



Lakeland Industry & Community Association

FEBRUARY 2022

Monthly Ambient Air Quality Monitoring Report

LICA-202202

Operation and Maintenance:

Bureau Veritas Canada

Data Validation and Report:

Lakeland Industry & Community Association

March 23, 2022

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March 23, 2022

Alberta Environment and Parks (AEP)

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

Enclosed is the February 2022 Monthly Ambient Air Quality Monitoring Report for the continuous ambient air quality monitoring stations of the Lakeland Industry & Community Association (LICA) regional air quality monitoring network.

The representative of the Person Responsible for this monitoring program is

LICA Airshed

Michael Bisaga, Monitoring Programs Manager

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

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LIST OF ACRONYMS

AAAQOs	Alberta Ambient Air Quality Objectives
AEP	Alberta Environment and Parks
AMD	Air Monitoring Directive
AT	Ambient Temperature
BP	Barometric Pressure
CH ₄	Methane
EPEA	Environmental Protection and Enhancement Act
H ₂ S	Hydrogen Sulphide
kph	kilometers per hour
LICA	Lakeland Industry & Community Association
mb	millibar
mm	millimeter
NMHC	Non-Methane Hydrocarbons
NO	Nitric Oxide
NO ₂	Nitrogen Dioxide
NO _x	Oxide of Nitrogen
PAC	Polycyclic Aromatic Compounds
ppb	parts per billion
ppm	parts per million
RH	Relative Humidity
SO ₂	Sulphur Dioxide
ST	Station Temperature
STDWD	Standard Deviation Wind Direction
THC	Total Hydrocarbons
TRS	Total Reduced Sulphur
VWD	Vector Wind Direction
VWS	Vector Wind Speed
WD	Wind Direction
WS	Wind Speed
°C	Degrees Celsius

NETWORK STATION SUMMARY

Listing of Continuous Monitoring Stations and Integrated Sampling Stations

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

List of Contractors performing air monitoring activities

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

Monitoring Notes during the Month of February 2022

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.
- 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, except precipitation (37.0%).
- Measured parameters were below Alberta Ambient Air Quality Objectives (AAAQOs) and/or Alberta Ambient Air Quality Guidelines (AAAQGs) where applicable.
- 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.
- Measured parameters were below Alberta Ambient Air Quality Objectives (AAAQOs) and/or Alberta Ambient Air Quality Guidelines (AAAQGs) where applicable.
- No major events were identified this month.

Integrated Sampling

All the integrated sampling analytical results are included in the February 2022 Integrated Sampling Report.

- **VOCs Sampling System:**
 - The VOC sampler is programmed to collect a 24-hour sample of air every sixth day as per the National Air Pollution Surveillance schedule (NAPS).
 - Five samples were collected this month: on February 4, 10, 16, 22 and 28.
- **PAHs Sampling System:**
 - The PUF sampler is programmed to collect a 24-hour sample of air every sixth day as per the National Air Pollution Surveillance schedule (NAPS).
 - Five samples were collected this month: on February 4, 10, 16, 22 and 28.
- **Partisol Sampling System:**
 - The Partisol sampler is programmed to collect a 24-hour sample of air every sixth day as per National Air Pollution Surveillance schedule (NAPS).
 - Five samples were collected this month: on February 4, 10, 16, 22 and 28.
- **Passive Sampling System:**
 - The passive sample filters were installed at the stations between January 31 and February 2, and were removed between February 28 and March 2.
 - A total of 9 duplicate samples were collected: 2 for H₂S, 3 for SO₂, 2 for NO₂ and 2 for O₃.
- **PAC Sampling System:**
 - The PAC sampling program began in February 2019, and is designed to collect a 2-month integrated sample.
 - The sample medias for January and February 2022 sample period were collected and the sample medias for March and April 2022 between February 28 and March 2.

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

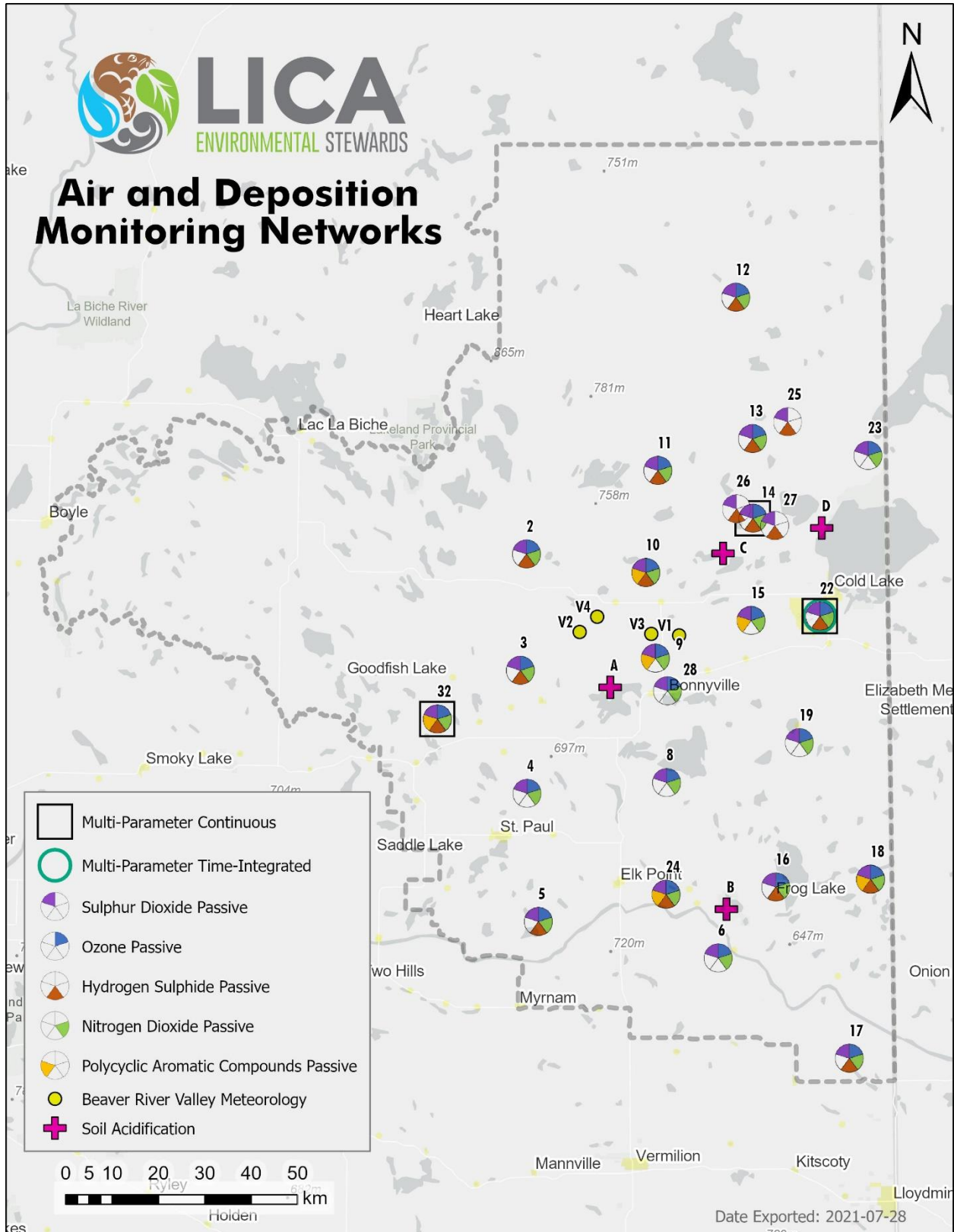
I certify that I have reviewed and verified this report and that the information is complete, accurate and representative of the monitoring results, reporting timeframe and the specified analysis, summarization and reporting requirements. I also certify that at the time of this report's submission, all air data have been electronically uploaded to Alberta's Ambient Air Quality Data Warehouse as required by the AMD, with the exception of electronic submission for the results of intermittent samples, Partisol samples and passive samples. Electronic submission for the intermittent sample, Partisol sample and passive sample results will be performed during the preparation of the February 2022 integrated sampling report. Uploading of VOC data from the canister sampling program was not required at the time of completing this report.



Michael Bisaga, Monitoring Programs Manager, LICA Airshed

March 23, 2022

Map of LICA Continuous Monitoring Network



CONTINUOUS NETWORK EQUIPMENT AND MONITORING RESULTS SUMMARY

Cold Lake South Station

Equipment Operation Summary

Parameter	Make / Model	Serial Number	Calibration Date
Sulphur Dioxide (SO ₂)	Thermo / 43i-TLE	1180260018	February 15, 2022
<ul style="list-style-type: none"> No issues were identified this month. 			
Total Reduced Sulphur (TRS)	Thermo / 450i	812728560	February 15, 2022
<ul style="list-style-type: none"> No issues were identified this month. 			
Total Hydrocarbons / Methane/ Non-methane Hydrocarbons (THC/CH ₄ /NMHC)	Thermo / 55i	1180930025	February 16, 2022
<ul style="list-style-type: none"> No issues were identified this month. 			
Oxide of Nitrogen / Nitric Oxide/ Nitrogen Dioxide (NO _x /NO/NO ₂)	Thermo / 42i	1505664393	February 15, 2022
<ul style="list-style-type: none"> No issues were identified this month. 			
Ozone (O ₃)	Thermo / 49i	700419951	February 16, 2022
<ul style="list-style-type: none"> No issues were identified this month. 			
Particulate Matter 2.5 (PM _{2.5})	Teledyne T640	575	February 16, 2022
<ul style="list-style-type: none"> No issues were identified this month. 			
Parameter	Make / Model	Serial Number	System Check Date
Relative Humidity (RH)	Rotronic HC2A-S3	202571103	February 16, 2022
<ul style="list-style-type: none"> No issues were identified this month. 			

Parameter	Make / Model	Serial Number	System Check Date
Barometric Pressure (BP)	Met One / Part 092	Y23368	February 16, 2022
<ul style="list-style-type: none"> No issues were identified this month. 			
Ambient Temperature (AT)	Rotronic HC2A-S3	202571103	February 16, 2022
<ul style="list-style-type: none"> No issues were identified this month. 			
Station Temperature (ST)	BV-supplied	n/a	February 16, 2022
<ul style="list-style-type: none"> No issues were identified this month. 			
Wind Speed (WS) / Wind Direction (WD)/ Stand Deviation Wind Direction (STDWD)	RM Young 05305AQ	177354	February 16, 2022
<ul style="list-style-type: none"> Wind direction data contained in this report represents where the wind is coming from. The last wind system calibration was completed on April 20, 2021. No issues were identified this month. 			

Monitored Data Summary for Cold Lake South Station

Parameter	Objectives/Guidelines			Exceedances			Monthly Avg.	Min. 1-hr	Max. 1-hr	Date/Time	VWS (km/hr)	VWD (sector)	Max. 24-hr	Date	Operational Uptime (%)	Valid Data (%)
	1-hr	24-hr	30-day	1-hr	24-hr	30-day										
SO2 (ppb)	172	48	11	0	0	0	0.3	0	4	February 3 at hour 12	5.7	WSW	1.0	February 3	100.0	95.1
TRS (ppb)	-	-	-	-	-	-	0.1	0	14	February 7 at hour 5	0.8	ENE	1.6	February 7	100.0	95.1
NOx (ppb)	-	-	-	-	-	-	7.1	1	103	February 11 at hour 10	14.9	NNW	16.9	February 7	100.0	94.8
NO (ppb)	-	-	-	-	-	-	1.4	0	95	February 11 at hour 10	14.9	NNW	5.4	February 7	100.0	94.8
NO2 (ppb)	159	-	-	0	-	-	5.7	0	37	February 7 at hour 7	0.9	E	11.4	February 7	100.0	94.8
O3 (ppb)	76	-	-	0	-	-	31.4	1.1	48.6	February 7 at hour 16	11.1	SW	40.5	February 8	100.0	95.2
THC (ppm)	-	-	-	-	-	-	1.97	1.84	2.33	February 6 at hour 1	0.3	ENE	2.06	February 23	100.0	95.2
CH4 (ppm)	-	-	-	-	-	-	1.97	1.84	2.33	February 6 at hour 1	0.3	ENE	2.06	February 23	100.0	95.2
NMHC (ppm)	-	-	-	-	-	-	0.00	0.00	0.04	February 9 at hour 17	10	SW	0.00	February 7	100.0	95.2
PM2.5 (µg/m3)	80	29	-	0	0	-	4.3	0	26	February 6 at hour 0	0.9	ENE	8.0	February 23	100.0	99.9
RH (%)	-	-	-	-	-	-	71.7	34	97	February 9 at hour 6	5	SW	84.4	February 9	100.0	100.0
BP (millibar)	-	-	-	-	-	-	954	929	974	February 22 at hour 4	0	N	972	February 22	100.0	100.0
Ext. Temp. (°C)	-	-	-	-	-	-	-14.6	-38.1	7.4	February 10 at hour 3	13.2	W	1.9	February 8	100.0	100.0
Stn. Temp. (°C)	-	-	-	-	-	-	24.4	22.6	25.1	February 15 at hour 13	19.5	NW	24.7	February 15	100.0	100.0
WSV (km/hr)	-	-	-	-	-	-	1.0	0.0	23.0	February 15 at hour 11	23	NW	9.9	February 10	100.0	100.0
WDV (sector)	-	-	-	-	-	-	288 (WNNW)	-	-	-	-	-	-	-	100.0	100.0

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

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

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

Tamarack Station

Equipment Operation Summary

Parameter	Make / Model	Serial Number	Calibration Date
Sulphur Dioxide (SO ₂)	Thermo / 43i-TLE	1180930031	February 9, 2022
<ul style="list-style-type: none"> No issues were identified this month. 			
Hydrogen Sulphide (H ₂ S)	Thermo / 450i	CM17360005	February 9, 2022
<ul style="list-style-type: none"> Low ambient temperatures had a marked effect on H₂S span results between February 21 and February 25. This is a perennial problem when the moisture levels in sample air drop very low, causing H₂S analyzer to respond more slowly due to the SO₂ scrubber requiring a certain humidity to function optimally. Although daily span check results are often below the requirements, and the daily zero check results were occasionally close to or outside the allowable drift range (while low temperatures are occurring), experience indicates the analyzer's performance remains in compliance with AMD performance criteria, and collected data remain valid. 			
Oxide of Nitrogen / Nitric Oxide/ Nitrogen Dioxide (NO _x /NO/NO ₂)	Thermo / 42i	1180930028	February 9, 2022
<ul style="list-style-type: none"> No issues were identified this month. 			
Ozone (O ₃)	Thermo 49iQ	1202068570	February 10, 2022
<ul style="list-style-type: none"> No issues were identified this month. 			
Total Hydrocarbons / Methane/ Non-methane Hydrocarbons (THC/CH ₄ /NMHC)	Thermo / 55i	1314057759	February 10, 2022
<ul style="list-style-type: none"> No issues were identified this month. 			
Particulate Matter 2.5 (PM _{2.5})	Thermo / Sharp 5030	CM 2209	February 17, 2022
<ul style="list-style-type: none"> No issues were identified this month. 			
Parameter	Make / Model	Serial Number	System Check Date
Relative Humidity (RH)	Rotronic / HC2A-S3	20433166	February 10, 2022
<ul style="list-style-type: none"> No issues were identified this month. 			

Parameter	Make / Model	Serial Number	System Check Date
Ambient Temperature (AT)	Rotronic / HC2A-S3	20433166	February 10, 2022
<ul style="list-style-type: none"> No issues were identified this month. 			
Barometric Pressure (BP)	Met One / Part 090D	F4997	February 10, 2022
<ul style="list-style-type: none"> No issues were identified this month. 			
Station Temperature (ST)	BV-supplied	n/a	February 10, 2022
<ul style="list-style-type: none"> No issues were identified this month. 			
Precipitation (PRECIP)	Met One / Part 387	F4481	January 5, 2022
<ul style="list-style-type: none"> No issues were identified this month. 			
Wind Speed (WS) / Wind Direction (WD)/ Stand Deviation Wind Direction (STDWD)	RM Young / 05305VK	161465	February 10, 2022
<ul style="list-style-type: none"> Wind direction data contained in this report represents where the wind is coming from. An annual wind system calibration was completed on September 20, 2021. No issues were identified this month. 			

Monitored Data Summary for Tamarack Site

Parameter	Objectives/Guidelines			Exceedances			Monthly Avg.	Min. 1-hr	Max. 1-hr	Date/Time	VWS (km/hr)	VWD (sector)	Max. 24-hr	Date	Operational Uptime (%)	Valid Data (%)
	1-hr	24-hr	30-day	1-hr	24-hr	30-day										
SO2 (ppb)	172	48	11	0	0	0	1.3	0	18	February 8 at hour 1	15.2	WNW	3.6	February 8	100.0	94.9
H2S (ppb)	10	3	-	0	0	-	0.1	0	2	February 7 at hour 7	1.3	SSW	0.5	February 9	100.0	94.9
NOx (ppb)	-	-	-	-	-	-	5.4	0	34	February 3 at hour 7	3.1	WNW	9.0	February 23	100.0	94.8
NO (ppb)	-	-	-	-	-	-	1.0	0	19	February 24 at hour 11	2.4	SW	2.5	February 1	100.0	94.8
NO2 (ppb)	159	-	-	0	-	-	4.4	0	21	February 1 at hour 8	8.4	WNW	7.6	February 25	100.0	94.8
O3 (ppb)	76	-	-	0	-	-	31.7	9.4	45.7	February 7 at hour 18	14.6	W	37.9	February 27	100.0	94.8
THC (ppm)	-	-	-	-	-	-	1.97	1.84	2.37	February 6 at hour 8	3.1	SSW	2.06	February 23	100.0	94.9
CH4 (ppm)	-	-	-	-	-	-	1.96	1.84	2.24	February 6 at hour 8	3.1	SSW	2.06	February 23	100.0	94.9
NMHC (ppm)	-	-	-	-	-	-	0.00	0.00	0.18	February 10 at hour 6	13.7	WNW	0.02	February 10	100.0	94.9
PM2.5 (µg/m3)	80	29	-	0	0	-	2.7	0	19	February 23 at hour 3	3	SSW	6.2	February 21	100.0	99.6
RH (%)	-	-	-	-	-	-	79.2	42	100	February 6 at hour 11	7.5	SSW	90.7	February 9	100.0	100.0
BP (millibar)	-	-	-	-	-	-	938	914	957	February 22 at hour 0	3.2	WSW	955	February 22	100.0	100.0
Ext. Temp. (°C)	-	-	-	-	-	-	-14.6	-37.0	6.9	February 10 at hour 2	13.7	W	1.5	February 8	100.0	100.0
Stn. Temp. (°C)	-	-	-	-	-	-	21.7	21.0	23.8	February 10 at hour 12	13	N	22.9	February 10	100.0	100.0
Precipitation (mm)*	-	-	-	-	-	-	12.3	0.0	1.5	February 6 at hour 9	7.1	SSW	2.2	February 27	100.0	100.0
WSV (km/hr)	-	-	-	-	-	-	1.2	0.0	20.3	February 7 at hour 22	20.3	WNW	9.6	February 10	100.0	100.0
WDV (sector)	-	-	-	-	-	-	281 (W)	-	-	-	-	-	-	-	100.0	100.0

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

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

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

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

St. Lina Station

Equipment Operation Summary

Parameter	Make / Model	Serial Number	Calibration Date
Sulphur Dioxide (SO2)	Thermo / 43i-TLE	1180930030	February 3, 2022
<ul style="list-style-type: none"> The analyzer failed the daily zero-span check on February 3 due to a permeation tube depletion. The permeation tube was replaced during the monthly calibration on February 3. The expected span value was adjusted on February 9. 			
Hydrogen Sulphide (H2S)	Thermo / 450i	CM18010058	February 14, 2022
<ul style="list-style-type: none"> Low ambient temperatures had a marked effect on H2S span results between February 1 and February 3. This is a perennial problem when the moisture levels in sample air drop very low, causing H2S analyzer to respond more slowly due to the SO2 scrubber requiring a certain humidity to function optimally. Although daily span check results are often below the requirements, and the daily zero check results were occasionally close to or outside the allowable drift range (while low temperatures are occurring), experience indicates the analyzer's performance remains in compliance with AMD performance criteria, and collected data remain valid. A monthly calibration was completed on February 4. As the ambient temperatures warmed up, the analyzer recorded elevated hourly concentrations and unstable zero-span results between February 7 and February 8. A shut down calibration was completed before the SO2 scrubber material was replaced on February 8. A post-repair calibration was completed after the maintenance. Six hours of downtime were recorded due to this event. As the analyzer started showing drift on February 12, a repeat multi-point calibration was completed to correct the drift on April 14. Four hours of downtime was recorded as a result. The analyzer started showing drift again on February 18 and failed the zero-span check on February 25. A repeat zero-span check was completed on February 20 hour 7 to investigate the drift. It was determined that the drift was because the of the analyzer's sensitivity to the outdoor ambient temperature change. In response, plans were made to replace the analyzer during the station visit in March. One hour of downtime was recorded due to the additional quality check. 			

Parameter	Make / Model	Serial Number	Calibration Date
Total Hydrocarbons / Methane/ Non-methane Hydrocarbons (THC/CH4/NMHC)	Thermo / 55i	1505664392	February 4, 2022
<ul style="list-style-type: none"> No issues were identified this month. The span gas cylinder was replaced follow by a repeat zero-span check on February 14. One hour of downtime was recorded as a result. 			
Oxide of Nitrogen / Nitric Oxide/ Nitrogen Dioxide (NOx/NO/NO2)	Thermo / 42i	1180930029	February 3, 2022
<ul style="list-style-type: none"> No issues were identified this month. 			
Ozone (O3)	Thermo / 49i	1002240371	February 3, 2022
<ul style="list-style-type: none"> The analyzer failed the daily zero-span check from February 1 to February 3. A successful monthly calibration was completed to correct the drift on February 3. As the analyzer passed the monthly calibration check requirement, data collected between February 1 and February 3 were considered valid. 			
Particulate Matter 2.5 (PM2.5)	Thermo / Sharp 5030i	CM17091001	February 24, 2022
<ul style="list-style-type: none"> No issues were identified this month. 			
Parameter	Make / Model	Serial Number	System Check Date
Relative Humidity (RH)	Rotonic HC2-S3	20221366	February 4, 2022
<ul style="list-style-type: none"> No issues were identified this month. 			
Ambient Temperature (AT)	Rotonic HC2-S3	20221366	February 4, 2022
<ul style="list-style-type: none"> No issues were identified this month. 			
Barometric Pressure (BP)	Met One / Part 090D	F4998	February 4, 2022
<ul style="list-style-type: none"> No issues were identified this month. 			
Station Temperature (ST)	BV-supplied	n/a	February 4, 2022
<ul style="list-style-type: none"> No issues were identified this month. 			

Parameter	Make / Model	Serial Number	System Check Date
Precipitation (PRECIP)	Met One / Part 387D	A23775	January 10, 2022
<ul style="list-style-type: none"> No issues were identified this month. 			
Wind Speed (WS) / Wind Direction (WD)/ Stand Deviation Wind Direction (STDWD)	RM Young / 05305VK	161466	February 4, 2022
<ul style="list-style-type: none"> Wind direction data contained in this report represents where the wind is coming from. The annual wind system calibration was completed on March 16, 2021. No issues were identified this month. 			

Monitored Data Summary for St. Lina Site

Parameter	Objectives/Guidelines			Exceedances			Monthly Avg.	Min. 1-hr	Max. 1-hr	Date/Time	VWS (km/hr)	VWD (sector)	Max. 24-hr	Date	Operational Uptime (%)	Valid Data (%)
	1-hr	24-hr	30-day	1-hr	24-hr	30-day										
SO2 (ppb)	172	48	11	0	0	0	0.3	0	3	February 3 at hour 11	9.7	NNW	0.8	February 4	100.0	94.9
H2S (ppb)	10	3	-	0	0	-	0.3	0	3	February 8 at hour 4	14.9	WNW	2.0	February 6	98.4	93.3
NOx (ppb)	-	-	-	-	-	-	2.3	0	12	February 21 at hour 6	5.1	ENE	5.3	February 21	100.0	94.6
NO (ppb)	-	-	-	-	-	-	0.1	0	4	February 25 at hour 11	16.3	WSW	0.8	February 25	100.0	94.6
NO2 (ppb)	159	-	-	0	-	-	2.2	0	12	February 21 at hour 6	5.1	ENE	4.8	February 21	100.0	94.6
O3 (ppb)	76	-	-	0	-	-	36.3	15.6	51.2	February 6 at hour 16	21.9	WSW	46.3	February 7	100.0	94.9
THC (ppm)	-	-	-	-	-	-	1.94	1.81	2.26	February 14 at hour 1	10.1	E	2.08	February 14	99.9	94.9
CH4 (ppm)	-	-	-	-	-	-	1.94	1.81	2.26	February 14 at hour 1	10.1	E	2.08	February 14	99.9	94.9
NMHC (ppm)	-	-	-	-	-	-	0.00	0.00	0.02	February 3 at hour 18	5.7	NW	0.00	February 3	99.9	94.9
PM2.5 (µg/m3)	80	29	-	0	0	-	3.5	0	14	February 15 at hour 22	9.8	NNE	7.3	February 24	100.0	99.6
RH (%)	-	-	-	-	-	-	81.8	46	100	February 5 at hour 22	13.9	WSW	98.1	February 27	100.0	100.0
BP (millibar)	-	-	-	-	-	-	921	900	939	February 21 at hour 23	11.2	W	937	February 22	100.0	100.0
Ext. Temp. (°C)	-	-	-	-	-	-	-12.2	-31.9	8.9	February 10 at hour 0	22.6	WNW	3.4	February 7	100.0	100.0
Stn. Temp. (°C)	-	-	-	-	-	-	21.1	18.0	25.5	February 8 at hour 14	12.3	NW	23.9	February 26	100.0	100.0
Precipitation (mm)*	-	-	-	-	-	-	17.0	0.0	1.5	February 4 at hour 16	9.7	ESE	5.5	February 4	100.0	100.0
WSV (km/hr)	-	-	-	-	-	-	3.4	0.6	31.2	February 9 at hour 22	31.2	W	15.5	February 10	100.0	100.0
WDV (sector)	-	-	-	-	-	-	270 (W)	-	-	-	-	-	-	-	100.0	100.0

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

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

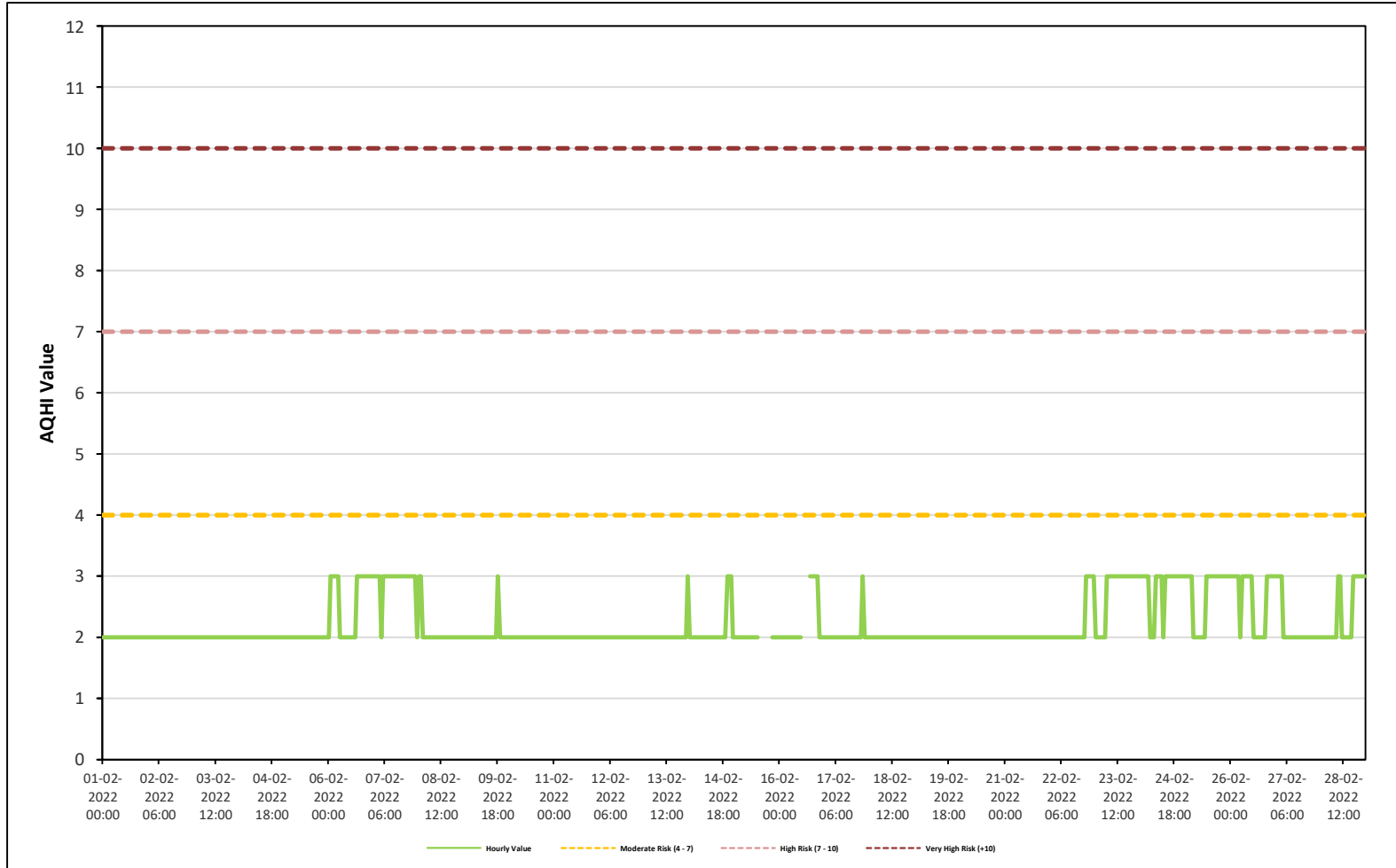
Alberta Ambient Air Quality Objectives (AAAQOs) and /or Alberta Ambient Air Quality Guidelines (AAAQGs) Exceedances

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

TABLES AND CHARTS

COLD LAKE SOUTH STATION

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





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

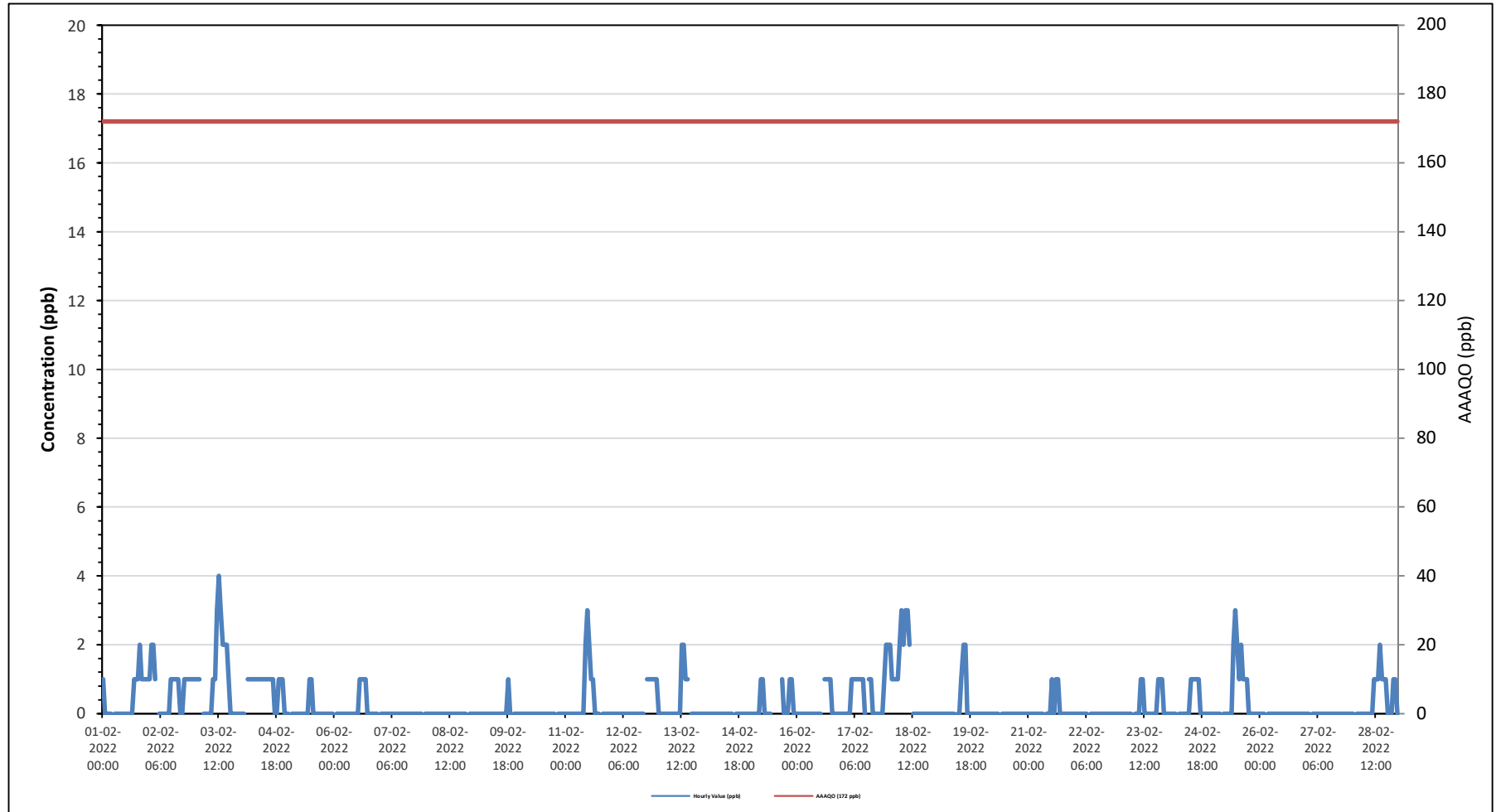
Cold Lake South Station - February 2022

Summary of Hourly Averages

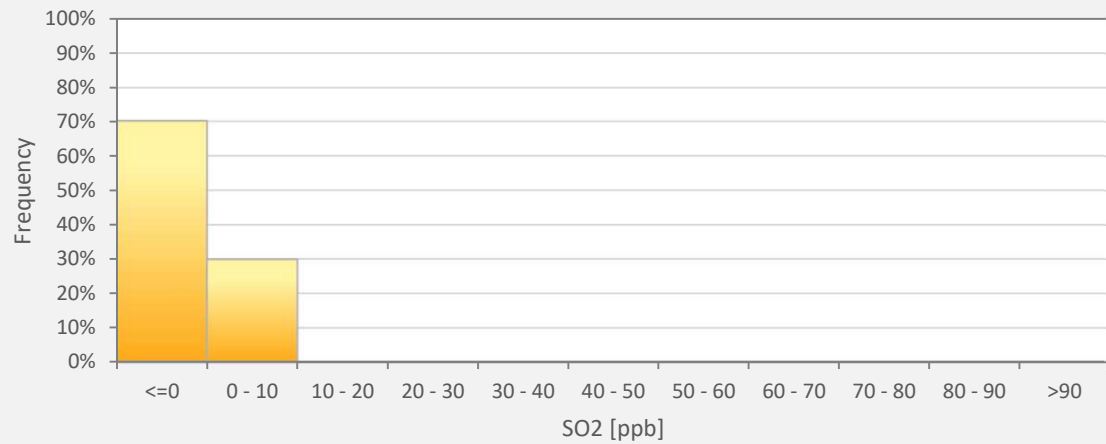
SULPHUR DIOXIDE (SO₂) in ppb

Alberta Ambient Air Quality Objectives (AAAQO): 1-Hour 172 ppb, 24-Hour 48 ppb, 30-Day 11 ppb																																	
Number of 1-Hour Exceedences: 0					Number of 24-Hour Exceedences: 0					30-Day Exceedence: 0																							
Maximum Hourly Value: 4 ppb on February 3 at hour 12										Hours in Service: 672																							
Maximum Daily Value: 1.0 ppb on February 3										Hours of Data: 639																							
Minimum Hourly Value: 0 ppb on February 1 at hour 1										Hours of Missing Data: 0																							
Minimum Daily Value: 0.0 ppb on February 7										Hours of Calibration: 33																							
Monthly Average: 0.3 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									
Feb 1	1	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	1	1	1	2	1	1	1	1	0	2	0.4						
Feb 2	1	2	2	1	S	0	0	0	0	0	0	1	1	1	1	1	0	0	1	1	1	1	1	1	1	0	2	0.7					
Feb 3	1	1	1	S	0	0	0	0	0	1	1	3	4	3	2	2	2	1	0	0	0	0	0	0	0	4	1.0						
Feb 4	0	0	S	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	0	0	0	0	1	0.7						
Feb 5	0	S	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1					
Feb 6	S	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	S	0	1	0.2					
Feb 7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0.0					
Feb 8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0.0					
Feb 9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	S	0	0	0	0	0	1	0.0					
Feb 10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0.0					
Feb 11	0	0	0	0	0	0	0	0	0	0	2	3	2	1	1	0	0	0	S	0	0	0	0	0	0	0	3	0.4					
Feb 12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	1	1	1	1	1	1	1	0	1	0.3					
Feb 13	0	0	0	0	0	0	0	0	0	0	0	0	2	2	1	1	S	0	0	0	0	0	0	0	0	0	2	0.3					
Feb 14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0.0					
Feb 15	0	0	0	0	0	1	1	0	0	0	0	0	C	C	C	C	0	0	0	0	0	1	1	0	0	0	1	0.3					
Feb 16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	1	1	1	0	0	0	0	0	0	0	0	0	1	0.2				
Feb 17	0	0	0	0	1	1	1	1	1	1	1	0	S	1	1	0	0	0	0	0	0	0	0	1	2	2	0	0.6					
Feb 18	2	1	1	1	1	2	3	2	3	3	2	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0.9					
Feb 19	0	0	0	0	0	0	0	0	0	0	0	S	0	0	1	2	2	0	0	0	0	0	0	0	0	0	2	0.2					
Feb 20	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0					
Feb 21	0	0	0	0	0	0	0	0	S	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0.1					
Feb 22	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0					
Feb 23	0	0	0	0	0	S	0	0	0	0	1	1	0	0	0	0	0	0	0	1	1	1	0	0	0	0	1	0.2					
Feb 24	0	0	0	0	0	S	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	1	0.2					
Feb 25	0	0	0	0	S	0	0	0	0	0	2	3	2	1	2	1	1	0	0	0	0	0	0	0	0	0	3	0.6					
Feb 26	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0					
Feb 27	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0					
Feb 28	0	S	0	0	0	0	0	0	0	0	1	1	1	2	1	1	0	0	0	0	1	1	0	0	0	0	2	0.4					
Diurnal Maximum	2	2	2	1	1	2	3	2	3	3	2	3	4	3	2	2	2	1	1	2	1	1	2	2	2	2							
Diurnal Average	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.1	0.2	0.2	0.4	0.5	0.6	0.5	0.6	0.5	0.4	0.2	0.1	0.2	0.2	0.3	0.2	0.2	0.2								
C	Monthly Calibration										S	Daily Zero-Span Check										Q	Quality Assurance										
K	Collection Error										N	No Data (Machine Not in Service)										Y	Routine Maintenance					P	Power Failure				
X	Invalid Data (Equipment Malfunction /Recovery)										NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)																					
Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.																																	
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.																																	

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



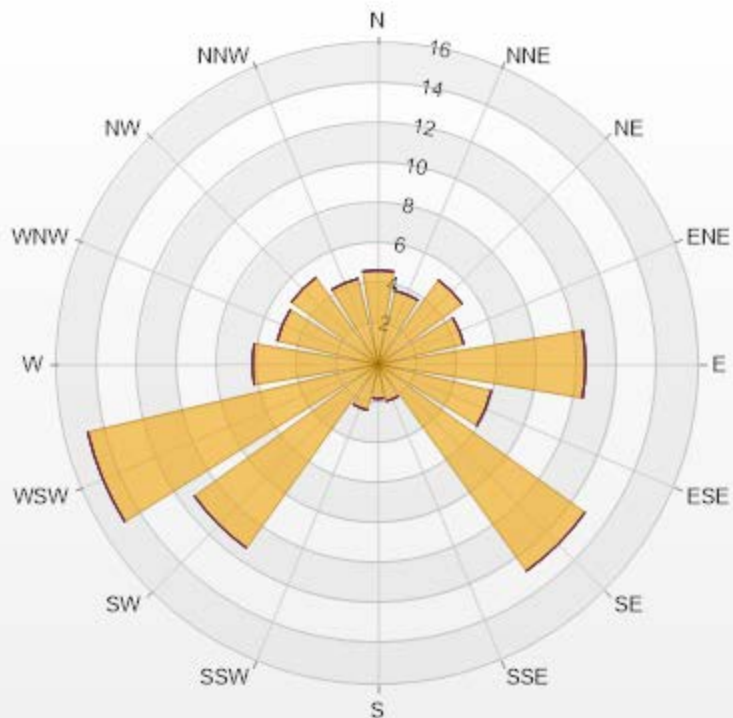
SO2[ppb] Histogram: Cold Lake South Monthly: 02-2022 1 Hr.



Classes	SO2
<=0	70.11%
0 - 10	29.89%
10 - 20	0.00%
20 - 30	0.00%
30 - 40	0.00%
40 - 50	0.00%
50 - 60	0.00%
60 - 70	0.00%
70 - 80	0.00%
80 - 90	0.00%
>90	0.00%

Wind: Cold Lake South Poll.: Cold Lake South-SO2[ppb] Monthly: 02-2022 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 95.09% Calm Avg: 0.00 [ppb]

Direction	0-10	10-50	50-100	100-172	>172.0	Total
N	4.69	0	0	0	0	4.69
NNE	3.76	0	0	0	0	3.76
NE	5.16	0	0	0	0	5.16
ENE	4.38	0	0	0	0	4.38
E	10.33	0	0	0	0	10.33
ESE	5.79	0	0	0	0	5.79
SE	12.68	0	0	0	0	12.68
SSE	1.88	0	0	0	0	1.88
S	1.72	0	0	0	0	1.72
SSW	2.35	0	0	0	0	2.35
SW	11.27	0	0	0	0	11.27
WSW	14.87	0	0	0	0	14.87
W	6.26	0	0	0	0	6.26
WNW	5.16	0	0	0	0	5.16
NW	5.32	0	0	0	0	5.32
NNW	4.38	0	0	0	0	4.38
Summary	100	0	0	0	0	100



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% Icon Classes (ppb)

100 0-10

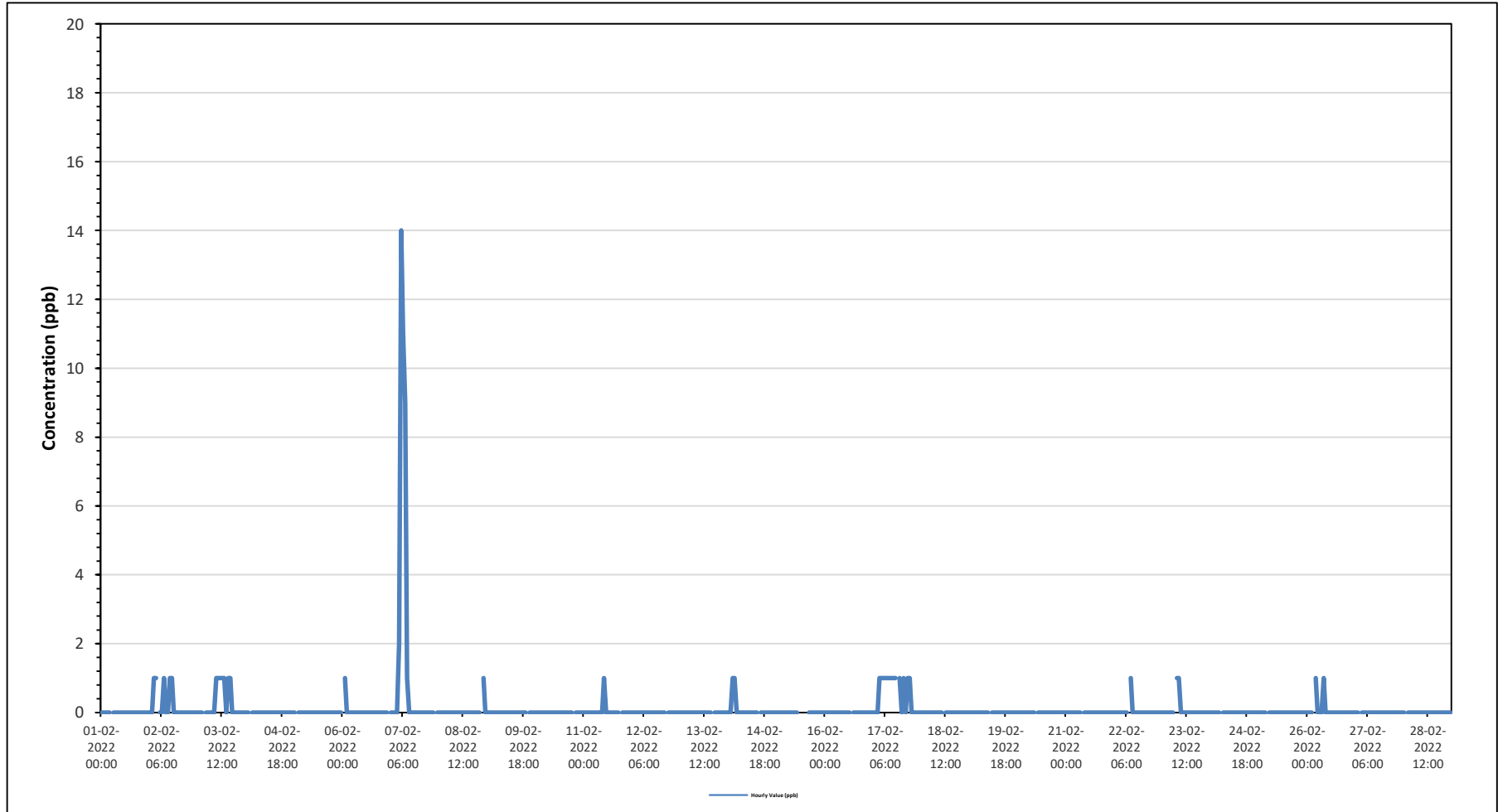
0 10-50

0 50-100

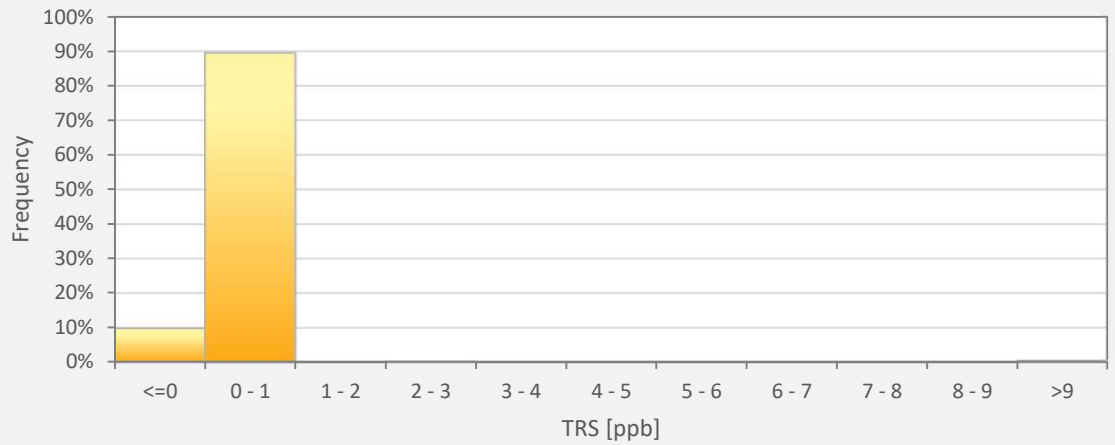
0 100-172

0 >172.0

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



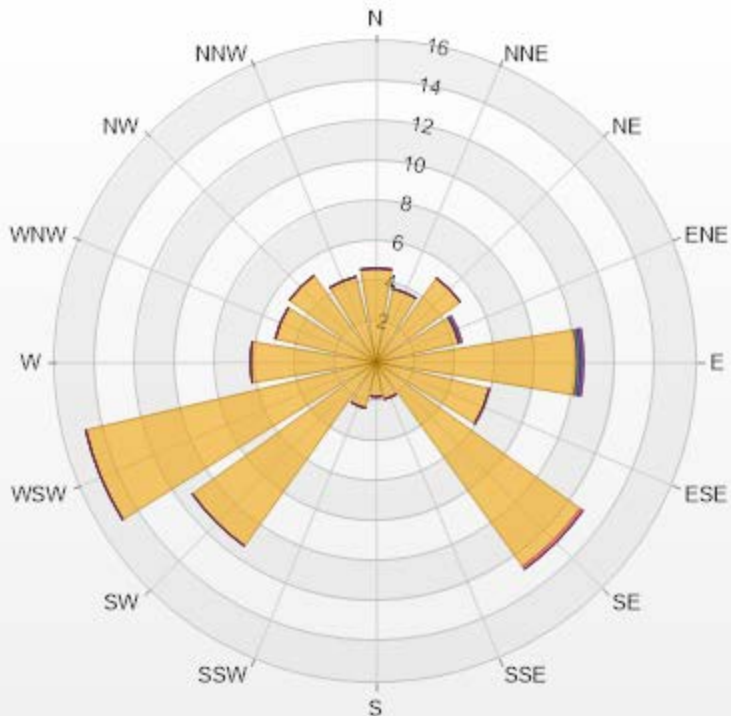
TRS[ppb] Histogram: Cold Lake South Monthly: 02-2022 1 Hr.



Classes	TRS
<=0	9.86%
0 - 1	89.51%
1 - 2	0.00%
2 - 3	0.16%
3 - 4	0.00%
4 - 5	0.00%
5 - 6	0.00%
6 - 7	0.00%
7 - 8	0.00%
8 - 9	0.00%
>9	0.47%

Wind: Cold Lake South Poll.: Cold Lake South-TRS[ppb] Monthly: 02-2022 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 95.09% Calm Avg: 0.00 [ppb]

Direction	0-2	2-5	5-10	10-50	>50.0	Total
N	4.69	0	0	0	0	4.69
NNE	3.76	0	0	0	0	3.76
NE	5.16	0	0	0	0	5.16
ENE	4.23	0	0	0.16	0	4.39
E	10.02	0	0.16	0.16	0	10.34
ESE	5.79	0	0	0	0	5.79
SE	12.52	0.16	0	0	0	12.68
SSE	1.88	0	0	0	0	1.88
S	1.72	0	0	0	0	1.72
SSW	2.35	0	0	0	0	2.35
SW	11.27	0	0	0	0	11.27
WSW	14.87	0	0	0	0	14.87
W	6.26	0	0	0	0	6.26
WNW	5.16	0	0	0	0	5.16
NW	5.32	0	0	0	0	5.32
NNW	4.38	0	0	0	0	4.38
Summary	99.38	0.16	0.16	0.32	0	100



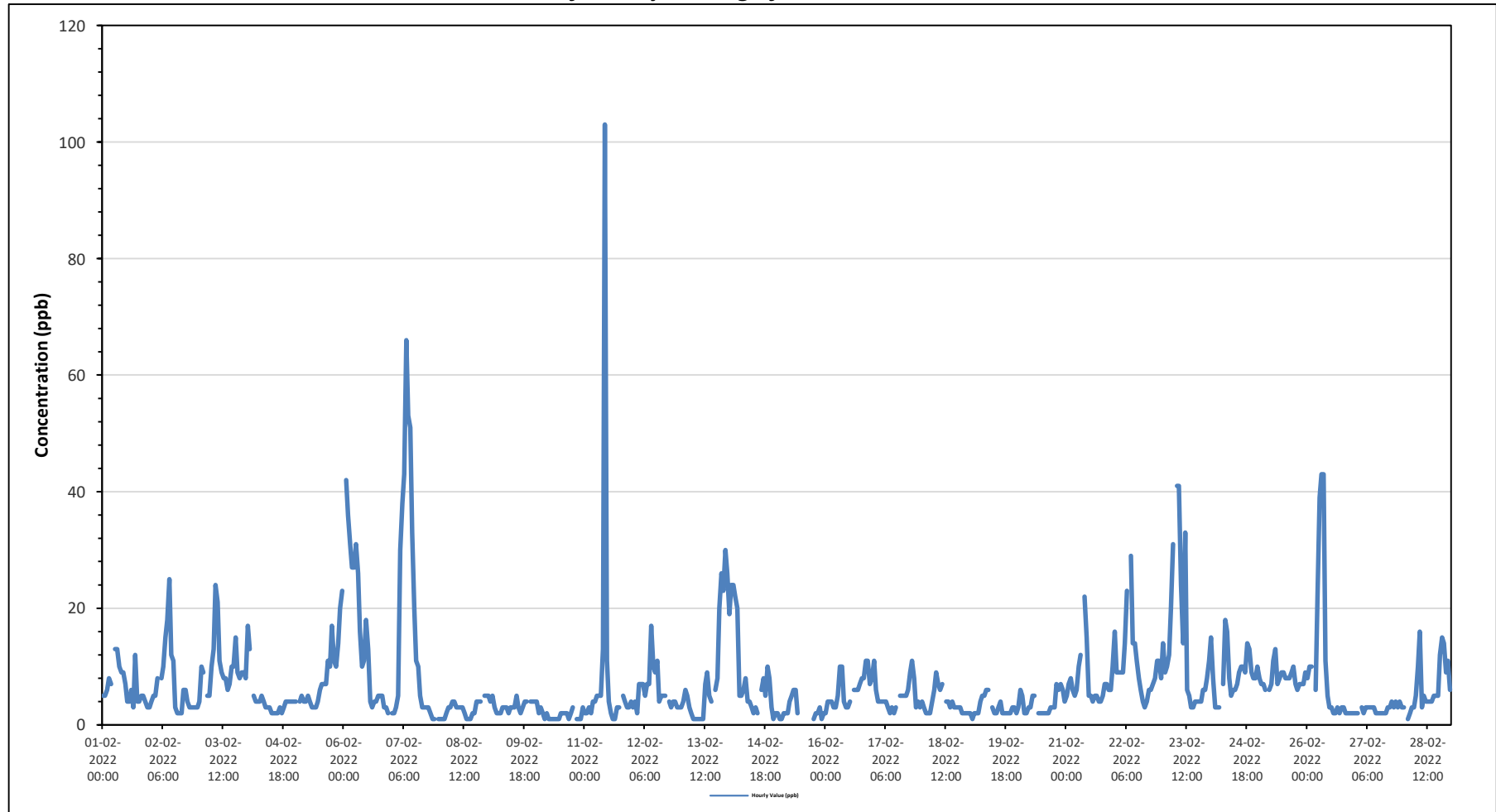
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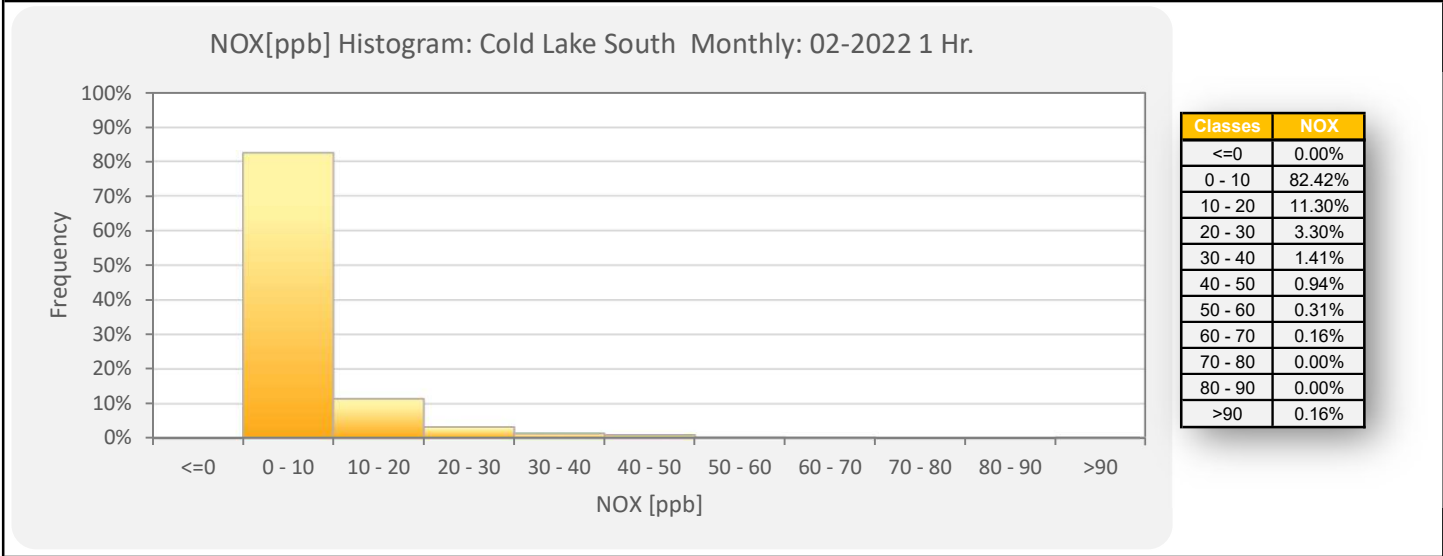
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% Icon Classes (ppb)

99 0-2 0 2-5 0 5-10 0 10-50 0 >50.0

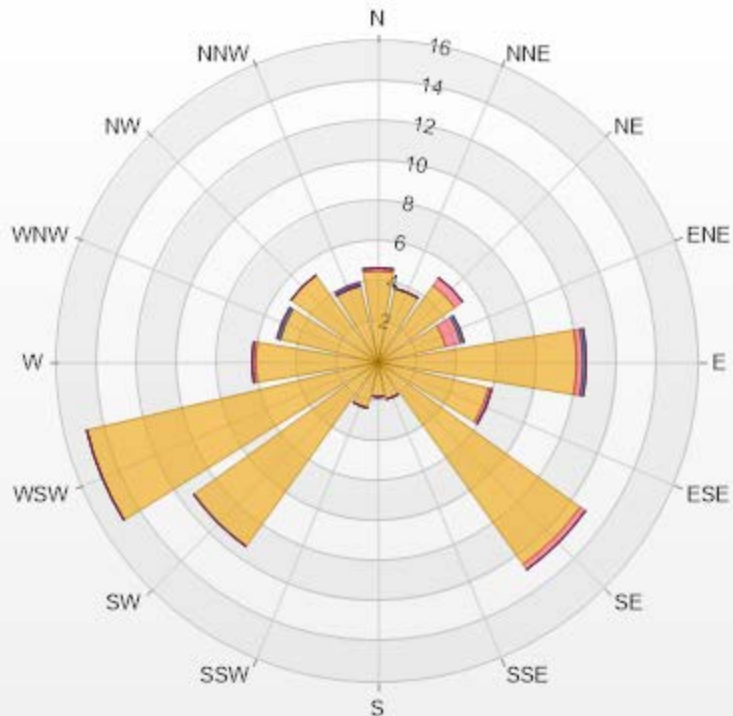
Timeseries Chart of Hourly Average for NOx - Cold Lake South Station





Wind: Cold Lake South Poll.: Cold Lake South-NOX[ppb] Monthly: 02-2022 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.79% Calm Avg: 0.00 [ppb]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	4.55	0.16	0	0	0	4.71
NNE	3.77	0	0	0	0	3.77
NE	4.71	0.47	0	0	0	5.18
ENE	3.45	0.78	0.16	0	0	4.39
E	9.89	0.31	0.16	0	0	10.36
ESE	5.65	0.16	0	0	0	5.81
SE	12.4	0.31	0	0	0	12.71
SSE	1.88	0	0	0	0	1.88
S	1.73	0	0	0	0	1.73
SSW	2.35	0	0	0	0	2.35
SW	11.3	0	0	0	0	11.3
WSW	14.91	0	0	0	0	14.91
W	6.12	0.16	0	0	0	6.28
WNW	5.02	0	0.16	0	0	5.18
NW	5.34	0	0	0	0	5.34
NNW	3.92	0	0	0.16	0	4.08
Summary	96.99	2.35	0.48	0.16	0	100

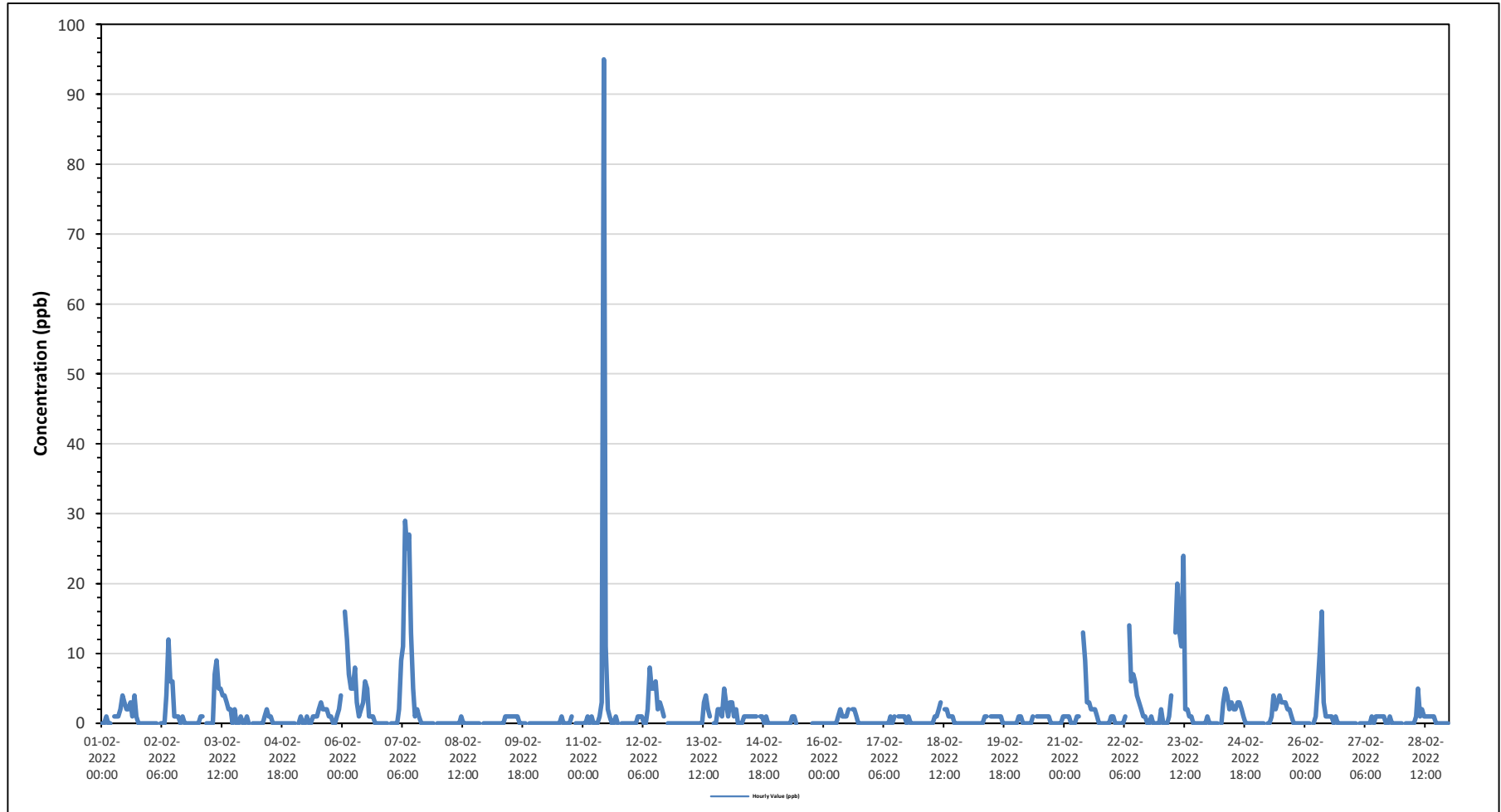


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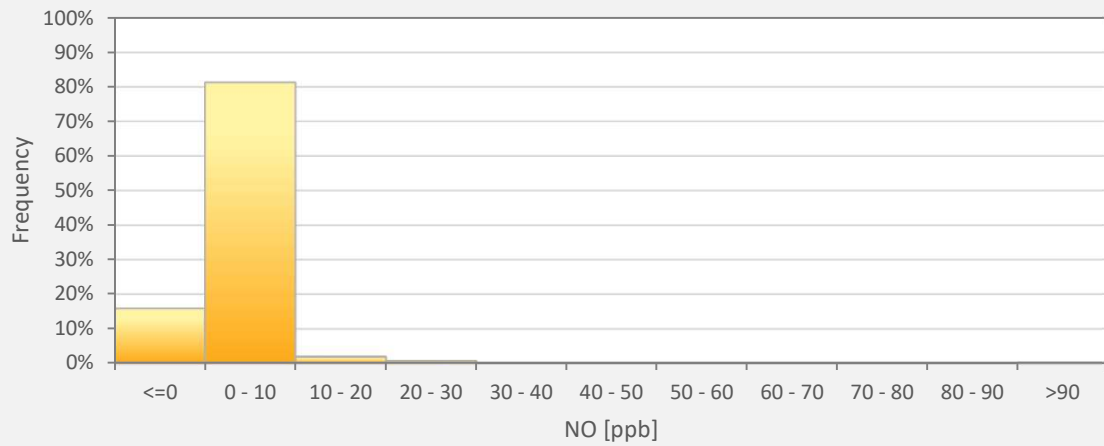
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% Icon Classes (ppb)	97	0-30	2	30-50	0	50-76	0	76-159	0	>159.0

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



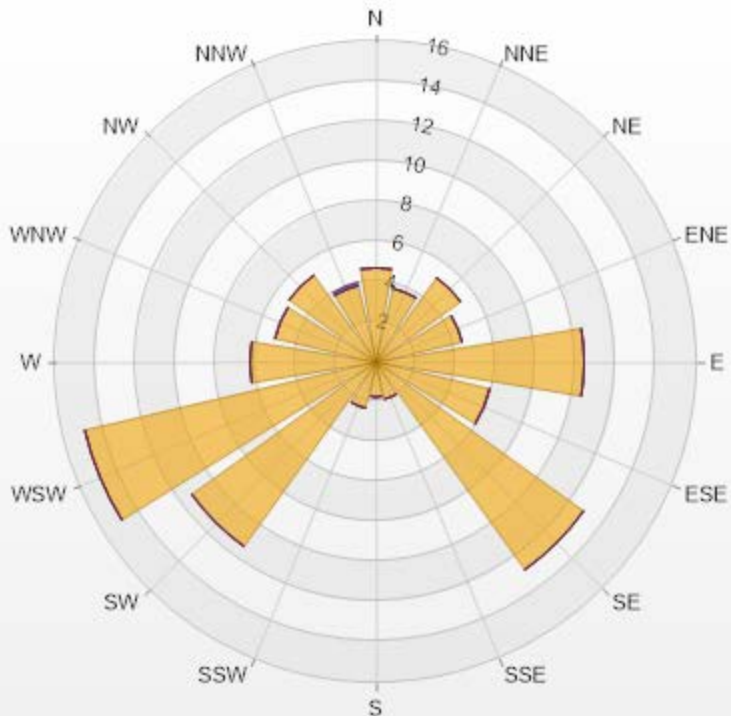
NO[ppb] Histogram: Cold Lake South Monthly: 02-2022 1 Hr.



Classes	NO
<=0	15.86%
0 - 10	81.32%
10 - 20	1.88%
20 - 30	0.78%
30 - 40	0.00%
40 - 50	0.00%
50 - 60	0.00%
60 - 70	0.00%
70 - 80	0.00%
80 - 90	0.00%
>90	0.16%

Wind: Cold Lake South Poll.: Cold Lake South-NO[ppb] Monthly: 02-2022 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.79% Calm Avg: 0.00 [ppb]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	4.71	0	0	0	0	4.71
NNE	3.77	0	0	0	0	3.77
NE	5.18	0	0	0	0	5.18
ENE	4.4	0	0	0	0	4.4
E	10.36	0	0	0	0	10.36
ESE	5.81	0	0	0	0	5.81
SE	12.72	0	0	0	0	12.72
SSE	1.88	0	0	0	0	1.88
S	1.73	0	0	0	0	1.73
SSW	2.35	0	0	0	0	2.35
SW	11.3	0	0	0	0	11.3
WSW	14.91	0	0	0	0	14.91
W	6.28	0	0	0	0	6.28
WNW	5.18	0	0	0	0	5.18
NW	5.34	0	0	0	0	5.34
NNW	3.92	0	0	0.16	0	4.08
Summary	100	0	0	0.16	0	100



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% Icon Classes (ppb)

100  0-30

0  30-50

0  50-76

0  76-159

0  >159.0



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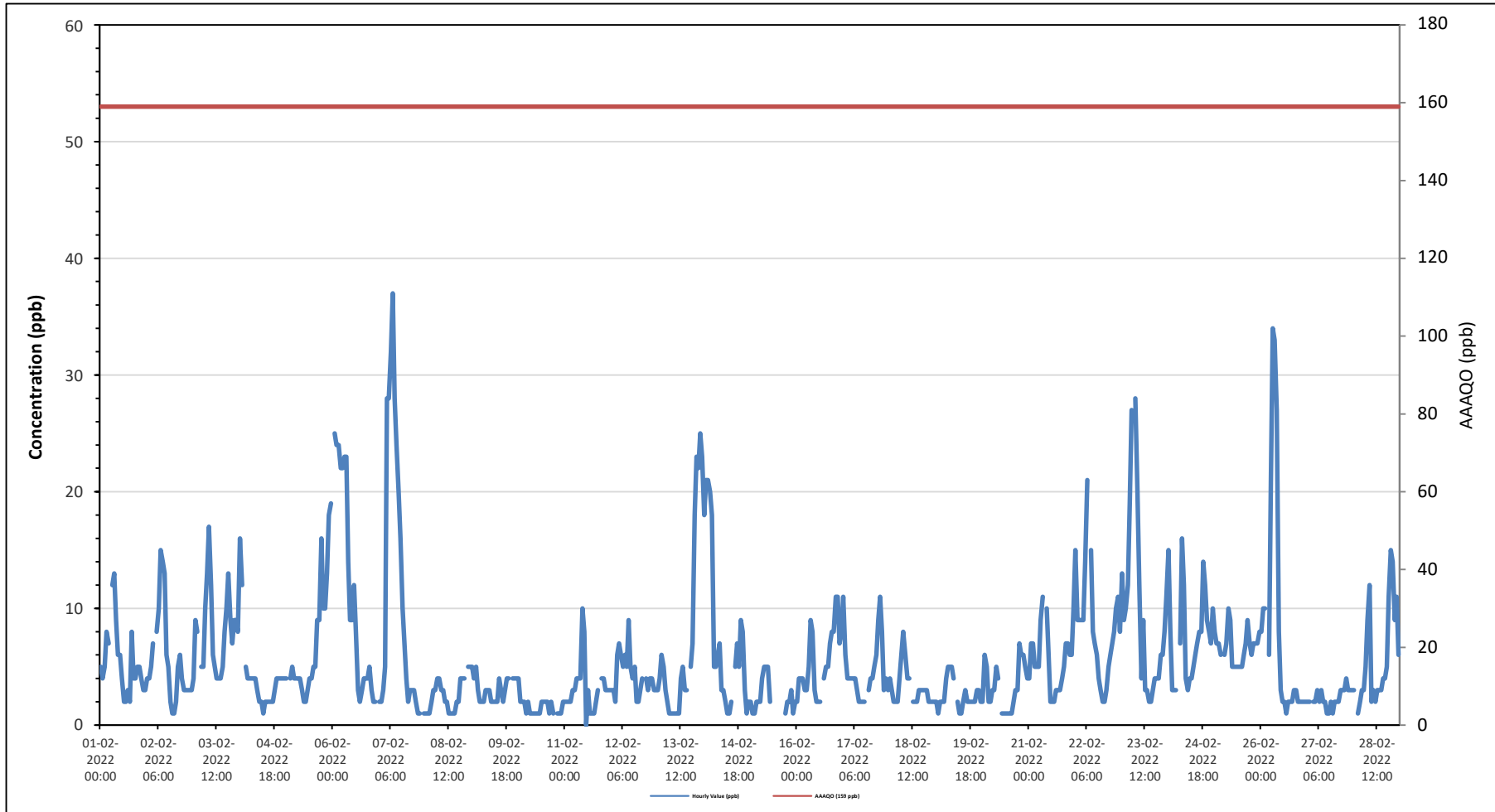
Cold Lake South Station - February 2022

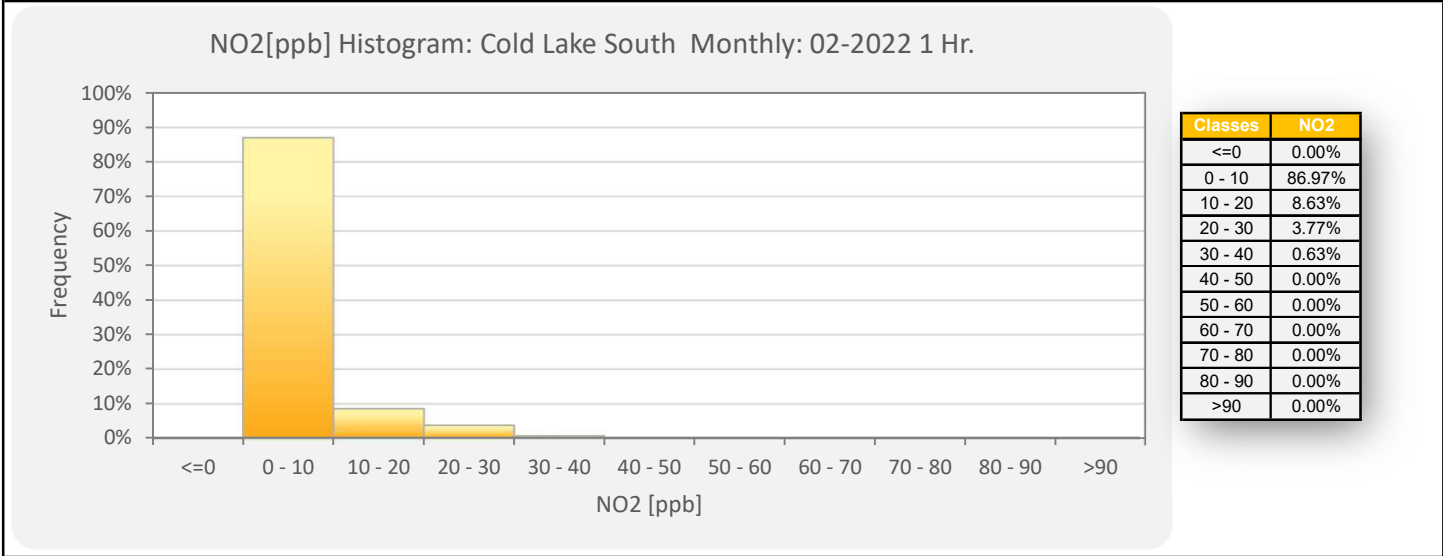
Summary of Hourly Averages

NITROGEN DIOXIDE (NO₂) in ppb

Alberta Ambient Air Quality Objectives (AAAQO): 1-Hour 159 ppb																																	
Number of 1-Hour Exceedences:		0																															
Maximum Hourly Value:		37 ppb on February 7 at hour 7												Hours in Service:		672																	
Maximum Daily Value:		11.4 ppb on February 7												Hours of Data:		637																	
Minimum Hourly Value:		0 ppb on February 11 at hour 11																															
Minimum Daily Value:		1.6 ppb on February 10												Hours of Missing Data:		0																	
Monthly Average:		5.7 ppb												Hours of Calibration:		35																	
														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									
Feb 1	5	4	5	8	7	S	12	13	9	6	6	4	2	2	3	2	8	4	4	5	5	4	3	3	2	13	5.4						
Feb 2	4	4	5	7	S	8	10	15	14	13	6	5	2	1	1	2	5	6	4	3	3	3	3	3	1	15	5.5						
Feb 3	4	9	8	S	5	5	10	13	17	12	6	5	4	4	4	5	8	10	13	9	7	9	9	8	4	17	8.0						
Feb 4	16	12	S	5	4	4	4	4	4	3	2	2	1	2	2	2	2	2	3	4	4	4	4	4	1	16	4.1						
Feb 5	4	S	4	5	4	4	4	4	3	2	2	3	4	4	5	9	9	16	10	10	13	18	19	2	19	7.0							
Feb 6	S	25	24	24	22	22	23	23	14	9	9	12	8	3	2	3	4	4	4	5	3	2	2	S	2	25	11.2						
Feb 7	2	2	3	5	28	28	32	37	28	24	20	16	10	7	4	2	3	3	3	2	1	1	S	1	1	37	11.4						
Feb 8	1	1	1	2	3	3	4	4	3	3	2	2	1	1	1	2	2	2	4	4	4	S	5	5	1	5	2.6						
Feb 9	5	4	5	3	2	2	2	3	3	3	2	2	2	2	4	3	2	3	4	4	S	4	4	4	2	5	3.1						
Feb 10	4	2	2	2	1	2	1	1	1	1	1	1	2	2	2	1	2	1	S	1	1	1	1	2	1	4	1.6						
Feb 11	2	2	2	2	3	3	4	4	4	10	8	0	3	1	1	2	3	S	S	4	4	3	3	3	0	10	3.1						
Feb 12	3	3	2	6	7	6	5	6	5	9	5	4	5	2	2	3	4	S	4	3	4	4	3	3	2	9	4.3						
Feb 13	3	4	6	5	3	2	1	1	1	1	1	1	4	5	3	3	S	5	7	18	23	22	25	23	1	25	7.3						
Feb 14	18	21	21	20	18	5	5	6	7	3	3	2	1	1	2	S	5	7	5	9	8	3	1	2	1	21	7.5						
Feb 15	2	1	1	2	2	2	4	5	5	5	2	C	C	C	C	C	C	C	1	2	2	3	1	2	1	5	-						
Feb 16	2	4	4	4	3	3	5	9	8	3	2	2	2	S	4	5	5	7	8	8	11	11	7	8	2	11	5.4						
Feb 17	11	6	4	4	4	4	4	3	2	2	2	2	S	3	4	4	5	6	9	11	8	3	4	3	2	11	4.7						
Feb 18	4	3	2	2	2	4	6	8	6	4	4	S	2	2	2	3	3	3	3	3	2	2	2	2	2	8	3.2						
Feb 19	2	1	2	2	2	4	5	5	5	4	S	2	1	1	2	3	2	2	2	2	2	3	3	2	1	5	2.6						
Feb 20	2	6	5	2	2	3	3	5	4	S	1	1	1	1	1	1	2	3	3	7	6	6	5	4	1	7	3.2						
Feb 21	4	7	7	5	5	5	9	11	S	10	6	2	2	2	3	3	3	4	5	7	7	6	6	10	2	11	5.6						
Feb 22	15	9	9	9	14	21	S	15	8	7	6	4	3	2	2	3	5	6	7	8	10	11	8	2	21	8.3							
Feb 23	13	9	10	12	19	27	S	28	20	12	4	9	3	3	2	2	3	4	4	4	6	6	8	11	2	28	9.5						
Feb 24	15	8	3	3	3	S	7	16	12	4	3	4	4	5	6	7	8	8	14	12	9	8	7	10	3	16	7.7						
Feb 25	8	7	7	6	S	6	7	10	9	5	5	5	5	5	5	6	7	9	7	6	7	7	7	8	5	10	6.7						
Feb 26	8	10	10	S	6	21	34	33	27	8	3	2	2	1	2	2	2	3	3	2	2	2	2	2	1	34	8.1						
Feb 27	2	2	S	2	2	3	2	3	2	2	1	1	2	1	2	2	2	3	3	3	3	3	3	3	1	4	2.3						
Feb 28	3	S	1	2	3	3	5	9	12	2	3	2	3	3	3	4	4	5	11	15	14	9	11	6	1	15	5.8						
Diurnal Maximum	18	25	24	24	28	28	34	37	28	24	20	16	10	7	6	7	9	10	16	18	23	22	25	23									
Dalurnal Average	6.0	6.4	5.9	5.7	6.5	7.4	8.5	10.3	8.9	6.2	4.3	3.7	3.1	2.6	2.7	3.0	4.0	4.7	5.6	6.3	6.1	5.6	5.9	5.9									
C	Monthly Calibration												S	Daily Zero-Span Check						Q	Quality Assurance												
K	Collection Error												N	No Data (Machine Not in Service)						Y	Routine Maintenance						P	Power Failure					
X	Invalid Data (Equipment Malfunction /Recovery)												NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)																			
Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.																																	
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.																																	

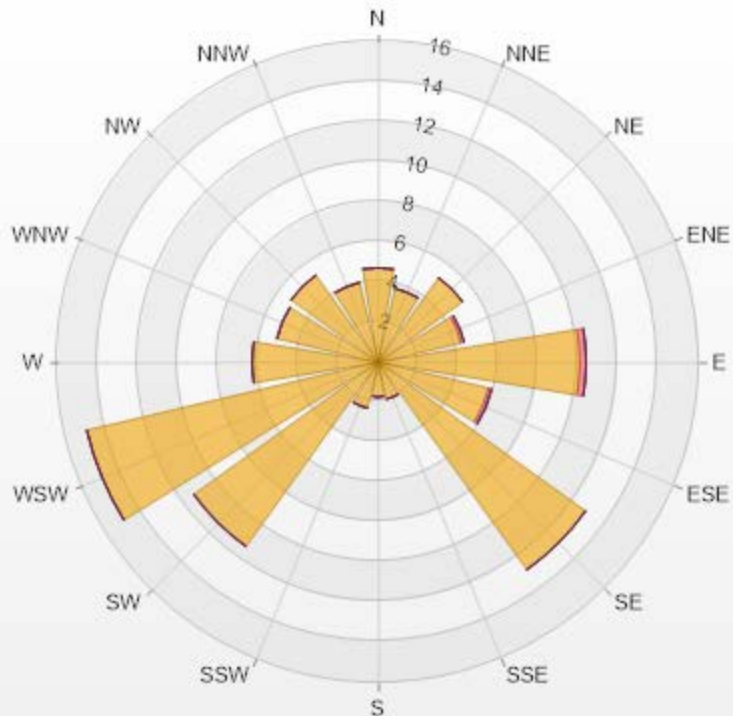
Timeseries Chart of Hourly Average for NO2 - Cold Lake South Station





Wind: Cold Lake South Poll.: Cold Lake South-NO2[ppb] Monthly: 02-2022 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.79% Calm Avg: 0.00 [ppb]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	4.71	0	0	0	0	4.71
NNE	3.77	0	0	0	0	3.77
NE	5.18	0	0	0	0	5.18
ENE	4.24	0.16	0	0	0	4.4
E	10.05	0.31	0	0	0	10.36
ESE	5.65	0.16	0	0	0	5.81
SE	12.72	0	0	0	0	12.72
SSE	1.88	0	0	0	0	1.88
S	1.73	0	0	0	0	1.73
SSW	2.35	0	0	0	0	2.35
SW	11.3	0	0	0	0	11.3
WSW	14.91	0	0	0	0	14.91
W	6.28	0	0	0	0	6.28
WNW	5.18	0	0	0	0	5.18
NW	5.34	0	0	0	0	5.34
NNW	4.08	0	0	0	0	4.08
Summary	99.37	0.63	0	0	0	100



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% Icon Classes (ppb)

99  0-30

1  30-50

0  50-76

0  76-159

0  >159.0



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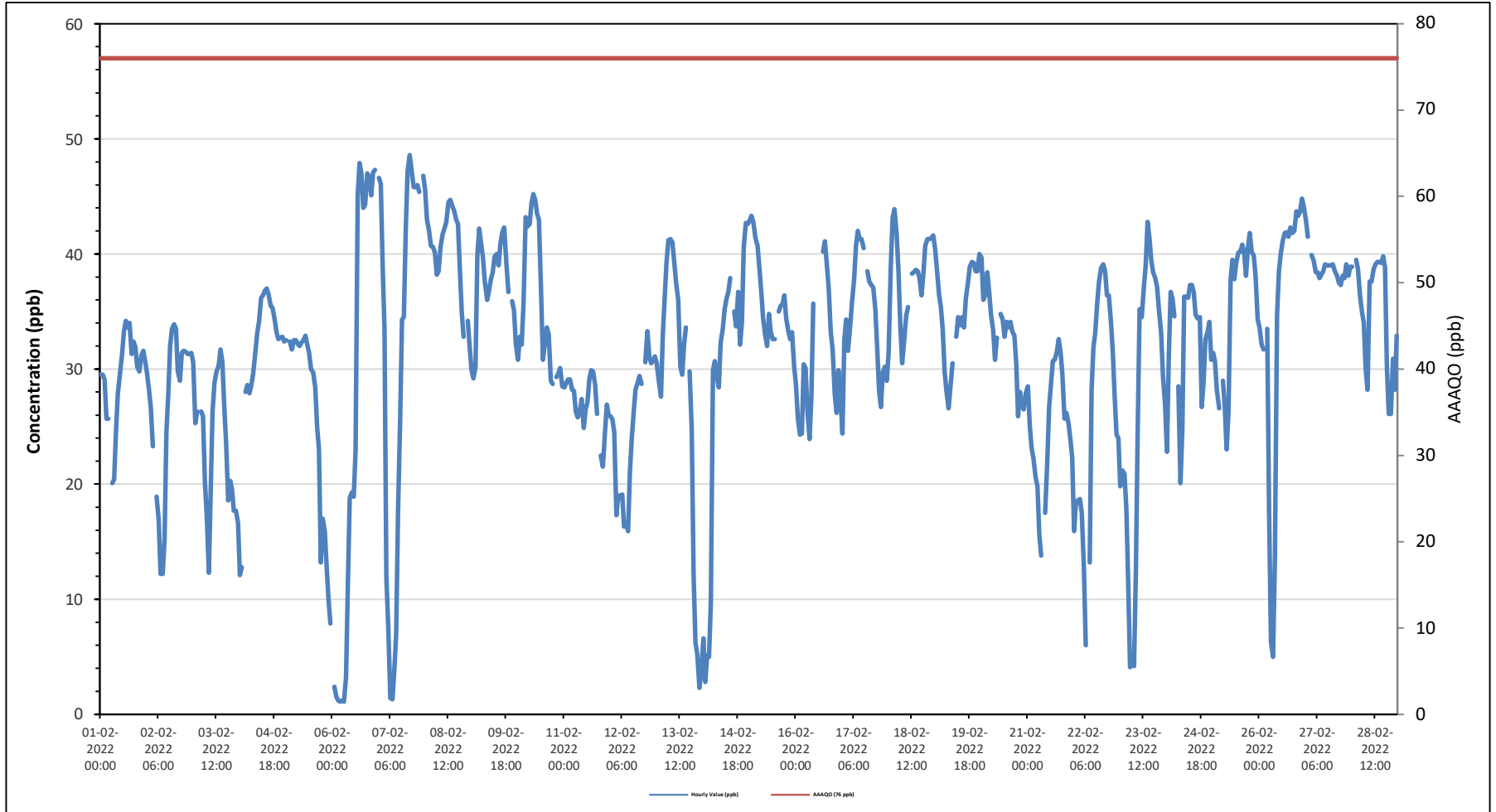
Cold Lake South Station - February 2022

Summary of Hourly Averages

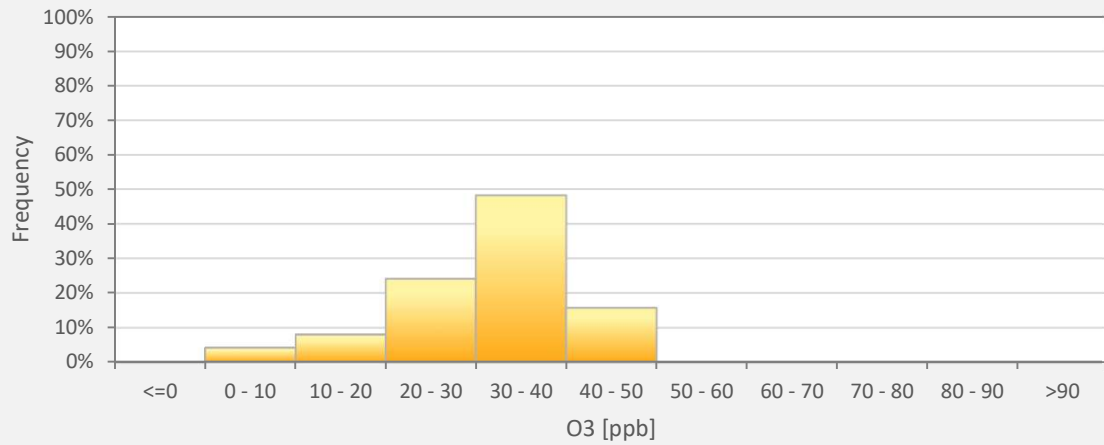
OZONE (O₃) in ppb

Alberta Ambient Air Quality Objectives (AAAQO): 1-Hour 76 ppb																																					
Number of 1-Hour Exceedences: 0																																					
Maximum Hourly Value: 48.6 ppb on February 7 at hour 16															Hours in Service: 672																						
Maximum Daily Value: 40.5 ppb on February 8															Hours of Data: 640																						
Minimum Hourly Value: 1.1 ppb on February 6 at hour 4															Hours of Missing Data: 0																						
Minimum Daily Value: 23.6 ppb on February 3															Hours of Calibration: 32																						
Monthly Average: 31.4 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										
Feb 1	29.5	29.5	29.1	25.7	25.7	S	20.1	20.4	24.6	27.9	29.6	31.3	33.3	34.2	33.6	34	31.3	32.4	31.9	30.2	29.8	31.2	31.6	30.7	20.1	34.2	29.5										
Feb 2	29.6	28.3	26.7	23.3	S	18.9	16.9	12.2	12.2	15.2	24.5	27.8	32	33.5	33.9	33.5	29.8	29	31.4	31.6	31.5	31.3	31.3	31.4	12.2	33.9	26.8										
Feb 3	30.6	25.3	26.3	S	26.3	25.9	20.3	16.8	12.3	19.5	26.3	28.8	29.8	30.3	31.7	30.6	26.8	23.6	18.6	20.3	19.6	17.7	17.7	16.6	12.3	31.7	23.6										
Feb 4	12.1	12.8	S	28	28.6	27.9	28.6	29.6	31.4	33.1	34.1	36.2	36.4	36.8	37	36.5	35.5	35.3	34.3	33.2	32.6	32.7	32.8	32.4	12.1	37.0	31.2										
Feb 5	32.5	S	32.4	31.7	32.5	32.5	32.2	32	32.3	32.5	32.9	32.1	31.4	30	29.7	28.4	25	23	13.2	17	15.9	12.8	10	7.9	7.9	32.9	26.1										
Feb 6	S	2.4	1.5	1.2	1.1	1.2	1.1	3.2	11.4	18.8	19.3	18.9	22.9	45.1	47.9	47	44	44.3	47	46.7	45.1	47.1	47.3	S	1.1	47.9	25.7										
Feb 7	46.6	46.1	39	33.5	11.9	7.7	1.4	1.3	3.8	7	17.6	25.6	34.3	34.5	42	47.2	48.6	47.1	45.8	45.8	46	45.4	S	46.8	1.3	48.6	31.5										
Feb 8	45.6	43	42	40.7	40.6	40.1	38.2	38.5	40.6	41.7	42.2	42.8	44.5	44.7	44.2	43.7	43	42.6	38.7	35	32.8	S	34.2	31.9	31.9	45.6	40.5										
Feb 9	29.9	29.2	30.2	39.9	42.2	40.9	39.7	37.6	36	36.8	37.8	38.4	39.8	40	39	40.9	41.9	42.3	39.3	36.7	S	35.9	35.1	32.2	29.2	42.3	37.5										
Feb 10	30.8	32.8	32.1	35.7	43.2	42.4	42.6	44.4	45.2	44.7	43.5	43	36.8	30.8	32.3	33.6	33	29	28.7	S	29.3	29.6	30.1	28.5	28.5	45.2	35.7										
Feb 11	28.4	28.8	29.1	29.1	28.2	28.1	26.3	25.8	26.1	27.4	24.9	26.5	27.1	29.1	29.9	29.8	28.6	26.1	S	22.5	21.5	24.5	26.9	26	21.5	29.9	27.0										
Feb 12	25.9	25.6	24.5	17.3	19	19	19.1	16.3	16.6	15.9	21.1	24	26.2	28.2	28.8	29.4	28.7	S	30.6	33.3	31.1	30.5	30.7	31.1	15.9	33.3	24.9										
Feb 13	30.5	28.9	27.6	33	36.2	39.3	41.2	41.3	41	39.3	37.5	36	30.2	29.5	32.1	33.6	S	29.8	24.7	12.1	6.2	5.2	2.3	4	2.3	41.3	27.9										
Feb 14	6.6	2.8	5.1	5	9.7	29.9	30.7	29.4	28.4	32.3	33.5	35.2	36.1	36.7	37.9	S	35	33.7	36.7	32.1	34	40.6	42.7	42.6	2.8	42.7	28.6										
Feb 15	42.9	43.3	42.8	41.4	40.7	38.8	36.7	34.4	33.1	32	34.8	33.2	32.6	32.6	S	35	35.5	35.6	36.4	34.4	33.3	32.6	33.2	30.2	30.2	43.3	35.9										
Feb 16	28.6	25.7	24.3	24.4	30.4	30.1	26.4	23.9	27.6	35.7	C	C	C	C	40.2	41.1	39.1	37.1	33.2	31.7	27.8	26.2	29.9	27.8	23.9	41.1	30.6										
Feb 17	24.4	32.5	34.3	31.6	33.4	35.8	37.8	40.7	42	41.3	41.3	40.5	S	38.5	37.6	37.3	37.1	35.2	31.8	28.1	26.7	29.7	30.2	29	24.4	42.0	34.6										
Feb 18	31.4	38.8	43.1	43.9	41.8	38.6	33.9	30.5	32.3	34.6	35.4	S	32.8	34.5	33.8	34.5	38.6	38.5	37.8	36.4	38.3	40.7	41.3	41.4	41.6	30.5	43.9	38.1									
Feb 19	40.5	38.7	36.5	35.4	33.4	29.8	28.1	26.6	28.7	30.5	S	32.8	34.5	33.8	34.5	33.6	36.1	37.5	38.9	39.3	39.2	38.5	38.5	40	26.6	40.5	35.0										
Feb 20	39.7	36	36.4	38.4	36.7	34.7	33.4	30.8	32.7	S	34.8	34.3	32.8	34.1	33.6	34.1	33.3	32.9	30.5	25.9	28	26.9	26.5	27.9	25.9	39.7	32.8										
Feb 21	28.5	25.1	23.1	22.2	20.6	19.8	15.6	13.8	S	17.5	22	26.7	28.7	30.7	30.8	31.5	32.6	31.5	29.5	25.7	26.2	25.3	23.9	22.3	13.8	32.6	24.9										
Feb 22	15.9	18.3	18.6	18.7	17.5	12.8	6	S	13.2	28.2	31.9	33.2	35.7	37.6	38.8	39.1	38.5	36.4	36.4	34.1	31.5	27.6	24.3	24	6.0	39.1	26.9										
Feb 23	19.8	21.2	20.9	17.9	11.4	4.1	S	4.2	12.5	25.1	35.2	34.5	37.1	39	42.8	41.4	39.4	38.4	37.9	37.1	35.1	33.2	29.4	26.9	4.1	42.8	28.0										
Feb 24	22.8	31.1	36.7	36.1	34.6	S	28.5	20.1	24.7	36.3	36.3	36.2	37.3	37.3	36.7	34.7	34.4	34.5	26.7	28.8	32.6	33.2	34.1	30.8	20.1	37.3	32.4										
Feb 25	31.4	30.7	28.2	26.6	S	29	26.7	23	26.3	37.8	39.5	37.8	39.2	40.1	40.2	40.8	40.1	38.1	40.5	41.8	40.1	39.9	38.1	34.3	23.0	41.8	35.2										
Feb 26	33.6	32.1	31.7	S	33.5	17.6	6.3	5	13.7	34.7	38.5	40	41.1	41.8	41.9	41.5	42.3	41.8	42	43.7	43.3	43.7	44.8	44.1	5.0	44.8	34.7										
Feb 27	42.9	41.5	S	39.9	39.4	38.4	38.4	37.9	38.2	38.5	39.1	39	39	39	39.1	38.5	38.1	37.5	37.3	38.1	37.9	39.1	38.1	38.9	37.3	42.9	38.9										
Feb 28	38.9	S	39.5	38.7	36.3	35	34	30	28.2	37.6	37.6	38.7	39.1	39.3	39.3	39.2	39.8	38.8	30.2	26.1	26.1	30.9	28.2	32.9	26.1	39.8	35.0										
Diurnal Maximum	47	46	43	44	43	42	43	44	45	45	44	43	45	45	48	47	49	47	47	47	46	47	47	47	47	47	47	47									
Diurnal Average	30.4	28.9	29.3	29.2	29.0	27.6	26.3	24.8	26.5	30.4	32.7	33.6	34.5	35.8	36.8	36.8	36.1	35.2	33.7	32.3	31.3	31.6	30.9	30.1													
C	Monthly Calibration										S	Daily Zero-Span Check										Q	Quality Assurance														
K	Collection Error										N	No Data (Machine Not in Service)										Y	Routine Maintenance							P	Power Failure						
X	Invalid Data (Equipment Malfunction /Recovery)										NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)																									
Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.																																					
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.																																					

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



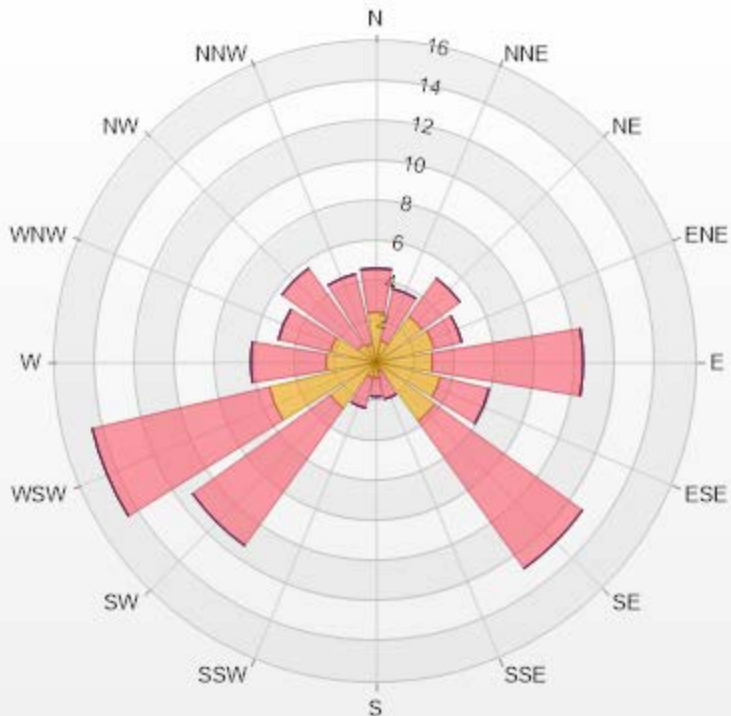
O3[ppb] Histogram: Cold Lake South Monthly: 02-2022 1 Hr.



Classes	O3
<=0	0.00%
0 - 10	4.22%
10 - 20	7.97%
20 - 30	24.06%
30 - 40	48.13%
40 - 50	15.63%
50 - 60	0.00%
60 - 70	0.00%
70 - 80	0.00%
80 - 90	0.00%
>90	0.00%

Wind: Cold Lake South Poll.: Cold Lake South-O3[ppb] Monthly: 02-2022 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 95.24% Calm Avg: 0.00 [ppb]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	2.5	2.19	0	0	0	4.69
NNE	1.09	2.66	0	0	0	3.75
NE	2.81	2.34	0	0	0	5.15
ENE	2.97	1.41	0	0	0	4.38
E	2.81	7.5	0	0	0	10.31
ESE	3.28	2.5	0	0	0	5.78
SE	3.59	9.06	0	0	0	12.65
SSE	0.47	1.41	0	0	0	1.88
S	0.78	0.94	0	0	0	1.72
SSW	0.78	1.56	0	0	0	2.34
SW	2.81	8.44	0	0	0	11.25
WSW	5.47	9.06	0	0	0	14.53
W	2.5	3.75	0	0	0	6.25
WNW	2.34	2.66	0	0	0	5
NW	1.09	4.69	0	0	0	5.78
NNW	0.94	3.59	0	0	0	4.53
Summary	36.23	63.76	0	0	0	100



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% Icon Classes (ppb)

36



0-30

64



30-50

0



50-76

0



76-159

0



>159.0



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Cold Lake South Station - February 2022

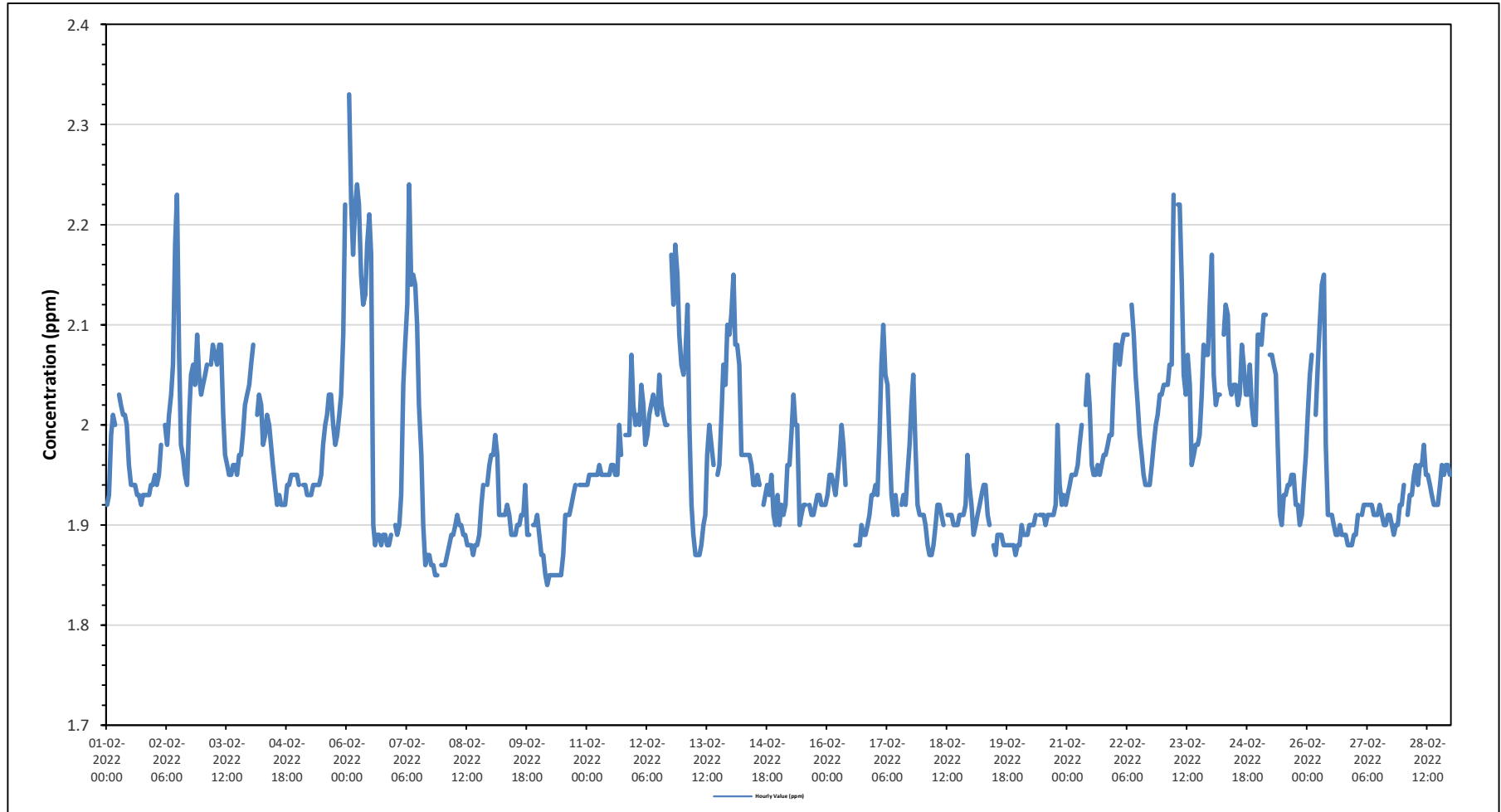
Summary of Hourly Averages

TOTAL HYDROCARBONS (THC) in ppm

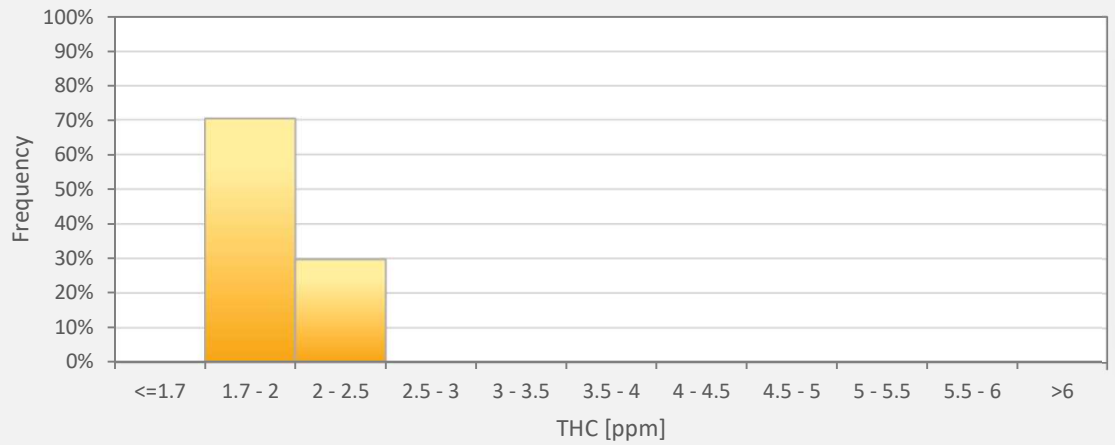
Maximum Hourly Value:	2.33 ppm on February 6 at hour 1	Hours in Service:	672
Maximum Daily Value:	2.06 ppm on February 23	Hours of Data:	640
Minimum Hourly Value:	1.84 ppm on February 10 at hour 4	Hours of Missing Data:	0
Minimum Daily Value:	1.89 ppm on February 10	Hours of Calibration:	32
Monthly Average:	1.97 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																							
Feb 1	1.92	1.93	1.99	2.01	2.00	S	2.03	2.02	2.01	2.01	2.00	1.96	1.94	1.94	1.94	1.93	1.93	1.92	1.93	1.93	1.93	1.94	1.94	1.92	2.03	1.96																								
Feb 2	1.95	1.94	1.95	1.98	S	2.00	1.98	2.01	2.03	2.06	2.18	2.23	2.07	1.98	1.97	1.95	1.94	2.01	2.05	2.06	2.04	2.09	2.05	2.03	1.94	2.23	2.02																							
Feb 3	2.04	2.05	2.06	S	2.06	2.08	2.07	2.06	2.08	2.08	2.01	1.97	1.96	1.95	1.95	1.96	1.96	1.95	1.97	1.97	1.99	2.02	2.03	2.04	1.95	2.08	2.01																							
Feb 4	2.06	2.08	S	2.01	2.03	2.02	1.98	1.99	2.01	2.00	1.98	1.96	1.94	1.92	1.93	1.92	1.92	1.92	1.94	1.94	1.95	1.95	1.95	1.95	1.92	2.08	1.97																							
Feb 5	1.94	S	1.94	1.94	1.93	1.93	1.93	1.94	1.94	1.94	1.94	1.95	1.98	2.00	2.01	2.03	2.03	2.00	1.98	1.99	2.01	2.03	2.09	2.22	1.93	2.22	1.99																							
Feb 6	S	2.33	2.22	2.17	2.22	2.24	2.22	2.15	2.12	2.13	2.18	2.21	2.17	1.90	1.88	1.89	1.89	1.88	1.89	1.89	1.88	1.88	1.89	S	1.88	2.33	2.06																							
Feb 7	1.90	1.89	1.90	1.93	2.04	2.08	2.12	2.24	2.14	2.15	2.14	2.10	2.02	1.97	1.90	1.86	1.87	1.87	1.86	1.86	1.85	1.85	S	1.86	1.85	2.24	1.97																							
Feb 8	1.86	1.86	1.87	1.88	1.89	1.89	1.90	1.91	1.90	1.90	1.89	1.89	1.88	1.88	1.88	1.87	1.88	1.88	1.89	1.92	1.94	S	1.94	1.94	1.96	1.86	1.89																							
Feb 9	1.97	1.97	1.99	1.97	1.91	1.91	1.91	1.92	1.91	1.89	1.89	1.89	1.89	1.90	1.90	1.91	1.91	1.94	1.89	1.89	S	1.90	1.90	1.91	1.89	1.99	1.92																							
Feb 10	1.89	1.87	1.87	1.85	1.84	1.85	1.85	1.85	1.85	1.85	1.85	1.87	1.91	1.91	1.91	1.92	1.93	1.94	S	1.94	1.94	1.94	1.94	1.94	1.84	1.94	1.89																							
Feb 11	1.94	1.95	1.95	1.95	1.95	1.95	1.96	1.95	1.95	1.95	1.95	1.96	1.96	1.95	1.95	2.00	1.97	S	1.99	1.99	1.99	2.07	2.02	1.94	2.07	1.97																								
Feb 12	2.00	2.01	2.00	2.04	2.02	1.98	1.99	2.01	2.02	2.03	2.02	2.01	2.05	2.02	2.01	2.00	2.00	S	2.17	2.12	2.18	2.15	2.09	2.06	1.98	2.18	2.04																							
Feb 13	2.05	2.07	2.12	2.00	1.92	1.89	1.87	1.87	1.87	1.88	1.90	1.91	1.97	2.00	1.98	1.96	S	1.95	1.96	2.01	2.06	2.04	2.10	2.09	1.87	2.12	1.98																							
Feb 14	2.11	2.15	2.08	2.08	2.06	1.97	1.97	1.97	1.97	1.96	1.94	1.94	1.95	1.94	S	1.92	1.93	1.94	1.93	1.95	1.91	1.90	1.93	1.90	2.15	1.98																								
Feb 15	1.90	1.92	1.91	1.92	1.96	1.96	1.99	2.03	2.00	2.00	1.90	1.91	1.92	1.92	S	1.92	1.91	1.91	1.92	1.93	1.93	1.92	1.92	1.92	1.90	2.03	1.94																							
Feb 16	1.93	1.95	1.95	1.94	1.93	1.95	1.97	2.00	1.98	1.94	C	C	C	C	1.88	1.88	1.88	1.90	1.89	1.89	1.90	1.91	1.93	1.93	1.88	2.00	1.93																							
Feb 17	1.94	1.93	1.99	2.06	2.10	2.05	2.04	1.98	1.93	1.91	1.93	1.91	S	1.92	1.93	1.92	1.95	1.98	2.02	2.05	1.98	1.92	1.91	1.91	1.91	2.10	1.97																							
Feb 18	1.91	1.90	1.88	1.87	1.87	1.88	1.90	1.92	1.92	1.91	1.90	S	1.91	1.91	1.91	1.90	1.90	1.90	1.91	1.91	1.91	1.92	1.97	1.94	1.87	1.97	1.91																							
Feb 19	1.92	1.89	1.90	1.91	1.92	1.93	1.94	1.94	1.91	1.90	S	1.88	1.87	1.89	1.89	1.88	1.88	1.88	1.88	1.88	1.88	1.88	1.87	1.88	1.87	1.94	1.90																							
Feb 20	1.88	1.90	1.89	1.89	1.89	1.90	1.90	1.90	1.91	S	1.91	1.91	1.91	1.90	1.91	1.91	1.91	1.91	1.92	2.00	1.94	1.92	1.93	1.92	1.88	2.00	1.91																							
Feb 21	1.93	1.94	1.95	1.95	1.95	1.96	1.98	2.00	S	2.02	2.05	2.02	1.96	1.95	1.95	1.96	1.95	1.96	1.97	1.97	1.98	1.99	1.99	2.04	1.93	2.05	1.97																							
Feb 22	2.08	2.08	2.06	2.08	2.09	2.09	2.09	S	2.12	2.09	2.05	2.02	1.99	1.97	1.95	1.94	1.94	1.94	1.96	1.98	2.00	2.01	2.03	2.03	1.94	2.12	2.03																							
Feb 23	2.04	2.04	2.04	2.06	2.06	2.23	S	2.22	2.22	2.14	2.05	2.03	2.07	2.04	1.96	1.97	1.98	1.98	1.99	2.03	2.08	2.07	2.07	2.12	1.96	2.23	2.06																							
Feb 24	2.17	2.05	2.02	2.03	2.03	S	2.09	2.12	2.11	2.04	2.03	2.04	2.04	2.02	2.03	2.08	2.06	2.03	2.03	2.06	2.02	2.00	2.00	2.09	2.00	2.17	2.05																							
Feb 25	2.09	2.08	2.11	2.11	S	2.07	2.07	2.06	2.05	1.98	1.91	1.90	1.93	1.93	1.94	1.94	1.95	1.95	1.92	1.92	1.90	1.91	1.94	1.97	1.90	2.11	1.98																							
Feb 26	2.01	2.05	2.07	S	2.01	2.06	2.10	2.14	2.15	1.98	1.91	1.91	1.91	1.90	1.89	1.89	1.90	1.89	1.89	1.89	1.88	1.88	1.88	1.89	1.88	2.15	1.96																							
Feb 27	1.89	1.91	S	1.91	1.92	1.92	1.92	1.92	1.91	1.91	1.91	1.91	1.92	1.91	1.90	1.91	1.91	1.90	1.89	1.90	1.90	1.92	1.92	1.92	1.89	1.92	1.91																							
Feb 28	1.94	S	1.91	1.93	1.93	1.95	1.96	1.94	1.96	1.96	1.95	1.95	1.94	1.93	1.92	1.92	1.92	1.94	1.96	1.95	1.96	1.96	1.95	1.91	1.98	1.94	1.94																							
Diurnal Maximum	2.17	2.33	2.22	2.17	2.22	2.24	2.22	2.24	2.22	2.15	2.18	2.23	2.17	2.04	2.03	2.08	2.06	2.03	2.17	2.12	2.18	2.15	2.10	2.22																										
Diurnal Average	1.97	1.99	1.99	1.98	1.98	1.99	1.99	2.00	2.00	1.99	1.98	1.97	1.96	1.94	1.93	1.93	1.93	1.93	1.95	1.96	1.96	1.96	1.97	1.98																										
C	Monthly Calibration										S										Daily Zero-Span Check										Q										Quality Assurance									
K	Collection Error										N										No Data (Machine Not in Service)										Y										Routine Maintenance									
X	InValid Data (Equipment Malfunction /Recovery)										NRM										UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)										P										Power Failure									
Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.																																																		
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.																																																		

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



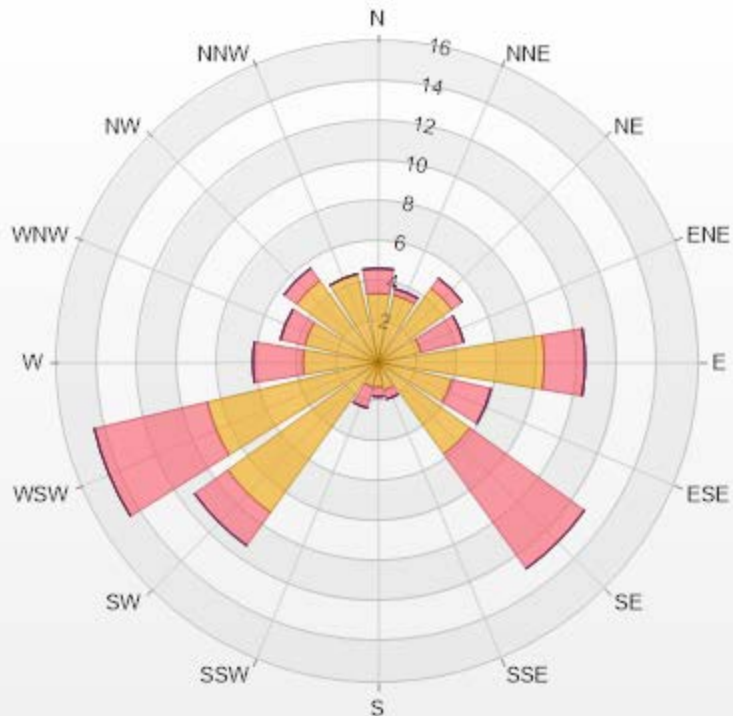
THC55[ppm] Histogram: Cold Lake South Monthly: 02-2022 1 Hr.



