9	1.6	1.8	0.2	0.2	9.8	5.2
Jun 3	0.1	0.4	0.3	1.0	**0.0**	1.1	4.3	5.2	5.1	5.6	0.9	2.9	2.2	5.7	4.7	4.8	2.7	5.7	5.9	7.8	4.6	2.8	2.2	2.0	**0.0**	7.8	3.3
Jun 4	3.2	2.2	2.8	2.4	2.1	2.0	3.7	4.9	3.5	7.4	9.5	8.4	9.3	6.8	8.3	6.1	8.2	6.6	4.8	3.7	4.5	4.7	4.6	4.0	2.0	9.5	5.2
Jun 5	4.4	2.8	2.9	7.5	10.5	13.1	12.0	9.5	9.5	8.0	8.2	8.0	0.4	7.0	7.3	6.8	14.9	12.7	11.7	9.4	18.0	19.5	17.2	15.5	0.4	19.5	9.9
Jun 6	13.0	9.9	7.8	6.1	4.2	2.7	5.4	5.2	8.0	9.7	8.7	8.1	8.1	9.5	8.8	8.1	7.8	7.4	5.6	3.9	1.7	4.2	5.5	5.7	1.7	13.0	6.9
Jun 7	5.2	6.3	6.1	6.9	6.7	6.7	6.6	7.9	8.2	8.1	6.9	7.0	7.8	4.8	6.8	5.4	5.1	2.8	4.6	1.4	1.2	1.1	0.2	2.3	0.2	8.2	5.3
Jun 8	4.1	4.8	2.0	1.9	0.3	1.6	2.8	3.3	7.4	6.8	6.5	7.7	8.2	8.5	7.8	7.2	6.0	6.6	5.2	4.3	3.2	0.4	3.9	5.1	0.3	8.5	4.8
Jun 9	5.4	3.1	5.6	4.7	7.3	7.0	9.0	10.0	10.8	10.4	10.5	10.4	10.6	10.7	11.1	10.4	10.1	10.5	9.6	10.4	11.0	10.5	11.0	10.1	3.1	11.1	9.2
Jun 10	10.7	11.3	10.0	9.3	9.4	10.0	11.1	11.3	11.7	11.8	12.2	12.7	14.2	13.1	10.9	10.1	10.1	9.1	8.2	9.3	9.4	9.6	11.2	11.0	8.2	14.2	10.7
Jun 11	11.1	12.0	9.6	7.8	3.4	3.4	4.7	5.7	10.7	9.1	8.0	5.9	6.3	5.1	5.9	5.2	7.9	8.5	9.7	6.0	7.7	2.9	3.3	2.0	2.0	12.0	6.7
Jun 12	2.8	4.3	4.1	4.0	4.4	2.8	4.1	5.2	6.8	6.2	6.1	5.6	5.6	7.0	5.7	5.2	4.2	3.0	3.4	5.5	5.0	8.0	8.5	8.6	2.8	8.6	5.3
Jun 13	7.2	6.6	5.0	6.1	7.8	8.2	7.4	7.3	7.4	4.8	5.3	9.1	9.4	12.0	12.0	13.5	15.4	14.6	14.0	12.0	7.3	11.6	8.7	7.0	4.8	15.4	9.2
Jun 14	4.3	2.3	1.1	0.8	1.5	4.6	4.0	6.4	7.3	5.8	6.0	11.4	15.0	12.4	13.4	18.3	18.3	16.6	15.2	16.0	16.3	14.9	15.5	14.0	0.8	18.3	10.1
Jun 15	12.0	13.1	12.8	12.9	13.4	14.7	16.3	19.4	22.2	26.3	**27.2**	24.3	24.5	21.1	16.9	19.1	16.1	15.6	12.8	7.0	4.9	3.3	4.0	4.6	3.3	**27.2**	**15.2**
Jun 16	4.5	4.7	4.9	4.2	4.9	5.8	7.1	7.3	7.3	9.1	9.2	10.7	8.3	10.5	8.2	2.9	1.9	1.8	1.8	10.3	5.1	4.4	3.1	3.3	1.8	10.7	5.9
Jun 17	3.2	4.1	5.0	5.6	5.0	4.9	6.8	10.6	13.1	14.2	14.2	13.2	11.4	11.7	11.1	11.8	10.8	8.0	5.8	4.8	1.8	2.5	3.9	3.1	1.8	14.2	7.8
Jun 18	1.5	0.8	1.3	2.5	1.0	3.1	7.1	6.3	8.0	10.0	3.8	6.4	5.8	8.9	12.7	12.9	13.3	11.2	12.9	14.1	7.1	7.7	16.2	16.5	0.8	16.5	8.0
Jun 19	15.3	15.5	14.9	13.3	13.5	14.8	12.9	10.6	3.8	10.0	9.2	7.6	6.8	6.2	1.5	4.3	7.2	9.6	7.8	9.2	8.2	8.0	7.9	6.5	1.5	15.5	9.4
Jun 20	9.4	9.5	11.0	11.7	11.4	12.1	11.4	12.4	11.9	13.2	13.1	13.3	14.7	14.0	12.1	11.6	13.6	11.5	11.0	9.2	9.0	10.6	9.5	9.0	9.0	14.7	11.5
Jun 21	10.3	9.1	4.0	6.7	5.8	5.0	6.1	9.0	6.1	5.9	7.2	9.2	11.2	10.2	9.7	8.3	7.4	5.2	5.6	3.6	3.2	3.8	4.0	4.4	3.2	11.2	6.7
Jun 22	5.0	4.1	3.0	4.0	3.6	2.6	1.8	1.3	2.4	1.9	3.5	4.6	3.1	3.8	3.8	4.0	4.1	2.2	1.9	2.1	2.9	4.6	3.5	3.9	1.3	5.0	**3.2**
Jun 23	8.7	9.3	8.1	5.6	3.8	4.5	7.5	8.5	7.4	4.5	6.0	3.7	5.6	5.2	6.4	6.2	6.3	6.4	6.4	3.5	3.2	3.2	4.5	5.4	3.2	9.3	5.8
Jun 24	4.8	5.0	4.7	2.8	4.4	4.0	3.4	3.7	3.9	5.8	7.0	8.4	7.4	7.8	4.2	5.9	4.5	7.1	5.8	4.4	0.8	2.0	1.8	3.6	0.8	8.4	4.7
Jun 25	1.8	3.4	2.8	0.8	5.9	7.8	10.0	9.7	7.6	8.8	9.4	7.3	8.8	8.7	9.0	8.8	8.5	7.0	6.4	5.0	2.4	2.0	3.2	3.7	0.8	10.0	6.2
Jun 26	3.1	4.2	2.8	3.2	4.0	6.7	6.5	6.4	5.3	5.1	5.4	6.7	4.6	5.4	7.4	9.1	8.3	5.2	8.0	5.6	2.8	2.4	0.9	0.5	0.5	9.1	5.0
Jun 27	2.3	2.0	1.5	1.8	0.8	2.2	3.1	4.0	3.7	3.2	5.4	5.1	5.2	8.5	9.8	7.5	8.6	7.0	4.6	4.2	2.8	2.1	1.0	2.5	0.8	9.8	4.1
Jun 28	2.5	0.2	1.5	2.7	2.1	3.8	5.8	6.7	7.8	8.8	7.4	7.2	6.8	4.9	5.8	8.3	8.9	8.5	6.6	4.6	5.5	7.2	6.5	5.7	0.2	8.9	5.7
Jun 29	5.1	5.8	5.0	4.8	5.3	5.6	5.2	7.2	8.5	9.0	10.1	10.8	10.7	8.8	10.0	8.1	3.7	4.9	7.5	6.5	3.3	1.1	2.0	2.3	1.1	10.8	6.3
Jun 30	2.2	3.1	3.2	3.4	2.8	3.6	3.3	4.6	6.5	5.5	7.2	7.0	6.1	5.8	6.6	6.5	5.9	7.3	2.8	2.0	1.7	1.2	0.7	0.8	0.7	7.3	4.2
Diurnal Maximum	15.3	15.5	14.9	13.3	13.5	14.8	16.3	19.4	22.2	26.3	27.2	24.3	24.5	21.1	16.9	19.1	18.3	16.6	15.2	16.0	18.0	19.5	17.2	16.5			
Diurnal Average	5.7	5.5	5.2	5.4	5.2	5.8	6.8	7.5	8.0	8.4	8.2	8.6	8.5	8.7	8.4	8.3	8.4	7.9	7.3	6.5	5.4	5.4	5.7	5.5			

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

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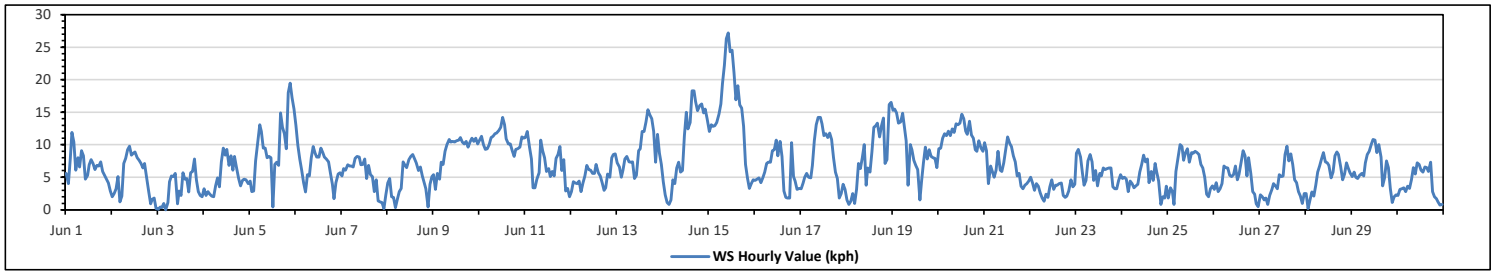
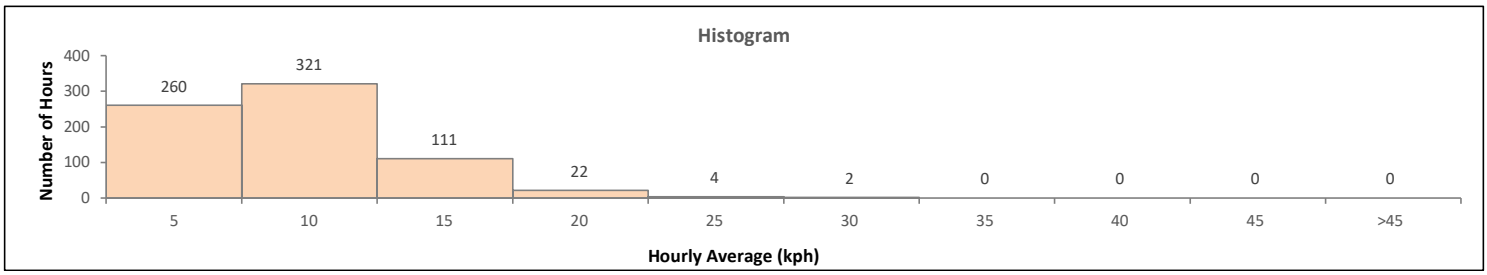


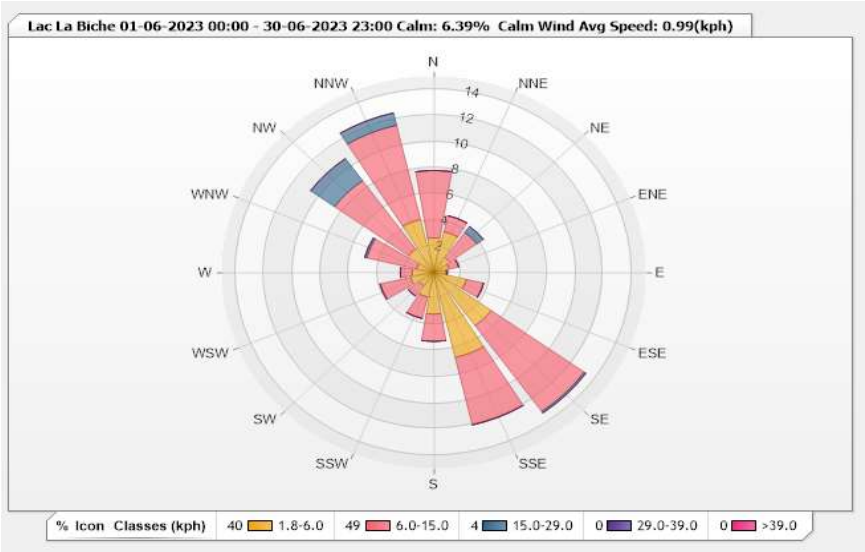


Station: Lac La Biche Monitor: WDS [kph] Monthly: 06-2023

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

Calm (WS<1.8kph): 6.39% Valid Data: 100.00%

Direction	1.8-6.0	6.0-15.0	15.0-29.0	29.0-39.0	>39.0	Total
N	2.64	5.14	0	0	0	7.78
NNE	3.19	1.25	0	0	0	4.44
NE	1.39	2.36	0.56	0	0	4.31
ENE	1.11	0.69	0	0	0	1.8
E	0.83	0.14	0	0	0	0.97
ESE	2.36	1.25	0	0	0	3.61
SE	5	8.06	0.14	0	0	13.2
SSE	6.67	5.28	0	0	0	11.95
S	3.19	2.08	0	0	0	5.27
SSW	1.94	1.67	0	0	0	3.61
SW	1.25	0.97	0	0	0	2.22
WSW	1.67	2.22	0	0	0	3.89
W	1.53	0.83	0	0	0	2.36
WNW	1.25	3.61	0.14	0	0	5
NW	2.22	6.39	2.08	0	0	10.69
NNW	4.17	7.36	0.97	0	0	12.5
Summary	40.41	49.3	3.89	0	0	93.6



Lakeland Industry & Community Association

Lac La Biche Station - June 2023

Summary of Hourly Averages

WIND DIRECTION (VWD) in sector

Monthly Average:	336 (NNW) degree	Hours in Service:	720
		Hours of Data:	720
		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
Jun 1	NNE	NNE	NW	NW	NW	NNW	NNW	NNW	NW	NNW	NNW	NNW	NW	NW	NW	NW	NW	NNW	NW	NNW	NNW	NW	NW	NNW	330	NNW
Jun 2	NW	WNW	WNW	NW	WNW	NW	NW	NNW	NW	NW	NNW	N	N	N	N	N	NE	ENE	NE	ENE	E	SE	SE	SSE	349	NNW
Jun 3	NE	SSE	NE	NE	ESE	ENE	NNE	N	N	NNW	SE	ESE	NNE	N	N	N	ENE	SE	SE	SE	ESE	E	ENE	ENE	57	ENE
Jun 4	ENE	NE	N	NNW	N	NNE	ESE	SE	SSE	ESE	ESE	ESE	SE	SE	SSE	SSE	SSE	SSE	ESE	ESE	ESE	ESE	ESE	ESE	127	SE
Jun 5	SE	SE	NW	NW	NW	NW	NNW	NNW	NW	NNW	NNW	NNW	NNE	SE	SSE	SSE	NW	NNW	NW	WNW	WNW	NW	NW	NW	319	NW
Jun 6	NW	WNW	WNW	W	W	WSW	NW	WNW	WNW	NW	WNW	W	WSW	WSW	W	WSW	WSW	WSW	SW	SSW	SE	SE	SE	SE	273	W
Jun 7	SSE	SSE	SSE	SSE	SE	SSE	S	S	SSW	SW	W	WNW	W	NW	N	NNW	NNE	NNW	WSW	SSW	SSE	SSW	SE	N	212	SSW
Jun 8	NNE	N	NNE	NNE	ENE	NNW	NE	NNE	N	NNW	N	NNW	NNW	NNW	N	N	NNE	NNE	NNE	NNE	NE	ENE	ENE	E	8	N
Jun 9	ESE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	ESE	ESE	ESE	ESE	ESE	SE	SE	SE	SE	SE	SE	128	SE
Jun 10	SE	SE	SE	SE	SSE	SE	SSE	SSE	SSE	SSE	SSE	SSE	SE	SE	SSE	SSE	SSE	SE	SE	SE	SE	SE	SE	SE	147	SE
Jun 11	SE	SE	SSE	SSE	SSE	SSE	S	W	NW	NW	NW	NNW	NW	NW	NW	NNW	NW	WNW	NW	WNW	NW	WNW	NNW	NW	296	WNW
Jun 12	NW	NNW	NW	NNW	NNW	NNE	NNE	N	NNW	NNW	N	N	NNE	NNW	N	N	N	NNE	SSE	SE	SE	SE	SE	SE	14	NNE
Jun 13	SSE	SE	SE	SE	SE	SE	SSE	SSE	SE	ESE	E	SE	ESE	SE	SE	SE	SE	SE	SE	SE	N	NNW	N	N	127	SE
Jun 14	NNE	NNW	NNE	NW	NW	NNW	WNW	NW	NW	NNW	N	NW	NW	NW	NW	NW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	N	337	NNW
Jun 15	N	N	NNW	NNW	NNW	NNW	NNW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	WNW	W	SSW	SSW	SSW	323	NW
Jun 16	S	SSE	SSE	SSE	SSE	SSE	SSE	SE	S	SSE	S	SSW	SW	WNW	WNW	NE	SE	SSE	SSW	WNW	WNW	W	WSW	SSW	202	SSW
Jun 17	SSW	SW	SW	WSW	WSW	WSW	WSW	WNW	WNW	WNW	WNW	WNW	WSW	WSW	WSW	WSW	WSW	SW	SW	SSW	SSW	S	S	SSE	259	WSW
Jun 18	SE	E	ESE	E	ENE	NE	ENE	ENE	ENE	NE	ENE	NNE	NNE	NE	NE	NE	NNE	NNE	NE	NE	ENE	NE	NE	NE	46	NE
Jun 19	NE	NE	NE	NE	NE	NE	NNE	NE	NE	SE	SE	SE	SE	SE	S	NNW	NW	NW	NW	NW	NW	NNW	NNW	N	32	NNE
Jun 20	NNE	N	N	N	N	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	N	N	N	NNW	NNW	NNW	NNW	345	NNW
Jun 21	NNW	NW	WNW	NNW	NNW	WNW	NW	NW	WNW	W	WNW	WNW	NW	NW	NW	NW	NW	NW	W	SSW	S	S	SSE	SSE	303	WNW
Jun 22	SSE	SSE	ESE	SE	SSE	S	S	S	SSE	SW	SSW	WSW	SSW	NNE	N	SE	NE	SSE	SE	SSE	SE	SE	SE	N	155	SSE
Jun 23	NE	E	ESE	SE	S	SSE	SSE	SE	SE	SSE	SSW	S	S	SE	SSE	S	S	SSE	SSE	S	SE	SE	ESE	ESE	147	SE
Jun 24	SE	SE	SE	S	SSE	SSE	SSE	SSE	SSE	SSW	SSW	SW	WSW	SW	NNW	NW	W	WSW	W	WSW	SW	SSE	S	SSE	210	SSW
Jun 25	NE	NNE	E	NNE	NNW	N	NNE	NE	NE	NNW	NNW	N	NNE	NNE	N	N	NNW	NNW	N	NNE	ESE	ESE	SE	ESE	13	NNE
Jun 26	ESE	SE	SE	SSE	SSE	SE	SSE	S	SSE	SE	SSE	SSW	SW	SW	S	SSW	SW	SW	NE	NNE	ENE	S	SSE	W	173	S
Jun 27	NNW	WNW	WSW	SSW	WSW	SSW	SW	SW	WSW	WNW	N	NNW	NNW	NW	NW	NNW	NNW	NNW	NNW	NE	NE	E	SSE	SSE	324	NW
Jun 28	SE	WSW	S	SE	S	SE	SE	SSE	SSE	SSE	SSE	S	S	S	S	SW	SSW	SW	SSW	SSE	SE	SE	SE	SE	171	S
Jun 29	SE	SSE	SSE	SSE	SSE	SSE	SSE	S	S	S	S	SSW	SSW	SSW	WSW	WSW	WSW	NNW	NW	WNW	WNW	SW	S	ESE	199	SSW
Jun 30	SE	SSE	SSE	S	S	SSE	SSW	WSW	WNW	NNW	NNW	NNW	WNW	WNW	W	W	WSW	WNW	W	WSW	SW	NW	N	NNW	279	W

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

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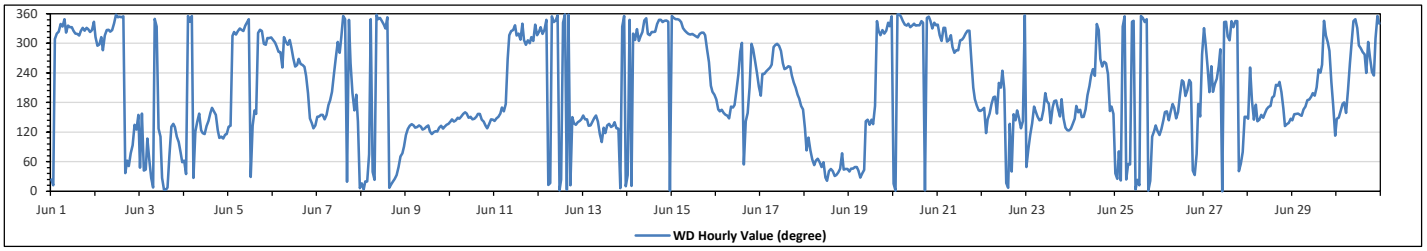
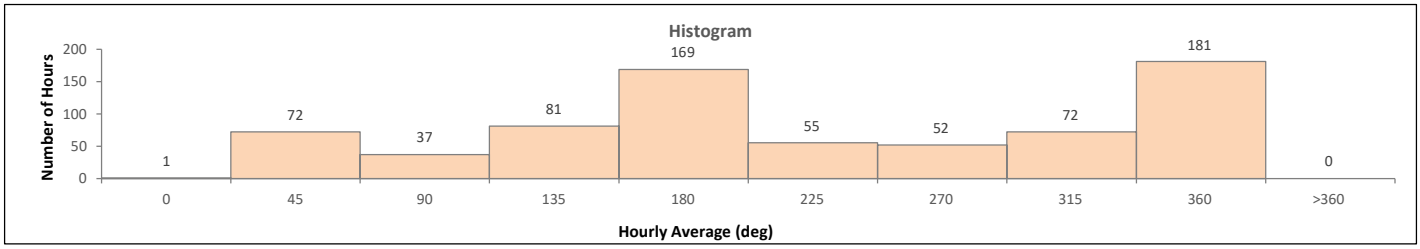




Lakeland Industry & Community Association

Lac La Biche Station - June 2023

Summary of Hourly Averages

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

WIND SPEED

Maximum Hourly Value:	27.2	kph	on Jun 15 at hr 10	Hours in Service:	720
Maximum Daily Value:	15.2	kph	on Jun 15	Hours of Data:	720
Minimum Hourly Value:	0.0	kph	on Jun 3 at hr 4	Hours of Missing Data:	0
Minimum Daily Value:	3.2	kph	on Jun 22	Hours of Calibration:	0
Monthly Average:	1.0	kph		Operational Uptime:	100.0

WIND DIRECTION

Monthly Average: 336 degree (NNW)

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			
Jun 1	5.6	4.0	7.9	11.9	10.4	6.1	8.0	6.6	9.1	8.3	4.7	5.3	6.9	7.7	7.1	6.2	6.8	6.7	7.4	5.9	5.3	4.7	4.1	2.9	2.9	11.9	6.7
	NNE	NNE	NW	NW	NW	NNW	NNW	NNW	NW	NNW	NNW	NNW	NW	NW	NW	NW	NW	NNW	NW	NNW	NNW	NW	NW	NNW			
Jun 2	2.0	2.5	3.2	5.1	1.2	2.1	7.1	7.9	9.2	9.8	8.4	8.7	8.9	8.0	7.6	7.1	6.4	7.1	5.1	2.8	0.9	1.6	1.8	0.2	0.2	9.8	5.2
	NW	WNW	WNW	NW	WNW	NW	NW	NNW	NW	NW	NNW	N	N	N	N	N	NE	ENE	NE	ENE	E	SE	SE	SSE			
Jun 3	0.1	0.4	0.3	1.0	**0.0**	1.1	4.3	5.2	5.1	5.6	0.9	2.9	2.2	5.7	4.7	4.8	2.7	5.7	5.9	7.8	4.6	2.8	2.2	2.0	**0.0**	7.8	3.3
	NE	SSE	NE	NE	ESE	ENE	NNE	N	N	NNW	SE	ESE	NNE	N	N	N	ENE	SE	SE	SE	ESE	E	ENE	ENE			
Jun 4	3.2	2.2	2.8	2.4	2.1	2.0	3.7	4.9	3.5	7.4	9.5	8.4	9.3	6.8	8.3	6.1	8.2	6.6	4.8	3.7	4.5	4.7	4.6	4.0	2.0	9.5	5.2
	ENE	NE	N	NNW	N	NNE	ESE	SE	SSE	ESE	ESE	ESE	SE	SE	SSE	SSE	SSE	SSE	ESE	ESE	ESE	ESE	ESE	ESE			
Jun 5	4.4	2.8	2.9	7.5	10.5	13.1	12.0	9.5	9.5	8.0	8.2	8.0	0.4	7.0	7.3	6.8	14.9	12.7	11.7	9.4	18.0	19.5	17.2	15.5	0.4	19.5	9.9
	SE	SE	NW	NW	NW	NW	NNW	NNW	NW	NNW	NNW	NNW	NNE	SE	SSE	SSE	NW	NNW	NW	WNW	WNW	NW	NW	NW			
Jun 6	13.0	9.9	7.8	6.1	4.2	2.7	5.4	5.2	8.0	9.7	8.7	8.1	8.1	9.5	8.8	8.1	7.8	7.4	5.6	3.9	1.7	4.2	5.5	5.7	1.7	13.0	6.9
	NW	WNW	WNW	W	W	WSW	NW	WNW	WNW	NW	WNW	W	WSW	WSW	W	WSW	WSW	WSW	SW	SSW	SE	SE	SE	SE			
Jun 7	5.2	6.3	6.1	6.9	6.7	6.7	6.6	7.9	8.2	8.1	6.9	7.0	7.8	4.8	6.8	5.4	5.1	2.8	4.6	1.4	1.2	1.1	0.2	2.3	0.2	8.2	5.3
	SSE	SSE	SSE	SSE	SE	SSE	S	S	SSW	SW	W	WNW	W	NW	N	NNW	NNE	NNW	WSW	SSW	SSE	SSW	SE	N			
Jun 8	4.1	4.8	2.0	1.9	0.3	1.6	2.8	3.3	7.4	6.8	6.5	7.7	8.2	8.5	7.8	7.2	6.0	6.6	5.2	4.3	3.2	0.4	3.9	5.1	0.3	8.5	4.8
	NNE	N	NNE	NNE	ENE	NNW	NE	NNE	N	NNW	N	NNW	NNW	NNW	N	N	NNE	NNE	NNE	NNE	NE	ENE	ENE	E			
Jun 9	5.4	3.1	5.6	4.7	7.3	7.0	9.0	10.0	10.8	10.4	10.5	10.4	10.6	10.7	11.1	10.4	10.1	10.5	9.6	10.4	11.0	10.5	11.0	10.1	3.1	11.1	9.2
	ESE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	ESE	ESE	ESE	ESE	ESE	SE	SE	SE	SE	SE	SE			
Jun 10	10.7	11.3	10.0	9.3	9.4	10.0	11.1	11.3	11.7	11.8	12.2	12.7	14.2	13.1	10.9	10.1	10.1	9.1	8.2	9.3	9.4	9.6	11.2	11.0	8.2	14.2	10.7
	SE	SE	SE	SE	SSE	SE	SSE	SSE	SSE	SSE	SSE	SSE	SE	SE	SSE	SSE	SSE	SE	SE	SE	SE	SE	SE	SE			
Jun 11	11.1	12.0	9.6	7.8	3.4	3.4	4.7	5.7	10.7	9.1	8.0	5.9	6.3	5.1	5.9	5.2	7.9	8.5	9.7	6.0	7.7	2.9	3.3	2.0	2.0	12.0	6.7
	SE	SE	SSE	SSE	SSE	SSE	S	W	NW	NW	NW	NNW	NW	NW	NW	NNW	NW	WNW	NW	WNW	NW	WNW	NNW	NW			
Jun 12	2.8	4.3	4.1	4.0	4.4	2.8	4.1	5.2	6.8	6.2	6.1	5.6	5.6	7.0	5.7	5.2	4.2	3.0	3.4	5.5	5.0	8.0	8.5	8.6	2.8	8.6	5.3
	NW	NNW	NW	NNW	NNW	NNE	NNE	N	NNW	NNW	N	N	NNE	NNW	N	N	N	NNE	SSE	SE	SE	SE	SE	SE			
Jun 13	7.2	6.6	5.0	6.1	7.8	8.2	7.4	7.3	7.4	4.8	5.3	9.1	9.4	12.0	12.0	13.5	15.4	14.6	14.0	12.0	7.3	11.6	8.7	7.0	4.8	15.4	9.2
	SSE	SE	SE	SE	SE	SE	SSE	SSE	SE	ESE	E	SE	ESE	SE	SE	SE	SE	SE	SE	SE	N	NNW	N	N			
Jun 14	4.3	2.3	1.1	0.8	1.5	4.6	4.0	6.4	7.3	5.8	6.0	11.4	15.0	12.4	13.4	18.3	18.3	16.6	15.2	16.0	16.3	14.9	15.5	14.0	0.8	18.3	10.1
	NNE	NNW	NNE	NW	NW	NNW	WNW	NW	NW	NNW	N	NW	NW	NW	NW	NW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	N			
Jun 15	12.0	13.1	12.8	12.9	13.4	14.7	16.3	19.4	22.2	26.3	**27.2**	24.3	24.5	21.1	16.9	19.1	16.1	15.6	12.8	7.0	4.9	3.3	4.0	4.6	3.3	**27.2**	**15.2**
	N	N	NNW	NNW	NNW	NNW	NNW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	WNW	W	SSW	SSW	SSW			
Jun 16	4.5	4.7	4.9	4.2	4.9	5.8	7.1	7.3	7.3	9.1	9.2	10.7	8.3	10.5	8.2	2.9	1.9	1.8	1.8	10.3	5.1	4.4	3.1	3.3	1.8	10.7	5.9
	S	SSE	SSE	SSE	SSE	SSE	SSE	SE	S	SSE	S	SSW	SW	WNW	WNW	NE	SE	SSE	SSW	WNW	WNW	W	WSW	SSW			
Jun 17	3.2	4.1	5.0	5.6	5.0	4.9	6.8	10.6	13.1	14.2	14.2	13.2	11.4	11.7	11.1	11.8	10.8	8.0	5.8	4.8	1.8	2.5	3.9	3.1	1.8	14.2	7.8
	SSW	SW	SW	WSW	WSW	WSW	WSW	WNW	WNW	WNW	WNW	WNW	WSW	WSW	WSW	WSW	WSW	SW	SW	SSW	SSW	S	S	SSE			
Jun 18	1.5	0.8	1.3	2.5	1.0	3.1	7.1	6.3	8.0	10.0	3.8	6.4	5.8	8.9	12.7	12.9	13.3	11.2	12.9	14.1	7.1	7.7	16.2	16.5	0.8	16.5	8.0
	SE	E	ESE	E	ENE	NE	ENE	ENE	ENE	NE	ENE	NNE	NNE	NE	NE	NE	NNE	NNE	NE	NE	ENE	NE	NE	NE			
Jun 19	15.3	15.5	14.9	13.3	13.5	14.8	12.9	10.6	3.8	10.0	9.2	7.6	6.8	6.2	1.5	4.3	7.2	9.6	7.8	9.2	8.2	8.0	7.9	6.5	1.5	15.5	9.4
	NE	NE	NE	NE	NE	NE	NNE	NE	NE	SE	SE	SE	SE	SE	S	NNW	NW	NW	NW	NW	NW	NNW	NNW	N			
Jun 20	9.4	9.5	11.0	11.7	11.4	12.1	11.4	12.4	11.9	13.2	13.1	13.3	14.7	14.0	12.1	11.6	13.6	11.5	11.0	9.2	9.0	10.6	9.5	9.0	9.0	14.7	11.5
	NNE	N	N	N	N	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	N	N	N	NNW	NNW	NNW	NNW			
Jun 21	10.3	9.1	4.0	6.7	5.8	5.0	6.1	9.0	6.1	5.9	7.2	9.2	11.2	10.2	9.7	8.3	7.4	5.2	5.6	3.6	3.2	3.8	4.0	4.4	3.2	11.2	6.7
	NNW	NW	WNW	NNW	NNW	WNW	NW	NW	WNW	W	WNW	WNW	NW	NW	NW	NW	NW	NW	W	SSW	S	S	SSE	SSE			
Jun 22	5.0	4.1	3.0	4.0	3.6	2.6	1.8	1.3	2.4	1.9	3.5	4.6	3.1	3.8	3.8	4.0	4.1	2.2	1.9	2.1	2.9	4.6	3.5	3.9	1.3	5.0	**3.2**
	SSE	SSE	ESE	SE	SSE	S	S	S	SSE	SW	SSW	WSW	SSW	NNE	N	SE	NE	SSE	SE	SSE	SE	SE	SE	N			
Jun 23	8.7	9.3	8.1	5.6	3.8	4.5	7.5	8.5	7.4	4.5	6.0	3.7	5.6	5.2	6.4	6.2	6.3	6.4	6.4	3.5	3.2	3.2	4.5	5.4	3.2	9.3	5.8
	NE	E	ESE	SE	S	SSE	SSE	SE	SE	SSE	SSW	S	S	SE	SSE	S	S	SSE	SSE	S	SE	SE	ESE	ESE			
Jun 24	4.8	5.0	4.7	2.8	4.4	4.0	3.4	3.7	3.9	5.8	7.0	8.4	7.4	7.8	4.2	5.9	4.5	7.1	5.8	4.4	0.8	2.0	1.8	3.6	0.8	8.4	4.7
	SE	SE	SE	S	SSE	SSE	SSE	SSE	SSE	SSW	SSW	SW	WSW	SW	NNW	NW	W	WSW	W	WSW	SW	SSE	S	SSE			
Jun 25	1.8	3.4	2.8	0.8	5.9	7.8	10.0	9.7	7.6	8.8	9.4	7.3	8.8	8.7	9.0	8.8	8.5	7.0	6.4	5.0	2.4	2.0	3.2	3.7	0.8	10.0	6.2
	NE	NNE	E	NNE	NNW	N	NNE	NE	NE	NNW	NNW	N	NNE	NNE	N	N	NNW	NNW	N	NNE	ESE	ESE	SE	ESE			
Jun 26	3.1	4.2	2.8	3.2	4.0	6.7	6.5	6.4	5.3	5.1	5.4	6.7	4.6	5.4	7.4	9.1	8.3	5.2	8.0	5.6	2.8	2.4	0.9	0.5	0.5	9.1	5.0
	ESE	SE	SE	SSE	SSE	SE	SSE	S	SSE	SE	SSE	SSW	SW	SW	S	SSW	SW	SW	NE	NNE	ENE	S	SSE	W			
Jun 27	2.3	2.0	1.5	1.8	0.8	2.2	3.1	4.0	3.7	3.2	5.4	5.1	5.2	8.5	9.8	7.5	8.6	7.0	4.6	4.2	2.8	2.1	1.0	2.5	0.8	9.8	4.1
	NNW	WNW	WSW	SSW	WSW	SSW	SW	SW	WSW	WNW	N	NNW	NNW	NW	NW	NNW	NNW	NNW	NNW	NE	NE	E	SSE	SSE			
Jun 28	2.5	0.2	1.5	2.7	2.1	3.8	5.8	6.7	7.8	8.8	7.4	7.2	6.8	4.9	5.8	8.3	8.9	8.5	6.6	4.6	5.5	7.2	6.5	5.7	0.2	8.9	5.7
	SE	WSW	S	SE	S	SE	SE	SSE	SSE	SSE	SSE	S	S	S	S	SW	SSW	SW	SSW	SSE	SE	SE	SE	SE			
Jun 29	5.1	5.8	5.0	4.8	5.3	5.6	5.2	7.2	8.5	9.0	10.1	10.8	10.7	8.8	10.0	8.1	3.7	4.9	7.5	6.5	3.3	1.1	2.0	2.3	1.1	10.8	6.3
	SE	SSE	SSE	SSE	SSE	SSE	SSE	S	S	S	S	SSW	SSW	SSW	WSW	WSW	WSW	NNW	NW	WNW	WNW	SW	S	ESE			
Jun 30	2.2	3.1	3.2	3.4	2.8	3.6	3.3	4.6	6.5	5.5	7.2	7.0	6.1	5.8	6.6	6.5	5.9	7.3	2.8	2.0	1.7	1.2	0.7	0.8	0.7	7.3	4.2
	SE	SSE	SSE	S	S	SSE	SSW	WSW	WNW	NNW	NNW	NNW	WNW	WNW	W	W	WSW	WNW	W	WSW	SW	NW	N	NNW			

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 - June 2023

Summary of Hour Standard Deviations

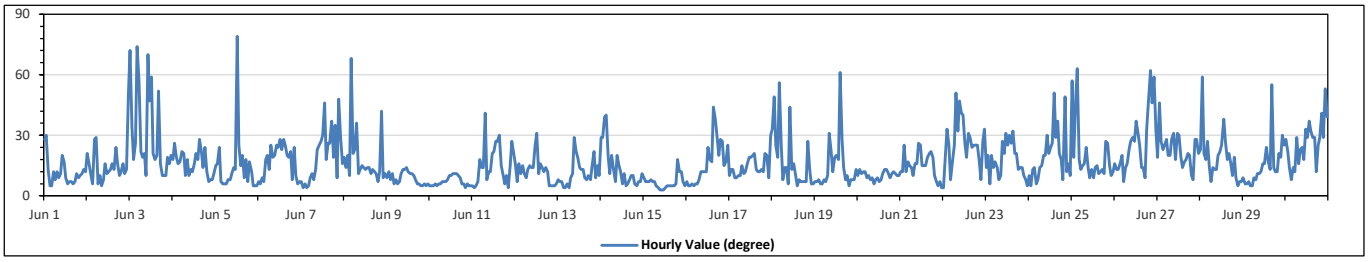
STANDARD DEVIATION WIND DIRECTION (STDWD) in Degree

Maximum Hourly Value:	79 degree on Jun 5 at hr 12	Hours in Service:	720
		Hours of Data:	720
Minimum Hourly Value:	3 degree on Jun 15 at hr 9	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		
Jun 1	28	30	13	5	5	12	8	12	9	11	20	17	9	6	7	7	6	7	11	9	10	11	13	12	5	30
Jun 2	21	16	11	6	28	29	6	10	5	8	16	11	12	13	16	13	24	16	10	12	16	11	13	51	5	51
Jun 3	72	34	18	26	74	57	22	19	21	10	70	47	59	21	18	20	52	16	10	10	10	19	16	20	10	74
Jun 4	18	26	19	16	17	22	21	10	18	10	13	12	16	21	18	28	22	14	24	12	7	8	8	11	7	28
Jun 5	15	16	24	7	6	6	6	8	8	11	14	13	79	25	15	20	9	18	7	17	12	5	5	5	5	79
Jun 6	7	6	9	7	18	20	13	25	19	20	25	24	28	23	28	25	20	19	22	8	24	10	6	7	6	28
Jun 7	7	4	6	4	5	9	11	8	13	23	25	27	30	46	18	26	26	37	19	35	9	48	29	16	4	48
Jun 8	19	14	20	10	68	21	23	36	11	13	15	14	13	14	14	11	13	12	11	7	12	42	9	11	7	68
Jun 9	9	12	8	11	6	8	6	7	11	13	13	14	12	11	11	10	8	6	6	5	5	6	5	6	5	14
Jun 10	5	5	5	6	5	6	6	7	7	7	8	10	10	11	11	11	10	9	6	6	4	6	5	5	4	11
Jun 11	5	4	5	7	18	14	14	41	8	12	12	21	22	27	27	30	15	11	6	10	4	15	27	21	4	41
Jun 12	16	7	16	11	15	11	9	13	15	14	14	25	31	11	16	14	12	14	12	5	5	5	5	6	5	31
Jun 13	8	7	7	4	4	6	4	9	11	29	22	19	14	13	13	9	8	10	8	15	22	9	15	10	4	29
Jun 14	29	29	39	40	20	11	20	13	7	20	15	12	6	11	5	6	8	10	10	6	5	7	7	11	5	40
Jun 15	9	7	7	7	8	7	7	5	4	3	3	3	4	5	5	5	5	5	6	18	12	12	7	5	3	18
Jun 16	7	5	5	6	5	6	6	8	12	12	12	12	24	18	17	44	38	30	20	28	27	15	17	25	5	44
Jun 17	10	13	13	9	9	10	10	15	11	12	16	19	19	20	21	13	12	12	13	12	21	20	9	30	9	30
Jun 18	33	49	25	19	56	25	8	14	14	6	44	13	16	10	5	8	7	7	7	7	27	13	6	6	5	56
Jun 19	7	7	8	6	6	8	7	10	31	22	12	19	20	18	61	28	14	8	10	5	8	8	8	13	5	61
Jun 20	10	13	11	12	12	9	10	8	9	6	8	9	7	8	11	13	13	11	9	11	12	11	10	10	6	13
Jun 21	12	12	25	12	17	15	14	10	16	16	26	25	15	15	15	19	21	22	19	10	7	5	7	4	4	26
Jun 22	4	20	33	25	8	17	25	51	32	47	41	40	26	19	31	29	24	25	25	25	17	8	27	33	4	51
Jun 23	14	20	6	20	14	17	14	8	10	27	21	31	25	30	26	32	21	21	13	14	14	10	8	5	5	32
Jun 24	10	5	13	14	6	8	14	15	20	20	30	21	24	26	51	29	37	21	18	8	49	12	16	10	5	51
Jun 25	57	19	47	63	18	13	15	16	24	14	9	13	9	14	15	11	12	13	11	27	26	15	10	12	9	63
Jun 26	16	13	13	16	20	7	14	16	23	27	29	27	37	31	25	14	14	9	33	48	62	46	59	32	7	62
Jun 27	19	46	27	23	25	28	20	20	28	31	18	31	30	19	14	17	18	21	20	10	8	28	28	21	8	46
Jun 28	23	59	21	18	27	14	7	14	13	13	20	22	25	38	27	18	21	16	10	19	9	5	7	7	5	59
Jun 29	9	6	6	7	5	5	9	8	11	11	12	16	16	24	17	13	55	14	12	12	21	19	30	25	5	55
Jun 30	28	22	14	8	14	12	29	16	23	24	18	33	29	37	32	29	29	12	25	29	41	29	53	39	8	53
Diurnal Minimum	4	4	5	4	4	5	4	5	4	3	3	3	4	5	5	5	5	5	6	5	4	5	5	4		
Diurnal Maximum	72	59	47	63	74	57	29	51	32	47	70	47	79	46	61	44	55	37	33	48	62	48	59	51		

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

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



END OF REPORT

This page, 167 of 167 ends the June 2023 Monthly Ambient Air Quality Monitoring Report.

Lakeland Industry & Community Association

JUNE 2023

Ambient Air Monitoring Calibration Report

- COLD LAKE SOUTH STATION-

CAL-LICA-202306-01174

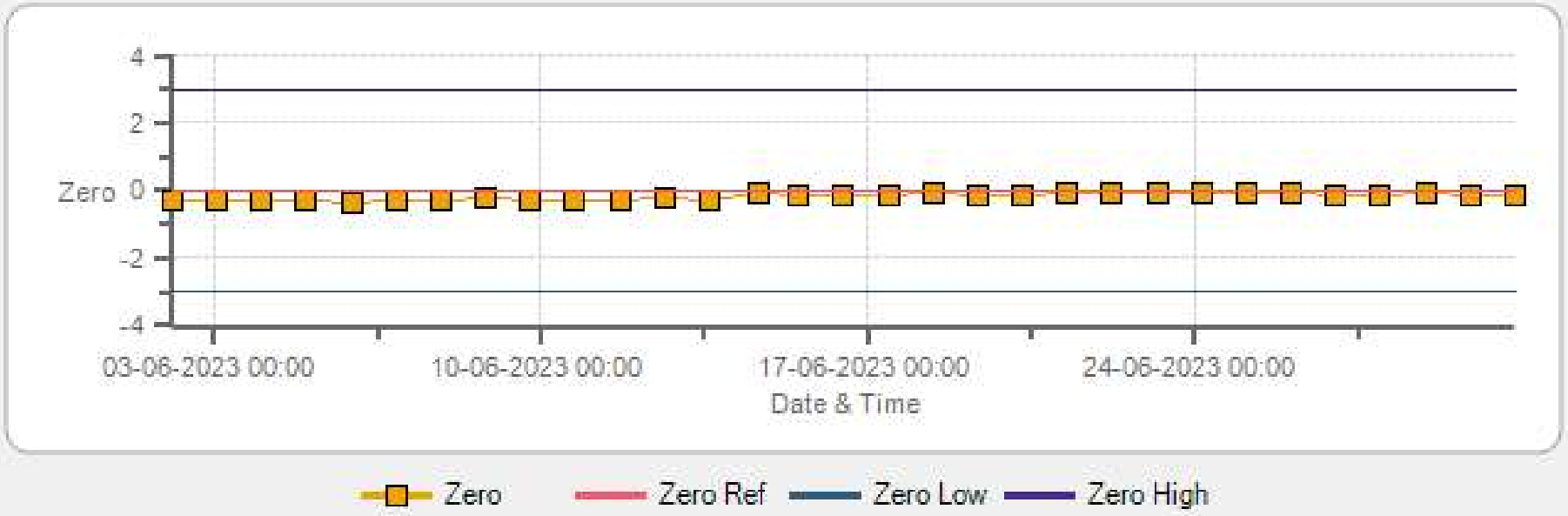
Station Operation and Maintenance:
Bureau Veritas Canada

Data Validation and Report:
LICA / Bureau Veritas Canada

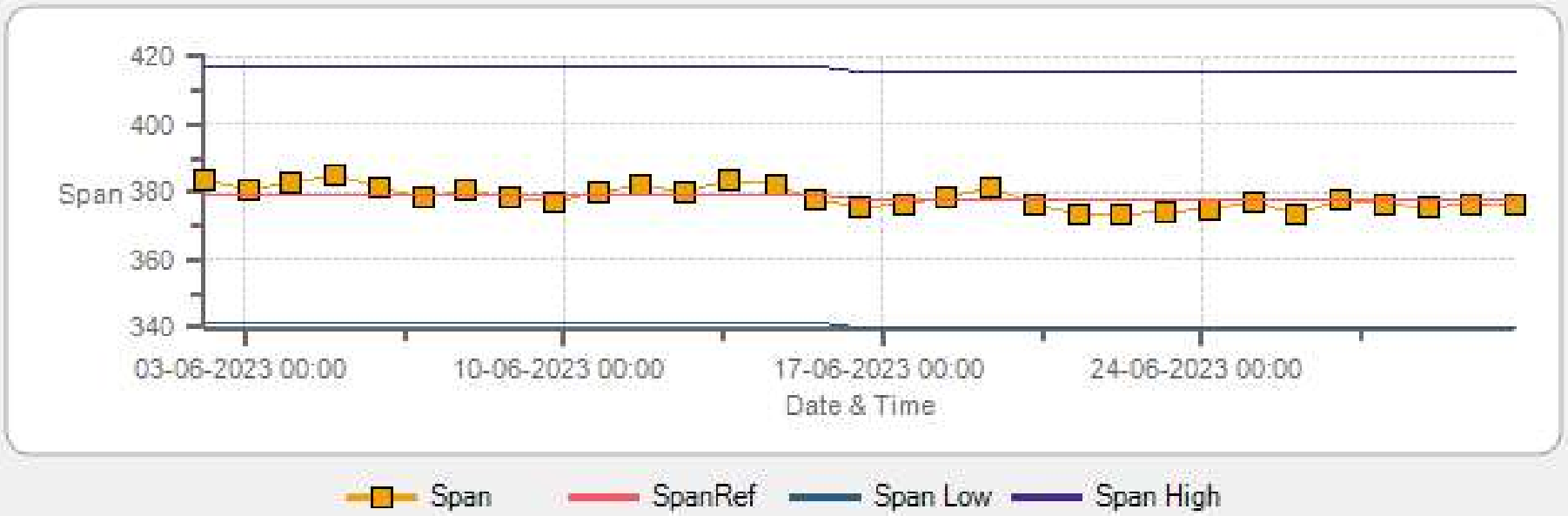
July 19, 2023

DAILY INTERNAL ZERO-SPAN CALIBRATION RECORDS

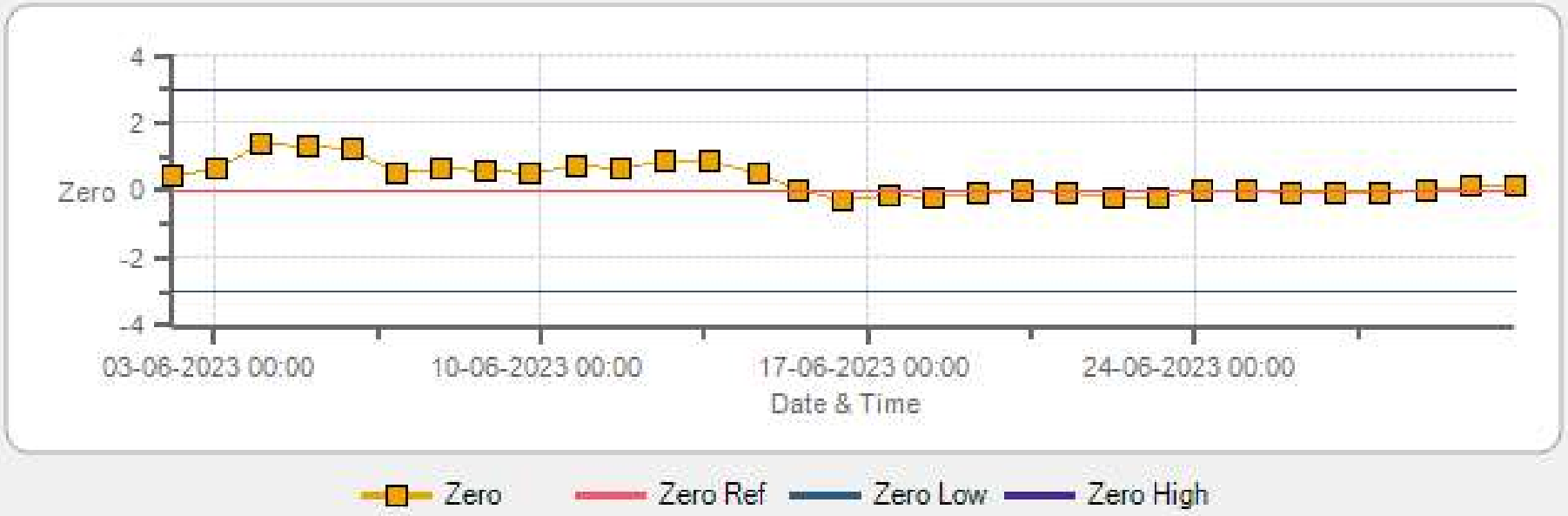
SO2[ppb] Calibration: Cold Lake South Monthly: 06-2023 Type: SpanAndZero - Zero



SO2[ppb] Calibration: Cold Lake South Monthly: 06-2023 Type: SpanAndZero - Span

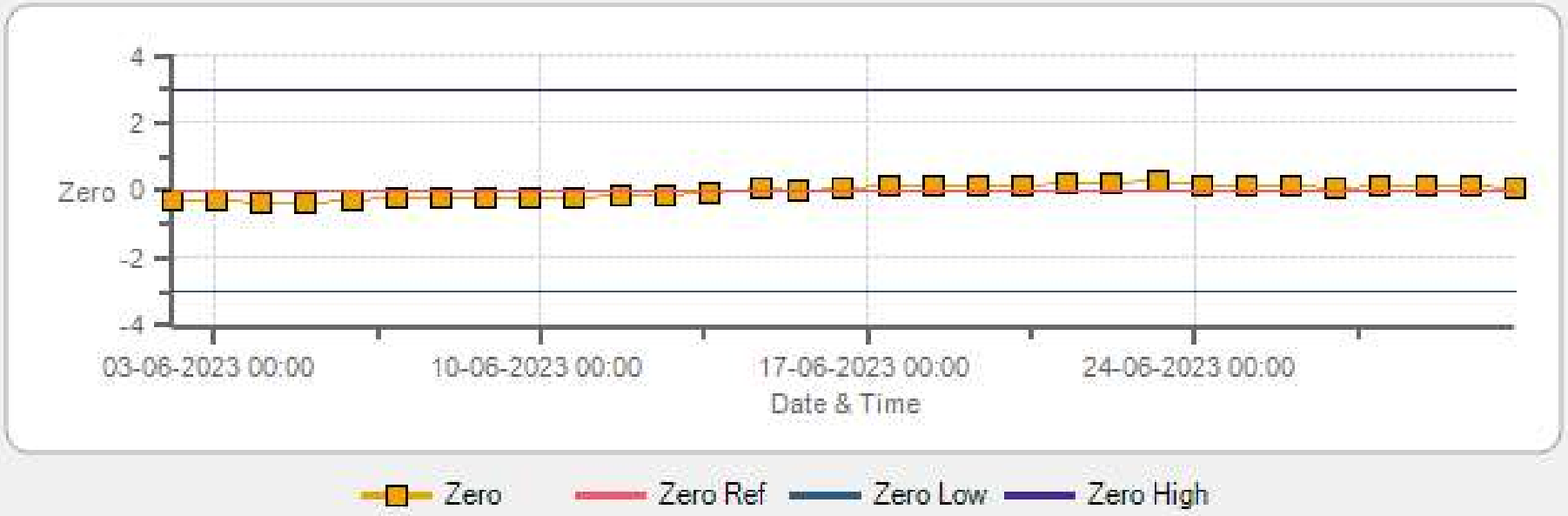


TRS[ppb] Calibration: Cold Lake South Monthly: 06-2023 Type: SpanAndZero - Zero



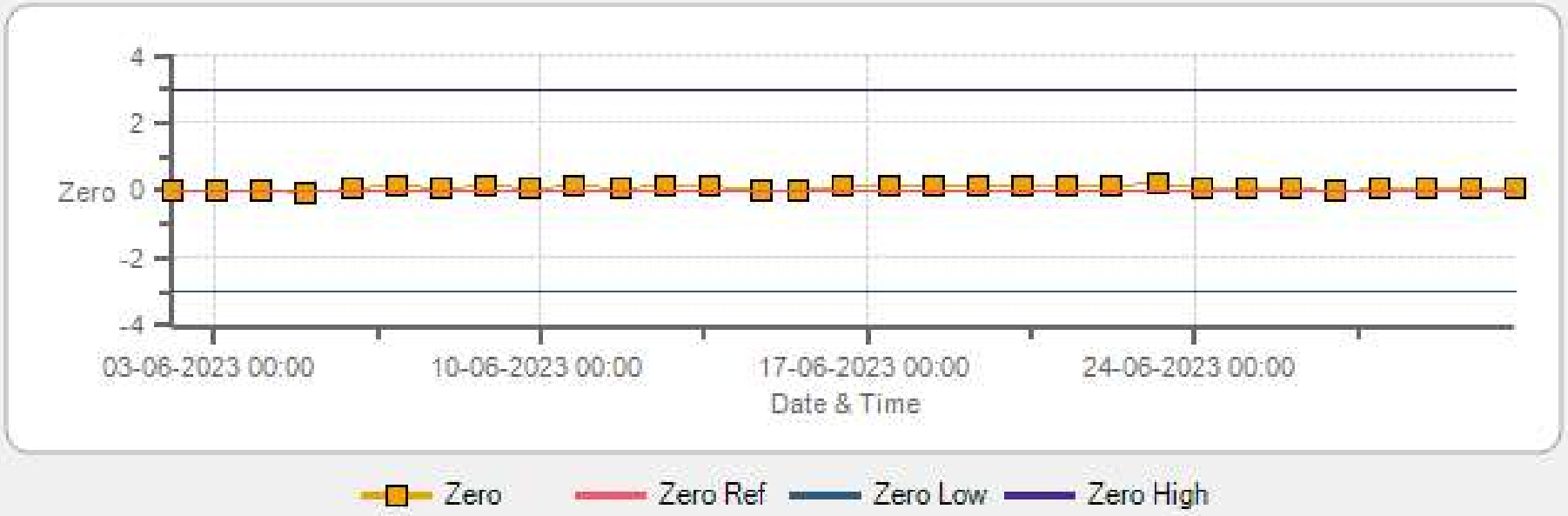
TRS[ppb] Calibration: Cold Lake South Monthly: 06-2023 Type: SpanAndZero - Span

NOX[ppb] Calibration: Cold Lake South Monthly: 06-2023 Type: SpanAndZero - Zero



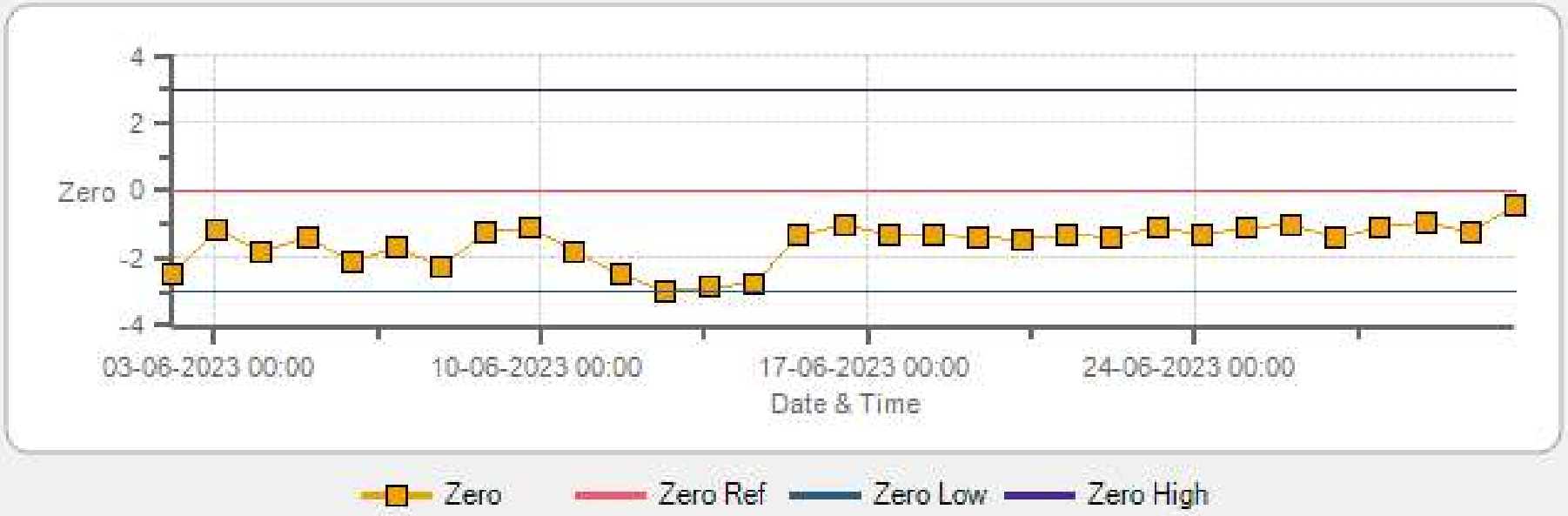
NOX[ppb] Calibration: Cold Lake South Monthly: 06-2023 Type: SpanAndZero - Span

NO2[ppb] Calibration: Cold Lake South Monthly: 06-2023 Type: SpanAndZero - Zero

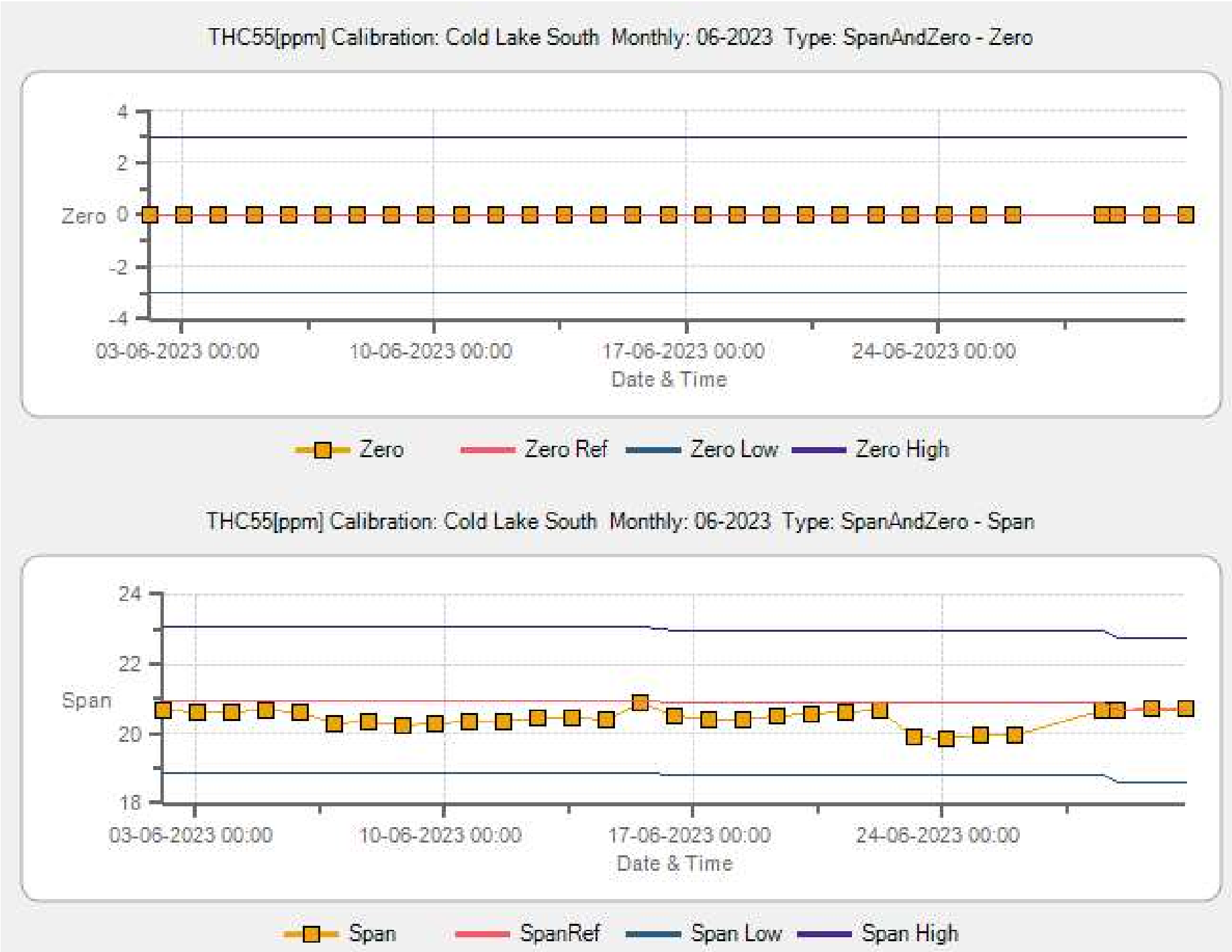


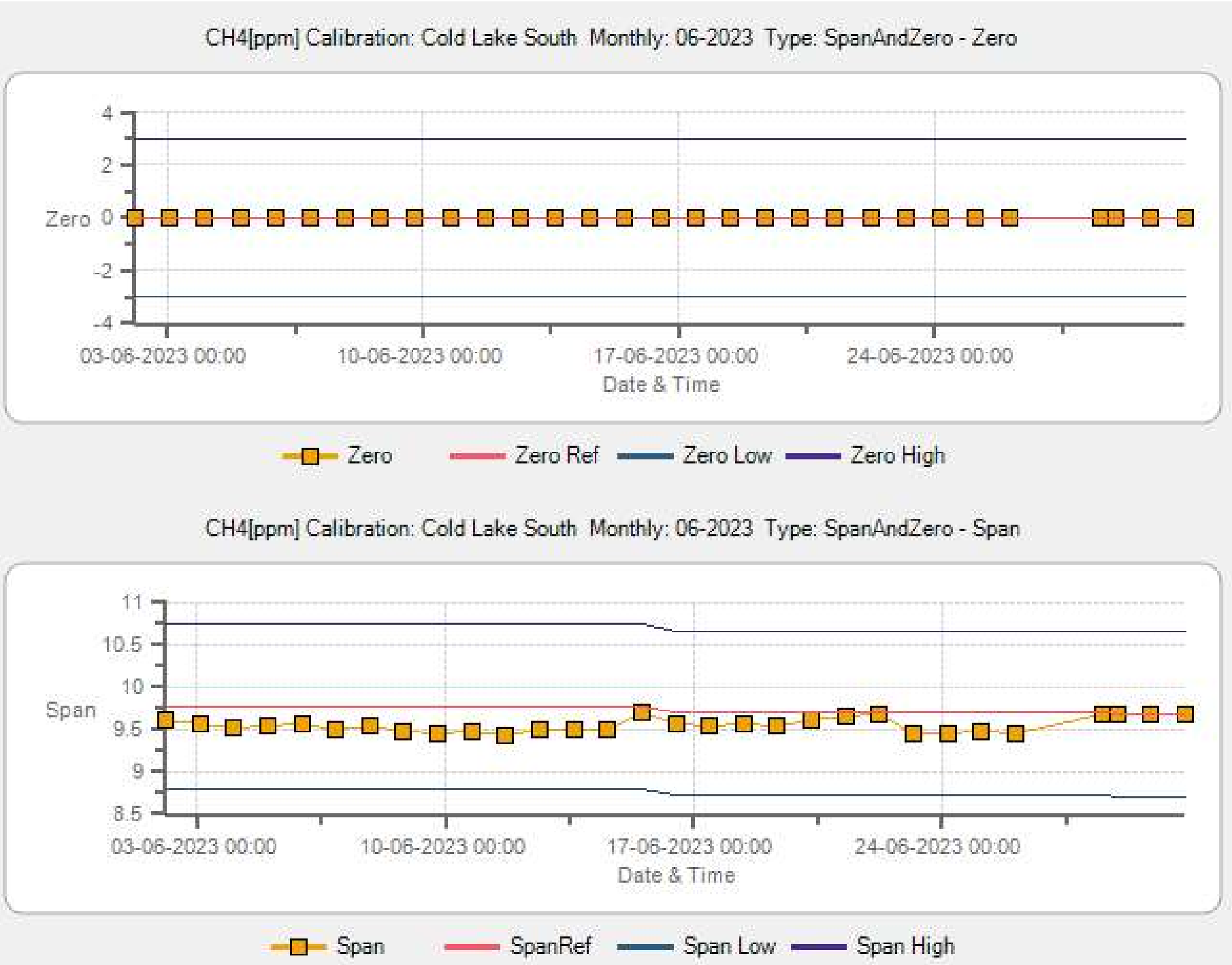
NO2[ppb] Calibration: Cold Lake South Monthly: 06-2023 Type: SpanAndZero - Span