Classes	THC55
<=1.7	0.00%
1.7 - 2	70.31%
2 - 2.5	29.69%
2.5 - 3	0.00%
3 - 3.5	0.00%
3.5 - 4	0.00%
4 - 4.5	0.00%
4.5 - 5	0.00%
5 - 5.5	0.00%
5.5 - 6	0.00%
>6	0.00%

Wind: Cold Lake South Poll.: Cold Lake South-THC55[ppm] Monthly: 02-2022 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 95.24% Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-40	>40.0	Total
N	3.44	1.25	0	0	0	4.69
NNE	3.44	0.31	0	0	0	3.75
NE	4.53	0.63	0	0	0	5.16
ENE	2.19	2.19	0	0	0	4.38
E	8.28	2.03	0	0	0	10.31
ESE	3.75	2.03	0	0	0	5.78
SE	5.63	7.03	0	0	0	12.66
SSE	1.41	0.47	0	0	0	1.88
S	1.25	0.47	0	0	0	1.72
SSW	1.25	1.09	0	0	0	2.34
SW	9.22	2.03	0	0	0	11.25
WSW	8.75	5.78	0	0	0	14.53
W	3.75	2.5	0	0	0	6.25
WNW	3.75	1.25	0	0	0	5
NW	5	0.78	0	0	0	5.78
NNW	4.53	0	0	0	0	4.53
Summary	70.17	29.84	0	0	0	100



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% Icon Classes (ppm)

70 0-2

30 2-5

0 5-10

0 10-40

0 >40.0



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - February 2022

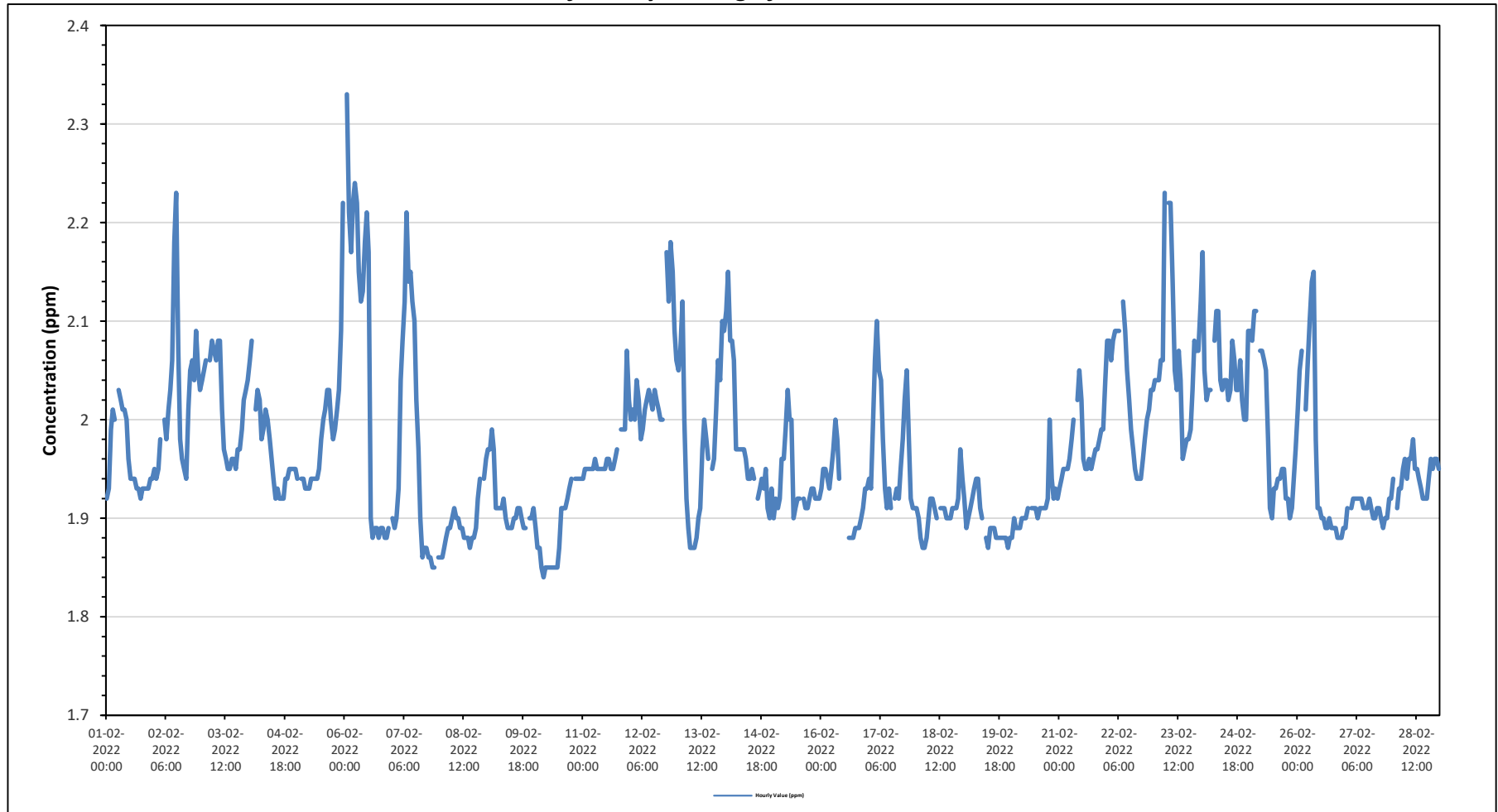
Summary of Hourly Averages

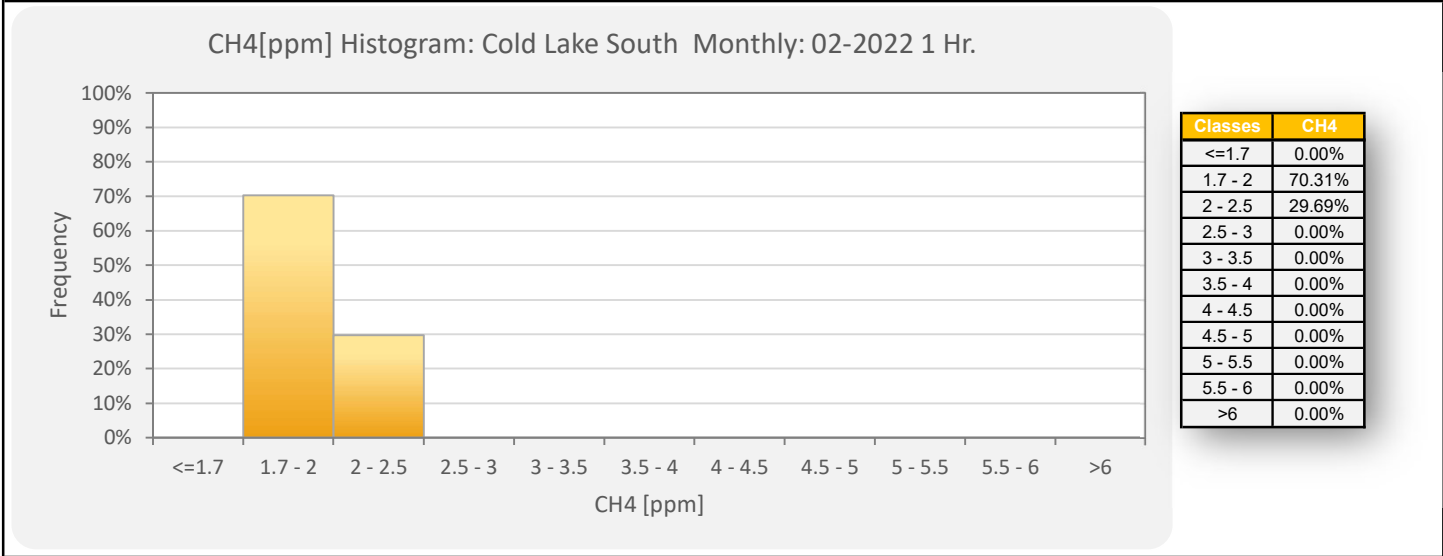
METHANE (CH4) in ppm

Maximum Hourly Value:	2.33 ppm on February 6 at hour 1	Hours in Service:	672
Maximum Daily Value:	2.06 ppm on February 23	Hours of Data:	640
Minimum Hourly Value:	1.84 ppm on February 10 at hour 4	Hours of Missing Data:	0
Minimum Daily Value:	1.89 ppm on February 10	Hours of Calibration:	32
Monthly Average:	1.97 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																																											
Feb 1	1.92	1.93	1.99	2.01	2.00	S	2.03	2.02	2.01	2.01	2.00	1.96	1.94	1.94	1.94	1.93	1.93	1.92	1.93	1.93	1.93	1.94	1.94	1.92	2.03	1.96																																												
Feb 2	1.95	1.94	1.95	1.98	S	2.00	1.98	2.01	2.03	2.06	2.18	2.23	2.07	1.98	1.96	1.95	1.94	2.01	2.05	2.06	2.04	2.09	2.05	2.03	1.94	2.23	2.02																																											
Feb 3	2.04	2.05	2.06	S	2.06	2.08	2.07	2.06	2.08	2.08	2.01	1.97	1.96	1.95	1.95	1.96	1.96	1.95	1.97	1.97	1.99	2.02	2.03	2.04	1.95	2.08	2.01																																											
Feb 4	2.06	2.08	S	2.01	2.03	2.02	1.98	1.99	2.01	2.00	1.98	1.96	1.94	1.92	1.93	1.92	1.92	1.92	1.94	1.94	1.95	1.95	1.95	1.95	1.92	2.08	1.97																																											
Feb 5	1.94	S	1.94	1.94	1.93	1.93	1.93	1.94	1.94	1.94	1.94	1.95	1.98	2.00	2.01	2.03	2.03	2.00	1.98	1.99	2.01	2.03	2.09	2.22	1.93	2.22	1.99																																											
Feb 6	S	2.33	2.21	2.17	2.22	2.24	2.22	2.15	2.12	2.13	2.18	2.21	2.17	1.90	1.88	1.89	1.89	1.88	1.89	1.89	1.88	1.88	1.89	S	1.88	2.33	2.06																																											
Feb 7	1.90	1.89	1.90	1.93	2.04	2.08	2.12	2.21	2.14	2.15	2.12	2.10	2.02	1.97	1.90	1.86	1.87	1.87	1.86	1.86	1.85	1.85	S	1.86	1.85	2.21	1.97																																											
Feb 8	1.86	1.86	1.87	1.88	1.89	1.89	1.90	1.91	1.90	1.90	1.89	1.89	1.88	1.88	1.88	1.87	1.88	1.88	1.89	1.92	1.94	S	1.94	1.94	1.96	1.86	1.89																																											
Feb 9	1.97	1.97	1.99	1.97	1.91	1.91	1.91	1.92	1.90	1.89	1.89	1.89	1.89	1.90	1.91	1.91	1.90	1.89	1.89	S	1.90	1.90	1.91	1.91	1.89	1.99	1.91																																											
Feb 10	1.89	1.87	1.87	1.85	1.84	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.87	1.91	1.91	1.91	1.92	1.93	1.94	S	1.94	1.94	1.94	1.94	1.84	1.94	1.89																																											
Feb 11	1.94	1.95	1.95	1.95	1.95	1.95	1.96	1.95	1.95	1.95	1.95	1.96	1.96	1.95	1.95	1.96	1.95	1.96	1.97	S	1.99	1.99	1.99	2.07	2.02	1.94	1.97																																											
Feb 12	2.00	2.01	2.00	2.04	2.02	1.98	1.99	2.01	2.02	2.03	2.02	2.01	2.03	2.02	2.01	2.00	2.00	S	2.17	2.12	2.18	2.15	2.09	2.06	1.98	2.18	2.04																																											
Feb 13	2.05	2.07	2.12	2.00	1.92	1.89	1.87	1.87	1.87	1.88	1.90	1.91	1.97	2.00	1.98	1.96	S	1.95	1.96	2.01	2.06	2.04	2.10	2.09	1.87	2.12	1.98																																											
Feb 14	2.11	2.15	2.08	2.08	2.06	1.97	1.97	1.97	1.97	1.97	1.96	1.94	1.94	1.95	1.94	S	1.92	1.93	1.94	1.93	1.95	1.91	1.90	1.93	1.90	2.15	1.98																																											
Feb 15	1.90	1.92	1.91	1.92	1.96	1.96	1.99	2.03	2.00	2.00	1.90	1.91	1.92	1.92	S	1.92	1.91	1.91	1.92	1.93	1.93	1.92	1.92	1.92	1.90	2.03	1.94																																											
Feb 16	1.93	1.95	1.95	1.94	1.93	1.95	1.97	2.00	1.98	1.94	C	C	C	C	1.88	1.88	1.88	1.89	1.89	1.89	1.90	1.91	1.93	1.93	1.88	2.00	1.93																																											
Feb 17	1.94	1.93	1.99	2.06	2.10	2.05	2.04	1.98	1.93	1.91	1.93	1.91	S	1.92	1.93	1.92	1.95	1.98	2.02	2.05	1.98	1.92	1.91	1.91	1.91	2.10	1.97																																											
Feb 18	1.91	1.90	1.88	1.87	1.87	1.88	1.90	1.92	1.92	1.91	1.90	S	1.91	1.91	1.91	1.90	1.90	1.90	1.91	1.91	1.91	1.92	1.97	1.94	1.87	1.97	1.91																																											
Feb 19	1.92	1.89	1.90	1.91	1.92	1.93	1.94	1.94	1.91	1.90	S	1.88	1.87	1.89	1.89	1.88	1.88	1.88	1.88	1.88	1.88	1.88	1.87	1.88	1.87	1.94	1.90																																											
Feb 20	1.88	1.90	1.89	1.89	1.89	1.90	1.90	1.90	1.91	1.91	S	1.91	1.91	1.91	1.90	1.91	1.91	1.91	1.92	2.00	1.94	1.92	1.93	1.92	1.88	2.00	1.91																																											
Feb 21	1.93	1.94	1.95	1.95	1.95	1.96	1.98	2.00	S	2.02	2.05	2.02	1.96	1.95	1.95	1.96	1.95	1.96	1.97	1.97	1.98	1.99	1.99	2.04	1.93	2.05	1.97																																											
Feb 22	2.08	2.08	2.06	2.08	2.09	2.09	2.09	S	2.12	2.09	2.05	2.02	1.99	1.97	1.95	1.94	1.94	1.94	1.96	1.98	2.00	2.01	2.03	2.03	1.94	2.12	2.03																																											
Feb 23	2.04	2.04	2.04	2.06	2.06	2.23	S	2.22	2.22	2.14	2.05	2.03	2.07	2.04	1.96	1.97	1.98	1.98	1.99	2.03	2.08	2.07	2.07	2.12	1.96	2.23	2.06																																											
Feb 24	2.17	2.05	2.02	2.03	2.03	S	2.08	2.11	2.11	2.04	2.03	2.04	2.04	2.02	2.03	2.08	2.06	2.03	2.03	2.06	2.02	2.00	2.00	2.09	2.00	2.17	2.05																																											
Feb 25	2.09	2.08	2.11	2.11	S	2.07	2.07	2.06	2.05	1.98	1.91	1.90	1.93	1.93	1.94	1.94	1.95	1.95	1.92	1.92	1.90	1.91	1.94	1.97	1.90	2.11	1.98																																											
Feb 26	2.01	2.05	2.07	S	2.01	2.06	2.10	2.14	2.15	1.98	1.91	1.91	1.90	1.90	1.89	1.89	1.90	1.89	1.89	1.89	1.88	1.88	1.88	1.89	1.88	2.15	1.96																																											
Feb 27	1.89	1.91	S	1.91	1.92	1.92	1.92	1.92	1.92	1.91	1.91	1.91	1.92	1.91	1.90	1.91	1.91	1.90	1.91	1.90	1.89	1.90	1.92	1.92	1.89	1.92	1.91																																											
Feb 28	1.94	S	1.91	1.93	1.93	1.95	1.96	1.94	1.96	1.96	1.95	1.95	1.94	1.93	1.92	1.92	1.92	1.94	1.96	1.95	1.96	1.96	1.95	1.91	1.98	1.94	1.94																																											
Diurnal Maximum	2.17	2.33	2.21	2.17	2.22	2.24	2.22	2.22	2.22	2.15	2.18	2.23	2.17	2.04	2.03	2.08	2.06	2.03	2.17	2.12	2.18	2.15	2.10	2.22																																														
Diurnal Average	1.97	1.99	1.99	1.98	1.98	1.99	1.99	2.00	2.00	1.99	1.98	1.97	1.96	1.94	1.93	1.93	1.93	1.93	1.95	1.96	1.96	1.96	1.97	1.98																																														
C	Monthly Calibration										S										Daily Zero-Span Check										Q										Quality Assurance																													
K	Collection Error										N										No Data (Machine Not in Service)										Y										Routine Maintenance										P										Power Failure									
X	InValid Data (Equipment Malfunction /Recovery)																							NRM										UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)																																				
Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.																																																																						
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.																																																																						

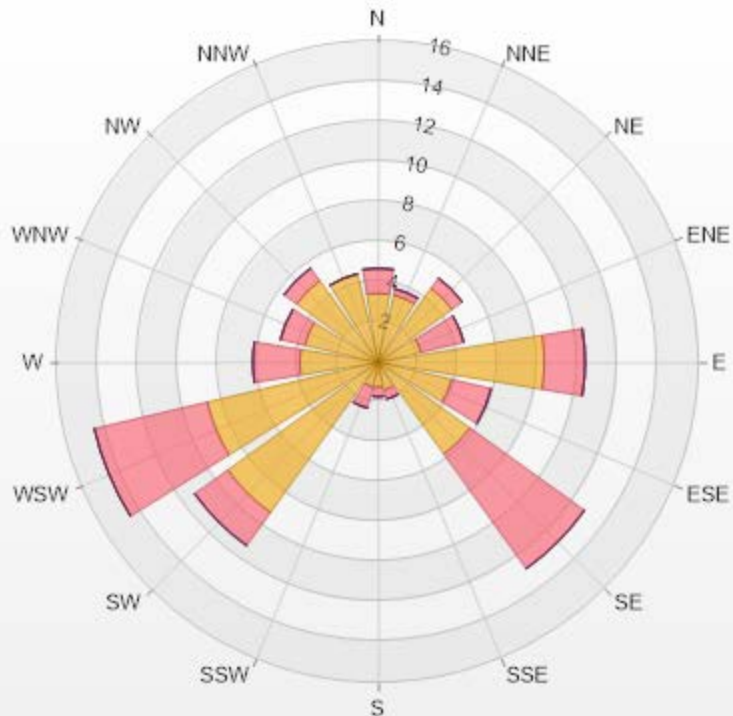
Timeseries Chart of Hourly Average for CH4 - Cold Lake South Station





Wind: Cold Lake South Poll.: Cold Lake South-CH4[ppm] Monthly: 02-2022 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 95.24% Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-20	>20.0	Total
N	3.44	1.25	0	0	0	4.69
NNE	3.44	0.31	0	0	0	3.75
NE	4.53	0.63	0	0	0	5.16
ENE	2.19	2.19	0	0	0	4.38
E	8.28	2.03	0	0	0	10.31
ESE	3.75	2.03	0	0	0	5.78
SE	5.63	7.03	0	0	0	12.66
SSE	1.41	0.47	0	0	0	1.88
S	1.25	0.47	0	0	0	1.72
SSW	1.25	1.09	0	0	0	2.34
SW	9.22	2.03	0	0	0	11.25
WSW	8.75	5.78	0	0	0	14.53
W	3.91	2.34	0	0	0	6.25
WNW	3.75	1.25	0	0	0	5
NW	5	0.78	0	0	0	5.78
NNW	4.53	0	0	0	0	4.53
Summary	70.33	29.68	0	0	0	100



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% Icon Classes (ppm)

70 0-2

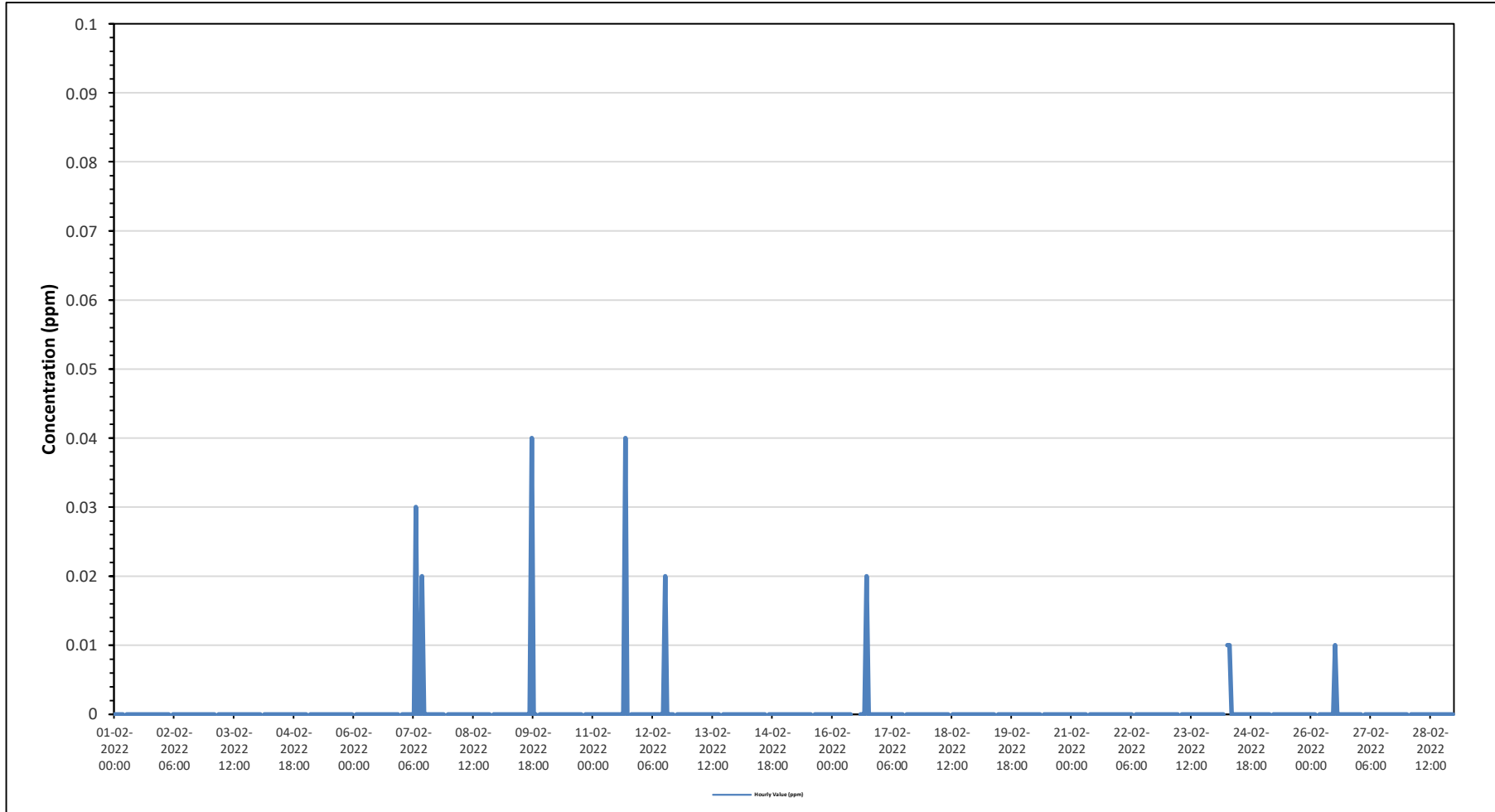
30 2-5

0 5-10

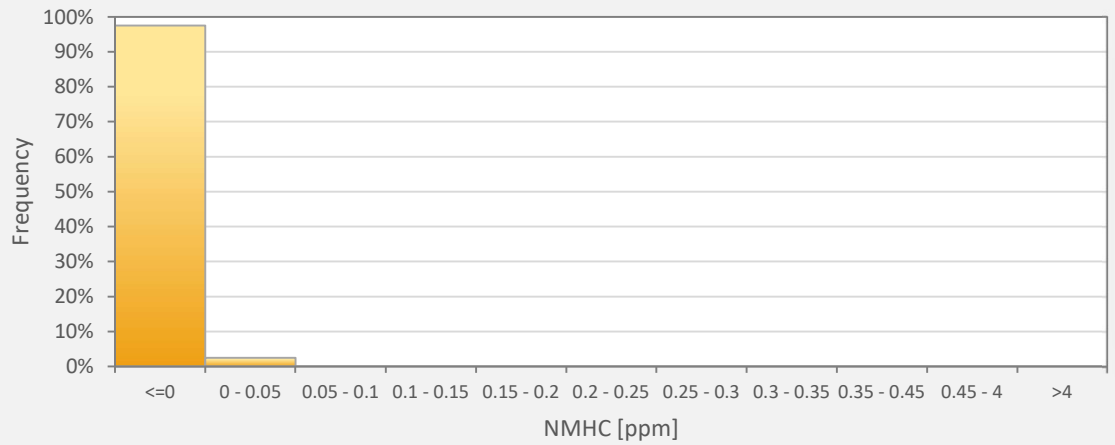
0 10-20

0 >20.0

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



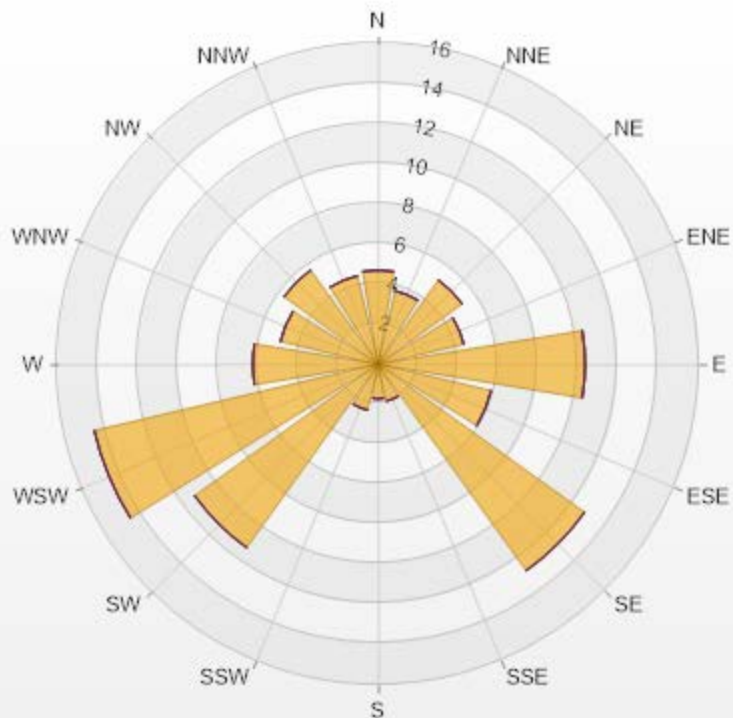
NMHC[ppm] Histogram: Cold Lake South Monthly: 02-2022 1 Hr.



Classes	NMHC
<=0	97.50%
0 - 0.05	2.50%
0.05 - 0.1	0.00%
0.1 - 0.15	0.00%
0.15 - 0.2	0.00%
0.2 - 0.25	0.00%
0.25 - 0.3	0.00%
0.3 - 0.35	0.00%
0.35 - 0.45	0.00%
0.45 - 4	0.00%
>4	0.00%

Wind: Cold Lake South Poll.: Cold Lake South-NMHC[ppm] Monthly: 02-2022 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 95.24% Calm Avg: 0.00 [ppm]

Direction	0-0.1	0.1-0.3	0.3-1	1-2	>2.0	Total
N	4.69	0	0	0	0	4.69
NNE	3.75	0	0	0	0	3.75
NE	5.16	0	0	0	0	5.16
ENE	4.38	0	0	0	0	4.38
E	10.31	0	0	0	0	10.31
ESE	5.78	0	0	0	0	5.78
SE	12.66	0	0	0	0	12.66
SSE	1.88	0	0	0	0	1.88
S	1.72	0	0	0	0	1.72
SSW	2.34	0	0	0	0	2.34
SW	11.25	0	0	0	0	11.25
WSW	14.53	0	0	0	0	14.53
W	6.25	0	0	0	0	6.25
WNW	5	0	0	0	0	5
NW	5.78	0	0	0	0	5.78
NNW	4.53	0	0	0	0	4.53
Summary	100	0	0	0	0	100



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% Icon Classes (ppm)

100  0-0.1

 0.1-0.3

0  0.3-1

0  1-2

0  >2.0



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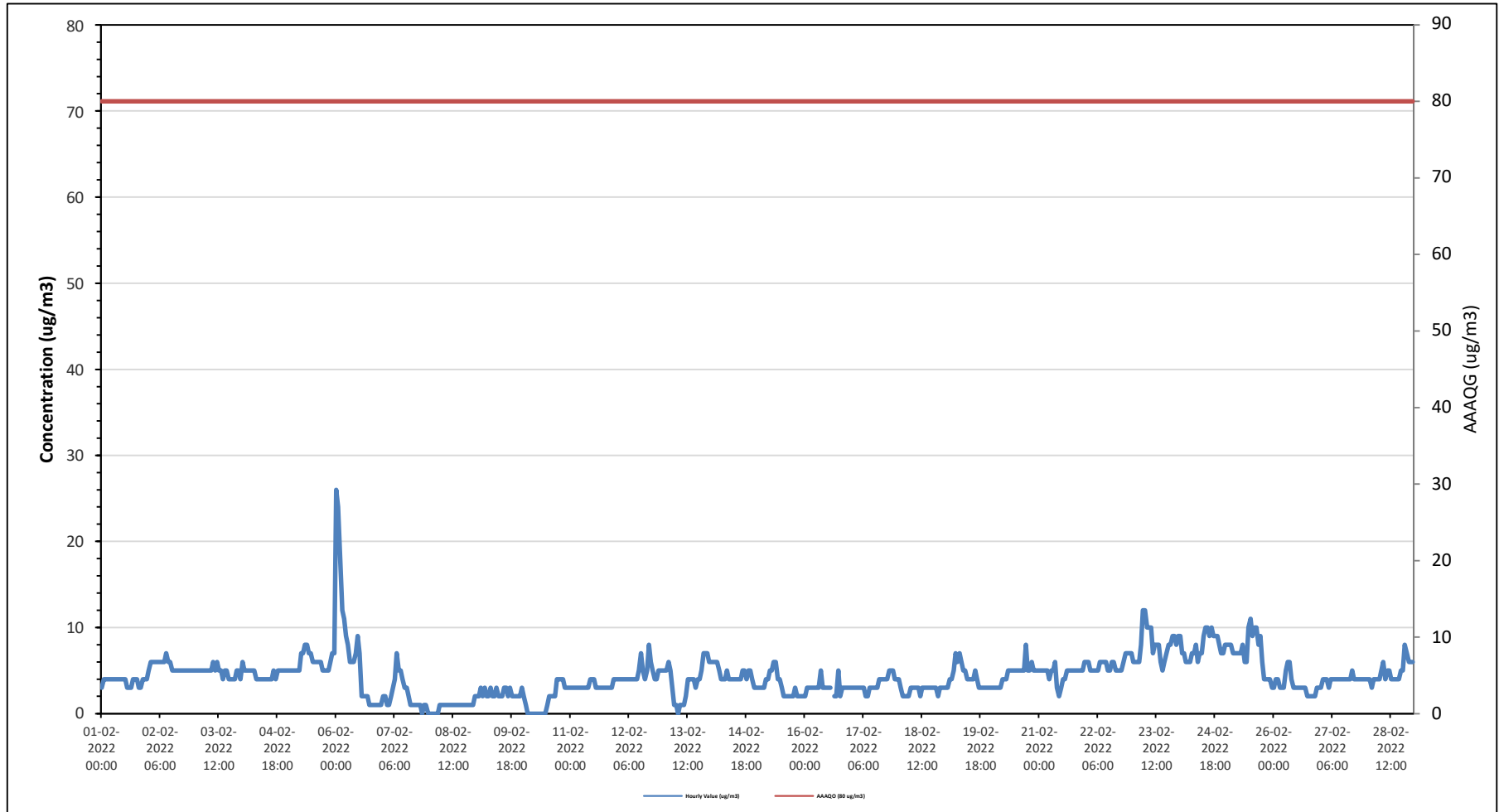
Cold Lake South Station - February 2022

Summary of Hourly Averages

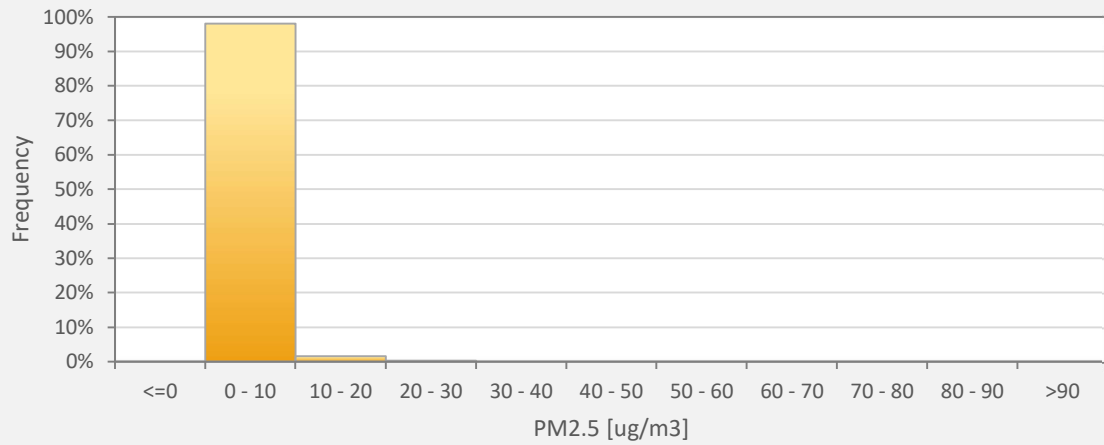
PARTICULATE MATTER 2.5 (PM_{2.5}) in µg/m³

Alberta Ambient Air Quality Guideline (AAAQG): 1-Hour 80 µg/m ³ , Alberta Ambient Air Quality Objective (AAAQO): 24-Hour 29 µg/m ³																															
Number of 1-Hour Exceedences: 0										Number of 24-Hour Exceedences: 0																					
Maximum Hourly Value: 26 µg/m ³ on February 6 at hour 0										Hours in Service: 672																					
Maximum Daily Value: 8.0 µg/m ³ on February 23										Hours of Data: 671																					
Minimum Hourly Value: 0 µg/m ³ on February 7 at hour 20										Hours of Missing Data: 0																					
Minimum Daily Value: 1 µg/m ³ on February 8										Hours of Calibration: 1																					
Monthly Average: 4.3 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				
Feb 1	3	4	4	4	4	4	4	4	4	4	4	4	4	3	3	3	4	4	4	3	3	4	4	4	3	4	3.8				
Feb 2	5	6	6	6	6	6	6	6	6	7	6	6	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.5				
Feb 3	5	5	5	5	5	5	5	5	5	6	5	6	5	5	4	5	5	4	4	4	4	5	5	4	4	6	4.8				
Feb 4	6	5	5	5	5	5	5	4	4	4	4	4	4	4	4	5	4	5	5	5	5	5	5	5	5	4.6					
Feb 5	5	5	5	5	5	5	7	7	8	8	7	7	6	6	6	6	5	5	5	5	6	7	7	5	8	6.0					
Feb 6	26	24	18	12	11	9	8	6	6	6	7	9	7	2	2	2	1	1	1	1	1	1	1	1	1	26	6.8				
Feb 7	2	2	1	1	2	3	4	7	5	5	4	3	3	2	1	1	1	1	1	1	0	1	1	0	0	2.2					
Feb 8	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	0	0.8					
Feb 9	2	2	3	2	3	2	2	3	2	2	3	2	2	3	3	2	3	2	2	2	2	2	3	2	3	2.3					
Feb 10	2	1	0	0	0	0	0	0	0	0	0	0	1	2	2	2	2	4	4	4	4	3	3	3	0	1.5					
Feb 11	3	3	3	3	3	3	3	3	3	3	4	4	4	3	3	3	3	3	3	3	3	3	4	4	3	3.2					
Feb 12	4	4	4	4	4	4	4	4	4	4	4	5	7	5	4	5	8	6	5	4	4	5	5	5	4	4.7					
Feb 13	5	5	6	5	3	1	1	0	1	1	1	2	4	4	4	3	4	4	5	7	7	7	6	0	7	3.8					
Feb 14	6	6	6	6	5	4	4	4	5	4	4	4	4	4	4	5	5	4	5	5	4	3	3	3	3	4.5					
Feb 15	3	3	3	3	4	4	5	5	6	6	4	4	3	2	2	2	2	2	3	2	2	2	2	2	2	6	3.2				
Feb 16	2	3	3	3	3	3	3	3	5	3	3	3	3	3	C	2	2	5	2	3	3	3	3	3	2	5	3.0				
Feb 17	3	3	3	3	3	3	3	2	2	3	3	3	3	3	4	4	4	4	4	5	5	5	4	4	2	5	3.5				
Feb 18	4	3	2	2	2	2	3	3	3	3	3	2	3	3	3	3	3	3	3	3	2	3	3	3	2	4	2.8				
Feb 19	3	3	4	4	5	7	6	7	6	5	5	4	4	4	5	4	3	3	3	3	3	3	3	3	3	7	4.2				
Feb 20	3	3	3	3	3	4	4	4	5	5	5	5	5	5	5	5	8	5	5	6	5	5	5	3	8	4.6					
Feb 21	5	5	5	5	5	4	5	5	6	3	2	3	4	4	5	5	5	5	5	5	5	5	6	2	6	4.7					
Feb 22	6	6	5	5	5	5	6	6	6	6	6	5	5	6	6	5	5	5	5	6	7	7	7	5	7	5.7					
Feb 23	6	6	6	6	8	12	12	10	10	10	7	8	8	8	6	5	6	7	8	8	9	9	8	9	5	12	8.0				
Feb 24	9	7	7	6	6	6	7	7	8	6	7	7	9	10	10	9	10	9	9	9	8	7	7	8	6	10	7.8				
Feb 25	8	8	8	7	7	7	7	8	6	6	10	11	9	10	10	8	9	6	4	4	4	4	3	3	11	7.1					
Feb 26	3	4	4	3	3	3	5	6	6	4	3	3	3	3	3	3	2	2	2	2	2	3	3	2	6	3.3					
Feb 27	3	4	4	4	3	4	4	4	4	4	4	4	4	4	4	4	5	4	4	4	4	4	4	3	5	4.0					
Feb 28	4	4	3	4	4	4	4	5	6	4	5	5	4	4	4	4	5	5	8	7	6	6	6	3	8	4.8					
Diurnal Maximum	26	24	18	12	11	12	12	10	10	10	7	10	11	10	10	10	10	9	9	9	9	9	8	9							
Dalurnal Average	4.9	4.8	4.5	4.1	4.2	4.3	4.5	4.6	4.8	4.4	4.2	4.4	4.5	4.1	4.1	4.1	4.2	4.3	4.0	4.1	4.1	4.2	4.2	4.2							
C	Monthly Calibration							S	Daily Zero-Span Check							Q	Quality Assurance														
K	Collection Error							N	No Data (Machine Not in Service)							Y	Routine Maintenance							P	Power Failure						
X	Invalid Data (Equipment Malfunction/Recovery)							NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)																						
Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.																															
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.																															

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



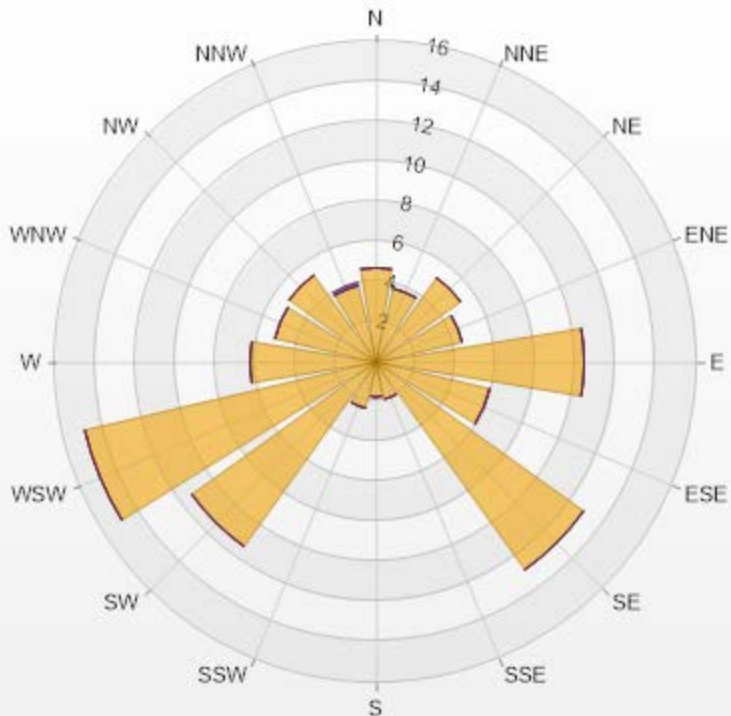
PM2.5[ug/m3(L)] Histogram: Cold Lake South Monthly: 02-2022 1 Hr.



Classes	PM2.5
<=0	0.00%
0 - 10	98.06%
10 - 20	1.64%
20 - 30	0.30%
30 - 40	0.00%
40 - 50	0.00%
50 - 60	0.00%
60 - 70	0.00%
70 - 80	0.00%
80 - 90	0.00%
>90	0.00%

Wind: Cold Lake South Poll.: Cold Lake South-PM2.5[ug/m3(L)] Monthly: 02-2022 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 99.85% Calm Avg: 0.00 [ug/m3(L)]

Direction	0-50	50-80	80-120	120-240	>240.0	Total
N	4.77	0	0	0	0	4.77
NNE	3.58	0	0	0	0	3.58
NE	5.51	0	0	0	0	5.51
ENE	4.47	0	0	0	0	4.47
E	10.13	0	0	0	0	10.13
ESE	5.96	0	0	0	0	5.96
SE	12.37	0	0	0	0	12.37
SSE	1.79	0	0	0	0	1.79
S	1.79	0	0	0	0	1.79
SSW	2.38	0	0	0	0	2.38
SW	11.18	0	0	0	0	11.18
WSW	14.9	0	0	0	0	14.9
W	6.11	0	0	0	0	6.11
WNW	5.07	0	0	0	0	5.07
NW	5.66	0	0	0	0	5.66
NNW	4.32	0	0	0	0	4.32
Summary	100	0	0	0	0	100




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% Icon Classes (ppb)

100  0-30

0  30-50

0  50-76

0  76-159

0  >159.0



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - February 2022

Summary of Hourly Averages

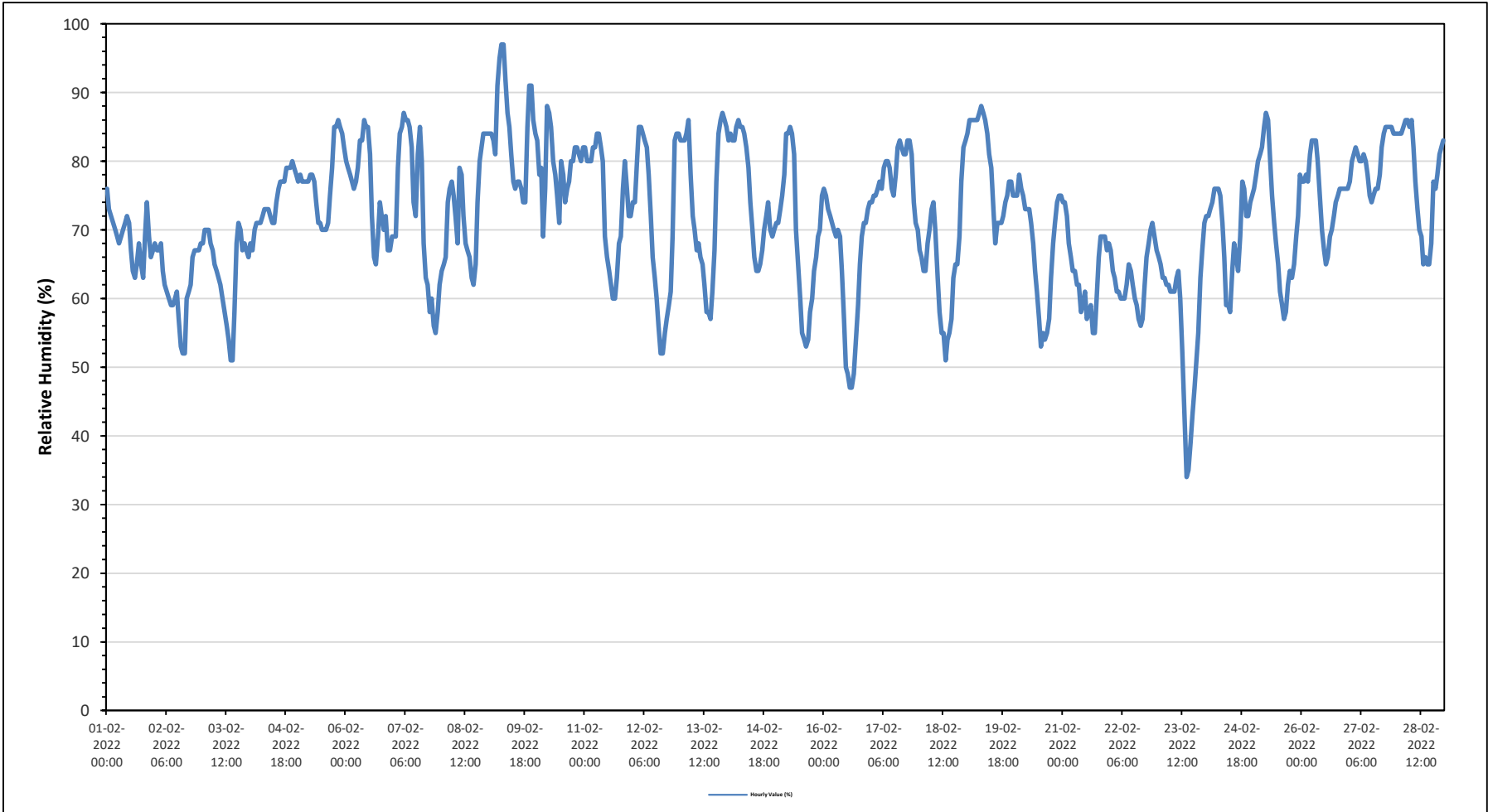
RELATIVE HUMIDITY (RH) in %

Maximum Hourly Value:	97 %	on February 9 at hour 6	Hours in Service:	672
Maximum Daily Value:	84.4 %	on February 9	Hours of Data:	672
Minimum Hourly Value:	34 %	on February 23 at hour 14	Hours of Missing Data:	0
Minimum Daily Value:	56.3 %	on February 23	Hours of Calibration:	0
Monthly Average:	71.7 %		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																				
Feb 1	76	73	72	71	70	69	68	69	70	71	72	71	67	64	63	65	68	65	63	69	74	69	66	67	63	76	68.8																				
Feb 2	68	67	67	68	64	62	61	60	59	59	60	61	57	53	52	52	60	61	62	66	67	67	67	68	52	68	62.0																				
Feb 3	68	70	70	70	68	67	65	64	63	62	60	58	56	54	51	51	58	68	71	70	67	68	67	66	51	71	63.8																				
Feb 4	68	67	70	71	71	71	72	73	73	73	72	71	71	74	76	77	77	77	79	79	79	80	79	78	67	80	74.1																				
Feb 5	77	78	77	77	77	77	78	78	77	74	71	71	70	70	70	71	75	79	85	85	86	85	84	82	70	86	77.3																				
Feb 6	80	79	78	77	76	77	79	83	83	86	85	85	81	72	66	65	69	74	72	70	72	67	67	69	65	86	75.5																				
Feb 7	69	69	79	84	85	87	86	86	85	82	74	72	81	85	80	68	63	62	58	60	56	55	58	62	55	87	72.8																				
Feb 8	64	65	66	74	76	77	75	72	68	79	78	72	68	67	66	63	62	65	74	80	82	84	84	84	62	84	72.7																				
Feb 9	84	84	83	81	91	95	97	97	92	87	85	81	77	76	77	77	76	74	74	85	91	91	86	84	74	97	84.4																				
Feb 10	83	78	79	69	76	88	87	85	80	78	75	71	80	78	74	76	77	80	80	82	82	81	80	82	69	88	79.2																				
Feb 11	82	80	80	80	82	82	84	84	82	80	69	66	64	62	60	60	63	68	69	76	80	76	72	72	60	84	73.9																				
Feb 12	74	74	80	85	85	84	83	82	78	72	66	63	60	56	52	52	55	57	59	61	69	83	84	84	52	85	70.8																				
Feb 13	83	83	83	84	86	78	72	70	67	68	66	65	62	58	58	57	61	67	77	84	86	87	86	85	57	87	73.9																				
Feb 14	83	84	83	83	85	86	85	85	84	82	79	74	70	66	64	64	65	67	70	72	74	70	69	70	64	86	75.6																				
Feb 15	71	71	73	75	78	84	84	85	84	81	70	65	60	55	54	53	54	58	60	64	66	69	70	75	53	85	69.1																				
Feb 16	76	75	73	72	71	70	69	70	69	64	57	50	49	47	47	49	54	59	65	69	71	71	73	74	47	76	64.3																				
Feb 17	74	75	75	76	77	76	79	80	80	79	76	75	78	82	83	82	81	81	83	83	81	74	71	70	70	83	78.0																				
Feb 18	67	66	64	64	68	70	73	74	70	63	58	55	55	51	54	55	57	63	65	65	69	77	82	83	51	83	65.3																				
Feb 19	84	86	86	86	86	86	87	88	87	86	84	81	79	73	68	71	71	71	72	74	75	77	77	75	68	88	79.6																				
Feb 20	75	75	78	76	75	73	73	73	71	68	64	61	57	53	55	54	55	57	63	68	71	74	75	75	53	78	67.5																				
Feb 21	74	74	72	68	66	64	64	62	62	58	59	61	57	58	59	55	55	60	66	69	69	69	67	68	55	74	64.0																				
Feb 22	67	64	63	61	61	60	60	60	62	65	64	62	60	59	57	56	57	62	66	68	70	71	69	67	56	71	63.0																				
Feb 23	66	65	63	63	62	62	61	61	61	63	64	60	52	43	34	35	39	43	47	51	55	63	67	71	34	71	56.3																				
Feb 24	72	72	73	74	76	76	76	75	71	66	59	59	58	64	68	66	64	69	77	76	72	72	74	75	58	77	70.2																				
Feb 25	76	78	80	81	82	85	87	86	80	75	71	68	65	61	59	57	58	62	64	63	65	69	72	78	57	87	71.8																				
Feb 26	77	77	78	77	81	83	83	83	80	75	70	67	65	66	69	70	72	74	75	76	76	76	76	76	65	83	75.1																				
Feb 27	77	80	81	82	81	80	80	81	80	78	75	74	75	76	76	78	82	84	85	85	85	84	84	74	85	80.3																					
Feb 28	84	84	84	85	86	86	85	86	82	77	73	70	69	65	66	65	65	68	77	76	78	81	82	83	65	86	77.4																				
Diurnal Maximum	84	86	86	86	91	95	97	97	92	87	85	85	81	85	83	82	82	84	85	85	91	91	86	85																							
Diurnal Average	75.0	74.8	75.4	75.5	76.5	77.0	76.9	76.9	75.0	73.3	69.9	67.5	65.8	63.9	62.8	62.3	64.0	67.0	69.9	72.4	73.9	74.7	74.6	75.3																							
C	Monthly Calibration											S	Daily Zero-Span Check											Q	Quality Assurance																						
K	Collection Error											N	No Data (Machine Not in Service)											Y	Routine Maintenance											P	Power Failure										
X	Invalid Data (Equipment Malfunction /Recovery)											NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)																																		

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

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





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - February 2022

Summary of Hourly Averages

BAROMETRIC PRESSURE (BP) in millibar

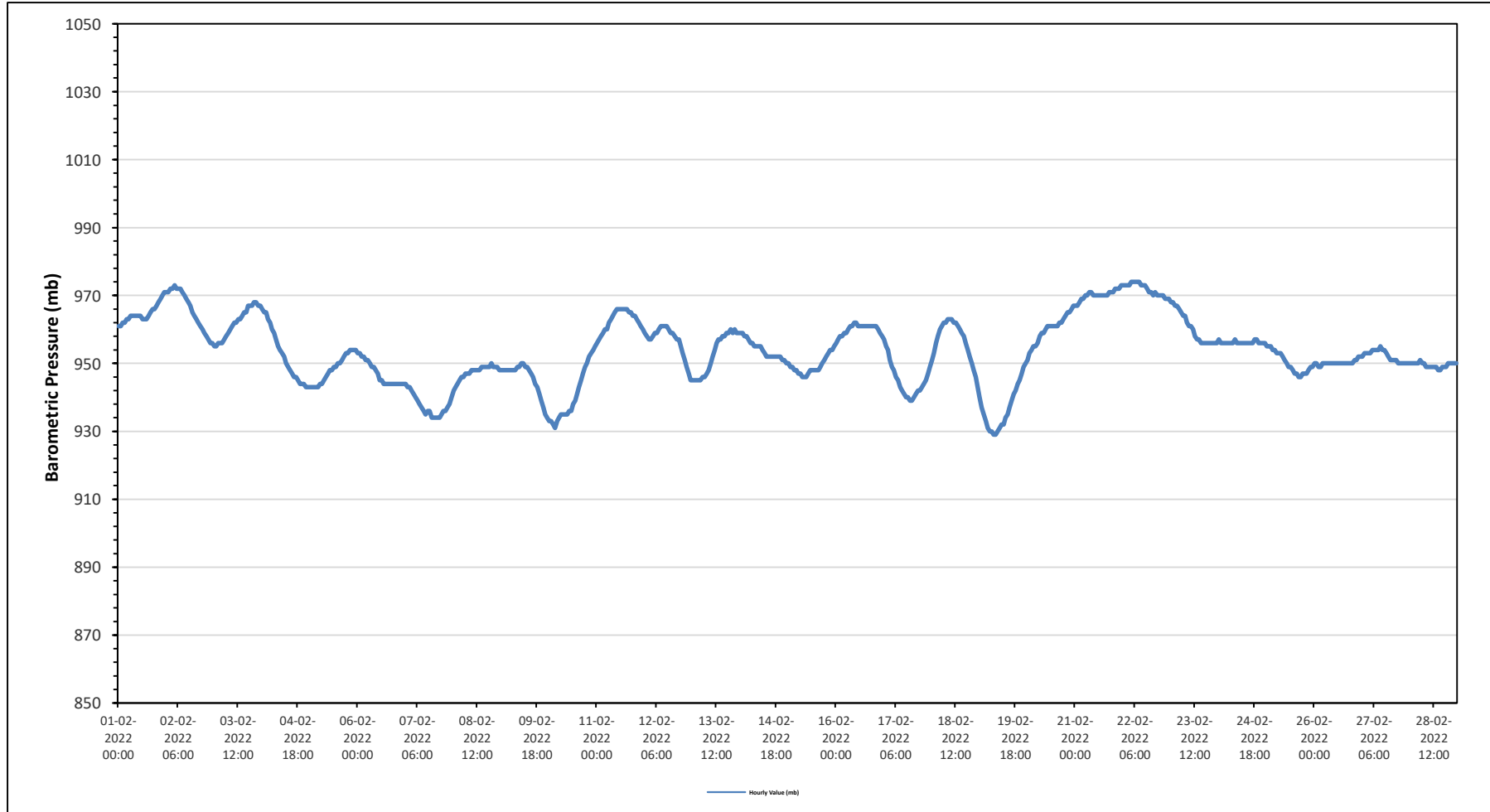
Maximum Hourly Value:	974 mb on February 22 at hour 4	Hours in Service:	672
Maximum Daily Value:	972 mb on February 22	Hours of Data:	672
Minimum Hourly Value:	929 mb on February 19 at hour 7	Hours of Missing Data:	0
Minimum Daily Value:	937 mb on February 19	Hours of Calibration:	0
Monthly Average:	954 mb	Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average			
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23		
Feb 1	961	961	962	962	963	963	964	964	964	964	964	964	963	963	963	964	965	966	966	966	967	968	969	970	971	961	971	965	
Feb 2	971	971	972	972	973	972	972	972	971	970	969	968	967	965	964	963	962	961	960	959	958	957	956	956	956	956	956	973	966
Feb 3	955	955	956	956	956	957	958	959	960	961	962	962	963	963	964	965	965	967	967	967	968	968	967	967	967	967	955	968	962
Feb 4	966	965	965	963	962	960	959	957	955	954	953	952	950	949	948	947	946	946	945	944	944	944	943	943	943	943	943	966	953
Feb 5	943	943	943	943	943	944	944	945	946	947	948	948	949	949	950	950	951	952	953	953	954	954	954	954	954	943	954	948	
Feb 6	953	953	952	952	951	951	950	949	949	948	947	945	945	944	944	944	944	944	944	944	944	944	944	944	944	944	944	953	947
Feb 7	944	943	943	942	941	940	939	938	937	936	935	936	936	934	934	934	934	934	935	936	936	937	938	940	934	944	938	947	
Feb 8	942	943	944	945	946	946	947	947	947	948	948	948	948	948	949	949	949	949	949	950	949	949	949	948	942	950	947	947	
Feb 9	948	948	948	948	948	948	948	948	949	949	949	950	950	949	948	947	946	944	943	941	939	937	935	934	934	950	946	946	
Feb 10	933	933	932	931	933	934	935	935	935	935	936	936	938	939	941	943	945	947	949	950	952	953	954	955	931	955	941	941	
Feb 11	956	957	958	959	960	960	962	963	964	965	966	966	966	966	966	966	965	965	964	964	963	962	961	960	956	966	963	963	
Feb 12	959	958	957	957	958	959	959	960	961	961	961	961	960	959	958	957	957	955	953	951	949	947	945	945	945	961	957	957	
Feb 13	945	945	945	945	945	946	946	947	948	950	952	954	956	957	957	958	958	959	959	960	959	960	959	959	945	960	953	953	
Feb 14	959	959	958	958	957	956	956	955	955	955	955	954	953	952	952	952	952	952	952	952	951	951	950	950	950	959	954	954	
Feb 15	950	949	949	948	948	947	947	946	946	946	947	948	948	948	948	949	950	951	952	953	954	954	955	946	955	949	949	949	
Feb 16	956	957	958	958	959	959	960	961	961	962	962	961	961	961	961	961	961	961	961	961	961	960	959	958	956	962	960	960	
Feb 17	957	955	954	951	949	948	946	945	943	942	941	940	940	939	939	940	941	942	942	943	944	945	947	949	939	957	945	945	
Feb 18	951	953	956	958	960	961	962	962	963	963	963	962	962	961	960	959	958	956	954	952	950	948	946	943	943	963	957	957	
Feb 19	940	937	935	933	931	930	930	929	929	930	931	932	932	934	935	937	939	941	942	944	945	947	949	950	929	950	937	937	
Feb 20	951	953	954	955	955	956	958	959	959	960	961	961	961	961	961	961	962	962	963	964	965	965	966	967	951	967	960	960	
Feb 21	967	967	968	969	969	970	970	971	971	970	970	970	970	970	970	970	970	971	971	971	971	972	972	973	967	973	970	970	
Feb 22	973	973	973	973	974	974	974	974	974	973	973	973	972	971	971	970	971	970	970	970	969	969	969	969	969	969	974	972	972
Feb 23	968	968	967	967	966	965	964	964	962	961	961	960	958	957	957	956	956	956	956	956	956	956	956	956	956	956	968	960	960
Feb 24	957	956	956	956	956	956	956	956	957	956	956	956	956	956	956	956	956	956	957	957	956	956	956	956	956	956	957	956	956
Feb 25	955	955	955	954	954	953	953	953	952	951	950	949	948	947	947	946	946	946	947	947	947	948	949	949	946	955	950	950	
Feb 26	950	950	949	949	950	950	950	950	950	950	950	950	950	950	950	950	950	950	950	950	951	951	952	952	949	952	950	950	
Feb 27	952	953	953	953	953	954	954	954	954	955	954	954	953	952	951	951	951	951	950	950	950	950	950	950	950	950	955	952	952
Feb 28	950	950	950	950	950	951	950	950	949	949	949	949	949	948	948	949	949	949	950	950	950	950	950	950	948	951	950	950	
Diurnal Maximum	973	973	973	973	974	974	974	974	974	973	973	973	972	971	971	970	971	971	971	971	971	972	972	972	973	969	974	972	
Diurnal Average	954	954	954	954	954	954	954	954	954	954	954	954	953	953	953	953	953	954	954	954	954	954	954	954	954	954	954	954	

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

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

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





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - February 2022

Summary of Hourly Averages

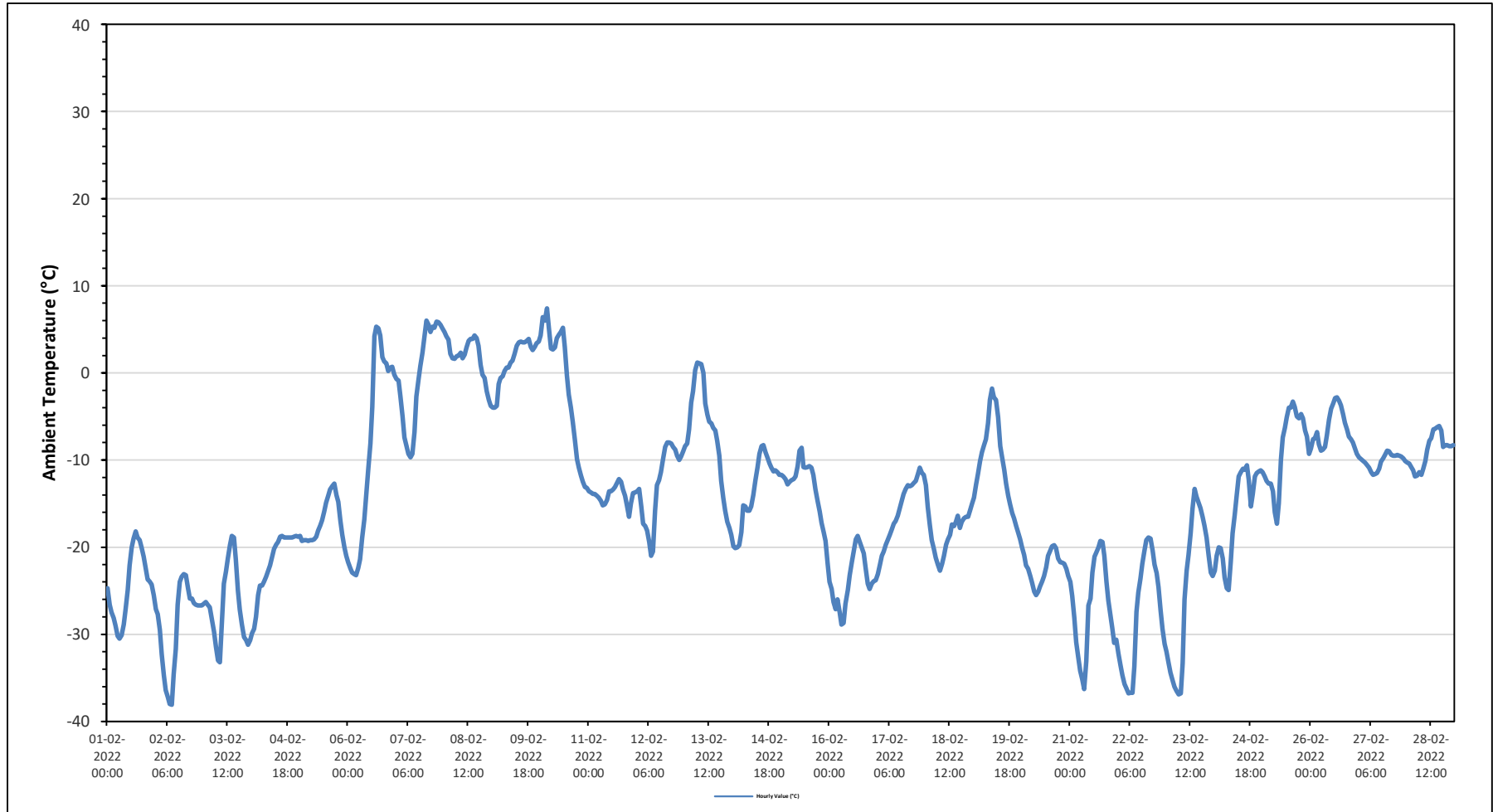
AMBIENT TEMPERATURE (AT) in Degree Celsius

Maximum Hourly Value:	7.4 °C	on February 10 at hour 3	Hours in Service:	672
Maximum Daily Value:	1.9 °C	on February 8	Hours of Data:	672
Minimum Hourly Value:	-38.1 °C	on February 2 at hour 8	Hours of Missing Data:	0
Minimum Daily Value:	-29.1 °C	on February 2	Hours of Calibration:	0
Monthly Average:	-14.6 °C		Operational Uptime:	100.0

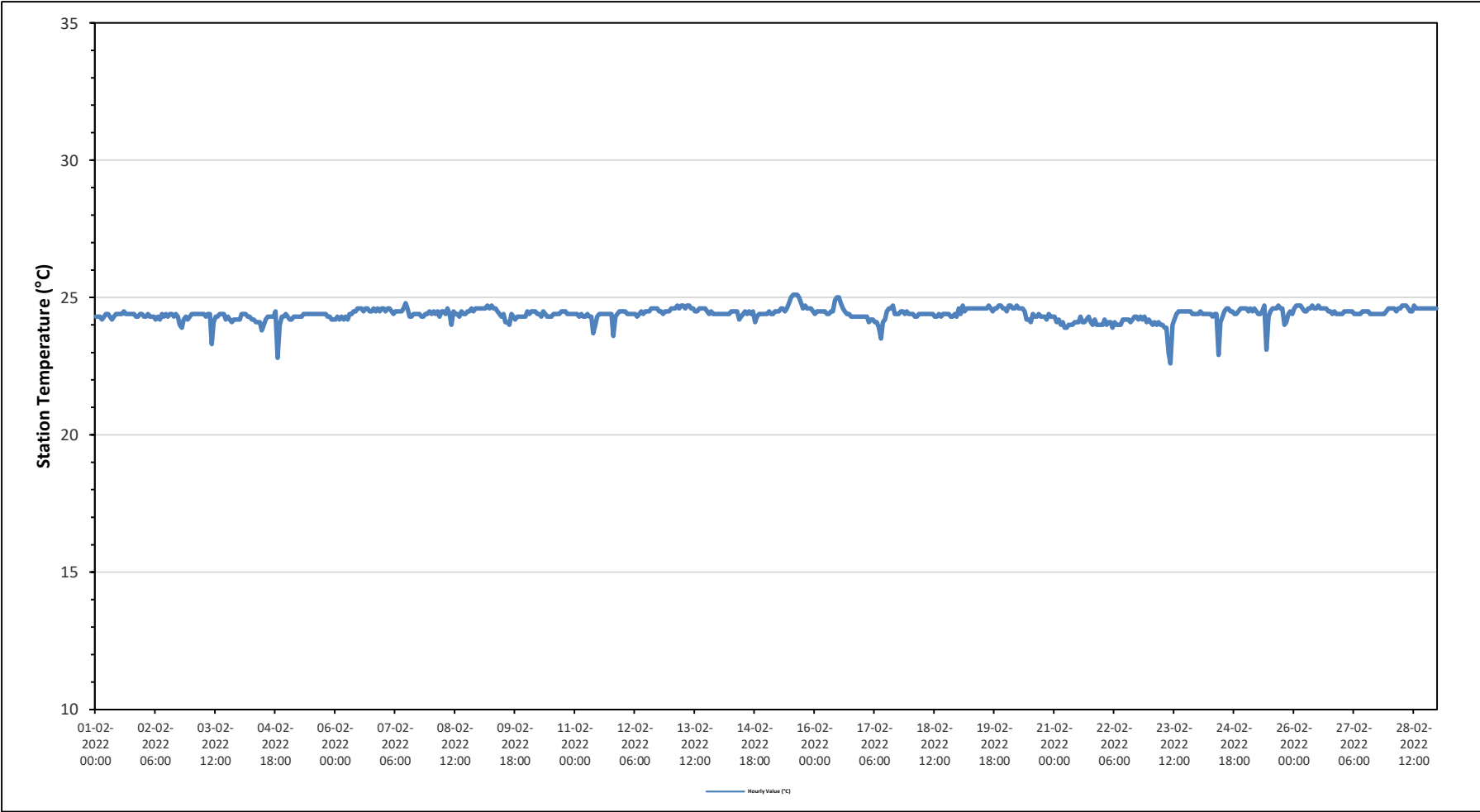
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23
Feb 1	-24.7	-26.6	-27.5	-28.1	-29	-30.2	-30.5	-30.1	-28.9	-27.1	-24.9	-22.1	-20	-19	-18.2	-18.9	-19.2	-20	-21.1	-22.3	-23.7	-23.9	-24.3	-25.5	-30.5	-18.2	-24.4
Feb 2	-27.1	-27.7	-29.5	-32.3	-34.7	-36.4	-37.2	-38	-38.1	-34.6	-31.7	-26.6	-24	-23.4	-23.1	-23.2	-24.7	-25.9	-25.9	-26.4	-26.6	-26.7	-26.7	-26.7	-38.1	-23.1	-29.1
Feb 3	-26.5	-26.3	-26.6	-26.9	-28.3	-29.7	-31.4	-33	-33.2	-28.4	-24.2	-22.8	-21.3	-19.8	-18.7	-18.9	-21.4	-25	-27.2	-28.9	-30.3	-30.7	-31.2	-30.7	-33.2	-18.7	-26.7
Feb 4	-29.9	-29.4	-28	-25.5	-24.4	-24.4	-24	-23.4	-22.8	-22.1	-21.2	-20.2	-19.7	-19.4	-18.8	-18.7	-18.9	-18.9	-18.9	-18.9	-18.9	-18.8	-18.7	-18.8	-29.9	-18.7	-21.8
Feb 5	-18.7	-19.3	-19.2	-19.2	-19.3	-19.2	-19.2	-19.1	-18.8	-18.1	-17.5	-16.9	-15.9	-14.9	-14.1	-13.4	-13	-12.7	-14	-14.8	-17	-18.6	-20	-21	-21.0	-12.7	-17.2
Feb 6	-21.7	-22.4	-22.9	-23.1	-23.2	-22.4	-21.4	-18.9	-16.8	-13.7	-11	-8.1	-3.9	4.2	5.3	5.1	4.3	1.8	1.3	1.1	0.2	0.6	0.7	-0.2	-23.2	5.3	-8.5
Feb 7	-0.7	-0.9	-2.7	-5	-7.4	-8.4	-9.3	-9.7	-9.3	-6.8	-2.7	-0.8	0.8	2.3	4.3	6	5.5	4.7	5.3	5.2	5.9	5.8	5.5	5.1	-9.7	6.0	-0.3
Feb 8	4.7	4.2	3.8	2.2	1.7	1.6	1.9	2	2.3	1.7	2.1	2.9	3.7	3.9	3.9	4.3	4	3.1	0.9	-0.2	-0.6	-2.1	-3.1	-3.8	-3.8	4.7	1.9
Feb 9	-4	-4	-3.8	-1.3	-0.6	-0.4	0.2	0.6	0.6	1.2	1.4	2.2	3.1	3.5	3.6	3.5	3.5	3.7	3.9	3	2.6	3	3.4	3.6	-4.0	3.9	1.4
Feb 10	4.3	6.4	6	7.4	5.2	2.8	2.7	2.9	4	4.4	4.7	5.2	3	-0.3	-2.5	-4	-5.6	-7.7	-9.9	-10.9	-11.8	-12.5	-13.1	-13.2	-13.2	7.4	-1.4
Feb 11	-13.6	-13.7	-13.9	-13.9	-14.1	-14.3	-14.7	-15.2	-15.1	-14.6	-13.6	-13.6	-13.4	-13.1	-12.6	-12.2	-12.5	-13.4	-14.1	-15.2	-16.5	-15	-13.8	-13.7	-16.5	-12.2	-14.0
Feb 12	-13.6	-13.3	-15.3	-17.3	-17.6	-18.1	-19.4	-21	-20.5	-15.8	-12.9	-12.3	-11.4	-9.9	-8.5	-8	-8	-8.1	-8.5	-8.8	-9.5	-10	-9.6	-9	-21.0	-8.0	-12.8
Feb 13	-8.4	-8.1	-6.5	-3.4	-2.1	0.3	1.2	1.1	1	0	-3.5	-4.8	-5.6	-5.8	-6.3	-6.6	-7.8	-9.5	-12.4	-14.4	-15.8	-17.1	-17.8	-18.6	-18.6	1.2	-7.1
Feb 14	-19.9	-20.1	-20	-19.8	-18.3	-15.2	-15.3	-15.8	-15.8	-15.3	-14	-12.3	-10.8	-9.3	-8.4	-8.3	-9.1	-9.7	-10.4	-10.9	-11.3	-11.2	-11.4	-11.7	-20.1	-8.3	-13.5
Feb 15	-11.7	-11.9	-12.2	-12.8	-12.5	-12.3	-12.2	-11.9	-10.7	-8.9	-8.6	-10.8	-10.9	-10.8	-10.7	-10.9	-11.7	-13.4	-14.7	-15.9	-17.2	-18.3	-19.3	-21.9	-21.9	-8.6	-13.0
Feb 16	-24	-24.8	-26.3	-27.1	-26	-27.4	-28.9	-28.7	-26.5	-24.9	-23.2	-21.7	-20.5	-19.1	-18.7	-19.4	-20	-20.7	-22.4	-24.2	-24.8	-24.2	-23.9	-23.8	-28.9	-18.7	-23.8
Feb 17	-23.1	-22	-21	-20.5	-19.7	-19.2	-18.6	-18	-17.3	-17	-16.4	-15.6	-14.7	-13.9	-13.3	-12.9	-13	-12.9	-12.6	-12.4	-11.6	-10.9	-11.5	-11.7	-23.1	-10.9	-15.8
Feb 18	-12.9	-15.4	-17.5	-19.2	-20.2	-21.2	-22	-22.7	-21.9	-21	-19.7	-19.1	-18.6	-17.4	-17.6	-17.1	-16.4	-17.8	-17.1	-16.7	-16.5	-16.5	-15.8	-15	-22.7	-12.9	-18.1
Feb 19	-14.3	-12.8	-11.6	-10.1	-9.1	-8.3	-7.6	-5.8	-3.1	-1.8	-2.8	-3.1	-5.1	-8.4	-9.7	-11.1	-12.7	-14.1	-15.1	-16.1	-16.7	-17.6	-18.3	-19.1	-19.1	-1.8	-10.6
Feb 20	-20	-20.9	-22.1	-22.5	-23.3	-24.1	-25.1	-25.5	-25.1	-24.5	-23.9	-23.3	-22.3	-21	-20.4	-19.9	-19.8	-20.1	-21.3	-21.7	-21.8	-21.9	-22.5	-23.3	-25.5	-19.8	-22.3
Feb 21	-24	-25.6	-28.1	-30.9	-32.7	-34.2	-35.2	-36.3	-33.1	-26.7	-25.9	-22.9	-21.1	-20.6	-20	-19.3	-19.4	-21	-24	-26.1	-27.6	-29.3	-31	-30.6	-36.3	-19.3	-26.9
Feb 22	-32.2	-33.6	-34.7	-35.7	-36.2	-36.8	-36.7	-36.7	-33.7	-27.4	-25.2	-23.6	-21.9	-20.4	-19.2	-18.9	-19	-20.4	-22	-23	-24.6	-27.3	-29.4	-31.1	-36.8	-18.9	-27.9
Feb 23	-32	-33.3	-34.4	-35.3	-36	-36.5	-36.9	-36.8	-33.3	-26	-22.7	-20.9	-18.4	-15.6	-13.3	-14.2	-14.9	-15.5	-16.5	-17.5	-18.9	-21	-22.9	-23.3	-36.9	-13.3	-24.8
Feb 24	-22.7	-21	-20	-20.1	-21.3	-23.5	-24.7	-24.9	-21.7	-18.4	-16.3	-14.2	-11.9	-11.4	-11	-11.1	-10.6	-12.3	-15.3	-13.9	-11.9	-11.5	-11.3	-11.2	-24.9	-10.6	-16.3
Feb 25	-11.4	-11.9	-12.4	-12.7	-12.7	-13.6	-16	-17.3	-15	-10	-7.4	-6.3	-5.1	-4	-4	-3.3	-3.9	-5	-5.2	-4.7	-5.2	-6.6	-7.3	-9.3	-17.3	-3.3	-8.8
Feb 26	-8.7	-7.6	-7.5	-6.8	-8.2	-8.9	-8.8	-8.5	-7.2	-5.4	-4.1	-3.5	-2.9	-2.8	-3.2	-3.7	-4.7	-5.7	-6.5	-7.3	-7.6	-8	-8.7	-9.3	-9.3	-2.8	-6.5
Feb 27	-9.7	-9.9	-10.1	-10.3	-10.6	-10.9	-11.4	-11.7	-11.6	-11.5	-11	-10.2	-9.8	-9.4	-8.9	-9	-9.4	-9.5	-9.5	-9.4	-9.5	-9.6	-9.8	-10.1	-11.7	-8.9	-10.1
Feb 28	-10.3	-10.4	-10.8	-11.2	-11.9	-11.8	-11.4	-11.7	-11	-10.1	-8.8	-7.8	-7.5	-6.5	-6.4	-6.2	-6.1	-6.6	-8.5	-8.3	-8.3	-8.4	-8.4	-8.3	-11.9	-6.1	-9.0
Diurnal Maximum	4.7	6.4	6.0	7.4	5.2	2.8	2.7	2.9	4.0	4.4	4.7	5.2	3.7	4.2	5.3	6.0	5.5	4.7	5.3	5.2	5.9	5.8	5.5	5.1			
Diurnal Average	-16.3	-16.5	-17.0	-17.2	-17.6	-18.0	-18.3	-18.4	-17.2	-15.1	-13.8	-12.6	-11.6	-10.8	-10.4	-10.4	-10.9	-11.9	-12.9	-13.6	-14.1	-14.6	-15.0	-15.4			
C	Monthly Calibration							S	Daily Zero-Span Check							Q	Quality Assurance										
K	Collection Error							N	No Data (Machine Not in Service)							Y	Routine Maintenance							P	Power Failure		
X	Invalid Data (Equipment Malfunction / Recovery)							NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)																		

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

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



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





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - February 2022

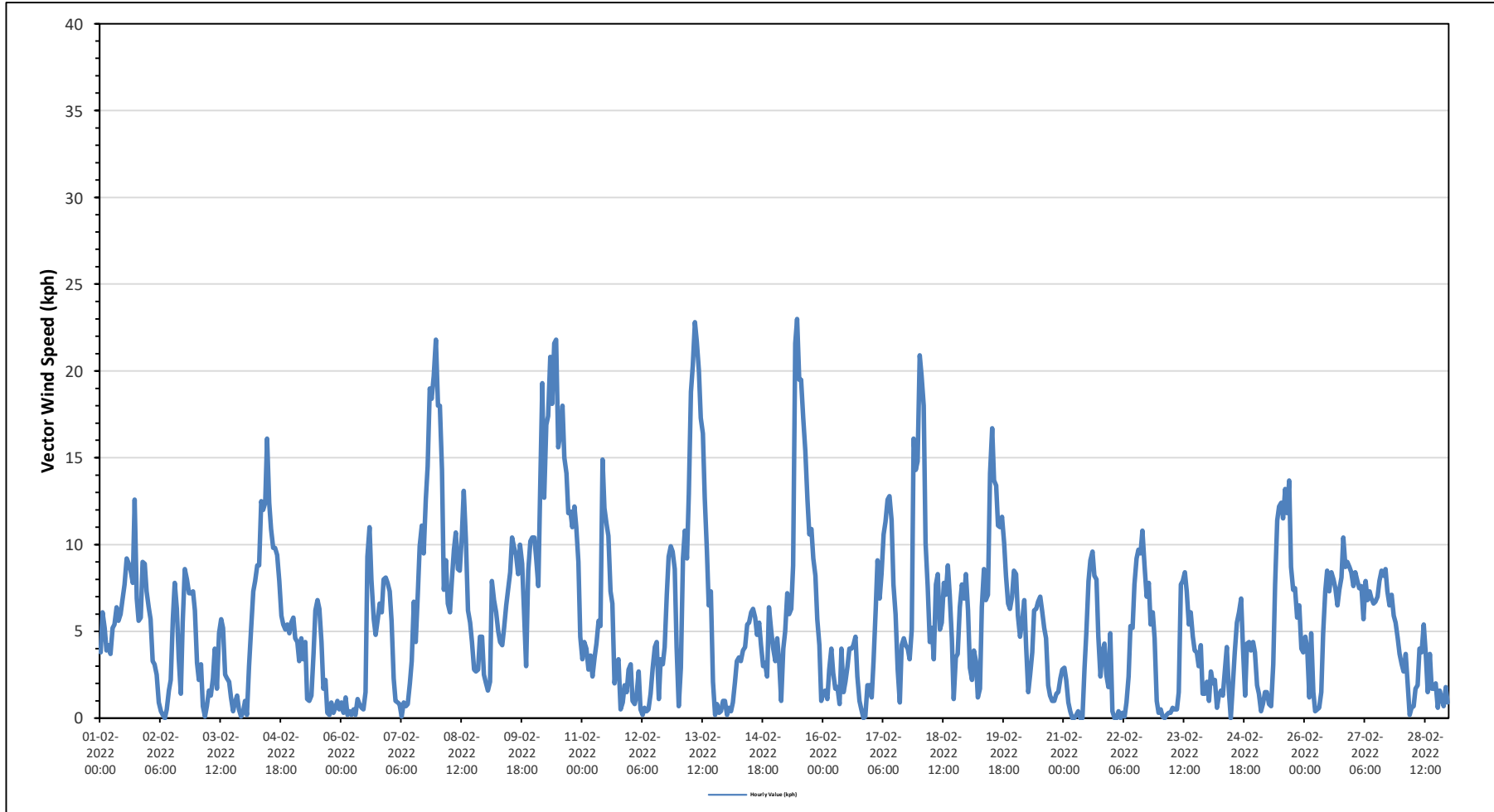
Summary of Hourly Averages

VECTOR WIND SPEED (VWS) in km/hr

Maximum Hourly Value:	23.0 kph on February 15 at hour 11	Hours in Service:	672
Maximum Daily Value:	9.9 kph on February 10	Hours of Data:	672
Minimum Hourly Value:	0.0 kph on February 2 at hour 8	Hours of Missing Data:	0
Minimum Daily Value:	0.5 kph on February 5	Hours of Calibration:	0
Monthly Average:	1.0 kph	Operational Uptime:	100.0

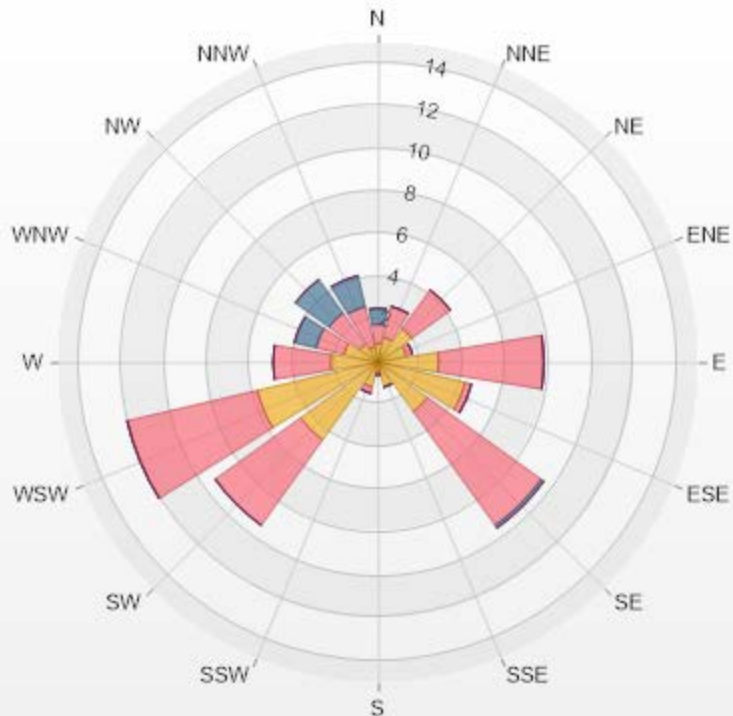
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average																	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23																
Feb 1	3.8	6.1	5.2	3.9	4.2	3.7	5.2	5.4	6.4	5.6	6.0	6.8	7.7	9.2	8.9	8.5	7.8	12.6	6.9	5.6	5.8	9.0	8.9	7.3	3.7	12.6	5.6																
Feb 2	6.4	5.7	3.3	3.1	2.5	0.9	0.4	0.2	0.0	0.5	1.6	2.2	5.7	7.8	6.3	3.5	1.4	5.5	8.6	8.0	7.2	7.2	7.3	6.2	0.0	8.6	2.1																
Feb 3	3.2	2.2	3.1	0.7	0.1	0.7	1.6	1.3	2.3	4.0	1.7	4.9	5.7	5.2	2.5	2.3	2.1	1.2	0.4	0.9	1.3	0.5	0.1	0.3	0.1	5.7	1.1																
Feb 4	1.0	0.2	3.0	5.2	7.3	7.9	8.8	8.8	12.5	12.0	12.4	16.1	12.4	10.9	9.8	9.8	9.4	7.9	5.9	5.4	5.1	5.4	4.9	5.5	0.2	16.1	7.7																
Feb 5	5.8	4.6	4.4	3.3	4.6	3.4	4.4	1.1	1.0	1.3	3.7	6.2	6.8	6.3	4.4	1.7	2.2	0.3	0.2	0.9	0.3	0.6	1.0	0.5	0.2	6.8	0.5																
Feb 6	0.9	0.3	1.2	0.2	0.4	0.2	0.5	0.2	1.1	0.8	0.6	0.5	1.5	9.3	11.0	8.0	5.7	4.8	5.7	6.6	6.1	8.0	8.1	7.8	0.2	11.0	3.4																
Feb 7	7.3	5.6	2.3	1.0	0.9	0.8	0.1	0.9	0.7	0.8	2.0	3.3	6.7	4.4	7.2	9.9	11.1	9.5	12.6	14.5	19.0	18.4	19.7	21.8	0.1	21.8	6.5																
Feb 8	18.0	18.0	14.3	7.4	9.1	6.6	6.1	7.9	9.7	10.7	8.6	8.5	10.6	13.1	10.3	6.2	5.5	4.4	2.8	2.7	2.8	4.7	4.7	2.5	2.5	18.0	7.3																
Feb 9	2.0	1.6	2.1	7.9	6.8	6.1	5.0	4.4	4.2	5.2	6.5	7.4	8.4	10.4	9.8	9.4	8.3	10.0	8.9	6.2	3.0	8.5	10.2	10.4	1.6	10.4	6.4																
Feb 10	10.4	9.2	7.6	13.2	19.3	12.7	16.9	17.4	20.8	18.1	21.6	21.8	15.6	16.4	18.0	15.0	14.1	11.8	11.9	11.0	12.2	11.0	9.0	4.7	4.7	21.8	9.9																
Feb 11	3.4	4.4	4.0	2.8	3.6	2.4	3.5	4.3	5.6	5.3	14.9	12.1	11.2	10.5	7.3	6.6	2.0	3.0	3.4	0.5	0.9	1.9	1.5	2.8	0.5	14.9	2.8																
Feb 12	3.1	1.0	0.8	1.3	2.7	0.5	0.2	0.6	0.4	0.5	1.4	2.9	4.1	4.4	1.1	3.4	3.1	4.1	7.1	9.3	9.9	9.6	8.6	4.1	0.2	9.9	3.0																
Feb 13	0.7	2.9	9.2	10.8	9.2	12.9	18.8	20.3	22.8	21.7	20.0	17.3	16.4	12.7	9.7	6.5	7.3	2.1	0.2	0.8	0.3	0.4	1.0	1.0	0.2	22.8	7.4																
Feb 14	0.2	0.6	0.4	0.9	2.1	3.3	3.5	3.3	3.9	4.1	5.4	5.5	6.1	6.3	5.8	4.8	5.5	4.2	3.0	3.2	2.4	6.4	5.1	4.1	0.2	6.4	3.6																
Feb 15	3.3	4.6	3.1	1.0	4.0	5.0	7.2	6.0	6.3	8.8	21.6	23.0	19.5	19.5	17.3	15.4	12.6	10.6	10.9	9.2	8.2	5.7	4.2	1.0	1.0	23.0	7.1																
Feb 16	1.5	1.6	1.1	2.8	4.0	2.6	1.7	1.8	0.8	4.0	1.5	2.1	3.0	4.0	4.0	4.2	4.7	2.4	1.0	0.5	0.0	0.1	1.9	1.9	0.0	4.7	1.1																
Feb 17	1.2	3.3	6.2	9.1	6.9	8.3	10.6	11.3	12.6	12.8	11.4	7.7	6.0	2.8	0.9	4.2	4.6	4.2	4.0	3.4	5.1	16.1	14.3	14.8	0.9	16.1	1.9																
Feb 18	20.9	19.7	18.0	10.1	7.6	4.4	5.2	3.4	7.7	8.3	5.1	5.5	7.8	7.1	8.8	7.1	4.6	1.1	3.5	3.7	6.4	7.7	6.9	8.3	1.1	20.9	2.8																
Feb 19	6.2	2.9	2.2	3.9	3.3	1.2	1.7	6.4	8.6	6.8	7.1	14.1	16.7	13.7	13.4	11.1	11.0	11.6	10.1	8.2	6.6	6.3	7.0	8.5	1.2	16.7	5.2																
Feb 20	8.3	5.9	4.7	5.6	6.8	4.1	1.5	2.5	3.8	6.2	6.3	6.7	7.0	6.2	5.2	4.6	1.9	1.3	1.0	1.0	1.4	1.5	2.3	2.8	1.0	8.3	3.9																
Feb 21	2.9	2.2	0.9	0.4	0.0	0.0	0.2	0.4	0.0	0.0	2.9	5.0	7.9	9.1	9.6	8.2	8.0	4.7	2.4	3.8	4.3	2.5	1.8	4.9	0.0	9.6	2.8																
Feb 22	0.4	0.0	0.0	0.4	0.0	0.3	0.1	0.9	2.4	5.3	5.2	7.7	9.2	9.7	9.5	10.8	8.8	7.0	7.8	5.4	6.1	4.6	1.0	0.3	0.0	10.8	4.2																
Feb 23	0.5	0.1	0.0	0.2	0.3	0.3	0.6	0.5	0.5	1.5	7.7	7.9	8.4	7.3	5.4	6.1	4.7	3.9	3.8	3.0	4.2	1.4	1.4	2.1	0.0	8.4	2.6																
Feb 24	1.0	2.7	2.0	2.2	0.6	1.3	1.6	1.3	2.8	4.1	1.5	0.0	2.0	3.8	5.5	6.1	6.9	4.0	1.3	4.3	4.4	3.9	4.4	3.8	0.0	6.9	1.9																
Feb 25	1.9	1.4	0.4	0.8	1.5	1.5	0.8	0.7	3.1	7.7	11.4	12.2	12.4	11.5	13.2	11.8	13.7	8.7	7.4	7.5	5.8	6.5	4.0	3.8	0.4	13.7	6.2																
Feb 26	4.7	4.0	1.2	4.9	1.5	0.4	0.5	0.6	1.5	4.9	7.3	8.5	7.3	8.4	8.0	7.5	6.5	7.4	8.1	10.4	8.7	9.0	8.7	8.4	0.4	10.4	4.5																
Feb 27	7.6	8.4	7.9	7.5	7.6	5.7	7.9	6.8	7.3	6.9	6.6	6.7	7.0	7.9	8.5	8.2	8.6	7.3	6.5	7.1	5.9	5.5	4.6	3.7	3.7	8.6	7.0																
Feb 28	3.1	2.7	3.7	2.1	0.2	0.6	0.7	1.7	1.9	4.0	3.8	5.4	3.6	1.5	3.7	1.7	1.7	2.0	0.6	1.6	1.1	0.7	1.8	0.9	0.2	5.4	1.4																
Diurnal Maximum	21	20	18	13	19	13	19	20	23	22	22	23	20	20	18	15	14	13	13	15	19	18	20	22																			
Dalurnal Average	4.6	4.4	4.0	4.0	4.2	3.5	4.1	4.3	5.4	6.1	7.4	8.1	8.5	8.6	8.0	7.2	6.6	5.6	5.2	5.2	5.8	5.5	5.2																				
C	Monthly Calibration										S	Daily Zero-Span Check										Q	Quality Assurance																				
K	Collection Error										N	No Data (Machine Not in Service)										Y	Routine Maintenance										P	Power Failure									
X	InValid Data (Equipment Malfunction /Recovery)										NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)																															
Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.																																											
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.																																											

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



Wind: Cold Lake South Monitor: WDS [kph] Monthly: 02-2022 Type: WindRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 24.70% Valid Data: 100.00%

Direction	1.8-6.0	6.0-15.0	15.0-29.0	29.0-39.0	>39.0	Total
N	0.89	0.89	0.74	0	0	2.52
NNE	1.19	1.49	0	0	0	2.68
NE	1.93	2.23	0	0	0	4.16
ENE	1.34	0.3	0	0	0	1.64
E	2.83	4.91	0	0	0	7.74
ESE	4.17	0.3	0	0	0	4.47
SE	2.83	6.55	0.15	0	0	9.53
SSE	1.19	0	0	0	0	1.19
S	0.45	0.15	0	0	0	0.6
SSW	1.19	0.3	0	0	0	1.49
SW	4.46	4.91	0	0	0	9.37
WSW	5.8	6.25	0	0	0	12.05
W	2.23	2.68	0	0	0	4.91
WNW	1.64	1.34	1.04	0	0	4.02
NW	1.04	1.79	1.93	0	0	4.76
NNW	0.74	1.93	1.49	0	0	4.16
Summary	33.92	36.02	5.35	0	0	75.29



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% Icon Classes (kph)

34 1.8-6.0

36 6.0-15.0

5 15.0-29.0

0 29.0-39.0

0 >39.0



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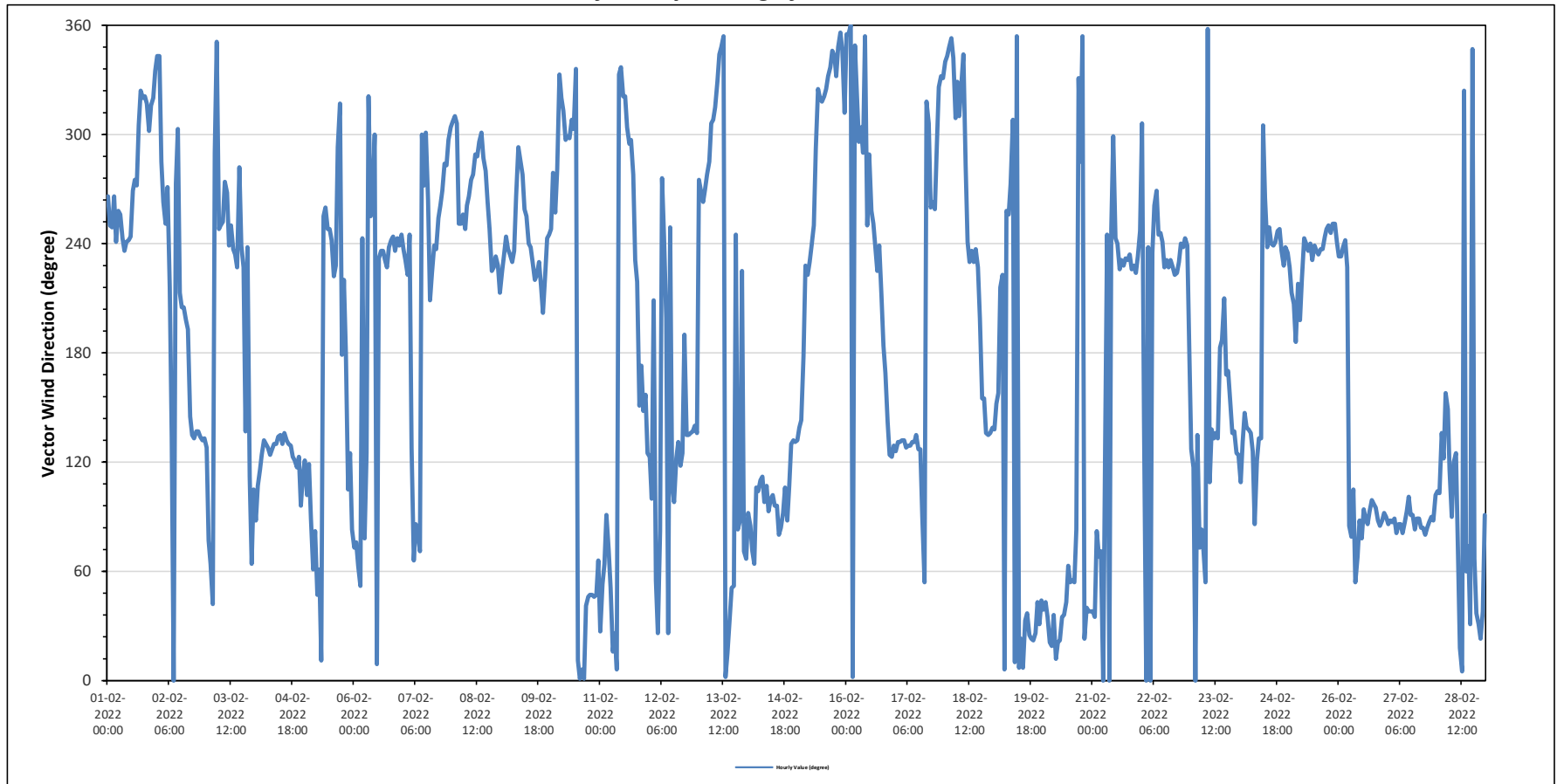
Cold Lake South Station - February 2022

Summary of Hourly Averages

WIND DIRECTION (VWD) in sector

Monthly Average:		288 (WNW) degree														Hours in Service:		672									
																Hours of Data:		672									
																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	
Feb 1	W	WSW	WSW	W	WSW	WSW	WSW	WSW	SW	WSW	WSW	WSW	W	W	W	WNW	NW	NW	NW	NW	WNW	NW	NW	NNW	283	W	
Feb 2	NNW	NNW	WNW	W	WSW	W	SW	SE	N	W	WNW	SSW	SSW	SSW	SSW	S	SE	SE	SE	SE	SE	SE	SE	SE	166	SSE	
Feb 3	SE	ENE	ENE	NE	WNW	N	WSW	WSW	WSW	W	W	WSW	WSW	SW	SW	SW	W	WSW	SW	SE	SW	ESE	ENE	ESE	242	WSW	
Feb 4	E	ESE	ESE	ESE	SE	SE	SE	ESE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	ESE	ESE	ESE	E	ESE	128	SE		
Feb 5	ESE	E	ESE	E	ENE	E	NE	ENE	NNE	WSW	WSW	WSW	WSW	WSW	SW	SW	WNW	NW	S	SW	S	ESE	SE	E	177	S	
Feb 6	ENE	ENE	ENE	NE	WSW	ENE	SE	NW	WSW	W	WNW	N	SW	SW	SW	SW	SW	SW	WSW	WSW	SW	WSW	WSW	WSW	238	SW	
Feb 7	SW	SW	SW	WSW	SE	ENE	E	E	ENE	WNW	W	WNW	W	SSW	SW	WSW	SW	WSW	W	W	WNW	W	WNW	WNW	269	W	
Feb 8	NW	NW	NW	WSW	WSW	WSW	WSW	W	W	W	W	WNW	WNW	WNW	WNW	WNW	W	W	WSW	SW	SW	SW	SSW	279	W		
Feb 9	SW	SW	WSW	SW	SW	SW	SW	W	WNW	WNW	W	WSW	WSW	WSW	SW	SW	SW	SW	SW	SW	SSW	SW	WSW	WSW	240	WSW	
Feb 10	WSW	W	WSW	W	NNW	NW	NW	WNW	WNW	WNW	NW	WNW	NNW	NNE	N	N	N	NE	NE	NE	NE	NE	NE	ENE	335	NNW	
Feb 11	NNE	NE	ENE	E	ENE	NE	NNE	NNE	N	NNW	NNW	NW	NW	WNW	WNW	WNW	W	SW	SW	SSE	S	SE	SSE	SE	337	NNW	
Feb 12	ESE	E	SSW	NE	NNE	E	W	WSW	SSW	NNE	WSW	ESE	E	ESE	SE	ESE	SE	S	SE	SE	SE	SE	SE	131	SE		
Feb 13	W	W	W	W	WNW	NW	NW	NW	NNW	NNW	NNW	N	N	NNE	NE	NE	NE	NE	WSW	E	E	SW	ENE	ENE	326	NW	
Feb 14	E	E	ENE	ENE	ESE	ESE	ESE	ESE	E	ESE	E	E	E	E	E	E	E	E	ESE	E	ESE	SE	SE	SE	103	ESE	
Feb 15	SE	SE	SE	S	SW	SW	SW	WSW	WSW	WNW	NW	NW	NW	NW	NW	NNW	NNW	NNW	NNW	NNW	NNW	N	NNW	NW	319	NW	
Feb 16	N	N	N	N	NNW	NW	WNW	WNW	WNW	N	WSW	WNW	WSW	WSW	SW	SW	WSW	SSW	S	SSE	SE	ESE	ESE	SE	279	W	
Feb 17	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	E	NE	NW	NW	WSW	W	WSW	WNW	NW	NNW	NNW	121	ESE	
Feb 18	NNW	NNW	NNW	N	NNW	NW	NNW	NW	NNW	NNW	W	WSW	SW	SW	SW	SW	SW	SW	SSW	SSE	SSE	SE	SE	SE	312	NW	
Feb 19	SE	SSE	SSE	SW	SW	N	WSW	WSW	W	NW	N	N	NNE	N	NNE	NE	NNE	NNE	NNE	NNE	NNE	NE	NE	NE	14	NNE	
Feb 20	NE	NE	NE	NNE	NNE	NE	NNE	NNE	NNE	NE	NE	NE	ENE	NE	NE	NE	E	NNW	WNW	N	NNE	NE	NE	NE	38	NE	
Feb 21	NE	NE	E	ENE	ENE	N	SE	WSW	N	WSW	WNW	WSW	WSW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	WSW	235	SW	
Feb 22	NW	SE	N	SW	N	SW	W	W	WSW	WSW	WSW	SW	SW	SW	SW	SW	SW	SW	SW	WSW	SW	WSW	WSW	S	232	SW	
Feb 23	SE	ESE	N	SE	ENE	E	ENE	NE	N	ESE	SE	SE	SE	SE	S	S	SSW	SSE	SSE	SSE	SE	SE	SE	ESE	149	SSE	
Feb 24	ESE	SE	SE	SE	SE	SE	SE	E	ESE	SE	SE	WNW	W	SW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	SW	SW	SW	217	SW	
Feb 25	SW	SSW	SSW	S	SW	SSW	SW	WSW	WSW	SW	WSW	SW	WSW	SW	SW	SW	SW	SW	WSW	WSW	WSW	WSW	WSW	WSW	238	SW	
Feb 26	SW	SW	SW	WSW	SW	E	ENE	ESE	NE	ENE	E	ENE	E	E	E	E	E	E	E	E	E	E	E	E	93	E	
Feb 27	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	87	E	
Feb 28	ESE	ESE	SE	ESE	SSE	SSE	ESE	E	ESE	SE	ENE	NNE	N	NW	ENE	ENE	NNE	NNW	ENE	NE	NNE	NNE	NE	E	70	ENE	
C	Monthly Calibration							S	Daily Zero-Span Check							Q	Quality Assurance										
K	Collection Error							N	No Data (Machine Not in Service)							Y	Routine Maintenance							P	Power Failure		
X	Invalid Data (Machine Malfunction /Recovery)							NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)																		
Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.																											
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.																											