O3[ppb] Calibration: Cold Lake South Monthly: 06-2023 Type: SpanAndZero - Zero

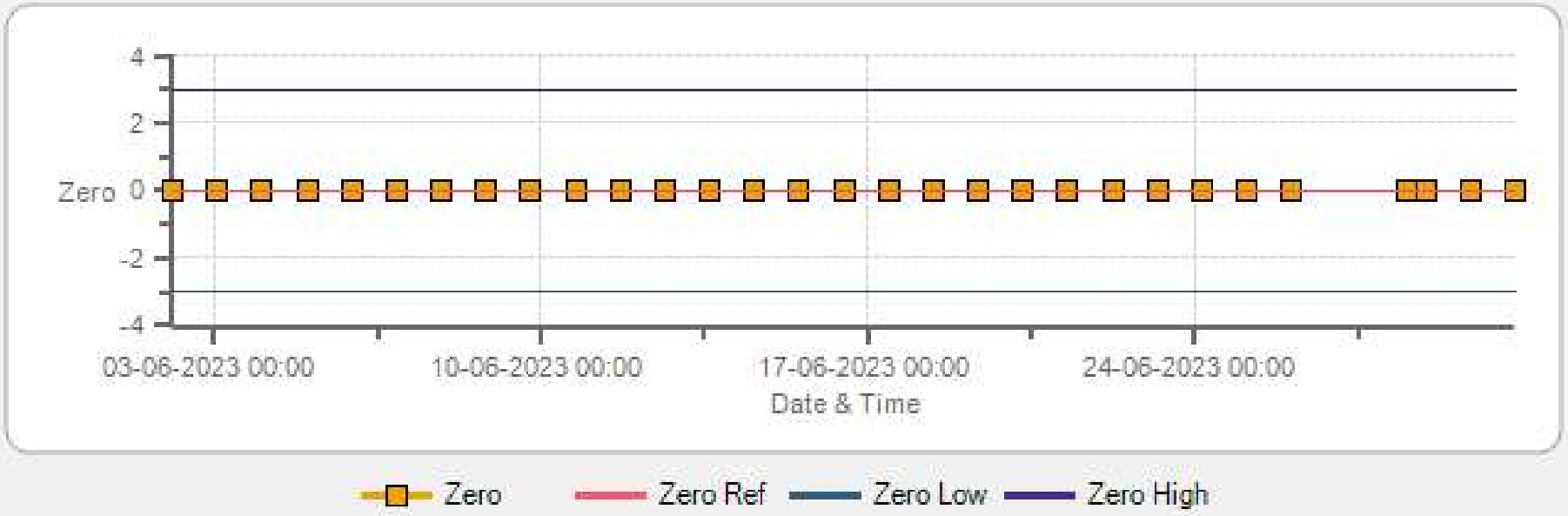


O3[ppb] Calibration: Cold Lake South Monthly: 06-2023 Type: SpanAndZero - Span

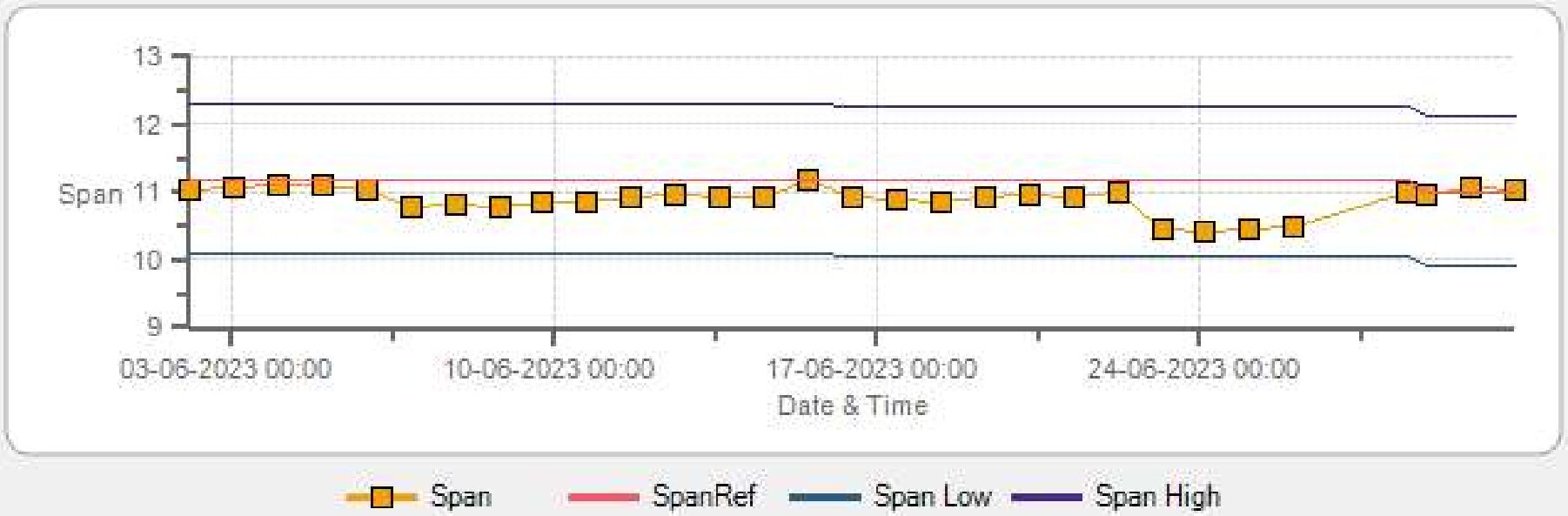

THC55[ppm] Calibration: Cold Lake South Monthly: 06-2023 Type: SpanAndZero - Zero
4
2
Zero 0
-2
-4
03-06-2023 00:00
10-06-2023 00:00
17-06-2023 00:00
24-06-2023 00:00
Date & Time
Zero
Zero Ref
Zero Low
Zero High
THC55[ppm] Calibration: Cold Lake South Monthly: 06-2023 Type: SpanAndZero - Span
24
22
Span
20
18
03-06-2023 00:00
10-06-2023 00:00
17-06-2023 00:00
24-06-2023 00:00
Date & Time
Span
SpanRef
Span Low
Span High


CH4[ppm] Calibration: Cold Lake South Monthly: 06-2023 Type: SpanAndZero - Zero
4
2
Zero 0
-2
-4
03-06-2023 00:00
10-06-2023 00:00
17-06-2023 00:00
24-06-2023 00:00
Date & Time
Zero
Zero Ref
Zero Low
Zero High
CH4[ppm] Calibration: Cold Lake South Monthly: 06-2023 Type: SpanAndZero - Span
11
10.5
10
Span
9.5
9
8.5
03-06-2023 00:00
10-06-2023 00:00
17-06-2023 00:00
24-06-2023 00:00
Date & Time
Span
SpanRef
Span Low
Span High

NMHC[ppm] Calibration: Cold Lake South Monthly: 06-2023 Type: SpanAndZero - Zero



NMHC[ppm] Calibration: Cold Lake South Monthly: 06-2023 Type: SpanAndZero - Span



MULTI-POINT CALIBRATION RECORDS

SO2 Analyzer Calibration by Dilution

DATE:	14-Jun-2023	PREVIOUS CALIBRATION DATE:	08-May-2023
PARAMETER:	SO2	PREVIOUS CORRECTION FACTOR:	1.000
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	CLS	BAROMETRIC (mBar):	932
PURPOSE	Routine	START TIME (MST):	10:04
PERFORMED BY:	Alex Yakupov	END TIME (MST):	15:40

ANALYZER:

MAKE/MODEL	Thermo 43I-TLE	RANGE	500 ppb
SERIAL #	1180260018	FLOW (mL/min)	436
INITIAL		FINAL	
BKG/OFFSET	2.35	BKG/OFFSET	2.17
COEF/SLOPE	0.991	COEF/SLOPE	0.969
Expected (reference) Value	379	Expected (reference) Value	378

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010	MODEL:	T701
ID:	17100415	ID:	132
MFC CALIBRATION DATE:	12-Apr-2023	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	LL 127895	HIGH ID	n/a
CONC (ppm):	50.40	EXPIRY DATE	n/a
CYLINDER (psi):	1400	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:

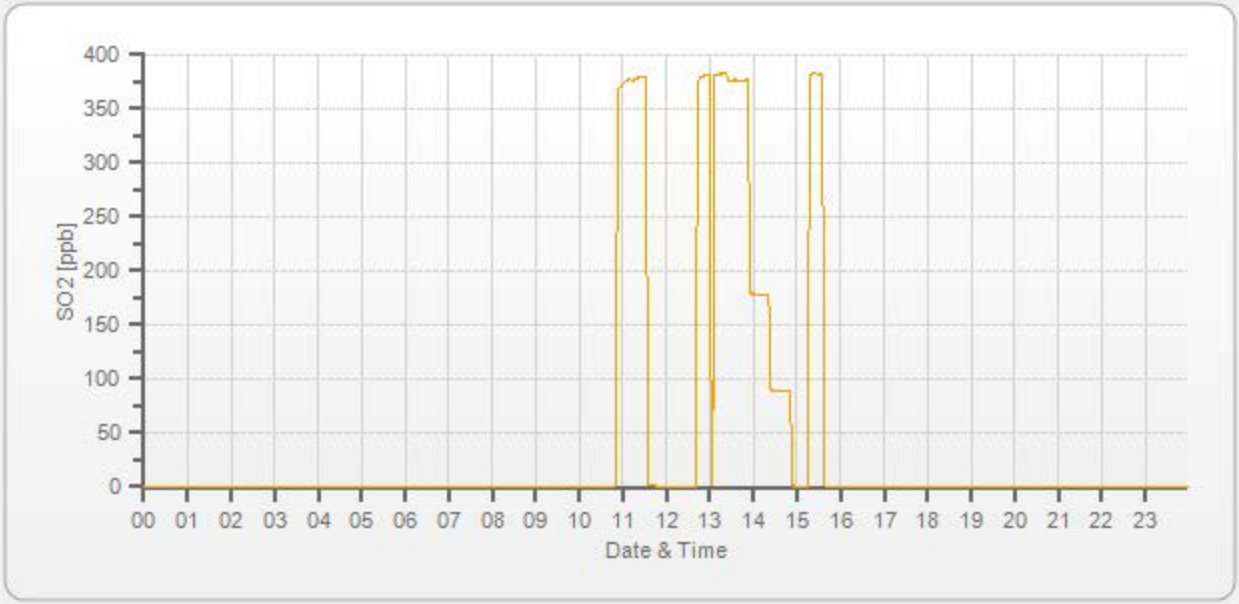
FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
			ACTUAL	INDICATED		Initial	Final
DILUENT	GAS	TOTAL		Initial	Final		
5000		5000	0.00	-0.3	0		
4961	37.20	4998	375.13	379.2	375.8	0.988	0.998
4982	17.60	5000	177.41	n/a	177.5	n/a	0.999
4990	8.80	4999	88.72	n/a	87.9	n/a	1.009

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.003	-0.1%

COMMENTS:

Sample inlet filter was changed.13:00 - scheduled ZS check interfered with the calibration. Adjusted High point was started from beginning


SO2[ppb] Station: Cold Lake South Daily: 14-06-2023 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:	14-Jun-2023	PREVIOUS CALIBRATION DATE:	08-May-2023
PARAMETER:	TRS	PREVIOUS CORRECTION FACTOR:	1.007
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	CLS	BAROMETRIC (mBar):	932
PURPOSE	Routine	START TIME (MST):	10:03
PERFORMED BY:	Alex Yakupov	END TIME (MST):	15:39

ANALYZER:

MAKE/MODEL	Thermo 450i	RANGE	100 ppb
SERIAL #	812728560	FLOW (mL/min)	485
INITIAL		FINAL	
BKG/OFFSET	26.4	BKG/OFFSET	26.9
COEF/SLOPE	1.174	COEF/SLOPE	1.149
Expected (reference) Value	43.3	Expected (reference) Value	42.6

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010 D	MODEL:	T701
ID:	11900613	ID:	132
MFC CALIBRATION DATE:	12-Apr-2023	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	EY 0002287	HIGH ID	n/a
CONC (ppm):	10.10	EXPIRY DATE	n/a
CYLINDER (psi):	600	LOW ID	n/a
EXPIRY DATE	14-Sep-2024	EXPIRY DATE	n/a

CALIBRATION PARAMETERS:

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

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

START TIME:	10:12	SO2 Conc (ppb)	380
END TIME:	10:27	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	0.9	0		
7442	57.90	7500	77.97	79.6	77.8	0.991	1.002
7472	28.20	7500	37.98	n/a	38.4	n/a	0.989
7486	14.10	7500	18.99	n/a	19.4	n/a	0.979

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	0.996	0.3%

COMMENTS:

Sample inlet filter was changed. 13:00 - scheduled ZS check interfered with the calibration. Adjusted High point was started from beginning

TRS[ppb] Station: Cold Lake South Daily: 14-06-2023 Type: AVG 1 Min. [1 Min.]

NOx Calibration by Dilution/Gas-Phase Titration

CALIBRATION:

DATE:	14-Jun-2023	PREVIOUS CALIBRATION DATE:	08-May-2023
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	CLS	BAROMETRIC (mBar):	932
PURPOSE	Routine	START TIME (MST):	10:05
PERFORMED BY:	Alex Yakupov	END TIME (MST):	17:36

ANALYZER:

MAKE/MODEL:	Thermo 42i	PREVIOUS CF.	
SERIAL #:	1505664393	NOx	1.004
FLOW (mL/min)	665	NO	1.003
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):	1400		LOW ID:	n/a
MFC CALIBRATION DATE:	12-Apr-2023	OXIDIZER ID:	n/a	EXPIRY DATE	27-Oct-2030		LOW EXPIRY:	n/a

CALIBRATION SETTINGS:

INITIAL	NOx	NO	NO2	FINAL	NOx	NO	NO2
BKG/OFFSET:	5	4.9	n/a	BKG/OFFSET:	4.9	4.6	n/a
SLOPE/COEF/CE:	1.007	1.051	0.999	SLOPE/COEF/CE:	1.009	1.064	0.999

EXPECTED (REFERENCE) VALUE:

INITIAL	NOx	NO	NO2	FINAL	NOx	NO	NO2
	284.0	2.9	281.0		282.5	3.5	279.0

CALIBRATION PARAMETERS:

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

NO/NOx CALIBRATION:

FLOW RATE (mL/min)			CONCENTRATION (ppb)									CORRECTION FACTOR (CF.)					
			CALCULATED			INITIAL INDICATED			FINAL INDICATED			INITIAL			FINAL		
DILUENT	GAS	TOTAL	NO	NOx	NO2	NO	NOx	NO2	NO	NOx	NO2	NO	NOx	NO2	NO	NOx	NO2
5000		5000	0.0	0.0	0.0	-0.2	-0.1	0.0	0.0	0.0	0.0						
4961	37.20	4998	380.3	384.1	3.7	374.0	377.8	3.7	379.9	384.1	4.2	1.016	1.016		1.001	1.000	
4982	17.60	5000	179.9	181.6	1.8	n/a	n/a	n/a	180.0	182.0	2.0	n/a	n/a		0.999	0.998	
4990	8.80	4999	90.0	90.8	0.9	n/a	n/a	n/a	90.1	91.0	0.9	n/a	n/a		0.998	0.998	

GPT CALIBRATION:

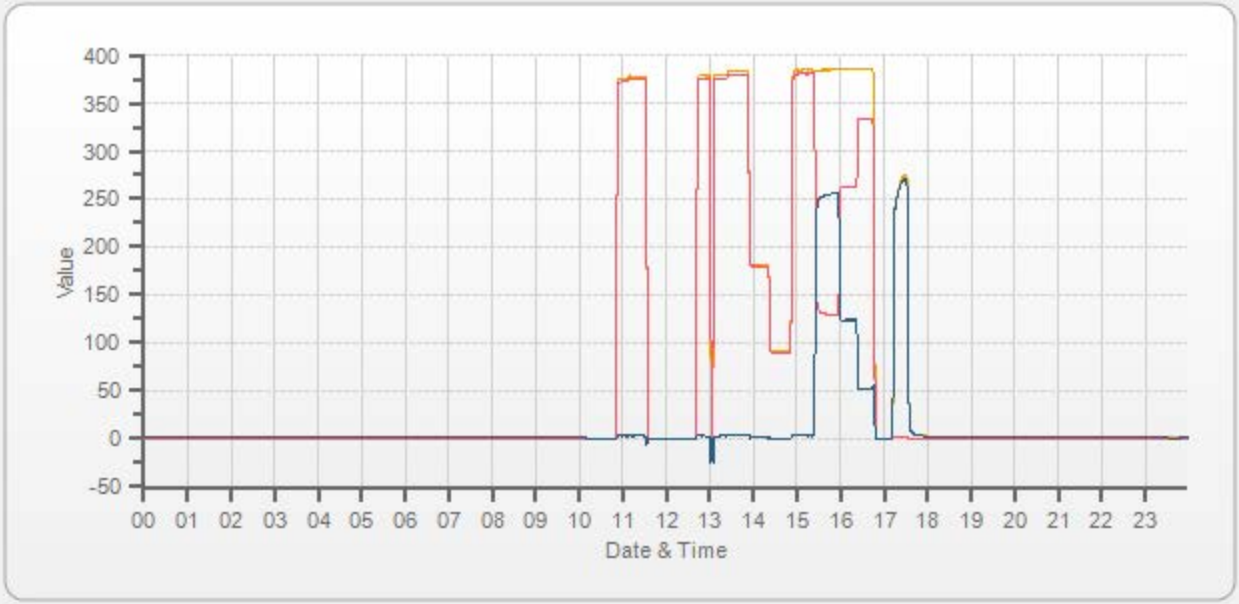
Point	CALIBRATOR			INDICATED (ppb)			NO DROP / O3 Conc (ppb)	NO2 GAIN (ppb)	NO2 Corr. FACTOR	CONV. EFFICIENCY
	GAS	TOTAL	O3 SETPOINT	NO	NOx	NO2				
REFERENCE	37.20	4998	0	380.7	384.7	3.9				
AS-FOUND HIGH	37.20	4998	235	129.4	385.0	255.6	251.3	251.7	0.998	100.16%
ADJUSTED HIGH	n/a	n/a	n/a	n/a	n/a	n/a	n/a	**n/a**	**n/a**	n/a
MID	37.20	4998	110	262.0	385.4	123.3	118.7	119.4	0.994	100.59%
LOW	37.20	4998	40	333.5	385.8	52.3	47.2	48.4	0.975	102.54%
NO2 adjustment not required.									AVERAGE:	101.10%

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
NO	1.000	0.999	0.03%
NOx	1.000	1.000	0.03%
NO2	1.000	0.996	0.26%

COMMENTS:

Sample inlet filter was changed. 13:00 - scheduled ZS check interfered with the calibration. Adjusted High point was started from beginning


Station: Cold Lake South Daily: 14-06-2023 Type: AVG 1 Min. [1 Min.]
400
350
300
250
200
150
100
50
0
-50
Value
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23
Date & Time
NOX [ppb]
NO [ppb]
NO2 [ppb]

Ozone Calibration by Photometer (Varying UV Lamp)

DATE:	15-Jun-2023	PREVIOUS CALIBRATION DATE:	25-May-2023
PARAMETER:	O3	PREVIOUS CORRECTION FACTOR:	1.008
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	CLS	BAROMETRIC (mBar):	936
PURPOSE	Routine	START TIME (MST):	08:25
PERFORMED BY:	Alex Yakupov	END TIME (MST):	12:44

ANALYZER:

MAKE/MODEL	Thermo 49iQ	RANGE	500 ppb
SERIAL #	12208316585	FLOW (mL/min)	1.3
INITIAL		FINAL	
BKG/OFFSET	0.7	BKG/OFFSET	-0.4
COEF/SLOPE	1.047	COEF/SLOPE	1.027
Expected (reference) Value	270	Expected (reference) Value	271

CALIBRATION SYSTEM:

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

CALIBRATION PARAMETERS:

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

CALIBRATION:

FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
			ACTUAL	INDICATED		Initial	Final
DILUENT	GAS	TOTAL		Initial	Final		
5000		5000	0.0	-1.0	0.0		
5000		5000	380.0	384.9	377.0	0.985	1.008
5000		5000	180.0	n/a	179.9	n/a	1.001
5000		5000	60.0	n/a	61.0	n/a	0.984

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	0.991	0.2%

COMMENTS:

Sample inlet filter was changed. 10:08 - operator error, adjusted High Point starts at 10:24


O3[ppb] Station: Cold Lake South Daily: 15-06-2023 Type: AVG 1 Min. [1 Min.]
800
700
600
500
400
300
200
100
0
-100
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:	15-Jun-2023	PREVIOUS CALIBRATION DATE:	07-May-2023
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	CLS	BAROMETRIC (mBar):	936
PURPOSE	Routine	START TIME (MST):	08:28
PERFORMED BY:	Alex Yakupov	END TIME (MST):	12:44

ANALYZER:

VALUE	MAKE/MODEL	SERIAL	FLOW (mL/min)
	Thermo 55i	1180930025	1100
PARAMETER:	CH4	NMHC	THC
RANGE (ppm):	20	20	40
PREVIOUS CF:	0.998	0.997	0.997

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:		CALIBRATION GAS:			FLOWMETERS (if applicable):	
MAKE:	SABIO	MAKE:	Teledyne	CYLINDER ID:	LL 23593		HIGH ID:	n/a
MODEL:	2010	MODEL:	T701	CH_4/C_3H_8 (ppm):	603.0	204.0	HIGH EXPIRY:	n/a
ID:	17100415	ID:	134	CYLINDER (psi):	1100		LOW ID:	n/a
MFC CALIBRATION DATE:	12-Apr-2023	OXIDIZER ID:	n/a	EXPIRY DATE	18-Aug-2029		LOW EXPIRY:	n/a

CALIBRATION PARAMETERS:

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

EXPECTED (REFERENCE) VALUE:

INITIAL	CH4	NMHC	THC	FINAL	CH4	NMHC	THC
	9.77	11.20	20.96		9.70	11.17	20.88

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	14.32	13.39	27.72	14.55	13.55	28.11	1.013	1.008	1.011	0.997	0.996	0.996
3063	37.30	3100	7.26	6.75	14.01	n/a	n/a	n/a	7.20	6.83	14.03	n/a	n/a	n/a	1.008	0.988	0.998
3081	18.60	3100	3.62	3.37	6.98	n/a	n/a	n/a	3.59	3.43	7.03	n/a	n/a	n/a	1.008	0.981	0.993

LINEAR REGRESSION ANALYSIS:

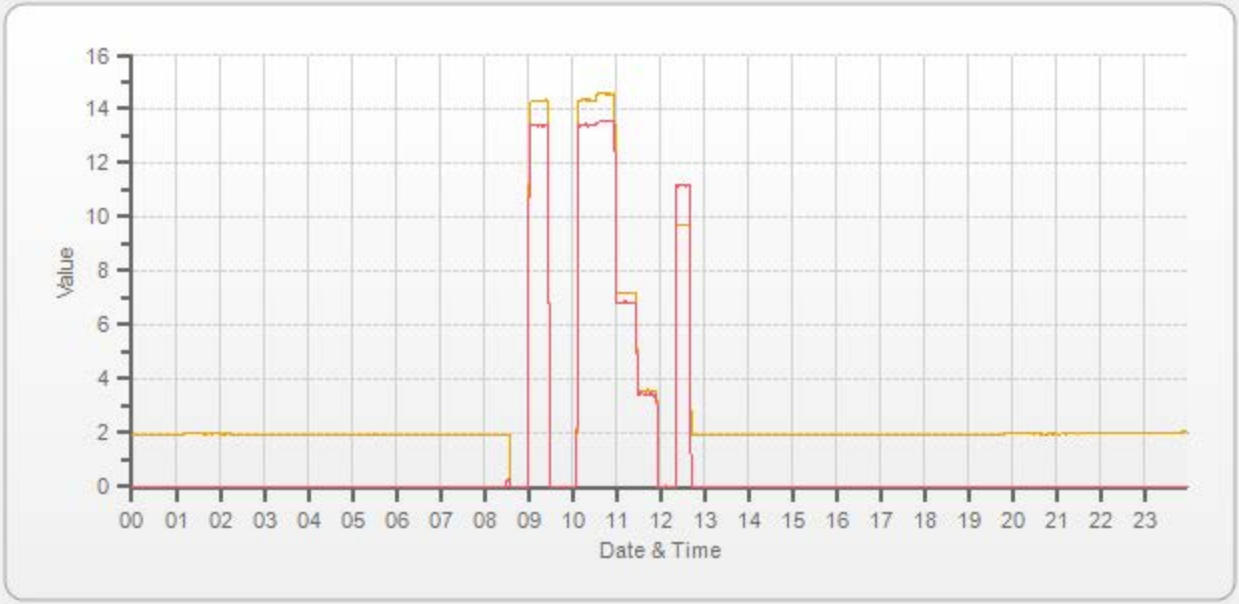
	CORRELATION	SLOPE	INTERCEPT
CH4	1.000	1.003	-0.2%
NMHC	1.000	1.003	0.2%
THC	1.000	1.003	0.0%

Comments:

Sample inlet filter was changed.

Use Zero Chrom? **Yes**

Station: Cold Lake South Daily: 15-06-2023 Type: AVG 1 Min. [1 Min.]



Methane/Non-Methane Analyzer Calibration by Dilution

CALIBRATION:

DATE:	28-Jun-2023	PREVIOUS CALIBRATION DATE:	15-Jun-2023
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	CLS	BAROMETRIC (mBar):	949
PURPOSE	Install/Post-Repair	START TIME (MST):	10:31
PERFORMED BY:	Alex Yakupov	END TIME (MST):	12:54

ANALYZER:

VALUE	MAKE/MODEL	SERIAL	FLOW (mL/min)
	Thermo 55i	1180930025	1195
PARAMETER:	CH4	NMHC	THC
RANGE (ppm):	20	20	40
PREVIOUS CF:	0.997	0.996	0.996

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:		CALIBRATION GAS:			FLOWMETERS (if applicable):	
MAKE:	SABIO	MAKE:	Teledyne	CYLINDER ID:	LL 23593		HIGH ID:	n/a
MODEL:	2010	MODEL:	T701	CH_4/C_3H_8 (ppm):	603.0	204.0	HIGH EXPIRY:	n/a
ID:	17100415	ID:	134	CYLINDER (psi):	1100		LOW ID:	n/a
MFC CALIBRATION DATE:	12-Apr-2023	OXIDIZER ID:	n/a	EXPIRY DATE	18-Aug-2029		LOW EXPIRY:	n/a

CALIBRATION PARAMETERS:

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

EXPECTED (REFERENCE) VALUE:

INITIAL	CH4	NMHC	THC	FINAL	CH4	NMHC	THC
	9.70	11.17	20.88		9.68	11.01	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	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	13.45	27.92	n/a	n/a	n/a	1.003	1.004	1.003
3063	37.30	3100	7.26	6.75	14.01	n/a	n/a	n/a	7.17	6.80	13.97	n/a	n/a	n/a	1.012	0.993	1.003
3081	18.60	3100	3.62	3.37	6.98	n/a	n/a	n/a	3.55	3.48	7.03	n/a	n/a	n/a	1.019	0.967	0.993

LINEAR REGRESSION ANALYSIS:

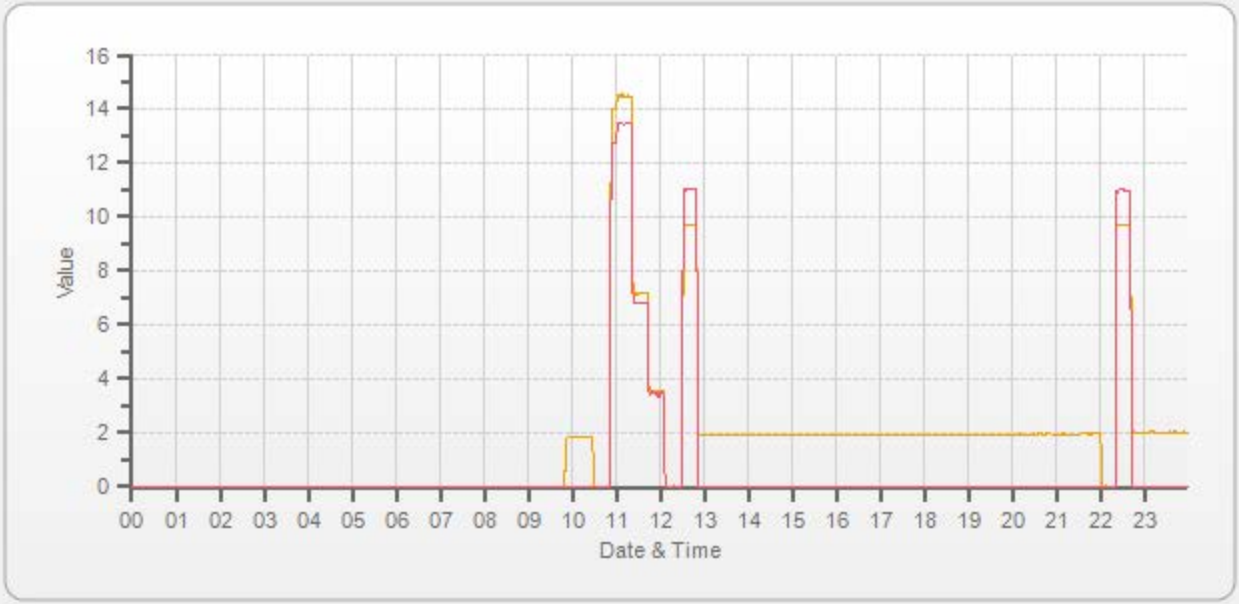
	CORRELATION	SLOPE	INTERCEPT
CH4	1.000	0.998	-0.2%
NMHC	1.000	0.994	0.3%
THC	1.000	0.996	0.1%

Comments:

Sample pump was repaired. No shutdown calibration was possible. Sample pump failed.

Use Zero Chrom? **Yes**

Station: Cold Lake South Daily: 28-06-2023 Type: AVG 1 Min. [1 Min.]



Teledyne T640 Audit/Calibration

Date/Previous Audit Date:	June 15, 2023	May 7, 2023	**Weather Conditions:**	Mainly sunny	
Company:	LICA		**Start Time (mst):**	13:06	
Station:	Cold Lake South		**End Time (mst):**	14:14	
Parameter:	PM 2.5		**Performed By/Reviewer:**	Alex Yakupov	Chris Wesson
Instrument Data:					
Make/Model:	Teledyne T640		**Serial Number:**	575	
Owner:	LICA		**Alarms (detail in comments):**	No	
Reference Standards/I.D./Expiry Date:					

Flow Standard: DeltaCal DC1 S/N 177246 / Sep 03, 2023
Digital Manometer: DeltaCal DC1 S/N 177246 / Sep 03, 2023
Temperature: Fisher / FB 61291/ #130168457/ Mar 20, 2024
Pressure: Fisher / FB 61291/ #130168457/ Mar 20, 2024

DIAGNOSTICS:

Ambient Pressure (mmHg)	705.1	Ambient Temp (°C)	11.6	ASC Heater Duty (%)	0.0
Box Temp (°C)	28.0	Current PMT HV (V)	1429	LED Temp (°C)	37.37
P3 Value	51	PMT Setting (V)	1432	Pump PWM (%)	42
Sample Flow (L/min)	5.02	Sample RH (%RH)	34.2	Sample Temp (°C)	26.3

Monthly Audit/Calibration:

Item:	As-found		As-left		Tolerance
	Reference	T640x	Reference	T640x	
Zero Test (Leak Check)	PM10	0.0	PM10	0.0	0.0 to 0.2
	PM2.5	0.0	PM2.5	0.0	
Ambient Pressure (mmHg)	705.0	705.0	705	705	+/- 10 mm Hg
Ambient Temperature (°C)	11.90	11.6	n/a		+/- 2°C
Sample Flow (L/min)	4.99	5	4.99	5	+/-5% of T640x (e.g., 4.75 – 5.25 lpm)
Additional Monthly Maintenance :					***Completed***
				Inlet cleaned?	Yes
				Sample tubing inspected (inner and outer)?	Yes

Comments:

A new filter was installed.