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





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - February 2022

Summary of Hourly Averages

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

WIND SPEED																											
Maximum Hourly Value: 23.0 kph on February 15 at hour 11										Hours in Service: 672																	
Maximum Daily Value: 9.9 kph on February 10										Hours of Data: 672																	
Minimum Hourly Value: 0.0 kph on February 2 at hour 8										Hours of Missing Data: 0																	
Minimum Daily Value: 0.5 kph on February 5										Hours of Calibration: 0																	
Monthly Average: 1.0 kph										Operational Uptime: 100																	
WIND DIRECTION																											
Monthly Average: 288 (WNW degree)																											
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23
Feb 1	3.8	6.1	5.2	3.9	4.2	3.7	5.2	5.4	6.4	5.6	6.0	6.8	7.7	9.2	8.9	8.5	7.8	12.6	6.9	5.6	5.8	9.0	8.9	7.3	3.7	12.6	5.6
Feb 2	6.4	5.7	3.3	3.1	2.5	0.9	0.4	0.2	0.0	0.5	1.6	2.2	5.7	7.8	6.3	3.5	1.4	5.5	8.6	8.0	7.2	7.2	7.3	6.2	0.0	8.6	2.1
Feb 3	3.2	2.2	3.1	0.7	0.1	0.7	1.6	1.3	2.3	4.0	1.7	4.9	5.7	5.2	2.5	2.3	2.1	1.2	0.4	0.9	1.3	0.5	0.1	0.3	0.1	5.7	1.1
Feb 4	1.0	0.2	3.0	5.2	7.3	7.9	8.8	8.8	12.5	12.0	12.4	16.1	12.4	10.9	9.8	9.8	9.4	7.9	5.9	5.4	5.1	5.4	4.9	5.5	0.2	16.1	7.7
Feb 5	5.8	4.6	4.4	3.3	4.6	3.4	4.4	1.1	1.0	1.3	3.7	6.2	6.8	6.3	4.4	1.7	2.2	0.3	0.2	0.9	0.3	0.6	1.0	0.5	0.2	6.8	0.5
Feb 6	0.9	0.3	1.2	0.2	0.4	0.2	0.5	0.2	1.1	0.8	0.6	0.5	1.5	9.3	11.0	8.0	5.7	4.8	5.7	6.6	6.1	8.0	8.1	7.8	0.2	11.0	3.4
Feb 7	7.3	5.6	2.3	1.0	0.9	0.8	0.1	0.9	0.7	0.8	2.0	3.3	6.7	4.4	7.2	9.9	11.1	9.5	12.6	14.5	19.0	18.4	19.7	21.8	0.1	21.8	6.5
Feb 8	18.0	18.0	14.3	7.4	9.1	6.6	6.1	7.9	9.7	10.7	8.6	8.5	10.6	13.1	10.3	6.2	5.5	4.4	2.8	2.7	2.8	4.7	4.7	2.5	2.5	18.0	7.3
Feb 9	2.0	1.6	2.1	7.9	6.8	6.1	5.0	4.4	4.2	5.2	6.5	7.4	8.4	10.4	9.8	9.4	8.3	10.0	8.9	6.2	3.0	8.5	10.2	10.4	1.6	10.4	6.4
Feb 10	10.4	9.2	7.6	13.2	19.3	12.7	16.9	17.4	20.8	18.1	21.6	21.8	15.6	16.4	18.0	15.0	14.1	11.8	11.9	11.0	12.2	11.0	9.0	4.7	4.7	21.8	9.9
Feb 11	3.4	4.4	4.0	2.8	3.6	2.4	3.5	4.3	5.6	5.3	14.9	12.1	11.2	10.5	7.3	6.6	2.0	3.0	3.4	0.5	0.9	1.9	1.5	2.8	0.5	14.9	2.8
Feb 12	3.1	1.0	0.8	1.3	2.7	0.5	0.2	0.6	0.4	0.5	1.4	2.9	4.1	4.4	1.1	3.4	3.1	4.1	7.1	9.3	9.9	9.6	8.6	4.1	0.2	9.9	3.0
Feb 13	0.7	2.9	9.2	10.8	9.2	12.9	18.8	20.3	22.8	21.7	20.0	17.3	16.4	12.7	9.7	6.5	7.3	2.1	0.2	0.8	0.3	0.4	1.0	1.0	0.2	22.8	7.4
Feb 14	0.2	0.6	0.4	0.9	2.1	3.3	3.5	3.3	3.9	4.1	5.4	5.5	6.1	6.3	5.8	4.8	5.5	4.2	3.0	3.2	2.4	6.4	5.1	4.1	0.2	6.4	3.6
Feb 15	3.3	4.6	3.1	1.0	4.0	5.0	7.2	6.0	6.3	8.8	21.6	23.0	19.5	19.5	17.3	15.4	12.6	10.6	10.9	9.2	8.2	5.7	4.2	1.0	1.0	23.0	7.1
Feb 16	1.5	1.6	1.1	2.8	4.0	2.6	1.7	1.8	0.8	4.0	1.5	2.1	3.0	4.0	4.0	4.2	4.7	2.4	1.0	0.5	0.0	0.1	1.9	1.9	0.0	4.7	1.1
Feb 17	1.2	3.3	6.2	9.1	6.9	8.3	10.6	11.3	12.6	12.8	11.4	7.7	6.0	2.8	0.9	4.2	4.6	4.2	4.0	3.4	5.1	16.1	14.3	14.8	0.9	16.1	1.9
Feb 18	20.9	19.7	18.0	10.1	7.6	4.4	5.2	3.4	7.7	8.3	5.1	5.5	7.8	7.1	8.8	7.1	4.6	1.1	3.5	3.7	6.4	7.7	6.9	8.3	1.1	20.9	2.8
Feb 19	6.2	2.9	2.2	3.9	3.3	1.2	1.7	6.4	8.6	6.8	7.1	14.1	16.7	13.7	13.4	11.1	11.0	11.6	10.1	8.2	6.6	6.3	7.0	8.5	1.2	16.7	5.2
Feb 20	8.3	5.9	4.7	5.6	6.8	4.1	1.5	2.5	3.8	6.2	6.3	6.7	7.0	6.2	5.2	4.6	1.9	1.3	1.0	1.0	1.4	1.5	2.3	2.8	1.0	8.3	3.9
	NE	NE	NE	NNE	NNE	NE	NNE	NNE	NNE	NE	NE	NE	ENE	NE	NE	E	NNW	WNW	N	NNE	NE	NE	NE	NE			



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - February 2022

Summary of Hourly Averages

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

WIND SPEED					
Maximum Hourly Value:	23.0 kph on February 15 at hour 11				
Maximum Daily Value:	9.9 kph on February 10				
Minimum Hourly Value:	0.0 kph on February 2 at hour 8				
Minimum Daily Value:	0.5 kph on February 5				
Monthly Average:	1.0 kph				
Hours in Service:	672				
Hours of Data:	672				
Hours of Missing Data:	0				
Hours of Calibration:	0				
Operational Uptime:	100				
WIND DIRECTION					
Monthly Average:	288 (WNW degree)				
Day	Hourly Period Starting at (MST)	Daily Minimum	Daily Maximum	Daily Average	
Feb 21	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	0.0	9.6	2.8	
Feb 22	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	0.0	10.8	4.2	
Feb 23	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	0.0	8.4	2.6	
Feb 24	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	0.0	6.9	1.9	
Feb 25	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	0.4	13.7	6.2	
Feb 26	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	0.4	10.4	4.5	
Feb 27	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	3.7	8.6	7.0	
Feb 28	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	0.2	5.4	1.4	
C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance
X	InValid Data (Equipment Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	P	Power Failure
Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.					
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.					



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - February 2022

Summary of Hour Standard Deviations

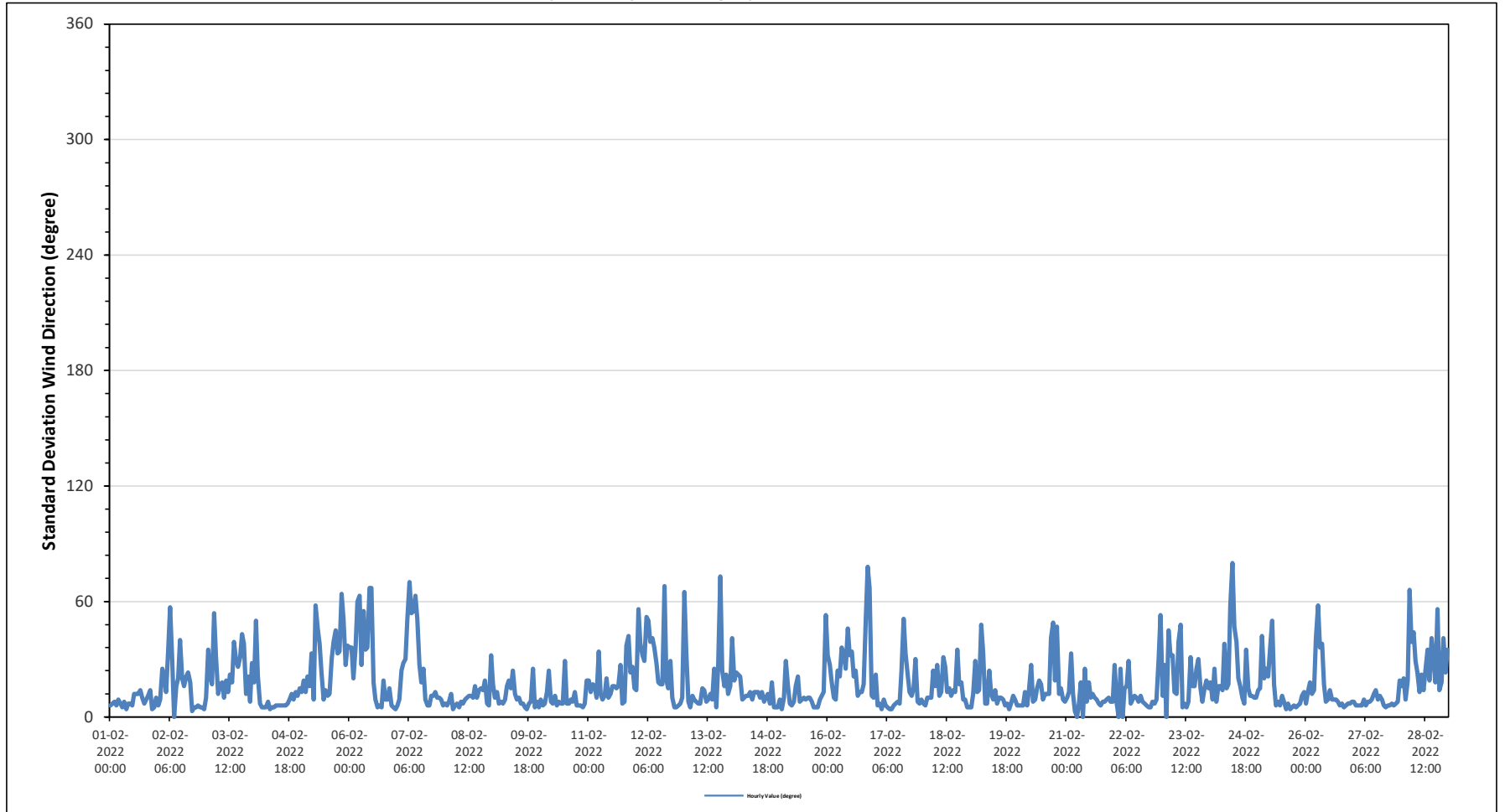
STANDARD DEVIATION WIND DIRECTION (STDWD) in Degree

Maximum Hourly Value:	80 degree on February 24 at hour 11	Hours in Service:	672
Minimum Hourly Value:	0 degree on February 2 at hour 8	Hours of Data:	672
		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													
Feb 1	6	7	8	6	9	7	5	8	4	7	7	6	12	12	12	14	10	7	9	11	14	4	5	10	4	14													
Feb 2	6	9	25	21	13	35	57	29	0	16	20	40	20	16	21	23	18	3	5	5	6	5	5	4	0	57													
Feb 3	10	35	21	17	54	31	12	17	18	10	19	13	22	18	39	29	26	31	43	38	12	21	8	28	8	54													
Feb 4	18	50	21	7	5	5	5	8	4	5	6	6	6	6	6	6	7	9	12	9	13	11	15	4	50														
Feb 5	13	19	13	21	16	33	9	58	46	38	23	9	14	11	12	30	39	45	33	34	64	51	27	37	9	64													
Feb 6	36	36	20	36	60	63	27	55	35	36	67	67	18	9	5	6	5	19	9	9	15	6	5	4	4	67													
Feb 7	6	9	24	28	30	51	70	54	55	63	51	27	18	25	9	6	6	11	11	13	10	10	9	6	6	70													
Feb 8	7	6	8	12	4	6	7	5	8	7	9	10	11	11	10	16	10	14	15	14	19	7	6	32	4	32													
Feb 9	17	10	13	7	8	7	9	16	19	15	24	12	9	10	7	7	5	4	7	8	25	5	8	5	4	25													
Feb 10	9	6	7	13	24	8	7	11	6	8	7	7	29	7	7	9	8	13	6	6	6	5	7	19	5	29													
Feb 11	19	13	17	16	10	34	12	9	11	20	10	12	16	16	15	16	27	7	8	37	42	23	26	15	7	42													
Feb 12	14	56	38	32	29	52	50	39	41	36	28	18	17	17	68	19	15	29	10	5	6	7	10	5	68														
Feb 13	65	34	8	5	11	9	8	7	7	15	14	8	9	12	9	25	5	27	73	24	16	22	12	16	5	73													
Feb 14	41	19	23	22	21	9	10	11	11	13	9	13	13	13	10	13	8	10	12	7	18	5	5	5	5	41													
Feb 15	9	4	10	29	16	7	6	8	16	21	8	9	10	9	10	10	8	5	5	9	11	13	53	4	53														
Feb 16	32	27	18	10	9	24	21	36	33	25	46	32	34	21	24	11	13	13	17	51	78	67	11	10	9	78													
Feb 17	22	6	7	4	9	6	5	4	4	6	7	8	7	24	51	33	22	13	11	15	30	8	7	9	4	51													
Feb 18	7	6	10	10	10	24	16	27	11	13	31	26	13	15	11	14	13	35	17	18	9	9	5	5	5	35													
Feb 19	5	12	29	13	14	48	34	7	7	24	12	9	14	7	10	10	9	6	7	4	7	11	9	6	4	48													
Feb 20	6	6	6	13	6	14	27	8	9	15	19	17	9	12	12	12	41	49	19	47	12	15	9	8	6	49													
Feb 21	10	13	33	12	3	0	7	18	0	25	8	18	10	12	10	9	7	6	8	8	9	10	8	8	0	33													
Feb 22	27	7	0	25	0	15	16	29	7	9	11	10	8	11	8	7	6	5	5	8	7	9	30	53	0	53													
Feb 23	11	27	0	45	32	32	13	12	39	48	5	7	5	8	31	16	16	25	30	15	8	15	19	15	0	48													
Feb 24	18	9	25	8	16	16	14	38	15	17	58	80	47	39	20	16	10	7	35	15	11	11	10	10	7	80													
Feb 25	14	15	42	20	25	21	35	50	17	6	8	6	11	8	4	7	4	5	6	5	6	7	11	13	4	50													
Feb 26	7	13	18	12	14	41	58	36	38	17	8	9	14	9	9	9	8	6	7	5	6	7	7	8	5	58													
Feb 27	8	6	6	6	6	9	6	8	8	9	12	14	9	11	9	6	5	6	6	7	6	7	8	19	5	19													
Feb 28	16	20	9	19	66	39	44	29	23	13	22	14	24	35	19	41	29	18	56	14	18	41	23	35	9	66													
Diurnal Minimum	5	4	0	4	0	0	5	4	0	5	5	6	5	6	4	6	4	3	5	4	5	4	5	4	5	4													
Diurnal Maximum	65	56	42	45	66	63	70	58	55	63	67	80	47	39	68	41	41	49	73	51	78	67	30	53															
C	Monthly Calibration										S	Daily Zero-Span Check										Q	Quality Assurance																
K	Collection Error										N	No Data (Machine Not in Service)										Y	Routine Maintenance								P	Power Failure							
X	Invalid Data (Machine Malfunction /Recovery)										NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)																											

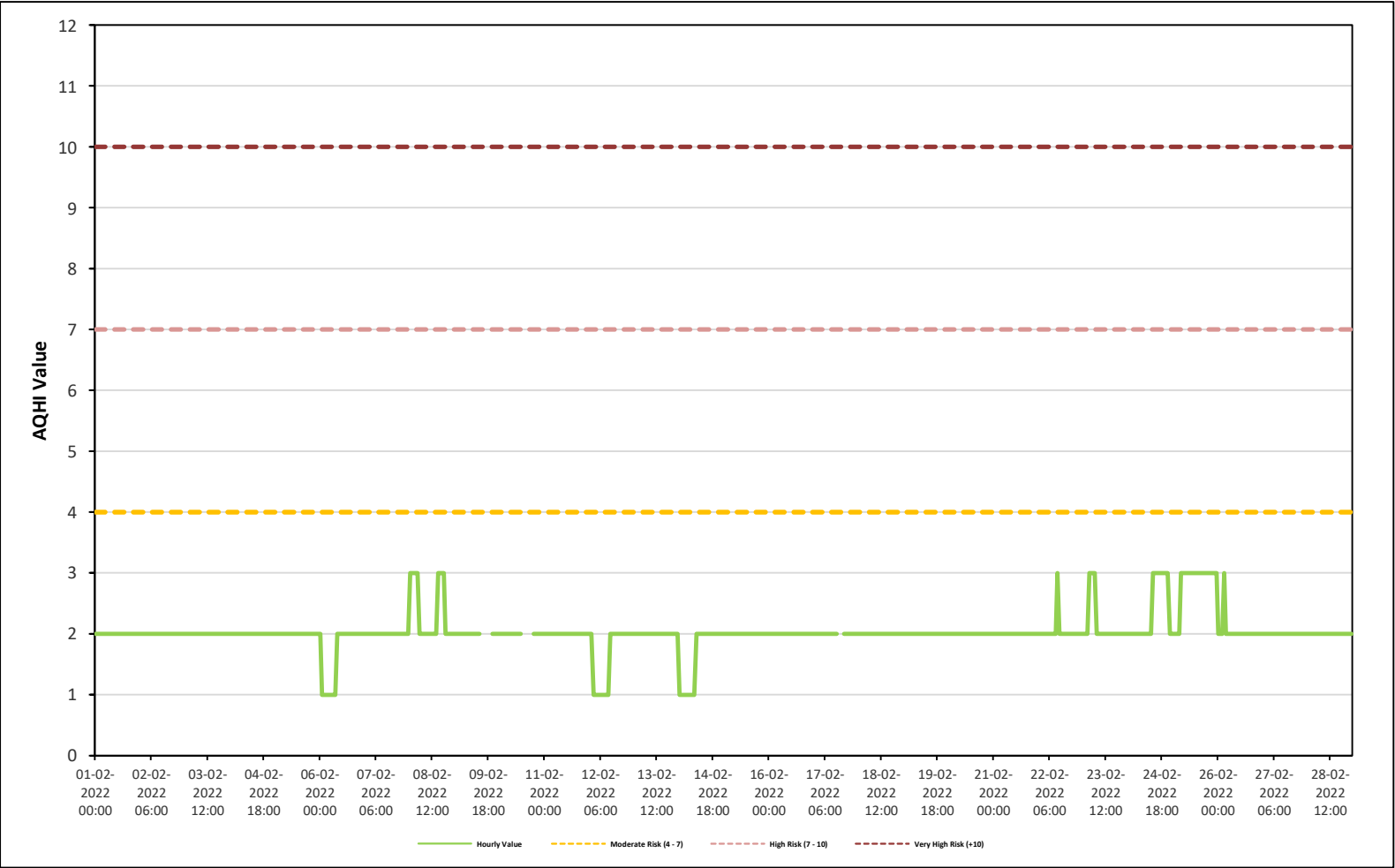
Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

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



TAMARACK STATION

Timeseries Chart of Hourly Average for AQHI - Tamarack Site





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

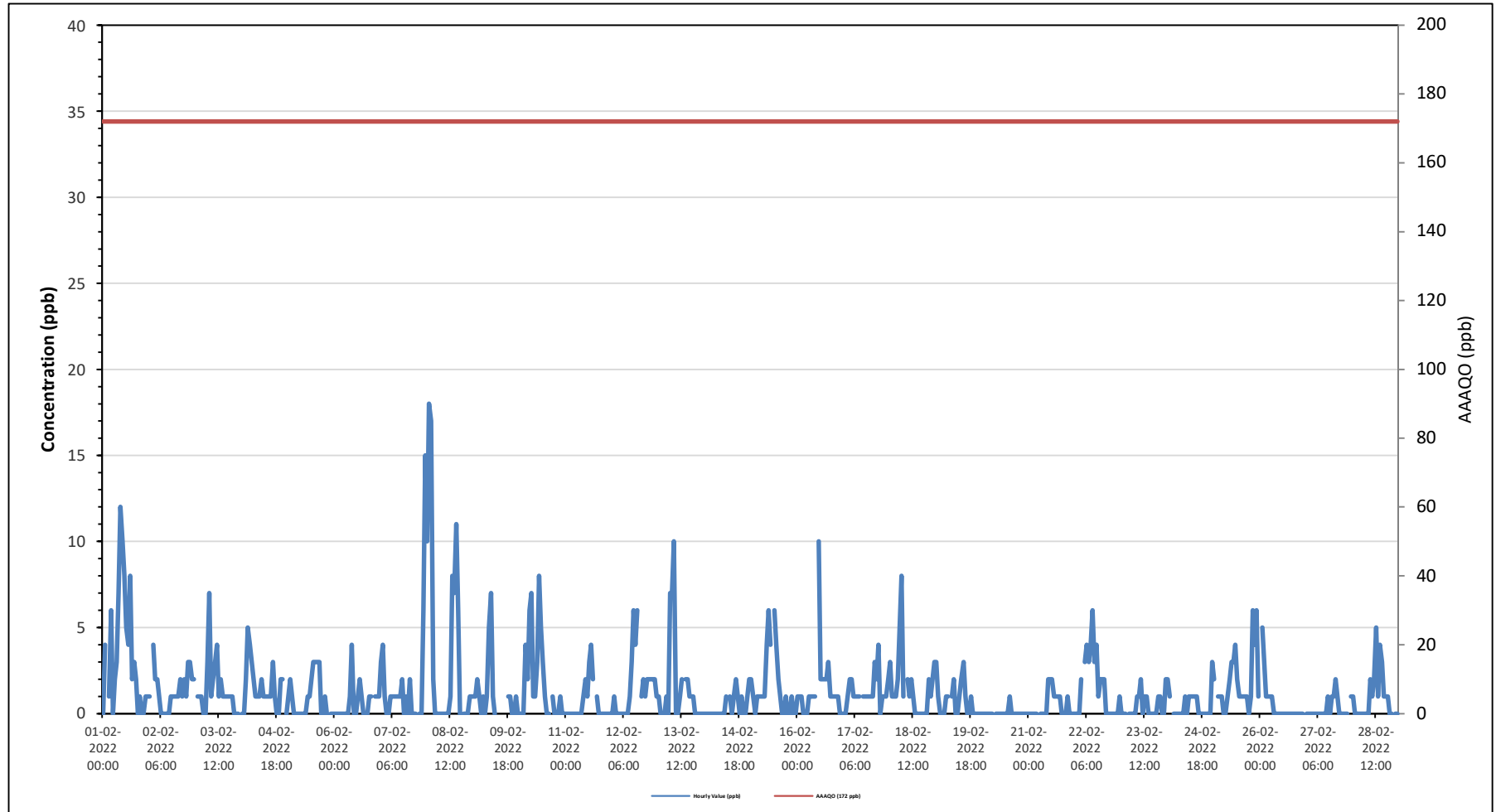
Tamarack Site - February 2022

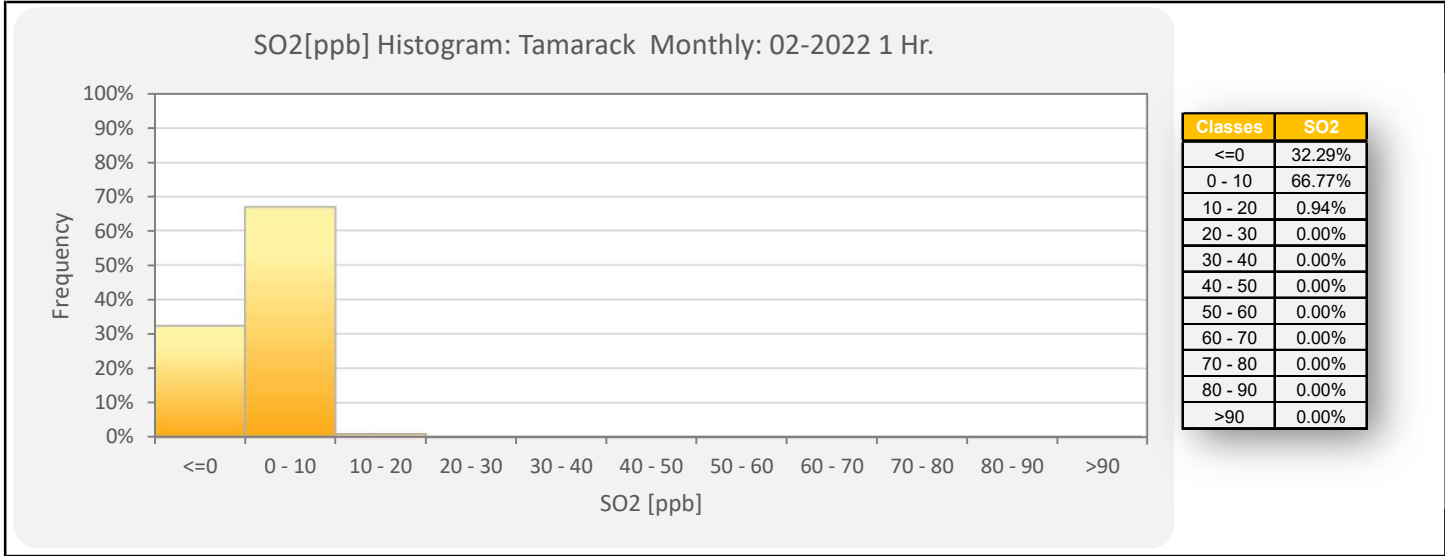
Summary of Hourly Averages

SULPHUR DIOXIDE (SO₂) in ppb

Alberta Ambient Air Quality Objectives (AAAQO): 1-Hour 172 ppb, 24-Hour 48 ppb, 30-Day 11 ppb																												
Number of 1-Hour Exceedences: 0					Number of 24-Hour Exceedences: 0					30-Day Exceedence: 0																		
Maximum Hourly Value: 18 ppb on February 8 at hour 1										Hours in Service: 672																		
Maximum Daily Value: 3.6 ppb on February 8										Hours of Data: 638																		
Minimum Hourly Value: 0 ppb on February 1 at hour 0										Hours of Missing Data: 0																		
Minimum Daily Value: 0.0 ppb on February 20										Hours of Calibration: 34																		
Monthly Average: 1.3 ppb										Operational Uptime: 100.0																		
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average		
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23				
Feb 1	0	4	S	1	6	0	2	3	7	12	10	8	5	4	8	2	3	2	0	1	0	0	1	1	0	0	12	3.5
Feb 2	1	S	4	2	2	1	0	0	0	0	0	1	1	1	1	2	1	2	1	3	3	2	2	2	0	4	1.3	
Feb 3	S	1	1	1	0	0	3	7	1	2	3	4	1	2	1	1	1	1	1	0	0	0	S	0	7	1.5		
Feb 4	0	0	2	5	4	3	2	1	1	1	2	1	1	1	1	3	1	0	0	2	2	S	0	0	5	1.5		
Feb 5	1	2	1	0	0	0	0	0	0	0	1	1	2	3	3	3	0	0	1	1	0	S	0	0	3	0.9		
Feb 6	0	0	0	0	0	0	0	0	1	4	0	0	1	2	1	0	0	0	1	1	S	1	1	1	0	4	0.6	
Feb 7	3	4	1	0	0	1	1	1	1	1	1	2	0	1	0	2	0	0	0	S	0	0	6	15	0	15	1.7	
Feb 8	10	18	17	2	0	0	0	0	0	0	0	0	1	8	7	11	6	0	S	0	0	0	1	1	0	18	3.6	
Feb 9	1	1	2	1	0	1	0	1	5	7	1	0	C	C	C	C	0	S	1	1	0	0	1	0	0	7	1.2	
Feb 10	0	0	0	4	2	6	7	1	1	3	8	5	3	1	0	0	S	1	0	0	0	1	0	0	0	8	1.9	
Feb 11	0	0	0	0	0	0	0	0	0	1	2	1	3	4	2	S	1	0	0	0	0	0	0	0	0	4	0.6	
Feb 12	0	1	0	0	0	0	0	0	0	1	3	6	4	6	S	1	2	1	2	2	2	2	2	1	0	6	1.6	
Feb 13	1	0	0	0	1	0	7	7	10	0	0	1	2	S	2	2	1	1	1	0	0	0	0	0	0	10	1.6	
Feb 14	0	0	0	0	0	0	0	0	0	0	0	1	S	1	0	1	2	1	0	1	0	0	1	2	0	2	0.4	
Feb 15	2	1	0	1	1	1	1	1	4	6	4	S	6	4	2	1	0	0	1	0	0	1	0	0	0	6	1.6	
Feb 16	1	1	1	0	0	0	1	1	1	1	S	10	2	2	2	2	3	1	1	1	1	1	0	0	0	10	1.4	
Feb 17	0	0	1	2	2	1	1	1	1	S	1	1	1	1	1	3	2	4	0	1	1	1	2	0	4	1.3		
Feb 18	3	1	1	1	2	5	8	1	S	2	1	2	1	0	0	0	0	0	0	0	2	1	2	3	0	8	1.6	
Feb 19	3	1	0	0	0	1	1	S	1	2	0	0	1	2	3	1	0	0	1	0	0	0	0	0	0	3	0.7	
Feb 20	0	0	0	0	0	0	S	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0.0	
Feb 21	0	0	0	0	0	S	0	0	0	0	2	2	2	1	1	1	0	0	0	0	1	0	0	0	0	2	0.5	
Feb 22	0	0	0	2	S	3	4	3	4	6	3	4	1	2	2	2	0	0	0	0	0	0	0	1	0	6	1.6	
Feb 23	0	0	0	S	0	0	0	0	1	1	2	0	1	1	0	0	0	0	0	1	1	0	0	2	0	2	0.4	
Feb 24	2	1	S	0	0	0	0	0	0	1	0	1	1	1	1	0	0	0	0	0	0	0	0	3	0	3	0.5	
Feb 25	2	S	1	1	1	0	0	0	1	2	3	3	4	2	1	1	1	1	0	1	6	4	6	1	0	6	1.9	
Feb 26	S	5	3	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0.5	
Feb 27	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	2	1	0	0	0	0	0	S	1	0	2	0.3	
Feb 28	1	0	0	0	0	0	0	0	0	2	1	2	5	1	4	3	1	1	0	0	S	0	0	0	0	5	1.0	
Diurnal Maximum	10	18	17	5	6	6	8	7	10	12	10	10	6	8	8	11	6	2	4	2	6	4	6	15				
Diurnal Average	1.2	1.6	1.3	0.9	0.8	0.9	1.4	1.1	1.5	2.1	1.8	2.1	1.8	2.0	1.7	1.5	1.3	0.5	0.6	0.4	0.7	0.7	0.9	1.4				
C	Monthly Calibration										S	Daily Zero-Span Check					Q	Quality Assurance										
K	Collection Error										N	No Data (Machine Not in Service)					Y	Routine Maintenance					P	Power Failure				
X	Invalid Data (Equipment Malfunction /Recovery)										NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)																
Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.																												
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.																												

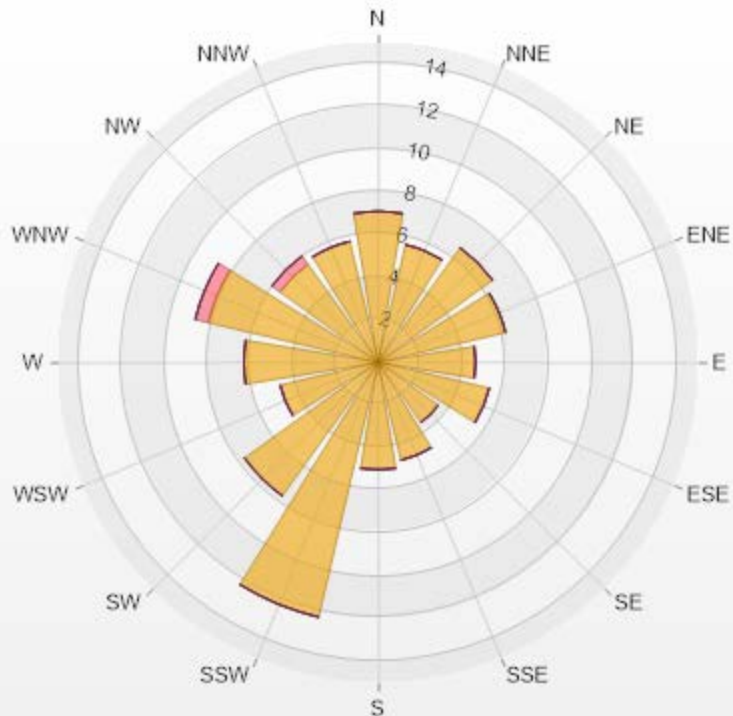
Timeseries Chart of Hourly Average for SO₂ - Tamarack Site





Wind: Tamarack Poll.: Tamarack-SO2[ppb] Monthly: 02-2022 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.94% Calm Avg: 0.00 [ppb]

Direction	0-10	10-50	50-100	100-172	>172.0	Total
N	7.05	0	0	0	0	7.05
NNE	5.64	0	0	0	0	5.64
NE	6.58	0	0	0	0	6.58
ENE	6.11	0	0	0	0	6.11
E	4.55	0	0	0	0	4.55
ESE	5.33	0	0	0	0	5.33
SE	3.45	0	0	0	0	3.45
SSE	4.7	0	0	0	0	4.7
S	5.02	0	0	0	0	5.02
SSW	12.23	0	0	0	0	12.23
SW	7.68	0	0	0	0	7.68
WSW	4.7	0	0	0	0	4.7
W	6.27	0	0	0	0	6.27
WNW	8.15	0.63	0	0	0	8.78
NW	5.64	0.47	0	0	0	6.11
NNW	5.8	0	0	0	0	5.8
Summary	98.9	1.1	0	0	0	100



LICA-202202

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% Icon Classes (ppb)

99 0-10

1 10-50

0 50-100

0 100-172

0 >172.0



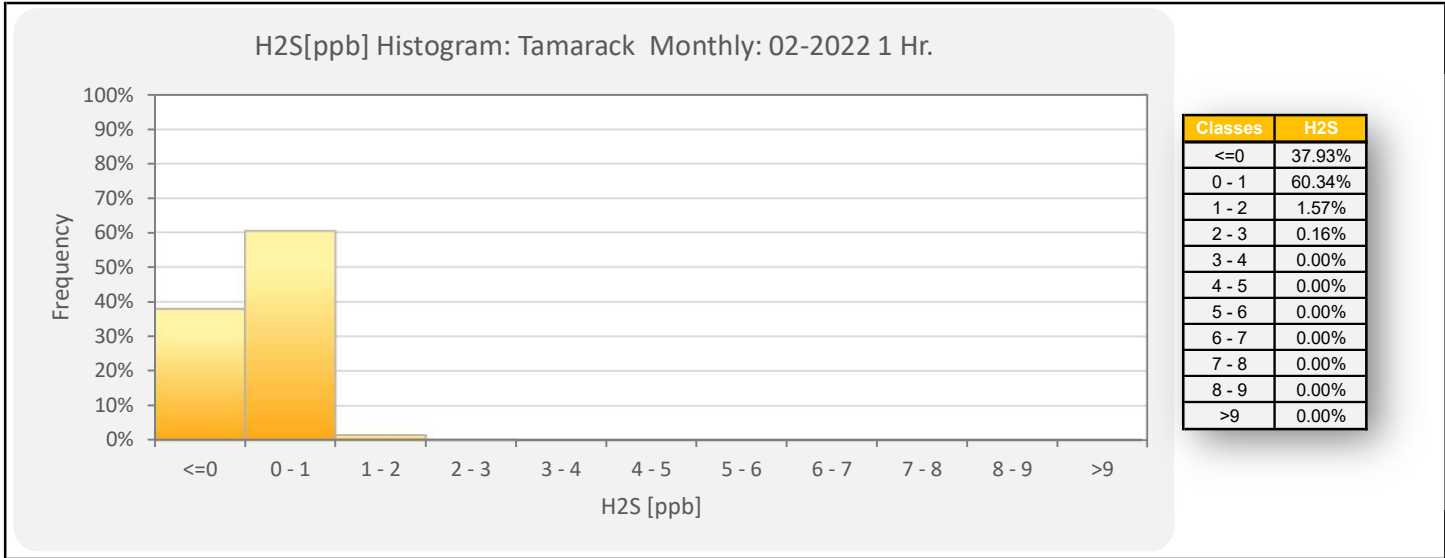
LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Tamarack Site - February 2022

Summary of Hourly Averages

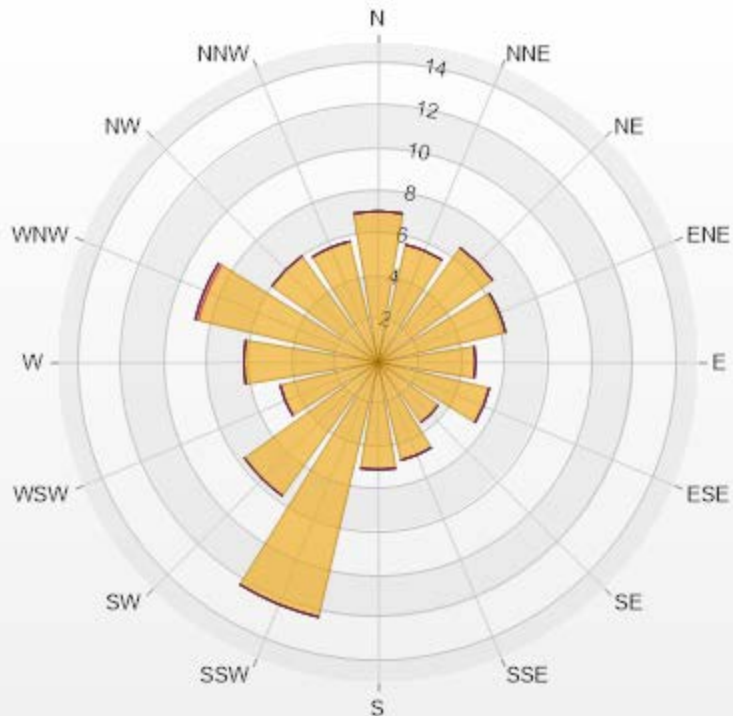
HYDROGEN SULPHIDE (H₂S) in ppb

Alberta Ambient Air Quality Objectives (AAAQO): 1-Hour 10 ppb, 24-Hour 3 ppb																																											
Number of 1-Hour Exceedances: 0												Number of 24-Hour Exceedances: 0																															
Maximum Hourly Value: 2 ppb on February 7 at hour 7												Hours in Service: 672																															
Maximum Daily Value: 0.5 ppb on February 9												Hours of Data: 638																															
Minimum Hourly Value: 0 ppb on February 1 at hour 0												Hours of Missing Data: 0																															
Minimum Daily Value: 0.0 ppb on February 2												Hours of Calibration: 34																															
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																			
Feb 1	0	0	S	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0														
Feb 2	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0														
Feb 3	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0.0															
Feb 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0.0															
Feb 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0.0															
Feb 6	0	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	0.1															
Feb 7	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	1	0	2	0.1																
Feb 8	1	1	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	S	0	0	0	0	1	0	1	0.3																
Feb 9	1	1	0	1	1	0	1	0	1	1	1	1	C	C	C	C	0	S	0	0	0	0	0	0	0	1	0.5																
Feb 10	0	0	0	1	0	1	2	0	0	0	2	2	1	0	0	0	S	0	0	0	0	0	0	0	0	2	0.4																
Feb 11	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																
Feb 12	0	0	0	0	0	0	0	1	1	1	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	1	0.1																
Feb 13	0	0	0	0	0	0	1	1	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	1	0.1																
Feb 14	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0																
Feb 15	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																
Feb 16	0	0	0	0	0	0	0	1	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1																
Feb 17	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0																
Feb 18	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0																
Feb 19	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0																
Feb 20	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0																
Feb 21	0	0	0	0	0	S	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1																
Feb 22	0	0	0	0	S	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2																
Feb 23	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0																
Feb 24	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0																
Feb 25	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0																
Feb 26	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0.0																
Feb 27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0.0																
Feb 28	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																
Diurnal Maximum	1	1	1	1	1	1	2	2	1	1	2	2	1	1	1	1	1	0	0	0	0	0	0	0	1																		
Diurnal Average	0.1	0.1	0.0	0.1	0.0	0.1	0.2	0.3	0.1	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1																			
C	Monthly Calibration										S	Daily Zero-Span Check										Q	Quality Assurance																				
K	Collection Error										N	No Data (Machine Not in Service)										Y	Routine Maintenance										P	Power Failure									
X	Invalid Data (Equipment Malfunction /Recovery)										NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)																															
Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.																																											
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.																																											



Wind: Tamarack Poll.: Tamarack-H2S[ppb] Monthly: 02-2022 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.94% Calm Avg: 0.00 [ppb]

Direction	0-2	2-5	5-10	10-50	>50.0	Total
N	7.05	0	0	0	0	7.05
NNE	5.64	0	0	0	0	5.64
NE	6.58	0	0	0	0	6.58
ENE	6.11	0	0	0	0	6.11
E	4.55	0	0	0	0	4.55
ESE	5.33	0	0	0	0	5.33
SE	3.45	0	0	0	0	3.45
SSE	4.7	0	0	0	0	4.7
S	5.02	0	0	0	0	5.02
SSW	12.23	0	0	0	0	12.23
SW	7.68	0	0	0	0	7.68
WSW	4.7	0	0	0	0	4.7
W	6.27	0	0	0	0	6.27
WNW	8.62	0.16	0	0	0	8.78
NW	6.11	0	0	0	0	6.11
NNW	5.8	0	0	0	0	5.8
Summary	100	0.16	0	0	0	100



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% Icon Classes (ppb)

100 0-2

0 2-5

0 5-10

0 10-50

0 >50.0



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Tamarack Site - February 2022

Summary of Hourly Averages

OXIDES OF NITROGEN (NOx) in ppb

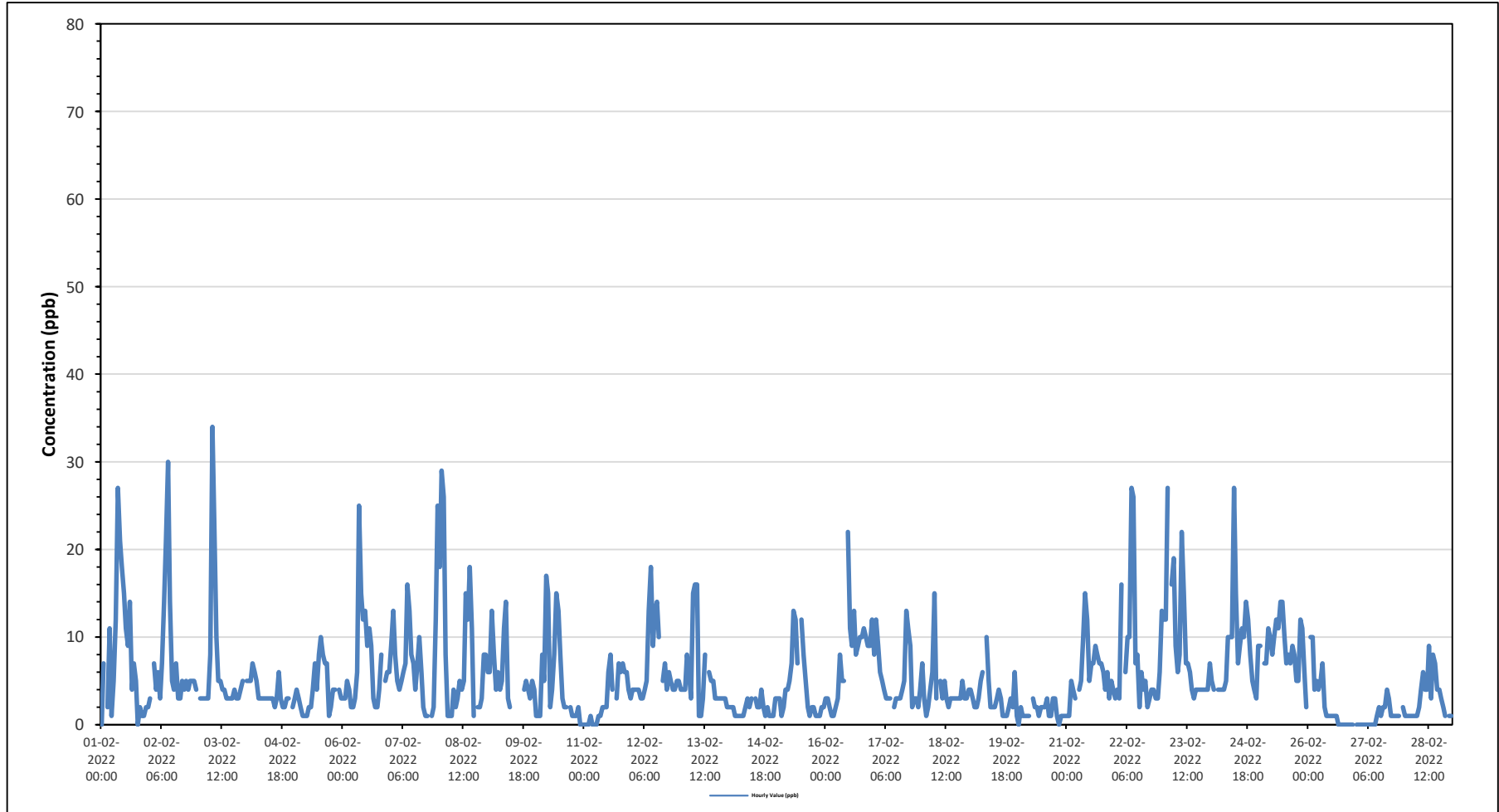
Maximum Hourly Value:	34 ppb on February 3 at hour 7	Hours in Service:	672
Maximum Daily Value:	9.0 ppb on February 23	Hours of Data:	637
Minimum Hourly Value:	0 ppb on February 1 at hour 0	Hours of Missing Data:	0
Minimum Daily Value:	1.0 ppb on February 27	Hours of Calibration:	35
Monthly Average:	5.4 ppb	Operational Uptime:	100.0

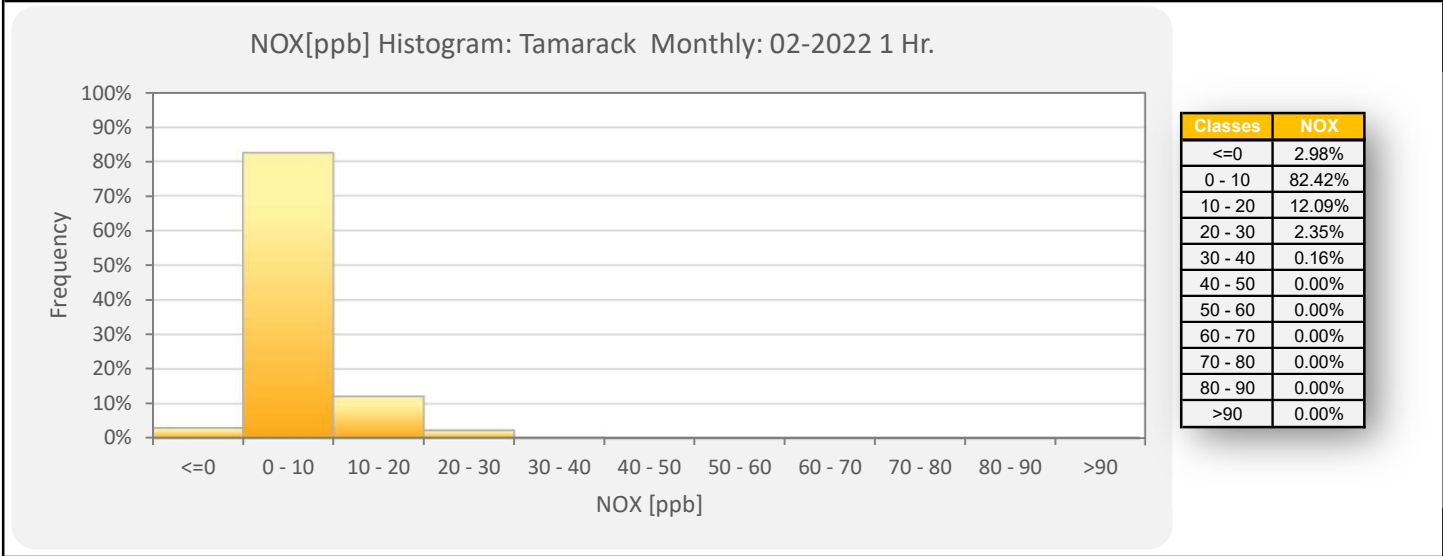
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average		
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23	
Feb 1	0	7	S	2	11	1	5	12	27	21	18	15	11	9	14	4	7	5	0	2	1	1	2	2	0	27	7.7	
Feb 2	3	S	7	4	6	3	7	14	21	30	14	5	4	7	3	3	5	4	5	4	5	5	5	4	3	30	7.3	
Feb 3	S	3	3	3	3	3	8	34	23	10	5	5	4	4	3	3	3	3	4	3	3	4	5	S	3	34	6.3	
Feb 4	5	5	5	7	6	5	3	3	3	3	3	3	3	3	2	3	6	3	2	2	3	3	S	2	2	7	3.6	
Feb 5	3	4	3	2	1	1	1	2	2	4	7	4	8	10	8	7	7	1	2	4	4	S	4	3	1	10	4.0	
Feb 6	3	3	5	4	2	2	3	6	25	15	12	13	9	11	9	3	2	2	4	8	S	5	6	6	2	25	6.9	
Feb 7	9	13	8	5	4	5	6	7	16	13	8	7	4	7	10	6	2	1	1	S	1	2	12	25	1	25	7.5	
Feb 8	18	29	26	8	1	1	1	4	2	3	5	4	5	15	12	18	11	1	S	2	2	3	8	8	1	29	8.1	
Feb 9	6	6	13	8	4	6	4	5	11	14	3	2	C	C	C	C	C	C	C	4	5	4	3	5	4	2	14	5.9
Feb 10	1	1	1	8	5	17	15	2	4	8	15	13	8	3	2	2	S	2	1	1	1	2	0	0	0	17	4.9	
Feb 11	0	0	0	1	0	0	0	1	1	2	2	2	6	8	4	S	3	7	6	7	6	6	4	3	0	8	3.0	
Feb 12	4	4	4	4	3	3	4	5	13	18	9	13	14	10	S	5	7	4	6	5	4	4	5	5	3	18	6.7	
Feb 13	4	4	4	8	6	3	15	16	16	1	1	3	8	S	6	5	5	3	3	3	3	3	3	2	1	16	5.4	
Feb 14	2	2	2	1	1	1	1	1	2	3	2	3	S	3	2	2	4	2	1	2	1	1	1	3	1	4	1.9	
Feb 15	3	3	1	2	4	4	5	7	13	12	7	S	12	8	5	2	1	2	2	1	1	1	2	2	1	13	4.3	
Feb 16	3	3	2	1	1	2	3	8	5	5	S	22	11	9	13	8	9	10	10	11	10	9	9	12	1	22	7.7	
Feb 17	8	12	9	6	5	4	3	3	3	S	2	3	3	3	4	5	13	11	9	2	3	3	2	4	2	13	5.2	
Feb 18	7	3	1	2	4	6	15	3	S	5	3	5	3	2	3	3	3	3	3	3	5	3	3	4	1	15	4.0	
Feb 19	4	3	2	2	3	5	6	S	10	5	2	2	2	3	4	3	1	1	1	2	3	2	6	1	1	10	3.2	
Feb 20	0	2	1	1	1	1	S	3	2	2	1	2	2	2	3	1	1	3	3	1	0	1	1	1	0	3	1.5	
Feb 21	1	1	5	4	3	S	4	5	10	15	12	5	7	7	9	8	7	7	6	4	6	3	5	4	1	15	6.0	
Feb 22	3	4	3	16	S	6	10	10	27	26	7	8	2	6	4	5	2	3	4	4	3	3	6	13	2	27	7.6	
Feb 23	12	12	27	S	16	19	9	6	8	22	15	7	7	6	4	3	4	4	4	4	4	4	4	7	3	27	9.0	
Feb 24	5	4	S	4	4	4	4	5	10	10	10	27	15	7	9	11	10	14	12	8	5	4	3	9	3	27	8.4	
Feb 25	9	S	7	7	11	10	8	10	12	11	14	14	10	7	8	7	9	8	5	5	12	11	6	2	2	14	8.8	
Feb 26	S	10	10	4	5	4	5	7	2	1	1	1	1	1	1	0	0	0	0	0	0	0	0	S	0	10	2.4	
Feb 27	0	0	0	0	0	0	0	0	0	0	1	2	1	2	2	4	3	1	1	1	1	1	S	2	0	4	1.0	
Feb 28	1	1	1	1	1	1	1	2	4	6	4	4	9	3	8	7	4	4	3	2	1	S	1	1	1	9	3.0	
Diurnal Maximum	18	29	27	16	16	19	15	34	27	30	18	27	15	15	14	18	13	14	12	11	12	11	12	25				
Diurnal Average	4.4	5.3	5.8	4.3	4.1	4.3	5.4	6.7	10.1	9.8	6.8	7.2	6.5	6.0	5.8	4.9	5.0	4.0	3.8	3.6	3.4	3.3	4.2	5.0				

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

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

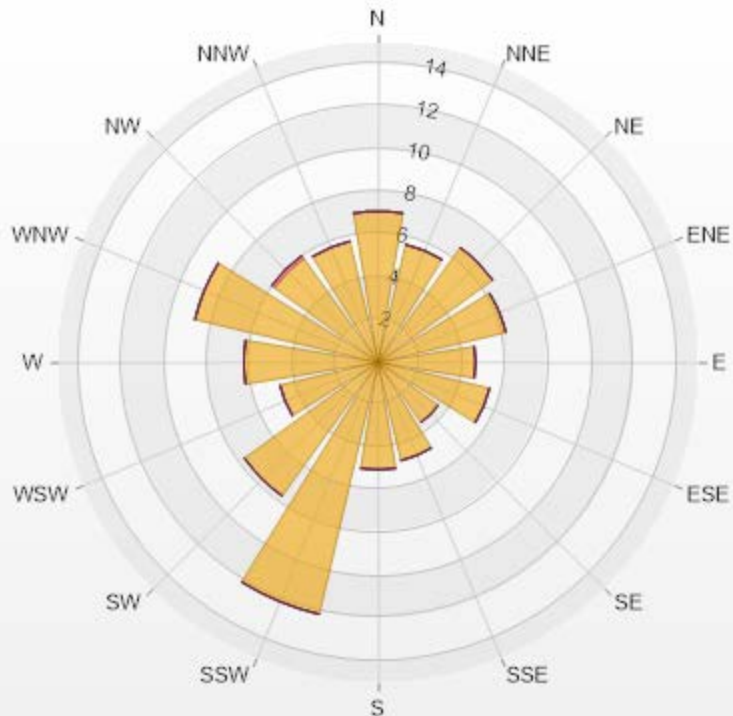
Timeseries Chart of Hourly Average for NOx - Tamarack Site





Wind: Tamarack Poll.: Tamarack-NOX[ppb] Monthly: 02-2022 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.79% Calm Avg: 0.00 [ppb]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	7.06	0	0	0	0	7.06
NNE	5.65	0	0	0	0	5.65
NE	6.59	0	0	0	0	6.59
ENE	6.12	0	0	0	0	6.12
E	4.55	0	0	0	0	4.55
ESE	5.34	0	0	0	0	5.34
SE	3.45	0	0	0	0	3.45
SSE	4.71	0	0	0	0	4.71
S	5.02	0	0	0	0	5.02
SSW	12.09	0	0	0	0	12.09
SW	7.69	0	0	0	0	7.69
WSW	4.71	0	0	0	0	4.71
W	6.28	0	0	0	0	6.28
WNW	8.79	0	0	0	0	8.79
NW	5.97	0.16	0	0	0	6.13
NNW	5.81	0	0	0	0	5.81
Summary	100	0.16	0	0	0	100



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% Icon Classes (ppb)

100  0-30

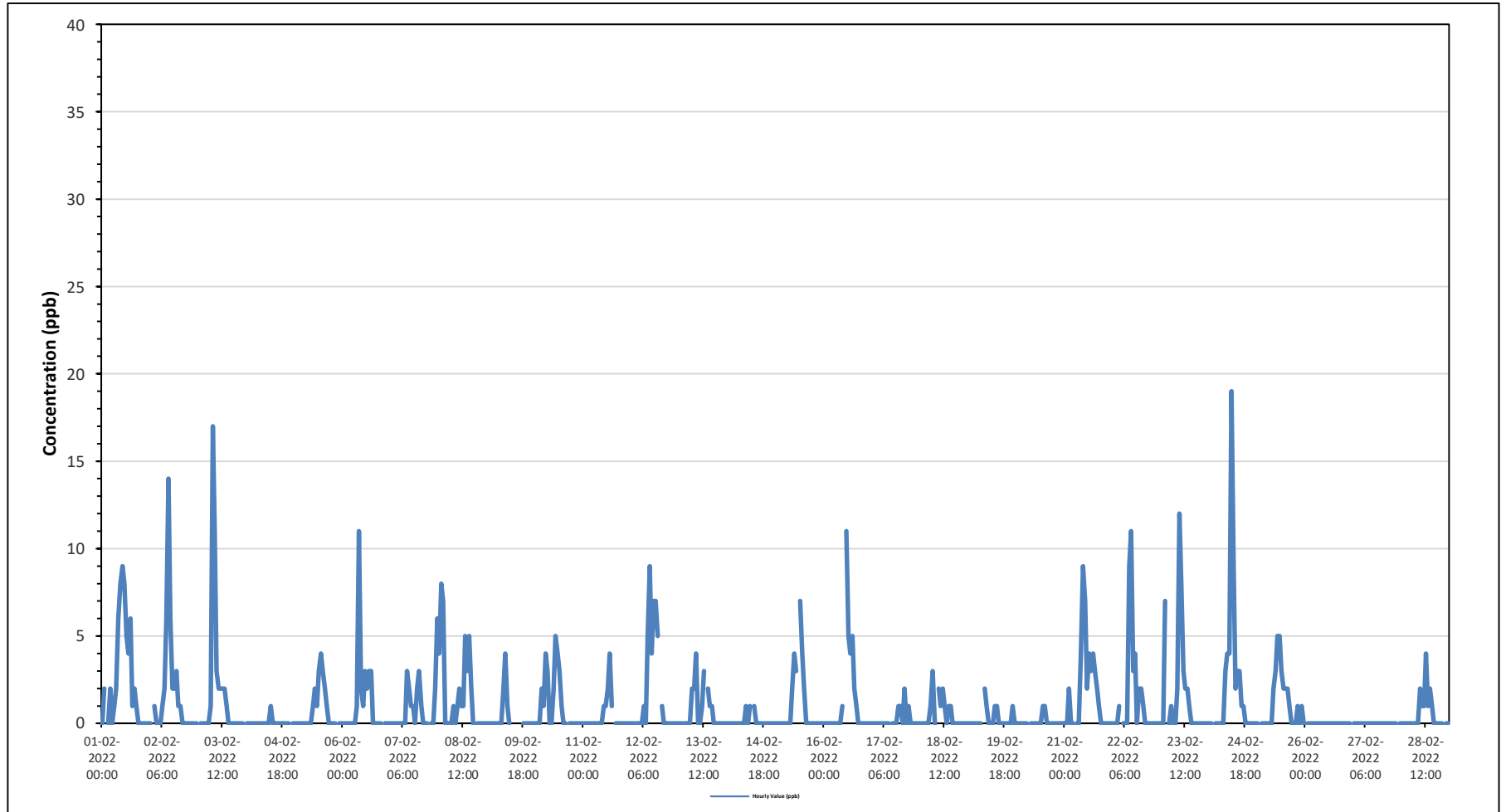
0  30-50

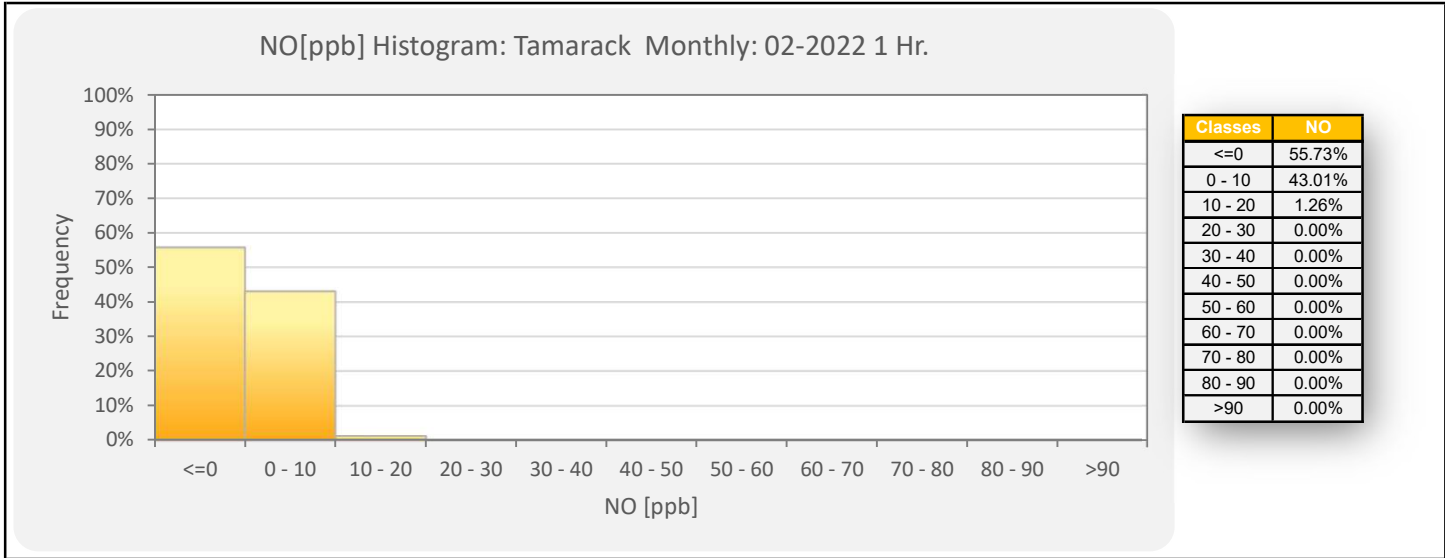
0  50-76

0  76-159

0  >159.0

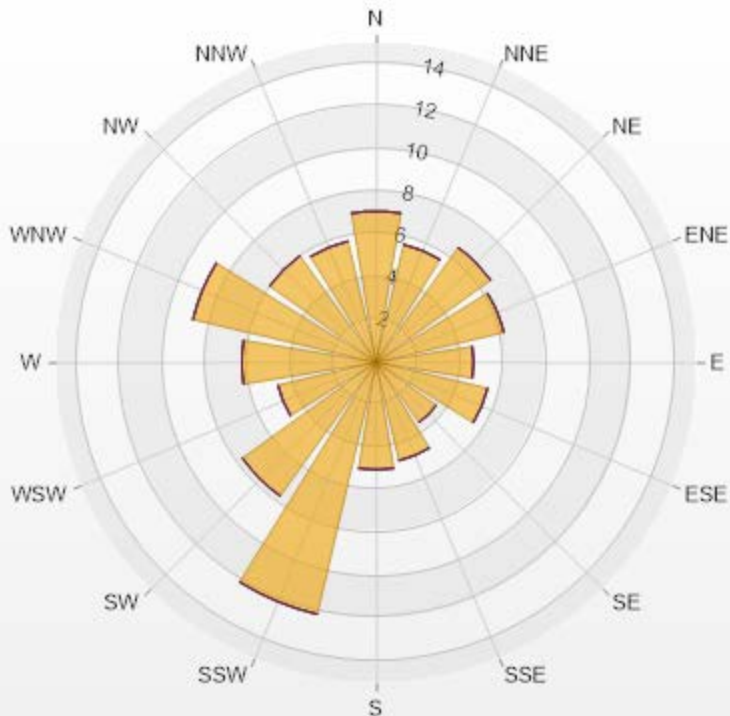
Timeseries Chart of Hourly Average for NO - Tamarack Site





Wind: Tamarack Poll.: Tamarack-NO[ppb] Monthly: 02-2022 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.79% Calm Avg: 0.00 [ppb]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	7.06	0	0	0	0	7.06
NNE	5.65	0	0	0	0	5.65
NE	6.59	0	0	0	0	6.59
ENE	6.12	0	0	0	0	6.12
E	4.55	0	0	0	0	4.55
ESE	5.34	0	0	0	0	5.34
SE	3.45	0	0	0	0	3.45
SSE	4.71	0	0	0	0	4.71
S	5.02	0	0	0	0	5.02
SSW	12.09	0	0	0	0	12.09
SW	7.69	0	0	0	0	7.69
WSW	4.71	0	0	0	0	4.71
W	6.28	0	0	0	0	6.28
WNW	8.79	0	0	0	0	8.79
NW	6.12	0	0	0	0	6.12
NNW	5.81	0	0	0	0	5.81
Summary	100	0	0	0	0	100



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% Icon Classes (ppb)

100

0-30

0

30-50

0

50-76

0

76-159

0

>159.0



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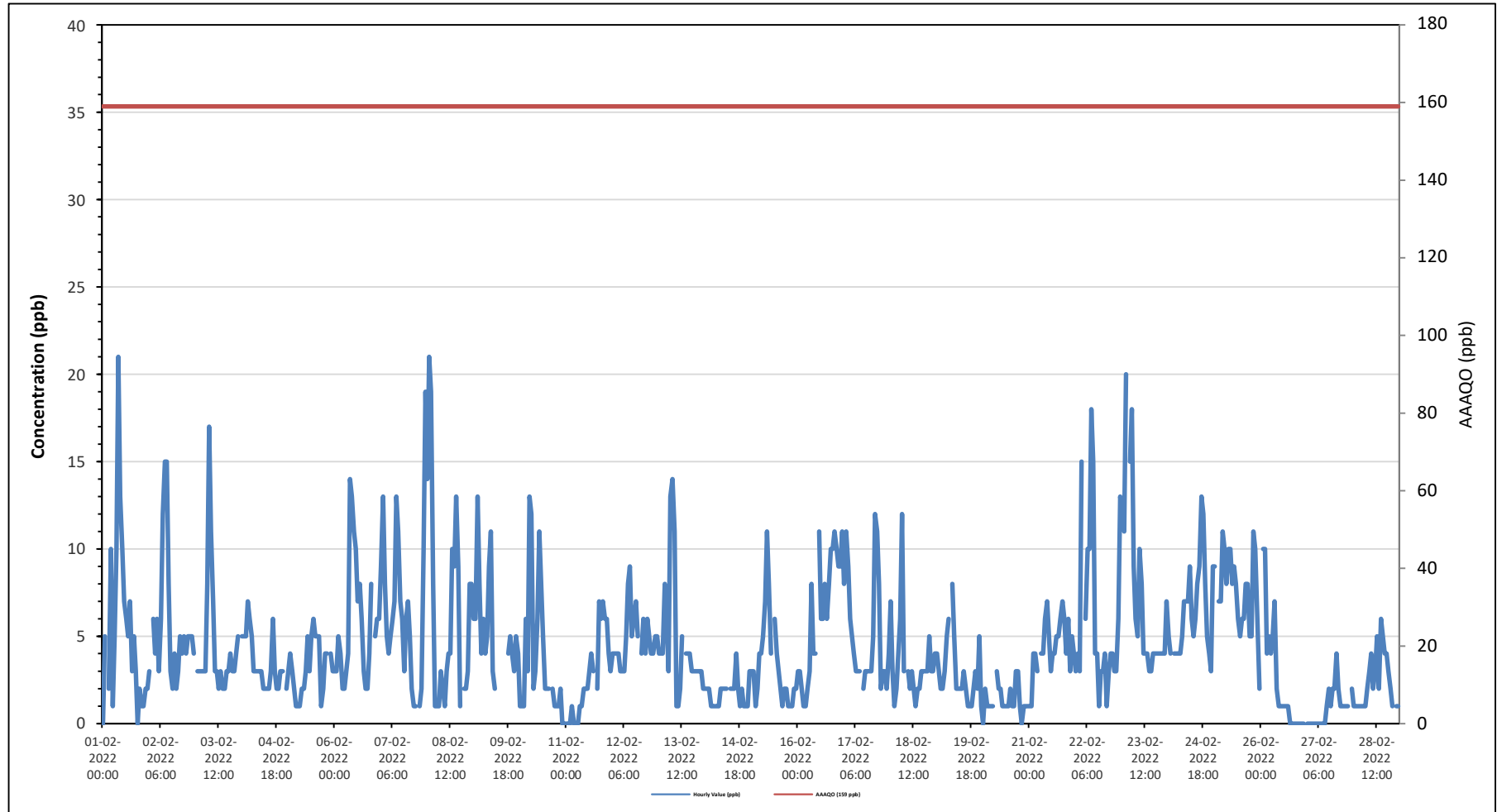
Tamarack Site - February 2022

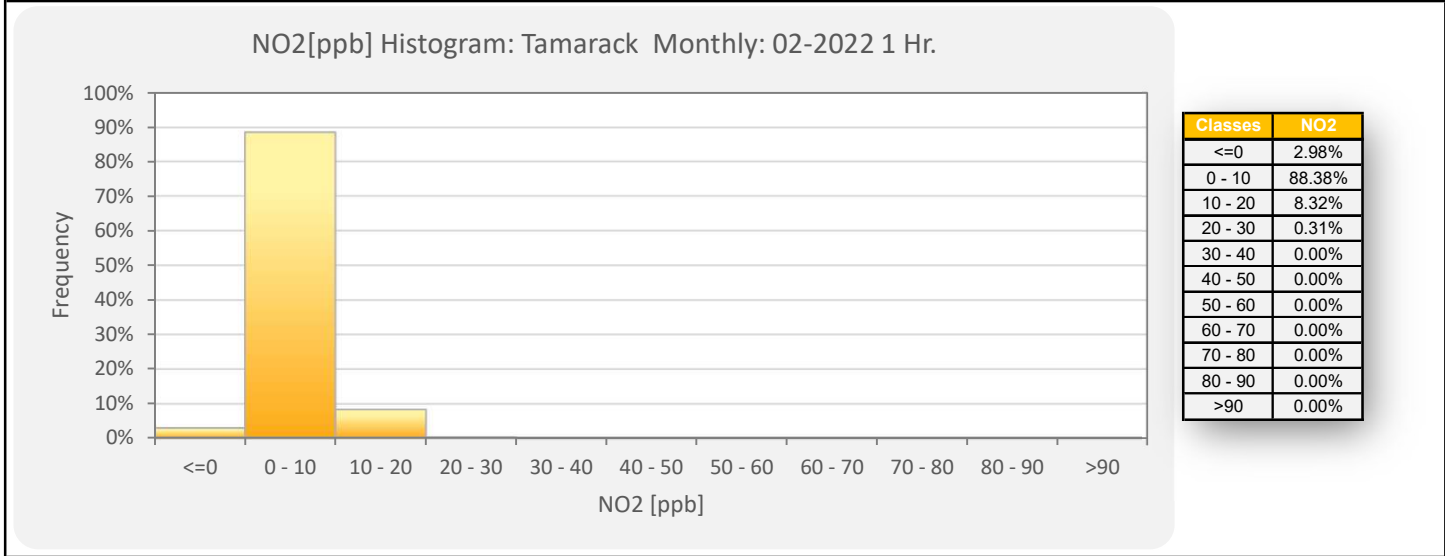
Summary of Hourly Averages

NITROGEN DIOXIDE (NO₂) in ppb

Alberta Ambient Air Quality Objectives (AAAQO): 1-Hour 159 ppb																															
Number of 1-Hour Exceedences:		0																													
Maximum Hourly Value:												21 ppb on February 1 at hour 8												Hours in Service:		672					
Maximum Daily Value:												7.6 ppb on February 25												Hours of Data:		637					
Minimum Hourly Value:												0 ppb on February 1 at hour 0												Hours of Missing Data:		0					
Minimum Daily Value:												0.9 ppb on February 27												Hours of Calibration:		35					
Monthly Average:												4.4 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							
Feb 1	0	5	S	2	10	1	5	10	21	13	10	7	6	5	7	3	5	3	0	2	1	1	2	2	0	21	5.3				
Feb 2	3	S	6	4	6	3	6	12	15	15	8	3	2	4	2	3	5	4	5	4	5	5	5	4	2	15	5.6				
Feb 3	S	3	3	3	3	3	8	17	11	7	3	3	2	3	2	3	3	4	3	4	3	4	5	S	2	17	4.5				
Feb 4	5	5	5	7	6	5	3	3	3	3	3	2	2	2	2	3	6	3	2	2	3	3	S	2	2	7	3.5				
Feb 5	3	4	3	2	1	1	1	2	2	3	5	3	5	6	5	5	5	1	2	4	4	S	4	3	1	6	3.2				
Feb 6	3	3	5	4	2	2	3	4	14	13	11	10	7	8	6	3	2	2	4	8	S	5	6	6	2	14	5.7				
Feb 7	9	13	8	5	4	5	6	7	13	11	7	6	3	6	7	5	2	1	1	S	1	2	10	19	1	19	6.6				
Feb 8	14	21	19	8	1	1	1	3	2	1	3	4	4	10	9	13	9	1	S	2	2	3	8	8	1	21	6.4				
Feb 9	6	6	13	8	4	6	4	5	9	11	3	2	C	C	C	C	C	C	4	5	4	3	5	4	2	13	5.7				
Feb 10	1	1	1	6	3	13	12	2	3	6	11	8	5	2	2	2	S	2	1	1	1	2	0	0	0	13	3.7				
Feb 11	0	0	0	1	0	0	0	1	1	2	2	2	3	4	3	S	2	7	6	7	6	6	4	3	0	7	2.6				
Feb 12	4	4	4	4	3	3	3	5	8	9	5	6	7	5	S	4	6	4	6	5	4	4	5	5	3	9	4.9				
Feb 13	4	4	4	8	6	3	13	14	11	1	1	2	5	S	4	4	4	3	3	3	3	3	3	2	1	14	4.7				
Feb 14	2	2	2	1	1	1	1	1	2	2	2	2	S	2	2	2	4	2	1	2	1	1	1	3	1	4	1.7				
Feb 15	3	3	1	2	4	4	5	7	11	8	4	S	6	4	3	2	1	2	2	1	2	1	2	2	1	11	3.4				
Feb 16	3	3	2	1	1	2	3	8	4	4	S	11	6	6	8	6	8	10	10	11	10	9	9	11	1	11	6.3				
Feb 17	8	11	9	6	5	4	3	3	3	S	2	3	3	3	3	5	12	11	8	2	3	3	2	4	2	12	5.0				
Feb 18	7	3	1	2	4	6	12	3	S	3	2	3	2	1	2	2	3	3	3	3	5	3	4	1	12	3.5					
Feb 19	4	3	2	2	3	5	6	S	8	5	2	2	2	2	3	2	1	1	1	2	3	2	5	1	1	8	2.9				
Feb 20	0	2	1	1	1	1	S	3	2	2	1	1	1	1	2	1	1	3	3	1	0	1	1	1	0	3	1.3				
Feb 21	1	1	4	4	3	S	4	4	6	7	5	3	4	4	5	5	6	7	6	4	6	3	5	4	1	7	4.4				
Feb 22	3	4	3	15	S	6	10	10	18	15	4	4	1	3	3	4	1	3	4	4	3	3	6	13	1	18	6.1				
Feb 23	12	11	20	S	15	18	9	6	5	10	8	4	4	4	3	3	4	4	4	4	4	4	4	7	3	20	7.3				
Feb 24	5	4	S	4	4	4	4	4	5	7	7	7	9	6	5	6	8	9	13	12	8	5	4	3	9	3	13	6.4			
Feb 25	9	S	7	7	11	10	8	10	10	8	9	8	6	5	6	6	8	8	5	5	11	10	6	2	2	11	7.6				
Feb 26	S	10	10	4	5	4	5	7	2	1	1	1	1	1	0	0	0	0	0	0	0	0	0	S	0	10	2.4				
Feb 27	0	0	0	0	0	0	0	0	0	0	1	2	1	2	2	4	2	1	1	1	1	1	S	2	0	4	0.9				
Feb 28	1	1	1	1	1	1	1	2	3	4	2	3	5	2	6	5	4	4	3	2	1	S	1	1	1	6	2.4				
Diurnal Maximum	14	21	20	15	15	18	13	17	21	15	11	11	7	10	9	13	12	13	12	11	11	10	10	19							
Dalurnal Average	4.2	4.9	5.2	4.1	4.0	4.1	5.0	5.7	7.2	6.3	4.5	4.2	3.8	3.8	4.0	3.9	4.3	3.9	3.7	3.6	3.4	3.3	4.0	4.7							
C	Monthly Calibration							S	Daily Zero-Span Check							Q	Quality Assurance														
K	Collection Error							N	No Data (Machine Not in Service)							Y	Routine Maintenance							P	Power Failure						
X	Invalid Data (Equipment Malfunction /Recovery)							NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)																						
Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.																															
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.																															

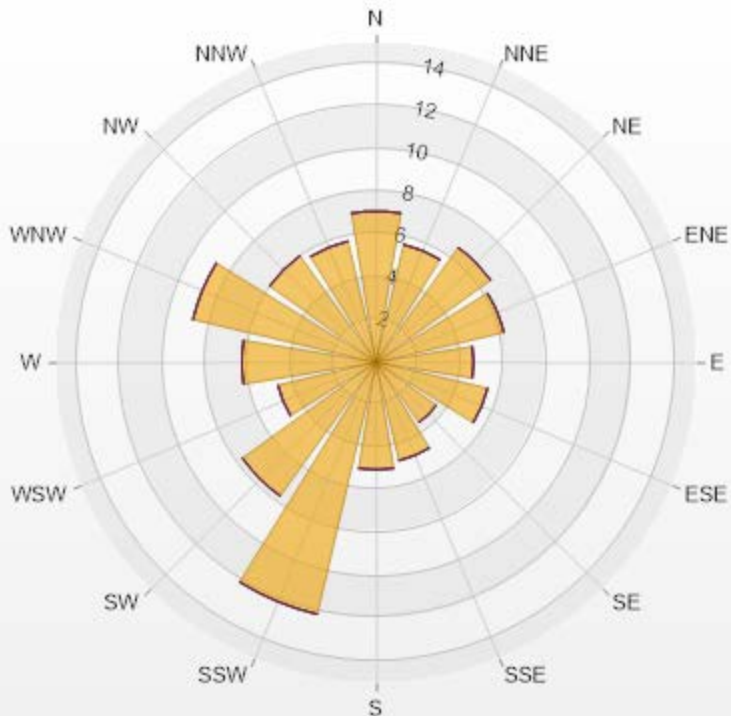
Timeseries Chart of Hourly Average for NO2 - Tamarack Site





Wind: Tamarack Poll.: Tamarack-NO2[ppb] Monthly: 02-2022 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.79% Calm Avg: 0.00 [ppb]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	7.06	0	0	0	0	7.06
NNE	5.65	0	0	0	0	5.65
NE	6.59	0	0	0	0	6.59
ENE	6.12	0	0	0	0	6.12
E	4.55	0	0	0	0	4.55
ESE	5.34	0	0	0	0	5.34
SE	3.45	0	0	0	0	3.45
SSE	4.71	0	0	0	0	4.71
S	5.02	0	0	0	0	5.02
SSW	12.09	0	0	0	0	12.09
SW	7.69	0	0	0	0	7.69
WSW	4.71	0	0	0	0	4.71
W	6.28	0	0	0	0	6.28
WNW	8.79	0	0	0	0	8.79
NW	6.12	0	0	0	0	6.12
NNW	5.81	0	0	0	0	5.81
Summary	100	0	0	0	0	100



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% Icon Classes (ppb)

100  0-30

0  30-50

0  50-76

0  76-159

0  >159.0



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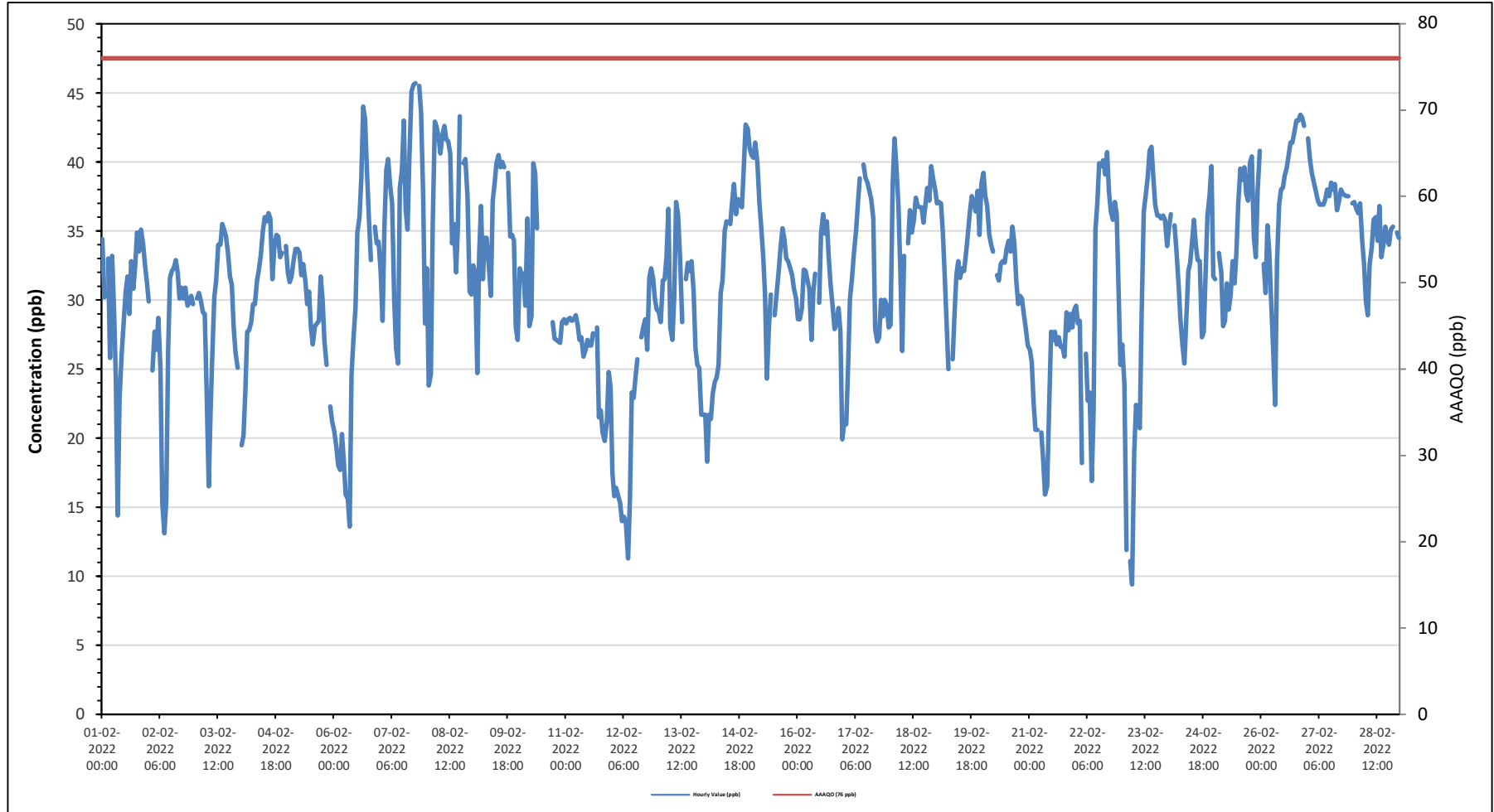
Tamarack Site - February 2022

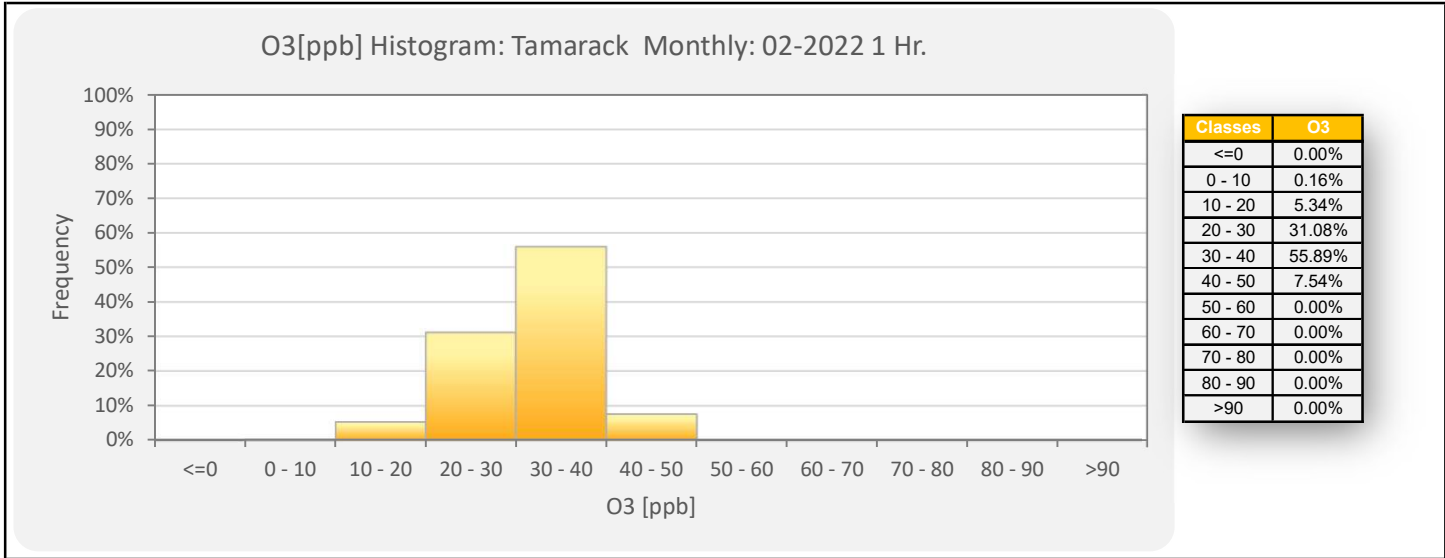
Summary of Hourly Averages

OZONE (O₃) in ppb

Alberta Ambient Air Quality Objectives (AAAQO): 1-Hour 76 ppb																															
Number of 1-Hour Exceedences:		0																													
Maximum Hourly Value: 45.7 ppb on February 7 at hour 18												Hours in Service: 672																			
Maximum Daily Value: 37.9 ppb on February 27												Hours of Data: 637																			
Minimum Hourly Value: 9.4 ppb on February 23 at hour 5												Hours of Missing Data: 0																			
Minimum Daily Value: 22.2 ppb on February 12												Hours of Calibration: 35																			
Monthly Average: 31.7 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							
Feb 1	34.4	30.2	S	33	25.8	33.2	29.4	24.3	14.4	22.9	26.1	28.5	30.6	31.7	29	32.8	30.8	32.5	34.9	33.5	35.1	34	32.5	31.3	14.4	35.1	30.0				
Feb 2	29.9	S	24.9	27.7	26.4	28.7	25.1	15.3	13.1	15.5	26.3	31.6	32.1	32.3	32.9	32	30.1	30.9	30.1	30.9	29.6	29.8	30.3	29.7	13.1	32.9	27.6				
Feb 3	S	30.1	30.5	29.9	29.1	29	23.5	16.5	22	26.3	30.2	31.4	34	34	35.5	35.1	34.6	33.5	31.7	31.1	28	26.2	25.1	S	16.5	35.5	29.4				
Feb 4	19.5	20.2	23.4	27.7	27.8	28.4	29.7	29.7	31.4	32.2	33.2	35	36	35.7	36.3	35.9	31.5	33.8	34.7	34.6	33.1	33.4	S	33.9	19.5	36.3	31.2				
Feb 5	32	31.3	31.7	32.9	33.7	33.7	33.4	31.8	32.6	31.4	29.7	30.6	28	26.8	28.1	28.3	28.5	31.7	30	27	25.3	S	22.3	21.2	21.2	33.7	29.7				
Feb 6	20.5	19.5	18	17.7	20.3	18.3	15.9	15.6	13.6	24.6	27.4	29.4	34.9	36	38.8	44	43.1	39.4	35.7	32.9	S	35.3	34.1	34.2	13.6	44.0	28.2				
Feb 7	32	28.5	35.3	39.4	40.2	38.4	37	29.9	26.5	25.4	38.1	39.4	43	36.6	35.1	40.3	45.1	45.6	45.7	S	45.5	43.6	37.5	28.3	25.4	45.7	37.2				
Feb 8	32.3	23.8	24.6	35.5	42.9	42.5	41.8	40.6	41.9	42.6	41.6	41.5	40.6	34.1	35.5	32	35.4	43.3	S	39.9	40.2	37.5	30.6	30.4	23.8	43.3	37.0				
Feb 9	32.5	32	24.7	33.3	36.8	31.5	34.5	34.5	32.3	30.3	37.2	38.4	39.9	40.5	39.6	40	39.6	S	39.2	34.6	34.7	34.3	28	27.1	24.7	40.5	34.6				
Feb 10	32.3	31.8	31.9	29.6	35.9	28.1	28.8	39.9	39.2	35.2	C	C	C	C	C	31.7	S	28.4	27.2	27.1	27	26.9	28.4	28.6	26.9	39.9	31.0				
Feb 11	28.3	28.6	28.7	28.5	28.6	28.9	28.2	27.1	27.3	25.9	26.4	27.1	26.7	26.7	27.6	S	28	21.5	22	20.4	19.8	21.2	24.8	23.7	19.8	28.9	25.9				
Feb 12	17.5	15.8	16.4	15.8	15.3	14	14.3	13.8	11.3	15.6	23.3	22.9	24.4	25.7	S	27.3	28.1	28.6	26.4	31.6	32.3	31.6	30.1	29.3	11.3	32.3	22.2				
Feb 13	29.2	28.4	31.4	31.5	33.2	36.6	28	27.1	30.3	37.1	36.2	33	28.4	S	31.5	32.7	32.1	32.8	30.6	26.5	25.3	25.1	21.7	21.7	21.7	37.1	30.0				
Feb 14	21.7	18.3	21.7	21.4	23.2	24.1	24.4	25.3	30.5	31.4	35	35.7	S	35.5	37.1	38.4	36.2	37.3	37	36.7	39.6	42.7	42.4	41	18.3	42.7	32.0				
Feb 15	40.5	40.3	41.4	40	37	35.2	33.2	30.4	24.3	28.2	30.4	S	28.9	30.5	32.2	33.9	35.2	34.4	33	32.8	32.3	31.8	30.8	30.1	24.3	41.4	33.3				
Feb 16	28.6	28.6	29.4	32.2	32.1	31.4	30.8	27.1	30.6	31.9	S	29.8	34.8	36.2	34.8	35.7	33.1	31.1	29.5	27.9	28.4	29.4	27.7	19.9	19.9	36.2	30.5				
Feb 17	21.2	21	25.2	30.1	31.4	33.4	35	37	38.8	S	39.8	38.8	38.5	37.9	37.3	35.9	27.9	27	27.3	30	28.8	30	29.6	28	21.0	39.8	31.7				
Feb 18	28.2	38.4	41.7	39.6	36.7	32	26.3	33.2	S	34.1	36.5	34.9	35.8	37.4	36.8	36.7	36.7	35.6	36.8	38.1	37.2	39.7	38.7	38	26.3	41.7	36.0				
Feb 19	37	37.1	37	34.9	31.8	28.4	25	S	25.7	29	31.8	32.8	31.6	32.3	32.1	33.3	34.7	36.4	37.5	37	36.4	37.9	34.7	38.4	25.0	38.4	33.6				
Feb 20	39.2	37.5	36.8	34.7	34	33.5	S	31.8	31.4	32.6	32.8	32.7	33.7	34.3	33.5	35.3	34.2	31.3	29.7	30.3	30.1	29	28	26.7	26.7	39.2	32.7				
Feb 21	26.4	25.5	22.5	20.6	20.6	S	20.4	18.4	15.9	16.5	22.6	27.7	27.1	27.7	26.8	27.3	26.6	26.6	25.9	29.1	27.8	29	28	29.3	15.9	29.3	24.7				
Feb 22	29.6	28.3	28.5	18.2	S	26.1	22.7	23.3	16.9	22	35.1	37	39.9	39.7	40.1	39.1	40.7	37.8	36.4	35.8	37.1	36.2	30.8	25.3	16.9	40.7	31.6				
Feb 23	26.8	23.9	11.9	S	11.1	9.4	19	22.4	21.5	20.7	29	36.4	37.7	38.9	40.8	41.1	38.9	36.9	36.1	36.1	35.9	36.1	35.8	33.9	9.4	41.1	29.6				
Feb 24	35.2	36.2	S	35.4	33.6	31.2	28.6	26.7	25.4	28.5	32.1	32.7	34.2	35.8	34	32.9	32.8	27.3	27.7	31.9	36.1	37.6	39.7	31.7	25.4	39.7	32.5				
Feb 25	31.5	S	33.4	32	28.1	28.5	31.2	29.3	30.3	32.8	31.2	33.4	37	39.5	38.7	39.6	37.7	37.2	39.9	40.4	34.5	33.1	37.9	40.8	28.1	40.8	34.7				
Feb 26	S	32.6	30.5	35.4	33.4	29.9	26.7	22.4	32.7	36.9	38	38.1	39	39.6	40.5	41.4	41.4	42.1	43	43	43.4	43.2	42.6	S	22.4	43.4	37.1				
Feb 27	41.7	40.2	39.2	38.6	37.9	37.2	36.9	36.9	36.9	37.3	38	37.5	38.5	38	38.4	36.5	37.2	38	37.7	37.6	37.5	37.5	S	37	36.5	41.7	37.9				
Feb 28	37.1	36.6	36.3	37	34.3	32.6	29.9	28.9	32.6	33.8	35.8	36	34.3	36.8	33.1	34	35.3	34.4	34	35.1	35.3	S	34.9	34.5	28.9	37.1	34.5				
Diurnal Maximum	42	40	42	40	43	42	41	42	43	42	42	43	41	41	44	45	46	46	46	43	46	44	43	41							
Diurnal Average	30.2	29.4	29.1	30.8	30.4	29.8	28.1	27.4	27.0	28.9	32.5	33.6	34.2	34.6	34.9	35.3	34.6	33.9	33.3	33.0	33.2	33.5	31.8	30.5							
C	Monthly Calibration							S	Daily Zero-Span Check							Q	Quality Assurance														
K	Collection Error							N	No Data (Machine Not in Service)							Y	Routine Maintenance							P	Power Failure						
X	Invalid Data (Equipment Malfunction /Recovery)							NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)																						
Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.																															
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.																															

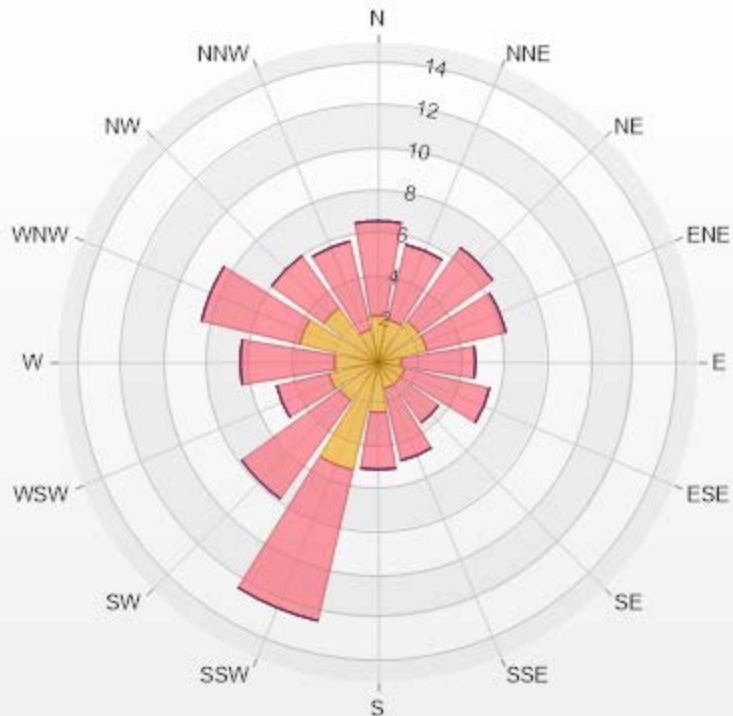
Timeseries Chart of Hourly Average for O3 - Tamarack Site





Wind: Tamarack Poll.: Tamarack-O3[ppb] Monthly: 02-2022 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.79% Calm Avg: 0.00 [ppb]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	2.2	4.4	0	0	0	6.6
NNE	2.04	3.61	0	0	0	5.65
NE	2.35	4.24	0	0	0	6.59
ENE	2.35	3.77	0	0	0	6.12
E	1.1	3.45	0	0	0	4.55
ESE	1.26	4.08	0	0	0	5.34
SE	1.26	2.2	0	0	0	3.46
SSE	1.26	3.45	0	0	0	4.71
S	2.35	2.67	0	0	0	5.02
SSW	5.18	7.22	0	0	0	12.4
SW	2.2	5.65	0	0	0	7.85
WSW	2.35	2.51	0	0	0	4.86
W	2.04	4.4	0	0	0	6.44
WNW	3.77	4.71	0	0	0	8.48
NW	3.14	2.98	0	0	0	6.12
NNW	1.57	4.24	0	0	0	5.81
Summary	36.42	63.58	0	0	0	100



LICA-202202

% Icon Classes (ppb)	36	0-30	64	30-50	0	50-76	0	76-159	0	>159.0
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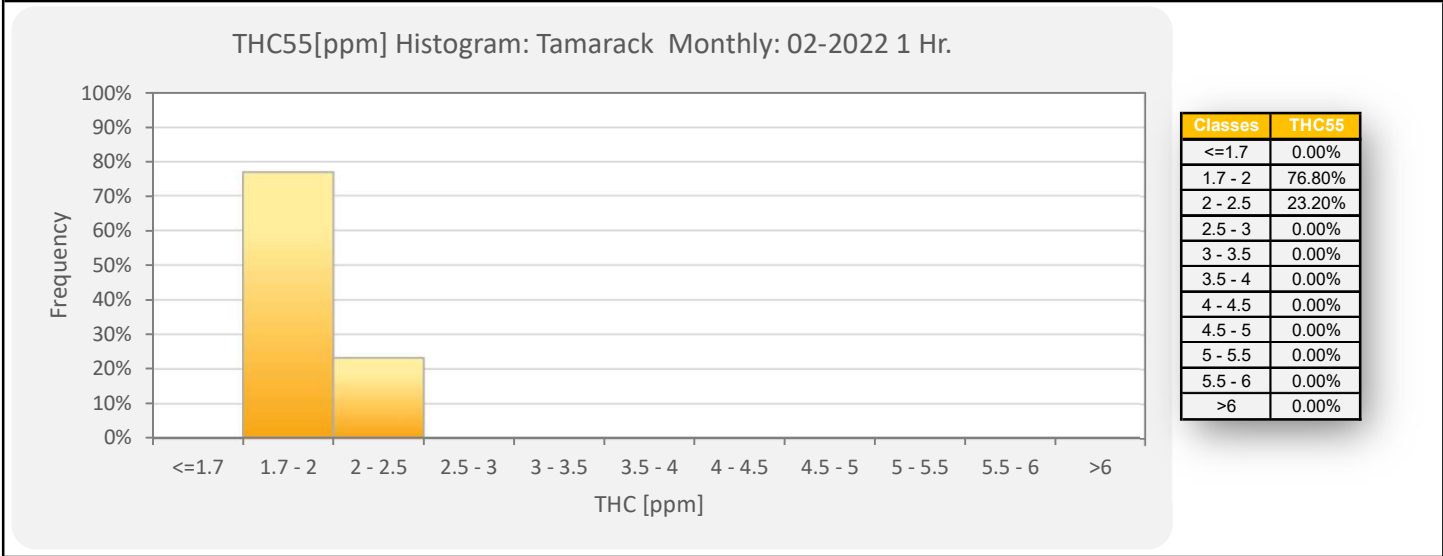
Tamarack Site - February 2022

Summary of Hourly Averages

TOTAL HYDROCARBONS (THC) in ppm

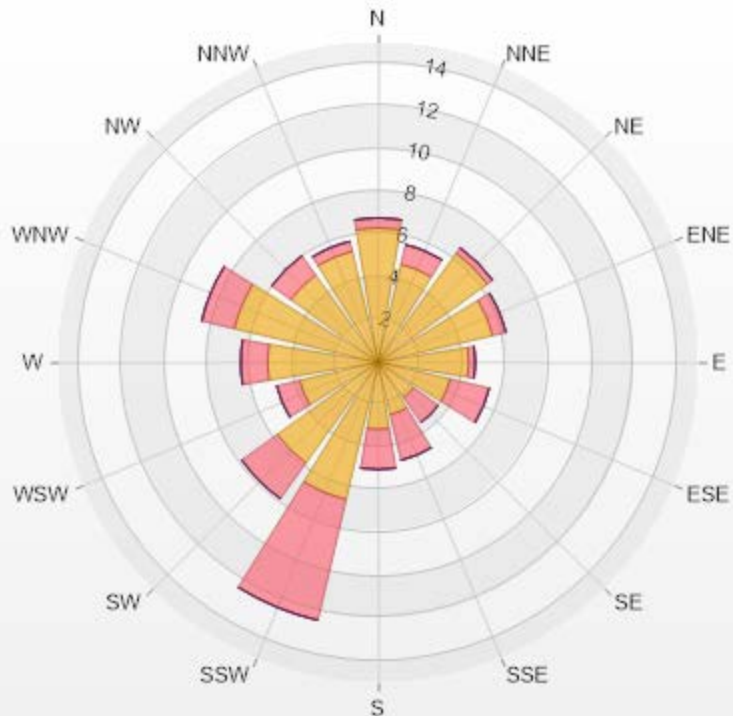
Maximum Hourly Value:	2.37 ppm on February 6 at hour 8	Hours in Service:	672
Maximum Daily Value:	2.06 ppm on February 23	Hours of Data:	638
Minimum Hourly Value:	1.84 ppm on February 10 at hour 2	Hours of Missing Data:	0
Minimum Daily Value:	1.90 ppm on February 26	Hours of Calibration:	34
Monthly Average:	1.97 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					
Feb 1	1.92	1.94	S	1.93	1.96	1.93	1.94	1.97	2.01	2.03	1.97	1.95	1.95	1.95	1.97	1.94	1.96	1.95	1.94	1.95	1.94	1.95	1.97	1.92	2.03	1.96						
Feb 2	1.97	S	1.98	1.97	1.98	1.96	1.96	2.03	1.99	2.02	2.02	1.97	1.97	1.98	1.97	2.00	1.98	1.98	1.98	2.00	2.03	2.04	2.05	2.05	1.96	2.05	1.99					
Feb 3	S	2.06	2.05	2.05	2.05	2.06	2.10	2.10	2.04	2.02	1.97	1.96	1.94	1.95	1.94	1.94	1.93	1.93	1.93	1.94	1.94	1.97	1.99	S	1.93	2.10	1.99					
Feb 4	2.01	2.03	1.99	1.98	1.98	2.00	2.02	2.02	2.02	2.03	2.02	1.98	1.95	1.94	1.94	1.93	1.94	1.94	1.95	1.96	1.95	1.95	S	1.95	1.93	2.03	1.98					
Feb 5	1.97	1.96	1.95	1.95	1.94	1.94	1.94	1.95	1.94	1.95	1.96	1.96	1.99	2.00	2.00	1.99	1.98	1.97	1.97	1.98	1.98	S	1.99	1.99	1.94	2.00	1.97					
Feb 6	2.00	2.01	2.03	2.02	2.00	2.00	2.09	2.26	2.37	2.06	2.14	2.10	2.03	2.07	2.01	1.90	1.88	1.88	1.91	1.98	S	1.93	1.95	1.95	1.88	2.37	2.02					
Feb 7	1.98	2.04	2.05	2.02	1.98	1.98	1.98	2.01	1.98	2.00	1.96	1.94	1.90	1.95	2.03	1.94	1.87	1.86	1.86	S	1.86	1.87	1.95	1.97	1.86	2.05	1.96					
Feb 8	1.98	1.96	2.02	1.89	1.87	1.87	1.87	1.88	1.88	1.88	1.87	1.88	1.91	2.01	1.95	1.93	2.01	1.88	S	1.90	1.90	1.91	1.97	1.98	1.87	2.02	1.92					
Feb 9	1.94	1.94	2.03	1.97	1.92	1.97	1.94	1.91	1.91	1.91	1.88	1.86	1.88	1.90	1.91	1.92	S	1.92	1.92	1.92	1.92	1.92	1.94	1.91	1.86	2.03	1.92					
Feb 10	1.85	1.86	1.84	1.91	1.89	1.92	2.08	1.87	1.90	1.93	C	C	C	C	1.92	1.92	S	1.92	1.92	1.93	1.93	1.93	1.93	1.93	1.84	2.08	1.91					
Feb 11	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.96	1.95	1.96	1.96	1.97	1.98	S	1.96	1.95	1.96	2.00	2.01	1.98	1.97	1.98	1.94	2.01	1.96					
Feb 12	2.00	1.99	1.99	1.99	1.99	1.99	2.00	2.12	2.11	2.07	2.01	2.07	2.01	1.98	S	1.98	1.98	1.99	2.02	2.07	2.06	2.08	2.12	2.11	1.98	2.12	2.03					
Feb 13	2.11	2.12	2.02	1.92	1.89	1.87	1.92	1.91	1.89	1.88	1.89	1.92	1.98	S	1.97	1.96	1.94	1.92	1.92	1.92	1.92	1.94	1.93	1.95	1.97	1.87	2.12	1.95				
Feb 14	1.96	1.96	1.95	1.95	1.94	1.94	1.94	1.94	1.93	1.93	1.93	1.93	S	1.92	1.92	1.92	1.92	1.93	1.93	1.93	1.91	1.89	1.89	1.90	1.89	1.96	1.93					
Feb 15	1.90	1.91	1.93	1.94	1.96	1.98	2.00	2.03	2.01	1.94	1.92	S	1.94	1.93	1.93	1.92	1.91	1.91	1.91	1.92	1.92	1.92	1.92	1.92	1.90	2.03	1.94					
Feb 16	1.93	1.93	1.93	1.92	1.91	1.92	1.94	1.99	1.94	1.92	S	1.93	1.91	1.90	1.91	1.92	1.95	1.98	1.99	1.99	1.97	1.95	1.95	1.98	1.90	1.99	1.94					
Feb 17	2.02	2.04	2.07	2.07	2.05	2.06	2.05	2.04	2.01	S	1.95	1.95	1.94	1.94	1.96	1.98	2.00	2.01	2.00	1.97	1.96	1.94	1.94	1.94	1.94	2.07	2.00					
Feb 18	1.96	1.91	1.89	1.90	1.90	1.94	1.96	1.93	S	1.93	1.92	1.92	1.92	1.93	1.93	1.92	1.92	1.92	1.92	1.94	1.97	1.95	1.94	1.95	1.89	1.97	1.93					
Feb 19	1.95	1.94	1.93	1.93	1.94	1.96	1.97	S	1.92	1.91	1.89	1.89	1.91	1.92	1.92	1.92	1.92	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.89	1.97	1.92					
Feb 20	1.90	1.91	1.91	1.94	1.94	1.93	S	1.95	1.95	1.94	1.94	1.93	1.93	1.93	1.93	1.93	1.93	1.94	1.95	1.94	1.94	1.95	1.95	1.90	1.95	1.94						
Feb 21	1.95	1.96	1.96	1.96	1.97	S	1.98	2.02	2.04	2.10	2.11	1.97	2.01	2.03	2.04	2.01	2.01	1.99	1.98	1.97	1.96	1.97	1.98	1.99	1.95	2.11	2.00					
Feb 22	1.96	1.96	1.96	2.02	S	2.11	2.18	2.10	2.14	2.07	1.99	1.94	1.93	1.93	1.92	1.92	1.92	1.96	1.97	1.97	1.95	1.96	1.99	1.92	2.18	2.00						
Feb 23	2.10	2.10	2.10	S	2.10	2.09	2.06	2.02	2.03	2.09	2.11	2.07	2.06	2.05	2.02	2.00	2.01	2.04	2.04	2.05	2.05	2.05	2.06	2.07	2.00	2.11	2.06					
Feb 24	2.06	2.05	S	2.07	2.08	2.08	2.08	2.10	2.12	2.17	2.08	2.06	2.04	2.03	2.04	2.06	2.06	2.09	2.08	2.04	1.98	1.95	1.93	2.00	1.93	2.17	2.05					
Feb 25	2.04	S	2.05	2.07	2.10	2.14	2.12	2.10	2.10	2.03	2.09	2.04	1.98	1.94	1.97	1.97	1.98	1.99	1.94	1.90	1.93	1.92	1.90	1.89	1.89	2.14	2.01					
Feb 26	S	1.90	1.92	1.91	1.94	1.94	1.94	1.95	1.92	1.90	1.90	1.90	1.89	1.89	1.89	1.89	1.88	1.88	1.88	1.89	1.89	1.89	1.90	S	1.88	1.95	1.90					
Feb 27	1.90	1.91	1.91	1.91	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.93	1.92	1.93	1.92	1.94	1.94	1.91	1.91	1.91	1.91	1.91	1.91	S	1.93	1.90	1.92					
Feb 28	1.92	1.91	1.91	1.92	1.92	1.92	1.92	1.92	1.92	1.96	1.96	1.92	1.96	1.92	1.95	1.93	1.92	1.92	1.92	1.92	1.91	S	1.91	1.91	1.91	1.96	1.92					
Diurnal Maximum	2.11	2.12	2.10	2.07	2.10	2.14	2.18	2.26	2.37	2.17	2.14	2.10	2.06	2.07	2.04	2.06	2.06	2.09	2.08	2.07	2.06	2.08	2.12	2.11								
Diurnal Average	1.97	1.97	1.97	1.96	1.97	1.98	1.99	2.00	2.00	1.98	1.98	1.96	1.95	1.96	1.96	1.95	1.95	1.95	1.95	1.96	1.95	1.95	1.96	1.97								
C	Monthly Calibration										S										Daily Zero-Span Check								Q		Quality Assurance	
K	Collection Error										N										No Data (Machine Not in Service)								Y		Routine Maintenance	
X	InValid Data (Equipment Malfunction /Recovery)										NRM										UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)								P		Power Failure	
Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.																																
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.																																



Wind: Tamarack Poll.: Tamarack-THC55[ppm] Monthly: 02-2022 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.94% Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-40	>40.0	Total
N	6.27	0.47	0	0	0	6.74
NNE	4.7	0.94	0	0	0	5.64
NE	6.27	0.31	0	0	0	6.58
ENE	5.49	0.63	0	0	0	6.12
E	4.23	0.31	0	0	0	4.54
ESE	3.45	1.88	0	0	0	5.33
SE	2.04	1.41	0	0	0	3.45
SSE	2.51	2.19	0	0	0	4.7
S	3.13	1.88	0	0	0	5.01
SSW	6.58	5.8	0	0	0	12.38
SW	5.8	2.04	0	0	0	7.84
WSW	3.76	1.1	0	0	0	4.86
W	5.17	1.25	0	0	0	6.42
WNW	6.9	1.57	0	0	0	8.47
NW	5.02	1.1	0	0	0	6.12
NNW	5.33	0.47	0	0	0	5.8
Summary	76.65	23.35	0	0	0	100



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% Icon Classes (ppm)

77 0-2

23 2-5

0 5-10

0 10-40

0 >40.0



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Tamarack Site - February 2022

Summary of Hourly Averages

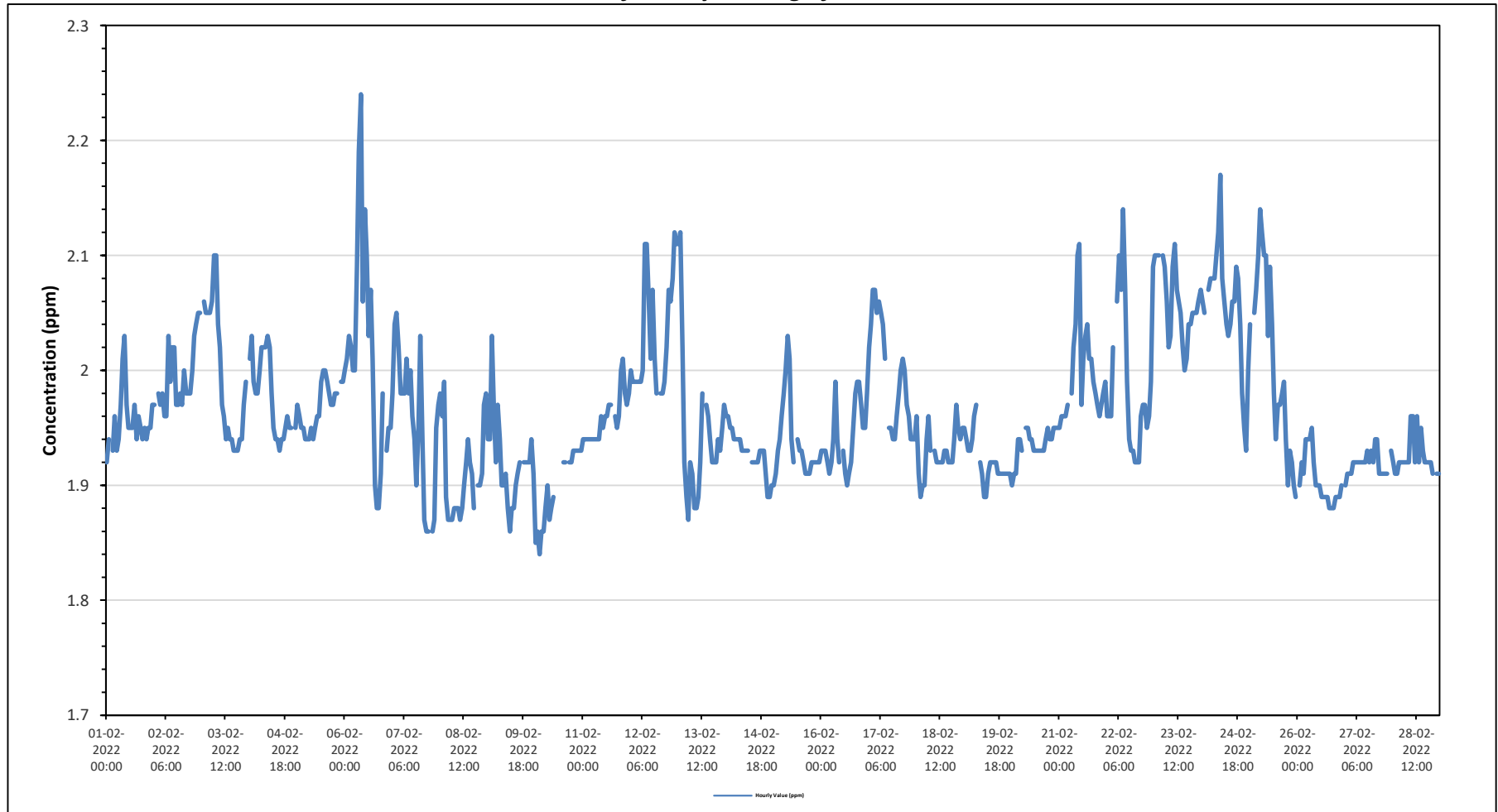
METHANE (CH4) in ppm

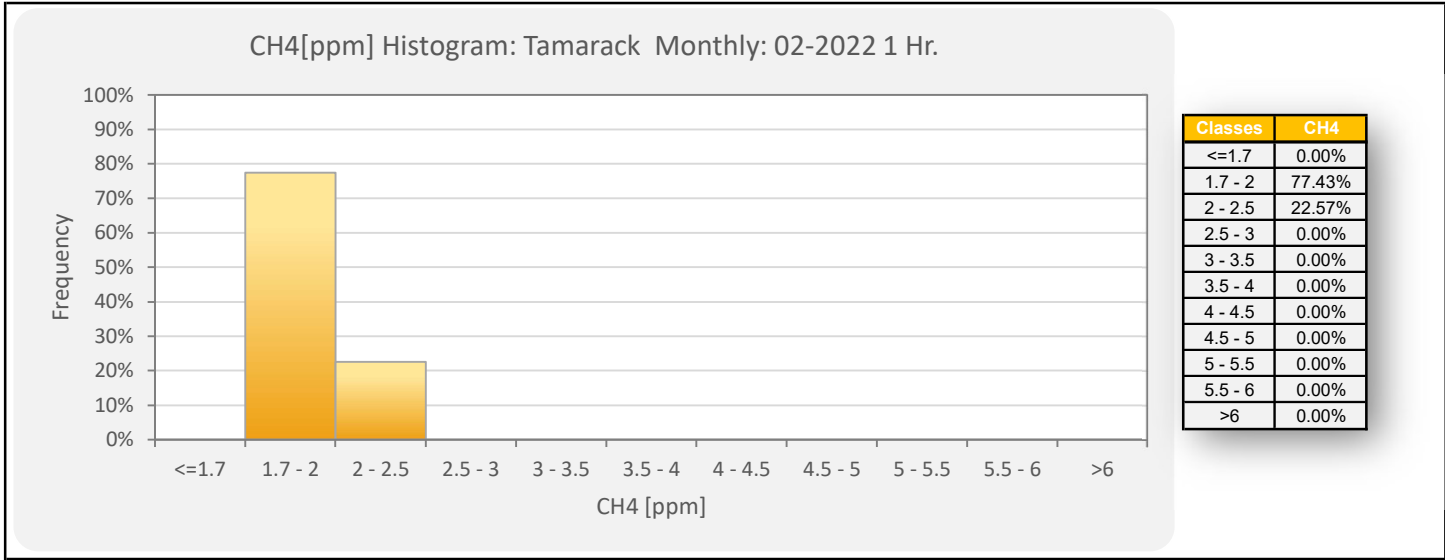
Maximum Hourly Value:	2.24 ppm on February 6 at hour 8	Hours in Service:	672
Maximum Daily Value:	2.06 ppm on February 23	Hours of Data:	638
Minimum Hourly Value:	1.84 ppm on February 10 at hour 2	Hours of Missing Data:	0
Minimum Daily Value:	1.90 ppm on February 10	Hours of Calibration:	34
Monthly Average:	1.96 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									
Feb 1	1.92	1.94	S	1.93	1.96	1.93	1.94	1.97	2.01	2.03	1.97	1.95	1.95	1.95	1.97	1.94	1.96	1.95	1.94	1.95	1.94	1.95	1.95	1.97	1.92	2.03	1.96									
Feb 2	1.97	S	1.98	1.97	1.98	1.96	1.96	2.03	1.99	2.02	2.02	1.97	1.97	1.98	1.97	2.00	1.98	1.98	1.98	2.00	2.03	2.04	2.05	2.05	1.96	2.05	1.99									
Feb 3	S	2.06	2.05	2.05	2.05	2.06	2.10	2.10	2.04	2.02	1.97	1.96	1.94	1.95	1.94	1.94	1.93	1.93	1.93	1.94	1.94	1.97	1.99	S	1.93	2.10	1.99									
Feb 4	2.01	2.03	1.99	1.98	1.98	2.00	2.02	2.02	2.02	2.03	2.02	1.98	1.95	1.94	1.94	1.93	1.94	1.94	1.95	1.96	1.95	1.95	S	1.95	1.93	2.03	1.98									
Feb 5	1.97	1.96	1.95	1.95	1.94	1.94	1.94	1.95	1.94	1.95	1.96	1.96	1.99	2.00	2.00	1.99	1.98	1.97	1.97	1.98	1.98	S	1.99	1.99	1.94	2.00	1.97									
Feb 6	2.00	2.01	2.03	2.02	2.00	2.00	2.09	2.19	2.24	2.06	2.14	2.10	2.03	2.07	2.01	1.90	1.88	1.88	1.91	1.98	S	1.93	1.95	1.95	1.88	2.24	2.02									
Feb 7	1.98	2.04	2.05	2.02	1.98	1.98	1.98	2.01	1.98	2.00	1.96	1.94	1.90	1.95	2.03	1.94	1.87	1.86	1.86	S	1.86	1.87	1.95	1.97	1.86	2.05	1.96									
Feb 8	1.98	1.96	1.99	1.89	1.87	1.87	1.87	1.88	1.88	1.88	1.87	1.88	1.90	1.92	1.94	1.92	1.91	1.88	S	1.90	1.90	1.91	1.97	1.98	1.87	1.99	1.91									
Feb 9	1.94	1.94	2.03	1.97	1.92	1.97	1.94	1.90	1.90	1.91	1.88	1.86	1.88	1.90	1.91	1.92	S	1.92	1.92	1.92	1.92	1.92	1.94	1.91	1.86	2.03	1.92									
Feb 10	1.85	1.86	1.84	1.86	1.86	1.88	1.90	1.87	1.88	1.89	C	C	C	C	1.92	1.92	S	1.92	1.92	1.93	1.93	1.93	1.93	1.93	1.84	1.93	1.90									
Feb 11	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.96	1.95	1.96	1.96	1.97	1.97	S	1.96	1.95	1.96	2.00	2.01	1.98	1.97	1.98	1.94	2.01	1.96									
Feb 12	2.00	1.99	1.99	1.99	1.99	1.99	2.00	2.11	2.11	2.06	2.01	2.07	2.01	1.98	S	1.98	1.98	1.99	2.02	2.07	2.06	2.08	2.12	2.11	1.98	2.12	2.03									
Feb 13	2.11	2.12	2.02	1.92	1.89	1.87	1.92	1.91	1.88	1.88	1.89	1.92	1.98	S	1.97	1.96	1.94	1.92	1.92	1.92	1.92	1.94	1.93	1.95	1.97	1.87	2.12	1.94								
Feb 14	1.96	1.96	1.95	1.95	1.94	1.94	1.94	1.94	1.93	1.93	1.93	1.93	S	1.92	1.92	1.92	1.92	1.93	1.93	1.93	1.91	1.89	1.89	1.90	1.89	1.96	1.93									
Feb 15	1.90	1.91	1.93	1.94	1.96	1.98	2.00	2.03	2.01	1.94	1.92	S	1.94	1.93	1.93	1.92	1.91	1.91	1.91	1.92	1.92	1.92	1.92	1.92	1.90	2.03	1.94									
Feb 16	1.93	1.93	1.93	1.92	1.91	1.92	1.94	1.99	1.94	1.92	S	1.93	1.91	1.90	1.91	1.92	1.95	1.98	1.99	1.99	1.97	1.95	1.95	1.98	1.90	1.99	1.94									
Feb 17	2.02	2.04	2.07	2.07	2.05	2.06	2.05	2.04	2.01	S	1.95	1.95	1.94	1.94	1.96	1.98	2.00	2.01	2.00	1.97	1.96	1.94	1.94	1.94	1.94	2.07	2.00									
Feb 18	1.96	1.91	1.89	1.90	1.90	1.94	1.96	1.93	S	1.93	1.92	1.92	1.92	1.93	1.93	1.92	1.92	1.92	1.92	1.94	1.97	1.95	1.94	1.95	1.89	1.97	1.93									
Feb 19	1.95	1.94	1.93	1.93	1.94	1.96	1.97	S	1.92	1.91	1.89	1.89	1.91	1.92	1.92	1.92	1.92	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.89	1.97	1.92									
Feb 20	1.90	1.91	1.91	1.94	1.94	1.93	S	1.95	1.95	1.94	1.94	1.93	1.93	1.93	1.93	1.93	1.93	1.94	1.95	1.94	1.94	1.95	1.95	1.90	1.95	1.94										
Feb 21	1.95	1.96	1.96	1.96	1.97	S	1.98	2.02	2.04	2.10	2.11	1.97	2.01	2.03	2.04	2.01	2.01	1.99	1.98	1.97	1.96	1.97	1.98	1.99	1.95	2.11	2.00									
Feb 22	1.96	1.96	1.96	2.02	S	2.06	2.10	2.07	2.14	2.07	1.99	1.94	1.93	1.93	1.92	1.92	1.92	1.96	1.97	1.97	1.95	1.96	1.99	1.92	2.14	1.99										
Feb 23	2.10	2.10	2.10	S	2.10	2.09	2.06	2.02	2.03	2.09	2.11	2.07	2.06	2.05	2.02	2.00	2.01	2.04	2.04	2.05	2.05	2.05	2.05	2.06	2.07	2.00	2.11	2.06								
Feb 24	2.06	2.05	S	2.07	2.08	2.08	2.08	2.10	2.12	2.17	2.08	2.06	2.04	2.03	2.04	2.06	2.06	2.09	2.08	2.04	1.98	1.95	1.93	2.00	1.93	2.17	2.05									
Feb 25	2.04	S	2.05	2.07	2.10	2.14	2.12	2.10	2.10	2.03	2.09	2.04	1.98	1.94	1.97	1.97	1.98	1.99	1.94	1.90	1.93	1.92	1.90	1.89	1.89	2.14	2.01									
Feb 26	S	1.90	1.92	1.91	1.94	1.94	1.94	1.95	1.92	1.90	1.90	1.90	1.89	1.89	1.89	1.89	1.88	1.88	1.88	1.89	1.89	1.89	1.90	S	1.88	1.95	1.90									
Feb 27	1.90	1.91	1.91	1.91	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.93	1.92	1.93	1.92	1.94	1.94	1.91	1.91	1.91	1.91	1.91	1.91	S	1.93	1.90	1.92									
Feb 28	1.92	1.91	1.91	1.92	1.92	1.92	1.92	1.92	1.92	1.96	1.96	1.92	1.96	1.92	1.95	1.93	1.92	1.92	1.92	1.92	1.91	S	1.91	1.91	1.91	1.96	1.92									
Diurnal Maximum	2.11	2.12	2.10	2.07	2.10	2.14	2.12	2.19	2.24	2.17	2.14	2.10	2.06	2.07	2.04	2.06	2.06	2.09	2.08	2.07	2.06	2.08	2.12	2.11												
Diurnal Average	1.97	1.97	1.97	1.96	1.96	1.97	1.98	1.99	1.99	1.98	1.98	1.96	1.95	1.95	1.96	1.95	1.95	1.95	1.95	1.96	1.95	1.95	1.96	1.97												
C	Monthly Calibration										S										Daily Zero-Span Check															
K	Collection Error										N										No Data (Machine Not in Service)															
X	InValid Data (Equipment Malfunction /Recovery)										NRM										UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)															
Q																					Y								Routine Maintenance							
P																													Power Failure							

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

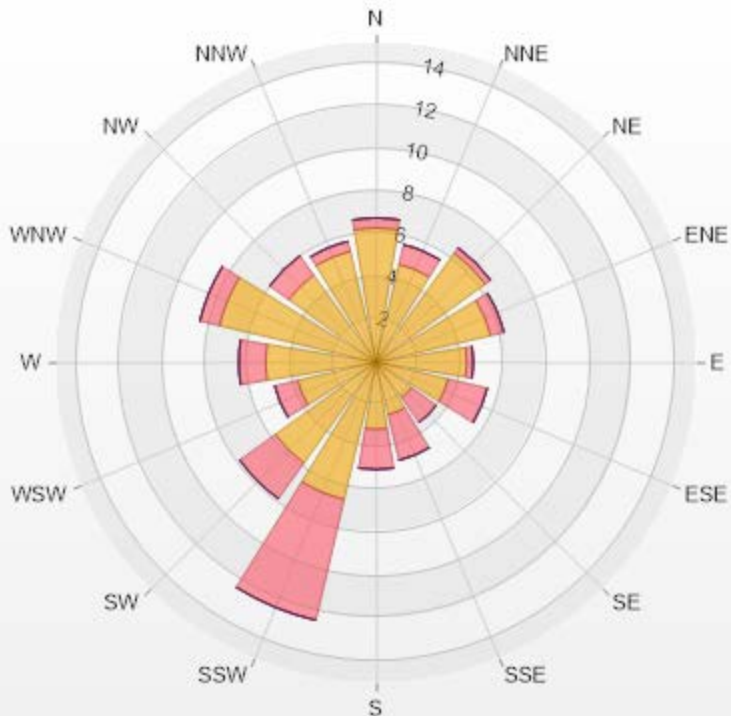
Timeseries Chart of Hourly Average for CH4 - Tamarack Site





Wind: Tamarack Poll.: Tamarack-CH4[ppm] Monthly: 02-2022 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.94% Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-20	>20.0	Total
N	6.27	0.47	0	0	0	6.74
NNE	4.7	0.94	0	0	0	5.64
NE	6.27	0.31	0	0	0	6.58
ENE	5.49	0.63	0	0	0	6.12
E	4.23	0.31	0	0	0	4.54
ESE	3.45	1.88	0	0	0	5.33
SE	2.04	1.41	0	0	0	3.45
SSE	2.51	2.19	0	0	0	4.7
S	3.13	1.88	0	0	0	5.01
SSW	6.58	5.8	0	0	0	12.38
SW	5.8	2.04	0	0	0	7.84
WSW	3.76	1.1	0	0	0	4.86
W	5.17	1.25	0	0	0	6.42
WNW	7.52	0.94	0	0	0	8.46
NW	5.02	1.1	0	0	0	6.12
NNW	5.33	0.47	0	0	0	5.8
Summary	77.27	22.72	0	0	0	100



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% Icon Classes (ppm)

77 0-2

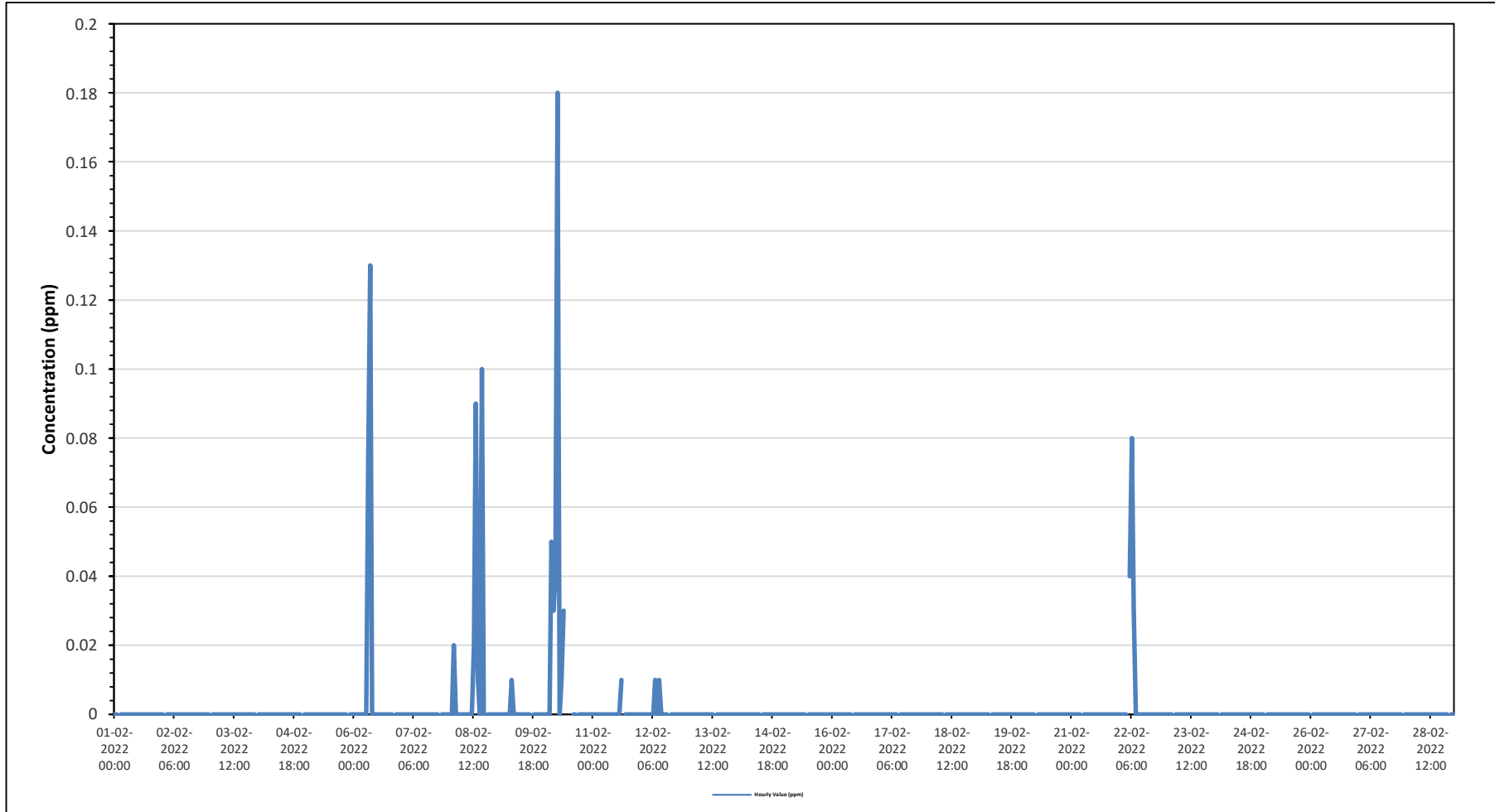
23 2-5

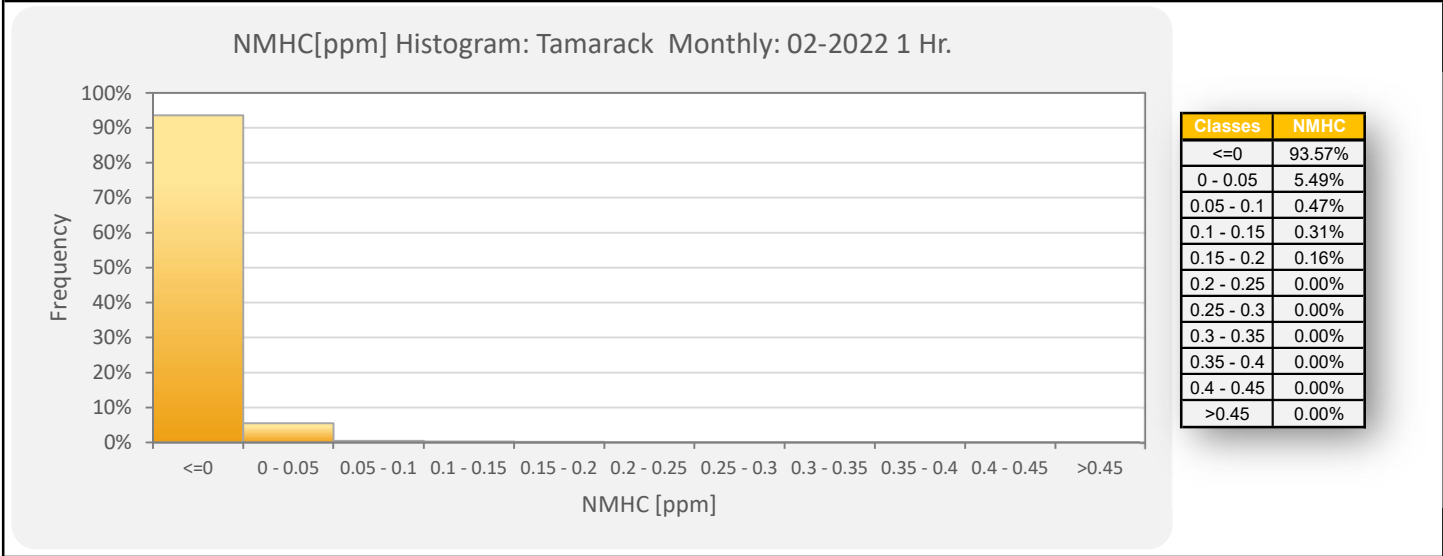
0 5-10

0 10-20

0 >20.0

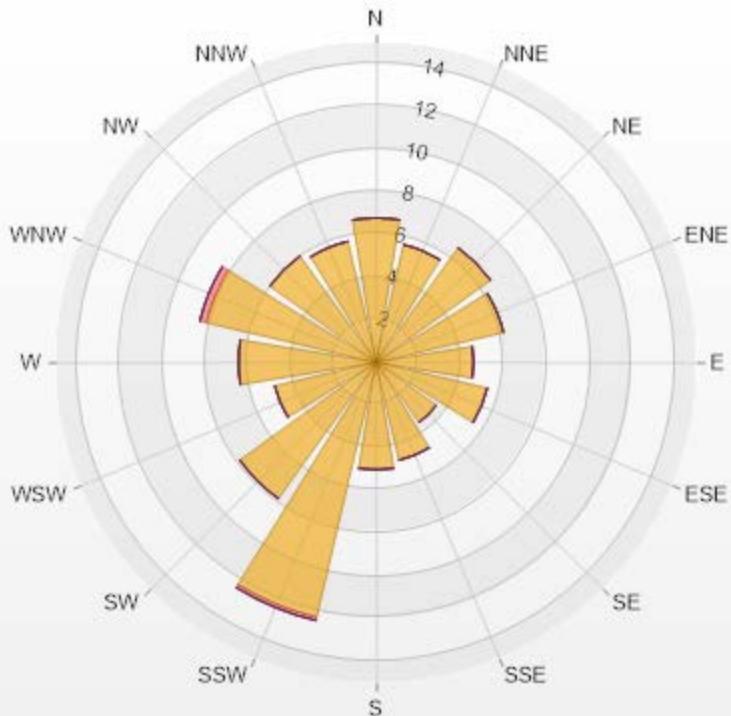
Timeseries Chart of Hourly Average for NMHC - Tamarack Site





Wind: Tamarack Poll.: Tamarack-NMHC[ppm] Monthly: 02-2022 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.94% Calm Avg: 0.00 [ppm]

Direction	0-0.1	0.1-0.3	0.3-1	1-2	>2.0	Total
N	6.74	0	0	0	0	6.74
NNE	5.64	0	0	0	0	5.64
NE	6.58	0	0	0	0	6.58
ENE	6.11	0	0	0	0	6.11
E	4.55	0	0	0	0	4.55
ESE	5.33	0	0	0	0	5.33
SE	3.45	0	0	0	0	3.45
SSE	4.7	0	0	0	0	4.7
S	5.02	0	0	0	0	5.02
SSW	12.23	0.16	0	0	0	12.39
SW	7.84	0	0	0	0	7.84
WSW	4.86	0	0	0	0	4.86
W	6.43	0	0	0	0	6.43
WNW	8.15	0.31	0	0	0	8.46
NW	6.11	0	0	0	0	6.11
NNW	5.8	0	0	0	0	5.8
Summary	100	0.47	0	0	0	100



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% Icon Classes (ppm)

100 0-0.1

0 0.1-0.3

0 0.3-1

0 1-2

0 >2.0



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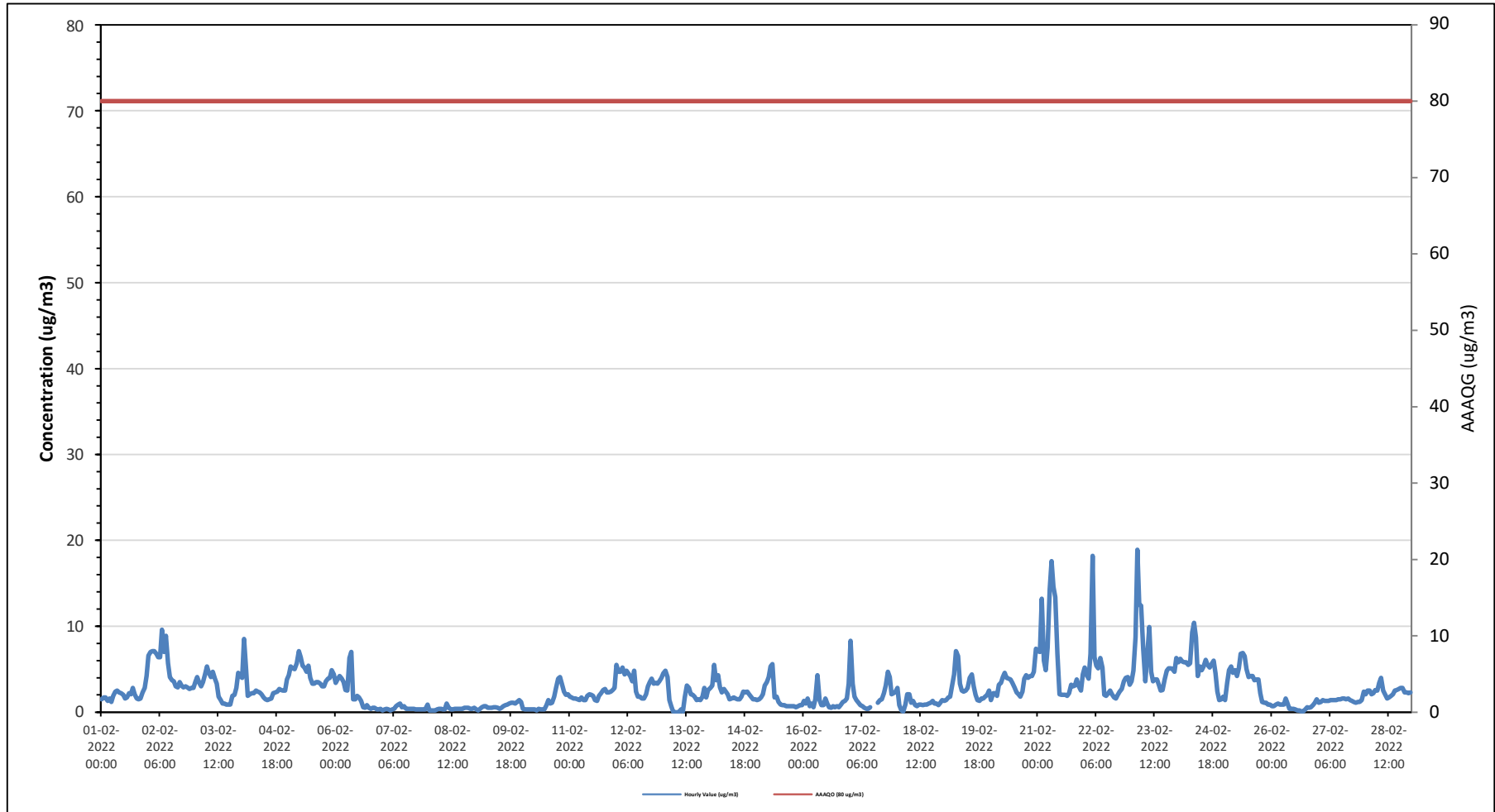
Tamarack Site - February 2022

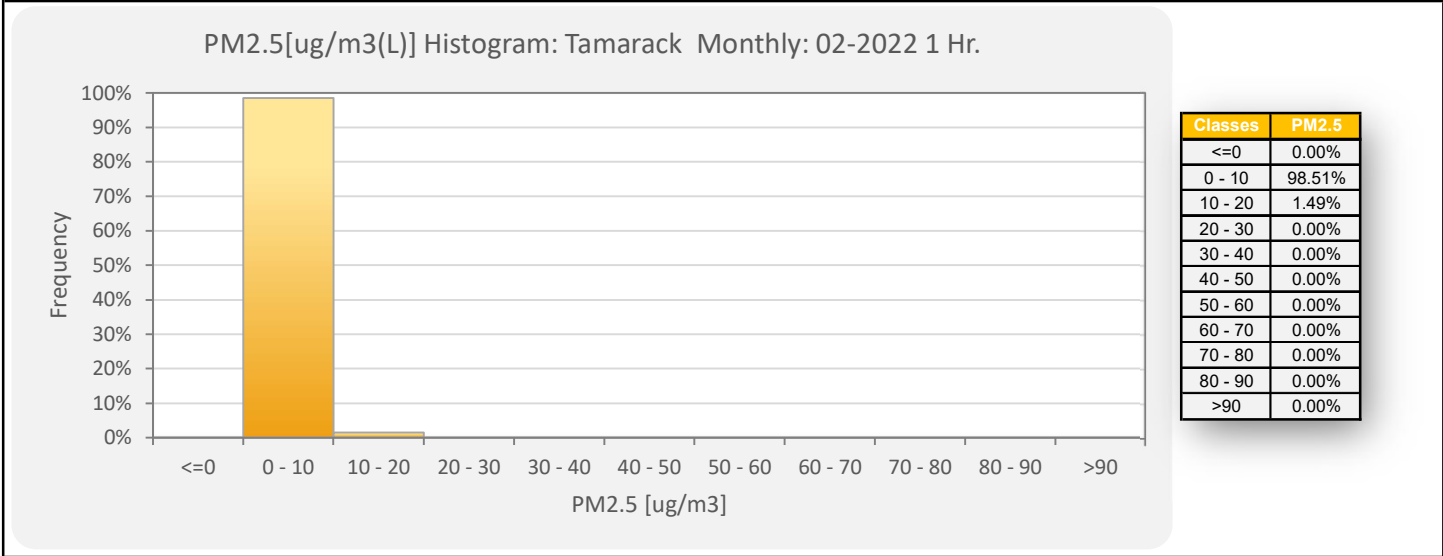
Summary of Hourly Averages

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

Alberta Ambient Air Quality Guideline (AAAQG): 1-Hour 80 µg/m ³ , Alberta Ambient Air Quality Objective (AAAQO): 24-Hour 29 µg/m ³																															
Number of 1-Hour Exceedences: 0										Number of 24-Hour Exceedences: 0																					
Maximum Hourly Value: 19 µg/m ³ on February 23 at hour 3										Hours in Service: 672																					
Maximum Daily Value: 6.2 µg/m ³ on February 21										Hours of Data: 669																					
Minimum Hourly Value: 0 µg/m ³ on February 13 at hour 6										Hours of Missing Data: 0																					
Minimum Daily Value: 0 µg/m ³ on February 8										Hours of Calibration: 3																					
Monthly Average: 2.7 µg/m ³										Operational Uptime: 100.0																					
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average					
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23				
Feb 1	2	2	2	1	2	1	2	2	3	2	2	2	2	2	2	2	3	2	2	2	2	3	4	1	4	2.0					
Feb 2	7	7	7	7	7	6	6	10	7	9	6	4	4	4	3	3	4	3	3	3	3	3	3	3	3	10	5.0				
Feb 3	4	4	3	3	4	4	5	5	4	5	4	3	2	1	1	1	1	1	2	2	3	5	4	1	5	3.0					
Feb 4	4	9	5	2	2	2	2	3	2	2	2	2	2	1	2	2	2	2	2	3	3	3	3	4	1	9	2.7				
Feb 5	4	5	5	5	6	7	6	5	5	5	5	4	3	3	4	4	3	3	3	4	4	5	4	3	7	4.5					
Feb 6	3	4	4	4	4	3	3	6	7	2	2	2	2	1	1	1	1	0	1	1	0	0	0	0	0	7	2.1				
Feb 7	0	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0.4				
Feb 8	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	1	1	0	0	1	0	1	0.4				
Feb 9	0	0	0	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	0	1	0.7				
Feb 10	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	3	4	4	3	2	2	2	0	4	1.3				
Feb 11	2	2	2	2	2	1	2	1	1	2	2	2	2	1	1	2	2	3	3	2	2	2	3	3	1	3	1.9				
Feb 12	6	5	5	5	4	5	5	4	4	5	2	2	2	2	2	3	4	4	3	3	4	4	4	2	6	3.6					
Feb 13	5	5	4	1	1	0	0	0	0	0	0	2	3	3	2	2	1	2	1	2	3	2	3	0	5	1.8					
Feb 14	3	3	6	4	4	3	2	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	6	2.4				
Feb 15	1	2	2	2	3	4	4	5	6	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	6	1.7					
Feb 16	1	1	2	1	1	1	2	4	1	1	1	2	1	1	1	1	1	1	1	1	1	1	2	3	1	4	1.2				
Feb 17	8	3	2	1	1	1	1	1	0	0	1	C	C	C	1	1	2	2	3	5	4	2	2	2	0	8	2.1				
Feb 18	3	1	0	0	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	3	1.1				
Feb 19	1	1	2	2	3	4	7	7	3	3	2	3	3	4	4	3	2	1	1	2	2	2	3	1	7	2.8					
Feb 20	1	2	2	2	3	3	4	5	4	4	4	3	3	2	2	2	4	4	4	4	4	5	7	1	7	3.4					
Feb 21	7	7	13	6	5	8	14	18	15	13	7	2	2	2	2	2	3	3	3	4	3	3	4	2	18	6.2					
Feb 22	5	4	4	7	18	6	5	5	6	5	2	2	2	3	2	2	2	2	3	4	4	4	3	2	18	4.3					
Feb 23	4	5	9	19	13	12	7	4	7	10	5	4	4	4	3	3	4	5	5	5	5	6	3	19	6.1						
Feb 24	6	6	6	6	6	6	6	9	10	9	4	5	5	5	6	6	5	6	6	5	2	1	2	2	1	10	5.4				
Feb 25	1	3	5	5	5	5	4	5	7	7	5	4	4	4	4	4	2	1	1	1	1	1	1	1	7	3.8					
Feb 26	1	1	1	1	1	1	1	2	1	0	0	0	0	0	0	0	1	1	1	1	1	2	0	2	0	2	0.7				
Feb 27	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	1	1	1	1	1	1	2	1	2	1	1.4				
Feb 28	2	3	3	2	2	3	3	3	4	3	2	2	2	2	2	3	3	3	3	3	2	2	2	2	4	2	2.4				
Diurnal Maximum	8	9	13	19	18	12	14	18	15	13	7	5	5	5	6	6	5	6	6	5	5	5	7								
Dalurnal Average	2.9	3.1	3.4	3.2	3.5	3.3	3.4	3.9	3.7	3.4	2.4	2.1	2.0	2.0	1.9	1.8	1.9	2.1	2.2	2.2	2.2	2.1	2.2	2.7							
C	Monthly Calibration							S	Daily Zero-Span Check							Q	Quality Assurance														
K	Collection Error							N	No Data (Machine Not in Service)							Y	Routine Maintenance							P	Power Failure						
X	Invalid Data (Equipment Malfunction/Recovery)							NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)																						
Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.																															
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.																															

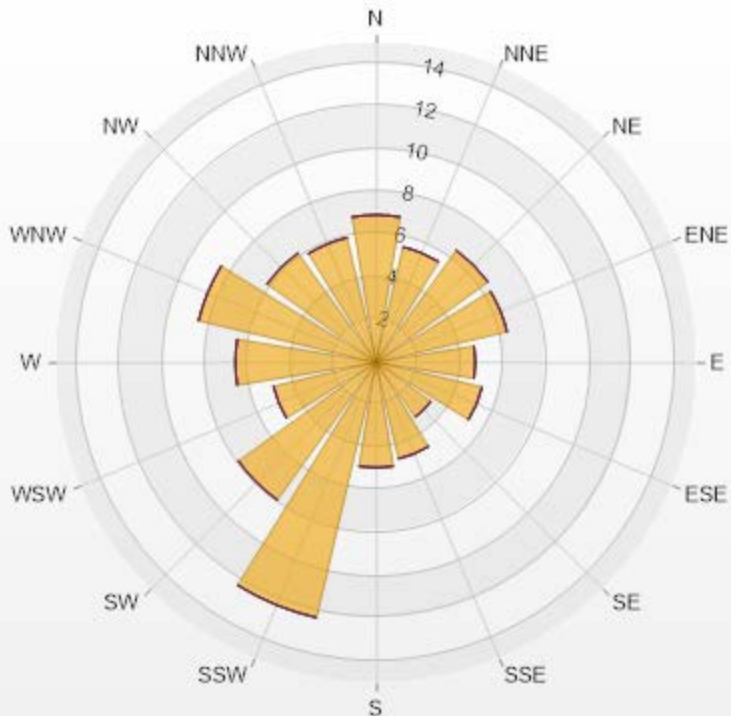
Timeseries Chart of Hourly Average for PM2.5 - Tamarack Site





Wind: Tamarack Poll.: Tamarack-PM2.5[ug/m3(L)] Monthly: 02-2022 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 99.55% Calm Avg: 0.00 [ug/m3(L)]

Direction	0-50	50-80	80-120	120-240	>240.0	Total
N	6.88	0	0	0	0	6.88
NNE	5.53	0	0	0	0	5.53
NE	6.43	0	0	0	0	6.43
ENE	6.28	0	0	0	0	6.28
E	4.63	0	0	0	0	4.63
ESE	5.08	0	0	0	0	5.08
SE	3.14	0	0	0	0	3.14
SSE	4.63	0	0	0	0	4.63
S	4.93	0	0	0	0	4.93
SSW	12.26	0	0	0	0	12.26
SW	7.92	0	0	0	0	7.92
WSW	4.93	0	0	0	0	4.93
W	6.58	0	0	0	0	6.58
WNW	8.52	0	0	0	0	8.52
NW	6.28	0	0	0	0	6.28
NNW	5.98	0	0	0	0	5.98
Summary	100	0	0	0	0	100



LICA-202202

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% Icon Classes (ug/m3(L))

100 0-50

0 50-80

0 80-120

0 120-240

0 >240.0



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Tamarack Site - February 2022

Summary of Hourly Averages

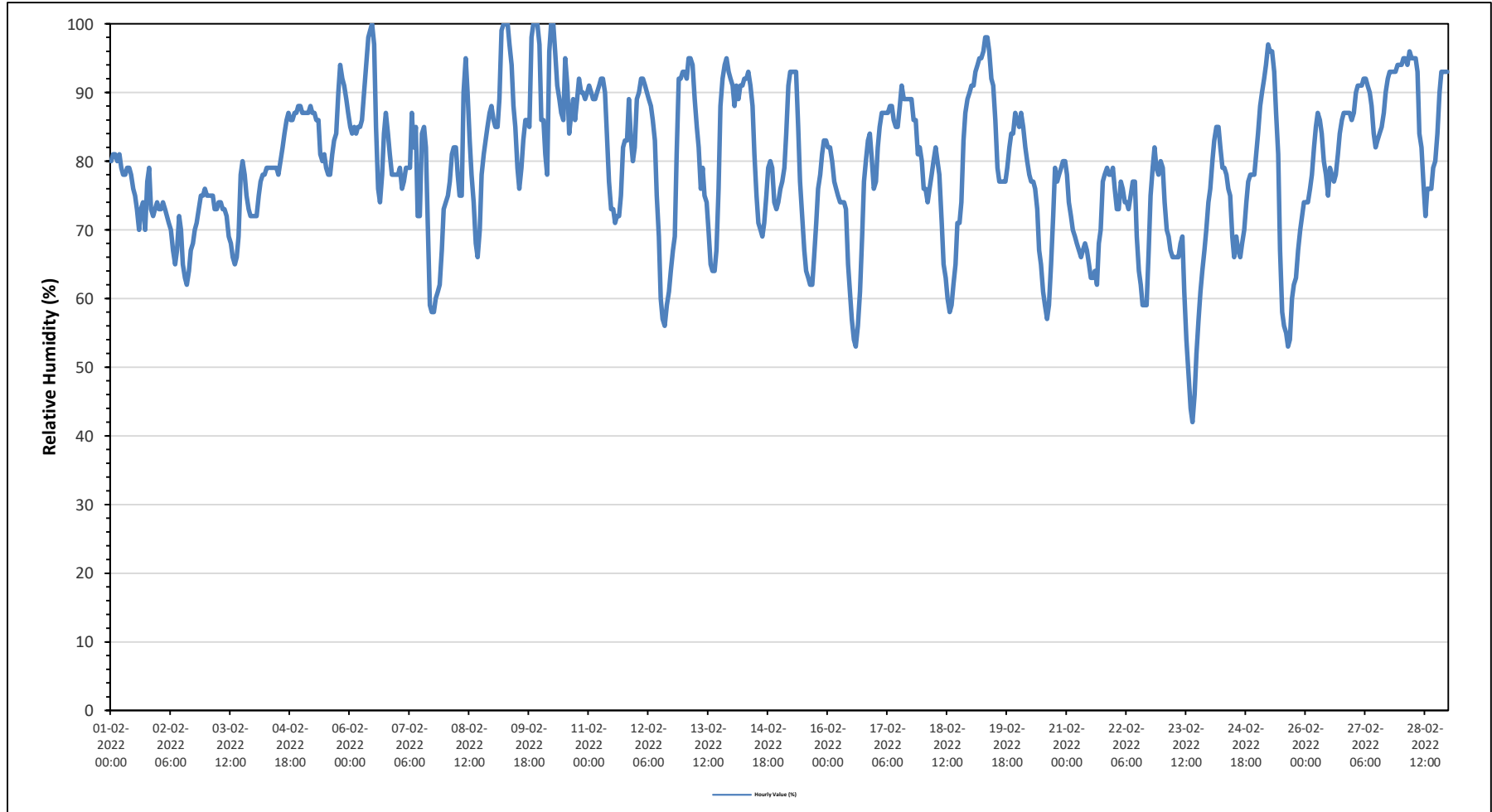
RELATIVE HUMIDITY (RH) in %

Maximum Hourly Value:	100 %	on February 6 at hour 11	Hours in Service:	672
Maximum Daily Value:	90.7 %	on February 9	Hours of Data:	672
Minimum Hourly Value:	42 %	on February 23 at hour 15	Hours of Missing Data:	0
Minimum Daily Value:	62.5 %	on February 23	Hours of Calibration:	0
Monthly Average:	79.2 %		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																
Feb 1	80	81	81	80	81	79	78	78	79	79	78	76	75	73	70	73	74	70	77	79	73	72	73	74	70	81	76.4																
Feb 2	73	73	74	73	72	71	70	67	65	67	72	70	65	63	62	64	67	68	70	71	73	75	75	76	62	76	69.8																
Feb 3	75	75	75	75	73	73	74	74	73	73	72	69	68	66	65	66	69	78	80	78	75	73	72	72	65	80	72.6																
Feb 4	72	72	75	77	78	78	79	79	79	79	79	79	78	80	82	84	86	87	86	86	87	87	88	88	72	88	81.0																
Feb 5	87	87	87	87	88	87	87	86	86	81	80	81	79	78	78	81	83	84	90	94	92	91	89	87	78	94	85.4																
Feb 6	85	84	85	84	85	85	86	90	94	98	99	100	97	85	76	74	78	84	87	84	81	78	78	78	74	100	85.6																
Feb 7	78	79	76	77	79	79	79	87	82	85	72	72	84	85	82	71	59	58	58	60	61	62	67	73	58	87	73.5																
Feb 8	74	75	77	81	82	82	78	75	75	90	95	90	83	78	74	68	66	70	78	81	83	85	87	88	66	95	79.8																
Feb 9	86	85	85	89	99	100	100	100	97	94	88	85	79	76	79	83	86	86	85	98	100	100	100	97	76	100	90.7																
Feb 10	86	86	81	78	96	100	100	96	91	89	87	86	95	91	84	87	89	86	89	92	90	90	89	90	78	100	89.5																
Feb 11	91	90	89	89	90	91	92	92	90	84	77	73	73	71	72	72	75	82	83	83	89	83	80	82	71	92	83.0																
Feb 12	89	90	92	92	91	90	89	88	86	83	75	69	60	57	56	59	61	64	67	69	81	92	92	93	56	93	78.5																
Feb 13	93	92	95	95	94	89	85	82	76	79	75	74	70	65	64	64	67	76	88	92	94	95	93	92	64	95	82.9																
Feb 14	91	88	91	89	91	91	92	92	93	91	88	81	75	71	70	69	71	75	79	80	79	74	73	74	69	93	82.0																
Feb 15	76	77	79	84	91	93	93	93	93	85	77	72	67	64	63	62	62	66	71	76	78	81	83	83	62	93	77.9																
Feb 16	82	82	80	77	76	75	74	74	74	73	65	61	57	54	53	56	61	69	77	80	83	84	80	76	53	84	71.8																
Feb 17	77	82	85	87	87	87	87	88	88	86	85	85	88	91	89	89	89	89	89	86	86	81	82	80	77	91	86.0																
Feb 18	76	76	74	76	78	80	82	80	78	71	65	63	60	58	59	62	65	71	71	74	83	87	89	90	58	90	73.7																
Feb 19	91	91	93	94	95	95	96	98	98	96	92	91	86	79	77	77	77	77	79	82	84	84	87	86	77	98	87.7																
Feb 20	85	87	85	82	80	78	77	77	76	73	67	65	61	59	57	59	65	72	79	77	78	79	80	80	57	87	74.1																
Feb 21	78	74	72	70	69	68	67	66	67	68	67	65	63	63	64	62	68	70	77	78	79	78	78	79	62	79	70.4																
Feb 22	76	73	73	77	76	74	74	73	75	77	77	69	64	62	59	59	59	67	75	79	82	79	78	80	59	82	72.4																
Feb 23	79	74	70	69	67	66	66	66	66	68	69	61	54	49	44	42	46	52	57	61	64	67	70	74	42	79	62.5																
Feb 24	76	80	83	85	85	82	79	79	78	76	75	69	66	69	67	66	68	70	74	77	78	78	78	81	66	85	75.8																
Feb 25	84	88	90	92	94	97	96	96	93	87	81	67	58	56	55	53	54	60	62	63	67	70	72	74	53	97	75.4																
Feb 26	74	74	76	78	82	85	87	86	84	80	78	75	79	78	77	78	81	84	86	87	87	87	87	86	74	87	81.5																
Feb 27	87	90	91	91	91	92	92	91	90	88	84	82	83	84	85	87	90	92	93	93	93	93	94	94	82	94	89.6																
Feb 28	94	95	95	94	96	95	95	95	93	84	82	77	72	76	76	79	80	84	90	93	93	93	93	93	72	96	87.5																
Diurnal Maximum	94	95	95	95	99	100	100	100	98	98	99	100	97	91	89	89	90	92	93	98	100	100	100	97																			
Diurnal Average	82.0	82.1	82.5	82.9	84.5	84.4	84.1	83.9	82.8	81.6	78.6	75.3	72.8	70.8	69.3	69.4	71.3	74.5	78.3	80.4	81.9	82.1	82.4	82.9																			
C	Monthly Calibration										S	Daily Zero-Span Check										Q	Quality Assurance																				
K	Collection Error										N	No Data (Machine Not in Service)										Y	Routine Maintenance										P	Power Failure									
X	Invalid Data (Equipment Malfunction /Recovery)										NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)																															

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

Timeseries Chart of Hourly Average for RH - Tamarack Site





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Tamarack Site - February 2022

Summary of Hourly Averages

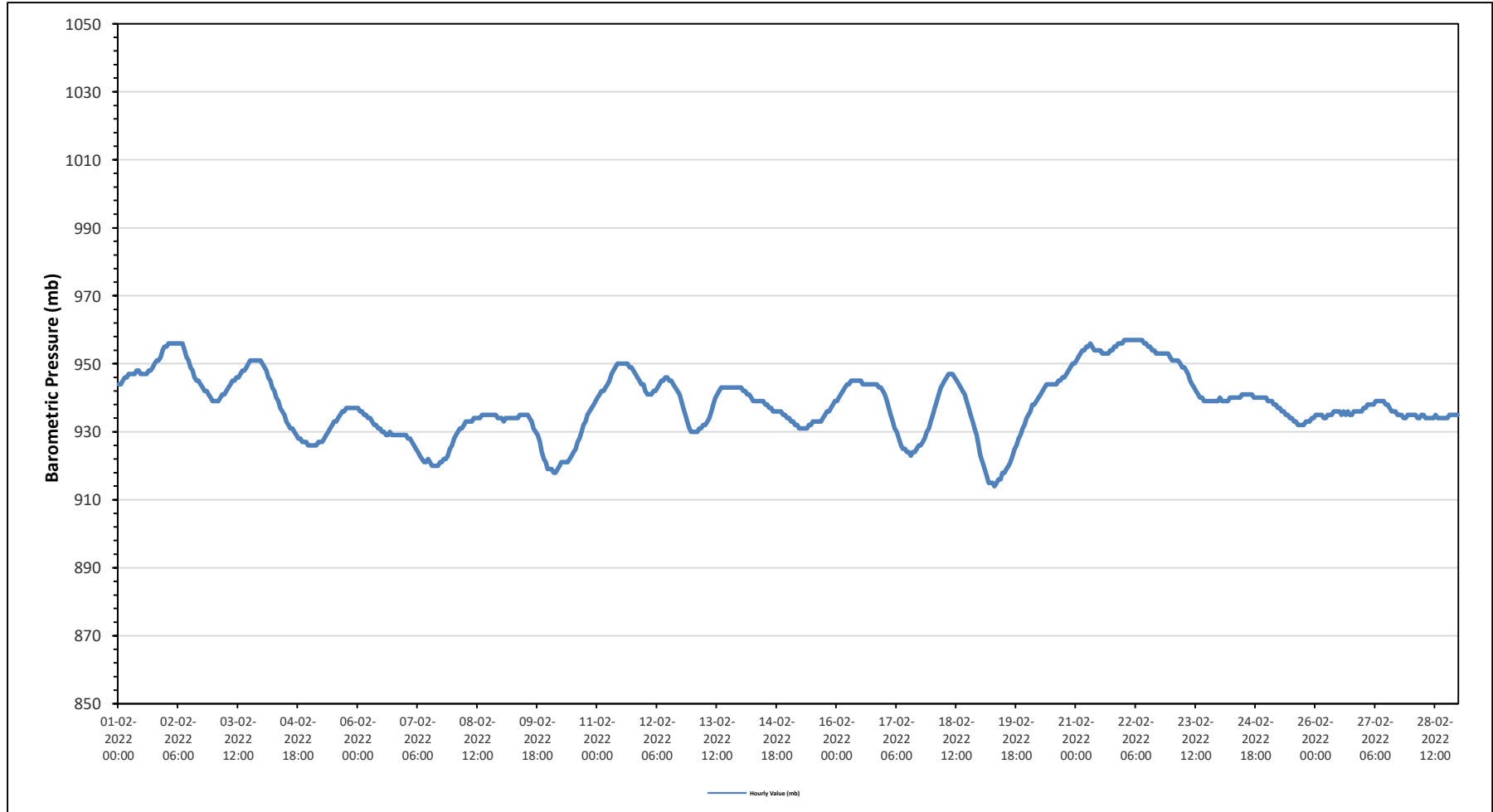
BAROMETRIC PRESSURE (BP) in millibar

Maximum Hourly Value:	957	mb	on February 22 at hour 0	Hours in Service:	672
Maximum Daily Value:	955	mb	on February 22	Hours of Data:	672
Minimum Hourly Value:	914	mb	on February 19 at hour 7	Hours of Missing Data:	0
Minimum Daily Value:	921	mb	on February 19	Hours of Calibration:	0
Monthly Average:	938	mb		Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23
Feb 1	944	944	945	946	946	947	947	947	947	948	948	947	947	947	947	948	948	949	950	951	951	952	954	955	944	955	948
Feb 2	955	956	956	956	956	956	956	956	956	954	952	951	949	948	946	945	945	944	943	942	942	941	940	939	939	956	949
Feb 3	939	939	939	940	941	941	942	943	944	945	945	946	946	947	948	948	949	950	951	951	951	951	951	951	939	951	946
Feb 4	950	949	948	946	945	943	942	940	939	937	936	935	933	932	931	931	930	929	928	928	927	927	927	926	926	950	936
Feb 5	926	926	926	926	927	927	927	928	929	930	931	932	933	933	934	935	936	936	937	937	937	937	937	937	926	937	932
Feb 6	937	936	936	935	935	934	934	933	932	932	931	931	930	930	929	929	930	929	929	929	929	929	929	929	929	937	932
Feb 7	929	928	928	927	926	925	924	923	922	921	921	922	921	920	920	920	921	921	922	922	922	923	925	926	920	929	923
Feb 8	928	929	930	931	931	932	933	933	933	933	934	934	934	935	935	935	935	935	935	935	935	935	934	934	928	935	933
Feb 9	934	933	934	934	934	934	934	934	934	935	935	935	935	935	934	933	931	930	929	927	924	922	921	919	919	935	931
Feb 10	919	919	918	918	919	920	921	921	921	921	922	923	924	925	927	928	930	932	933	935	936	937	938	939	918	939	926
Feb 11	940	941	942	942	943	944	945	947	948	949	950	950	950	950	950	949	949	948	947	946	945	944	944	940	940	950	946
Feb 12	942	941	941	941	942	942	943	944	945	945	946	946	945	945	944	943	942	941	939	937	935	933	931	930	930	946	941
Feb 13	930	930	930	931	931	932	932	933	934	936	938	940	941	942	943	943	943	943	943	943	943	943	943	943	930	943	938
Feb 14	943	942	942	941	941	940	939	939	939	939	939	939	938	938	937	937	936	936	936	936	935	935	934	934	934	943	938
Feb 15	934	933	933	932	932	931	931	931	931	931	932	932	933	933	933	933	934	935	936	936	937	938	939	931	939	933	
Feb 16	939	940	941	942	943	944	944	945	945	945	945	945	944	944	944	944	944	944	944	944	943	943	942	939	945	943	
Feb 17	941	939	937	935	933	931	930	928	926	925	925	924	924	923	924	924	925	926	926	927	928	930	931	933	923	941	929
Feb 18	935	937	939	941	943	944	945	946	947	947	947	946	945	944	943	942	941	939	937	935	933	931	929	926	926	947	940
Feb 19	923	921	919	917	915	915	915	914	915	916	916	918	918	919	920	921	923	925	926	928	929	931	932	934	914	934	921
Feb 20	935	936	938	938	939	940	941	942	943	944	944	944	944	944	944	945	945	946	946	947	948	949	950	950	935	950	943
Feb 21	951	952	953	954	954	955	955	956	955	954	954	954	954	953	953	953	953	954	954	955	955	956	956	956	951	956	954
Feb 22	957	957	957	957	957	957	957	957	957	957	956	956	955	955	954	954	953	953	953	953	953	953	953	952	952	957	955
Feb 23	951	951	951	951	950	949	949	948	947	945	944	943	942	941	940	940	939	939	939	939	939	939	939	939	939	951	944
Feb 24	940	939	939	939	939	940	940	940	940	940	940	941	941	941	941	941	941	940	940	940	940	940	940	940	939	941	940
Feb 25	939	939	939	938	938	937	937	936	936	935	935	934	933	933	932	932	932	932	933	933	933	934	934	932	939	935	
Feb 26	935	935	935	935	934	934	935	935	935	936	936	936	936	935	936	936	935	936	935	935	936	936	936	936	934	936	935
Feb 27	937	937	938	938	938	938	939	939	939	939	939	938	938	937	936	936	936	935	935	935	934	934	935	935	934	939	937
Feb 28	935	935	935	934	934	935	935	934	934	934	934	934	935	934	934	934	934	935	935	935	935	935	935	934	935	935	934
Diurnal Maximum	957	957	957	957	957	957	957	957	957	957	956	956	955	955	954	954	953	954	954	955	955	956	956	956			
Diurnal Average	938	938	938	938	938	938	938	938	938	938	938	938	938	938	938	938	938	938	938	938	938	938	938	938			
C	Monthly Calibration							S	Daily Zero-Span Check							Q	Quality Assurance										
K	Collection Error							N	No Data (Machine Not in Service)							Y	Routine Maintenance							P	Power Failure		
X	Invalid Data (Equipment Malfunction /Recovery)							NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)																		

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

Timeseries Chart of Hourly Average for BP - Tamarack Site





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Tamarack Site - February 2022

Summary of Hourly Averages

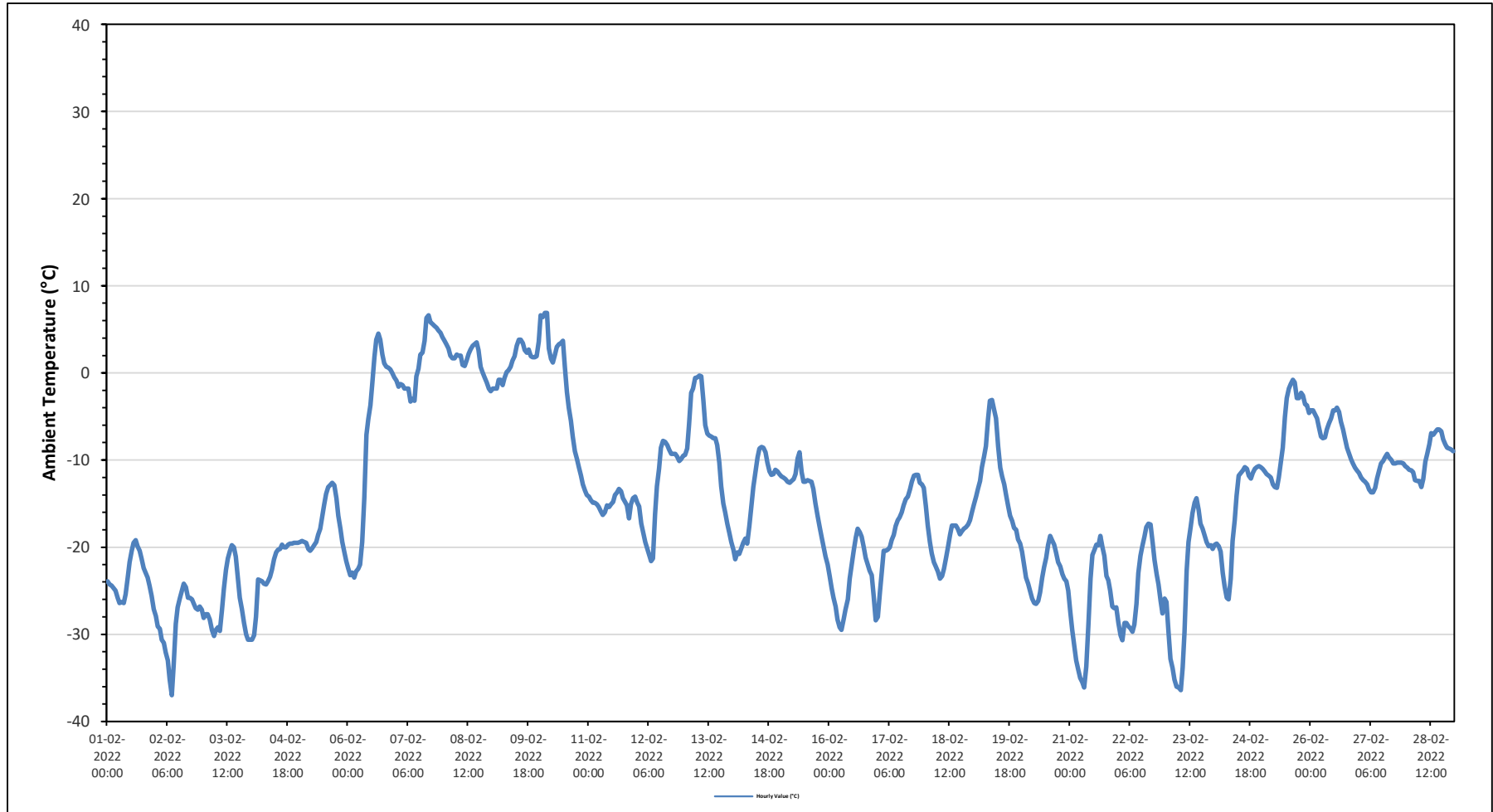
AMBIENT TEMPERATURE (AT) in Degree Celsius

Maximum Hourly Value:	6.9 °C	on February 10 at hour 2	Hours in Service:	672
Maximum Daily Value:	1.5 °C	on February 8	Hours of Data:	672
Minimum Hourly Value:	-37.0 °C	on February 2 at hour 8	Hours of Missing Data:	0
Minimum Daily Value:	-28.6 °C	on February 2	Hours of Calibration:	0
Monthly Average:	-14.6 °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
Feb 1	-23.9	-24.3	-24.4	-24.7	-25	-25.8	-26.4	-26.3	-26.4	-25.4	-23.5	-21.7	-20.4	-19.5	-19.2	-19.9	-20.4	-21.3	-22.4	-22.9	-23.5	-24.4	-25.6	-27.1	-27.1	-19.2	-23.5
Feb 2	-27.9	-29.1	-29.4	-30.6	-31	-32.1	-33	-35.2	-37	-33.5	-28.8	-26.9	-25.9	-25.1	-24.2	-24.6	-25.8	-25.8	-26	-26.5	-27	-27.2	-26.8	-27.2	-37.0	-24.2	-28.6
Feb 3	-28.1	-27.7	-27.7	-28.3	-29.5	-30.2	-29.5	-29.2	-29.6	-27.2	-24.8	-22.6	-21.3	-20.4	-19.8	-20	-21.1	-23.6	-25.8	-27.1	-28.7	-30	-30.6	-30.6	-30.6	-19.8	-26.4
Feb 4	-30.6	-30.1	-28	-23.7	-23.8	-23.9	-24.2	-24.3	-23.9	-23.4	-22.6	-21.4	-20.6	-20.3	-20.2	-19.7	-20	-20	-19.7	-19.6	-19.6	-19.5	-19.5	-19.5	-30.6	-19.5	-22.4
Feb 5	-19.4	-19.3	-19.4	-19.5	-20.2	-20.4	-20.1	-19.8	-19.4	-18.6	-17.9	-16.6	-15.1	-13.9	-13.1	-12.9	-12.6	-12.9	-14.4	-16.4	-17.9	-19.4	-20.6	-21.6	-21.6	-12.6	-17.6
Feb 6	-22.4	-23.2	-22.9	-23.5	-22.8	-22.5	-22	-19.4	-14.3	-7.1	-5.3	-3.7	-1.2	1.8	3.8	4.5	3.8	2.1	1.1	0.7	0.6	0.4	0	-0.5	-23.5	4.5	-8.0
Feb 7	-0.9	-1.6	-1.3	-1.4	-1.8	-1.8	-1.8	-3.3	-3	-3.2	-0.4	0.5	2.1	2.3	3.7	6.3	6.6	5.8	5.6	5.4	5.2	4.9	4.6	4.1	-3.3	6.6	1.5
Feb 8	3.7	3.3	2.8	2	1.7	1.7	2.1	2	2	0.9	0.8	1.4	2.2	2.7	3.1	3.3	3.5	2.6	0.7	0.1	-0.5	-1.1	-1.8	-2.1	-2.1	3.7	1.5
Feb 9	-1.8	-1.8	-1.8	-0.8	-0.8	-1.4	-0.6	0.1	0.3	0.7	1.4	1.9	3.1	3.8	3.8	3.4	2.6	2.3	2.7	1.9	1.8	1.8	1.9	3.6	-1.8	3.8	1.2
Feb 10	6.6	6.4	6.9	6.9	2.8	1.6	1.2	2.1	3	3.3	3.4	3.7	0.8	-2.2	-4	-5.5	-7.3	-9	-9.9	-10.8	-11.8	-12.8	-13.5	-14	-14.0	6.9	-2.2
Feb 11	-14.2	-14.6	-14.9	-14.9	-15.1	-15.4	-15.9	-16.3	-16	-15.2	-15.4	-15.1	-14.8	-14	-13.7	-13.3	-13.6	-14.4	-14.8	-15.2	-16.7	-15.1	-14.4	-14.2	-16.7	-13.3	-14.9
Feb 12	-14.9	-15.3	-17.3	-18.3	-19.4	-20.1	-20.9	-21.6	-21.3	-16.2	-13	-11	-8.6	-7.8	-7.9	-8.3	-8.8	-9.3	-9.3	-9.6	-10.1	-9.9	-9.5	-9.5	-21.6	-7.8	-13.2
Feb 13	-9.4	-8.7	-5.9	-2.3	-1.8	-0.6	-0.5	-0.3	-0.4	-3.2	-6	-7	-7.2	-7.3	-7.5	-7.5	-8.3	-10.3	-13	-15	-16	-17.3	-18.4	-19.4	-19.4	-0.3	-8.1
Feb 14	-20.3	-21.4	-20.6	-20.8	-20.1	-19.5	-19	-19.6	-17.6	-15.5	-13.1	-11.4	-9.7	-8.7	-8.5	-8.6	-9.1	-10.3	-11.3	-11.7	-11.6	-11.1	-11.3	-11.6	-21.4	-8.5	-14.3
Feb 15	-11.9	-12	-12.2	-12.5	-12.6	-12.4	-12.2	-11.6	-9.8	-9.1	-11.4	-12.5	-12.5	-12.3	-12.4	-12.5	-13.3	-15	-16.4	-17.7	-18.8	-20	-21.1	-22	-22.0	-9.1	-13.9
Feb 16	-23.2	-24.7	-25.8	-26.8	-28.3	-29.2	-29.5	-28.3	-27.2	-26	-23.6	-21.9	-20.4	-18.9	-17.9	-18.3	-18.8	-20	-21.2	-22	-22.7	-23.2	-25.5	-28.4	-29.5	-17.9	-23.8
Feb 17	-28	-25.1	-22.8	-20.4	-20.4	-20.3	-20	-19.2	-18.6	-17.6	-16.9	-16.6	-16	-15.2	-14.5	-14.2	-13.4	-12.5	-11.8	-11.7	-11.7	-12.6	-12.8	-13.2	-28.0	-11.7	-16.9
Feb 18	-15.3	-17.5	-19.4	-20.7	-21.7	-22.2	-22.8	-23.6	-23.3	-22.5	-21.2	-20	-18.6	-17.5	-17.5	-17.5	-17.9	-18.5	-18.2	-17.9	-17.7	-17.4	-16.9	-15.9	-23.6	-15.3	-19.2
Feb 19	-15.1	-14.2	-13.3	-12.4	-10.8	-9.6	-8.4	-5.3	-3.2	-3.1	-4.1	-5.2	-8.4	-10.9	-11.9	-12.8	-14	-15.3	-16.4	-17	-17.8	-18	-19.1	-19.6	-19.6	-3.1	-11.9
Feb 20	-20.5	-22.1	-23.5	-24.2	-25.1	-25.9	-26.4	-26.5	-26.2	-25.2	-23.5	-22.3	-21.2	-19.8	-18.7	-19.2	-19.7	-20.6	-21.7	-22.2	-23.1	-23.6	-23.9	-25	-26.5	-18.7	-22.9
Feb 21	-27.5	-29.5	-31.4	-33	-34.1	-35	-35.5	-36.1	-33.7	-28.9	-23.6	-20.9	-20.3	-19.7	-19.8	-18.7	-20	-21	-23.3	-23.8	-25	-26.8	-27	-26.9	-36.1	-18.7	-26.7
Feb 22	-28.7	-30.1	-30.7	-28.7	-28.7	-29.1	-29.3	-29.7	-28.9	-26.5	-23	-21	-19.9	-18.8	-17.7	-17.3	-17.4	-19.5	-21.5	-23.1	-24.3	-26.2	-27.6	-25.9	-30.7	-17.3	-24.7
Feb 23	-26.3	-29.9	-32.8	-33.9	-35.2	-36	-36.1	-36.4	-33.8	-29.7	-22.7	-19.4	-17.7	-16.1	-14.9	-14.4	-15.7	-17.3	-17.9	-18.6	-19.4	-19.9	-19.8	-20.2	-36.4	-14.4	-24.3
Feb 24	-19.7	-19.6	-19.9	-20.5	-23	-24.5	-25.8	-26	-23.6	-19.3	-16.9	-14.1	-11.8	-11.5	-11.2	-10.8	-11	-11.8	-12.1	-11.5	-11	-10.8	-10.7	-10.8	-26.0	-10.7	-16.2
Feb 25	-11	-11.3	-11.6	-11.8	-12	-12.8	-13.1	-13.2	-12	-10.2	-8.6	-5.1	-2.9	-1.8	-1.3	-0.8	-1.1	-2.9	-2.9	-2.3	-2.6	-3.6	-3.7	-4.6	-13.2	-0.8	-6.8
Feb 26	-4.3	-4.3	-4.7	-5.2	-6.2	-7.3	-7.5	-7.4	-6.5	-5.8	-5.2	-4.3	-4.3	-4	-4.5	-5.6	-6.5	-7.5	-8.6	-9.2	-9.9	-10.4	-10.9	-11.2	-11.2	-4.0	-6.7
Feb 27	-11.5	-12	-12.3	-12.5	-12.8	-13.4	-13.7	-13.7	-13.2	-12.1	-11.2	-10.4	-10.1	-9.7	-9.3	-9.7	-10	-10.4	-10.4	-10.3	-10.3	-10.4	-10.7	-10.7	-13.7	-9.3	-11.3
Feb 28	-10.9	-11.1	-11.2	-11.4	-12.3	-12.4	-12.1	-12.2	-10.2	-9.3	-8.2	-6.9	-7.1	-6.8	-6.5	-6.5	-6.7	-7.6	-8.2	-8.6	-8.6	-8.7	-8.8	-9	-13.1	-6.5	-9.4
Diurnal Maximum	6.6	6.4	6.9	6.9	2.8	1.7	2.1	2.1	3.0	3.3	3.4	3.7	3.1	3.8	3.8	6.3	6.6	5.8	5.6	5.4	5.2	4.9	4.6	4.1			
Diurnal Average	-16.3	-16.8	-17.0	-16.9	-17.5	-17.9	-18.0	-17.9	-17.0	-15.4	-13.8	-12.6	-11.7	-11.1	-10.8	-10.8	-11.3	-12.3	-13.1	-13.6	-14.2	-14.7	-15.1	-15.5			
C	Monthly Calibration							S	Daily Zero-Span Check							Q	Quality Assurance										
K	Collection Error							N	No Data (Machine Not in Service)							Y	Routine Maintenance							P	Power Failure		
X	Invalid Data (Equipment Malfunction / Recovery)							NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)																		

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

Timeseries Chart of Hourly Average for AT - Tamarack Site





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Tamarack Site - February 2022

Summary of Hourly Averages

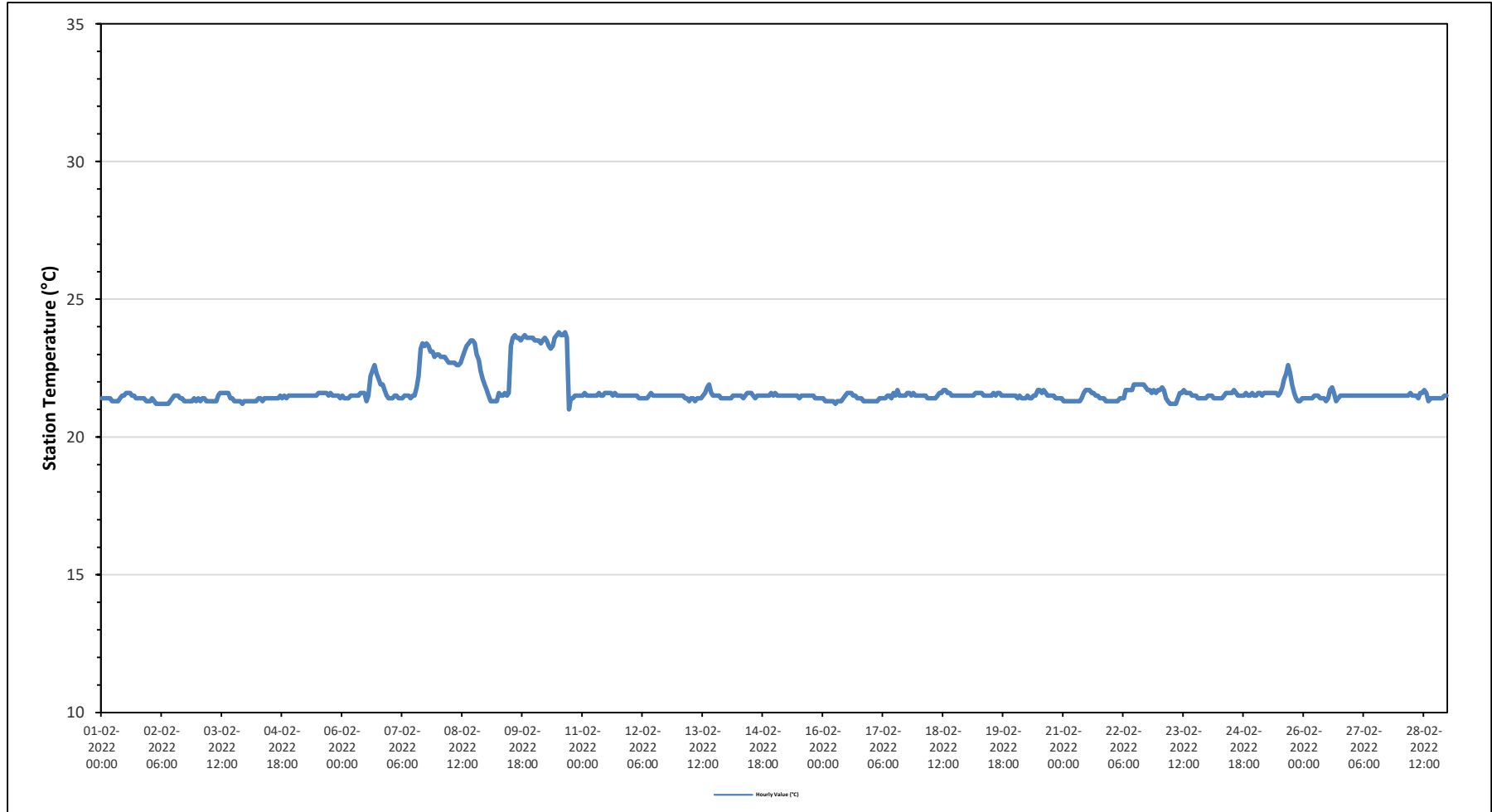
STATION TEMPERATURE (ST) in Degree Celsius

Maximum Hourly Value:	23.8 °C	on February 10 at hour 12	Hours in Service:	672
Maximum Daily Value:	22.9 °C	on February 10	Hours of Data:	672
Minimum Hourly Value:	21.0 °C	on February 10 at hour 17	Hours of Missing Data:	0
Minimum Daily Value:	21.3 °C	on February 2	Hours of Calibration:	0
Monthly Average:	21.7 °C		Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average																	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23																
Feb 1	21.4	21.4	21.4	21.4	21.4	21.3	21.3	21.3	21.3	21.4	21.5	21.5	21.6	21.6	21.6	21.5	21.5	21.4	21.4	21.3	21.3	21.3	21.3	21.4	21.3	21.3	21.2	21.5	21.3														
Feb 2	21.3	21.4	21.3	21.2	21.2	21.2	21.2	21.2	21.2	21.3	21.4	21.5	21.5	21.5	21.4	21.4	21.3	21.3	21.3	21.3	21.3	21.3	21.4	21.3	21.2	21.5	21.3																
Feb 3	21.4	21.3	21.4	21.4	21.3	21.3	21.3	21.3	21.3	21.3	21.5	21.6	21.6	21.6	21.6	21.6	21.6	21.4	21.4	21.3	21.3	21.3	21.3	21.2	21.6	21.4																	
Feb 4	21.3	21.3	21.3	21.3	21.3	21.3	21.4	21.4	21.3	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.5	21.4	21.5	21.4	21.5	21.5	21.5	21.3	21.5	21.4																
Feb 5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.6	21.6	21.6	21.6	21.6	21.6	21.5	21.6	21.5	21.5	21.5	21.5	21.4	21.4	21.6	21.5															
Feb 6	21.5	21.4	21.4	21.4	21.5	21.5	21.5	21.5	21.5	21.5	21.6	21.6	21.6	21.3	21.5	22.2	22.4	22.6	22.3	22.1	21.9	21.9	21.7	21.5	21.4	21.3	22.6	21.7															
Feb 7	21.4	21.4	21.5	21.5	21.4	21.4	21.4	21.5	21.5	21.5	21.4	21.5	21.5	21.8	22.2	23.2	23.4	23.3	23.4	23.3	23.1	23.1	22.9	23.0	21.4	23.4	22.2	21.4															
Feb 8	23.0	22.9	22.9	22.9	22.8	22.7	22.7	22.7	22.7	22.6	22.6	22.7	22.9	23.1	23.3	23.4	23.5	23.5	23.4	23.0	22.8	22.4	22.1	21.9	21.9	23.5	22.9	21.9															
Feb 9	21.7	21.5	21.3	21.3	21.3	21.3	21.6	21.5	21.5	21.6	21.5	21.6	21.5	21.6	23.3	23.6	23.7	23.6	23.6	23.5	23.6	23.7	23.6	23.6	21.3	23.7	22.5	21.3															
Feb 10	23.5	23.5	23.5	23.4	23.5	23.6	23.5	23.3	23.2	23.3	23.6	23.7	23.8	23.7	23.7	23.8	23.6	23.6	21.0	21.4	21.4	21.5	21.5	21.5	21.5	21.0	23.8	22.9															
Feb 11	21.5	21.6	21.5	21.5	21.5	21.5	21.5	21.5	21.6	21.5	21.5	21.6	21.6	21.6	21.6	21.5	21.6	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.6	21.5															
Feb 12	21.5	21.5	21.5	21.5	21.4	21.4	21.4	21.4	21.4	21.4	21.5	21.6	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.4	21.6	21.5															
Feb 13	21.5	21.5	21.5	21.4	21.4	21.3	21.4	21.4	21.3	21.4	21.4	21.4	21.4	21.5	21.6	21.8	21.9	21.6	21.5	21.5	21.5	21.5	21.5	21.4	21.4	21.4	21.3	21.9	21.5														
Feb 14	21.4	21.4	21.4	21.5	21.5	21.5	21.5	21.5	21.4	21.5	21.6	21.6	21.6	21.5	21.4	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.6	21.5	21.4	21.6	21.5														
Feb 15	21.6	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.4	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.4	21.4	21.4	21.4	21.4	21.6	21.5	21.4														
Feb 16	21.4	21.3	21.3	21.3	21.3	21.3	21.2	21.3	21.3	21.3	21.4	21.5	21.6	21.6	21.6	21.5	21.5	21.4	21.4	21.4	21.3	21.3	21.3	21.3	21.2	21.6	21.4	21.4															
Feb 17	21.3	21.3	21.3	21.3	21.4	21.4	21.4	21.4	21.5	21.5	21.4	21.6	21.5	21.7	21.5	21.5	21.5	21.5	21.5	21.6	21.5	21.6	21.5	21.5	21.3	21.7	21.5	21.5															
Feb 18	21.5	21.5	21.5	21.5	21.4	21.4	21.4	21.4	21.4	21.5	21.6	21.6	21.7	21.7	21.6	21.6	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.4	21.7	21.5	21.4															
Feb 19	21.5	21.5	21.5	21.5	21.6	21.6	21.6	21.6	21.5	21.5	21.5	21.5	21.5	21.6	21.5	21.6	21.6	21.6	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.6	21.5	21.5														
Feb 20	21.5	21.4	21.5	21.4	21.4	21.4	21.5	21.4	21.4	21.5	21.5	21.7	21.7	21.6	21.7	21.6	21.5	21.5	21.5	21.5	21.5	21.4	21.4	21.4	21.4	21.4	21.7	21.5	21.4														
Feb 21	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.4	21.6	21.7	21.7	21.7	21.6	21.6	21.5	21.5	21.5	21.4	21.4	21.3	21.3	21.3	21.3	21.3	21.7	21.4	21.3														
Feb 22	21.3	21.3	21.3	21.3	21.4	21.4	21.4	21.4	21.7	21.7	21.7	21.7	21.9	21.9	21.9	21.9	21.9	21.9	21.8	21.7	21.7	21.6	21.7	21.6	21.7	21.3	21.9	21.6	21.3														
Feb 23	21.7	21.8	21.7	21.4	21.3	21.2	21.2	21.2	21.2	21.4	21.6	21.6	21.7	21.6	21.6	21.6	21.6	21.5	21.5	21.5	21.4	21.4	21.4	21.4	21.4	21.2	21.8	21.5	21.2														
Feb 24	21.5	21.5	21.5	21.4	21.4	21.4	21.4	21.4	21.4	21.5	21.6	21.6	21.6	21.6	21.7	21.6	21.5	21.5	21.5	21.5	21.6	21.5	21.5	21.6	21.5	21.4	21.7	21.5	21.4														
Feb 25	21.5	21.6	21.6	21.5	21.6	21.6	21.6	21.6	21.6	21.6	21.6	21.6	21.5	21.6	21.8	22.1	22.3	22.6	22.3	21.9	21.6	21.4	21.3	21.3	21.4	21.3	22.6	21.7	21.3														
Feb 26	21.4	21.4	21.4	21.4	21.4	21.5	21.5	21.5	21.4	21.4	21.4	21.4	21.3	21.4	21.7	21.8	21.6	21.3	21.4	21.5	21.5	21.5	21.5	21.5	21.5	21.3	21.8	21.5	21.5														
Feb 27	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5														
Feb 28	21.5	21.5	21.5	21.5	21.5	21.6	21.5	21.5	21.5	21.5	21.6	21.6	21.7	21.6	21.3	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.3	21.7	21.5	21.5														
Diurnal Maximum	23.5	23.5	23.5	23.4	23.5	23.6	23.5	23.3	23.2	23.3	23.6	23.7	23.8	23.7	23.7	23.8	23.6	23.5	23.6	23.7	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6														
Diurnal Average	21.6	21.6	21.6	21.5	21.5	21.5	21.5	21.5	21.5	21.6	21.6	21.7	21.8	21.8	21.9	21.9	21.9	21.7	21.7	21.7	21.6	21.6	21.6	21.6	21.6	21.6	21.6	21.6	21.6														
C	Monthly Calibration										S	Daily Zero-Span Check										Q	Quality Assurance																				
K	Collection Error										N	No Data (Machine Not in Service)										Y	Routine Maintenance										P	Power Failure									
X	Invalid Data (Equipment Malfunction / Recovery)										NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)																															

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

Timeseries Chart of Hourly Average for ST - Tamarack Site





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Tamarack Site - February 2022

Summary of Hourly Averages

PRECIPITATION in mm

Maximum Hourly Value:	1.5 mm on February 6 at hour 9	Hours in Service:	672
Maximum Daily Value:	2.2 mm on February 27	Hours of Data:	672
Minimum Hourly Value:	0.0 mm on February 1 at hour 0	Hours of Missing Data:	0
Minimum Daily Value:	0.0 mm on February 1	Hours of Calibration:	0
Monthly Total:	12.3 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		
Feb 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		
Feb 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	0.1	0.1	
Feb 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	
Feb 4	0	0	0	0	0.1	0.1	0.2	0.1	0.3	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.3	1.0	
Feb 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	
Feb 6	0	0	0	0	0	0	0	0	0	1.5	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	1.5	1.7	
Feb 7	0	0	0	0	0	0	0	0	0	0	0	0.1	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.4	0.5	
Feb 8	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1	0.1	
Feb 9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	1.2	0.3	0	0	0.0	1.2	1.7	
Feb 10	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0.1	0.1	0.2	0.1	0.1	0	0.1	0.0	0.2	0.8	
Feb 11	0	0	0	0.1	0.1	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	0.0	0.5	0.8	
Feb 12	0.1	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.3	0.1	0	0.0	0.3	0.9	
Feb 13	0.1	0.1	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.2	0.4	
Feb 14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	
Feb 15	0	0	0	0	0.3	0.1	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.3	0.5	
Feb 16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	
Feb 17	0	0	0	0	0	0.1	0.4	0.4	0.2	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.4	1.2	
Feb 18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0.0	0.1	0.1	
Feb 19	0	0	0	0	0	0.1	0	0.1	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1	0.3	
Feb 20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	
Feb 21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	
Feb 22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	
Feb 23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	
Feb 24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	
Feb 25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	
Feb 26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	
Feb 27	0	0	0.1	0	0.1	0	0	0	0	0	0.1	0	0	0	0	0	0.1	0.2	0.3	0.4	0.2	0.3	0.2	0.1	0.1	0	0.0	0.4	2.2
Feb 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	0.0	
Diurnal Maximum	0.1	0.1	0.2	0.1	0.3	0.1	0.4	0.4	0.3	1.5	0.2	0.1	0.4	0.0	0.1	0.2	0.3	0.4	0.2	1.2	0.3	0.3	0.1	0.5					
Diurnal Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0					

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

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



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Tamarack Site - February 2022

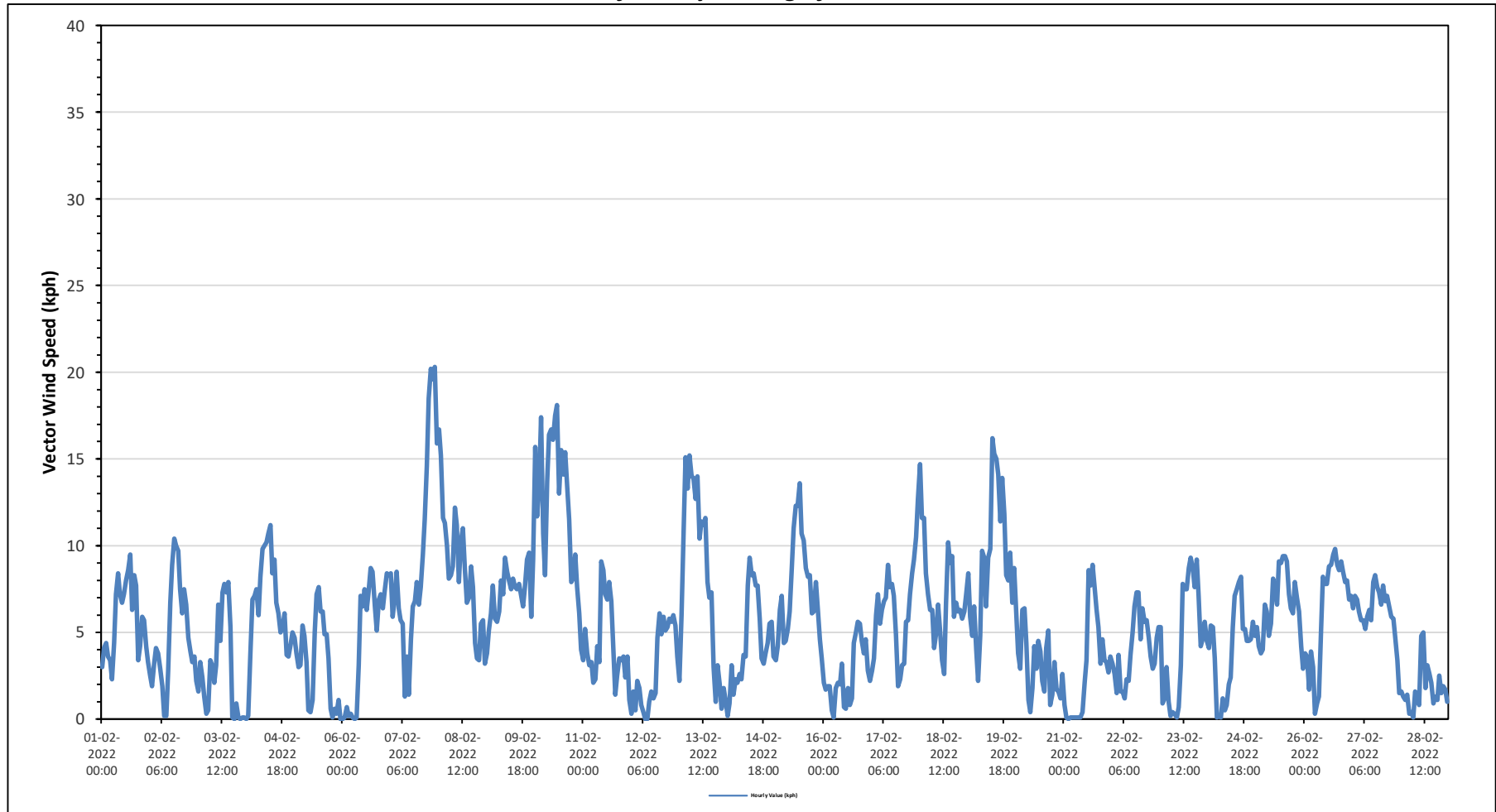
Summary of Hourly Averages

VECTOR WIND SPEED (VWS) in km/hr

Maximum Hourly Value:	20.3 kph on February 7 at hour 22	Hours in Service:	672
Maximum Daily Value:	9.6 kph on February 10	Hours of Data:	672
Minimum Hourly Value:	0.0 kph on February 3 at hour 18	Hours of Missing Data:	0
Minimum Daily Value:	1.1 kph on February 5	Hours of Calibration:	0
Monthly Average:	1.2 kph	Operational Uptime:	100.0

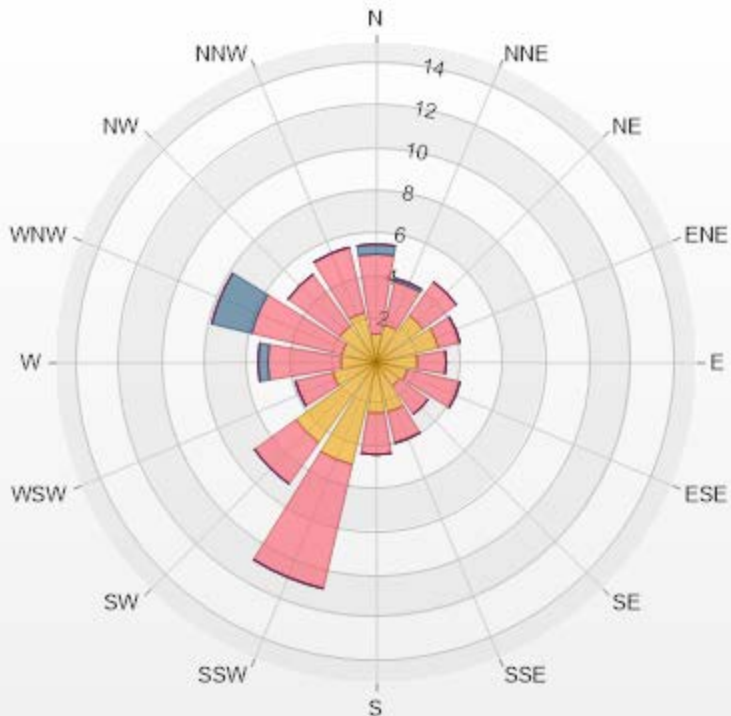
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average											
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23										
Feb 1	3.0	4.1	4.4	3.6	3.4	2.3	4.4	7.2	8.4	7.2	6.7	7.2	8.0	8.6	9.5	6.3	8.3	7.7	3.4	4.2	5.9	5.7	4.2	3.3	2.3	9.5	5.4										
Feb 2	2.5	1.9	3.2	4.1	3.8	2.9	1.9	0.2	0.2	2.8	6.7	8.9	10.4	10.0	9.7	7.5	6.1	7.5	6.6	4.7	3.9	3.3	3.6	2.2	0.2	10.4	3.5										
Feb 3	1.6	3.3	2.4	1.3	0.3	0.5	3.4	3.1	2.1	3.1	6.6	4.5	7.3	7.8	7.3	7.9	5.3	0.1	0.0	0.9	0.1	0.0	0.1	0.1	0.0	7.9	2.5										
Feb 4	0.0	0.2	3.7	6.9	7.1	7.5	6.0	8.2	9.8	10.0	10.2	10.7	11.2	8.4	9.2	6.7	6.1	5.0	5.3	6.1	3.7	3.6	4.3	5.0	0.0	11.2	6.2										
Feb 5	4.7	3.8	3.0	3.1	5.4	4.8	3.3	0.5	0.4	1.1	5.0	7.2	7.6	6.2	6.2	4.9	4.9	3.5	0.6	0.1	0.6	0.3	1.1	0.0	0.0	7.6	1.1										
Feb 6	0.0	0.1	0.7	0.2	0.3	0.1	0.0	0.1	3.1	7.1	6.5	7.5	6.3	7.3	8.7	8.5	6.5	5.1	6.9	7.2	6.4	7.4	8.4	8.3	0.0	8.7	4.4										
Feb 7	8.4	5.9	7.0	8.5	6.4	5.7	5.5	1.3	3.6	1.4	4.6	6.5	6.8	7.9	6.6	7.6	9.5	11.5	14.6	18.5	20.2	19.6	20.3	15.9	1.3	20.3	7.6										
Feb 8	16.7	15.2	11.6	11.3	10.0	8.1	8.3	8.8	12.2	11.2	7.9	10.2	11.0	8.8	6.7	7.0	8.8	7.6	4.4	3.5	3.4	5.5	5.7	3.2	3.2	16.7	7.9										
Feb 9	3.8	5.1	6.1	7.7	5.8	5.6	6.2	8.0	7.2	9.3	8.5	8.0	7.5	8.1	7.6	7.5	7.8	7.2	6.5	7.6	9.2	9.6	5.9	9.2	3.8	9.6	6.3										
Feb 10	15.7	11.7	13.7	17.4	10.7	8.3	13.7	16.4	16.7	16.1	17.5	18.1	13.0	15.5	14.1	15.4	13.3	11.5	7.9	8.1	9.5	7.6	6.1	4.0	4.0	18.1	9.6										
Feb 11	3.4	5.2	3.8	3.1	3.3	2.1	2.3	4.2	3.3	9.1	8.6	7.2	6.9	7.9	6.8	4.3	1.4	2.5	3.5	3.4	3.6	2.4	3.6	1.1	1.1	9.1	1.7										
Feb 12	0.3	1.6	0.5	2.2	1.8	0.8	0.4	0.0	0.0	1.0	1.6	1.2	1.5	4.7	6.1	4.9	5.9	5.1	5.3	5.8	5.6	6.0	5.4	3.6	0.0	6.1	2.3										
Feb 13	2.2	6.0	10.9	15.1	13.3	15.2	14.0	13.9	12.7	14.0	10.4	11.4	11.2	11.6	7.9	7.0	7.3	3.0	1.0	3.1	2.0	0.6	1.8	1.1	0.6	15.2	6.1										
Feb 14	0.2	0.9	3.1	1.4	2.3	2.1	2.6	2.3	3.7	3.6	7.7	9.3	8.3	8.4	7.7	7.7	5.8	3.5	3.2	3.8	4.4	5.5	5.6	3.6	0.2	9.3	4.0										
Feb 15	3.4	4.2	6.3	7.1	4.4	4.5	5.2	6.2	8.7	11.0	12.3	12.3	13.6	10.7	10.3	8.7	8.2	8.3	6.1	6.2	7.9	6.4	4.6	3.5	3.4	13.6	4.7										
Feb 16	2.1	1.7	1.9	1.9	0.5	0.1	1.8	2.1	2.0	3.2	0.7	0.6	1.8	0.8	1.2	4.4	5.0	5.6	5.5	4.5	3.8	4.6	2.8	2.2	0.1	5.6	1.2										
Feb 17	2.8	3.5	6.0	7.2	5.5	6.3	6.8	7.0	8.9	7.6	7.8	7.1	4.9	1.9	2.3	3.1	3.2	5.6	5.7	7.2	8.4	9.2	10.5	12.7	1.9	12.7	1.1										
Feb 18	14.7	11.6	11.6	8.4	7.2	6.3	6.3	4.1	5.0	6.6	5.0	3.4	2.6	6.7	10.2	9.0	9.4	5.9	6.7	6.2	6.3	5.8	6.2	7.2	2.6	14.7	1.5										
Feb 19	8.4	5.9	4.8	6.5	4.0	2.2	4.8	9.7	9.3	6.5	9.3	9.8	16.2	15.3	15.0	14.1	11.4	13.9	11.8	8.3	8.0	9.6	6.7	8.7	2.2	16.2	5.4										
Feb 20	6.1	3.8	2.9	6.3	6.4	4.4	1.1	0.4	1.8	4.2	2.9	4.5	3.9	2.2	1.6	4.1	5.1	0.8	1.4	3.3	1.7	1.6	1.2	2.6	0.4	6.4	2.8										
Feb 21	0.8	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.4	2.1	3.4	8.6	7.7	8.9	7.7	6.3	5.3	3.2	4.6	3.4	3.3	2.7	3.6	0.0	8.9	2.6										
Feb 22	3.2	2.6	1.5	3.7	1.6	1.6	1.2	2.3	2.2	3.7	5.0	6.5	7.3	7.3	4.6	6.4	5.6	5.7	4.7	3.6	2.9	3.2	4.7	5.3	1.2	7.3	3.3										
Feb 23	5.3	0.9	1.2	3.0	1.0	0.2	0.4	0.3	0.1	0.7	3.1	7.8	7.5	7.5	8.7	9.3	8.7	7.6	9.2	7.1	4.2	4.6	5.6	4.5	0.1	9.3	4.3										
Feb 24	4.1	5.4	5.3	3.5	0.1	0.2	0.1	1.2	0.5	0.8	2.0	2.4	5.3	7.1	7.5	7.9	8.2	5.2	5.2	4.5	4.5	4.6	5.6	4.8	0.1	8.2	3.5										
Feb 25	5.3	4.2	3.8	4.0	6.6	6.2	4.8	5.5	8.1	7.5	6.6	9.1	9.0	9.4	9.4	9.1	7.2	6.4	6.1	7.9	7.0	6.2	4.2	2.9	2.9	9.4	5.5										
Feb 26	3.8	3.6	1.7	3.9	3.0	0.3	0.9	1.3	5.1	8.2	7.8	7.8	8.8	8.9	9.5	9.8	8.9	8.6	9.1	8.5	7.9	8.0	6.9	7.1	0.3	9.8	5.0										
Feb 27	6.4	7.1	6.9	6.2	5.7	5.7	5.2	5.9	6.3	5.7	7.9	8.3	7.6	7.3	6.6	7.7	6.8	7.1	6.5	5.9	5.8	4.7	3.4	1.5	1.5	8.3	5.9										
Feb 28	1.6	1.3	1.1	1.4	0.3	0.4	0.1	1.6	1.3	0.8	4.8	5.0	1.8	3.1	2.6	2.1	0.9	1.3	1.1	2.5	1.5	1.9	1.7	1.0	0.1	5.0	1.5										
Diurnal Maximum	17	15	14	17	13	15	14	16	17	16	18	18	16	16	15	15	13	14	15	19	20	20	20	16													
Dalurnal Average	4.7	4.3	4.6	5.3	4.3	3.7	4.0	4.4	5.1	5.9	6.6	7.4	7.7	7.8	7.6	7.4	6.9	6.0	5.4	5.6	5.4	5.4	5.1	4.6													
C	Monthly Calibration										S	Daily Zero-Span Check										Q	Quality Assurance														
K	Collection Error										N	No Data (Machine Not in Service)										Y	Routine Maintenance							P	Power Failure						
X	InValid Data (Equipment Malfunction /Recovery)										NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)																									
Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.																																					
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.																																					