Meteorological System Checklist

Date:	June 15, 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:	Fisher / FB 61291/ #130168457/ Mar 20, 2024		
Reference Temperature (^{o}C):	12.2		
Station - Ambient Temperature (^{o}C):	11.2		
Temperature Difference (^{o}C):	1.0		
BAROMETRIC PRESSURE SENSOR CHECK			
Reference Barometer ID:	Fisher / FB 61291/ #130168457/ Mar 20, 2024		
Reference Pressure - Units/Reading:	millibar	943	
Station Pressure - Units/Reading:	millibar	945	
Pressure Tolerance +/- 15% of error:	802 - 1084	-0.21%	
RELATIVE HUMIDITY (HYGROMETER) SENSOR CHECK			
Reference Hygrometer ID:	Vaisala / HM70 / #T1640130, Exp. Date: Jun 14, 2023		
Reference Hygrometer % RH- Reading:	79.40		
Station Hygrometer % RH- Reading:	85.20		
RH Tolerance +/- 15% of difference:	67.49 - 91.31	-7.3%	
ANEMOMETER - WIND SPEED & WIND DIRECTION SENSOR CHECK			
WIND SPEED		WIND DIRECTION	
Previous check date:	May 8, 2023	Previous check date:	May 8, 2023
Wind Speed Observed (kph):	0 - 10	Wind Direction Observed:	NW
Wind speed on Data Logger (kph):	9	Wind Direction on Data Logger:	NW
	Annual audit: Jul 6, 2022	Wind Direction Pass/Fail?:	Pass

Comments

Station (Trailer) temperature vs Reference gauge: 23.0 vs 22.8, Difference = 0.2 degrees. Passed. Wind system: Model 05305AQ. Signal box # 32400

Meteorological Sensor Audit/Calibration

Location Information

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

Wind Sensor Information

Sensor ID Data:		**Sensor Outputs:**	
Sensor Make:	RM Young	**Velocity Voltage Output Range:**	n/a
Sensor Model:	05305AQ	**Velocity Unit Output Range:**	0-200
Serial #:	177354	**Direction Voltage Output Range:**	n/a
Previous Cal/Audit Date:	April 20, 2021	**Direction Unit Output Range:**	0-360

Wind Calibrator Information

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

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

RPM	Wind Speed Generated kph	Clockwise Wind Speed kph	Counter Clockwise Wind Speed kph	Correction Factor
0	0	0.0	0.0	-
1000	18.4	18.2	18.2	1.013
2000	36.9	36.6	36.6	1.007
3000	55.3	55.1	55.1	1.003
4000	73.7	73.5	73.5	1.003
5000	92.2	92.1	92.0	1.001
6000	110.6	110.4	110.3	1.002
7000	129.0	128.8	128.8	1.002
8000	147.4	147.3	147.3	1.001
9000	165.9	165.6	165.6	1.002
10000	184.3	184.2	184.2	1.001
		The audit meets AMD requirements.	**Average Correction Factor=**	**1.003**

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

Generated Wind Direction 0-360 (Up)	Generated Wind Direction 360-0 (Down)	Indicated Wind Direction 0-360 (Up)	Indicated Wind Direction 360-0 (Down)	Degrees Difference 0-360 (Up)	Degrees Difference 360-0 (Down)	Average Absolute Degrees Difference
0	355	0	355	0.1	0.0	0.1
30	330	27	329	2.7	1.4	2.0
60	300	58	298	2.4	1.9	2.1
90	270	89	268	1.1	2.1	1.6
120	240	119	239	0.9	1.1	1.0
150	210	148	208	1.6	2.1	1.8
180	180	178	180	2.4	-0.2	1.3
210	150	208	149	2.3	1.1	1.7
240	120	239	119	1.3	0.6	1.0
270	90	268	91	2.2	-1.2	1.7
300	60	298	58	2.3	1.9	2.1
330	30	329	28	1.3	2.5	1.9
355	0	355	0	-0.1	0.1	0.1
The audit meets AMD requirements.			**Average Absolute Degrees Difference=**			**1.4**

Comments:

Output via RMY32400 Serial Interface

End of Report

Lakeland Industry & Community Association

JUNE 2023

Ambient Air Monitoring Calibration Report

- TAMARACK STATION-

CAL-LICA-202306-01248

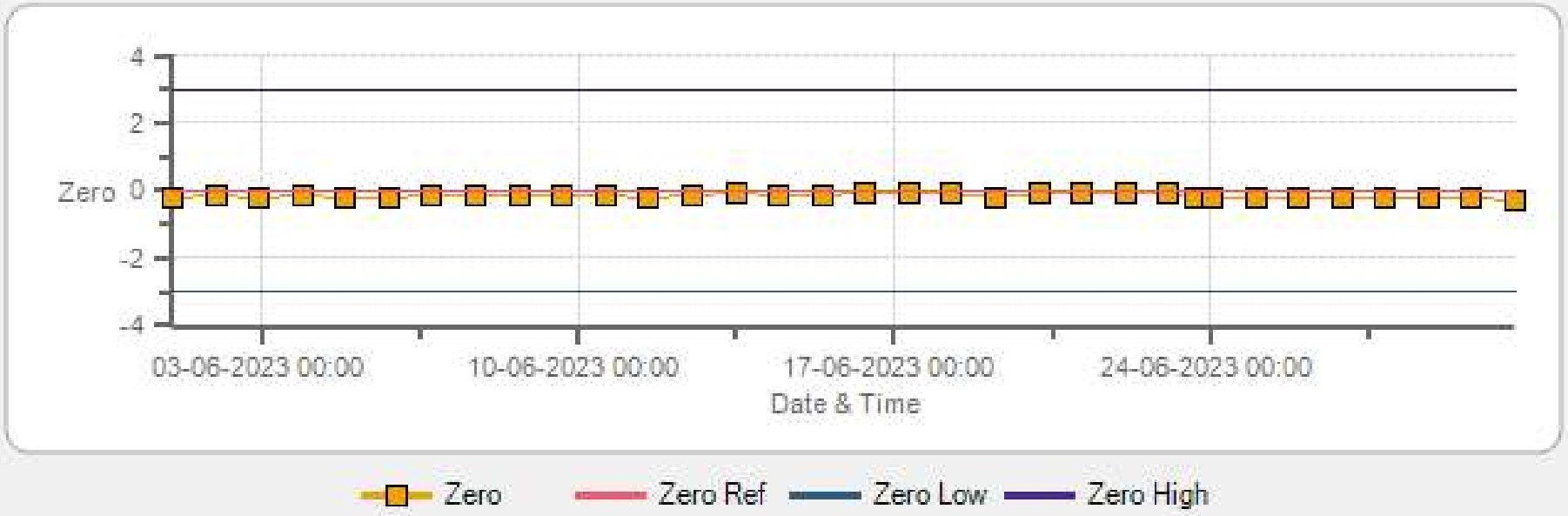
Station Operation and Maintenance:
Bureau Veritas Canada

Data Validation and Report:
LICA / Bureau Veritas Canada

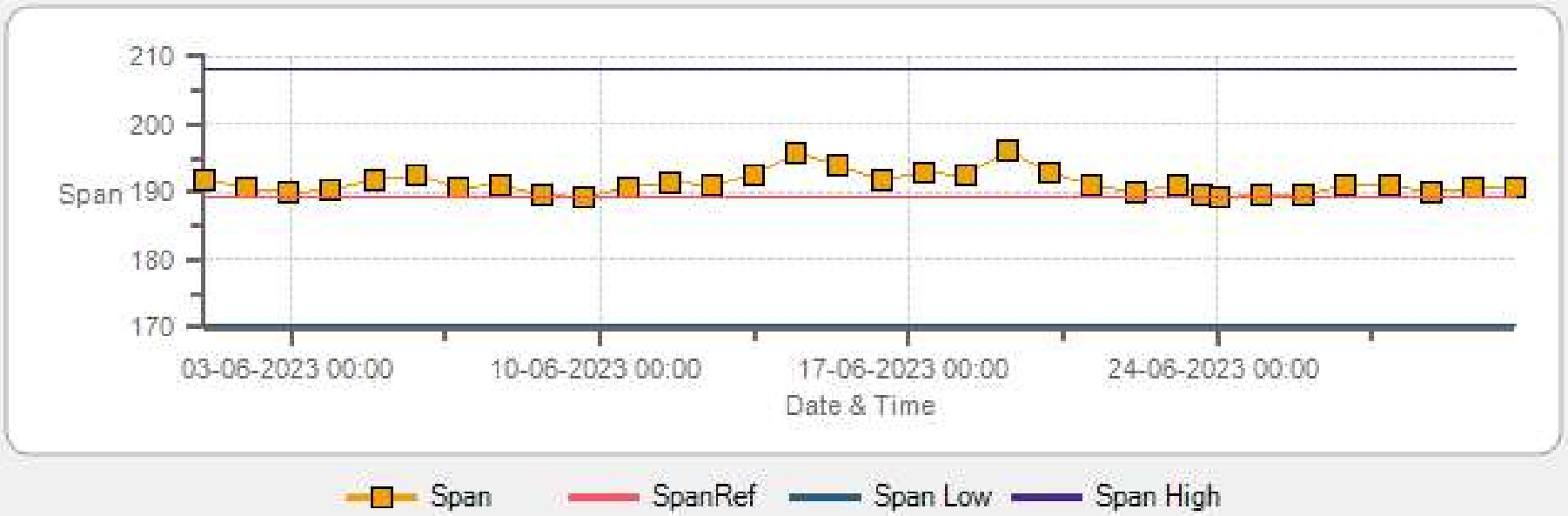
July 19, 2023

DAILY INTERNAL ZERO-SPAN CALIBRATION RECORDS

SO2[ppb] Calibration: Tamarack Monthly: 06-2023 Type: SpanAndZero - Zero

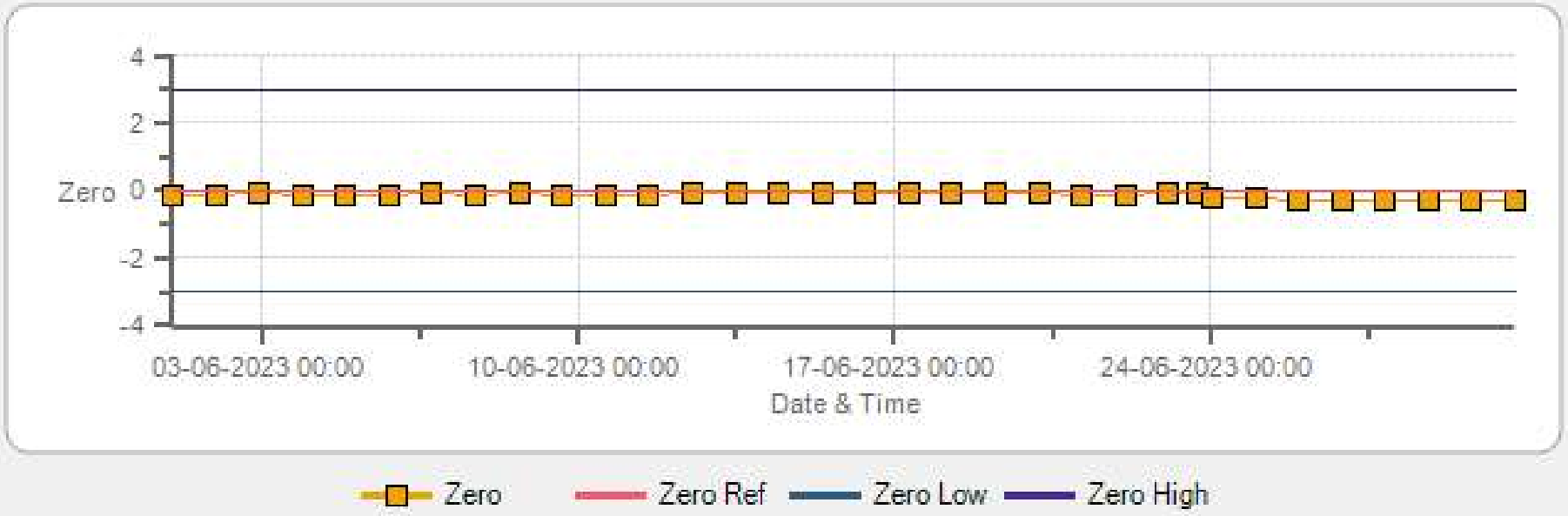


SO2[ppb] Calibration: Tamarack Monthly: 06-2023 Type: SpanAndZero - Span

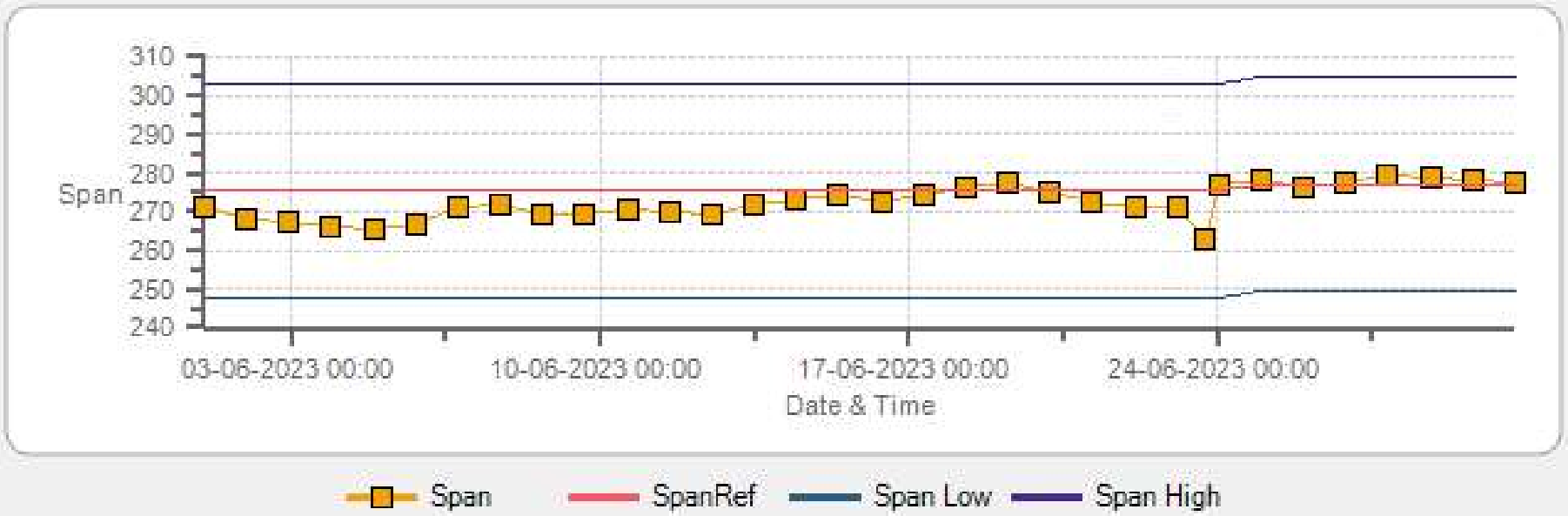



H2S[ppb] Calibration: Tamarack Monthly: 06-2023 Type: SpanAndZero - Zero
4
2
Zero 0
-2
-4
03-06-2023 00:00
10-06-2023 00:00
17-06-2023 00:00
24-06-2023 00:00
Date & Time
Zero
Zero Ref
Zero Low
Zero High
H2S[ppb] Calibration: Tamarack Monthly: 06-2023 Type: SpanAndZero - Span
50
45
Span
40
35
03-06-2023 00:00
10-06-2023 00:00
17-06-2023 00:00
24-06-2023 00:00
Date & Time
Span
SpanRef
Span Low
Span High

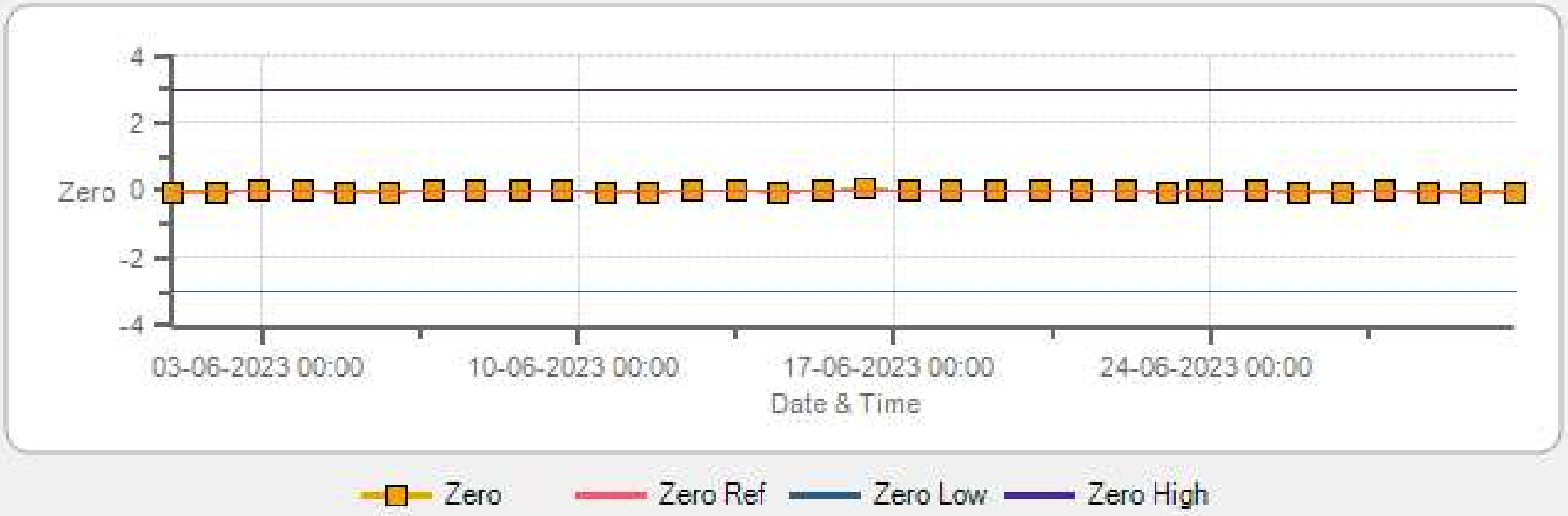
NOX[ppb] Calibration: Tamarack Monthly: 06-2023 Type: SpanAndZero - Zero



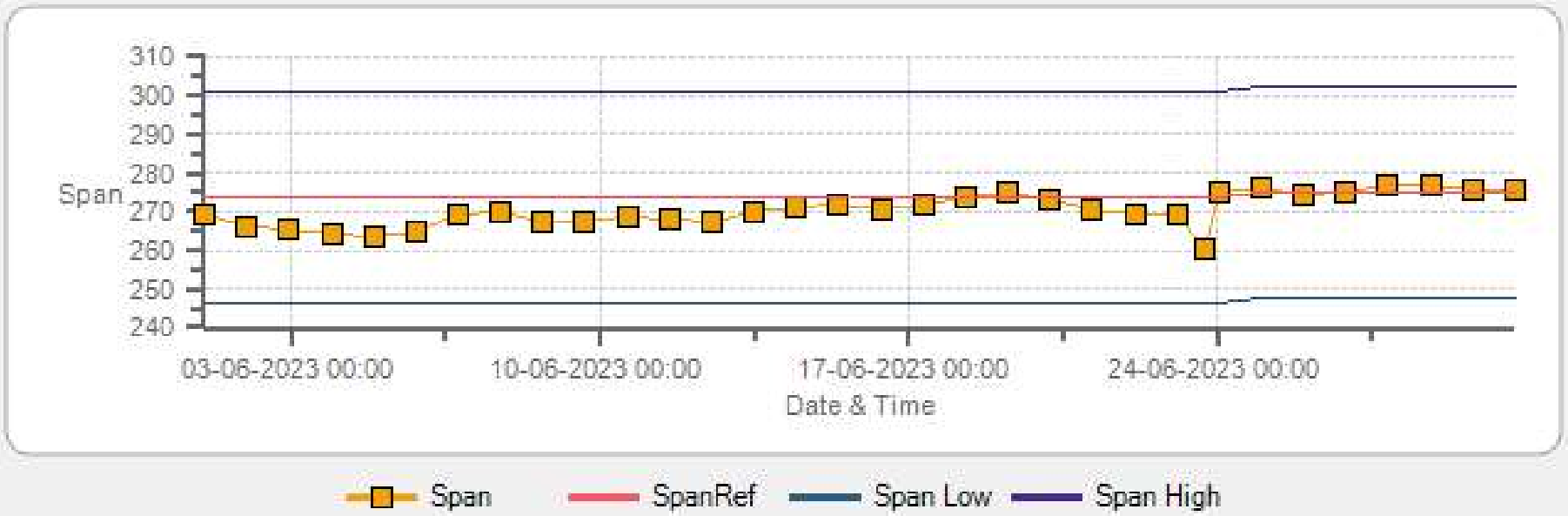
NOX[ppb] Calibration: Tamarack Monthly: 06-2023 Type: SpanAndZero - Span

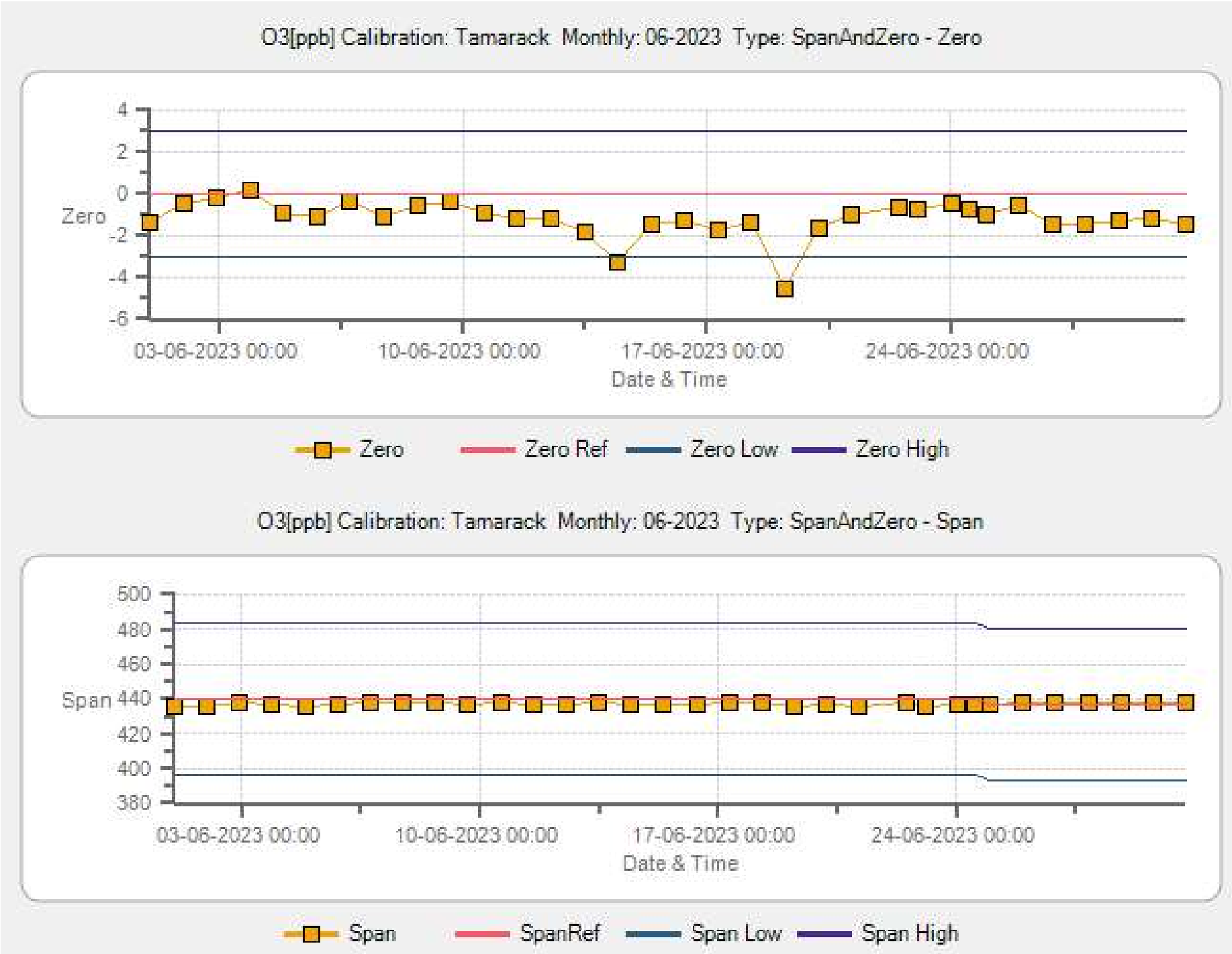


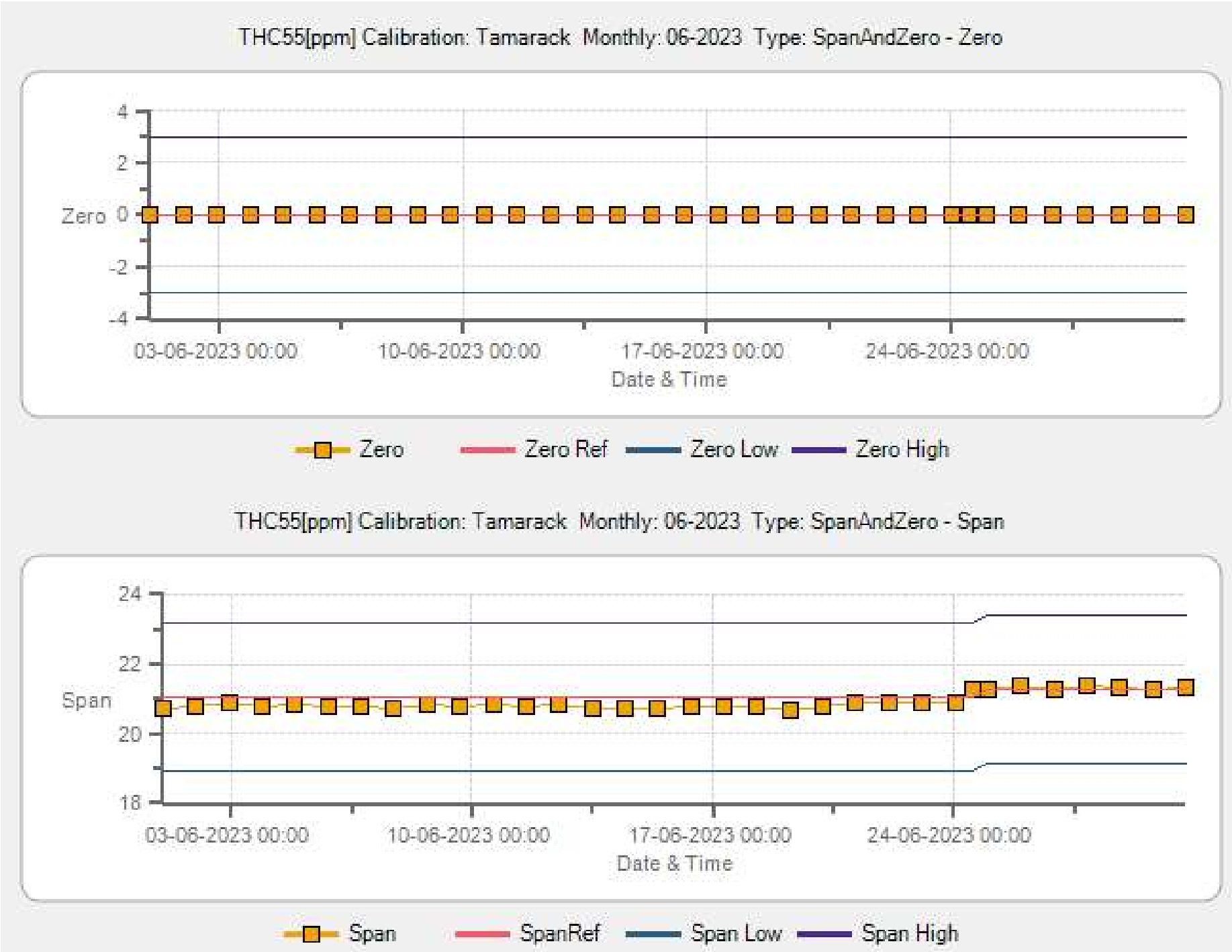
NO2[ppb] Calibration: Tamarack Monthly: 06-2023 Type: SpanAndZero - Zero



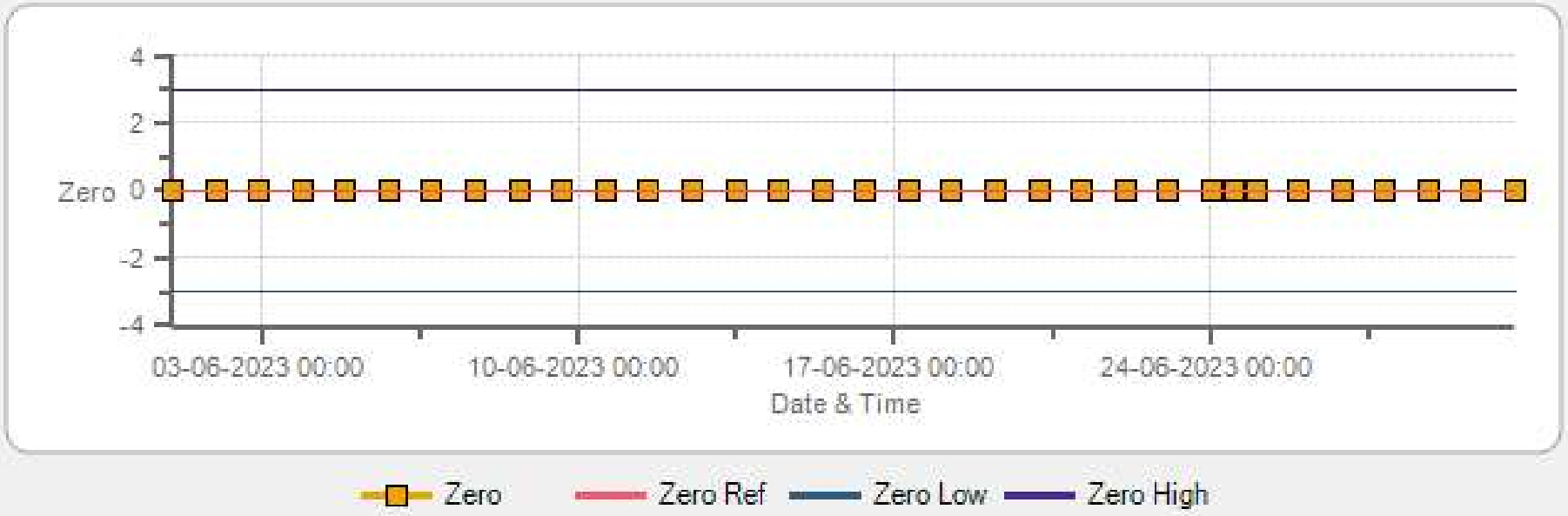
NO2[ppb] Calibration: Tamarack Monthly: 06-2023 Type: SpanAndZero - Span



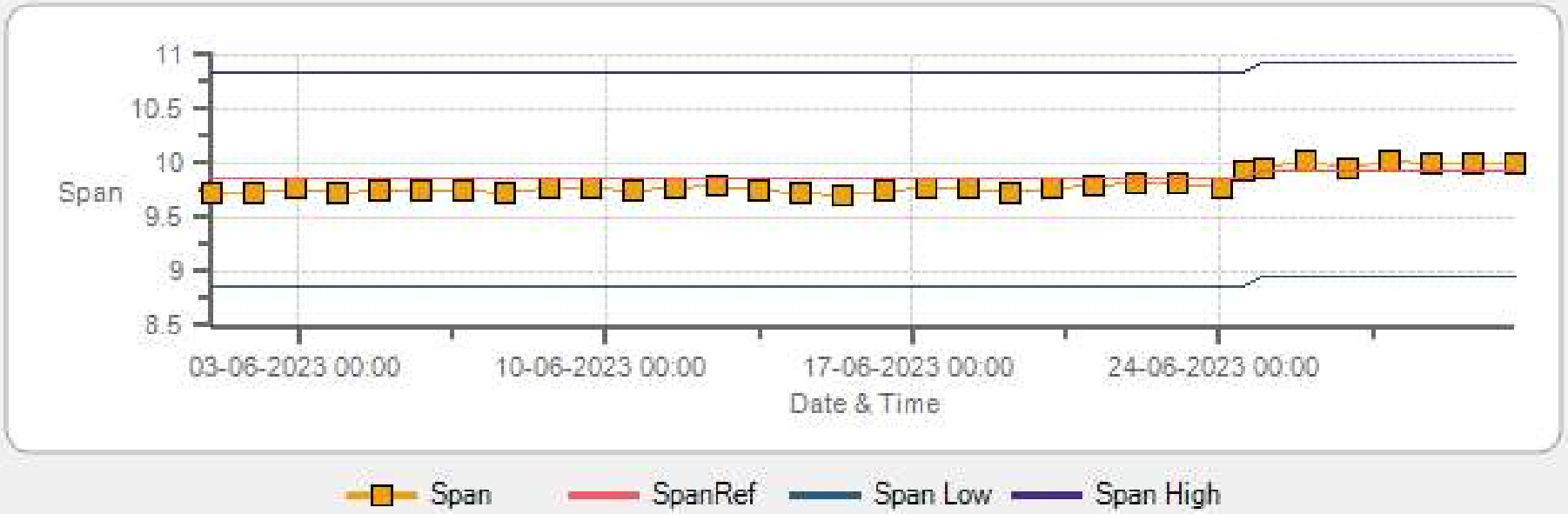

O3[ppb] Calibration: Tamarack Monthly: 06-2023 Type: SpanAndZero - Zero
Zero
4
2
0
-2
-4
-6
03-06-2023 00:00
10-06-2023 00:00
17-06-2023 00:00
24-06-2023 00:00
Date & Time
Zero
Zero Ref
Zero Low
Zero High
O3[ppb] Calibration: Tamarack Monthly: 06-2023 Type: SpanAndZero - Span
Span
500
480
460
440
420
400
380
03-06-2023 00:00
10-06-2023 00:00
17-06-2023 00:00
24-06-2023 00:00
Date & Time
Span
SpanRef
Span Low
Span High