Timeseries Chart of Hourly Average for VWS - Tamarack Site



Wind: Tamarack Monitor: WDS [kph] Monthly: 02-2022 Type: WindRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 17.71% Valid Data: 100.00%

Direction	1.8-6.0	6.0-15.0	15.0-29.0	29.0-39.0	>39.0	Total
N	1.34	3.72	0.45	0	0	5.51
NNE	1.79	2.08	0.15	0	0	4.02
NE	2.68	1.93	0	0	0	4.61
ENE	2.98	1.04	0	0	0	4.02
E	1.93	1.34	0	0	0	3.27
ESE	1.49	2.53	0	0	0	4.02
SE	1.34	1.64	0	0	0	2.98
SSE	2.38	1.49	0	0	0	3.87
S	2.38	1.93	0	0	0	4.31
SSW	4.91	5.95	0	0	0	10.86
SW	4.61	2.38	0	0	0	6.99
WSW	2.08	1.79	0	0	0	3.87
W	1.64	3.42	0.45	0	0	5.51
WNW	1.64	4.32	1.93	0	0	7.89
NW	2.08	2.98	0	0	0	5.06
NNW	2.38	3.13	0	0	0	5.51
Summary	37.65	41.67	2.98	0	0	82.3



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% Icon Classes (kph)	38	1.8-6.0	42	5.0-15.0	3	15.0-29.0	0	29.0-39.0	0	>39.0
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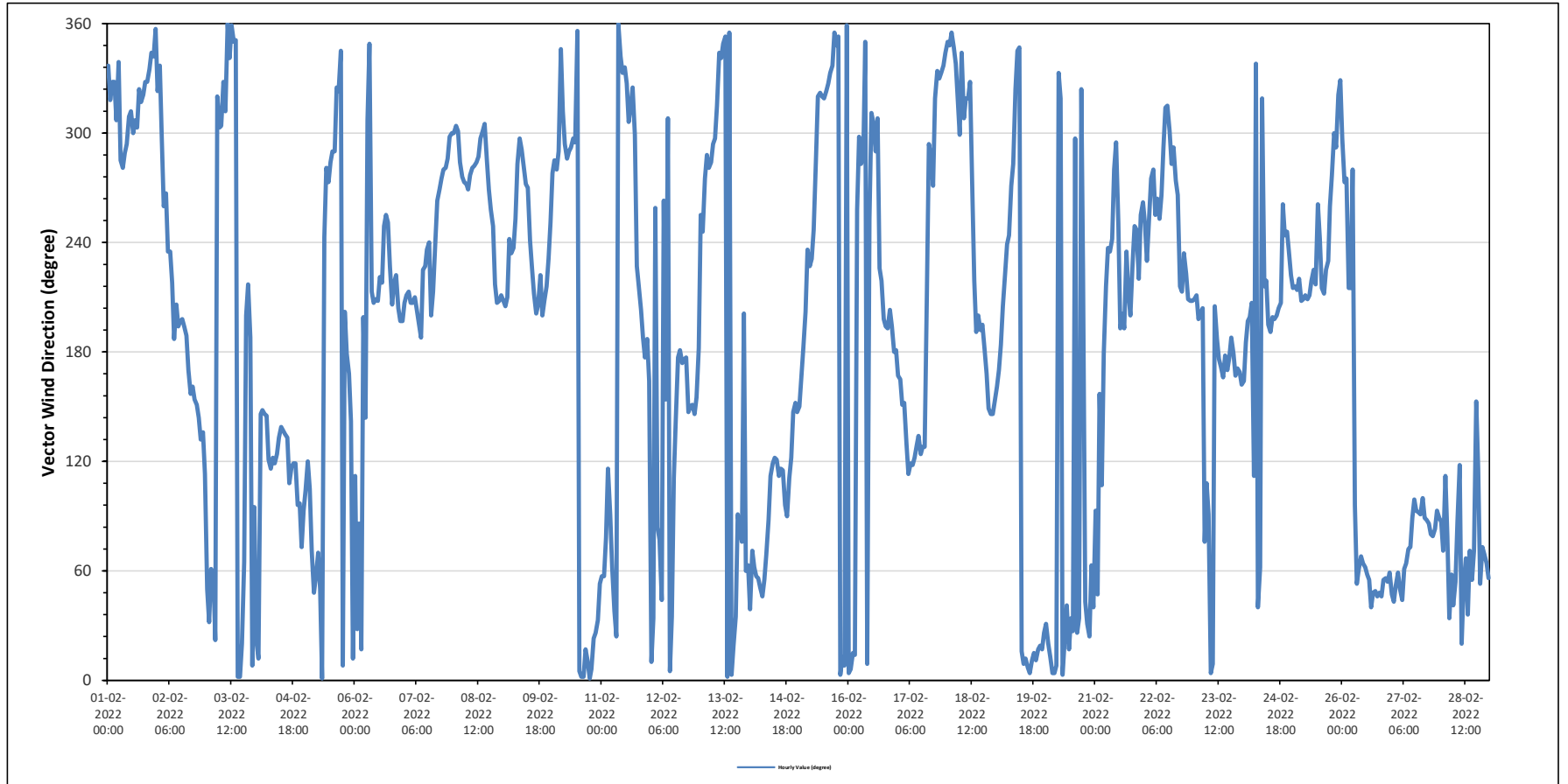
Tamarack Site - February 2022

Summary of Hourly Averages

WIND DIRECTION (VWD) in sector

Monthly Average:		281 (W) degree														Hours in Service:		672									
																Hours of Data:		672									
																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	
Feb 1	NNW	NW	NNW	NNW	NW	NNW	WNW	W	WNW	WNW	NW	NW	WNW	NW	WNW	NW	NW	NNW	NNW	NNW	NNW	NNW	N	314	NW		
Feb 2	NW	NNW	WNW	WSW	W	SW	SW	SW	S	SSW	SSW	SSW	SSW	SSW	S	SSE	SSE	SSE	SSE	SSE	SE	SE	SE	ESE	186	S	
Feb 3	NE	NNE	ENE	ENE	NNE	NW	WNW	WNW	NNW	NW	N	NNW	N	N	N	N	N	NNE	ENE	SSW	SW	S	N	E	354	N	
Feb 4	NNE	NNE	SE	SE	SE	SE	ESE	ESE	ESE	ESE	ESE	SE	SE	SE	SE	ESE	ESE	ESE	ESE	E	E	ENE	E	125	SE		
Feb 5	ESE	ESE	ESE	ENE	NE	ENE	ENE	NE	N	WSW	W	W	WNW	WNW	WNW	NW	NW	NNW	N	SSW	S	SSE	SE	NNE	330	NNW	
Feb 6	ESE	NNE	E	NNE	SSW	SE	NW	NNW	SSW	SSW	SSW	SSW	SW	SW	WSW	WSW	WSW	SW	SSW	SW	SW	SSW	SSW	SSW	218	SW	
Feb 7	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	S	SW	SW	SW	WSW	SSW	SSW	WSW	W	W	W	W	W	WNW	WNW	WNW	256	WSW	
Feb 8	WNW	WNW	WNW	WNW	W	W	W	W	W	W	W	WNW	WNW	WNW	WNW	WNW	WNW	W	WSW	WSW	SW	SSW	SSW	SSW	280	W	
Feb 9	SSW	SSW	SSW	WSW	SW	SW	WSW	W	WNW	WNW	W	W	W	WSW	SW	SSW	SSW	SSW	SW	SSW	SSW	SW	WSW	WSW	239	WSW	
Feb 10	W	WNW	W	WNW	NNW	NW	WNW	WNW	WNW	WNW	WNW	WNW	N	N	N	N	NNE	NNE	N	N	NNE	NNE	NE	324	NW		
Feb 11	ENE	ENE	ENE	ESE	E	ENE	NE	NNE	N	NNW	NNW	NNW	NW	NW	NW	WNW	SW	SSW	S	S	S	SSE	343	NNW			
Feb 12	N	NE	WSW	E	ENE	NE	W	SSE	NW	N	NE	ESE	SE	S	S	S	S	SE	SSE	SSE	SE	SSE	S	156	SSE		
Feb 13	WSW	WSW	W	WNW	W	WNW	WNW	WNW	NW	NNW	NNW	NNW	N	N	N	N	NNE	NE	E	E	ENE	SSW	ENE	ENE	320	NW	
Feb 14	NE	ENE	ENE	ENE	NE	NE	NE	NE	ENE	E	ESE	ESE	ESE	ESE	ESE	ESE	ESE	E	E	ESE	ESE	SE	SSE	SE	110	ESE	
Feb 15	SSE	SSE	S	SSW	SW	SW	SW	WSW	WNW	NW	NW	NW	NW	NW	NNW	NNW	N	NNW	N	N	NNE	N	N	318	NW		
Feb 16	N	N	NNE	NNE	WSW	WNW	W	WNW	N	N	WSW	NW	WNW	WNW	NW	SW	SW	SSW	SSW	S	SSW	SSW	S	S	227	SW	
Feb 17	SSE	SSE	SSE	SSE	SE	ESE	ESE	ESE	ESE	SE	SE	ESE	SE	SE	SSW	WNW	WNW	W	NW	NNW	NNW	NNW	NNW	101	E		
Feb 18	N	NNW	N	NNW	NNW	NW	WNW	NNW	NW	NW	NW	NNW	W	SW	S	SSW	S	SSW	S	SSE	SSE	SE	SSE	279	W		
Feb 19	SSE	SSE	S	SSW	SW	WSW	WSW	W	W	NW	NNW	NNW	NNE	N	NNE	N	N	NNE	NNE	NNE	NNE	NNE	NNE	358	N		
Feb 20	NNE	NNE	NNE	N	N	N	NNW	NW	N	NNE	NE	NNE	NE	NNE	NE	WNW	NNE	NE	NW	SW	NE	NNE	NNE	ENE	19	NNE	
Feb 21	E	NE	SSE	ESE	S	SW	SW	SW	WSW	W	WNW	WSW	S	SSW	S	SW	SSW	SSW	SW	WSW	WSW	WSW	WSW	W	220	SW	
Feb 22	WSW	SW	WSW	W	W	WSW	W	WSW	W	WNW	NW	NW	WNW	W	WNW	W	W	SW	SSW	SW	SSW	SSW	SSW	SSW	261	W	
Feb 23	SSW	SSW	SSW	SSW	SSW	ENE	ESE	E	N	N	SSW	S	S	S	SSE	S	SSE	S	S	S	SSE	S	SSE	179	S		
Feb 24	SSE	S	SSW	SSW	SSW	ESE	NNW	NE	ENE	NW	SW	SW	SSW	S	SSW	SSW	SSW	SSW	SSW	W	WSW	WSW	SW	SW	208	SSW	
Feb 25	SSW	SW	SSW	SW	SSW	SSW	SSW	SSW	SSW	SW	SW	SW	W	WSW	SSW	SSW	SSW	SW	SW	WSW	W	WNW	WNW	NW	NNW	234	SW
Feb 26	WNW	W	W	SSW	SSW	W	E	NE	ENE	ENE	ENE	ENE	ENE	ENE	NE	NE	NE	NE	NE	NE	NE	NE	ENE	ENE	52	NE	
Feb 27	NE	NE	NE	ENE	NE	NE	ENE	ENE	ENE	ENE	E	E	E	E	E	E	E	E	E	E	E	ENE	E	E	76	ENE	
Feb 28	E	ENE	ESE	ENE	NE	ENE	NE	NE	E	ESE	NNE	NE	ENE	NE	ENE	NE	ENE	SSE	ESE	NE	ENE	ENE	ENE	NE	62	ENE	
C	Monthly Calibration							S	Daily Zero-Span Check							Q	Quality Assurance										
K	Collection Error							N	No Data (Machine Not in Service)							Y	Routine Maintenance							P	Power Failure		
X	Invalid Data (Machine Malfunction /Recovery)							NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)																		
Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.																											
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.																											

Timeseries Chart of Hourly Average for VWD - Tamarack Site





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Tamarack Site - February 2022

Summary of Hourly Averages

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

WIND SPEED																											
Maximum Hourly Value: 20.3 kph on February 7 at hour 22													Hours in Service: 672														
Maximum Daily Value: 9.6 kph on February 10													Hours of Data: 672														
Minimum Hourly Value: 0.0 kph on February 3 at hour 18													Hours of Missing Data: 0														
Minimum Daily Value: 1.1 kph on February 5													Hours of Calibration: 0														
Monthly Average: 1.2 kph													Operational Uptime: 100														
WIND DIRECTION																											
Monthly Average: 281 (W) degree																											
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23
Feb 1	3.0	4.1	4.4	3.6	3.4	2.3	4.4	7.2	8.4	7.2	6.7	7.2	8.0	8.6	9.5	6.3	8.3	7.7	3.4	4.2	5.9	5.7	4.2	3.3	2.3	9.5	5.4
Feb 2	2.5	1.9	3.2	4.1	3.8	2.9	1.9	0.2	0.2	2.8	6.7	8.9	10.4	10.0	9.7	7.5	6.1	7.5	6.6	4.7	3.9	3.3	3.6	2.2	0.2	10.4	3.5
Feb 3	1.6	3.3	2.4	1.3	0.3	0.5	3.4	3.1	2.1	3.1	6.6	4.5	7.3	7.8	7.3	7.9	5.3	0.1	0.0	0.9	0.1	0.0	0.1	0.1	0.0	7.9	2.5
Feb 4	0.0	0.2	3.7	6.9	7.1	7.5	6.0	8.2	9.8	10.0	10.2	10.7	11.2	8.4	9.2	6.7	6.1	5.0	5.3	6.1	3.7	3.6	4.3	5.0	0.0	11.2	6.2
Feb 5	4.7	3.8	3.0	3.1	5.4	4.8	3.3	0.5	0.4	1.1	5.0	7.2	7.6	6.2	6.2	4.9	4.9	3.5	0.6	0.1	0.6	0.3	1.1	0.0	0.0	7.6	1.1
Feb 6	0.0	0.1	0.7	0.2	0.3	0.1	0.0	0.1	3.1	7.1	6.5	7.5	6.3	7.3	8.7	8.5	6.5	5.1	6.9	7.2	6.4	7.4	8.4	8.3	0.0	8.7	4.4
Feb 7	8.4	5.9	7.0	8.5	6.4	5.7	5.5	1.3	3.6	1.4	4.6	6.5	6.8	7.9	6.6	7.6	9.5	11.5	14.6	18.5	20.2	19.6	20.3	15.9	1.3	20.3	7.6
Feb 8	16.7	15.2	11.6	11.3	10.0	8.1	8.3	8.8	12.2	11.2	7.9	10.2	11.0	8.8	6.7	7.0	8.8	7.6	4.4	3.5	3.4	5.5	5.7	3.2	3.2	16.7	7.9
Feb 9	3.8	5.1	6.1	7.7	5.8	5.6	6.2	8.0	7.2	9.3	8.5	8.0	7.5	8.1	7.6	7.5	7.8	7.2	6.5	7.6	9.2	9.6	5.9	9.2	3.8	9.6	6.3
Feb 10	15.7	11.7	13.7	17.4	10.7	8.3	13.7	16.4	16.7	16.1	17.5	18.1	13.0	15.5	14.1	15.4	13.3	11.5	7.9	8.1	9.5	7.6	6.1	4.0	4.0	18.1	9.6
Feb 11	3.4	5.2	3.8	3.1	3.3	2.1	2.3	4.2	3.3	9.1	8.6	7.2	6.9	7.9	6.8	4.3	1.4	2.5	3.5	3.4	3.6	2.4	3.6	1.1	1.1	9.1	1.7
Feb 12	0.3	1.6	0.5	2.2	1.8	0.8	0.4	0.0	0.0	1.0	1.6	1.2	1.5	4.7	6.1	4.9	5.9	5.1	5.3	5.8	5.6	6.0	5.4	3.6	0.0	6.1	2.3
Feb 13	2.2	6.0	10.9	15.1	13.3	15.2	14.0	13.9	12.7	14.0	10.4	11.4	11.2	11.6	7.9	7.0	7.3	3.0	1.0	3.1	2.0	0.6	1.8	1.1	0.6	15.2	6.1
Feb 14	0.2	0.9	3.1	1.4	2.3	2.1	2.6	2.3	3.7	3.6	7.7	9.3	8.3	8.4	7.7	7.8	3.5	3.2	3.8	4.4	5.5	5.6	3.6	3.6	0.2	9.3	4.0
Feb 15	3.4	4.2	6.3	7.1	4.4	4.5	5.2	6.2	8.7	11.0	12.3	12.3	13.6	10.7	10.3	8.7	8.2	8.3	6.1	6.2	7.9	6.4	4.6	3.5	3.4	13.6	4.7
Feb 16	2.1	1.7	1.9	1.9	0.5	0.1	1.8	2.1	2.0	3.2	0.7	0.6	1.8	0.8	1.2	4.4	5.0	5.6	5.5	4.5	3.8	4.6	2.8	2.2	0.1	5.6	1.2
Feb 17	2.8	3.5	6.0	7.2	5.5	6.3	6.8	7.0	8.9	7.6	7.8	7.1	4.9	1.9	2.3	3.1	3.2	5.6	5.7	7.2	8.4	9.2	10.5	12.7	1.9	12.7	1.1
Feb 18	14.7	11.6	11.6	8.4	7.2	6.3	6.3	4.1	5.0	6.6	5.0	3.4	2.6	6.7	10.2	9.0	9.4	5.9	6.7	6.2	6.3	5.8	6.2	7.2	2.6	14.7	1.5
Feb 19	8.4	5.9	4.8	6.5	4.0	2.2	4.8	9.7	9.3	6.5	9.3	9.8	16.2	15.3	15.0	14.1	11.4	13.9	11.8	8.3	8.0	9.6	6.7	8.7	2.2	16.2	5.4
Feb 20	6.1	3.8	2.9	6.3	6.4	4.4	1.1	0.4	1.8	4.2	2.9	4.5	3.9	2.2	1.6	4.1	5.1	0.8	1.4	3.3	1.7	1.6	1.2	2.6	0.4	6.4	2.8



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Tamarack Site - February 2022

Summary of Hourly Averages

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

WIND SPEED					
Maximum Hourly Value:	20.3 kph on February 7 at hour 22				
Maximum Daily Value:	9.6 kph on February 10				
Minimum Hourly Value:	0.0 kph on February 3 at hour 18				
Minimum Daily Value:	1.1 kph on February 5				
Monthly Average:	1.2 kph				
Hours in Service:	672				
Hours of Data:	672				
Hours of Missing Data:	0				
Hours of Calibration:	0				
Operational Uptime:	100				
WIND DIRECTION					
Monthly Average:	281 (W) degree				
Day	Hourly Period Starting at (MST)	Daily Minimum	Daily Maximum	Daily Average	
Feb 21	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	0.0	8.9	2.6	
Feb 22	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	1.2	7.3	3.3	
Feb 23	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	0.1	9.3	4.3	
Feb 24	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	0.1	8.2	3.5	
Feb 25	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	2.9	9.4	5.5	
Feb 26	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	0.3	9.8	5.0	
Feb 27	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	1.5	8.3	5.9	
Feb 28	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	0.1	5.0	1.5	
C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance
X	InValid Data (Equipment Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	P	Power Failure
Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.					
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.					



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Tamarack Site - February 2022

Summary of Hour Standard Deviations

STANDARD DEVIATION WIND DIRECTION (STDWD) in Degree

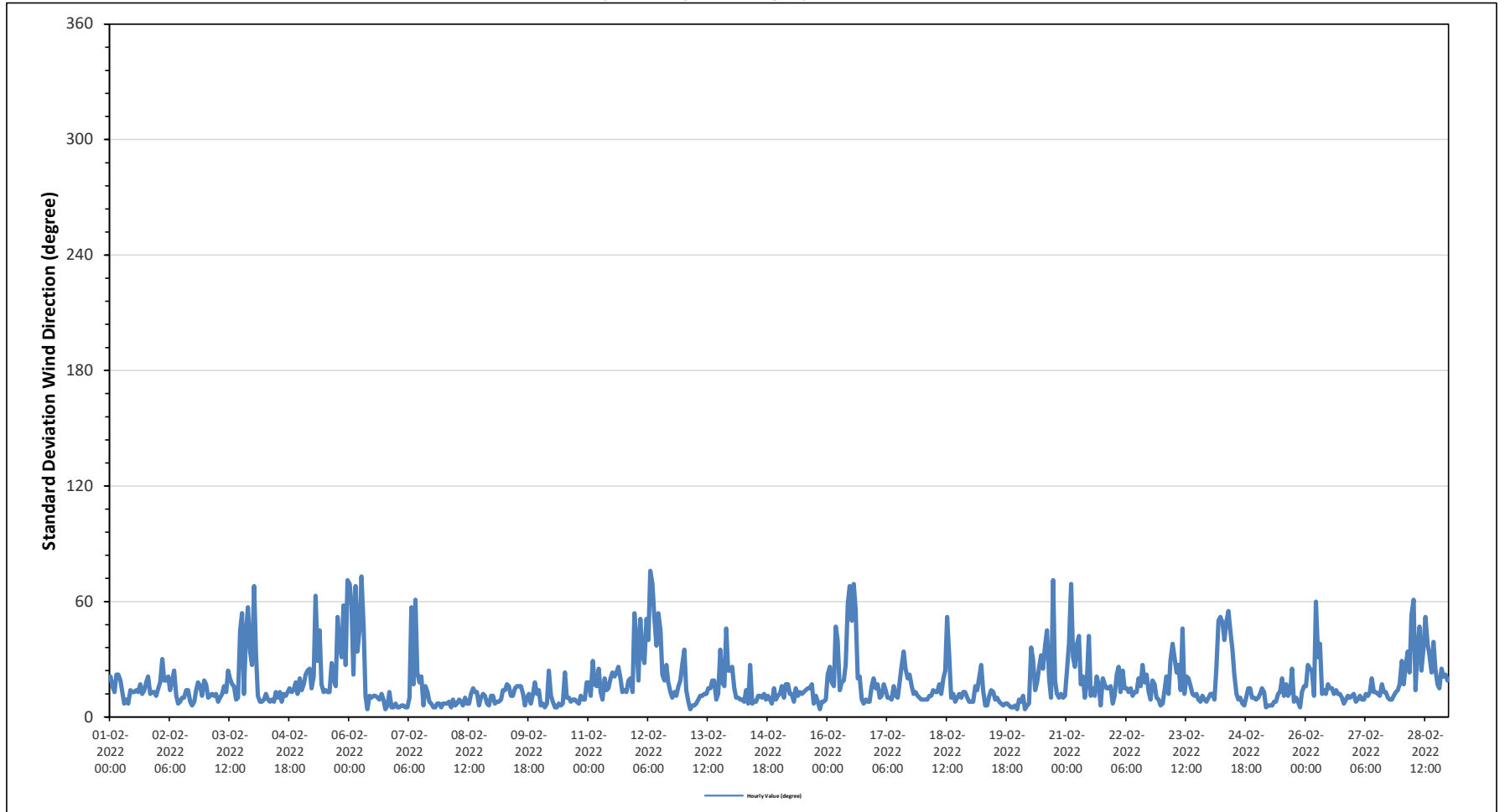
Maximum Hourly Value:	76 degree on February 12 at hour 7	Hours in Service:	672
Minimum Hourly Value:	4 degree on February 6 at hour 9	Hours of Data:	672
		Hours of Missing Data:	0
		Hours of Calibration:	0
		Operational Uptime:	100.0

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
Feb 1	21	16	13	22	22	19	13	7	9	7	14	13	13	14	13	17	12	14	18	21	12	13	13	11	7	22
Feb 2	15	18	30	19	19	21	14	19	24	11	7	8	10	10	14	14	8	6	8	14	18	16	11	19	6	30
Feb 3	17	10	11	12	11	12	8	10	12	16	13	24	20	17	16	9	10	45	54	12	44	57	34	27	8	57
Feb 4	68	33	11	8	8	9	12	9	8	9	8	13	10	13	8	12	11	13	15	13	14	18	12	20	8	68
Feb 5	14	17	22	24	25	15	21	63	29	45	17	13	14	13	13	28	20	16	52	38	31	58	27	71	13	71
Feb 6	69	58	22	68	34	46	73	47	11	4	11	10	11	11	10	9	12	9	4	6	13	5	5	7	4	73
Feb 7	5	5	6	6	5	5	10	57	17	61	23	18	21	6	16	13	8	7	5	5	7	7	5	7	5	61
Feb 8	7	7	8	5	9	6	7	9	8	6	10	7	7	12	15	13	13	6	10	12	11	7	6	11	5	15
Feb 9	11	7	8	8	9	14	14	17	16	11	11	15	16	16	16	12	6	10	12	7	12	18	12	14	6	18
Feb 10	6	7	5	7	24	11	8	5	5	7	6	7	23	10	10	8	9	9	8	7	11	9	9	18	5	24
Feb 11	18	11	29	17	16	25	13	9	20	14	15	20	23	21	23	26	20	13	14	13	19	20	13	54	9	54
Feb 12	41	19	51	32	28	51	40	76	69	52	37	54	45	22	19	27	18	13	10	13	11	16	19	27	10	76
Feb 13	35	14	8	4	6	6	7	9	11	11	12	12	15	15	19	19	9	12	35	18	16	46	24	24	4	46
Feb 14	26	15	10	10	9	9	8	14	7	27	7	8	8	11	11	10	12	9	11	9	7	15	9	11	7	27
Feb 15	12	16	10	17	17	12	12	8	15	11	13	12	13	14	15	15	17	7	11	8	4	8	8	9	4	17
Feb 16	22	26	18	16	47	40	14	18	19	27	59	68	50	69	56	20	21	9	7	9	8	8	16	20	7	69
Feb 17	15	17	10	11	17	14	10	10	9	16	11	10	18	26	34	25	20	22	16	12	13	11	10	9	9	34
Feb 18	9	9	9	11	11	14	13	13	17	12	20	24	52	31	10	12	8	10	12	10	13	13	10	8	8	52
Feb 19	8	8	16	14	20	27	14	6	6	11	14	13	9	10	8	7	6	7	7	6	5	5	6	4	4	27
Feb 20	9	8	11	4	6	7	36	30	14	18	26	32	25	37	45	20	10	71	19	12	10	12	10	11	4	71
Feb 21	25	38	69	31	26	38	42	17	21	10	17	42	11	15	11	21	17	6	20	17	15	15	16	7	6	69
Feb 22	11	22	26	13	24	15	15	13	15	11	13	13	20	16	27	18	22	13	9	19	17	10	9	6	6	27
Feb 23	7	14	21	12	29	38	31	23	27	14	46	12	21	20	16	12	11	12	9	8	11	9	8	10	7	46
Feb 24	12	12	9	25	50	52	49	40	50	55	45	35	22	12	9	10	7	6	10	15	15	10	10	9	6	55
Feb 25	10	12	15	13	5	6	6	6	8	8	12	13	20	11	17	11	13	25	8	10	8	5	13	16	5	25
Feb 26	16	27	25	24	11	60	31	38	12	14	12	17	15	15	12	14	12	12	10	7	9	11	10	11	7	60
Feb 27	12	8	9	11	9	9	12	11	13	20	13	13	12	11	17	13	13	10	9	9	11	13	14	17	8	20
Feb 28	29	17	26	34	23	53	61	14	34	47	24	36	52	38	32	23	39	25	17	15	25	21	22	19	14	61
Diurnal Minimum	5	5	5	4	5	5	6	5	5	4	6	7	7	6	8	7	6	6	4	5	4	5	5	4		
Diurnal Maximum	69	58	69	68	50	60	73	76	69	61	59	68	52	69	56	28	39	71	54	38	44	58	34	71		

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

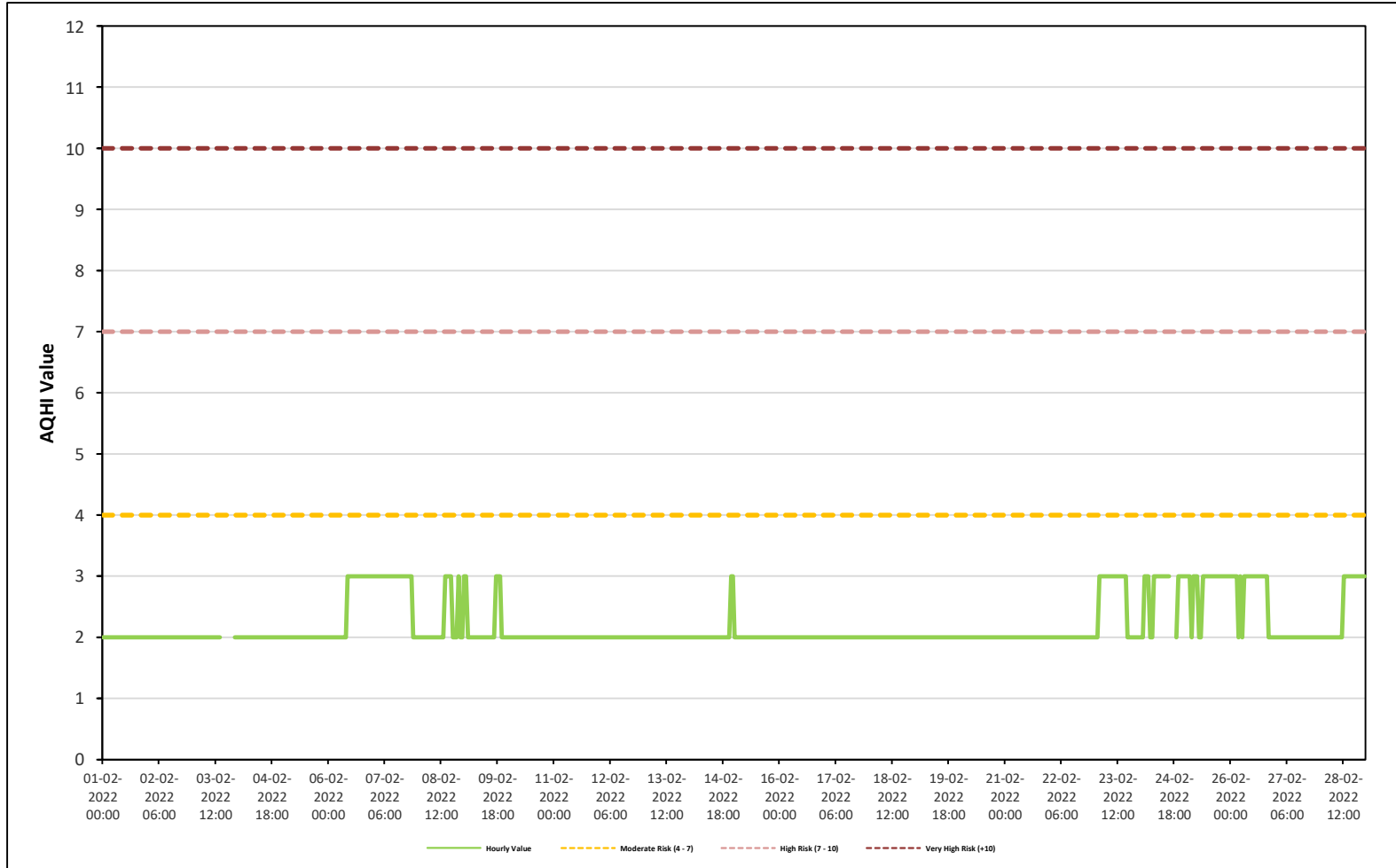
Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
 Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for STDWD - Tamarack Site

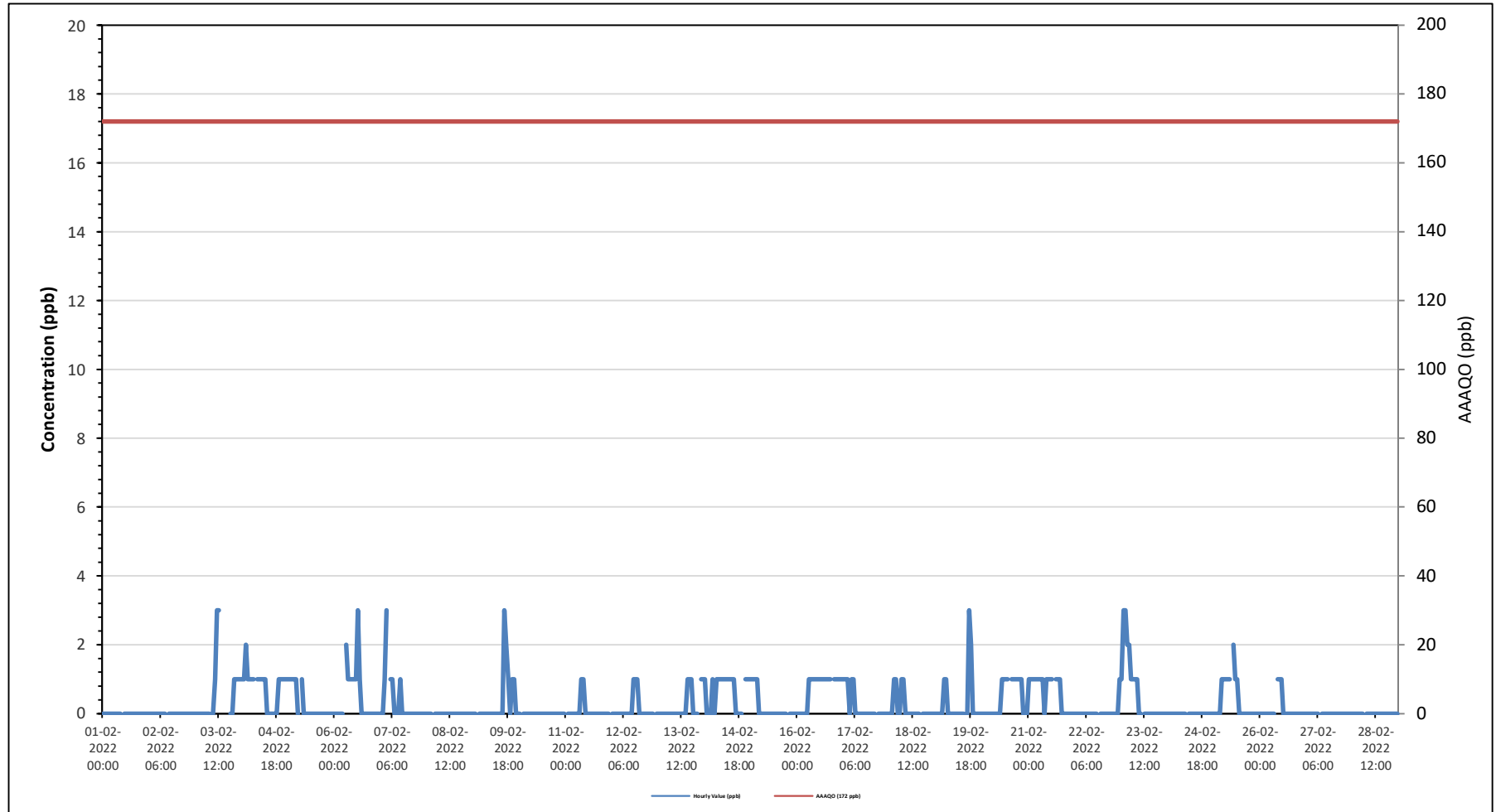


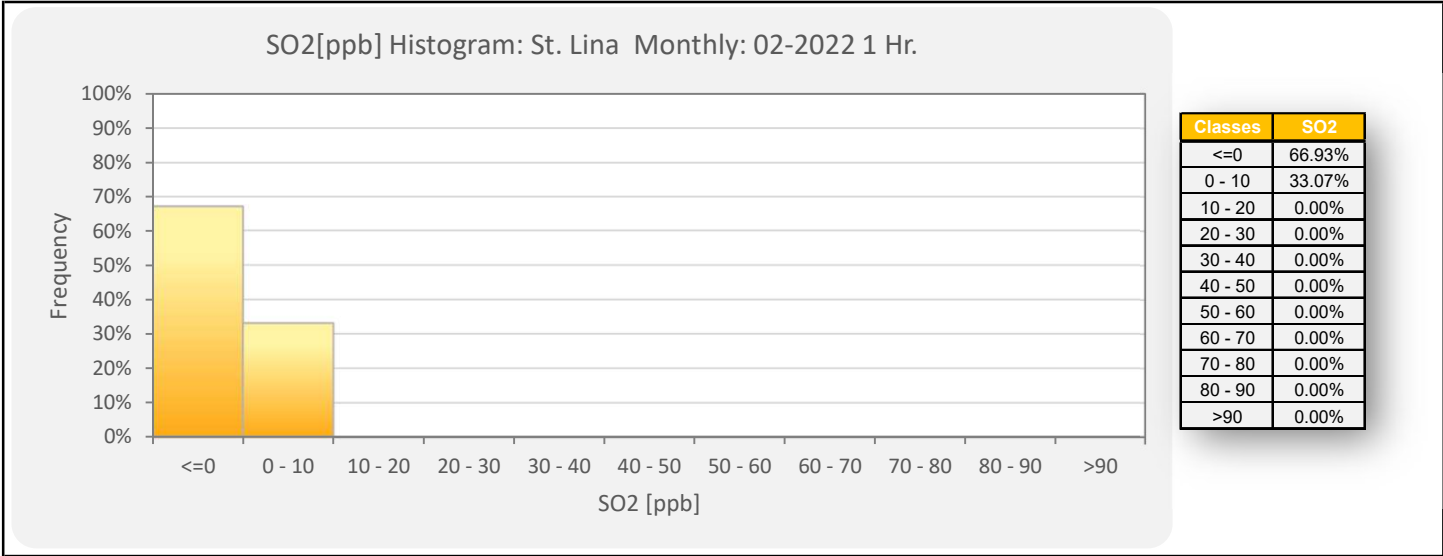
ST. LINA STATION

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



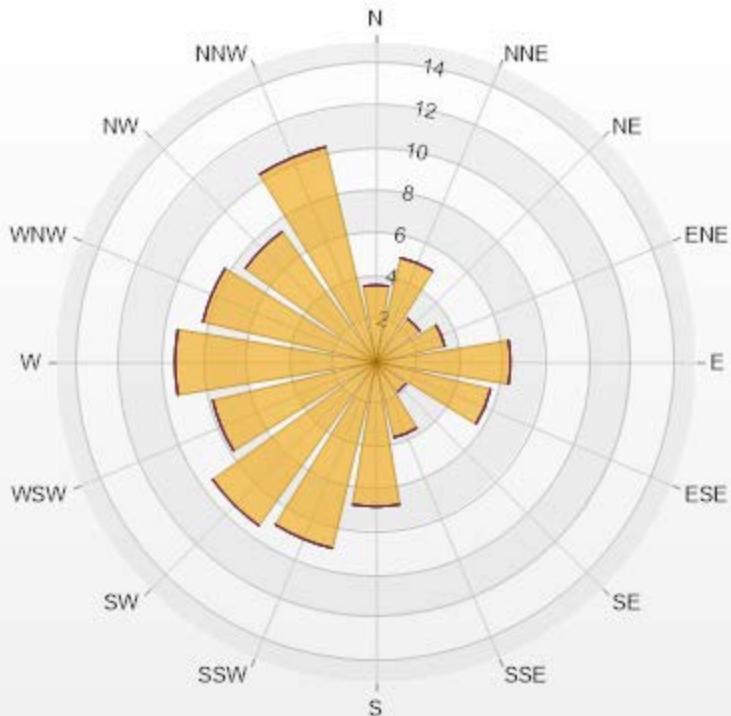
Timeseries Chart of Hourly Average for SO2 - St. Lina Site





Wind: St. Lina Poll.: St. Lina-SO2[ppb] Monthly: 02-2022 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.94% Calm Avg: 0.00 [ppb]

Direction	0-10	10-50	50-100	100-172	>172.0	Total
N	3.61	0	0	0	0	3.61
NNE	5.02	0	0	0	0	5.02
NE	2.51	0	0	0	0	2.51
ENE	3.29	0	0	0	0	3.29
E	6.27	0	0	0	0	6.27
ESE	5.49	0	0	0	0	5.49
SE	1.72	0	0	0	0	1.72
SSE	3.61	0	0	0	0	3.61
S	6.74	0	0	0	0	6.74
SSW	8.93	0	0	0	0	8.93
SW	9.4	0	0	0	0	9.4
WSW	7.84	0	0	0	0	7.84
W	9.4	0	0	0	0	9.4
WNW	8.31	0	0	0	0	8.31
NW	7.52	0	0	0	0	7.52
NNW	10.34	0	0	0	0	10.34
Summary	100	0	0	0	0	100



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% Icon Classes (ppb)

100 0-10

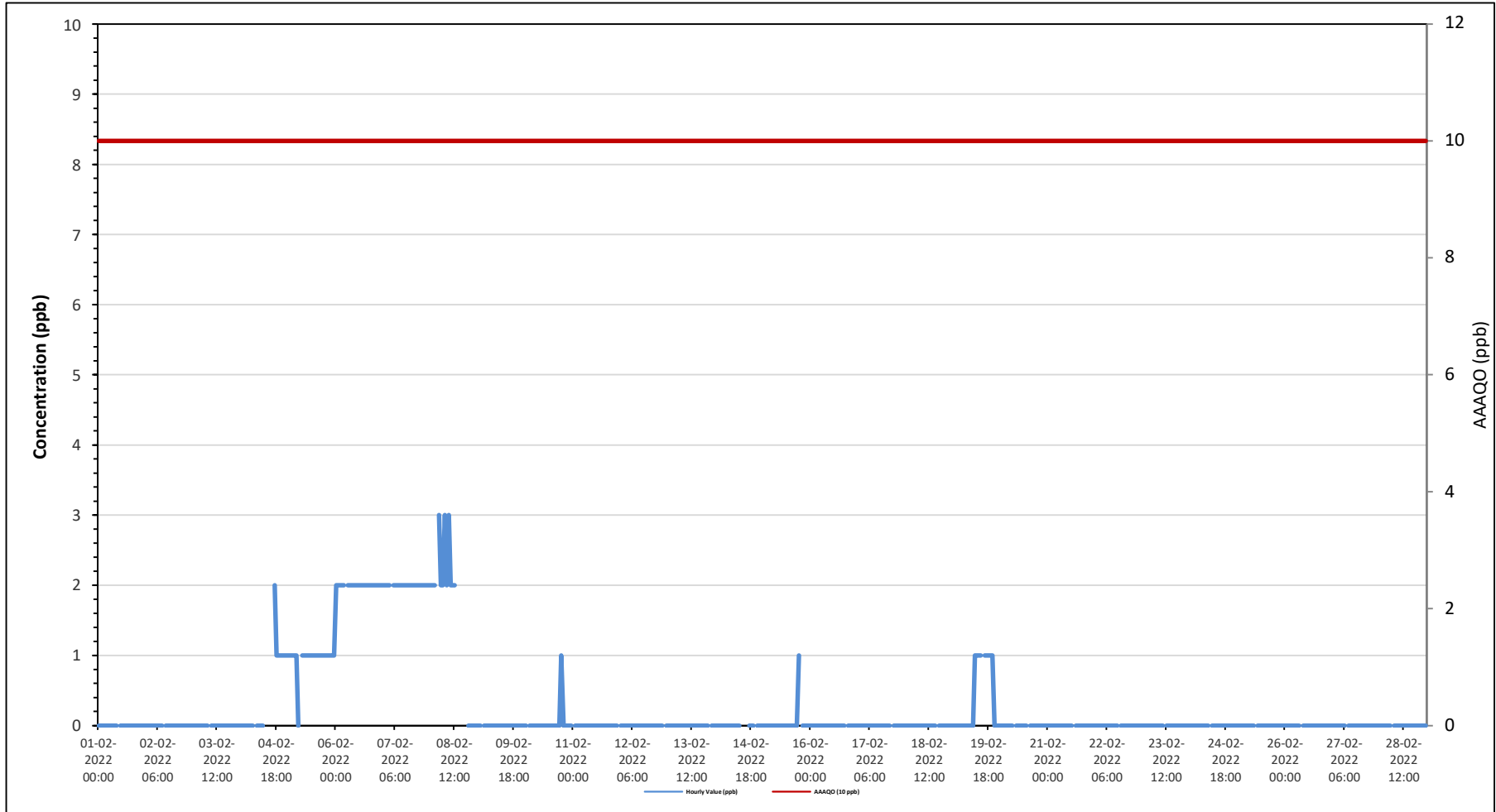
0 10-50

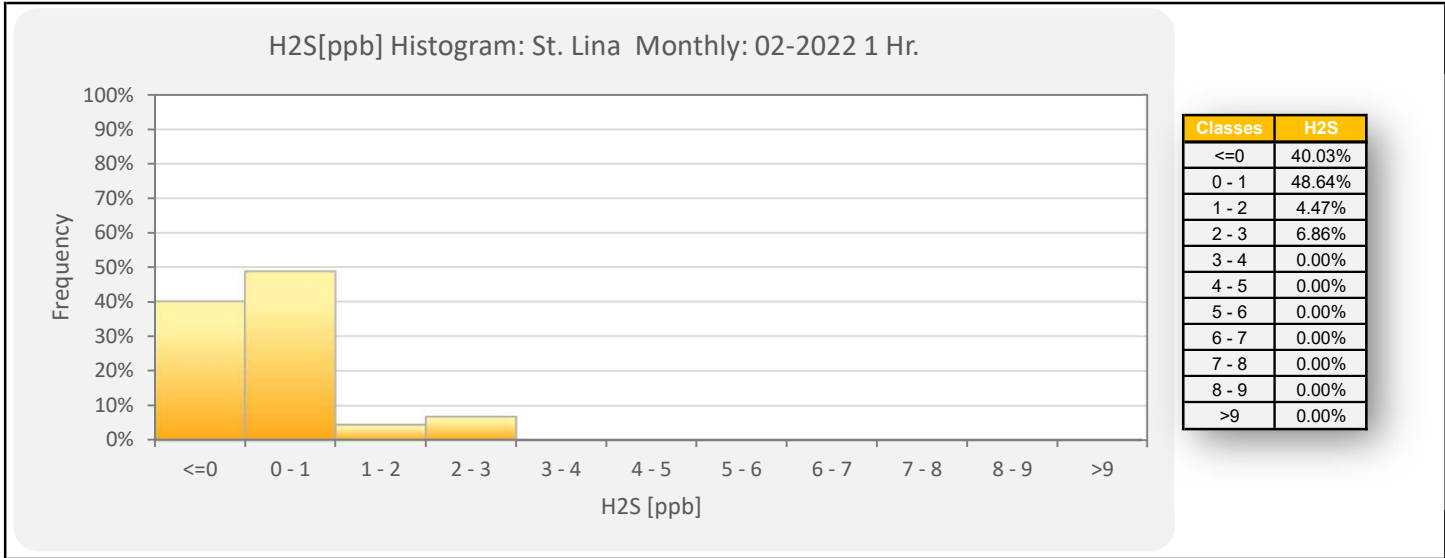
0 50-100

0 100-172

0 >172.0

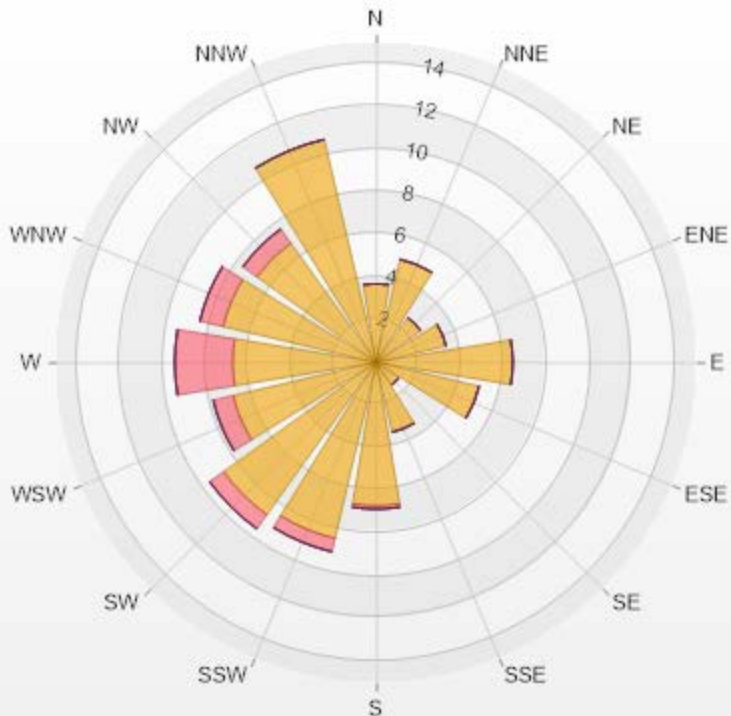
Timeseries Chart of Hourly Average for H2S - St. Lina Site





Wind: St. Lina Poll.: St. Lina-H2S[ppb] Monthly: 02-2022 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 93.30% Calm Avg: 0.00 [ppb]

Direction	0-2	2-5	5-10	10-50	>50.0	Total
N	3.67	0	0	0	0	3.67
NNE	4.94	0	0	0	0	4.94
NE	2.55	0	0	0	0	2.55
ENE	3.35	0	0	0	0	3.35
E	6.38	0	0	0	0	6.38
ESE	4.94	0	0	0	0	4.94
SE	1.28	0	0	0	0	1.28
SSE	3.35	0	0	0	0	3.35
S	6.7	0.16	0	0	0	6.86
SSW	8.45	0.64	0	0	0	9.09
SW	8.77	0.8	0	0	0	9.57
WSW	6.86	0.96	0	0	0	7.82
W	6.7	2.71	0	0	0	9.41
WNW	7.34	1.12	0	0	0	8.46
NW	6.86	0.8	0	0	0	7.66
NNW	10.69	0	0	0	0	10.69
Summary	92.83	7.19	0	0	0	100



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% Icon Classes (ppb)

93 0-2

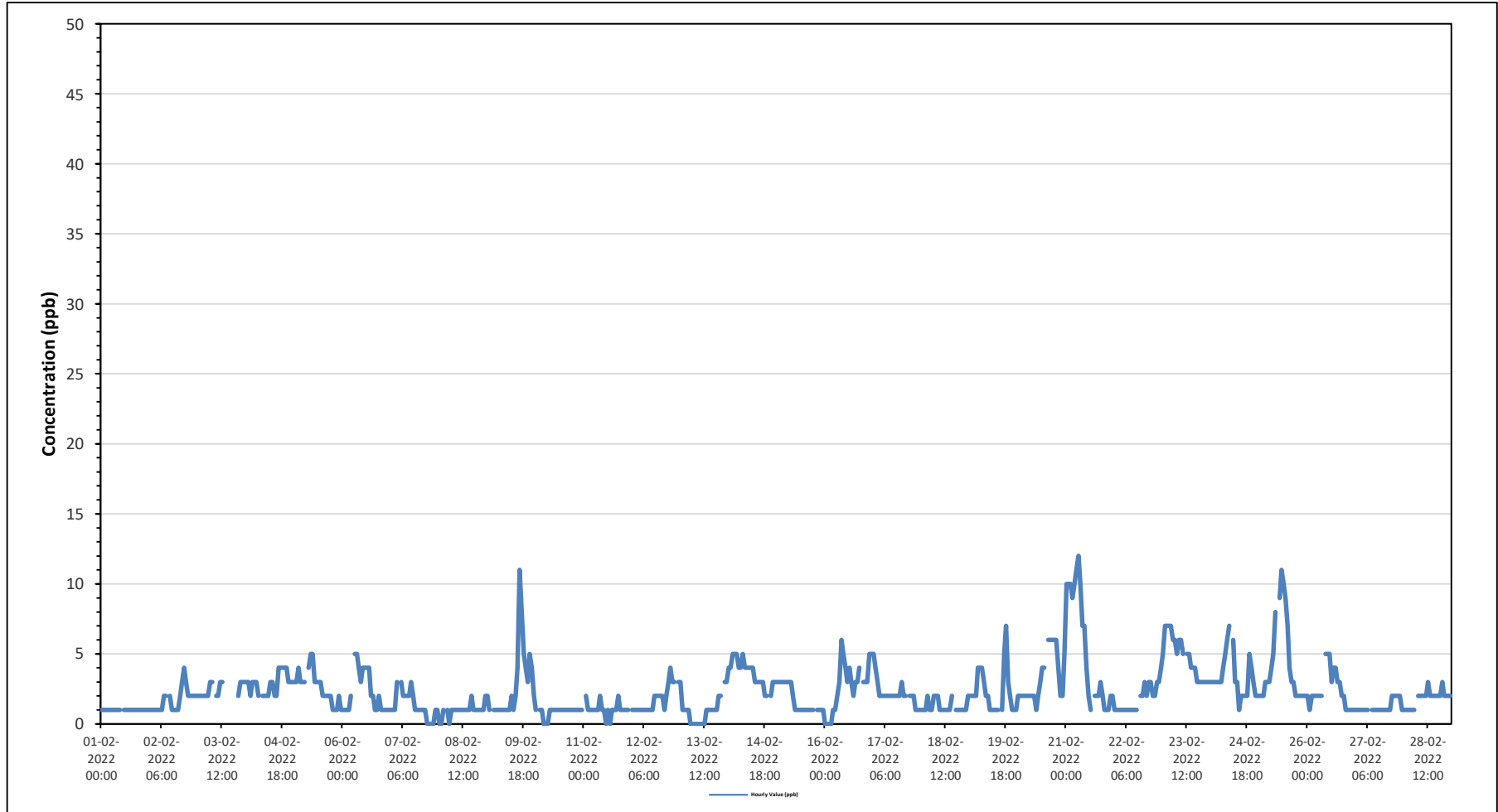
7 2-5

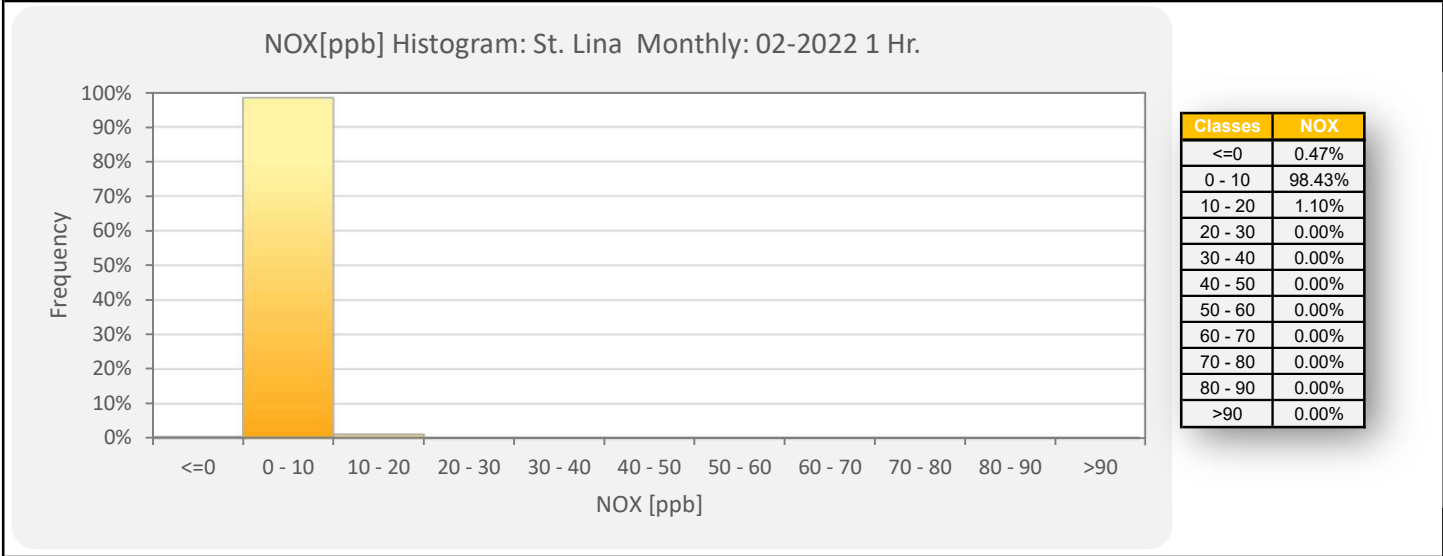
0 5-10

0 10-50

0 >50.0

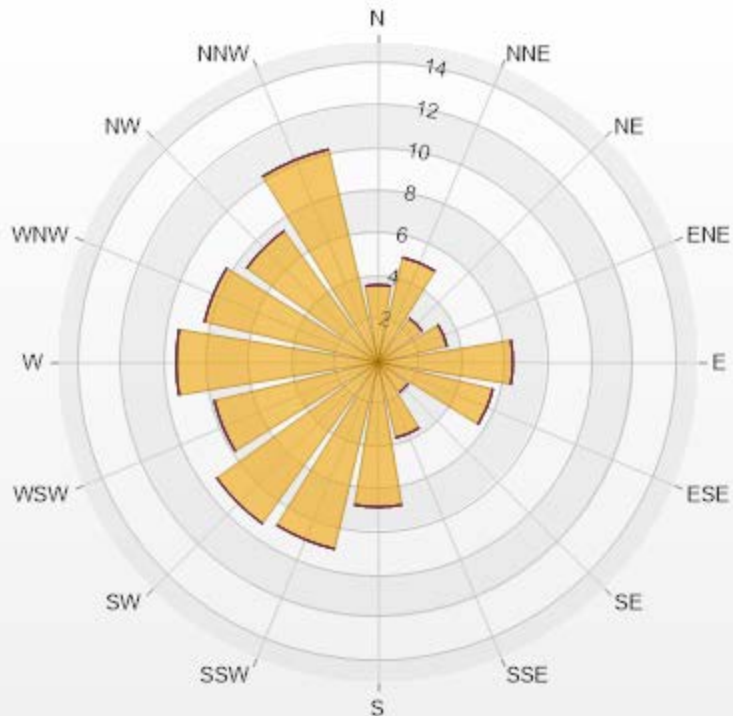
Timeseries Chart of Hourly Average for NOx - St. Lina Site





Wind: St. Lina Poll.: St. Lina-NOX[ppb] Monthly: 02-2022 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.64% Calm Avg: 0.00 [ppb]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	3.62	0	0	0	0	3.62
NNE	5.03	0	0	0	0	5.03
NE	2.52	0	0	0	0	2.52
ENE	3.3	0	0	0	0	3.3
E	6.29	0	0	0	0	6.29
ESE	5.5	0	0	0	0	5.5
SE	1.73	0	0	0	0	1.73
SSE	3.62	0	0	0	0	3.62
S	6.76	0	0	0	0	6.76
SSW	8.96	0	0	0	0	8.96
SW	9.28	0	0	0	0	9.28
WSW	7.86	0	0	0	0	7.86
W	9.43	0	0	0	0	9.43
WNW	8.33	0	0	0	0	8.33
NW	7.55	0	0	0	0	7.55
NNW	10.22	0	0	0	0	10.22
Summary	100	0	0	0	0	100



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% Icon Classes (ppb)

100  0-30

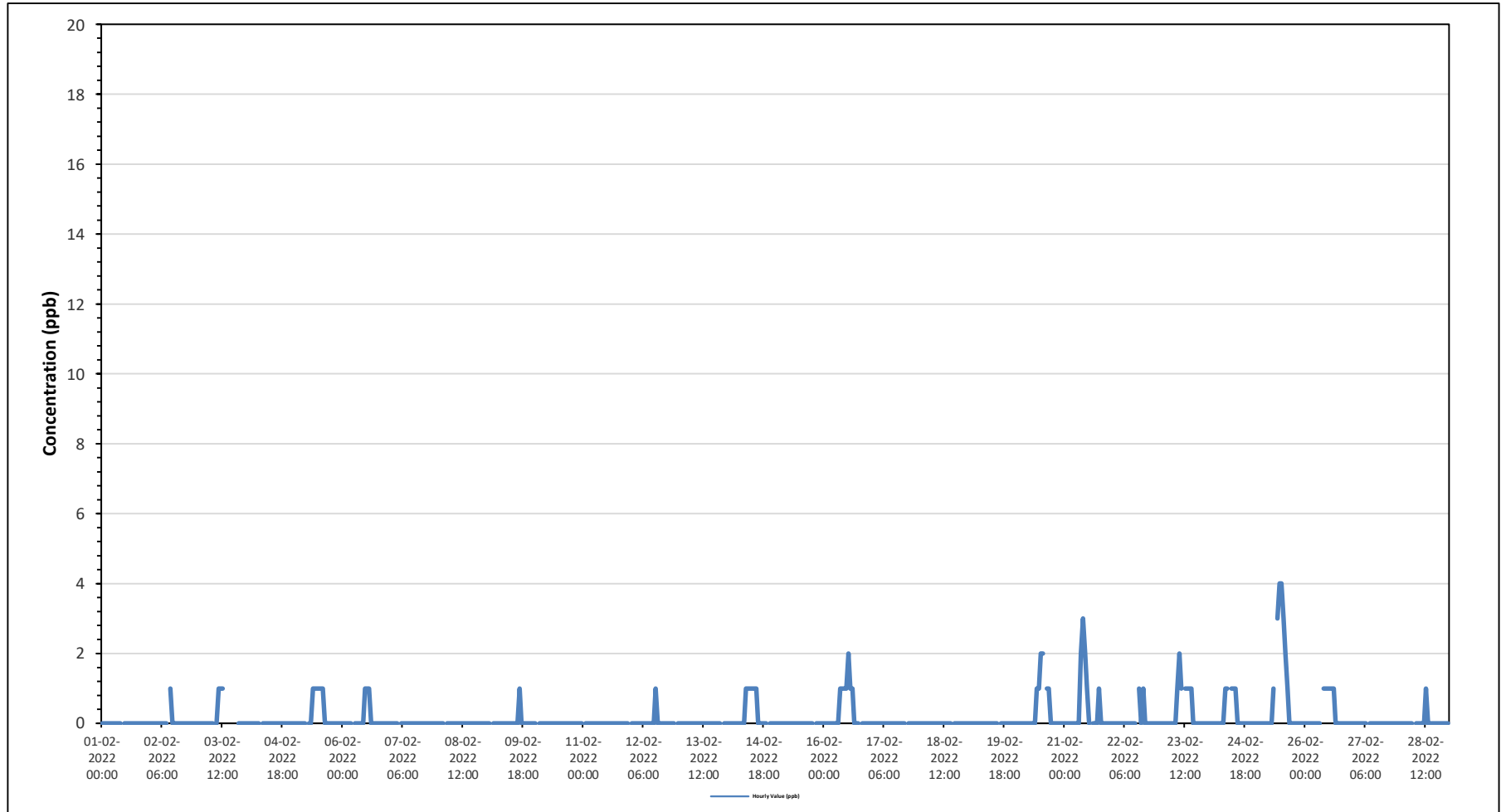
0  30-50

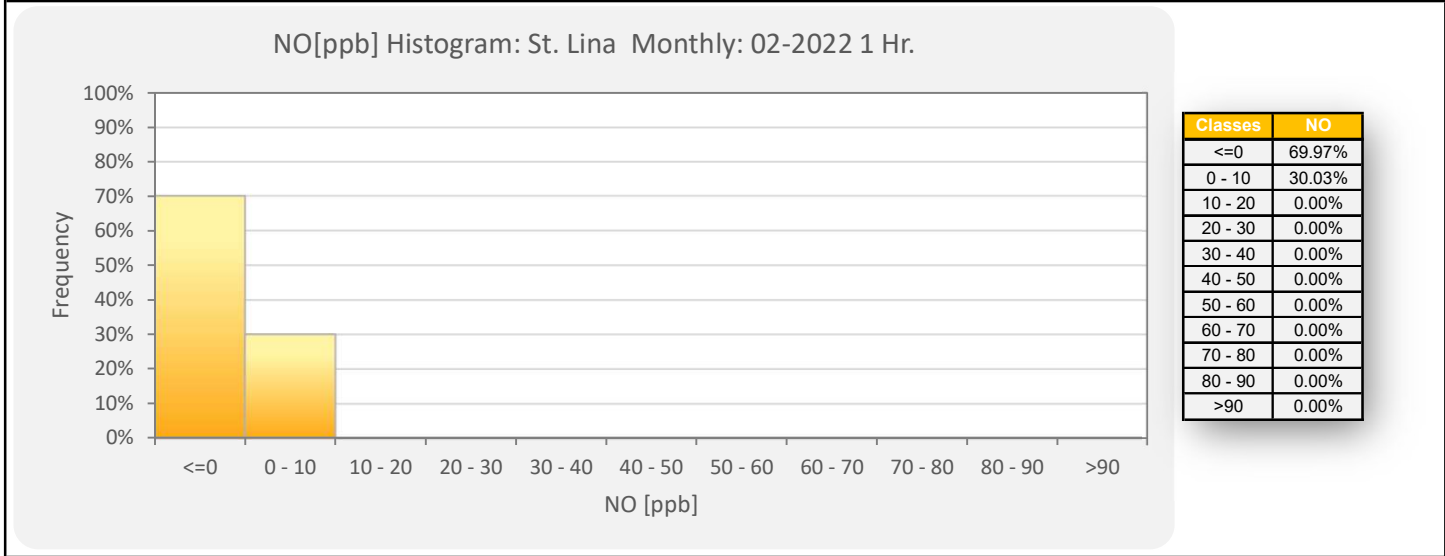
0  50-76

0  76-159

0  >159.0

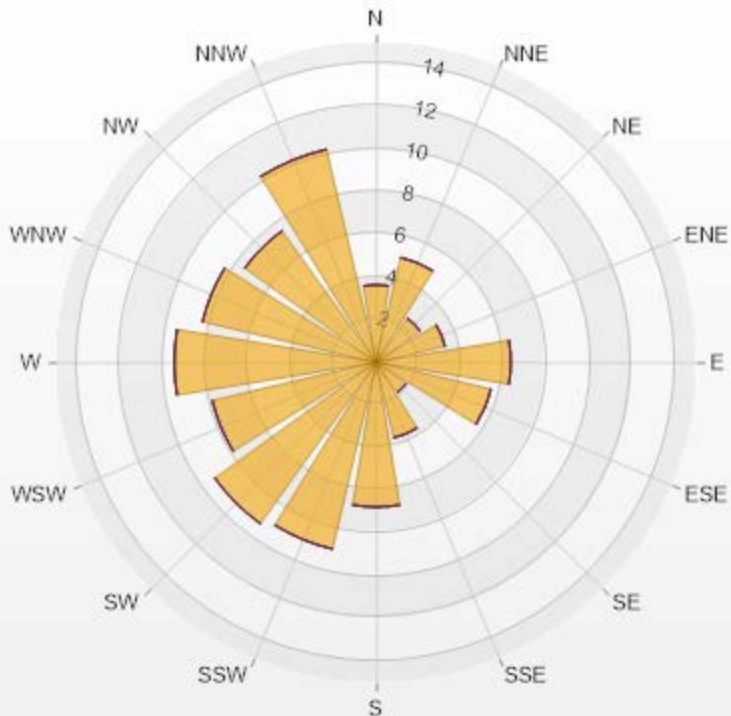
Timeseries Chart of Hourly Average for NO - St. Lina Site





Wind: St. Lina Poll.: St. Lina-NO[ppb] Monthly: 02-2022 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.64% Calm Avg: 0.00 [ppb]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	3.62	0	0	0	0	3.62
NNE	5.03	0	0	0	0	5.03
NE	2.52	0	0	0	0	2.52
ENE	3.3	0	0	0	0	3.3
E	6.29	0	0	0	0	6.29
ESE	5.5	0	0	0	0	5.5
SE	1.73	0	0	0	0	1.73
SSE	3.62	0	0	0	0	3.62
S	6.76	0	0	0	0	6.76
SSW	8.96	0	0	0	0	8.96
SW	9.28	0	0	0	0	9.28
WSW	7.86	0	0	0	0	7.86
W	9.43	0	0	0	0	9.43
WNW	8.33	0	0	0	0	8.33
NW	7.55	0	0	0	0	7.55
NNW	10.22	0	0	0	0	10.22
Summary	100	0	0	0	0	100




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% Icon Classes (ppb)

100  0-30

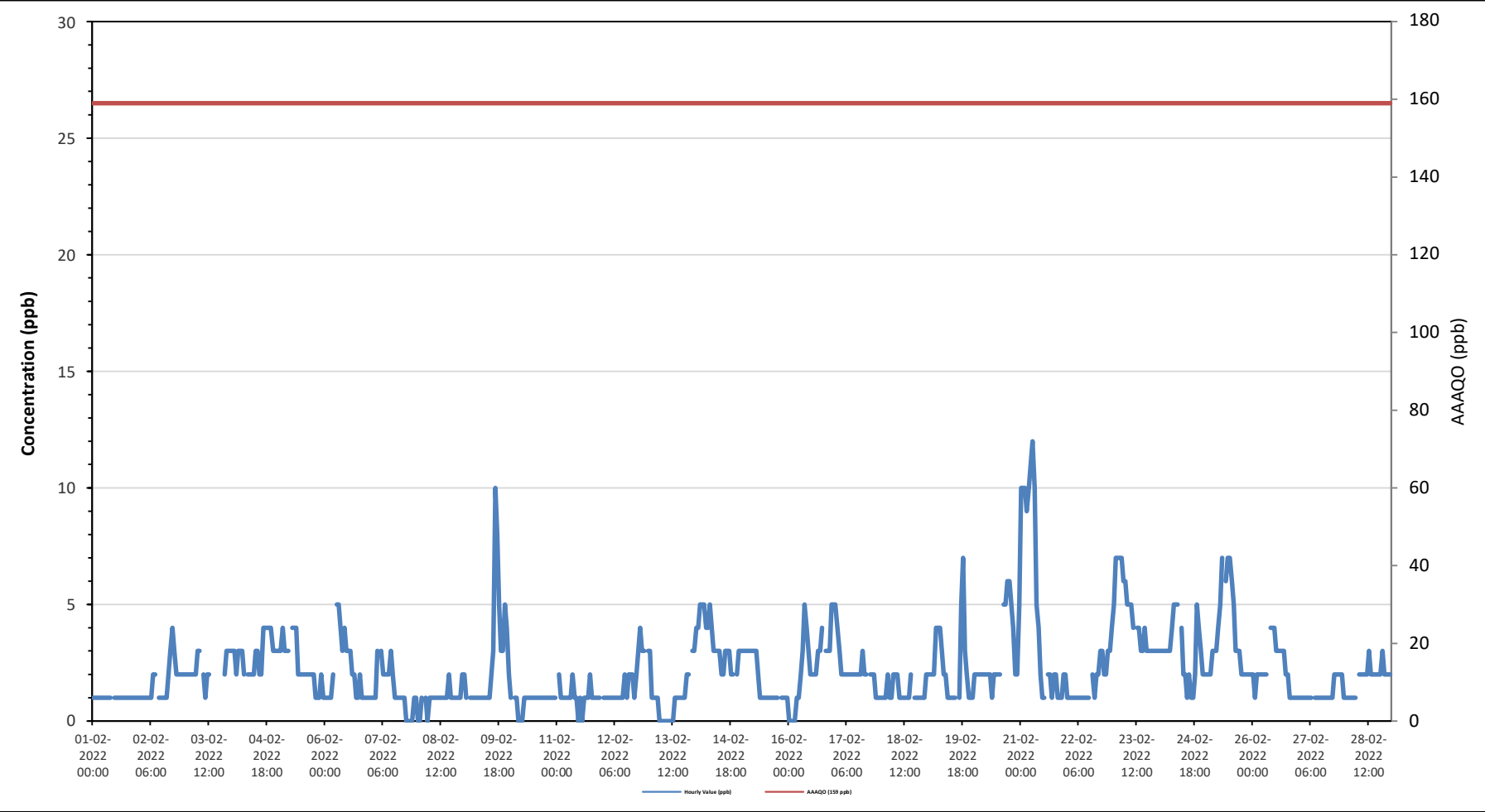
0  30-50

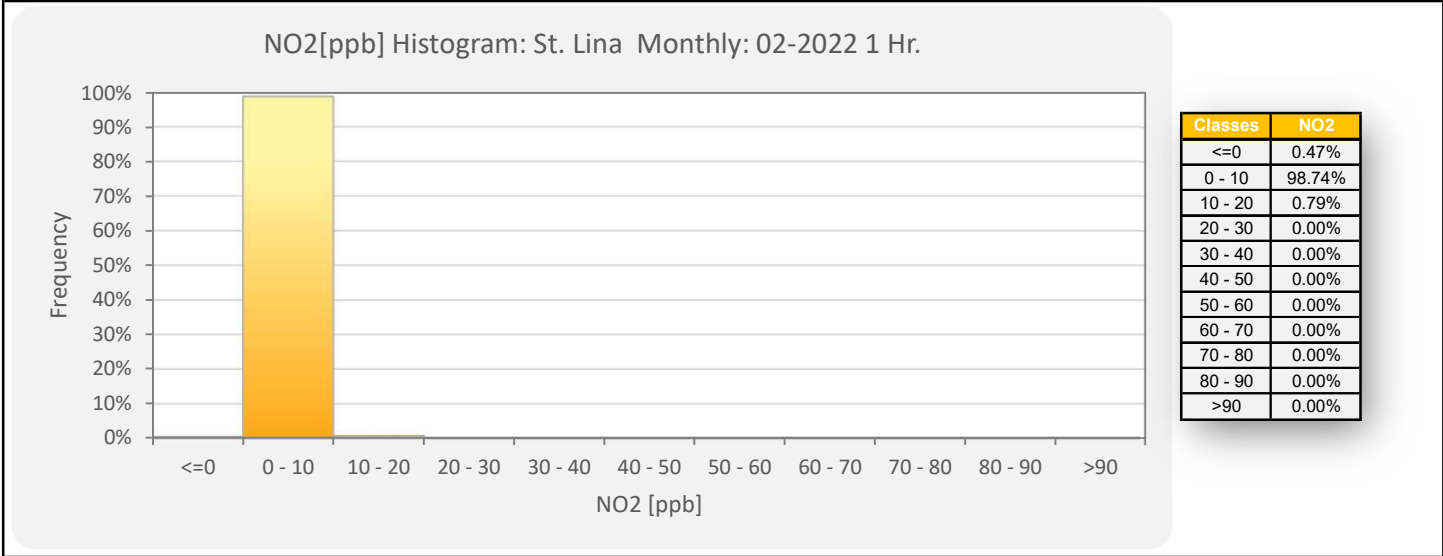
0  50-76

0  76-159

0  >159.0

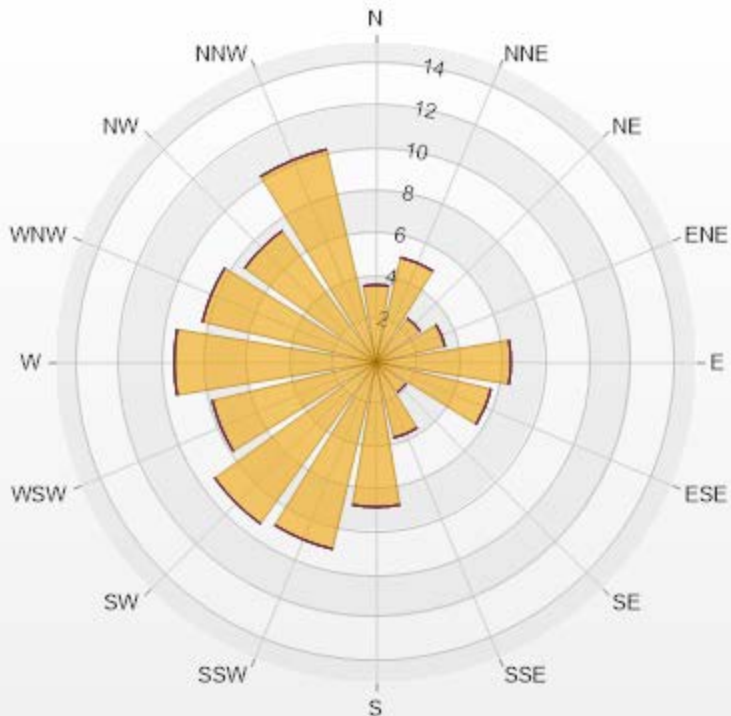
Timeseries Chart of Hourly Average for NO2 - St. Lina Site





Wind: St. Lina Poll.: St. Lina-NO2[ppb] Monthly: 02-2022 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.64% Calm Avg: 0.00 [ppb]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	3.62	0	0	0	0	3.62
NNE	5.03	0	0	0	0	5.03
NE	2.52	0	0	0	0	2.52
ENE	3.3	0	0	0	0	3.3
E	6.29	0	0	0	0	6.29
ESE	5.5	0	0	0	0	5.5
SE	1.73	0	0	0	0	1.73
SSE	3.62	0	0	0	0	3.62
S	6.76	0	0	0	0	6.76
SSW	8.96	0	0	0	0	8.96
SW	9.28	0	0	0	0	9.28
WSW	7.86	0	0	0	0	7.86
W	9.43	0	0	0	0	9.43
WNW	8.33	0	0	0	0	8.33
NW	7.55	0	0	0	0	7.55
NNW	10.22	0	0	0	0	10.22
Summary	100	0	0	0	0	100



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% Icon Classes (ppb)

100  0-30

0  30-50

0  50-76

0  76-159

0  >159.0



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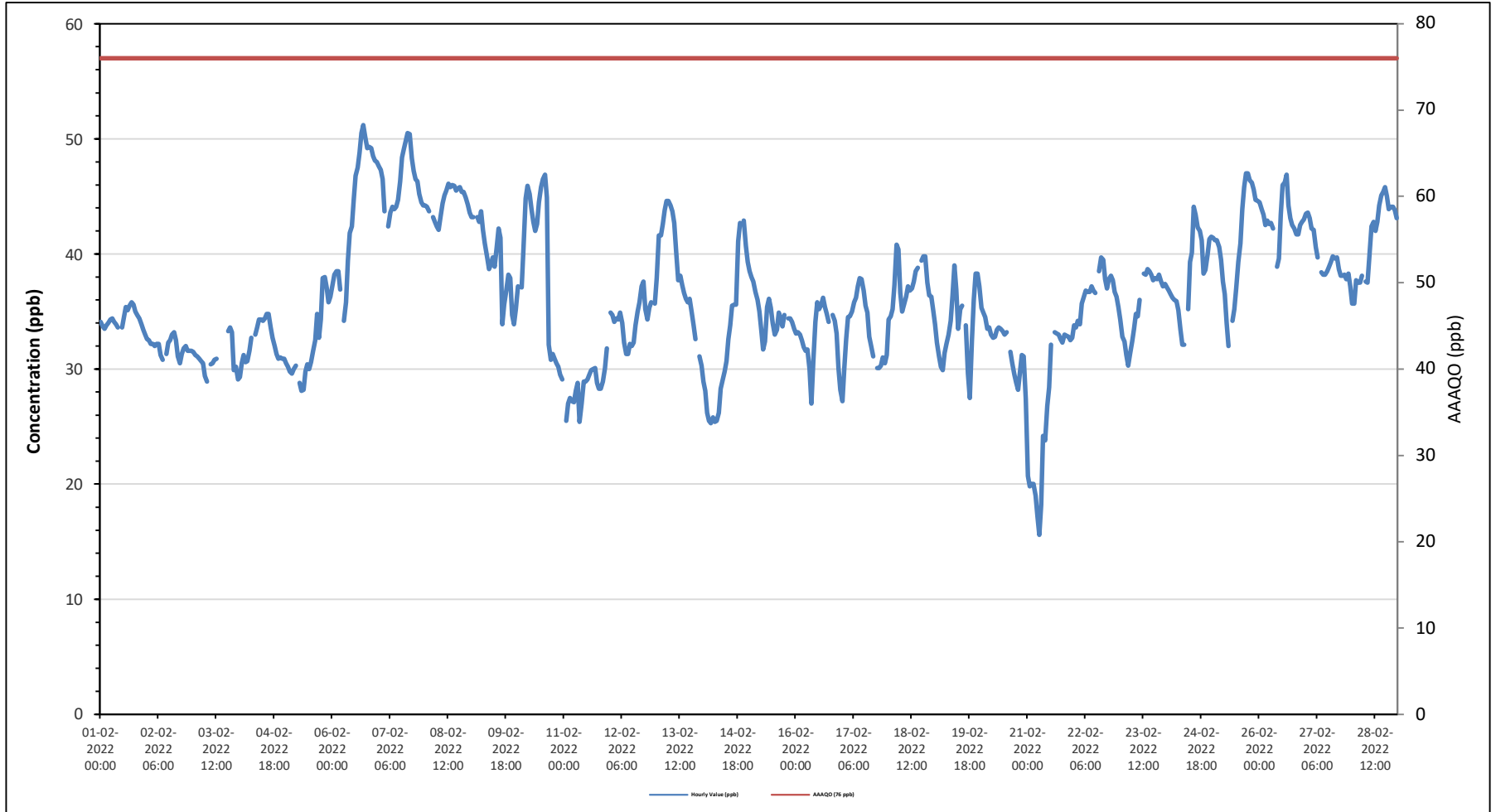
St. Lina Site - February 2022

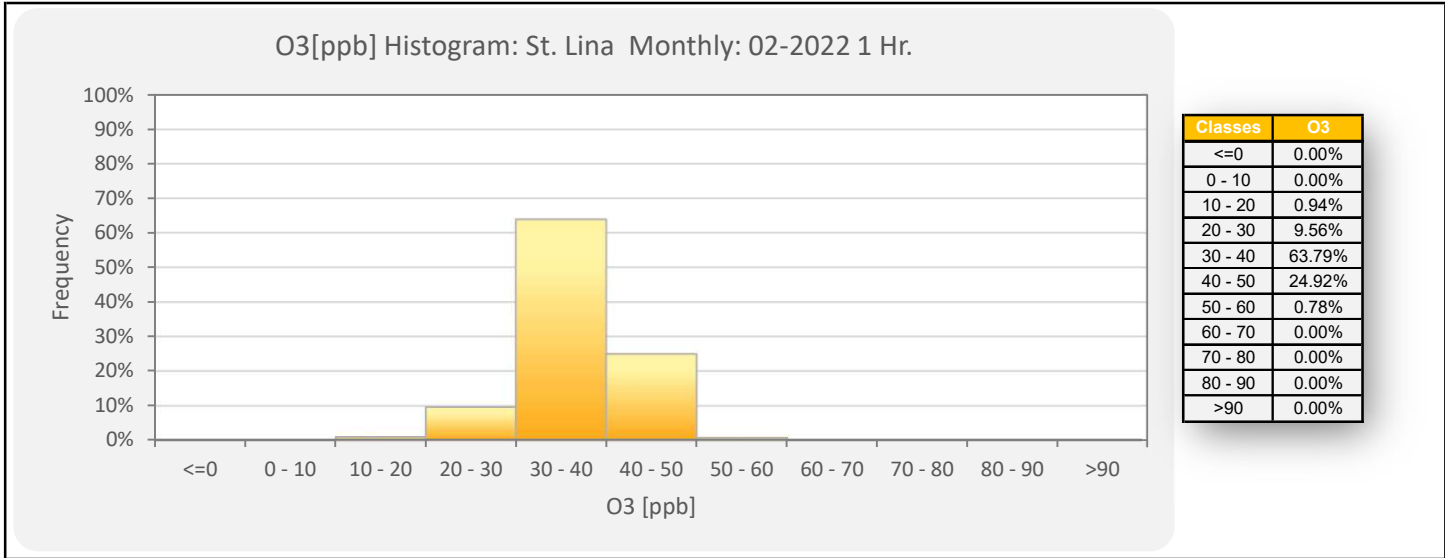
Summary of Hourly Averages

OZONE (O₃) in ppb

Alberta Ambient Air Quality Objectives (AAAQO): 1-Hour 76 ppb																																			
Number of 1-Hour Exceedences: 0																																			
Maximum Hourly Value: 51.2 ppb on February 6 at hour 16													Hours in Service: 672																						
Maximum Daily Value: 46.3 ppb on February 7													Hours of Data: 638																						
Minimum Hourly Value: 15.6 ppb on February 21 at hour 6													Hours of Missing Data: 0																						
Minimum Daily Value: 26.7 ppb on February 21													Hours of Calibration: 34																						
Monthly Average: 36.3 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											
Feb 1	34.1	33.7	33.5	33.8	34	34.3	34.4	34.1	33.9	33.6	S	33.6	34.5	35.4	35.1	35.5	35.8	35.6	35	34.7	34.4	33.9	33.4	33	33.0	35.8	34.3								
Feb 2	32.6	32.5	32.2	32.2	32	32.2	32.2	31.2	30.8	S	31.3	32.3	32.5	33	33.2	32.5	31.1	30.5	31.3	31.8	32	31.6	31.6	31.6	30.5	33.2	31.9								
Feb 3	31.5	31.2	31.1	30.9	30.7	30.5	29.4	28.9	S	30.4	30.5	30.8	30.9	C	C	C	C	C	33.3	33.6	33.2	29.9	30.2	29.1	28.9	33.6	30.9								
Feb 4	29.3	30.5	31.2	30.6	30.7	31.6	32.7	S	33	33.6	34.3	34.3	34.2	34.4	34.8	34.8	33.6	32.7	32	31.3	30.9	31	30.9	30.9	29.3	34.8	32.3								
Feb 5	30.5	30.2	29.8	29.6	30	30.3	S	28.8	28.1	28.2	29.8	30.4	30	30.6	31.6	32.5	34.8	32.7	34.3	37.9	38	37.1	35.8	36.3	28.1	38.0	32.1								
Feb 6	37.3	38.2	38.5	38.5	36.9	S	34.2	35.8	39.4	41.8	42.4	44.7	46.8	47.5	48.8	50.5	51.2	50.2	49.2	49.3	49.2	48.5	48.1	48	34.2	51.2	44.1								
Feb 7	47.6	47.3	46.5	43.7	S	42.4	43.6	44.1	43.9	44.1	44.7	46.3	48.4	49.1	49.8	50.5	50.4	48.3	47.2	46.5	46.3	45.2	44.5	44.2	42.4	50.5	46.3								
Feb 8	44.2	44.1	43.7	S	43.2	42.8	42.4	42.1	43.2	44.4	45.1	45.5	46.1	45.8	46	45.9	45.5	45.7	45.8	45.4	45.4	44.9	44.3	43.6	42.1	46.1	44.6								
Feb 9	43.2	43.2	S	43.2	42.8	43.7	42.1	40.9	39.7	38.7	39.1	39.7	38.9	40.6	42.2	41.4	33.9	35.6	36.8	38.2	37.9	34.7	33.9	35.2	33.9	43.7	39.4								
Feb 10	37.2	S	37.1	40.6	44.8	45.9	45.2	43.9	42.8	42	42.6	44.5	45.8	46.5	46.9	44.9	32.1	30.8	31.3	30.9	30.5	30.2	29.5	29.1	29.1	46.9	38.9								
Feb 11	S	25.5	27	27.5	27.2	27.1	28.1	28.8	25.4	27	28.9	28.9	29.1	29.5	29.9	30	30.1	28.8	28.3	28.3	28.9	30.1	31.8	S	25.4	31.8	28.5								
Feb 12	34.9	34.7	34.1	34.4	34.3	34.9	34	32.3	31.3	31.3	32.2	32	32.3	33.8	35	35.8	37.2	37.6	35.2	34.3	35.3	35.8	S	35.7	31.3	37.6	34.3								
Feb 13	37.9	41.6	41.6	42.6	43.8	44.6	44.6	44.2	43.7	42.7	40.3	37.7	38.1	37.3	36.6	36.1	35.8	36.1	34.9	33.8	32.6	S	31.1	30.3	30.3	44.6	38.6								
Feb 14	28.9	28.1	26.2	25.5	25.3	25.8	25.4	25.5	26.2	28.3	29.1	29.8	30.7	32.6	33.8	35.5	35.6	35.6	35.6	41.1	42.7	S	42.9	40.7	39.3	25.3	42.9	31.9							
Feb 15	38.5	38	37.6	36.7	36	35	33.4	31.7	32.4	35.4	36.1	35.3	34	33	33.4	34.9	34.4	33.7	34.7	S	34.4	34.4	34.1	33.5	31.7	38.5	34.8								
Feb 16	33.1	33.2	33	32.5	31.9	31.6	31.7	30	27	30.6	34.1	35.8	35.2	35.6	36.2	35.4	34.8	34.1	S	34.7	34.2	33.1	30.1	28.2	27.0	36.2	32.9								
Feb 17	27.2	30.1	32.6	34.5	34.6	35	35.8	36.2	37.2	37.9	37.8	36.8	35.5	34.9	32.8	31.9	31.1	S	30.1	30.1	30.3	31	30.5	31.2	27.2	37.9	33.3								
Feb 18	34.3	34.6	35.2	37.3	40.8	40.4	36.6	35	35.6	36.3	37.2	36.8	37	37.6	38.5	38.8	S	39.4	39.8	39.8	37.5	36.4	36.3	35.1	34.3	40.8	37.2								
Feb 19	33.9	32.3	31.1	30.2	29.9	31.4	32.2	33	34.2	36.4	39	36.9	33.5	35.2	35.5	S	33.8	29.6	27.5	32.5	36	38.3	38.3	37.2	27.5	39.0	33.8								
Feb 20	35.3	34.9	34.5	33.5	33.6	33	32.7	32.8	33.4	33.6	33.5	33.3	33	33.2	S	31.5	30.5	29.5	28.8	28.2	29.7	31.2	31.1	27.4	27.4	35.3	32.1								
Feb 21	20.7	19.8	20	20	19	17.2	15.6	18.2	24.2	23.8	26.8	28.4	32.1	S	33.2	33.1	33	32.6	32.3	33	32.9	32.8	32.5	32.7	15.6	33.2	26.7								
Feb 22	33.8	33.6	34.2	33.9	35.7	36.3	36.8	36.7	36.7	37.2	36.8	36.6	S	38.5	39.7	39.5	37.8	37	37.8	38.1	37.7	36.7	36.3	35.4	33.6	39.7	36.6								
Feb 23	34.3	32.8	32.4	31.2	30.3	31.3	32.4	33.5	34.8	34.6	36	S	38.3	38.2	38.7	38.5	38.2	37.7	37.9	37.8	38.2	37.6	37.2	37.4	30.3	38.7	35.6								
Feb 24	37.1	36.8	36.5	36.2	36	35.9	35.1	33.4	32.1	32.1	S	35.2	39.3	40.1	44.1	43.4	42.3	42	41.2	38.3	38.6	39.9	41.3	41.5	32.1	44.1	38.2								
Feb 25	41.4	41.2	41.2	40.6	39.5	37.6	36.5	34	32	S	34.2	35.2	37	39.3	40.9	43.9	45.8	47	47	46.4	46.2	45.6	44.7	44.6	32.0	47.0	40.9								
Feb 26	44.5	43.9	43.4	42.5	42.9	42.6	42.7	42.2	S	38.9	39.6	43.4	46	46.2	46.9	44.2	43.1	42.5	42.2	41.7	41.7	42.5	42.8	43	38.9	46.9	43.0								
Feb 27	43.5	43.6	43.1	42.2	42.1	40.6	39.7	S	38.4	38.2	38.2	38.5	38.9	39.3	39.8	39.6	39.7	38.7	38.1	38.1	38.2	37.8	38.3	37.2	37.2	43.6	39.6								
Feb 28	35.7	35.7	37.7	37.5	37.5	S	37.6	37.5	40.1	42.4	42.8	42	42.8	44.2	45.1	45.4	45.8	45	43.9	44.1	44.1	43.8	43.1	35.7	45.8	41.4									
Diurnal Maximum	48	47	47	44	45	46	45	44	44	44	45	46	48	49	50	51	51	50	49	49	49	49	48	48											
Diurnal Average	35.6	35.2	35.0	34.9	35.0	35.3	35.0	34.4	34.5	35.4	36.2	36.5	37.0	38.1	38.8	38.7	37.6	37.3	37.0	37.1	36.8	36.9	36.4	36.1											
C	Monthly Calibration								S	Daily Zero-Span Check								Q	Quality Assurance																
K	Collection Error								N	No Data (Machine Not in Service)								Y	Routine Maintenance								P	Power Failure							
X	Invalid Data (Equipment Malfunction /Recovery)								NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)																									
Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.																																			
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.																																			

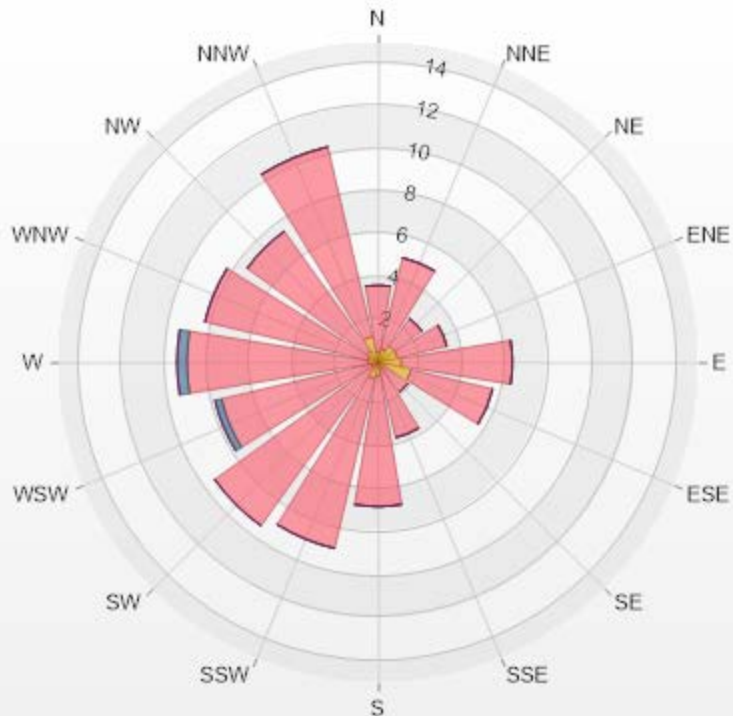
Timeseries Chart of Hourly Average for O3 - St. Lina Site





Wind: St. Lina Poll.: St. Lina-O3[ppb] Monthly: 02-2022 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.94% Calm Avg: 0.00 [ppb]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	0.47	3.13	0	0	0	3.6
NNE	0.63	4.39	0	0	0	5.02
NE	0.94	1.57	0	0	0	2.51
ENE	0.94	2.35	0	0	0	3.29
E	1.1	5.17	0	0	0	6.27
ESE	1.57	3.92	0	0	0	5.49
SE	0.31	1.41	0	0	0	1.72
SSE	0	3.61	0	0	0	3.61
S	0.63	6.11	0	0	0	6.74
SSW	0.78	8.15	0	0	0	8.93
SW	0	9.4	0	0	0	9.4
WSW	0.31	7.21	0.31	0	0	7.83
W	0.47	8.46	0.47	0	0	9.4
WNW	0.47	7.84	0	0	0	8.31
NW	0.63	6.9	0	0	0	7.53
NNW	1.25	9.09	0	0	0	10.34
Summary	10.5	88.71	0.78	0	0	100



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% Icon Classes (ppb)	11	0-30	89	30-50	1	50-76	0	76-159	0	>159.0
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St. Lina Site - February 2022

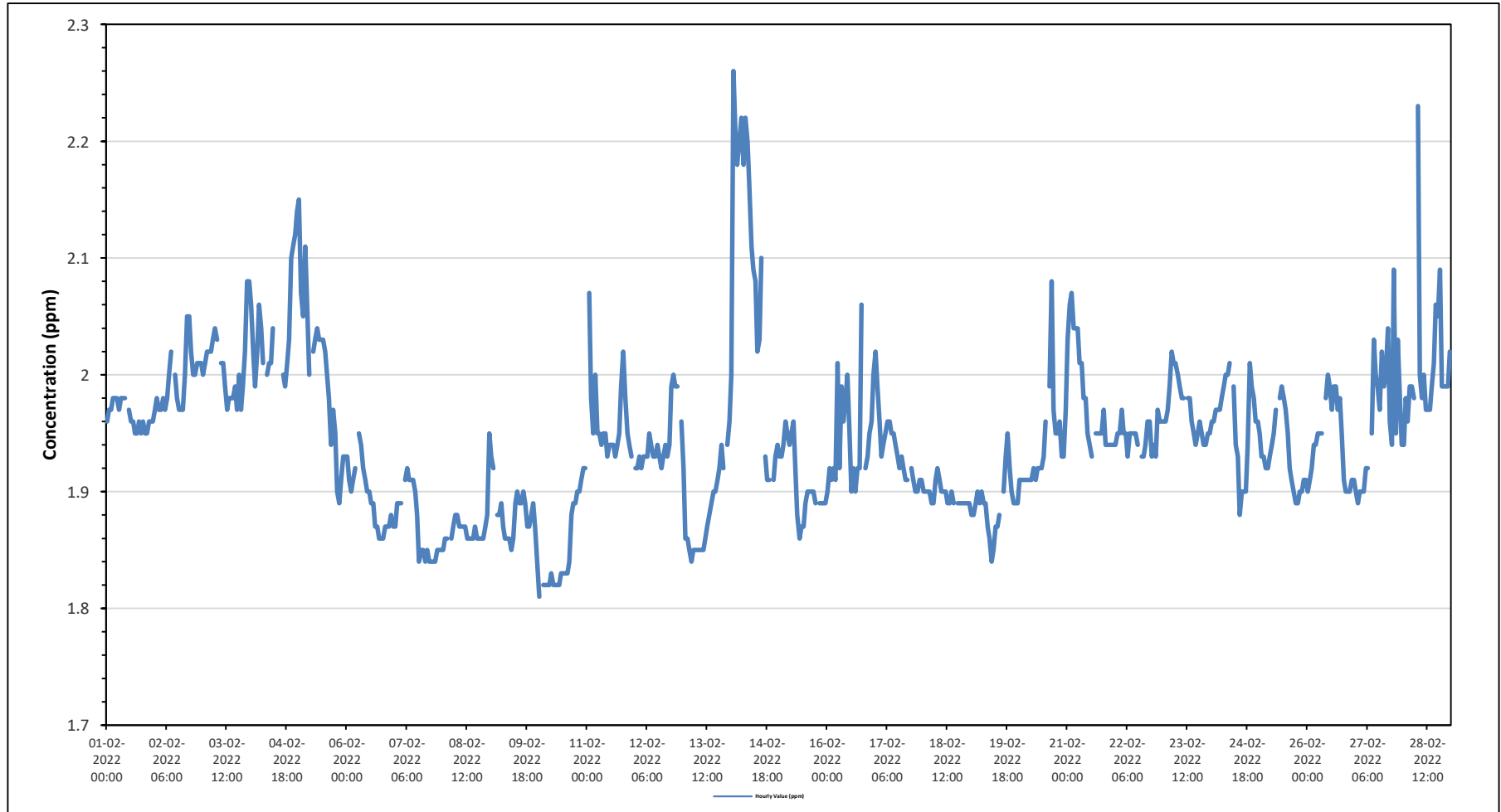
Summary of Hourly Averages

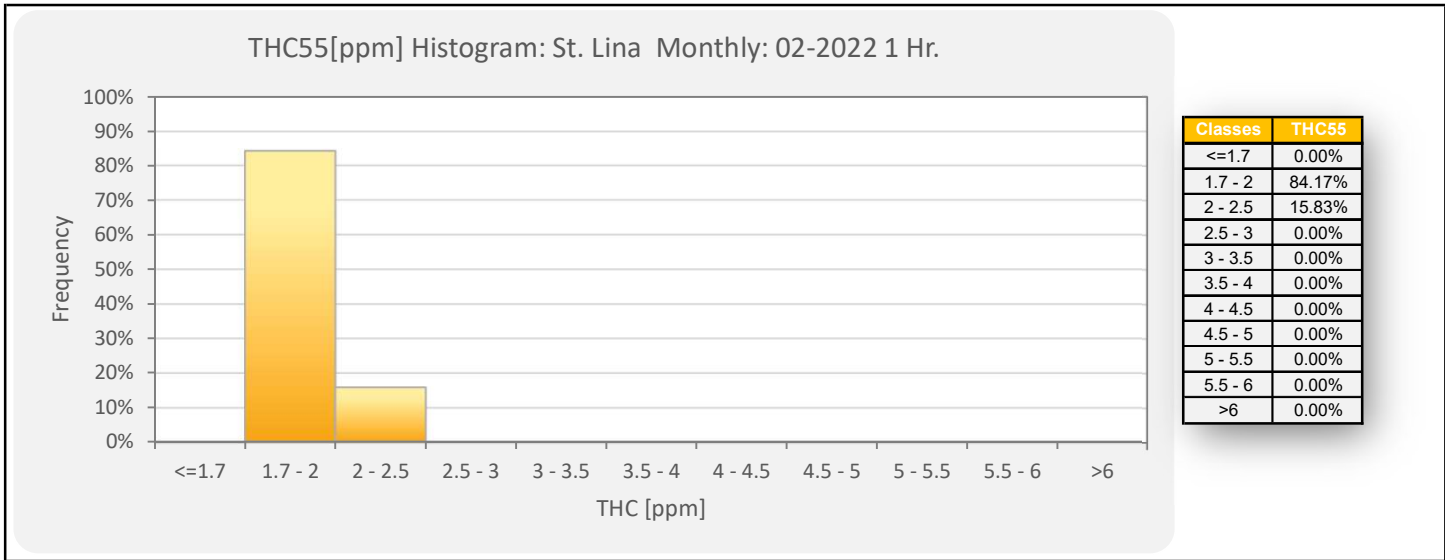
TOTAL HYDROCARBONS (THC) in ppm

Maximum Hourly Value:	2.26 ppm on February 14 at hour 1	Hours in Service:	672
Maximum Daily Value:	2.08 ppm on February 14	Hours of Data:	638
Minimum Hourly Value:	1.81 ppm on February 10 at hour 0	Hours of Missing Data:	1
Minimum Daily Value:	1.85 ppm on February 10	Hours of Calibration:	33
Monthly Average:	1.94 ppm	Operational Uptime:	99.9

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average						
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23					
Feb 1	1.96	1.97	1.97	1.98	1.98	1.98	1.97	1.98	1.98	1.98	S	1.97	1.96	1.96	1.95	1.95	1.96	1.95	1.96	1.96	1.95	1.96	1.96	1.96	1.95	1.98	1.96					
Feb 2	1.97	1.98	1.97	1.97	1.98	1.97	1.98	2.00	2.02	S	2.00	1.98	1.97	1.97	1.97	2.00	2.05	2.02	2.00	2.00	2.01	2.01	2.01	1.97	2.05	1.99						
Feb 3	2.00	2.01	2.02	2.02	2.02	2.03	2.04	2.01	S	2.01	2.01	1.99	1.97	1.98	1.98	1.98	1.99	1.97	2.00	1.97	1.99	2.02	2.08	2.08	1.97	2.08	2.01					
Feb 4	2.06	2.02	1.99	2.02	2.06	2.04	2.01	S	2.00	2.01	2.01	2.04	C	C	C	C	2.00	1.99	2.01	2.03	2.10	2.11	2.12	2.14	1.99	2.14	2.04					
Feb 5	2.15	2.07	2.05	2.11	2.06	2.00	S	2.02	2.03	2.04	2.03	2.03	2.03	2.02	2.00	1.98	1.94	1.97	1.95	1.90	1.89	1.91	1.93	1.93	1.89	2.15	2.00					
Feb 6	1.93	1.91	1.90	1.91	1.92	S	1.95	1.94	1.92	1.91	1.90	1.90	1.89	1.89	1.87	1.87	1.86	1.86	1.86	1.87	1.87	1.87	1.88	1.87	1.86	1.95	1.89					
Feb 7	1.87	1.89	1.89	1.89	S	1.91	1.92	1.91	1.91	1.91	1.90	1.88	1.84	1.85	1.85	1.84	1.85	1.84	1.84	1.84	1.84	1.85	1.85	1.85	1.84	1.92	1.87					
Feb 8	1.85	1.86	1.86	S	1.86	1.87	1.88	1.88	1.87	1.87	1.87	1.87	1.86	1.86	1.86	1.86	1.87	1.86	1.86	1.86	1.86	1.87	1.88	1.87	1.85	1.95	1.87					
Feb 9	1.93	1.92	S	1.88	1.88	1.89	1.87	1.86	1.86	1.86	1.85	1.86	1.89	1.90	1.89	1.89	1.90	1.89	1.87	1.87	1.88	1.89	1.87	1.84	1.84	1.93	1.88					
Feb 10	1.81	S	1.82	1.82	1.82	1.82	1.83	1.82	1.82	1.82	1.82	1.83	1.83	1.83	1.83	1.84	1.88	1.89	1.89	1.90	1.90	1.91	1.92	1.92	1.81	1.92	1.85					
Feb 11	S	2.07	1.98	1.95	2.00	1.95	1.95	1.94	1.95	1.95	1.93	1.94	1.94	1.94	1.93	1.94	1.95	1.99	2.02	1.98	1.95	1.94	1.93	S	1.93	2.07	1.96					
Feb 12	1.92	1.92	1.93	1.92	1.93	1.93	1.93	1.95	1.94	1.94	1.93	1.94	1.93	1.92	1.93	1.94	1.93	1.94	1.99	2.00	1.99	1.99	S	1.96	1.92	2.00	1.94					
Feb 13	1.92	1.86	1.86	1.85	1.84	1.85	1.85	1.85	1.85	1.85	1.85	1.86	1.87	1.88	1.89	1.90	1.90	1.91	1.92	1.94	1.92	S	1.94	1.96	1.84	1.96	1.88					
Feb 14	2.00	2.26	2.21	2.18	2.20	2.22	2.18	2.22	2.20	2.16	2.11	2.09	2.08	2.02	2.03	2.10	NRM	1.93	1.91	1.91	S	1.91	1.93	1.94	1.91	2.26	2.08					
Feb 15	1.93	1.93	1.94	1.96	1.95	1.94	1.95	1.96	1.92	1.88	1.86	1.87	1.87	1.89	1.90	1.90	1.90	1.90	1.89	S	1.89	1.89	1.89	1.89	1.89	1.86	1.96	1.91				
Feb 16	1.90	1.92	1.91	1.92	1.91	2.01	1.92	1.99	1.96	1.98	2.00	1.95	1.90	1.92	1.90	1.92	1.92	2.06	S	1.92	1.93	1.95	1.96	2.00	1.90	2.06	1.95					
Feb 17	2.02	1.99	1.96	1.93	1.94	1.95	1.96	1.96	1.95	1.95	1.94	1.93	1.92	1.93	1.92	1.91	1.91	S	1.92	1.91	1.90	1.90	1.91	1.91	1.90	2.02	1.94					
Feb 18	1.90	1.90	1.90	1.90	1.89	1.89	1.91	1.92	1.91	1.90	1.90	1.90	1.89	1.89	1.90	1.89	S	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.92	1.90				
Feb 19	1.88	1.88	1.89	1.90	1.89	1.90	1.89	1.89	1.87	1.86	1.84	1.85	1.87	1.87	1.88	S	1.90	1.93	1.95	1.92	1.90	1.89	1.89	1.89	1.84	1.95	1.89					
Feb 20	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.92	1.91	1.92	1.92	1.92	1.93	1.96	S	1.99	2.08	1.97	1.95	1.95	1.96	1.93	1.93	1.97	1.91	2.08	1.94					
Feb 21	2.03	2.06	2.07	2.04	2.04	2.04	2.01	2.01	1.98	1.98	1.95	1.94	1.93	S	1.95	1.95	1.95	1.95	1.97	1.94	1.94	1.94	1.94	1.94	1.93	2.07	1.98					
Feb 22	1.94	1.95	1.95	1.97	1.95	1.95	1.93	1.95	1.95	1.95	1.95	1.94	S	1.93	1.93	1.94	1.96	1.96	1.93	1.94	1.93	1.97	1.96	1.96	1.93	1.97	1.95					
Feb 23	1.96	1.96	1.97	1.99	2.02	2.01	2.01	2.00	1.99	1.98	1.98	S	1.98	1.98	1.96	1.95	1.94	1.95	1.96	1.95	1.94	1.94	1.95	1.95	1.94	2.02	1.97					
Feb 24	1.96	1.96	1.97	1.97	1.97	1.98	1.99	2.00	2.00	2.01	S	1.99	1.94	1.93	1.88	1.90	1.90	1.90	1.94	2.01	1.99	1.98	1.96	1.96	1.88	2.01	1.96					
Feb 25	1.95	1.93	1.93	1.92	1.92	1.93	1.94	1.95	1.97	S	1.98	1.99	1.98	1.97	1.95	1.92	1.91	1.90	1.89	1.89	1.90	1.91	1.91	1.91	1.89	1.99	1.93					
Feb 26	1.90	1.91	1.92	1.94	1.94	1.95	1.95	1.95	S	1.98	2.00	1.99	1.97	1.99	1.99	1.97	1.98	1.95	1.91	1.90	1.90	1.90	1.91	1.91	1.90	2.00	1.94					
Feb 27	1.90	1.89	1.90	1.90	1.90	1.92	1.92	S	1.95	2.03	2.00	1.99	1.97	2.02	1.99	2.00	2.04	1.96	1.94	2.09	1.95	2.03	1.98	1.94	1.89	2.09	1.97					
Feb 28	1.94	1.98	1.96	1.99	1.99	S	2.23	2.00	1.98	2.00	1.97	1.97	1.97	1.97	1.99	2.01	2.06	2.05	2.09	1.99	1.99	1.99	2.02	1.94	2.23	2.01						
Diurnal Maximum	2.15	2.26	2.21	2.18	2.20	2.22	2.18	2.23	2.20	2.16	2.11	2.09	2.08	2.02	2.03	2.10	2.08	2.06	2.09	2.09	2.10	2.11	2.12	2.14								
Dalurnal Average	1.94	1.96	1.95	1.95	1.95	1.96	1.95	1.97	1.95	1.95	1.94	1.94	1.93	1.93	1.93	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.95								
C	Monthly Calibration										S	Daily Zero-Span Check										Q	Quality Assurance									
K	Collection Error										N	No Data (Machine Not in Service)										Y	Routine Maintenance									
X	InValid Data (Equipment Malfunction /Recovery)										NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)										P	Power Failure									
Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.																																
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.																																

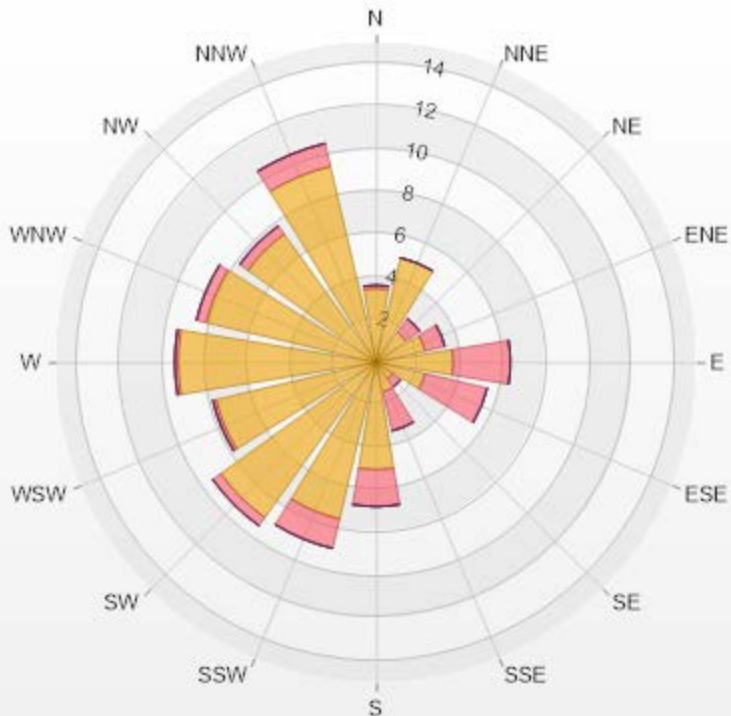
Timeseries Chart of Hourly Average for THC - St. Lina Site





Wind: St. Lina Poll.: St. Lina-THC55[ppm] Monthly: 02-2022 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.94% Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-40	>40.0	Total
N	3.45	0.16	0	0	0	3.61
NNE	5.02	0	0	0	0	5.02
NE	1.72	0.78	0	0	0	2.5
ENE	2.35	0.94	0	0	0	3.29
E	3.61	2.66	0	0	0	6.27
ESE	2.35	2.98	0	0	0	5.33
SE	0.94	0.47	0	0	0	1.41
SSE	1.41	1.88	0	0	0	3.29
S	5.02	1.72	0	0	0	6.74
SSW	7.52	1.41	0	0	0	8.93
SW	8.93	0.47	0	0	0	9.4
WSW	7.68	0.16	0	0	0	7.84
W	9.25	0.16	0	0	0	9.41
WNW	8.15	0.47	0	0	0	8.62
NW	7.37	0.47	0	0	0	7.84
NNW	9.4	1.1	0	0	0	10.5
Summary	84.17	15.83	0	0	0	100



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% Icon Classes (ppm)

84

0-2

16

2-5

0

5-10

0

10-40

0

>40.0



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**St. Lina Site - February 2022
Summary of Hourly Averages**

METHANE (CH4) in ppm

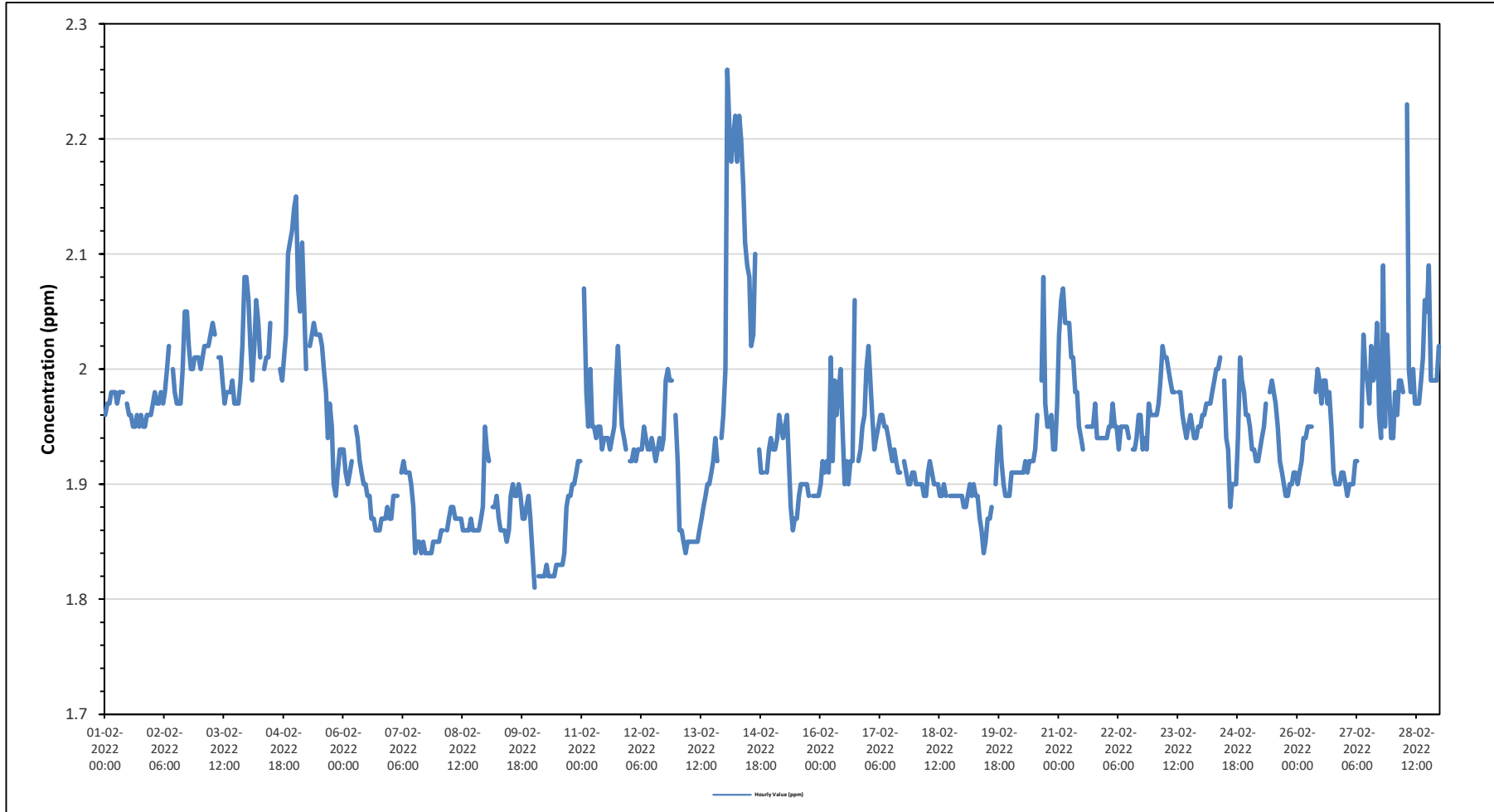
Maximum Hourly Value:	2.26 ppm on February 14 at hour 1	Hours in Service:	672
Maximum Daily Value:	2.08 ppm on February 14	Hours of Data:	638
Minimum Hourly Value:	1.81 ppm on February 10 at hour 0	Hours of Missing Data:	1
Minimum Daily Value:	1.85 ppm on February 10	Hours of Calibration:	33
Monthly Average:	1.94 ppm	Operational Uptime:	99.9

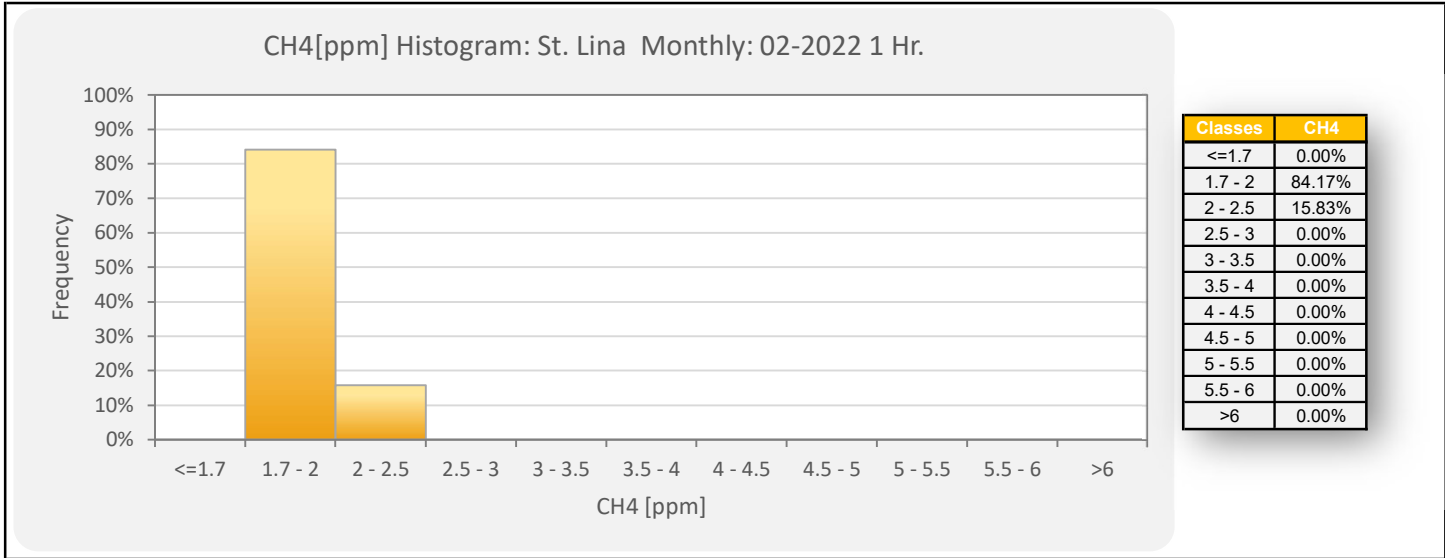
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23
Feb 1	1.96	1.97	1.97	1.98	1.98	1.98	1.97	1.98	1.98	1.98	S	1.97	1.96	1.96	1.95	1.95	1.96	1.95	1.96	1.96	1.96	1.96	1.96	1.95	1.98	1.96	
Feb 2	1.97	1.98	1.97	1.97	1.98	1.97	1.98	2.00	2.02	S	2.00	1.98	1.97	1.97	1.97	2.00	2.05	2.02	2.00	2.00	2.01	2.01	2.01	1.97	2.05	1.99	
Feb 3	2.00	2.01	2.02	2.02	2.02	2.03	2.04	2.01	S	2.01	2.01	1.99	1.97	1.98	1.98	1.98	1.99	1.97	1.97	1.97	1.99	2.02	2.08	2.08	1.97	2.08	2.01
Feb 4	2.06	2.02	1.99	2.02	2.06	2.04	2.01	S	2.00	2.01	2.01	2.04	C	C	C	C	2.00	1.99	2.01	2.03	2.10	2.11	2.12	2.14	1.99	2.14	2.04
Feb 5	2.15	2.07	2.05	2.11	2.06	2.00	S	2.02	2.03	2.04	2.03	2.03	2.03	2.02	2.00	1.98	1.94	1.97	1.95	1.90	1.89	1.91	1.93	1.93	1.89	2.15	2.00
Feb 6	1.93	1.91	1.90	1.91	1.92	S	1.95	1.94	1.92	1.91	1.90	1.90	1.89	1.89	1.87	1.87	1.86	1.86	1.86	1.87	1.87	1.87	1.88	1.87	1.86	1.95	1.89
Feb 7	1.87	1.89	1.89	1.89	S	1.91	1.92	1.91	1.91	1.91	1.90	1.88	1.84	1.85	1.85	1.84	1.85	1.84	1.84	1.84	1.84	1.85	1.85	1.85	1.84	1.92	1.87
Feb 8	1.85	1.86	1.86	S	1.86	1.87	1.88	1.88	1.87	1.87	1.87	1.87	1.86	1.86	1.86	1.86	1.87	1.86	1.86	1.86	1.86	1.87	1.88	1.87	1.85	1.95	1.87
Feb 9	1.93	1.92	S	1.88	1.88	1.89	1.87	1.86	1.86	1.86	1.85	1.86	1.89	1.90	1.89	1.89	1.90	1.89	1.87	1.87	1.88	1.89	1.87	1.84	1.84	1.93	1.88
Feb 10	1.81	S	1.82	1.82	1.82	1.82	1.83	1.82	1.82	1.82	1.82	1.83	1.83	1.83	1.83	1.84	1.88	1.89	1.89	1.90	1.90	1.91	1.92	1.92	1.81	1.92	1.85
Feb 11	S	2.07	1.98	1.95	2.00	1.95	1.95	1.94	1.95	1.95	1.93	1.94	1.94	1.94	1.93	1.94	1.95	1.99	2.02	1.98	1.95	1.94	1.93	S	1.93	2.07	1.96
Feb 12	1.92	1.92	1.93	1.92	1.93	1.93	1.93	1.95	1.94	1.93	1.93	1.94	1.93	1.92	1.93	1.94	1.93	1.94	1.99	2.00	1.99	1.99	S	1.96	1.92	2.00	1.94
Feb 13	1.92	1.86	1.86	1.85	1.84	1.85	1.85	1.85	1.85	1.85	1.85	1.86	1.87	1.88	1.89	1.90	1.90	1.91	1.92	1.94	1.92	S	1.94	1.96	1.84	1.96	1.88
Feb 14	2.00	2.26	2.21	2.18	2.20	2.22	2.18	2.22	2.20	2.16	2.11	2.09	2.08	2.02	2.03	2.10	NRM	1.93	1.91	1.91	S	1.91	1.93	1.94	1.91	2.26	2.08
Feb 15	1.93	1.93	1.94	1.96	1.95	1.94	1.95	1.96	1.92	1.88	1.86	1.87	1.87	1.89	1.90	1.90	1.90	1.90	1.89	S	1.89	S	1.89	1.89	1.89	1.89	1.91
Feb 16	1.90	1.92	1.91	1.92	1.91	2.01	1.92	1.99	1.96	1.98	2.00	1.95	1.90	1.92	1.90	1.92	1.92	2.06	S	1.92	1.93	1.95	1.96	2.00	1.90	2.06	1.95
Feb 17	2.02	1.99	1.96	1.93	1.94	1.95	1.96	1.96	1.95	1.95	1.94	1.93	1.92	1.93	1.92	1.91	1.91	S	1.92	1.91	1.90	1.90	1.91	1.91	1.90	2.02	1.94
Feb 18	1.90	1.90	1.90	1.90	1.89	1.89	1.91	1.92	1.91	1.90	1.90	1.90	1.89	1.89	1.90	1.89	S	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.90
Feb 19	1.88	1.88	1.89	1.90	1.89	1.90	1.89	1.89	1.87	1.86	1.84	1.85	1.87	1.87	1.88	S	1.90	1.93	1.95	1.92	1.90	1.89	1.89	1.89	1.84	1.95	1.89
Feb 20	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.92	1.91	1.92	1.92	1.92	1.93	1.96	S	1.99	2.08	1.97	1.95	1.95	1.96	1.93	1.93	1.97	1.91	2.08	1.94
Feb 21	2.03	2.06	2.07	2.04	2.04	2.04	2.01	2.01	1.98	1.98	1.95	1.94	1.93	S	1.95	1.95	1.95	1.95	1.97	1.94	1.94	1.94	1.94	1.94	1.93	2.07	1.98
Feb 22	1.94	1.95	1.95	1.97	1.95	1.95	1.93	1.95	1.95	1.95	1.95	1.94	S	1.93	1.93	1.94	1.96	1.96	1.93	1.94	1.93	1.97	1.96	1.96	1.93	1.97	1.95
Feb 23	1.96	1.96	1.97	1.99	2.02	2.01	2.01	2.00	1.99	1.98	1.98	S	1.98	1.98	1.96	1.95	1.94	1.95	1.96	1.95	1.94	1.94	1.95	1.95	1.94	2.02	1.97
Feb 24	1.96	1.96	1.97	1.97	1.97	1.98	1.99	2.00	2.00	2.01	S	1.99	1.94	1.93	1.88	1.90	1.90	1.90	1.94	2.01	1.99	1.98	1.96	1.96	1.88	2.01	1.96
Feb 25	1.95	1.93	1.93	1.92	1.92	1.93	1.94	1.95	1.97	S	1.98	1.99	1.98	1.97	1.95	1.92	1.91	1.90	1.89	1.89	1.90	1.91	1.91	1.91	1.89	1.99	1.93
Feb 26	1.90	1.91	1.92	1.94	1.94	1.95	1.95	1.95	S	1.98	2.00	1.99	1.97	1.99	1.99	1.97	1.98	1.95	1.91	1.90	1.90	1.90	1.91	1.91	1.90	2.00	1.94
Feb 27	1.90	1.89	1.90	1.90	1.90	1.92	1.92	S	1.95	2.03	2.00	1.99	1.97	2.02	1.99	2.00	2.04	1.96	1.94	2.09	1.95	2.03	1.98	1.94	1.89	2.09	1.97
Feb 28	1.94	1.98	1.96	1.99	1.99	S	2.23	2.00	1.98	2.00	1.97	1.97	1.97	1.97	1.99	2.01	2.06	2.05	2.09	1.99	1.99	1.99	2.02	1.94	2.23	2.01	
Diurnal Maximum	2.15	2.26	2.21	2.18	2.20	2.22	2.18	2.23	2.20	2.16	2.11	2.09	2.08	2.02	2.03	2.10	2.08	2.06	2.09	2.09	2.10	2.11	2.12	2.14	1.95		
Diurnal Average	1.94	1.96	1.95	1.95	1.95	1.96	1.95	1.97	1.95	1.95	1.94	1.94	1.93	1.93	1.93	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.95			

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

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

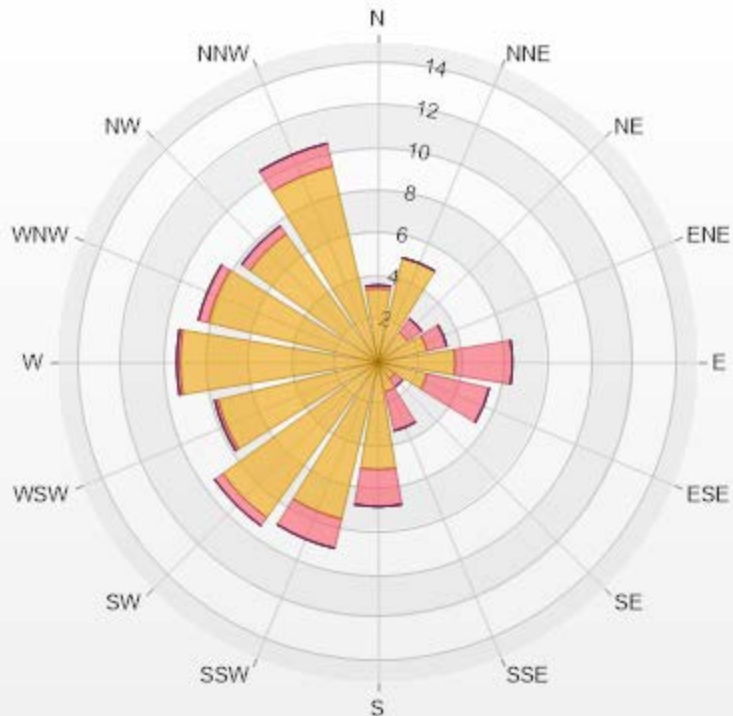
Timeseries Chart of Hourly Average for CH4 - St. Lina Site





Wind: St. Lina Poll.: St. Lina-CH4[ppm] Monthly: 02-2022 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.94% Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-20	>20.0	Total
N	3.45	0.16	0	0	0	3.61
NNE	5.02	0	0	0	0	5.02
NE	1.72	0.78	0	0	0	2.5
ENE	2.35	0.94	0	0	0	3.29
E	3.61	2.66	0	0	0	6.27
ESE	2.35	2.98	0	0	0	5.33
SE	0.94	0.47	0	0	0	1.41
SSE	1.41	1.88	0	0	0	3.29
S	5.02	1.72	0	0	0	6.74
SSW	7.52	1.41	0	0	0	8.93
SW	8.93	0.47	0	0	0	9.4
WSW	7.68	0.16	0	0	0	7.84
W	9.25	0.16	0	0	0	9.41
WNW	8.15	0.47	0	0	0	8.62
NW	7.37	0.47	0	0	0	7.84
NNW	9.4	1.1	0	0	0	10.5
Summary	84.17	15.83	0	0	0	100



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% Icon Classes (ppm)

84

0-2

16

2-5

0

5-10

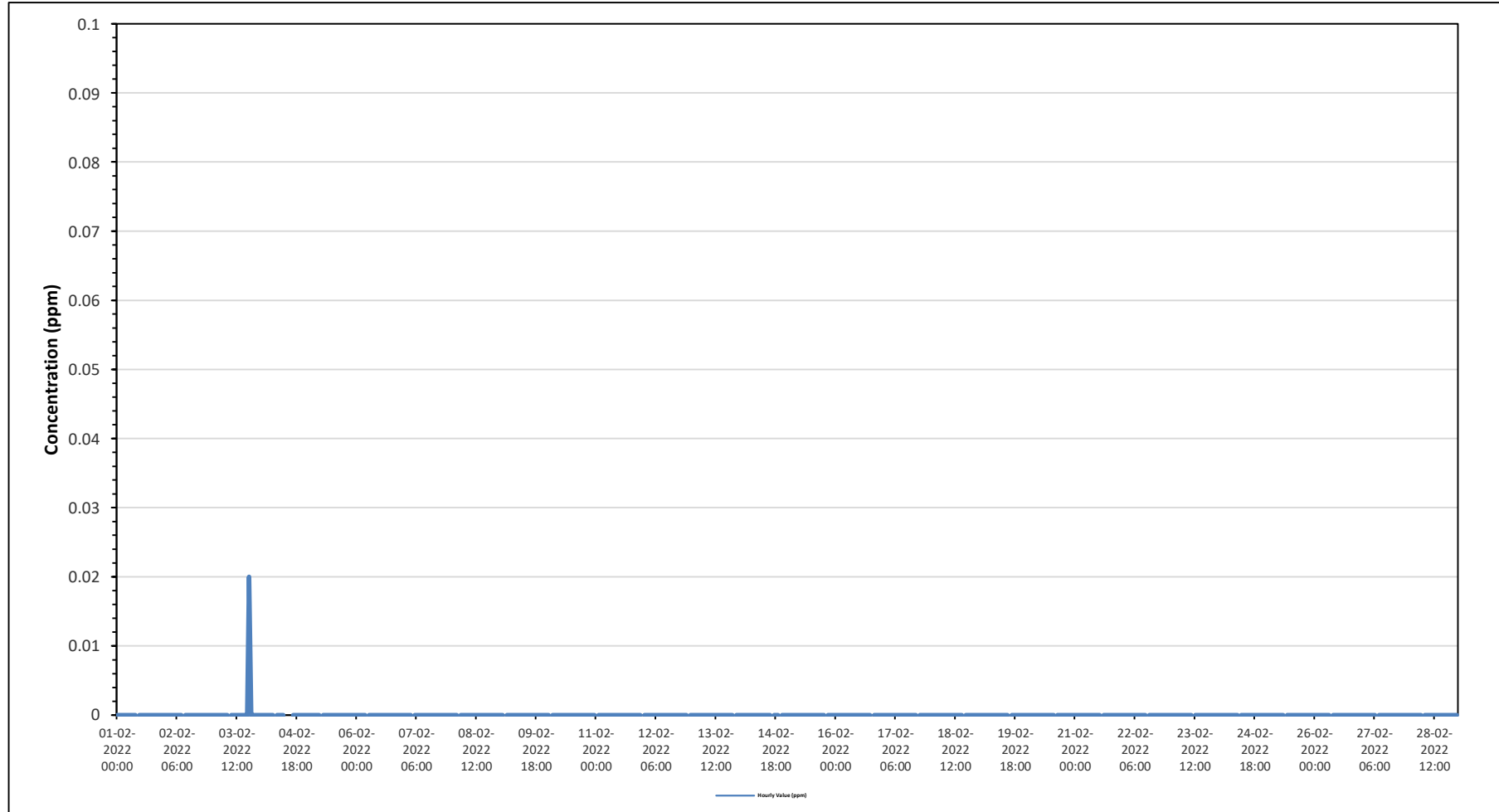
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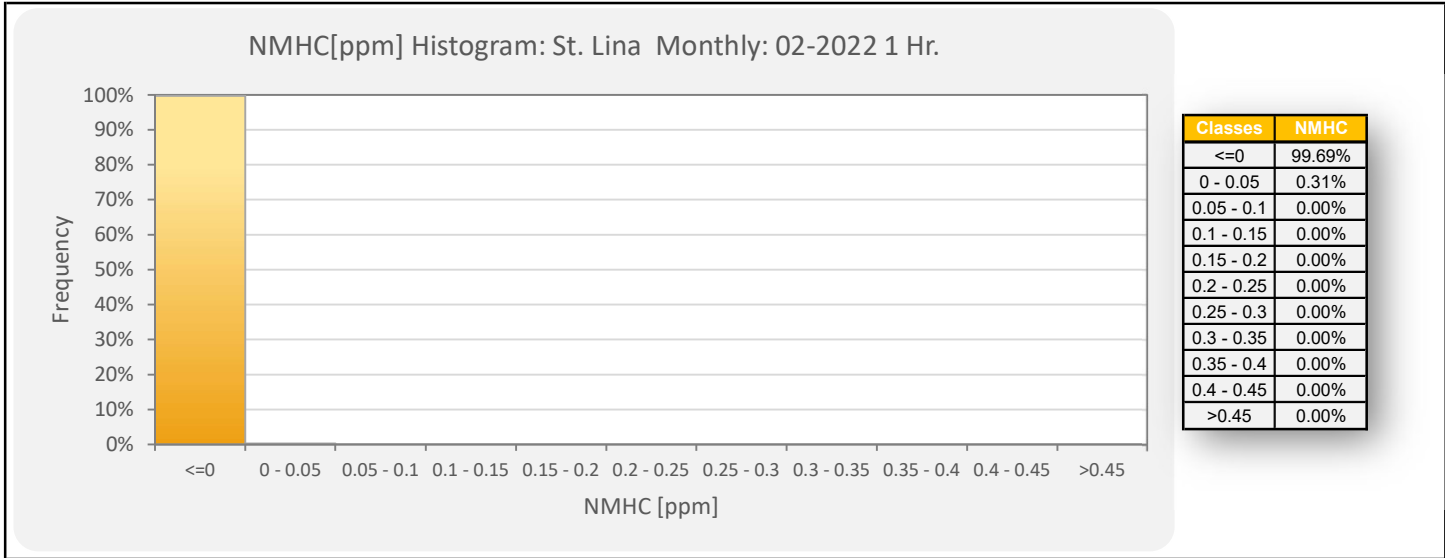
10-20

0

>20.0

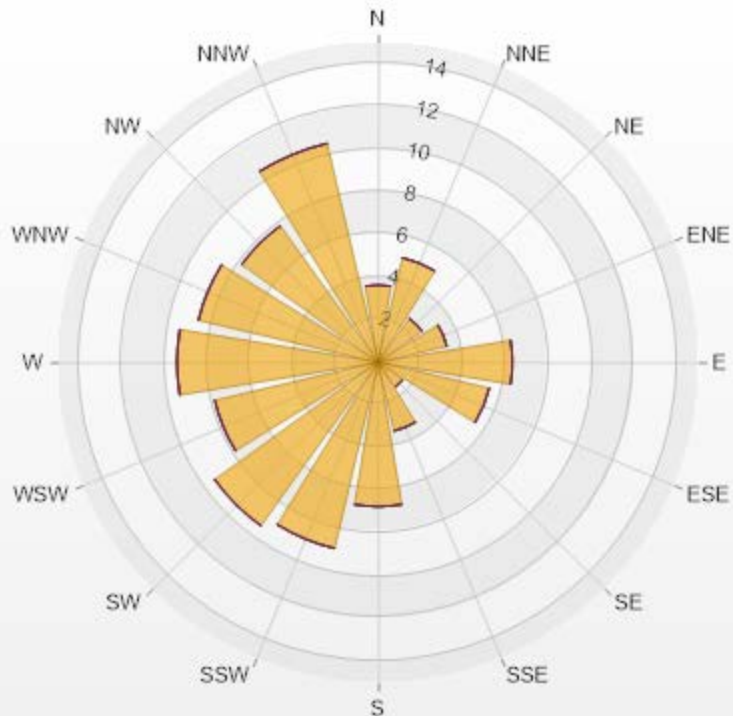
Timeseries Chart of Hourly Average for NMHC - St. Lina Site





Wind: St. Lina Poll.: St. Lina-NMHC[ppm] Monthly: 02-2022 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.94% Calm Avg: 0.00 [ppm]

Direction	0-0.1	0.1-0.3	0.3-1	1-2	>2.0	Total
N	3.61	0	0	0	0	3.61
NNE	5.02	0	0	0	0	5.02
NE	2.51	0	0	0	0	2.51
ENE	3.29	0	0	0	0	3.29
E	6.27	0	0	0	0	6.27
ESE	5.33	0	0	0	0	5.33
SE	1.41	0	0	0	0	1.41
SSE	3.29	0	0	0	0	3.29
S	6.74	0	0	0	0	6.74
SSW	8.93	0	0	0	0	8.93
SW	9.4	0	0	0	0	9.4
WSW	7.84	0	0	0	0	7.84
W	9.4	0	0	0	0	9.4
WNW	8.62	0	0	0	0	8.62
NW	7.84	0	0	0	0	7.84
NNW	10.5	0	0	0	0	10.5
Summary	100	0	0	0	0	100



LICA-202202

% Icon Classes (ppm)

100 0-0.1

0 0.1-0.3

0 0.3-1

0 1-2

0 >2.0



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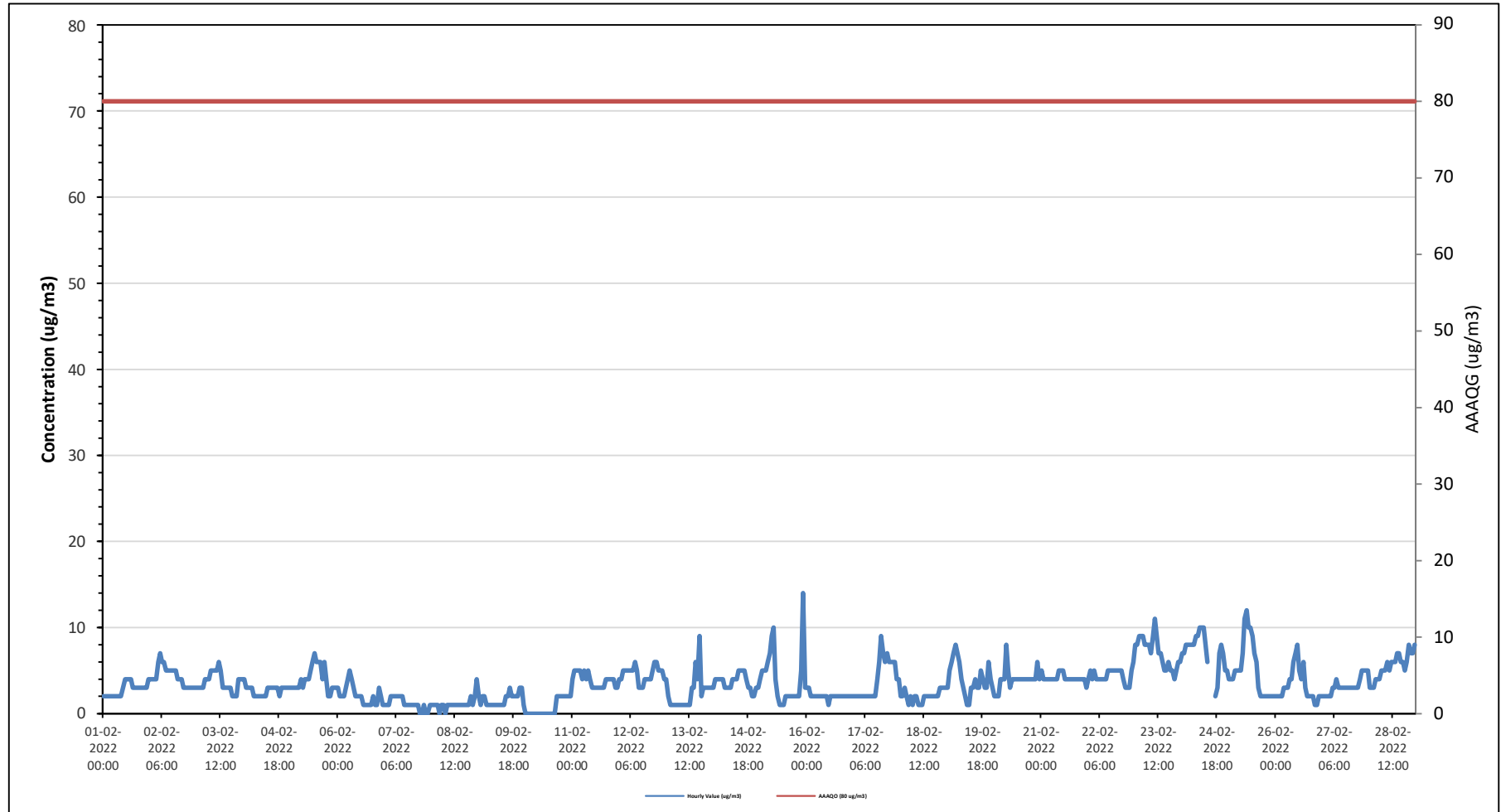
St. Lina Site - February 2022

Summary of Hourly Averages

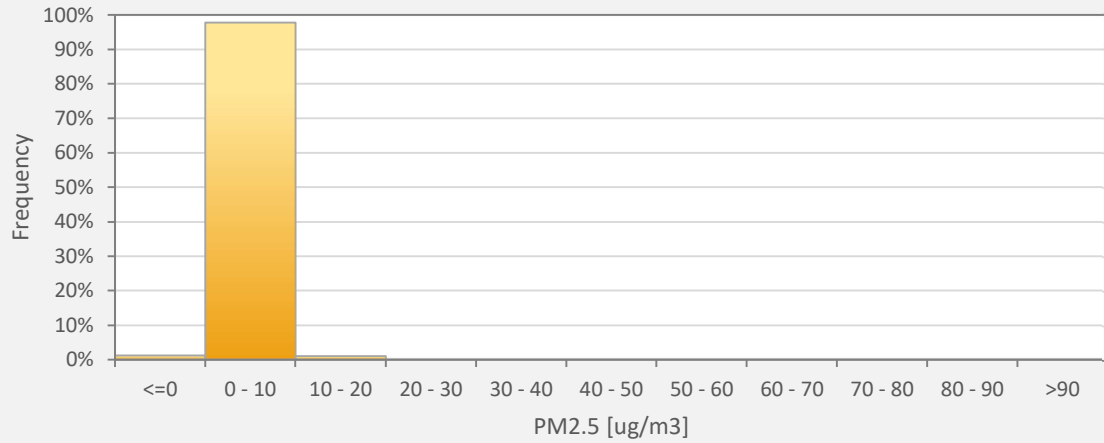
PARTICULATE MATTER 2.5 (PM_{2.5}) in µg/m³

Alberta Ambient Air Quality Guideline (AAAQG): 1-Hour 80 µg/m ³ , Alberta Ambient Air Quality Objective (AAAQO): 24-Hour 29 µg/m ³																																											
Number of 1-Hour Exceedences: 0												Number of 24-Hour Exceedences: 0																															
Maximum Hourly Value: 14 µg/m ³ on February 15 at hour 22												Hours in Service: 672																															
Maximum Daily Value: 7.3 µg/m ³ on February 24												Hours of Data: 669																															
Minimum Hourly Value: 0 µg/m ³ on February 7 at hour 18												Hours of Missing Data: 0																															
Minimum Daily Value: 1 µg/m ³ on February 10												Hours of Calibration: 3																															
Monthly Average: 3.5 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																
Feb 1	2	2	2	2	2	2	2	2	2	2	3	4	4	4	4	3	3	3	3	3	3	3	3	4	2	4	2.8																
Feb 2	4	4	4	4	6	7	6	6	5	5	5	5	5	5	4	4	4	3	3	3	3	3	3	3	3	7	4.3																
Feb 3	3	3	3	3	4	4	4	4	5	5	5	6	5	3	3	3	3	2	2	2	4	4	4	4	2	6	3.7																
Feb 4	4	3	3	3	3	2	2	2	2	2	2	2	3	3	3	3	3	2	3	3	3	3	3	3	2	4	2.7																
Feb 5	3	3	3	3	3	4	3	4	4	4	5	6	7	6	6	6	4	6	4	2	2	3	3	3	2	7	4.0																
Feb 6	3	2	2	2	3	4	5	4	3	2	2	2	2	1	1	1	1	2	1	1	3	2	1	1	1	5	2.1																
Feb 7	1	1	1	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1	0	0	1	0	0	1	0	2	1.1																
Feb 8	1	1	1	1	0	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	2	1	2	4	0	4	1.1																
Feb 9	2	1	2	2	1	1	1	1	1	1	1	1	1	1	2	2	3	2	2	2	2	3	3	1	1	3	1.6																
Feb 10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2	2	2	2	2	2	0	2	0.7																
Feb 11	4	5	5	5	5	4	5	4	5	4	3	3	3	3	3	3	3	4	4	4	4	4	3	3	3	5	3.9																
Feb 12	4	4	5	5	5	5	5	5	6	5	3	3	3	4	4	4	4	5	6	6	5	5	5	4	3	6	4.6																
Feb 13	4	2	1	1	1	1	1	1	1	1	1	1	1	3	3	6	4	9	2	3	3	3	3	3	1	9	2.5																
Feb 14	3	4	4	4	4	4	3	3	3	3	4	4	4	5	5	5	5	4	3	3	2	2	3	3	2	5	3.6																
Feb 15	4	5	5	5	6	7	9	10	4	2	1	1	1	2	2	2	2	2	2	2	2	5	14	1	14	4.1																	
Feb 16	3	3	2	2	2	2	2	2	2	2	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	1	3	2.0															
Feb 17	2	2	2	2	2	2	2	2	2	2	2	2	4	6	9	7	6	7	6	6	6	6	6	4	4	2	9	4.0															
Feb 18	2	2	3	2	1	2	1	2	2	1	1	1	2	2	2	2	2	2	2	2	3	3	3	3	1	3	2.0																
Feb 19	3	5	6	7	8	7	6	4	3	2	1	1	3	3	4	3	3	5	4	3	6	4	3	1	8	4.0																	
Feb 20	2	2	2	4	4	4	8	5	3	4	4	4	4	4	4	4	4	4	4	4	4	4	4	6	4	2	8	4.0															
Feb 21	5	4	4	4	4	4	4	4	4	5	5	5	4	4	4	4	4	4	4	4	4	4	4	3	3	5	4.1																
Feb 22	4	5	4	5	4	4	4	4	4	4	5	5	5	5	5	5	5	5	4	3	3	3	5	6	3	6	4.4																
Feb 23	8	8	9	9	9	8	8	8	7	9	11	9	7	7	6	5	5	6	5	5	4	5	6	6	4	11	7.1																
Feb 24	7	7	8	8	8	8	8	9	9	10	10	10	8	6	C	C	C	2	3	7	8	7	5	5	2	10	7.3																
Feb 25	4	4	4	5	5	5	5	7	11	12	10	10	9	7	6	3	2	2	2	2	2	2	2	2	2	12	5.1																
Feb 26	2	2	2	2	3	3	3	4	4	6	7	8	5	4	6	3	2	2	2	2	1	1	2	2	1	8	3.3																
Feb 27	2	2	2	2	2	3	3	4	3	3	3	3	3	3	3	3	3	3	3	4	5	5	5	5	2	5	3.2																
Feb 28	3	3	3	4	4	4	5	5	5	6	5	6	6	6	7	7	6	6	5	6	8	7	7	8	3	8	5.5																
Diurnal Maximum	8	8	9	9	9	8	9	10	11	12	11	10	9	7	9	7	6	9	6	7	8	7	14	8																			
Dalurnal Average	3.2	3.2	3.3	3.5	3.6	3.7	3.9	3.9	3.7	3.8	3.7	3.8	3.7	3.6	3.7	3.4	3.2	3.5	3.0	3.1	3.2	3.5	3.9	3.4																			
C	Monthly Calibration										S	Daily Zero-Span Check										Q	Quality Assurance																				
K	Collection Error										N	No Data (Machine Not in Service)										Y	Routine Maintenance										P	Power Failure									
X	Invalid Data (Equipment Malfunction/Recovery)										NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)																															
Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.																																											
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.																																											

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



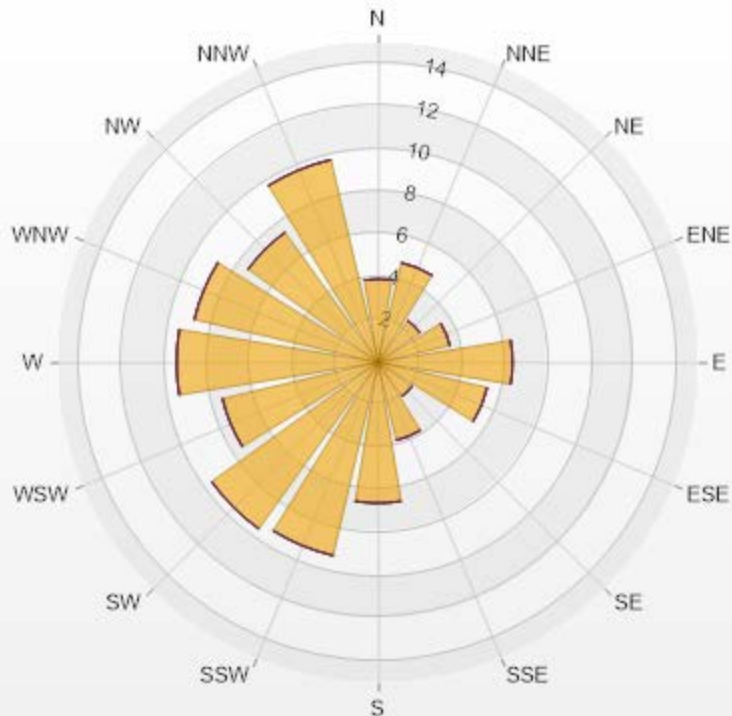
PM2.5[ug/m3(L)] Histogram: St. Lina Monthly: 02-2022 1 Hr.



Classes	PM2.5
<=0	1.20%
0 - 10	97.76%
10 - 20	1.05%
20 - 30	0.00%
30 - 40	0.00%
40 - 50	0.00%
50 - 60	0.00%
60 - 70	0.00%
70 - 80	0.00%
80 - 90	0.00%
>90	0.00%

Wind: St. Lina Poll.: St. Lina-PM2.5[ug/m3(L)] Monthly: 02-2022 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 99.55% Calm Avg: 0.00 [ug/m3(L)]

Direction	0-50	50-80	80-120	120-240	>240.0	Total
N	3.89	0	0	0	0	3.89
NNE	4.78	0	0	0	0	4.78
NE	2.39	0	0	0	0	2.39
ENE	3.44	0	0	0	0	3.44
E	6.28	0	0	0	0	6.28
ESE	5.23	0	0	0	0	5.23
SE	1.94	0	0	0	0	1.94
SSE	3.74	0	0	0	0	3.74
S	6.58	0	0	0	0	6.58
SSW	9.27	0	0	0	0	9.27
SW	9.57	0	0	0	0	9.57
WSW	7.47	0	0	0	0	7.47
W	9.42	0	0	0	0	9.42
WNW	8.82	0	0	0	0	8.82
NW	7.47	0	0	0	0	7.47
NNW	9.72	0	0	0	0	9.72
Summary	100	0	0	0	0	100



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% Icon Classes (ug/m3(L))

100 0-50

0 50-80

0 80-120

0 120-240

0 >240.0



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St. Lina Site - February 2022 Summary of Hourly Averages

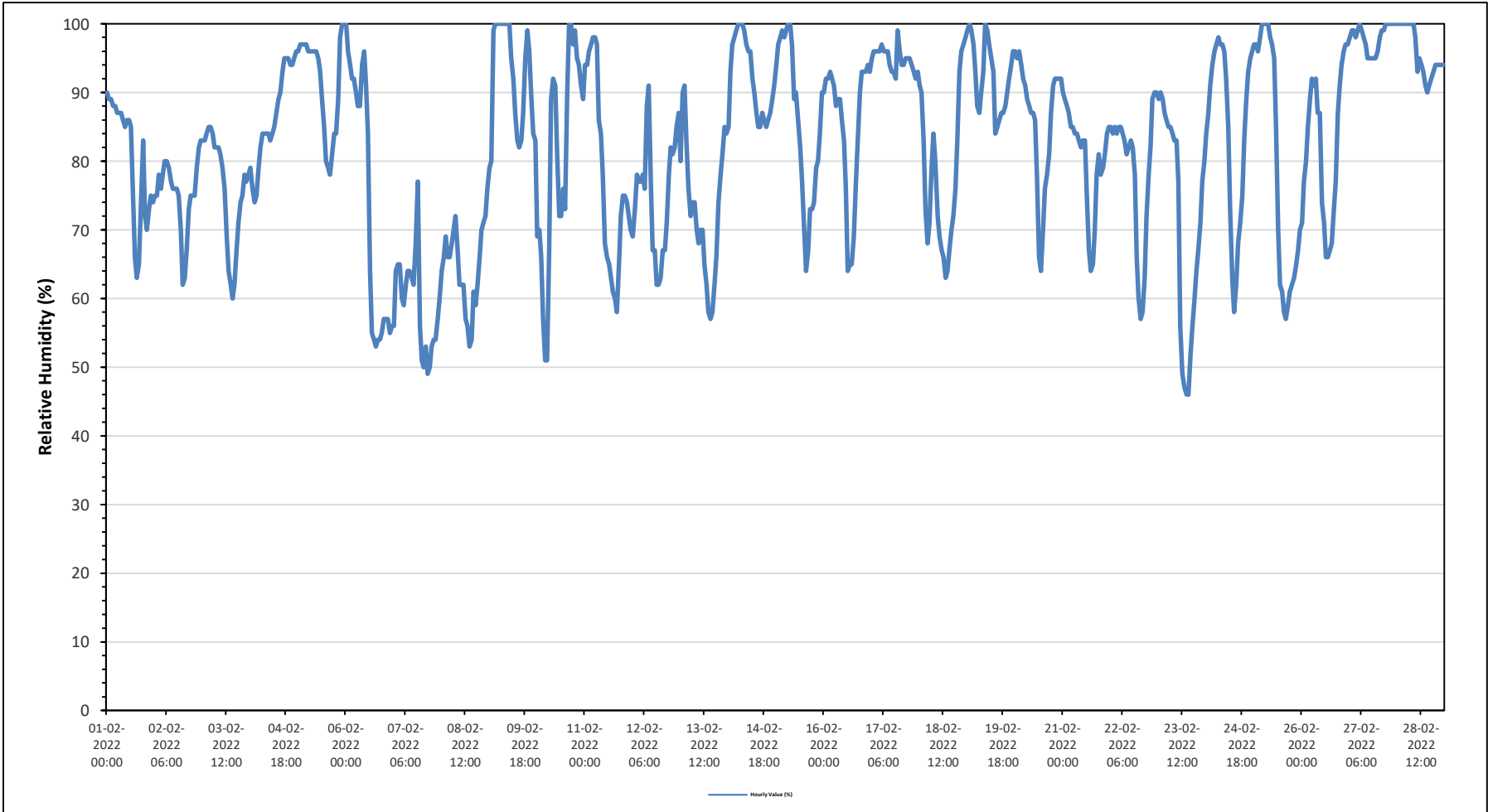
RELATIVE HUMIDITY (RH) in %

Maximum Hourly Value:	100 %	on February 5 at hour 22	Hours in Service:	672
Maximum Daily Value:	98.1 %	on February 27	Hours of Data:	672
Minimum Hourly Value:	46 %	on February 23 at hour 14	Hours of Missing Data:	0
Minimum Daily Value:	59.0 %	on February 7	Hours of Calibration:	0
Monthly Average:	81.8 %		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																
Feb 1	90	89	89	88	88	87	87	87	86	85	86	86	85	76	66	63	65	74	83	72	70	73	75	74	63	90	80.2																
Feb 2	75	75	78	76	78	80	80	79	77	76	76	76	75	70	62	63	67	73	75	75	75	79	82	83	62	83	75.2																
Feb 3	83	83	84	85	85	84	82	82	82	81	79	76	69	64	62	60	62	67	71	74	75	78	77	78	60	85	76.0																
Feb 4	79	76	74	75	79	82	84	84	84	84	83	84	85	87	89	90	93	95	95	95	94	94	95	96	74	96	86.5																
Feb 5	96	97	97	97	97	96	96	96	96	96	95	93	89	85	80	79	78	81	84	84	89	98	100	100	78	100	91.6																
Feb 6	100	96	94	92	92	90	88	88	94	96	91	84	64	55	54	53	54	54	55	57	57	57	55	56	53	100	74.0																
Feb 7	56	64	65	65	60	59	62	64	64	63	62	68	77	56	51	50	53	49	50	53	54	54	57	60	49	77	59.0																
Feb 8	64	66	69	66	66	68	70	72	67	62	62	57	56	53	54	61	59	62	66	70	71	72	76	53	76	64.6																	
Feb 9	79	80	99	100	100	100	100	100	100	100	95	92	87	83	82	83	87	95	99	96	89	84	83	79	100	92.2																	
Feb 10	69	70	66	57	51	51	67	89	92	91	81	72	72	76	73	90	100	100	97	99	95	94	91	89	51	100	80.5																
Feb 11	94	94	96	97	98	98	97	86	84	78	68	66	65	63	61	60	58	65	72	75	74	72	70	58	98	77.8																	
Feb 12	69	73	78	77	77	78	76	88	91	77	67	67	62	62	63	67	67	71	78	82	81	82	85	87	62	91	75.2																
Feb 13	80	90	91	83	76	72	74	74	70	68	70	70	65	62	58	57	58	62	66	74	78	81	85	84	57	91	72.8																
Feb 14	85	93	97	98	99	100	100	100	99	97	96	96	92	90	87	85	87	86	85	86	87	89	91	85	100	92.1																	
Feb 15	94	97	98	99	98	99	100	100	97	89	90	86	82	77	70	64	67	73	74	79	80	84	90	64	100	85.8																	
Feb 16	90	92	92	93	92	91	88	89	89	86	83	76	64	65	65	69	77	84	90	93	93	93	94	93	64	94	85.0																
Feb 17	95	96	96	96	96	97	96	96	96	94	93	93	92	99	96	94	94	95	95	95	94	93	92	93	92	99	94.8																
Feb 18	91	90	83	73	68	71	79	84	80	72	69	67	66	63	64	67	70	72	76	83	93	96	97	98	63	98	78.0																
Feb 19	99	100	99	97	93	88	87	90	93	100	99	97	95	93	84	85	86	87	87	88	90	92	94	96	84	100	92.5																
Feb 20	96	95	96	94	92	91	89	88	87	87	86	78	66	64	70	76	78	81	87	91	92	92	92	92	64	96	85.8																
Feb 21	90	89	88	87	85	85	84	84	83	82	83	83	75	67	64	65	70	78	81	78	79	81	84	85	64	90	80.4																
Feb 22	85	84	85	84	85	85	84	83	81	82	83	82	78	66	60	57	58	63	72	78	82	89	90	90	57	90	78.6																
Feb 23	89	90	89	87	86	85	85	84	83	83	77	56	49	47	46	46	52	56	60	64	67	71	77	80	46	90	71.2																
Feb 24	84	87	91	94	96	97	98	97	97	96	92	85	73	63	58	62	68	71	75	83	89	93	95	96	58	98	85.0																
Feb 25	97	97	96	98	100	100	100	100	98	97	95	85	70	62	61	58	57	59	61	62	63	65	67	70	57	100	79.9																
Feb 26	71	77	80	85	89	92	91	92	87	87	74	71	66	66	67	68	73	77	87	91	94	96	97	97	66	97	82.3																
Feb 27	98	99	99	98	99	100	99	98	97	95	95	95	95	96	98	99	99	100	100	100	100	100	100	100	95	100	98.1																
Feb 28	100	100	100	100	100	100	100	100	100	98	93	95	94	93	91	90	91	92	93	94	94	94	94	94	90	100	95.8																
Diurnal Maximum	100	100	100	100	100	100	100	100	100	100	100	97	95	99	96	98	100	100	100	100	100	100	100	100	100	100	100	100															
Diurnal Average	85.6	87.1	88.2	87.2	86.6	86.6	87.3	88.4	87.6	85.8	83.1	80.1	75.5	71.8	69.1	69.7	72.3	75.4	78.8	80.9	82.3	83.8	84.9	85.8																			
C	Monthly Calibration										S	Daily Zero-Span Check										Q	Quality Assurance																				
K	Collection Error										N	No Data (Machine Not in Service)										Y	Routine Maintenance										P	Power Failure									
X	Invalid Data (Equipment Malfunction /Recovery)										NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)																															

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

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





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - February 2022

Summary of Hourly Averages

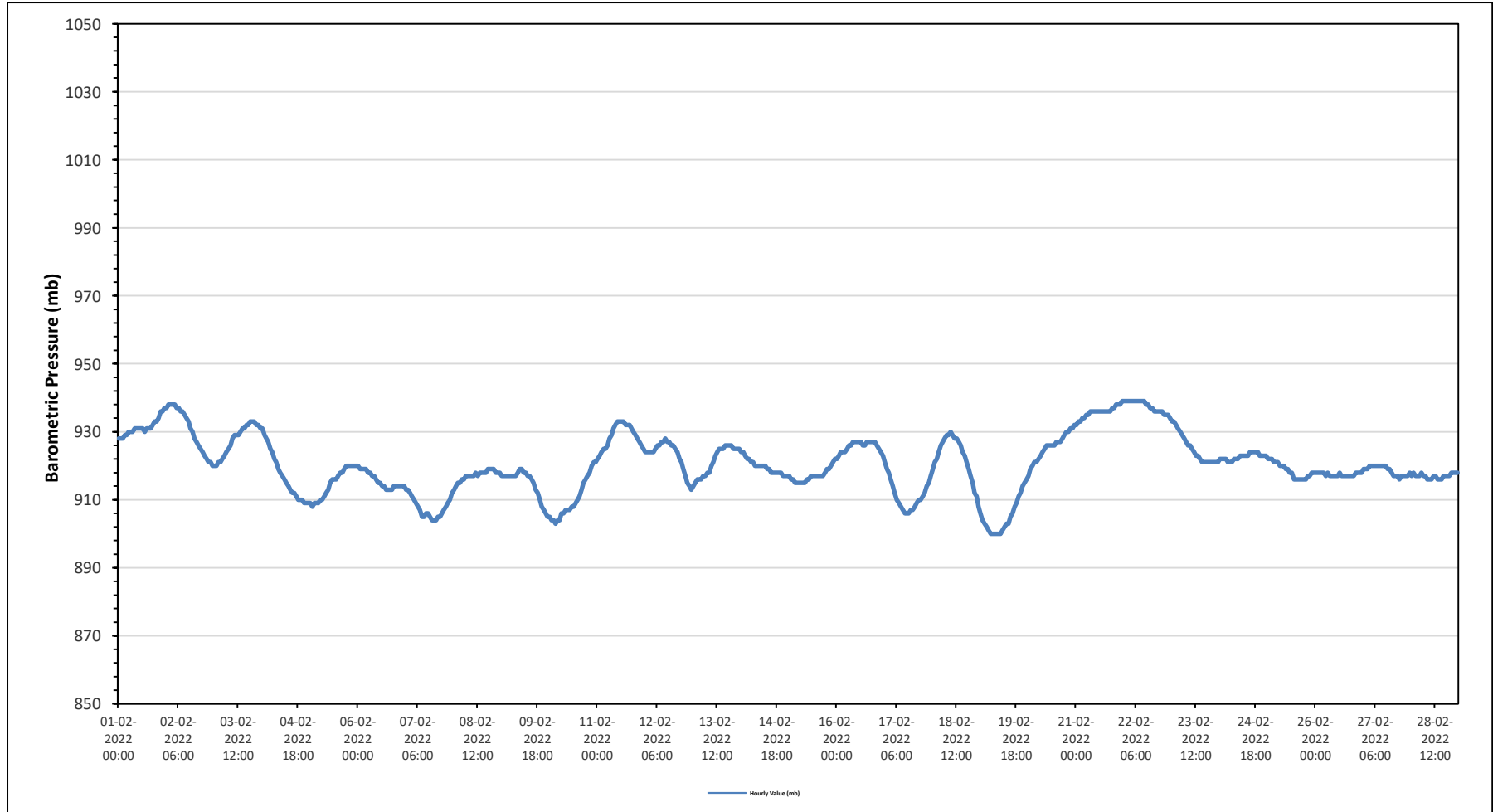
BAROMETRIC PRESSURE (BP) in millibar

Maximum Hourly Value:	939 mb on February 21 at hour 23	Hours in Service:	672
Maximum Daily Value:	937 mb on February 22	Hours of Data:	672
Minimum Hourly Value:	900 mb on February 19 at hour 5	Hours of Missing Data:	0
Minimum Daily Value:	905 mb on February 19	Hours of Calibration:	0
Monthly Average:	921 mb	Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average																					
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23																				
Feb 1	928	928	928	929	929	930	930	930	931	931	931	931	931	930	931	931	931	932	933	933	934	936	936	937	928	937	931																				
Feb 2	937	938	938	938	938	937	937	936	936	935	934	933	931	930	928	927	926	925	924	923	922	921	921	920	920	938	931																				
Feb 3	920	920	921	921	922	923	924	925	926	928	929	929	929	930	931	931	932	932	933	933	933	932	932	931	920	933	928																				
Feb 4	931	929	928	927	925	924	922	921	919	918	917	916	915	914	913	912	911	910	910	910	909	909	909	909	909	931	917																				
Feb 5	909	908	909	909	909	910	910	911	912	913	915	916	916	916	917	918	918	919	920	920	920	920	920	920	908	920	915																				
Feb 6	920	919	919	919	919	918	918	917	917	916	915	915	914	914	913	913	913	914	914	914	914	914	914	914	913	920	916																				
Feb 7	913	913	912	911	910	909	908	907	905	905	906	906	905	904	904	904	905	905	906	907	908	909	910	912	904	913	908																				
Feb 8	913	914	915	915	916	916	917	917	917	917	917	918	917	918	918	918	919	919	919	919	919	918	918	918	913	919	917																				
Feb 9	917	917	917	917	917	917	917	917	918	919	919	918	918	917	917	916	915	913	912	910	908	907	906	905	905	919	915																				
Feb 10	905	904	904	903	904	904	906	906	907	907	907	908	908	909	910	911	913	915	916	917	918	920	921	921	903	921	910																				
Feb 11	922	923	924	925	925	926	928	929	931	932	933	933	933	932	932	932	931	930	929	928	927	926	925	922	922	933	929																				
Feb 12	924	924	924	924	924	925	926	926	927	927	928	927	927	926	926	925	924	922	921	919	917	915	914	913	913	928	923																				
Feb 13	914	915	916	916	916	917	917	918	918	920	921	923	924	925	925	925	926	926	926	926	926	925	925	925	914	926	921																				
Feb 14	924	924	923	922	922	921	921	920	920	920	920	919	919	918	918	918	918	918	918	918	917	917	917	917	917	924	920																				
Feb 15	917	916	916	915	915	915	915	915	915	916	916	917	917	917	917	917	917	917	918	919	920	921	922	922	915	922	917																				
Feb 16	922	923	924	924	924	925	926	926	927	927	927	927	927	926	926	927	927	927	927	927	927	926	925	924	922	927	926																				
Feb 17	921	919	918	916	914	912	910	909	908	907	906	906	906	907	907	908	909	910	910	911	912	914	915	917	906	921	911																				
Feb 18	919	921	922	924	926	927	928	929	930	930	929	928	928	927	926	924	923	921	919	917	915	912	911	908	908	930	923																				
Feb 19	906	904	903	902	901	900	900	900	900	900	900	901	902	903	903	905	906	908	909	911	912	914	915	916	900	916	905																				
Feb 20	917	919	920	921	921	922	923	924	925	926	926	926	926	926	927	927	927	928	929	930	930	931	931	932	917	932	926																				
Feb 21	932	933	933	934	934	935	935	936	936	936	936	936	936	936	936	936	936	936	937	937	938	938	938	939	932	939	936																				
Feb 22	939	939	939	939	939	939	939	939	939	939	939	938	938	937	937	936	936	936	936	936	935	935	934	934	934	939	937																				
Feb 23	933	933	932	931	930	929	928	927	926	926	925	924	923	923	922	921	921	921	921	921	921	921	921	921	921	933	925																				
Feb 24	922	922	922	922	921	921	921	922	922	922	923	923	923	923	924	924	924	924	924	923	923	923	923	921	924	923																					
Feb 25	922	922	922	921	921	921	920	920	920	919	919	918	918	916	916	916	916	916	916	917	917	918	918	916	922	919																					
Feb 26	918	918	918	918	918	917	918	917	917	917	917	917	918	917	917	917	917	917	917	917	918	918	918	918	917	918	917																				
Feb 27	919	919	919	920	920	920	920	920	920	920	920	920	919	919	918	917	917	917	916	917	917	917	918	916	920	919																					
Feb 28	917	918	917	917	917	918	917	917	916	916	916	917	917	916	916	917	917	917	917	918	918	918	918	916	918	918	917																				
Diurnal Maximum	939	939	939	939	939	939	939	939	939	939	939	938	938	937	937	936	936	936	937	937	938	938	938	939																							
Diurnal Average	921	921	921	921	921	921	921	921	921	921	921	921	921	921	920	921	921	921	921	921	920	920	921	921																							
C	Monthly Calibration											S	Daily Zero-Span Check											Q	Quality Assurance																						
K	Collection Error											N	No Data (Machine Not in Service)											Y	Routine Maintenance											P	Power Failure										
X	Invalid Data (Equipment Malfunction / Recovery)											NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)																																		

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

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





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - February 2022

Summary of Hourly Averages

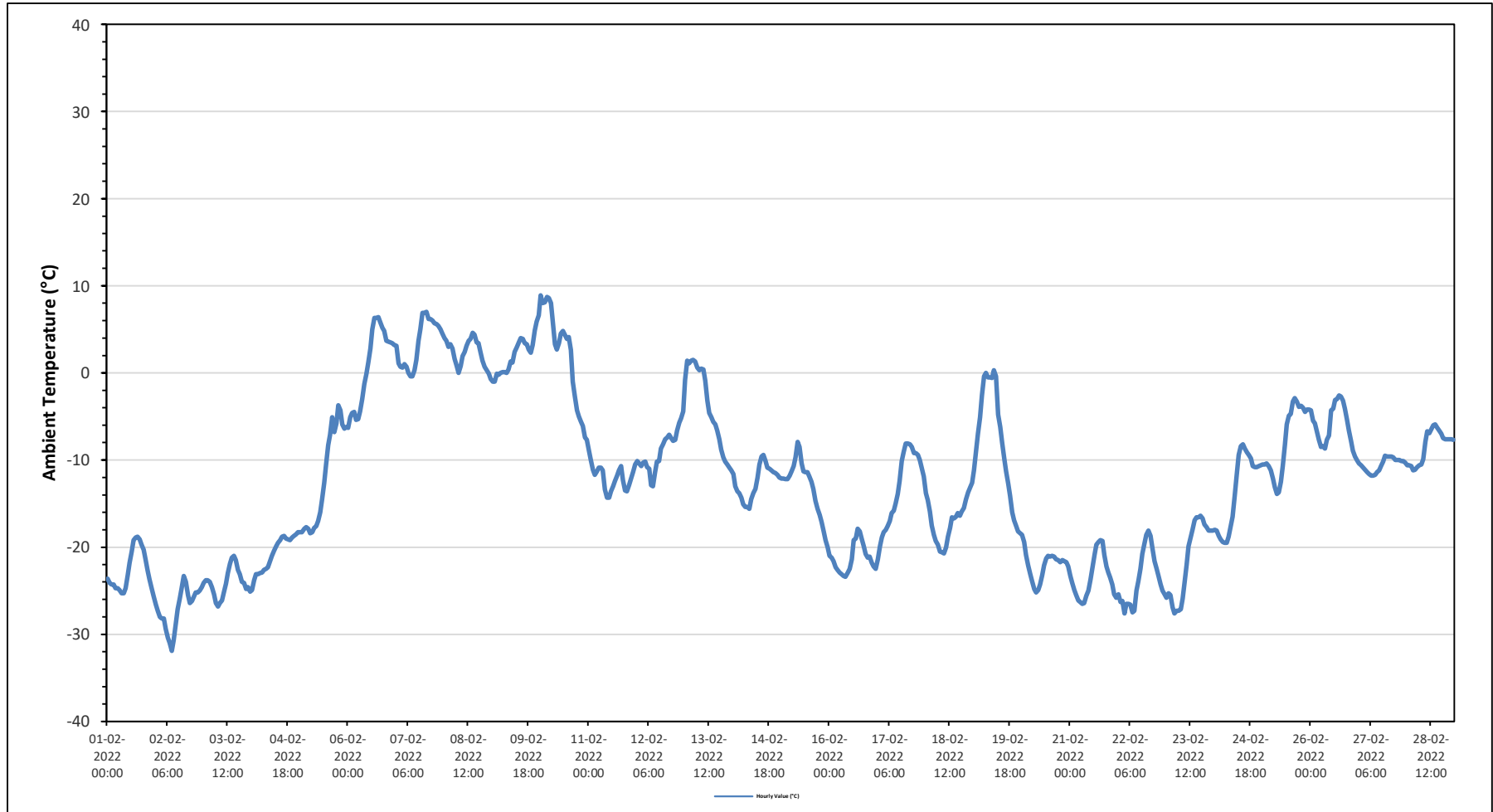
AMBIENT TEMPERATURE (AT) in Degree Celsius

Maximum Hourly Value:	8.9 °C	on February 10 at hour 0	Hours in Service:	672
Maximum Daily Value:	3.4 °C	on February 7	Hours of Data:	672
Minimum Hourly Value:	-31.9 °C	on February 2 at hour 8	Hours of Missing Data:	0
Minimum Daily Value:	-27.1 °C	on February 2	Hours of Calibration:	0
Monthly Average:	-12.2 °C		Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average					
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23				
Feb 1	-23.6	-24.1	-24.3	-24.3	-24.7	-24.7	-24.9	-25.3	-25.3	-24.7	-23.2	-21.8	-20.5	-19.2	-18.9	-18.8	-19.1	-19.7	-20.3	-21.4	-22.7	-23.7	-24.7	-25.7	-25.7	-18.8	-22.7				
Feb 2	-26.6	-27.3	-28	-28.2	-28.2	-29.4	-30.4	-31	-31.9	-30.7	-28.8	-27.1	-25.9	-24.7	-23.3	-24	-25.5	-26.4	-26.2	-25.7	-25.2	-25.2	-25	-24.6	-31.9	-23.3	-27.1				
Feb 3	-24.1	-23.8	-23.8	-24	-24.6	-25.4	-26.4	-26.8	-26.4	-26.1	-25.2	-24.2	-23	-21.9	-21.2	-21	-21.5	-22.6	-23.1	-24	-24.1	-24.8	-24.6	-25.1	-26.8	-21.0	-24.1				
Feb 4	-24.9	-23.8	-23.1	-23.1	-23	-22.9	-22.6	-22.5	-22.3	-21.6	-21	-20.4	-19.9	-19.5	-19.2	-18.8	-18.7	-19	-19.1	-19.2	-18.9	-18.7	-18.5	-18.3	-24.9	-18.3	-20.8				
Feb 5	-18.3	-18.3	-17.9	-17.7	-17.9	-18.4	-18.3	-17.8	-17.6	-17	-16	-14.5	-12.6	-10.5	-8.3	-7.1	-5.1	-6.8	-5.8	-3.7	-4.3	-5.9	-6.4	-6.2	-18.4	-3.7	-12.2				
Feb 6	-6.3	-5.1	-4.6	-4.5	-5.4	-5.3	-4.4	-3	-1.3	-0.1	1.2	2.8	5	6.3	6.3	6.4	5.8	5.2	4.8	3.7	3.6	3.5	3.4	3.2	-6.3	6.4	0.9				
Feb 7	3.1	1.1	0.7	0.6	1	0.7	0	-0.4	-0.4	0.3	1.5	3.7	5	6.9	6.9	7	6.2	6.2	6	5.7	5.6	5.4	5	4.5	-0.4	7.0	3.4				
Feb 8	4	3.7	3	3.3	2.8	1.6	0.8	0	0.8	1.9	2.4	3.1	3.7	3.9	4.6	4.4	3.5	3.4	2.3	1.4	0.7	0.3	-0.1	-0.7	-0.7	4.6	2.3				
Feb 9	-1	-1	-0.1	-0.2	0	0.1	0.1	0	0.4	1.3	1.2	2.4	2.9	3.5	4	3.9	3.4	3.3	2.7	2.3	3.2	4.9	5.9	6.6	-1.0	6.6	2.1				
Feb 10	8.9	8	8.1	8.7	8.6	8	5.8	3.3	2.7	3.4	4.5	4.8	4.4	3.9	4.1	2.6	-1	-2.7	-4.3	-5	-5.6	-6.1	-7.4	-7.7	-7.7	8.9	2.1				
Feb 11	-8.9	-10	-11.1	-11.7	-11.3	-10.9	-10.9	-11.2	-13.4	-14.3	-14.3	-13.6	-13	-12.4	-11.8	-11.2	-10.7	-12.3	-13.5	-13.6	-12.9	-12.2	-11.4	-10.5	-14.3	-8.9	-12.0				
Feb 12	-10.1	-10.4	-10.7	-10.3	-10.2	-10.8	-11	-12.9	-13	-11.4	-10.2	-10.1	-8.7	-8.2	-7.6	-7.4	-7.1	-7.5	-7.8	-7.7	-6.6	-5.7	-5.2	-4.4	-13.0	-4.4	-9.0				
Feb 13	-0.8	1.4	1.1	1.4	1.5	1.3	0.6	0.3	0.5	0.4	-0.9	-3.2	-4.6	-5.1	-5.6	-5.9	-6.6	-7.6	-8.8	-9.7	-10.2	-10.5	-10.9	-11.2	-11.2	1.5	-3.9				
Feb 14	-11.6	-13	-13.6	-13.8	-14.3	-15.1	-15.4	-15.4	-15.6	-14.5	-13.8	-13.3	-12	-10.5	-9.6	-9.4	-10.1	-10.9	-11	-11.2	-11.4	-11.5	-11.7	-12	-15.6	-9.4	-12.5				
Feb 15	-12.1	-12.1	-12.2	-12.2	-11.8	-11.3	-10.7	-9.7	-7.9	-8.5	-10.4	-11.3	-11.4	-11.4	-11.9	-12.5	-13.3	-14.7	-15.6	-16.3	-17.1	-18.2	-19.2	-20	-20.0	-7.9	-13.0				
Feb 16	-21	-21.2	-21.6	-22.3	-22.6	-22.9	-23.1	-23.3	-23.4	-22.9	-22.5	-21.4	-19.2	-19	-17.9	-18.2	-19	-19.9	-20.8	-21.2	-21.1	-21.8	-22.2	-22.5	-23.4	-17.9	-21.3				
Feb 17	-21.4	-19.9	-18.9	-18.3	-18	-17.6	-17	-16.1	-15.8	-15	-13.9	-12.4	-10.1	-9.1	-8.1	-8.1	-8.2	-8.5	-9.2	-9.2	-9.4	-10	-11	-11.9	-21.4	-8.1	-13.2				
Feb 18	-13.8	-14.6	-15.9	-17.5	-18.6	-19.3	-19.7	-20.5	-20.6	-20.7	-20	-18.8	-17.8	-16.6	-16.7	-16.5	-16.1	-16.4	-15.9	-15.5	-14.5	-13.7	-13.2	-12.6	-20.7	-12.6	-16.9				
Feb 19	-11.2	-8.9	-7	-5.1	-2.6	-0.4	0	-0.5	-0.5	-0.6	0.3	-0.4	-4.8	-6.2	-8	-9.8	-11.3	-12.7	-14.1	-16	-16.9	-17.6	-18.2	-18.4	-18.4	0.3	-8.0				
Feb 20	-18.6	-19.4	-20.9	-22.1	-23.1	-23.9	-24.8	-25.2	-24.9	-24.3	-23.2	-22.1	-21.3	-21	-21.1	-21	-21.1	-21.4	-21.5	-21.7	-21.5	-21.6	-21.7	-22.2	-25.2	-18.6	-22.1				
Feb 21	-23.3	-24.1	-24.9	-25.5	-26.1	-26.3	-26.5	-26.4	-25.6	-25	-23.7	-22.4	-20.9	-19.7	-19.4	-19.2	-19.3	-20.9	-22.2	-22.9	-23.5	-24.3	-25.4	-25.8	-26.5	-19.2	-23.5				
Feb 22	-25.4	-26.3	-26.2	-27.6	-26.5	-26.5	-26.6	-27.5	-27.3	-25	-23.9	-22.5	-20.8	-19.6	-18.6	-18.1	-18.7	-20.3	-21.6	-22.5	-23.3	-24.3	-25	-25.4	-27.6	-18.1	-23.7				
Feb 23	-25.8	-25.3	-25.5	-26.9	-27.6	-27.3	-27.3	-27.1	-25.9	-24.1	-22	-19.9	-18.9	-18	-16.9	-16.6	-16.6	-16.4	-16.7	-17.4	-17.7	-18.1	-18.1	-18.1	-27.6	-16.4	-21.4				
Feb 24	-18	-18.1	-18.7	-19.1	-19.4	-19.5	-19.5	-18.8	-17.6	-16.5	-14.1	-11.9	-9.4	-8.4	-8.2	-8.7	-9.1	-9.4	-9.8	-10.7	-10.8	-10.8	-10.7	-10.6	-19.5	-8.2	-13.7				
Feb 25	-10.5	-10.5	-10.4	-10.7	-11.2	-12.1	-13.1	-13.9	-13.7	-12.5	-10.7	-8.3	-5.9	-4.9	-4.7	-3.3	-2.9	-3.3	-3.9	-3.8	-4	-4.5	-4.2	-4.2	-13.9	-2.9	-7.8				
Feb 26	-4.3	-5.5	-5.8	-6.8	-7.7	-8.5	-8.4	-8.7	-7.7	-7.2	-4.3	-4.1	-3.1	-3	-2.6	-2.7	-3.2	-4.1	-5.4	-6.6	-7.8	-8.9	-9.6	-10	-10.0	-2.6	-6.1				
Feb 27	-10.4	-10.6	-10.9	-11.1	-11.4	-11.6	-11.8	-11.7	-11.4	-11.2	-10.7	-10.2	-9.5	-9.6	-9.6	-9.6	-9.7	-10	-10	-10	-10	-10.1	-10.1	-10.3	-11.8	-9.5	-10.6				
Feb 28	-10.6	-10.6	-10.7	-11.2	-11.1	-10.8	-10.6	-10.5	-9.9	-7.9	-6.7	-6.9	-6.5	-6	-5.9	-6.3	-6.6	-7	-7.5	-7.6	-7.6	-7.6	-7.7	-7.7	-11.2	-5.9	-8.4				
Diurnal Maximum	8.9	8.0	8.1	8.7	8.6	8.0	5.8	3.3	2.7	3.4	4.5	4.8	5.0	6.9	6.9	7.0	6.2	6.2	6.0	5.7	5.6	5.4	5.9	6.6							
Diurnal Average	-13.1	-13.2	-13.4	-13.6	-13.7	-13.9	-14.1	-14.4	-14.1	-13.4	-12.5	-11.6	-10.7	-10.0	-9.6	-9.6	-10.1	-10.8	-11.4	-11.8	-11.9	-12.2	-12.4	-12.6							
C	Monthly Calibration							S	Daily Zero-Span Check							Q	Quality Assurance														
K	Collection Error							N	No Data (Machine Not in Service)							Y	Routine Maintenance							P	Power Failure						
X	Invalid Data (Equipment Malfunction /Recovery)							NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)																						

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

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





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - February 2022

Summary of Hourly Averages

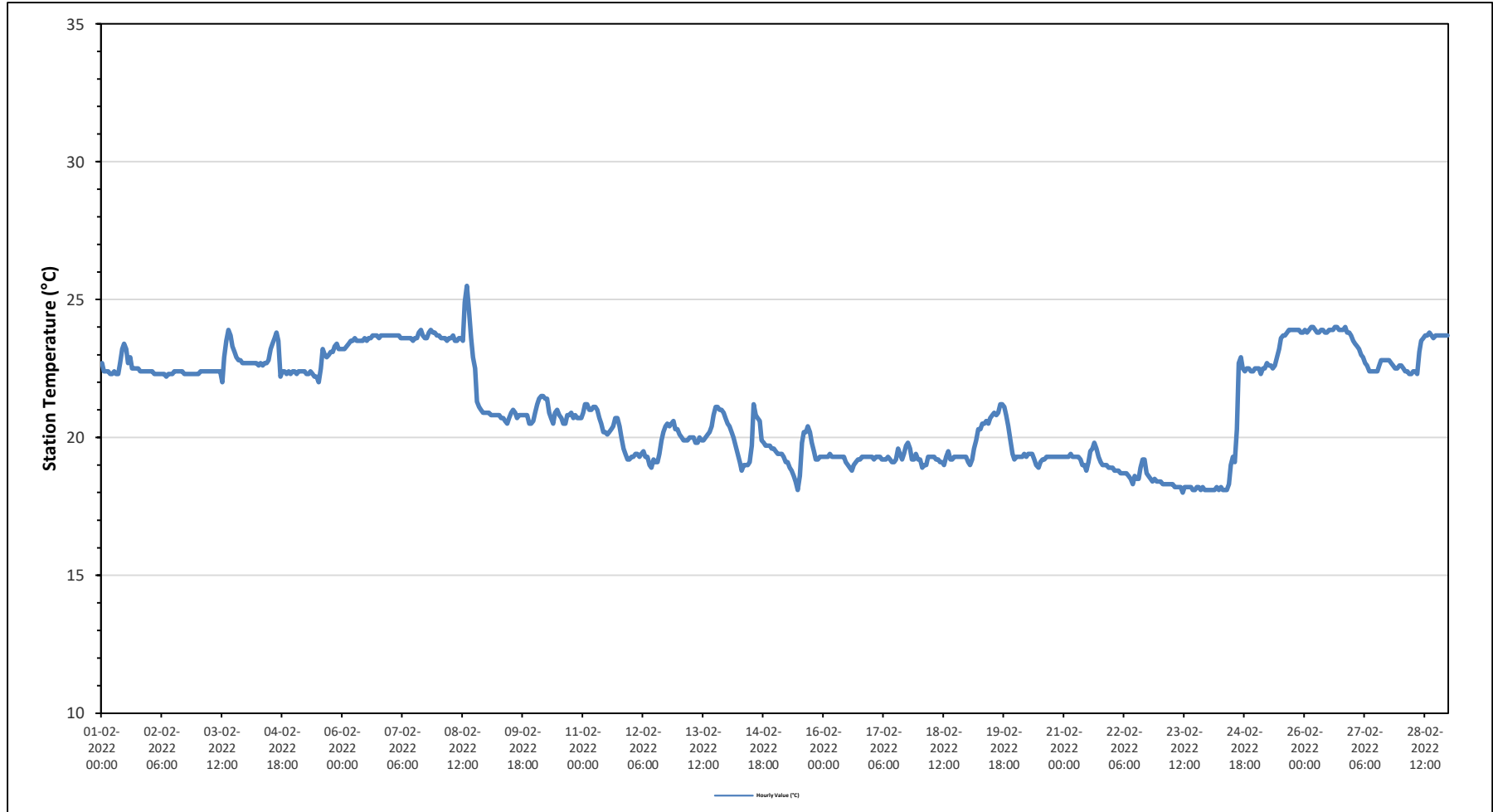
STATION TEMPERATURE (ST) in Degree Celsius

Maximum Hourly Value:	25.5 °C	on February 8 at hour 14	Hours in Service:	672
Maximum Daily Value:	23.9 °C	on February 26	Hours of Data:	672
Minimum Hourly Value:	18.0 °C	on February 23 at hour 11	Hours of Missing Data:	0
Minimum Daily Value:	18.2 °C	on February 23	Hours of Calibration:	0
Monthly Average:	21.1 °C		Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average		
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23	
Feb 1	22.7	22.4	22.4	22.4	22.3	22.3	22.4	22.3	22.3	22.2	22.3	22.3	22.4	22.4	22.4	22.3	22.3	22.3	22.3	22.3	22.3	22.3	22.3	22.3	22.3	22.2	22.4	22.3
Feb 2	22.4	22.4	22.3	22.3	22.3	22.3	22.3	22.3	22.2	22.3	22.3	22.3	22.4	22.4	22.4	22.3	22.3	22.3	22.3	22.3	22.3	22.3	22.3	22.3	22.3	22.2	22.4	22.3
Feb 3	22.3	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.0	22.9	23.5	23.9	23.7	23.3	23.1	22.9	22.8	22.8	22.7	22.7	22.0	23.9	22.7	
Feb 4	22.7	22.7	22.7	22.7	22.7	22.7	22.6	22.7	22.6	22.7	22.7	22.8	23.2	23.4	23.6	23.8	23.5	22.2	22.4	22.4	22.3	22.4	22.3	22.4	22.2	23.8	22.8	
Feb 5	22.4	22.3	22.4	22.4	22.4	22.4	22.3	22.3	22.4	22.3	22.2	22.2	22.0	22.5	23.2	23.0	22.9	23.0	23.1	23.1	23.3	23.4	23.2	23.2	22.0	23.4	22.7	
Feb 6	23.2	23.2	23.3	23.4	23.5	23.5	23.6	23.5	23.5	23.5	23.5	23.6	23.5	23.6	23.6	23.7	23.7	23.7	23.6	23.7	23.7	23.7	23.7	23.7	23.2	23.7	23.6	
Feb 7	23.7	23.7	23.7	23.7	23.7	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.5	23.6	23.6	23.8	23.9	23.7	23.6	23.6	23.8	23.9	23.8	23.8	23.7	23.5	23.9	23.7
Feb 8	23.7	23.6	23.6	23.6	23.5	23.6	23.6	23.7	23.5	23.5	23.6	23.6	23.5	24.9	25.5	24.6	23.6	22.9	22.5	21.3	21.1	21.0	20.9	20.9	20.9	20.9	23.2	
Feb 9	20.9	20.9	20.8	20.8	20.8	20.8	20.8	20.7	20.7	20.6	20.5	20.7	20.9	21.0	20.9	20.7	20.8	20.8	20.8	20.8	20.8	20.5	20.5	20.6	20.5	21.0	20.8	
Feb 10	20.9	21.2	21.4	21.5	21.5	21.4	21.4	20.9	20.7	20.5	20.9	21.0	20.8	20.7	20.5	20.5	20.8	20.8	20.9	20.7	20.8	20.7	20.7	20.7	20.5	21.5	20.9	
Feb 11	20.9	21.2	21.2	21.0	21.0	21.1	21.1	21.0	20.7	20.5	20.2	20.2	20.1	20.2	20.3	20.4	20.7	20.7	20.4	20.0	19.6	19.4	19.2	19.2	19.2	21.2	20.4	
Feb 12	19.3	19.3	19.4	19.4	19.3	19.4	19.5	19.3	19.3	19.0	18.9	19.2	19.1	19.1	19.4	19.9	20.2	20.4	20.5	20.4	20.5	20.6	20.3	20.3	18.9	20.6	19.7	
Feb 13	20.1	20.0	19.9	19.9	19.9	20.0	20.0	20.0	19.8	19.8	20.0	19.9	19.9	20.0	20.1	20.2	20.4	20.8	21.1	21.1	21.0	21.0	20.9	20.7	19.8	21.1	20.3	
Feb 14	20.5	20.4	20.2	20.0	19.7	19.4	19.1	18.8	19.0	19.0	19.0	19.1	19.7	21.2	20.8	20.7	20.6	19.9	19.8	19.7	19.7	19.7	19.6	19.6	18.8	21.2	19.8	
Feb 15	19.5	19.4	19.4	19.4	19.3	19.1	19.1	18.9	18.8	18.6	18.4	18.1	18.6	19.8	20.2	20.2	20.4	20.2	19.8	19.5	19.2	19.2	19.3	19.3	18.1	20.4	19.3	
Feb 16	19.3	19.3	19.3	19.4	19.3	19.3	19.3	19.3	19.3	19.3	19.3	19.3	19.1	19.0	18.9	18.8	19.0	19.1	19.2	19.2	19.3	19.3	19.3	19.3	18.8	19.4	19.2	
Feb 17	19.3	19.2	19.3	19.3	19.3	19.2	19.2	19.2	19.3	19.2	19.1	19.1	19.2	19.6	19.4	19.2	19.4	19.7	19.8	19.6	19.2	19.2	19.4	19.2	19.1	19.8	19.3	
Feb 18	19.2	18.9	19.0	19.0	19.3	19.3	19.3	19.3	19.2	19.2	19.1	19.1	19.0	19.3	19.5	19.2	19.2	19.3	19.3	19.3	19.3	19.3	19.3	19.3	18.9	19.5	19.2	
Feb 19	19.1	19.0	19.2	19.6	19.9	20.3	20.3	20.5	20.5	20.6	20.5	20.7	20.8	20.9	20.8	20.9	21.2	21.2	21.1	20.8	20.4	19.9	19.4	19.2	19.0	21.2	20.3	
Feb 20	19.3	19.3	19.3	19.3	19.4	19.3	19.4	19.4	19.4	19.2	19.0	18.9	19.1	19.2	19.2	19.3	19.3	19.3	19.3	19.3	19.3	19.3	19.3	19.3	18.9	19.4	19.3	
Feb 21	19.3	19.3	19.3	19.4	19.3	19.3	19.3	19.3	19.2	19.0	19.0	18.8	19.1	19.5	19.6	19.8	19.6	19.3	19.1	19.0	19.0	19.0	18.9	18.9	18.8	19.8	19.2	
Feb 22	18.9	18.8	18.8	18.8	18.7	18.7	18.7	18.7	18.6	18.5	18.3	18.6	18.5	18.5	18.9	19.2	19.2	18.7	18.6	18.5	18.4	18.5	18.4	18.4	18.3	19.2	18.7	
Feb 23	18.4	18.3	18.3	18.3	18.3	18.3	18.3	18.2	18.2	18.2	18.2	18.0	18.2	18.2	18.2	18.2	18.1	18.1	18.2	18.2	18.1	18.2	18.1	18.1	18.0	18.4	18.2	
Feb 24	18.1	18.1	18.1	18.1	18.2	18.1	18.2	18.1	18.1	18.1	18.3	19.0	19.3	19.1	20.3	22.7	22.9	22.5	22.4	22.5	22.5	22.4	22.4	22.5	18.1	22.9	20.0	
Feb 25	22.5	22.5	22.3	22.5	22.5	22.7	22.6	22.6	22.5	22.6	22.9	23.2	23.6	23.7	23.7	23.8	23.9	23.9	23.9	23.9	23.9	23.9	23.8	23.8	22.3	23.9	23.2	
Feb 26	23.9	23.8	23.9	24.0	24.0	23.9	23.8	23.8	23.9	23.9	23.8	23.8	23.9	23.9	23.9	24.0	24.0	23.9	23.9	23.9	24.0	23.8	23.8	23.7	23.7	24.0	23.9	
Feb 27	23.5	23.4	23.3	23.2	23.0	22.9	22.7	22.6	22.4	22.4	22.4	22.4	22.4	22.6	22.8	22.8	22.8	22.8	22.8	22.7	22.6	22.5	22.5	22.6	22.4	23.5	22.8	
Feb 28	22.6	22.5	22.4	22.4	22.3	22.3	22.4	22.4	22.3	23.1	23.5	23.6	23.7	23.7	23.8	23.7	23.6	23.7	23.7	23.7	23.7	23.7	23.7	23.7	22.3	23.8	23.2	
Diurnal Maximum	23.9	23.8	23.9	24.0	24.0	23.9	23.8	23.8	23.9	23.9	23.8	23.8	23.9	24.9	25.5	24.6	24.0	23.9	23.9	23.9	24.0	23.9	23.8	23.8				
Diurnal Average	21.0	21.0	21.0	21.0	21.0	21.0	21.0	20.9	20.9	20.9	20.9	20.9	21.0	21.3	21.4	21.5	21.5	21.4	21.3	21.2	21.1	21.1	21.1					
C	Monthly Calibration										S	Daily Zero-Span Check										Q	Quality Assurance					
K	Collection Error										N	No Data (Machine Not in Service)										Y	Routine Maintenance					
X	Invalid Data (Equipment Malfunction / Recovery)										NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)										P	Power Failure					

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

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





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - February 2022
Summary of Hourly Averages

PRECIPITATION in mm

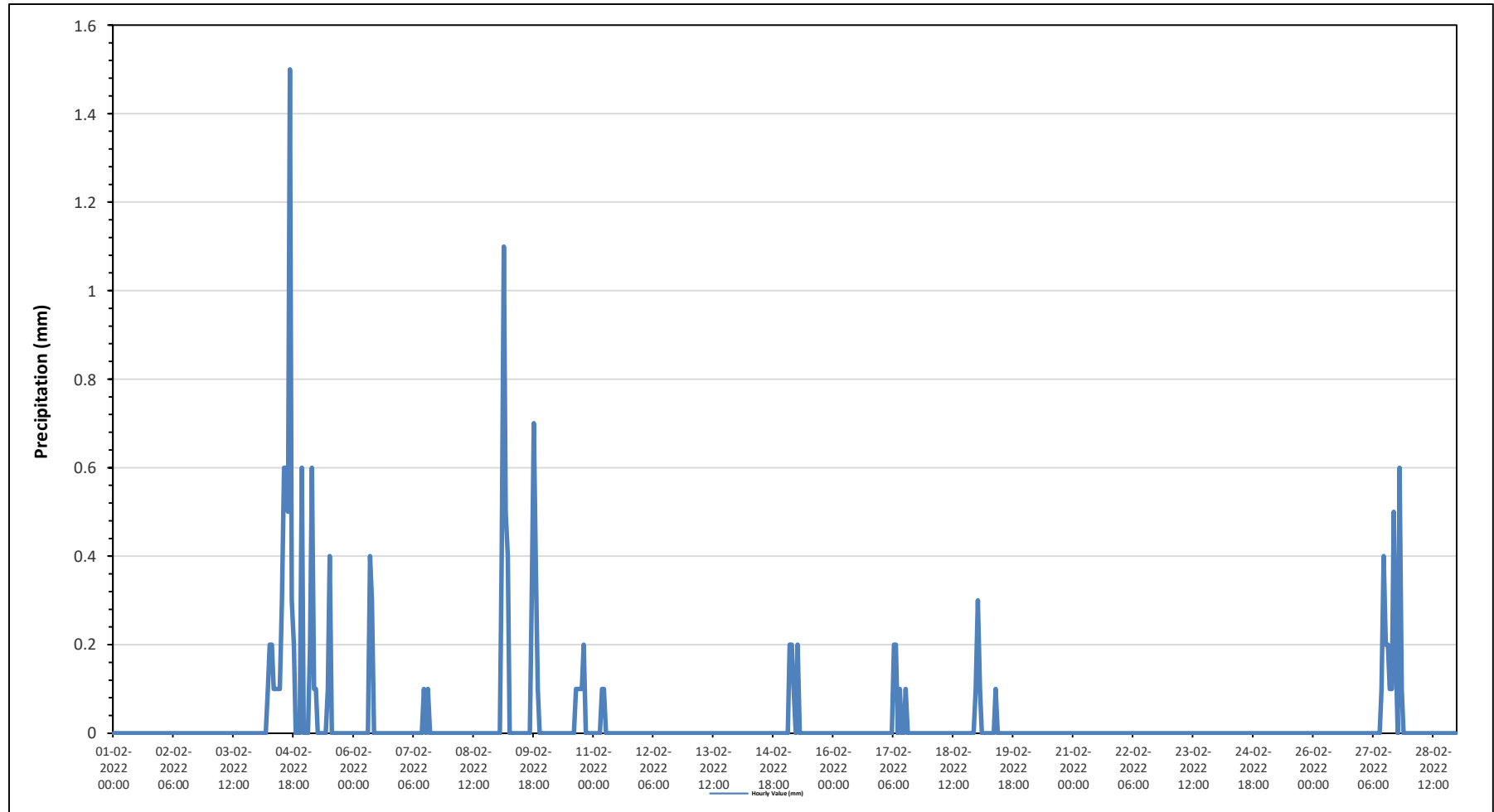
Maximum Hourly Value:	1.5 mm on February 4 at hour 16	Hours in Service:	672
Maximum Daily Value:	5.5 mm on February 4	Hours of Data:	672
Minimum Hourly Value:	0.0 mm on February 1 at hour 0	Hours of Missing Data:	0
Minimum Daily Value:	0.0 mm on February 1	Hours of Calibration:	0
Monthly Total:	17.0 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	
Feb 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	
Feb 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Feb 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Feb 4	0	0	0	0	0	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.3	0.6	0.6	0.5	1.5	0.3	0.2	0	0	0	0.6	0	0.0	1.5	5.5	
Feb 5	0	0	0.2	0.6	0.1	0.1	0	0	0	0	0	0.1	0.4	0	0	0	0	0	0	0	0	0	0	0	0.0	0.6	1.5	
Feb 6	0	0	0	0	0	0	0	0	0.4	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.4	0.7	
Feb 7	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0.1	0	0	0	0	0	0	0	0	0	0	0.0	0.1	0.2	
Feb 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	
Feb 9	0	0	0.4	1.1	0.5	0.4	0	0	0	0	0	0	0	0	0	0	0	0.3	0.7	0.4	0.1	0	0	0	0.0	1.1	3.9	
Feb 10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.1	0.1	0.1	0.2	0	0	0	0	0.0	0.2	0.6	
Feb 11	0	0	0	0	0.1	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1	0.2	
Feb 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	
Feb 13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	
Feb 14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	
Feb 15	0	0	0.2	0.2	0.1	0	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.2	0.7	
Feb 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	
Feb 17	0	0	0	0	0	0	0.2	0.2	0	0.1	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0.0	0.2	0.6	
Feb 18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1	0.1	
Feb 19	0.3	0.1	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.3	0.5	
Feb 20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	
Feb 21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	
Feb 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	
Feb 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	
Feb 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	
Feb 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	
Feb 26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	
Feb 27	0	0	0	0	0	0	0	0	0	0	0.1	0.4	0.2	0.2	0.1	0.1	0.5	0.2	0	0.6	0.1	0	0	0	0.0	0.6	2.5	
Feb 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	
Diurnal Maximum	0.3	0.1	0.4	1.1	0.5	0.4	0.2	0.2	0.4	0.3	0.1	0.4	0.4	0.6	0.6	0.5	1.5	0.3	0.7	0.6	0.1	0.0	0.6	0.1				
Diurnal Average	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	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	N	No Data (Machine Not in Service)	Y	Routine Maintenance
X	InValid Data (Equipment Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	P	Power Failure

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

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





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - February 2022

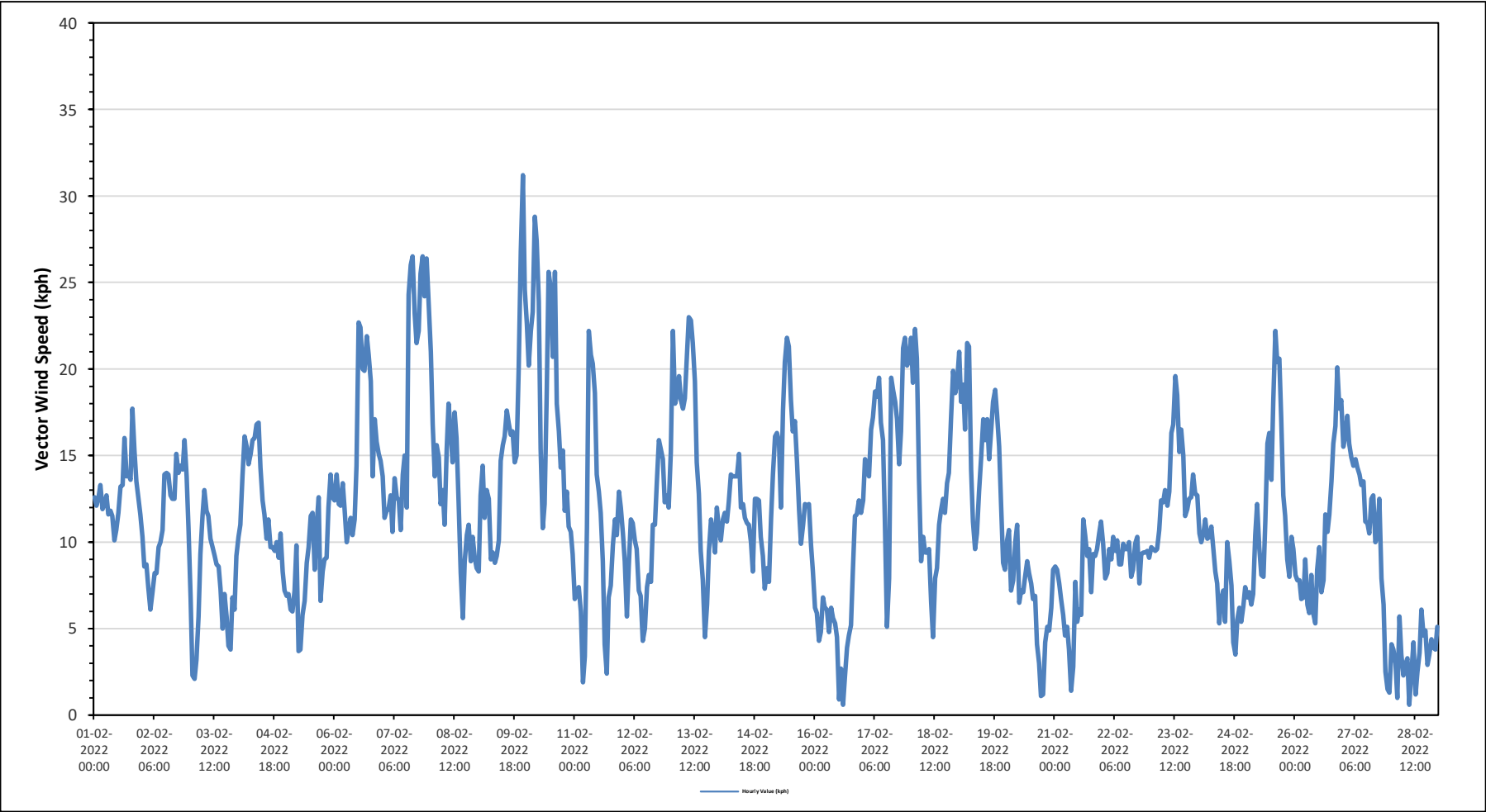
Summary of Hourly Averages

VECTOR WIND SPEED (VWS) in km/hr

Maximum Hourly Value:	31.2 kph on February 9 at hour 22	Hours in Service:	672
Maximum Daily Value:	15.5 kph on February 10	Hours of Data:	672
Minimum Hourly Value:	0.6 kph on February 16 at hour 14	Hours of Missing Data:	0
Minimum Daily Value:	1.7 kph on February 28	Hours of Calibration:	0
Monthly Average:	3.4 kph	Operational Uptime:	100.0

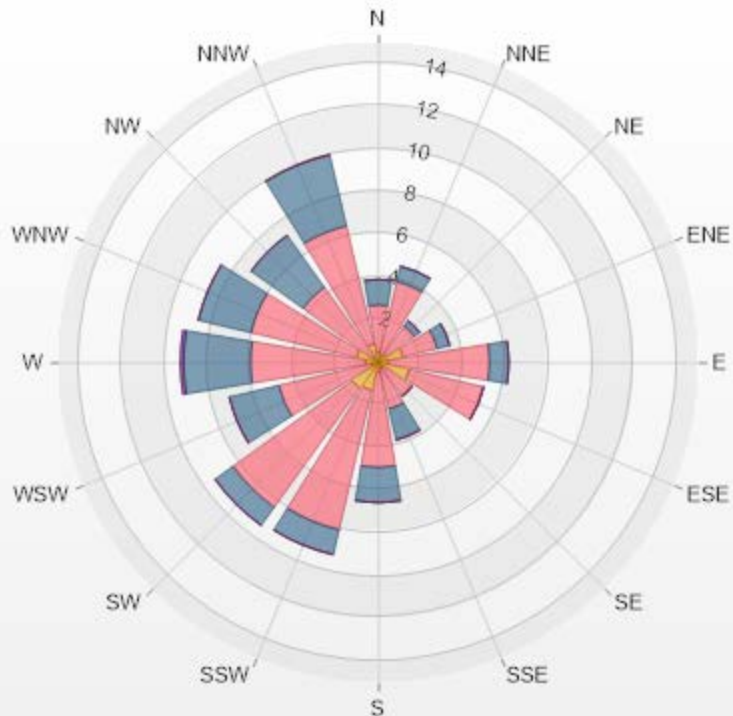
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average											
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23										
Feb 1	12.6	12.1	12.6	13.3	11.9	12.2	12.7	11.6	11.8	11.5	10.1	10.7	11.7	13.2	13.3	16.0	13.8	13.9	13.6	17.7	15.2	13.5	12.5	11.6	10.1	17.7	12.5										
Feb 2	10.3	8.6	8.7	7.4	6.1	7.1	8.2	8.2	9.7	10.0	10.7	13.9	14.0	13.9	12.7	12.5	12.5	15.1	14.0	14.4	14.2	15.9	13.8	10.8	6.1	15.9	7.4										
Feb 3	6.8	2.3	2.1	3.2	5.7	9.3	11.5	13.0	11.8	11.5	10.2	9.7	9.2	8.7	8.6	7.3	5.0	7.0	5.7	4.0	3.8	6.8	6.1	9.2	2.1	13.0	4.4										
Feb 4	10.3	11.0	13.8	16.1	15.5	14.5	15.1	15.9	16.0	16.8	16.9	14.3	12.4	11.6	10.2	11.3	9.7	9.7	9.5	10.0	9.1	10.5	8.3	7.2	7.2	16.9	11.4										
Feb 5	6.9	7.0	6.1	6.0	7.2	9.8	3.7	3.8	5.8	6.6	8.8	9.7	11.5	11.7	8.4	10.9	12.6	6.6	8.3	9.0	9.1	12.0	13.9	12.6	3.7	13.9	4.3										
Feb 6	12.4	13.9	12.2	12.1	13.4	11.9	10.0	10.7	11.4	10.4	11.3	14.4	22.7	22.4	20.0	19.9	21.9	20.8	19.3	13.8	17.1	15.8	15.1	14.7	10.0	22.7	14.8										
Feb 7	13.8	11.4	11.8	11.9	12.7	10.6	13.7	12.6	12.4	10.7	13.9	15.0	12.0	24.3	26.0	26.5	23.2	21.5	22.2	25.5	26.5	24.2	26.4	23.7	10.6	26.5	14.7										
Feb 8	21.0	16.8	13.8	15.6	14.9	12.2	13.0	11.0	15.4	18.0	16.4	14.6	17.5	16.0	12.3	8.2	5.6	8.9	10.4	11.0	8.9	10.3	9.1	8.5	5.6	21.0	12.2										
Feb 9	8.3	12.7	14.4	11.4	13.0	12.5	9.0	9.4	8.8	9.2	10.1	14.7	15.6	16.1	17.6	16.9	16.2	16.4	14.6	15.0	20.0	26.8	31.2	24.6	8.3	31.2	14.5										
Feb 10	22.6	20.2	22.2	23.3	28.8	27.4	23.9	15.4	10.8	12.2	18.6	25.6	24.7	20.7	25.6	18.0	16.4	14.3	15.3	11.8	12.9	10.9	10.6	9.3	9.3	28.8	15.5										
Feb 11	6.7	7.1	7.4	6.0	1.9	3.4	10.8	22.2	20.8	20.3	18.6	13.9	12.9	11.7	8.9	4.1	2.4	6.8	7.5	9.8	11.3	10.4	12.9	12.0	1.9	22.2	2.7										
Feb 12	10.5	8.9	5.7	8.6	11.3	11.1	10.1	9.6	7.2	6.9	4.3	5.0	7.4	8.1	7.7	11.0	11.0	13.4	15.9	15.4	14.8	12.3	12.7	12.0	4.3	15.9	4.7										
Feb 13	15.2	22.2	18.0	18.5	19.6	18.2	17.7	18.3	20.8	23.0	22.8	21.5	19.3	14.6	12.8	9.5	7.8	4.5	6.4	9.5	11.3	10.7	9.4	12.0	4.5	23.0	8.7										
Feb 14	10.7	10.1	11.3	11.7	11.2	12.3	13.9	13.8	13.8	13.8	15.1	12.0	12.2	11.4	11.1	11.0	10.0	8.3	12.5	12.5	12.4	10.3	9.2	7.3	7.3	15.1	11.0										
Feb 15	8.5	7.7	11.4	13.9	16.1	16.3	15.8	12.0	17.6	20.4	21.8	21.3	18.2	16.4	17.0	14.6	11.8	9.9	11.0	12.2	12.1	12.2	9.8	8.3	7.7	21.8	9.1										
Feb 16	6.2	5.9	4.3	4.8	6.8	6.2	6.1	4.8	6.2	5.6	5.3	4.5	0.9	2.7	0.6	2.2	3.9	4.6	5.2	8.3	11.5	11.6	12.4	11.7	0.6	12.4	2.5										
Feb 17	12.4	14.8	14.5	13.8	16.5	17.2	18.7	18.4	19.5	16.9	15.9	11.3	5.1	7.9	19.5	18.8	18.1	17.1	14.5	16.4	21.2	21.8	20.2	20.5	5.1	21.8	4.0										
Feb 18	21.8	19.2	22.3	20.6	13.7	8.9	10.3	9.4	9.4	9.6	6.5	4.5	7.9	8.5	11.0	11.8	12.5	11.7	13.4	14.0	17.1	19.9	18.6	19.2	4.5	22.3	2.2										
Feb 19	21.0	18.1	19.1	16.5	21.5	21.3	14.2	11.2	9.6	10.5	12.9	14.9	17.1	15.9	17.1	14.8	16.5	18.1	18.8	17.4	15.5	12.3	8.8	8.4	8.4	21.5	6.2										
Feb 20	10.1	10.7	7.2	7.8	10.0	11.0	6.5	7.2	7.1	8.0	8.9	8.2	7.6	6.7	6.9	4.1	3.0	1.1	1.2	4.2	5.1	4.9	6.2	8.4	1.1	11.0	5.5										
Feb 21	8.6	8.4	7.6	6.7	5.8	4.6	5.1	3.8	1.4	2.8	7.7	5.4	6.1	5.8	11.3	10.4	9.2	9.6	7.1	9.3	9.2	9.6	10.5	11.2	1.4	11.3	3.4										
Feb 22	9.9	7.9	8.2	9.6	9.0	10.3	9.5	10.1	8.7	8.7	9.9	9.6	9.6	10.0	8.0	8.4	9.9	10.3	7.6	9.3	9.4	9.4	9.5	9.1	7.6	10.3	8.5										
Feb 23	9.7	9.6	9.5	9.6	10.7	12.4	12.3	13.0	12.1	12.9	16.3	16.8	19.6	18.5	15.2	16.5	15.0	11.5	11.9	12.5	12.6	13.9	12.8	12.7	9.5	19.6	13.1										
Feb 24	10.5	10.0	10.5	11.3	10.2	10.3	10.9	9.7	8.3	7.6	5.3	6.7	7.2	5.4	10.0	8.9	7.5	4.2	3.5	5.5	6.2	5.4	6.3	7.4	3.5	11.3	4.9										
Feb 25	6.8	7.1	6.4	7.0	10.4	12.2	9.7	8.1	8.0	11.2	15.7	16.3	13.6	18.1	22.2	20.4	20.6	17.2	12.7	11.5	9.0	8.0	10.3	9.6	6.4	22.2	11.3										
Feb 26	8.1	7.8	7.8	6.7	6.8	9.0	6.4	5.9	8.1	5.9	5.3	8.4	9.7	7.1	7.8	11.6	10.6	11.6	13.5	15.7	16.7	20.1	17.7	18.2	5.3	20.1	5.2										
Feb 27	15.5	16.1	17.3	15.7	14.9	14.4	14.8	14.3	13.9	13.3	13.5	11.2	11.1	10.5	12.5	12.7	10.0	10.3	12.5	7.9	6.4	2.5	1.5	1.3	1.3	17.3	11.1										
Feb 28	4.1	3.8	3.0	1.0	5.7	3.5	2.3	2.9	3.3	0.6	2.4	4.2	1.2	2.5	3.6	6.1	4.6	4.9	2.9	3.5	4.4	3.9	3.8	5.1	0.6	6.1	1.7										
Diurnal Maximum	23	22	22	23	29	27	24	22	21	23	23	26	25	24	26	27	23	22	22	26	27	27	31	25													
Diurnal Average	11.5	11.1	11.0	11.1	11.8	11.8	11.3	10.9	11.1	11.2	12.0	12.1	12.1	12.2	12.8	12.3	11.5	11.0	11.1	11.7	12.3	12.4	12.1	11.7													
C	Monthly Calibration										S	Daily Zero-Span Check										Q	Quality Assurance														
K	Collection Error										N	No Data (Machine Not in Service)										Y	Routine Maintenance							P	Power Failure						
X	InValid Data (Equipment Malfunction /Recovery)										NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)																									
Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.																																					
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.																																					