THC55[ppm] Calibration: Tamarack Monthly: 06-2023 Type: SpanAndZero - Zero
4
2
Zero 0
-2
-4
03-06-2023 00:00
10-06-2023 00:00
17-06-2023 00:00
24-06-2023 00:00
Date & Time
Zero
Zero Ref
Zero Low
Zero High
THC55[ppm] Calibration: Tamarack Monthly: 06-2023 Type: SpanAndZero - Span
24
22
Span
20
18
03-06-2023 00:00
10-06-2023 00:00
17-06-2023 00:00
24-06-2023 00:00
Date & Time
Span
SpanRef
Span Low
Span High

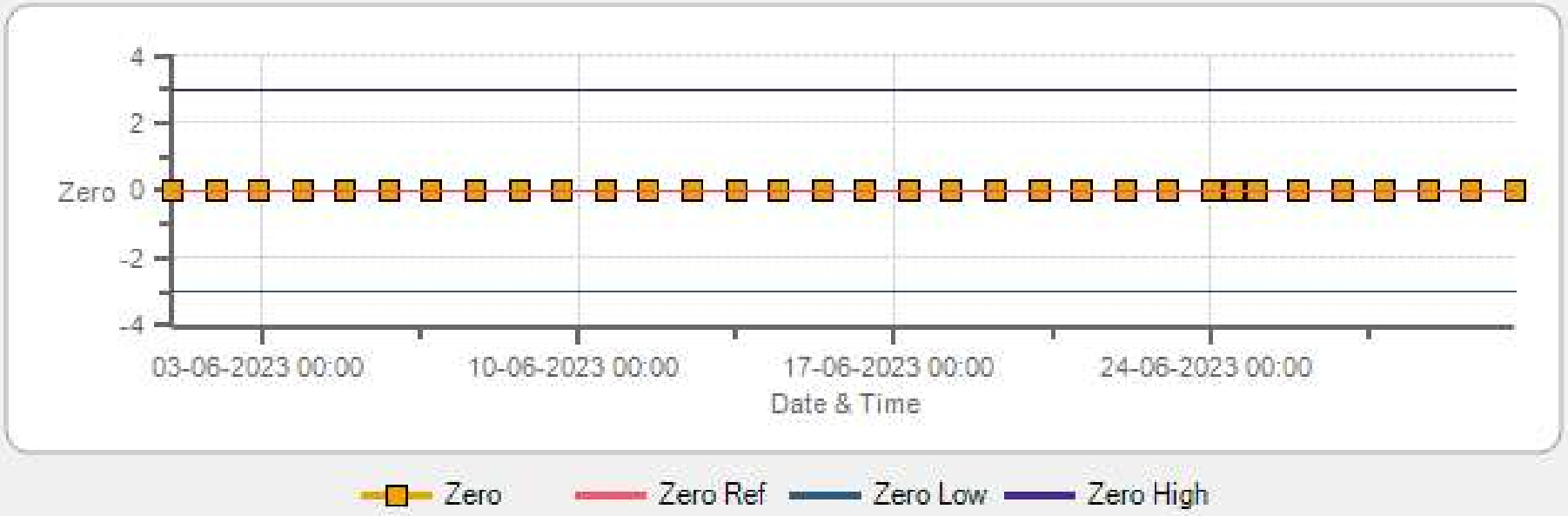
CH4[ppm] Calibration: Tamarack Monthly: 06-2023 Type: SpanAndZero - Zero



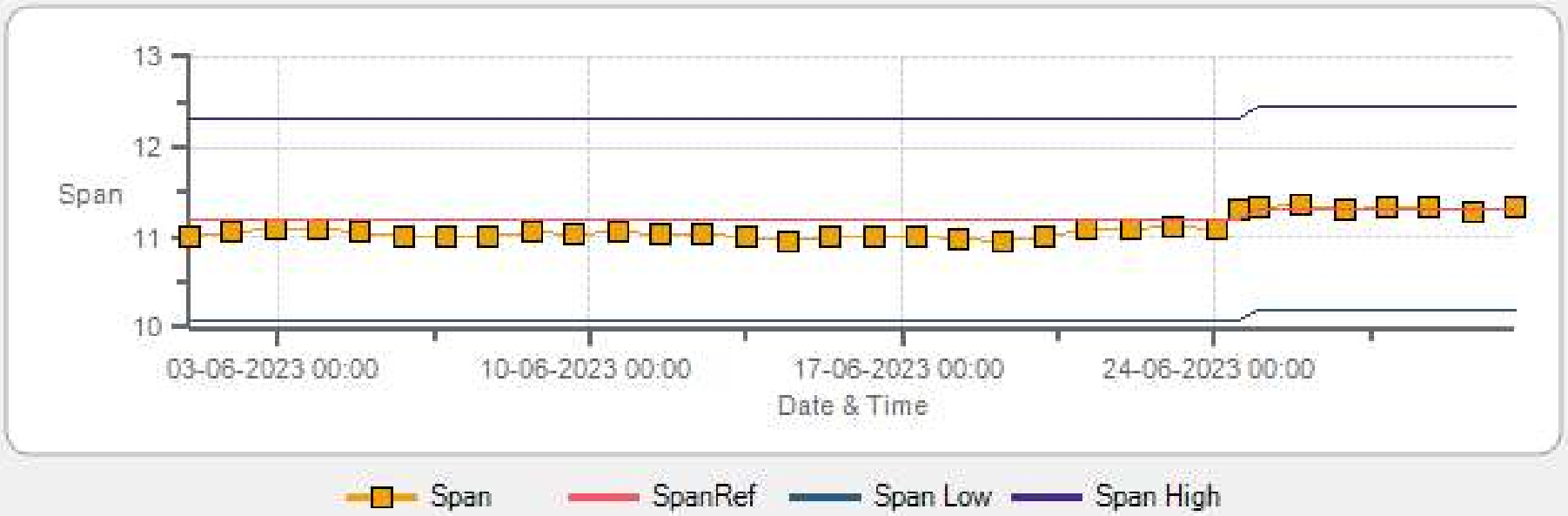
CH4[ppm] Calibration: Tamarack Monthly: 06-2023 Type: SpanAndZero - Span



NMHC[ppm] Calibration: Tamarack Monthly: 06-2023 Type: SpanAndZero - Zero



NMHC[ppm] Calibration: Tamarack Monthly: 06-2023 Type: SpanAndZero - Span



MULTI-POINT CALIBRATION RECORDS

SO2 Analyzer Calibration by Dilution

DATE:	23-Jun-2023	PREVIOUS CALIBRATION DATE:	11-May-2023
PARAMETER:	SO2	PREVIOUS CORRECTION FACTOR:	1.000
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	Tamarack	BAROMETRIC (mBar):	938
PURPOSE	Routine	START TIME (MST):	10:16
PERFORMED BY:	Alex Yakupov	END TIME (MST):	15:13

ANALYZER:

MAKE/MODEL	Thermo 43I-TLE	RANGE	500 ppb
SERIAL #	1180930031	FLOW (mL/min)	453
INITIAL		FINAL	
BKG/OFFSET	2.71	BKG/OFFSET	2.85
COEF/SLOPE	1	COEF/SLOPE	0.995
Expected (reference) Value	189.2	Expected (reference) Value	189.2

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010	MODEL:	T701
ID:	17100415	ID:	132
MFC CALIBRATION DATE:	12-Apr-2023	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	LL 127895	HIGH ID	n/a
CONC (ppm):	50.40	EXPIRY DATE	n/a
CYLINDER (psi):	1300	LOW ID	n/a
EXPIRY DATE	27-Oct-2030	EXPIRY DATE	n/a

CALIBRATION PARAMETERS:

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

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

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

CALIBRATION:

FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
			ACTUAL	INDICATED		Initial	Final
DILUENT	GAS	TOTAL		Initial	Final		
5000		5000	0.00	-0.1	0		
4961	37.20	4998	375.13	373.4	376	1.004	0.998
4982	17.60	5000	177.41	n/a	176.7	n/a	1.004
4990	8.80	4999	88.72	n/a	87.7	n/a	1.012

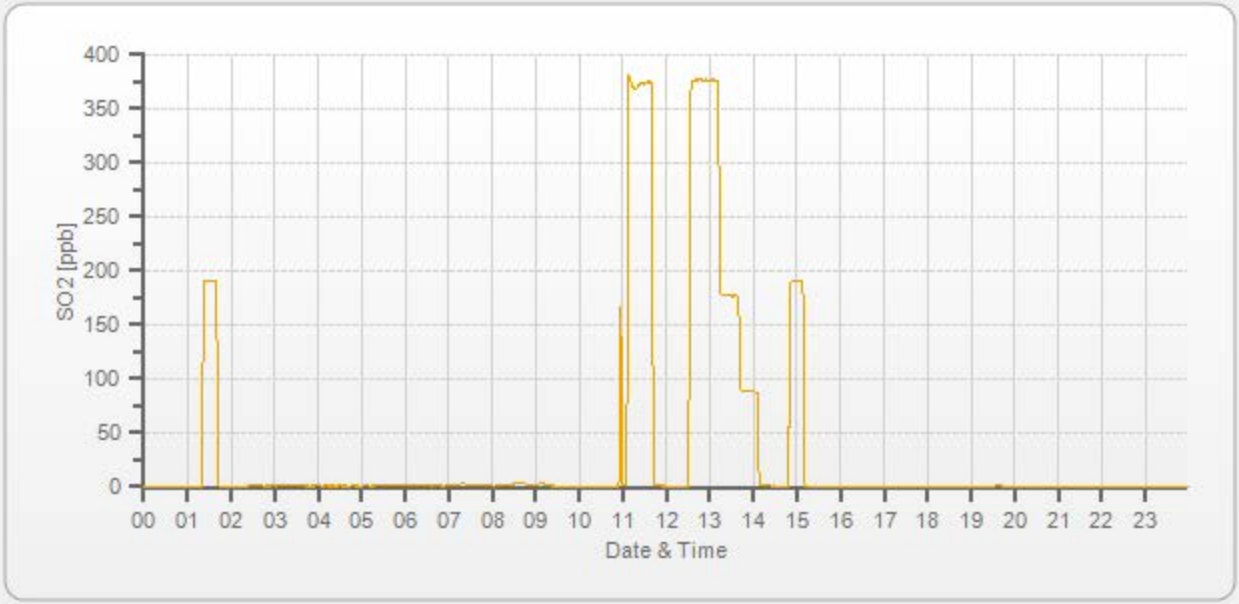
LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.003	-0.1%

COMMENTS:

Sample inlet filter was changed.

SO2[ppb] Station: Tamarack Daily: 23-06-2023 Type: AVG 1 Min. [1 Min.]



H2S Analyzer Calibration by Dilution

DATE:	23-Jun-2023	PREVIOUS CALIBRATION DATE:	11-May-2023
PARAMETER:	H2S	PREVIOUS CORRECTION FACTOR:	0.993
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	Tamarack	BAROMETRIC (mBar):	938
PURPOSE	Routine	START TIME (MST):	10:14
PERFORMED BY:	Alex Yakupov	END TIME (MST):	15:13

ANALYZER:

MAKE/MODEL	Thermo 450i	RANGE	100 ppb
SERIAL #	CM 17360005	FLOW (mL/min)	907
INITIAL		FINAL	
BKG/OFFSET	35	BKG/OFFSET	35.3
COEF/SLOPE	0.813	COEF/SLOPE	0.802
Expected (reference) Value	44.4	Expected (reference) Value	45.1

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010 D	MODEL:	T701
ID:	11900613	ID:	134
MFC CALIBRATION DATE:	12-Apr-2023	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	EY 0002287	HIGH ID	n/a
CONC (ppm):	10.10	EXPIRY DATE	n/a
CYLINDER (psi):	600	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	0.3	0		
7442	57.90	7500	77.97	81.1	77.9	0.965	1.001
7472	28.20	7500	37.98	n/a	37.6	n/a	1.010
7486	14.10	7500	18.99	n/a	18.6	n/a	1.021

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.000	-0.2%

COMMENTS:

Sample inlet filter was changed.


H2S[ppb] Station: Tamarack Daily: 23-06-2023 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:

				ANALYZER:			
DATE:	23-Jun-2023	PREVIOUS CALIBRATION DATE:	11-May-2023	MAKE/MODEL:	Thermo 42i	PREVIOUS CF.	
CLIENT:	LICA	TEMPERATURE (°C):	22.0	SERIAL #:	1180930028	NOx	1.000
LOCATION:	Tamarack	BAROMETRIC (mBar):	938	FLOW (mL/min)	815	NO	1.001
PURPOSE	Routine	START TIME (MST):	10:17	RANGE (ppb)	500	NO2	1.002
PERFORMED BY:	Alex Yakupov	END TIME (MST):	17:09	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):	1300		LOW ID:	n/a
MFC CALIBRATION DATE:	12-Apr-2023	OXIDIZER ID:	n/a	EXPIRY DATE	27-Oct-2030		LOW EXPIRY:	n/a

CALIBRATION SETTINGS:

INITIAL	NOx	NO	NO2	FINAL	NOx	NO	NO2
BKG/OFFSET:	2	1.8	n/a	BKG/OFFSET:	2.1	2	n/a
SLOPE/COEF/CE:	1.009	1.033	1	SLOPE/COEF/CE:	1.009	1.06	1

EXPECTED (REFERENCE) VALUE:

INITIAL	NOx	NO	NO2	FINAL	NOx	NO	NO2
	275.4	1.7	273.8		277.0	2.0	275.0

CALIBRATION PARAMETERS:

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

NO/NOx CALIBRATION:

FLOW RATE			CONCENTRATION (ppb)									CORRECTION FACTOR (CF.)					
(mL/min)			CALCULATED			INITIAL INDICATED			FINAL INDICATED			INITIAL			FINAL		
DILUENT	GAS	TOTAL	NO	NOx	NO2	NO	NOx	NO2	NO	NOx	NO2	NO	NOx	NO2	NO	NOx	NO2
5000		5000	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0						
4961	37.20	4998	380.3	384.1	3.7	369.4	373.2	3.8	379.9	383.7	3.8	1.030	1.029		1.001	1.001	
4982	17.60	5000	179.9	181.6	1.8	n/a	n/a	n/a	179.8	182.0	2.1	n/a	n/a		1.000	0.998	
4990	8.80	4999	90.0	90.8	0.9	n/a	n/a	n/a	90.9	89.9	1.0	n/a	n/a		0.990	1.010	

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	380.0	383.7	3.7				
AS-FOUND HIGH	37.20	4998	235	127.3	383.0	255.7	252.7	252	1.003	99.72%
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	259.2	383.5	124.3	120.8	120.6	1.002	99.83%
LOW	37.20	4998	40	330.4	383.9	53.5	49.6	49.8	0.996	100.40%
NO2 adjustment not required.									AVERAGE:	99.99%

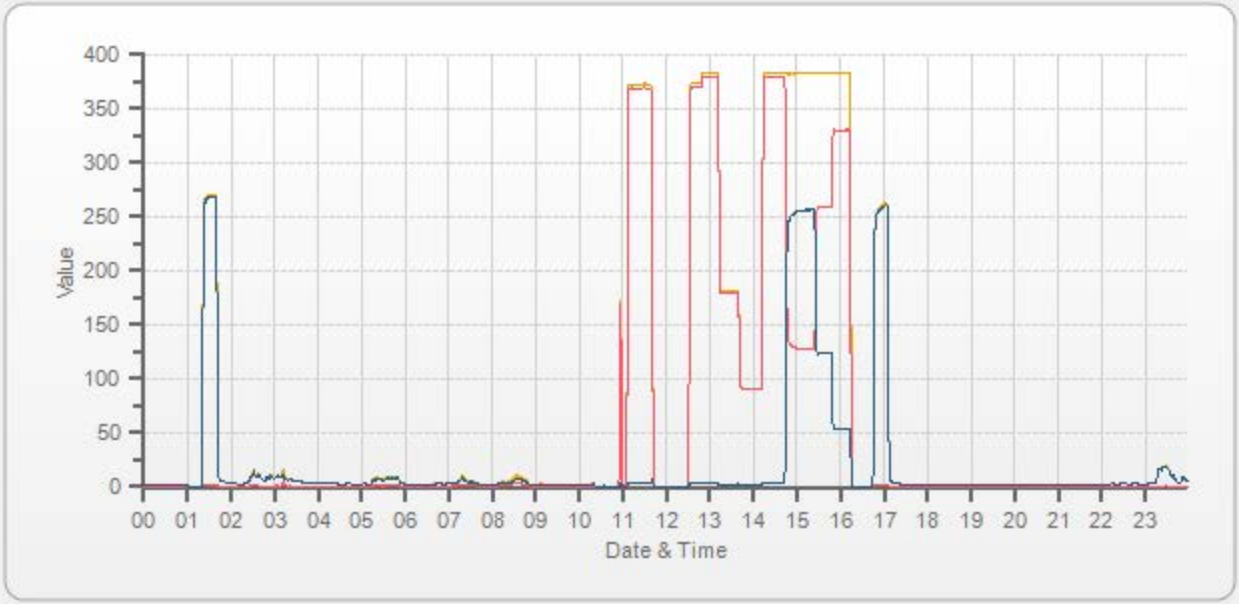
LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
NO	1.000	0.998	0.09%
NOx	1.000	1.000	-0.04%
NO2	1.000	0.996	0.08%

COMMENTS:

Sample inlet filter was changed.

Station: Tamarack Daily: 23-06-2023 Type: AVG 1 Min. [1 Min.]



Ozone Calibration by Photometer (Varying UV Lamp)

DATE:	24-Jun-2023	PREVIOUS CALIBRATION DATE:	12-May-2023
PARAMETER:	O3	PREVIOUS CORRECTION FACTOR:	1.001
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	Tamarack	BAROMETRIC (mBar):	938
PURPOSE	Routine	START TIME (MST):	08:45
PERFORMED BY:	Alex Yakupov	END TIME (MST):	13:08

ANALYZER:

MAKE/MODEL	Thermo 49iQ	RANGE	500 ppb
SERIAL #	1202068570	FLOW (mL/min)	1360
INITIAL		FINAL	
BKG/OFFSET	4.8	BKG/OFFSET	4.9
COEF/SLOPE	1.033	COEF/SLOPE	1.037
Expected (reference) Value	440	Expected (reference) Value	437

CALIBRATION SYSTEM:

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

CALIBRATION PARAMETERS:

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

CALIBRATION:

FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
			ACTUAL	INDICATED		Initial	Final
DILUENT	GAS	TOTAL		Initial	Final		
5000		5000	0.0	0.4	0.0		
5000		5000	378.0	376.2	379.7	1.006	0.996
5000		5000	180.0	n/a	181.9	n/a	0.990
5000		5000	61.0	n/a	62.0	n/a	0.984

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.004	0.1%

COMMENTS:

Sample inlet filter was changed.


O3[ppb] Station: Tamarack Daily: 24-06-2023 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:	24-Jun-2023	PREVIOUS CALIBRATION DATE:	12-May-2023
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	Tamarack	BAROMETRIC (mBar):	938
PURPOSE	Routine	START TIME (MST):	08:44
PERFORMED BY:	Alex Yakupov	END TIME (MST):	13:08

ANALYZER:

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

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:		CALIBRATION GAS:			FLOWMETERS (if applicable):	
MAKE:	SABIO	MAKE:	Teledyne	CYLINDER ID:	LL 23593		HIGH ID:	n/a
MODEL:	2010	MODEL:	T701	CH_4/C_3H_8 (ppm):	603.0	204.0	HIGH EXPIRY:	n/a
ID:	17100415	ID:	132	CYLINDER (psi):	1100		LOW ID:	n/a
MFC CALIBRATION DATE:	12-Apr-2023	OXIDIZER ID:	115	EXPIRY DATE	18-Aug-2029		LOW EXPIRY:	n/a

CALIBRATION PARAMETERS:

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

EXPECTED (REFERENCE) VALUE:

INITIAL	CH4	NMHC	THC	FINAL	CH4	NMHC	THC
	9.86	11.19	21.05		9.94	11.32	21.26

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	14.26	13.29	27.55	14.53	13.52	28.05	1.018	1.016	1.017	0.999	0.999	0.999
3063	37.30	3100	7.26	6.75	14.01	n/a	n/a	n/a	7.27	6.73	14.00	n/a	n/a	n/a	0.998	1.003	1.000
3081	18.60	3100	3.62	3.37	6.98	n/a	n/a	n/a	3.64	3.36	7.00	n/a	n/a	n/a	0.994	1.002	0.998

LINEAR REGRESSION ANALYSIS:

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

Comments:

Sample inlet filter was changed. A new span gas cylinder was installed.

Use Zero Chrom? **Yes**

Station: Tamarack Daily: 24-06-2023 Type: AVG 1 Min. [1 Min.]

Thermo 5030 SHARP Monitor Monthly Check

Date:	June 24, 2023	**Performed By/Reviewer:**	Alex Yakupov / Chris Wesson
Company:	LICA	**Start Time (mst):**	13:19
Station Name/Location:	Tamarack	**End Time (mst):**	14:31
Previous Audit Date:	May 12, 2023	**Calibration Purpose:**	routine monthly
Parameter:	PM 2.5	**Weather Conditions:**	Mainly sunny

SHARP Information and Status:

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

Reference Standards:

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

As found temperature and pressure:

	Tolerance +/- 4°C		**Tolerance +/- 13.33 hPa**
SHARP T1 °C:	25.0	**SHARP P3 (hPa):**	938.000
Reference °C:	25.6	**Reference (hPa):**	939.000
Difference °C:	0.6	**Difference (hPa) :**	-1.000

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

	Tolerance +/- 4°C		**Tolerance +/- 13.33 hPa**
SHARP T1 °C:	25.0	**SHARP P3 (hPa):**	938.000
Reference °C:	25.6	**Reference (hPa):**	939.000
Difference °C:	0.6	**Difference :**	-1.000

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 (%)	47.20	**Reference AirFlow (l/min)**	16.64
		Difference (l/min)	-0.03

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 (%)	52.50	**Reference AirFlow (l/min)**	16.64
		Difference (l/min)	-0.03

Inlet Assembly:

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

Comments:

Leak check: 16.64 vs 16.54, 0.10 < 0.80 lpm, passed.

Meteorological System Checklist

Date:	June 24, 2023		
Technician:	Alex Yakupov		
Station:	Tamarack / Audit time: 14:32 - 16:10		
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	15:12 - water test. Response is timely and accurate.
Is the housing clean?	yes	
Is the area around the housing clean and free from obstacles?	yes	

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

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

AMBIENT TEMPERATURE SENSOR CHECK

Parameter:	Temperature @ 2 metres
Reference Thermometer ID:	Fisher / FB 61291/ #130168457/ Mar 20, 2024
Reference Temperature (^{o}C):	23.5
Station - Ambient Temperature (^{o}C):	23.1
Temperature Difference (^{o}C):	0.7

BAROMETRIC PRESSURE SENSOR CHECK

Reference Barometer ID:	Fisher / FB 61291/ #130168457/ Mar 20, 2024	
Reference Pressure - Units/Reading:	millibar	938
Station Pressure - Units/Reading:	millibar	937
Pressure Tolerance +/- 15% of error:	797 - 1079	0.11%

RELATIVE HUMIDITY (HYGROMETER) SENSOR CHECK

Reference Hygrometer ID:	Vaisala HMP76B #T1640130, Exp. Date: Jun 14, 2023	
Reference Hygrometer % RH- Reading:	32.60	
Station Hygrometer % RH- Reading:	33.40	
RH Tolerance +/- 15% of difference:	27.71 - 37.49	-2.5%

ANEMOMETER - WIND SPEED & WIND DIRECTION SENSOR CHECK

WIND SPEED		WIND DIRECTION	
Previous check date:	May 12, 2023	Previous check date:	May 12, 2023
Wind Speed Observed (kph):	0 to 10	Wind Direction Observed:	SW
Wind speed on Data Logger (kph):	8.7	Wind Direction on Data Logger:	SW
	Annual audit: Jul 26, 2022	Wind Direction Pass/Fail?:	Pass

Comments

Station (Trailer) temperature vs Reference gauge temperature: 22.2 vs 22.4 degrees, difference = 0.0 => 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

JUNE 2023

Ambient Air Monitoring Calibration Report

- ST. LINA STATION-

CAL-LICA-202306-01250

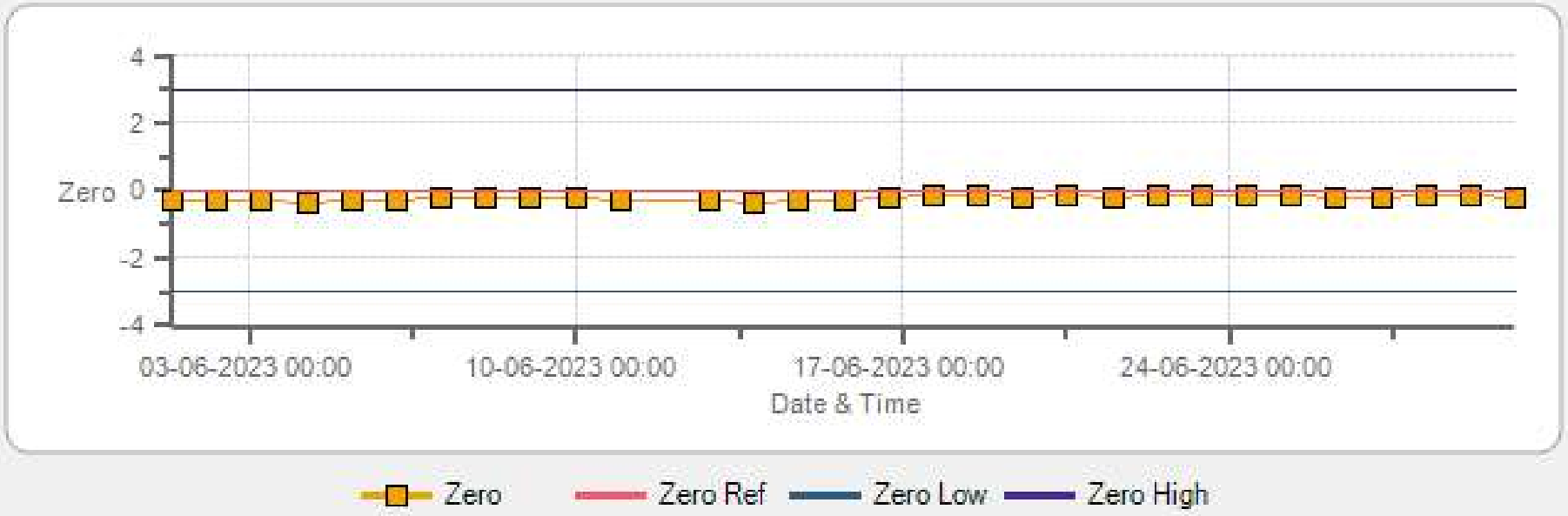
Station Operation and Maintenance:
Bureau Veritas Canada

Data Validation and Report:
LICA / Bureau Veritas Canada

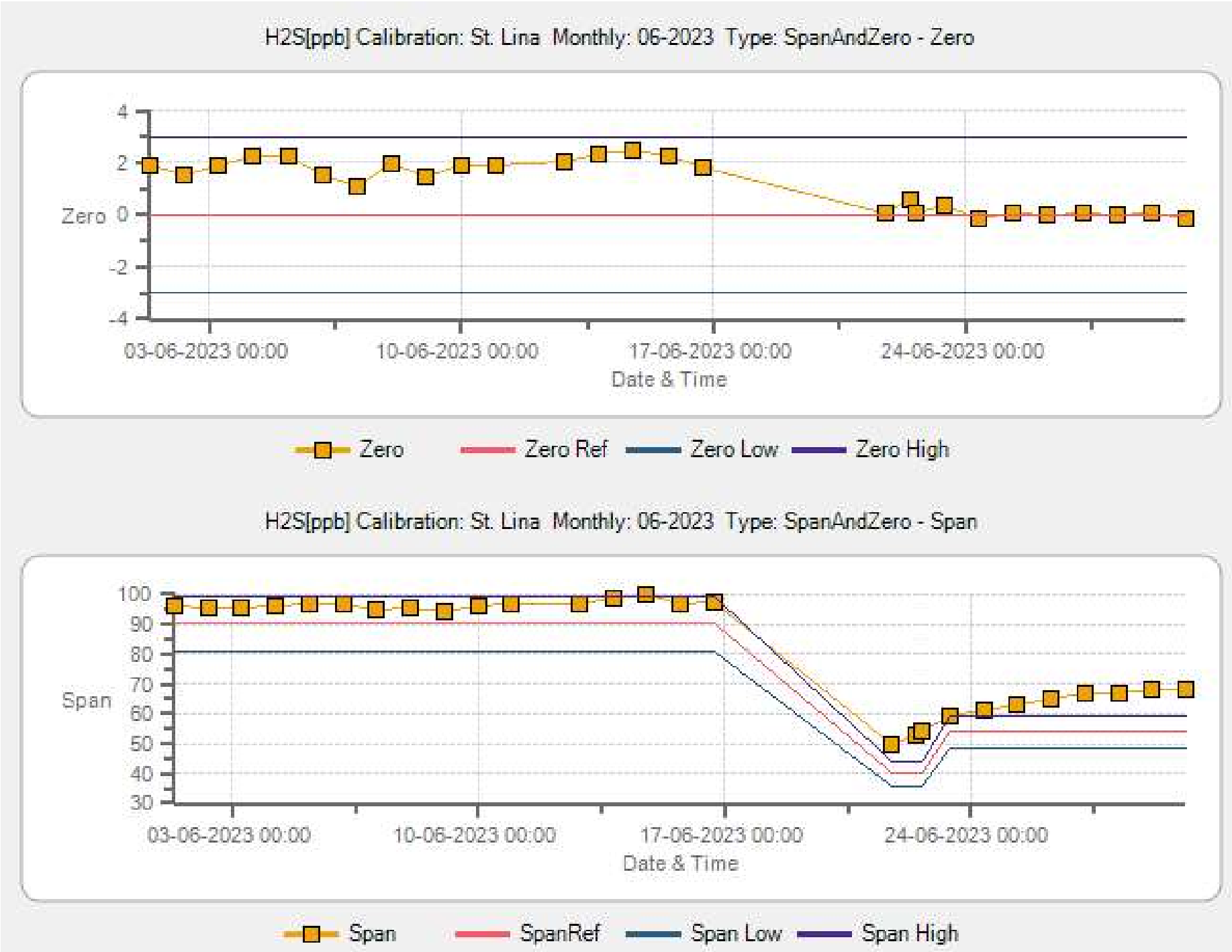
July 19, 2023

DAILY INTERNAL ZERO-SPAN CALIBRATION RECORDS

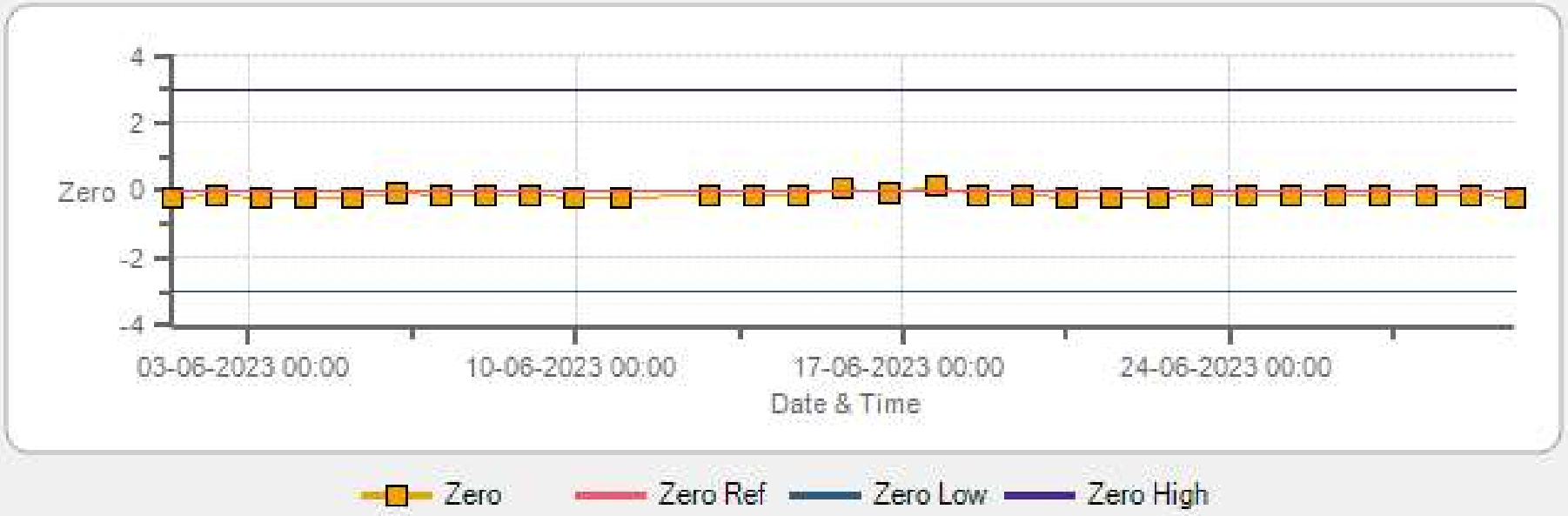
SO2[ppb] Calibration: St. Lina Monthly: 06-2023 Type: SpanAndZero - Zero



SO2[ppb] Calibration: St. Lina Monthly: 06-2023 Type: SpanAndZero - Span

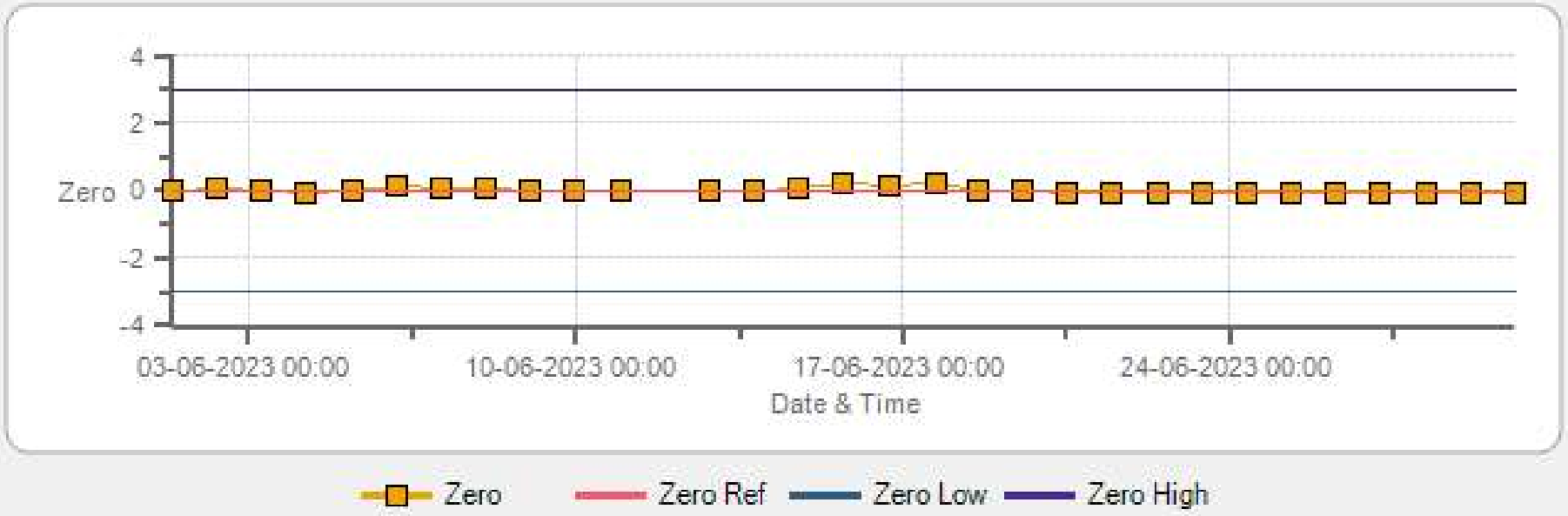

H2S[ppb] Calibration: St. Lina Monthly: 06-2023 Type: SpanAndZero - Zero
4
2
Zero 0
-2
-4
03-06-2023 00:00
10-06-2023 00:00
17-06-2023 00:00
24-06-2023 00:00
Date & Time
Zero
Zero Ref
Zero Low
Zero High
H2S[ppb] Calibration: St. Lina Monthly: 06-2023 Type: SpanAndZero - Span
100
90
80
70
Span 60
50
40
30
03-06-2023 00:00
10-06-2023 00:00
17-06-2023 00:00
24-06-2023 00:00
Date & Time
Span
SpanRef
Span Low
Span High

NOX[ppb] Calibration: St. Lina Monthly: 06-2023 Type: SpanAndZero - Zero

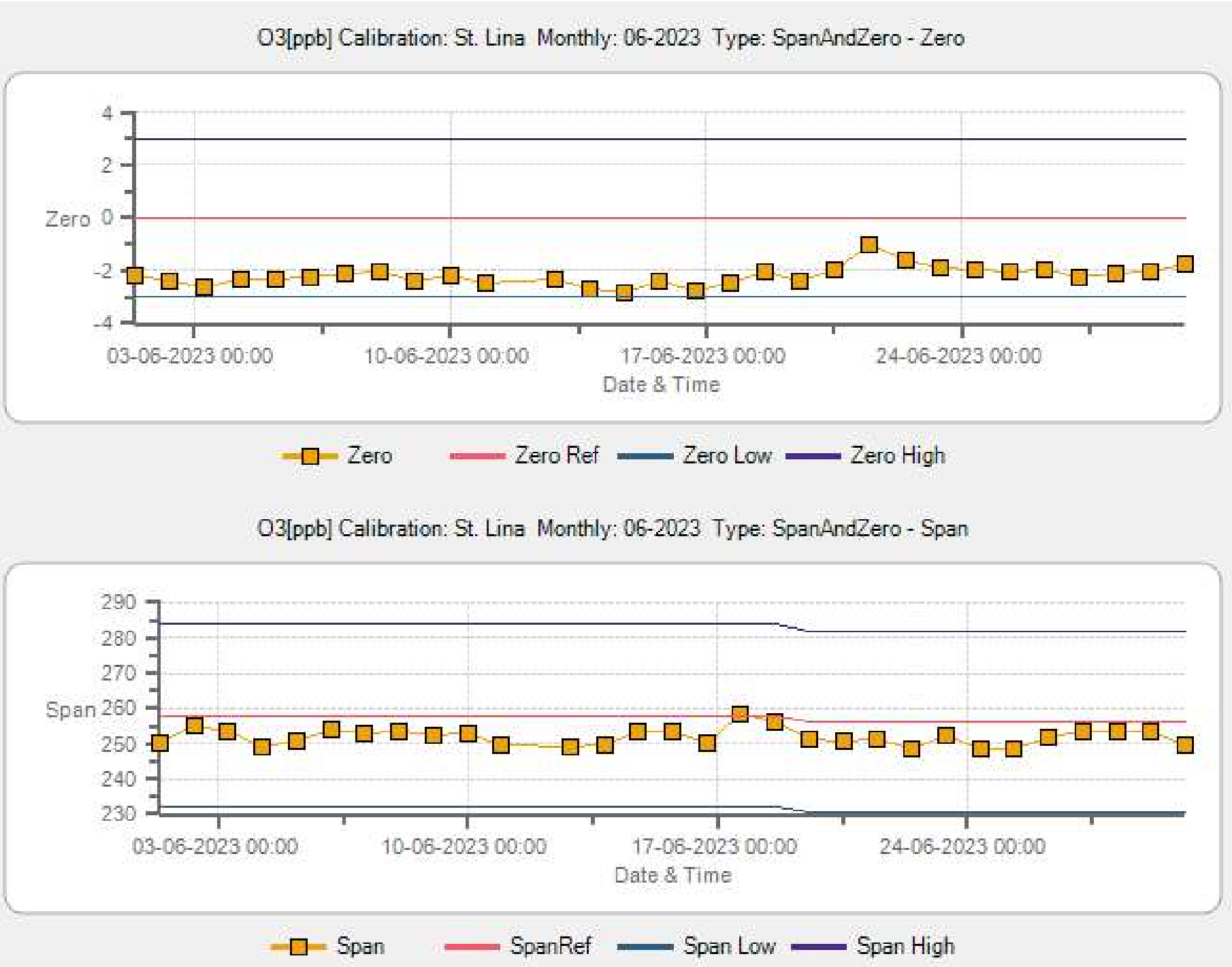


NOX[ppb] Calibration: St. Lina Monthly: 06-2023 Type: SpanAndZero - Span

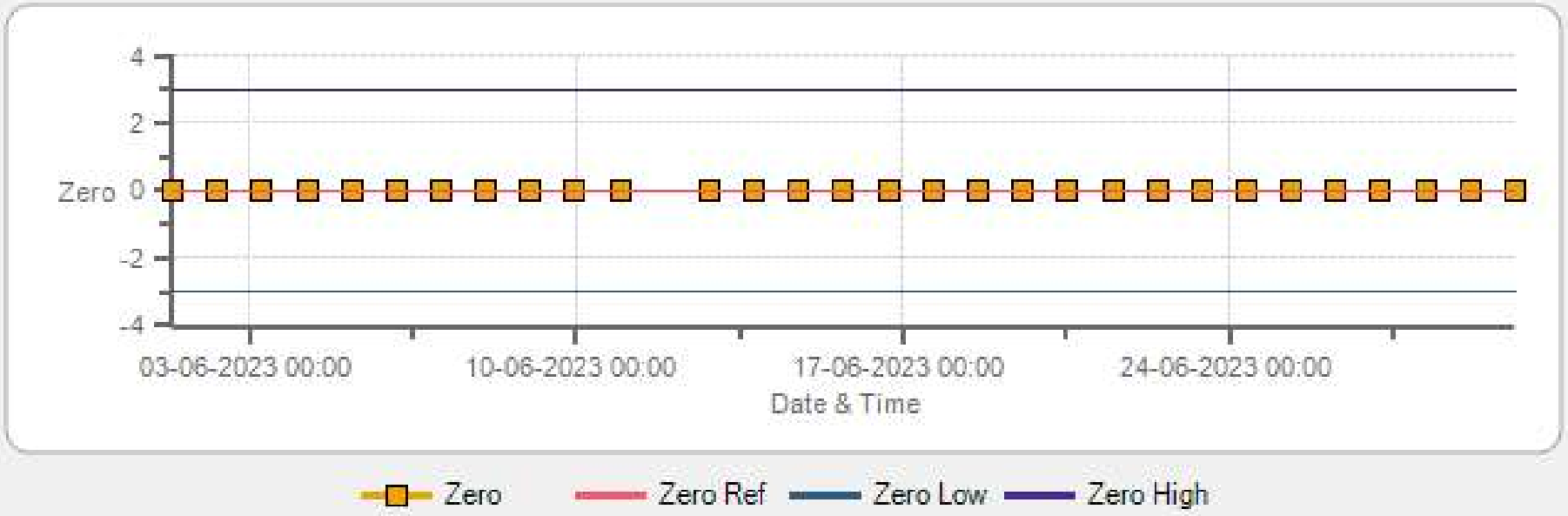
NO2[ppb] Calibration: St. Lina Monthly: 06-2023 Type: SpanAndZero - Zero



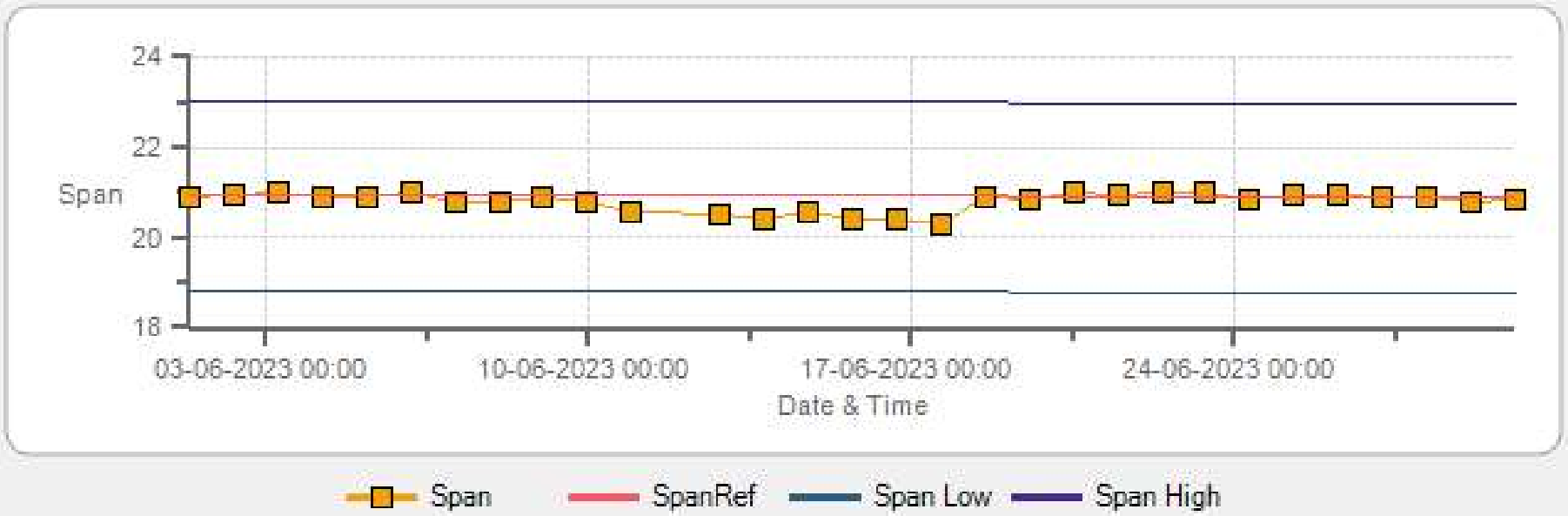
NO2[ppb] Calibration: St. Lina Monthly: 06-2023 Type: SpanAndZero - Span


O3[ppb] Calibration: St. Lina Monthly: 06-2023 Type: SpanAndZero - Zero
Zero
4
2
0
-2
-4
03-06-2023 00:00
10-06-2023 00:00
17-06-2023 00:00
24-06-2023 00:00
Date & Time
Zero
Zero Ref
Zero Low
Zero High
O3[ppb] Calibration: St. Lina Monthly: 06-2023 Type: SpanAndZero - Span
Span
290
280
270
260
250
240
230
03-06-2023 00:00
10-06-2023 00:00
17-06-2023 00:00
24-06-2023 00:00
Date & Time
Span
SpanRef
Span Low
Span High

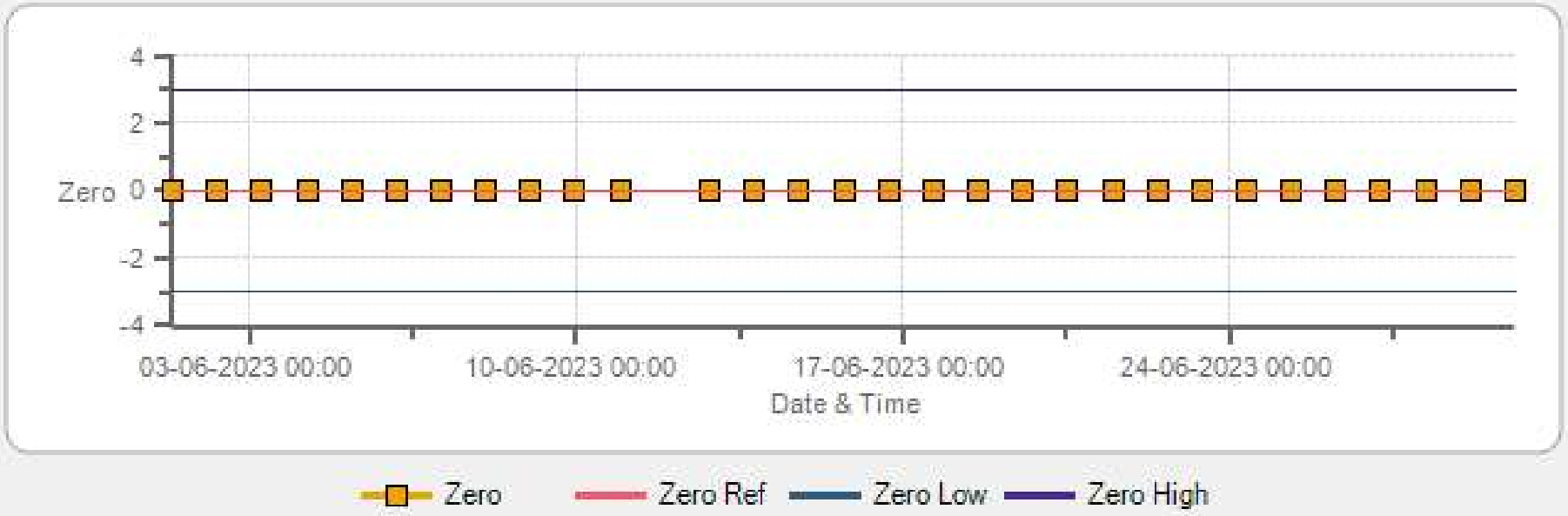
THC55[ppm] Calibration: St. Lina Monthly: 06-2023 Type: SpanAndZero - Zero



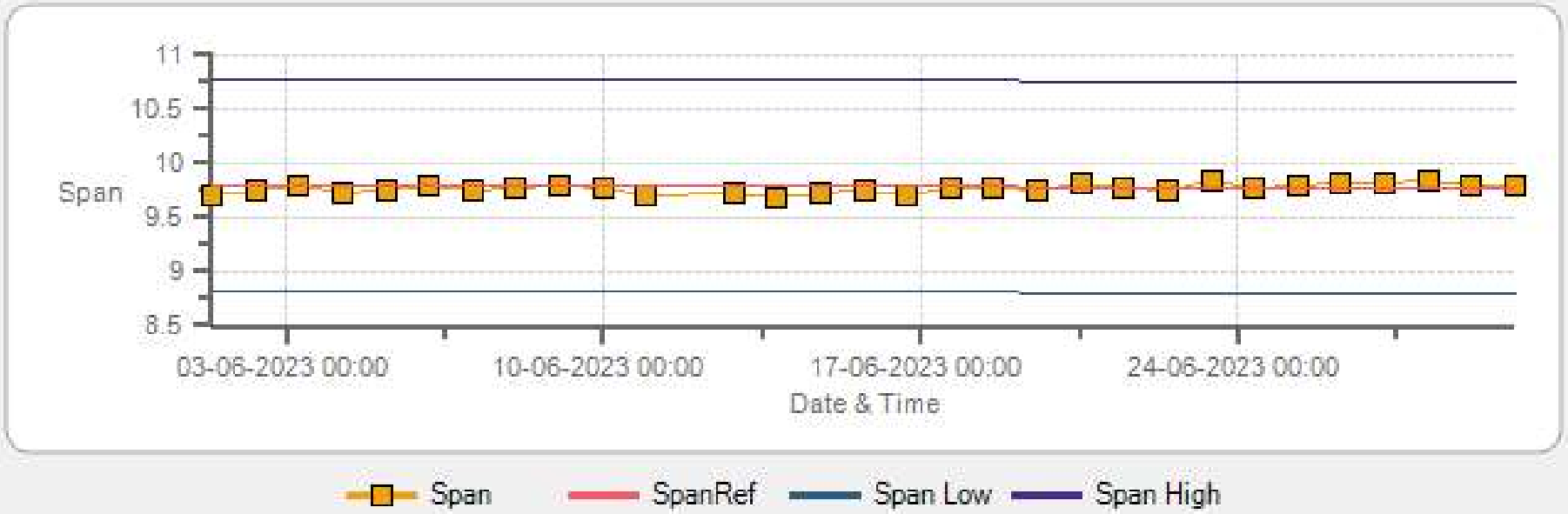
THC55[ppm] Calibration: St. Lina Monthly: 06-2023 Type: SpanAndZero - Span

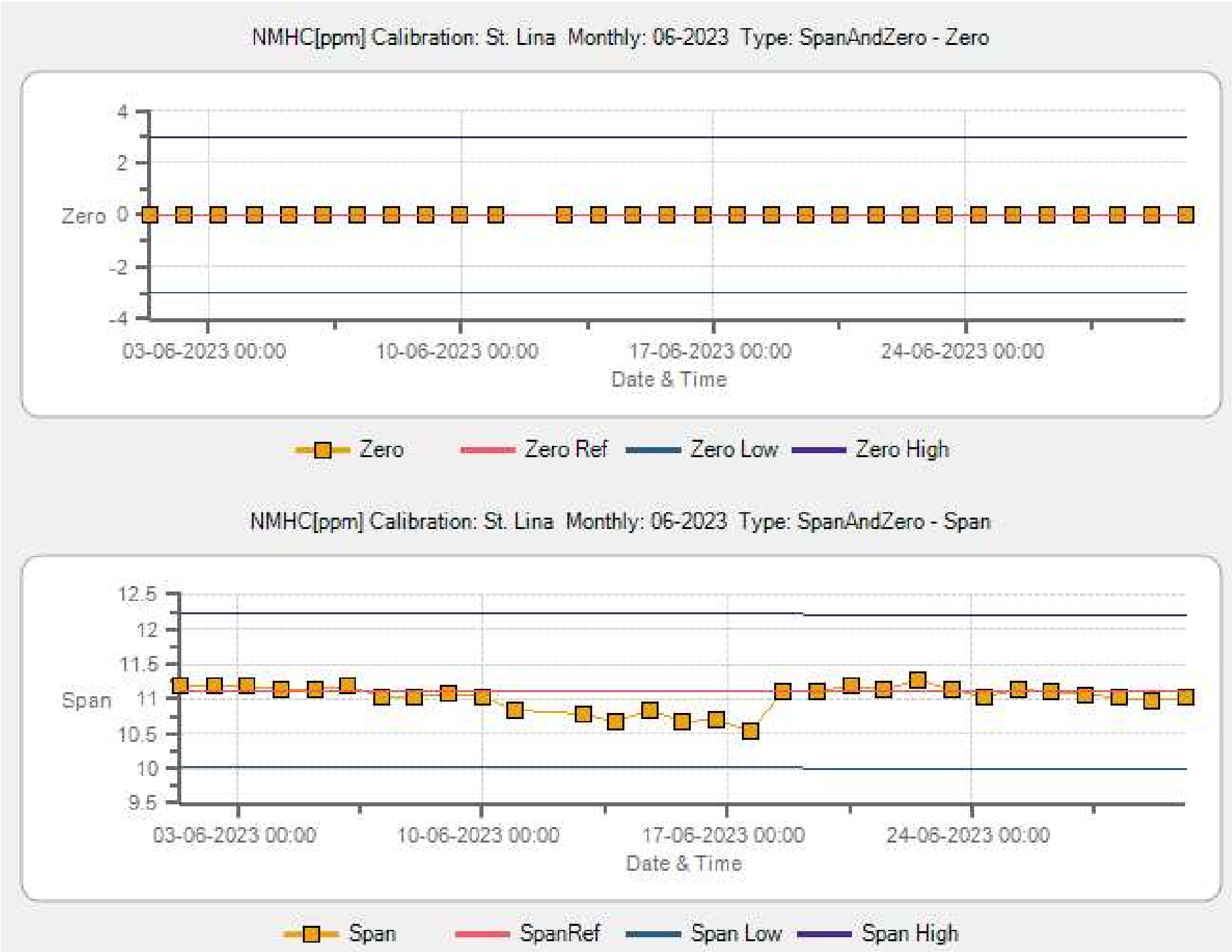


CH4[ppm] Calibration: St. Lina Monthly: 06-2023 Type: SpanAndZero - Zero



CH4[ppm] Calibration: St. Lina Monthly: 06-2023 Type: SpanAndZero - Span




NMHC[ppm] Calibration: St. Lina Monthly: 06-2023 Type: SpanAndZero - Zero
4
2
Zero 0
-2
-4
03-06-2023 00:00
10-06-2023 00:00
17-06-2023 00:00
24-06-2023 00:00
Date & Time
Zero
Zero Ref
Zero Low
Zero High
NMHC[ppm] Calibration: St. Lina Monthly: 06-2023 Type: SpanAndZero - Span
12.5
12
11.5
Span 11
10.5
10
9.5
03-06-2023 00:00
10-06-2023 00:00
17-06-2023 00:00
24-06-2023 00:00
Date & Time
Span
SpanRef
Span Low
Span High

MULTI-POINT CALIBRATION RECORDS

SO2 Analyzer Calibration by Dilution

DATE:	17-Jun-2023	PREVIOUS CALIBRATION DATE:	06-May-2023
PARAMETER:	SO2	PREVIOUS CORRECTION FACTOR:	0.999
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	St. Lina	BAROMETRIC (mBar):	912
PURPOSE	Routine	START TIME (MST):	10:27
PERFORMED BY:	Alex Yakupov	END TIME (MST):	15:44

ANALYZER:

MAKE/MODEL	Thermo 43I-TLE	RANGE	500 ppb
SERIAL #	1180930030	FLOW (mL/min)	427
INITIAL		FINAL	
BKG/OFFSET	4.92	BKG/OFFSET	4.78
COEF/SLOPE	1.197	COEF/SLOPE	1.183
Expected (reference) Value	339	Expected (reference) Value	334

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010	MODEL:	T701
ID:	17100415	ID:	132
MFC CALIBRATION DATE:	12-Apr-2023	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	LL 127895	HIGH ID	n/a
CONC (ppm):	50.40	EXPIRY DATE	n/a
CYLINDER (psi):	1300	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	-0.3	0		
4961	37.20	4998	375.13	378.8	376	0.990	0.998
4982	17.60	5000	177.41	n/a	176.3	n/a	1.006
4990	8.80	4999	88.72	n/a	87.6	n/a	1.013

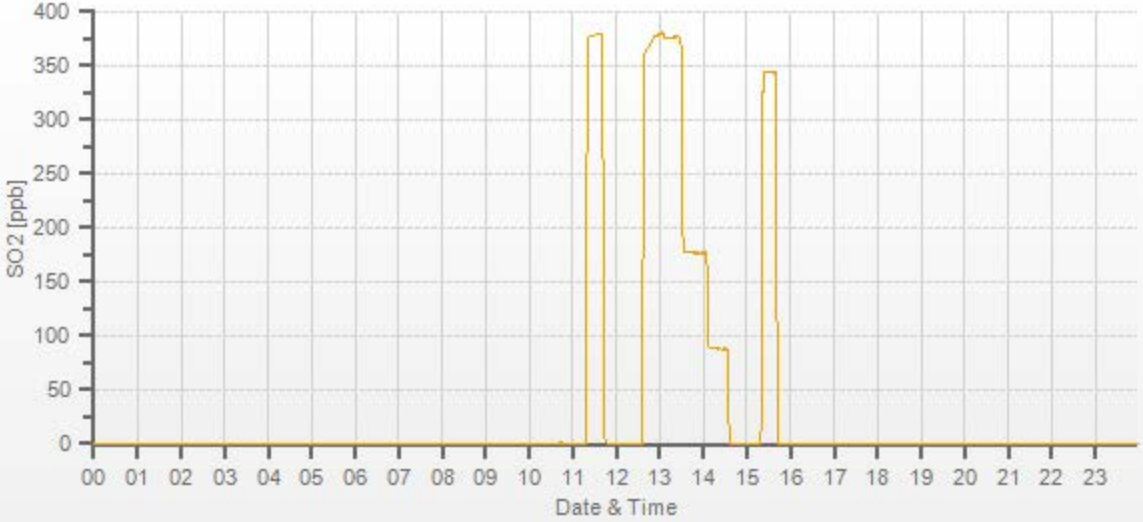
LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.003	-0.2%

COMMENTS:

Sample inlet filter was changed.

SO2[ppb] Station: St. Lina Daily: 17-06-2023 Type: AVG 1 Min. [1 Min.]



H2S Analyzer Calibration by Dilution

DATE:	17-Jun-2023	PREVIOUS CALIBRATION DATE:	06-May-2023
PARAMETER:	H2S	PREVIOUS CORRECTION FACTOR:	0.995
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	St. Lina	BAROMETRIC (mBar):	912
PURPOSE	Removal/Shut-down	START TIME (MST):	10:28
PERFORMED BY:	Alex Yakupov	END TIME (MST):	12:27

ANALYZER:

MAKE/MODEL	Thermo 450i	RANGE	100 ppb
SERIAL #	CM18010058	FLOW (mL/min)	778
INITIAL		FINAL	
BKG/OFFSET	55.6	BKG/OFFSET	n/a
COEF/SLOPE	1	COEF/SLOPE	n/a
Expected (reference) Value	90.2	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:	12-Apr-2023	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	EY 0002287	HIGH ID	n/a
CONC (ppm):	10.10	EXPIRY DATE	n/a
CYLINDER (psi):	700	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:	10:42	SO2 Conc (ppb)	380
END TIME:	10:57	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	1.9	n/a		
7442	57.90	7500	77.97	81.7	n/a	0.977	n/a
7472	28.20	7500	37.98	40.4	n/a	0.986	n/a
7486	14.10	7500	18.99	20.9	n/a	0.999	n/a

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.025	1.7%

COMMENTS:

Shutdown calibration was completed to repair a sample pump.

H2S[ppb] Station: St. Lina Daily: 17-06-2023 Type: AVG 1 Min. [1 Min.]

H2S Analyzer Calibration by Dilution

DATE:	18-Jun-2023	PREVIOUS CALIBRATION DATE:	n/a
PARAMETER:	H2S	PREVIOUS CORRECTION FACTOR:	n/a
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	St. Lina	BAROMETRIC (mBar):	909
PURPOSE	Install/Post-Repair	START TIME (MST):	13:53
PERFORMED BY:	Alex Yakupov	END TIME (MST):	18:18

ANALYZER:

MAKE/MODEL	Thermo 450i	RANGE	100 ppb
SERIAL #	CM18010058	FLOW (mL/min)	813
INITIAL		FINAL	
BKG/OFFSET	n/a	BKG/OFFSET	57.1
COEF/SLOPE	n/a	COEF/SLOPE	0.977
Expected (reference) Value	n/a	Expected (reference) Value	90

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010 D	MODEL:	T701
ID:	11900613	ID:	132
MFC CALIBRATION DATE:	12-Apr-2023	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	EY 0002287	HIGH ID	n/a
CONC (ppm):	10.10	EXPIRY DATE	n/a
CYLINDER (psi):	500	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:	13:54	SO2 Conc (ppb)	380
END TIME:	14:09	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	77.9	n/a	1.001
7472	28.20	7500	37.98	n/a	37.5	n/a	1.013
7486	14.10	7500	18.99	n/a	18.8	n/a	1.010

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	0.999	-0.2%

COMMENTS:

Shutdown calibration was completed to repair a sample pump. A new permeation device was installed. The EV will be updated in 72 hours. Parts used: KNF spare kit. Part NO: 204142

H2S[ppb] Station: St. Lina Daily: 18-06-2023 Type: AVG 1 Min. [1 Min.]

H2S Analyzer Calibration by Dilution

DATE:	22-Jun-2023	PREVIOUS CALIBRATION DATE:	n/a
PARAMETER:	H2S	PREVIOUS CORRECTION FACTOR:	n/a
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	St. Lina	BAROMETRIC (mBar):	920
PURPOSE	Install/Post-Repair	START TIME (MST):	11:09
PERFORMED BY:	Alex Yakupov	END TIME (MST):	14:51

ANALYZER:

MAKE/MODEL	Teledyne T100	RANGE	100 ppb
SERIAL #	1014	FLOW (mL/min)	527
INITIAL		FINAL	
BKG/OFFSET	n/a	BKG/OFFSET	12.8
COEF/SLOPE	n/a	COEF/SLOPE	1.016
Expected (reference) Value	n/a	Expected (reference) Value	54

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010 D	MODEL:	T701
ID:	11900613	ID:	132
MFC CALIBRATION DATE:	12-Apr-2023	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	EY 0002287	HIGH ID	n/a
CONC (ppm):	10.10	EXPIRY DATE	n/a
CYLINDER (psi):	500	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:	13:14	SO2 Conc (ppb)	380
END TIME:	13:29	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	37.6	n/a	1.010
7486	14.10	7500	18.99	n/a	18.4	n/a	1.032

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.004	-0.3%

COMMENTS:

Installation calibration was completed to replace a failed analyzer. Sample inlet filter was changed.