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



Wind: St. Lina Monitor: WDS [kph] Monthly: 02-2022 Type: WindRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 1.49% Valid Data: 100.00%

Direction	1.8-6.0	6.0-15.0	15.0-29.0	29.0-39.0	>39.0	Total
N	0.45	2.23	1.19	0	0	3.87
NNE	0.3	3.57	0.74	0	0	4.61
NE	0.45	1.64	0.3	0	0	2.39
ENE	1.19	1.64	0.6	0	0	3.43
E	0.45	4.76	0.89	0	0	6.1
ESE	1.49	3.57	0	0	0	5.06
SE	0.3	1.64	0	0	0	1.94
SSE	0.3	1.93	1.49	0	0	3.72
S	0.45	4.46	1.64	0	0	6.55
SSW	1.34	6.7	1.19	0	0	9.23
SW	1.49	6.85	1.04	0	0	9.38
WSW	0.3	4.46	2.38	0	0	7.14
W	0.6	5.36	3.13	0.15	0	9.24
WNW	1.04	5.06	2.53	0	0	8.63
NW	0.3	4.02	2.98	0	0	7.3
NNW	0.89	5.65	3.42	0	0	9.96
Summary	11.34	63.54	23.52	0.15	0	98.55



LICA-202202

% Icon Classes (kph)	11	64	24	0	0
	1.8-6.0	6.0-15.0	15.0-29.0	29.0-39.0	>39.0



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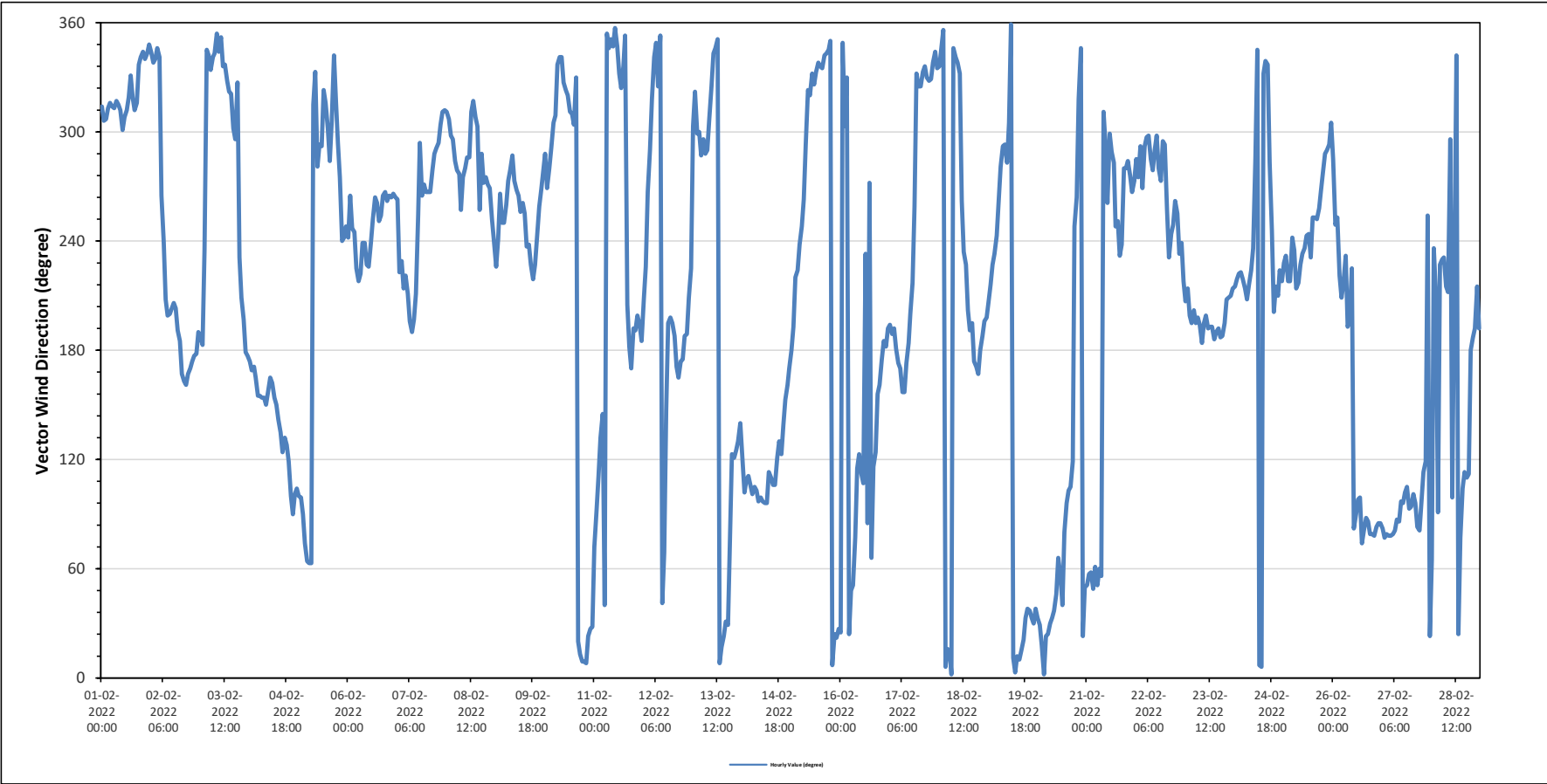
St. Lina Site - February 2022

Summary of Hourly Averages

WIND DIRECTION (VWD) in sector

Monthly Average: 270 (W) degree										Hours in Service: 672																																	
										Hours of Data: 672																																	
										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																	
Feb 1	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	322	NW																	
Feb 2	NNW	NNW	NNW	NNW	NNW	W	WSW	SSW	SSW	SSW	SSW	SSW	SSW	S	S	SSE	SSE	SSE	SSE	SSE	S	S	S	S	193	S																	
Feb 3	S	S	SW	NNW	NNW	NNW	NNW	NNW	N	NNW	N	NNW	NNW	NNW	NW	NW	WNW	WNW	NW	SW	SSW	SSW	S	S	322	NW																	
Feb 4	S	SSE	S	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SE	SE	ESE	SE	SE	ESE	E	E	E	ESE	147	SE																		
Feb 5	E	E	E	ENE	ENE	ENE	ENE	ENE	NW	NNW	W	WNW	WNW	NW	NW	WNW	WNW	NW	NNW	WNW	W	WSW	WSW	WSW	303	WNW																	
Feb 6	WSW	W	WSW	WSW	SW	SW	SW	WSW	WSW	SW	SW	WSW	WSW	W	W	WSW	WSW	W	W	W	W	W	W	W	252	WSW																	
Feb 7	W	SW	SW	SSW	SW	SSW	SSW	S	SSW	SSW	WSW	WNW	W	W	W	W	W	W	WNW	WNW	WNW	WNW	NW	NW	267	W																	
Feb 8	NW	NW	WNW	WNW	WNW	W	W	WSW	W	W	WNW	WNW	NW	NW	NW	WNW	WSW	WNW	W	W	W	W	WSW	WSW	287	WNW																	
Feb 9	SW	WSW	W	WSW	WSW	WSW	W	W	WNW	W	W	W	WSW	W	WSW	SW	SW	SW	SW	SW	WSW	WSW	W	W	254	WSW																	
Feb 10	WNW	W	W	WNW	WNW	NW	NNW	NNW	NNW	NW	NW	NW	NW	NW	WNW	NNW	NNE	NNE	N	N	N	NNE	NNE	NNE	324	NW																	
Feb 11	ENE	E	ESE	SE	SE	NE	N	NNW	N	NNW	N	NNW	N	NNW	NNW	N	SSW	S	SSE	S	S	SSW	SSW	S	343	NNW																	
Feb 12	SSW	SW	W	WNW	NW	NNW	NNW	NW	N	NE	ENE	SE	SSW	SSW	S	S	SSE	S	S	S	S	S	SSW	SW	207	SSW																	
Feb 13	WNW	NW	WNW	WNW	WNW	WNW	WNW	WNW	NW	NNW	NNW	N	N	NNE	NNE	NNE	NNE	ENE	ESE	ESE	SE	SE	SE	SE	329	NNW																	
Feb 14	ESE	E	ESE	ESE	ESE	E	ESE	ESE	E	E	E	E	ESE	ESE	ESE	ESE	ESE	ESE	SE	ESE	SE	SSE	SSE	SSE	113	ESE																	
Feb 15	S	S	SW	SW	SW	WSW	W	WNW	NW	NNW	NW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	N	N	NNE	NNE	NNE	318	NW																	
Feb 16	NNE	NNW	WNW	NNW	NNW	NE	NE	ENE	ESE	ESE	ESE	SW	E	W	ENE	ESE	ESE	SSE	SSE	S	S	S	S	131	SE																		
Feb 17	SSW	S	S	S	S	SSE	SSE	SSE	S	S	SSW	SW	WSW	NNW	NW	NW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	264	W																	
Feb 18	NNW	NNW	N	N	NNE	NNE	N	NNW	NNW	NNW	NNW	W	SW	SW	SSW	S	SSW	S	S	SSE	S	S	SSW	SSW	259	WSW																	
Feb 19	SSW	SW	SW	SW	WSW	W	W	WNW	WNW	W	WNW	N	NNE	N	NNE	NNE	NNE	NE	NE	NNE	NNE	NE	NE	NE	330	NNW																	
Feb 20	NNE	NNE	NNE	N	NNE	NNE	NNE	NNE	NE	NE	ENE	NE	NE	E	E	ESE	ESE	ESE	WSW	W	NW	NNW	NNE	NE	37	NE																	
Feb 21	NE	ENE	ENE	NE	ENE	NE	ENE	NE	NW	WNW	W	WNW	WNW	W	WSW	WSW	SW	SW	W	W	WNW	W	W	W	286	WNW																	
Feb 22	WNW	W	WNW	W	WNW	WNW	WNW	WNW	W	WNW	WNW	W	W	WNW	WNW	WSW	WSW	WSW	WSW	W	WSW	SW	WSW	SW	271	W																	
Feb 23	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	S	SSW	SSW	S	S	S	S	S	S	S	S	SSW	SSW	SSW	SSW	SSW	197	SSW																	
Feb 24	SSW	SW	SW	SW	SW	SSW	SSW	SW	SW	SW	WNW	NNW	N	N	NNW	NNW	NNW	W	WSW	SSW	SSW	SSW	SW	SW	241	WSW																	
Feb 25	SW	SW	SW	SW	WSW	SW	SSW	SW	SW	SW	WSW	WSW	WSW	SW	WSW	WSW	WSW	WSW	W	W	WNW	WNW	WNW	WNW	249	WSW																	
Feb 26	WNW	WSW	WSW	SW	SSW	SW	SW	S	SSW	SW	E	E	E	E	ENE	E	E	E	ENE	ENE	ENE	E	E	E	101	E																	
Feb 27	E	ENE	ENE	ENE	ENE	E	E	E	E	E	E	E	ESE	E	E	E	E	E	E	E	ESE	ESE	WSW	NNE	88	E																	
Feb 28	ENE	SW	SSW	E	SW	SW	SW	SSW	SSW	WNW	E	SW	NNW	NNE	ENE	ESE	ESE	ESE	ESE	S	S	S	SSW	S	174	S																	
C	Monthly Calibration										S	Daily Zero-Span Check										Q	Quality Assurance																				
K	Collection Error										N	No Data (Machine Not in Service)										Y	Routine Maintenance										P	Power Failure									
X	Invalid Data (Machine Malfunction /Recovery)										NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)																															
Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.																																											
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.																																											

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





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - February 2022

Summary of Hourly Averages

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

WIND SPEED																												
Maximum Hourly Value:	31.2	kph	on February 9 at hour 22												Hours in Service:	672												
Maximum Daily Value:	15.5	kph	on February 10												Hours of Data:	672												
Minimum Hourly Value:	0.6	kph	on February 16 at hour 14												Hours of Missing Data:	0												
Minimum Daily Value:	1.7	kph	on February 28												Hours of Calibration:	0												
Monthly Average:	3.4	kph													Operational Uptime:	100												
WIND DIRECTION																												
Monthly Average:	270	(W)	degree																									
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average		
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23	
Feb 1	12.6	12.1	12.6	13.3	11.9	12.2	12.7	11.6	11.8	11.5	10.1	10.7	11.7	13.2	13.3	16.0	13.8	13.9	13.6	17.7	15.2	13.5	12.5	11.6	10.1	17.7	12.5	
NW	NW	NW	NW	NNW	NW	NW	NW	NW	NW	NNW	NW	NW	NNW	NW	NW	NNW	NW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	
Feb 2	10.3	8.6	8.7	7.4	6.1	7.1	8.2	8.2	9.7	10.0	10.7	13.9	14.0	13.9	12.7	12.5	12.5	15.1	14.0	14.4	14.2	15.9	13.8	10.8	6.1	15.9	7.4	
NNW	NNW	NNW	NNW	NNW	W	WSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	S	S	SSE	SSE	SSE	SSE	SSE	S	S	S	S	S	6.1	15.9	7.4
Feb 3	6.8	2.3	2.1	3.2	5.7	9.3	11.5	13.0	11.8	11.5	10.2	9.7	9.2	8.7	8.6	7.3	5.0	7.0	5.7	4.0	3.8	6.8	6.1	9.2	2.1	13.0	4.4	
S	S	SW	NNW	NNW	NNW	NNW	NNW	N	NNW	N	NNW	NNW	NNW	NW	NW	NNW	NNW	NNW	NNW	SW	SSW	SSW	S	S	2.1	13.0	4.4	
Feb 4	10.3	11.0	13.8	16.1	15.5	14.5	15.1	15.9	16.0	16.8	16.9	14.3	12.4	11.6	10.2	11.3	9.7	9.7	9.5	10.0	9.1	10.5	8.3	7.2	7.2	16.9	11.4	
S	SSE	S	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SE	SE	ESE	SE	SE	ESE	E	E	E	ESE	7.2	16.9	11.4	
Feb 5	6.9	7.0	6.1	6.0	7.2	9.8	3.7	3.8	5.8	6.6	8.8	9.7	11.5	11.7	8.4	10.9	12.6	6.6	8.3	9.0	9.1	12.0	13.9	12.6	3.7	13.9	4.3	
E	E	E	ENE	ENE	ENE	ENE	NW	NNW	W	WNW	WNW	NW	NW	WNW	WNW	NW	NNW	NW	WNW	W	WSW	WSW	WSW	WSW	3.7	13.9	4.3	
Feb 6	12.4	13.9	12.2	12.1	13.4	11.9	10.0	10.7	11.4	10.4	11.3	14.4	22.7	22.4	20.0	19.9	21.9	20.8	19.3	13.8	17.1	15.8	15.1	14.7	10.0	22.7	14.8	
WSW	W	WSW	WSW	SW	SW	SW	WSW	WSW	SW	SW	WSW	WSW	W	W	WSW	WSW	W	W	W	W	W	W	W	W	10.0	22.7	14.8	
Feb 7	13.8	11.4	11.8	11.9	12.7	10.6	13.7	12.6	12.4	10.7	13.9	15.0	12.0	24.3	26.0	26.5	23.2	21.5	22.2	25.5	26.5	24.2	26.4	23.7	10.6	26.5	14.7	
W	SW	SW	SSW	SW	SSW	SSW	S	SSW	SSW	WSW	WNW	W	W	W	W	W	W	W	WNW	WNW	WNW	WNW	NW	NW	10.6	26.5	14.7	
Feb 8	21.0	16.8	13.8	15.6	14.9	12.2	13.0	11.0	15.4	18.0	16.4	14.6	17.5	16.0	12.3	8.2	5.6	8.9	10.4	11.0	8.9	10.3	9.1	8.5	5.6	21.0	12.2	
NW	NW	WNW	WNW	WNW	W	W	WSW	W	W	WNW	WNW	NW	NW	NW	WNW	WSW	WNW	W	W	W	W	W	WSW	WSW	5.6	21.0	12.2	
Feb 9	8.3	12.7	14.4	11.4	13.0	12.5	9.0	9.4	8.8	9.2	10.1	14.7	15.6	16.1	17.6	16.9	16.2	16.4	14.6	15.0	20.0	26.8	31.2	24.6	8.3	31.2	14.5	
SW	WSW	W	WSW	WSW	WSW	W	W	WNW	W	W	WSW	W	WSW	W	WSW	SW	SW	SW	SW	SW	WSW	WSW	W	W	8.3	31.2	14.5	
Feb 10	22.6	20.2	22.2	23.3	28.8	27.4	23.9	15.4	10.8	12.2	18.6	25.6	24.7	20.7	25.6	18.0	16.4	14.3	15.3	11.8	12.9	10.9	10.6	9.3	9.3	28.8	15.5	
WNW	W	W	WNW	WNW	NW	NNW	NNW	NNW	NW	NW	NNW	NNW	NW	NNW	NNW	NNE	NNE	N	N	N	NNE	NNE	NNE	NNE	9.3	28.8	15.5	
Feb 11	6.7	7.1	7.4	6.0	1.9	3.4	10.8	22.2	20.8	20.3	18.6	13.9	12.9	11.7	8.9	4.1	2.4	6.8	7.5	9.8	11.3	10.4	12.9	12.0	1.9	22.2	2.7	
ENE	E	ESE	SE	SE	NE	N	NNW	N	NNW	N	NNW	NNW	NW	NNW	N	SSW	S	SSE	S	S	S	SSW	SSW	S	1.9	22.2	2.7	
Feb 12	10.5	8.9	5.7	8.6	11.3	11.1	10.1	9.6	7.2	6.9	4.3	5.0	7.4	8.1	7.7	11.0	11.0	13.4	15.9	15.4	14.8	12.3	12.7	12.0	4.3	15.9	4.7	
SSW	SW	W	WNW	NW	NNW	NNW	NW	N	ENE	SE	SSW	SSW	SSW	S	S	SSE	S	S	S	S	S	SSW	SSW	S	4.3	15.9	4.7	
Feb 13	15.2	22.2	18.0	18.5	19.6	18.2	17.7	18.3	20.8	23.0	22.8	21.5	19.3	14.6	12.8	9.5	7.8	4.5	6.4	9.5	11.3	10.7	9.4	12.0	4.5	23.0	8.7	
WNW	NW	WNW	WNW	WNW	WNW	WNW	WNW	NW	NNW	NNW	N	N	NNE	NNE	NNE	NNE	ENE	ESE	ESE	ESE	SE	SE	SE	SE	4.5	23.0	8.7	
Feb 14	10.7	10.1	11.3	11.7	11.2	12.3	13.9	13.8	13.8	13.8	15.1	12.0	12.2	11.4	11.1	11.0	10.0	8.3	12.5	12.5	12.4	10.3	9.2	7.3	7.3	15.1	11.0	
ESE	E	ESE	ESE	ESE	E	ESE	ESE	E	E	E	ESE	ESE	ESE	ESE	ESE	ESE	ESE	SE	ESE	SE	ESE	SE	SSE	SSE	7.3	15.1	11.0	
Feb 15	8.5	7.7	11.4	13.9	16.1	16.3	15.8	12.0	17.6	20.4	21.8	21.3	18.2	16.4	17.0	14.6	11.8	9.9	11.0	12.2	12.2	12.2	9.8	8.3	7.7	21.8	9.1	
S	S	SW	SW	SW	WSW	W	WNW	NW	NW	NNW	NW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	N	N	NNE	NNE	NNE	7.7	21.8	9.1	
Feb 16	6.2	5.9	4.3	4.8	6.8	6.2	6.1	4.8	6.2	5.6	5.3	4.5	0.9	2.7	0.6	2.2	3.9	4.6	5.2	8.3	11.5	11.6	12.4	11.7	0.6	12.4	2.5	
NNE	NNW	WNW	NNW	NNE	NE	NE	ENE	ESE	ESE	ESE	SW	E	W	ENE	ESE	ESE	SSE	SSE	S	S	S	S	S	S	0.6	12.4	2.5	
Feb 17	12.4	14.8	14.5	13.8	16.5	17.2	18.7	18.4	19.5	16.9	15.9	11.3	5.1	7.9	19.5	18.8	18.1	17.1	14.5	16.4	21.2	21.8	20.2	20.5	5.1	21.8	4.0	
SSW	S	S	S	SSE	SSE	SSE	S	S	SSW	SSW	SSW	NNW	NW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	5.1	21.8	4.0	
Feb 18	21.8	19.2	22.3	20.6	13.7	8.9	10.3	9.4	9.4	9.6	6.5	4.5	7.9	8.5	11.0	11.8	12.5	11.7	13.4	14.0	17.1	19.9	18.6	19.2	4.5	22.3	2.2	
NNW	NNW	N	N	NNE	NNE	N	NNW	NNW	NNW	NNW	W	SW	SSW	SSW	S	SSW	S	SSE	S	S	SSE	S	SSW	SSW	4.5	22.3	2.2	
Feb 19	21.0	18.1	19.1	16.5	21.5	21.3	14.2	11.2	9.6	10.5	12.9	14.9	17.1	15.9	17.1	14.8	16.5	18.1	18.8	17.4	15.5	12.3	8.8	8.4	8.4	21.5	6.2	
SSW	SW	SW	SW	WSW	W	W	WNW	WNW	W	WNW	N	NNE	N	NNE	N	NNE	NNE	NNE	NNE	NE	NE	NNE	NNE	NE	8.4	21.5	6.2	
Feb 20	10.1	10.7	7.2	7.8	10.0	11.0	6.5	7.2	7.1	8.0	8.9	8.2	7.6	6.7	6.9	4.1	3.0	1.1	1.2	4.2	5.1	4.9	6.2	8.4	1.1	11.0	5.5	
NNE	NNE	NNE	N	NNE	NNE	NNE	NNE	NE	NE	ENE	NE	NE	E	E	ESE	ESE	ESE	ESE	WSW	W	NW	NNW	NNE	NE	1.1	11.0	5.5	



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - February 2022

Summary of Hourly Averages

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

WIND SPEED																											
Maximum Hourly Value:	31.2	kph	on February 9 at hour 22	Hours in Service:	672																						
Maximum Daily Value:	15.5	kph	on February 10	Hours of Data:	672																						
Minimum Hourly Value:	0.6	kph	on February 16 at hour 14	Hours of Missing Data:	0																						
Minimum Daily Value:	1.7	kph	on February 28	Hours of Calibration:	0																						
Monthly Average:	3.4	kph		Operational Uptime:	100																						
WIND DIRECTION																											
Monthly Average:	270	(W)	degree																								
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average	
Feb 21	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	1.4	11.3	3.4
Feb 22	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	7.6	10.3	8.5
Feb 23	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	9.5	19.6	13.1
Feb 24	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	3.5	11.3	4.9
Feb 25	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	6.4	22.2	11.3
Feb 26	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	5.3	20.1	5.2
Feb 27	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	1.3	17.3	11.1
Feb 28	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	0.6	6.1	1.7
C	Monthly Calibration							S	Daily Zero-Span Check							Q	Quality Assurance										
K	Collection Error							N	No Data (Machine Not in Service)							Y	Routine Maintenance							P	Power Failure		
X	Invalid Data (Equipment Malfunction/Recovery)							NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)																		
Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.																											
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.																											



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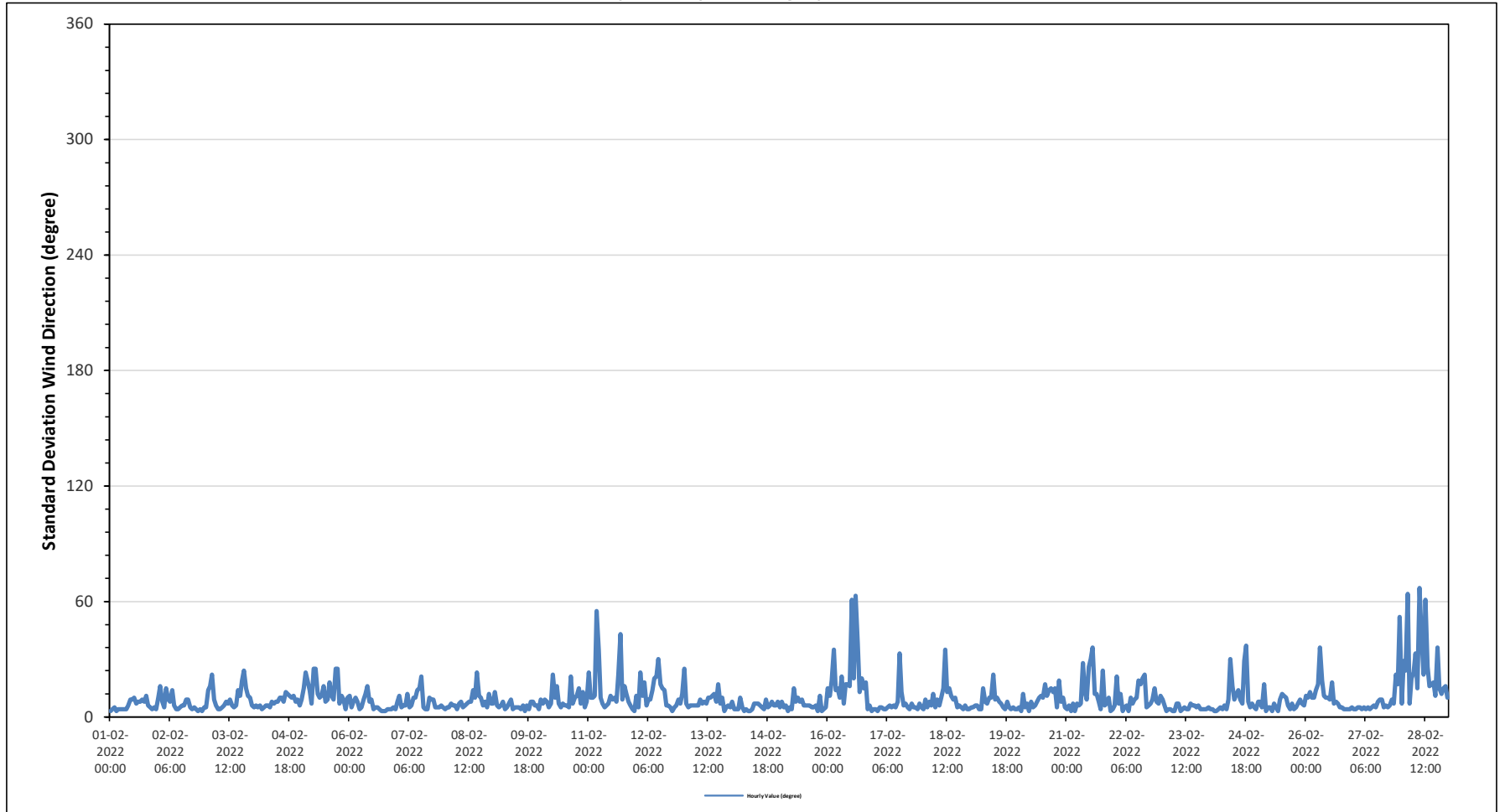
St. Lina Site - February 2022

Summary of Hour Standard Deviations

STANDARD DEVIATION WIND DIRECTION (STDWD) in Degree

Maximum Hourly Value:		67 degree on February 28 at hour 9														Hours in Service:		672													
Minimum Hourly Value:		3 degree on February 1 at hour 0														Hours of Data:		672													
																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					
Feb 1	3	4	5	3	4	4	4	4	4	6	9	9	10	7	8	8	9	8	11	6	5	4	5	4	3	11					
Feb 2	10	16	8	5	15	9	8	14	6	4	4	5	6	6	9	9	5	4	5	4	3	4	3	5	3	16					
Feb 3	5	14	16	22	9	6	4	4	5	6	8	7	9	6	5	6	14	11	19	24	15	11	10	6	4	24					
Feb 4	5	6	5	6	4	5	6	6	5	8	7	8	8	10	10	8	13	12	11	10	11	8	9	6	4	13					
Feb 5	9	15	23	19	14	7	25	25	12	10	11	16	8	9	18	11	9	25	25	7	11	9	4	10	4	25					
Feb 6	11	5	8	10	8	4	5	9	12	16	8	9	4	5	5	4	3	3	3	4	4	4	5	4	3	16					
Feb 7	8	11	5	6	6	12	5	6	10	10	14	15	21	5	4	4	10	9	9	5	5	5	6	5	4	21					
Feb 8	4	5	5	7	6	6	4	7	8	5	6	7	8	5	6	7	8	14	10	23	11	10	6	8	5	12	7	4	23		
Feb 9	7	13	6	5	6	8	4	5	7	9	4	5	5	5	4	6	3	6	4	8	8	6	6	4	3	13					
Feb 10	9	7	9	8	5	7	22	10	16	7	5	7	6	6	5	21	7	10	11	15	7	13	5	8	5	22					
Feb 11	23	10	10	11	55	35	10	7	5	6	7	11	9	10	8	22	43	9	16	12	8	6	4	3	3	55					
Feb 12	11	5	23	11	18	6	9	9	14	20	21	30	17	15	14	6	6	5	3	5	6	9	7	12	3	30					
Feb 13	25	7	5	6	6	6	6	6	9	7	8	7	10	10	11	12	8	17	7	10	3	5	6	5	3	25					
Feb 14	8	4	4	4	10	5	3	4	3	3	4	7	7	7	6	5	4	9	5	6	8	6	6	8	3	10					
Feb 15	5	8	5	6	3	5	4	15	8	10	8	9	6	6	6	6	5	5	6	3	11	3	4	5	3	15					
Feb 16	15	11	19	35	14	15	10	21	7	17	17	16	61	20	63	38	13	20	15	18	4	6	3	4	3	63					
Feb 17	4	3	5	5	4	4	5	6	5	6	5	8	33	13	6	7	5	4	7	5	5	4	7	5	3	33					
Feb 18	4	9	5	8	6	12	5	9	6	10	15	35	13	15	11	9	10	5	6	5	4	6	4	4	4	35					
Feb 19	5	5	6	6	4	4	15	8	7	10	10	22	9	10	8	7	5	4	8	5	4	5	4	4	4	22					
Feb 20	5	3	12	5	7	3	8	5	6	8	10	11	10	17	11	14	15	13	15	5	19	8	10	5	3	19					
Feb 21	4	6	3	7	3	7	6	7	28	13	9	26	30	36	12	12	8	4	24	6	7	10	3	4	3	36					
Feb 22	6	21	7	12	3	5	6	3	10	7	9	10	19	17	20	22	5	6	7	9	15	8	7	11	3	22					
Feb 23	9	6	3	4	4	3	3	7	7	3	4	5	4	4	7	6	6	5	6	4	4	4	4	5	3	9					
Feb 24	4	4	3	3	4	5	4	6	4	9	30	16	9	12	14	9	7	29	37	8	5	7	5	4	3	37					
Feb 25	8	8	5	17	3	5	5	3	7	5	3	9	12	11	10	6	4	7	4	5	7	9	7	6	3	17					
Feb 26	11	10	13	10	10	14	17	36	19	11	10	10	9	18	7	8	7	5	5	4	4	4	4	5	4	36					
Feb 27	4	4	5	5	4	5	4	5	4	5	6	5	8	9	9	5	6	5	6	9	7	22	17	52	4	52					
Feb 28	7	29	24	64	7	20	23	33	15	67	43	22	61	26	16	17	18	11	36	15	12	15	16	10	7	67					
Diurnal Minimum	3	3	3	3	3	3	3	3	3	3	3	5	4	4	4	4	3	3	3	3	3	3	3	3	3	3					
Diurnal Maximum	25	29	24	64	55	35	25	36	28	67	43	35	61	36	63	38	43	29	37	24	19	22	17	52	7	67					
C	Monthly Calibration														S	Daily Zero-Span Check						Q	Quality Assurance								
K	Collection Error														N	No Data (Machine Not in Service)						Y	Routine Maintenance						P	Power Failure	
X	Invalid Data (Machine Malfunction /Recovery)														NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)															
Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.																															
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.																															

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



END OF REPORT

This page, 237 of 237, ends the February 2022 Monthly Ambient Air Quality Monitoring Report.



Lakeland Industry & Community Association

FEBRUARY 2022
Ambient Air Monitoring Calibration Report
- COLD LAKE SOUTH STATION-
CAL-LICA-202202-01174

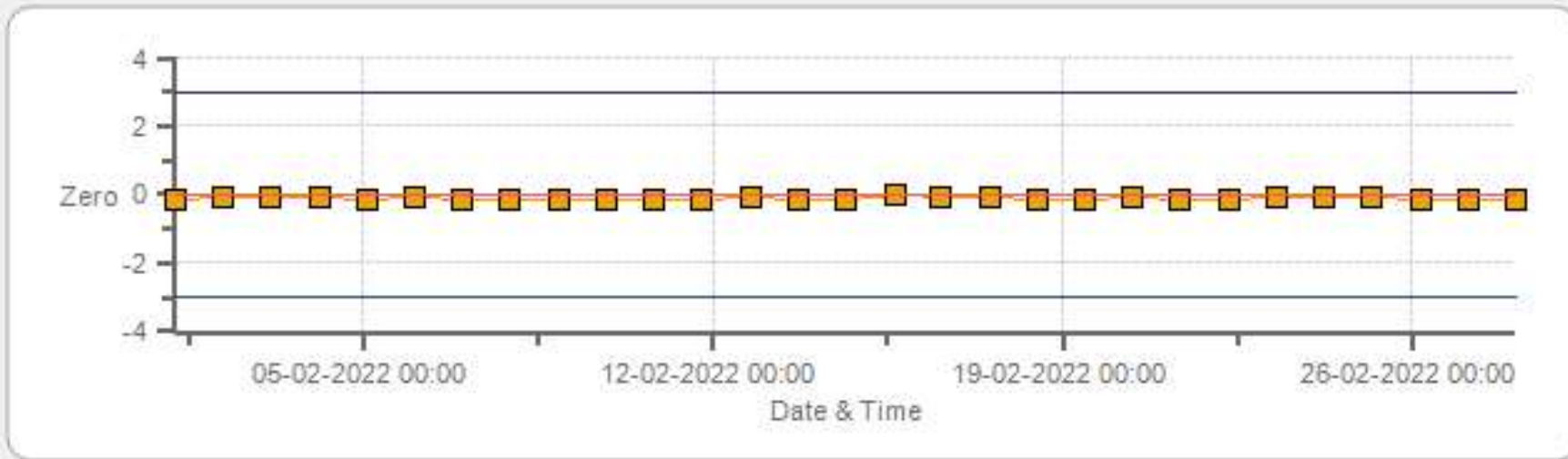
Station Operation and Maintenance:
Bureau Veritas Canada

Data Validation and Report:
LICA / Bureau Veritas Canada

March 23, 2022

DAILY INTERNAL ZERO-SPAN CALIBRATION RECORDS

SO2[ppb] Calibration: Cold Lake South Monthly: 02-2022 Type: SpanAndZero - Zero



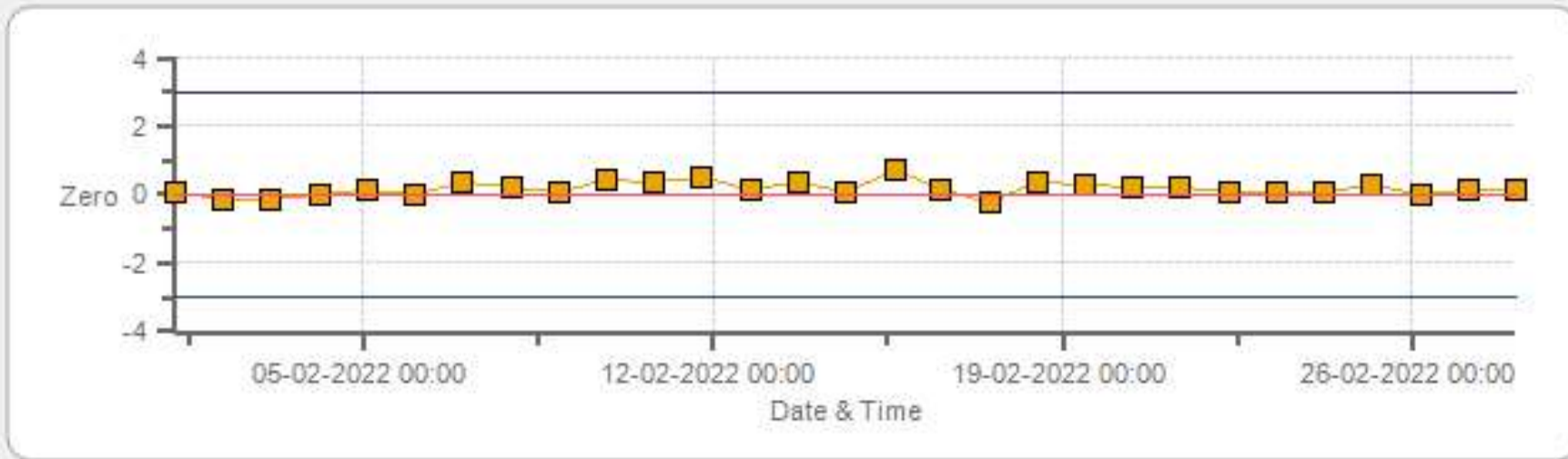
Zero Zero Ref Zero Low Zero High

SO2[ppb] Calibration: Cold Lake South Monthly: 02-2022 Type: SpanAndZero - Span



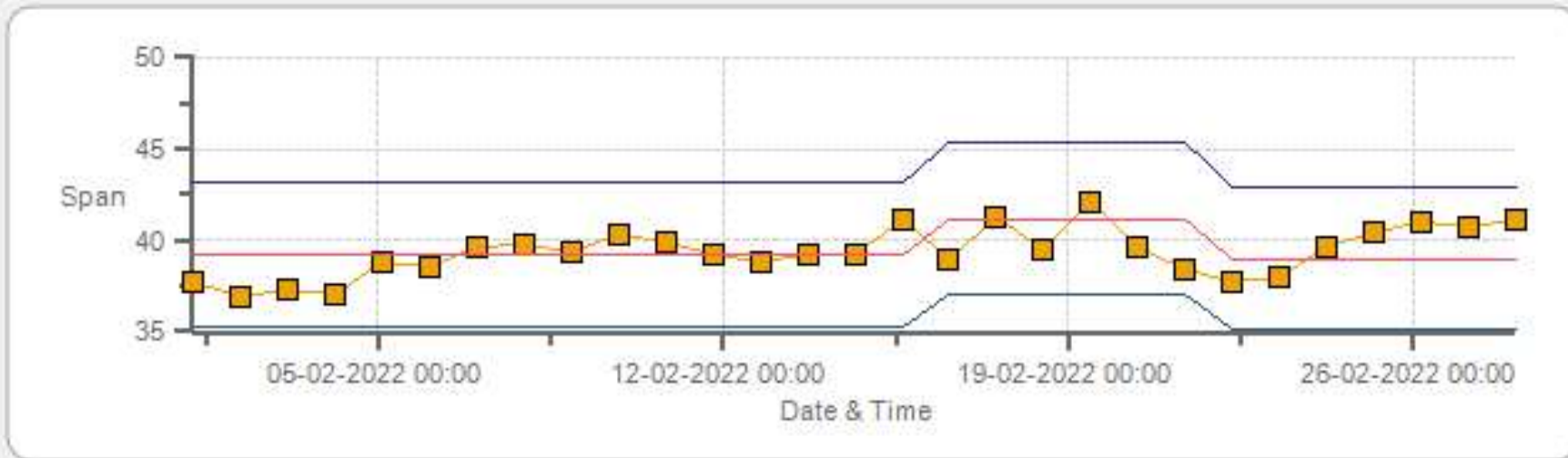
Span SpanRef Span Low Span High

TRS[ppb] Calibration: Cold Lake South Monthly: 02-2022 Type: SpanAndZero - Zero



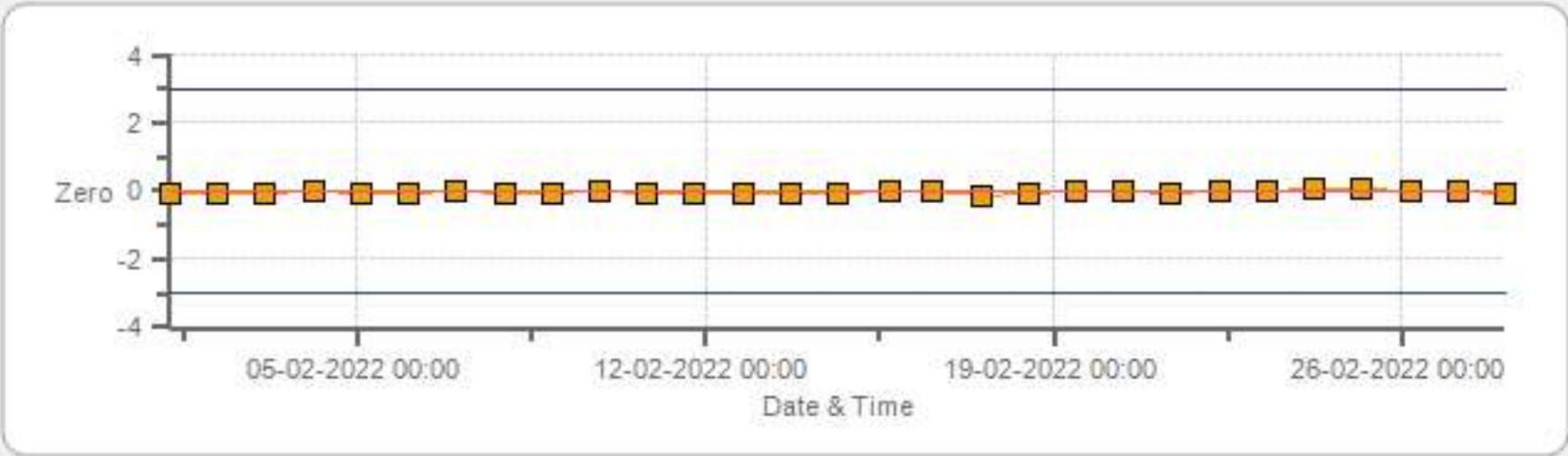
Zero Zero Ref Zero Low Zero High

TRS[ppb] Calibration: Cold Lake South Monthly: 02-2022 Type: SpanAndZero - Span



Span SpanRef Span Low Span High

NOX[ppb] Calibration: Cold Lake South Monthly: 02-2022 Type: SpanAndZero - Zero



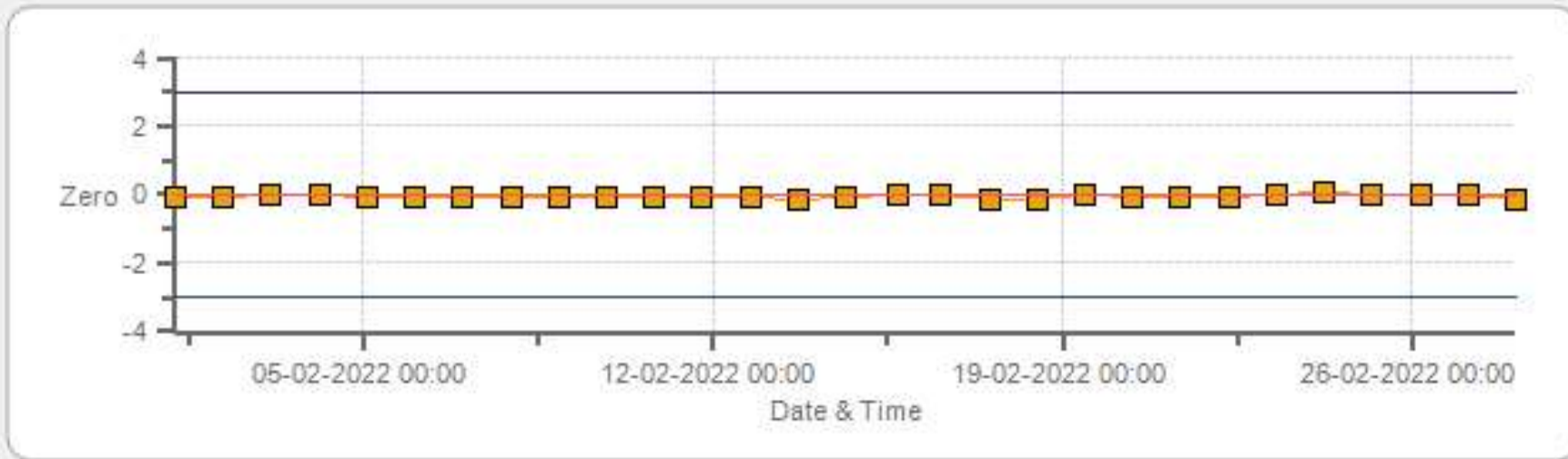
Zero Zero Ref Zero Low Zero High

NOX[ppb] Calibration: Cold Lake South Monthly: 02-2022 Type: SpanAndZero - Span



Span SpanRef Span Low Span High

NO2[ppb] Calibration: Cold Lake South Monthly: 02-2022 Type: SpanAndZero - Zero



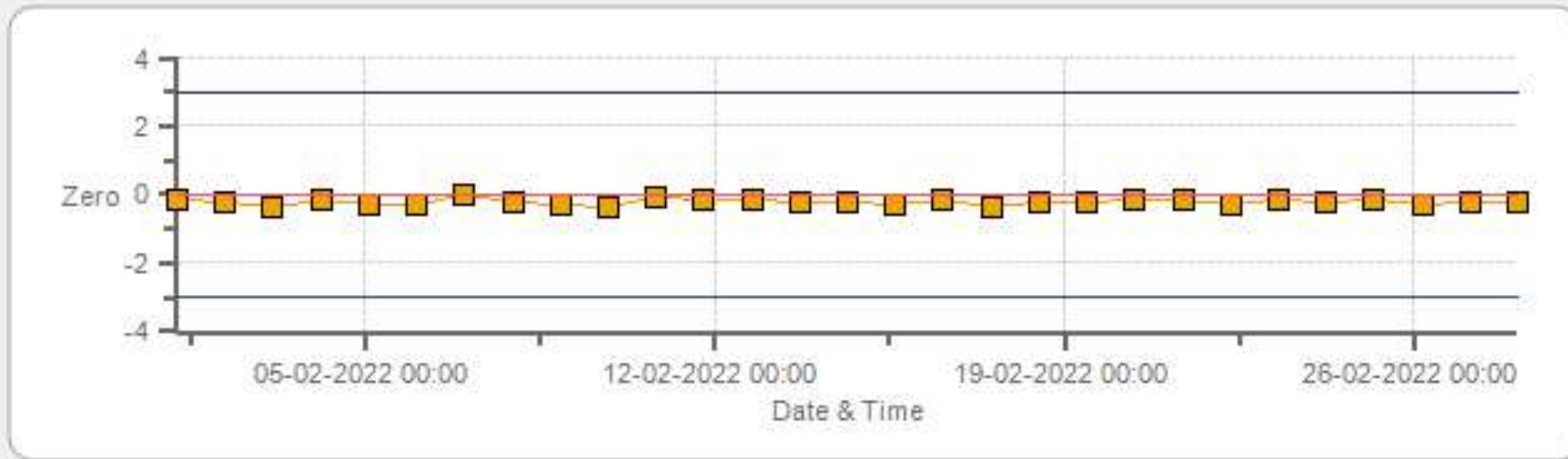
Zero Zero Ref Zero Low Zero High

NO2[ppb] Calibration: Cold Lake South Monthly: 02-2022 Type: SpanAndZero - Span



Span SpanRef Span Low Span High

O3[ppb] Calibration: Cold Lake South Monthly: 02-2022 Type: SpanAndZero - Zero



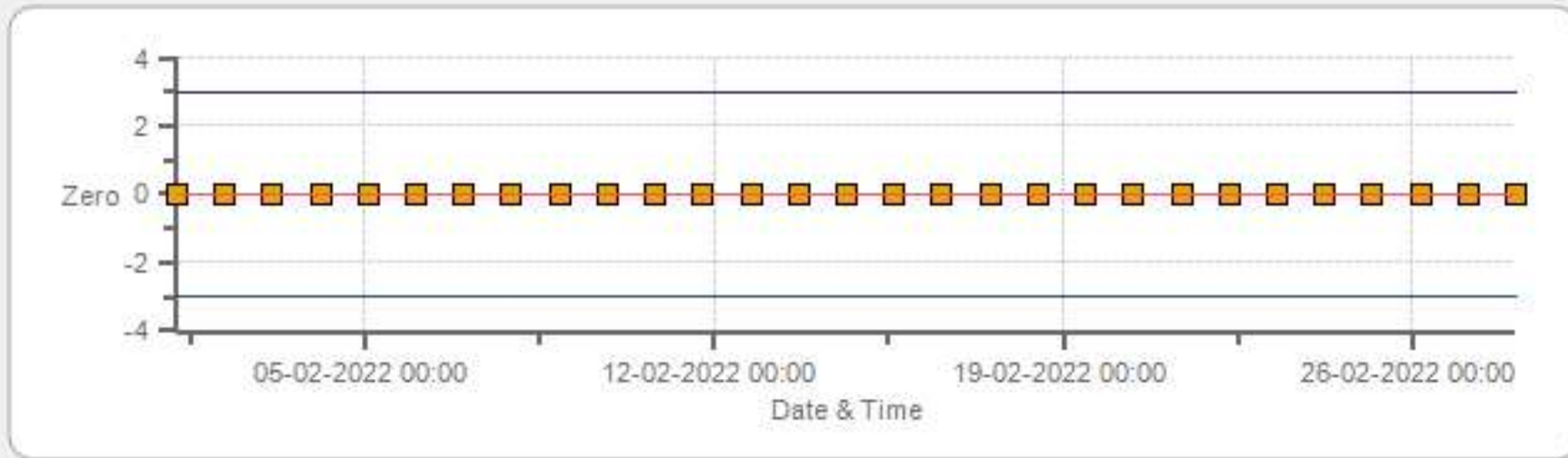
Zero Zero Ref Zero Low Zero High

O3[ppb] Calibration: Cold Lake South Monthly: 02-2022 Type: SpanAndZero - Span



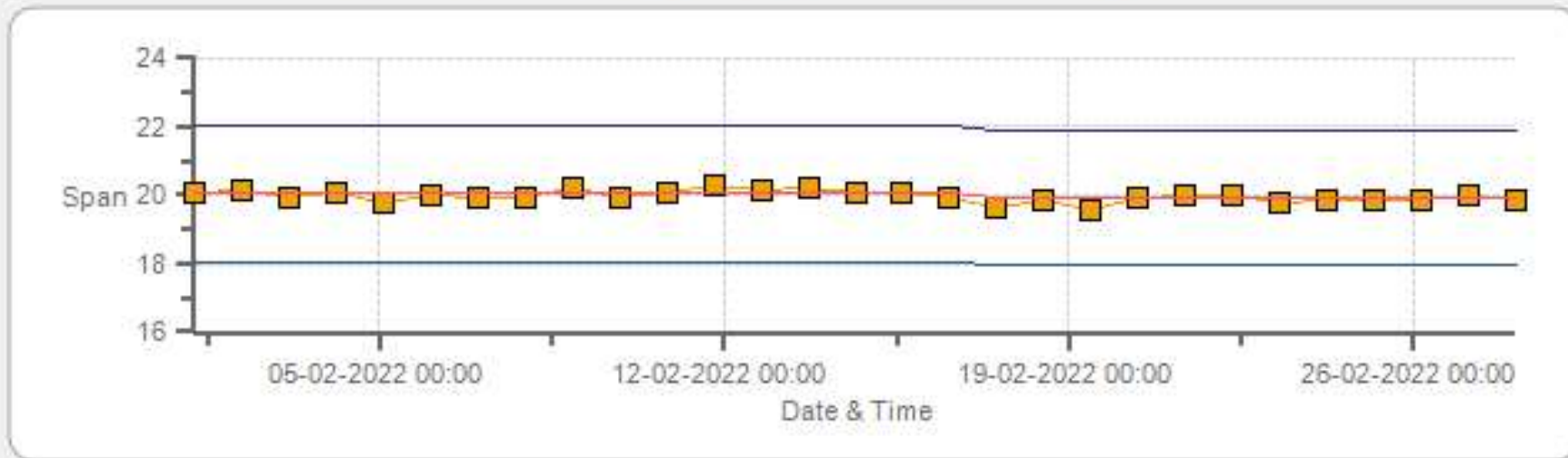
Span SpanRef Span Low Span High

THC55[ppm] Calibration: Cold Lake South Monthly: 02-2022 Type: SpanAndZero - Zero



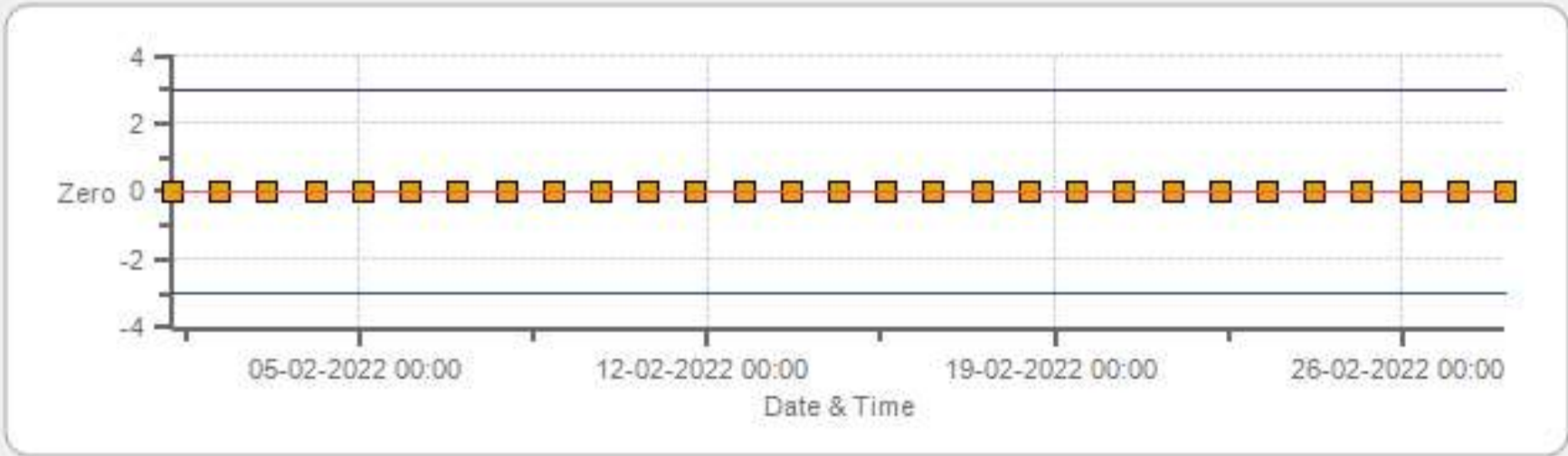
Zero Zero Ref Zero Low Zero High

THC55[ppm] Calibration: Cold Lake South Monthly: 02-2022 Type: SpanAndZero - Span



Span SpanRef Span Low Span High

CH4[ppm] Calibration: Cold Lake South Monthly: 02-2022 Type: SpanAndZero - Zero



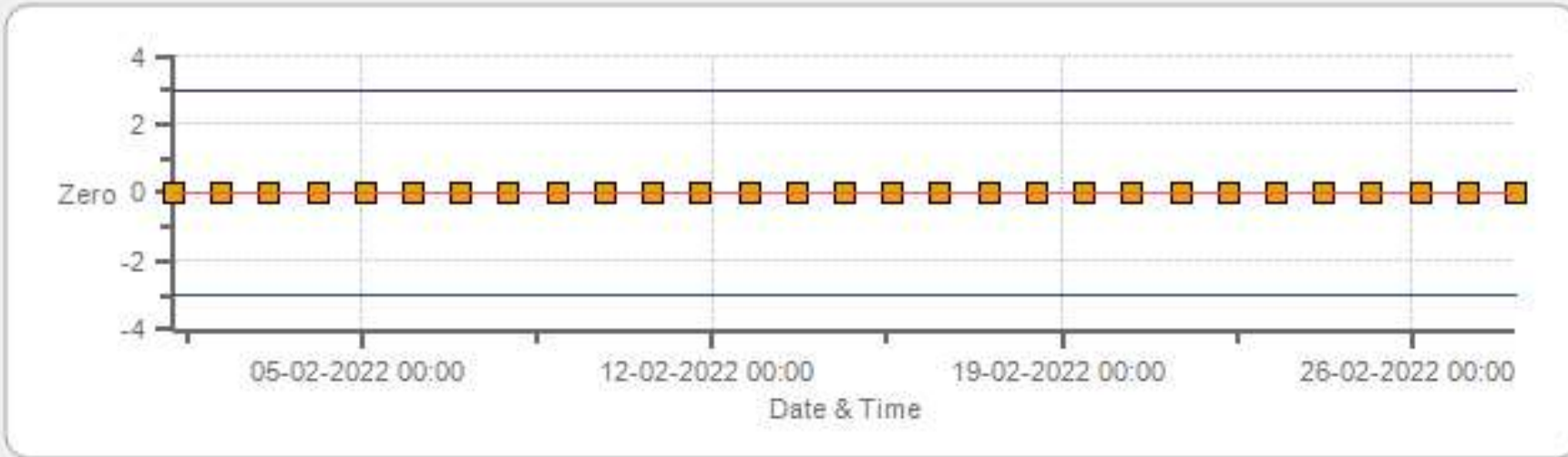
Zero Zero Ref Zero Low Zero High

CH4[ppm] Calibration: Cold Lake South Monthly: 02-2022 Type: SpanAndZero - Span



Span SpanRef Span Low Span High

NMHC[ppm] Calibration: Cold Lake South Monthly: 02-2022 Type: SpanAndZero - Zero



Zero Zero Ref Zero Low Zero High

NMHC[ppm] Calibration: Cold Lake South Monthly: 02-2022 Type: SpanAndZero - Span



Span Span Ref Span Low Span High

MULTI-POINT CALIBRATION RECORDS

SO2 Analyzer Calibration by Dilution



DATE:	15-Feb-2022	PREVIOUS CALIBRATION DATE:	13-Jan-2022
PARAMETER:	SO2	PREVIOUS CORRECTION FACTOR:	1.000
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	CLS	BAROMETRIC (mBar):	947
PURPOSE:	Routine	START TIME (MST):	11:23
PERFORMED BY:	Alex Yakupov	END TIME (MST):	15:47

ANALYZER:

MAKE/MODEL	Thermo 43I-TLE	RANGE	500 ppb
SERIAL #	1180260018	FLOW (mL/min)	441
INITIAL		FINAL	
BKG/OFFSET	2.23	BKG/OFFSET	2.23
COEF/SLOPE	0.982	COEF/SLOPE	0.983
Expected (reference) Value	258.2	Expected (reference) Value	261.1

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010	MODEL:	T701
ID:	26801218	ID:	132
MFC CALIBRATION DATE:	19-Oct-2021	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	LL 105146	HIGH ID	n/a
CONC (ppm):	50.80	EXPIRY DATE	n/a
CYLINDER (psi):	1100	LOW ID	n/a
EXPIRY DATE	09-Jun-2029	EXPIRY DATE	n/a

CALIBRATION PARAMETERS:

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

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

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

CALIBRATION:

FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
DILUENT	GAS	TOTAL	ACTUAL	INDICATED		Initial	Final
				Initial	Final		
5000	38.50	5000	0.00	0	0	1.008	0.999
4962	38.50	5000	391.16	387.9	391.6	1.008	0.999
4982	18.00	5000	182.88	n/a	183.8	n/a	0.995
4991	9.00	5000	91.44	n/a	92.5	n/a	0.989

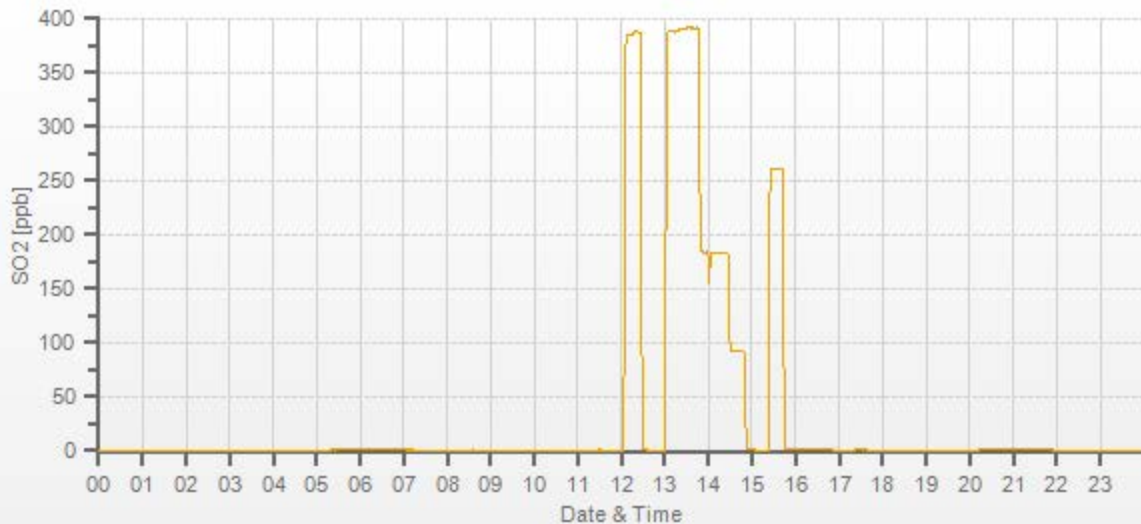
LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.000	0.1%

COMMENTS:

Sample inlet filter was changed.
14:00 - scheduled ZS check interfered with the calibration.

SO2[ppb] Station: Cold Lake South Daily: 15-02-2022 Type: AVG 1 Min. [1 Min.]



CAL-LICA-202202-01174

TRS Analyzer Calibration by Dilution



DATE:	15-Feb-2022	PREVIOUS CALIBRATION DATE:	13-Jan-2022
PARAMETER:	TRS	PREVIOUS CORRECTION FACTOR:	1.006
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	CLS	BAROMETRIC (mBar):	947
PURPOSE:	Routine	START TIME (MST):	11:21
PERFORMED BY:	Alex Yakupov	END TIME (MST):	15:47

ANALYZER:

MAKE/MODEL	Thermo 450i	RANGE	100 ppb
SERIAL #	812728560	FLOW (mL/min)	498
INITIAL		FINAL	
BKG/OFFSET	22.3	BKG/OFFSET	23.1
COEF/SLOPE	1.07	COEF/SLOPE	1.115
Expected (reference) Value	39.2	Expected (reference) Value	39

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010 D	MODEL:	T701
ID:	11900613	ID:	132
MFC CALIBRATION DATE:	19-Oct-2021	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	EY 0000644	HIGH ID	n/a
CONC (ppm):	10.00	EXPIRY DATE	n/a
CYLINDER (psi):	500	LOW ID	n/a
EXPIRY DATE	16-Jul-2022	EXPIRY DATE	n/a

CALIBRATION PARAMETERS:

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

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

START TIME:	11:26	SO2 Conc (ppb)	380
END TIME:	11:41	Analyzer Response (ppb)	0.0

CALIBRATION:

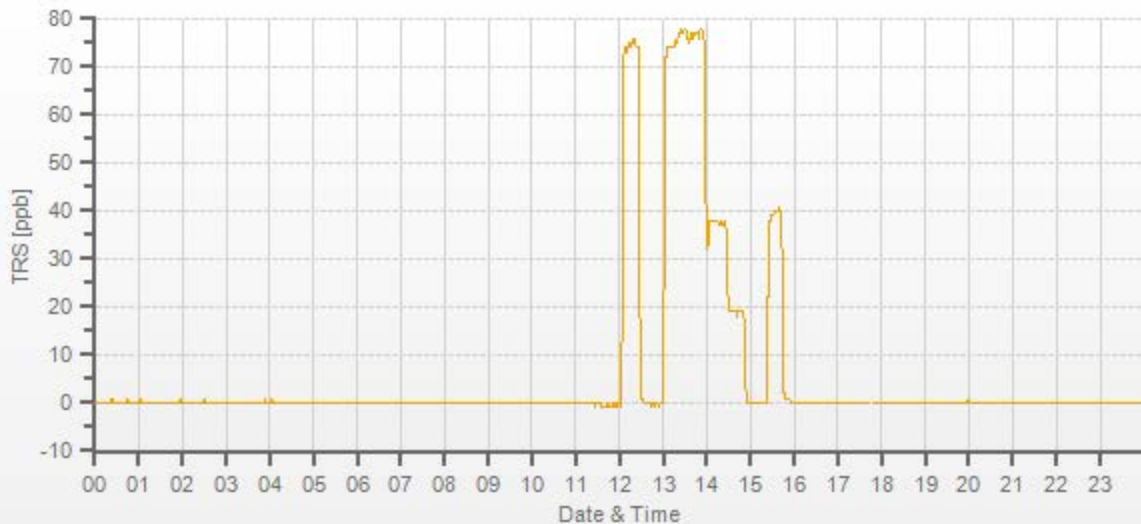
FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
DILUENT	GAS	TOTAL	ACTUAL	INDICATED		Initial	Final
				Initial	Final		
7500	7500	7500	0.00	0	0.2	1.006	1.006
7442	58.50	7500	78.00	75.8	78.4	1.029	0.997
7472	28.50	7500	38.00	n/a	38.1	n/a	1.003
7486	14.20	7500	18.93	n/a	19.4	n/a	0.986

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.001	0.2%

COMMENTS:

Sample inlet filter was changed.
14:00 - scheduled ZS check interfered with the calibration.



NOx Calibration by Dilution/Gas-Phase Titration



CALIBRATION:				ANALYZER:			
DATE:	15-Feb-2022	PREVIOUS CALIBRATION DATE:	13-Jan-2022	MAKE/MODEL:	Thermo 42i	PREVIOUS CF.	
CLIENT:	LICA	TEMPERATURE (°C):	22.0	SERIAL #:	1505664393	NOx	1.000
LOCATION:	CLS	BAROMETRIC (mBar):	947	FLOW (mL/min)	782	NO	1.001
PURPOSE:	Routine	START TIME (MST):	11:24	RANGE (ppb)	500	NO2	1.000
PERFORMED BY:	Alex Yakupov	END TIME (MST):	17:25	GPT FOR O3?		No	

CALIBRATOR:		ZERO AIR:		CALIBRATION GAS:		FLOWMETERS (if applicable):	
MAKE:	SABIO	MAKE:	Teledyne	CYLINDER ID:	LL 105146	HIGH ID:	n/a
MODEL:	2010	MODEL:	T701	NO/NOx (PPM):	50.0 50.1	HIGH EXPIRY:	n/a
ID:	26801218	ID:	132	CYLINDER (psi):	1100	LOW ID:	n/a
MFC CALIBRATION DATE:	19-Oct-2021	OXIDIZER ID:	n/a	EXPIRY DATE	09-Jun-2029	LOW EXPIRY:	n/a

CALIBRATION SETTINGS:							
INITIAL	NOx	NO	NO2	FINAL	NOx	NO	NO2
BKG/OFFSET:	4.3	4.2	n/a	BKG/OFFSET:	4.4	4.2	n/a
SLOPE/COEF/CE:	1	0.947	0.999	SLOPE/COEF/CE:	0.999	0.949	1.003

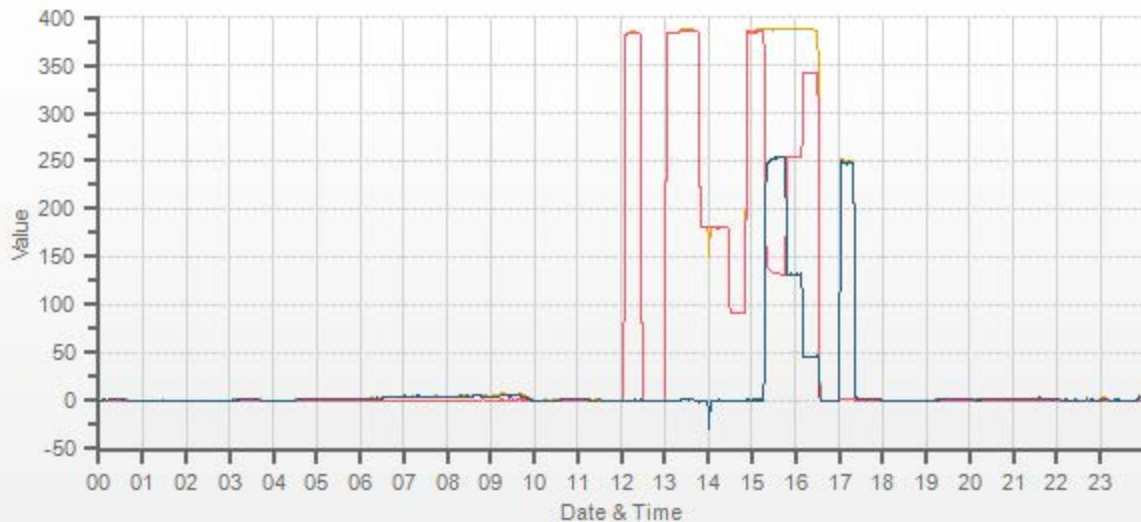
EXPECTED (REFERENCE) VALUE:							
INITIAL	NOx	NO	NO2	FINAL	NOx	NO	NO2
	252.9	2.1	250.8		250.0	2.3	247.7

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

FLOW RATE			CONCENTRATION (ppb)									CORRECTION FACTOR (CF.)					
(mL/min)			CALCULATED			INITIAL INDICATED			FINAL INDICATED			INITIAL			FINAL		
DILUENT	GAS	TOTAL	NO	NOx	NO2	NO	NOx	NO2	NO	NOx	NO2	NO	NOx	NO2	NO	NOx	NO2
5000	38.50	5000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.005	1.004	0.999	0.999	0.999	0.999
4962	38.50	5000	385.0	385.8	0.8	383.1	384.1	1.0	385.4	386.1	0.6	1.005	1.004	0.999	0.999	0.999	0.999
4982	18.00	5000	180.0	180.4	0.4	n/a	n/a	n/a	180.9	181.6	0.7	n/a	n/a	0.995	0.993	0.993	0.993
4991	9.00	5000	90.0	90.2	0.2	n/a	n/a	n/a	91.3	91.8	0.5	n/a	n/a	0.986	0.982	0.982	0.982

GPT CALIBRATION:										
Point	CALIBRATOR			INDICATED (ppb)			NO DROP / O3 Conc (ppb)	NO2 GAIN (ppb)	NO2 Corr. FACTOR	CONV. EFFICIENCY
	GAS	TOTAL	O3 SETPOINT	NO	NOx	NO2				
REFERENCE	38.50	5000	0	385.3	386.6	1.3	253.1	253.4	0.999	100.12%
AS-FOUND HIGH	38.50	5000	240	132.2	387.0	254.7	253.1	253.4	0.999	100.12%
ADJUSTED HIGH	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
MID	38.50	5000	125	254.7	386.9	132.2	130.6	130.9	0.998	100.23%
LOW	38.50	5000	45	341.2	386.2	45.0	44.1	43.7	1.009	99.09%
NO2 adjustment not required.									AVERAGE:	99.81%

LINEAR REGRESSION ANALYSIS:				COMMENTS:
	CORRELATION	SLOPE	INTERCEPT	
NO	1.000	1.000	0.13%	
NOx	1.000	1.000	0.17%	
NO2	1.000	1.003	-0.08%	



CAL-LICA-202202-01174

Ozone Calibration by Photometer (Varying UV Lamp)



DATE:	16-Feb-2022	PREVIOUS CALIBRATION DATE:	14-Jan-2022
PARAMETER:	O3	PREVIOUS CORRECTION FACTOR:	1.002
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	CLS	BAROMETRIC (mBar):	961
PURPOSE:	Routine	START TIME (MST):	09:51
PERFORMED BY:	Alex Yakupov	END TIME (MST):	13:45

ANALYZER:

MAKE/MODEL	Thermo 49i	RANGE	500 ppb
SERIAL #	700419951	FLOW (mL/min)	1473
INITIAL		FINAL	
BKG/OFFSET	0	BKG/OFFSET	0
COEF/SLOPE	1.103	COEF/SLOPE	1.113
Expected (reference) Value	416	Expected (reference) Value	445

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010 D	MODEL:	T701
ID:	11900613	ID:	132
MFC CALIBRATION DATE:	19-Oct-2021	OXIDIZER ID:	n/a
CALIBRATION METHOD:		Photometer (Varying UV Lamp)	
GPT DATE:	n/a	GPT END TIME:	n/a

CALIBRATION PARAMETERS:

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

CALIBRATION:

FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
DILUENT	GAS	TOTAL	ACTUAL	INDICATED		Initial	Final
				Initial	Final		
5000	XXXX	5000	0.0	0.0	0.0	XXXX	XXXX
5000	XXXX	5000	378.0	376.1	377.9	1.005	1.000
5000	XXXX	5000	180.0	n/a	181.0	n/a	0.994
5000	XXXX	5000	60.0	n/a	60.9	n/a	0.985

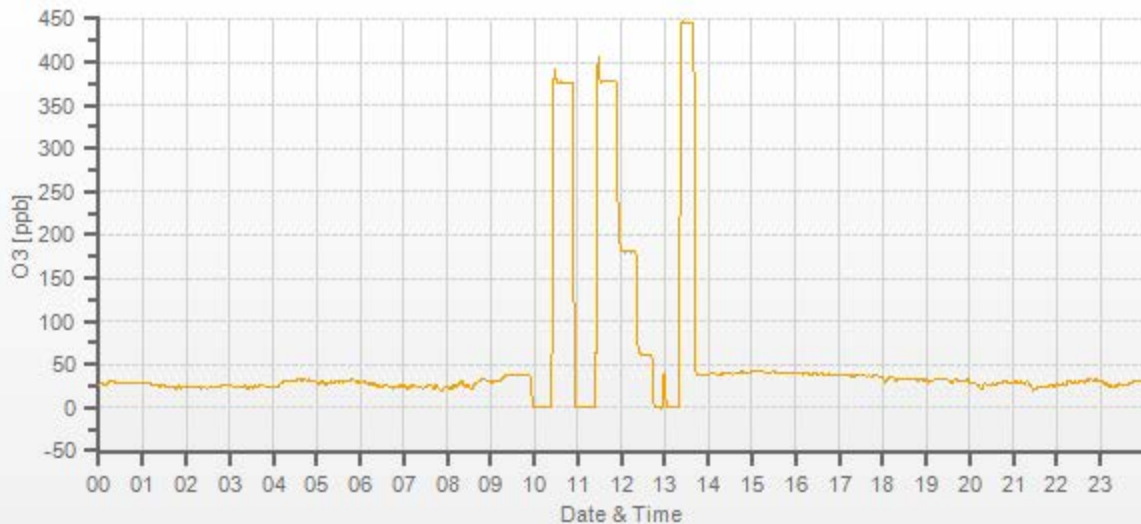
LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	0.999	0.1%

COMMENTS:

Sample inlet filter was changed.

O3[ppb] Station: Cold Lake South Daily: 16-02-2022 Type: AVG 1 Min. [1 Min.]



CAL-LICA-202202-01174

Methane/Non-Methane Analyzer Calibration by Dilution



CALIBRATION:				ANALYZER:			
DATE:	16-Feb-2022	PREVIOUS CALIBRATION DATE:	14-Jan-2022	VALUE	MAKE/MODEL	SERIAL	FLOW (mL/min)
CLIENT:	LICA	TEMPERATURE (°C):	22.0		Thermo 55i	1180930025	1158
LOCATION:	CLS	BAROMETRIC (mBar):	961	PARAMETER:	CH4	NMHC	THC
PURPOSE	Routine	START TIME (MST):	09:52	RANGE (ppm):	20	20	40
PERFORMED BY:	Alex Yakupov	END TIME (MST):	13:45	PREVIOUS CF:	0.996	1.000	0.998

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:		CALIBRATION GAS:		FLOWMETERS (if applicable):	
MAKE:	SABIO	MAKE:	Teledyne	CYLINDER ID:	LL 168375	HIGH ID:	n/a
MODEL:	2010	MODEL:	T701	CH ₄ /C ₃ H ₈ (ppm):	914.0 307.0	HIGH EXPIRY:	n/a
ID:	26801218	ID:	132	CYLINDER (psi):	500	LOW ID:	n/a
MFC CALIBRATION DATE:	19-Oct-2021	OXIDIZER ID:	115	EXPIRY DATE	21-Jan-2028	LOW EXPIRY:	n/a

CALIBRATION PARAMETERS:

POINT (CH ₄ /NMHC)	HIGH	MID	LOW	CH ₄ EQUIVILANCE	
TARGET	14	7	3.5	C ₃ H ₈ as CH ₄	844.3
RANGE	12 - 16	6 - 8	2 - 4	THC as CH ₄	1758.3

EXPECTED (REFERENCE) VALUE:

INITIAL	CH ₄	NMHC	THC	FINAL	CH ₄	NMHC	THC
	8.77	11.29	20.06		8.69	11.23	19.92

CALIBRATION:

FLOW RATE			CONCENTRATION (PPM)									CORRECTION FACTOR (CF.)					
(mL/min)			CALCULATED			INITIAL INDICATED			FINAL INDICATED			INITIAL			FINAL		
DILUENT	GAS	TOTAL	CH ₄	NMHC	THC	CH ₄	NMHC	THC	CH ₄	NMHC	THC	CH ₄	NMHC	THC	CH ₄	NMHC	THC
3100	X	3100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	X	X	X	X	X	X
3051	49.40	3100	14.57	13.45	28.02	14.93	13.80	28.74	14.63	13.49	28.13	0.976	0.975	0.975	0.996	0.997	0.996
3075	24.70	3100	7.28	6.73	14.01	n/a	n/a	n/a	7.19	6.72	13.91	n/a	n/a	n/a	1.013	1.001	1.007
3088	12.40	3100	3.66	3.38	7.03	n/a	n/a	n/a	3.53	3.25	6.79	n/a	n/a	n/a	1.036	1.039	1.036

LINEAR REGRESSION ANALYSIS:

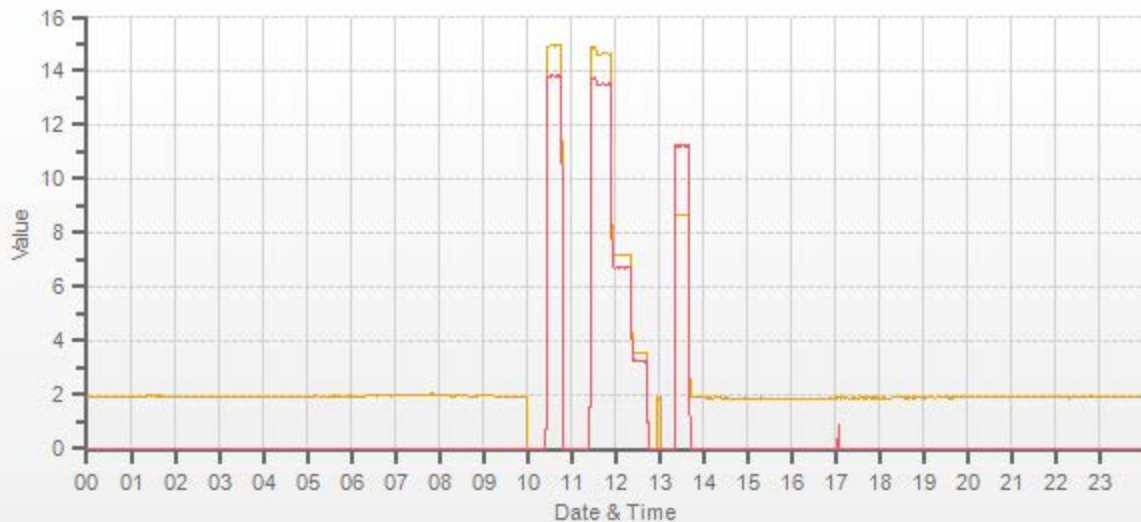
	CORRELATION	SLOPE	INTERCEPT
CH ₄	1.000	1.007	-0.4%
NMHC	1.000	1.006	-0.3%
THC	1.000	1.007	-0.3%

Comments:

Sample inlet filter was changed.

Use Zero Chrom?

Yes



CAL-LICA-202202-01174



Teledyne T640 Audit/Calibration

Date/Previous Audit Date:	February 16, 2022	January 14, 2022	Weather Conditions:	Cloudy/Overcast	
Company:	LICA		Start Time (mst):	14:10	
Station:	Cold Lake South		End Time (mst):	14:49	
Parameter:	PM 2.5		Performed By/Reviewer:	Alex Yakupov	Chris Wesson
Instrument Data:					
Make/Model:	Teledyne T640		Serial Number:	575	
Owner:	LICA		Alarms (detail in comments):	No	
Reference Standards/I.D./Expiry Date:					
Flow Standard: DeltaCal DC1 S/N177246 / Jul 12, 2022			Temperature: VAISALA HMP76B / SN: T1640130 / Apr 22, 2022		
Digital Manometer: DeltaCal DC1 S/N177246 / Jul 12, 2022			Pressure: DeltaCal DC1 S/N177246 / Jul 12, 2022		
DIAGNOSTICS:					
Ambient Pressure (mmHg)	719.4	Ambient Temp (°C)	-17.3	ASC Heater Duty (%)	0.0
Box Temp (°C)	29.0	Current PMT HV (V)	1442	LED Temp (°C)	38.25
P3 Value	46	PMT Setting (V)	1444	Pump PWM (%)	90
Sample Flow (L/min)	5.02	Sample RH (%RH)	1.6	Sample Temp (°C)	25.9
Monthly Audit/Calibration:					
Item:	As-found		As-left		Tolerance
	Reference	T640x	Reference	T640x	
Zero Test (Leak Check)	PM10	0.0	PM10	0.0	0.0 to 0.2
	PM2.5	0.0	PM2.5	0.0	
Ambient Pressure (mmHg)	720.0	719.4	720	719	+/- 10 mm Hg
Ambient Temperature (°C)	-18.20	-17.3	n/a		+/- 2°C
Sample Flow (L/min)	5.04	5.02	5.04	5.01	+/-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:					
n/a					

Meteorological System Checklist



Date:	February 16, 2022		
Technician:	Alex Yakupov		
Station:	Cold Lake South		
Unit:	Make:	Model:	Serial #:
Temperature Sensor:	Rotronic	HC2A-S3	202571103
Barometric Pressure Sensor:	MetOne	92	Y23368
Relative Humidity Sensor:	Rotronic	HC2A-S3	202571103
Anemometer:	RM Young	05305AQ	177354
AMBIENT TEMPERATURE SENSOR CHECK			
Previous check date:	January 14, 2022		
Parameter:	Temperature @ 2 metres		
Reference Thermometer ID:	Vaisala HMP76B #T1640130, Exp. Date: April 22, 2022		
Reference Temperature (°C):	-18.2		
Station - Ambient Temperature (°C):	-18.4		
Temperature Difference (°C):	0.2		
BAROMETRIC PRESSURE SENSOR CHECK			
Previous check date:	January 14, 2022		
Reference Barometer ID:	Vaisala HMP76B #T1640130, Exp. Date: April 22, 2022		
Reference Pressure - Units/Reading:	millibar	960	
Station Pressure - Units/Reading:	millibar	961	
Pressure Tolerance +/- 15% of error:	816 - 1104	-0.10%	
RELATIVE HUMIDITY (HYGROMETER) SENSOR CHECK			
Previous check date:	January 14, 2022		
Reference Hygrometer ID:	Vaisala HMP76B #T1640130, Exp. Date: April 22, 2022		
Reference Hygrometer % RH- Reading:	91.00		
Station Hygrometer % RH- Reading:	88.00		
RH Tolerance +/- 15% of difference:	77.35 - 104.65	3.3%	
ANEMOMETER - WIND SPEED & WIND DIRECTION SENSOR CHECK			
WIND SPEED		WIND DIRECTION	
Previous check date:	January 14, 2022	Previous check date:	January 14, 2022
Wind Speed Observed (kph):	0-10	Wind Direction Observed:	SW
Wind speed on Data Logger (kph):	3.6	Wind Direction on Data Logger:	SW
	Annual audit: April 20, 2021	Wind Direction Pass/Fail?:	Pass
Comments			
Station (Trailer) temperature vs Reference gauge: 24.6 vs 24.9, passed			



Meteorological Sensor Audit/Calibration

Location Information

Company: LICA
 Audit Location: Cold Lake South
 Audit Date: April 20, 2021
 Calibration Purpose: installation

Performed By: Alex Yakupov
 Reviewed By: Chris Wesson
 Start/End Time (mst): 10:19 / 14:44
 Weather Conditions: Mix of sun and 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:	0-180
Serial #:	177354	Direction Voltage Output Range:	n/a
Previous Cal/Audit Date:	September 25, 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	92.0	92.0	1.002
6000	110.6	110.4	110.4	1.002
7000	129.0	128.8	128.8	1.002
8000	147.4	147.3	147.3	1.001
9000	165.9	165.7	165.7	1.001
10000	184.3	184.2	184.2	1.001
The audit meets AMD requirements.			Average Correction Factor=	1.003

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

Generated Wind Direction 0-360 (Up)	Generated Wind Direction 360-0 (Down)	Indicated Wind Direction 0-360 (Up)	Indicated Wind Direction 360-0 (Down)	Degrees Difference 0-360 (Up)	Degrees Difference 360-0 (Down)	Average Absolute Degrees Difference
0	355	0	355	0.1	0.0	0.1
30	330	28	328	1.6	1.7	1.7
60	300	58	299	1.6	1.5	1.6
90	270	89	267	0.6	3.0	1.8
120	240	120	237	0.5	3.3	1.9
150	210	148	207	1.6	3.2	2.4
180	180	177	179	2.9	1.4	2.2
210	150	206	149	3.8	1.3	2.6
240	120	237	119	3.1	0.7	1.9
270	90	267	89	2.8	0.7	1.8
300	60	297	58	2.8	1.7	2.3
330	30	328	28	1.7	2.0	1.8
355	0	355	0	0.0	0.1	0.1
The audit meets AMD requirements.				Average Absolute Degrees Difference=		1.7

Comments:

Bearing Torque was also tested. Still at minimum threshold (like new) = No problem.

End of Report



Lakeland Industry & Community Association

FEBRUARY 2022
Ambient Air Monitoring Calibration Report
- TAMARACK STATION-
CAL-LICA-202202-01248

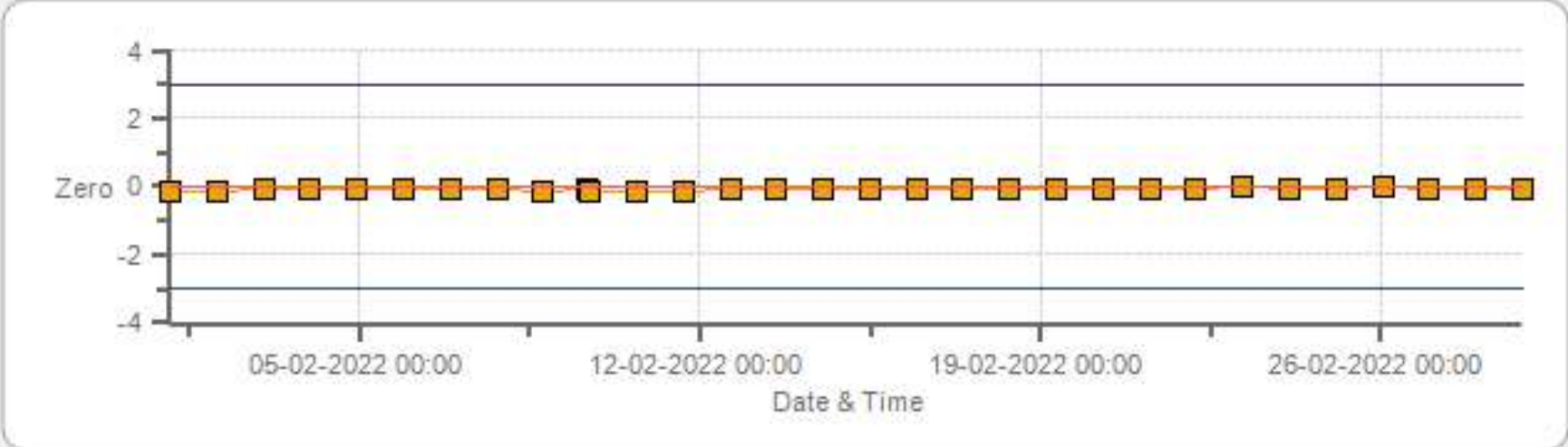
Station Operation and Maintenance:
Bureau Veritas Canada

Data Validation and Report:
LICA / Bureau Veritas Canada

March 23, 2022

DAILY INTERNAL ZERO-SPAN CALIBRATION RECORDS

SO2[ppb] Calibration: Tamarack Monthly: 02-2022 Type: SpanAndZero - Zero



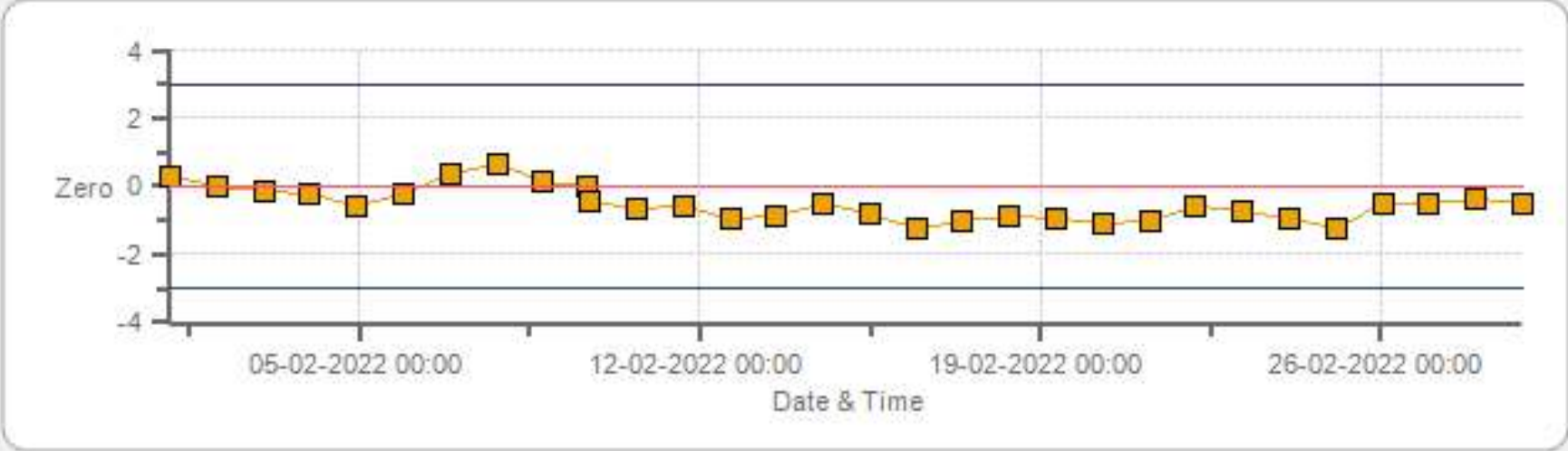
Zero Zero Ref Zero Low Zero High

SO2[ppb] Calibration: Tamarack Monthly: 02-2022 Type: SpanAndZero - Span



Span SpanRef Span Low Span High

H2S[ppb] Calibration: Tamarack Monthly: 02-2022 Type: SpanAndZero - Zero



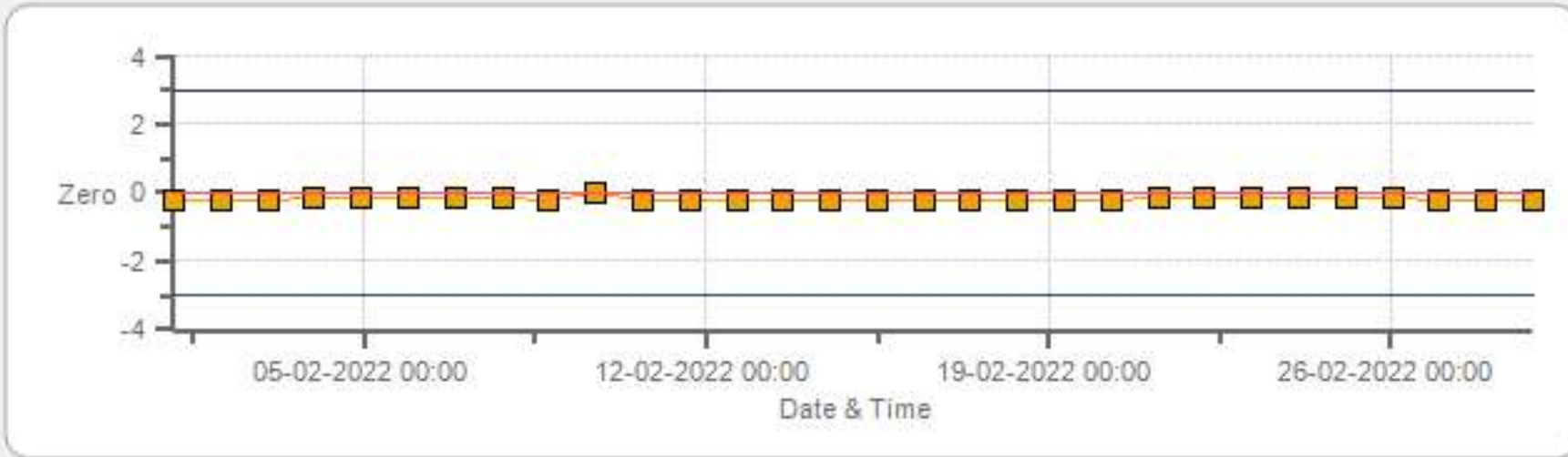
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H2S[ppb] Calibration: Tamarack Monthly: 02-2022 Type: SpanAndZero - Span



Span SpanRef Span Low Span High

NOX[ppb] Calibration: Tamarack Monthly: 02-2022 Type: SpanAndZero - Zero



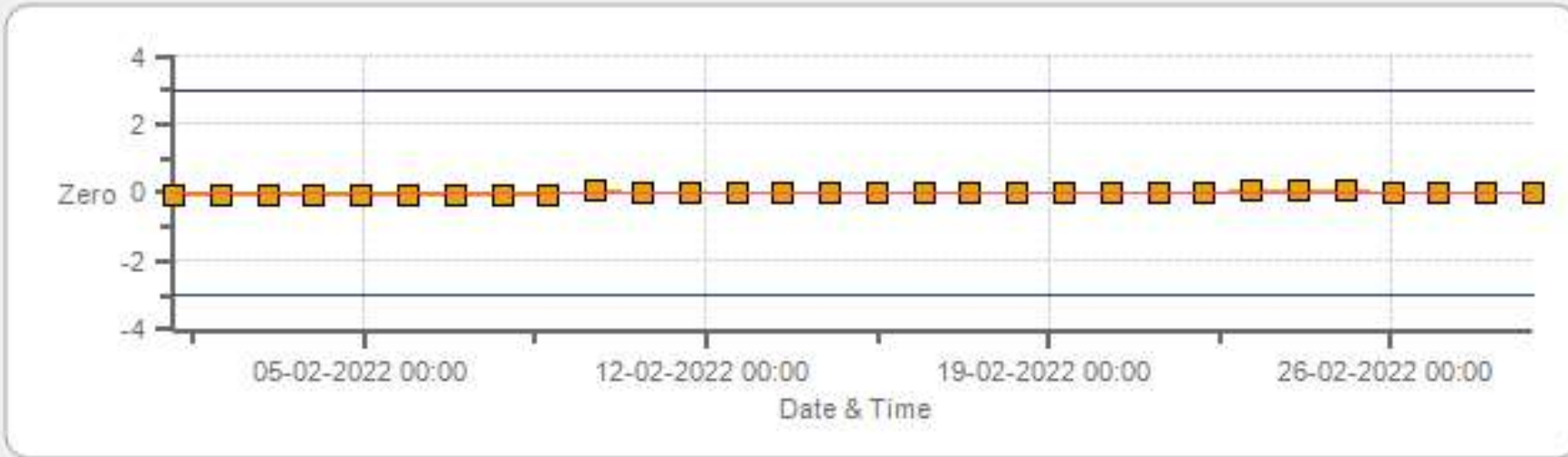
Zero Zero Ref Zero Low Zero High

NOX[ppb] Calibration: Tamarack Monthly: 02-2022 Type: SpanAndZero - Span



Span SpanRef Span Low Span High

NO2[ppb] Calibration: Tamarack Monthly: 02-2022 Type: SpanAndZero - Zero



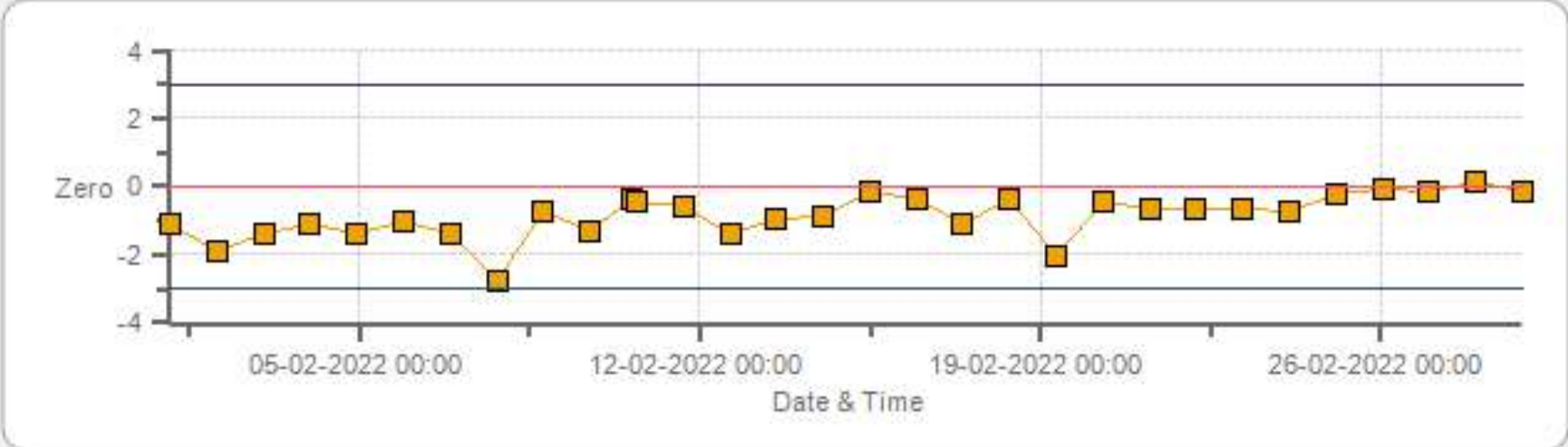
Zero Zero Ref Zero Low Zero High

NO2[ppb] Calibration: Tamarack Monthly: 02-2022 Type: SpanAndZero - Span



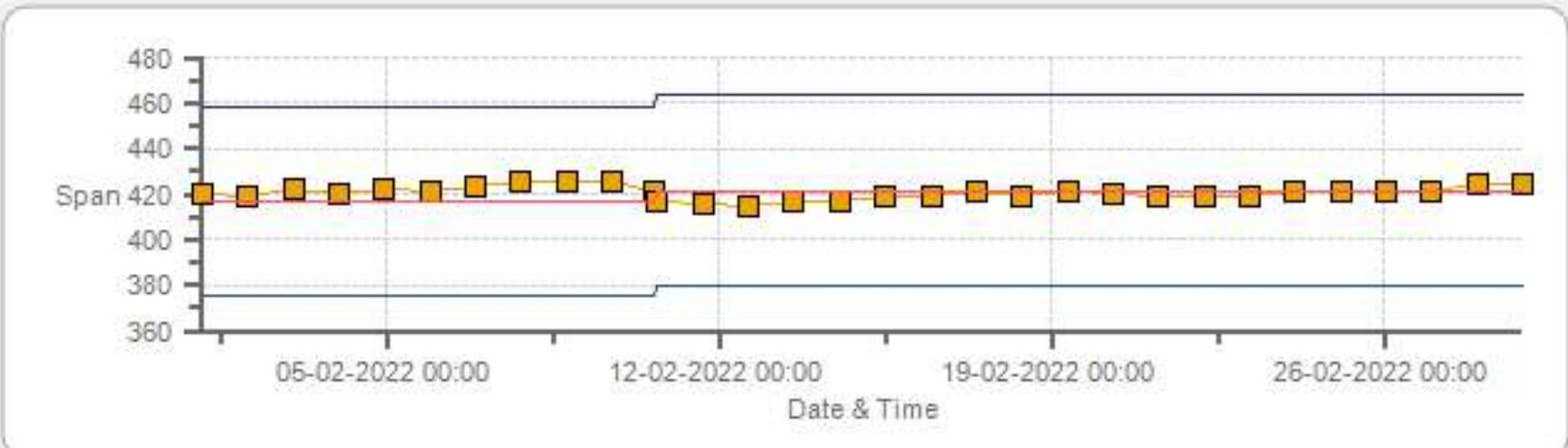
Span SpanRef Span Low Span High

O3[ppb] Calibration: Tamarack Monthly: 02-2022 Type: SpanAndZero - Zero



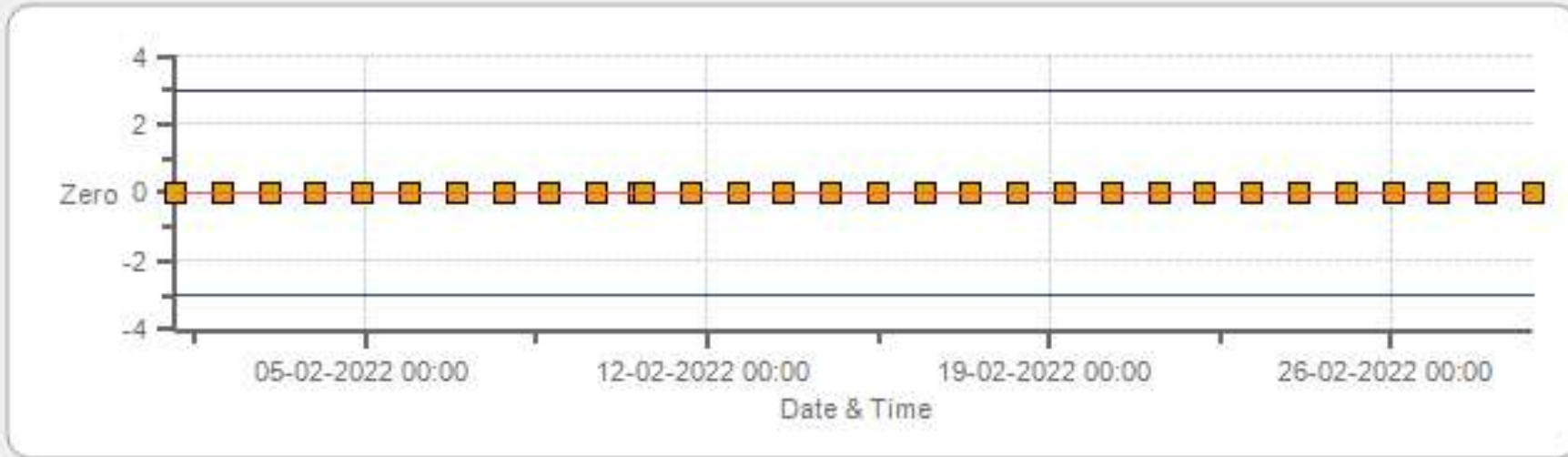
Zero Zero Ref Zero Low Zero High

O3[ppb] Calibration: Tamarack Monthly: 02-2022 Type: SpanAndZero - Span



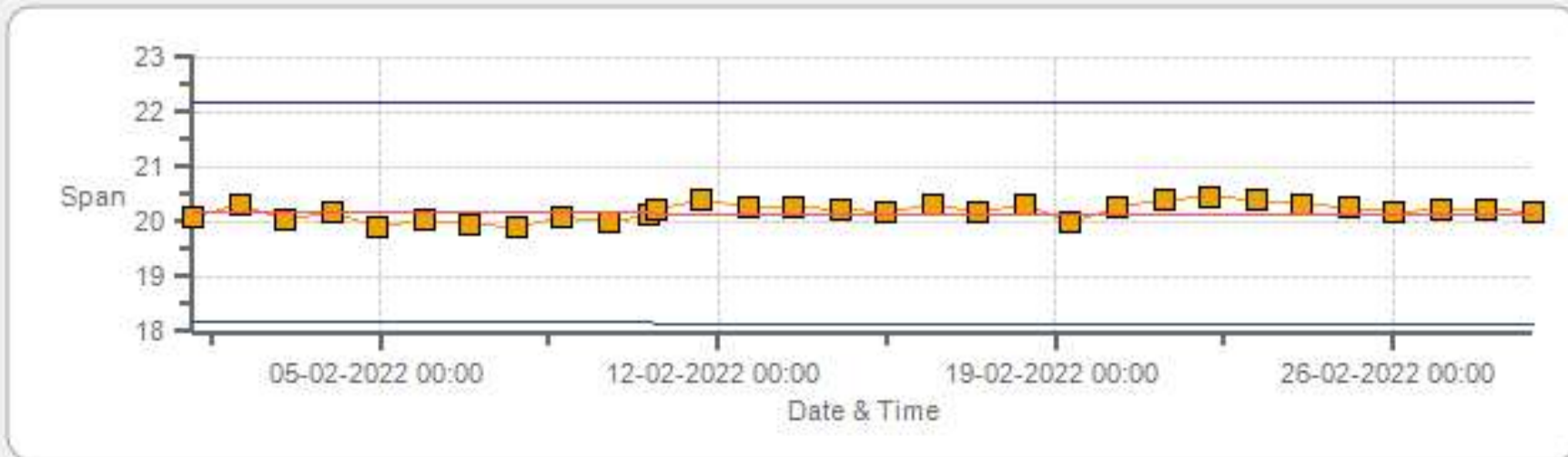
Span SpanRef Span Low Span High

THC55[ppm] Calibration: Tamarack Monthly: 02-2022 Type: SpanAndZero - Zero



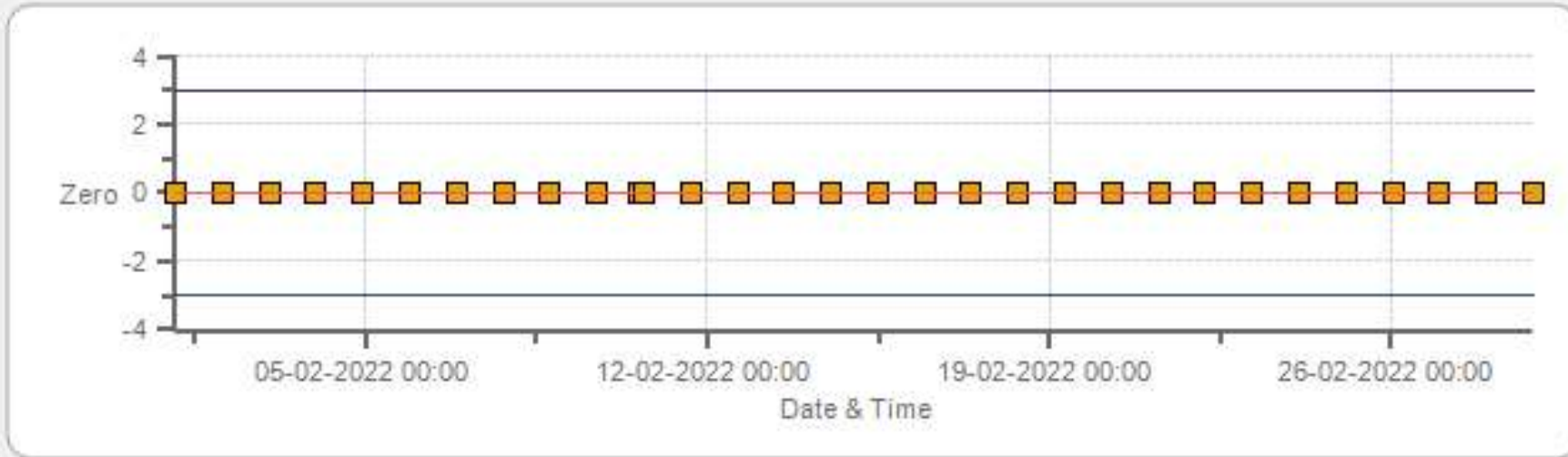
Zero Zero Ref Zero Low Zero High

THC55[ppm] Calibration: Tamarack Monthly: 02-2022 Type: SpanAndZero - Span



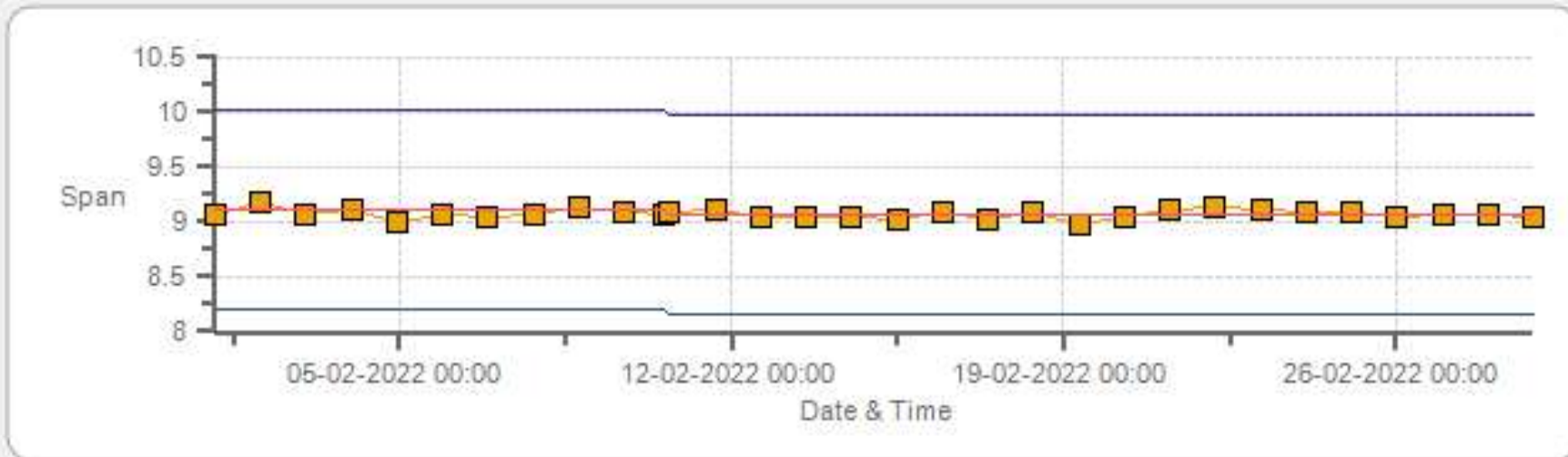
Span SpanRef Span Low Span High

CH4[ppm] Calibration: Tamarack Monthly: 02-2022 Type: SpanAndZero - Zero



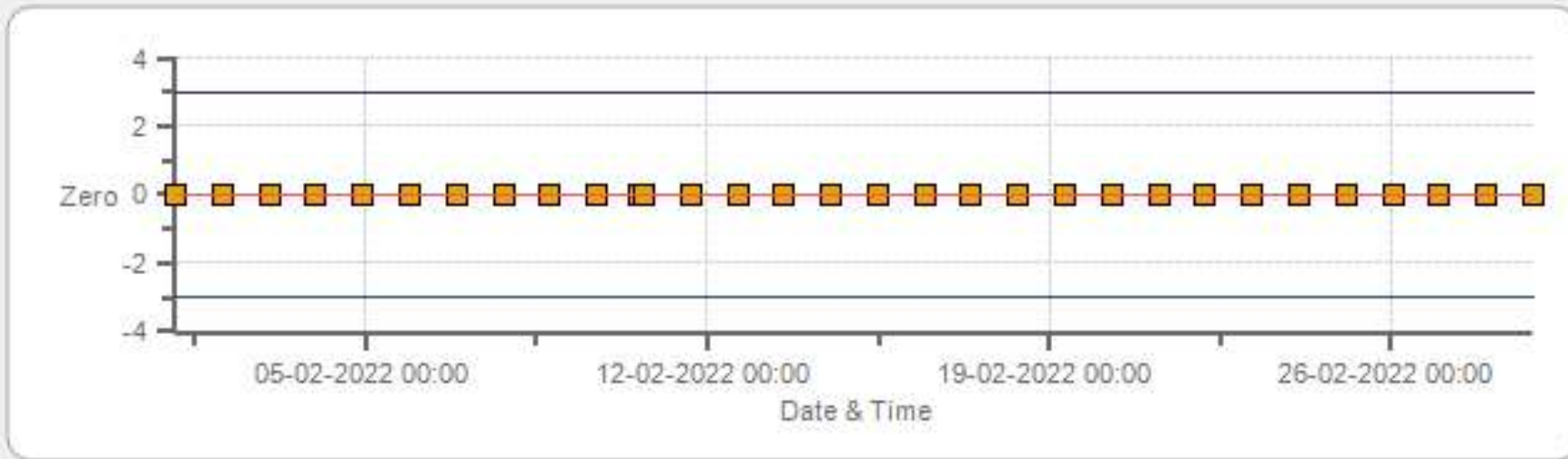
Zero Zero Ref Zero Low Zero High

CH4[ppm] Calibration: Tamarack Monthly: 02-2022 Type: SpanAndZero - Span



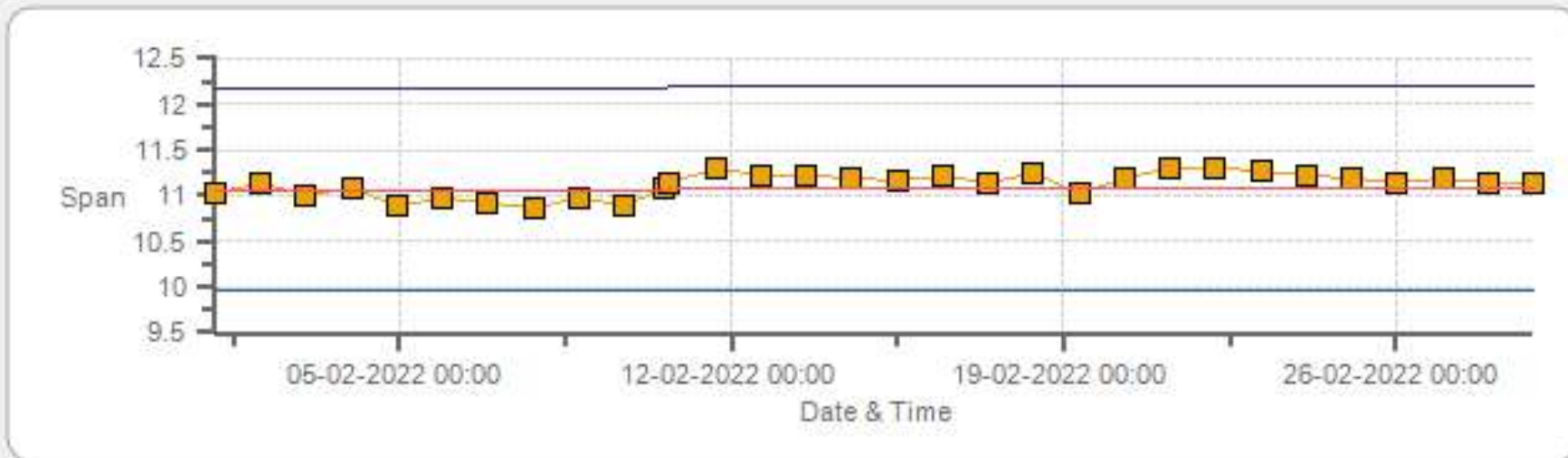
Span SpanRef Span Low Span High

NMHC[ppm] Calibration: Tamarack Monthly: 02-2022 Type: SpanAndZero - Zero



Zero Zero Ref Zero Low Zero High

NMHC[ppm] Calibration: Tamarack Monthly: 02-2022 Type: SpanAndZero - Span



Span SpanRef Span Low Span High

MULTI-POINT CALIBRATION RECORDS

SO2 Analyzer Calibration by Dilution



DATE:	09-Feb-2022	PREVIOUS CALIBRATION DATE:	05-Jan-2022
PARAMETER:	SO2	PREVIOUS CORRECTION FACTOR:	0.998
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	Tamarack	BAROMETRIC (mBar):	935
PURPOSE:	Routine	START TIME (MST):	11:48
PERFORMED BY:	Alex Yakupov	END TIME (MST):	15:58

ANALYZER:

MAKE/MODEL	Thermo 43I-TLE	RANGE	500 ppb
SERIAL #	1180930031	FLOW (mL/min)	449
INITIAL		FINAL	
BKG/OFFSET	2.8	BKG/OFFSET	2.7
COEF/SLOPE	1.006	COEF/SLOPE	0.97
Expected (reference) Value	183.6	Expected (reference) Value	189.8

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010	MODEL:	T701
ID:	26801218	ID:	132
MFC CALIBRATION DATE:	19-Oct-2021	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	LL 105146	HIGH ID	n/a
CONC (ppm):	50.80	EXPIRY DATE	n/a
CYLINDER (psi):	1100	LOW ID	n/a
EXPIRY DATE	09-Jun-2029	EXPIRY DATE	n/a

CALIBRATION PARAMETERS:

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

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

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

CALIBRATION:

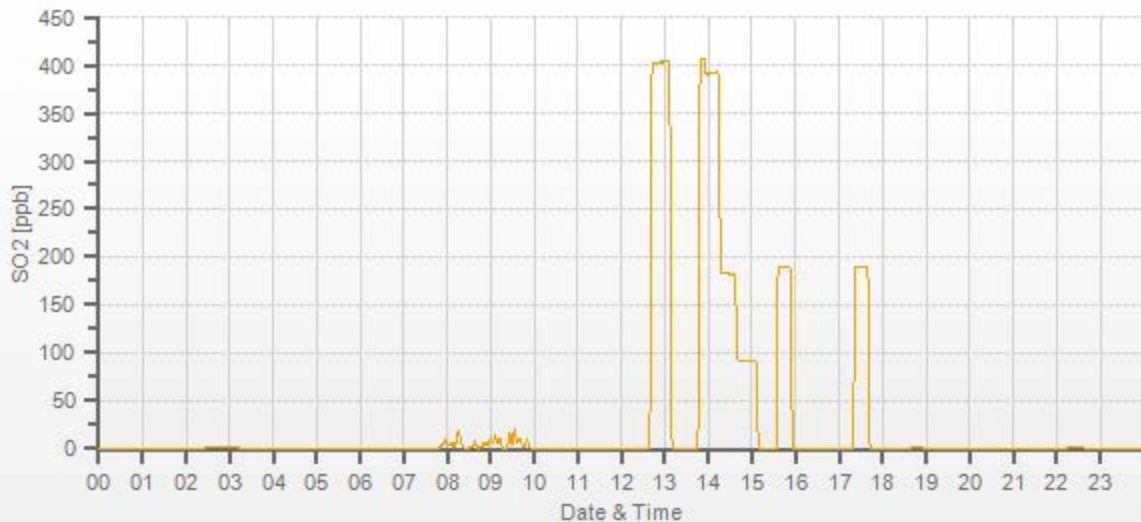
FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
DILUENT	GAS	TOTAL	ACTUAL	INDICATED		Initial	Final
				Initial	Final		
5000	 	5000	0.00	-0.2	0	 	
4962	38.50	5000	391.16	403.7	391.2	0.968	1.000
4982	18.00	5000	182.88	n/a	182.2	n/a	1.004
4991	9.00	5000	91.44	n/a	90.6	n/a	1.009

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.001	-0.1%

COMMENTS:

Sample inlet filter was changed.