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

NOx Calibration by Dilution/Gas-Phase Titration

CALIBRATION:

DATE:	17-Jun-2023	PREVIOUS CALIBRATION DATE:	06-May-2023
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	St. Lina	BAROMETRIC (mBar):	912
PURPOSE	Routine	START TIME (MST):	10:30
PERFORMED BY:	Alex Yakupov	END TIME (MST):	17:41

ANALYZER:

MAKE/MODEL:	Thermo 42i	PREVIOUS CF.	
SERIAL #:	1180930029	NOx	1.001
FLOW (mL/min)	807	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):	1300		LOW ID:	n/a
MFC CALIBRATION DATE:	12-Apr-2023	OXIDIZER ID:	n/a	EXPIRY DATE	27-Oct-2030		LOW EXPIRY:	n/a

CALIBRATION SETTINGS:

INITIAL	NOx	NO	NO2	FINAL	NOx	NO	NO2
BKG/OFFSET:	4.4	4.2	n/a	BKG/OFFSET:	4.4	4.1	n/a
SLOPE/COEF/CE:	1.008	0.877	1	SLOPE/COEF/CE:	1.011	0.879	1

EXPECTED (REFERENCE) VALUE:

INITIAL	NOx	NO	NO2	FINAL	NOx	NO	NO2
	208.0	1.6	206.0		215.0	1.7	213.0

CALIBRATION PARAMETERS:

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

NO/NOx CALIBRATION:

FLOW RATE (mL/min)			CONCENTRATION (ppb)									CORRECTION FACTOR (CF.)					
			CALCULATED			INITIAL INDICATED			FINAL INDICATED			INITIAL			FINAL		
DILUENT	GAS	TOTAL	NO	NOx	NO2	NO	NOx	NO2	NO	NOx	NO2	NO	NOx	NO2	NO	NOx	NO2
5000		5000	0.0	0.0	0.0	-0.2	-0.2	0.0	0.0	0.0	0.0						
4961	37.20	4998	380.3	384.1	3.7	379.0	382.8	3.8	379.5	383.7	4.2	1.003	1.003		1.002	1.001	
4982	17.60	5000	179.9	181.6	1.8	n/a	n/a	n/a	179.6	181.7	2.1	n/a	n/a		1.002	1.000	
4990	8.80	4999	90.0	90.8	0.9	n/a	n/a	n/a	89.5	90.4	0.9	n/a	n/a		1.005	1.005	

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	379.4	383.4	4.0				
AS-FOUND HIGH	37.20	4998	240	130.9	384.3	253.4	248.5	249.4	0.996	100.36%
ADJUSTED HIGH	n/a	n/a	n/a	n/a	n/a	n/a	n/a	**n/a**	**n/a**	n/a
MID	37.20	4998	125	261.3	384.0	122.6	118.1	118.6	0.996	100.42%
LOW	37.20	4998	45	332.6	384.0	51.4	46.8	47.4	0.987	101.28%
NO2 adjustment not required.									AVERAGE:	100.69%

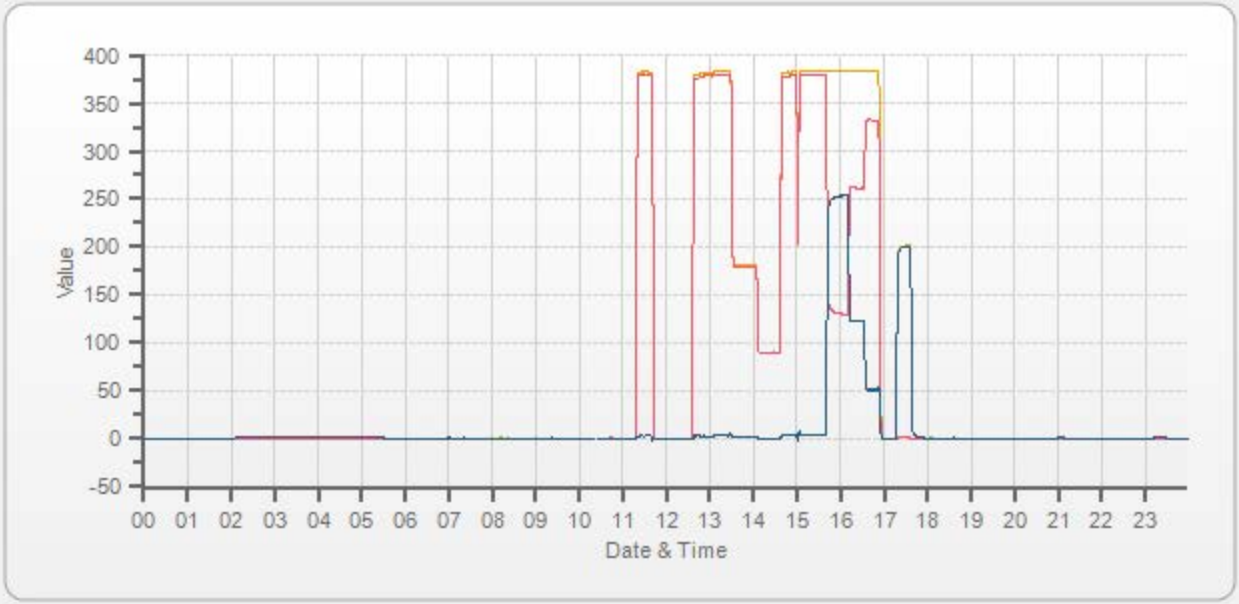
LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
NO	1.000	0.998	-0.02%
NOx	1.000	0.999	-0.02%
NO2	1.000	1.002	0.09%

COMMENTS:

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

Station: St. Lina Daily: 17-06-2023 Type: AVG 1 Min. [1 Min.]



Ozone Calibration by Photometer (Varying UV Lamp)

DATE:	18-Jun-2023	PREVIOUS CALIBRATION DATE:	05-May-2023
PARAMETER:	O3	PREVIOUS CORRECTION FACTOR:	0.999
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	St. Lina	BAROMETRIC (mBar):	909
PURPOSE	Routine	START TIME (MST):	10:16
PERFORMED BY:	Alex Yakupov	END TIME (MST):	14:26

ANALYZER:

MAKE/MODEL	Thermo 49iQ	RANGE	500 ppb
SERIAL #	12208316586	FLOW (mL/min)	1.32
INITIAL		FINAL	
BKG/OFFSET	1	BKG/OFFSET	0.6
COEF/SLOPE	1.021	COEF/SLOPE	1.021
Expected (reference) Value	258	Expected (reference) Value	256

CALIBRATION SYSTEM:

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

CALIBRATION PARAMETERS:

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

CALIBRATION:

FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
			ACTUAL	INDICATED		Initial	Final
DILUENT	GAS	TOTAL		Initial	Final		
5000		5000	0.0	-0.1	0.0		
5000		5000	378.0	376.3	377.4	1.004	1.002
5000		5000	180.0	n/a	180.0	n/a	1.000
5000		5000	61.0	n/a	61.4	n/a	0.993

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	0.998	0.1%

COMMENTS:

Sampe inlet filter was changed.


O3[ppb] Station: St. Lina Daily: 18-06-2023 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:	18-Jun-2023	PREVIOUS CALIBRATION DATE:	06-May-2023
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	St. Lina	BAROMETRIC (mBar):	909
PURPOSE	Routine	START TIME (MST):	10:17
PERFORMED BY:	Alex Yakupov	END TIME (MST):	14:26

ANALYZER:

VALUE	MAKE/MODEL	SERIAL	FLOW (mL/min)
	Thermo 55i	1180030034	1180
PARAMETER:	CH4	NMHC	THC
RANGE (ppm):	20	20	40
PREVIOUS CF:	1.001	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:	132	CYLINDER (psi):	1100		LOW ID:	n/a
MFC CALIBRATION DATE:	12-Apr-2023	OXIDIZER ID:	115	EXPIRY DATE	18-Aug-2029		LOW EXPIRY:	n/a

CALIBRATION PARAMETERS:

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

EXPECTED (REFERENCE) VALUE:

INITIAL	CH4	NMHC	THC	FINAL	CH4	NMHC	THC
	9.80	11.12	20.92		9.77	11.10	20.87

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	14.27	12.66	26.93	14.50	13.46	27.96	1.017	1.066	1.040	1.001	1.003	1.002
3063	37.30	3100	7.26	6.75	14.01	n/a	n/a	n/a	7.26	6.86	14.12	n/a	n/a	n/a	0.999	0.984	0.992
3081	18.60	3100	3.62	3.37	6.98	n/a	n/a	n/a	3.66	3.54	7.19	n/a	n/a	n/a	0.989	0.951	0.971

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
CH4	1.000	0.998	0.1%
NMHC	1.000	0.993	0.5%
THC	1.000	0.996	0.3%

Comments:

Sample inlet filter was changed.

Use Zero Chrom? **Yes**

Station: St. Lina Daily: 18-06-2023 Type: AVG 1 Min. [1 Min.]

Thermo 5030i SHARP Monitor Monthly Check

Date:	June 18, 2023	**Performed By/Reviewer:**	Alex Yakupov / Chris Wesson
Company:	LICA	**Start Time (mst):**	17:35
Station Name/Location:	St. Lina	**End Time (mst):**	18:11
Previous Audit Date:	May 5, 2023	**Calibration Purpose:**	routine monthly
Parameter:	PM 2.5	**Weather Conditions:**	Overcast

SHARP 5030i Information and Status:

Serial Number: CM 17091001 **Filter Tape Counter** 226

Reference Standards:

	Air Flow			
	Manometer	**Orifice**	**Pressure:**	**Temp / RH:**
Make:	DeltaCal	DeltaCal	Fisher	Fisher
Model:	DC1	DC1	FB61291	FB61291
Serial Number:	177246	177246	130168457	130168457
Calibration Expiration Date:	September 7, 2023	September 7, 2023	March 20, 2024	March 20, 2024

Ambient Temperature (°C)

	Reference	SHARP	Difference
#1	19.10	18.3	0.8

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

Ambient Relative Humidity (%RH)

As Found:

	Reference	SHARP	Difference
#1	57.70	56.0	1.7

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

Barometric Pressure (mmHg)

As Found:

	Reference	SHARP	Difference
#1	689.0	689.0	0.0

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

Flow Audit (L/min)

As Found:

	Reference	SHARP			
#1	16.65	16.67		% Difference	0.10%
#2	16.65	16.66			
#3	16.65	16.67			
Average	16.65	16.67			

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

Leak Check (L/min)

	Without Leak Check Adapter			With leak Check Adapter		
	Reference	**SHARP**	**Difference**	**Reference**	**SHARP**	**Difference**
#1	16.65	16.67	-0.02	16.10	16.62	-0.52
					LEAK RATE:	**-0.50**

Leak Limit: 0.80 L/min

Meteorological System Checklist

Date:	June 18, 2023		
Technician:	Alex Yakupov		
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	Tip-test = 18:13-18:15
Is the screen on the housing? (screen should be on between July and September	no	
Is the housing clean?	yes	
Is the area around the housing clean and free from obstacles?	yes	

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

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

AMBIENT TEMPERATURE SENSOR CHECK

Parameter:	Temperature @ 2 metres
Reference Thermometer ID:	Fisher / FB 61291/ #130168457/ Mar 20, 2024
Reference Temperature (^{o}C):	16.6
Station - Ambient Temperature (^{o}C):	17.7
Temperature Difference (^{o}C):	1.1

BAROMETRIC PRESSURE SENSOR CHECK

Reference Barometer ID:	Fisher / FB 61291/ #130168457/ Mar 20, 2024	
Reference Pressure - Units/Reading:	millibar	915
Station Pressure - Units/Reading:	millibar	904
Pressure Tolerance +/- 15% of error:	778 - 1052	1.20%

RELATIVE HUMIDITY (HYGROMETER) SENSOR CHECK

Reference Hygrometer ID:	Fisher / FB 61291/ #130168457/ Mar 20, 2024	
Reference Hygrometer % RH- Reading:	63.10	
Station Hygrometer % RH- Reading:	64.90	
RH Tolerance +/- 15% of difference:	53.64 - 72.57	-2.9%

ANEMOMETER - WIND SPEED & WIND DIRECTION SENSOR CHECK

WIND SPEED		WIND DIRECTION	
Previous check date:	May 6, 2023	Previous check date:	May 6, 2023
Wind Speed Observed (kph):	10-20	Wind Direction Observed:	W
Wind speed on Data Logger (kph):	12.3	Wind Direction on Data Logger:	W
	Annual audit: Jul 22, 2022	Wind Direction Pass/Fail?:	Pass

Comments

Station (Trailer) temperature vs Reference gauge temperature: 22.8 vs 22.7. Difference: 0.0 degrees. Passed

Meteorological Sensor Audit/Calibration

Location Information

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

Wind Sensor Information

Sensor ID Data:		**Sensor Outputs:**	
Sensor Make:	RM Young	**Velocity Voltage Output Range:**	0-1
Sensor Model:	05305VK	**Velocity Unit Output Range:**	0-200
Serial #:	161466	**Direction Voltage Output Range:**	0-1
Previous Cal/Audit Date:	March 16, 2021	**Direction Unit Output Range:**	0-360

Wind Calibrator Information

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

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

RPM	Wind Speed Generated kph	Clockwise Wind Speed kph	Counter Clockwise Wind Speed kph	Correction Factor
0	0	0.1	0.1	-
1000	18.4	18.5	18.5	0.996
2000	36.9	36.9	37.0	0.998
3000	55.3	55.4	55.5	0.997
4000	73.7	74.1	74.1	0.995
5000	92.2	92.5	92.4	0.997
6000	110.6	111.0	111.0	0.996
7000	129.0	129.4	129.4	0.997
8000	147.4	148.1	148.1	0.996
9000	165.9	166.6	166.6	0.996
10000	184.3	185.1	185.1	0.996
		The audit meets AMD requirements.	**Average Correction Factor=**	**0.996**

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

Generated Wind Direction 0-360 (Up)	Generated Wind Direction 360-0 (Down)	Indicated Wind Direction 0-360 (Up)	Indicated Wind Direction 360-0 (Down)	Degrees Difference 0-360 (Up)	Degrees Difference 360-0 (Down)	Average Absolute Degrees Difference
0	355	0	355	0.4	0.0	0.2
30	330	31	331	-0.6	-0.8	0.7
60	300	62	301	-2.1	-0.6	1.4
90	270	93	270	-2.7	-0.1	1.4
120	240	123	241	-2.9	-1.2	2.1
150	210	152	212	-2.1	-2.1	2.1
180	180	182	183	-2.0	-2.9	2.5
210	150	211	153	-1.2	-2.8	2.0
240	120	241	123	-0.8	-3.1	2.0
270	90	270	93	-0.3	-3.0	1.7
300	60	301	62	-0.8	-2.3	1.6
330	30	331	30	-0.5	-0.4	0.4
355	0	355	1	0.0	0.5	0.3
The audit meets AMD requirements.			**Average Absolute Degrees Difference=**			**1.4**

Comments:

n/a

End of Report

Lakeland Industry & Community Association

JUNE 2023

Ambient Air Monitoring Calibration Report

- LAC LA BICHE STATION-

CAL-LICA-202306-01690

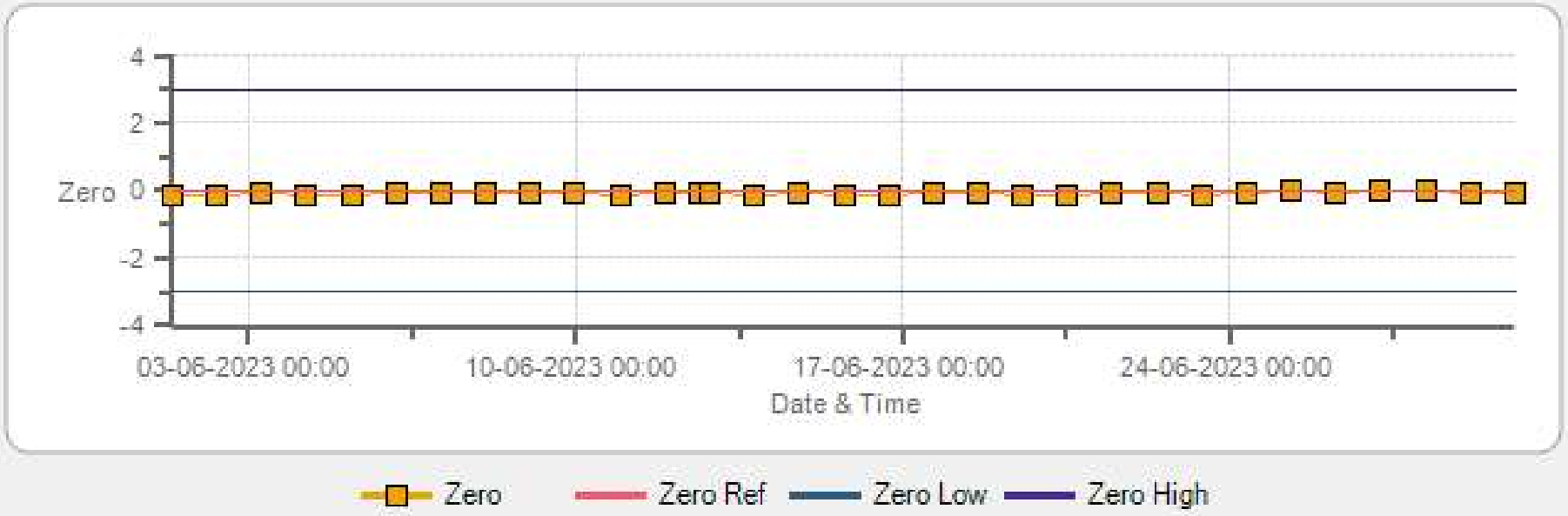
Station Operation and Maintenance:
Bureau Veritas Canada

Data Validation and Report:
LICA / Bureau Veritas Canada

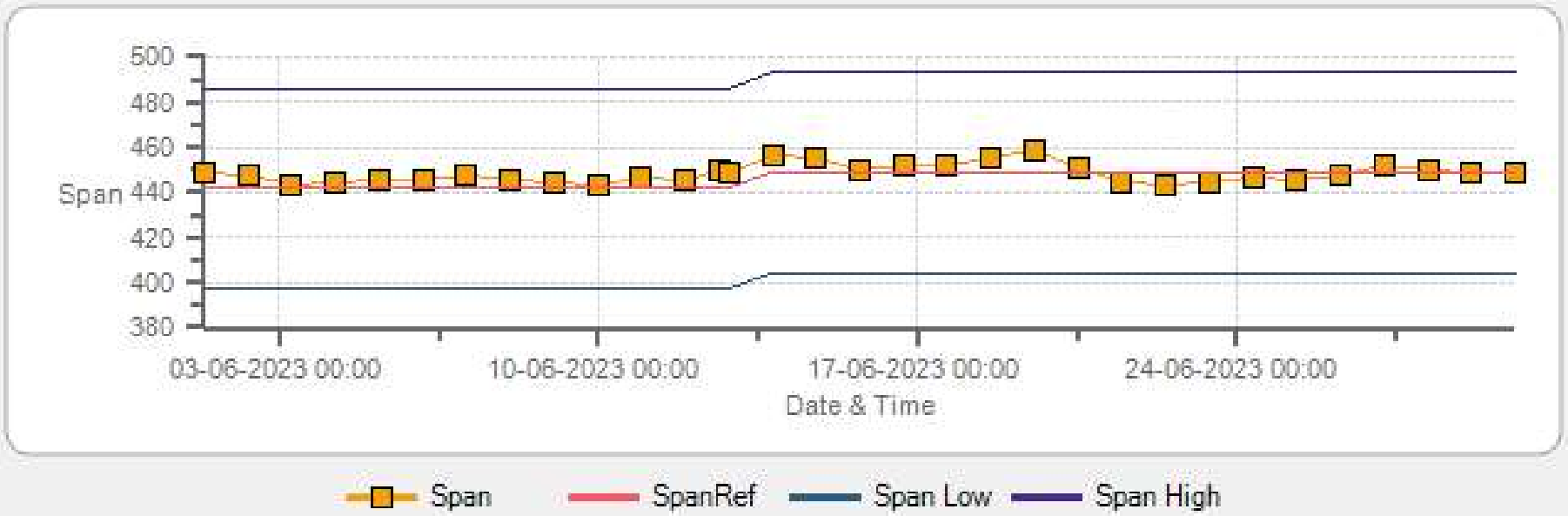
July 19, 2023

DAILY INTERNAL ZERO-SPAN CALIBRATION RECORDS

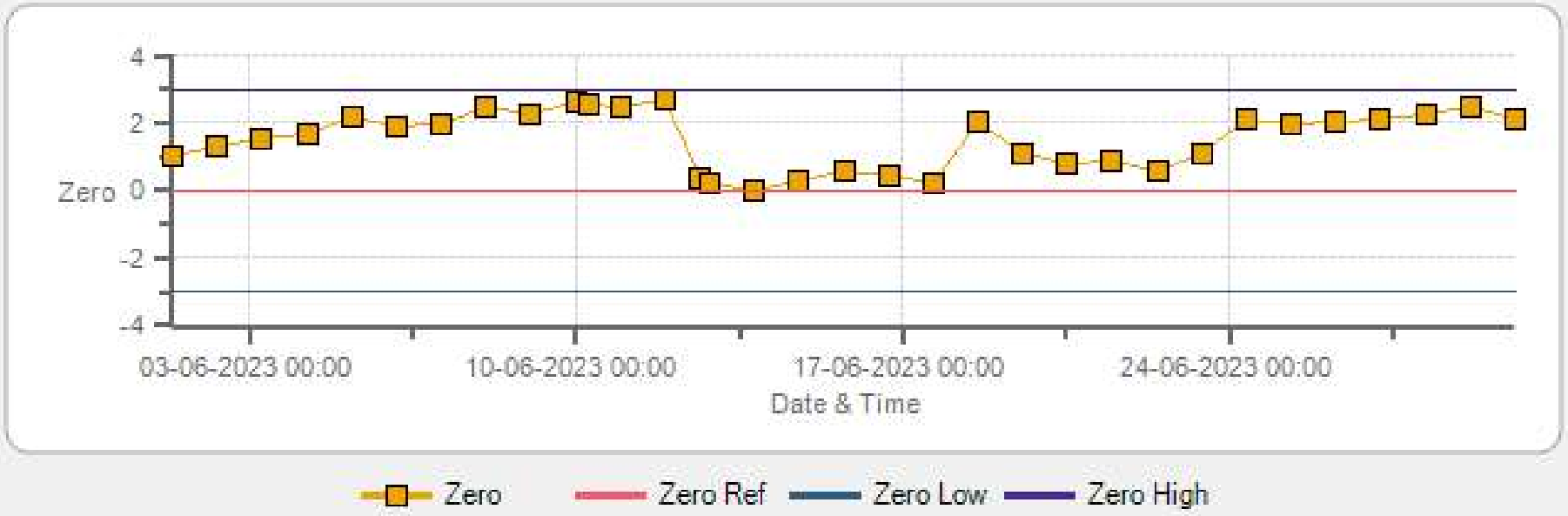
SO2[ppb] Calibration: Lac La Biche Monthly: 06-2023 Type: SpanAndZero - Zero



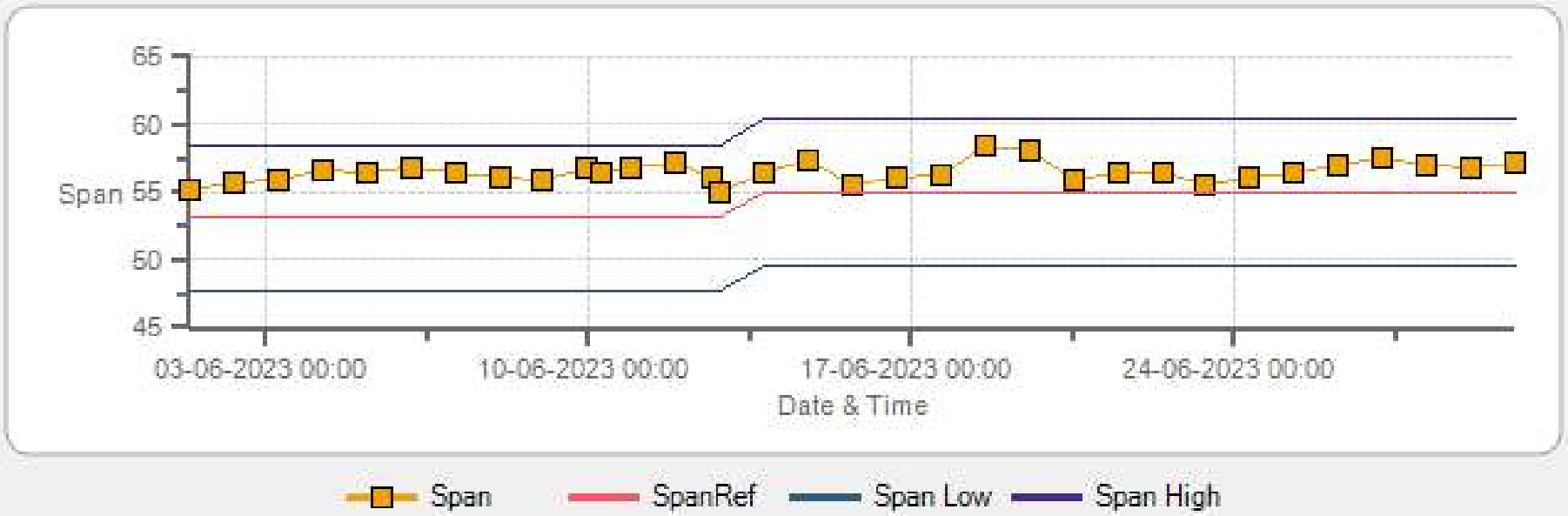
SO2[ppb] Calibration: Lac La Biche Monthly: 06-2023 Type: SpanAndZero - Span



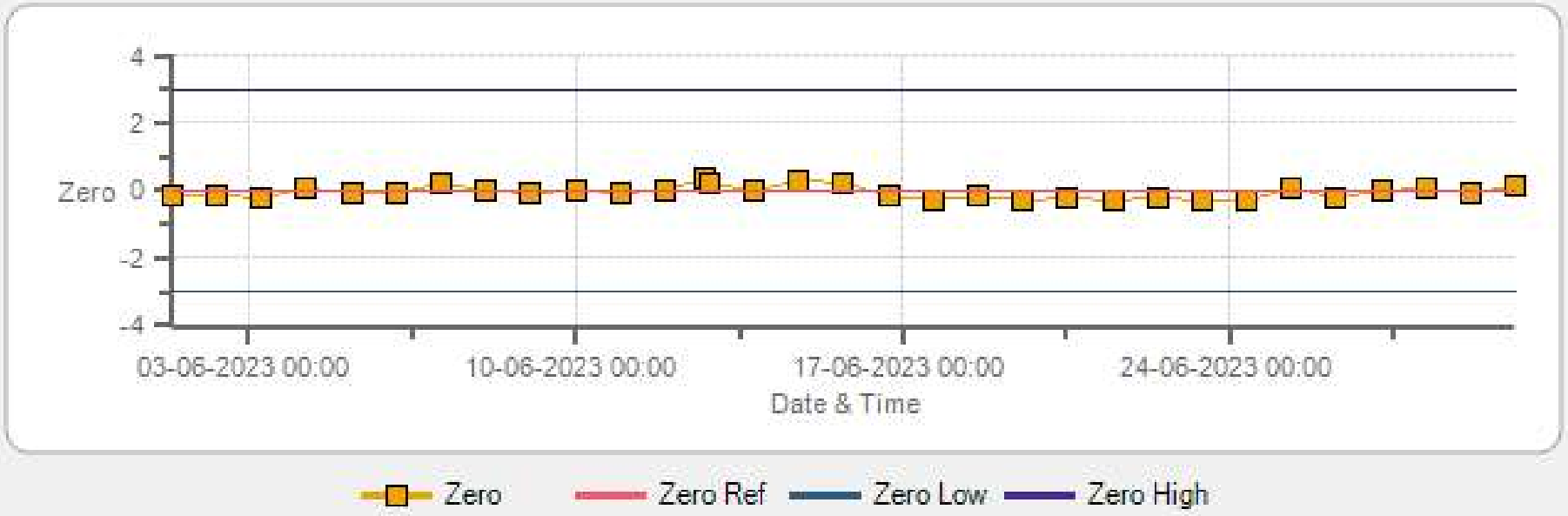
H2S[ppb] Calibration: Lac La Biche Monthly: 06-2023 Type: SpanAndZero - Zero



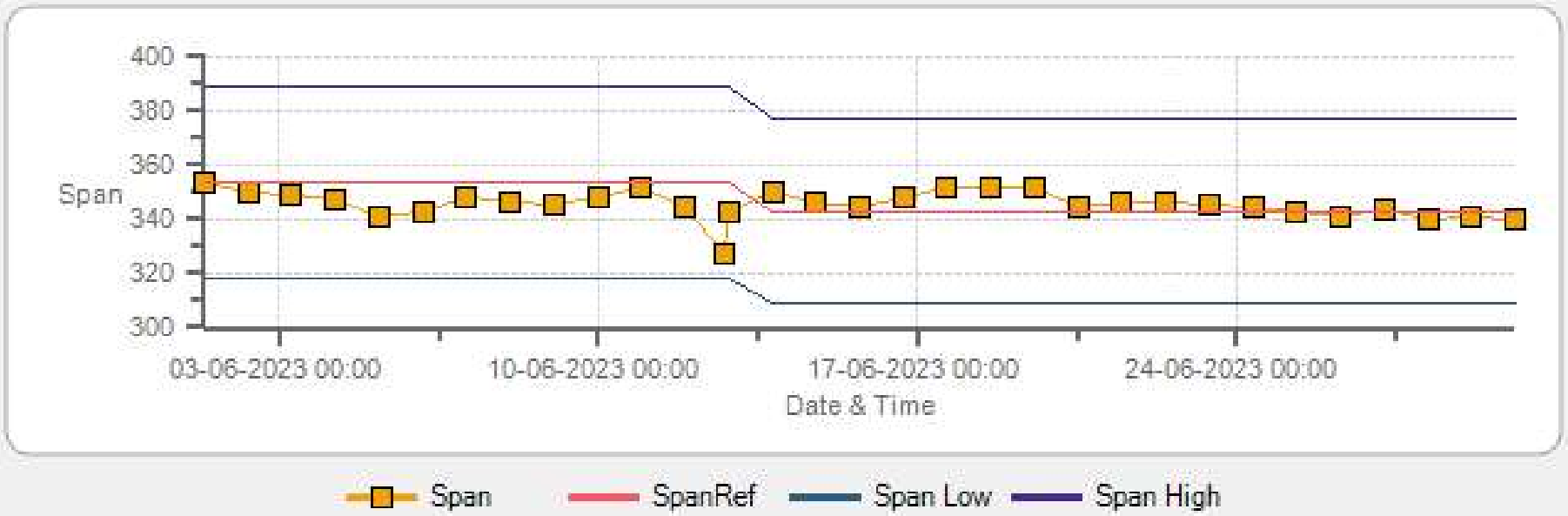
H2S[ppb] Calibration: Lac La Biche Monthly: 06-2023 Type: SpanAndZero - Span



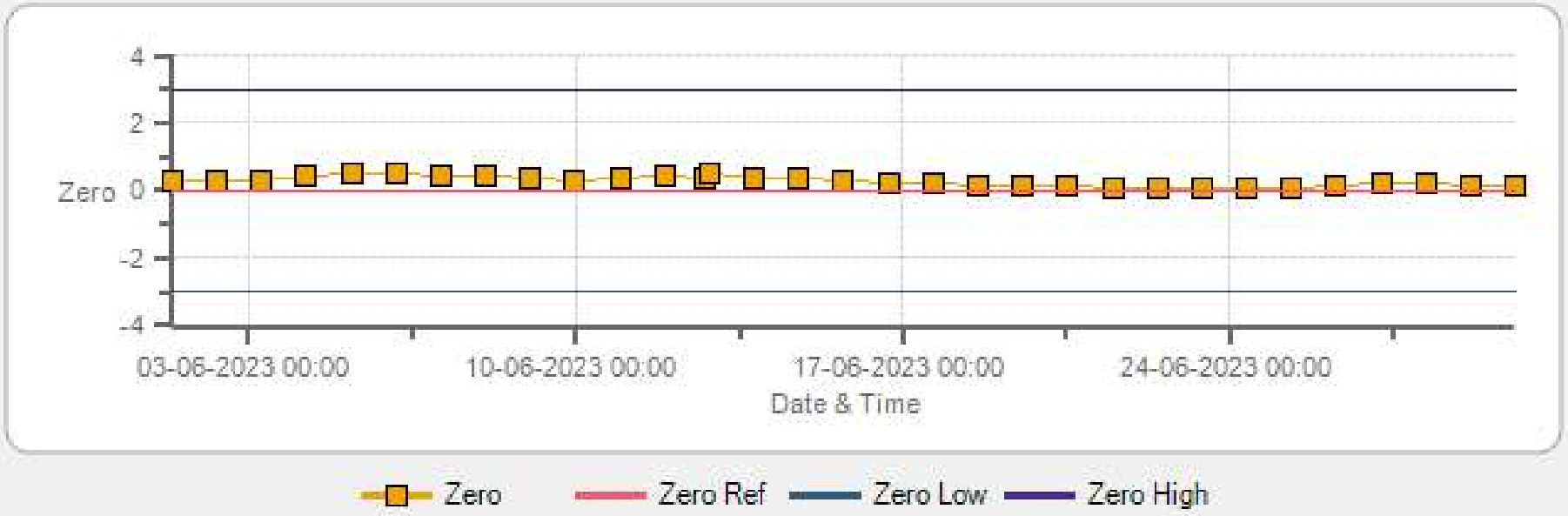
NOX[ppb] Calibration: Lac La Biche Monthly: 06-2023 Type: SpanAndZero - Zero



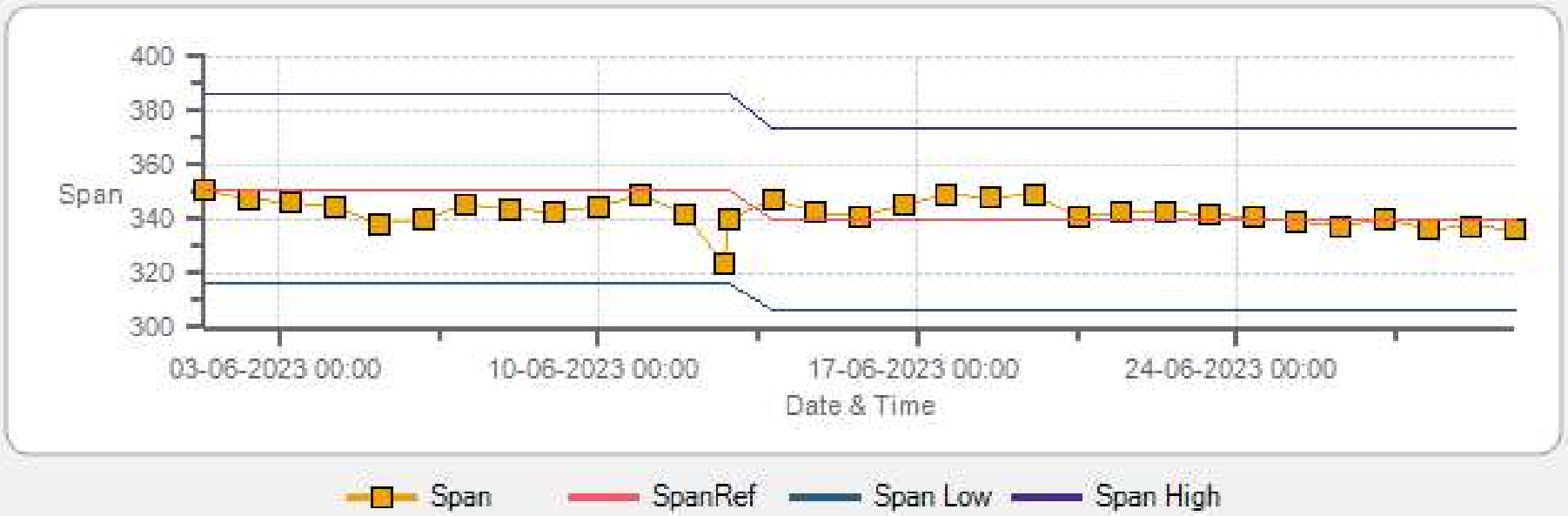
NOX[ppb] Calibration: Lac La Biche Monthly: 06-2023 Type: SpanAndZero - Span



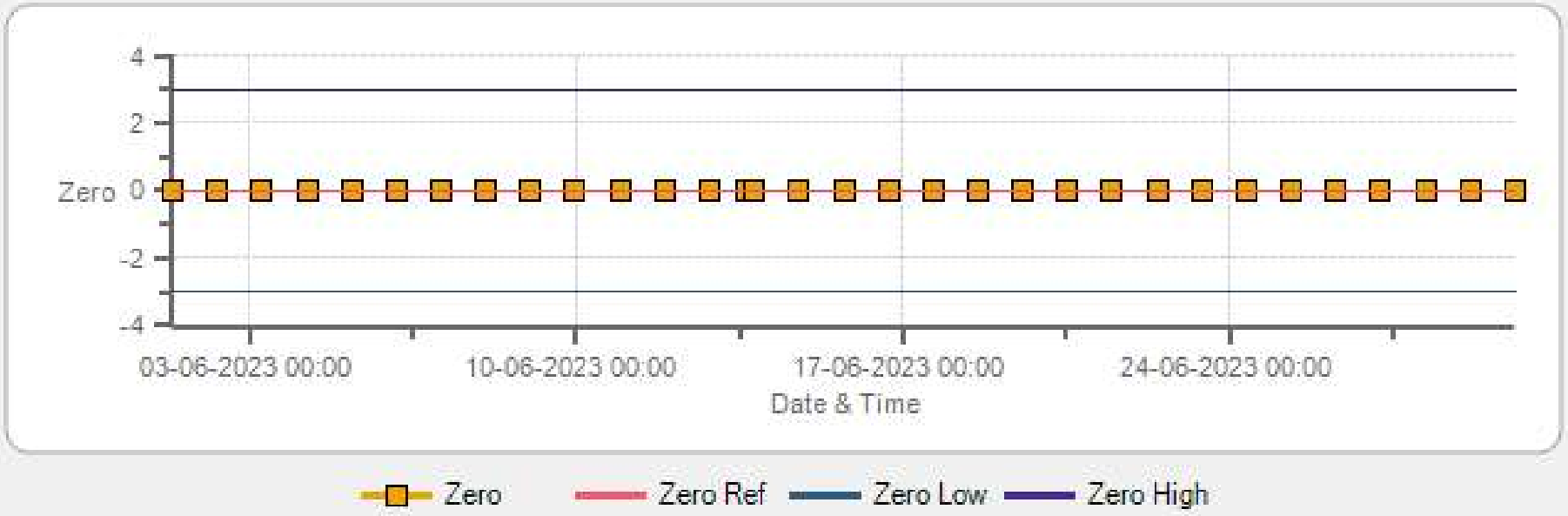
NO2[ppb] Calibration: Lac La Biche Monthly: 06-2023 Type: SpanAndZero - Zero



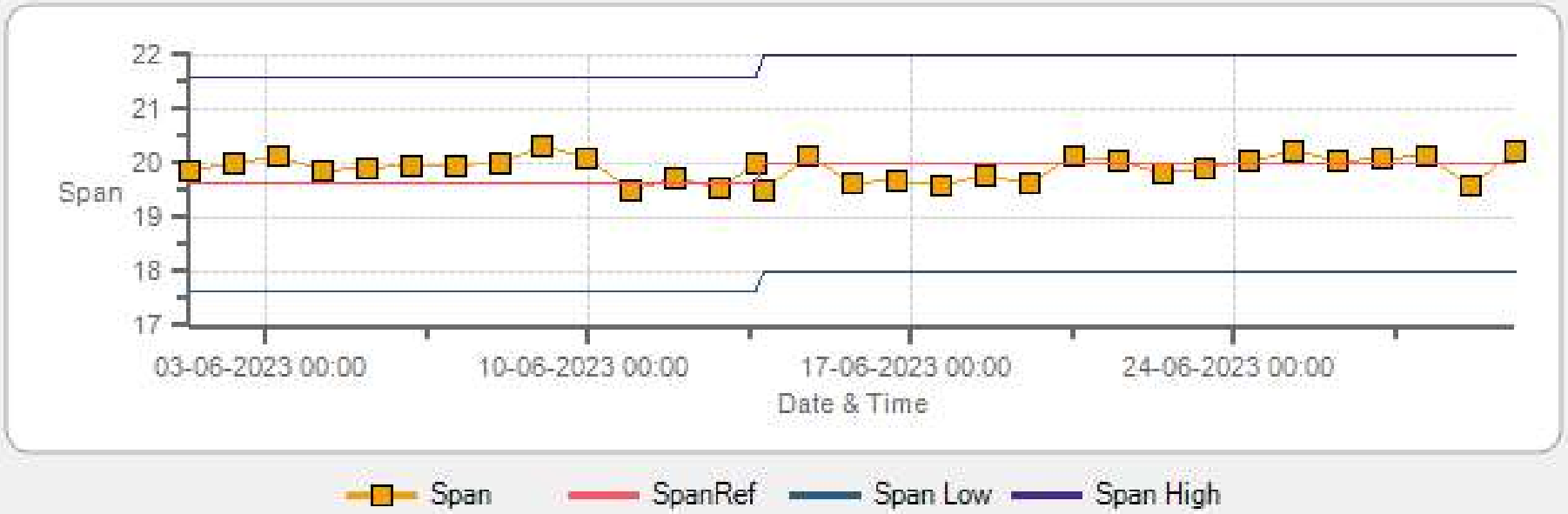
NO2[ppb] Calibration: Lac La Biche Monthly: 06-2023 Type: SpanAndZero - Span

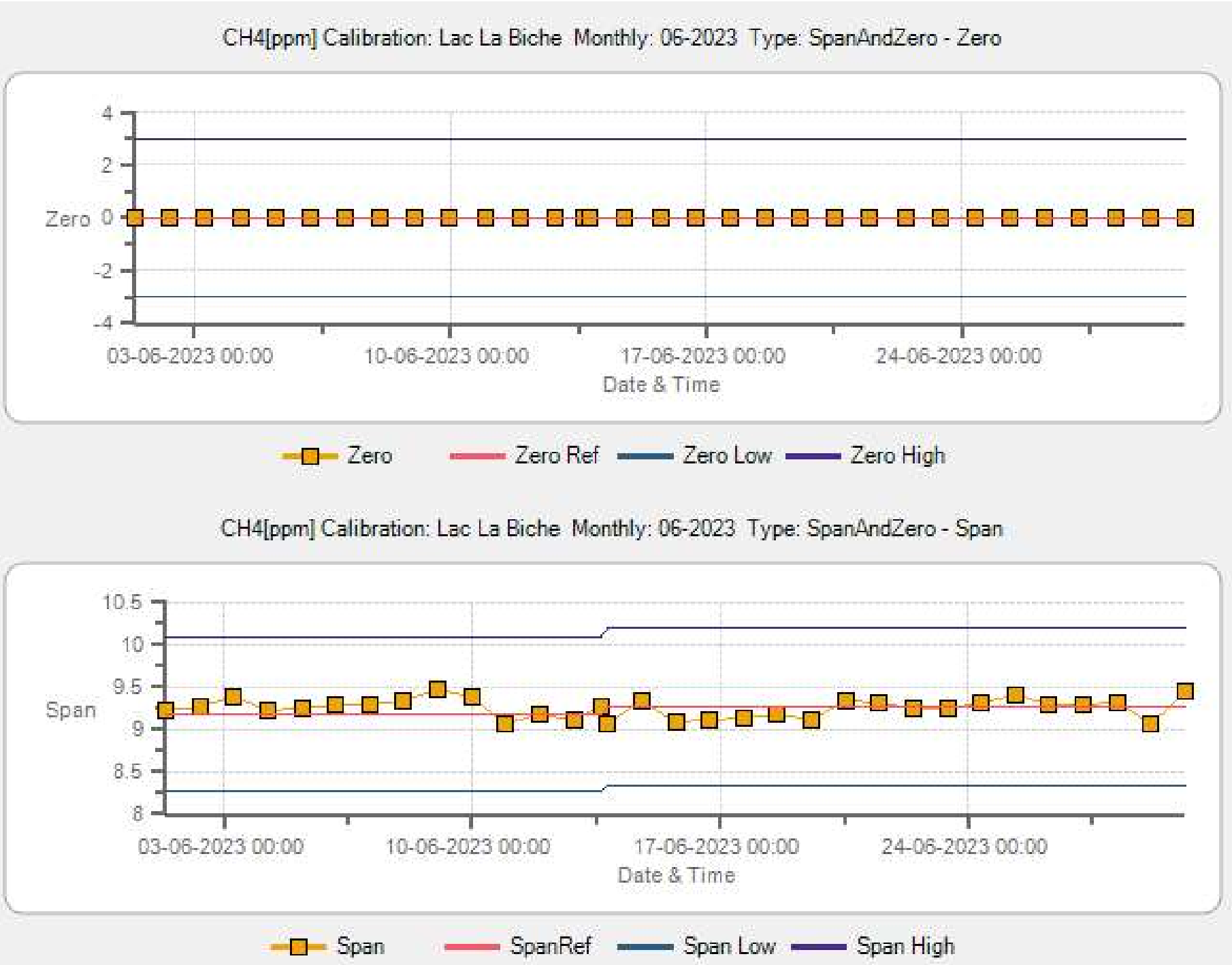


THC55[ppm] Calibration: Lac La Biche Monthly: 06-2023 Type: SpanAndZero - Zero



THC55[ppm] Calibration: Lac La Biche Monthly: 06-2023 Type: SpanAndZero - Span




CH4[ppm] Calibration: Lac La Biche Monthly: 06-2023 Type: SpanAndZero - Zero
4
2
Zero 0
-2
-4
03-06-2023 00:00
10-06-2023 00:00
17-06-2023 00:00
24-06-2023 00:00
Date & Time
Zero
Zero Ref
Zero Low
Zero High
CH4[ppm] Calibration: Lac La Biche Monthly: 06-2023 Type: SpanAndZero - Span
10.5
10
9.5
Span
9
8.5
8
03-06-2023 00:00
10-06-2023 00:00
17-06-2023 00:00
24-06-2023 00:00
Date & Time
Span
SpanRef
Span Low
Span High


NMHC[ppm] Calibration: Lac La Biche Monthly: 06-2023 Type: SpanAndZero - Zero
4
2
Zero 0
-2
-4
03-06-2023 00:00
10-06-2023 00:00
17-06-2023 00:00
24-06-2023 00:00
Date & Time
Zero
Zero Ref
Zero Low
Zero High
NMHC[ppm] Calibration: Lac La Biche Monthly: 06-2023 Type: SpanAndZero - Span
12
11
Span
10
9
03-06-2023 00:00
10-06-2023 00:00
17-06-2023 00:00
24-06-2023 00:00
Date & Time
Span
SpanRef
Span Low
Span High

MULTI-POINT CALIBRATION RECORDS

SO2 Analyzer Calibration by Dilution

DATE:	12-Jun-2023	PREVIOUS CALIBRATION DATE:	18-May-2023
PARAMETER:	SO2	PREVIOUS CORRECTION FACTOR:	0.999
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	Lac La Biche	BAROMETRIC (mBar):	945
PURPOSE	Routine	START TIME (MST):	11:04
PERFORMED BY:	Alex Yakupov	END TIME (MST):	16:09

ANALYZER:

MAKE/MODEL	Thermo 43I-TLE	RANGE	500 ppb
SERIAL #	1180320043	FLOW (mL/min)	455
INITIAL		FINAL	
BKG/OFFSET	6.51	BKG/OFFSET	6.5
COEF/SLOPE	1.345	COEF/SLOPE	1.349
Expected (reference) Value	442	Expected (reference) Value	449

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010	MODEL:	T701
ID:	17100415	ID:	132
MFC CALIBRATION DATE:	12-Apr-2023	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	LL 127895	HIGH ID	n/a
CONC (ppm):	50.40	EXPIRY DATE	n/a
CYLINDER (psi):	1300	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:

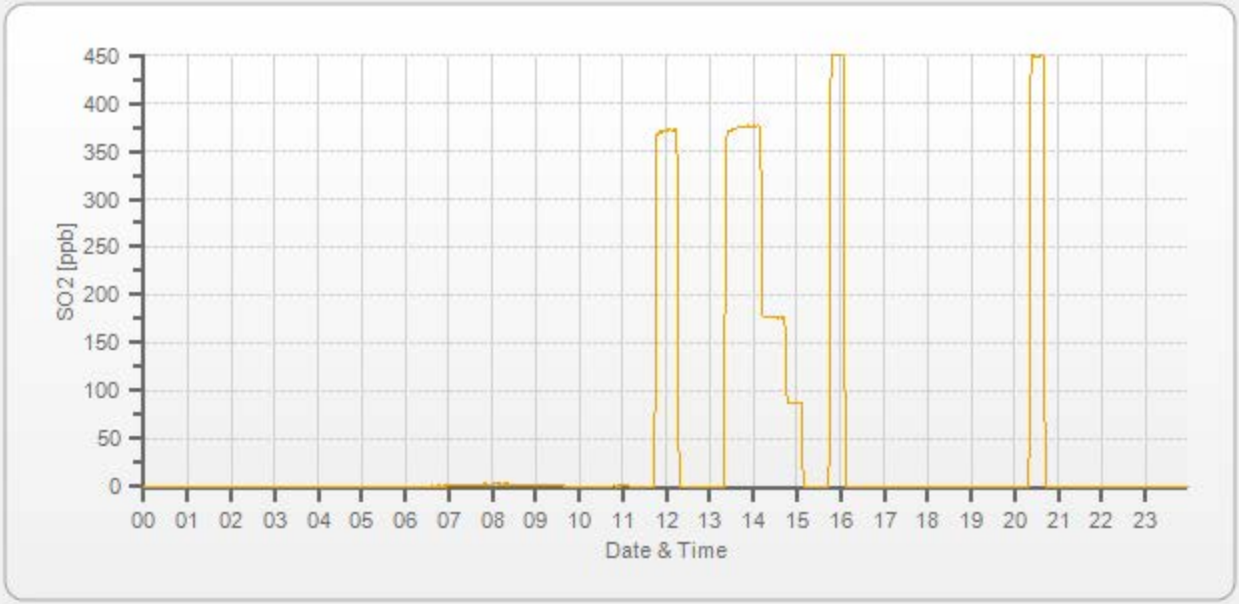
FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
			ACTUAL	INDICATED		Initial	Final
DILUENT	GAS	TOTAL		Initial	Final		
5000		5000	0.00	-0.11	0		
4961	37.20	4998	375.13	371.42	376.18	1.010	0.997
4982	17.60	5000	177.41	n/a	177.03	n/a	1.002
4990	8.80	4999	88.72	n/a	87.54	n/a	1.013

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.004	-0.2%

COMMENTS:

Sample inlet filter was changed.


SO2[ppb] Station: Lac La Biche Daily: 12-06-2023 Type: AVG 1 Min. [1 Min.]
SO2 [ppb]
450
400
350
300
250
200
150
100
50
0
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23
Date & Time
SO2 [ppb]

H2S Analyzer Calibration by Dilution

DATE:	12-Jun-2023	PREVIOUS CALIBRATION DATE:	30-May-2023
PARAMETER:	H2S	PREVIOUS CORRECTION FACTOR:	1.004
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	Lac La Biche	BAROMETRIC (mBar):	945
PURPOSE	Routine	START TIME (MST):	11:02
PERFORMED BY:	Alex Yakupov	END TIME (MST):	16:09

ANALYZER:

MAKE/MODEL	Thermo 450i	RANGE	100 ppb
SERIAL #	CM17360002	FLOW (mL/min)	934
INITIAL		FINAL	
BKG/OFFSET	73.1	BKG/OFFSET	77.6
COEF/SLOPE	0.979	COEF/SLOPE	1.006
Expected (reference) Value	53.1	Expected (reference) Value	55

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010 D	MODEL:	T701
ID:	11900613	ID:	132
MFC CALIBRATION DATE:	12-Apr-2023	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	EY 0002287	HIGH ID	n/a
CONC (ppm):	10.10	EXPIRY DATE	n/a
CYLINDER (psi):	600	LOW ID	n/a
EXPIRY DATE	14-Sep-2024	EXPIRY DATE	n/a

CALIBRATION PARAMETERS:

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

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

START TIME:	11:09	SO2 Conc (ppb)	380
END TIME:	11:24	Analyzer Response (ppb)	0.0

CALIBRATION:

FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
			ACTUAL	INDICATED		Initial	Final
DILUENT	GAS	TOTAL		Initial	Final		
7500		7500	0.00	2.8	0		
7442	57.90	7500	77.97	81	77.9	0.997	1.001
7472	28.20	7500	37.98	n/a	37.5	n/a	1.013
7486	14.10	7500	18.99	n/a	18.3	n/a	1.038

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.001	-0.4%

COMMENTS:

Sample inlet filter was changed.


H2S[ppb] Station: Lac La Biche Daily: 12-06-2023 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:	12-Jun-2023	PREVIOUS CALIBRATION DATE:	18-May-2023
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	Lac La Biche	BAROMETRIC (mBar):	945
PURPOSE	Routine	START TIME (MST):	11:05
PERFORMED BY:	Alex Yakupov	END TIME (MST):	18:19

ANALYZER:

MAKE/MODEL:	Thermo 42i	PREVIOUS CF.	
SERIAL #:	1180930027	NOx	1.000
FLOW (mL/min)	763	NO	1.000
RANGE (ppb)	500	NO2	0.996
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):	1300		LOW ID:	n/a
MFC CALIBRATION DATE:	12-Apr-2023	OXIDIZER ID:	n/a	EXPIRY DATE	27-Oct-2030		LOW EXPIRY:	n/a

CALIBRATION SETTINGS:

INITIAL	NOx	NO	NO2	FINAL	NOx	NO	NO2
BKG/OFFSET:	8.5	8.5	n/a	BKG/OFFSET:	8.5	8.3	n/a
SLOPE/COEF/CE:	1.007	0.837	0.993	SLOPE/COEF/CE:	1.007	0.83	0.999

EXPECTED (REFERENCE) VALUE:

INITIAL	NOx	NO	NO2	FINAL	NOx	NO	NO2
	353.6	2.4	351.2		343.0	3.2	340.0

CALIBRATION PARAMETERS:

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

NO/NOx CALIBRATION:

FLOW RATE (mL/min)			CONCENTRATION (ppb)									CORRECTION FACTOR (CF.)					
			CALCULATED			INITIAL INDICATED			FINAL INDICATED			INITIAL			FINAL		
DILUENT	GAS	TOTAL	NO	NOx	NO2	NO	NOx	NO2	NO	NOx	NO2	NO	NOx	NO2	NO	NOx	NO2
5000		5000	0.0	0.0	0.0	-0.3	-0.1	0.2	0.0	0.0	0.0						
4961	37.20	4998	380.3	384.1	3.7	382.4	386.4	4.0	380.3	383.7	3.4	0.994	0.994		1.000	1.001	
4982	17.60	5000	179.9	181.6	1.8	n/a	n/a	n/a	179.2	180.7	1.6	n/a	n/a		1.004	1.005	
4990	8.80	4999	90.0	90.8	0.9	n/a	n/a	n/a	88.8	89.6	0.8	n/a	n/a		1.013	1.014	

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	379.8	383.5	3.7				
AS-FOUND HIGH	37.20	4998	235	126.5	384.3	257.8	253.3	254.1	0.997	100.32%
ADJUSTED HIGH	37.20	4998	235	126.1	382.8	256.7	253.7	253	1.003	99.72%
MID	37.20	4998	110	260.2	383.1	122.9	119.6	119.2	1.003	99.67%
LOW	37.20	4998	40	333.1	383.3	50.2	46.7	46.5	1.004	99.57%
NO2 COEF/CONVERTER EFFICIENCY ADJUSTED									AVERAGE:	99.65%

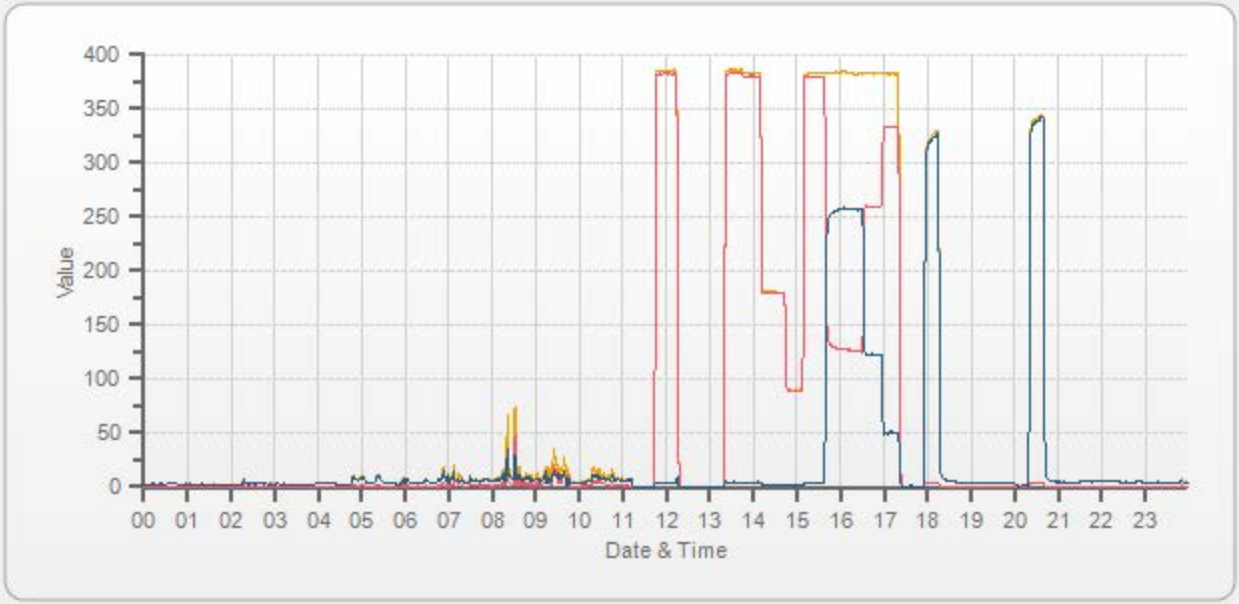
LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
NO	1.000	1.001	-0.12%
NOx	1.000	1.000	-0.12%
NO2	1.000	0.998	-0.02%

COMMENTS:

Sample inlet filter was changed.

Station: Lac La Biche Daily: 12-06-2023 Type: AVG 1 Min. [1 Min.]



Ozone Calibration by Photometer (Varying UV Lamp)

DATE:	13-Jun-2023	PREVIOUS CALIBRATION DATE:	19-May-2023
PARAMETER:	O3	PREVIOUS CORRECTION FACTOR:	1.001
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	Lac La Biche	BAROMETRIC (mBar):	935
PURPOSE	Routine	START TIME (MST):	10:19
PERFORMED BY:	Alex Yakupov	END TIME (MST):	15:07

ANALYZER:

MAKE/MODEL	Thermo 49i	RANGE	500 ppb
SERIAL #	1002240372	FLOW (mL/min)	1424
INITIAL		FINAL	
BKG/OFFSET	0.1	BKG/OFFSET	0.2
COEF/SLOPE	1.038	COEF/SLOPE	1.025
Expected (reference) Value	273	Expected (reference) Value	285

CALIBRATION SYSTEM:

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

CALIBRATION PARAMETERS:

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

CALIBRATION:

FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
			ACTUAL	INDICATED		Initial	Final
DILUENT	GAS	TOTAL		Initial	Final		
5000		5000	0.0	0.1	0.0		
5000		5000	378.0	381.2	377.4	0.992	1.002
5000		5000	180.0	n/a	179.8	n/a	1.001
5000		5000	60.0	n/a	61.2	n/a	0.980

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	0.997	0.1%

COMMENTS:

Sample inlet filter was changed.


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

Methane/Non-Methane Analyzer Calibration by Dilution

CALIBRATION:

DATE:	13-Jun-2023	PREVIOUS CALIBRATION DATE:	19-May-2023
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	Lac La Biche	BAROMETRIC (mBar):	935
PURPOSE	Routine	START TIME (MST):	10:20
PERFORMED BY:	Alex Yakupov	END TIME (MST):	15:10

ANALYZER:

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

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:		CALIBRATION GAS:			FLOWMETERS (if applicable):	
MAKE:	SABIO	MAKE:	Teledyne	CYLINDER ID:	LL 23593		HIGH ID:	n/a
MODEL:	2010	MODEL:	T701	CH_4/C_3H_8 (ppm):	603.0	204.0	HIGH EXPIRY:	n/a
ID:	17100415	ID:	134	CYLINDER (psi):	1200		LOW ID:	n/a
MFC CALIBRATION DATE:	12-Apr-2023	OXIDIZER ID:	n/a	EXPIRY DATE	18-Aug-2029		LOW EXPIRY:	n/a

CALIBRATION PARAMETERS:

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

EXPECTED (REFERENCE) VALUE:

INITIAL	CH4	NMHC	THC	FINAL	CH4	NMHC	THC
	9.18	10.44	19.62		9.28	10.70	19.98

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	14.35	13.36	27.71	14.51	13.58	28.10	1.011	1.010	1.011	1.000	0.994	0.997
3063	37.30	3100	7.26	6.75	14.01	n/a	n/a	n/a	7.24	6.76	14.00	n/a	n/a	n/a	1.002	0.999	1.000
3081	18.60	3100	3.62	3.37	6.98	n/a	n/a	n/a	3.62	3.38	6.99	n/a	n/a	n/a	0.999	0.996	0.999

LINEAR REGRESSION ANALYSIS:

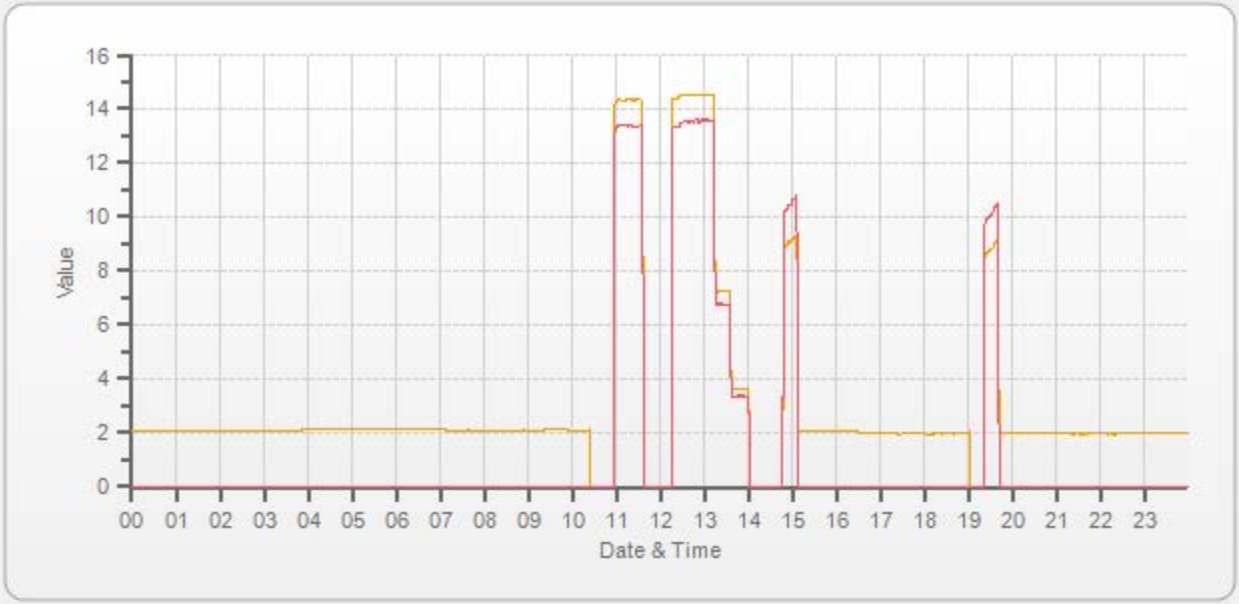
	CORRELATION	SLOPE	INTERCEPT
CH4	1.000	1.000	0.0%
NMHC	1.000	1.006	0.0%
THC	1.000	1.003	0.0%

Comments:

Sample inlet filter was changed.

Use Zero Chrom? **Yes**

Station: Lac La Biche Daily: 13-06-2023 Type: AVG 1 Min. [1 Min.]



Thermo 5030i SHARP Monitor Monthly Check

Date:	June 13, 2023	**Performed By/Reviewer:**	Alex Yakupov / Chris Wesson
Company:	LICA	**Start Time (mst):**	15:19
Station Name/Location:	Lac La Biche	**End Time (mst):**	16:04
Previous Audit Date:	May 21, 2023	**Calibration Purpose:**	routine monthly
Parameter:	PM 2.5	**Weather Conditions:**	Overcast

SHARP 5030i Information and Status:

Serial Number:	CM 17071016	**Filter Tape Counter**	369

Reference Standards:

	Air Flow			
	Manometer	**Orifice**	**Pressure:**	**Temp / RH:**
Make:	DeltaCal	DeltaCal	Fisher Scientific	Vaisala HMP76B
Model:	DC1	DC1	FB 61291	HMP 76B
Serial Number:	177246	177246	130168457	T1640130
Calibration Expiration Date:	September 7, 2023	September 7, 2023	March 20, 2024	June 14, 2023

Ambient Temperature (°C)

	Reference	**SHARP**	**Difference**	Range	Action
				< ± 2°C	OK
				2-3 °C	Recalibrate
#1	28.60	27.3	1.3	*> 3°C*	*Fail*

Ambient Relative Humidity (%RH)

As Found:

	Reference	**SHARP**	**Difference**	Range	Action
				< ± 2 %RH	OK
				2-5 %RH	Recalibrate
#1	38.70	40.2	-1.5	*> 5 %RH*	*Fail*

Barometric Pressure (mmHg)

As Found:

	Reference	**SHARP**	**Difference**	Range	Action
				< ± 10 mmHg	OK
				10-12 mmHg	Recalibrate
#1	700.0	700.0	0.0	*> 12 mmHg*	*Fail*

Flow Audit (L/min)

As Found:

	Reference	**SHARP**			Range	Action
					< ± 4%	OK
#1	16.65	16.67	% Difference	0.12%	4-5%	Recalibrate
#2	16.65	16.67			*>5%*	*Fail*
#3	16.65	16.67				
Average	16.65	16.67				

Leak Check (L/min)

	Without Leak Check Adapter			**With leak Check Adapter**			
	Reference	**SHARP**	**Difference**	**Reference**	**SHARP**	**Difference**	
#1	16.65	16.67	-0.02	16.51	16.67	-0.16	*Leak Limit: 0.80 L/min*
					LEAK RATE:	**-0.14**	

Meteorological System Checklist

Date:	June 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 (°C):	28.1		
Station - Ambient Temperature (°C):	27.6		
Temperature Difference (°C):	0.5		
BAROMETRIC PRESSURE SENSOR CHECK			
Reference Barometer ID:	Fisher Scientific / FB 61291 / #130168457/ Mar 20, 2024		
Reference Pressure - Units/Reading:	millibar	931	
Station Pressure - Units/Reading:	millibar	934	
Pressure Tolerance +/- 15% of error:	791 - 1071	-0.32%	
RELATIVE HUMIDITY (HYGROMETER) SENSOR CHECK			
Reference Hygrometer ID:	Vaisala / HM70 / #T1640130/ Jun 14, 2023		
Reference Hygrometer % RH- Reading:	43.60		
Station Hygrometer % RH- Reading:	45.70		
RH Tolerance +/- 15% of difference:	37.06 - 50.14	-4.8%	
ANEMOMETER - WIND SPEED & WIND DIRECTION SENSOR CHECK			
WIND SPEED		WIND DIRECTION	
Previous check date:	May 21, 2023	Previous check date:	May 21, 2023
Wind Speed Observed (kph):	20-30	Wind Direction Observed:	SE
Wind speed on Data Logger (kph):	25.2	Wind Direction on Data Logger:	SE
	Annual audit: May 09, 2022	Wind Direction Pass/Fail?:	Pass

Comments

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

List of SOPs

MONITOR	SOP
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 REDUCED SULPHUR (TRS)	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-00015: Teledyne API PM Monitor Model T640
WIND SPEED (WS) & WIND DIRECTION (WD)	Bureau Veritas EMS SOP-00013: RM Young Wind Monitor Calibration