H2S Analyzer Calibration by Dilution



DATE:	09-Feb-2022	PREVIOUS CALIBRATION DATE:	20-Jan-2022
PARAMETER:	H2S	PREVIOUS CORRECTION FACTOR:	0.999
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	Tamarack	BAROMETRIC (mBar):	935
PURPOSE:	Routine	START TIME (MST):	11:46
PERFORMED BY:	Alex Yakupov	END TIME (MST):	15:58

ANALYZER:

MAKE/MODEL	Thermo 450i	RANGE	100 ppb
SERIAL #	CM 17360005	FLOW (mL/min)	928
INITIAL		FINAL	
BKG/OFFSET	30	BKG/OFFSET	30
COEF/SLOPE	0.822	COEF/SLOPE	0.81
Expected (reference) Value	44.5	Expected (reference) Value	44.2

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010 D	MODEL:	T701
ID:	11900613	ID:	132
MFC CALIBRATION DATE:	19-Oct-2021	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	EY 0000644	HIGH ID	n/a
CONC (ppm):	10.00	EXPIRY DATE	n/a
CYLINDER (psi):	600	LOW ID	n/a
EXPIRY DATE	16-Jun-2022	EXPIRY DATE	n/a

CALIBRATION PARAMETERS:

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

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

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

CALIBRATION:

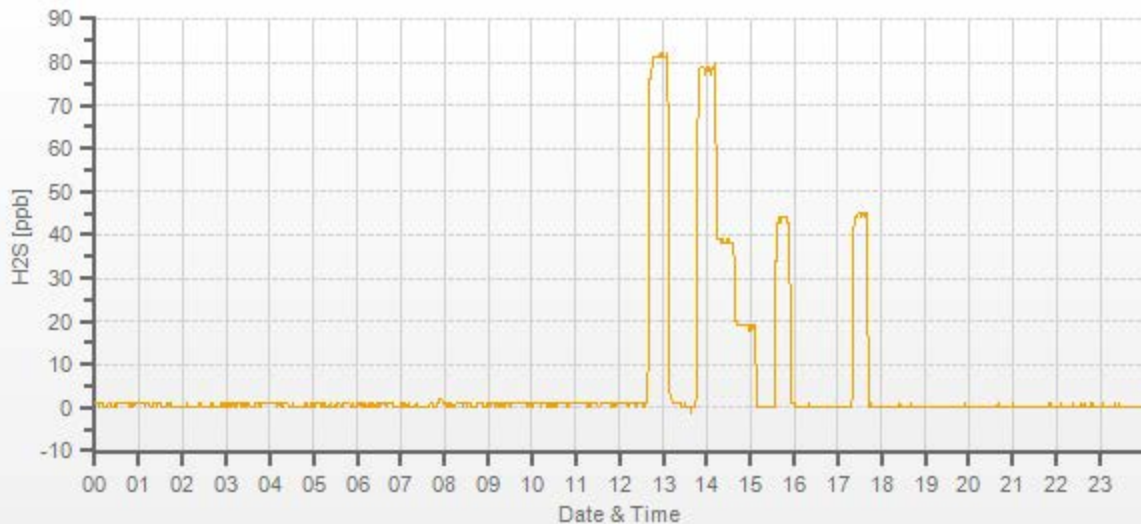
FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
DILUENT	GAS	TOTAL	ACTUAL	INDICATED		Initial	Final
				Initial	Final		
7500	7500	7500	0.00	0.7	0	0.999	0.999
7442	58.50	7500	78.00	81.1	78.4	0.970	0.995
7472	28.50	7500	38.00	n/a	38.3	n/a	0.992
7486	14.20	7500	18.93	n/a	18.5	n/a	1.023

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.008	-0.2%

COMMENTS:

Sample inlet filter was changed.



NOx Calibration by Dilution/Gas-Phase Titration



CALIBRATION:				ANALYZER:			
DATE:	09-Feb-2022	PREVIOUS CALIBRATION DATE:	05-Jan-2022	MAKE/MODEL:	Thermo 42i	PREVIOUS CF.	
CLIENT:	LICA	TEMPERATURE (°C):	22.0	SERIAL #:	1180930028	NOx	1.001
LOCATION:	Tamarack	BAROMETRIC (mBar):	935	FLOW (mL/min)	858	NO	1.002
PURPOSE:	Routine	START TIME (MST):	11:49	RANGE (ppb)	500	NO2	1.003
PERFORMED BY:	Alex Yakupov	END TIME (MST):	17:45	GPT FOR O3?		No	

CALIBRATOR:		ZERO AIR:		CALIBRATION GAS:		FLOWMETERS (if applicable):	
MAKE:	SABIO	MAKE:	Teledyne	CYLINDER ID:	LL 105146	HIGH ID:	n/a
MODEL:	2010	MODEL:	T701	NO/NOx (PPM):	50.0 50.1	HIGH EXPIRY:	n/a
ID:	26801218	ID:	132	CYLINDER (psi):	1100	LOW ID:	n/a
MFC CALIBRATION DATE:	19-Oct-2021	OXIDIZER ID:	n/a	EXPIRY DATE	09-Jun-2029	LOW EXPIRY:	n/a

CALIBRATION SETTINGS:							
INITIAL	NOx	NO	NO2	FINAL	NOx	NO	NO2
BKG/OFFSET:	1.7	1.6	n/a	BKG/OFFSET:	1.7	1.7	n/a
SLOPE/COEF/CE:	1.002	0.959	1.005	SLOPE/COEF/CE:	1.001	0.976	1.005

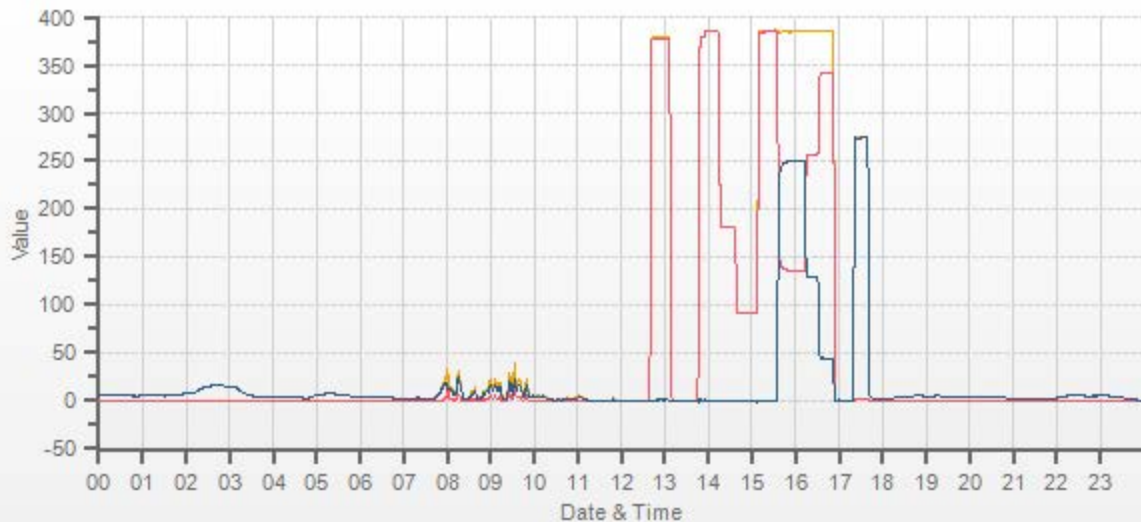
EXPECTED (REFERENCE) VALUE:							
INITIAL	NOx	NO	NO2	FINAL	NOx	NO	NO2
	276.3	1.5	274.7		275.9	1.7	274.2

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

FLOW RATE			CONCENTRATION (ppb)									CORRECTION FACTOR (CF.)					
(mL/min)			CALCULATED			INITIAL INDICATED			FINAL INDICATED			INITIAL			FINAL		
DILUENT	GAS	TOTAL	NO	NOx	NO2	NO	NOx	NO2	NO	NOx	NO2	NO	NOx	NO2	NO	NOx	NO2
5000	38.50	5000	0.0	0.0	0.0	-0.1	-0.1	0.0	0.0	0.0	0.0	1.018	1.015	0.994	1.000	1.000	0.990
4962	38.50	5000	385.0	385.8	0.8	378.2	379.9	1.7	385.0	385.6	0.6	1.018	1.015	0.994	1.000	1.000	0.990
4982	18.00	5000	180.0	180.4	0.4	n/a	n/a	n/a	181.0	181.2	0.2	n/a	n/a	0.994	0.994	0.995	0.990
4991	9.00	5000	90.0	90.2	0.2	n/a	n/a	n/a	90.8	91.1	0.3	n/a	n/a	0.991	0.991	0.990	0.990

GPT CALIBRATION:										
Point	CALIBRATOR			INDICATED (ppb)			NO DROP / O3 Conc (ppb)	NO2 GAIN (ppb)	NO2 Corr. FACTOR	CONV. EFFICIENCY
	GAS	TOTAL	O3 SETPOINT	NO	NOx	NO2				
REFERENCE	38.50	5000	0	385.5	386.1	0.6	250.1	249	1.004	99.56%
AS-FOUND HIGH	38.50	5000	240	135.4	384.9	249.6	250.1	249	1.004	99.56%
ADJUSTED HIGH	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
MID	38.50	5000	125	256.0	385.4	129.5	129.5	128.9	1.005	99.54%
LOW	38.50	5000	45	341.6	385.8	44.2	43.9	43.6	1.007	99.32%
NO2 adjustment not required.									AVERAGE:	99.47%

LINEAR REGRESSION ANALYSIS:				COMMENTS:
	CORRELATION	SLOPE	INTERCEPT	
NO	1.000	0.999	0.11%	
NOx	1.000	0.999	0.12%	
NO2	1.000	0.996	-0.02%	



CAL-LICA-202202-01248

Ozone Calibration by Photometer (Varying UV Lamp)



DATE:	10-Feb-2022	PREVIOUS CALIBRATION DATE:	05-Feb-2022
PARAMETER:	O3	PREVIOUS CORRECTION FACTOR:	1.004
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	Tamarack	BAROMETRIC (mBar):	922
PURPOSE:	Routine	START TIME (MST):	10:17
PERFORMED BY:	Alex Yakupov	END TIME (MST):	14:22

ANALYZER:

MAKE/MODEL	Thermo 49iQ	RANGE	500 ppb
SERIAL #	1202068570	FLOW (mL/min)	1350
INITIAL		FINAL	
BKG/OFFSET	3.7	BKG/OFFSET	3.4
COEF/SLOPE	1.032	COEF/SLOPE	1.018
Expected (reference) Value	416.5	Expected (reference) Value	421.4

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010 D	MODEL:	T701
ID:	11900613	ID:	132
MFC CALIBRATION DATE:	19-Oct-2021	OXIDIZER ID:	n/a
CALIBRATION METHOD:		Photometer (Varying UV Lamp)	
GPT DATE:	n/a	GPT END TIME:	n/a

CALIBRATION PARAMETERS:

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

CALIBRATION:

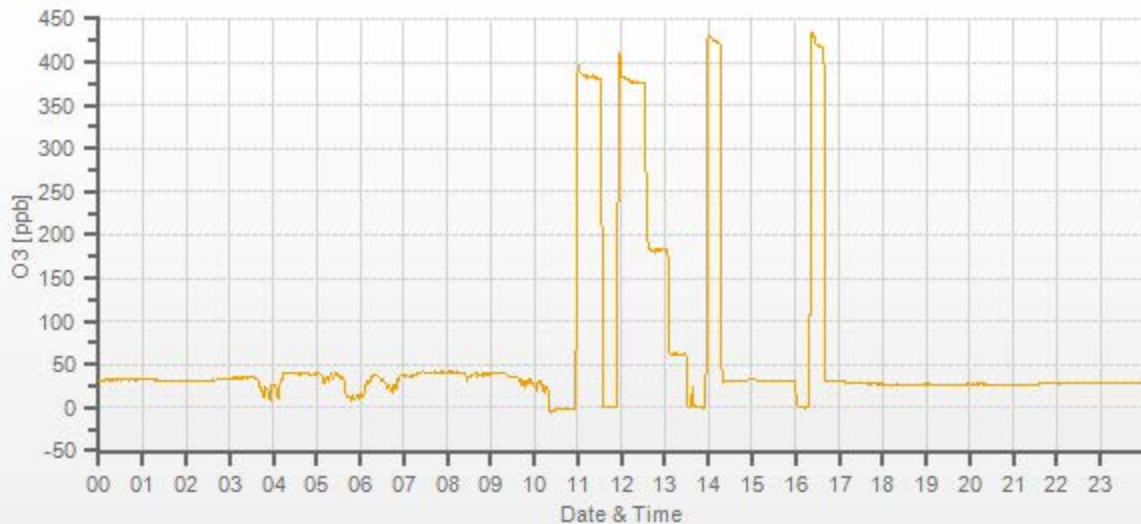
FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
DILUENT	GAS	TOTAL	ACTUAL	INDICATED		Initial	Final
				Initial	Final		
5000	XXXX	5000	0.0	-1.2	-0.1	XXXX	XXXX
5000	XXXX	5000	378.0	381.2	376.3	0.988	1.004
5000	XXXX	5000	181.0	n/a	182.0	n/a	0.994
5000	XXXX	5000	60.0	n/a	60.5	n/a	0.990

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	0.995	0.1%

COMMENTS:

Sample inlet filter ws changed.



Methane/Non-Methane Analyzer Calibration by Dilution



CALIBRATION:				ANALYZER:			
DATE:	10-Feb-2022	PREVIOUS CALIBRATION DATE:	06-Jan-2022	VALUE	MAKE/MODEL	SERIAL	FLOW (mL/min)
CLIENT:	LICA	TEMPERATURE (°C):	22.0		Thermo 55i	1314057759	1010
LOCATION:	Tamarack	BAROMETRIC (mBar):	922	PARAMETER:	CH4	NMHC	THC
PURPOSE	Routine	START TIME (MST):	10:16	RANGE (ppm):	20	20	40
PERFORMED BY:	Alex Yakupov	END TIME (MST):	14:01	PREVIOUS CF:	1.004	1.001	1.002

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:		CALIBRATION GAS:		FLOWMETERS (if applicable):	
MAKE:	SABIO	MAKE:	Teledyne	CYLINDER ID:	LL 168375	HIGH ID:	n/a
MODEL:	2010	MODEL:	T701	CH ₄ /C ₃ H ₈ (ppm):	914.0 307.0	HIGH EXPIRY:	n/a
ID:	26801218	ID:	132	CYLINDER (psi):	600	LOW ID:	n/a
MFC CALIBRATION DATE:	19-Oct-2021	OXIDIZER ID:	115	EXPIRY DATE	21-Jan-2028	LOW EXPIRY:	n/a

CALIBRATION PARAMETERS:

POINT (CH ₄ /NMHC)	HIGH	MID	LOW	CH ₄ EQUIVILANCE	
TARGET	14	7	3.5	C ₃ H ₈ as CH ₄	844.3
RANGE	12 - 16	6 - 8	2 - 4	THC as CH ₄	1758.3

EXPECTED (REFERENCE) VALUE:

INITIAL	CH ₄	NMHC	THC	FINAL	CH ₄	NMHC	THC
	9.11	11.06	20.18		9.07	11.08	20.15

CALIBRATION:

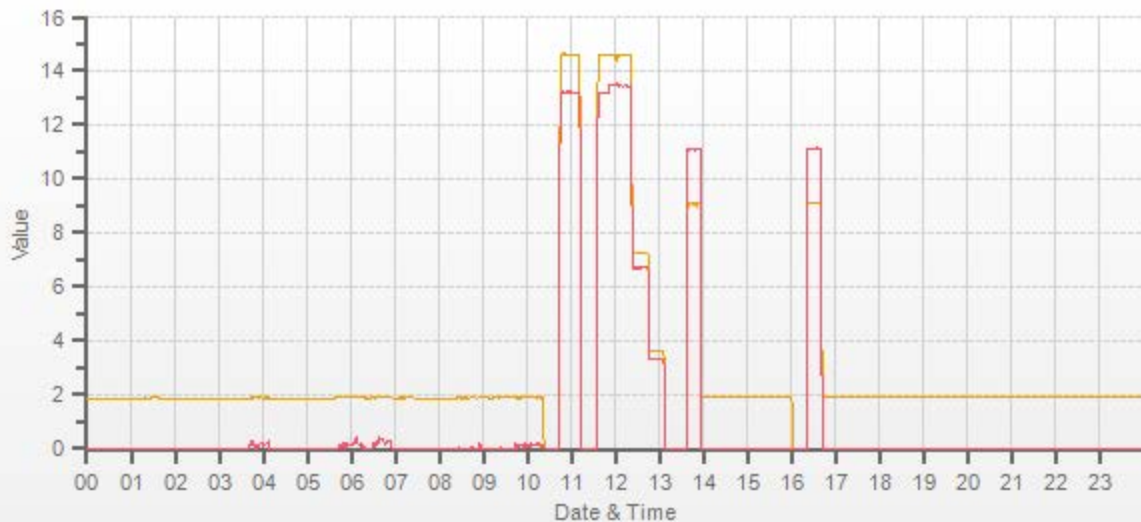
FLOW RATE			CONCENTRATION (PPM)									CORRECTION FACTOR (CF.)					
(mL/min)			CALCULATED			INITIAL INDICATED			FINAL INDICATED			INITIAL			FINAL		
DILUENT	GAS	TOTAL	CH ₄	NMHC	THC	CH ₄	NMHC	THC	CH ₄	NMHC	THC	CH ₄	NMHC	THC	CH ₄	NMHC	THC
3100	X	3100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	X	X	X	X	X	X
3051	49.40	3100	14.57	13.45	28.02	14.59	13.20	27.79	14.57	13.45	28.01	0.998	1.019	1.008	1.000	1.000	1.000
3075	24.70	3100	7.28	6.73	14.01	n/a	n/a	n/a	7.27	6.73	14.00	n/a	n/a	n/a	1.002	1.000	1.001
3088	12.40	3100	3.66	3.38	7.03	n/a	n/a	n/a	3.61	3.33	6.94	n/a	n/a	n/a	1.013	1.014	1.013

LINEAR REGRESSION ANALYSIS:

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

Comments:

Sample inlet filter was changed.	
Use Zero Chrom?	Yes



CAL-LICA-202202-01248



Thermo 5030 SHARP Monitor Calibration

Date:	February 17, 2022	Performed By/Reviewer:	Alex Yakupov	Chris Wesson
Company:	LICA	Start Time (mst):	10:50	
Station Name/Location:	Tamarack	End Time (mst):	13:39	
Previous Audit Date:	January 6, 2022	Calibration Purpose:	quarterly	
Parameter:	PM 2.5	Weather Conditions:	Mainly cloudy with snow	

SHARP Information and Status:				
Serial Number/Owner:	CM - 2209	LICA	Status Code	0
Approx. % Tape Reaming	3/10		Error Code	0

Reference Standards/I.D./Cert. Date:				
High Flow:	DeltaCal / DC-1 / s/n 177246 / July 12, 2021			
Digital Manometer:	DeltaCal / DC-1 / s/n 177246 / July 12, 2021			
Temperature:	VAISALA / HMP76B / T1640130 / April 22, 2021			
Pressure:	VAISALA / HMP76B / T1640130 / April 22, 2021			

As Found Temperatures, Pressure, Humidity:						
	T1 (°C)	T2 (°C)	T3 (°C)	T4 (°C)	P3 (hPa)	RH (%)
SHARP:	-15	21	22	22	928	13
Reference:	-16.0	22.0	22.0	22.0	927.0	14.0
Difference:	1.0	1.0	0.0	0.0	1.0	1.0
	Temp Limit: ± 4 °C					
	Pressure Limit: ± 13.33 hPa					
	RH Limit: ± 2%					

As Left Temperature and Pressure (same as above if as found adequate):						
	T1 (°C)	T2 (°C)	T3 (°C)	T4 (°C)	P3 (hPa)	RH (%)
SHARP:	-15	21	22	22	928	13
Reference:	-16.0	22.0	22.0	22.0	927.0	14.0
Difference:	1.0	1.0	0.0	0.0	1.0	7.1%
	Temp Limit: ± 4 °C					
	Pressure Limit: ± 13.33 hPa					
	RH Limit: ± 2%					

Mass Foil Calibration:				
	Mass Foil:	ZERO:	Span Sensitivity	
Mass Foil ID:	9015	QLF:	15	OLD:
Spanfoil Value (µg):	1294	CONFID:	9	NEW:
				7012
				7030

Nephelometer Zero:							
	As Found			As Left			
Analog	167.00			Analog	167.00		
NEPH	0.00			NEPH	0.00		
C14	24.00			C14	24.00		
Conc	0.00			Conc	0.00		

Flow rate:							
	As Found			As Left			
SHARP AirFlow l/hr	1000			SHARP AirFlow l/hr	1000		
Reference AirFlow (l/min)	16.69			Reference AirFlow (l/min)	16.69		
Reference AirFlow (l/hr)	1001			Reference AirFlow (l/hr)	1001		
% Difference:	-0.1%			Difference:	-0.1%		
	Tolerance +/- 5%						

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

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

Comments:

Leak check: 16.65 vs 16.58, 0.07 < 0.80 lpm, passed.

Meteorological System Checklist



Date:	February 10, 2022		
Technician:	Alex Yakupov		
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

AMBIENT TEMPERATURE SENSOR CHECK

Previous check date:	January 5, 2022		
Parameter:	Temperature @ 2 metres		
Reference Thermometer ID:	Vaisala HMP76B #T1640130, Exp. Date: April 22, 2022		
Reference Temperature (°C):	-2.8		
Station - Ambient Temperature (°C):	-4.7		
Temperature Difference (°C):	1.9		

BAROMETRIC PRESSURE SENSOR CHECK

Previous check date:	January 5, 2022		
Reference Barometer ID:	DeltaCal DC1 #177246, Exp. Date: Jul 12, 2022		
Reference Pressure - Units/Reading:	millibar	929	
Station Pressure - Units/Reading:	millibar	927	
Pressure Tolerance +/- 15% of error:	790 - 1068	0.22%	

RELATIVE HUMIDITY (HYGROMETER) SENSOR CHECK

Previous check date:	January 5, 2022		
Reference Hygrometer ID:	Vaisala HMP76B #T1640130, Exp. Date: April 22, 2022		
Reference Hygrometer % RH- Reading:	75.00		
Station Hygrometer % RH- Reading:	83.50		
RH Tolerance +/- 15% of difference:	63.75 - 86.25	-11.3%	

ANEMOMETER - WIND SPEED & WIND DIRECTION SENSOR CHECK

	WIND SPEED		WIND DIRECTION
Previous check date:	January 5, 2022	Previous check date:	January 5, 2022
Wind Speed Observed (kph):	10 to 20	Wind Direction Observed:	NE
Wind speed on Data Logger (kph):	14.8	Wind Direction on Data Logger:	NE
	Annual audit: Sep 20, 2021	Wind Direction Pass/Fail?:	Pass

Comments

Station (Trailer) temperature vs Reference gauge temperature: 23.8 vs 22.4, difference = 1.4 => Passed.



Meteorological Sensor Audit/Calibration

Location Information

Company: LICA
 Audit Location: Tamarack
 Audit Date: September 20, 2021
 Calibration Purpose: routine annual

Performed By: Alex Yakupov
 Reviewed By: Chris Wesson
 Start/End Time (mst): 14:10 / 15:19
 Weather Conditions: Mainly sunny

Wind Sensor Information

Sensor ID Data:		Sensor Outputs:	
Sensor Make:	RM Young	Velocity Voltage Output Range:	0-1
Sensor Model:	05305VK	Velocity Unit Output Range:	0-200
Serial #:	161465	Direction Voltage Output Range:	0-1
Previous Cal/Audit Date:	September 10, 2020	Direction Unit Output Range:	0-360

Wind Calibrator Information

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

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

RPM	Wind Speed Generated kph	Clockwise Wind Speed kph	Counter Clockwise Wind Speed kph	Correction Factor
0	0	0.1	0.1	-
1000	18.4	18.5	18.5	0.996
2000	36.9	37.0	37.0	0.996
3000	55.3	55.5	55.5	0.996
4000	73.7	74.0	74.0	0.996
5000	92.2	92.5	92.5	0.996
6000	110.6	111.0	111.0	0.996
7000	129.0	129.6	129.6	0.995
8000	147.4	148.2	148.1	0.995
9000	165.9	166.8	166.8	0.994
10000	184.3	185.3	185.4	0.994
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	354	0.4	0.9	0.6
30	330	32	330	-1.6	0.2	0.9
60	300	63	300	-3.1	0.1	1.6
90	270	93	270	-3.4	0.0	1.7
120	240	123	241	-3.4	-1.3	2.4
150	210	153	212	-2.8	-2.3	2.6
180	180	181	183	-1.1	-2.9	2.0
210	150	212	153	-2.3	-3.4	2.9
240	120	241	124	-1.2	-3.8	2.5
270	90	269	94	0.6	-4.0	2.3
300	60	299	64	0.6	-3.9	2.3
330	30	329	33	0.6	-2.7	1.7
355	0	354	1	0.9	0.7	0.8
The audit meets AMD requirements.				Average Absolute Degrees Difference=		1.9

Comments:

n/a

End of Report



Lakeland Industry & Community Association

FEBRUARY 2022
Ambient Air Monitoring Calibration Report
- ST. LINA STATION-
CAL-LICA-202202-01250

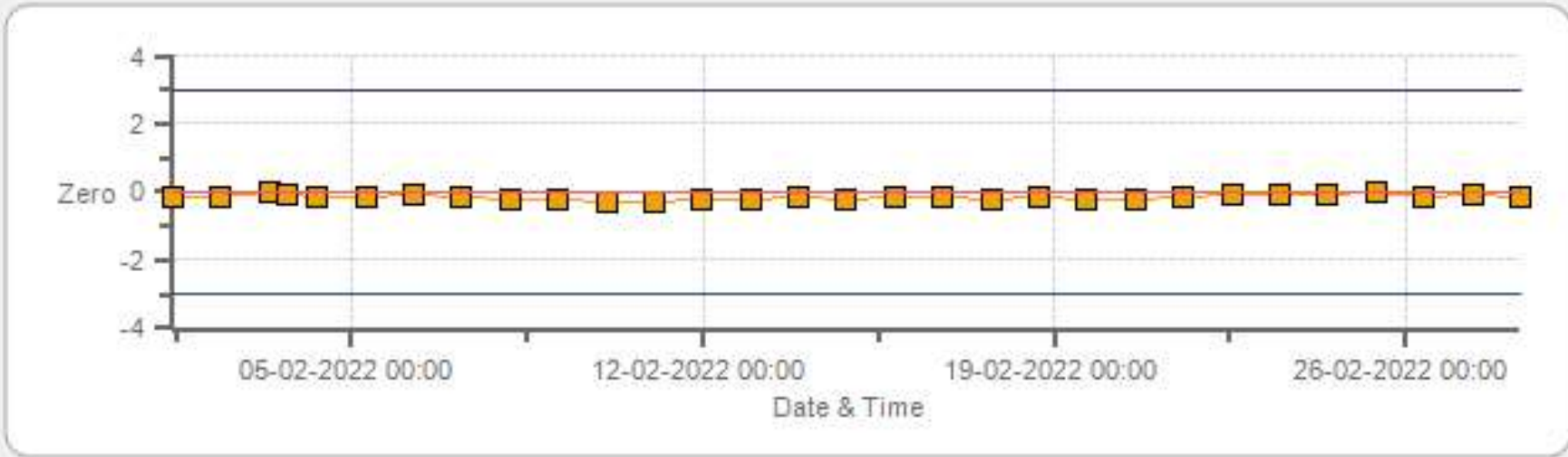
Station Operation and Maintenance:
Bureau Veritas Canada

Data Validation and Report:
LICA / Bureau Veritas Canada

March 23, 2022

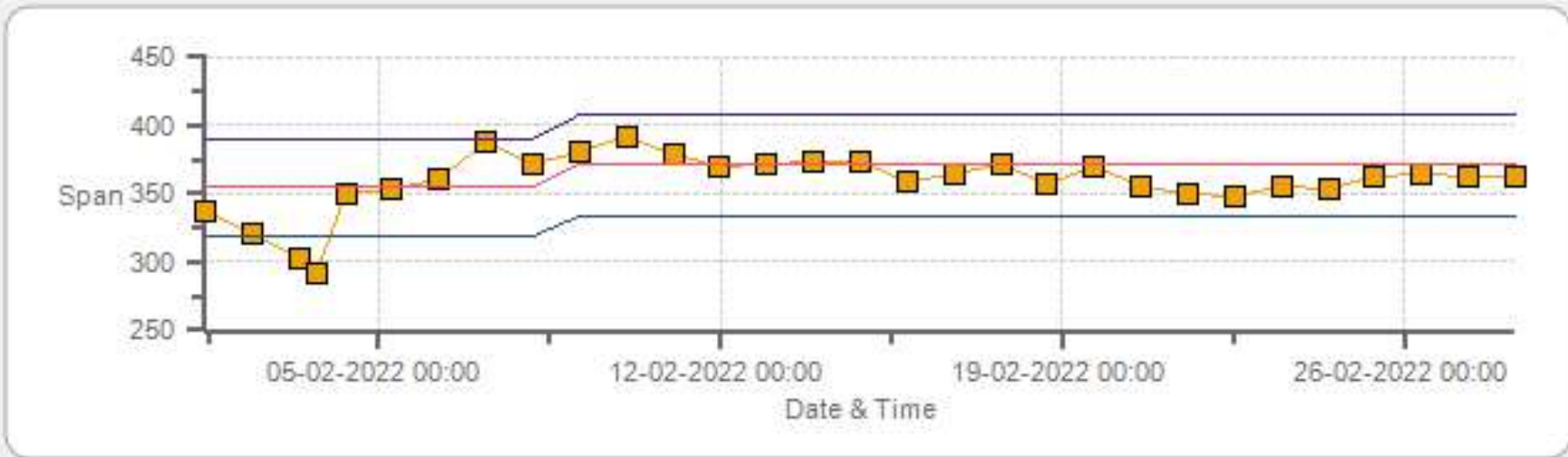
DAILY INTERNAL ZERO-SPAN CALIBRATION RECORDS

SO2[ppb] Calibration: St. Lina Monthly: 02-2022 Type: SpanAndZero - Zero



Zero Zero Ref Zero Low Zero High

SO2[ppb] Calibration: St. Lina Monthly: 02-2022 Type: SpanAndZero - Span



Span SpanRef Span Low Span High

H2S[ppb] Calibration: St. Lina Monthly: 02-2022 Type: SpanAndZero - Zero



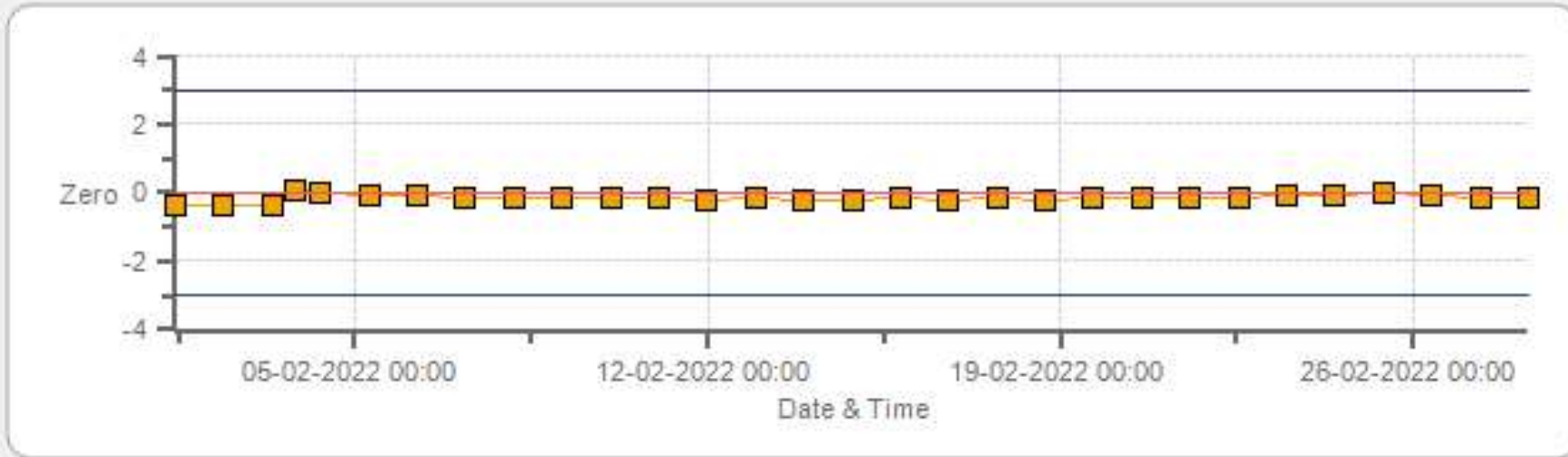
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H2S[ppb] Calibration: St. Lina Monthly: 02-2022 Type: SpanAndZero - Span



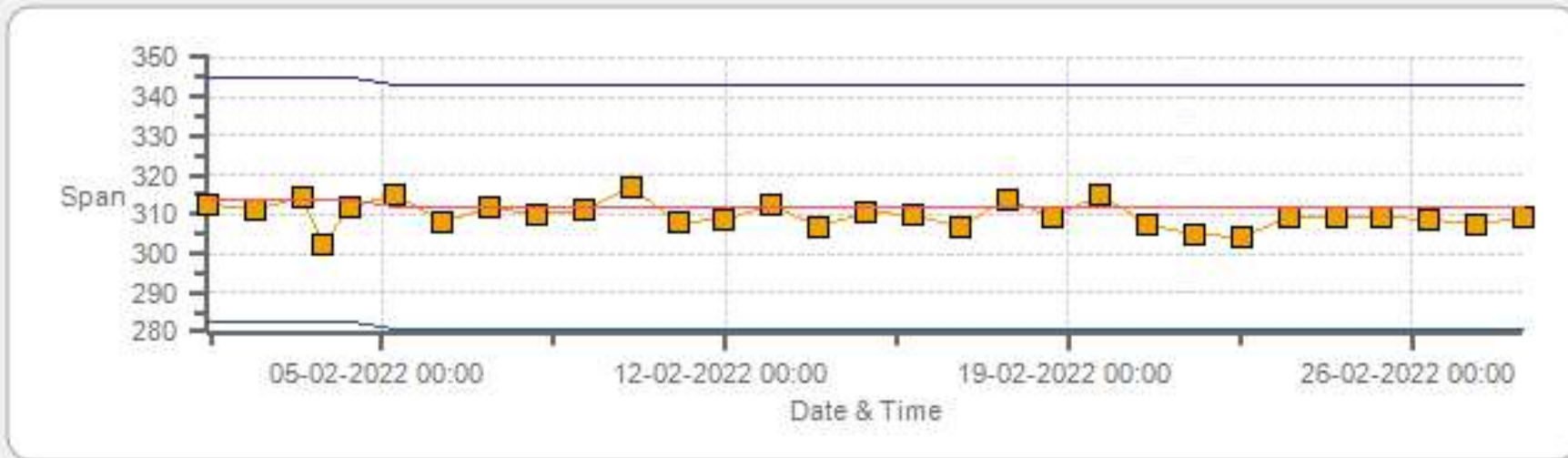
Span SpanRef Span Low Span High

NOX[ppb] Calibration: St. Lina Monthly: 02-2022 Type: SpanAndZero - Zero



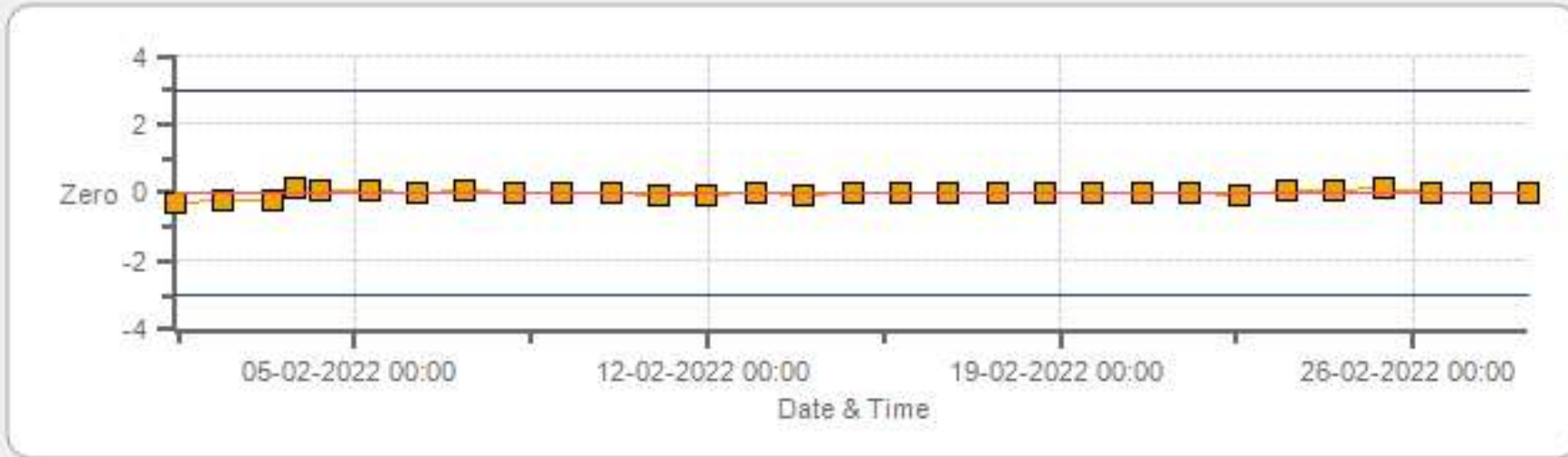
Zero Zero Ref Zero Low Zero High

NOX[ppb] Calibration: St. Lina Monthly: 02-2022 Type: SpanAndZero - Span



Span SpanRef Span Low Span High

NO2[ppb] Calibration: St. Lina Monthly: 02-2022 Type: SpanAndZero - Zero



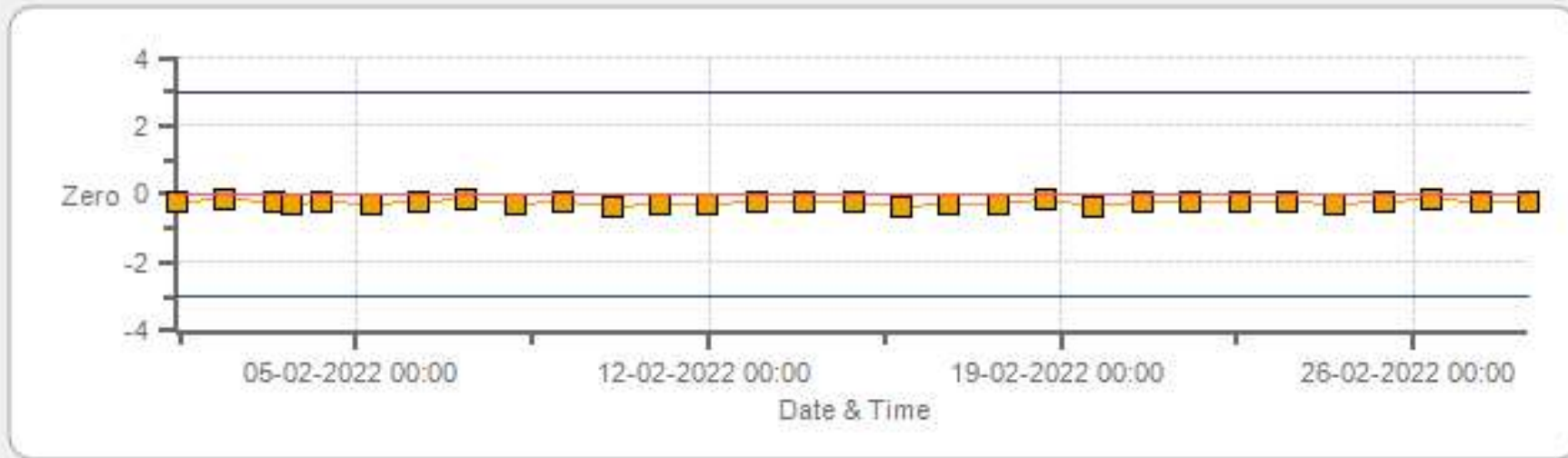
Zero Zero Ref Zero Low Zero High

NO2[ppb] Calibration: St. Lina Monthly: 02-2022 Type: SpanAndZero - Span



Span SpanRef Span Low Span High

O3[ppb] Calibration: St. Lina Monthly: 02-2022 Type: SpanAndZero - Zero



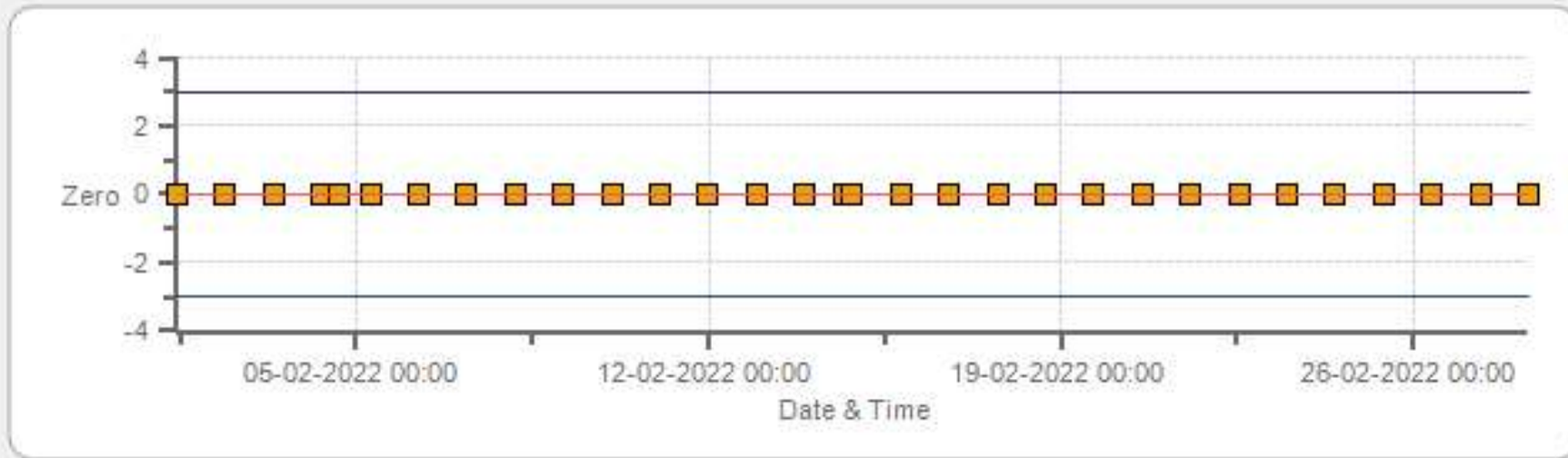
Zero Zero Ref Zero Low Zero High

O3[ppb] Calibration: St. Lina Monthly: 02-2022 Type: SpanAndZero - Span



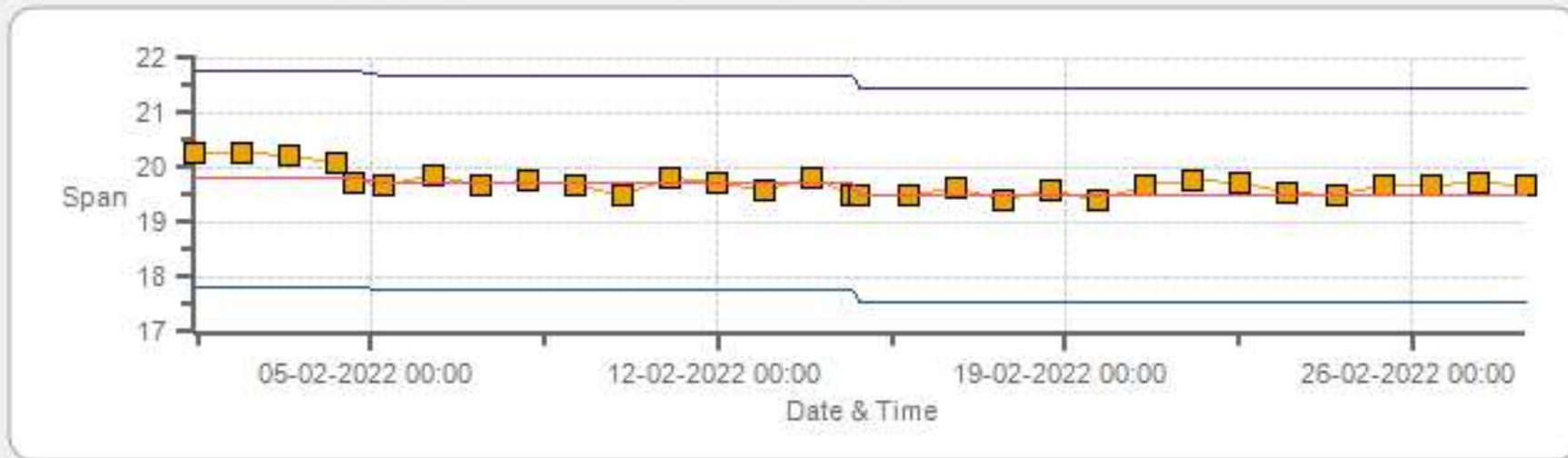
Span Span Ref Span Low Span High

THC55[ppm] Calibration: St. Lina Monthly: 02-2022 Type: SpanAndZero - Zero



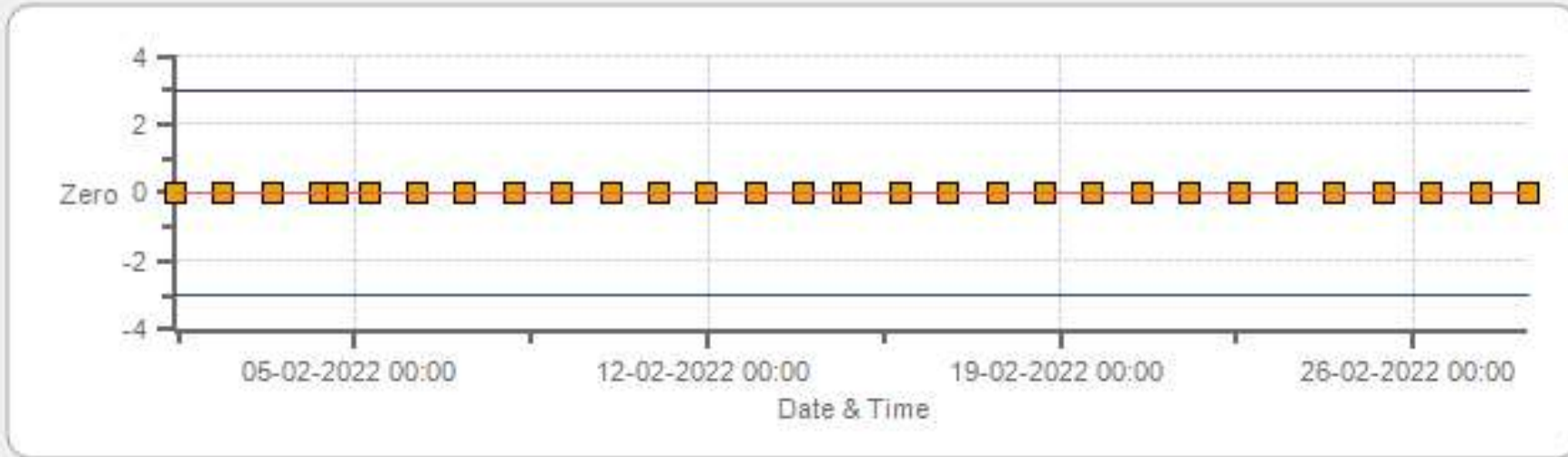
Zero Zero Ref Zero Low Zero High

THC55[ppm] Calibration: St. Lina Monthly: 02-2022 Type: SpanAndZero - Span



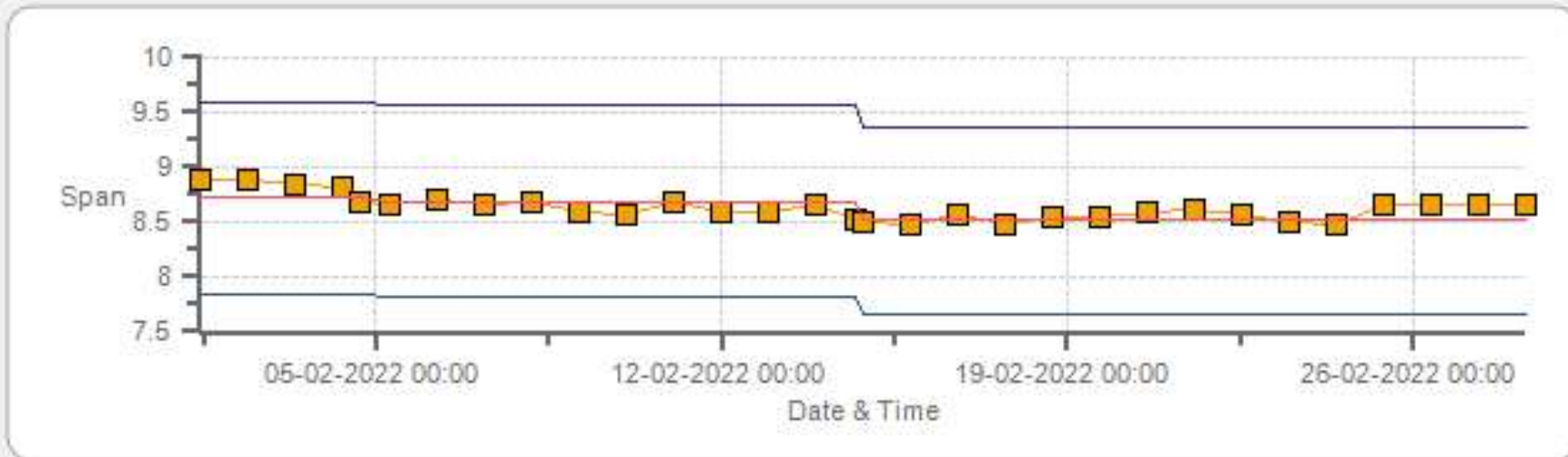
Span Span Ref Span Low Span High

CH4[ppm] Calibration: St. Lina Monthly: 02-2022 Type: SpanAndZero - Zero



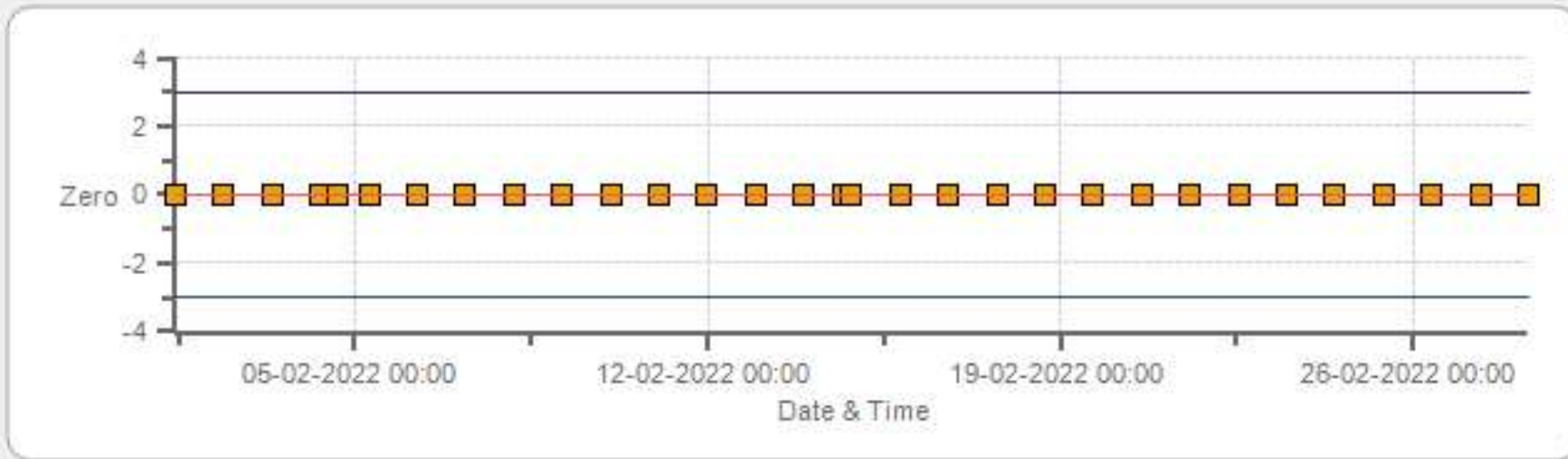
Zero Zero Ref Zero Low Zero High

CH4[ppm] Calibration: St. Lina Monthly: 02-2022 Type: SpanAndZero - Span



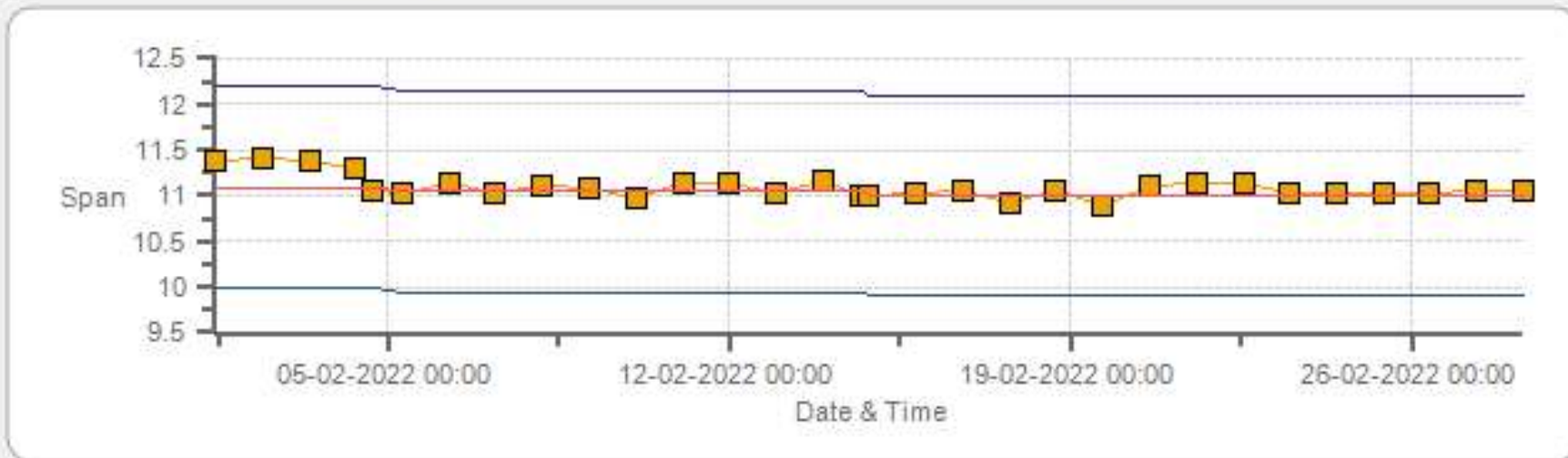
Span SpanRef Span Low Span High

NMHC[ppm] Calibration: St. Lina Monthly: 02-2022 Type: SpanAndZero - Zero



Zero Zero Ref Zero Low Zero High

NMHC[ppm] Calibration: St. Lina Monthly: 02-2022 Type: SpanAndZero - Span



Span SpanRef Span Low Span High

MULTI-POINT CALIBRATION RECORDS

SO2 Analyzer Calibration by Dilution



DATE:	03-Feb-2022	PREVIOUS CALIBRATION DATE:	11-Jan-2022
PARAMETER:	SO2	PREVIOUS CORRECTION FACTOR:	0.998
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	St. Lina	BAROMETRIC (mBar):	927
PURPOSE:	Routine	START TIME (MST):	13:14
PERFORMED BY:	Alex Yakupov	END TIME (MST):	17:15

ANALYZER:

MAKE/MODEL	Thermo 43I-TLE	RANGE	500 ppb
SERIAL #	1180930030	FLOW (mL/min)	440
INITIAL		FINAL	
BKG/OFFSET	4.85	BKG/OFFSET	4.81
COEF/SLOPE	1.184	COEF/SLOPE	1.179
Expected (reference) Value	354.9	Expected (reference) Value	to be adjusted

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010	MODEL:	T701
ID:	26801218	ID:	132
MFC CALIBRATION DATE:	19-Oct-2021	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	LL 105146	HIGH ID	n/a
CONC (ppm):	50.80	EXPIRY DATE	n/a
CYLINDER (psi):	1100	LOW ID	n/a
EXPIRY DATE	09-Jun-2029	EXPIRY DATE	n/a

CALIBRATION PARAMETERS:

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

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

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

CALIBRATION:

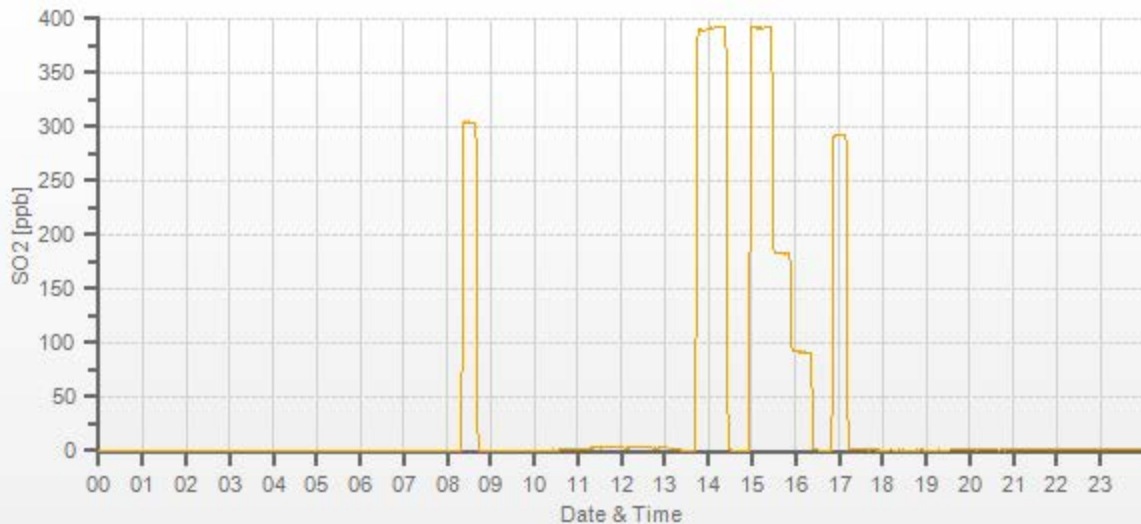
FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
DILUENT	GAS	TOTAL	ACTUAL	INDICATED		Initial	Final
				Initial	Final		
5000	38.50	5000	0.00	0	0	1.000	0.998
4959	38.50	4997	391.39	391.2	392	1.000	0.998
4981	18.00	4999	182.92	n/a	182.6	n/a	1.002
4990	9.00	4999	91.46	n/a	91.1	n/a	1.004

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.002	-0.1%

COMMENTS:

Sample inlet filter was changed.
New perm tube installed (Part NO. 140-533-0082-U45, used), 760 ng. The span value will be adjusted once stable.



H2S Analyzer Calibration by Dilution



DATE:	04-Feb-2022	PREVIOUS CALIBRATION DATE:	26-Jan-2022
PARAMETER:	H2S	PREVIOUS CORRECTION FACTOR:	1.003
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	St. Lina	BAROMETRIC (mBar):	915
PURPOSE:	Routine	START TIME (MST):	11:59
PERFORMED BY:	Alex Yakupov	END TIME (MST):	16:55

ANALYZER:

MAKE/MODEL	Thermo 450i	RANGE	100 ppb
SERIAL #	CM 18010058	FLOW (mL/min)	810
INITIAL		FINAL	
BKG/OFFSET	54.9	BKG/OFFSET	57.9
COEF/SLOPE	0.865	COEF/SLOPE	0.949
Expected (reference) Value	52.2	Expected (reference) Value	58.9

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010 D	MODEL:	T701
ID:	11900613	ID:	132
MFC CALIBRATION DATE:	19-Oct-2021	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	EY 0000644	HIGH ID	n/a
CONC (ppm):	10.00	EXPIRY DATE	n/a
CYLINDER (psi):	600	LOW ID	n/a
EXPIRY DATE	16-Jul-2022	EXPIRY DATE	n/a

CALIBRATION PARAMETERS:

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

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

START TIME:	12:04	SO2 Conc (ppb)	380
END TIME:	12:19	Analyzer Response (ppb)	0.0

CALIBRATION:

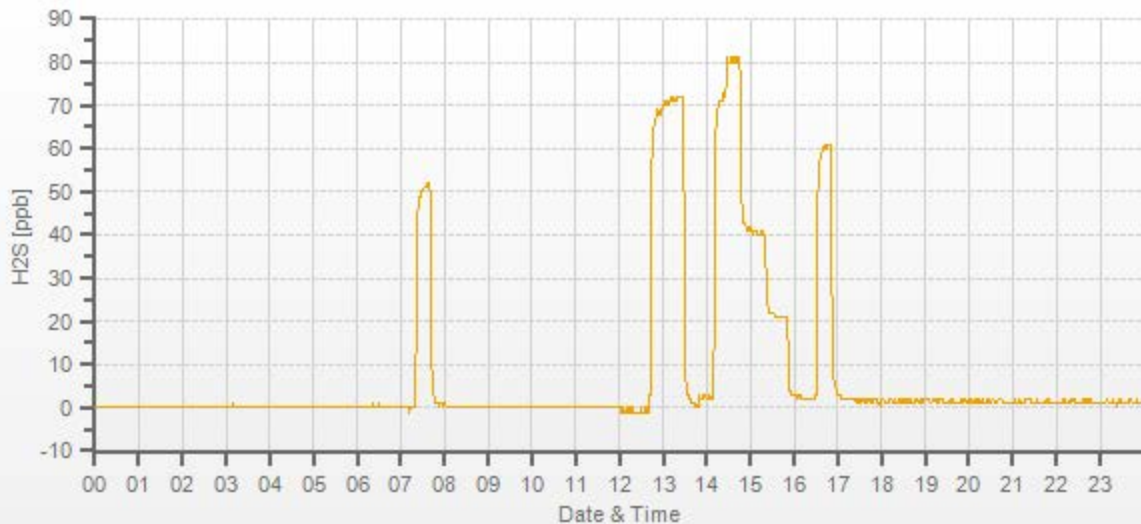
FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
DILUENT	GAS	TOTAL	ACTUAL	INDICATED		Initial	Final
				Initial	Final		
7500	7500	7500	0.00	-2.9	0	1.000	1.000
7442	58.50	7500	78.00	69.6	78.1	1.076	0.999
7472	28.50	7500	38.00	n/a	38	n/a	1.000
7486	14.30	7500	19.07	n/a	18.9	n/a	1.009

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.002	-0.1%

COMMENTS:

Sample inlet filter was changed



H2S Analyzer Calibration by Dilution



DATE:	08-Feb-2022	PREVIOUS CALIBRATION DATE:	04-Feb-2022
PARAMETER:	H2S	PREVIOUS CORRECTION FACTOR:	0.999
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	St. Lina	BAROMETRIC (mBar):	917
PURPOSE:	Removal/Shut-down	START TIME (MST):	13:03
PERFORMED BY:	Alex Yakupov	END TIME (MST):	14:54

ANALYZER:

MAKE/MODEL	Thermo 450i	RANGE	100 ppb
SERIAL #	CM 18010058	FLOW (mL/min)	814
INITIAL		FINAL	
BKG/OFFSET	57.9	BKG/OFFSET	n/a
COEF/SLOPE	0.949	COEF/SLOPE	n/a
Expected (reference) Value	58.9	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:	19-Oct-2021	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	EY 0000644	HIGH ID	n/a
CONC (ppm):	10.00	EXPIRY DATE	n/a
CYLINDER (psi):	600	LOW ID	n/a
EXPIRY DATE	16-Jul-2022	EXPIRY DATE	n/a

CALIBRATION PARAMETERS:

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

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

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

CALIBRATION:

FLOW RATES			CONCENTRATION (ppb)			CORRECTION FACTOR	
(mL/min)			ACTUAL	INDICATED		Initial	Final
DILUENT	GAS	TOTAL		Initial	Final		
7500	7500	7500	0.00	2.2	n/a	0.931	n/a
7442	58.50	7500	78.00	86	n/a	0.931	n/a
7472	28.50	7500	38.00	42.8	n/a	0.936	n/a
7486	14.30	7500	19.07	22.8	n/a	0.926	n/a

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.074	2.2%

COMMENTS:

Shutdown calibration was completed to renew SO2 scrubber beads

H2S Analyzer Calibration by Dilution



DATE:	08-Feb-2022	PREVIOUS CALIBRATION DATE:	n/a
PARAMETER:	H2S	PREVIOUS CORRECTION FACTOR:	n/a
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	St. Lina	BAROMETRIC (mBar):	917
PURPOSE:	Install/Post-Repair	START TIME (MST):	15:41
PERFORMED BY:	Alex Yakupov	END TIME (MST):	18:47

ANALYZER:

MAKE/MODEL	Thermo 450i	RANGE	100 ppb
SERIAL #	CM 18010058	FLOW (mL/min)	810
INITIAL		FINAL	
BKG/OFFSET	n/a	BKG/OFFSET	54.7
COEF/SLOPE	n/a	COEF/SLOPE	0.858
Expected (reference) Value	n/a	Expected (reference) Value	61.8

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010 D	MODEL:	T701
ID:	11900613	ID:	132
MFC CALIBRATION DATE:	19-Oct-2021	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	EY 0000644	HIGH ID	n/a
CONC (ppm):	10.00	EXPIRY DATE	n/a
CYLINDER (psi):	600	LOW ID	n/a
EXPIRY DATE	16-Jul-2022	EXPIRY DATE	n/a

CALIBRATION PARAMETERS:

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

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

START TIME:	15:43	SO2 Conc (ppb)	380
END TIME:	15:58	Analyzer Response (ppb)	0.0

CALIBRATION:

FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
DILUENT	GAS	TOTAL	ACTUAL	INDICATED		Initial	Final
				Initial	Final		
7500	7500	7500	0.00	n/a	-0.1	n/a	n/a
7442	58.50	7500	78.00	n/a	77.9	n/a	1.000
7472	28.50	7500	38.00	n/a	37.4	n/a	1.013
7486	14.30	7500	19.07	n/a	18.1	n/a	1.048

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.003	-0.5%

COMMENTS:

SO2 scrubber beads were renewed.



H2S Analyzer Calibration by Dilution



DATE:	14-Feb-2022	PREVIOUS CALIBRATION DATE:	08-Feb-2022
PARAMETER:	H2S	PREVIOUS CORRECTION FACTOR:	1.000
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	St. Lina	BAROMETRIC (mBar):	919
PURPOSE:	Repeat	START TIME (MST):	12:57
PERFORMED BY:	Alex Yakupov	END TIME (MST):	16:59

ANALYZER:

MAKE/MODEL	Thermo 450i	RANGE	100 ppb
SERIAL #	CM 18010058	FLOW (mL/min)	816
INITIAL		FINAL	
BKG/OFFSET	54.7	BKG/OFFSET	53.8
COEF/SLOPE	0.858	COEF/SLOPE	0.858
Expected (reference) Value	61.8	Expected (reference) Value	55.9

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010 D	MODEL:	T701
ID:	11900613	ID:	132
MFC CALIBRATION DATE:	19-Oct-2021	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	EY 0000644	HIGH ID	n/a
CONC (ppm):	10.00	EXPIRY DATE	n/a
CYLINDER (psi):	600	LOW ID	n/a
EXPIRY DATE	16-Jul-2022	EXPIRY DATE	n/a

CALIBRATION PARAMETERS:

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

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

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

CALIBRATION:

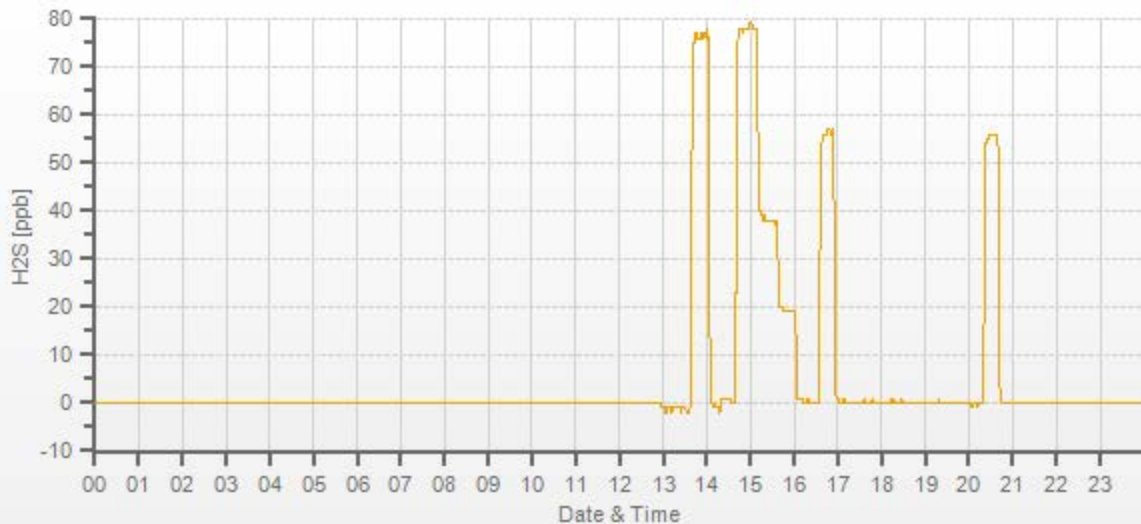
FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
DILUENT	GAS	TOTAL	ACTUAL	INDICATED		Initial	Final
				Initial	Final		
7500	7500	7500	0.00	-2.1	0.3	0.999	1.004
7442	58.50	7500	78.00	76	78	0.999	1.004
7472	28.50	7500	38.00	n/a	37.5	n/a	1.022
7486	14.30	7500	19.07	n/a	18.6	n/a	1.042

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	0.998	-0.1%

COMMENTS:

Repeat calibration due to span drift (SO2 scrubber beads stabilizing).



NOx Calibration by Dilution/Gas-Phase Titration



CALIBRATION:				ANALYZER:			
DATE:	03-Feb-2022	PREVIOUS CALIBRATION DATE:	11-Jan-2022	MAKE/MODEL:	Thermo 42i	PREVIOUS CF.	
CLIENT:	LICA	TEMPERATURE (°C):	22.0	SERIAL #:	1180930029	NOx	0.999
LOCATION:	St. Lina	BAROMETRIC (mBar):	927	FLOW (mL/min)	841	NO	1.001
PURPOSE:	Routine	START TIME (MST):	13:15	RANGE (ppb)	500	NO2	0.994
PERFORMED BY:	Alex Yakupov	END TIME (MST):	19:21	GPT FOR O3?		No	

CALIBRATOR:		ZERO AIR:		CALIBRATION GAS:		FLOWMETERS (if applicable):	
MAKE:	SABIO	MAKE:	Teledyne	CYLINDER ID:	LL 105146	HIGH ID:	n/a
MODEL:	2010	MODEL:	T701	NO/NOx (PPM):	50.0 50.1	HIGH EXPIRY:	n/a
ID:	26801218	ID:	132	CYLINDER (psi):	1100	LOW ID:	n/a
MFC CALIBRATION DATE:	19-Oct-2021	OXIDIZER ID:	n/a	EXPIRY DATE	09-Jun-2029	LOW EXPIRY:	n/a

CALIBRATION SETTINGS:							
INITIAL	NOx	NO	NO2	FINAL	NOx	NO	NO2
BKG/OFFSET:	4.3	3.9	n/a	BKG/OFFSET:	4	3.9	n/a
SLOPE/COEF/CE:	1.002	0.852	0.995	SLOPE/COEF/CE:	1.002	0.842	0.997

EXPECTED (REFERENCE) VALUE:							
INITIAL	NOx	NO	NO2	FINAL	NOx	NO	NO2
	313.8	1.6	312.2		311.7	1.6	310.1

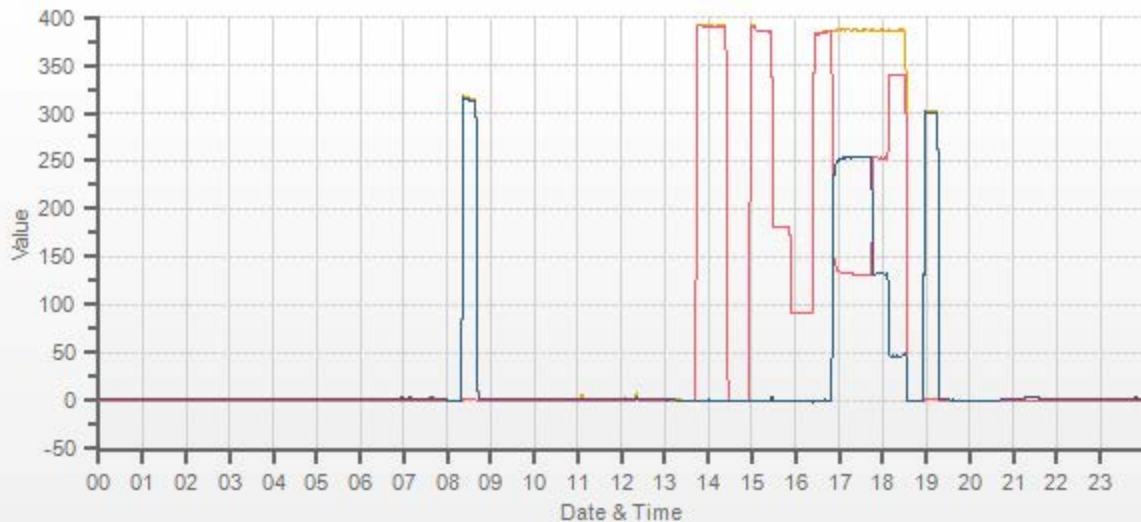
CALIBRATION PARAMETERS:				
POINT	NO TARGET (PPB)	NO2 TARGET (PPB)	NO2 RANGE	O3 POINT
HIGH	380	250	230-265	n/a
MID	180	125	115-150	n/a
LOW	90	45	40-55	n/a
EXTRA 1	n/a	n/a	n/a	n/a

FLOW RATE			CONCENTRATION (ppb)									CORRECTION FACTOR (CF.)					
(mL/min)			CALCULATED			INITIAL INDICATED			FINAL INDICATED			INITIAL			FINAL		
DILUENT	GAS	TOTAL	NO	NOx	NO2	NO	NOx	NO2	NO	NOx	NO2	NO	NOx	NO2	NO	NOx	NO2
5000	38.50	5000	0.0	0.0	0.0	-0.1	-0.3	-0.2	0.0	0.0	0.0	0.987	0.988	0.995	1.001	1.000	0.999
4959	38.50	4997	385.2	386.0	0.8	390.1	390.3	0.3	384.8	386.0	1.2	0.987	0.988	0.995	1.001	1.000	0.999
4981	18.00	4999	180.0	180.4	0.4	n/a	n/a	n/a	180.9	181.3	0.4	n/a	n/a	0.995	0.995	0.995	0.999
4990	9.00	4999	90.0	90.2	0.2	n/a	n/a	n/a	90.8	91.1	0.3	n/a	n/a	0.995	0.991	0.990	0.999

GPT CALIBRATION:										
Point	CALIBRATOR			INDICATED (ppb)			NO DROP / O3 Conc (ppb)	NO2 GAIN (ppb)	NO2 Corr. FACTOR	CONV. EFFICIENCY
	GAS	TOTAL	O3 SETPOINT	NO	NOx	NO2				
REFERENCE	38.50	4997	0	384.2	385.5	1.4	252.1	253.3	0.995	100.48%
AS-FOUND HIGH	38.50	4997	240	132.1	386.8	254.7	252.1	253.3	0.995	100.48%
ADJUSTED HIGH	38.50	4997	240	132.1	386.6	254.5	252.1	253.1	0.996	100.40%
MID	38.50	4997	125	253.6	386.4	132.8	130.6	131.4	0.994	100.61%
LOW	38.50	4997	45	340.0	386.6	46.6	44.2	45.2	0.978	102.26%
NO2 COEF/CONVERTER EFFICIENCY ADJUSTED									AVERAGE:	101.09%

LINEAR REGRESSION ANALYSIS:				COMMENTS:
	CORRELATION	SLOPE	INTERCEPT	
NO	1.000	0.998	0.12%	
NOx	1.000	0.999	0.11%	
NO2	1.000	1.000	0.18%	

Station: St. Lina Daily: 03-02-2022 Type: AVG 1 Min. [1 Min.]



CAL-LICA-202202-01250

NOX [ppb] NO [ppb] NO2 [ppb]

Ozone Calibration by Photometer (Varying UV Lamp)



DATE:	03-Feb-2022	PREVIOUS CALIBRATION DATE:	11-Jan-2022
PARAMETER:	O3	PREVIOUS CORRECTION FACTOR:	1.002
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	St. Lina	BAROMETRIC (mBar):	926
PURPOSE:	Routine	START TIME (MST):	13:13
PERFORMED BY:	Alex Yakupov	END TIME (MST):	17:15

ANALYZER:

MAKE/MODEL	Thermo 49i	RANGE	500 ppb
SERIAL #	1002240371	FLOW (mL/min)	1507
INITIAL		FINAL	
BKG/OFFSET	0.2	BKG/OFFSET	0.2
COEF/SLOPE	1.008	COEF/SLOPE	1.01
Expected (reference) Value	229	Expected (reference) Value	234

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010 D	MODEL:	T701
ID:	11900613	ID:	132
MFC CALIBRATION DATE:	19-Oct-2021	OXIDIZER ID:	n/a
CALIBRATION METHOD:		Photometer (Varying UV Lamp)	
GPT DATE:	n/a	GPT END TIME:	n/a

CALIBRATION PARAMETERS:

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

CALIBRATION:

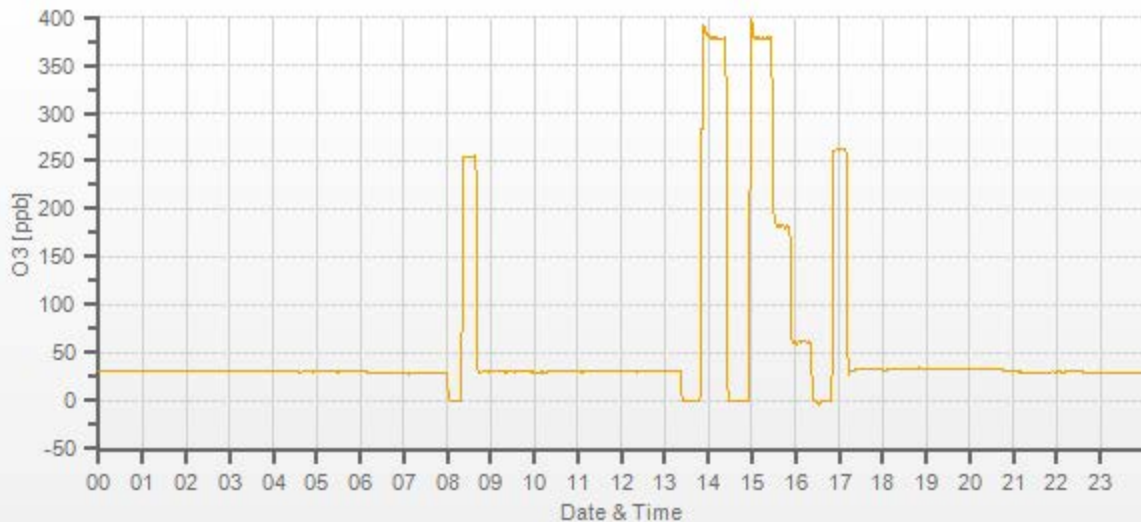
FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
DILUENT	GAS	TOTAL	ACTUAL	INDICATED		Initial	Final
				Initial	Final		
5000	XXXX	5000	0.0	0.2	0.0	XXXX	XXXX
5000	XXXX	5000	378.0	376.8	377.5	1.004	1.001
5000	XXXX	5000	180.0	n/a	181.1	n/a	0.994
5000	XXXX	5000	60.0	n/a	61.0	n/a	0.984

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	0.998	0.1%

COMMENTS:

Sampe inlet filter was changed. Zero-span pump was rebuilt.



Methane/Non-Methane Analyzer Calibration by Dilution



CALIBRATION:				ANALYZER:			
DATE:	04-Feb-2022	PREVIOUS CALIBRATION DATE:	19-Jan-2022	VALUE	MAKE/MODEL	SERIAL	FLOW (mL/min)
CLIENT:	LICA	TEMPERATURE (°C):	22.0		Thermo 55i	1505664392	1211
LOCATION:	St. Lina	BAROMETRIC (mBar):	915	PARAMETER:	CH4	NMHC	THC
PURPOSE	Routine	START TIME (MST):	12:00	RANGE (ppm):	20	20	40
PERFORMED BY:	Alex Yakupov	END TIME (MST):	15:40	PREVIOUS CF:	1.000	1.001	1.001

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:		CALIBRATION GAS:		FLOWMETERS (if applicable):	
MAKE:	SABIO	MAKE:	Teledyne	CYLINDER ID:	LL 168375	HIGH ID:	n/a
MODEL:	2010	MODEL:	T701	CH ₄ /C ₃ H ₈ (ppm):	914.0 307.0	HIGH EXPIRY:	n/a
ID:	26801218	ID:	132	CYLINDER (psi):	600	LOW ID:	n/a
MFC CALIBRATION DATE:	19-Oct-2021	OXIDIZER ID:	115	EXPIRY DATE	21-Jan-2028	LOW EXPIRY:	n/a

CALIBRATION PARAMETERS:

POINT (CH ₄ /NMHC)	HIGH	MID	LOW	CH ₄ EQUIVILANCE	
TARGET	14	7	3.5	C ₃ H ₈ as CH ₄	844.3
RANGE	12 - 16	6 - 8	2 - 4	THC as CH ₄	1758.3

EXPECTED (REFERENCE) VALUE:

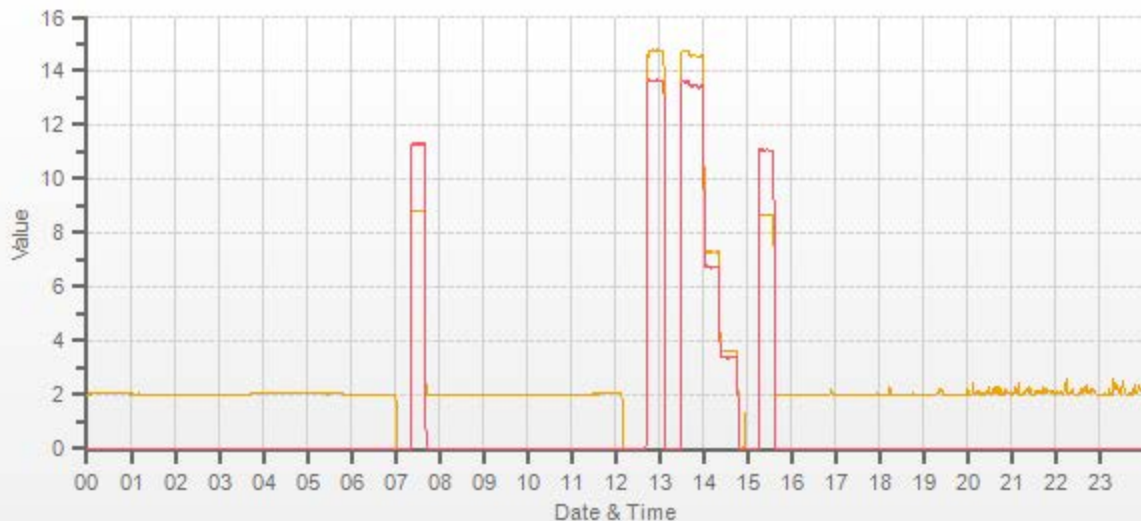
INITIAL	CH ₄	NMHC	THC	FINAL	CH ₄	NMHC	THC
	8.72	11.09	19.80		8.69	11.05	19.73

CALIBRATION:

FLOW RATE			CONCENTRATION (PPM)									CORRECTION FACTOR (CF.)					
(mL/min)			CALCULATED			INITIAL INDICATED			FINAL INDICATED			INITIAL			FINAL		
DILUENT	GAS	TOTAL	CH ₄	NMHC	THC	CH ₄	NMHC	THC	CH ₄	NMHC	THC	CH ₄	NMHC	THC	CH ₄	NMHC	THC
3100	X	3100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	X	X	X	X	X	X
3051	49.40	3100	14.57	13.45	28.02	14.77	13.65	28.42	14.54	13.41	27.94	0.986	0.986	0.986	1.002	1.003	1.003
3075	24.70	3100	7.28	6.73	14.01	n/a	n/a	n/a	7.30	6.75	14.04	n/a	n/a	n/a	0.998	0.997	0.998
3088	12.40	3100	3.66	3.38	7.03	n/a	n/a	n/a	3.64	3.38	7.01	n/a	n/a	n/a	1.004	0.999	1.003

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT	Comments:	
CH ₄	1.000	0.999	0.0%	Sample inlet filter was changed.	
NMHC	1.000	0.997	0.1%		
THC	1.000	0.998	0.0%		
				Use Zero Chrom?	Yes



CAL-LICA-202202-01250

Thermo 5030i SHARP Monitor Calibration

Date: <u>February 24, 2022</u>	Performed By/Reviewer: <u>Alex Yakupov</u> <u>Chris Wesson</u>
Company: <u>LICA</u>	Start Time (mst): <u>14:34</u>
Station Name/Location: <u>St. Lina</u>	End Time (mst): <u>16:35</u>
Previous Audit Date: <u>January 11, 2022</u>	Calibration Purpose: <u>Quarterly</u>
Parameter: <u>PM 2.5</u>	Weather Conditions: <u>Mainly sunny</u>

SHARP 5030i Information and Status:		
Serial Number: <u>CM 17091001</u>	Filter Tape Counter	116

Reference Standards: Air Flow					
	Manometer	Orifice	Pressure:	Temp / RH:	
Make:	<u>DeltaCal</u>	<u>DeltaCal</u>	<u>DeltaCal</u>	<u>VAISALA</u>	
Model:	<u>DC1</u>	<u>DC1</u>	<u>DC1</u>	<u>HMP76B</u>	
Serial Number:	<u>177246</u>	<u>177246</u>	<u>177246</u>	<u>SN: T1640130</u>	
Expiry Date:	<u>July 12, 2022</u>	<u>July 12, 2022</u>	<u>July 12, 2022</u>	<u>April 22, 2022</u>	

Ambient Temperature (°C)						
	As Found:			As Left: (same as found if acceptable)		
	Reference	SHARP	Difference	Reference	SHARP	Difference
#1	-8.40	-8.1	-0.3	-8.40	-8.1	-0.3
#2	-8.40	-8.1	-0.3	-8.40	-8.1	-0.3
#3	-8.50	-8.1	-0.4	-8.50	-8.1	-0.4
Average	-8.4	-8.1	-0.3	-8.4	-8.1	-0.3
	<i>Temp Limit: ± 2°C</i>					

Ambient Relative Humidity (%RH)						
	As Found:			As Left: (same as found if acceptable)		
	Reference	SHARP	Offset (ZERO)	Reference	SHARP	Offset (ZERO)
#1	59.60	59.8	-0.2	59.60	59.8	-0.2
#2	59.70	59.8	-0.1	59.70	59.8	-0.1
#3	59.70	59.9	-0.2	59.70	59.9	-0.2
Average	59.7	59.8	-0.2	59.7	59.8	-0.2
	<i>RH Limit: ± 2 %RH</i>					

Flow Temperature (°C)						
	As Found:			As Left: (same as found if acceptable)		
	Reference	SHARP	Difference	Reference	SHARP	Difference
#1	20.90	20.3	0.6	20.90	20.3	0.6
#2	20.90	20.3	0.6	20.90	20.3	0.6
#3	21.00	20.4	0.6	21.00	20.4	0.6
Average	20.9	20.3	0.6	20.9	20.3	0.6
	<i>Temp Limit: ± 2°C</i>					

Barometric Pressure (mmHg)						
	As Found:			As Left: (same as found if acceptable)		
	Reference	SHARP	Difference	Reference	SHARP	Difference
#1	698.0	700.0	2.0	697.0	697.0	0.0
	<i>BP Limit: ± 2 mmHg</i>					

Nephelometer Relative Humidity (%RH)						
	As Found:			As Left: (same as found if acceptable)		
	Reference	SHARP	Difference	Reference	SHARP	Difference
#1	15.50	15.2	0.3	15.50	15.2	0.3
	<i>RH Limit: ± 2 %RH</i>					

Nephelometer Temperature (%RH)						
	As Found:			As Left: (same as found if acceptable)		
	Reference	SHARP	Difference	Reference	SHARP	Difference
#1	21.20	20.8	0.4	21.20	20.8	0.4
	<i>Temp Limit: ± 2°C</i>					

Nephelometer Source Level						
	As Found:			As Left: (same as found if acceptable)		
	Variable	Value		Variable	Value	
	IRED	65		IRED	65	
	SRC LEVEL	47		SRC LEVEL	47	
	<i>IRED Limit (as found): 60-70 mA</i>					
	<i>Adjusted IRED Limit (as left): 65 mA</i>					

Detector Calibration (Auto)				
		As Left:		
Detector Auto Calibration Completed:		Variable	Value	
YES		HIGH VOLT	1360	
		BETA REF TH	250	
		ALPHA TH	650	
		DIFF HV	0	

Mass Coefficient (Auto)				
Zero		Span		
Variable	Value	Variable	Value	
MASS COEF	7112.5	MASS COEF	7112.5	
FOIL VALUE	1045	FOIL VALUE	1045	
Beta Avg	9287	Beta Avg	8018	
difference	Foil set # 4804	difference	0.0	
Foil Set: CM1597				

Flow Calibration (L/min)						
	As Found:			As Left: (same as found if acceptable)		
	Reference	SHARP	Difference	Reference	SHARP	Difference
#1	16.69	16.67	0.02	16.69	16.67	0.02
#2	16.68	16.67	0.01	16.68	16.67	0.01
#3	16.69	16.68	0.01	16.69	16.68	0.01
Average	16.69	16.67	0.01	16.69	16.67	0.01
	<i>Flow Limit: 16.67 ± 0.33 L/min</i>					

Leak Check (L/min)						
	Without Leak Check Adapter			With leak Check Adapter		
	Reference	SHARP	Difference	Reference	SHARP	Difference
#1	16.69	16.67	0.02	16.62	16.64	-0.02
	<i>Leak Limit: 0.08 L/min</i>					
	LEAK RATE: -0.04					

Meteorological System Checklist



Date:	February 4, 2022		
Technician:	Alex Yakupov		
Station:	St. Lina		
Unit:	Make:	Model:	Serial #:
Temperature Sensor:	Rotronic	HC2-S3	20221366
Barometric Pressure Sensor:	Met One	O90D	F4498
Relative Humidity Sensor:	Rotronic	HC2-S3	20221366
Anemometer:	RM Young	05305VK	161466

AMBIENT TEMPERATURE SENSOR CHECK

Previous check date:	January 10, 2022		
Parameter:	Temperature @ 2 metres		
Reference Thermometer ID:	Vaisala HMP76B #T1640130, Exp. Date: April 22, 2022		
Reference Temperature (°C):	-19.1		
Station - Ambient Temperature (°C):	-18.5		
Temperature Difference (°C):	0.6		

BAROMETRIC PRESSURE SENSOR CHECK

Previous check date:	January 10, 2022		
Reference Barometer ID:	Fisher Scientific #130168457, Exp. Date: Feb 17, 2022		
Reference Pressure - Units/Reading:	millibar	914	
Station Pressure - Units/Reading:	millibar	911	
Pressure Tolerance +/- 15% of error:	777 - 1051	0.33%	

RELATIVE HUMIDITY (HYGROMETER) SENSOR CHECK

Reference Hygrometer ID:	Vaisala HMP76B #T1640130, Exp. Date: April 22, 2022		
Reference Hygrometer % RH- Reading:	84.00		
Station Hygrometer % RH- Reading:	90.10		
RH Tolerance +/- 15% of difference:	71.40 - 96.60	-7.3%	

ANEMOMETER - WIND SPEED & WIND DIRECTION SENSOR CHECK

	WIND SPEED		WIND DIRECTION
Previous check date:	January 10, 2022	Previous check date:	January 10, 2022
Wind Speed Observed (kph):	10-20	Wind Direction Observed:	SE
Wind speed on Data Logger (kph):	16.2	Wind Direction on Data Logger:	SE
	Annual audit: Mar 16, 2021	Wind Direction Pass/Fail?:	Pass

Comments

Station (Trailer) temperature vs Reference gauge temperature: 23.7 vs 23.4 , passed.



Meteorological Sensor Audit/Calibration

Location Information

Company: LICA
 Audit Location: St. Lina
 Audit Date: March 16, 2021
 Calibration Purpose: routine annual

Performed By: Alex Yakupov
 Reviewed By: Chris Wesson
 Start/End Time (mst): 12:17 / 14:32
 Weather Conditions: Mainly sunny

Wind Sensor Information

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

Wind Calibrator Information

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

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

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

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

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

Comments:

n/a

End of Report